

555-7101-214

CallPilot

Installation and Configuration

Part 5: 200i Server Maintenance and Diagnostics

Product release 1.07

Standard 1.0

May 2000

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CallPilot

Installation and Configuration

Part 5: 200i Server Maintenance and Diagnostics

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Chapter 1

About this guide

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Overview

Introduction

This guide provides information and instructions for maintaining the current functions of a CallPilot server, and for troubleshooting any problems that might arise.

Who should read this guide

This guide is for planners, administrators, technicians, and engineers responsible for maintaining a CallPilot server. It is intended to act as a guide for installing, repairing, replacing, and upgrading hardware and software components. It assumes that the reader has basic computing skills, is familiar with necessary safety procedures, and has the hardware documentation provided by the manufacturer available as a reference.

Assumptions

This guide assumes that you are planning to maintain or troubleshoot an existing CallPilot server.

Glossary and related documents

Part 1 of this binder contains a glossary and a list of related documents.

Skills you need

Purpose

This section describes the skills and knowledge you need to use this guide effectively.

Nortel Networks product knowledge

Knowledge of, or experience with, the following Nortel Networks products is helpful when administering the CallPilot server:

- 200i Server
- 702t Server
- 1001rp Server

PC experience or knowledge

Knowledge of, or experience with, the following PC products is helpful when administering the CallPilot server:

- Microsoft Windows 95 or Windows NT
- client/server architecture
- Internet Protocol (IP)

Other experience or knowledge

Other types of experience or knowledge that might be useful include the following:

- database management
- programming

Symbols and conventions

Symbols

You might encounter the following symbols in this manual.

Danger



Risk of electric shock

Warns you of an immediate electrical hazard which, if not avoided, will result in shock, serious injury, or death.

Warning



Risk of personal injury

Warns you of a situation in which you can be injured if instructions are not followed exactly as stated.

Caution



Risk of equipment damage

Alerts you to situations where data can be lost or damaged, equipment can be damaged, actions can result in service interruption, and productive time can be lost.

ATTENTION

Provides information essential to the completion of a task.

Note: Describes the secondary results of procedures or commands, or special conditions under which a procedure or command must be used.

Choosing commands for procedures

For many procedures in this guide, there are several different ways you can perform the same task. For example, to copy text, you could choose any of the following methods:

- Choose Copy from the Edit menu.
- Click Copy on the toolbar.
- Type the keyboard shortcut Control+C.

This guide uses the first method.

Preparing for maintenance activities

Introduction

Maintenance activities are tasks you perform to ensure the proper functioning of your server or to fix any problems that occur. Before you begin any maintenance activities, collect all the tools you need, and follow all recommended safety precautions.

The remainder of this chapter discusses required tools for maintenance activities, as well as recommended safety precautions for electrostatic discharge, handling cards, and handling your server.

Required tools and safety precautions

Introduction

If you need to replace or upgrade any system parts, follow Nortel Networks tools and 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.

Maintenance tools and materials checklist

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

Check	Description
	Phillips cross-head screwdriver
	Standard slot-head screwdriver (1/4" and 1/2")
	Sidecutters
	Jumper removal tool or needle nose pliers
	Tape measure for determining cable lengths
	Tweezers
	Antistatic ESD wrist strap (recommended)
	Pen or pencil for writing notes, cable lengths, and cable identifications
	Cable tie wraps
	Pen or pencil for noting cable lengths and labeling cables

Check	Description
	Cable identification labels
	Equipment log. This is used to record the model and serial number of the system, all installed options, and other information.

Approved replacement parts

Before replacing any parts on your server, contact your Nortel Networks customer technical support organization for a list of approved add-in boards and peripheral devices. The use of non-approved replacement parts can cause serious system problems or void your Nortel Networks warranty.

General safety

Nortel Networks recommends that you observe these safety guidelines as you work on your server:

- Plug the peripheral devices into properly grounded power sources to prevent electric shock.
- Ensure that nothing rests on your server's cables and that you cannot trip over or step on the cables.
- Do not spill food or liquid in the server.
- Do not push any objects into the openings of your server.

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.

Avoiding electrostatic discharge

Introduction

Electrostatic discharge (ESD) can seriously damage component parts such as disk drives, boards, and other parts. Nortel Networks recommends that you perform the maintenance procedures described in this section at an ESD workstation.

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 surface on your system chassis.

While you work

As you work inside the server, periodically touch an unpainted surface to discharge any static your body might have accumulated.

Conductive foam padded in-boards

After removing a card from its protective wrapper or from the system, place it component-side up on a conductive foam pad. If possible, use antistatic floor pads and workbench pads.

Handling cards

Introduction

Electronic components are sensitive to the environment and to electrostatic discharge. To protect equipment and prolong the useful life of components, Nortel Networks recommends that you follow the precautions described below.

Avoiding electrostatic discharge

Electrostatic discharge (ESD) affects the performance and decreases the useful life of system components. Use caution when handling cards or server components to prevent damage. Wear an ESD wrist strap when handling system parts.

Precautions for handling cards

Take these precautions with any procedure that includes an add-in board:

- After removing a board from its protective wrapper, or from the server, place it component-side up on a grounded, static-free surface.
- Do not slide a board over any surface.
- Do not touch board components or gold-edge connectors on the board.
- Hold a board by the top edge, or by the side edges.

Handling hard disks

Introduction

Hard disks are extremely sensitive to vibration and physical shock. To protect equipment and prolong the useful life of hard drives, Nortel Networks recommends 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 accidentally knocked or moved. Use caution when handling hard disks to prevent damage.

Precautions for handling hard disks

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.

Shipping damage

If your hard disk is shipped independently for either an upgrade or a replacement, note any dents or damage on the padded container and packaging. Keep the container to prove that the part was damaged during shipping and handling.

Precautions when removing hard drives

Perform a proper system shutdown, and then remove the drive. See [Chapter 5, “Hardware maintenance and upgrade.”](#) for instructions.

Store hard drives

If you purchase extra hard disks, store these hard disks in the original padded container. Store the disks away from places where they might be moved or jarred.

Chapter 2

Diagnosing the server

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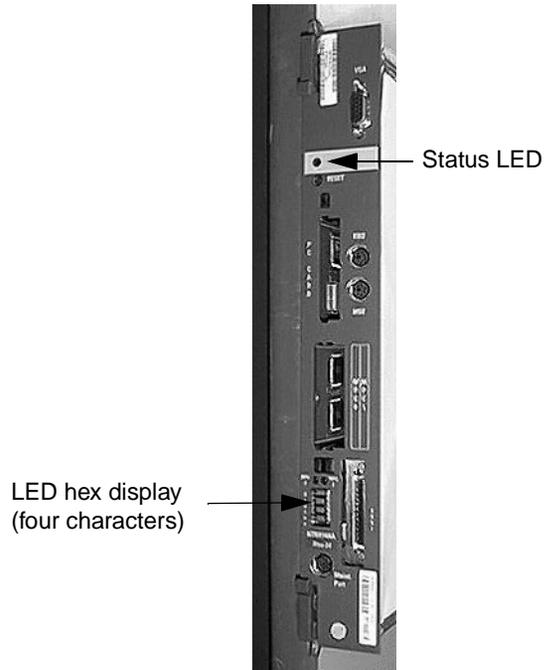
Section A: LED and hex displays

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Status LED and hex display location

The following picture shows where the status LED and LED hex display are located on the 200i server faceplate:



Understanding the Status LED

Introduction

The LED is located on the faceplate of the 200i server, immediately under the SVGA connector.

The server's LED is controlled exclusively by the server. The LED does not respond to any input commands from the switch console.

LED functions

The LED indicates two server states:

- the completion of self-test diagnostics
- when it is safe to remove the server from the switch

Server boot sequence indicators

When the server is inserted into an IPE shelf, the following sequence of LED indicator status occurs:

Activity	LED status
The 200i server is not locked into the IPE shelf.	Unlit
The 200i server is inserted into the switch and receives power.	Lights
Self-diagnostics completes with no critical errors.	Blinks three times
Boot sequence starts, ending after Windows NT successfully loads.	Unlit

Server status after installation

After the server has been installed, the LED status indicators are as follows:

LED activity	Explanation
The Status LED is lit.	The 200i server is not in use and can be removed from the shelf. The LED also lights up during the initial 10–15 seconds of a warm reboot.
The Status LED is unlit.	The 200i server is in use, or is booting.
The Status LED is unlit but the hex display is working.	One or more of the following apply: <ul style="list-style-type: none">■ The 200i server motherboard is faulty.■ The LED is faulty.

Understanding the hex display

Introduction

The hex display is located on the faceplate of the 200i server, under the MPC slots.

The server's hex display is controlled exclusively by the server. This display does not respond to any input commands from the switch console.

Hex display functions

The hex display gives a visual indication of current server status:

- error code indication of bootup fault conditions
- error code indication of the highest severity event being experienced by the server

Server boot sequence indicators

When the server is inserted into an IPE shelf, the hex display moves through the following sequence:

Note: XX represents a two-digit number.

Activity	Hex display status
The server is not locked into the IPE shelf.	Blank
The server is inserted into the switch and receives power.	Lights and begins T:XX
The bootup sequence begins (diagnostics are being run).	Continues to display T:XX

Server status after boot sequence

After the server is installed and the boot sequence completes, the current status of the server is shown on the hex display.

Note: Some MIN, MAJ, and CRI events might appear because the server has not been configured, and might be resolved after running the Configuration Wizard, which is described in Part 3 of this binder. The BOOT, PASS, WARN, and FAIL messages are system ready indicator messages, and do not appear if the Configuration Wizard has not been run.

Note: XX represents a two-digit number.

Hex display output	Description
T:XX	The 200i server is booting up and running diagnostics. These diagnostics are performed during a cold reboot (when the server is powered up, or if you press the Reset button). See “Diagnostic codes” on page 32 for more details.
F:XX	At least one noncritical diagnostic failed (error code represents the first failed diagnostic).
DOWN	The operating system is starting up or shutting down.
OK	The operating system boot sequence has passed.
BOOT	CallPilot is starting up and is not yet fully operational.
PASS	CallPilot is fully operational and ready to accept calls.

Hex display output	Description
WARN	CallPilot is ready to accept calls. However, some services failed the boot sequence. Check the event log for further information.
FAIL	CallPilot failed the boot sequence and cannot accept calls. Check the event log for further information.
MIN	A minor alarm has occurred. Check the event log for further information.
MAJ	A major alarm has occurred. Check the event log for further information.
CRI	A critical alarm has occurred. Check the event log for further information.
???	This indicates that an alarm of unknown severity occurred. This error should not occur on a properly installed system. The severity of this event is treated as higher-than-critical.

Note: If anything else appears on the display, contact your Nortel Networks technical support organization.

Diagnostic codes

Introduction

The diagnostic tests described here are performed during a cold reboot (when the server is powered up, or if you press the Reset button). Diagnostic codes are divided into the following three categories:

- critical bootup diagnostics
- noncritical bootup diagnostics
- noncritical operating system and switch diagnostics

Critical bootup diagnostics

All critical bootup diagnostics must pass before the 200i server can proceed with the bootup sequence. If a critical diagnostic fails, the bootup sequence indefinitely halts and an error code displays.

Critical bootup diagnostic codes

The following table shows the critical bootup diagnostic codes with their corresponding failure codes. Failure of these diagnostics means that there has been a server failure. The boot cycle is halted.

Note: The tests for T:00 to T:05 occur instantaneously, so you might not see these test codes.

Test code	Test description	Failure code
T:00	Initialization	F:00
T:01	Internal RAM	F:01
T:02	ALU	F:02
T:03	Address modes	F:03
T:04	Boot ROM	F:04
T:05	Timers	F:05

Noncritical bootup diagnostics

If a noncritical diagnostic fails, the server continues to boot up. The failure code corresponding to the first failed test appears on the hex display for three seconds, after all noncritical bootup diagnostics have completed (up to T:17). If more than one diagnostic fails, only the error code of the first failed test appears.

Noncritical bootup diagnostic codes

The following table shows the noncritical bootup diagnostic codes with their corresponding failure codes. Diagnostic failures in this case do not affect completion of server bootup.

Note: When a test is successfully completed, the next test code appears.

Test code	Test description	Failure code
T:06	Watchdog	F:06
T:07	External RAM	F:07
T:08	Host DPRAM	F:08
T:09	DS30 DPRAM	F:09
T:10	Software feature key (dongle)	F:10
T:11	Flash memory	F:11
T:12	PCI FPGA programming	F:12
T:13	DS30 FPGA programming	F:13
T:14	CEMUX FPGA programming	F:14
T:15	DSP FPGA programming	F:15
T:16	CEMUX interface	F:16
T:17	EEPROM	F:17

Noncritical operating system and switch diagnostics

ATTENTION

Until you program the switch (instructions are in Part 3 of this binder), the hex display might stop between T:18 and T:21, which is when the handshaking with the switch begins. After you program the switch, press the Reset button on the 200i server faceplate to reboot and to clear this fault code.

The 200i server Fault Management Test is an indicator for the highest severity minor, major, or critical event logged by the software. This is the only noncritical operating system and switch test that generates a failure message on the hex display.

If a noncritical operating and switch diagnostic test fails, the hex display stops at the failed test. Remaining diagnostics are not performed. The boot sequence continues, but server functionality can be compromised.

Noncritical operating system and switch diagnostic error codes

The following table shows the noncritical operating system and switch diagnostic codes with their corresponding failure codes. Diagnostic failures in this case do not affect completion of server bootup:

Status code	Operation description	Failure code
T:18	OS boot	T:18
T:19	CEMUX bus and OS driver	T:19
T:20	OS driver application active	T:20
T:21	Switch and cardLAN config	T:21
T:22	Bootup is complete. 200i server fault management takes over.	OK

As soon as the T:18 diagnostic test completes, look for OK. Tests after T:18 complete quickly, so you might not see them on the display. If OK does not appear but the display remains at a T:18 or higher code, then the corresponding test has failed. See [“Server status after boot sequence” on page 30](#) for other messages that can appear on the hex display.

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What to do when the 200i server fails to boot

To determine why the 200i server failed to boot up

- 1 Verify the modem DIP switches. For the settings, refer to Part 2 of this binder for modem DIP switch settings.
Note: DIP switch 4 is particularly important. If it is not set correctly, the 200i server will fail to boot.
- 2 Try rebooting the server by pressing the reset button on the 200i server faceplate.
- 3 Allow 20 to 30 minutes for the boot cycle to complete.
- 4 Look at the diagnostic codes on the hex display. See [“Diagnostic codes” on page 32](#).
- 5 Look at the BIOS POST diagnostic results for failures. See [“Power-On Self-Test \(POST\) diagnostics” on page 37](#).
Note: Use Console Redirection for this. See [Section E: “Working with Console Redirection,” on page 71](#).
- 6 Attach a local VGA monitor and determine where in the boot cycle the failure occurs.
Note: Use Console Redirection for this.
- 7 If the server boots up, but the hex display shows MIN, MAJ, or CRI, check the event logs for more information. See [“Viewing event logs” on page 42](#).
- 8 If you still cannot find the boot failure cause, call your Nortel Networks product support representative.

Power-On Self-Test (POST) diagnostics

Introduction

The Power-On Self-Test (POST) runs after T:18 completes. POST is a system diagnostic program (stored in the BIOS) that runs every time the 200i server reboots. POST tests system components, and then displays status messages on a locally connected monitor or through Console Redirection.

Viewing bootup results

The BIOS boot screen, as well as POST code diagnostic failure text, can be viewed locally or remotely by using one of the following methods:

- Attach a local VGA monitor to the 200i server faceplate.
- Use Console Redirection to view text locally or remotely.

Successful bootup example

The following is a typical successful 200i server BIOS boot screen. The exact phrases can vary based on

- the BIOS version being used
- whether mouse and keyboard devices are attached
- whether the flash recovery PC card is inserted

The text that is underlined is displayed only during cold boots. Cold boots are generated by

- removing or reinserting the 200i server from the switch
- manually pressing the reset button on the 200i server's faceplate

Therefore, extensive BIOS POST memory tests are performed only on cold boots.

```
Phoenix PicoBIOS Version 4.05.03
```

```
Copyright 1985-1998 Phoenix Technologies Ltd., All  
Rights Reserved.
```

11/16/98 12:40:14

Northern Telecom Ltd., NTRH13BA-01

CPU = Pentium with MMX 166 MHz

0000640K System RAM Passed

0130048K Extended RAM Passed

0256K Cache SRAM Passed

System BIOS shadowed

Video BIOS shadowed

UMB upper limit segment address: F192

Fixed Disk 0: ST92130AG

Mouse Initialized

Phoenix PicoCard (tm) PC Card Boot

(C) Copyright Phoenix Technologies Ltd. , 1997, All Rights Reserved

Initializing PicoCard BIOS Socket Services ...

Found Cirrus Logic PD6730 PCI-PCMCIA Controller.

Read I/O Address as: 03E0

Initialization of PicoCard BIOS Socket Services completed.

No bootable PCMCIA Card found in socket 0.

Press <F2> to enter SETUP, <ALT> to bypass PC Card boot

Successful bootup description

The following is a line-by-line description of successful bootup results:

Line(s)	Description
1–3	Indicate the BIOS vendor, BIOS core version number, and date and time the BIOS was installed in the system.
5	Indicates the Nortel Networks product code for the product.
6	Indicates the CPU type and speed.
7	Indicates that memory tests on the first 640 bytes of dynamic RAM passed successfully.
8	Indicates that memory tests on the remaining 127 Mbytes of dynamic RAM passed successfully.
9	Indicates that memory tests on cache static RAM memory passed successfully.
10–12	Indicate that the BIOS was successfully copied into dynamic memory.
13	Indicates that the hard disk drive was successfully detected, and when queried, returned the ST92130AG version identifier string.
14	Indicates that a mouse was successfully detected and initialized.
17–23	Indicate that a BIOS extension initialized correctly. The BIOS extension successfully detected and initialized the onboard PCMCIA controller.
24	Indicates that the Flash Recovery PC card was either not inserted properly or, if inserted, has been damaged. As a result, the BIOS attempts to boot from a hard disk drive.

Line(s)	Description
27	<p>Provides information on how to perform the following actions:</p> <ul style="list-style-type: none">■ Enter the BIOS CMOS setup screens to change or verify BIOS settings and enable or disable BIOS features (for example, Console Redirection).■ Allow booting from the 200i server's hard drive despite having a flash recovery PC card inserted.

POST diagnostic failures

If there was a POST diagnostic failure, the BIOS displays additional messages if possible. The following are examples of typical error messages that might display:

- 0000640K System RAM Failed at offset: 0F3A
- 0000922K Shadow RAM failed at offset: 00BA
- Memory Testing Aborted
- System cache error - Cache disabled
- SMART Failure Predicted on Hard Disk 0
- Operating system not found
- Keyboard controller error
- Stuck Key

If the failure is noncritical, the BIOS displays failure information text but does not halt the boot cycle. The system might or might not boot, depending on the nature and severity of the underlying hardware failure.

If the failure is diagnosed to be a critical failure, failure information text appears and the boot cycle stops. The following message always appears as part of the failure information text:

```
POST error! Press <F1> to resume, <F2> to Setup
```

What to do if a POST diagnostic failure occurs

If a POST failure occurs, write down any failure messages and contact your Nortel Networks product support representative.

To see if the problem reoccurs, reboot the 200i server by pressing the reset button on the 200i server's faceplate.

Viewing event logs

Introduction

When the 200i server boot cycle is complete and if the CallPilot server has been configured (see Part 3 of this binder), the hex display should show PASS. If the hex display shows CRI, MAJ, or MIN instead, a fault has occurred. To determine what happened, you can use the following:

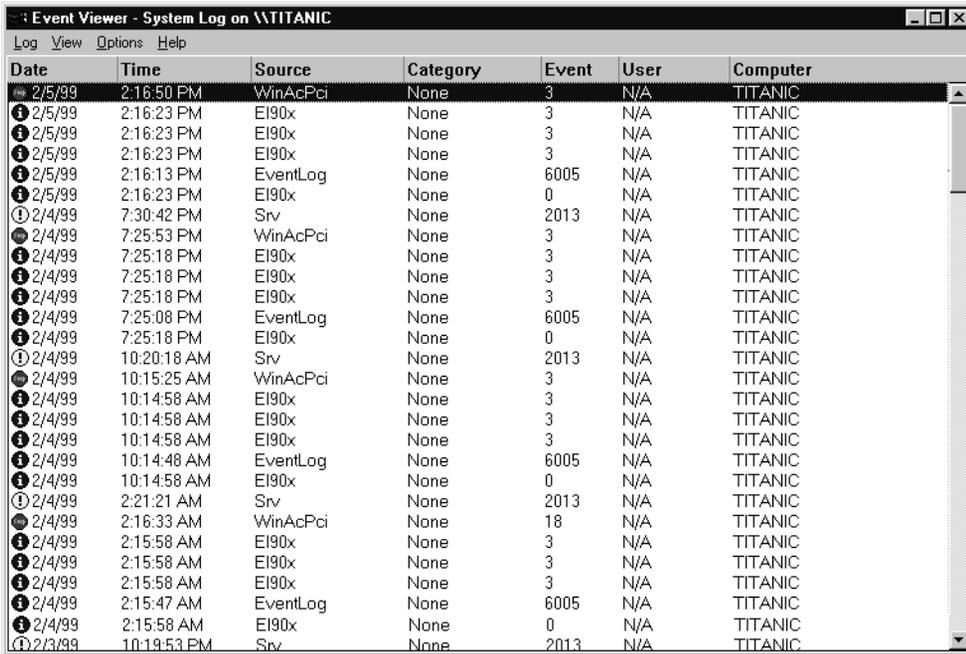
- Windows NT Event Viewer on the 200i server (see [“To use the Windows NT Event Viewer on the 200i server” on page 43](#))
- Event Browser on the administrative client PC (refer to the *Monitoring and Security for the Administrator* guide for instructions)
- Alarm Monitor on the administrative client PC (refer to the *Monitoring and Security for the Administrator* guide for instructions)

Note: The Event Browser and Alarm Monitor include online Help for events that might help you resolve the problem. If you cannot log on to the CallPilot system from the administrative PC due to server problems, use the Windows NT Event Viewer.

To use the Windows NT Event Viewer on the 200i server

- 1 Click Start > Programs > Administrative Tools > Event Viewer.

Result: The Event Viewer window appears.



Date	Time	Source	Category	Event	User	Computer
2/5/99	2:16:50 PM	WinAcPci	None	3	N/A	TITANIC
2/5/99	2:16:23 PM	El90x	None	3	N/A	TITANIC
2/5/99	2:16:23 PM	El90x	None	3	N/A	TITANIC
2/5/99	2:16:23 PM	El90x	None	3	N/A	TITANIC
2/5/99	2:16:13 PM	EventLog	None	6005	N/A	TITANIC
2/5/99	2:16:23 PM	El90x	None	0	N/A	TITANIC
2/4/99	7:30:42 PM	Srv	None	2013	N/A	TITANIC
2/4/99	7:25:53 PM	WinAcPci	None	3	N/A	TITANIC
2/4/99	7:25:18 PM	El90x	None	3	N/A	TITANIC
2/4/99	7:25:18 PM	El90x	None	3	N/A	TITANIC
2/4/99	7:25:18 PM	El90x	None	3	N/A	TITANIC
2/4/99	7:25:08 PM	EventLog	None	6005	N/A	TITANIC
2/4/99	7:25:18 PM	El90x	None	0	N/A	TITANIC
2/4/99	10:20:18 AM	Srv	None	2013	N/A	TITANIC
2/4/99	10:15:25 AM	WinAcPci	None	3	N/A	TITANIC
2/4/99	10:14:58 AM	El90x	None	3	N/A	TITANIC
2/4/99	10:14:58 AM	El90x	None	3	N/A	TITANIC
2/4/99	10:14:58 AM	El90x	None	3	N/A	TITANIC
2/4/99	10:14:48 AM	EventLog	None	6005	N/A	TITANIC
2/4/99	10:14:58 AM	El90x	None	0	N/A	TITANIC
2/4/99	2:21:21 AM	Srv	None	2013	N/A	TITANIC
2/4/99	2:16:33 AM	WinAcPci	None	18	N/A	TITANIC
2/4/99	2:15:58 AM	El90x	None	3	N/A	TITANIC
2/4/99	2:15:58 AM	El90x	None	3	N/A	TITANIC
2/4/99	2:15:58 AM	El90x	None	3	N/A	TITANIC
2/4/99	2:15:47 AM	EventLog	None	6005	N/A	TITANIC
2/4/99	2:15:58 AM	El90x	None	0	N/A	TITANIC
2/3/99	10:19:53 PM	Srv	None	2013	N/A	TITANIC

- 2 Do one of the following:
 - Select Log > System to view the System Log.

- Select Log > Application to view the Application Log.

Result: The log appears.

Note: The following is an example of the Application Log:

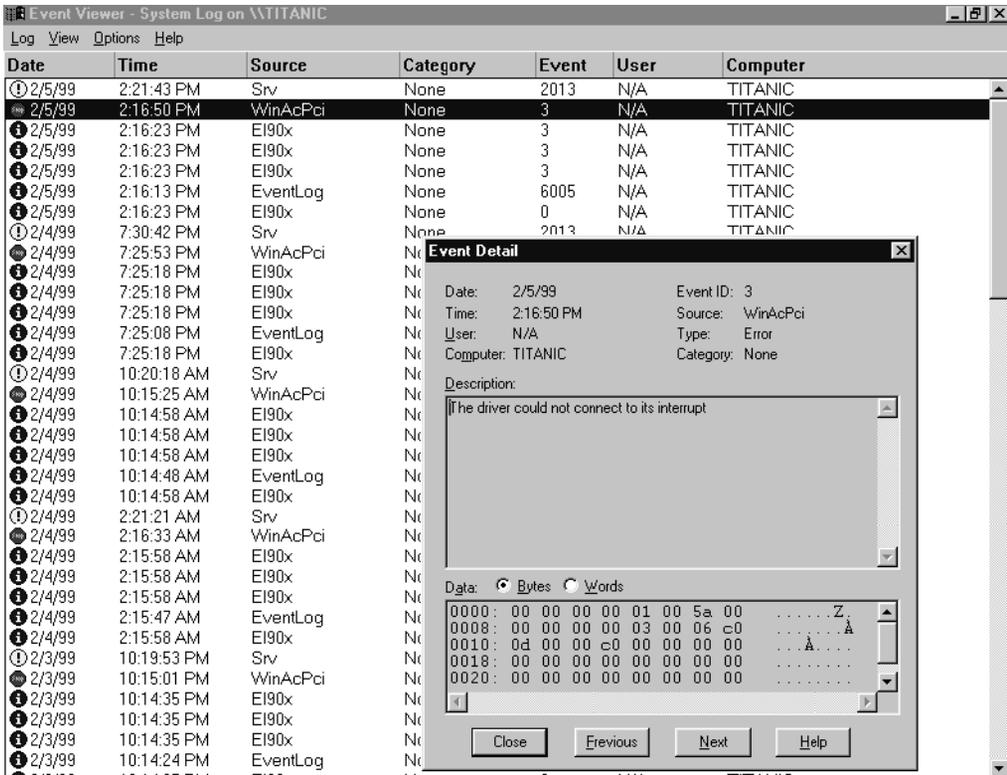
Date	Time	Source	Category	Event	User	Computer
1/31/99	8:21:26 PM	NAV Scanner	Information	4098	SYSTEM	TITANIC
1/24/99	8:22:08 PM	NAV Scanner	Information	4098	SYSTEM	TITANIC
1/17/99	8:21:36 PM	NAV Scanner	Information	4098	SYSTEM	TITANIC
1/16/99	6:45:04 PM	Perflib	None	1008	N/A	TITANIC
1/16/99	6:45:04 PM	SramPerf	None	2001	N/A	TITANIC
1/16/99	6:45:04 PM	SramPerf	None	2002	N/A	TITANIC
1/16/99	6:45:04 PM	SramPerf	None	2000	N/A	TITANIC
1/16/99	6:43:49 PM	Perflib	None	1008	N/A	TITANIC
1/16/99	6:43:49 PM	SramPerf	None	2001	N/A	TITANIC
1/16/99	6:43:49 PM	SramPerf	None	2002	N/A	TITANIC
1/16/99	6:43:49 PM	SramPerf	None	2000	N/A	TITANIC
1/13/99	2:20:10 PM	NGen	None	36179	N/A	TITANIC
1/10/99	8:21:24 PM	NAV Scanner	Information	4098	SYSTEM	TITANIC
1/3/99	8:21:17 PM	NAV Scanner	Information	4098	SYSTEM	TITANIC
12/27/98	8:21:09 PM	NAV Scanner	Information	4098	SYSTEM	TITANIC
12/20/98	8:21:28 PM	NAV Scanner	Information	4098	SYSTEM	TITANIC
12/16/98	10:22:55 PM	Perflib	None	1008	N/A	TITANIC
12/16/98	10:22:55 PM	SramPerf	None	2001	N/A	TITANIC
12/16/98	10:22:55 PM	SramPerf	None	2002	N/A	TITANIC
12/16/98	10:22:55 PM	SramPerf	None	2000	N/A	TITANIC
12/13/98	8:16:34 PM	NAV Scanner	Information	4098	SYSTEM	TITANIC
11/29/98	8:21:50 PM	NAV Scanner	Information	4098	SYSTEM	TITANIC
11/22/98	8:22:03 PM	NAV Scanner	Information	4098	SYSTEM	TITANIC
11/20/98	10:14:39 AM	Perflib	None	1008	N/A	TITANIC
11/20/98	10:14:39 AM	SramPerf	None	2001	N/A	TITANIC

- 3 Look for any error codes flagged with or that have occurred since the last boot.

Note: Each error is date and time stamped. indicates major or critical errors. indicates minor errors.

- 4 To determine the cause of the error, double-click the error.

Result: A description of the error appears.



- 5 Use the description to fix easily solvable errors.

Note: If the error persists or does not suggest a solution, contact your Nortel Networks support representative.

- 6 Click Close.

Result: The event log reappears.

- 7 Select Log > Exit.

Result: The Event Viewer closes.

Where to get more information

For more information about using the Windows NT System Event Viewer, click Help > Contents in the Event Viewer window.

Section C: Viewing installation and configuration log files

In this section

[Viewing installation and configuration log files](#)

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Viewing installation and configuration log files

Installation or upgrade event log file

The installation event log tracks events associated with any install, reinstall, upgrade, or uninstallation operation. This log also tracks any fatal errors that interrupt these operations.

Use any text editor (for example, Notepad) to view the installation event log file located on the server in `C:\sysops\sysops.log`.

Configuration Wizard log file

Use any text editor (for example, Notepad) to view the Configuration Wizard log file located on the server in `D:\Nortel\ConfigWizard\ConfigWiz.log`.

Section D: Performing Windows NT online diagnostics

In this section

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Overview

Introduction

This section outlines how to access the run-time online diagnostics provided by the Windows NT server software.

Checking hardware using Windows NT 4.0 diagnostics

Introduction

The Windows NT 4.0 system provides tools that can be used to diagnose and debug system problems, including

- Windows NT Diagnostics screen
- Event Viewer

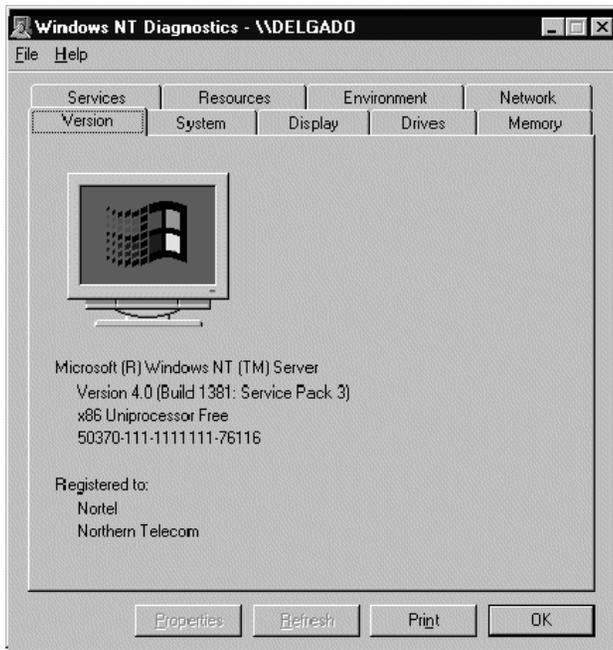
Windows NT Diagnostics window

The Windows NT 4.0 Diagnostics window allows you to view details concerning the system and network components.

