Dell™ PowerEdge™ SC1425 Systems Installation and Troubleshooting Guide

Notes, Notices, and Cautions

NOTE: A NOTE indicates important information that helps you make better use of your computer.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

Abbreviations and Acronyms

For a complete list of abbreviations and acronyms, see the Glossary in your *User's Guide*.

Jumpers, Switches, and Connectors

Dell™ PowerEdge™ SC1425 Systems Installation and Troubleshooting Guide

- Jumpers—A General Explanation
- System Board Jumpers
- System Board Connectors
- Riser Board Connectors
- Disabling a Forgotten Password

This section provides specific information about the system jumpers. It also provides some basic information on jumpers and switches and describes the connectors on the various boards in the system.

Jumpers—A General Explanation

Jumpers provide a convenient and reversible way of reconfiguring the circuitry on a printed circuit board. When reconfiguring the system, you may need to change jumper settings on circuit boards or drives.

Jumpers

Jumpers are small blocks on a circuit board with two or more pins emerging from them. Plastic plugs containing a wire fit down over the pins. The wire connects the pins and creates a circuit. To change a jumper setting, pull the plug off its pin(s) and carefully fit it down onto the pin(s) indicated. Figure A-1 shows an example of a jumper.

Figure A-1. Example Jumper
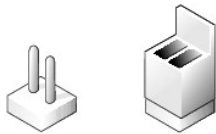
A jumper is referred to as open or unjumpered when the plug is pushed down over only one pin or if there is no plug at all. When the plug is pushed down over two pins, the jumper is referred to as jumpered. The jumper setting is often shown in text as two numbers, such as 1–2. The number 1 is printed on the circuit board with a triangle so that you can identify each pin number based on the location of pin 1.

Figure A-2 shows the location and default settings of the server-module jumper blocks. See Table A-1 for the designations, default settings, and functions of the jumpers.

System Board Jumpers

Figure A-2 shows the location of the configuration jumpers on the system board. Table A-1 lists the jumper settings.

Figure A-2. System Board Jumpers
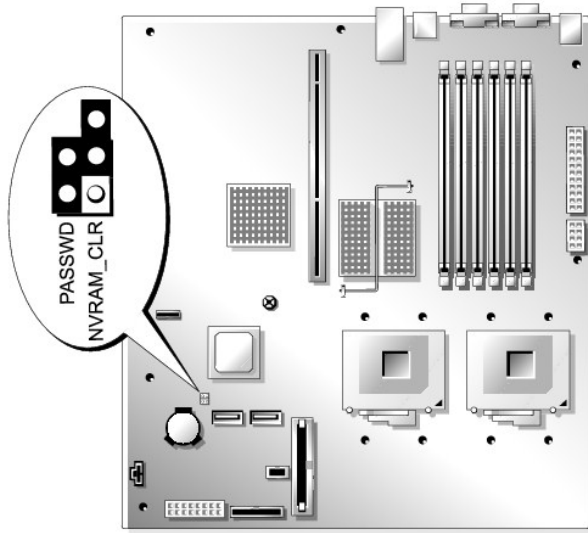
Table A-**1. System Board Jumper Settings**

Jumper	Setting	Description
PASSWD	(default)	The password feature is enabled.
		The password feature is disabled.
NVRAM_CLR	(default)	The configuration settings in NVRAM are retained at system boot.
		The configuration settings in NVRAM are cleared at next system boot.
jumpered unjumpered		

System Board Connectors

See <u>Figure A-3</u> and <u>Table A-2</u> for the location and description of the system board connectors.

Figure A-3. System Board Connectors
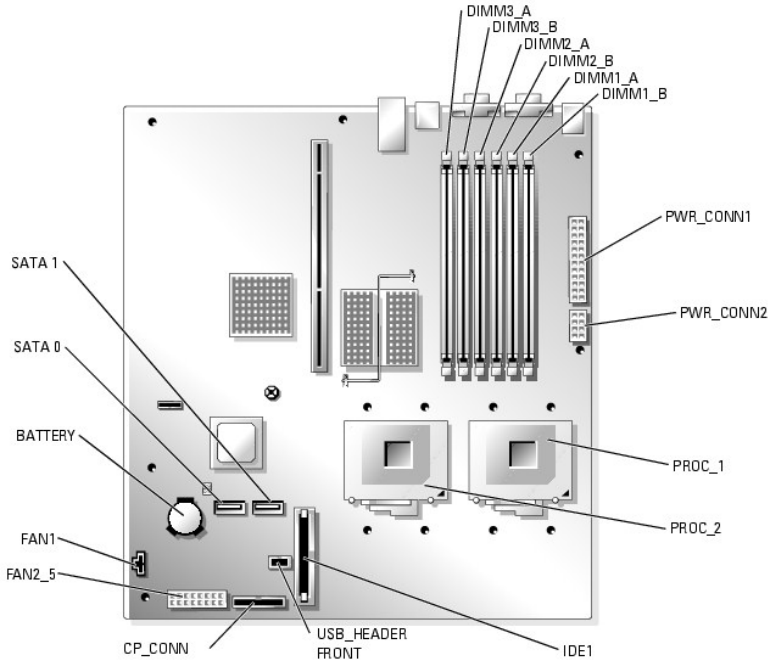
Table A-2. System Board Connectors

Connector	Description
BATTERY	Connector for the 3.0 V coin battery
CP_CONN	Control panel connector
DIMM*n_ x*	Memory module connector (6)
FAN_*n*	FAN1 is the connector for the expansion card fan module, and FAN2-5 is the connector for the processor and memory fan modules (4)
IDE1	IDE device connector
PROC_*n*	Processor connector (2)
PWR_CONN*n*	Power supply connector (2)
SATA_*n*	SATA device connectors
USB_HEADER FRONT	USB device connector

Riser Board Connectors

See <u>Figure A-4</u> for the location and description of the riser card connectors.

Figure A-4. Standard PCI-X Riser Card
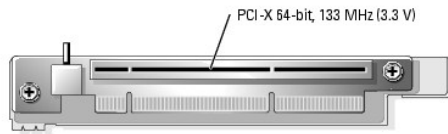
Disabling a Forgotten Password

The system's software security features include a system password and a setup password, which are discussed in detail in "Using the System Setup Program" in your *User's Guide*. The password jumper enables these password features or disables them and clears any password(s) currently in use.

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1. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.

2. Open the system. See "Opening the System" in "Troubleshooting Your System."

3. Remove the password jumper plug.

   See Figure A-2 to locate the password jumper on the system board.

   If necessary, remove the riser card insulator to improve access to the jumper. See "Removing the Riser Card" in "Installing System Components."

4. If you removed the riser card insulator in step 3, reinstall it now. See "Installing the Riser Card" in "Installing System Components."

5. Close the system. See "Closing the System" in "Troubleshooting Your System."

6. Reconnect the system to the electrical outlet, and turn on the system.

   The existing passwords are not disabled (erased) until the system boots with the password jumper plug removed. However, before you assign a new system and/or setup password, you must install the jumper plug.

   ![NOTE icon] **NOTE:** If you assign a new system and/or setup password with the jumper plug still removed, the system disables the new password(s) the next time it boots.

7. Turn off the system, including any attached peripherals, and disconnect the system from the electrical outlet.

8. Open the system. See "Opening the System" in "Troubleshooting Your System."

9. Install the password jumper plug.

   See Figure A-2 to locate the password jumper on the system board.

   If necessary, remove the riser card insulator to improve access to the jumper, then reinstall the riser card insulator.

10. Close the system, reconnect the system to the electrical outlet, and turn on the system. See "Closing the System" in "Troubleshooting Your System."

11. Assign a new system and/or setup password.

    To assign a new password using the System Setup program, see "Using the System Setup Program" in your *User's Guide.*

I/O Connectors

Dell™ PowerEdge™ SC1425 Systems Installation and Troubleshooting Guide

- Serial Connector
- PS/2-Compatible Keyboard and Mouse Connectors
- Video Connector
- USB Connectors
- Integrated NIC Connectors
- Network Cable Requirements

I/O connectors are the gateways that the system uses to communicate with external devices, such as a keyboard, mouse, printer, or monitor. This section describes the various connectors on your system. If you reconfigure the hardware connected to the system, you may also need the pin number and signal information for these connectors. Figure B-1 illustrates the connectors on the system.

Figure B-1. I/O Connectors
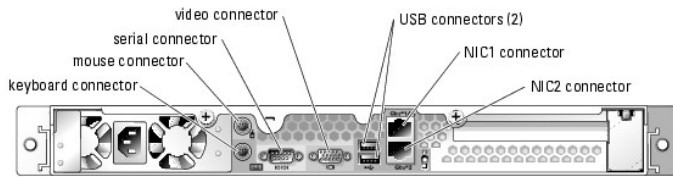
Table B-1 shows the icons used to label the connectors on the system.

Table B-1. I/O Connector Icons

Icon	Connector
IOIOI	Serial connector
⊸⊡	Mouse connector
⬚	Keyboard connector
⬚	Video connector
⊷	USB connector
⬚	NIC connector

Serial Connector

Serial connectors support devices such as external modems, printers, and mice that require serial data transmission. The serial connector is also used by the BMC to provide remote access to the system. The serial connector uses a 9-pin D-subminiature connector.

Serial Connector Autoconfiguration

The default designation of the integrated serial connector is COM1. When you add an expansion card containing a serial connector that has the same designation as the integrated connector, the system's autoconfiguration feature remaps (reassigns) the integrated serial connector to the next available designation. Both the new and the remapped COM connectors share the same IRQ setting. COM1 and COM3 share IRQ4, while COM2 and COM4 share IRQ3.

NOTE: If two COM connectors share an IRQ setting, you may not be able to use them both at the same time. In addition, if you install one or more expansion cards with serial connectors designated as COM1 and COM3, the integrated serial connector is disabled.

Before adding a card that remaps the COM connectors, check the documentation that came with the software to make sure that the software can accommodate the new COM connector designation.

Figure B-2 illustrates the pin numbers for the serial connector and Table B-2 defines the pin assignments for the connector.

Figure B-2. Serial Connector Pin Numbers
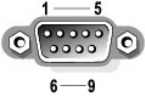
Table B-2. Serial Connector Pin Assignments

Pin	Signal	I/O	Definition
1	DCD	I	Data carrier detect
2	SIN	I	Serial input
3	SOUT	O	Serial output
4	DTR	O	Data terminal ready
5	GND	N/A	Signal ground
6	DSR	I	Data set ready
7	RTS	O	Request to send
8	CTS	I	Clear to send
9	RI	I	Ring indicator
Shell	N/A	N/A	Chassis ground

PS/2-Compatible Keyboard and Mouse Connectors

The PS/2-compatible keyboard and mouse cables attach to 6-pin, miniature DIN connectors. Figure B-3 illustrates the pin numbers for these connectors and Table B-3 defines the pin assignments for these connectors.

Figure B-3. PS/2-Compatible Keyboard and Mouse Connector Pin Numbers

Table B-3. Keyboard and Mouse Connector Pin Assignments

Pin	Signal	I/O	Definition
1	KBDATA or MFDATA	I/O	Keyboard data or mouse data
2	NC	N/A	No connection
3	GND	N/A	Signal ground
4	FVcc	N/A	Fused supply voltage
5	KBCLK or MFCLK	I/O	Keyboard clock or mouse clock
6	NC	N/A	No connection
Shell	N/A	N/A	Chassis ground

Video Connector

You can attach a VGA-compatible monitor to the system's integrated video controller using a 15-pin high-density D-subminiature connector on the system front or back panel. Figure B-4 illustrates the pin numbers for the video connector and Table B-4 defines the pin assignments for the connector.

📝 **NOTE:** Installing a video card automatically disables the system's integrated video controller.

Figure B-4. Video Connector Pin Numbers
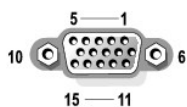
Table B-4. Video Connector Pin Assignments

Pin	Signal	I/O	Definition
1	RED	O	Red video
2	GREEN	O	Green video
3	BLUE	O	Blue video
4	NC	N/A	No connection
5–8, 10	GND	N/A	Signal ground
9	VCC	N/A	Vcc
11	NC	N/A	No connection
12	DDC data out	O	Monitor detect data
13	HSYNC	O	Horizontal synchronization
14	VSYNC	O	Vertical synchronization
15	NC	N/A	No connection

USB Connectors

The system's USB connectors support USB-compliant peripherals such as keyboards, mice, and printers and may also support USB-compliant devices such as diskette drives and optical drives. Figure B-5 illustrates the pin numbers for the USB connector and Table B-5 defines the pin assignments for the connector.

⬤ NOTICE: Do not attach a USB device or a combination of USB devices that draw a maximum current of more than 500 mA per channel or +5 V. Attaching devices that exceed this threshold may cause the USB connectors to shut down. See the documentation that accompanied the USB devices for their maximum current ratings.

Figure B-5. USB Connector Pin Numbers

Table B-5. USB Connector Pin Assignments

Pin	Signal	I/O	Definition
1	Vcc	N/A	Supply voltage
2	DATA	I	Data in
3	+DATA	O	Data out
4	GND	N/A	Signal ground

Integrated NIC Connectors

Each of the system's integrated NICs function as a separate network expansion card while providing fast communication between servers and workstations. Figure B-6 illustrates the pin numbers for the NIC connector and Table B-6 defines the pin assignments for the connectors.

Figure B-6. NIC Connector
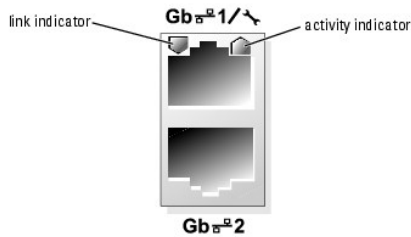
Table B-6. NIC Connector Pin Assignments

Pin	Signal	I/O	Definition

1	TD+	O	Data out (+)
2	TD−	O	Data out (−)
3	RD+	I	Data in (+)
4	NC	N/A	No connection
5	NC	N/A	No connection
6	RD−	I	Data in (−)
7	NC	N/A	No connection
8	NC	N/A	No connection

Network Cable Requirements

The NIC supports a UTP Ethernet cable equipped with a standard RJ45-compatible plug.

Observe the following cabling restrictions.

⬤ **NOTICE:** To avoid line interference, voice and data lines must be in separate sheaths.

  l   Use Category 5 or greater wiring and connectors.

  l   Do not exceed a cable run length (from a workstation to a hub) of 100 m (328 ft).

For detailed guidelines on operation of a network, see "Systems Considerations of Multi-Segment Networks" in the IEEE 802.3 standard.

Service-Only Parts Replacement Procedures

Dell™ PowerEdge™ *SC*1425 Systems Installation and Troubleshooting Guide

- ● Recommended Tools
- ● Control Panel Assembly
- ● System Board

Recommended Tools

You may need the following items to perform the procedures in this section:

- l Key to the system keylock
- l Wrist grounding strap
- l #2 Phillips screwdriver

Control Panel Assembly

Removing the Control Panel Assembly

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Open the system. See "Opening the System" in "Troubleshooting Your System."

2. Disconnect the control panel cables. See Figure C-1.

3. Using a #2 Phillips screwdriver, remove the two screws that secure the control panel assembly to the chassis. See Figure C-1.

4. Carefully lift the back of the control panel assembly to clear the chassis mounting studs, and remove the assembly from the system.

Figure C-1. Control Panel Assembly Removal

Installing the Control Panel Assembly

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1. Align the control panel assembly's mounting holes with the chassis mounting studs, and lower the assembly over the studs. See Figure C-1.

2. Using a #2 Phillips screwdriver, install the two screws that secure the control panel assembly to the chassis. See Figure C-1.

3. Connect the control panel cables. See Figure C-1.

4. Close the system. See "Closing the System" in "Troubleshooting Your System."

System Board

The system board provides interface signal routing between the system board and the two SATA hard-drive bays, the optional CD drive, and the control panel. In addition, the power supply is connected to the system board using two cables.

The system board and system board tray are removed and replaced as a single assembly.
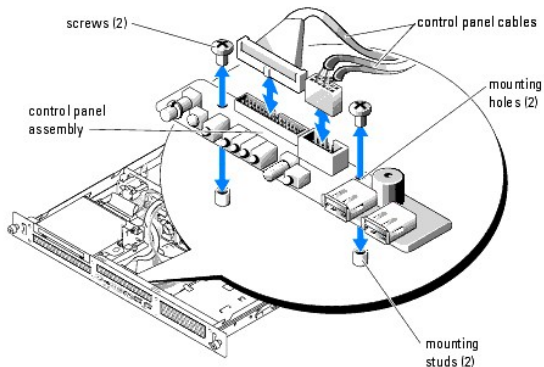
Removing the System Board Assembly

⚠️ CAUTION: **Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Open the system. See "Opening the System" in "Troubleshooting Your System."

2. Remove the cooling shroud. See "Replacing the Processor" in "Installing System Components."

3. Remove the heat sink and processor. See "Replacing the Processor" in "Installing System Components."

4. Remove the memory modules. See "Removing Memory Modules" in "Installing System Components."

    📝 NOTE: As you remove the memory modules, record the memory module socket locations to ensure proper installation.

5. If applicable, disconnect the CD drive interface cable from the system board connector IDE1. See Figure 6-1 in "Installing System Board Components."

6. Disconnect the two control-panel interface cables from the CP_CONN and USB_HEADER FRONT connectors on the system board. See Figure 6-1 in "Installing System Board Components."

7. Disconnect the hard-drive interface cables:

    a. If SCSI hard drives are installed, disconnect the interface cable from the PCI controller card.

    b. If SATA hard drives are installed, disconnect the interface cable from the SATA_0 and SATA_1 connectors on the system board. See Figure 6-1 in "Installing System Board Components."

8. Remove all PCI expansion cards installed on the riser card. See "Removing an Expansion Card" in "Installing System Components."

9. Using a #2 Phillips screwdriver, remove the two screws that secure the riser card to the system board. See "Removing the Riser Card" in "Installing System Components."

10. Disconnect the riser card from the system board card-edge connector.

11. Disconnect the two power cables from the PWR_CONN1 and PWR_CONN2 connectors on the system board. See Figure 6-1 in "Installing System Board Components."

