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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](#).

If you purchased a Dell™ n Series computer, any references in this document to Microsoft® Windows® operating systems are not applicable.

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Model DHM and WHM



April 2004 P/N U3526 Rev. A00

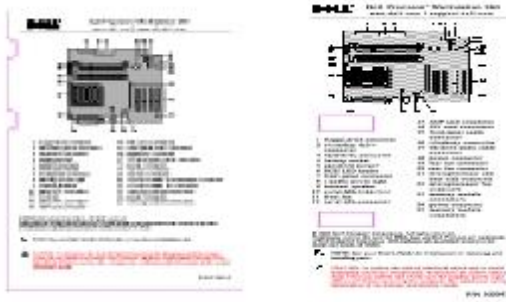
Information About Your Computer

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Finding Information

What Are You Looking For?	Find it Here
<ul style="list-style-type: none">A diagnostic program for my computerDrivers for my computerMy computer documentationMy device documentationDesktop System Software (DSS)	<p>Drivers and Utilities CD (also known as the ResourceCD)</p> <p>Documentation and drivers are already installed on your computer. You can use the CD to reinstall drivers, run the Dell Diagnostics, or access your documentation.</p>  <p>Readme files may be included on your CD to provide last-minute updates about technical changes to your computer or advanced technical-reference material for technicians or experienced users.</p> <p>NOTE: The latest drivers and documentation updates can be found at support.dell.com.</p>
<ul style="list-style-type: none">How to set up my computerHow to care for my computerTroubleshooting informationHow to run the Dell DiagnosticsError codes and diagnostic lightsHow to open my computer cover	<p>Quick Reference Guide</p>  <p>NOTE: This document is available as a PDF at support.dell.com.</p>
<ul style="list-style-type: none">System board connectorsLocation of system board components	<p>System Information Label</p> <p>Located on the inside cover of your computer.</p>



- Warranty information
- Safety instructions
- Regulatory information
- Ergonomics information
- End User License Agreement

Dell™ Product Information Guide



NOTE: This document is available as a PDF at support.dell.com.

- How to remove and replace parts
- Technical specifications
- How to configure system settings
- How to troubleshoot and solve problems

Precision User's Guide

Microsoft® Windows® XP Help and Support Center

1. Click the **Start** button and click **Help and Support**.
2. Click **User's and system guides** and click **User's guides**.

The *User's Guide* is also available on the *Drivers and Utilities CD*.

- Service Tag and Express Service Code
- Microsoft Windows License Label

Service Tag and Microsoft Windows License

These labels are located on your computer.



- Use the Service Tag to identify your computer when you use support.dell.com or contact technical support.
- Enter the Express Service Code to direct your call when contacting technical support. The Express Service Code is not available in all countries.


- Latest drivers for my computer
- Answers to technical service and support questions
- Online discussions with other users and technical support
- Documentation for my computer

Dell Support Website — support.dell.com

NOTE: Select your region to view the appropriate support site.

The Dell Support website provides several online tools, including:

- Solutions — Troubleshooting hints and tips, articles from technicians, and online courses
- Community — Online discussion with other Dell customers
- Upgrades — Upgrade information for components, such as memory, the hard drive, and the operating system
- Customer Care — Contact information, order status, warranty, and repair information
- Downloads — Drivers, patches, and software updates

	<ul style="list-style-type: none"> Reference — Computer documentation, product specifications, and white papers
<ul style="list-style-type: none"> Service call status and support history Top technical issues for my computer Frequently asked questions File downloads Details on my computer configuration Service contract for my computer 	<p>Dell Premier Support Website — premiersupport.dell.com</p> <p>The Dell Premier Support website is customized for corporate, government, and education customers. This website may not be available in all regions.</p>
<ul style="list-style-type: none"> How to use Windows XP Documentation for my computer Documentation for devices (such as a modem) 	<p>Windows Help and Support Center</p> <ol style="list-style-type: none"> Click the Start button and click Help and Support. Type a word or phrase that describes your problem and click the arrow icon. Click the topic that describes your problem. Follow the instructions on the screen.
<ul style="list-style-type: none"> How to use Linux Email discussions with Dell Precision and Linux users Additional information regarding Linux and my Dell Precision computer 	<p>Dell Supported Linux Sites</p> <ul style="list-style-type: none"> http://linux.dell.com http://lists.us.dell.com/mailman/listinfo/linux-precision http://docs.us.dell.com/docs/software/oslinux/ http://docs.us.dell.com/docs/software/OSRHEL3/
<ul style="list-style-type: none"> How to reinstall my operating system 	<p>Operating System CD</p> <p>The operating system is already installed on your computer. To reinstall your operating system, use the <i>Operating System CD</i>. See your Precision <i>User's Guide</i> for instructions.</p>  <p>After you reinstall your operating system, use the <i>Drivers and Utilities CD</i> to reinstall drivers for the devices that came with your computer.</p> <p>Your operating system product key label is located on your computer.</p> <p>NOTE: The color of your CD varies based on the operating system you ordered.</p>

Specifications

Microprocessor	
Microprocessor type	<p>Intel® Pentium® 4 Processor with HT Technology Extreme Edition</p> <p>or Intel® Pentium® 4 Processor with HT</p>

	Technology
Level 1 (L1) cache	8 KB or 16 KB
Level 2 (L2) cache	512 KB or 1 MB
Level 3 (L3) cache	0 or 2 MB

Memory	
Type	Dual channel DDR2 400-MHz (PC2-3200) non-ECC and 533-MHz (PC2-4300) ECC SDRAM. NOTE: Ensure that you do not mix ECC and non-ECC memory. NOTE: Your computer does not support registered or buffered memory
Memory connectors	4
Memory capacities	128-, 256-, 512-, or 1-GB
Minimum memory	256 MB
Maximum memory	4 GB
BIOS address	F0000h

Computer Information	
Chipset	Intel 925X Express
Data bus width	64 bits
Address bus width	32 bits
DMA channels	eight
Interrupt levels	24
BIOS chip (NVRAM)	4-Mb
Memory speed	400/533 MHz
NIC	Integrated network interface with ASF 1.0 support as defined by DMTF Capable of 10/100/1000 communication <ul style="list-style-type: none"> • Green — A good connection exists between a 10-Mbps network and the computer. • Orange — A good connection exists between a 100-Mbps network and the computer. • Yellow — A good connection exists between a 1 Gb (or 1000-Mbps) connection. • Off — The computer is not detecting a physical connection to the network.
SCSI controller	add-in U320 SCSI
System clock	800 MHz data rate

Video	
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Type	PCI Express x16 up to 150 W
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Audio	
Type	AC97, Sound Blaster emulation
Stereo conversion	16-bit analog-to-digital; 20-bit digital-to-analog

Controllers	
Hard drive	Integrated Serial ATA (4), with RAID 0/1 & Command Queuing Integrated ATA-100 (1 channel)

Expansion Bus	
Bus type	mini-tower computer: 3 PCI 2.3 5v desktop computer: 4 PCI 2.3 5v one PCI Express x16 up to 150W one PCI Express x1 eight USB 2.0 (2 front, 6 back)
Bus speed	PCI: 33 MHz PCI Express: x1 slot bidirectional speed - 500 MB/s x16 slot bidirectional speed - 8 GB/s
PCI	
connectors	mini-tower computer: three desktop computer: four
connector size	120 pins
connector data width (maximum)	32 bits
PCI Express	
connectors	one x1
connector size	36 pins
connector data width (maximum)	1 PCI Express lane
PCI Express	
connectors	one x16
connector size	164 pins
connector data width (maximum)	16 PCI Express lanes

Drives	
Externally accessible:	
Desktop computer	one 3.5 inch drive bay (for optional floppy) two 5.25-inch bays
Mini-tower computer	two 3.5 inch drive bays

	two 5.25-inch drive bays
Available devices	Serial ATA drive, floppy drive, USB memory devices, CD drive, CD-RW drive, DVD drive, DVD+RW drive, and DVD and CD-RW combo drive
Internally accessible:	two bays for 1-inch high hard drives

Connectors	
External connectors:	
Serial	one 9-pin connector (optional 2nd connector); 16550C-compatible
Parallel	one 25-hole connector (bidirectional)
IEEE 1394	6-pin serial connector (add-in card)
Video	15-hole connector
Network adapter	RJ45 connector
PS/2 (keyboard and mouse)	6-pin mini-DIN
USB	two front-panel and six back-panel USB 2.0-compliant connectors
Audio	three connectors for line-in, line-out, and microphone; one front-panel connector for headphones
I/O panel	34-pin connector
CD drive audio interface	4-pin connector
Power_1 connector	24-pin connector
System board connectors:	
Primary IDE drive	40-pin connector on PCI local bus
Serial ATA (4)	7-pin connector
Fan	5-pin connector
PCI 2.3	120-pin connector
CD drive audio interface	4-pin connector

Key Combinations	
<Ctrl> <Alt> 	launches the task manager
<F2>	starts embedded system setup (during start-up only)
<F12> or <Ctrl> <Alt> <F8>	boots from the network (during start-up only)
<Ctrl> <Alt> <F10>	launches the utility partition (if installed) during computer start-up
<Ctrl> <Alt> <D>	launches the hard-drive diagnostics utility during computer start-up

Controls and Lights	
Power control	push button

Power light	green light—blinking green in sleep state; solid green for power-on state amber light—blinking amber indicates a problem with an installed device; solid amber indicates an internal power problem (see " Power Problems ").
Hard-drive access light	green
Link integrity light (on integrated network adapter)	green light for 10-Mb operation; orange light for 100-Mb operation; yellow light for a 1000-Mb (1-Gb) operation
Activity light (on integrated network adapter)	yellow blinking light
Diagnostic lights	four lights on back panel of mini-tower and front of desktop
Standby power light	AUX_PWR on the system board