You can open the following tabs on the Diagnostics window to display specific information:

- Version
- System
- Display
- Drives
- Memory
- Services
- Resources
- Environment
- Network

Windows NT Diagnostics main window



To access Windows NT 4.0 diagnostic tools

- 1 Log on to Windows.
- 2 Select Start > Programs > Administrative Tools (Common) > Windows NT Diagnostics to access the Windows NT Diagnostics window.
- 3 Select the appropriate tab on the Diagnostics main window to view information concerning the system and network. Details available on each tab are supplied in the following table:

Select	To display details about
Version	Version Registration
System	System identifier HAL BIOS information Processors
Display	BIOS information Adapter Driver
Drives	Drives by type or letter To view specific details, select a drive, and then press Properties to view details for the drive, including size, labels, and so on.
Memory	Memory, including totals, physical and kernel memory, commit charge, kernel
Services	Service and state for both services and devices To view specific details, select a service, and then press Properties to view details, including pathname, dependencies, service flags, and so on.
Resources	Select one of the following buttons to display information about the resources available on the system: <ul style="list-style-type: none"> ■ IRQ ■ I/O Port ■ DMA ■ Memory ■ Devices To view specific details, select a resource, and then press Properties.

Select	To display details about
Environment	Variable and value for both system and local user
Network	Select one of the following buttons to display information about the network and components: <ul style="list-style-type: none">■ General■ Transports■ Settings■ Statistics

Event Viewer

Windows NT 4.0 provides an Event Viewer that is used to view event logs to assist in diagnosing and debugging system problems.

Three types of event logs are available from the Event Viewer, as follows:

System	Logs events by Windows NT 4.0 components, including RAS or other WinNT services.
Security	Logs security events, such as logons, logoffs, illegal access, and so on. This option is available only to users with Administrative access.
Applications	Logs events by application, such as database file errors, and so on.

To access the Event Viewer

- 1 Log on to Windows.
- 2 Select Start > Programs > Administrative Tools (Common) > Event Viewer.
- 3 Select the appropriate tab to view the associated event logs.

Invoking the chkdsk utility

Introduction

The chkdsk utility checks a specified disk on the server and displays a status report. Use this utility on the C or D drive.

Note: A version of this utility, called autocheck, automatically runs at Windows NT boot-time. Output from this utility appears on the startup blue screen.

Chkdsk utility syntax

The chkdsk utility uses the following syntax:

```
chkdsk [drive:][path]filename] [/F] [/V] [/R]
```

Parameters	Description
[drive:]	The drive letter of the drive you want to check.
filename	The names of files to check for fragmentation.
/F	Add this switch to fix errors on the disk.
/V	Add this switch to display the full pathname of every file on the disk.
/R	Add this switch to locate bad sectors and to recover readable information.

To run the chkdsk utility from Windows NT 4.0

- 1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

Result: The MS-DOS Command Prompt window appears.

- 2 At the MS-DOS prompt, type **chkdsk <drive letter:>** (for example, chkdsk c:).

3 Press Enter.

Result: The system runs the chkdsk utility.

4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

Invoking and interpreting TCP/IP diagnostics

Introduction

This section outlines the following TCP/IP diagnostic tools available for the Ethernet card. The first three tools are the most useful:

- ipconfig
- ping
- tracert
- arp
- nbtstat
- netstat

The ipconfig command

The ipconfig command displays IP configuration information.

Ipconfig default

Running the command without flags displays the IP address, subnet mask, and default gateway for each adapter bound to TCP/IP.

Ipconfig command syntax

```
ipconfig [/]
```

The following flags are available for the ipconfig command:

Flag	Description
/?	Displays Help information.
/all	Displays full configuration information.
/release	Releases the IP address for the specified adapter.

Flag	Description
/renew	Renews the IP address for the specified adapter.

To run the ipconfig command from Windows NT 4.0

- 1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.
Result: The MS-DOS Command Prompt window appears.
- 2 At the MS-DOS prompt, type **ipconfig <with appropriate parameters:>** (for example, ipconfig /all).
- 3 Press Enter.
Result: The system runs the ipconfig utility.
- 4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

The ping command

The ping command sends an echo request to a specified host.

Ping command syntax

The ping command uses the following syntax:

```
ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS]
      [-r count] [-s count] [[-j host-list] | [-k host-list]]
      [-w timeout] destination-list
```

Parameters	Description
-t	Pings the specified host until interrupted.
-a	Resolves addresses to host names.
-n count	Specifies the number of echo requests to send.
-l size	Sends buffer size.
-f	Set Don't Fragment flag in packet.
-i TTL	Time To Live.
-v TOS	Type Of Service.
-r count	Record route for count hops.
-s count	Time stamp for count hops.
-j host-list	Loose source route along host list.
-k host-list	Strict source route along host list.
-w timeout	Timeout in milliseconds to wait for each reply.

To run the ping command from Windows NT 4.0

- 1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

Result: The MS-DOS Command Prompt window appears.

- 2 At the MS-DOS prompt, type **ping <destination IP address:>** (for example, ping 47.286.32.0:).

- 3 Press Enter.

Result: The system indicates a successful ping.

- 4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

The tracert command

This utility determines the route taken to a destination.

How tracert works

The tracert utility follows several steps to complete its task:

- Tracert sends Internet Control Message Protocol (ICMP) echo packets with varying Time-To-Live (TTL) values to the destination.
- Each router along the path must decrement the TTL on a packet by at least 1 before forwarding it, so the TTL is effectively a hop count.
- When the TTL on a packet reaches 0, the router sends back an ICMP Time Exceeded message to the source system.
- Tracert determines the route by sending the first echo packet with a TTL of 1 and incrementing the TTL by 1 on each subsequent transmission until the target responds, or the maximum TTL is reached.
- Tracert then examines the ICMP Time Exceeded messages sent back by intermediate routers.

Tracert syntax

```
tracert [-d] [-h maximum_hops] [-j host_list] [-w timeout] [target_name]
```

Tracert parameters

The tracert command uses the following parameters:

Parameter	Description
-d	Specifies not to resolve addresses to hostnames.
-h maximum_hops	Specifies the maximum number of hops to search for target.
-j host-list	Specifies a loose source route along the host list.
-w timeout	Waits the number of milliseconds specified by the timeout for each reply.

Parameter	Description
target_name	The name of the target host.

To run the tracert command from Windows NT 4.0

- 1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

Result: The MS-DOS Command Prompt window appears.

- 2 At the MS-DOS prompt, type the following command:

tracert [-d] [-h maximum_hops] [j host_list] [-w timeout] [target name]

(for example, tracert 47.286.0.32 210 47.236.0.04)

- 3 Press Enter.

Result: The system runs the tracert utility.

- 4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

The arp command

The arp command displays and modifies the IP-to-physical address translation tables used by Address Resolution Protocol (arp).

Arp command syntax

The arp command uses the following syntax:

```
arp -s inet_addr eth_addr [if_addr]
```

```
arp -d inet_addr [if_addr]
```

```
arp -a [inet_addr] [-N if_addr]
```

Parameter	Description
-a	Displays current arp entries by interrogating the current protocol data. If inet_addr is specified, the IP and physical addresses for only the specified computer appear. If more than one network interface uses arp, entries for each arp table appear.
-g	Same as -a.
inet_addr	Specifies an Internet address.
if_addr	Specifies the Internet address of the interface whose address translation table should be modified. If not present, the first applicable interface is used.
eth_addr	Specifies a physical address.
-N if_addr	Displays the arp entries for the network interface specified by if_addr.
-d	Deletes the host specified by inet_addr.

-s	Adds the host and associates the Internet address <code>inet_addr</code> with the Physical address <code>eth_addr</code> . The physical address is given as six hexadecimal bytes separated by hyphens. The entry is permanent.
----	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

To run the arp command from Windows NT 4.0

- 1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.
Result: The MS-DOS Command Prompt window appears.
- 2 At the MS-DOS prompt, type **arp** with the required parameters (for example, `arp -g 47.286.0.32`).
- 3 Press Enter.
Result: The system runs the arp command.
- 4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

The nbtstat command

The nbtstat command displays protocol statistics and current TCP/IP connections using NBT. This command is available only if the TCP/IP protocol is installed.

Nbtstat command syntax

The nbtstat command uses the following syntax:

```
nbtstat [-a remotename] [-A IP address] [-c] [-n] [-R] [-S] [-s] [interval]
```

Parameter	Description
-a remotename	Lists the remote computer's name table using its name.
-A IP address	Lists the remote computer's name table using its IP address.
-c	Lists the contents of the NetBIOS name cache giving the IP address of each name.
-n	Lists local NetBIOS names. Registered indicates that the name is registered by broadcast (Bnode) or WINS (other node types).
-R	Reloads the LMHOSTS file after purging all names from the NetBIOS name cache.
-r	Lists name resolution statistics for Windows networking name resolution. On a Windows NT computer configured to use WINS, this option returns the number of names resolved and registered through broadcast or through WINS.
-S	Displays both client and server sessions, listing the remote hosts by IP address only.

-s	Displays both client and server sessions, and attempts to convert the remote host IP address to a name using the HOSTS file.
interval	Displays selected statistics, pausing interval seconds between each display. Press CTRL+C to stop displaying statistics. Without this parameter, nbtstat prints the current configuration information once.

To run the nbtstat command from Windows NT 4.0

- 1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.
Result: The MS-DOS Command Prompt window appears.
- 2 At the MS-DOS prompt, type **nbtstat** with the required parameters.
- 3 Press Enter.
Result: The system runs the nbtstat utility.
- 4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

The netstat command

The netstat command displays current TCP/IP network connections and protocol statistics.

Netstat command syntax

The netstat command uses the following syntax:

```
netstat [-a] [-e] [-n] [-s] [-p proto] [-r] [interval]
```

Parameter	Description
-a	Displays all connections and listening ports.
-e	Displays Ethernet statistics. This can be combined with the -s option.
-n	Displays addresses and port numbers in numerical form.
-s	Displays per-protocol statistics.
-p proto	Shows connections for the protocol specified by proto. Proto can be tcp or udp. If used with the -s option, proto can be tcp, udp, or ip.
-r	Displays the contents of the routing table.
interval	Redisplays selected statistics, pausing between each display. Press CTRL+C to stop redisplaying.

To run the netstat command from Windows NT 4.0

- 1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

Result: The MS-DOS Command Prompt window appears.

- 2 At the MS-DOS prompt, type **netstat** with the required parameters.
- 3 Press Enter.

Result: The system runs the netstat utility.

- 4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

Invoking and interpreting Token Ring card diagnostics

Introduction

If TCP/IP protocol is installed, you can diagnose faults on the Token Ring card by using the ping command under Windows NT.

Using the ping command

Instructions for using the ping command are in the procedure [“To run the ping command from Windows NT 4.0” on page 60.](#)

Section E: Working with Console Redirection

In this section

About Console Redirection	72
Console Redirection requirements	75
Setting up a direct serial connection	77
Setting up a modem connection	80
Using Console Redirection	82

About Console Redirection

Introduction

Console Redirection is a remote control feature provided by the Phoenix Technologies BIOS. With Console Redirection, you can be located anywhere provided you have a modem and can connect to the 200i server through a public switched telephone network (PSTN). By doing so, it appears as if you are sitting right next to the 200i server with a local monitor, keyboard, and mouse attached to the server's faceplate.

With Console Redirection, you can do the following:

- Enter BIOS CMOS Setup to query, alter, or restore BIOS settings.
- Watch BIOS POST Diagnostics execute, and see their completion status.
- Force warm boots, cold boots, and diagnostic boots.
- Run MS-DOS-based diagnostics and use MS-DOS utilities and features.

Difference between Console Redirection and pcANYWHERE32

Console Redirection provides MS-DOS-based remote control as well as pre-Windows NT bootup remote control. pcANYWHERE32 provides post-Windows NT bootup remote control.

The following table describes when Console Redirection and pcANYWHERE32 can be used during the boot cycle:

Boot phase	Remote control tool
BIOS and MS-DOS	During BIOS and MS-DOS bootup, you can use Console Redirection to control the boot cycle.
Windows NT	While Windows NT is booting, you cannot see or control what the boot cycle is doing. This is called a blackout period.

Boot phase	Remote control tool
CallPilot server software	While the CallPilot server software is booting, you can use pcANYWHERE32 software to watch the boot cycle. When bootup is completed, you can use pcANYWHERE32 to administer the 200i server.

When to use Console Redirection

Typically, you use Console Redirection when you want to

- investigate bootup problems
- control bootup behavior
- perform any of the actions listed under [“Using Console Redirection” on page 82](#)

Where Console Redirection can be used

Console Redirection can be used in the following scenarios:

- You are local to the 200i server, but a monitor and keyboard or mouse are not connected.
- You are not local to the 200i server but have a modem connected to a PSTN. (This requires that the 200i server also be equipped with a modem.)

Restrictions

With Console Redirection, the following restrictions apply:

- When the 200i server displays the Windows NT/DOS boot selection menu, this screen *cannot* be viewed, nor can all subsequent Windows NT screens. This means that the Windows NT boot cycle cannot be seen or controlled.
- Colors are not displayed.
- You cannot perform 200i server BIOS upgrades with Console Redirection. You must perform upgrades using a local mouse, monitor, and keyboard.

- 200i server operating system installation and hard disk recovery procedures must be performed using a local mouse, monitor, and keyboard.

Console Redirection requirements

Introduction

Console Redirection can be used from two connection scenarios:

- direct serial connection (total setup time is five minutes)
- modem connection (total setup time is five minutes)

This section describes the requirements of these scenarios.

Direct serial connection requirements

General requirements

You must be local to the 200i server and have access to its I/O breakout panel. All call processing must be stopped, and the 200i server must be rebooted.

Hardware requirements

- administration client PC or laptop with a free communication port (for example, COM1)
- RS-232 9-pin female to 9-pin female serial cable
- null modem device
- gender benders (if required)

Software requirements on the 200i server

The 200i server must have Console Redirection enabled in the BIOS CMOS setup. For instructions, see [“To reenable Console Redirection” on page 214](#).

Software requirements on the client PC or laptop

The client PC or laptop must be running Windows NT 4.0, Windows 95, or Windows 98, and HyperTerminal must be installed.

Modem connection requirements

General requirements

- You must stop all call processing and reboot the 200i server.
- You need the phone number of the 200i server modem.
- You need the RAS passwords to invoke a remote pcANYWHERE32 session to remotely perform a 200i server Windows NT shutdown and restart.

Hardware requirements

- The administration client PC must have a high-speed modem capable of 19200 bps.
- The 200i server must have a high-speed modem capable of 19200 bps.
- The modem must be powered on and configured correctly.
- You need access to a PSTN.

Software requirements on the 200i server

Console Redirection must be enabled in 200i server BIOS CMOS Setup.

Software requirements on the administration client PC or laptop

- The administration client PC or laptop must be running Windows NT 4.0, Windows 95, or Windows 98.
- Dial-Up Networking must be configured.

Setting up a direct serial connection

Introduction

A direct serial connection is achieved by

- connecting the client PC to the COM1 port of the 200i server I/O breakout panel
- establishing connection with the 200i server using HyperTerminal

Before you can perform these tasks, you need to

- ensure that a HyperTerminal connection profile is configured on the client PC
- shut down the 200i server

To configure the client PC

- 1 Determine which COM port is free on the client PC (COM1 or COM2).
- 2 Start HyperTerminal by clicking Start > Programs > Accessories > HyperTerminal > HyperTerminal.

Note: If HyperTerminal is not present, you must install it. Install HyperTerminal as follows:

- a. Click Start > Settings > Control Panel.
- b. Double-click Add/Remove Programs.
- c. Click the Windows NT or Windows 95 tab.
- d. Click Accessories.
- e. Click OK.

Note: You might be prompted to insert your operating system CD.

Result: The HyperTerminal window appears, asking you to enter a name.

- 3 Enter a name for the new connection profile, and then click OK.

Result: The Connect To dialog box appears.

- 4 Under Connect using, select the COM port that you previously identified as free from the drop-down list, and then click OK.

Result: The Properties window appears.

- 5 Select the following settings from the drop-down menus, and then click OK:

- Bits per second: 19200
- Data bits: 8
- Parity: N
- Stop bits: 1
- Flow Control: Xon/Xoff

- 6 Click OK.

Result: Your terminal session begins.

To shut down the 200i server

- 1 Courtesy stop or stop all 200i server DSP ports. See [“Starting and stopping components” on page 112](#).
- 2 If a modem is connected to the 200i server, before shutting down, ensure that no one is currently using the modem to administer the 200i server.
- 3 Invoke a 200i server Windows NT shutdown, and restart.

To connect the serial cable

- 1 Temporarily disconnect the modem's serial cable from the I/O breakout panel's COM1 connector.
- 2 Connect one end of the RS-232 serial cable to the I/O breakout panel's COM1 connector.
- 3 Connect the other end of the cable to the null modem device.
- 4 Connect the null modem device to the client PC's COM port that was set up in [“To configure the client PC” on page 77](#).

Note: You might need to use gender benders.

- 5 Restart the server by pressing the reset button on the 200i server faceplate.

- 6 Wait until the red status LED blinks three times.
Result: From the client PC, you should now be able to view and take control of the server. See [“Using Console Redirection” on page 82](#).
- 7 When you are finished, disconnect the serial cable from the I/O breakout panel's COM1 connector.
- 8 Reconnect the modem to the I/O breakout panel's COM1 connector.
- 9 Disconnect the serial cable from the administration client PC.
- 10 Exit the administration client's HyperTerminal session by choosing File > Exit.
Tip: Before exiting, you can save the HyperTerminal session settings for future use by selecting File > Save As. Restore the session by choosing File > Open and specifying the saved file name.
- 11 Ensure that the 200i server boots up and the hex display shows OK, MIN, MAJ, or CRI.
- 12 Restart 200i server DSP ports. See [“Starting and stopping components” on page 112](#).

Setting up a modem connection

Introduction

A modem serial connection is achieved by

- ensuring that the client PC is configured with Dial-Up Networking
- connecting to the 200i server and shutting it down
- hanging up, and then reconnecting to the 200i server with Dial-Up Networking (with terminal window)

To configure the administration client PC

Configure the administration client PC to use Dial-Up Networking. Refer to the *Monitoring and Security for the Administrator* guide for instructions.

To shut down the 200i server

- 1 Establish a RAS connection.

Note: Refer to the *Monitoring and Security for the Administrator* guide for instructions.

- 2 Remotely courtesy stop or stop all 200i server call processing using the RAS connection.

- 3 Force the 200i server to do a Windows NT shutdown and restart.

Note: Refer to the *Monitoring and Security for the Administrator* guide for instructions.

To configure the modem properties on the administration client PC

- 1 Hang up the current Dial-Up Networking connection.

- 2 Click Start > Settings > Control Panel.

Result: The Control Panel appears.

- 3 Double-click Modems.

Result: The Modem Properties dialog box appears.

- 4 Select the modem.
- 5 Click Properties.
- 6 Click Connection.
- 7 Reconfigure the client PC's modem to use the following settings:
 - Bits per second: 19200
 - Data bits: 8
 - Parity: N
 - Stop bits: 1
 - Flow Control: Xon/Xoff
- 8 Reestablish a RAS connection with the 200i server.

Note: The Dial-Up Networking connection profile properties should be configured to open a terminal window. To open a terminal window, do the following:

 - a. Right-click the Dial-Up Networking connection icon you are using.
 - b. Click Properties.
 - c. Under Connect using (on the General tab), click Configure.

Result: The connection profile's Modem Properties dialog box appears.

 - d. Click the Options tab.
 - e. Click one of the following:
 - Bring up terminal window before dialing
 - Bring up terminal window after dialing
 - f. Click OK.

Result: From the client, you should now be able to view and take control of the server. See ["Using Console Redirection" on page 82](#).
- 9 When you are finished, hang up and reset the modem properties back to their original settings.
- 10 Reestablish a RAS connection with the 200i server, and reenale call processing.

Using Console Redirection

Introduction

You can use Console Redirection to watch *and* control the 200i server bootup cycle until Windows NT starts to load.

Types of boots

There are three types of boots:

- Warm boots are Ctrl-Alt-Del type boots.
- Cold boots are almost equivalent to a power down except that the bootup diagnostics do not run. Cold boots perform many more POST diagnostic tests than warm boots.
- Diagnostic boots are similar to cold boots except that they are even more intensive, and try to get your system up and running regardless of how many POST diagnostics fail.

OA&M tasks

You can use Console Redirection to perform the following OA&M tasks:

Task	How to perform the task
Enter BIOS CMOS Setup to query, alter, or restore BIOS settings.	Press F2 to enter setup when the following message appears:
Watch BIOS POST diagnostics execute and see their completion status.	<p data-bbox="605 1136 1107 1218">Press <F2> to enter setup or <ALT> to bypass PC Card boot</p> <p data-bbox="605 1234 1133 1409">BIOS POST diagnostics automatically appear when a connection is established early in the boot cycle. If the BIOS screen was missed, you can boot to DOS and type coldboot.exe at the C:\> prompt.</p>

Task	How to perform the task
<p>Force warm boots, cold boots, and diagnostic boots.</p> <p>Note: See “Types of boots” on page 82 for descriptions.</p>	<p>Do one of the following:</p> <ul style="list-style-type: none">■ During the BIOS POST diagnostics, press one of the following key sequences:<ul style="list-style-type: none">■ Ctrl-C: to perform a cold boot■ Ctrl-W: to perform a warm boot■ Ctrl-D: to perform a diagnostic boot■ Boot to DOS and type coldboot.exe at the C:\> prompt.
<p>Run MS-DOS–based diagnostics, and use MS-DOS utilities and features (for example, ELAN and CLAN NIC diagnostics, network access, SCSI CD-ROM access, and utilities such as chkdsk.exe, edit.exe, sys.exe, and so on, while in MS-DOS).</p>	<p>During the boot sequence, you are asked to choose between booting to MS-DOS or to Windows NT. Select MS-DOS.</p>

Chapter 3

Using the Administrative PC to diagnose the server

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Overview

Introduction

This chapter provides information on how to detect, isolate, and fix hardware problems on the CallPilot server using the CallPilot Administration Client software on the administrative PC.

- The section [“Detecting, isolating, and fixing hardware problems” on page 87](#) provides details on how to detect, isolate, and fix hardware problems.
- The section [“Working with the Maintenance window” on page 97](#) describes how to use the Maintenance window as you detect, isolate, and fix hardware problems.

Note: The components in the Maintenance window vary based on the type of switch connected to CallPilot and the server type. The dialog box examples in this chapter are for illustration purposes and might not appear exactly the same on your system. References to the SCbus, Master Timeswitch, and MPB are not applicable to the 200i server.

Section A: Detecting, isolating, and fixing hardware problems

In this section

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Overview

Introduction

This section provides guidelines on how to detect, isolate, and fix potential or real hardware problems.

- [“Detecting hardware problems” on page 89](#) provides information on the different ways in which you typically become aware of hardware problems.
- [“Viewing events and isolating problems” on page 90](#) describes how to work with the Alarm Monitor, Event Browser and Maintenance screen. These tools are used to isolate the cause of problems and plan a strategy to fix hardware problems.
- [“Checking channel status” on page 93](#) describes how to view channel status in the Channel Monitor and Multimedia Monitor.

Component dependencies

The status of some components depend on the operational status of other components. If a component fails or is stopped, the dependent components go out of service.

Note: Based on the type of switch connected to CallPilot and the server type, some of these components might not appear on your system.

Component	Dependent components
SCbus	all MPBs, MPCs, and all Multimedia and Call channels
Master Timeswitch	all MPBs, MPCs, and all Multimedia and Call channels
Timeswitch	all Multimedia and Call channels connected to the same MPB as the timeswitch
MPC	all multimedia channels on the MPC-8 card
DS30x	all Call channels associated with that DS30x link cable

Detecting hardware problems

Introduction

Typically, you first become aware of a hardware problem when an alarm is raised. All hardware faults produce an alarm (or series of alarms, depending on the problem) in the Alarm Monitor.

Note: By default, the Alarm Monitor appears on the screen as soon as an alarm is raised. It does not appear if Alerting Off has been set in the CallPilot system window. For more information on setting or resetting the alerting feature, refer to the *Monitoring and Security for the Administrator* guide.

Other indications of a hardware problem

Other indications of a hardware problem include the following:

- user complaints
- call processing difficulties, such as busy signals, static, dropped calls, trouble connecting, and cross talk (hearing other conversations)
- system administrator log on difficulties
- alert icons on the Maintenance window

Viewing events and isolating problems

Introduction

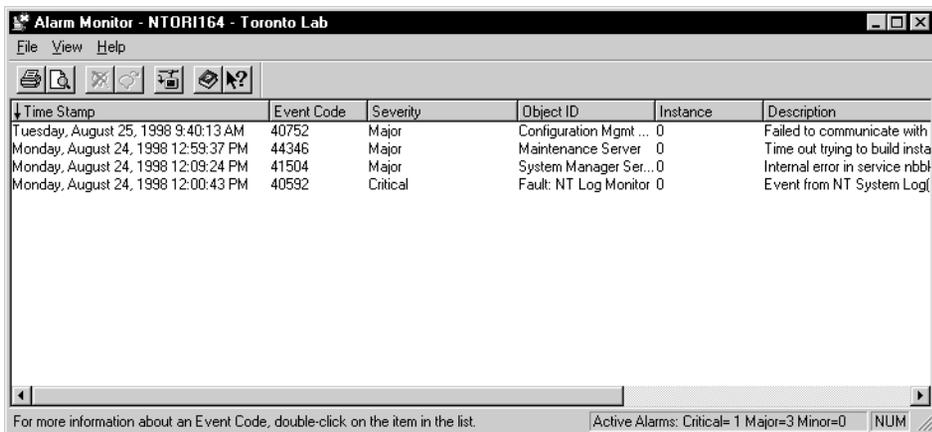
Use one of the following methods to isolate and plan a strategy to fix a hardware problem:

- Go to the Alarm Monitor to investigate one or more raised alarms.
- Use the Event Browser to investigate a series of events that occurred around the time an alarm was raised.
- Go to the Maintenance window to get status information for any suspect components. For some components, you can use the Diagnostic tab of the Maintenance window to run a diagnostic test.

Note: For detailed information on how to use the Alarm Monitor and Event Browser (for example, how to set preferences), refer to the *Monitoring and Security for the Administrator* guide.

Using the Alarm Monitor

Each alarm in the Alarm Monitor has Help text that often provides a solution to the problem. If the solution is not apparent, use the Event Browser or the Maintenance screen to further investigate the problem.



To investigate using the Alarm Monitor

- 1 If the Alarm Monitor is not already visible, then in the CallPilot system window, go to System Administration > Alarms and Events > Alarm Monitor.
- 2 Double-click the first critical or major alarm.
Result: The Help window appears.
- 3 View the description and recovery action.
- 4 Repeat steps [2](#) and [3](#) for a few more alarms.
- 5 If the solution to the problem is not apparent, obtain the return code of the first event and continue the investigation by using the Event Browser (go to [“Using the Event Browser” on page 91](#)).

Using the Event Browser

The Event Browser lets you view events that have been recorded in the server log. The event listing can help you better determine the root cause of the problem. Use the Event Browser to view the time the event occurred, the object that generated the event, and the cause of the event.

Time Stamp	Event Code	Event Type	Severity	Object ID	Instance	Description
Tuesday, August 25, 1998 9:39:1...	40820	Alarm Set	Critical	Users - Desktop		PC user force logout
Monday, August 24, 1998 12:00:...	40592	Alarm Set	Critical	Fault: NT Log Mo...0		Event from NT System
Thursday, August 20, 1998 11:15:...	40592	Alarm Set	Critical	Fault: NT Log Mo...0		Event from NT System
Thursday, August 20, 1998 11:15:...	40592	Alarm Set	Critical	Fault: NT Log Mo...0		Event from NT System
Thursday, August 20, 1998 11:13:...	40592	Alarm Set	Critical	Fault: NT Log Mo...0		Event from NT System
Thursday, August 20, 1998 11:13:...	40592	Alarm Set	Critical	Fault: NT Log Mo...0		Event from NT System
Monday, August 17, 1998 1:40:3...	40592	Alarm Set	Critical	Fault: NT Log Mo...0		Event from NT System
Friday, August 07, 1998 4:13:05 ...	41550	Alarm Set	Critical	Sys Manager Libr...0		The SM could not sta
Friday, August 07, 1998 4:08:31 ...	40592	Alarm Set	Critical	Fault: NT Log Mo...0		Event from NT System

For more information about an Event Code, double-click on the item in the list.

To investigate using the Event Browser

- 1 In the CallPilot system window, go to System Administration > Alarms and Events > Event Browser.
- 2 Double-click an event that appears to be related to the problem, or an event that occurred near the time the alarm was raised.
- 3 View the description and recovery action.
- 4 Repeat steps [2](#) and [3](#) for a few more events.
- 5 If the solution to the problem is not apparent, contact your distributor.

Using the Maintenance window

If you suspect or discover a problem with an MPC-8 card or the timeswitch, use the Diagnostic tab of the Maintenance window. You can view the results of the last diagnostic test run against the component. This produces a list of components that might be causing the problem. A probability percentage is listed with each component that reflects how probable it is that replacing the component will fix the problem.

For information on using the Maintenance window to view the results of the last diagnostic test, see [“Viewing last diagnostic results” on page 119](#).

For information on all aspects of the Maintenance window, see [Section B: “Working with the Maintenance window,” on page 97](#).

Checking channel status

Introduction

The Channel Monitor shows the status of call channels (the connection between the server and the switch that carries the call signal to CallPilot).

The Multimedia Monitor shows the status of multimedia channels (the DSP ports that process the call— these are the voice, fax, and speech recognition channels).

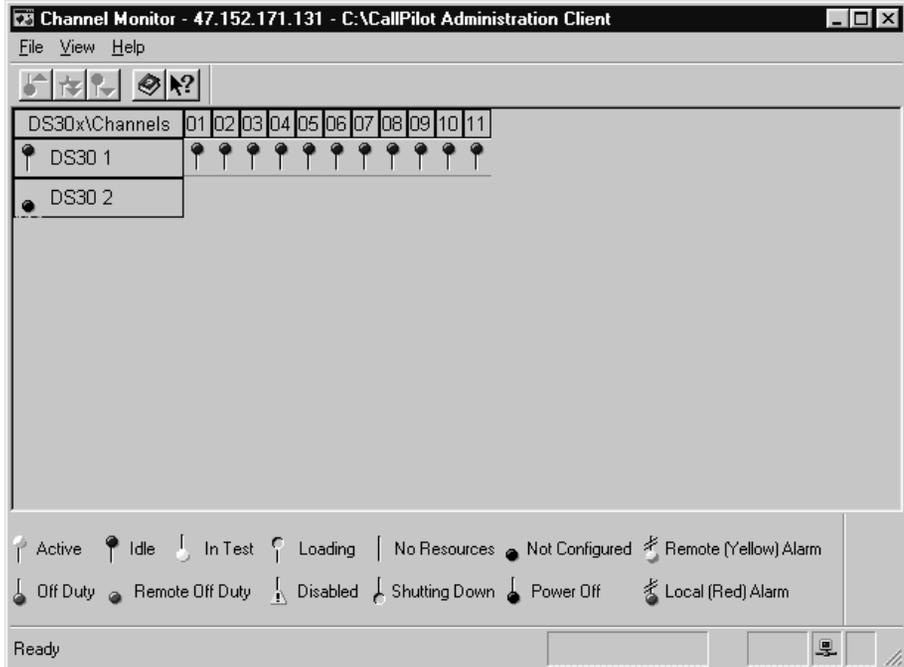
The Channel Monitor and Multimedia Monitor also enable you to start, stop, or courtesy stop channels. To run diagnostics on a channel, use the Maintenance window.