12. Disconnect the fan cables from the FAN1 and FAN2_5 connectors on the system board. See Figure 6-1 in "Installing System Board Components."

13. Using a #2 Phillips screwdriver, remove the screw that secures the system board tray to the chassis floor. See Figure C-2.

14. Using the tab on the system board tray, slide the system board forward (toward the front of the system) and lift the assembly up and out of the chassis. See Figure C-2.

15. Lay the system board tray down on a smooth, nonconductive work surface.

Figure C-2. Removing the System Board Assembly

system board and system board tray

screw
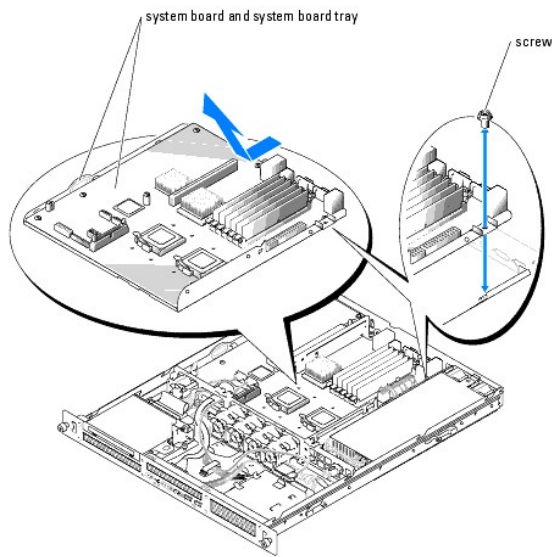
Installing the System Board Assembly

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1. Unpack the new system board assembly.

2. Align the system board tray so that the tabs on the chassis floor slide into the notches in the system board tray.

3. Slide the system board tray backward until it stops.

4. Using a #2 Phillips screwdriver, tighten the screw that secures the system board tray to the chassis. See Figure C-2.

5. Connect the fan cables to the FAN1 and FAN2_5 connectors on the system board. See Figure 6-1 in "Installing System Board Components."

6. Connect the two power cables to the PWR_CONN1 and PWR_CONN2 connectors on the system board. See Figure 6-1 in "Installing System Board Components."

7. Connect the riser card. See "Installing the Riser Card" in "Installing System Components."

8. Using a #2 Phillips screwdriver, tighten the two screws that secure the riser card to the system board.

9. Install any PCI expansion cards that you removed. See "Installing an Expansion Card" in "Installing System Components."

10. Connect the hard-drive interface cables:

    a. If SCSI hard drives are installed, connect the interface cable to the PCI controller card.

    b. If SATA hard drives are installed, connect the interface cable to the SATA_0 and SATA_1 connectors on the system board. See Figure 6-1 in "Installing System Board Components."

11. Install the processor and heat sink. See "Replacing the Processor" in "Installing System Components."

12. Install the memory modules. See "Installing Memory Modules" in "Installing System Components."

    ✎ **NOTE:** Install the memory modules as noted in step 4 of the procedure in "Removing the System Board Assembly."

13. Connect the two control-panel interface cables to the CP_CONN and USB_HEADER FRONT connectors on the system board. See Figure 6-1 in "Installing System Board Components."

14. If applicable, connect the CD drive interface cable to the IDE1 connector on the system board. See Figure 6-1 in "Installing System Board Components."

15. Install the cooling shroud. See "Replacing the Processor" in "Installing System Components."

NOTE: When installing the cooling shroud, ensure that the two tabs on the cooling shroud are inserted into the two retaining slots in the mid-chassis wall.

16. Close the system. See "Closing the System" in "Troubleshooting Your System."

Introduction

Dell™ PowerEdge™ SC1425 Systems Installation and Troubleshooting Guide

● Other Documents You May Need

Your system includes the following significant service and upgrade feature:

l   System diagnostics, which checks for hardware problems (if the system can boot)

The following system options are offered:

l   Second microprocessor
l   Additional system memory
l   Expansion-card options
l   IDE optical drive

Other Documents You May Need

⚠   The *Product Information Guide* provides important safety and regulatory information. Warranty information may be included within this document or as a separate document.

l   The *Rack Installation Guide* or *Rack Installation Instructions* included with your rack solution describes how to install your system into a rack.

l   The *Getting Started Guide* provides an overview of initially setting up your system.

l   The *User's Guide* provides information about system features and technical specifications.

l   Systems management software documentation describes the features, requirements, installation, and basic operation of the software.

l   Operating system documentation describes how to install (if necessary), configure, and use the operating system software.

l   Documentation for any components you purchased separately provides information to configure and install these options.

l   Updates are sometimes included with the system to describe changes to the system, software, and/or documentation.

   ✍   **NOTE:** Always check for updates on **support.dell.com** and read the updates first because they often supersede information in other documents.

l   Release notes or readme files may be included to provide last-minute updates to the system or documentation or advanced technical reference material intended for experienced users or technicians.

Indicators, Messages, and Codes
Dell™ PowerEdge™ SC1425 Systems Installation and Troubleshooting Guide

- Front-Panel Indicators and Features
- Back-Panel Features and Indicators
- NIC Indicators
- System Messages
- System Beep Codes

- Warning Messages
- Diagnostics Messages
- Alert Messages
- Baseboard Management Controller Messages

The system, applications, and operating systems can identify problems and alert you to them. Any of the following can indicate when the system is not operating properly:

- System indicators
- System messages
- Beep codes
- Warning messages
- Diagnostics messages
- Alert messages

This section describes each type of message, lists the possible causes, and provides steps to resolve any problems indicated by a message. The system indicators and features are illustrated in this section.

Front-Panel Indicators and Features

System Status Indicators

To remove the optional bezel and access the front panel, see "Opening the System" in "Troubleshooting Your System." Figure 2-1 shows the system's front-panel features and indicators. Table 2-1 lists the front-panel LED indicators, buttons, and connectors.

Figure 2-1. Front-Panel Features and Indicators
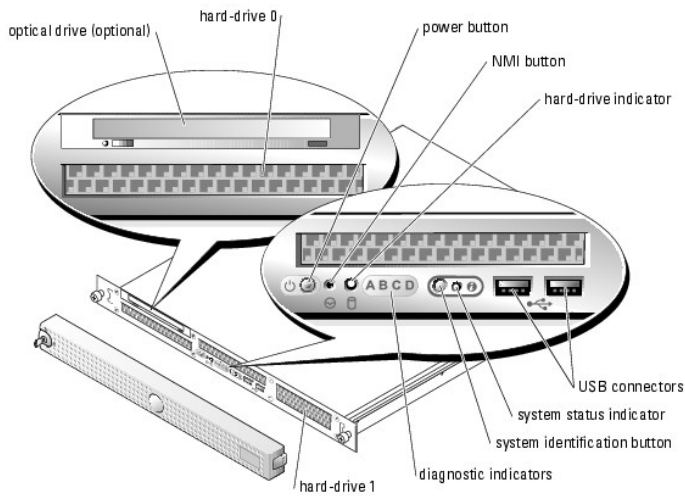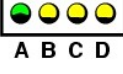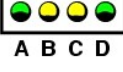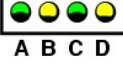
Table 2-1. Front-Panel LED Indicators, Buttons, and Connectors
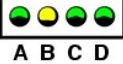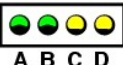
Indicator, Button, or Connector	Icon	Description
Blue/amber system status indicator		The blue system status indicator lights up during normal system operation. You can also use either the systems management software or the identification buttons located on the front and back of the system to cause this indicator to flash to identify a particular system. The amber system status indicator flashes when the system needs attention due to a system problem.

Hard-drive indicator	🛢	The green hard-drive activity indicator flashes when the SATA hard drives are in use. NOTE: It does not flash when SCSI hard drives are in use.
NMI button	↻	The NMI button is used to troubleshoot software and device driver errors when using certain operating systems. This button can be pressed using the end of a paper clip. Use this button only if directed to do so by qualified support personnel or by the operating system's documentation.
System identification button	①	The identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pushed, the blue system status indicator on the front and back blinks until one of the buttons is pushed again.
USB connectors	⇷	These connect USB 2.0-compliant devices to the system.
Power-on indicator, Power button	⏻	The power-on indicator blinks when power is available to the system, but the system is not powered on. The power button controls the DC power supply output to the system. NOTICE: If you turn off the system using the power button and the system is running an ACPI-compliant operating system, the system performs a graceful shutdown before the power is turned off. If the system is not running an ACPI-compliant operating system, the power is turned off immediately after the power button is pressed.
Diagnostic indicators (4)		The diagnostic indicators aid in diagnosing and troubleshooting the system. For more information, see Table 2-2.

Table 2-**2. Diagnostic Indicator Codes**

Code	Causes	Corrective Action
A B C D	Possible processor failure.	See "Troubleshooting the Processor" in "Troubleshooting Your System."
A B C D	Memory failure.	See "Troubleshooting System Memory" in "Troubleshooting Your System."
A B C D	Possible expansion card failure.	See "Troubleshooting Expansion Cards" in "Troubleshooting Your System."
A B C D	Possible video card failure.	See "Troubleshooting Expansion Cards" in "Troubleshooting Your System."
A B C D	Diskette drive or hard drive failure.	Ensure that the diskette drive and hard-drive are properly connected. See "Installing Drives" for information on the drives installed in your system.
A B C D	Possible USB failure.	See "Troubleshooting a USB Device" in "Troubleshooting Your System."
A B C D	No memory modules detected.	See "Troubleshooting System Memory" in "Troubleshooting Your System."
A B C D	System board failure.	See "Getting Help."
A B C D	Memory configuration error.	See "Troubleshooting System Memory" in "Troubleshooting Your System."

	Possible system board resource and/or system board hardware failure.	See "IRQ Assignment Conflicts" in "Finding Software Solution." If the problem persists, see "Getting Help."
A B C D		
A B C D	Possible expansion card failure.	See "Troubleshooting Expansion Cards" in "Troubleshooting Your System."
A B C D	Other failure.	Ensure that the diskette drive, optical drive, and hard drives are properly connected. See "Troubleshooting Your System" for the appropriate drive installed in your system. If the problem persists, see "Getting Help."
A B C D	The system is in a normal operating condition after POST.	Information only.
◯ = yellow ◯ = green ◯ = off		

Back-Panel Features and Indicators

shows the controls, indicators, and connectors located on the system's back panel.

Figure 2-2. Back-Panel Features and Indicators
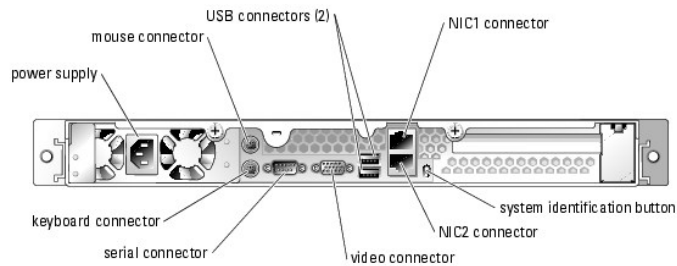
NIC Indicators

Figure 2-3. NIC Indicators
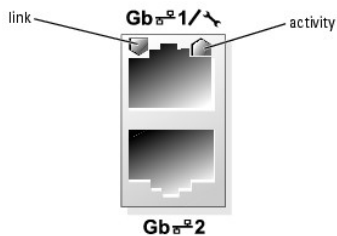
Table 2-3. NIC Indicators

Indicator Type	Indicator Code	Description
Activity	Off	When off at the same time that the link indicator is off, the NIC is not connected to the network or the NIC is disabled in the System Setup screen. See "Using the System Setup Program" in the *User's Guide*.
	Blinking	Indicates that network data is being sent or received.
Link	Off	When off at the same time that the activity indicator is off, the NIC is not connected to the network or the NIC is disabled in the System Setup screen. See "Using the System Setup Program" in the *User's Guide*.

Yellow	1000-Mbps connection
Orange	100-Mbps connection
Green	10-Mbps connection

System Messages

System messages appear on the screen during system boot to notify you of a possible problem with the system. Table 2-4 lists the system messages that can occur and the probable cause and corrective action for each message.

NOTE: If you receive a system message that is not listed in Table 2-4, check the documentation for the application that is running when the message appears or the operating system's documentation for an explanation of the message and recommended action.

Table 2-4. System Messages

Message	Causes	Corrective Actions
Alert! OS Install Mode enabled. Amount of available memory limited to 256MB	The **OS Install Mode** option in the System Setup program is set to **On**. This limits the amount of available memory to 256 MB because some operating systems will not complete installation with more than 2 GB of system memory.	After the operating system is installed, enter the System Setup program and set the **OS Install Mode** option to **Off**. See your *User's Guide* for details.
Auxiliary device failure	Loose or improperly connected mouse or keyboard cable; faulty mouse or keyboard.	Replace the mouse. If the problem persists, replace the keyboard.
BIOS Update Attempt Failed!	Remote BIOS update attempt failed.	Retry the BIOS update. If the problem persists, see "Getting Help."
BIOS MANUFACTURING MODE detected. MANUFACTURING MODE will be cleared before the next boot. System reboot required for normal operation.	Manufacture mode message.	This is an informational message; no corrective action required.
Caution! NVRAM_CLR jumper is installed on system board. Please run SETUP	NVRAM_CLR jumper is installed.	Check the System Setup configuration settings. See "Using the System Setup Program" in your *User's Guide*. Remove the NVRAM_CLR jumper. See Figure A-2 for jumper location.
CD-ROM drive not found	IDE CD-ROM drive set as Auto, no disk.	If the system does not have a CD drive, disable the IDE CD-ROM Controller option in the System Setup program. See "Using the System Setup program" in the *User's Guide*.
Data error	The diskette drive or hard drive cannot read the data.	For the operating system, run the appropriate utility to check the file structure of the diskette drive or hard drive. See your operating system documentation for information on running these utilities.
Decreasing available memory	One or more memory modules might be faulty or improperly seated.	Reinstall the memory modules and, if necessary, replace them. See "System Memory" in "Installing System Components." See "Troubleshooting System Memory" in "Troubleshooting Your System."
Error: Incorrect memory configuration. Ensure memory in slots DIMM1_A and DIMM1_B, DIMM2_A and DIMM2_B, and DIMM3_A and DIMM3_B match identically in size, speed, and rank.	The installed memory are not matched pairs.	See "General Memory Module Installation Guidelines" in "Installing System Components."
Error: Incorrect memory configuration. Memory slots DIMM3_A and DIMM3_B only support single rank DIMMS. Remove the dual rank DIMMs from slots DIMM3_A and DIMM3_B.	The memory modules that are installed in DIMM3_A and DIMM3_B are dual ranked.	See "General Memory Module Installation Guidelines" in "Installing System Components." Reinstall the memory modules with the correct memory modules. See "System Memory" in "Installing System Components."
Error: Incorrect memory configuration. Move DIMM3_A and DIMM3_B into DIMM2_A and DIMM2_B.	The memory modules are not properly installed. The memory modules must be contiguous.	See "General Memory Module Installation Guidelines" in "Installing System Components." Reinstall the memory modules with the correct memory modules. See "System Memory" in "Installing System Components."
Error: Incorrect memory configuration. Swap the DIMMs in slots DIMM1_A and DIMM1_B with DIMMs in slots DIMM2_A and DIMM2_B.	The memory modules are not properly installed. If you are mixing dual ranked and single ranked memory modules, the dual ranked modules must be installed in DIMM1_A and DIMM1_B.	See "General Memory Module Installation Guidelines" in "Installing System Components." Reinstall the memory modules with the correct memory modules. See "System Memory" in "Installing System Components."
Error: Incorrect memory configuration.	Dual ranked memory modules are installed in bank 1 and 2.	See "General Memory Module Installation Guidelines" in "Installing System Components."

Memory slots DIMM3_A and DIMM3_B must be empty if Dual Rank memory DIMMs are in slots DIMM2_A and DIMM2_B.		Remove the memory modules in bank 3. See "System Memory" in "Installing System Components."
Gate A20 failure	Faulty keyboard controller (faulty system board).	See "Getting Help."
General failure	The operating system is unable to carry out the command.	This message is usually followed by specific information. Take the appropriate action to resolve the problem.
Hard-disk configuration error Hard-disk controller failure Hard-disk drive failure	The hard drive failed initialization.	Run the system diagnostics. See "Running the System Diagnostics." See "Troubleshooting a SATA Hard Drive" and "Troubleshooting SCSI Hard Drives" in "Troubleshooting Your System."
Insert bootable media	The operating system is trying to boot from a nonbootable diskette or CD.	Insert a bootable diskette or CD.
Invalid configuration information - please run SETUP program	The system configuration information does not match the hardware configuration; faulty system battery; removing NVRAM_CLR jumper during POST.	Enter the System Setup program and correct the system configuration information. See your *User's Guide* for details.
Keyboard Controller Failure KeyBoard Stuck Key Failure Keyboard failure	A cable or connector might be loose, or the keyboard or keyboard/mouse controller might be faulty.	See "Troubleshooting the Keyboard" in "Troubleshooting Your System."
Memory address line failure at *address*, read *value* expecting *value*	A memory module might be faulty or improperly seated.	Reinstall the memory modules and, if necessary, replace them. See "Troubleshooting System Memory" in "Troubleshooting Your System."
Memory allocation error	The software you are attempting to run is conflicting with the operating system, another program, or a utility.	Turn off the system, wait 30 seconds, restart the system, and then try to run the program again. If the error message appears again, see the software documentation for additional troubleshooting suggestions.
Memory data line failure at *address*, read *value* expecting *value* Memory double word logic failure at *address*, read *value* expecting *value* Memory odd/even logic failure at *address*, read *value* expecting *value* Memory write/read failure at *address*, read *value* expecting *value*	A memory module might be faulty or improperly seated.	Reinstall the memory modules and, if necessary, replace them. See "Troubleshooting System Memory" in "Troubleshooting Your System."
Memory parity interrupt at *address*	Improperly seated or faulty DIMMs.	See "Troubleshooting System Memory" in "Troubleshooting Your System."
Memory tests terminated by keystroke	POST memory test terminated by pressing the spacebar.	See "Troubleshooting System Memory" in "Troubleshooting Your System."
No boot device available	The system cannot find the diskette or hard drive.	If the diskette drive is your boot device, ensure that a bootable disk is in the drive. If the hard drive is your boot device, ensure that the hard drive is installed, properly seated, and partitioned as a boot device. Enter the System Setup program and verify the boot sequence information. See your *User's Guide* for details.
No boot sector on hard-disk drive	The system configuration information in the System Setup program might be incorrect.	Enter the System Setup program and verify the system configuration information for the hard drive. See your *User's Guide* for details. If the message continues to appear after verifying the information in the System Setup program, the operating system might have been corrupted. Reinstall the operating system. See your operating system documentation for reinstallation information.
No timer tick interrupt	A chip on the system board might be malfunctioning.	Run the system diagnostics. See "Running the System Diagnostics."
Non-system disk or disk error	The diskette in the diskette drive or your hard drive does not have a bootable operating system installed on it.	Replace the diskette with one that has a bootable operating system or remove the diskette, and then restart the system. If the problem persists, see the appropriate hard drive troubleshooting procedure: "Troubleshooting a SATA Hard Drive" and "Troubleshooting SCSI Hard Drives" in "Troubleshooting Your System." If the problem persists, see "Getting Help."
Not a boot diskette	The operating system is trying to boot from a diskette that does not have a bootable operating system installed on it.	Insert a diskette that has a bootable operating system.
PCI BIOS failed to install	PCI device BIOS (Option ROM) checksum failure is detected during shadowing.	Ensure that all appropriate cables are securely connected to the expansion cards. If the problem persists, see "Troubleshooting Expansion Cards" in "Troubleshooting Your System."