Power	
DC power supply:	
Wattage	350 W
Heat dissipation	910 BTU/hr
Voltage	fixed-voltage power supply—110 V at 50/60 Hz manual selection and auto-sensing power supplies—90 to 135 V at 50/60 Hz; 180 to 265 V at 50/60 Hz; 100 V at 50/60 Hz for Japanese computers
Backup battery	3-V CR2032 lithium coin cell

Physical	
Mini-tower computer:	
Height	42.5 cm (16.8 inches)
Width	19.1 cm (7.5 inches)
Depth	45.0 cm (17.7 inches)
Weight	12.7 kg (28 lbs)
Desktop computer:	
Height	16.5 cm (6.5 inches)
Width	44.5 cm (17.5 inches)
Depth	45.7 cm (18 inches)
Weight	18.6 cm (41 lbs)
Supported monitor weight (in desktop orientation)	45.4 kg (100 lbs)

Environmental	
Temperature:	
Operating	10° to 35°C (50° to 95°F)

	NOTE: At 35°C (95°F), the maximum operating altitude is 914 m (3000 ft).
Storage	-40° to 65°C (-40° to 149°F)
Relative humidity	20% to 80% (noncondensing)
Maximum vibration:	
Operating	0.25 G at 3 to 200 Hz at 0.5 octave/min
Storage	0.5 G at 3 to 200 Hz at 1 octave/min
Maximum shock:	
Operating	bottom half-sine pulse with a change in velocity of 20 inches/sec (50.8 cm/sec)
Storage	27-G faired square wave with a velocity change of 200 inches/sec (508 cm/sec)
Altitude:	
Operating	-15.2 to 3048 m (-50 to 10,000 ft)
Storage	-15.2 to 10,668 m (-50 to 35,000 ft)

Caring for Your Computer

To help maintain your computer, follow these suggestions:

- To avoid losing or corrupting data, never turn off your computer when the hard drive light is on.
- Schedule regular virus scans using virus software.
- Manage hard drive space by periodically deleting unnecessary files and defragmenting the drive.
- Back up files on a regular basis.

Periodically clean your monitor screen, mouse, and keyboard (see "[Cleaning Your Computer](#)").

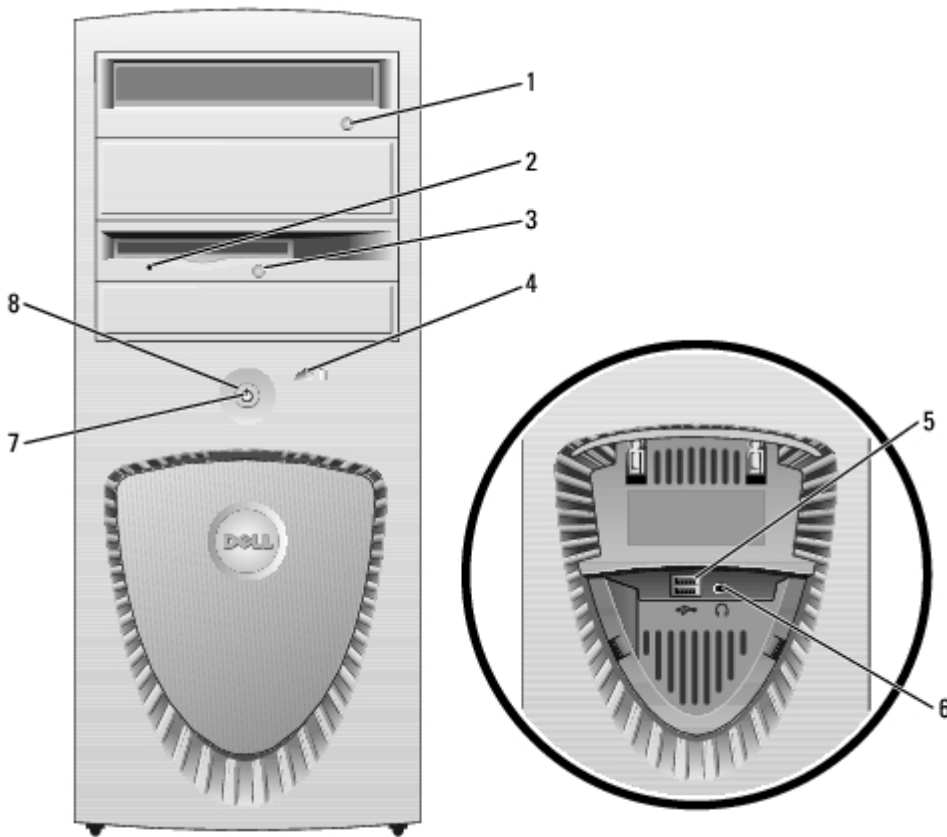
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Your Mini-Tower Computer

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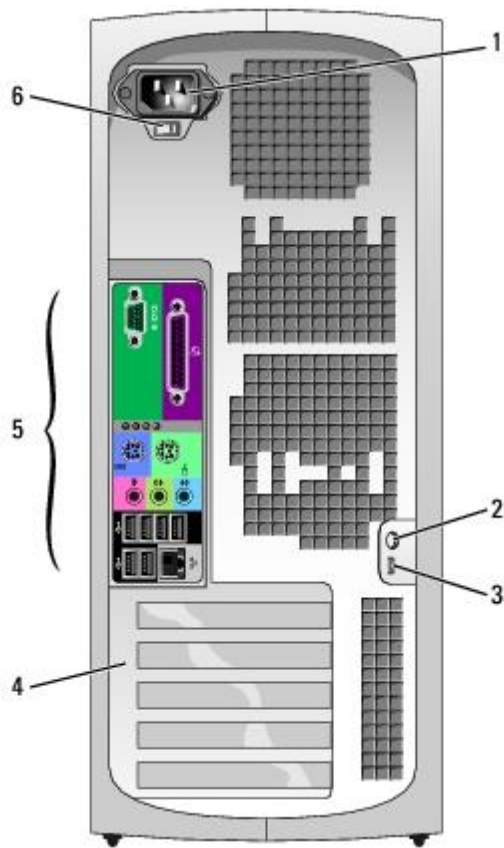
Front View



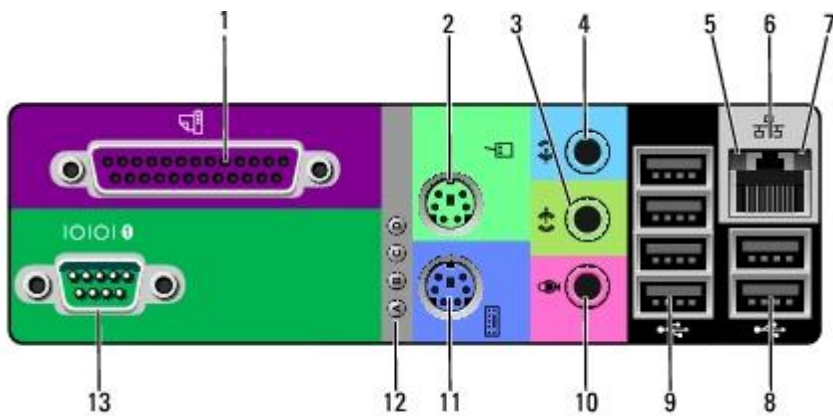
1	CD or DVD drive eject button	Press to eject a disc from the CD or DVD drive.
2	floppy-drive activity light	The floppy drive light is on when the computer reads data from or writes data to the floppy drive. Wait until this light turns off before you remove the floppy disk from the drive.
3	floppy-drive eject button	Press to eject a floppy disk from the floppy drive.
4	hard-drive activity	The hard drive light is on when the computer reads data from or writes data to the hard drive. The light might also be on when a device such as your CD player

	light	is operating.
5	USB 2.0 connectors (2)	<p>Use the front USB connectors for devices that you connect occasionally, such as flash memory keys or cameras, or for bootable USB devices (see system setup for more information on booting to a USB device).</p> <p>It is recommended that you use the back USB connectors for devices that typically remain connected, such as printers and keyboards.</p>
6	headphone connector	Use the headphone connector to attach headphones and most kinds of speakers.
7	power light	<p>The power light illuminates and blinks or remains solid to indicate different states:</p> <ul style="list-style-type: none"> • No light — The computer is turned off. • Steady green — The computer is in a normal operating state. • Blinking green — The computer is in a power-saving state. • Blinking or solid amber — See "Power Problems." <p>To exit from a power-saving state, press the power button or use the keyboard or the mouse if it is configured as a wake device in the Windows Device Manager. For more information about sleep states and exiting from a power-saving state, see "Power Management."</p> <p>See "Diagnostic Lights" for a description of light codes that can help you troubleshoot problems with your computer.</p>
8	power button	<p>Press to turn on the computer.</p> <p>NOTE: The power button can also be used to wake the system or to place it into a power-saving state. See "Power Management" for more information.</p> <p>NOTICE: To avoid losing data, do not use the power button to turn off the computer. Instead, perform an operating system shutdown.</p>

[Back View](#)



1	power connector	Insert the power cable.
2	padlock ring	Insert a padlock to lock the computer cover.
3	security cable slot	Use a security cable with the slot to help secure your computer.
4	card slots	Access connectors for any installed PCI or PCI Express cards.
5	back panel connectors	Plug serial, USB, and other devices into the appropriate connector.
6	voltage selection switch	See the safety instructions located in the <i>Product Information Guide</i> for more information.