Note: For detailed information on how to use the Channel Monitor and Multimedia Monitor, refer to the online Help in the CallPilot system window, or refer to the *Monitoring and Security for the Administrator* guide.

To view call channel states

- 1 In the CallPilot system window, go to System Administration > Maintenance Administration > Channel Monitor.
- 2 Double-click Channel Monitor.

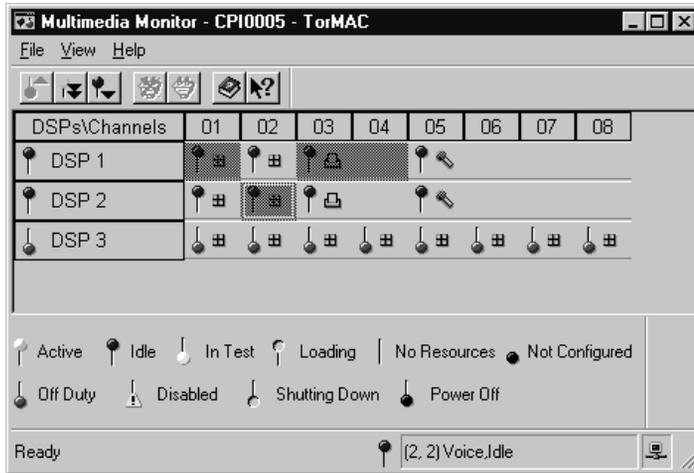
Result: The Channel Monitor window appears, showing the state of all call channels on the system. For an explanation of the channel states, refer to the online Help.



To view multimedia channels

- 1 In the CallPilot system window, go to System Administration > Maintenance Administration > Multimedia Monitor.
- 2 Double-click Multimedia Monitor.

Result: The Multimedia Monitor window appears, showing the state of all multimedia channels. For an explanation of the channel states, refer to the online Help.



Section B: Working with the Maintenance window

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Overview

Introduction

Use the Maintenance window to do the following:

- Obtain general information about components.
- View component states.
- Start and stop components.
- Run integrated diagnostic tests.
- View the results of the last diagnostic test run against a component.

Introducing the Maintenance window

Introduction

All physical and logical hardware components are listed in the Maintenance window tree. This tree shows how components relate to each other. For example, eight multimedia channels exist as subcomponents for each MPC-8 card.

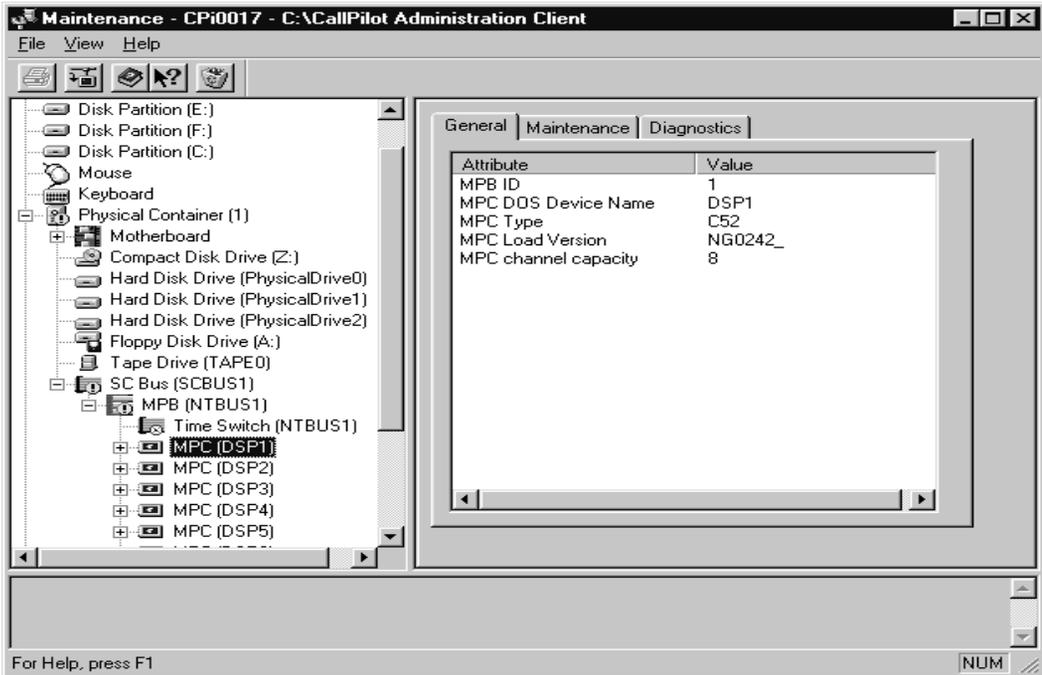
When you select a component in the Maintenance window, at least one of the following tabs appear:

Tab	Description
General	This page shows general technical information about the selected component.
Maintenance	This page shows the state of the selected component. You can also take some components out of service from this page.
Diagnostics	This page enables you to run component-specific diagnostics.
Replacement	This page shows replacement part numbers for selected components. This option is not available for all platforms. Contact your distributor for latest part number information.

Note: The components in the Maintenance window vary based on the type of switch connected to CallPilot and the server type. The dialog box examples in this chapter are for illustration purposes and might not appear exactly the same on your system. References to the SCbus, Master Timeswitch, and MPB are not applicable to the 200i server.

The General tab

Use the General tab to view general information about components.



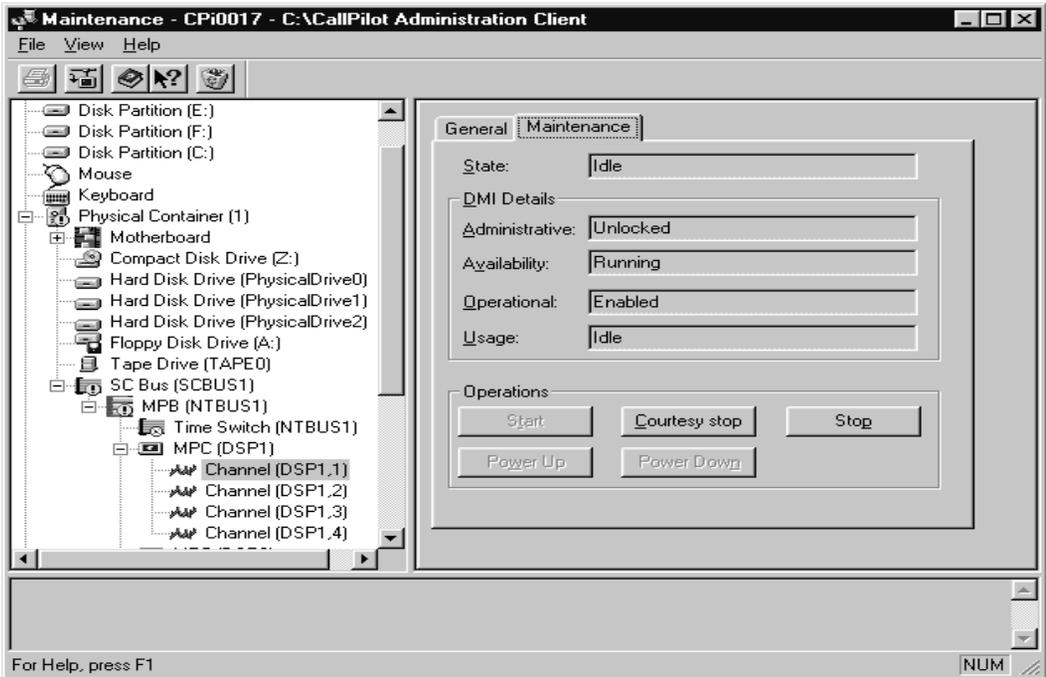
Box	Description
-----	-------------

Attribute	Shows component-specific general technical information.
------------------	---------------------------------------------------------

Value	Shows additional details, such as the speed of a selected device.
--------------	-------------------------------------------------------------------

The Maintenance tab

Use the Maintenance tab to view the state of the highlighted component and to start and stop a component before running a diagnostic test.

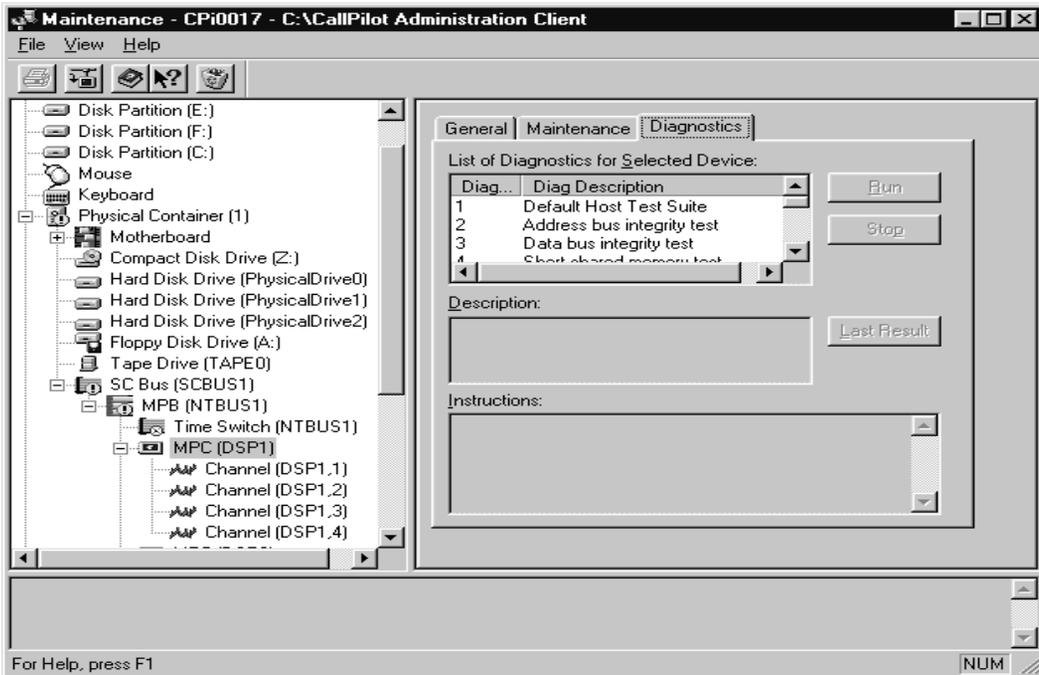


Box	Description
State	Specifies the state of the highlighted component.
Administrative	This is a Desktop Management Interface (DMI) summary state. You do not need this state.
Availability	This is a DMI summary state. You do not need this state.
Operational	This is a DMI summary state. You do not need this state.
Usage	This is a DMI summary state. You do not need this state.
Stop	<p>Use this button to take the selected device out of service immediately. All calls in progress are disconnected.</p> <p>Caution: For CallPilot servers connected to a Lucent, Mitel, or Rolm switch, if you stop an individual call channel, the corresponding port on the switch side is not automatically disabled. As a result, calls can continue to land on the stopped channel resulting in a Ring-No-Answer.</p> <p>If you need to stop an individual channel, you have two options:</p> <ul style="list-style-type: none">■ Busy-out the port on the switch side. This must be done manually by the switch administrator.■ Courtesy stop the entire hunt group that contains the call channel or courtesy stop all call channels in the system. <p>This caution does not apply to stopping DSP ports.</p>

Box	Description
Courtesy stop	<p>Use this button to take the selected device out of service after all calls are finished. This prevents any calls from being disconnected.</p> <p>Caution: For CallPilot servers connected to a Lucent, Mitel, or Rolm switch, if you stop an individual call channel, the corresponding port on the switch side is not automatically disabled. As a result, calls can continue to land on the stopped channel resulting in a Ring-No-Answer.</p> <p>If you need to stop an individual channel, you have two options:</p> <ul style="list-style-type: none">■ Busy-out the port on the switch side. This must be done manually by the switch administrator.■ Courtesy stop the entire hunt group that contains the call channel or courtesy stop all call channels in the system. <p>This caution does not apply to stopping DSP ports.</p>
Start	<p>Use this button to put the selected device in service.</p>
Power Up	<p>Use this button to power up an MPC-8 card that had been powered down. You can only use this button for MPC-8 cards on a 200i server. See “To replace MPC cards” on page 179.</p>
Power Down	<p>Use this button to power off an MPC-8 card prior to replacing it. You can only use this button for MPC-8 cards on a 200i server. See “To replace MPC cards” on page 179.</p>

The Diagnostics tab

Use the Diagnostics tab to run a diagnostic test or to view the results of the last diagnostic test run on a component.

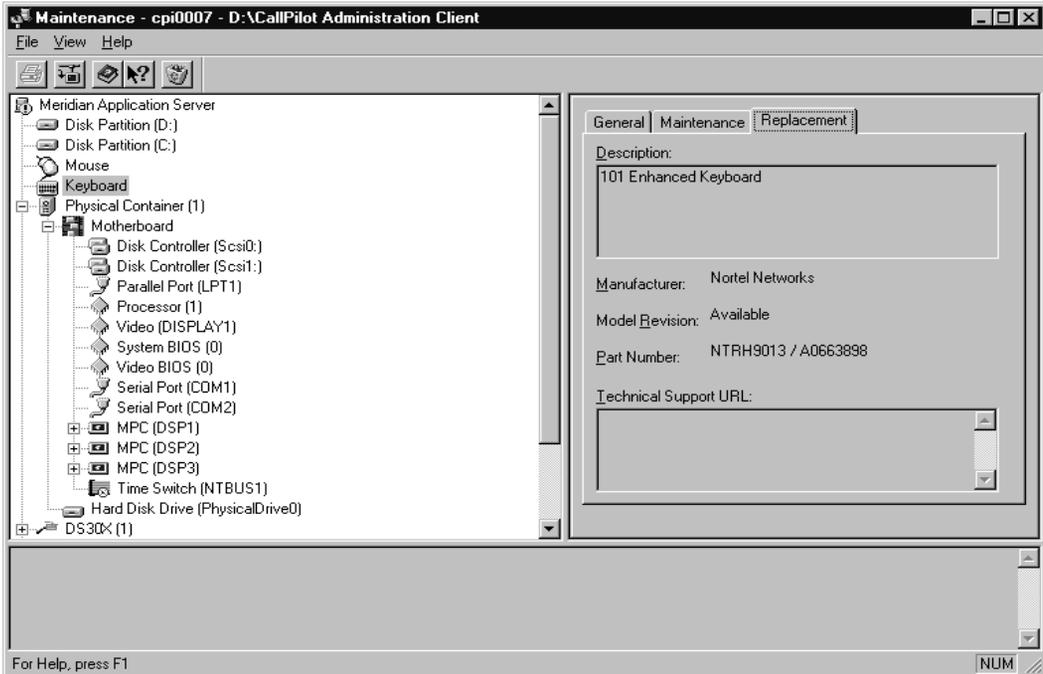


Box	Description
List of Diagnostics for Selected Device	Shows the diagnostic tests that are available for the highlighted component.
Run	Use this button to run the selected diagnostics. For the Timeswitch and MPC components, go to the Maintenance tab to courtesy stop the component before you run diagnostics.
Stop	Use this button to stop the selected diagnostics

Box	Description
Last Result	<p>Use this button to view the results of the last diagnostic test.</p> <p>The results include a list of Field Replaceable Units (FRU), which, if replaced, might fix the problem. Each FRU is shown with a percentage that shows how probable it is that the component caused the hardware problem.</p>
Description	<p>Shows a comment or description for a selected diagnostic test.</p>
Instructions	<p>Shows the instructions for the user to run the diagnostic test.</p>

The Replacement tab

The Replacement tab shows component part number information. This tab is not available for all platforms. To be certain you have the latest component information, contact your distributor.



Box	Description
Description	Shows the name of the highlighted component.
Manufacturer	Shows the manufacturer of the component.
Model Revision	Shows the revision number for the component.
Part Number	Shows the part number for the component.
Technical Support URL	Shows a web site address where you can get technical support.

Obtaining general information about components

Introduction

Find general technical information for each hardware component listed in the tree using the General tab of the Maintenance window.

For a description of the General tab, see [“The General tab” on page 100](#).

Type of technical information

Technical information about hardware components typically includes details such as the following:

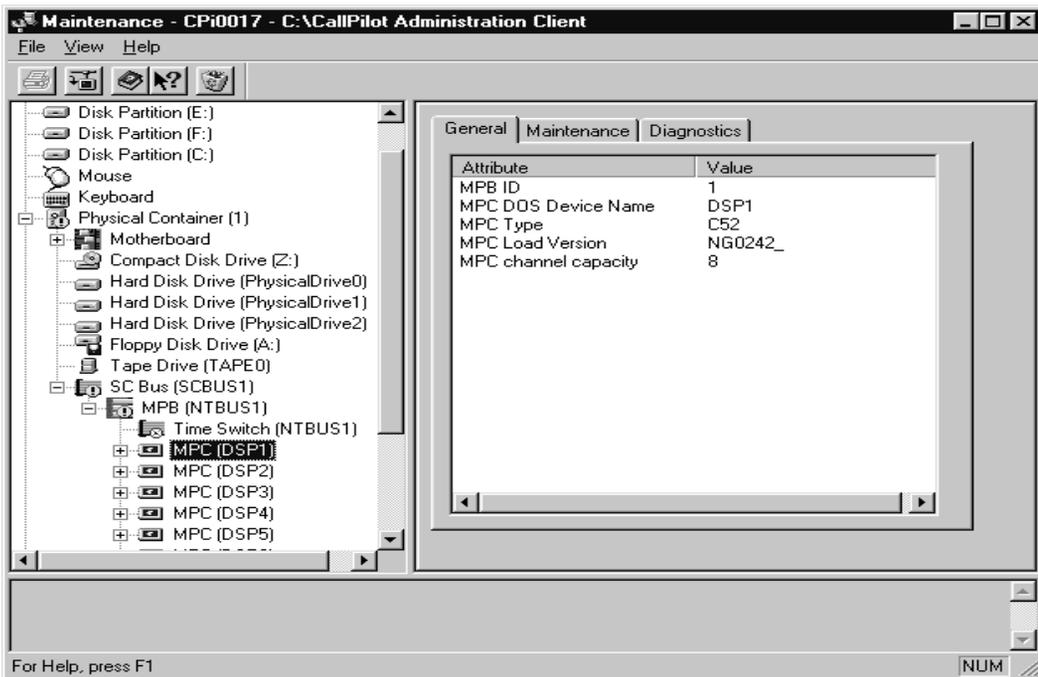
- the name, class, type, series, or version of a component
- various capabilities of a component (for example, the speed of a CPU)
- the available disk space

Getting there CallPilot system > System Administration > Maintenance Administration > Maintenance

To view component details

- 1 From the left pane of the Maintenance window, select the hardware component about which you want to obtain information.

Result: The General page appears with general information shown.



Viewing component states

Introduction

View a component's state to determine the general condition of the component, including whether the component is disabled or off duty. You can view the state of components that are listed in the Maintenance tab of the Maintenance window.

For a description of the Maintenance tab, see [“The Maintenance tab” on page 101](#).

Component states

The state of a hardware component changes depending on the following factors:

- whether the component is currently involved in processing a call
- whether a diagnostic test is being run on the component
- whether the component is out of service

You can determine the state of a component by looking at the State field in the Maintenance tab.

State	Description
Active	The component is working and currently involved in processing a call.
Idle	The component is working but not currently involved in processing a call.
Uninstalled	The component is not installed or properly configured. This usually happens only when the system is being configured, or if the database is corrupted.
Shutting Down	The component is in the process of stopping. This state occurs quickly and is immediately followed by Off Duty.

State	Description
Loading	The component has been started, which takes it out of the Off Duty state. This state occurs quickly and is immediately followed by Idle.
No resources	The hardware required for the component to operate is not installed or not operating properly.
Off duty	The component has been stopped.
Remote Off Duty	The component has been taken out of service at the switch.

Details

These states (Administrative, Availability, Operational, and Usage) are standard Desktop Management Interface (DMI) states. They are shown for administrators who understand and use the DMI standard in other aspects of their jobs. You do not need to use the DMI states; the summary state listed in the State field is provided instead.

Alert icons

If one of the following icons appears next to a component in the tree, the component or one of its subcomponents is experiencing a problem:

Icon	Description
	This means that a diagnostic test run on the component has failed and the component has been placed into disabled status. You must view the last results of the diagnostic test. See “Viewing last diagnostic results” on page 119 .
	This means that a problem exists with one of the component's subcomponents. Expand the tree to locate the subcomponent with the problem.

Getting there CallPilot system > System Administration > Maintenance Administration > Maintenance

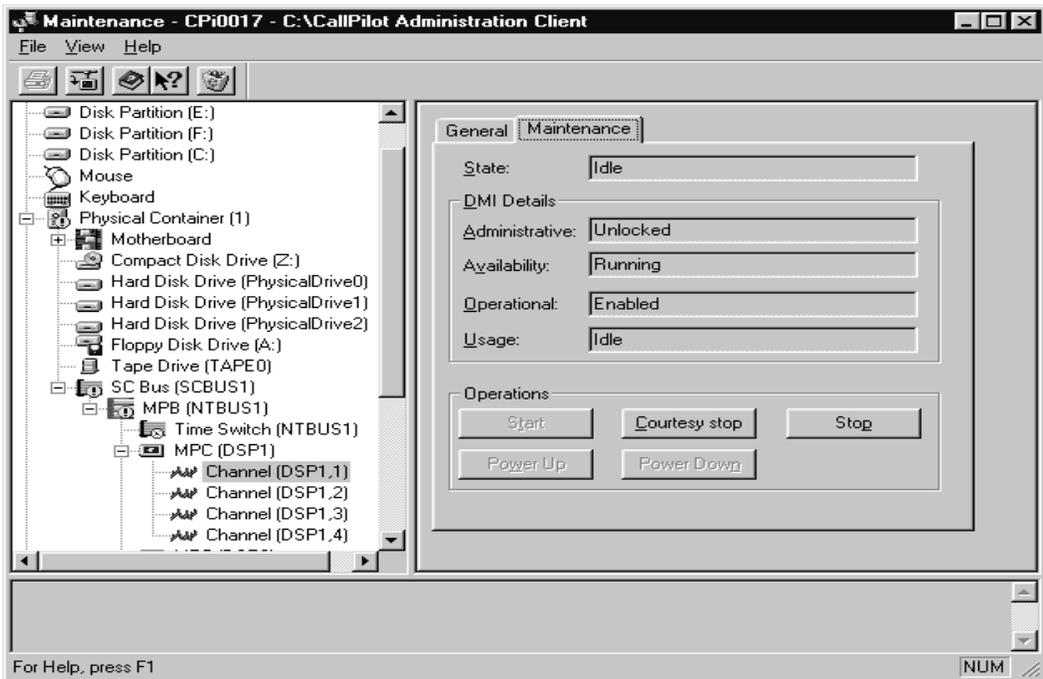
To view the state of a hardware component

- 1 From the left pane of the Maintenance window, select the hardware component.

Result: The General page appears.

- 2 From the right pane, click the Maintenance tab.

Result: The Maintenance page appears.



- 3 View the state of the selected component in the State field.

Starting and stopping components

Introduction

When you stop a component, it goes out of service and stops operating. You must either stop or courtesy stop a component before you can run a diagnostic test on it.

ATTENTION

Nortel Networks recommends that you courtesy stop a component if possible.

In the Maintenance window, the courtesy stop option is available only at the individual channel level.

To courtesy down CallPilot, use the Multimedia Monitor to courtesy stop all DSPs.

To courtesy stop a range of multimedia channels or all multimedia channels on an MPC [DSP] card, use the Multimedia Monitor. See [“Checking channel status” on page 93](#) for an overview of the Channel Monitor and Multimedia Monitor.

When you start a channel, it goes back into service. You must start a channel after replacing it, or after running a successful diagnostic test, to bring it back into service.

Courtesy stop

A courtesy stop takes the component out of service only after the component has finished processing the active call. If the component is currently processing a call, the call is not dropped. If the component is not currently in use, it is taken out of service immediately. This method is preferred over a regular stop.

Stop

A stop takes the component out of service immediately, regardless of whether the component is currently processing calls. All active calls are dropped. Typically, you perform a stop only when severe problems occur that are affecting a large number of incoming calls, or if your organization determines a special need for it.



CAUTION

Risk of Ring No Answer on disabled (stopped) call channel on Lucent, Mitel, or Rolm systems

For CallPilot servers connected to a Lucent, Mitel, or Rolm switch, if you stop an individual call channel, the corresponding port on the switch side is not automatically disabled. As a result, calls can continue to land on the stopped channel resulting in a Ring-No-Answer.

If you need to stop an individual channel, you have two options:

- Busy-out the port on the switch side. This must be done manually by the switch administrator.
- Courtesy stop the entire hunt group that contains the call channel or courtesy stop all call channels in the system.

This caution does not apply to stopping DSP ports.

Components that can be started and stopped

This section lists components that can be started and stopped.

If you want to start or stop more than one or two multimedia or call channels, use the Channels windows. See [“Checking channel status” on page 93](#) for an overview of the Channel Monitor and Multimedia Monitor. For detailed information, refer to the *Monitoring and Security for the Administrator* guide.

Note: Based on the type of switch connected to CallPilot and the server type, some of these components do not appear or do not have the Stop option:

Component	Effect of stopping
SCbus	takes out of service all call processing resources
Timeswitch	takes out of service the MPB16 card that is serviced by the timeswitch

Component	Effect of stopping
MPC-8 cards	takes out of service the selected MPC-8 card
Multimedia (DSP) channels	takes out of service the selected DSP channel
Switch Interface Link (found under the Switch Interface Card component)	takes out of service the selected link to the switch
Call channels	takes out of service the selected call channel
DS30x link	takes out of service the selected DS30x link

Getting there CallPilot system > System Administration > Maintenance Administration > Maintenance

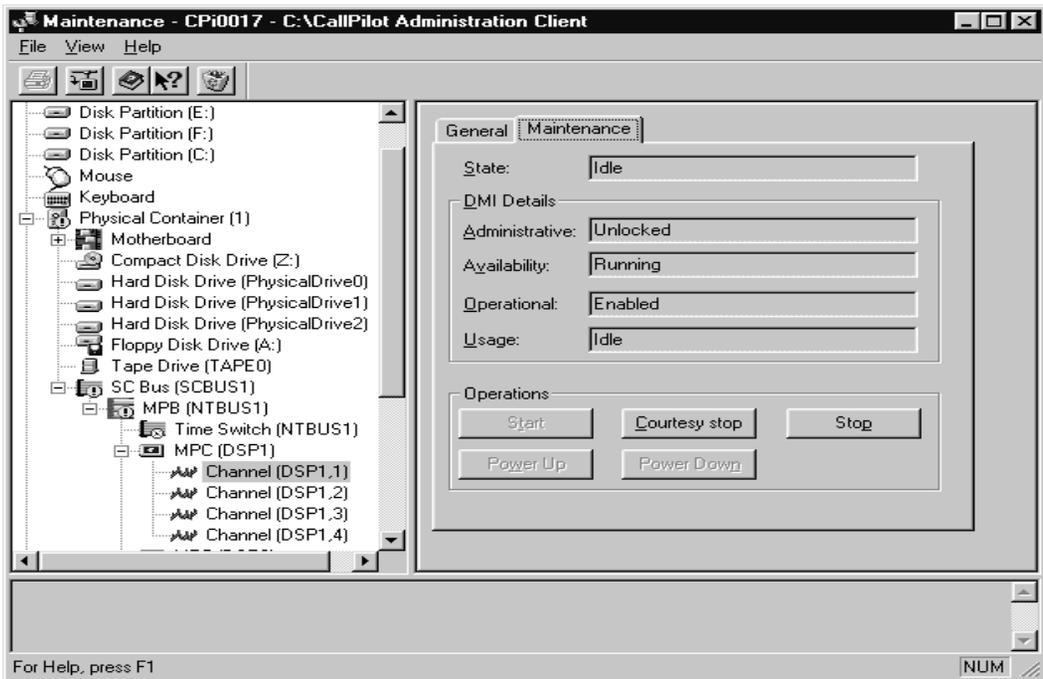
To start or stop a component in the Maintenance window

- 1 From the left pane of the Maintenance window, select the hardware component you want to start or stop.

Result: The General page appears.

- 2 From the right pane, click the Maintenance tab.

Result: The Maintenance page appears.



- 3 Click Start, Courtesy Stop, or Stop.

Running integrated diagnostics

Introduction

You should run diagnostic tests from the Diagnostic tab in the Maintenance window in the following circumstances:

- After installing or reinstalling a component, make sure it is operating properly. (A component must be Off Duty [stopped] before you can run the diagnostic test. See [“Starting and stopping components” on page 112.](#))
- Run the tests if the CallPilot server experiences trouble processing incoming calls. Problems include static, dropped calls, and cross talk (hearing another conversation).

Note: For a description of the Diagnostic tab, see [“The Diagnostics tab” on page 104.](#)

List of components that have diagnostic tests available

- MPC (DSPs)
- Timeswitch (depending on the switch type, diagnostics might not be available)

To view available diagnostic tests

The available diagnostic tests for each component appear in the Diagnostic page of the Maintenance window. Click a component to see the diagnostic tests available for that component.

If a diagnostic test fails or cannot be run

If a warning box appears, the diagnostic test cannot be run because a prerequisite condition has not been met. If a diagnostic test fails, the failure is indicated at the bottom of the Diagnostic tab.

In both cases, check the Alarm Monitor to determine the reason and the appropriate action to take. (See [“Detecting, isolating, and fixing hardware problems” on page 87.](#))

To run a diagnostic test

Note: See [“Starting and stopping components” on page 112](#) for details about courtesy stopping a component. Nortel Networks recommends that you courtesy stop rather than stop a component if possible.

1 From the left pane of the Maintenance window, select the hardware component for which you want to run a diagnostic test.

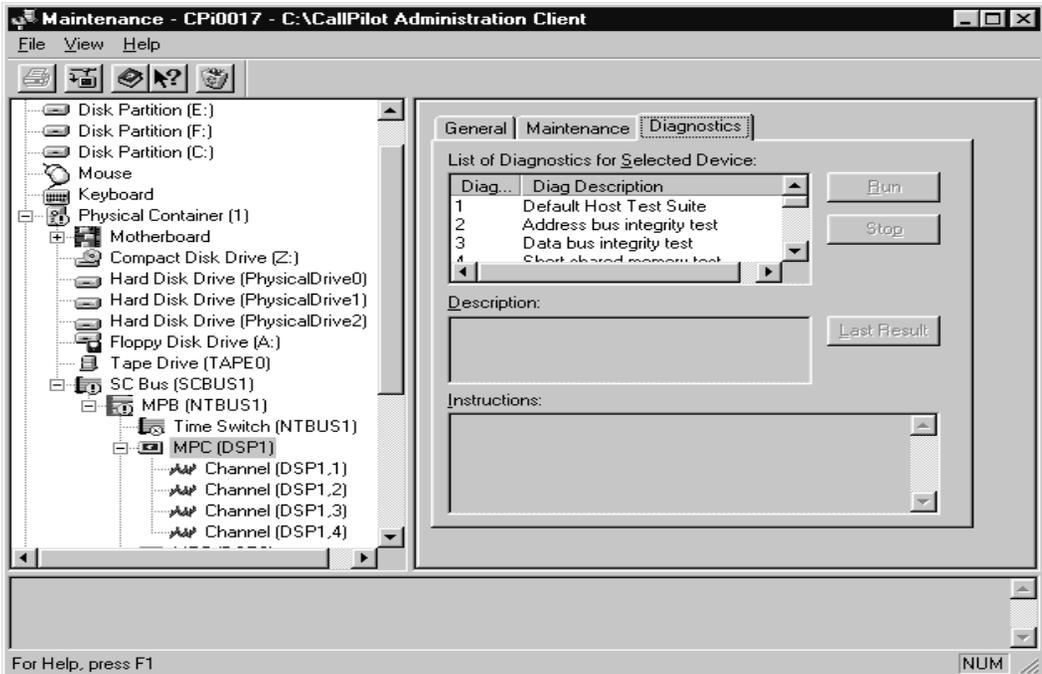
2 From the right pane, click the Maintenance tab.