PCI Express training error	Faulty PCI Express controller.	See "Getting Help."
Plug & Play Configuration error	Plug & Play Configuration error is detected during PCI device scan.	Install the NVRAM_CLR jumper and reboot the system. See Figure A-2 for jumper location. If the problem persists, see "Troubleshooting Expansion Cards" in "Troubleshooting Your System."
Read fault	The operating system cannot read from the diskette or hard drive, the system could not find a particular sector on the disk, or the requested sector is defective.	See "Troubleshooting a SATA Hard Drive" and "Troubleshooting SCSI Hard Drives" in "Troubleshooting Your System."
Requested sector not found	The operating system cannot read from the diskette or hard drive, the system could not find a particular sector on the disk, or the requested sector is defective.	See "Troubleshooting a USB Device" or "Troubleshooting a SATA Hard Drive" and "Troubleshooting SCSI Hard Drives" in "Troubleshooting Your System."
Reset failed	The disk reset operation failed.	See "Troubleshooting a USB Device" or "Troubleshooting a SATA Hard Drive" and "Troubleshooting SCSI Hard Drives" in "Troubleshooting Your System."
SATA port 0/1 hard disk drive configuration error	Faulty drive. Parameters failure.	Ensure that the hard drive cables are properly connected. See "Troubleshooting a SATA Hard Drive" in "Troubleshooting Your System."
SATA port 0/1 hard disk drive failure	Faulty drive. INT13 call failure from the drive.	Ensure that the hard drive cables are properly connected. See "Troubleshooting a SATA Hard Drive" in "Troubleshooting Your System."
SATA port 0/1 hard disk drive auto-sensing error	Faulty drive. INT13 call failure from the drive.	Ensure that the hard drive cables are properly connected. See "Troubleshooting a SATA Hard Drive" in "Troubleshooting Your System."
SATA Port0 hard disk drive not found	SATA Port0 drive set as Auto, no disk.	Run the System Setup program to correct the settings. See "Using the System Setup Program" in your *User's Guide*.
SATA Port1 hard disk drive not found	SATA Port1 drive set as Auto, no disk.	Run the System Setup program to correct the settings. See "Using the System Setup Program" in your *User's Guide*.
Sector not found Seek error	A faulty diskette drive or hard drive.	See "Troubleshooting a USB Device" or "Troubleshooting a SATA Hard Drive" and "Troubleshooting SCSI Hard Drives" in "Troubleshooting Your System."
Shutdown failure	A chip on the system board might be malfunctioning.	Run the system diagnostics. See "Running the System Diagnostics."
Time-of-day clock stopped	The battery might be faulty.	See "Troubleshooting the System Battery" in "Troubleshooting Your System."
Time-of-day not set	The time or date stored in the System Setup program does not match the system clock.	Enter the System Setup program and correct the **Date** and **Time** options. See your *User's Guide* for details. If the problem persists, see "Troubleshooting the System Battery" in "Troubleshooting Your System."
Timer chip counter 2 failed	A chip on the system board might be malfunctioning.	Run the system diagnostics. See "Running the System Diagnostics."
Unexpected interrupt in protected mode	Improperly seated DIMMs or faulty keyboard/mouse controller chip.	Ensure that all memory modules are properly installed. See "General Memory Module Installation Guidelines" in "Installing System Components." If the problem persists, see "Troubleshooting System Memory" in "Troubleshooting Your System."
Unsupported CPU stepping detected	Invalid CPU stepping is detected.	Install a supported microprocessor combination. See "Processor" in "Installing System Components."
Unsupported CPU combination detected	Mismatched CPUs are detected.	Install a supported microprocessor combination. See "Processor" in "Installing System Components."
Utility partition not available	Utility partition is not available on the hard disk	Create a utility partition on the boot hard drive. See "Using the Dell™ OpenManage™ Server Assistant" in your *User's Guide*.
Warning! No micro code update loaded for processor 0	Micro code update failed.	Update the BIOS firmware. See "Getting Help."
Write fault	The operating system cannot write to the diskette drive or hard drive.	See "Troubleshooting a USB Device" or "Troubleshooting a SATA Hard Drive" and "Troubleshooting SCSI Hard Drives" in "Troubleshooting Your System."
Write fault on selected drive	The operating system cannot write to the diskette drive or hard drive.	See "Troubleshooting a USB Device" or "Troubleshooting a SATA Hard Drive" and "Troubleshooting SCSI Hard Drives" in "Troubleshooting Your System."
x:\ is not accessible. The device is not ready	The diskette drive cannot read the diskette.	Insert a diskette into the drive and try again.

System Beep Codes

If an error that cannot be reported on the screen occurs during POST, the system may emit a series of beeps that identifies the problem.

NOTE: If the system boots without a keyboard, mouse, or monitor attached, the system does not issue beep codes related to those peripherals.

If a beep code is emitted, write down the series of beeps and then look it up in Table 2-5. If you are unable to resolve the problem by looking up the meaning of the beep code, use system diagnostics to identify the possible cause. If you are still unable to resolve the problem, see "Getting Help."

Table 2-5. System Beep Codes

Code	Cause	Corrective Action
1-1-2	CPU register test failure	See "Troubleshooting the Processors" in "Troubleshooting Your System."
1-1-3	CMOS write/read failure; faulty system board	Faulty system board. See "Getting Help."
1-1-4	BIOS error	Reflash the BIOS.
1-2-1	Programmable interval-timer failure; faulty system board	Faulty system board. See "Getting Help."
1-2-2	DMA initialization failure	See "Troubleshooting System Memory" in "Troubleshooting Your System."
1-2-3	DMA page register write/read failure	
1-3-1	Main-memory refresh verification failure	
1-3-2	No memory installed	
1-3-3	Chip or data line failure in the first 64 KB of main memory	
1-3-4	Odd/even logic failure in the first 64 KB of main memory	
1-4-1	Address line failure in the first 64 KB of main memory	
1-4-2	Parity failure in the first 64 KB of main memory	
1-4-3	Fail-safe timer test failure	
1-4-4	Software NMI port test failure	
2-1-1 through 2-4-4	Bit failure in the first 64 KB of main memory	
3-1-1	Slave DMA-register failure	Faulty system board. See "Getting Help."
3-1-2	Master DMA-register failure	
3-1-3	Master interrupt-mask register failure	
3-1-4	Slave interrupt-mask register failure	
3-2-2	Interrupt vector loading failure	
3-2-4	Keyboard-controller test failure	
3-3-1	CMOS failure	
3-3-2	System configuration check failure	
3-3-3	Keyboard controller not detected	
3-3-4	Video memory test failure	
3-4-1	Screen initialization failure	
3-4-2	Screen-retrace test failure	
3-4-3	Video ROM search failure	
4-2-1	No timer tick	Faulty system board. See "Getting Help."
4-2-2	Shutdown test failure	
4-2-3	Gate A20 failure	
4-2-4	Unexpected interrupt in protected mode	See "Troubleshooting Expansion Cards" in "Troubleshooting Your System."
4-3-1	Improperly installed or faulty memory modules	See "Troubleshooting System Memory" in "Troubleshooting Your System."
4-3-2	No memory modules installed in the first memory module connector	Install a memory module in the first memory module connector. See "System Memory" in "Installing System Components."
4-3-3	Faulty system board	Faulty system board. See "Getting Help."
4-3-4	Time-of-day clock stopped	See "Troubleshooting System Memory" in "Troubleshooting Your System." If the problem persists, see "Getting Help."
4-4-1	Super I/O chip failure; faulty system board	Faulty system board. See "Getting Help."
4-4-4	Cache test failure; faulty processor	See "Troubleshooting the Processors" in "Troubleshooting Your System."

Warning Messages

A warning message alerts you to a possible problem and prompts you to respond before the system continues a task. For example, before you format a diskette, a message will warn you that you may lose all data on the diskette. Warning messages usually interrupt the task and require you to respond by typing y (yes) or n (no).

NOTE: Warning messages are generated by either the application or the operating system. For more information, see "Finding Software Solutions" and the documentation that accompanied the operating system or application.

Diagnostics Messages

When you run system diagnostics, an error message may result. Diagnostic error messages are not covered in this section. Record the message on a copy of the Diagnostics Checklist in "Getting Help," and then follow the instructions in that section for obtaining technical assistance.

Alert Messages

Systems management software generates alert messages for your system. Alert messages include information, status, warning, and failure messages for drive, temperature, fan, and power conditions.

Baseboard Management Controller Messages

The Baseboard Management Controller (BMC) enables you to configure, monitor, and recover systems remotely. BMC uses the system's serial port and integrated NIC1 to support fault logging and SNMP alerting.

NOTE: If the integrated network controller is used in an Ether Channel team or link aggregation team, the BMC management traffic will not function properly. For more information about network teaming, see the documentation for the network controller.

For additional information on using BMC, see the documentation for the BMC and systems management applications.

Finding Software Solutions

Dell™ PowerEdge™ SC1425 Systems Installation and Troubleshooting Guide

- Before You Begin
- Troubleshooting Errors and Conflicts

Software problems can be caused by:

- l   Improper installation or configuration of an application
- l   Application conflicts
- l   Input errors
- l   Interrupt assignment conflicts

Ensure that you are installing the software application according to the software manufacturer's recommended procedures. If a problem occurs after you install the software, you might need to troubleshoot your software application and your system.

See the documentation that accompanied the software or contact the software manufacturer for detailed troubleshooting information.

NOTE: If all of the system diagnostic tests complete successfully, then the problem is most likely caused by the software and not the hardware.

Before You Begin

- l   Scan the software media with antivirus software.
- l   Read the software documentation before you run the installation utility.
- l   Be prepared to respond to prompts from the installation utility.

    The installation utility may require you to enter information about your system, such as how the operating system is configured, and the type of peripherals that are connected to the system. Have this information available before running the installation utility.

Troubleshooting Errors and Conflicts

While configuring and running software, problems might occur that are caused by input errors, application conflicts, and/or IRQ assignment conflicts. The problems are sometimes indicated by error messages.

Error messages are generated by system hardware or software. "Indicators, Messages, and Codes" provides information about error messages that are hardware-based. If you receive an error message that is not listed, see your operating system or software program documentation for troubleshooting information.

Input Errors

Pressing a specific key or set of keys at the wrong time may produce unexpected results. See the documentation that came with the software application to ensure that the values or characters you are entering are valid.

Ensure that your operating system is configured properly to run the application. Remember that whenever you change the parameters of the operating system, the changes can conflict with an application's operating requirements. After you configure the operating system, you may need to reinstall or reconfigure a software application so that it can run properly in its new environment.

Application Conflicts

Some applications can leave unnecessary files or data behind after they are deleted from your system. Device drivers can also create application errors. If application errors occur, see your application device driver or operating system documentation for troubleshooting information.

IRQ Assignment Conflicts

Most PCI devices can share an IRQ with another device, but they cannot use an IRQ simultaneously. To avoid this type of conflict, see the documentation for each PCI device for specific IRQ requirements. Table 3-1 lists the IRQ assignments.

Table 3-1. IRQ Assignment Defaults

IRQ Line	Assignment
IRQ0	System timer
IRQ1	Keyboard controller

IRQ2	Interrupt controller 1 to enable IRQ8 through IRQ15
IRQ3	*Available*
IRQ4	Serial port 1 (COM1 and COM3)
IRQ5	*Available*
IRQ6	*Available*
IRQ7	Reserved
IRQ8	Real-time clock
IRQ9	ACPI functions (used for power management)
IRQ10	*Available*
IRQ11	*Available*
IRQ12	PS/2 mouse port unless the mouse is disabled through the System Setup program
IRQ13	Math coprocessor
IRQ14	IDE OPTICAL drive controller (available if IDE CDROM controller is disabled in BIOS setup)
IRQ15	Reserved (available if IDE CDROM controller is disabled in BIOS setup)

Running the System Diagnostics

Dell™ PowerEdge™ SC1425 Systems Installation and Troubleshooting Guide

- Using Dell Diagnostics
- System Diagnostics Features
- When to Use the System Diagnostics
- Running the System Diagnostics
- System Diagnostics Testing Options
- Using the Custom Test Options

If you experience a problem with your system, run the diagnostics before calling for technical assistance. The purpose of the diagnostics is to test your system's hardware without requiring additional equipment or risking data loss. If you are unable to fix the problem yourself, service and support personnel can use diagnostics test results to help you solve the problem.

Using Dell Diagnostics

To assess a system problem, first use the online diagnostics. If you are unable to identify the problem, then use the system diagnostics.

To download the Dell PowerEdge Diagnostics, go to **support.dell.com** and download the latest version for your system. For additional information, see the diagnostic documentation at **support.dell.com**.

System Diagnostics Features

The system diagnostics provides a series of menus and options for particular device groups or devices. The system diagnostics menus and options allow you to:

- Run tests individually or collectively.
- Control the sequence of tests.
- Repeat tests.
- Display, print, or save test results.
- Temporarily suspend testing if an error is detected or terminate testing when a user-defined error limit is reached.
- View help messages that briefly describe each test and its parameters.
- View status messages that inform you if tests are completed successfully.
- View error messages that inform you of problems encountered during testing.

When to Use the System Diagnostics

If a major component or device in the system does not operate properly, component failure may be indicated. As long as the microprocessor and the system's input/output devices (monitor, keyboard, and diskette drive) are functioning, you can use the system diagnostics to help identify the problem.

Running the System Diagnostics

The system diagnostics can be run either from the utility partition on your hard drive or from a set of diskettes that you create using the *Dell OpenManage Server Assistant* CD. To use diskettes you must attach a USB diskette drive to your system.

NOTICE: Use the system diagnostics to test only your system. Using this program with other systems may cause invalid results or error messages. In addition, use only the program that came with your system (or an updated version of that program).

From the Utility Partition

1. As the system boots, press <F10> during POST.

2. From the utility partition main menu under **Run System Utilities**, select **Run System Diagnostics**.

From the Diagnostics Diskettes

1. Create a set of diagnostics diskettes from the *Dell OpenManage Server Assistant* CD. See "Using the Dell OpenManage Server Assistant" in your *User's Guide* for information on creating the diskettes.

2. Obtain a USB diskette drive and connect it to the system.

3. Insert the first diagnostics diskette.

4. Reboot the system.

    If the system fails to boot, see "Getting Help."

When you start the system diagnostics, a message is displayed stating that the diagnostics are initializing. Next, the **Diagnostics** menu appears. The menu allows you to run all or specific diagnostics tests or to exit the system diagnostics.

> **NOTE:** Before you read the rest of this section, start the system diagnostics so that you can see the utility on your screen.

System Diagnostics Testing Options

Click the testing option in the **Main Menu** window. Table 4-1 provides a brief explanation of testing options.

Table 4-1. System Diagnostics Testing Options

Testing Option	Function
Express Test	Performs a quick check of the system. This option runs device tests that do not require user interaction. Use this option to quickly identify the source of your problem.
Extended Test	Performs a more thorough check of the system. This test can take an hour or longer.
Custom Test	Tests a particular device.
Information	Displays test results.

Using the Custom Test Options

When you select **Custom Test** in the **Main Menu** window, the **Customize** window appears and allows you to select the device(s) to be tested, select specific options for testing, and view the test results.

Selecting Devices for Testing

The left side of the **Customize** window lists devices that can be tested. Devices are grouped by device type or by module, depending on the option you select. Click the **(+)** next to a device or module to view its components. Click **(+)** on any component to view the tests that are available. Click a device, rather than its components, to select all of the components for testing.

Selecting Diagnostics Options

Use the **Diagnostics Options** area to select how you want to test a device. You can set the following options:

- **Non-Interactive Tests Only** — When checked, runs only tests that require no user intervention.

- **Quick Tests Only** — When checked, runs only the quick tests on the device. Extended tests will not run when you select this option.

- **Show Ending Timestamp** — When checked, time stamps the test log.

- **Test Iterations** — Selects the number of times the test is run.

- **Log Output File Pathname** — When checked, enables you to specify where the test log file is saved.

Viewing Information and Results

The tabs in the **Customize** window provide information about the test and the test results. The following tabs are available:

- **Results** — Displays the test that ran and the result.

- **Errors** — Displays any errors that occurred during the test.

- **Help** — Displays information about the currently selected device, component, or test.

- **Configuration** — Displays basic configuration information about the currently selected device.

- **Parameters** — If applicable, displays parameters that you can set for the test.

Troubleshooting Your System

Dell™ PowerEdge™ SC1425 Systems Installation and Troubleshooting Guide

Safety First—For You and Your System

To perform certain procedures in this document, you must remove the system cover and work inside the system. While working inside the system, do not attempt to service the system except as explained in this guide and elsewhere in your system documentation.