1	parallel connector	<p>Connect a parallel device, such as a printer, to the parallel connector. If you have a USB printer, plug it into a USB connector.</p> <p>NOTE: The integrated parallel connector is automatically disabled if the computer detects an installed card containing a parallel connector configured</p>
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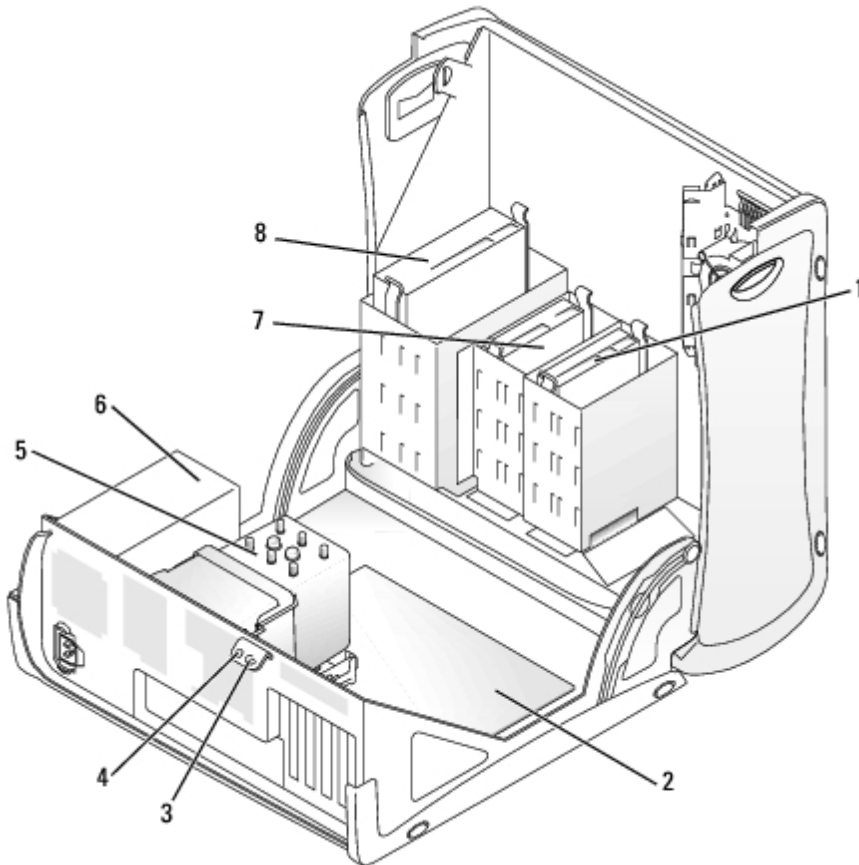
		to the same address. For more information, see "System Setup Options."
2	mouse connector	<p>Plug a standard mouse into the green mouse connector. Turn off the computer and any attached devices before you connect a mouse to the computer. If you have a USB mouse, plug it into a USB connector.</p> <p>If your computer is running the Microsoft® Windows XP operating system, the necessary mouse drivers have been installed on your hard drive.</p>
3	line-out connector	<p>Use the green line-out connector to attach headphones and most speakers with integrated amplifiers.</p> <p>On computers with a sound card, use the connector on the card.</p>
4	line-in connector	<p>Use the blue line-in connector to attach a record/playback device such as a cassette player, CD player, or VCR.</p> <p>On computers with a sound card, use the connector on the card.</p>
5	link integrity light	<ul style="list-style-type: none"> • Green — A good connection exists between a 10-Mbps network and the computer. • Orange — A good connection exists between a 100-Mbps network and the computer. • Yellow — A good connection exists between a 1000-Mbps (or 1-Gbps) network and the computer. • Off — The computer is not detecting a physical connection to the network.
6	network adapter connector	<p>To attach your computer to a network or broadband device, connect one end of a network cable to either a network jack or your network or broadband device. Connect the other end of the network cable to the network adapter connector on your computer. A click indicates that the network cable has been securely attached.</p> <p>NOTE: Do not plug a telephone cable into the network connector.</p> <p>On computers with a network connector card, use the connector on the card.</p> <p>It is recommended that you use Category 5 wiring and connectors for your network. If you must use Category 3 wiring, force the network speed to 10 Mbps to ensure reliable operation.</p>
7	network activity light	Flashes a yellow light when the computer is transmitting or receiving network data. A high volume of network traffic may make this light appear to be in a steady "on" state.
8	USB 2.0 connectors (2)	<p>Use the back USB connectors for devices that typically remain connected, such as printers and keyboards.</p> <p>It is recommended that you use the front USB connectors for devices that you connect occasionally, such as flash memory keys or cameras., or for bootable USB devices.</p>
9	USB 2.0 connectors (4)	<p>Use the back USB connectors for devices that typically remain connected, such as printers and keyboards.</p> <p>It is recommended that you use the front USB connectors for devices that you connect occasionally, such as flash memory keys or cameras, or for bootable USB devices.</p>
10	microphone connector	<p>Use the pink microphone connector to attach a personal computer microphone for voice or musical input into a sound or telephony program.</p> <p>On computers with a sound card, the microphone connector is on the card.</p>
11	keyboard connector	If you have a standard keyboard, plug it into the purple keyboard connector. If you have a USB keyboard, plug it into a USB connector.
12	diagnostic lights (4)	Use the lights to help you troubleshoot a computer problem based on the diagnostic code. For more information, see " Diagnostic Lights ."
13	serial connector	Connect a serial device, such as a handheld device, to the serial port. The default designations are COM1 for serial connector 1 and COM2 for the

optional serial connector 2.

For more information, see "[System Setup Options](#)."

Inside View

⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

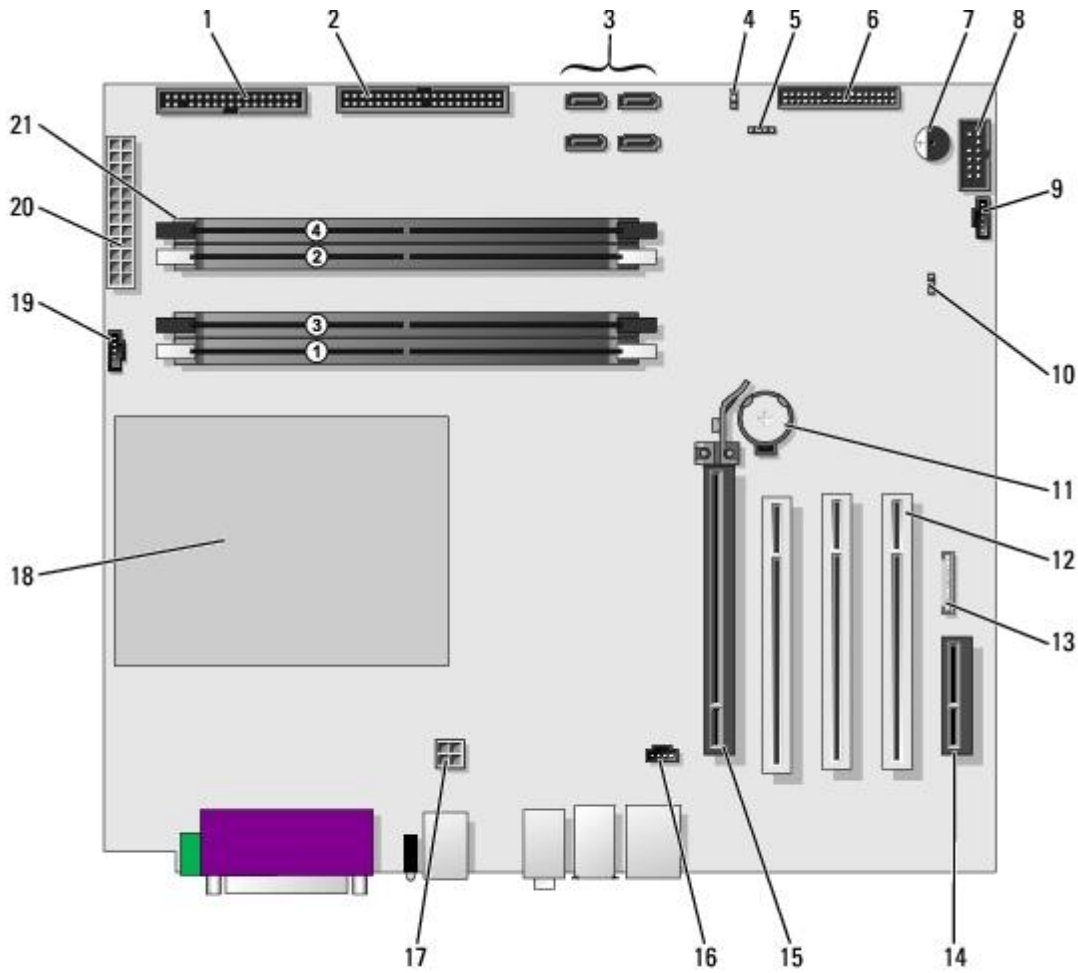


1	hard drive	5	processor airflow shroud and fan
2	system board	6	power supply
3	padlock ring	7	floppy drive (optional)
4	security cable slot	8	CD/DVD drive

Cable Colors

Device	Color
Hard drive	Blue cable
Floppy drive	Black pull tab
CD/DVD drive	Orange pull tab