Result: The Maintenance page appears.

3 Stop the component.

4 From the right pane, click the Diagnostic tab.

Result: The Diagnostic page appears.



- 5 Select the diagnostic test you want to run.
- 6 Click Run.
- 7 View the diagnostic test results at the bottom of the Diagnostic page.

Viewing last diagnostic results

Introduction

If the Alarm Monitor and Event Browser do not provide a solution to a hardware problem, a component might need to be replaced or serviced. If the problem rests with a component that is not replaceable because it is not a physical entity (such as the timeswitch), you must replace its parent component or contact technical support, depending on the component.

Replaceable parts are called Field Replaceable Units (FRUs). View the last diagnostic test result in the Diagnostic tab of the Maintenance window to obtain a list of FRUs that, when replaced, will likely fix the problem.

Notes:

1. For general information on investigating hardware problems, see [“Detecting, isolating, and fixing hardware problems” on page 87](#).
2. For a description of the Diagnostic tab, see [“The Diagnostics tab” on page 104](#).

Field replaceable units

When you view the last results of a failed diagnostic test, a Diagnostic Result description appears at the bottom of the Diagnostic tab. This description includes a list of components that might have caused the problem.

Each FRU is shown with a percentage that represents how probable it is that the component caused the hardware problem. Use these percentages as a guide to determine which component to try replacing first; the higher the percentage of probability, the better the chance that replacing the FRU will fix the problem.

To view the last diagnostics result

- 1 From the left pane of the Maintenance window, select the hardware component.

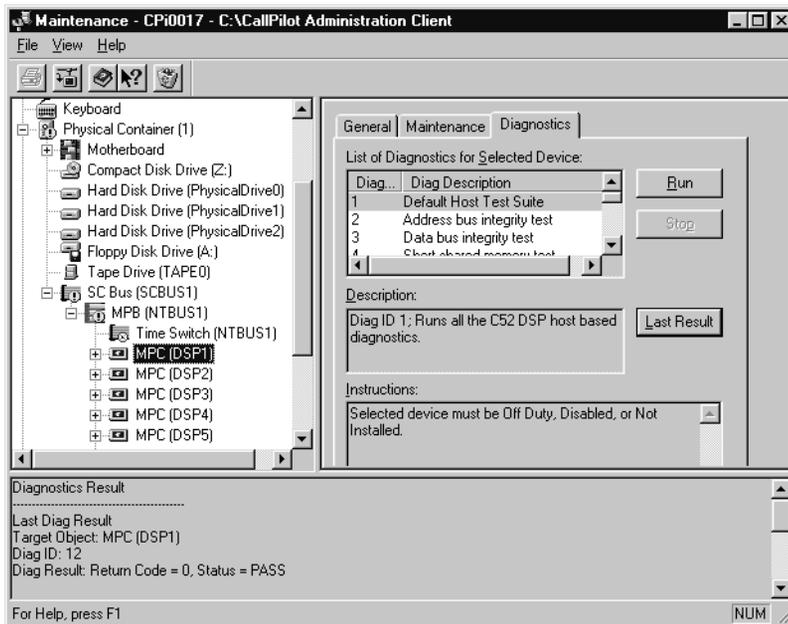
Result: The General page appears.

- 2 From the right pane, click the Diagnostics tab.

Result: The Diagnostics page appears.

- 3 Click Last Result.

Result: The results of the last diagnostic test appear at the bottom of the Diagnostics page.



- 4 View the last results to determine what action to take.

Last diagnostic results

The results of the last diagnostic test display the following information at the bottom of the Diagnostic page:

Information	Description
Target Object	This is the component selected in the tree.
Diag ID	This is the ID of the diagnostic test that was run. The diagnostics IDs and descriptions are listed in the List of Diagnostics for Selected Device window on the Diagnostics page.
Diag result	The diagnostic result includes a return code and whether the diagnostic test passed or failed.
Result Description	This section appears only when the diagnostic test fails. This is a more detailed description of the problem. This description includes the following: <ul style="list-style-type: none">■ the error that was encountered■ a list of components that might have caused the error with a probability percentage■ troubleshooting instructions

Obtaining replacement part numbers

Introduction

If you determine that a component needs to be replaced, contact your distributor.

The Replacement tab in the Maintenance window provides component information. However, your distributor has the latest part number information. The Replacement tab is not available on all platforms.

Chapter 4

System utilities

In this chapter

Overview	124
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Session Trace	132
System Information	140
System Monitor	142

Overview

Introduction

The following table lists the CallPilot system utilities:

Diagnostic	Enables CallPilot startup diagnostics to be enabled or disabled (turned on or off).
PEP Maintenance	Displays a list of installed PEPs and enables PEP uninstall.
Services Monitor	Displays the true status of all CallPilot services according to WinNT definition.
Session Trace	Provides detailed information about the activity in a user's mailbox and the state of the message waiting indicator (MWI).
System Information	Displays particulars about the CallPilot System such as names, keycodes, serial numbers, IP addresses, and system numbers.
System Monitor	Displays the status of all CallPilot subsystems related to call processing.

Accessing the System Utilities

All CallPilot customer administrator tools are accessible from the server using Start > Programs > CallPilot > System Utilities.

Diagnostics

Introduction

The Diagnostics startup utility is a graphical user interface that enables CallPilot startup diagnostics to be enabled or disabled as required by the user or the system.

CallPilot startup diagnostics automatically identifies hardware problems that might exist when the system and its services are started (DSP, TimeSwitch, SCbus).

This tool saves time during system maintenance operations where restarts or Call Processing services restarts are required.

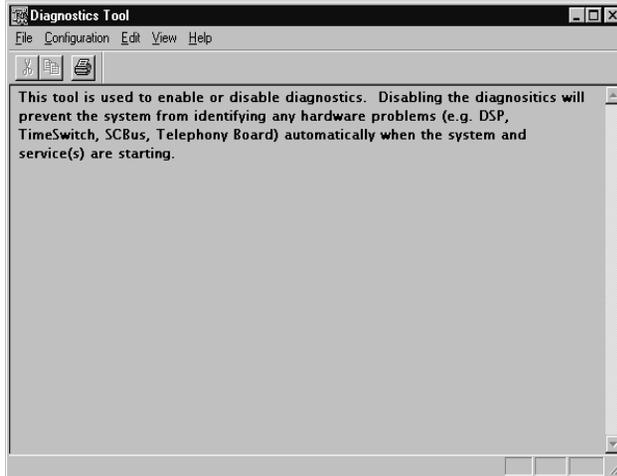
There are three recommended steps:

- Use the Diagnostics tool to turn off CallPilot startup diagnostics.
- Perform system maintenance.
- Use the Diagnostics tool to turn on CallPilot startup diagnostics.

To access the startup Diagnostic Tool utility

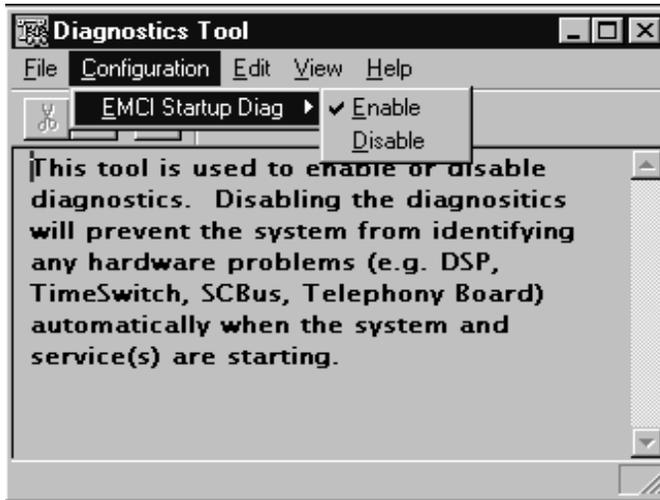
From the Windows Start menu, click Programs > CallPilot > System Utilities > Diagnostic Tool.

Result: The Diagnostics Tool window appears.



To enable startup diagnostics

From the menu, select Configuration > EMCI Startup Diag > Enable.



To disable startup diagnostics

From the menu, select Configuration > EMCI Startup Diag > Disable.

Note: Nortel Networks recommends that you leave the startup diagnostics turned on.

When you disable CallPilot startup diagnostics; you prevent CallPilot from automatically identifying hardware problems that might exist when the system and its services are started (DSP, TimeSwitch, SCbus).

Pep Maintenance utility

Introduction

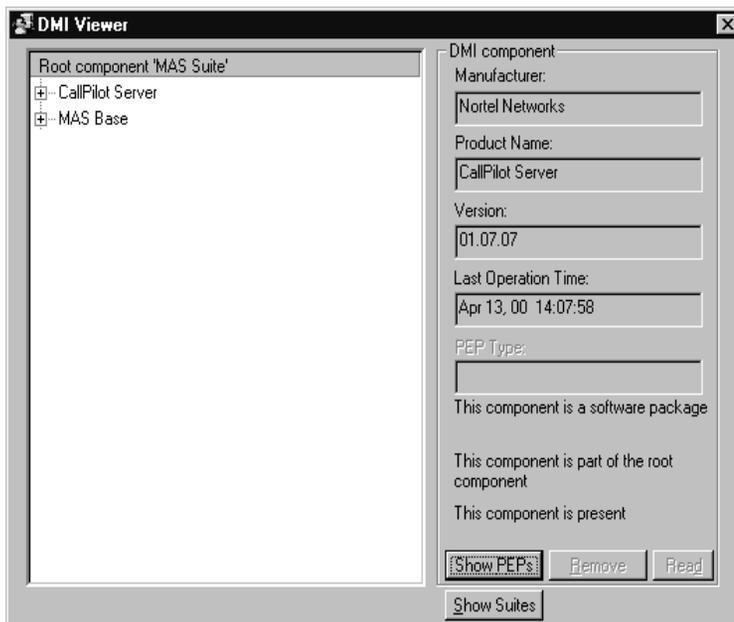
The PEP Maintenance utility displays a list of all installed PEPs on the server and enables you to uninstall PEPS.

For information on uninstalling PEPs, refer to [“Installing PEPs” on page 232](#).

To access the PEP Maintenance utility

From the Windows Start menu, click Programs > CallPilot > System Utilities > PEP Maintenance.

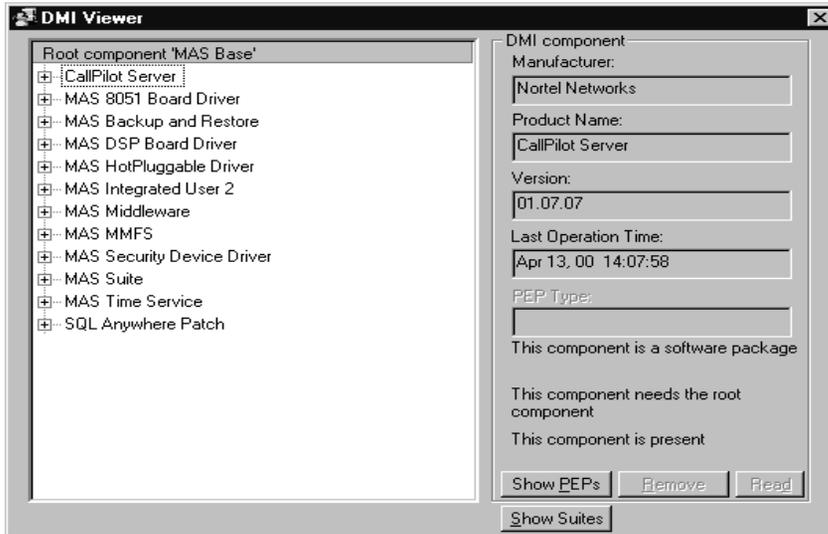
The DMI Viewer window appears.



To view a list of all installed PEPs

- 1 Click the component to display the PEP list.
- 2 Click Show PEPs.

Result: A list of all installed PEPs appears to the right of the window.



Services Monitor

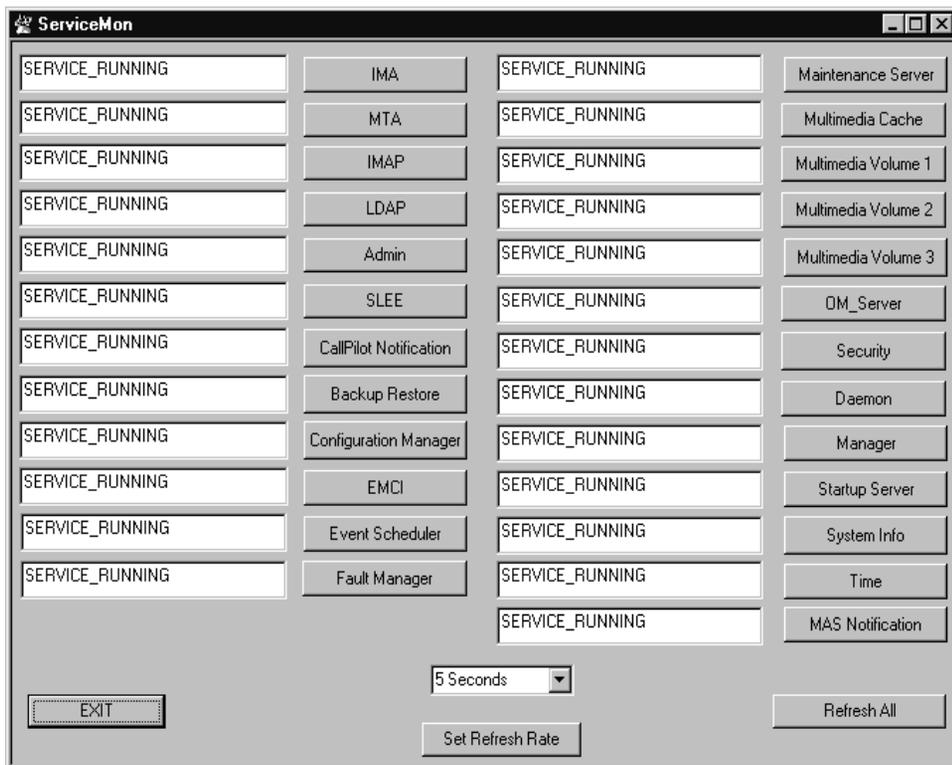
Introduction

The Services Monitor is a graphical user interface tool that helps to determine whether the CallPilot server is fully operational. It displays true states of the CallPilot services according to Windows NT definition, including the states that are not available through the control panel.

To access the Services Monitor

From the Windows Start menu, click Programs > CallPilot > System Utilities > Service Monitor.

Result: The ServiceMon window appears.



Using the Services Monitor

The Services Monitor provides the status of each CallPilot service (for example, running, any pending or pausing state).

The Refresh All button enables the display to be refreshed. Use the Set Refresh Rate button to set the rate of refresh or set to none.

Note: The fact that a service is running does not necessarily mean that it is fully operational. It might require some initialization, database connections, internal data structures, and so on.

Session Trace

Introduction

The Session Trace tool allows you to obtain detailed information about the activity in a user's mailbox and the state of the message waiting indicator (MWI). The session information includes

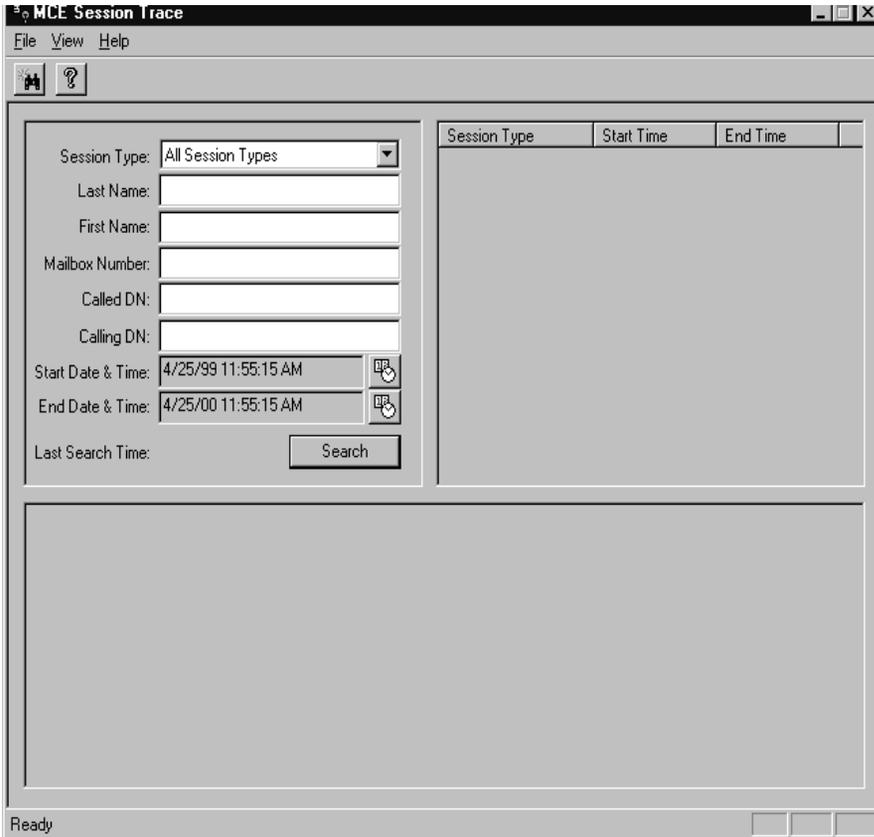
- voice messaging
- call answering
- express messaging activity (messages composed and sent, or left in a mailbox)
- the number of messages played or unplayed at the beginning, middle, and end of a session
- messages and personal distribution lists restored into a mailbox
- the last change to the MWI (turned on or off, or untouched)

This session information allows an administrator or technician to study the state of a user's mailbox and the MWI, and to use that information to follow up on any user complaints. For example, a user might complain that the MWI was on, but no voice messages were in the mailbox when the user logged on. The session information might tell the administrator why the MWI was turned on.

To access the session trace tool

From the Windows Start menu, click Programs > CallPilot > System Utilities > Session Trace Tool.

Result: The MCE Session Trace window appears.



To find a session

- 1 From the Session Type drop-down menu, select the type of session.

The screenshot shows a search window with the following fields and values:

- Session Type: Expired Messages (dropdown menu)
- Last Name: All Session Types (dropdown list)
- First Name: Expired Messages (dropdown list)
- Mailbox Number: Logon (dropdown list)
- Called DN: MWI (dropdown list)
- Calling DN: Selective Restore (dropdown list)
- Start Date & Time: 4/25/99 11:55:15 AM (calendar icon)
- End Date & Time: 4/25/00 11:55:15 AM (calendar icon)
- Last Search Time: 11:55:47 AM
- Search button

To display a list of all session types, select All Session Types.

- 2 Enter as much information in the search criteria fields in the window to identify the session you want to view.

To display a list of all users for the selected Session Type, leave the search criteria fields blank.

- 3 Click Search to initiate the search.
 - a. If you did not enter any user information, a list of users matching the Session Type appears on the bottom of the window.

To select a user from the list, double-click the user name to display session type information.

- b. If you selected All Session Types for a user, the session type information appears to the right of the window.
- 4 Double-click the session type to display the session information.

Result: The Session Type information appears on the bottom of the window.

Session type information

Call Answer session type information

MCE Session Trace

File View Help

Session Type: All Session Types

Last Name: Clint

First Name: Bill

Mailbox Number: 8050

Called DN:

Calling DN:

Start Date & Time: 5/2/99 11:23:15 AM

End Date & Time: 5/2/00 11:23:15 AM

Last Search Time: 11:26:30 AM

Session Type	Start Time	End Time
Logon OK	15:37:14 Apr 28	15:38:40 Apr 28
MWI Off	15:38:41 Apr 28	15:38:41 Apr 28
Logon OK	15:39:40 Apr 28	15:40:09 Apr 28
MWI Off	15:40:10 Apr 28	15:40:10 Apr 28
Call Answering	15:42:30 Apr 28	15:42:40 Apr 28
MWI On	15:42:40 Apr 28	15:42:40 Apr 28
Logon OK	15:42:47 Apr 28	15:43:56 Apr 28
MWI Off	15:43:11 Apr 28	15:43:11 Apr 28
MWI Off	15:43:57 Apr 28	15:43:57 Apr 28
Call Answering	15:46:48 Apr 28	15:46:53 Apr 28
MWI On	16:56:24 Apr 28	16:56:24 Apr 28
MWI On	01:30:13 Apr 29	01:30:13 Apr 29
Expired Messages	03:30:09 Apr 29	03:30:09 Apr 29

Session Type: Call Answering

Start Time: 15:42:30 Apr 28

End Time: 15:42:40 Apr 28

Session Length: 10 seconds

Called DN: 8050

Calling DN: 8051

Call Origination: Inbound

Message Length: 1 second

Message Disposition: Message left

43 records found

Expired messages session type information

MCE Session Trace

File View Help

Session Type: All Session Types

Last Name: Clint

First Name: Bill

Mailbox Number: 8050

Called DN:

Calling DN:

Start Date & Time: 5/2/99 11:23:15 AM

End Date & Time: 5/2/00 11:23:15 AM

Last Search Time: 11:26:30 AM

Session Type	Start Time	End Time
Logon OK	15:37:14 Apr 28	15:38:40 Apr 28
MWI Off	15:38:41 Apr 28	15:38:41 Apr 28
Logon OK	15:39:40 Apr 28	15:40:09 Apr 28
MWI Off	15:40:10 Apr 28	15:40:10 Apr 28
Call Answering	15:42:30 Apr 28	15:42:40 Apr 28
MWI On	15:42:40 Apr 28	15:42:40 Apr 28
Logon OK	15:42:47 Apr 28	15:43:56 Apr 28
MWI Off	15:43:11 Apr 28	15:43:11 Apr 28
MWI Off	15:43:57 Apr 28	15:43:57 Apr 28
Call Answering	15:46:48 Apr 28	15:46:53 Apr 28
MWI On	16:56:24 Apr 28	16:56:24 Apr 28
MWI On	01:30:13 Apr 29	01:30:13 Apr 29
Expired Messages	03:30:09 Apr 29	03:30:09 Apr 29

Session Type: Expired Messages

Date And Time: 03:30:09 Apr 29

Messages Deleted: 0

43 records found

Express messaging session type information

Session Type: Express Messaging	
Start Time: Static	Message Length: Static
End Time: Static	Message Type: Static
Session Length: Static	Message Disposition: Static
Called DN: 123456789012345678901234567890	
Calling DN: Static	
Call Origination: Static	

Logon session type information

MCE Session Trace

File View Help

Session Type: All Session Types
 Last Name: Clint
 First Name: Bill
 Mailbox Number: 8050
 Called DN:
 Calling DN:
 Start Date & Time: 5/2/99 11:23:15 AM
 End Date & Time: 5/2/00 11:23:15 AM
 Last Search Time: 11:26:30 AM

Session Type	Start Time	End Time
Logon OK	15:37:14 Apr 28	15:38:40 Apr 28
MWI Off	15:38:41 Apr 28	15:38:41 Apr 28
Logon OK	15:39:40 Apr 28	15:40:09 Apr 28
MWI Off	15:40:10 Apr 28	15:40:10 Apr 28
Call Answering	15:42:30 Apr 28	15:42:40 Apr 28
MWI On	15:42:40 Apr 28	15:42:40 Apr 28
[REDACTED]	15:42:47 Apr 28	15:43:56 Apr 28
MWI Off	15:43:11 Apr 28	15:43:11 Apr 28
MWI Off	15:43:57 Apr 28	15:43:57 Apr 28
Call Answering	15:46:48 Apr 28	15:46:53 Apr 28
MWI On	16:56:24 Apr 28	16:56:24 Apr 28
MWI On	01:30:13 Apr 29	01:30:13 Apr 29
Expired Messages	03:30:09 Apr 29	03:30:09 Apr 29

Session Type: Logon OK
 Start Time: 15:42:47 Apr 28 Session Length: 69 seconds
 End Time: 15:43:56 Apr 28 Call Origination: Inbound
 Called DN: 3751
 Calling DN: 8051

Message Lengths (Seconds)			
	min	max	total
Voice:	0	0	0
Fax:	0	0	0

Start Of Session	During Session
Total Msgs: 1	New Read: 1
Unread Msgs: 1	New Arrived: 0

End Of Session	
Total Msgs: 0	Unread Msgs: 0
Sent: 0	Composed: 0
Replied: 0	Forwarded: 0
Time Delivered: 0	Total Deleted: 1
	New Deleted: 0

43 records found

NUM

Selective restore session type information

Session Type: Selective Restore		
Start Time: Static	Start Of Session	End Of Session
End Time: Static	Total Msgs: Static	Total Msgs: Static
Session Length: Static	Unread Msgs: Static	Unread Msgs: Static
During Session		
Total Msgs Restored: Static		
Unread Msgs Restored: Static		
PDLs Restored: Static		

System Information

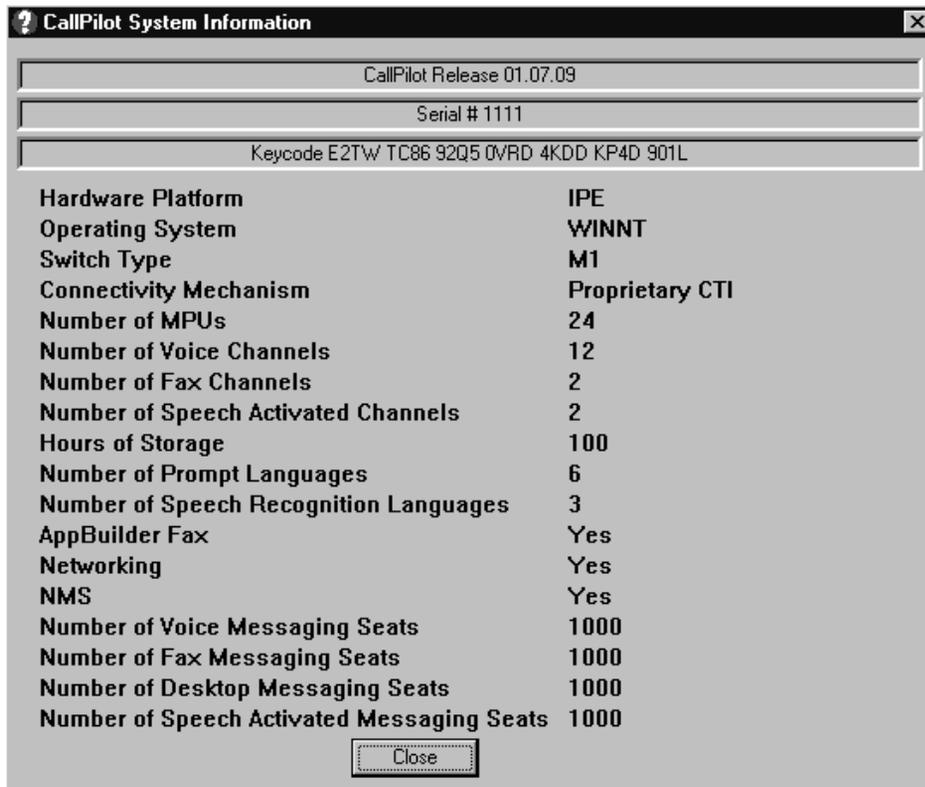
Introduction

Use this utility to view particulars about the CallPilot system, such as names, keycodes, serial numbers, IP addresses, and system numbers.

To access the System Information utility

From the Windows Start menu, choose Programs > CallPilot > System Utilities > System Information.

Result: The CallPilot System Information window appears.



To use the **System Information** utility

Use this utility to view CallPilot system information at a glance.

After viewing the information on this screen, click **Close** to close the window.

System Monitor

Introduction

The System Monitor is a graphical user interface based tool that provides a single point of view of CallPilot call processing status at any time. The status provided reflects the true internal status of the Call Processing subsystem, including all related call processing components. This eliminates the need to use multiple tools to get the same information.

The System Monitor queries the current status of each component it is monitoring and displays them in a graphical user interface. The status of each service is obtained from the Windows NT Service Controller; Middleware Components status are obtained from the CTMedia server; and the DSP and Call channels status are obtained by querying Middleware.

This tool shows the status of

- CallPilot Critical Services related to call processing
- CTMedia-based Middleware Services
- CallPilot Call Channels and Media Channels

System Monitor is a nondestructive tool that does not alter the behavior of any CallPilot components.

Note: Users of this tool require an understanding of CallPilot and the components they want to monitor.

To access the System Monitor

From the Windows Start menu, click Programs > CallPilot > System Utilities > System Monitor.

Result: The CallPilot System Monitor window appears.



User interface

The user interface comprises four main areas listed below. Each area indicates the status of the particular components of the CallPilot server.

1. Services Area for Critical Windows NT-based services
2. CT Media Services Area for Middleware-based services
3. Call Channel Area for Call Arrival/Departure activities
4. Media Channel Area for DSP channel usage activities

CallPilot Critical Services

Critical Services needed for CallPilot Call Processing include

- CT Media Server Service
- Telephony Server (TAPI) Service
- MAS EMCI Service

- MAS Notification Service
- MCE SLEE Service
- MCE Notification Service
- SQL Anywhere Service
- VBPC Load Service (useful in a DSE system)

CTMedia-based Middleware Services

Middleware resources needed for CallPilot include

- Dialogic CT Media Server Core Service
- Dialogic CT Media Server ISE Service
- Call Channel Resource Service
- Blue Call Router Service
- Media Resource Service
- Maintenance Service Provider Service

CallPilot Call Channels and Media Channels

Call and media channels needed for CallPilot include

- Multimedia Ports and Call Channel (DSP channel usage as well as Call Channel usage)

Online Help

To obtain a description of the various status codes for each of the window's components, use the online Help.

Menu items

The System Monitor tool provides several menu items for configuration:

File	Closes the tool.
Refresh rate	Changes the refresh rate to a desired level.
Help	Displays a legend for each status symbol shown.

Chapter 5

Hardware maintenance and upgrade

In this chapter

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Replacing the server	152
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Removing the daughterboard	156
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Replacing motherboard components	163
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Replacing the Nortel Networks software feature key	169
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Network interface cards	173
Nortel Networks Multimedia Processing Cards	176

Overview

Introduction

This chapter describes how to perform hardware maintenance and upgrade procedures. The chapter is organized into three sections for easier reference.

Preparing for server maintenance

[Section A: “Preparing for server maintenance,” on page 147](#), provides procedures usually followed whenever you must replace a component or perform an upgrade activity. These are the first steps in working with the server.

Removing components

[Section B: “Removing components,” on page 155](#), provides procedures associated with field service.

Installing and replacing card devices

[Section C: “Installing and replacing card devices,” on page 171](#), provides procedures for supported PC and MPC cards.

Section A: Preparing for server maintenance

In this section

Shutting down the server	148
Removing the server from the switch	150
Replacing the server	152

Shutting down the server

Introduction

You prepare the 200i server for removal from the switch by shutting down the software. Before you shut down the 200i server, ensure that all clients are logged off the server.

Peripherals connected through the I/O breakout panel do not need to be disconnected before shutdown. The switch automatically powers the server when the server is locked into position on an IPE shelf. The server, therefore, powers off when it is removed from the switch.

Equipment required

You need the following equipment:

- keyboard, monitor, and mouse
- or
- laptop computer

To perform a software shutdown

- 1 Do one of the following:
 - Connect the keyboard, monitor, and mouse (or laptop) to the server, and then go to step [4](#).
 - From a laptop (on the ELAN) or from a remote PC (over RAS), continue with step [2](#).
- 2 Start pcANYWHERE32.
- 3 Connect to the 200i server.
- 4 Log on to the server.
- 5 Exit all applications.

Note: For instructions on how to properly shut down a particular application, refer to the documentation for that application.

- 6** Press the Ctrl, Alt, and Delete keys simultaneously.
Result: The Windows NT Security dialog box appears.
- 7** Click Shut Down... .
Result: The Shutdown Computer dialog box appears.
- 8** Select Shutdown.
- 9** Click OK.
Result: You might be informed that an SQLAnywhere service is running with connections, and asked if you want to end it.
- 10** Click Yes or End Task.
Result: You might also be asked if you want to save ACD proxy changes.
- 11** Click No.
Result: The 200i server shutdown begins.
- 12** Wait for DOWN to appear on the System Ready Indicator LED, or for the message `It is now safe to turn off your computer.`
Note: The red LED indicator remains lit during the shutdown until you restart the server.