⚠️ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

Start-Up Routine

Look and listen during the system's start-up routine for the indications described in Table 5-1.

Table 5-1. Start-Up Routine Indications

Look/listen for:	Action
An error message displayed on the monitor.	See "System Messages" in "Indicators, Codes, and Messages."
A series of beeps emitted by the system.	See "System Beep Codes" in "Indicators, Codes, and Messages."
Alert messages from the systems management software.	See the systems management software documentation.
The monitor's power indicator.	See "Troubleshooting the Video Subsystem."
The keyboard indicators.	See "Troubleshooting the Keyboard."
The diskette drive activity indicator.	See "Troubleshooting a USB Device."
The optical drive activity indicator.	See "Troubleshooting an Optical Drive."
The hard-drive activity indicator.	See "Troubleshooting SCSI Hard Drives."
An unfamiliar constant scraping or grinding sound when you access a drive.	See "Getting Help."
The diagnostic indicators.	See "Diagnostics Messages" in "Indicators, Messages, and Codes."

Checking Basic Power Problems

1. If the power indicator on the system front panel does not indicate that power is available to the system, ensure that the power cable is securely connected to the power supply.

2. If the system is connected to a PDU or UPS, turn the PDU or UPS off and then on.

3. If the PDU or UPS is not receiving power, plug it into another electrical outlet. If it still is not receiving power, try another PDU or UPS.

4. Reconnect the system to the electrical outlet and turn on the system.

If the system still is not working properly, see "Troubleshooting the Power Supply."

Checking the Equipment

This section provides troubleshooting procedures for external devices attached to the system, such as the monitor, keyboard, or mouse. Before you perform any of the procedures, see "Troubleshooting External Connections."

Troubleshooting External Connections

Loose or improperly connected cables are the most likely source of problems for the system, monitor, and other peripherals (such as a printer, keyboard, mouse, or other external device). Ensure that all external cables are securely attached to the external connectors on your system. See Figure 2-1 and Figure 2-2 for the front panel and back-panel connectors on your system.

Troubleshooting the Video Subsystem

Problem

l   Monitor is not working properly.

l   Video memory is faulty.

Action

1. Check the system and power connections to the monitor.

2. Run the appropriate online diagnostic test. See "Using Dell Diagnostics" in "Running System Diagnostics."

    If the tests run successfully, the problem is not related to video hardware. See "Finding Software Solutions."

    If the tests fail, see "Getting Help."

Troubleshooting the Keyboard

Problem

l   System message indicates a problem with the keyboard

l   Keyboard is not functioning properly

Action

1. "Press each key on the keyboard, and examine the keyboard and its cable for signs of damage.

2. Swap the faulty keyboard with a working keyboard.

    If the problem is resolved, replace the faulty keyboard. See "Getting Help."

    If the problem is not resolved, see "Getting Help."

Troubleshooting the Mouse

Problem

l   System message indicates a problem with the mouse.

l   Mouse is not functioning properly.

Action

1. Run the appropriate online diagnostic test. See "Using Dell Diagnostics" in "Running System Diagnostics."

    If the test fails, continue to the next step.

2. Examine the mouse and its cable for signs of damage.

   If the mouse is not damaged, go to step 4.

   If the mouse is damaged, continue to the next step.

3. Swap the faulty mouse with a working mouse.

   If the problem is resolved, replace the faulty mouse. See "Getting Help."

4. Enter the System Setup program and ensure that the mouse controller is enabled. See "Using the System Setup Program" in your *User's Guide.*

   If the problem is not resolved, see "Getting Help."

Troubleshooting Basic I/O Functions

Problem

   l Error message indicates a problem with the serial port.

   l Device connected to the serial port is not operating properly.

Action

1. Enter the System Setup program and ensure that the serial port is enabled. See "Using the System Setup Program" in the *User's Guide.*

2. If the problem is confined to a particular application, see the application documentation for specific port configuration requirements that the program may require.

3. Run the appropriate online diagnostic test. See "Using Dell Diagnostics" in "Running System Diagnostics."

   If the tests run successfully but the problem persists, see "Troubleshooting a Serial I/O Device."

Troubleshooting a Serial I/O Device

Problem

   l Device connected to the serial port is not operating properly.

Action

1. Enter the System Setup program and ensure that the **Console Redirection** option on the **Console Redirection** screen is set to **Off**. See "Using Console Redirection" and "Using the System Setup Program" in your *User's Guide.*

2. Turn off the system and any peripheral devices connected to the serial port.

3. Swap the serial interface cable with a working cable, and turn on the system and the serial device.

   If the problem is resolved, replace the interface cable. See "Getting Help."

4. Turn off the system and the serial device, and swap the device with a comparable device.

5. Turn on the system and the serial device.

   If the problem is resolved, replace the serial device. See "Getting Help."

   If the problem persists, see "Getting Help."

Troubleshooting a USB Device

Problem

l   System message indicates a problem with a USB device.

l   Device connected to a USB port is not operating properly.

Action

1. Enter the System Setup program, and ensure that the USB ports are enabled. See "Using the System Setup Program" in your *User's Guide*.

2. Turn off the system and any USB devices.

3. Disconnect the USB devices, and connect the malfunctioning device to the other USB connector.

4. Turn on the system and the reconnected device.

    If the problem is resolved, the USB connector might be defective. See "Getting Help."

5. If possible, swap the interface cable with a working cable.

    If the problem is resolved, replace the interface cable. See "Getting Help."

6. Turn off the system and the USB device, and swap the device with a comparable device.

7. Turn on the system and the USB device.

    If the problem is resolved, replace the USB device. See "Getting Help."

    If the problem persists, see "Getting Help."

Troubleshooting a NIC

Problem

l   NIC cannot communicate with network.

Action

1. Run the appropriate online diagnostic test. See "Using Dell Diagnostics" in "Running System Diagnostics."

2. Check the appropriate indicator on the NIC connector. See "NIC Indicators" in "Indicators, Messages, and Codes."

    l   If the link indicator does not light, check all cable connections.

    l   If the activity indicator does not light, the network driver files might be damaged or missing.

        Remove and reinstall the drivers if applicable. See the NIC's documentation.

    l   Change the autonegotiation setting, if possible.

    l   Use another connector on the switch or hub.

    If you are using a NIC card instead of an integrated NIC, see the documentation for the NIC card.

3. Ensure that the appropriate drivers are installed and the protocols are bound. See the NIC's documentation.

4. Enter the System Setup program and confirm that the NICs are enabled. See "Using the System Setup Program" in your *User's Guide*.

5. Ensure that the NICs, hubs, and switches on the network are all set to the same data transmission speed. See the network equipment documentation.

6. Ensure that all network cables are of the proper type and do not exceed the maximum length. See "Network Cable Requirements" in your *User's Guide*.

Inside the System

In Figure 5-1, the bezel and system cover are removed to provide an interior view of the system.

Figure 5-1. Inside the System
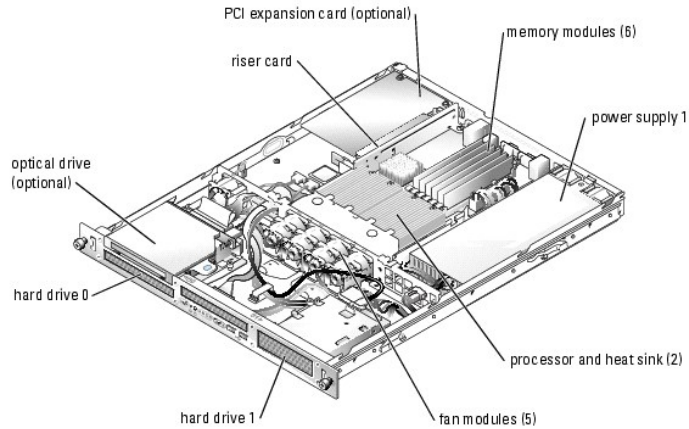
The system board holds the system's control circuitry and other electronic components. The processor and memory are installed directly on the system board. Using a riser card, the system can accommodate one expansion card. The peripheral bays provide space for up to two hard drives and an optional optical drive. Power is supplied to the system board and drives through one nonredundant power supply.

Opening the System

The system is enclosed by an optional bezel and cover. To upgrade or troubleshoot the system, remove the bezel and cover.

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. If applicable, remove the bezel. See Figure 5-2.

   a. Unlock the bezel.

   b. Unlatch the left end of the bezel and rotate it away from the front panel.

   c. Unhook the right end of the bezel and pull the bezel away from the system.

Figure 5-2. Installing and Removing the Optional Bezel
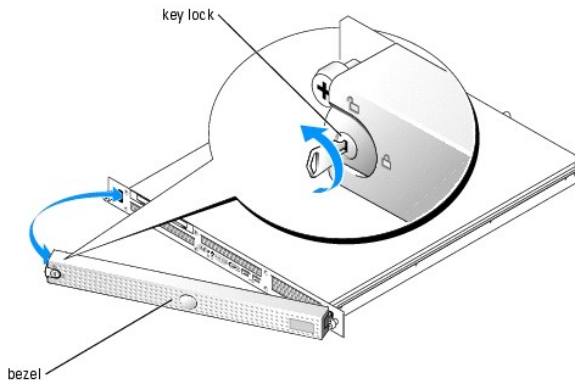
2. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet and peripherals.

3. Remove the system from the rack and place it on a work surface.

4. To remove the system cover, loosen the two thumbscrews at the back of the system. See Figure 5-3.

5. Slide the cover backward about 1.3 cm (0.5 inch), and grasp the cover on both sides.

6. Carefully lift the cover away from the system.

Figure 5-3. Installing and Removing the System Cover
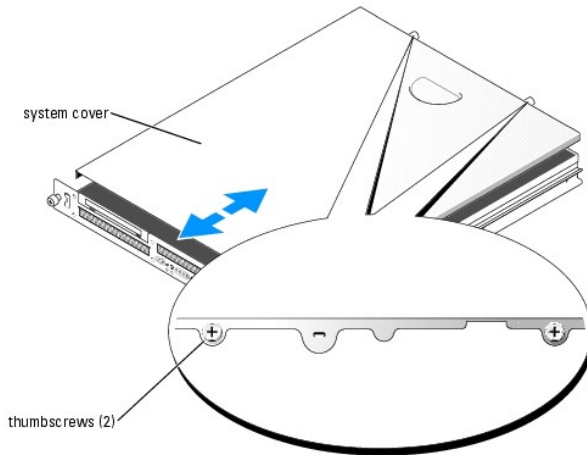
Closing the System

1. Ensure that you did not leave tools or parts inside the system.

2. Place the cover over the sides of the chassis, and slide the cover forward.

3. Tighten the two thumbscrews at the back of the system to secure the cover. See Figure 5-3.

4. Replace the system in the rack, and reconnect the peripheral cables.

5. To replace the optional bezel, hook the right end of the bezel onto the chassis, then fit the bezel onto the system. Secure the bezel with the keylock. See Figure 5-2.

6. Reconnect the system to the electrical outlet, and turn on the system.

Troubleshooting a Wet System

Problem

l   Liquid spilled on the system.

l   Excessive humidity.

Action

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.

2. Open the system. See "Opening the System."

3. Remove all expansion cards installed in the system. See "Removing an Expansion Card" in "Installing System Components."

4. Remove all memory modules installed in the system. See "Removing Memory Modules" in "Installing System Components."

5. Remove the processor(s) from the system. See "Replacing the Processor" in "Installing System Components."

6. Let the system dry thoroughly for at least 24 hours.

7. Reinstall all of the components that you removed earlier in this procedure. See "Installing an Expansion Card," "Installing Memory Modules," and "Replacing the Processor" in "Installing System Components."

8. Close the system. See "Closing the System."

9. Reconnect the system to the electrical outlet, and turn on the system and attached peripherals.

   If the system does not start properly, see "Getting Help."

10. Run the appropriate online diagnostic tests. See "Using Dell Diagnostics" in "Running the System Diagnostics."

   If any of the tests fail, see "Getting Help."

Troubleshooting a Damaged System

Problem

   l   System was dropped or damaged.

Action

⚠️ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Open the system. See "Opening the System."

2. Examine the interior and exterior of the system chassis.

   If there is sufficient damage that it would be unsafe to apply power to the system, see "Getting Help."

3. Ensure that the following components are properly installed:

      l   Expansion cards

      l   Memory modules

      l   Processor(s)

      l   Power supply

      l   Fans

4. Ensure that all cables are properly connected.

5. Close the system. See "Closing the System."

6. Run the system board tests in the system diagnostics. See "Using Dell Diagnostics in "Running the System Diagnostics." If the tests fail, see "Getting Help."

Troubleshooting the System Battery

Problem

   l   System message indicates a problem with the battery.

   l   System Setup program loses system configuration information.

   l   System date and time do not remain current.

📝 **NOTE:** If the system is turned off for long periods of time (weeks or months), the NVRAM may lose its system configuration information. This situation is caused by a defective battery.

Action

1. Re-enter the time and date through the System Setup program. See "Using the System Setup Program" in your *User's Guide.*

2. Turn off the system and disconnect it from the electrical outlet for at least one hour.

3. Reconnect the system to the electrical outlet and turn on the system.

4. Enter the System Setup program.

   If the date and time are not correct in the System Setup program, replace the battery. See "System Battery" in "Installing System Components."

   If the problem is not resolved by replacing the battery, see "Getting Help."

NOTE: Some software may cause the system time to speed up or slow down. If the system seems to operate normally except for the time kept in the System Setup program, the problem may be caused by software rather than by a defective battery.

Troubleshooting the Power Supply

Problem

l   Power button is blinking green, but system does not power up.

Action

1. Ensure that the power supply is properly installed by removing and reinstalling it. See "Power Supply" in "Installing System Components."

   If the problem persists, continue to the next step.

2. Swap the faulty power supply with a new power supply. See "Removing a Power Supply" and "Installing the Power Supply" in "Installing System Components."

   If the problem is resolved, replace the faulty power supply.

   If the problem is not resolved, see "Getting Help."

Problem

l   Power button is not blinking green and the system does not power up.

Action

1. Ensure that the power cable is properly connected between the power supply and electrical outlet.

2. If you have a UPS, make sure that it is connected properly both to the power supply and to the electrical outlet.

3. Ensure that the power supply is properly installed by removing and reinstalling it. See "Power Supply" in "Installing System Components."

   If the problem persists, remove the faulty power supply. See "Removing a Power Supply" in "Installing System Components."

4. Install a new power supply. See "Installing the Power Supply" in "Installing System Components."

   If the problem persists, see "Getting Help."

Troubleshooting System Cooling Problems

Problem

l   System-status indicator is amber.
l   Systems management software issues a fan-related error message.

Action

⚠️ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Run the appropriate diagnostic test. See "Using Dell Diagnostics" in Running System Diagnostics."

2. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.

3. Open the system. See "Opening the System."

4. Locate the fan module referenced by the systems management software or diagnostics.

   See Figure A-3 for the relative location of each fan.

5. Ensure that the faulty fan's power cable is firmly attached to the fan power cable connector and to the system board.

6. Close the system. See "Closing the System."

7. Reconnect the system to the electrical outlet, and turn on the system and attached peripherals.

8. If the problem is not resolved, install a new fan module. See "Fans" in "Installing System Components."

9. If the replacement fan does not operate, see "Getting Help."

Troubleshooting System Memory

Problem

- Faulty memory module.
- Faulty system board.

Action

⚠️ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Run the appropriate online diagnostic test. See "Using Dell Diagnostics" in "Running System Diagnostics."

2. Turn on the system and attached peripherals.

   If an error message does not appear, go to step 11.

3. Enter the System Setup program and check the system memory setting. See "Using the System Setup Program" in your *User's Guide*.

   If the amount of memory installed matches the system memory setting, go to step 11.

4. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.

5. Open the system. See "Opening the System."

6. Ensure that the memory modules are populated correctly. See "General Memory Module Installation Guidelines" in "Installing System Components."

   If the memory modules are populated correctly, continue to the next step.

7. Reseat the memory modules in their sockets. See "Installing Memory Modules" in "Installing System Components."

8. Close the system. See "Closing the System."

9. Reconnect the system to the electrical outlet, and turn on the system and attached peripherals.

10. Enter the System Setup program and check the system memory setting. See "Using the System Setup Program" in your *User's Guide*.

   If the amount of memory installed does not match the system memory setting, then perform the following steps:

   a. Turn off the system and attached peripherals, and disconnect the system from its electrical outlet.

   b. Open the system. See "Opening the System."

   📝 **NOTE:** Several configurations for the memory modules exist; see "General Memory Module Installation Guidelines" in "Installing System Components."

   c. Swap the memory modules in bank 1 with another bank of the same capacity. See "Installing Memory Modules" in "Installing System Components."

   d. Close the system. See "Closing the System."

   e. Reconnect the system to its electrical outlet, and turn on the system and attached peripherals.

   f. As the system boots, observe the monitor screen and the indicators on the keyboard.

11. Perform the following steps:

   a. Turn off the system and attached peripherals, and disconnect the system from its electrical outlet.

   b. Open the system. See "Opening the System."

   c. Repeat step c through step f in step 10 for each memory module installed.

   If the problem persists, see "Getting Help."

Troubleshooting an Optical Drive

Problem

- System cannot read data from a CD or DVD.
- Optical drive indicator does not blink during boot.

Action

⚠️ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Try using a different CD or DVD that you know works properly.

2. Enter the System Setup program and ensure that the drive's IDE controller is enabled. See "Using the System Setup Program" in the *User's Guide*.

3. Run the appropriate online diagnostic test. See "Using Dell Diagnostics" in "Running System Diagnostics."

4. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.

5. Open the system. See "Opening the System."

6. Ensure that the optical drive interface cable is securely connected to the optical drive and to the controller. See Figure 7-1.

7. Close the system. See "Closing the System."

8. Reconnect the system to the electrical outlet, and turn on the system and attached peripherals.

   If the problem is not resolved, see "Getting Help."

Troubleshooting a SATA Hard Drive

Problem

- Faulty hard drive.

l   Damaged or improperly connected hard-drive cables.