System Board Components



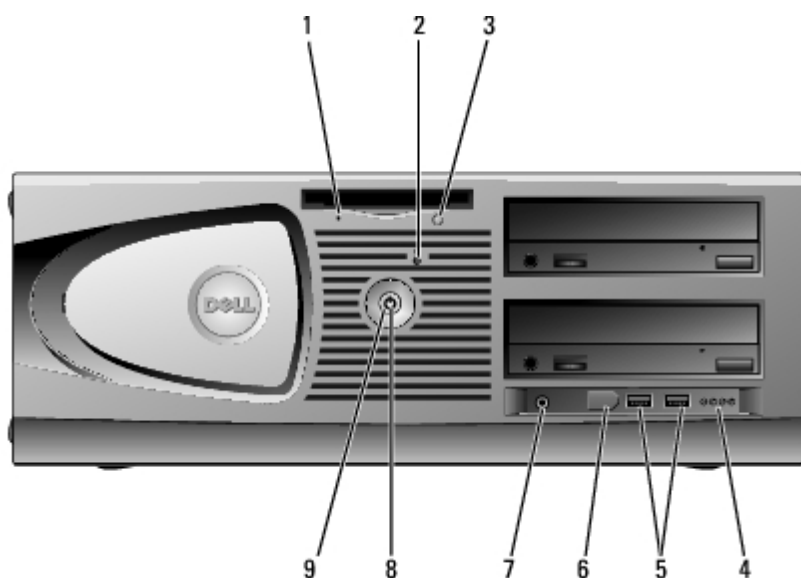
1	floppy drive (FLOPPY)	12	PCI card slots(1-3)
2	IDE drive (PRI IDE)	13	front panel audio (FP AUD)
3	SATA connectors (SATA-0, SATA-1, SATA-2, SATA-3)	14	PCI-Express x1 card slot
4	password jumper (PASS)	15	PCI-Express x16 up to 150w card slot
5	SCSI LED connector	16	CD audio input (CD IN)
6	front panel connector	17	processor power connector
7	speaker	18	processor socket
8	secondary serial port (SERIAL 2)	19	processor fan connector (CPU FAN)
9	card fan connector (PCI FAN)	20	main power connector (POWER)
10	clear CMOS jumper (CLR CMOS)	21	memory modules connectors
11	battery socket (BATTERY)		

Your Desktop Computer

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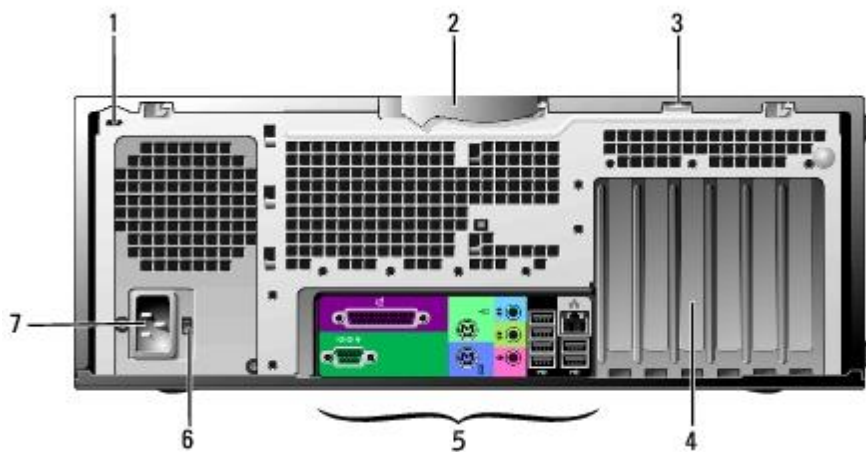
Front View



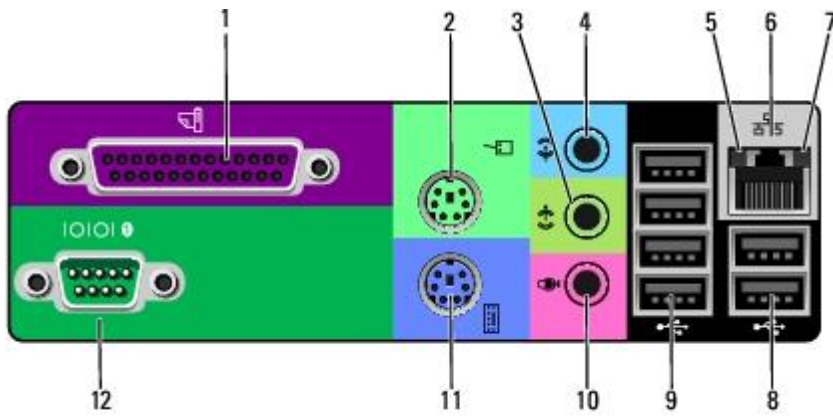
1	floppy-drive activity light	The floppy drive light is on when the computer reads data from or writes data to the floppy drive. Wait until this light turns off before you remove the floppy disk from the drive.
2	hard-drive activity light	The hard drive light is on when the computer reads data from or writes data to the hard drive. The light might also be on when a device such as your CD player is operating.
3	floppy-drive eject button	Press to eject a floppy disk from the floppy drive.
4	diagnostic lights (4)	Use the lights to help you troubleshoot a computer problem based on the diagnostic code. For more information, see " Diagnostic Lights ."
5	USB 2.0 connectors (2)	Use the front USB connectors for devices that you connect occasionally, such as flash memory keys or cameras, or for bootable USB devices (see system setup , for more information on booting to a USB device). It is recommended that you use the back USB connectors for devices that typically remain connected, such as printers and keyboards.
6	IEEE 1394 connector	Attach high-speed serial multimedia devices, such as digital video cameras.

		NOTE: To use the IEEE 1394 connector, you need an add-in-card that supports this feature. To order a card contact Dell .
7	headphone connector	Use the headphone connector to attach headphones and most kinds of speakers.
8	power light	<p>The power light illuminates and blinks or remains solid to indicate different states:</p> <ul style="list-style-type: none"> • No light — The computer is turned off. • Steady green — The computer is in a normal operating state. • Blinking green — The computer is in a power-saving state. • Blinking or solid amber — See "Power Problems." <p>To exit from a power-saving state, press the power button or use the keyboard or the mouse if it is configured as a wake device in the Windows Device Manager. For more information about sleep states and exiting from a power-saving state, see "Power Management."</p> <p>See "Diagnostic Lights" for a description of light codes that can help you troubleshoot problems with your computer.</p>
9	power button	<p>Press to turn on the computer.</p> <p>NOTE: The power button can also be used to wake the system or to place it into a power-saving state. See "Power Management" for more information.</p> <p>NOTICE: To avoid losing data, do not use the power button to turn off the computer. Instead, perform an operating system shutdown.</p>

Back View



1	security cable slot	Use a security cable with the slot to help secure your computer.
2	cover latch	Releases the cover from the computer. See " Open the computer cover ."
3	padlock ring	Insert a padlock to lock the computer cover.
4	card slots	Access connectors for any installed PCI or PCI Express cards.
5	back panel connectors	Plug serial, USB, and other devices into the appropriate connector.
6	voltage selection switch	See the safety instructions located in the Product Information Guide for more information.
7	power connector	Insert the power cable.