Removing the server from the switch

Introduction

You must remove the server from the switch before replacing the following components:

- daughterboard
- motherboard
- hard drive
- PCB interconnect strip
- in-board PC card
- DIMM
- SCSI paddleboard

Equipment required

You need the following equipment:

- antistatic mat
- antistatic wrist strap

To remove the server from the switch

- 1 Shut down the server.
- 2 Turn off the monitor.
- 3 Disconnect the monitor, keyboard, and mouse.
- 4 Power down the peripheral SCSI devices.
- 5 Disconnect the SCSI cable (if connected).
- 6 Open the lock latches at the top and bottom of the server.
- 7 Grip the faceplate and pull the server out of the IPE shelf.
- 8 Place the server on a clean, static-resistant surface.

What's next?

When you have removed the server from the switch, you can replace and upgrade components.

Replacing the server

Introduction

For activities that are not supported as field procedures, you must return the server to Nortel Networks for service. To maintain customer service, a replacement server must be installed on-site.

This guide covers all the procedures required to replace the 200i server.

The following steps make up the overall procedure for replacing the server. References are made to specific component replacement procedures where applicable.

To replace the server

1. If the installed server is functional, then perform a full backup of the hard disk as a precautionary measure.
2. Use the administrative client PC to take the MPC cards out of service. Then remove the MPC cards from the faceplate of the server (see page [179](#)).
3. Shut down the installed server (see page [148](#)).
4. Remove the server from the switch (see page [150](#)).
5. Disconnect all peripherals from the server. If a Network Interface card is installed in the in-board slot, remove it and install it in the replacement server (see page [173](#)).
6. Separate the daughterboard from the motherboard, as shown on page [157](#).
7. Remove the software feature key (dongle) from the defective server and install it in the replacement server, as shown on page [170](#).
8. Remove the hard drive from the defective server and install it in the replacement server as shown on page [165](#).
9. Remove the DIMM from the defective server and install it in the replacement server, as shown on page [160](#).

10. If a PC card was removed from the faceplate of the defective server, install it in the replacement server.
11. Install the replacement server on the switch and connect all applicable peripherals.
12. Install and configure any MPC cards removed from the defective server, as shown on page [178](#).

What's next?

- Ensure that the 200i server is able to start up and that the Windows NT logon window appears.
- Test the CallPilot channels as described in Part 4 of this binder.

Section B: Removing components

In this section

Removing the daughterboard	156
Replacing the DIMM	160
Replacing motherboard components	163
Replacing the EIDE hard drive	164
Replacing the Nortel Networks software feature key	169

Removing the daughterboard

Introduction

The daughterboard is secured by four screws to the stiffener and the motherboard of the 200i server.

Equipment required

You need the following equipment:

- antistatic wrist strap
- Phillips No. 1 screwdriver

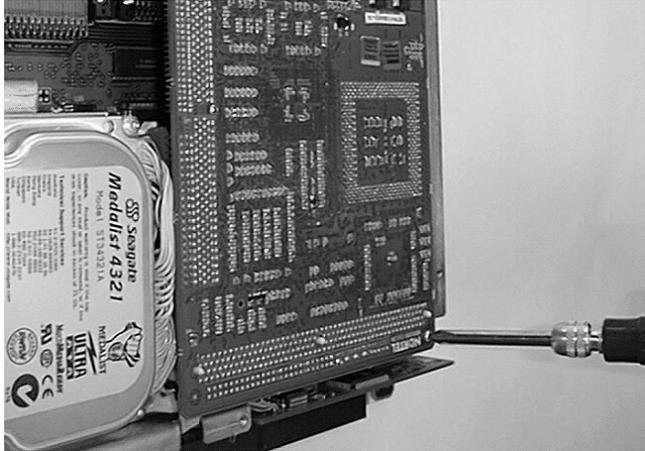
Before you begin

Before replacing the daughterboard, review these procedures:

- [“Removing the server from the switch” on page 150](#)
- [“Replacing the DIMM” on page 160](#)

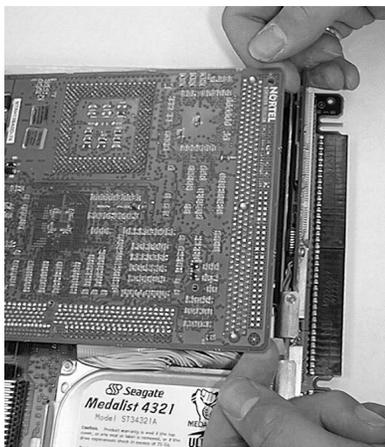
To remove the daughterboard

- 1 Remove the server from the switch and lay it on a static-resistant surface, with the daughterboard facing up.
- 2 Loosen and remove the four screws, one from each corner of the daughterboard.



- 3 Put your fingers under the daughterboard on the backplane side of the server, and carefully lift that side of the board out of the PCB connector slot.

Note: Lift the daughterboard only slightly from the motherboard because the daughterboard is still secured to the hard drive data cable.



- 4 Slide the daughterboard toward the backplane, freeing the VGA connector from the faceplate.
- 5 Tilt the board to the left, and remove the hard drive data cable from the daughterboard. Take note of the pin 1 location (red pin stripe) of the hard drive data cable for later reconnection.

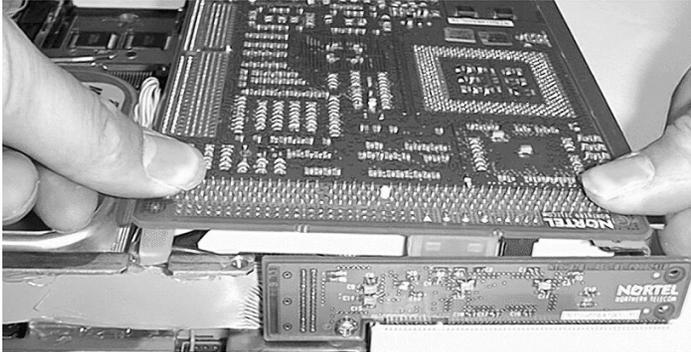


- 6 Set the board down with the component side facing up.

To replace the daughterboard components

- 1 Unpack the replacement daughterboard, and set it component-side up near the defective board.
- 2 Remove the PCB interconnect board from its slot on the defective daughterboard.
Note: If the PCB interconnect board is not attached to the defective daughterboard, then it might have detached from the daughterboard when the daughterboard was removed from the 200i server. In this case, the PCB interconnect board might still be attached to the motherboard.
- 3 Install the PCB interconnect board on the replacement daughterboard.
- 4 Remove the DIMM from the defective daughterboard, as described in the procedure on page [160](#).
- 5 Install the DIMM on the replacement daughterboard.
- 6 Attach the hard drive data cable connector to the replacement daughterboard.

- 7 Insert the replacement daughterboard into the stiffener so that the VGA connector sits out of the faceplate.
- 8 On the backplane side of the board, align the PCB interconnect board with its slot on the motherboard.
- 9 Apply downward pressure evenly across the connector until it is securely seated.

**ATTENTION**

Ensure that the hard drive DC power connector and 40-pin ribbon connector are not pinched when inserting the daughterboard.

- 10 Insert and tighten the four screws removed in step [2](#) on page [157](#) into each corner of the replacement board.

What's next?

Review the procedures for installing the server and conducting diagnostic tests.

Replacing the DIMM

Introduction

The DIMM resides in a slot on the daughterboard and is secured by a lock latch. The lock latch rotates freely to an open position so the DIMM can be removed, and closes to secure the DIMM in the proper position.

The DIMM is keyed so that it can only be fully seated and secured by the lock latch when it is inserted correctly.

Equipment required

You need the following equipment:

- antistatic wrist strap
- Phillips No. 1 screwdriver

Before you begin

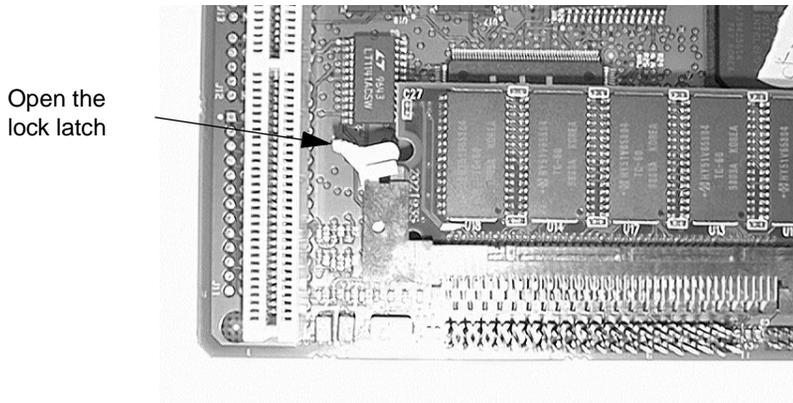
Perform the following tasks to replace the DIMM:

- [“Removing the server from the switch” on page 150](#)
- [“Removing the daughterboard” on page 156](#)

To replace the DIMM

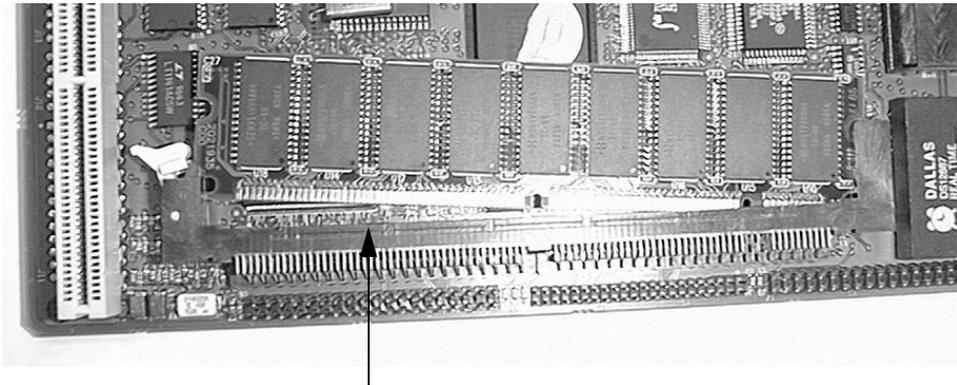
- 1 Remove the daughterboard from the motherboard and stiffener, as shown on page [157](#).
- 2 Set the daughterboard on an antistatic surface with the component side facing up.

- 3 Move the lock latch to its open position.



- 4 Slide the DIMM out of its slot until it clears the slot socket. Then lift out the DIMM.

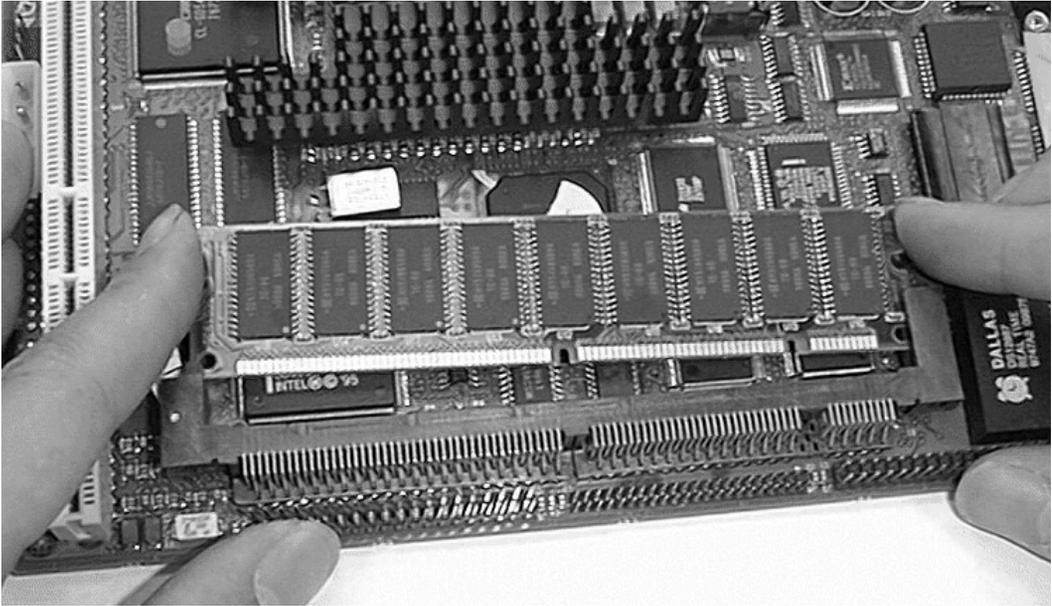
Note: You might need to use a slot-head screwdriver to extract the non-lock-latch side of the DIMM from the socket.



The slot that holds the memory module in place

- 5 Push the DIMM into the slot on the replacement server.

Result: The lock latch snaps into place when the DIMM is inserted completely.



Note: The DIMM is keyed to line up with the DIMM socket (the socket has blanks that line up with the notches on the DIMM). If the DIMM is inserted upside-down, then the lock latch will not close.

What's next?

Review the procedures for installing the server and conducting diagnostic tests.

Replacing motherboard components

Introduction

The faceplate and stiffener of the 200i server are attached to the motherboard. When you replace the motherboard, the faceplate and stiffener are also replaced as one unit.

Equipment required

You need the following equipment:

- antistatic wrist strap
- Phillips No. 1 screwdriver
- slot-head screwdriver

Before you begin

Remove the server from the switch and lay it on a static-resistant surface, with the daughterboard facing up.

To replace the motherboard components

Remove each of the following components from the defective motherboard and install them in the replacement server:

- EIDE hard drive (see page [164](#))
- software feature key (see page [169](#))
- faceplate-accessible flash card (see page [172](#))
- in-board network interface card (see page [173](#))
- MPC-8 cards (see page [176](#))

What's next?

Review the procedures for installing the server and conducting diagnostic tests.

Replacing the EIDE hard drive

Introduction

The hard drive is positioned beside the daughterboard and rests lengthwise along the backplane side of the server. Four screws secure the hard drive in place—two on the backplane edge of the stiffener, one through the motherboard, and one through the bottom edge of the stiffener.

Equipment required

You need the following equipment:

- antistatic wrist strap
- Phillips No. 1 screwdriver
- slotted screwdriver

Before you begin

Before you replace the hard drive on a new 200i server, review [“Removing the server from the switch” on page 150](#).

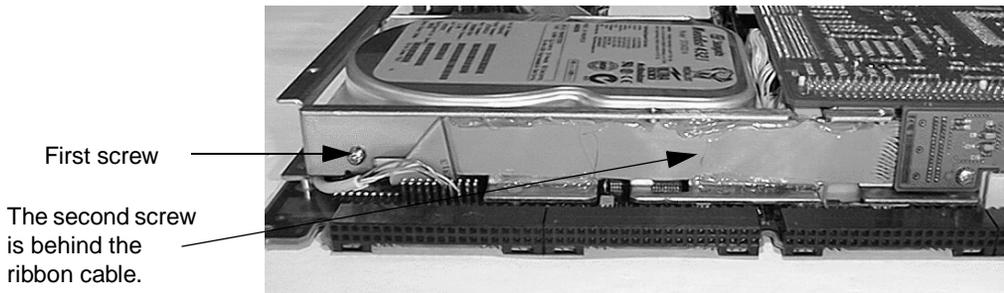
To remove the EIDE hard drive

- 1 Loosen and remove the following four screws:
 - one screw on the bottom of the motherboard stiffener



Note: On some versions of the 200i server, the SCSI cable is routed around the outside edge of the stiffener. In this situation, lift the SCSI cable over the top of the stiffener so that you can access the screws that secure the hard drive.

- two screws on the side of the motherboard stiffener



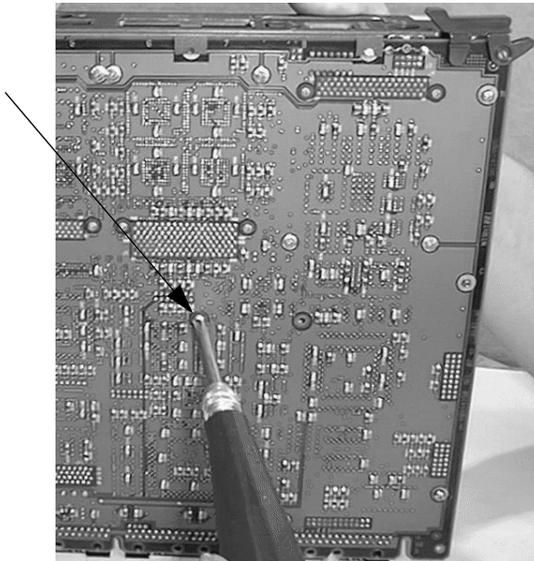
- one screw underneath the motherboard



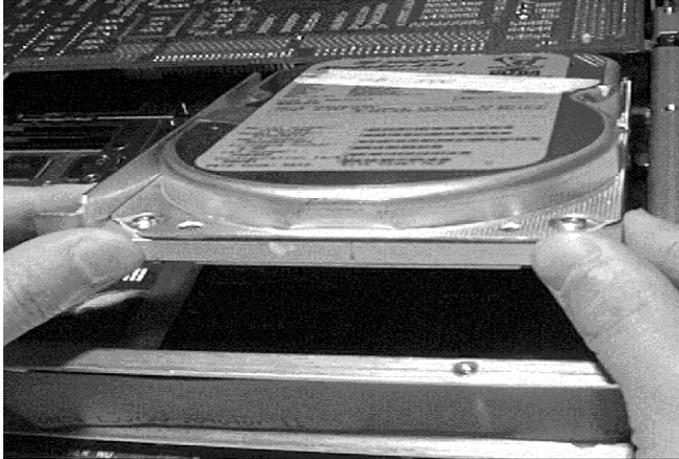
CAUTION

Risk of damage to the hard drive

Hold on to the hard drive with one hand as you remove this last screw.



- 2 Push the hard drive slightly toward the daughterboard so that the hard drive is free of the bottom edge of the motherboard stiffener.



- 3 Lift the hard drive out of the stiffener, and disconnect the hard drive power and data cables.



- 4 Verify with the manufacturer's documentation that the jumpers are set correctly.
Note: The drive must be configured as the primary drive.
- 5 Position the drive in the new server.

- 6 Attach the hard drive power and data cables.
Note: Ensure that the red stripe on the data cable is next to the red stripe on the power cable.
- 7 Angle the drive slightly downward and toward the daughterboard until you can lower the replacement drive into the motherboard stiffener.
- 8 Align the drive with the screw holes, and tighten the screws.

What's next?

Review the procedures for installing the server and conducting diagnostic tests.

Replacing the Nortel Networks software feature key

Introduction

The software feature key is a software security device (sometimes called a dongle). This key stores the unique serial number of the server.

Equipment required

You need the following equipment:

- Phillips No. 1 screwdriver
- tweezers

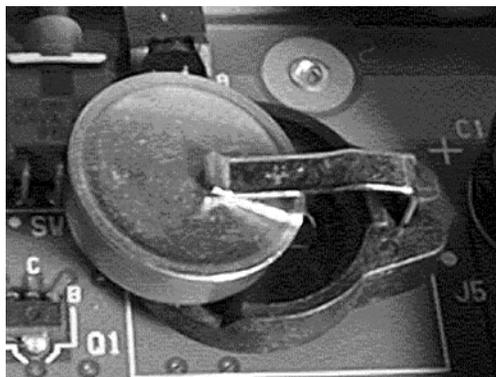
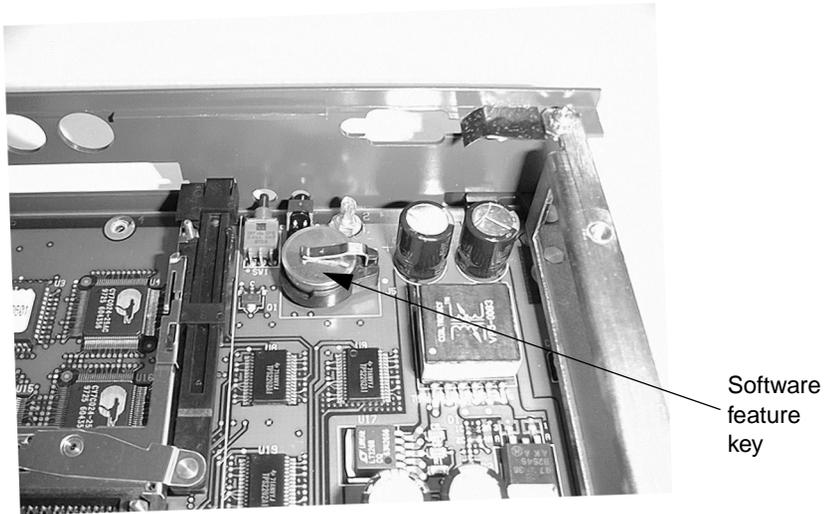
Before you begin

Review [“Removing the daughterboard” on page 156](#).

To replace the software feature key

- 1 Remove the daughterboard from the motherboard.
- 2 Pull the software feature key out from under the clip.

Note: Apply a slight upward pressure on the clip, but ensure the clip is not strained to such a degree that it can no longer apply enough downward pressure to hold the new software feature key in place.



- 3 Insert the software feature key into the socket on the replacement motherboard, lip-side up.
- 4 Reattach the daughterboard to the motherboard.

Section C: Installing and replacing card devices

In this section

About PC cards	172
Network interface cards	173
Nortel Networks Multimedia Processing Cards	176

About PC cards

Introduction

PC cards are small, versatile devices used on the 200i server. PC cards are about the same size as credit cards, but thicker.

Supported PC cards

PC cards supported on the 200i server include an Ethernet interface, a Token Ring interface, and a Nortel Networks-issued flash card used for system recovery. Check with your Nortel Networks representative for the most recent list of supported PC card types.

Network interface cards

Introduction

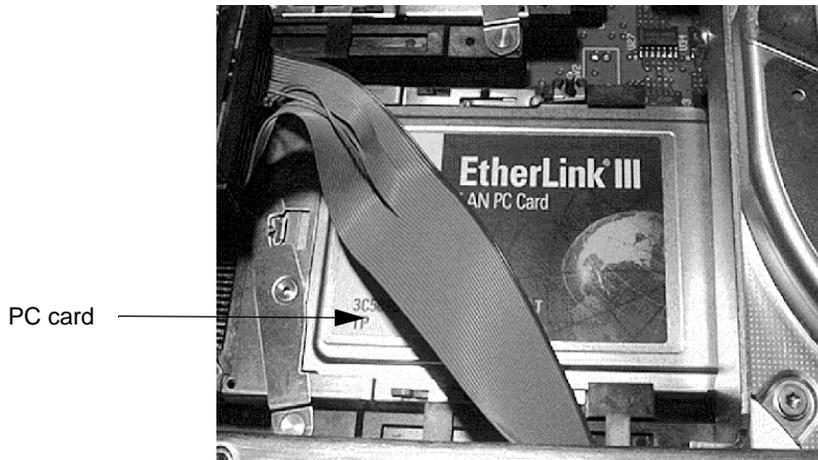
Network interface cards allow you to connect your 200i server to an existing network (CLAN) for connectivity to desktop computers or for LAN-based server administration.

The 200i has an internal slot on the motherboard where a single network card can be added. The network card can be an Ethernet interface card or a Token Ring interface card.

To install a network interface card

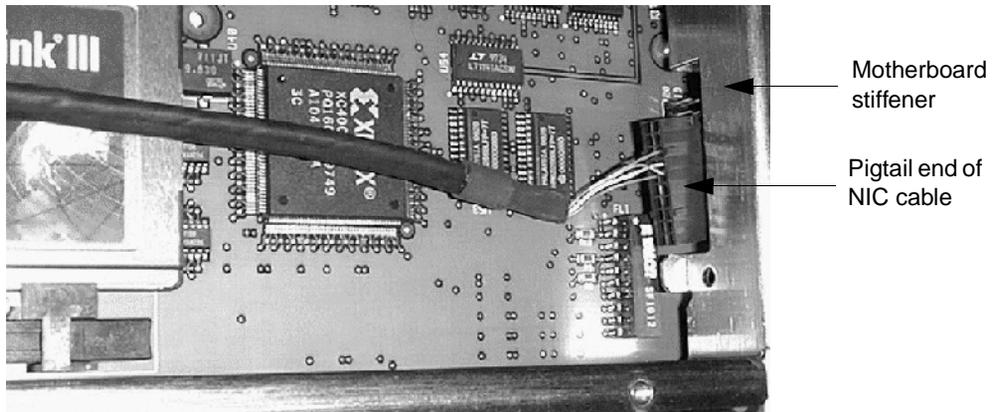
- 1 Remove the hard drive as described on page [165](#).
- 2 Insert the PC card into the internal PC card slot, label-side up.

Note: The following picture shows a correctly inserted Ethernet card:



- 3 Remove the jumper block from the motherboard stiffener.

- 4 Thread the pigtail end of the card cable under the motherboard stiffener.



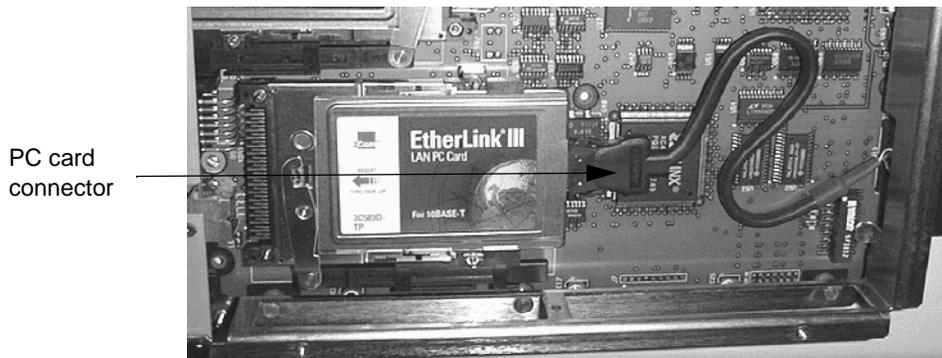
- 5 Connect the card cable jumper block to the pin header.

Note: The pin header is located to the right of the motherboard stiffener.

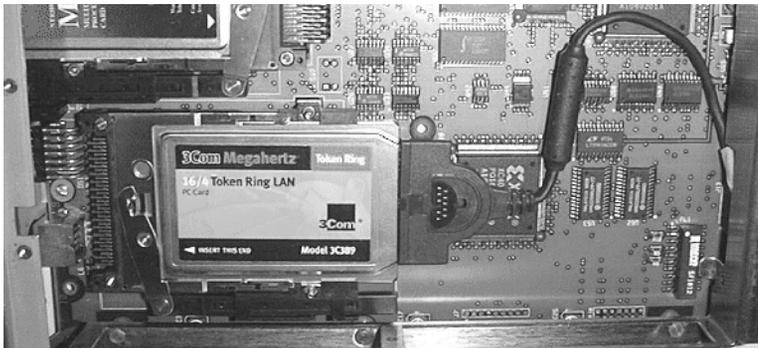
- 6 Connect the other end of the cable to the PC card.

Note: Bend the cable so that it can be connected to the PC card and it lies flat.

Result: The following picture shows a connected Ethernet card:



The following picture shows a connected Token Ring card:



- 7 Replace the hard drive.

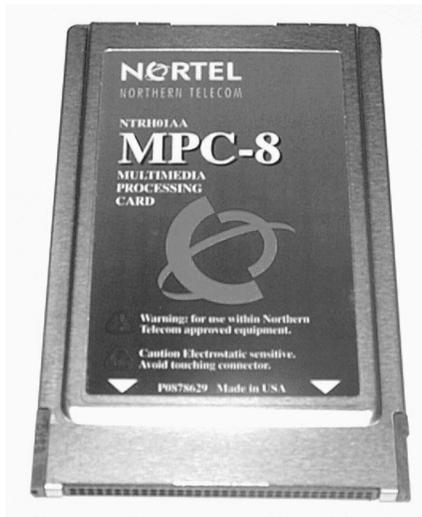
Note: You must also add and configure the correct driver software.

Nortel Networks Multimedia Processing Cards

Introduction

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

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



CAUTION

Risk of equipment damage

Any attempt to install an MPC card into a standard PC card slot results in equipment damage.

Correct card insertion

The MPC-8 card is keyed so that it fits only one way into the slot on the 200i server faceplate. If the card is inserted incorrectly, the card does not go all the way into the slot.



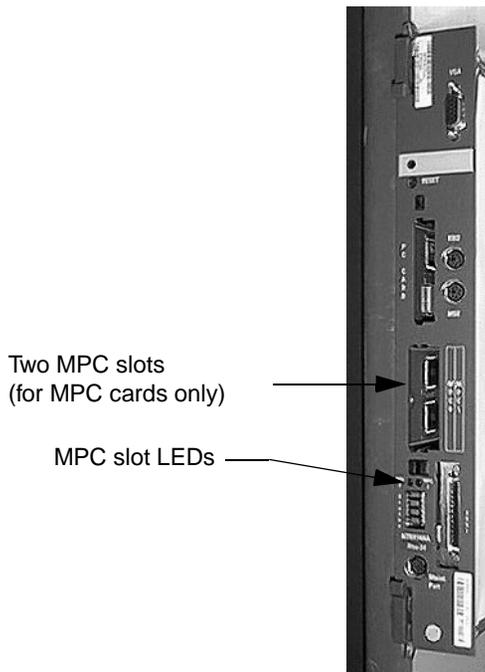
CAUTION

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 200i server.

MPC card slot LEDs

There is an LED for each MPC card slot. The following picture shows where these slots and LEDs are located on the 200i server:

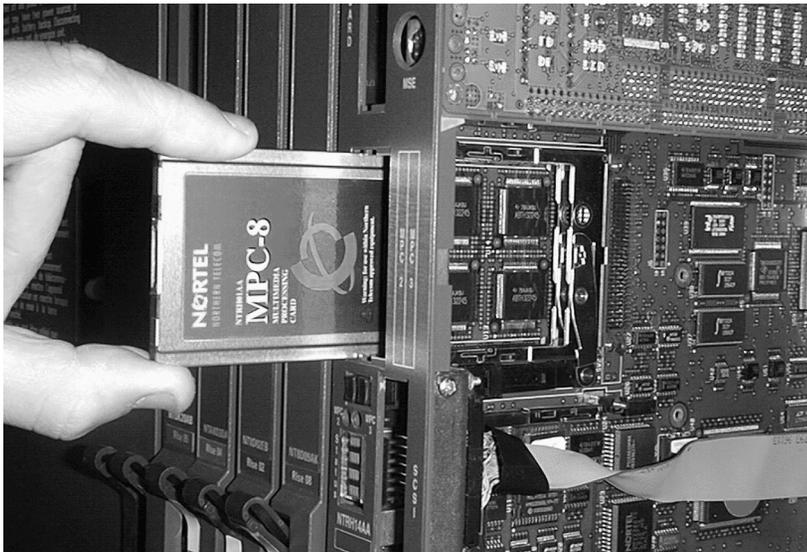


The following table describes each LED status:

Status	Description
Off	The MPC card is not receiving power. It is safe to remove the card.
On	The MPC card is in use. In this case, it is <i>not</i> safe to remove the card.
Off, then on	The MPC card has been recognized by the 200i server software and has been powered up.
On, then off	The MPC card has been successfully powered down. It is safe to remove the card.

To add an MPC-8 card

- 1 Ensure that the MPC-8 card label is facing one of the following ways:
 - facing to the right if the 200i server is inserted into the IPE shelf (see the picture below)
 - facing up if the faceplate is lying horizontally on a flat surface



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

3 Configure the client application so that it recognizes the MPC and its channels.

Note: You might need a new keycode to use the new card.

4 Enable the card and its channels.

Note: For instructions on configuring and enabling the MPC-8 card and its channels, refer to the documentation for your client application.

To replace MPC cards

Note: An MPC-8 card can be replaced on a 200i server without powering down the server. This procedure assumes that the 200i server is locked into position on the IPE shelf. If it is not, perform steps [7](#) to [10](#) only.