Action

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

🚫 **NOTICE:** This troubleshooting procedure can destroy data stored on the hard drive. Before you proceed, back up all files on the hard drive.

1. Run the appropriate online diagnostic test. See "Using Dell Diagnostics" in "Running the System Diagnostics."

   If the test fails, continue to the next step.

2. Enter the System Setup program and verify that the system is configured correctly. See "Using the System Setup Program" in your *User's Guide.*

3. Run the hard drive tests in the system diagnostics. See "Running the System Diagnostics."

   If the tests fail, continue to the next step.

4. Open the system. See "Opening the System."

5. Ensure that the hard-drive interface cable is properly connected between the drive and the system board.

   To identify system board connectors, see Figure A-3.

6. If the hard drive is the boot drive, ensure that the drive is configured and connected properly. See "Configuring the Boot Drive" in "Installing Drives."

7. Ensure that the power cable is properly connected to the drive.

8. Close the system. See "Closing the System."

9. Format and partition the hard drive. See the operating system documentation.

10. If possible, restore the files to the drive.

    If the problem persists, see "Getting Help."

Troubleshooting SCSI Hard Drives

Problem

l   Device driver error.

l   Hard drive not recognized by the system.

Action

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

🚫 **NOTICE:** This procedure can destroy data stored on the hard drive. Before you continue, back up all files on the hard drive.

1. Run the appropriate online diagnostic test. See "Using Dell Diagnostics" in "Running System Diagnostics."

   For information about testing the controller, see the SCSI controller's documentation.

   If the tests fail, continue to the next step.

2. Run the System Setup program and insure that the SCSI controller is enabled.

   See "Using the System Setup Program" in the User's Guide.

3. Ensure that the primary SCSI channel is enabled, and restart the system.

   See the documentation supplied with the controller for information about the configuration utility.

4. Verify that the device drivers are installed and configured correctly. See the operating system documentation.

5. Check the SCSI cable connections inside the system:

   a. Turn off the system, including any attached peripherals, and disconnect the system from the electrical outlet.

   b. Open the system. See "Opening the System."

   c. Verify that the SCSI cable is securely connected to the SCSI riser board and the SCSI host adapter. on the riser card, or a SCSI host adapter card installed in an expansion slot.

6. Replace the hard drive with a known working SCSI hard drive of the same type.

7. Close the system
   If the hard drive functions properly, replace the damaged drive.
   If the problem persists, see "Getting Help."

Troubleshooting Expansion Cards

NOTE: When troubleshooting an expansion card, see the documentation for your operating system and the expansion card.

Problem

- Error message indicates a problem with an expansion card.

- Expansion card performs incorrectly or not at all.

Action

⚠️ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Run the appropriate online diagnostic test. See "Using Dell Diagnostics" in "Running System Diagnostics."

2. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.

3. Open the system. See "Opening the System."

4. Ensure that the expansion card is firmly seated in its connector. See "Installing an Expansion Card" in "Installing System Components."

5. Close the system. See "Closing the System."

6. Reconnect the system to the electrical outlet, and turn on the system and attached peripherals.

   If the problem persists, go to the next step.

7. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.

8. Open the system. See "Opening the System."

9. Remove the expansion card. See "Removing an Expansion Card" in "Installing System Components."

10. Close the system. See "Closing the System."

11. Reconnect the system to the electrical outlet, and turn on the system and attached peripherals.

12. Run the appropriate online diagnostic test.

    If the tests fail, see "Getting Help."

    If the tests passes, you may have a faulty expansion. See "Getting Help."

Troubleshooting the Processors

Problem

- Error message indicates a processor problem.
- A heat sink is not installed for each processor.

Action

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Run the appropriate online diagnostics test. See "Using Dell Diagnostics" in "Running the System Diagnostics."

2. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.

3. Open the system. See "Opening the System."

4. Ensure that each processor and heat sink are properly installed. See "Replacing the Processor" in "Installing System Components."

5. Close the system. See "Closing the System."

6. Reconnect the system to the electrical outlet, and turn on the system and attached peripherals.

7. Run the appropriate online diagnostic test.

   If the tests fail or the problem persists, continue to the next step.

8. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.

9. Open the system. See "Opening the System."

10. Remove the second processor, leaving only processor 1 installed. See "Replacing the Processor" in "Installing System Components."

    To locate the processors, see Figure A-3.

    If only one processor is installed, see "Getting Help."

11. Close the system. See "Closing the System."

12. Reconnect the system to the electrical outlet, and turn on the system and attached peripherals.

13. Run the appropriate online diagnostic test.

    If the tests complete successfully, go to step 19.

14. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.

15. Open the system. See "Opening the System."

16. Replace processor 1 with another processor of the same capacity. See "Replacing the Processor" in "Installing System Components."

17. Close the system. See "Closing the System."

18. Run the appropriate online diagnostic test. Getting Help

    If the tests complete successfully, replace processor 1. See "Getting Help."

19. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.

20. Open the system. See "Opening the System."

21. Reinstall the second processor that you removed in step 10. See "Replacing the Processor" in "Installing System Components."

22. Close the system. See "Closing the System."

23. Reconnect the system to the electrical outlet, and turn on the system and attached peripherals.

    If the problem persists, see "Getting Help."

Back to Contents Page

Installing System Components

Dell™ PowerEdge™ SC1425 Systems Installation and Troubleshooting Guide

- System Board Components
- System Battery
- Fans
- Power Supply

- Expansion Cards
- Riser Card
- System Memory
- Processor

This section describes how to install the following system components:

- System battery
- Cooling fans
- Power supply
- Expansion cards
- Riser card
- System memory
- Processors

System Board Components

When installing and replacing system board components, use Figure 6-1 to locate the components.

Figure 6-1. System Board Components and Connectors
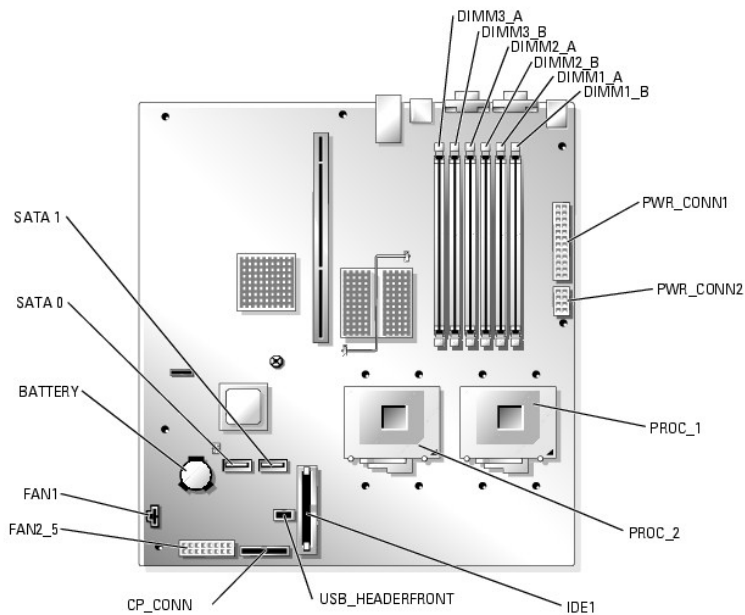
System Battery

Replacing the System Battery

⚠️ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Enter the System Setup program and record the option settings on the System Setup screens.

   See "Using the System Setup Program" in the *User's Guide*.

2. Open the system. See "Opening the System" in Troubleshooting Your System."

3. Remove the system battery. See Figure 6-1 to locate the system battery on the system board.

   a. Pull the latch away from the battery. See Figure 6-2.

   b. Lift the battery out of the battery socket.

   You can pry the system battery out of its connector with your fingers or with a blunt, nonconductive object such as a plastic screwdriver.

Figure 6-2. Replacing the System Battery
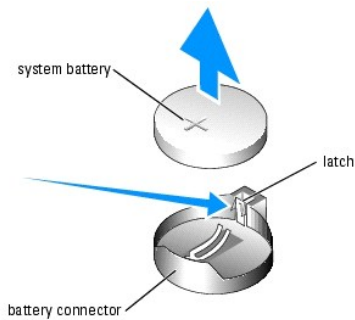
4. To install the new system battery, hold the battery with the side labeled "+" facing up, and then press the battery straight down into the battery socket until the latch snaps into place over the edge of the battery. See Figure 6-2.

5. Install the new system battery with the side labeled "+" facing up. See Figure 6-2.

   ![NOTE icon] **NOTE:** You must install the new system battery with the side labeled "+" facing up.

6. Close the system. See "Closing the System" in "Troubleshooting Your System."

7. Enter the System Setup program to confirm that the battery operates properly.

8. From the main screen, select **System Time** to enter the correct time and date.

9. Re-enter any system configuration information that is no longer displayed on the System Setup screens, and then exit the System Setup program.

10. To test the newly installed battery, see "Troubleshooting the System Battery" in "Troubleshooting Your System."

Fans

There are four sets of cooling fan modules that provide cooling for the processors and memory modules. Each fan module contains two fans. There is a single fan to cool the expansion card.

Removing a Processor/Memory Fan Module

![CAUTION icon] **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Open the system. See "Opening the System" in Troubleshooting Your System."

2. Disconnect the fan module's power cable(s) from the fan power interface cable connected to the system board. See Figure 6-3.

3. Using a #2 Phillips screwdriver, remove the two screws that secure the fan module brackets to the chassis. See Figure 6-3.

4. Slide the fan brackets toward the front of the system and remove them from the system.

5. Slide the fan modules toward the front of the system to remove them.

Figure 6-3. Installing and Removing a Processor/Memory Fan Module
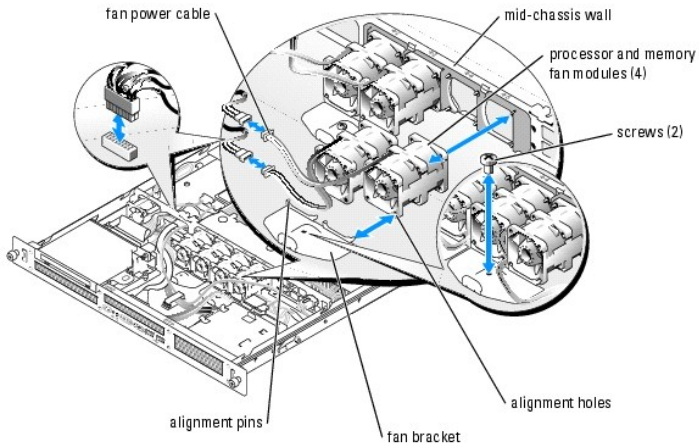
Installing a Processor/Memory Fan Module

1. With the fan power cable facing towards the front of the system, align the fan module alignment holes with the alignment pins on the chassis. See Figure 6-3.

2. Align the four alignment pins on the fan brackets with the alignment holes in the fan modules.

3. Slide the fan brackets so that the mounting hole in the fan bracket is aligned with the hole in the chassis.

4. Using a #2 Phillips screwdriver, reinstall the two screws that secure the fan brackets to the chassis.

📝 **NOTE:** Ensure that the numbers on the mid-chassis wall match those on the fan interface power cables before reconnecting the power cables to the system board.

5. Reconnect each fan module's power cable to the fan interface power cable connected to the system board. See Figure 6-3.

6. Close the system. See "Closing the System" in "Troubleshooting Your System."

Removing the Expansion Card Fan Module

⚠️ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Open the system. See "Opening the System" in Troubleshooting Your System."

2. Disconnect the fan module's power cable(s) from the fan power interface cable connected to the system board. See Figure 6-4.

3. Gently pull the fan module up and away from the peg on the system board, and remove the fan module from the system.

Figure 6-4. Installing and Removing the Expansion Card Fan Module

expansion card fan   fan power cable

AIR FLOW
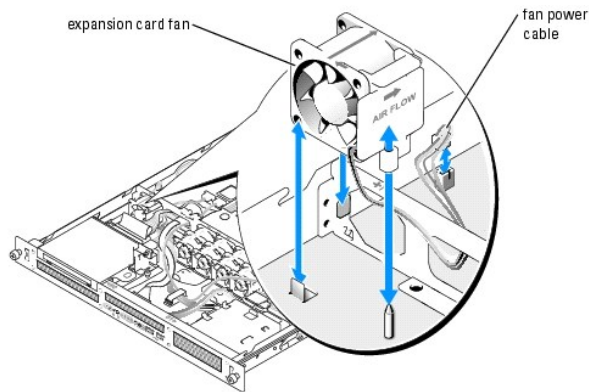
Installing the Expansion Card Fan Module

1. With the fan power cable facing towards the rear of the system, align the fan module alignment hole with the alignment pin on the chassis. See Figure 6-4.

2. Install the expansion card fan module against the two tabs and atop the alignment pin on the system chassis.

3. Reconnect the fan module's power cable to the fan interface power cable connected to the system board. See Figure 6-4.

4. Close the system. See "Closing the System" in "Troubleshooting Your System."

Power Supply

Removing a Power Supply

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Open the system. See "Opening the System" in "Troubleshooting Your System."

2. Disconnect the power supply cable from the interface cable located at the chassis mid-wall. The interface cable supplies power to the hard drives and optical drives. See Figure 6-5.

3. Disconnect the two power supply cables from the PWR_CONN1 and PWR_CONN2 connectors on the system board See Figure 6-1.

4. Remove the screw at the front of the power supply that secures the power supply to the chassis. See Figure 6-5.

5. Slide the power supply toward the front of the system and remove the power supply from the system.

Figure 6-5. Installing and Removing a Power Supply

PWR_CONN2 cable
PWR_CONN1 cable
screw
power supply brace
power supply
power supply cable
connector
interface cable
connector
mid-chassis connector slot
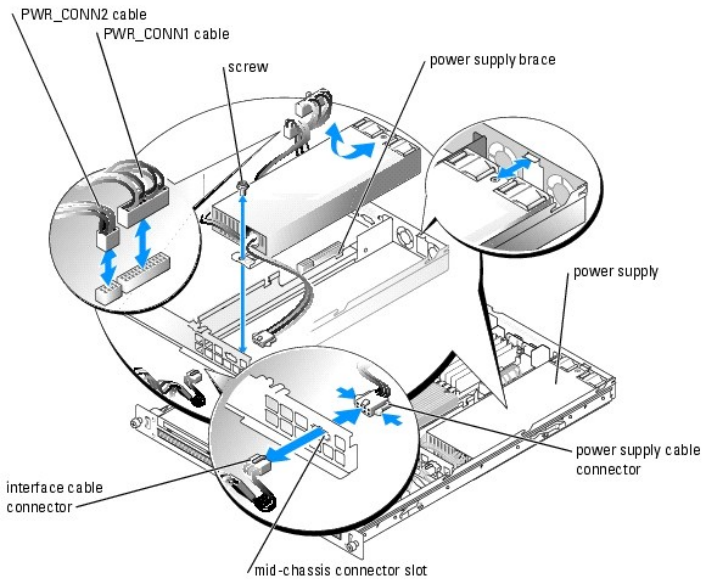
Installing the Power Supply

1. Lower the power supply in the system and slide the new power supply backward until the power supply is fully seated. See Figure 6-5).

2. Install the screw that secures the power supply to the chassis.

3. Fit the power supply cable connector into the mid-chassis connector slot.

4. Connect the power supply cable to the interface cable that supplies power to the hard drives and optical drives.

NOTICE: Place the two power cables in the slot beside the power supply brace, ensuring that the PWR_CONN1 cable is placed on top of the PWR_CONN2 cable, or the heat of the power supply may damage the power supply cables.

5. Route the PWR_CONN2 and PWR_CONN1 cables beside the power supply brace.

6. Connect the two power supply cables to the PWR_CONN1 and PWR_CONN2 connectors on the system board. See Figure 6-1.

7. Close the system. See "Closing the System" in "Troubleshooting Your System."

Expansion Cards

Your system supports a single 3.3-V, 64-bit, 133MHz PCI-X expansion card, which is installed in a connector on a riser card. See Figure 6-6.

## Installing an Expansion Card

CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

1. Open the system. See "Opening the System" in Troubleshooting Your System."

2. Lift the plastic expansion-card retainer adjacent to the expansion card slot. See Figure 6-6.

Figure 6-6. Installing and Removing Expansion Cards

expansion-card retainer

expansion card

expansion-card
connector (on riser card)
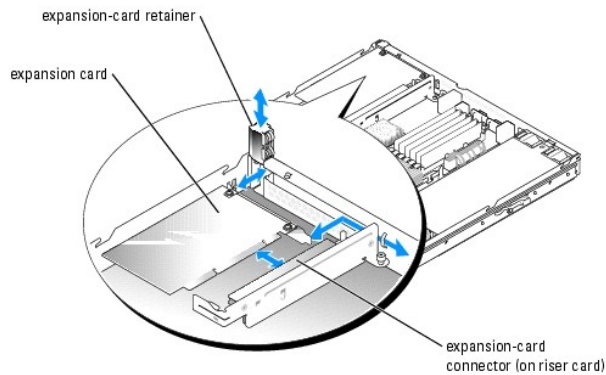
3. Remove the filler bracket.

   ![NOTE icon] **NOTE:** Keep this bracket in case you need to remove the expansion card. The filler bracket must be installed over the empty expansion card slot to maintain Federal Communications Commission (FCC) certification of the system. The bracket also keeps dust and dirt out of the system and aid in proper cooling and airflow inside the system.

4. Insert the expansion card firmly into the expansion-card connector on the riser card until the card is fully seated, being careful not to remove the riser card from the system board.

   ![NOTE icon] **NOTE:** Ensure that the expansion-card bracket is also inserted into the securing slot on the chassis's back panel.

5. Replace the expansion-card retainer. See Figure 6-6.

6. Connect any internal or external cable(s) to the expansion card.

7. Close the system. See "Closing the System" in "Troubleshooting Your System."

Removing an Expansion Card

![CAUTION icon] **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Open the system. See "Opening the System" in Troubleshooting Your System."

2. Disconnect any internal or external cable(s) that are connected to the expansion card.

3. Lift the expansion-card retainer adjacent to the expansion card slot. See Figure 6-6.

4. Grasp the expansion card and carefully pull it away from the riser-card connector.

5. If you are permanently removing the card, replace the metal filler bracket over the empty card-slot opening.

   ![NOTE icon] **NOTE:** The filler bracket must be installed over the empty expansion card slot to maintain FCC certification of the system. The bracket also keeps dust and dirt out of the system and aid in proper cooling and airflow inside the system.