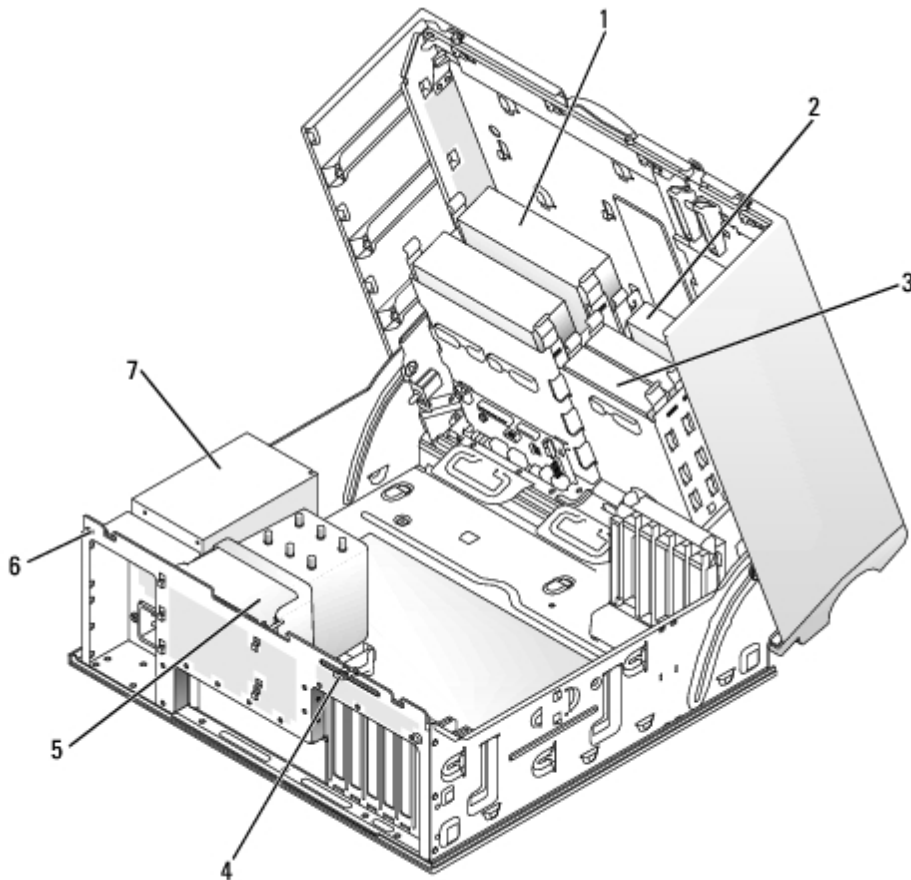


1	parallel connector	<p>Connect a parallel device, such as a printer, to the parallel connector. If you have a USB printer, plug it into a USB connector.</p> <p>NOTE: The integrated parallel connector is automatically disabled if the computer detects an installed card containing a parallel connector configured to the same address. For more information, see "System Setup Options."</p>
2	mouse connector	<p>Plug a standard mouse into the green mouse connector. Turn off the computer and any attached devices before you connect a mouse to the computer. If you have a USB mouse, plug it into a USB connector.</p> <p>If your computer is running the Microsoft® Windows® XP operating system, the necessary mouse drivers have been installed on your hard drive.</p>
3	line-out connector	<p>Use the green line-out connector to attach headphones and most speakers with integrated amplifiers.</p> <p>On computers with a sound card, use the connector on the card.</p>
4	line-in connector	<p>Use the blue line-in connector to attach a record/playback device such as a cassette player, CD player, or VCR.</p> <p>On computers with a sound card, use the connector on the card.</p>
5	link integrity light	<ul style="list-style-type: none"> • Green — A good connection exists between a 10-Mbps network and the computer. • Orange — A good connection exists between a 100-Mbps network and the computer. • Yellow — A good connection exists between a 1000-Mbps (or 1-Gbps) network and the computer. • Off — The computer is not detecting a physical connection to the network.
6	network adapter connector	<p>To attach your computer to a network or broadband device, connect one end of a network cable to either a network jack or your network or broadband device. Connect the other end of the network cable to the network adapter connector on your computer. A click indicates that the network cable has been securely attached.</p> <p>NOTE: Do not plug a telephone cable into the network connector.</p> <p>On computers with a network connector card, use the connector on the card.</p> <p>It is recommended that you use Category 5 wiring and connectors for your network. If you must use Category 3 wiring, force the network speed to 10 Mbps to ensure reliable operation.</p>
7	network activity light	<p>Flashes a yellow light when the computer is transmitting or receiving network data. A high volume of network traffic may make this light appear to be in a steady "on" state.</p>
8	USB 2.0 connectors	<p>Use the back USB connectors for devices that typically remain connected, such as printers and keyboards.</p>

	(2)	It is recommended that you use the front USB connectors for devices that you connect occasionally, such as flash memory keys or cameras, or for bootable USB devices.
9	USB 2.0 connectors (4)	Use the back USB connectors for devices that typically remain connected, such as printers and keyboards. It is recommended that you use the front USB connectors for devices that you connect occasionally, such as flash memory keys or cameras, or for bootable USB devices.
10	microphone connector	Use the pink microphone connector to attach a personal computer microphone for voice or musical input into a sound or telephony program. On computers with a sound card, the microphone connector is on the card.
11	keyboard connector	If you have a standard keyboard, plug it into the purple keyboard connector. If you have a USB keyboard, plug it into a USB connector.
12	serial connector	Connect a serial device, such as a handheld device, to the serial port. The default designations are COM1 for serial connector 1 and COM2 for the optional serial connector 2. For more information, see " System Setup Options ."

Inside View

⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

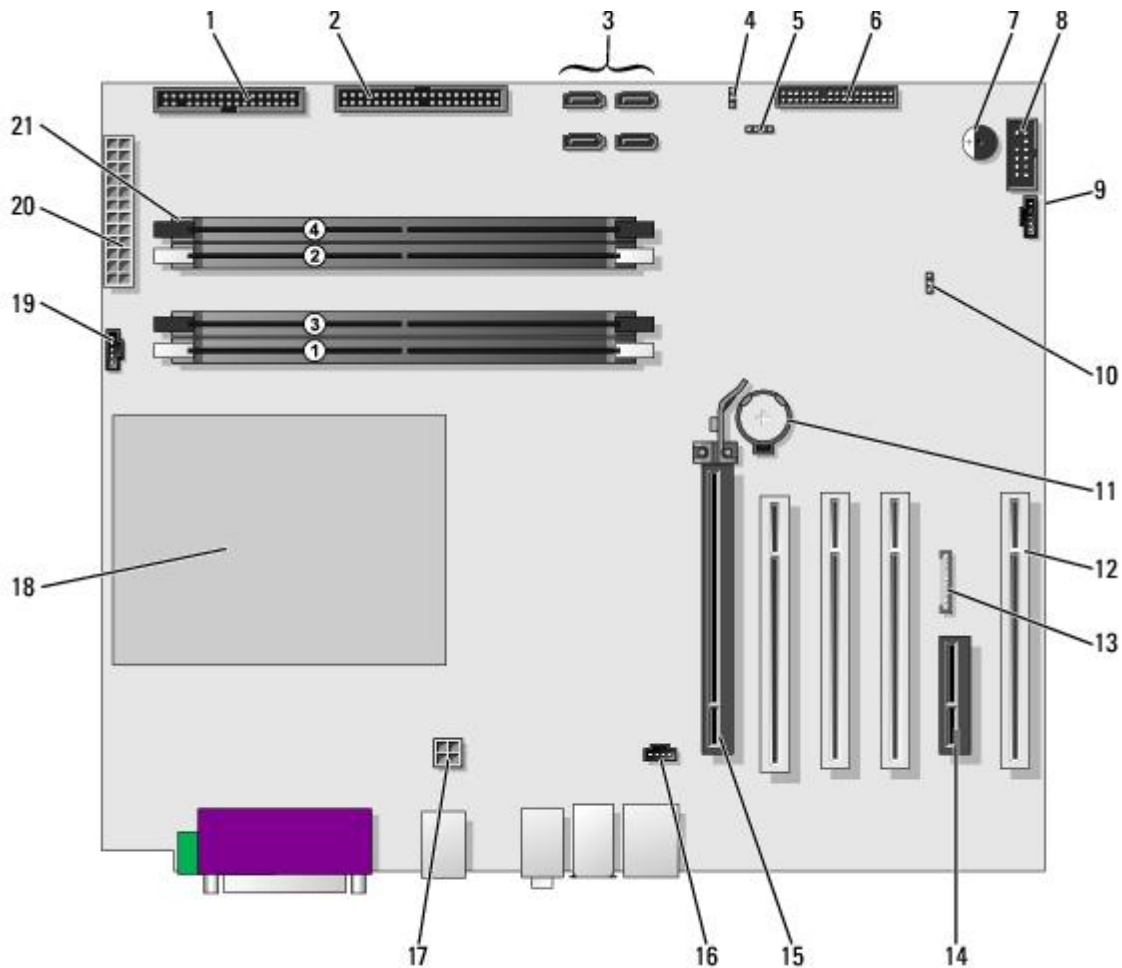


1	CD/DVD drive	5	processor airflow shroud and fan
2	floppy drive (optional)	6	security cable slot
3	hard drive	7	power supply
4	padlock ring		

Cable Colors

Device	Color
Hard drive	Blue cable
Floppy drive	Black pull tab
CD/DVD drive	Orange pull tab

System Board Components



1	floppy drive (FLOPPY)	12	PCI card slots (1-3)
2	IDE drive (PRI IDE)	13	front panel audio (FP AUD)
3	SATA connectors (SATA-0, SATA-1, SATA-2, SATA-3)	14	PCI-Express x1 card slot
4	password jumper (PASS)	15	PCI-Express x16 up to 150w card slot

5	SCSI LED connector	16	CD audio input (CD IN)
6	front panel connector	17	processor power connector
7	speaker	18	processor socket
8	secondary serial port (SERIAL 2)	19	processor fan connector (CPU FAN)
9	card fan connector (PCI FAN)	20	main power connector (POWER)
10	clear CMOS jumper (CLR CMOS)	21	memory modules connectors
11	battery socket (BATTERY)		

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Advanced Features

Dell Precision™ Workstation 370 User's Guide

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LegacySelect Technology Control

LegacySelect technology control offers legacy-full, legacy-reduced, or legacy-free solutions based on common platforms, hard-drive images, and help desk procedures. Control is provided to the administrator through system setup, Dell OpenManage™ IT Assistant, or Dell™ custom factory integration.

LegacySelect allows administrators to electronically activate or deactivate connectors and media devices that include serial and USB connectors, a parallel connector, a floppy drive, PCI slots, and a PS/2 mouse. Connectors and media devices that are deactivated make resources available. You must restart the computer to effect the changes.

Manageability

Alert Standard Format

ASF is a DMTF management standard that specifies "pre-operating system" or "operating system-absent" alerting techniques. The standard is designed to generate an alert on potential security and fault conditions when the operating system is in a sleep state or the system is powered down. ASF is designed to supersede previous operating system-absent alerting technologies.

Your computer supports the following ASF alerts:

Alert	Description
BIOS: Corrupt BIOS/Corrupt BIOS Cleared	The BIOS has been corrupted or the BIOS corruption has been resolved.
Boot: Failure to Boot to BIOS	The BIOS did not complete loading upon initiation.
Password: System Password Violation	The system password is invalid (alert occurs after three failed attempts).
CPU: CPU DOA Alert/CPU DOA Alert Cleared	The microprocessor is not functioning.
Heartbeats: Entity Presence	Periodic heartbeats have been transmitted to verify system presence.
Temperature: Generic Critical Temperature Problem/Generic Critical Temperature Problem Cleared	The computer temperature is out of limits or the computer temperature problem has been resolved.