1 On the Administrative client PC, log on to the CallPilot system.

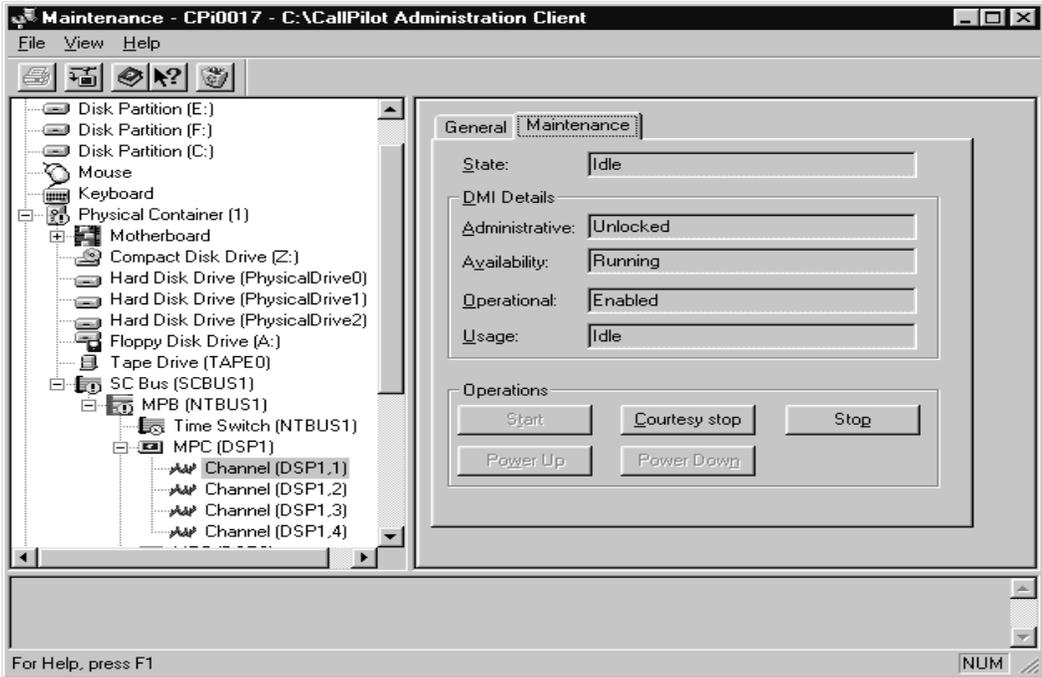
2 Open the CallPilot Administration Client window, and click System Administration > Maintenance Administration > Maintenance.

3 From the left pane of the Maintenance window, select the MPC-8 card you need to replace.

Result: The General page appears.

- From the right pane, click the Maintenance tab.

Result: The Maintenance page appears.



- Click Courtesy stop or Stop.

Result: The MPC-8 card changes to an Off Duty state.

- Click Power Down.

Result: The MPC-8 card is powered off.

- Ensure that the MPC's LED on the 200i server faceplate is not lit, which indicates that the MPC is no longer receiving power.



CAUTION

Risk of equipment damage

If you remove an MPC while it is receiving power, this can damage the MPC or the 200i server.

- 8 Press the MPC's ejector button to dislodge the MPC from its slot. The ejector button is on the 200i faceplate underneath the MPC slot. There is one ejector button for each MPC slot.
- 9 Pull the MPC out of its slot.
- 10 Insert the new MPC into the slot, and gently push it until it is firmly in place and the ejector button pops back out.
- 11 Ensure that the MPC's LED lights up green.
- 12 Ensure that the new MPC-8 card is highlighted in the left pane of the Maintenance window.
- 13 In the Maintenance window, click Power Up.
- 14 In the Maintenance window, click Start.

Result: The MPC-8 card changes to an Idle state and is now operational.

Chapter 6

Installing the operating system and server software (for recovery purposes)

In this chapter

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Installing and configuring MS-DOS	191
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Preparing to install Windows NT from the LAN	194
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Installing CallPilot server software	227
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Overview

Introduction

This section describes how to install the software that is preinstalled on the CallPilot server at the factory. Most of the procedures described here are typically required only in a recovery situation. See [Chapter 11, “Recovering from a hard drive failure or corrupted software.”](#) for additional information on hard disk recovery.

Windows NT configuration information worksheet

See [“Preparing configuration information for Windows NT” on page 188.](#)

What this chapter contains

This chapter explains how to do the following:

- Configure the server’s system BIOS.
- Install and configure MS-DOS.
- Prepare to install Windows NT from the LAN or CD-ROM.
- Install Windows NT Server 4.0.
- Do the following to complete the system build:
 - Reenable Console Redirection.
 - Clean up the MS-DOS partition.
 - Install the tape drive driver.
- Install service packs.
- Install pcANYWHERE32.
- Install CallPilot server software.
- Install Performance Enhancement Packages (PEPs).

Hardware requirements

You need the following items to perform a hard disk recovery and build:

- flash recovery PC card
- local CD-ROM drive (if not installing from the LAN)
- appropriate cabling (CD-ROM drive or LAN access)
- Operating System CD-ROM
- CallPilot Server CD
- PEP CD

Configure the server's system BIOS

Before you can install the operating system and application software, you must properly configure the 200i server system BIOS. This involves setting the system time and date, and ensuring that Console Redirect Port is disabled.

Install and configure MS-DOS

The next step in performing a hard disk recovery is to install MS-DOS. To install MS-DOS, you use an automated series of scripts (batch files) that partition the hard disk and load MS-DOS. After diagnostics have completed and all hardware is verified as sane, follow the procedure to install MS-DOS.

Prepare to install Windows NT from the LAN or CD-ROM

If the Windows NT software is being stored on a server on your LAN, you can choose to install Windows NT from there; or, if you have the Operating System CD-ROM, you can use it to install Windows NT.

Install Windows NT Server 4.0

Windows NT Server 4.0 is the operating system on which the 200i server software runs.

The procedure for installing Windows NT is divided into smaller procedures so that you can preview, in advance, the type of information you need to enter. You must complete the stages in sequence. If you choose to exit from the installation at any stage, you must cancel the Windows NT installation and begin again.

Ensure that you have the following information before you start:

- administrator's password
- time zone
- ELAN IP address and subnet mask
- CLAN IP address, subnet mask, and default gateway IP address (if a CLAN NIC is installed)
- range of remote access server (RAS) IP addresses
- country and area code
- computer name
- workgroup name

Complete the system build

The following tasks complete the system build:

- Reenable Console Redirection.
- Remove any temporary files that were created on the MS-DOS partition.
- Install the tape drive driver.

Install service packs

A service pack is an update provided by Microsoft for Windows operating systems. Service packs provide new versions of files and fixes for problems that have been reported.

Install pcANYWHERE32

pcANYWHERE32 enables your distributor or Nortel Networks support to dial in to the server to provide product support.

Install CallPilot server software

Once you have completed installing the operating system, you can install the CallPilot server software.

Install Performance Enhancement Packages

Performance Enhancement Packages (PEPs) are provided on CD-ROM. You must install PEPs in a specific order as identified in the readme files on the PEP CD-ROM.

Preparing configuration information for Windows NT

Configuration information

Use the following table to record data that you need to enter during the installation of Windows NT. You should consult with the company's Network Administrator to obtain the values for the items listed in the table.

Item	Information from company's Network Administrator
Name	
Company Name	
Computer Name	
Administrative account password	
Remote Access	
Begin	
End	
From	
To	
Excluded	
Network - IP Address	
IP Address	
Subnet Mask	
Default Gateway	

Item	Information from company's Network Administrator
Network - DNS	
Host Name (= Computer Name)	
Domain	
DNS Service Search Order	
Domain Suffix Search Order	
Network - WINS	
Primary WINS Server	
Secondary WINS Server	

Configuring the server's system BIOS

Introduction

Before you can install the operating system and application software, you must properly configure the 200i server system BIOS. This involves setting the system time and date, and ensuring that Console Redirect Port is disabled.

Note: After you install Windows NT, the BIOS settings are restored to their original values.

To set up the system BIOS

- 1 Attach a CD-ROM drive, keyboard, mouse, and monitor to the faceplate.
- 2 Press the reset button on the 200i server faceplate to reboot the server.
- 3 When the `Press <F2> to enter Setup, <ALT> to bypass PC Card Boot` prompt appears, press F2.
- 4 With the arrow and tab keys, select Main.
- 5 Enter the correct system time and date.
- 6 Select Server.
- 7 Ensure that Console Redirect Port is disabled.
- 8 Use the arrow keys to select Exit MENU.
- 9 Select Save Changes and Exit, and then press Enter.
- 10 Select Continue.

Result: The system reboots with the settings required to allow installation of Windows NT.

- 11 Install MS-DOS.

Note: For instructions, see [“Installing and configuring MS-DOS” on page 191](#).

Installing and configuring MS-DOS

Introduction

The next step in performing a hard disk recovery is to install MS-DOS. To install MS-DOS, you use an automated series of scripts (batch files) that partition the hard disk and load MS-DOS. After diagnostics are completed and all hardware is verified as sane, follow this procedure to install MS-DOS.

You use the flash recovery PC card to install MS-DOS 6.20 on the 200i server.

ATTENTION

This procedure erases all data on the hard drive.

Do not enable the MS-DOS DoubleSpace disk compression feature.

To install MS-DOS

- 1 Ensure the flash recovery PC card is inserted into its socket on the 200i server faceplate.
- 2 Press the reset button to reboot the server.

Result: The following menu appears:

```
A Erase the hard drive
B Phase 1 DOS Install
C Phase 2 DOS Install
D Run Diagnostics
X Exit to DOS
```

- 3 Press A to remove all existing partitions from the disk.

Result: The server reboots after the disk cleanup, and the same menu appears.

- 4 Press B to partition the drive.

Result: The system creates the appropriate partition to install DOS. When completed, the server reboots and the same menu appears.

5 Press C.

Result: MS-DOS and some IPE installation-specific files load to the C:\ drive (a 150 Mbyte FAT partition). MS-DOS setup is complete.

6 Press the PC card socket's ejector button to eject the card.

7 Remove the PC card from the socket.

8 Press Ctrl-Alt-Delete.

Result: The server boots from the MS-DOS partition and displays the following menu:

A: LAN install

B: Local CD-ROM install

C: Load PCMCIA support

D: Load diagnostics

9 Install Windows NT with one of the following:

- information needed for connecting to the server where the Windows NT installation package is stored (see [“Preparing to install Windows NT from the LAN” on page 194](#))
- Operating System CD-ROM (see [“Preparing to install Windows NT from the CD-ROM” on page 196](#))

Preparing drivers required for Windows NT 4.0 installation

Introduction

All drivers are contained on the Application Server Master Driver CD. This procedure copies all the required drivers to the hard drive in the directory C:\200tmp. The drivers are grouped in subfolders in C:\200tmp. When prompted for a driver during the Windows NT installation, go to C:\200tmp to locate the driver you need.

To copy drivers onto the hard drive

- 1 Insert the Application Server Driver CD into the CD-ROM drive.
- 2 Double-click My Computer. Then double-click the CD-ROM icon.
- 3 Open the 200i folder on the Application Server Master Driver CD.
- 4 Double-click setup.bat.
Result: All the drivers are loaded onto the hard drive in the directory C:\200tmp.
- 5 Close the setup window.
- 6 Remove the Application Server Master Driver CD.

Preparing to install Windows NT from the LAN

Introduction

This procedure explains how to prepare for Windows NT installation from a temporary PC on the ELAN instead of from the Operating System CD-ROM.

Before you begin

Before you can install Windows NT, you must reinstall MS-DOS and reboot the server as described in [“Installing and configuring MS-DOS” on page 191](#). Once completed, the following menu appears:

```
A: LAN install
B: Local CD-ROM install
C: Load PCMCIA support
D: Load diagnostics
```

ATTENTION

If an error occurs during the installation (for example, a LAN cable is accidentally removed, or power is lost), erase the hard disk and reinstall MS-DOS and Windows NT.

To install Windows NT from the LAN

- 1 Ensure that the I/O breakout panel is connected and cabled properly.
- 2 From the menu, press A.
Result: The server reboots with ELAN Network card support.
- 3 When prompted, enter the network information needed to connect to the server containing the Windows NT installation files.
- 4 Modify the appropriate values for your location, and press 0 to exit.

Result: The LAN-based setup launches.

Note: If an error occurs while loading the LAN drivers or connecting to the remote PC, then error messages appear on the console. The installation

stops at the command prompt. Ensure that the LAN cabling and ELAN parameters (that is, computer name, IP address, and so on) are correct.

Restart the installation by rebooting the server and selecting A: LAN install from the menu.

- 5 If you are prompted to enter a user ID and password, enter them.

Result: Some setup files are copied to the hard disk, and you are prompted to reboot.

- 6 Instead of rebooting, continue with the installation as described in [“Installing Windows NT Server 4.0” on page 198](#).

Preparing to install Windows NT from the CD-ROM

Introduction

If you have the Operating System CD-ROM, you can use it to install Windows NT.

Before you begin

Your CD-ROM drive must be connected before the server is powered on. If the CD-ROM is not connected, do the following:

1. Power off the 200i server.
2. Attach the CD-ROM drive.
3. Power up the CD-ROM drive.
4. Power on the 200i server.

Before you can install Windows NT, you must reinstall MS-DOS and reboot the server as described in [“Installing and configuring MS-DOS” on page 191](#). Once completed, the following menu appears:

```
A: LAN install
B: Local CD-ROM install
C: Load PCMCIA support
D: Load diagnostics
```

ATTENTION

If an error occurs during the installation (for example, a SCSI cable is accidentally removed, or power is lost), erase the hard disk, and reinstall MS-DOS and Windows NT.

To install Windows NT from the CD-ROM

- 1 From the menu, select B.

Result: Some setup files copy to the hard disk, and the server reboots. The generic SCSI CD-ROM driver loads, and you are prompted to insert the Operating System CD-ROM into the CD-ROM drive.

- 2 Insert the Operating System CD-ROM into the CD-ROM drive.

- 3 Press any key to continue with the installation.

Result: A delay of approximately 15 seconds occurs to allow the CD-ROM to spin up and start the installation. Files automatically copy to the system, and you are prompted to reboot.

Note: If the CD-ROM drive is not ready, you receive a `Not ready reading drive` message. Ensure that the correct CD-ROM is in the drive and that the SCSI cable is connected and powered on. Press R to retry the operation. If the installation fails repeatedly, power off the server, examine all of the connections, and retry the installation.

- 4 Press Enter to restart the 200i server.

Result: The 200i server restarts, and the Windows NT setup screen appears.

- 5 Continue with the installation as described in [“Installing Windows NT Server 4.0” on page 198](#).

Installing Windows NT Server 4.0

Introduction

This section explains how to install Windows NT Server 4.0. For clarification, this section divides the entire installation procedure into the following procedures so that you can preview, in advance, the type of information you need to enter:

1. Begin installation, and then confirm drivers and devices.
2. Format the hard drive.
3. Configure with the Windows NT Setup Wizard.
4. Begin configuration of the server for network use.
5. Configure network card drivers.
6. Add network protocols and services.
7. Configure the Etherlink III or Token Ring card settings.
8. Configure network services.
9. Configure network addresses.
10. Configure the date and time.
11. Configure the display adapter.
12. Finish the installation.

You must complete the installation in sequence. If you choose to exit from the installation at any stage, you cancel the Windows NT installation and must begin again.

Before you begin

Before you can install Windows NT, review this section and ensure that you have all the information you need to complete the installation.

Then perform one of the following procedures:

- [“Preparing to install Windows NT from the LAN” on page 194](#)
- [“Preparing to install Windows NT from the CD-ROM” on page 196](#)

To begin installation and confirm drivers and devices

- 1 At the Windows NT Setup screen, press Enter to continue setup.

Result: You are prompted to select the mass storage controllers.

The following items should both be listed:

- IDE CD-ROM (ATAPI 1.2)/PCI IDE Controller
- Symbios Logic C810 PCI SCSI Host Adapter

IF there is no	THEN
IDE driver	there is a hardware problem. Contact your Nortel Networks support representative.
SCSI driver	the SCSI paddleboard is not installed. Install the SCSI paddleboard, and retry the Windows NT installation. If there is still no SCSI driver, contact your Nortel Networks support representative.

- 2 Press Enter.

Result: The licensing agreement appears.

- 3 Scroll down to the end of the text, and then press F8 to agree with the licensing agreement.

Result: A list of installed hardware devices appears.

- 4 Review the list, and then select “The above list matches my computer” and press Enter.

Note: A list of devices that does not match what is actually installed can indicate a hardware problem.

Result: The Windows NT disk partitioning screen appears.

- 5 Continue with [“To format the hard drive” on page 200](#).

To format the hard drive

- 1 Do the following:

For	Do the following
2 Gbyte primary disks	<p>Select Unpartitioned space on the primary hard disk, (Disk 0) and press Enter.</p> <p>Result: You are prompted to select the format type NTFS or FAT.</p>
4 Gbyte primary disks	<p>If the unpartitioned space on the primary hard disk (Disk 0) is larger than 4096 Mbytes, select Unpartitioned space and press C to create a partition. Enter 4096 Mbytes as the size. Select the partition you just created, and press Enter.</p> <p>If the unpartitioned space on the primary hard disk (Disk 0) is less than 4096 Mbytes, select Unpartitioned space on the primary hard disk (Disk 0) and press Enter.</p> <p>Result: You are prompted to select the format type NTFS or FAT.</p>
9 Gbyte primary disks	<ul style="list-style-type: none"> ■ Select Unpartitioned space on the primary hard disk (Disk 0), and press C to create a partition. ■ Enter 4096 Mbytes as the size. <p>Note: The remaining space should be less than 4096 Mbytes.</p> ■ Select the remaining unpartitioned space on the primary disk, and press C. ■ Enter 4096 Mbytes or accept the default size, whichever is lower. ■ Select the first partition you created, and press Enter. <p>Result: You are prompted to select the format type NTFS or FAT.</p>

- 2 Use the arrow keys to select Format the partition using the NTFS file system, and press Enter.

Result: The new partition is formatted, and you are prompted for the installation path.

Note: The time it takes to format the hard drive depends on the drive size and type.

- 3 Press Enter to select the default directory for installing Windows NT.

Note: The default directory is \winnt.

Result: You are prompted to perform a comprehensive disk check.

- 4 Press Enter.

Result: When the disk check is complete, you are prompted to reboot.

- 5 Press Enter to reboot the server and launch the graphical portion of the Windows NT setup.

Result: Now that the text-mode portion of Windows NT Setup is complete, the system reboots and converts the newly formatted partition from the FAT file system to the NTFS file system. The system reboots when the file system conversion is complete and launches the graphical portion of Windows NT setup.

- 6 Continue with "[To configure with the Windows NT Setup Wizard](#)" below.

To configure with the Windows NT Setup Wizard

- 1 On the Windows NT Setup screen, click Next to continue.

Result: You are prompted for the name and organization.

- 2 Enter the data requested and click Next.

Result: You are prompted for the product ID.

- 3 Enter the product ID and click Next.

Result: You are prompted to choose the Windows NT licensing mode.

- 4 Under the licensing mode screen, select Per server and specify 5 as the number of concurrent connections. Then click Next.

Result: You are prompted to enter the computer name.

- 5 Enter the computer name and click Next.

Note: Obtain this information from the network administrator. Enter only alphanumeric characters (a–z and 0–9).

Result: You are prompted to select the computer's role.

- 6** Under Server type, select Stand-Alone Server and click Next.
- Result:** You are prompted to enter the administrator account password.
- 7** Enter the administrator account password and the confirmation password, and then click Next.
- Note:** Obtain this information from your network administrator. The passwords are case-sensitive.
- Result:** You are prompted to create an emergency repair disk.
- 8** Select No, Do not create an emergency repair disk, and then click Next.
- Note:** An emergency repair disk cannot be created or used on the 200i server since the 200i server does not have a floppy drive.
- Result:** You are prompted to select the optional Windows components to install.
- 9** Ensure the check boxes are in the following states:

Component	State
Accessibility Options	Unchecked
Accessories	Checked
WordPad	Checked (select Accessories, and then click Details to choose this option)
Communications	Checked
HyperTerminal	Checked (select Communications, and then click Details to choose this option)
Games	Unchecked
Multimedia	Unchecked
Windows Messaging	Unchecked

- 10** Uncheck any options not listed in step [9](#) that are checked.
- Result:** You are prompted to begin the setup of Windows NT networking.
- 11** Click Next.
- Result:** You are prompted to select how Windows NT participates on the network.

- 12 Continue with [“To begin configuration of the server for network use”](#) below.

To begin configuration of the server for network use

- 1 Select the option This computer will participate on a network.
- 2 Ensure the check boxes are in the following states:

Network behavior	State
Wired to the network	Checked
Remote access to the network	Unchecked

- 3 Click Next to continue.
Result: You are prompted to install Internet Information Server.
- 4 Deselect the Install Microsoft Internet Information Server option by clearing the check box, and then click Next.
Result: You are prompted to install the network card drivers.
- 5 Continue with [“To configure network interface card drivers”](#) below.

To configure network interface card drivers

Note: Ensure that the ELAN driver is installed before the CLAN driver.

- 1 To choose the ELAN driver to install, click Select from list.
Result: Windows NT displays the list of available network drivers.
- 2 Click Have Disk to specify a location to find the driver.
Result: Windows NT displays the Insert Disk dialog box.
- 3 Type the path `c:\200tmp\network\pcnet\oemsetup.inf` and click OK.
- 4 When prompted to select a driver, choose AMD PCNET Family Ethernet Adapter, and then click OK.
- 5 To choose the CLAN driver to install, click Select from list.
Result: Windows NT displays a list of available network drivers.
- 6 Click Have Disk to specify a location to find a driver.
Result: Windows NT displays the Insert Disk dialog box.

7 Do the following:

IF the system has	THEN do the following
a 3Com EtherLink Ethernet CLAN card	<ul style="list-style-type: none">■ Type the path c:\200tmp\network\etherlnk\oemsetup.inf and click OK.■ When prompted to select a driver, choose 3Com EtherLink III (3C589D) LAN PC Card and click OK. Then click Next.
a 3Com LAN Megahertz Ethernet CLAN card	<ul style="list-style-type: none">■ Type the path c:\200tmp\network\megahz\disk1\oemsetup.inf and click OK.■ When prompted to select a driver, choose the driver for 3Com LAN Megahertz PC Card and click OK. Then click Next.
a Token Ring CLAN card	<ul style="list-style-type: none">■ Type the path c:\200tmp\network\tokenlnk\disk2\nt\oemsetup.inf and click OK.■ When prompted to select a driver, choose 3ComTokenLink Velocity PC Card and click OK. Then click Next.

Result: You are prompted to select the network protocols to install.

8 Continue with ["To add network protocols and services" on page 205.](#)

To add network protocols and services

- 1 Ensure the check boxes are in the following states:

Network protocol	State
TCP/IP Protocol	Checked
NWLink IPX/SPX Compatible Transport	Unchecked
NetBEUI Protocol	Unchecked

- 2 Click Next.

Result: You are prompted to select the network services to install.

- 3 From the Network Services screen, click Select from list.

Result: A list of network services appears.

- 4 Select SNMP Service and click OK.

- 5 Repeat step [4](#) to select the following services, and then click OK:

- Microsoft TCP/IP Printing
- Remote Access Service

Result: You return to the Network Services screen.

- 6 Click Next to continue.

Result: You are prompted to confirm the installation of the network components.

- 7 Click Next to confirm and install the selected networking components.

Result: Files are copied to the system. You might be prompted with a dialog box indicating the network card settings.

- 8 Continue with one of the following procedures:

- ["To configure the 3Com Etherlink III or 3Com LAN Megahertz card settings" on page 206](#)
- ["To configure the TokenLink Velocity card settings" on page 206](#)

To configure the 3Com Etherlink III or 3Com LAN Megahertz card settings

- 1 In the 3Com EtherLink III PC Card or 3Com LAN Megahertz PC Card dialog box, set the I/O Port Address to 0x300.
- 2 Set the interrupt number to 9.
- 3 Click Continue.
- 4 Set the type to PCMCIA and the number to 0.
- 5 Click OK.

Result: The Setup Message dialog box appears.

- 6 Click OK to accept that the network card parameters are not verifiably correct.

Result: You are presented with the option to use DHCP to configure the network.

- 7 Continue with [“To configure network services” on page 207](#).

To configure the TokenLink Velocity card settings

- 1 In the 3ComTokenLink Velocity PC Card dialog box, select 3COM TokenLink Velocity PC Card.
- 2 Click Configure.

Result: The Select Operating Mode dialog box appears.

- 3 Ensure Compatible Mode is selected and click OK.

Result: The Compatible Mode Settings dialog box appears.

- 4 Accept the defaults and click OK.

Result: You return to the 3ComTokenLink Velocity PC Card dialog box.

- 5 Click Save.

Result: You are presented with the option to use DHCP to configure the network.

- 6 Continue with [“To configure network services.”](#)

To configure network services

- 1 Click NO to using DHCP.

Result: You are prompted to configure the SNMP service.

Note: Since the SNMP service is added only to provide additional Performance Monitor counters, no configuration is necessary.

- 2 Click OK to accept the default SNMP Configuration and continue.

Result: You are prompted to configure the Remote Access Service.

- 3 Click Yes to invoke the modem installer.

Result: You are prompted to install a modem.

- 4 Select Don't detect my modem; I will select it from a list, and then click Next.

- 5 Scroll through the list and select your modem as follows, and then click Next:

- Manufacturer: US Robotics, Inc.
- Model: Sportster 28800-33600 External

Result: You are prompted for the port to be used.

- 6 Select COM1 as the port and click Next.

Result: You are prompted for the country and area code.

- 7 Enter your area code and click Next.

- 8 Select Tone or Pulse dialing.

- 9 Complete the prompt "If you dial a number to access an outside line, what is it?" by entering the appropriate outgoing line access code, and then click Next.

Result: You are informed that the modem has been set up successfully.

- 10 Click Finish.

Result: The Add RAS Device window appears.

- 11 In the Add RAS Device window, click OK.

Result: The Remote Access Setup window appears.

- 12 In the Remote Access Setup window, click Configure.

Result: The Configure Port Usage window appears.

- 13 Ensure Receive calls only is selected, and then click OK.
Result: The Remote Access Setup window reappears.
- 14 Click Network.
Result: You are prompted for the network configuration.
- 15 Continue with "[To configure the network addresses.](#)"

To configure the network addresses

- 1 Ensure the check boxes are in the following states:

Network setting	State
NetBEUI	Unchecked
TCP/IP	Checked
IPX	Unchecked
Require Microsoft encrypted authentication	Checked
Require data encryption	Unchecked
Enable Multilink	Unchecked

- 2 Next to the TCP/IP check box, click Configure.
Result: The RAS Server TCP/IP Configuration window appears.
- 3 Under Allow remote TCP/IP clients to access, select the following:
 - This computer only
 - Use Static address pool
- 4 In the Begin and End boxes, type the first and last IP addresses of the IP address pool to be used.
- 5 Ensure that Allow remote clients to request a predetermined IP address is unchecked.
- 6 Click OK.
Result: The Network Configuration window reappears.

- 7 Click OK.
Result: The Remote Access Setup window reappears.
- 8 Click Continue.
Result: Files are copied to the system. When completed, you are prompted to enter the TCP/IP configuration parameters.
- 9 In the Microsoft TCP/IP Properties window, select the ELAN card (AMD PCNET Family Ethernet).
- 10 Ensure that Specify an IP address is checked.
- 11 Enter the following:
 - IP address
 - subnet mask
 - default gateway
- 12 Click OK.
- 13 If one is installed, select the CLAN (3Com Etherlink III or 3Com LAN Megahertz) or Token Ring (3Com TokenLink Velocity) card.
- 14 Ensure that Specify an IP address is checked.
- 15 Enter the following information for the CLAN or Token Ring card:
 - IP address
 - subnet mask
 - default gateway
- 16 Click OK.
Result: You are asked At least one of the adapter cards has an empty primary WINS address. Do you want to continue?
- 17 Click Yes.
- 18 Enter the IP address for the WINS server.
Result: You are prompted to adjust the binding order of the network services.
- 19 In the Show Binding for list, select all Services.
- 20 Configure NetBIOS binding as follows:

- a. Expand the NetBIOS service group by clicking + beside NetBIOS Interface.
 - b. Expand the WINS client (TCP/IP) group by clicking +.
 - c. Click AMD PCNET PCI Ethernet Adapter, and then click Move Up or Move Down to position it at the top of the list.
 - d. Click 3Com Etherlink III (3C589D), 3Com LAN Megahertz, or 3ComTokenLink Velocity, and then click Move Up or Move Down to position the adapter after AMD PCNET PCI Ethernet Adapter.
- 21** Repeat step [20](#) for server and workstation bindings.
- 22** Configure Remote Access Server bindings as follows:
- a. Expand the Remote Access Service group by clicking + beside NetBIOS Interface.
 - b. Expand the WINS client (TCP/IP) group by clicking +.
 - c. Click Remote Access WAN Wrapper, and then click Move Up or Move Down to position it at the top of the list.
 - d. Click AMD PCNET PCI Ethernet Adapter, and then click Move Up or Move Down to position it after Remote Access WAN Wrapper.
 - e. Click 3Com Etherlink III (3C589D), 3Com LAN Megahertz, or 3ComTokenLink Velocity, and then click Move Up or Move Down to position the adapter after AMD PCNET PCI Ethernet Adapter.
- 23** Click Next.

Note: If, at a later time, you add or replace the CLAN or Token Ring adapter, you must readjust the binding order.

Result: You are prompted to start the network.

- 24** Click Next.

Result: Windows NT starts the network, and you are prompted to enter domain or workgroup settings.

Note: You might receive the following message:

The system has detected an IP address conflict with another system on the network. The local interface has been disabled. More details are available in the system event log. Consult your network administrator to resolve the conflict.

If you receive this message, then either one or both of the IP addresses you entered for the ELAN or CLAN NICs are not unique. You must enter unique IP addresses.

- 25** Enter the workgroup name, and then click Next.

Result: Windows NT prepares to complete setup.

- 26** Click Finish to complete the Windows NT Networking setup.

Result: You are prompted for date and time configuration settings.

- 27** Continue with "[To configure the date and time.](#)"

To configure the date and time

- 1** Enter the correct date and time.

- 2** Select the time zone for your geographical area.

Example: (GMT -05:00) Eastern Time (US & Canada).

- 3** Ensure the check box for Automatically adjust clock for daylight saving changes is checked.

- 4** Click Close to continue.

Result: Windows NT Setup detects the installed display adapter. The detected display window appears to explain which video adapter was located in the system.

- 5** Continue with "[To configure the display adapter.](#)"

To configure the display adapter

- 1** Click OK to accept the detected video adapter.

Result: You are prompted to configure the display adapter.

- 2 Ensure the settings match your monitor requirement, and make changes if necessary.

Example:

Display adapter setting	Value
Desktop area	800 by 600 pixels
Color palette	256 colors
Font size	Small Fonts
Refresh Frequency	60 Hertz

Note: You must test these settings before Windows NT Setup allows you to proceed.

- 3 Click Test to start the test.

Result: You are prompted to continue with the test.

- 4 Click OK to proceed with the display settings test.

Result: A test screen appears. After 5 seconds, the system asks you to verify that the colors and images on the screen match the text. A window appears with the question `Did you see the test bitmap properly?`

- 5 If the screen looked correct, click Yes.

If the screen did not look correct, click No.

Note: If the screen did not look correct, there might be a hardware problem. Contact your Nortel Networks support representative.

Result: You are prompted to save the display settings.

- 6 Click OK to save the display settings you just tested.

- 7 Click OK to finalize the display settings and continue with Windows NT Setup.

Result: Files are copied to the system. Windows NT Setup sets security on system files and saves the system configuration. When the save is complete, you are prompted to reboot.

- 8 Continue with ["To finish Windows NT installation" on page 213.](#)

To finish Windows NT installation

- 1 If you performed the Windows NT installation from the CD-ROM, remove the CD-ROM from the CD-ROM drive.
- 2 Click Restart Computer to complete the Windows NT Setup.
Result: Windows NT Setup restarts the server and boots to Windows NT.
- 3 Continue with ["To reenable Console Redirection" on page 214](#).