6. Replace the expansion-card retainer.

7. Close the system. See "Closing the System" in "Troubleshooting Your System."

Riser Card

Removing the Riser Card

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Open the system. See "Opening the System" in "Troubleshooting Your System."

2. If applicable, remove the expansion card. See "Removing an Expansion Card."

3. Using a #2 Phillips screwdriver, remove the two screws that secures the riser card to the chassis. See Figure 6-7.

4. Lift the riser card straight up and remove the riser card from the system.

Figure 6-7. Installing and Removing the Riser Card
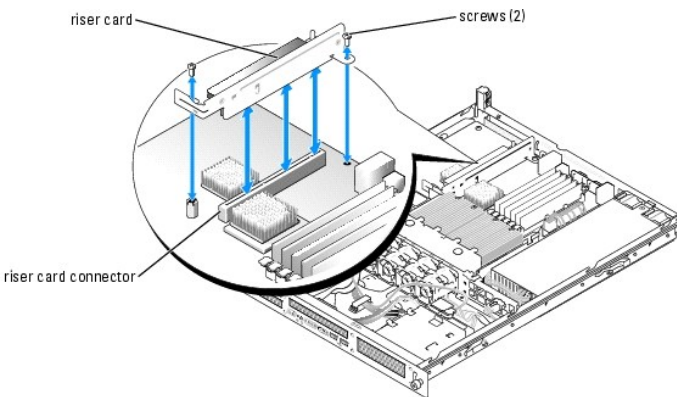
Installing the Riser Card

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Insert the riser card firmly into the riser card connector on the system board until the riser card is fully seated.

2. Using a #2 Phillips screwdriver, install the two screws that secure the riser card to the system board.

3. If applicable, reinstall the expansion card. See "Installing an Expansion Card."

4. Close the system. See "Closing the System" in "Troubleshooting Your System."

System Memory

The six memory module sockets can accommodate from 256 MB to 12GB (when 2-GB single ranked memory modules are available) of registered PC-3200 (DDR 2 400) memory. The memory sockets are located on the system board adjacent to the power supply bays. See Figure 6-1.

You can upgrade the system memory by installing combinations of 256-, 512-MB, 1-GB, and 2-GB registered memory modules.

📝 **NOTE:** The memory modules must be PC-3200 compliant.

🚫 **NOTICE:** If you remove your original memory modules from the system during a memory upgrade, keep them separate from any new memory modules that you may have. Use only registered DDR 2 memory modules.

The memory module sockets are arranged in three banks on two channels (A and B). The memory module banks are identified as follows:

- Bank 1: DIMM1_A and DIMM1_B
- Bank 2: DIMM2_A and DIMM2_B
- Bank 3: DIMM3_A and DIMM3_B

General Memory Module Installation Guidelines

- If only one memory module is installed, it must be installed in socket DIMM1_A.

- If two or more memory modules are installed, they must be installed in pairs of matched memory size, speed, and technology.

- The system supports both single-ranked and dual-ranked memory modules.

- If you install both single-ranked and dual-ranked memory modules, the dual-ranked memory modules must be installed in bank 1.

- Dual-ranked memory modules are not supported in bank 3.

- If dual-ranked memory modules are installed in bank 2, you cannot install memory modules in bank 3.

Memory modules marked with a 1R are single ranked and modules marked with a 2R are dual ranked. See Figure 6-8.

Figure 6-8. Determining a Memory Module's Capacity and Rank
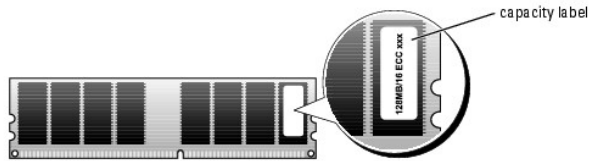
Spare Bank Support

If six identical single-rank memory modules are installed, the memory modules in bank 3 (DIMM3_A and DIMM3_B) can function as a spare bank if you select the spare bank option using the System Setup program.

NOTE: All six memory modules must be single-rank modules, identical in size.

Table 6-1 and Table 6-2 show examples of different memory configurations. Table 6-2 lists the various allowable combinations of single- and dual-ranked memory modules.

Table 6-1. Sample Memory Configurations

Total Memory	DIMM1_A	DIMM1_B	DIMM2_A	DIMM2_B	DIMM3_A	DIMM3_B
256 MB	256 MB	none	none	none	none	none
1 GB	256 MB	256 MB	256 MB	256 MB	none	none
1 GB	512 MB	512 MB	none	none	none	none
2 GB	512 MB	512 MB	512 MB	512 MB	none	none
2 GB	1 GB	1 GB	none	none	none	none
3 GB	1 GB	1 GB	512 MB	512 MB	none	none
3 GB	512 MB	512 MB	512 MB	512 MB	512 MB	512 MB
4 GB	1 GB	1 GB	1 GB	1 GB	none	none
4 GB	1 GB	1 GB	512 MB	512 MB	512 MB	512 MB
6 GB	2 GB	2 GB	1 GB	1 GB	none	none
6 GB	1 GB	1 GB	1 GB	1 GB	1 GB	1 GB
8 GB	2 GB	2 GB	2 GB	2 GB	none	none
8 GB	4 GB	4 GB	1 GB	none	none	none
12 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB

Table 6-2. Allowable Memory Module Configurations – Single-Ranked and Dual-Ranked Memory Modules

DIMM1_A	DIMM1_B	DIMM2_A	DIMM2_B	DIMM3_A	DIMM3_B
Single Rank	none	none	none	none	none
Single Rank	Single Rank	none	none	none	none
Dual Rank	Dual Rank	none	none	none	none
Single Rank	Single Rank	Single Rank	Single Rank	none	none
Dual Rank	Dual Rank	Dual Rank	Dual Rank	none	none
Dual Rank	Dual Rank	Single Rank	Single Rank	none	none
Single Rank	Single Rank	Single Rank	Single Rank	Single Rank	Single Rank
Dual Rank	Dual Rank	Single Rank	Single Rank	Single Rank	Single Rank

Installing Memory Modules

⚠️ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Open the system. See "Opening the System" in Troubleshooting Your System."

2. Locate the memory module sockets. See Figure 6-1.

3. Press the ejectors on the memory module socket down and out, as shown in Figure 6-9, to allow the memory module to be inserted into the socket.

Figure 6-9. Installing and Removing a Memory Module
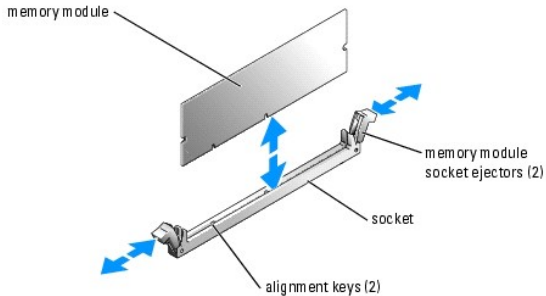
4. Align the memory module's edge connector with the alignment keys of the memory module socket, and insert the memory module in the socket.

   📝 **NOTE:** The memory module socket has two alignment keys that allow you to install the memory module in the socket in only one way.

5. Press down on the memory module with your thumbs while pulling up on the ejectors with your index fingers to lock the memory module into the socket.

   When the memory module is properly seated in the socket, the ejectors on the memory module socket align with the ejectors on the other sockets that have memory modules installed.

6. Repeat step 2 through step 5 of this procedure to install the remaining memory modules. See Table 6-1 and Table 6-2 for sample memory configurations.

7. Close the system. See "Closing the System" in "Troubleshooting Your System."

8. (Optional) Press <F2> to enter the System Setup program, and check the **System Memory** setting on the main **System Setup** screen.

   The system should have already changed the value to reflect the newly installed memory.

9. If the value is incorrect, one or more of the memory modules may not be installed properly. Repeat step 1 through step 8 of this procedure, checking to ensure that the memory modules are firmly seated in their sockets.

10. Run the system memory test in the system diagnostics. See "Using Dell Diagnostics."

Removing Memory Modules

⚠️ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Open the system. See "Opening the System" in Troubleshooting Your System."

2. Locate the memory module sockets. See Figure 6-1.

3. Press down and out on the ejectors on each end of the socket until the memory module pops out of the socket. See Figure 6-9.

4. Close the system. See "Closing the System" in "Troubleshooting Your System."

Processor

It is possible to upgrade your processor(s) to take advantage of future options in speed and functionality. Each processor and its associated internal cache memory are contained in a pin grid array (PGA) package that is installed in a zero insertion force (ZIF) socket on the system board.

Replacing the Processor

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Open the system. See "Opening the System" in Troubleshooting Your System."

📝 **NOTE:** When you remove the heat sink, the possibility exists that the processor might adhere to the heat sink and be removed from the socket. It is recommended that you remove the heat sink while the processor is still warm.

⊘ **NOTICE:** Never remove the heat sink from a processor unless you intend to remove the processor. The heat sink is necessary to maintain proper thermal conditions.

2. Remove the processor cooling shroud by rotating the shroud up and back toward the back of the system. See Figure 6-10.

Figure 6-10. Installing and Removing the Processor Cooling Shroud
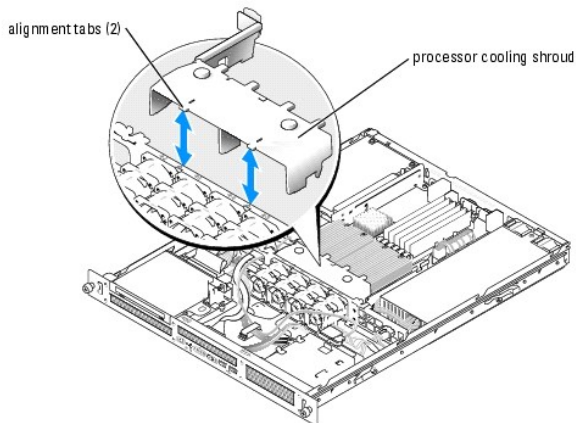
3. Using a #2 Phillips screwdriver, loosen the four captive screws that secure the heat sink to the system board. See Figure 6-11.

Figure 6-11. Installing and Removing the Heat Sink
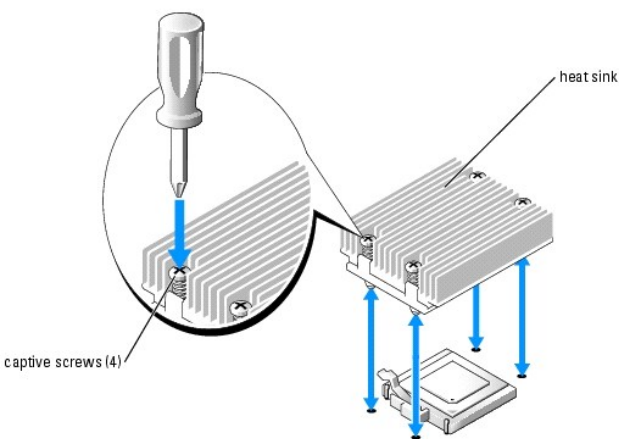
4. Wait 30 seconds for the heat sink to loosen from the processor.

5. If the heat sink has not separated from the processor, carefully rotate the heat sink in a clockwise, then counterclockwise, direction until it releases from

the processor. Do not pry the heat sink off of the processor.

6. Lift the heat sink off of the processor and set the heat sink upside down so as not to contaminate the thermal grease.

7. Pull the socket-release lever straight up until the processor is released from the socket. See Figure 6-12.

Figure 6-12. Installing and Removing the Processor
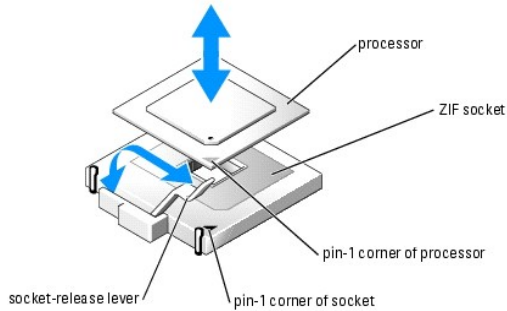
8. Lift the processor out of the socket and leave the release lever up so that the socket is ready for the new processor.

🚫 **NOTICE:** Be careful not to bend any of the pins when removing the processor. Bending the pins can permanently damage the processor.

9. Unpack the new processor.

   If any of the pins on the processor appear bent, see "Getting Help."

10. Align the pin-1 corner of the processor with the pin-1 corner of the ZIF socket. See Figure 6-12.

📝 **NOTE:** Identifying the pin-1 corners is critical to positioning the processor correctly.

   Identify the pin-1 corner of the processor by locating the tiny gold triangle on one corner of the processor. Place this corner in the same corner of the ZIF socket identified by a corresponding triangle.

11. Install the processor in the socket.

🚫 **NOTICE:** If you position the processor incorrectly, you can permanently damage the processor and the system when you turn it on. When placing the processor in the socket, make sure that all of the pins on the processor enter the corresponding holes. Be careful not to bend the pins.

   a. If the release lever on the processor socket is not positioned all the way up, move it to that position.

   b. With the pin-1 corners of the processor and socket aligned, set the processor lightly in the socket, making sure all pins are matched with the correct holes in the socket.

   Because the system uses a ZIF processor socket, do not use force, which could bend the pins if the processor is misaligned.

   When the processor is positioned correctly, it drops down into the socket with minimal pressure.

   c. When the processor is fully seated in the socket, rotate the socket release lever back down until it snaps into place, securing the processor.

12. Install the heat sink.

   a. Using a clean lint-free cloth, remove the existing thermal grease from the heat sink.

   📝 **NOTE:** Use the heat sink that you removed earlier in this procedure.

   b. Apply thermal grease evenly to the top of the processor.

   c. Place the heat sink onto the processor. See Figure 6-10.

   d. Using a #2 Phillips screwdriver, tighten in a diagonal pattern the four captive screws that secure the heat sink to the system board. See Figure 6-11.

   e. Repeat for the other heat sink.

13. Install the processor cooling shroud by aligning the arrows on the shroud with the arrows on the chassis next to the fans. See Figure 6-9.

14. Close the system. See "Closing the System" in "Troubleshooting Your System."

   As the system boots, it detects the presence of the new processor and automatically changes the system configuration information in the System Setup program.

15. Press <F2> to enter the System Setup program, and check that the processor information matches the new system configuration.

     See your *User's Guide* for instructions about using the System Setup program.

16. Run the system diagnostics to verify that the new processor operates correctly.

     See "Using Dell Diagnostics" for information about running the diagnostics and troubleshooting processor problems.

Installing Drives

Dell™ PowerEdge™ SC1425 Systems Installation and Troubleshooting Guide

- Optical Drive
- SCSI Configuration Information
- Configuring the Boot Drive
- Hard Drives
- Installing a SCSI Controller Card

Your system contains up to two SATA or SCSI hard drives and a optical drive. If your system contains SCSI hard drives, they must be connected to a SCSI controller card. The integrated SATA controller supports up to two SATA hard drives.

Optical Drive

The optional optical drive is mounted in a bracket using two alignment pins and a spring clip on top of hard drive 0. An interposer card is connected to the back of the drive which allows the drive to be connected to the Pri-IDE connector on the system board.

Removing the Optical Drive

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Open the system. See "Opening the System" in "Troubleshooting Your System."

2. Disconnect the power and interface cables from the optical drive's interposer card.

3. Pull the two captive fasteners that secure the interposer card to the hard drive 0 carrier. See Figure 7-1.

4. Disconnect the interposer card from the optical drive.

5. Press the bracket release lever that secures the optical drive to the hard drive 0 carrier. See Figure 7-1.

6. Lift and tilt the optical drive up and out of the bracket as shown in Figure 7-1.

Figure 7-1. Removing and Installing the Optional Optical Drive
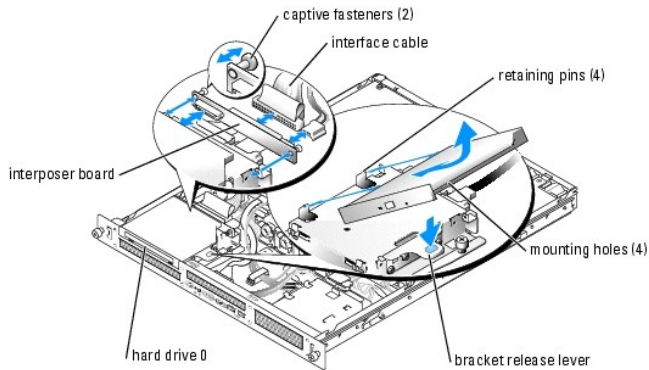
Installing the Optical Drive

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Align the optical drive's mounting holes with the retaining pins on the hard drive 0 bracket. See Figure 7-1.

2. Rotate the drive downward until it snaps into place.

3. Connect the interposer card to the optical drive.

4. Push the plungers into the captive fastener barrels until they snap into place.

5. Connect the interface and power cables to the optical drive's interposer card

6. Close the system. See "Closing the System" in "Troubleshooting Your System."

SCSI Configuration Information

Although SCSI drives are installed in essentially the same way as other drives, their configuration requirements are different. To install and configure a SCSI drive, follow the guidelines in the following subsections.

SCSI Interface Cables

SCSI interface connectors are keyed for correct insertion. Keying ensures that the pin-1 wire in the cable connects to pin 1 in the connectors on both ends. When you disconnect an interface cable, take care to grasp the cable connector, rather than the cable itself, to avoid stress on the cable.

SCSI ID Numbers

Each drive attached to a SCSI controller must have a unique SCSI ID number from 0 to 15.

- l The SCSI hard drive from which the system boots is configured as SCSI ID 0.

- l If you install optional SCSI drives or change your SCSI configuration, see the documentation for each SCSI drive for information on setting the appropriate SCSI ID number.

NOTE: There is no requirement that SCSI ID numbers be assigned sequentially or that drives be attached to the cable in order by ID number.