Voltage: Generic Critical Voltage Problem/Generic Critical Voltage Problem Cleared	The voltage from integrated voltage regulators is out of limits or the voltage problem has been resolved.
Power Supply: Critical Power Supply Problem/Critical Power Supply Problem Cleared	The computer power supply voltage is out of limits or the computer power supply voltage problem has been resolved.
Cooling Device: Generic Critical Fan Failure/Generic Critical Fan Failure Cleared	The fan speed (rpm) is out of limits or the fan speed (rpm) problem has been resolved.
Connectivity: Ethernet Connectivity Enabled/Ethernet Connectivity Disabled	The ethernet connectivity is enabled or the ethernet connectivity is disabled.

For more information about Dell's ASF implementation, see the *ASF User's Guide* and the *ASF Administrator's Guide*, which are available on the Dell Support website at support.dell.com.

Dell OpenManage IT Assistant

IT Assistant configures, manages, and monitors computers and other devices on a corporate network. IT Assistant manages assets, configurations, events (alerts), and security for computers equipped with industry-standard management software. It supports instrumentation that conforms to SNMP, DMI, and CIM industry standards.

Dell OpenManage Client instrumentation, which is based on DMI and CIM, is available for your computer. For information on IT Assistant, see the *Dell OpenManage IT Assistant User's Guide* available on the Dell Support website at support.dell.com.

Dell OpenManage Client Instrumentation

Dell OpenManage Client Instrumentation is software that enables remote management programs such as IT Assistant to do the following:

- Access information about your computer, such as how many processors it has and what operating system it is running
- Monitor the status of your computer, such as listening for thermal alerts from temperature probes or hard-drive failure alerts from storage devices
- Change the state of your computer, such as updating its BIOS or shutting it down remotely

A managed system is one that has Dell OpenManage Client Instrumentation set up on a network that uses IT Assistant. For information about Dell OpenManage Client Instrumentation, see the *Dell OpenManage Client Instrumentation User's Guide* available on the Dell Support website at support.dell.com.

Security

Chassis Intrusion Detection



NOTE: When the admin password is enabled, you must know the admin password before you can reset the **Chassis Intrusion** setting.

This feature detects that the chassis was opened and alerts the user. To change the **Chassis Intrusion** setting:

1. Enter system setup.
2. Press the down-arrow keys to move to the **System Security** option.
3. Press <Enter> to access the menu.

4. Use the left- and right-arrow key to select an option setting.
5. Exit system setup.

Option Settings

- **Enabled** — If the computer cover is opened, the setting changes to **Detected**, and the following alert message displays during the boot routine at the next computer start-up:

Alert! Cover was previously removed.

To reset the **Detected** setting, enter system setup. In the **Chassis Intrusion** option, press the left- or right-arrow key to select **Reset**, and then choose **Enabled**, **Enabled-Silent**, or **Disabled**.

- **Enabled-Silent** (default) — If the computer cover is opened, the setting changes to **Detected**. No alert message appears during the boot sequence at the next computer start-up.

Antitheft devices usually include a segment of metal-stranded cable with an attached locking device and key. The documentation that comes with the device contains instructions for installing it.

Padlock Ring and Security Cable Slot

Use one of the following methods to secure your computer:

- Use a padlock alone or a padlock and looped security cable with the [padlock ring](#).

A padlock alone prevents the computer from being opened.

A security cable looped around a stationary object is used in conjunction with a padlock to prevent unauthorized movement of the computer.

- Attach a commercially available antitheft device to the [security cable slot](#) on the back of the computer.



NOTE: Before you purchase an antitheft device, make sure that it works with the security cable slot on your computer.

Antitheft devices usually include a segment of metal-stranded cable with an attached locking device and key. The documentation that comes with the device contains instructions for installing it.

Password Protection



NOTICE: Although passwords provide security for the data on your computer, they are not foolproof. If your data requires more security, it is your responsibility to obtain and use additional forms of protection, such as data encryption programs.

System Password



NOTICE: If you leave your computer running and unattended without having a system password assigned, or if you leave your computer unlocked so that someone can disable the password by changing a jumper setting, anyone can

access the data stored on your hard drive.

Option Settings

You cannot change or enter a new system password if either of the following two options is displayed:

- **Disabled** — The system password is disabled by a jumper setting on the system board.

You can only assign a system password when the following option is displayed:

- **Set** — A system password is assigned.
- **Not Enabled** — No system password is assigned and the password jumper on the system board is in the enabled position (the default).

Assigning a System Password

To escape from the field without assigning a system password, press <Tab> or the <Shift><Tab> key combination to move to another field, or press <Esc> at any time before you complete step 5.

1. [Enter system setup](#) and verify that **Password Status** is set to **Unlocked**.
2. Highlight **System Password**, and then press <Enter>.

The option heading changes to **Enter Password**, followed by an empty 32-character field in square brackets.

3. Type your new system password.

You can use up to 32 characters. To erase a character when entering your password, press <Backspace> or the left-arrow key. The password is not case sensitive.

Certain key combinations are not valid. If you enter one of these combinations, the cursor will not move.

As you press each character key (or the spacebar for a blank space), a placeholder appears in the field.

4. Press <Enter>.

If the new system password is less than 32 characters, the whole field fills with placeholders. Then the option heading changes to **Confirm Password**, followed by another empty 32-character field in square brackets.

5. To confirm your password, type it a second time and press <Enter>.

The password setting changes to **Set**.

6. Exit system setup.

Password protection takes effect when you restart the computer.

Typing Your System Password

When you start or restart your computer, one of the following prompts appears on the screen.

If **Password Status** is set to **Unlocked**:

```
Type in the password and
- press <ENTER> to leave password security enabled.
- press <CTRL><ENTER> to disable password security.
Enter password:
```

If **Password Status** is set to **Locked**:

```
Type the system password and press <Enter>.
```

```
Enter password:
```

If you have assigned a setup password, the computer accepts your setup password as an alternate system password.

If you type a wrong or incomplete system password, the following message appears on the screen:

```
** Incorrect password. **
```

If you again type an incorrect or incomplete system password, the same message appears on the screen. The third and subsequent times you type an incorrect or incomplete system password, the computer displays the following message:

```
** Incorrect password. **
Number of unsuccessful password attempts: 3
System halted! Must power down.
```

Even after your computer is turned off and on, the previous message is displayed each time you type an incorrect or incomplete system password.



NOTE: You can use **Password Status** in conjunction with **System Password** and **Admin Password** to further protect your computer from unauthorized changes.

Changing or Deleting an Existing System Password

To change a system password, follow the procedure in "[Assigning a System Password](#)."

To delete a system password:

1. [Enter system setup](#).
2. Highlight **System Password** and press <Enter>
3. When prompted, type the system password.
4. Press <Enter> twice to clear the existing setup password. The setting changes to Not Set.
5. To assign a new password, follow the procedure in "[Assigning a System Password](#)."


Admin Password

Option Settings

- **Set** — Does not allow assignment of setup passwords; users must enter a setup password to make changes to system setup
- **Not Set** — Allows assignment of setup passwords; password feature is enabled but no password is assigned
- **Disabled** —The admin password is disabled by a jumper setting on the system board

Assigning a Setup Password

The setup password can be the same as the system password.

 **NOTE:** If the two passwords are different, the setup password can be used as an alternate system password. However, the system password cannot be used in place of the setup password.

1. [Enter system setup](#) and verify that **Admin Password** is set to **Not Enabled**.
2. Highlight **Admin Password** and press the left- or right-arrow key.

The computer prompts you to type and verify the password. If a character is not permitted, the computer emits a beep.

3. Type and then verify the password.

After you verify the password, the **Admin Password** setting changes to **Enabled**. The next time you enter system setup, the computer prompts you for the setup password.


4. Exit system setup.

A change to **Admin Password** becomes effective immediately (no need to restart the computer).

Operating Your Computer With a Admin Password Enabled

When you [enter system setup](#), the **Admin Password** option is highlighted, prompting you to type the password.

If you do not type the correct password, the computer lets you view, but not modify, system setup options.

 **NOTE:** You can use **Password Status** in conjunction with **Admin Password** to protect the system password from unauthorized changes.

Deleting or Changing an Existing Admin Password

To change an existing admin password, you must know the admin password.

1. [Enter system setup](#).
2. Type the admin password at the prompt.
3. Press <Enter> twice to clear the existing admin password. The setting changes to **Not Set**.

To assign a new setup password, you can also perform the procedure in "[Assigning a System Password](#)."

Disabling a Forgotten Password and Setting a New Password

To reset system and/or admin passwords, see "[Clearing Forgotten Passwords](#)."

System Setup

Overview

Use system setup as follows:

- To change the system configuration information after you add, change, or remove any hardware in your computer
- To set or change a user-selectable option such as the user password
- To read the current amount of memory or set the type of hard drive installed

Before you use system setup, it is recommended that you write down the system setup screen information for future reference.

Entering System Setup

1. Turn on (or restart) your computer.
2. When the blue DELL™ logo appears, press <F2> immediately.

If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows® desktop. Then [shut down your computer](#) and try again.

System Setup Screens

The system setup screen displays current or changeable configuration information for your computer. Information on the screen is divided into three areas: the options list, active options field, and key functions.

Options List — This field appears on the left side of the system setup window. The field is a scrollable list containing features that define the configuration of your computer, including installed hardware, power conservation, and security features.


Scroll up and down the list by using the up and down arrow keys. As an option is highlighted, the Option Field displays more information about that option and the option's current and available settings.

Option Field — This field contains information about each option. In this field you can view your current settings and make changes to your settings.