Completing the system build

Introduction

After installing Windows NT, you must do the following:

- Reenable Console Redirection.
- Remove any temporary files that were created on the MS-DOS partition.
- Install the tape drive driver.
Tape drives are used to perform backups of the CallPilot system software and databases.

To reenable Console Redirection

- 1 At the `Press <F2> to enter Setup, <ALT> to bypass PC Card boot prompt, press F2.`
- 2 Press F9 to select Restore Defaults, and then press Enter.
- 3 Select Save Changes and Exit, and then press Enter.

Result: The system reboots with the new BIOS settings.

To clean up the MS-DOS partition

- 1 Log on to Windows NT.

Note: If you receive the following message, either one or both of the IP addresses configured for the ELAN or CLAN NICs are not unique. You must enter unique IP addresses.

The system has detected an IP address conflict with another system on the network. The local interface has been disabled. More details are available in the system event log. Consult your network administrator to resolve the conflict.

If you are configuring more than one 200i server in a single switch, ignore this message and click OK to continue.

- 2 In the Welcome to Windows NT window, click Close.
- 3 Click Start > Run.

- 4 In the Run box, type **c:\cleanup.bat** and press Enter.

To install the tape drive driver

- 1 Click Start > Settings > Control Panel.
Result: The Control Panel appears.
- 2 Double-click the Tape Devices icon.
Result: The Tape Devices control panel opens. Windows NT attempts to detect the installed tape drive. The list of available tape drive device drivers appears.
- 3 Click the Drivers tab, and then click Add.
Result: You are prompted to install a driver.
- 4 Click Have Disk.
Result: You are prompted to insert the manufacturer's installation disk.
- 5 Type the path **c:\200tmp\tape\oemsetup.inf**, and then click OK.
Result: You are prompted to select a device driver from the displayed list.
- 6 Select Seagate tandqic (Tandberg Data QIC SCSI drives, all), and then click OK to continue.
Result: You are prompted for the path to the OEM Tape Device files.
- 7 Type the path **c:\200tmp\tape\oemsetup.inf**, and then click Continue.
Result: The driver files are copied to the system. You are prompted to restart the computer.
- 8 Click Yes to restart the computer.
Result: The computer restarts.

Installing service packs

Introduction

A service pack is an update that Microsoft provides for Windows operating systems. Service packs provide new versions of files and fixes for problems that have been reported.

Note: The current service pack is SP5.



CAUTION

Risk of system crash

The service pack should only be installed during the operating system installation and as part of an upgrade from a 1.0 CallPilot system. Do not reapply the service pack on an installed CallPilot system except where specifically instructed to do so in the documentation.



CAUTION

Risk of system crash

If you are upgrading from 1.0 or 1.06, install the updated SCSI driver before you install the service pack. See [“Installing the updated SCSI driver” on page 220](#).

To log on to Windows NT

- 1 Log on to Windows NT.

Note: The following message appears if either one or both of the IP addresses configured for the ELAN or CLAN NICs are not unique:

The system has detected an IP address conflict with another system on the network. The local interface has been disabled. More details are available in the system event log. Consult your network administrator to resolve the conflict.

You must enter unique IP addresses.

If you are configuring more than one 200i server in a single switch, ignore this message and click OK to continue.

- 2 If Windows displays hint windows, uncheck the Show this Welcome screen the next time you start Windows NT.
- 3 If the Control Panel is open, close it.

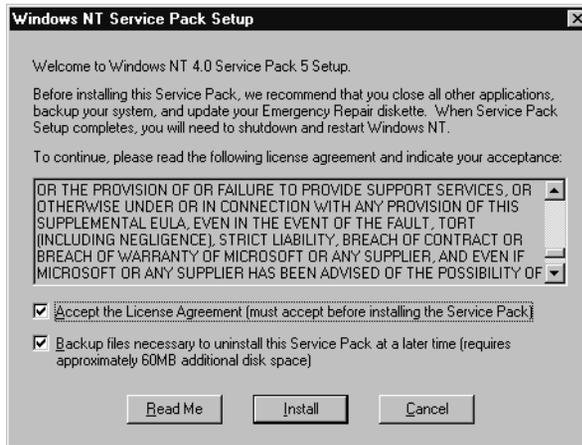
To install the service packs

Note: If you are upgrading from 1.0 or 1.06, install the updated SCSI driver before you install the service pack. See [“Installing the updated SCSI driver” on page 220](#).

- 1 Insert the PEP CD-ROM in the CD-ROM drive.
Result: The Windows NT Setup screen appears.
- 2 Close the screen using the [x] in the upper right corner of the window.
- 3 Click Start > Programs > Windows NT Explorer.
- 4 Click the plus sign (+) next to the CD-ROM drive to display its subdirectories.
- 5 Select the directory named Service Pack 5.

- 6 Double-click the folder US-40bit, and then double-click the file named SP5I386.

Result: Files are extracted, and then a Welcome screen appears.



- 7 Select the check box to accept the licence agreement.
- 8 Select the check box for backup files.
- 9 Click Install.
- 10 Click Finish to finish installing the service pack.

Result: The program examines the system, selects the files to copy, and then copies them. If messages appear, refer to the next step for the action to take in response.

- 11 As the files are installed, the following message might appear: The target file exists and is newer than the source. Overwrite the newer file? Click No in response.

When asked if you want to replace a file, always click No in response.

Result: When the installation is complete, the following message appears:



- 12 Click Restart.
- 13 After the server is restarted, remove the CallPilot PEP CD.

What's next?

If you are upgrading CallPilot, then continue with the upgrade procedure.

If this is a new installation, continue with [“Installing the updated SCSI driver” on page 220](#).

Installing the updated SCSI driver

To install the updated SCSI driver

- 1 Create a local directory `c:\sym53c86`.
- 2 Insert the PEP CD-ROM.
- 3 Copy all eight files from the SCSI Driver directory on the PEP CD-ROM to `c:\sym53c86` directory.
- 4 Click Start > Settings > Control Panel.
- 5 Double-click SCSI Adapters.
- 6 Click the Drivers tab.
 - a. Highlight the old driver, Symbios Logic C810 PCI SCSI Host Adapter, and click Remove.
 - b. Click Add and click Have Disk, and then click Browse to `c:\sym53c86`.
- 7 Highlight the `Oemsetup` (file type `.inf`) and click Open to install the new SCSI driver, Symbios Logic PCI (53c8xx).
- 8 Click OK, and then click OK again.
- 9 When prompted to input the full path to the OEM SCSI Adapters, type **`c:\sym53c86`** in the box and click Continue.
- 10 Click Yes to restart to make the new driver effective.
- 11 After the system is up, go to the Control Panel > SCSI Adapters > Drivers tab. Double-check that the new driver is present.

What's next?

If you are upgrading CallPilot, then continue with [“Installing service packs” on page 216](#).

If this is a new installation, continue with [“Installing pcANYWHERE32 on the 200i server” on page 221](#).

Installing pcANYWHERE32 on the 200i server

Introduction

The process of installing pcANYWHERE32 involves the following procedures:

1. Install the pcANYWHERE32 application on the server.
2. Start pcANYWHERE32 for the first time. This procedure allows you to set the network device.
3. Set the video mode. This procedure synchronizes the video card settings with that of the administration client PC to ensure that the remote user can see the server graphical user interfaces properly.
4. Set the pcANYWHERE32 service to Automatic. This procedure enables the pcANYWHERE32 service to start automatically after reboot.

To install pcANYWHERE32 on the 200i server

- 1 Log on as Administrator.
- 2 Insert the server Operating System CD-ROM into the CD-ROM drive.
- 3 Ensure all other Windows applications are closed.

- 4 Launch the pcANYWHERE32 installation program as follows:

IF you are installing from	THEN do the following
the CD-ROM drive	<p>With Windows Explorer, navigate to the Installs\Pca32\Disk1 folder on the CD-ROM drive as follows:</p> <ul style="list-style-type: none"> ■ Double-click Installs. ■ Double-click Pca32. ■ Double-click Disk1. ■ Locate and double-click the Setup file.
the LAN	<ul style="list-style-type: none"> ■ Ensure that the CD-ROM has been inserted into the remote computer. ■ Click Start > Run, and then type \\computername\sharecddrive\installs\pca32\disk1\setup.exe ■ Result: The Enter Network Password window might appear. ■ Enter the remote computer's user ID and password in the Connect As and Password fields, respectively, and then click OK.

Result: The Welcome to pcANYWHERE setup program window appears.

- 5 Click Next to start the installation.

Result: The User Information window appears.

- 6 Enter both the user and the company names, and then click Next.

Note: Ensure that the name and company are the same as those entered during the Windows NT installation.

Result: The Online License Agreement window appears.

- 7 Click Yes to accept the software license agreement.

Result: The Choose Destination window appears.

- 8 Click Next to accept the default directory.

Result: The Setup Review screen appears.

- 9 Click Next to continue.
Result: Some files are copied to the system. When installation is complete, the Symantec Support Solutions screen appears.
- 10 Click Next to continue.
Result: The How To Reach Us screen appears.
- 11 Click Next to continue.
Result: The Windows 95 Solutions screen appears.
- 12 Click Next to continue.
Result: The Registration screen appears.
- 13 Click Skip.
Result: You are asked if you want to view the README file now.
- 14 Click No.
Result: You are prompted to restart the computer.
- 15 Select No, I will restart my computer later, and then click Finish.
Result: pcANYWHERE32 setup terminates.

To start pcANYWHERE32 for the first time

- 1 Click Start > Programs > pcANYWHERE32 > pcANYWHERE.
Result: The Smart Setup Wizard window appears, and you are prompted for the modem device.
- 2 Ensure that the Sportster 28800-33600 External modem is selected.
- 3 Click Next.
Result: The system prompts you to select the network device.
- 4 Ensure that only TCP/IP is selected, and then click Next.
Result: The system prompts you to select a port.
- 5 Ensure that you select COM1, and then click Finish.
Result: The pcANYWHERE32 window appears.

To set the video mode

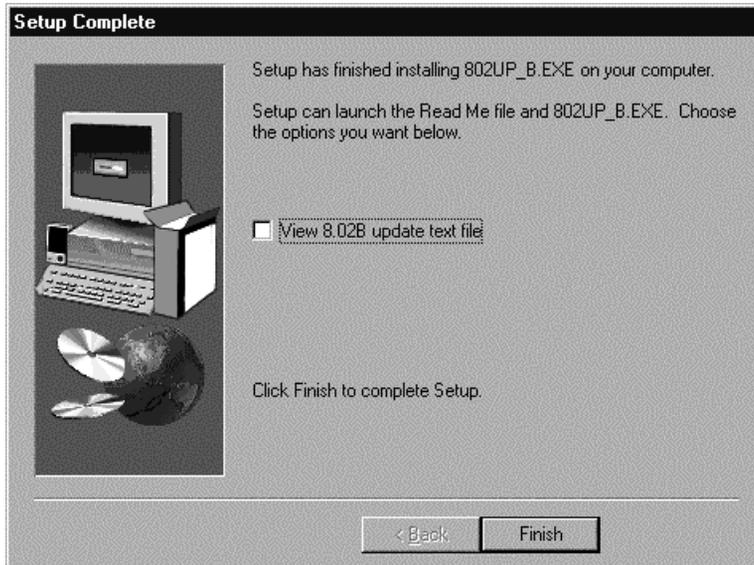
- 1 From the File menu, select Application Options.
Result: The Application Options dialog box appears.
- 2 Click the Host Operations tab.
- 3 In the Video mode selection drop-down list, select Default — Accelerator Enabled, then click Apply
- 4 Click OK to close the window.
Result: The pcANYWHERE32 window appears.
- 5 To finish the installation, on the pcANYWHERE32 window, click File > Exit.
- 6 If you performed the installation from the CD-ROM drive, remove the CD-ROM from the drive.

pcANYWHERE patch installation

Note: The pcANYWHERE32 patches are located on the CallPilot server CD in the following directory: platform\default\nortel\data\PCANYW_1.

- 1 Install the 802up_a Patch. From the CallPilot server CD, run platform\default\nortel\data\PCANYW_1\802up_a\disk1\setup.exe.
- 2 Double-click the setup.exe icon.
Result: The Welcome window appears.
- 3 Click Next.
Result: The Start Copying Files window shows the path for copying files.
- 4 Click Next.
Result: Setup copies files to the directories, and then the Setup complete window appears.
- 5 Select No, I will restart my computer later, and then click Finish.
Note: Do not restart the computer.
- 6 Install the 802up_b Patch. You can find the setup.exe file for this patch on the CallPilot server CD in the following directory: platform\default\nortel\data\PCANYW_1\802up_b\setup.exe.

- 7 Double-click setup.exe.
Result: The Welcome window appears.
- 8 Click Next.
Result: The Start Copying Files window appears, showing the path for copying files.
- 9 Click Next.
Result: Setup copies files to the directories, and then the Setup Complete window appears.
- 10 Select No, I will restart my computer later.
- 11 If you see the following screen, ensure that the check box is unchecked, and then click Finish.



- 12 Restart the computer by clicking Start > Shutdown. Select Restart the Computer, and then click OK.

To set the pcANYWHERE32 service to Automatic

- 1 Click Start > Settings > Control Panel.
- 2 Double-click Services.

- 3 Scroll to pcANYWHERE Host Service, and highlight the service.
- 4 Click Startup.
Result: The Service dialog box appears.
- 5 In the Startup Type area, select Automatic.
- 6 Click OK.
- 7 Close the Services window, and exit the Control Panel.

What's next?

Install the CallPilot server software.

Installing CallPilot server software

Introduction

This section describes the steps required to install CallPilot software on a CallPilot server that is already loaded with the Windows NT 4.0 operating system and the device drivers required by CallPilot.

Requirements

- CallPilot 1.07 Server CD
- CallPilot 1.07 PEP CD
- CallPilot 1.07 Language CD
- a server powered up, with Windows NT 4.0, service pack 5, and all the device drivers installed
- the current password for the Administrator account (This password was set during the installation of Windows NT.)

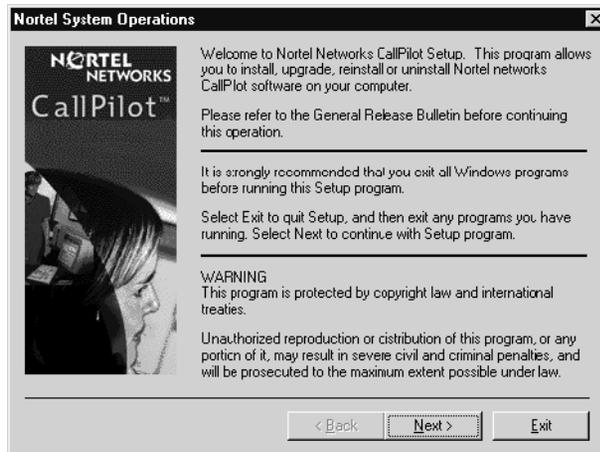
ATTENTION

During an installation, there are stages during which the setup program performs automatic installation steps between setup windows. Do not close or click on any windows that appear during these steps unless you are prompted. Wait for the next wizard setup window before you use the mouse or keyboard.

To install the CallPilot server software

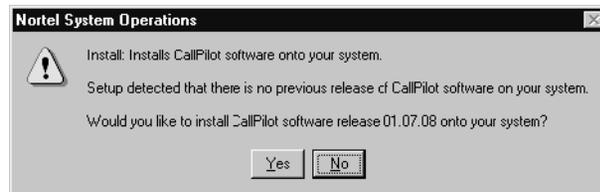
- 1 Insert the CallPilot 1.07 Server CD into the CD-ROM drive and launch Windows NT Explorer.
- 2 Click the CD-ROM drive, and then double-click setup to start the CallPilot installation.

Result: The Nortel System Operations window appears.



- 3 Click Next.

Result: You are asked to confirm the installation of CallPilot files onto your PC.



- 4 Click Yes.

Result: You are prompted to start the platform setting procedure.



- 5 If the server is a 200i, 702t, or a 1001rp, click Yes to perform the platform setup from CD.

Result: The Platform Type Information Test Application window appears.

```
1. Set the platform type
2. Retrieve the platform type
3. Exit

> _
```

- 6 Type 1 to set the platform type and press Enter.

Result: The system prompts you to identify the machine class.

```
Select the machine class:
1. TRP
2. IPE
3. Unknown

>
```

- 7 Type 1 for the 702t or the 1001rp.

Type 2 for the 200i.

Result: The system prompts you to identify the machine type.

```
Select the machine type:
1. Tower
2. Rack
3. IPE
4. Unknown

>
```

- 8 Type 1 for the 702t.

Type 2 for the 1001rp.

Type **3** for the 200i.

Result: The system prompts you to identify the platform series.

```
Select the platform series:
1. 200
2. 300
3. 700
4. 701
5. 702
6. 1000
7. 1001
8. 1002
9. Unknown
>
```

- 9 Type the number that identifies your server's model number. Press Enter.

Result: The Select the backplane type prompt appears.

```
Select the backplane type:
1. Active
2. Passive
3. Unknown
>
```

- 10 Type **1** for the 200i or the 702t.

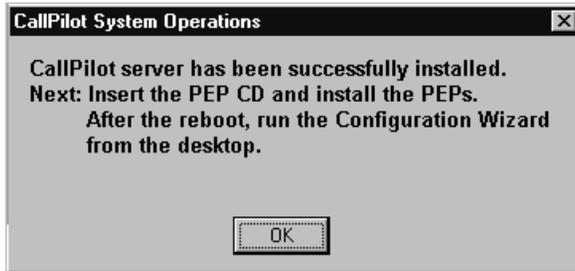
Type **2** for the 1001rp.

Result: The Nortel System Operations window appears and shows the current platform settings based on your responses.

- 11 If the settings are correct, click Yes to initiate the installation. Otherwise, click No to rerun the platform setting procedure.

- 12 The installation setup process runs automatically (taking 15 to 30 minutes). A series of messages appear to indicate the items that are being installed (for example, backup/restore, MMFS).

Result: When installation is complete, the following prompt window appears:



- 13 Remove the Server CD and insert the CallPilot 1.07 PEP CD. Click OK.

What's next?

Install any required PEPs.

Installing PEPs

Introduction

For an initial installation of CallPilot, the Performance Enhancement Packages (PEPs) are provided on a CD.

If you are using this procedure for a CallPilot system that is up and running, new PEPs are issued on the NIC web site at <http://www.nortelnetworks.com/prd/nic>.

You require a password to access this site.



CAUTION

Risk of system problems

For specific PEP installation instructions, refer to the readme files that are in the PEP CD root directory and in the folder for each PEP package. In many cases, PEPs must be uninstalled and installed in a specific order. The readme files provide these instructions. When the readme files instruct you to uninstall or install PEPs, refer to the procedures in this section.

ATTENTION

If your CallPilot system is up and running, Nortel Networks recommends that you perform a system backup before you install a new PEP.

See the *Monitoring and Security for the Administrator* guide for more information on performing a backup.

Identifying the PEPs

PEPs are labeled on the CD in the following format:

NMxxyyzzPwwwQ

where	
xyyyzz	is the release level (for example, 010707).
P	can be R for a restricted PEP, D for a diagnostic PEP, or G for a general PEP.
www	is the PEP number for the release. The range is from 001 to 999.
Q	indicates the platform type (for example, S denotes a PEP for the server).

Readme files

Readme files are provided in the following locations on the PEP CD:

- the root directory on the PEP CD
This readme file provides a general description of the PEP packages and general PEP install and uninstall instructions.
- in each PEP package folder
These readme files provide a list of all the PEPs in that package, and specific PEP install and uninstall instructions.
- in each PEP folder
These readme files describe the purpose of that PEP and might provide some PEP installation instruction.

To install a PEP package

- 1 Ensure that you are logged on to the server where you are going to begin PEP installation. Use a logon account that has administrative privileges (for example, administrator).
- 2 Insert the CallPilot 1.07 PEP CD.

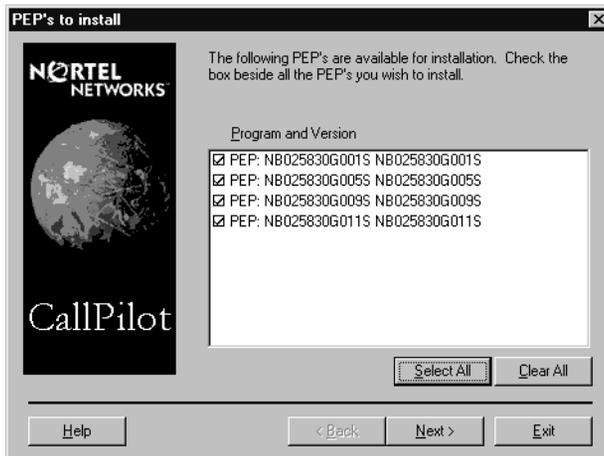
- 3 Read the readme files that are in the PEP CD root directory and in the folder for each PEP package for specific uninstallation or installation instructions, or both.
- 4 Double-click runme.exe.

Result: Setup examines the system, and the PEP's to install window appears.

ATTENTION

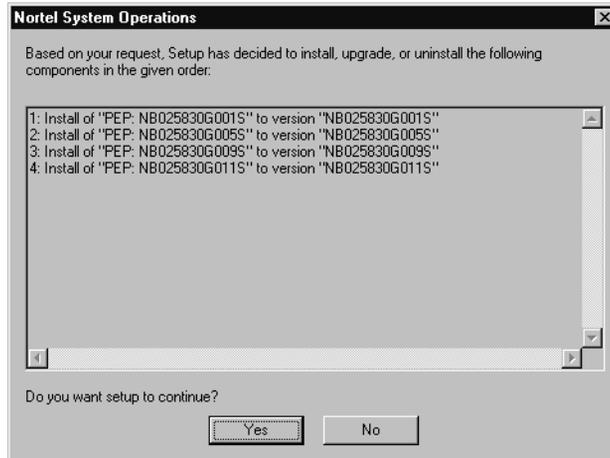
It can take 5 to 20 minutes for the PEPs to install window to appear, depending on the number of PEPs and the system configuration. In the meantime, a gray box might appear while the window is loading. Do not use the mouse or keyboard during this time.

Note: The following example is for illustration purposes only, and might not reflect what appears on your system:



- 5 Select the PEPs to install, and then click Next. If you are uncertain about which PEPs to install, refer to the Readme file located in the root directory of the CD.

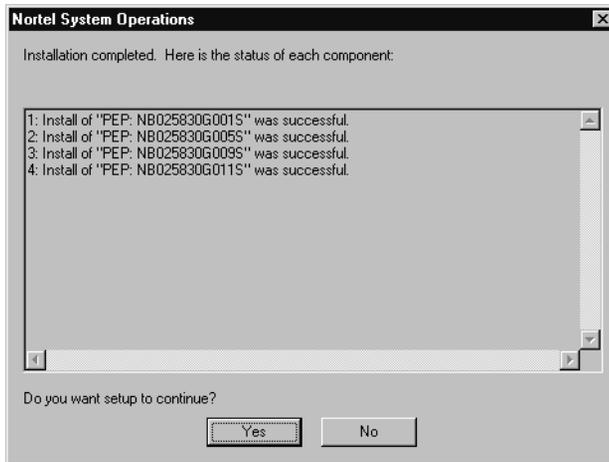
Result: The Nortel System Operations window appears and lists all components in the order in which they will be installed.



- 6 Click Yes to continue.

Result: The system automatically shuts down all services and the PEPs are installed. A summary of the installation appears, showing the success or failure of each PEP operation.

Note: CallPilot automatically removes obsolete PEPs when you install new PEPs.



- 7 Click Yes to complete the procedure.

Result: The program ends.

- 8 Repeat this procedure for other PEP packages. A reboot is required after installing PEPs.

To uninstall a PEP package

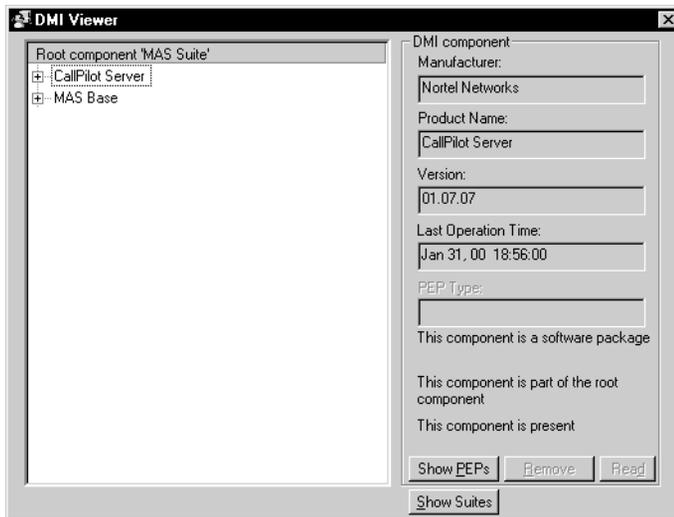
CallPilot automatically removes obsolete PEPs when you install new PEPs. However, there can be times when you want to uninstall a PEP yourself.

Use the DMI Viewer on the server to view or uninstall server PEPs. Access the DMI Viewers by clicking Start > Programs > CallPilot > System Utilities > PEP Maintenance Utility.

To uninstall PEPs on the server, follow these steps.

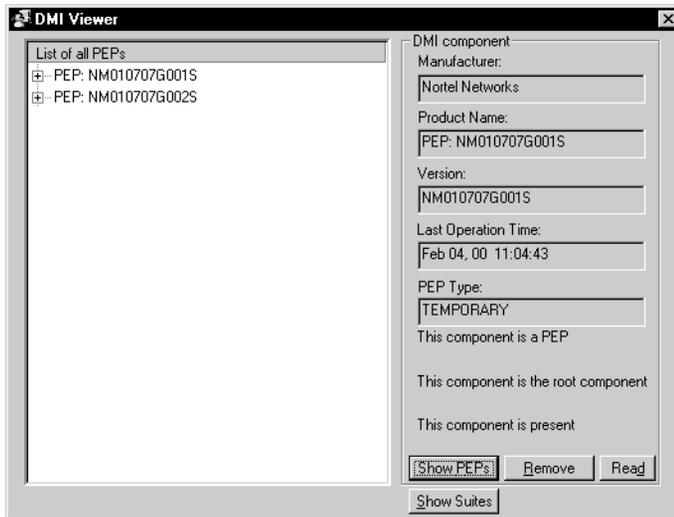
- 1 Log on to the server where you are going to begin the PEP uninstall. Use a logon account that has administrative privileges (for example, Administrator).
- 2 Open the DMI Viewer.

The DMI Viewer window appears. The following example might not reflect exactly what appears on your system:



- 3 To view a list of all PEPs, click Show PEPs.

Result: A list of all PEPs appears.



- 4 Select the PEP you want to uninstall. You can select multiple PEPs to uninstall in one operation by using the Ctrl key. The prefix PEP identifies PEPs.
- 5 Click Remove.
Result: The system prompts you to confirm this choice.
- 6 Click Yes.
Result: The system automatically shuts down all services and uninstalls the selected PEPs. When the uninstall is finished, the system automatically restarts all services.
Note: After you uninstall a PEP, the PEP is still visible in the list of components until you restart DMI Viewer.
- 7 When you are finished, close the DMI Viewer window.

What's next?

IF	THEN
you are installing a new CallPilot system	continue with the CallPilot server Configuration Wizard, which is described in Part 3 of this binder.
you are recovering from a hard drive failure	continue with the recovery steps outlined in the General Release Bulletin.

Chapter 7

Upgrading CallPilot server software

In this chapter

Pre-upgrade checklist	242
Preparing for the upgrade	247
Upgrading from 1.0 or 1.06 to 1.07	251

Pre-upgrade checklist

Introduction

This section provides an upgrade readiness checklist that should be performed before attempting the upgrade at the customer site. This enables you to

- avoid significant lost time and costs
- significantly reduce system downtime resulting from upgrade problems that might have been prevented

A summary of the upgrade readiness checks includes the following steps:

- Ensure dial-up networking can be established with the CallPilot server.
- Ensure a pcANYWHERE32 session can be established with the CallPilot server.
- Ensure the MMFS is less than 90 percent full.
- Check if the customer has recorded customized prompts.
- Check Meridian 1 for required software, feature packages, and patches.
- Check system information, such as keycode and serial number.
- Check for “critical” PEPs that have been issued since the release of the last 1.07 build.

If one of these readiness checks fails, the failure should be corrected before attempting the upgrade again. Details of the readiness checks follow.

To ensure a dial-up networking session can be established with CallPilot

If the PC is not on an IP network connected to the CallPilot server, establish a connection using Dial-Up Networking.

- 1 Click Start > Programs > Accessories > Dial-Up Networking.
- 2 Double-click the MAS icon.

If the icon is unavailable, create a MAS connection profile. See “Creating the MAS connection profile” on page 470 of the *CallPilot 1.0 Maintenance and Diagnostics Guide*.

- 3 When prompted, enter the Windows NT logon ID and password.
- 4 Wait until the connection is established.

To ensure a pcANYWHERE32 session can be established with CallPilot

If pcANYWHERE32 is not functioning prior to the upgrade, the upgrade will not change this. If the upgrade is performed and a problem occurs, remote support access is not possible.

Do not attempt an upgrade to CallPilot 1.07 until pcANYWHERE32 is functioning.

Given a dial-up networking session has been established, establish a pcANYWHERE32 connection to the CallPilot server:

- 1 Click Start > Programs > pcANYWHERE32 > pcANYWHERE.
- 2 Double-click the remote control icon for the server.
- 3 If the icon is unavailable, create a server connection profile. See “To create a remote control connection icon” on page 470 of the *CallPilot 1.0 Maintenance and Diagnostics Guide*.
- 4 When prompted, enter the pcANYWHERE32 logon ID and password.

If a pcANYWHERE32 session cannot be established, open a ticket with Nortel Networks CTS. You require pcANYWHERE32 access for remote support.

Ensure MMFS volume on Disk 1 is less than 90 percent full

Use the administrative client to check that the MMFS volume on Disk 1 (drive D) is less than 90 percent full. Do not proceed with the upgrade if the MMFS volume on Disk 1 (drive D) is greater than 90 percent full.

If the MMFS volume is greater than 90 percent full, then the upgrade of the system to the latest release of the voice prompts might fail.

To find out how much space is used on each volume, follow these steps:

- 1 On the Administrative client, select SMI > System Administration > System Performance Monitoring. Double-click Reporter Download Schedule.

Result: The system displays the “Select the drive for the local OM database” dialog box.

- 2 Click OK to continue.
- 3 From the Reporter Download Schedule window, press Download Now.

Note: If Nortel Communicator is not running, the system prompts you to start the Communicator. Click Yes to continue.

- 4 Select an interval for the OM collection period and click OK. A smaller interval downloads more quickly.

Result: The system downloads the Operational Measurements data from the server to the client PC.

- 5 When the OM download is complete, click Save.

- 6 To run the system reports, select Start > Programs > MAS Reporter > Reports. The default password for Reporter is “password.” You might need to change the password if you have not already done so.

- 7 Select your system name > Reports. Double-click the System folder and double-click Multimedia File System Usage Monitor Report.

- 8 Specify an interval.

- 9 Click OK.

Result: A report appears that shows the amount of text and voice space used for each of the volumes on the system.

- 10 Exit Reporter.

Check if custom prompts have been recorded

Use the administrative client to check if custom prompts have been recorded.

View the prompts in the System Prompts Customization main window by selecting one of the following paths.

For 1.0 systems

Nortel SMI > Meridian Application Server > CallPilot > System Prompts Customization.

For 1.06 systems

Nortel SMI > Meridian Application Server > Messaging > System Prompts Customization.

If one or more prompts are custom, then archive the custom prompts by selecting one of the following paths.

For 1.0 systems

Nortel SMI > Meridian Application Server > CallPilot > Archive & Restore > Archive Manager

For 1.06 systems

Nortel SMI > Meridian Application Server > Messaging > Archive & Restore > Archive Manager

After the upgrade to 1.07, the custom prompts can be restored on the system from the archived copy.