Device Termination

SCSI logic requires that termination be enabled for the two drives at opposite ends of the SCSI chain and disabled for all drives in between. For internal SCSI drives, termination is configured automatically. See the documentation provided with any optional SCSI drive you purchase for information on disabling termination.

Configuring the Boot Drive

The drive or device from which the system boots is determined by the boot order specified in the System Setup program. See "Using the System Setup Program" in your *User's Guide*. To boot the system from a hard drive or drive array, the drive(s) must be connected to the appropriate controller:

- l To boot from a single SATA hard drive, the master drive (drive 0) must be connected to the SATA_PORT_0 connector on the system board. To identify system board connectors, see Figure A-3.

- l To boot from a single SCSI hard drive, the drive must be connected to the SCSI controller card. See the documentation that accompanied the controller card.

- l To boot from a SCSI RAID array, the drive must be connected to the RAID controller card. See the documentation that accompanied the controller card.

Hard Drives

Your system contains up to two non-hot-pluggable SATA or SCSI hard drives. If your system contains SCSI hard drives, they must be connected to a SCSI controller board. The cables for hard drive 1 are routed through a cable clamp mounted to the chassis.

The procedures for removing and installing SATA or SCSI hard drives are the same.

CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

1. Open the system. See "Opening the System" in "Troubleshooting Your System."

2. If applicable, remove the CD drive.

Remove the CD drive if you are removing hard drive 0. See "Removing the Optical Drive."

3. Disconnect the power and interface cables from the hard drive.

   The interface cables for SATA hard drives are connected to the system board. See Figure A-3 for the location of the system board connectors.

   The interface cables for SCSI hard drives are connected to a controller card.

4. Loosen the captive screw that secures the hard-drive carrier to the chassis. See Figure 7-2.

Figure 7-2. Removing the Hard-Drive Carrier
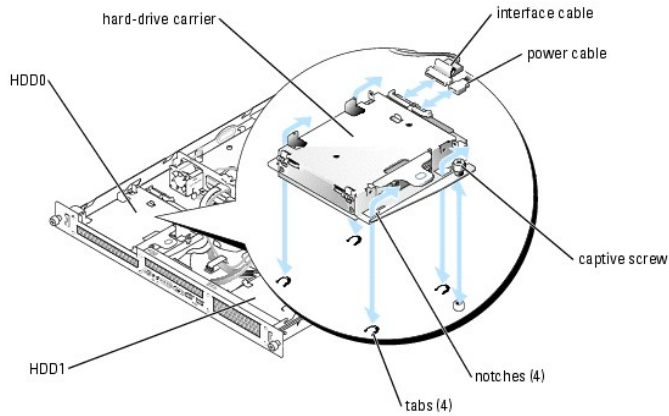
5. Slide the hard-drive carrier backward and lift the carrier out of the chassis.

6. Using a #2 Phillips screwdriver, remove the four screws that secure the hard drive to the carrier and remove the drive from the carrier. See Figure 7-3.

Figure 7-3. Removing the Hard Drives From the Drive Carriers
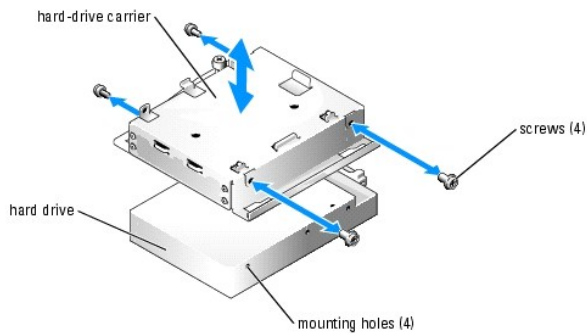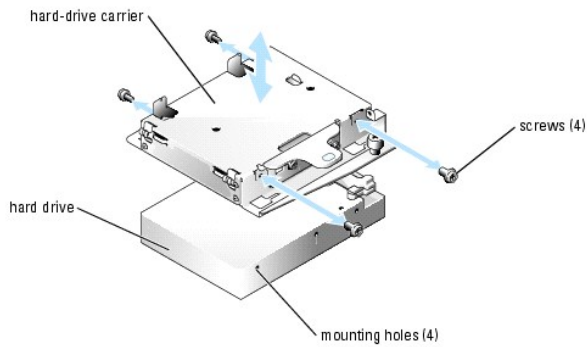
Installing a Hard Drive

⚠️ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

1. Align the hard-drive mounting holes with the holes in the drive carrier.

2. Using a #2 Phillips screwdriver, install the four screws that secure the hard drive to the carrier. See Figure 7-3.

3. Align the hard-drive carrier so that the tabs on the chassis slide into the notches in the carrier. See Figure 7-2.

4. Slide the carrier forward until it stops.

5. Tighten the captive screw that secures the hard-drive carrier to the chassis.

6. Connect the power and interface cables to the new drive.

   The interface cables for SATA hard drives are connected to the system board. See Figure A-3 for the location of the system board connectors.

   The interface cables for SCSI hard drives are connected to a controller card.
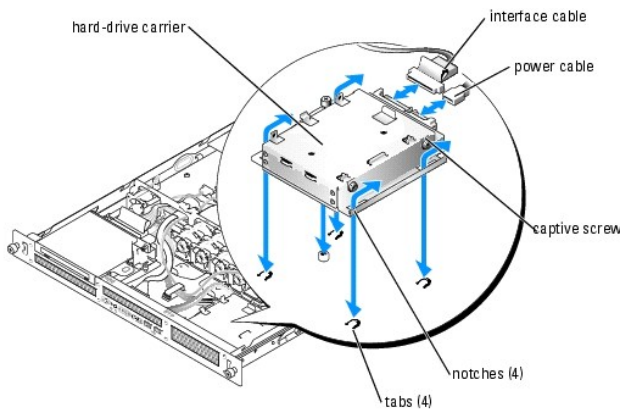
7. Install the CD drive.

   Install the CD drive if you are removing hard drive 0. See "Installing the Optical Drive."

8. Close the system. See "Closing the System" in "Troubleshooting Your System."

Installing a SCSI Controller Card

See "Installing an Expansion Card" in "Installing System Components" for instructions about installing the card. See the controller card documentation for information on installing and configuring the card.

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Getting Help

Dell™ PowerEdge™ SC1425 Systems Installation and Troubleshooting Guide

- Technical Assistance
- Dell Enterprise Training and Certification
- Problems With Your Order
- Product Information
- Returning Items for Warranty Repair or Credit
- Before You Call
- Contacting Dell

Technical Assistance

If you need assistance with a technical problem, perform the following steps:

1. Complete the procedures in "Troubleshooting Your System."

2. Run the system diagnostics and record any information provided.

3. Make a copy of the Diagnostics Checklist, and fill it out.

4. Use Dell's extensive suite of online services available at Dell Support at **support.dell.com** for help with installation and troubleshooting procedures.

   For more information, see "Online Services."

5. If the preceding steps have not resolved the problem, call Dell for technical assistance.

NOTE: Call technical support from a phone near or at the system so that technical support can assist you with any necessary procedures.

NOTE: Dell's Express Service Code system may not be available in all countries.

When prompted by Dell's automated telephone system, enter your Express Service Code to route the call directly to the proper support personnel. If you do not have an Express Service Code, open the **Dell Accessories** folder, double-click the **Express Service Code** icon, and follow the directions.

For instructions on using the technical support service, see "Technical Support Service" and "Before You Call."

NOTE: Some of the following services are not always available in all locations outside the continental U.S. Call your local Dell representative for information on availability.

Online Services

You can access Dell Support at **support.dell.com**. Select your region on the **WELCOME TO DELL SUPPORT** page, and fill in the requested details to access help tools and information.

You can contact Dell electronically using the following addresses:

- World Wide Web

  www.dell.com/

  www.dell.com/ap/ (Asian/Pacific countries only)

  www.dell.com/jp (Japan only)

  www.euro.dell.com (Europe only)

  www.dell.com/la (Latin American countries)

  www.dell.ca (Canada only)

- Anonymous file transfer protocol (FTP)

  ftp.dell.com/

  Log in as user:anonymous, and use your e-mail address as your password.

- Electronic Support Service

  support@us.dell.com

  apsupport@dell.com (Asian/Pacific countries only)

support.jp.dell.com (Japan only)

support.euro.dell.com (Europe only)

l   Electronic Quote Service

sales@dell.com

apmarketing@dell.com (Asian/Pacific countries only)

sales_canada@dell.com (Canada only)

l   Electronic Information Service

info@dell.com

AutoTech Service

Dell's automated technical support service—AutoTech—provides recorded answers to the questions most frequently asked by Dell customers about their portable and desktop computer systems.

When you call AutoTech, use your touch-tone telephone to select the subjects that correspond to your questions.

The AutoTech service is available 24 hours a day, 7 days a week. You can also access this service through the technical support service. See the contact information for your region.

Automated Order-Status Service

To check on the status of any Dell™ products that you have ordered, you can go to **support.dell.com**, or you can call the automated order-status service. A recording prompts you for the information needed to locate and report on your order. See the contact information for your region.

Technical Support Service

Dell's technical support service is available 24 hours a day, 7 days a week, to answer your questions about Dell hardware. Our technical support staff use computer-based diagnostics to provide fast, accurate answers.

To contact Dell's technical support service, see "Before You Call" and then see the contact information for your region.

Dell Enterprise Training and Certification

Dell Enterprise Training and Certification is available; see **www.dell.com/training** for more information. This service may not be offered in all locations.

Problems With Your Order

If you have a problem with your order, such as missing parts, wrong parts, or incorrect billing, contact Dell for customer assistance. Have your invoice or packing slip available when you call. See the contact information for your region.

Product Information

If you need information about additional products available from Dell, or if you would like to place an order, visit the Dell website at **www.dell.com**. For the telephone number to call to speak to a sales specialist, see the contact information for your region.

Returning Items for Warranty Repair or Credit

Prepare all items being returned, whether for repair or credit, as follows:

1.   Call Dell to obtain a Return Material Authorization Number, and write it clearly and prominently on the outside of the box.

    For the telephone number to call, see the contact information for your region.

2.   Include a copy of the invoice and a letter describing the reason for the return.

3.   Include a copy of any diagnostic information (including the Diagnostics Checklist) indicating the tests you have run and any error messages reported by

the system diagnostics.

4. Include any accessories that belong with the item(s) being returned (such as power cables, media such as CDs and diskettes, and guides) if the return is for credit.

5. Pack the equipment to be returned in the original (or equivalent) packing materials.

You are responsible for paying shipping expenses. You are also responsible for insuring any product returned, and you assume the risk of loss during shipment to Dell. Collect-on-delivery (C.O.D.) packages are not accepted.

Returns that are missing any of the preceding requirements will be refused at our receiving dock and returned to you.

Before You Call

NOTE: Have your Express Service Code ready when you call. The code helps Dell's automated-support telephone system direct your call more efficiently.

Remember to fill out the Diagnostics Checklist. If possible, turn on your system before you call Dell for technical assistance and call from a telephone at or near the computer. You may be asked to type some commands at the keyboard, relay detailed information during operations, or try other troubleshooting steps possible only at the computer system itself. Ensure that the system documentation is available.

⚠ **CAUTION: Before servicing any components inside your computer, see your *Product Information Guide* for important safety information.**

Diagnostics Checklist
Name:
Date:
Address:
Phone number:
Service Tag (bar code on the back of the computer):
Express Service Code:
Return Material Authorization Number (if provided by Dell support technician):
Operating system and version:
Peripherals:
Expansion cards:
Are you connected to a network? Yes No
Network, version, and network card:
Programs and versions:
See your operating system documentation to determine the contents of the system's start-up files. If possible, print each file. Otherwise, record the contents of each file before calling Dell.
Error message, beep code, or diagnostic code:
Description of problem and troubleshooting procedures you performed:

Contacting Dell

To contact Dell electronically, you can access the following websites:

l **www.dell.com**

l **support.dell.com** (technical support)

l **premiersupport.dell.com** (technical support for educational, government, healthcare, and medium/large business customers, including Premier, Platinum, and Gold customers)

For specific web addresses for your country, find the appropriate country section in the table below.

NOTE: Toll-free numbers are for use within the country for which they are listed.

When you need to contact Dell, use the electronic addresses, telephone numbers, and codes provided in the following table. If you need assistance in determining which codes to use, contact a local or an international operator.

Country (City) International Access Code Country Code City Code	Department Name or Service Area, Website and E-Mail Address	Area Codes, Local Numbers, and Toll-Free Numbers
Anguilla	General Support	toll-**free**: 800-335-0031
Antigua and Barbuda	General Support	1-800-805-5924
Argentina (Buenos Aires)	Website: **www.dell.com.ar**	
International Access Code: **00**	Tech Support and Customer Care	toll-**free**: 0-800-444-0733
	Sales	0-810-444-3355
Country Code: **54**	Tech Support Fax	11 4515 7139
City Code: **11**	Customer Care Fax	11 4515 7138
Aruba	General Support	toll-**free**: 800-1578
Australia (Sydney) International Access Code: **0011** Country Code: **61** City Code: **2**	E-mail (Australia): au_tech_support@dell.com	
	E-mail (New Zealand): nz_tech_support@dell.com	
	Home and Small Business	1-300-65-55-33
	Government and Business	toll-**free**: 1-800-633-559
	Preferred Accounts Division (PAD)	toll-**free**: 1-800-060-889
	Customer Care	toll-**free**: 1-800-819-339
	Corporate Sales	toll-**free**: 1-800-808-385
	Transaction Sales	toll-**free**: 1-800-808-312
	Fax	toll-**free**: 1-800-818-341
Austria (Vienna) International Access Code: **900** Country Code: **43** City Code: **1**	Website: **support.euro.dell.com**	
	E-mail: tech_support_central_europe@dell.com	
	Home/Small Business Sales	0820 240 530 00
	Home/Small Business Fax	0820 240 530 49
	Home/Small Business Customer Care	0820 240 530 14
	Preferred Accounts/Corporate Customer Care	0820 240 530 16
	Home/Small Business Technical Support	0820 240 530 14
	Preferred Accounts/Corporate Technical Support	0660 8779
	Switchboard	0820 240 530 00
Bahamas	General Support	toll-**free**: 1-866-278-6818
Barbados	General Support	1-800-534-3066
Belgium (Brussels) International Access Code: **00** Country Code: **32** City Code: **2**	Website: **support.euro.dell.com**	
	E-mail: tech_be@dell.com	
	E-mail for French Speaking Customers: **support.euro.dell.com/be/fr/emaildell/**	
	Technical Support	02 481 92 88
	Customer Care	02 481 91 19
	Corporate Sales	02 481 91 00
	Fax	02 481 92 99
	Switchboard	02 481 91 00
Bermuda	General Support	1-800-342-0671
Bolivia	General Support	toll-**free**: 800-10-0238
Brazil International Access Code: **00** Country Code: **55** City Code: **51**	Website: **www.dell.com/br**	
	Customer Support, Technical Support	0800 90 3355
	Tech Support Fax	51 481 5470
	Customer Care Fax	51 481 5480
	Sales	0800 90 3390
British Virgin Islands	General Support	toll-**free**: 1-866-278-6820
Brunei Country Code: **673**	Customer Technical Support (Penang, Malaysia)	604 633 4966
	Customer Service (Penang, Malaysia)	604 633 4949
	Transaction Sales (Penang, Malaysia)	604 633 4955
Canada (North York, Ontario) International Access Code: **011**	Online Order Status: **www.dell.ca/ostatus**	
	AutoTech (automated technical support)	toll-**free**: 1-800-247-9362
	TechFax	toll-**free**: 1-800-950-1329
	Customer Care (Home Sales/Small Business)	toll-**free**: 1-800-847-4096
	Customer Care (med./large business, government)	toll-**free**: 1-800-326-9463
	Technical Support (Home Sales/Small Business)	toll-**free**: 1-800-847-4096
	Technical Support (med./large bus., government)	toll-**free**: 1-800-387-5757
	Sales (Home Sales/Small Business)	toll-**free**: 1-800-387-5752

	Sales (med./large bus., government)	toll-**free:** 1-800-387-5755
	Spare Parts Sales & Extended Service Sales	1 866 440 3355
Cayman Islands	General Support	1-800-805-7541
Chile (Santiago) Country Code: **56** City Code: **2**	Sales, Customer Support, and Technical Support	toll-**free:** 1230-020-4823
China (Xiamen) Country Code: **86** City Code: **592**	Tech Support website: **support.dell.com.cn**	
	Tech Support E-mail: cn_support@dell.com	
	Tech Support Fax	818 1350
	Technical Support (Dimension™ and Inspiron™)	toll-**free:** 800 858 2969
	Technical Support (OptiPlex™, Latitude™, and Dell Precision™)	toll-**free:** 800 858 0950
	Technical Support (servers and storage)	toll-**free:** 800 858 0960
	Technical Support (projectors, PDAs, printers, switches, routers, and so on)	toll-**free:** 800 858 2920
	Customer Experience	toll-**free:** 800 858 2060
	Home and Small Business	toll-**free:** 800 858 2222
	Preferred Accounts Division	toll-**free:** 800 858 2557
	Large Corporate Accounts GCP	toll-**free:** 800 858 2055
	Large Corporate Accounts Key Accounts	toll-**free:** 800 858 2628
	Large Corporate Accounts North	toll-**free:** 800 858 2999
	Large Corporate Accounts North Government and Education	toll-**free:** 800 858 2955
	Large Corporate Accounts East	toll-**free:** 800 858 2020
	Large Corporate Accounts East Government and Education	toll-**free:** 800 858 2669
	Large Corporate Accounts Queue Team	toll-**free:** 800 858 2222
	Large Corporate Accounts South	toll-**free:** 800 858 2355
	Large Corporate Accounts West	toll-**free:** 800 858 2811
	Large Corporate Accounts Spare Parts	toll-**free:** 800 858 2621
Colombia	General Support	980-9-15-3978
Costa Rica	General Support	0800-012-0435
Czech Republic (Prague) International Access Code: **00** Country Code: **420** City Code: **2**	Website: **support.euro.dell.com**	
	E-mail: czech_dell@dell.com	
	Technical Support	02 2186 27 27
	Customer Care	02 2186 27 11
	Fax	02 2186 27 14
	TechFax	02 2186 27 28
	Switchboard	02 2186 27 11
Denmark (Copenhagen) International Access Code: **00** Country Code: **45**	Website: **support.euro.dell.com**	
	E-mail Support (portable computers): den_nbk_support@dell.com	
	E-mail Support (desktop computers): den_support@dell.com	
	E-mail Support (servers): Nordic_server_support@dell.com	
	Technical Support	7023 0182
	Customer Care (Relational)	7023 0184
	Home/Small Business Customer Care	3287 5505
	Switchboard (Relational)	3287 1200
	Fax Switchboard (Relational)	3287 1201
	Switchboard (Home/Small Business)	3287 5000
	Fax Switchboard (Home/Small Business)	3287 5001
Dominica	General Support	toll-**free:** 1-866-278-6821
Dominican Republic	General Support	1-800-148-0530
Ecuador	General Support	toll-**free:** 999-119
El Salvador	General Support	01-899-753-0777
Finland (Helsinki) International Access Code: **990** Country Code: **358** City Code: **9**	Website: **support.euro.dell.com**	
	E-mail: fin_support@dell.com	
	E-mail Support (servers): Nordic_support@dell.com	
	Technical Support	09 253 313 60
	Technical Support Fax	09 253 313 81
	Relational Customer Care	09 253 313 38
	Home/Small Business Customer Care	09 693 791 94