Use the right and left arrow keys to highlight an option. Press <Enter> to make that selection active.

Key Functions — This field appears below the Option Field and lists keys and their functions within the active system setup field.

System Setup Options

 **NOTE:** Depending on your computer and installed devices, the items listed in this section may or may not appear.

Info	
System Info	Lists the computer name, version number of the BIOS, date of the BIOS, Asset Tag, Service Tag, and Ownership tag.
CPU Info	Identifies whether the computer's processor supports Hyper-Threading, IA-32e, and identifies the CPU speed, bus speed, clock speed, and L2 cache.
Memory Info	Indicates amount of installed memory, computer memory speed, amount of video memory, size of the display cache, and channel mode (dual or single).
Date/Time	Displays current date and time settings. You can modify these settings.
Boot Sequence	The computer attempts to boot from the sequence of devices specified in this list.
Drives	
Diskette Drive	Enables and disables the diskette drives and sets read permission for the internal diskette drive. Off disables all diskette drives. Internal enables the internal diskette drive. USB disables the internal diskette drive and enables a USB drive if the USB controller is enabled and a USB drive is connected. Read Only enables the internal drive controller and allows the internal diskette drive read-only permission.
Drive 0	Identifies the primary serial hard drive attached to the SATA0 connector on the system board.
Drive 1	Identifies the secondary serial hard drive attached to the SATA1 connector on the system board.
Drive 2	Identifies the primary hard drive attached to the IDE1 connector on the system board.
Drive 3	Identifies the primary hard drive attached to the IDE1 connector on the system board.
Drive 4	Identifies the secondary hard drive attached to the IDE2 connector on the system board.
Drive 5	Identifies the secondary hard drive attached to the IDE2 connector on the system board.
Error Reporting	Control whether hard driver errors for internal IDE drives (Drive 0-6) are reported during system startup.
Onboard Devices	
Audio Controller	Enables or disables the onboard audio controller
NIC Controller	You can set the NIC to On (default), Off , or On w/ PXE . When the On w/ PXE setting is active (available only for the future boot process), the computer prompts the user to press <Ctrl><Alt>. Pressing this key combination causes a menu to display that allows you to select a method for booting from a network server. If a boot routine is not available from the network server, the system attempts to boot from the next device in the boot sequence list.
LPT Port Mode	Determines the mode of operating of the internal parallel port. Off disables the port. AT configures the port for IBM AT compatibility. PS/2 configures the port for IBM PS/2 compatibility. EPP configures the port for the EPP bidirectional protocol. ECP configures the port for the ECP bidirectional protocol. NOTE: If you set the LPT Port Mode to ECP , the LPT Port DMA appears in the option menu.

LPT Port Address	Determines the address that the built-in parallel port uses.
LPT Port DMA	Determines the address that the parallel port uses when it is in ECP mode. Off disables the DMA channel. DMA 1 selects the DMA 1 channel. DMA 3 selects the DMA 3 channel.
SATA2 Controller	
Serial Port #1	Serial Port 1 appears as an option if you have a serial port card installed. Auto , the default setting, automatically configures a connector to a particular designation (COM1 or COM3).
USB	Enables or disables the internal USB controller. Off disables controller. On enables the controller.
Performance	
Hyper-Threading	Determines whether each physical processor appears as one or two logical processors. The performance of some applications improves with additional logical processors. On enables Hyper-Threading. Off disables Hyper-Threading.
IDE Performance	<ul style="list-style-type: none"> • Quiet (default) - the hard drive operates at its most quiet setting. • Performance - the hard drive operates at its maximum speed. • Bypass - your computer does not test or change the current acoustics mode setting. • Suggested - the hard drive operates at the level suggested by the drive manufacturer. <p>NOTE: Switching to performance mode may cause the drive to be noisier, but its performance is not affected.</p> <p> NOTE: Changing the acoustics setting does not alter your hard drive image.</p>
Security	
Admin Password	This option provides restricted access to the computer's System Setup program in the same way that access to the system can be restricted with the System Password option.
System Password	Displays the current status of the system's password security feature and allows a new system password to be assigned and verified.
Drive Password	
Password Status	This option locks the system password field with the admin password. When the field is locked, the option to disable password security by pressing <CTRL-ENTER> when the computer starts is no longer available.
Chassis Intrusion	When enabled, this option alerts the user, during the next computer start-up, that the computer cover has been opened.
Power Management	
AC Power Recovery	Determines what happens when AC power is restored to the computer.
Auto Power On	<p>Sets time and days of week to automatically turn on the computer. Choices are every day or every Monday through Friday.</p> <p>Time is kept in a 24-hour format (<i>hours:minutes</i>). Change the start-up time by pressing the right- or left-arrow key to increase or decrease the numbers, or type numbers in both the date and time fields.</p> <p>The default setting is Disabled.</p> <p>This feature does not work if you turn off your computer using a power strip or surge protector.</p>
Auto Power Time	
Low Power	When Low Power Mode is selected, remote wakeup events will no longer power up from Hibernate or Off from onboard network controller.

Mode	
Remote Wake-Up	<p>This option allows the system to power up when a Network Interface Controller or Remote Wakeup-capable modem receives a wake up signal.</p> <p>On is the default setting. On w/ Boot to NIC will allow the computer to attempt to boot from a network prior to using the boot sequence.</p> <p>NOTE: Normally, the system can be powered up remotely from suspend mode, hibernate mode, or when powered off. When Low Power Mode (in the Power Management menu) is enabled, the system can only be powered up remotely from Suspend.</p>
Suspend Mode	The options are S1, a suspend state where the computer is running in a low-power mode, and S3, a standby state where the power is reduced or turned off for most components, however, system memory remains active.
Maintenance	
BIOS Update	Allows you to select the location where you want your computer to look for BIOS update files. Diskette directs your computer to the root directory of a DOS diskette. Disk directs your computer to a hard-disk drive or a USB memory key partition (FAT16 only).
Event Log	Displays the system event log.
CMOS Defaults	This setting will restore the computer's factory-installed default settings.
Video	
Primary Video	
POST Behavior	
Fastboot	When set to On (default), your computer will start more quickly since it will skip certain configurations and tests.
Numlock Key	This option involves the rightmost bank of keys on your keyboard. When set to On (default), this option activates the numeric and mathematical features shown at the top of each key. When set to Off, this option activates the cursor-control functions labeled on the bottom of each key.
OS Install	This setting turns the OS Install Mode either On or Off (default).
Keyboard Errors	When set to Report (enabled) and an error is detected during POST, the BIOS will display the error message and prompt you to press <F1> to continue or press <F2> to enter system setup. When set to Do Not Report (disabled), if an error is detected during POST, the BIOS will display the error message and continue booting the computer.
POST Hotkeys	


Boot Sequence

This feature allows you to change the boot sequence for devices.

Option Settings


- **Onboard or USB Floppy Drive** — The computer attempts to boot from the floppy drive. If the floppy disk in the drive is not bootable, or if no floppy disk is in the drive, the computer generates an error message.
- **Onboard SATA Hard Drive and Onboard IDE Hard Drive** — The computer attempts to boot from the primary hard drive. If no operating system is on the drive, the computer generates an error message.

- **Onboard or USB CD Drive** — The computer attempts to boot from the CD drive. If no CD is in the drive, or if the CD has no operating system, the computer generates an error message.
- **USB Device** — Insert the memory device into a USB port and restart the computer. When **F12 = Boot Menu** appears in the upper-right corner of the screen, press <F12>. The BIOS detects the device and adds the USB flash option to the boot menu.

 **NOTE:** To boot to a USB device, the device must be bootable. To make sure your device is bootable, check the device documentation.

Changing Boot Sequence for the Current Boot

You can use this feature, for example, to tell the computer to boot from the CD drive so that you can run the Dell Diagnostics on the *Drivers and Utilities* CD, but you want the computer to boot from the hard drive when the diagnostic tests are complete. You can also use this feature to restart your computer to a USB device such as a floppy drive, memory key.

 **NOTE:** If you are booting to a USB floppy drive, you must first set the floppy drive to OFF in [system setup](#).


1. If you are booting to a USB device, connect the USB device to a [USB connector](#).
2. Turn on (or restart) your computer.
3. When **F2 = Setup**, **F12 = Boot Menu** appears in the upper-right corner of the screen, press <F12>.

If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft Windows desktop. Then [shut down your computer](#) and try again.

The **Boot Device Menu** appears, listing all available boot devices. Each device has a number next to it.

4. At the bottom of the menu, enter the number of the device that is to be used for the current boot only.

For example, if you are booting to a USB memory key, highlight **USB Flash Device** and press <Enter>.

 **NOTE:** To boot to a USB device, the device must be bootable. To make sure your device is bootable, check the device documentation.

Changing Boot Sequence for Future Boots

1. [Enter system setup](#).
2. Use the arrow keys to highlight the **Boot Sequence** menu option and press <Enter> to access the pop-up menu.