Ensure the Meridian 1 switch has required patches

Check the Meridian 1 patches against the requirements stated in Part 3, Chapter 3. If the required patches are not present on the Meridian 1, do not proceed with an upgrade until the Meridian 1 switch is ready. Without the required patches on the Meridian 1, ring-no-answer and other issues can result.

Checking system information

To locate information about your system that you might need for the upgrade, click Start > Programs > CallPilot 1.0 (or 1.06) Server > CallPilot System Information. Ensure that the

- Security Device ID (Sec. Dev. ID) on the 1.07 keycode label matches the CallPilot serial number that appears on the CallPilot System Information dialog box. If these two items do not match, your Nortel Networks

customer support representative must generate a new keycode so you can upgrade your system.

- feature limits displayed on the 1.07 keycode label are greater than or equal to the feature limits displayed on the CallPilot System Information dialog box.

Features cannot be reduced. For example, if you currently have three voice prompt languages installed on your system, you cannot reduce the number of languages to two.

Check for critical PEPs that have been issued since 1.07 was released

Check the NIC web site at <http://www.nortelnetworks.com/prd/nic> (Products > CallPilot) for any additional PEPs that might have been made available since the manufacture of the PEP CD. If critical PEPs are available, apply them immediately after installing the PEPs from the PEP CD.

Note: The NIC web site is a secure site and requires a user name and a password to log on. If you do not currently have an account, you must apply for one prior to entry. Be advised that it might take three to five business days for your account request to be processed.

Preparing for the upgrade

Introduction

Use the procedures in this section to upgrade to a new release of CallPilot software. Upgrading involves replacing the CallPilot software with a higher numbered release.

You can upgrade:

- from a previous release (1.0 or 1.06)
- from a previous release (1.0 or 1.06) after performing an expansion
- from a previous release (1.0 or 1.06) at the same time as performing an expansion

Note: You cannot downgrade to a previous version of CallPilot software.

Timing

The upgrade process takes approximately 60 minutes.

Requirements

- a 1.07 keycode
- CallPilot 1.07 Server CD
- CallPilot 1.07 PEP CD
- CallPilot 1.07 Language CD
- a copy of the latest General Release Bulletin (GRB). It is important that you review this document for special instructions before starting the upgrade.
- a CallPilot mailbox, a telephone set, and the phone number of the customer's IVF Messaging application to check that CallPilot is operational after the upgrade
- if the customer has the fax or speech recognition options, a fax machine and the phone numbers for Express Fax Messaging, Speech Activated Messaging, or both

Upgrade checklist

Step	✓
Review the pre-upgrade checklist on page 242 .	
Disable all DSP and DS30 channels. Refer to “To disable all DSP and DS30 channels from the Administrative PC” on page 249 for more information on performing this step.	
Have on hand a 1.07 keycode and serial number. Check that the keycode and serial number are valid by following the steps listed in “Checking system information” on page 245 .	
Obtain the current password for the Administrator or NGenSys account. If you are unfamiliar with these passwords, contact the company’s network administrator.	
Start services. See “To start services” below for more information.	
Perform a full backup. See the <i>Monitoring and Security for the Administrator</i> guide for the backup procedure.	

Before you begin

To start services

Check that all services starting with the prefix MAS and CallPilot (MCE) are up and running before starting the upgrade.

- 1 Click Start > Settings > Control Panel > Services.
- 2 Select the MAS and CallPilot (MCE) services that have not been started.
- 3 Check that the startup states are set to Automatic.
- 4 Click OK to confirm.
- 5 Exit the Services application.

To disable all DSP and DS30 channels from the Administrative PC

Before upgrading the server, disable the DSP and DS30 channels and then shut down the Administrative PC.

- 1 From the Administrative PC, click Start > Programs > CallPilot Administration Client.
Result: An Explorer window appears.
- 2 Click your server icon.
Result: The SMI Login screen appears.
- 3 Enter your user ID and password, and then click OK.
- 4 From the Administration Menu, select System Administration > Maintenance Administration.
- 5 Double-click the Channel Monitor option.
Result: The DS30 channels appear.
- 6 Highlight the channel by clicking the DS30 channel entry.
- 7 From the File menu, select Courtesy Stop.
Result: The highlighted DS30 channel changes to off-duty status and becomes disabled.
- 8 Double-click the Multimedia Monitor option.
Result: The DSP channels appear.
- 9 Highlight the channel by clicking the DSP channel entry.
- 10 From the File menu, select Courtesy Stop.
Result: The highlighted DSP channel changes to off-duty status and become disabled.
- 11 After disabling all DSP channels, dial in to CallPilot to test that the lines are disabled. You should receive a busy signal.
- 12 Shut down the Administrative PC.

If you upgrade from a networked CD

If you perform an upgrade from a networked CD, the machine that serves the CD must have Windows NT 4.0 (Server or Workstation) and be accessible over the LAN.

To prepare a keycode file

You require a new keycode to upgrade your CallPilot system. This keycode should be different from the keycode supplied with your initial CallPilot system.

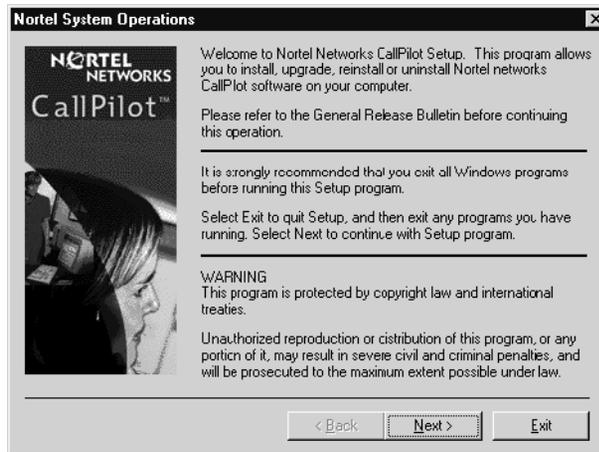
You can either manually enter the keycode or read it from a file. To prepare the file, follow these steps:

- 1** Open a document in a text-editing application (such as Notepad). The keycode is supplied by Nortel Networks, and consists of 7 sets of 4 alphanumeric characters.
- 2** Type the keycode into the file, placing a space between each set of characters.
- 3** Save the file as a *.kc document.

Upgrading from 1.0 or 1.06 to 1.07

To upgrade to a newer release

- 1 Log on to the server using an account with local administrative privileges (for example, Administrator or NGenSys).
- 2 Close all applications except for pcANYWHERE32, acdproxy, Sybase, and the MASTraceWindow.
- 3 Disable all DSP and DS30 channels using the administrative PC. Refer to [“To disable all DSP and DS30 channels from the Administrative PC” on page 249](#) for instructions on how to stop these channels.
- 4 If you are upgrading from CallPilot 1.0 or 1.06, install the latest SCSI driver and then install service pack 5 before you start the upgrade. Refer to [“Installing the updated SCSI driver” on page 220](#) and [“Installing service packs” on page 216](#).
- 5 Insert the 1.07 Server CD in the CD drive.
- 6 From the Windows taskbar, click Start > Run.
- 7 Click Browse.
Result: A Browse window appears.
- 8 Select the CD-ROM drive and double-click setup.exe.
- 9 Click OK from the Run window.
Result: The Nortel System Operation window appears.



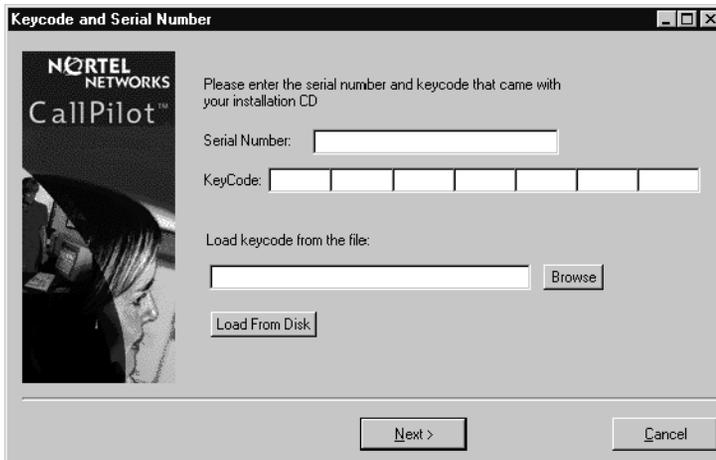
- 10 Click Next to continue with upgrade.

Result: Setup examines the system and then prompts you to confirm the upgrade.



- 11 Click Yes to start the upgrade.

Result: The Keycode and Serial Number window appears.

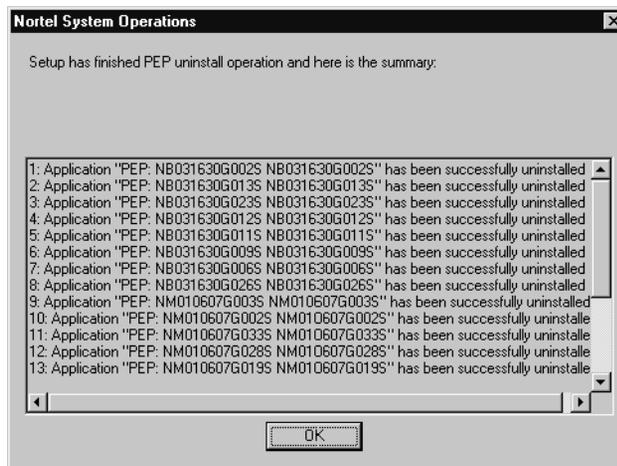


- 12 Enter the new 1.07 keycode, and then click Next.

Result: The Features Verification window appears.

- 13 Click Next.

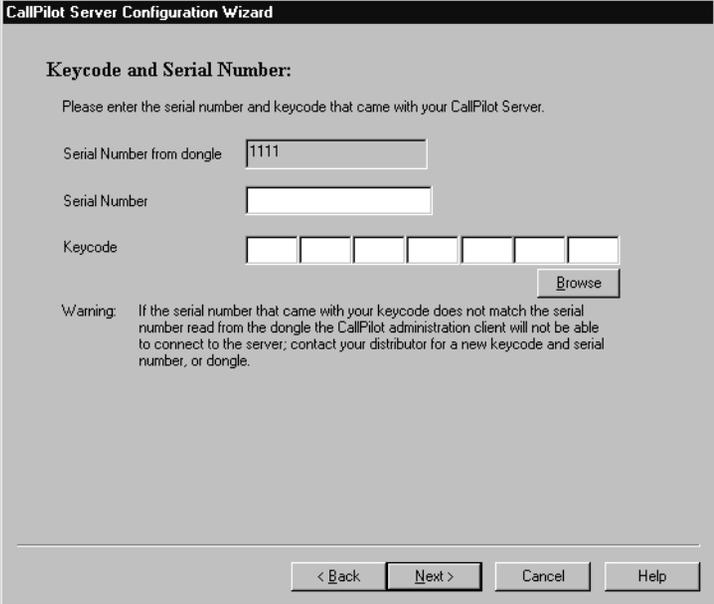
Result: Setup automatically uninstalls previous PEPs as part of the upgrade procedure. After all PEPs have been uninstalled, a dialog box appears, showing the PEPs that have been uninstalled.



- 14 Click OK to continue.
Result: You are prompted to confirm the platform settings for your system. If the settings are correct, click Yes. Otherwise, click No.
- 15 The upgrade process runs automatically. A series of messages appear to indicate the items that are being updated (for example, backup/restore, MMFS).
- 16 After the upgrade is complete, setup prompts you to install PEPs.
- 17 Click Yes to continue. Remove the Server CD and insert the PEP CD.
Refer to ["Installing PEPs" on page 232](#) for more information on installing PEPs.
- 18 After all the PEPs are installed, restart the server.
- 19 After the server restart, run the Configuration Wizard by clicking Start > Programs > CallPilot > Configuration Wizard.

To run the Configuration Wizard

- 20 Leave all current values in the Configuration Wizard dialog boxes as they are until you reach the Keycode and Serial Number dialog box shown here.



CallPilot Server Configuration Wizard

Keycode and Serial Number:

Please enter the serial number and keycode that came with your CallPilot Server.

Serial Number from dongle

Serial Number

Keycode

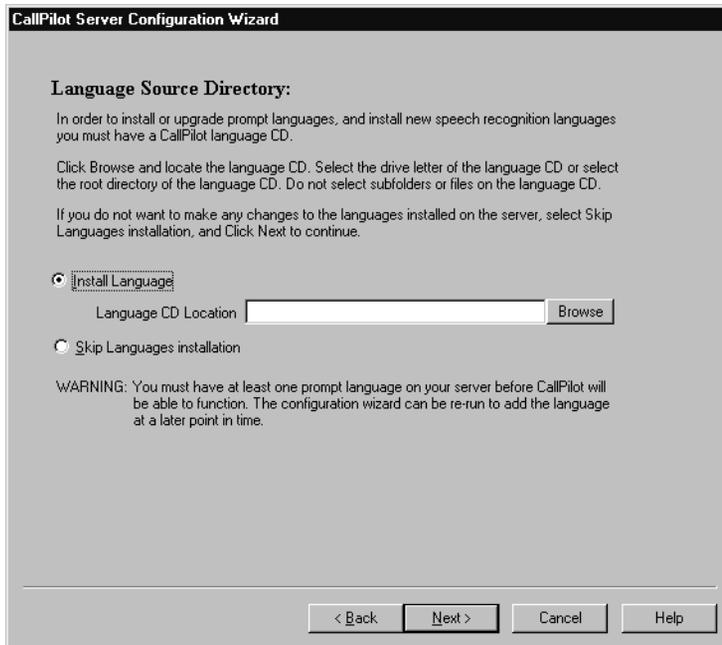
Warning: If the serial number that came with your keycode does not match the serial number read from the dongle the CallPilot administration client will not be able to connect to the server; contact your distributor for a new keycode and serial number, or dongle.

- 21** Enter the serial number you received with the CallPilot keycode in the Serial Number box. This number should match the prefilled “Serial Number from dongle” box.

If the serial number contains letters, use lowercase.

Note: The Serial Number from dongle box is prefilled with data read from the software feature key.

- 22** The keycode is prefilled with the value entered in step [12](#). Verify that the keycode is correct.
- 23** Click Next through the remaining Configuration Wizard dialog boxes until the following dialog box.



24 Remove the PEP CD and insert the CallPilot 1.07 Language CD.

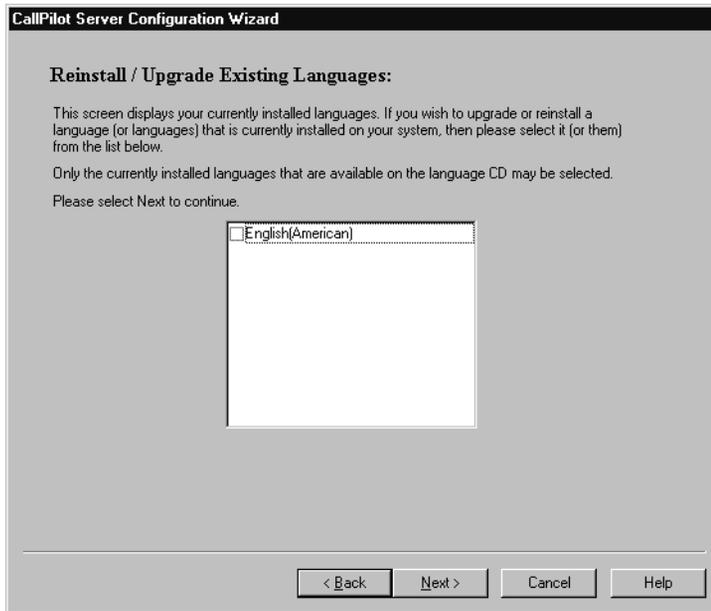
25 Select Install Language.

26 Click Browse and select the CD-ROM drive.

Note: Select the root level of the CD-ROM. Do not select subfolders or files on the CD. For example, if the CD-ROM is drive E:, select E:.

27 Click Next.

Result: The following dialog box appears, which lists all currently installed languages:

**28** Select the language you want to upgrade and click Next.

Result: The Add Prompt Language dialog box appears.

29 To add a language, select the prompt language check box. Click Next.

Result: The Primary and Secondary Languages dialog box appears.

30 Click Next to accept the currently assigned primary and secondary languages.

Result: The Speech Recognition Languages dialog box appears.

31 Click Next to skip this dialog box.

Result: The language installation dialog boxes are completed.

32 Click Next through the remaining Configuration Wizard dialog boxes until the Ready to Configure dialog box appears.

- 33 Select Apply the current configuration, and then click Next.
Result: The configuration changes are applied to the server. This is followed by a prompt to restart to CallPilot.
Note: The configuration changes take approximately 10 minutes, plus an additional 10 minutes for each language you are reinstalling.
- 34 Click Finish, and then click Cancel to bypass the restart.

To enable the DSP channels

- 35 From the Administrative PC, click Start > Programs > CallPilot Administration Client.
Result: An Explorer window appears.
- 36 Double-click your server icon.
Result: The SMI Login screen appears.
- 37 Enter your user ID and password, and then click OK.
- 38 From the Administration Menu, double-click Multimedia Monitor.
Result: The DSP channels appear.
- 39 If the DSP channels are not enabled, skip to step 40. Otherwise, skip to step 42 to check the DS30 channels.
- 40 Highlight the channel by clicking the DSP channel entry.
- 41 From the File menu, select Start Channels.
Result: The highlighted DSP channel changes to online status and becomes enabled.
- 42 Double-click the Channel Monitor option.
Result: The DS30 channels appear.
- 43 If the DS30 channels are not enabled, then skip to step 44. Otherwise, skip to step 46 to test the system.
- 44 Highlight the channel by clicking the DS30 channel entry.
- 45 From the File menu, select Start Channels.
Result: The highlighted DS30 channel changes to online status and becomes enabled.

- 46** After disabling all DSP channels, dial in to CallPilot to test that the lines are enabled. You should receive a prompt.

What's next

Test that CallPilot can receive calls by following the procedures in Part 3, Chapter 11, "Verifying that CallPilot can receive calls."

Chapter 8

Expanding CallPilot features

In this chapter

[Expanding features](#)

[262](#)

Expanding features

Introduction

This chapter summarizes how you add features to CallPilot.

CallPilot supports feature reduction only for those channels that have been previously allocated.

Expansions

The following types of features can be expanded:

- channels
- languages
- number of networking sites
- number of MPUs
- availability of features such as AppBuilderFax and Networking

To add features

- 1 If you are adding channels (installing additional MPC-8 cards), see [“To add an MPC-8 card” on page 178](#).
- 2 Install the software feature key if a new one was shipped to you. See [“Replacing the Nortel Networks software feature key” on page 169](#).
- 3 Have your new keycode and serial number available. When you purchase additional features or system capacity, you receive a new keycode and serial number.
- 4 Run the Configuration Wizard (refer to Part 3, Chapter 6, “Configuring the server software—common dialog boxes for all switch types”). In the Configuration Wizard, ensure you follow these steps:
 - a. Enter the new keycode and serial number.

- b.** Allocate new channels (if you have added channels).

ATTENTION

New channels are not automatically allocated. They must be allocated manually in the Configuration Wizard.

- 5** Configure additional channels on the switch and in the Configuration Wizard.

Chapter 9

Uninstalling CallPilot server software

In this chapter

[Uninstalling CallPilot](#)

[266](#)

Uninstalling CallPilot

Introduction

This section provides instructions to help you uninstall the CallPilot server software.

Uninstallation of CallPilot removes the software completely from the server. It also removes all CallPilot registry entries, linguistic information, and all links to CallPilot from the server database.

ATTENTION

Once you start the uninstallation process, you cannot restore CallPilot if you decide to cancel the process. You must perform a new installation to load CallPilot onto the server.

What is removed during uninstallation of CallPilot

Uninstallation of CallPilot software removes the following:

- CallPilot entries in the Windows NT Registry
- all CallPilot entries in the server database
- CallPilot files

Before you begin

Obtain the current password for the Administrator account.

To uninstall CallPilot server software

- 1 To uninstall CallPilot, click Start > Programs > CallPilot > Uninstall.
Result: You are prompted to confirm the uninstallation.
- 2 Click Yes to uninstall CallPilot.
Result: The uninstall process runs automatically.

- 3 After the CallPilot uninstall is complete, you are prompted to reboot the server.
- 4 Click Yes to reboot the server.
Result: You are asked to confirm the reboot.
- 5 Click OK to reboot.

Chapter 10

Reinstalling CallPilot server software

In this chapter

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Reinstalling the software (hard drive is functioning)

Introduction

If the hard drive is functioning but the CallPilot software appears to be corrupted, you can reinstall the CallPilot server software. This might correct the problem. If it does not correct the problem, then you need to rebuild the hard drive (see [Chapter 11, “Recovering from a hard drive failure or corrupted software”](#)).

The reinstallation procedure copies CallPilot program files from the CallPilot Server CD-ROM to a CallPilot system running the same version of CallPilot software. This process does not affect system or user data. It recovers most CallPilot program files, but does not recover the operating system, service pack, or, in the case of non-Meridian 1 systems, switch drivers.

Requirements

- a CallPilot Server CD-ROM that has the same version of CallPilot that is running on the CallPilot server
- a CallPilot Language CD
- a CallPilot PEP CD

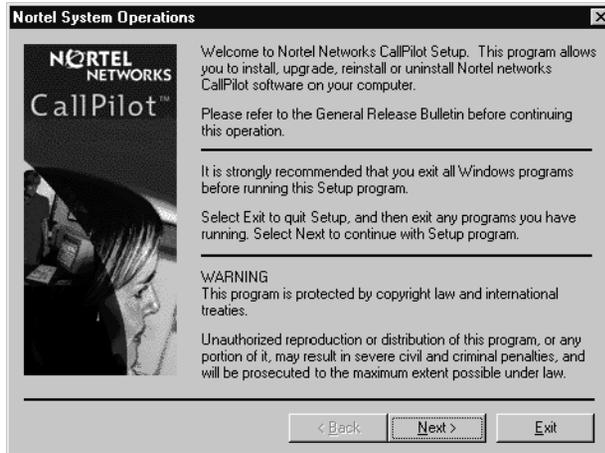
To reinstall the CallPilot server software

Note: During the reinstall, the following message might appear. If this message appears, click OK and continue with the reinstall.



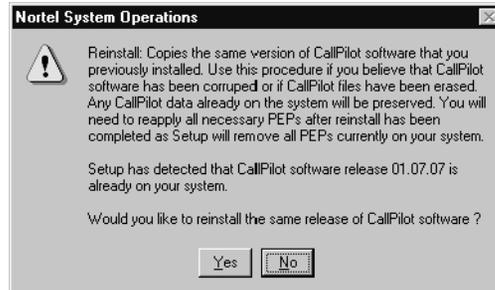
- 1 Log on to the CallPilot server.
- 2 Insert the CallPilot Server CD-ROM.
- 3 Run setup.exe from the root directory of the CallPilot Server CD-ROM.

Result: The following window appears:



- 4 Click Next.

Result: Setup examines the system and displays the following window:



- 5 Click Yes to reinstall the software.

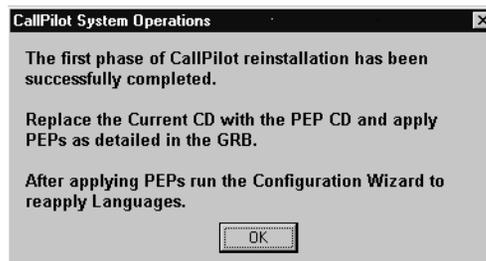
Result: You are asked to confirm the platform setting for the server.



- 6 Click Yes to begin the reinstallation of CallPilot software.

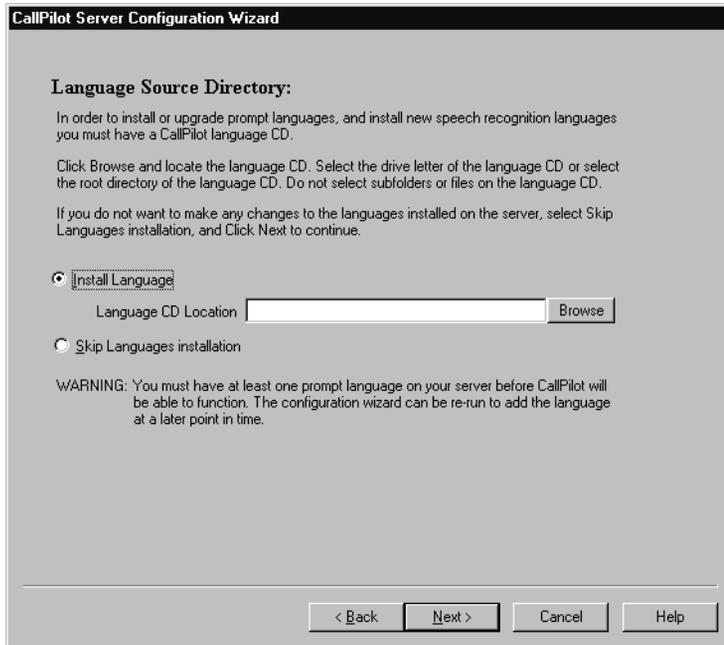
Result: Files are copied to the server as part of the reinstall procedure. This can take up to 10 minutes. A series of messages appear to indicate the items that are being reinstalled (for example, backup/restore, MMFS).

After the reinstall is complete, you are prompted to reinstall PEPs (if any were present on CallPilot).



- 7 Remove the Server CD and insert the CallPilot 1.07 PEP CD. Click OK. Refer to ["Installing PEPs" on page 232](#) for more information on reinstalling PEPs.
- 8 After all PEPs are reinstalled, restart the server when prompted.
- 9 After CallPilot has restarted, run the Configuration Wizard (see Part 3, Chapter 6, "Configuring the server software—common dialog boxes for all switch types").

- 10 Leave all current values in the Configuration Wizard dialog boxes as they are until you reach the Language Source Directory dialog box shown here:

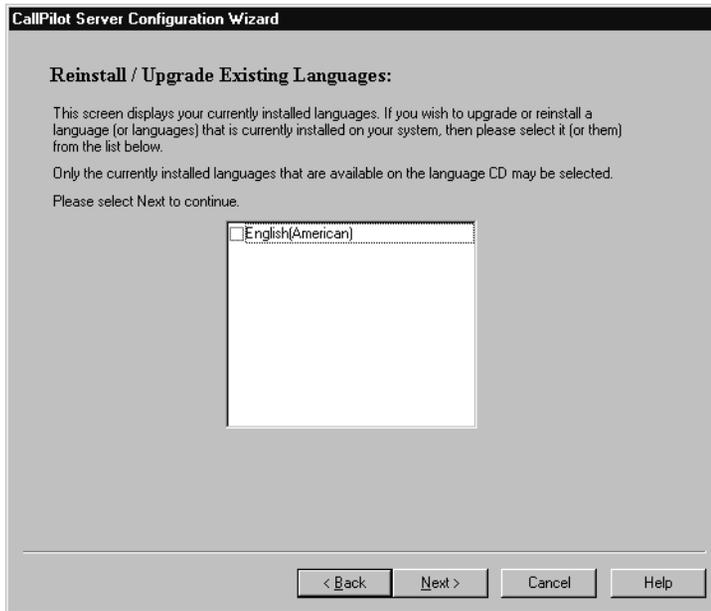


- 11 Insert the CallPilot Language CD.
- 12 Select Install Language.
- 13 Click Browse and select the CD-ROM drive.

Note: Select the root level of the CD-ROM. Do not select subfolders or files on the CD. For example, if the CD-ROM is drive Z:, select Z:.

14 Click Next.

Result: The following dialog box appears, which lists all currently installed languages:

**15** Select all the languages listed and click Next.

Result: The Add Prompt Language dialog box appears.

16 Click Next to skip this dialog box.

Result: The Primary and Secondary Languages dialog box appears.

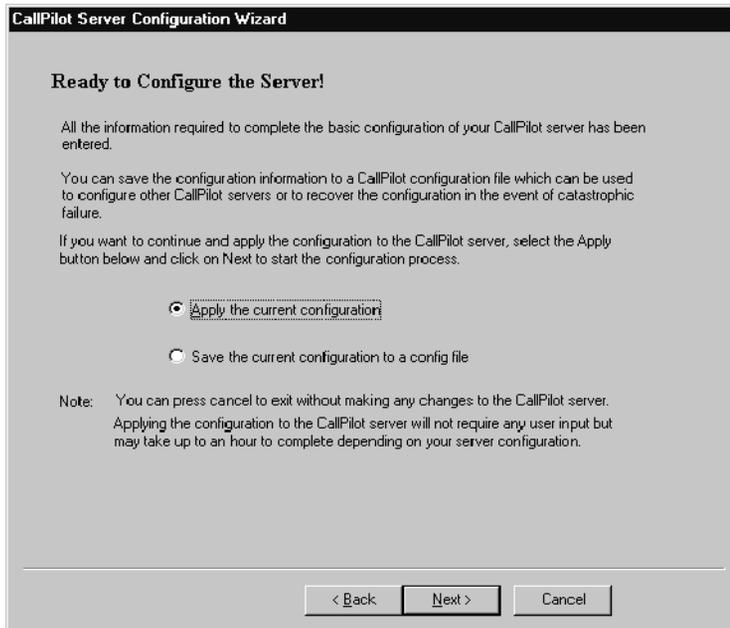
17 Click Next to accept the currently assigned primary and secondary languages.

Result: The Speech Recognition Languages dialog box appears.

18 Click Next to skip this dialog box.

Result: The language installation dialog boxes are completed.

- 19 Click Next through the remaining Configuration Wizard dialog boxes until you reach the following dialog box:



- 20 Select Apply the current configuration, and click Next.

Result: The configuration changes are applied to the server. This is followed by a prompt to restart to CallPilot.

Note: The configuration changes take approximately 10 minutes, plus an additional 10 minutes for each language you are reinstalling.

- 21 Click Finish, then click OK to restart CallPilot.

Result: The CallPilot software reinstallation is done.

- 22 Test your CallPilot channels as described in Part 4 of this Installation binder.

Reinstalling languages

Introduction

If the language prompts are not functioning, then you can reinstall them to try and fix the problem.

Requirements

- a CallPilot Language CD

To reinstall languages

- 1 Log on to the CallPilot server.
- 2 Run the Configuration Wizard as described in Part 3, Chapter 6, “Configuring the server software—common dialog boxes for all switch types”.

Chapter 11

Recovering from a hard drive failure or corrupted software

In this chapter

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Overview

Introduction

If the CallPilot server hard drive crashes or if software becomes corrupt, then you must either reinstall the software or rebuild the hard drive.

ATTENTION

Contact your distributor if a hard drive recovery is required.

Reinstalling languages

If only the language prompts are not functioning, then you can reinstall languages to try to fix the problem. See [“Reinstalling languages” on page 276](#).

Recovering from corrupted software (hard drive is functioning)

If the hard drive is functioning but the CallPilot software appears to be corrupted, you can reinstall the CallPilot server software. This might correct the problem. See [“Reinstalling the software \(hard drive is functioning\)” on page 270](#). If it does not correct the problem, then you need to rebuild the hard drive.

Recovering a CallPilot system from a hard drive failure

If this is a CallPilot system that is already in operation and backup tapes are available, then contact your distributor to perform the recovery procedure. Distributors should refer to the latest General Release Bulletin on the Nortel Networks web site at <http://www.nortelnetworks.com/nic> for the latest procedure.

If this is a new CallPilot system and no backup tapes are available (for example, the system failure occurs during CallPilot installation), then see Part 1, Chapter 3, “Installing server software for recovery purposes.” This procedure erases all existing data on the server.

Recovering from a hard drive failure

Introduction

Contact your distributor if a hard drive fails. Your distributor has access to a utility that is required to restore data from a backup tape.

ATTENTION

The recovery procedure requires access to a utility that is not available to customers. Distributors should refer to the latest General Release Bulletin on the Nortel Networks web site at <http://www.nortelnetworks.com/nic> for the latest procedure.

Requirements

- all software media that came with the CallPilot system
- a system backup

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CallPilot

Installation and Configuration

Part 5: 200i Server Maintenance and Diagnostics

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