	Fax	09 253 313 99
	Switchboard	09 253 313 00
France (Paris) (Montpellier) International Access Code: **00** Country Code: **33** City Codes: **(1) (4)**	Website: **support.euro.dell.com**	
	E-mail: **support.euro.dell.com/fr/fr/emaildell/**	
	Home and Small Business	
	Technical Support	0825 387 270
	Customer Care	0825 823 833
	Switchboard	0825 004 700
	Switchboard (calls from outside of France)	04 99 75 40 00
	Sales	0825 004 700
	Fax	0825 004 701
	Fax (calls from outside of France)	04 99 75 40 01
	Corporate	
	Technical Support	0825 004 719
	Customer Care	0825 338 339
	Switchboard	01 55 94 71 00
	Sales	01 55 94 71 00
	Fax	01 55 94 71 01
Germany (Langen) International Access Code: **00** Country Code: **49** City Code: **6103**	Website: **support.euro.dell.com**	
	E-mail: tech_support_central_europe@dell.com	
	Technical Support	06103 766-7200
	Home/Small Business Customer Care	0180-5-224400
	Global Segment Customer Care	06103 766-9570
	Preferred Accounts Customer Care	06103 766-9420
	Large Accounts Customer Care	06103 766-9560
	Public Accounts Customer Care	06103 766-9555
	Switchboard	06103 766-7000
Greece International Access Code: 00 Country Code: 30	Website: **support.euro.dell.com**	
	E-mail: **support.euro.dell.com/gr/en/emaildell/**	
	Technical Support	080044149518
	Gold Technical Support	08844140083
	Switchboard	2108129800
	Sales	2108129800
	Fax	2108129812
Grenada	General Support	toll-**free:** 1-866-540-3355
Guatemala	General Support	1-800-999-0136
Guyana	General Support	toll-**free:** 1-877-270-4609
Hong Kong International Access Code: **001** Country Code: **852**	Website: **support.ap.dell.com**	
	E-mail: ap_support@dell.com	
	Technical Support (Dimension™ and Inspiron™)	2969 3189
	Technical Support (OptiPlex™, Latitude™, and Dell Precision™)	2969 3191
	Technical Support (PowerApp™, PowerEdge™, PowerConnect™, and PowerVault™)	2969 3196
	Gold Queue EEC Hotline	2969 3187
	Customer Advocacy	3416 0910
	Large Corporate Accounts	3416 0907
	Global Customer Programs	3416 0908
	Medium Business Division	3416 0912
	Home and Small Business Division	2969 3105
India	Technical Support	1600 33 8045
	Sales	1600 33 8044
Ireland (Cherrywood) International Access Code: **16** Country Code: **353**	Website: **support.euro.dell.com**	
	E-mail: dell_direct_support@dell.com	
	Technical Support	1850 543 543
	U.K. Technical Support (dial within U.K. only)	0870 908 0800
	Home User Customer Care	01 204 4014
	Small Business Customer Care	01 204 4014
	U.K. Customer Care (dial within U.K. only)	0870 906 0010
	Corporate Customer Care	1850 200 982

City Code: **1**	Corporate Customer Care (dial within U.K. only)	0870 907 4499
	Ireland Sales	01 204 4444
	U.K. Sales (dial within U.K. only)	0870 907 4000
	Fax/SalesFax	01 204 0103
	Switchboard	01 204 4444
Italy (Milan) International Access Code: **00** Country Code: **39** City Code: **02**	Website: **support.euro.dell.com**	
	E-mail: **support.euro.dell.com/it/it/emaildell/**	
	Home and Small Business	
	Technical Support	02 577 826 90
	Customer Care	02 696 821 14
	Fax	02 696 821 13
	Switchboard	02 696 821 12
	Corporate	
	Technical Support	02 577 826 90
	Customer Care	02 577 825 55
	Fax	02 575 035 30
	Switchboard	02 577 821
Jamaica	General Support (dial from within Jamaica only)	1-800-682-3639
Japan (Kawasaki) International Access Code: **001** Country Code: **81** City Code: **44**	Website: **support.jp.dell.com**	
	Technical Support (servers)	toll-free: 0120-198-498
	Technical Support outside of Japan (servers)	81-44-556-4162
	Technical Support (Dimension™ and Inspiron™)	toll-free: 0120-198-226
	Technical Support outside of Japan (Dimension and Inspiron)	81-44-520-1435
	Technical Support (Dell Precision™, OptiPlex™, and Latitude™)	toll-free:0120-198-433
	Technical Support outside of Japan (Dell Precision, OptiPlex, and Latitude)	81-44-556-3894
	Technical Support (Axim™)	toll-free: 0120-981-690
	Technical Support outside of Japan (Axim)	81-44-556-3468
	Faxbox Service	044-556-3490
	24-Hour Automated Order Service	044-556-3801
	Customer Care	044-556-4240
	Business Sales Division (up to 400 employees)	044-556-1465
	Preferred Accounts Division Sales (over 400 employees)	044-556-3433
	Large Corporate Accounts Sales (over 3500 employees)	044-556-3430
	Public Sales (government agencies, educational institutions, and medical institutions)	044-556-1469
	Global Segment Japan	044-556-3469
	Individual User	044-556-1760
	Switchboard	044-556-4300
Korea (Seoul) International Access Code: **001** Country Code: **82** City Code: **2**	Technical Support	toll-**free: 080**-200-3800
	Sales	toll-**free: 080**-200-3600
	Customer Service (Seoul, Korea)	toll-free: 080-200-3800
	Customer Service (Penang, Malaysia)	604 633 4949
	Fax	2194-6202
	Switchboard	2194-6000
Latin America	Customer Technical Support (Austin, Texas, U.S.A.)	512 728-4093
	Customer Service (Austin, Texas, U.S.A.)	512 728-3619
	Fax (Technical Support and Customer Service) (Austin, Texas, U.S.A.)	512 728-3883
	Sales (Austin, Texas, U.S.A.)	512 728-4397
	SalesFax (Austin, Texas, U.S.A.)	512 728-4600 or 512 728-3772
Luxembourg International Access Code: **00** Country Code: **352**	Website: **support.euro.dell.com**	
	E-mail: tech_be@dell.com	
	Technical Support (Brussels, Belgium)	3420808075
	Home/Small Business Sales (Brussels, Belgium)	toll-**free: 080016884**
	Corporate Sales (Brussels, Belgium)	02 481 91 00
	Customer Care (Brussels, Belgium)	02 481 91 19
	Fax (Brussels, Belgium)	02 481 92 99
	Switchboard (Brussels, Belgium)	02 481 91 00
Macao	Technical Support	toll-**free: 0800 582**

Country Code: **853**	Customer Service (Penang, Malaysia)	604 633 4949
	Transaction Sales	toll-**free: 0800 581**
Malaysia (Penang)	Technical Support (Dell Precision, OptiPlex, and Latitude)	toll-**free: 1 800 88 0193**
International Access Code: **00**	Technical Support (Dimension and Inspiron)	toll-**free: 1 800 88 1306**
Country Code: **60**	Customer Service	04 633 4949
	Transaction Sales	toll-**free: 1 800 888 202**
City Code: **4**	Corporate Sales	toll-**free: 1 800 888 213**
Mexico International Access Code: **00** Country Code: **52**	Customer Technical Support	001-877-384-8979 or 001-877-269-3383
	Sales	50-81-8800 or 01-800-888-3355
	Customer Service	001-877-384-8979 or 001-877-269-3383
	Main	50-81-8800 or 01-800-888-3355
Montserrat	General Support	toll-**free: 1-866-278-6822**
Netherlands Antilles	General Support	001-800-882-1519
Netherlands (Amsterdam) International Access Code: **00** Country Code: **31** City Code: **20**	Website: **support.euro.dell.com** E-mail (Technical Support): (Enterprise): nl_server_support@dell.com (Latitude): nl_latitude_support@dell.com (Inspiron): nl_inspiron_support@dell.com (Dimension): nl_dimension_support@dell.com (OptiPlex): nl_optiplex_support@dell.com (Dell Precision): nl_workstation_support@dell.com	
	Technical Support	020 674 45 00
	Technical Support Fax	020 674 47 66
	Home/Small Business Customer Care	020 674 42 00
	Relational Customer Care	020 674 4325
	Home/Small Business Sales	020 674 55 00
	Relational Sales	020 674 50 00
	Home/Small Business Sales Fax	020 674 47 75
	Relational Sales Fax	020 674 47 50
	Switchboard	020 674 50 00
	Switchboard Fax	020 674 47 50
New Zealand International Access Code: **00** Country Code: **64**	E-mail (New Zealand): nz_tech_support@dell.com	
	E-mail (Australia): au_tech_support@dell.com	
	Home and Small Business	0800 446 255
	Government and Business	0800 444 617
	Sales	0800 441 567
	Fax	0800 441 566
Nicaragua	General Support	001-800-220-1006
Norway (Lysaker) International Access Code: **00** Country Code: **47**	Website: **support.euro.dell.com** E-mail Support (portable computers): nor_nbk_support@dell.com	
	E-mail Support (desktop computers): nor_support@dell.com	
	E-mail Support (servers): nordic_server_support@dell.com	
	Technical Support	671 16882
	Relational Customer Care	671 17514
	Home/Small Business Customer Care	23162298
	Switchboard	671 16800
	Fax Switchboard	671 16865

Panama	General Support	001-800-507-0962
Peru	General Support	0800-50-669
Poland (Warsaw) International Access Code: **011** Country Code: **48** City Code: **22**	Website: **support.euro.dell.com**	
	E-mail: pl_support_tech@dell.com	
	Customer Service Phone	57 95 700
	Customer Care	57 95 999
	Sales	57 95 999
	Customer Service Fax	57 95 806
	Reception Desk Fax	57 95 998
	Switchboard	57 95 999
Portugal International Access Code: **00** Country Code: **351**	Website: **support.euro.dell.com**	
	E-mail: **support.euro.dell.com/pt/en/emaildell/**	
	Technical Support	707200149
	Customer Care	800 300 413
	Sales	800 300 410 or 800 300 411 or 800 300 412 or 21 422 07 10
	Fax	21 424 01 12
Puerto Rico	General Support	1-800-805-7545
St. Kitts and Nevis	General Support	toll-**free:** 1-877-441-4731
St. Lucia	General Support	1-800-882-1521
St. Vincent and the Grenadines	General Support	toll-**free:** 1-877-270-4609
Singapore (Singapore) International Access Code: **005** Country Code: **65**	Technical Support	toll-**free:** 800 6011 051
	Customer Service (Penang, Malaysia)	604 633 4949
	Transaction Sales	toll-**free:** 800 6011 054
	Corporate Sales	toll-**free:** 800 6011 053
South Africa (Johannesburg) International Access Code: **09/091** Country Code: **27** City Code: **11**	Website: **support.euro.dell.com**	
	E-mail: dell_za_support@dell.com	
	Technical Support	011 709 7710
	Customer Care	011 709 7707
	Sales	011 709 7700
	Fax	011 706 0495
	Switchboard	011 709 7700
Southeast Asian and Pacific Countries	Customer Technical Support, Customer Service, and Sales (Penang, Malaysia)	604 633 4810
Spain (Madrid) International Access Code: **00** Country Code: **34** City Code: **91**	Website: **support.euro.dell.com**	
	E-mail: **support.euro.dell.com/es/es/emaildell/**	
	Home and Small Business	
	Technical Support	902 100 130
	Customer Care	902 118 540
	Sales	902 118 541
	Switchboard	902 118 541
	Fax	902 118 539
	Corporate	
	Technical Support	902 100 130
	Customer Care	902 118 546
	Switchboard	91 722 92 00
	Fax	91 722 95 83
Sweden (Upplands Vasby) International Access Code: **00** Country Code: **46** City Code: **8**	Website: **support.euro.dell.com**	
	E-mail: swe_support@dell.com	
	E-mail Support for Latitude and Inspiron: Swe-nbk_kats@dell.com	
	E-mail Support for OptiPlex: Swe_kats@dell.com	
	E-mail Support for Servers: Nordic_server_support@dell.com	
	Technical Support	08 590 05 199
	Relational Customer Care	08 590 05 642
	Home/Small Business Customer Care	08 587 70 527
	Employee Purchase Program (EPP) Support	20 140 14 44
	Fax Technical Support	08 590 05 594
	Sales	08 590 05 185

	Website: **support.euro.dell.com**	
	E-mail: Tech_support_central_Europe@dell.com	
Switzerland (Geneva)	E-mail for French-speaking HSB and Corporate Customers: **support.euro.dell.com/ch/fr/emaildell/**	
International Access Code: **00**	Technical Support (Home and Small Business)	0844 811 411
	Technical Support (Corporate)	0844 822 844
Country Code: **41**	Customer Care (Home and Small Business)	0848 802 202
City Code: **22**	Customer Care (Corporate)	0848 821 721
	Fax	022 799 01 90
	Switchboard	022 799 01 01
Taiwan	Technical Support (portable and desktop computers)	toll-**free: 00801 86 1011**
International Access Code: **002**	Technical Support (servers)	toll-**free: 0080 60 1256**
	Transaction Sales	toll-**free: 0080 651 228**
Country Code: **886**	Corporate Sales	toll-**free: 0080 651 227**
Thailand	Technical Support	toll-**free: 0880 060 07**
International Access Code: **001**	Customer Service (Penang, Malaysia)	604 633 4949
Country Code: **66**	Sales	toll-**free: 0880 060 09**
Trinidad/Tobago	General Support	1-800-805-8035
Turks and Caicos Islands	General Support	toll-**free: 1-866-540-3355**
	Website: **support.euro.dell.com**	
	Customer Care website: **support.euro.dell.com/uk/en/ECare/Form/Home.asp**	
	E-mail: dell_direct_support@dell.com	
	Technical Support (Corporate/Preferred Accounts/PAD [1000+ employees])	0870 908 0500
U.K. (Bracknell)	Technical Support (direct/PAD and general)	0870 908 0800
International Access Code: **00**	Global Accounts Customer Care	01344 373 186
	Home and Small Business Customer Care	0870 906 0010
Country Code: **44**	Corporate Customer Care	01344 373 185
City Code: **1344**	Preferred Accounts (500–5000 employees) Customer Care	0870 906 0010
	Central Government Customer Care	01344 373 193
	Local Government & Education Customer Care	01344 373 199
	Health Customer Care	01344 373 194
	Home and Small Business Sales	0870 907 4000
	Corporate/Public Sector Sales	01344 860 456
	Home and Small Business Fax	0870 907 4006
Uruguay	General Support	toll-**free: 000-413-598-2521**
	Automated Order-Status Service	toll-**free: 1-800-433-9014**
	AutoTech (portable and desktop computers)	toll-**free: 1-800-247-9362**
	Consumer (Home and Home Office)	
	Technical Support	toll-**free: 1-800-624-9896**
	Customer Service	toll-**free: 1-800-624-9897**
	DellNet™ Service and Support	toll-**free: 1-877-Dellnet** (1-877-335-5638)
	Employee Purchase Program (EPP) Customers	toll-**free: 1-800-695-8133**
	Financial Services website: **www.dellfinancialservices.com**	
	Financial Services (lease/loans)	toll-**free: 1-877-577-3355**
	Financial Services (Dell Preferred Accounts [DPA])	toll-**free: 1-800-283-2210**
	Business	
U.S.A. (Austin, Texas)	Customer Service and Technical Support	toll-**free: 1-800-822-8965**
International Access Code: **011**	Employee Purchase Program (EPP) Customers	toll-**free: 1-800-695-8133**
	Printers and Projectors Technical Support	toll-**free: 1-877-459-7298**
Country Code: **1**	**Public** (government, education, and healthcare)	
	Customer Service and Technical Support	toll-**free: 1-800-456-3355**
	Employee Purchase Program (EPP) Customers	toll-**free: 1-800-234-1490**
	Dell Sales	toll-**free: 1-800-289-3355** or toll-**free: 1-800-879-3355**
	Dell Outlet Store (Dell refurbished computers)	toll-**free: 1-888-798-7561**
	Software and Peripherals Sales	toll-**free: 1-800-671-3355**

	Spare Parts Sales	toll-free: 1-800-357-3355
	Extended Service and Warranty Sales	toll-free: 1-800-247-4618
	Fax	toll-free: 1-800-727-8320
	Dell Services for the Deaf, Hard-of-Hearing, or Speech-Impaired	toll-free: 1-877-DELLTTY (1-877-335-5889)
U.S. Virgin Islands	General Support	1-877-673-3355
Venezuela	General Support	8001-3605

Dell™ PowerEdge™ SC1425 Systems Installation and Troubleshooting Guide

Notes, Notices, and Cautions

NOTE: A NOTE indicates important information that helps you make better use of your computer.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

Abbreviations and Acronyms

For a complete list of abbreviations and acronyms, see the Glossary in your *User's Guide*.