 **NOTE:** Write down your current boot sequence in case you want to restore it.

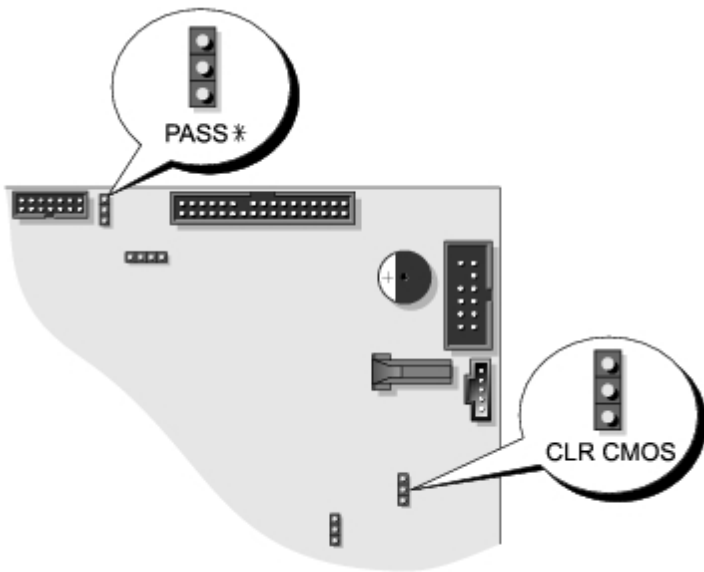
3. Press the up- and down-arrow keys to move through the list of devices.
4. Press the spacebar to enable or disable a device (enabled devices have a checkmark).
5. Press plus (+) or minus (-) to move a selected device up or down the list.







Clearing Forgotten Passwords

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

NOTICE: This process erases both the system and setup passwords.

1. Follow the procedures in "[Before You Begin](#)."




Jumper	Setting	Description
PSWD	 Table 4-1.	Password features are enabled
		Password features are disabled
CLR_CMOS	 Table 4-1.	Normal CMOS function
		Clears the CMOS settings
 jumpered  unjumpered		

2. Locate the 3-pin password jumper (PSWD) on the system board, and attach the jumper plug to pins 2 and 3 to clear the password. For more information for the mini-tower computer, see "[System Board Components](#)" for the desktop computer, see "[System Board Components](#)."


NOTE: When you receive your computer, the jumper plug is attached to pins 1 and 2.

3. [Close the computer cover](#).

4. Connect your computer and monitor to electrical outlets, and turn them on.
5. After the Microsoft® Windows® desktop appears on your computer, [shut down your computer](#).
6. Turn off the monitor and disconnect it from the electrical outlet.
7. Disconnect the computer power cable from the electrical outlet, and press the power button to ground the system board.
8. [Open the computer cover](#).
9. Locate the 3-pin password jumper on the system board and attach the jumper to pins 1 and 2 to reenable the password feature. For more information for the mini-tower computer, see "[System Board Components](#)" for the desktop computer, see "[System Board Components](#)."
10. [Close the computer cover](#).


 **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

11. Connect your computer and devices to electrical outlets, and turn them on.


 **NOTE:** This procedure enables the password feature. When you [enter system setup](#), both system and admin password options appear as **Not Set**—meaning that the password feature is enabled but no password is assigned.

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

Clearing CMOS Settings

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

1. Follow the procedures in "[Before You Begin](#)."
2. Reset the current CMOS settings:
 - a. Locate the password and CMOS jumpers (CLRCM) on the system board.
 - b. Remove the jumper plug from its pins.
 - c. Place the password jumper plug on the CLRCM pins and wait approximately 5 seconds.
 - d. Remove the jumper plug from the CLRCM pins and place it back on the password pins.
3. [Close the computer cover](#).

 **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.


4. Connect your computer and devices to electrical outlets, and turn them on.

Power Management


Your computer can be set to use less power when you are not working. You control the power usage through the operating system installed on your computer and certain option settings in [system setup](#). These periods of reduced power are called

"sleep states":

- **Standby**. In this sleep state, power is reduced or turned off for most components, including the cooling fans. However, system memory remains active.

 **NOTE:** All components installed in the computer must support this feature and have the appropriate drivers loaded to enter standby. For more information, see the manufacturer's documentation for each component.

- **Hibernate**. This sleep state reduces power consumption to a minimum by writing all data in system memory to a hard drive and then removing system power. Waking up from this state restarts the computer, and the memory contents are restored. Operation then resumes where the computer left off when it entered the hibernation state.

 **NOTE:** All components installed in the computer must support this feature and have the appropriate drivers loaded to enter hibernation. For more information, see the manufacturer's documentation for each component.

- **Shutdown**. This sleep state removes all power from the computer except a small auxiliary amount. As long as the computer remains connected to an electrical outlet, it can be automatically or remotely started. For example, the Auto Power On option in [system setup](#) allows the computer to automatically start at a specified time. Also, your network administrator can remotely start your computer using a power management event such as Remote Wake Up.

The following table lists the sleep states and the methods you can use to wake the computer from each state.

Sleep State	Wake-Up Methods (Windows XP)
Standby	<ul style="list-style-type: none">• Press the power button• Auto power on• Move or click the mouse• Type on the keyboard• USB device activity• Power management event
Hibernate	<ul style="list-style-type: none">• Press the power button• Auto power on• Power management event
Shutdown	<ul style="list-style-type: none">• Press the power button• Auto power on• Power management event

 **NOTE:** For more information on power management, see your operating system documentation.

Hyper-Threading

Hyper-Threading is an Intel® technology that can enhance overall computer performance by allowing one physical processor to function as two logical processors, capable of performing certain tasks simultaneously. It is recommended that you use the Microsoft® Windows® XP Service Pack 1 (SP1) or higher operating system because Windows XP is optimized to take advantage of Hyper-Threading technology. While many programs can benefit from Hyper-Threading, some programs have not been optimized for Hyper-Threading and may require an update from the software manufacturer. Contact the software manufacturer for updates and information about using Hyper-Threading with your software.

To determine if your computer is using Hyper-Threading technology:

1. Click the **Start** button, right-click **My Computer**, and then click **Properties**.
2. Click **Hardware** and click **Device Manager**.

3. In the **Device Manager** window, click the plus (+) sign next to the processor type. If Hyper- Threading is enabled, the processor is listed twice.

You can enable or disable Hyper-Threading through system setup.

IEEE 1394

IEEE 1394 is a digital interface that can move large amounts of data between computers and peripheral devices. IEEE 1394 is ideal for use with multimedia devices because it speeds the transfer of data and large files, which enables a computer to connect directly to devices such as digital video cameras.

 **NOTE:** The connector can accept 4-pin IEEE 1394 devices with the use of an adapter.

The Dell Precision 370 desktop computer has an optional front IEEE 1394 connector (see "[Your Desktop Computer](#)"). This connector is only available if you purchased an add-in IEEE 1394 card. To purchase a card, contact Dell.

U320 SCSI Controller


The optional U320 SCSI controller is PCI based and operates in a low voltage differential (LVD) mode while running at U320 (320 MBps) speeds. The bus is backward compatible and can run at U160 (160 MBps), Ultra2 (80 MBps), Ultra (40 MBps) speeds.

If single-ended (SE) devices are connected to the same bus as the LVD devices (such as U320, U160, or Ultra2), the SCSI bus operates in SE mode and runs at maximum of Ultra (40 MBps) speed.

For more information installing a SCSI device and SCSI ID settings for your mini-tower computer, see "[Drives](#)." for your desktop computer "[Drives](#)."

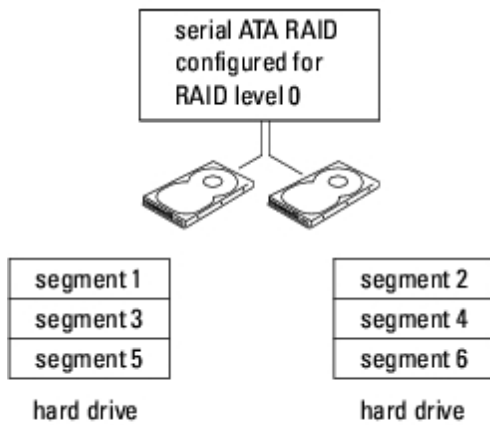
About RAID Configurations

This section provides an overview of the RAID configuration that you might have selected when you purchased your computer. Although there are several RAID configurations available in the computer industry for different types of uses, Dell offers either RAID level 0 or RAID level 1 on your Precision computer. A RAID level 0 configuration is recommended for high-performance applications, and a RAID level 1 configuration is recommended for users that desire a higher level of data integrity.

 **NOTE:** RAID levels do not represent a hierarchy. A RAID level 1 configuration is not inherently better or worse than a RAID level 0 configuration.

RAID Level 0

RAID level 0 uses a storage technique known as "data striping" to provide a high data access rate. Data striping is a method of writing consecutive segments, or stripes, of data sequentially across the physical drives to create a large virtual drive. Data striping allows one of the drives to read data while the other drive is searching for and reading the next block.

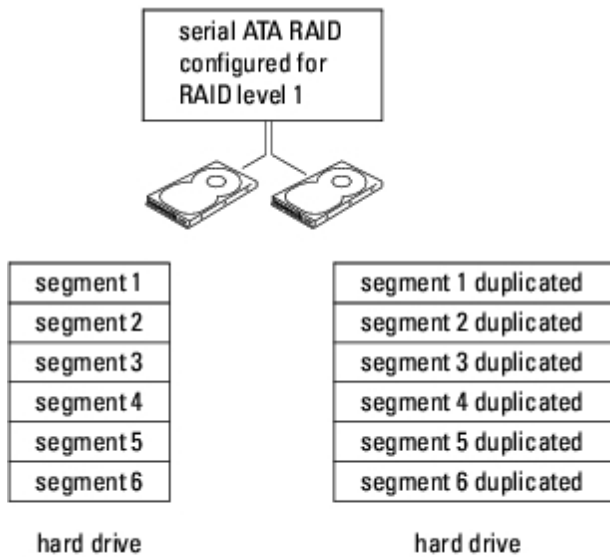


Another advantage of a RAID level 0 configuration is that it utilizes the full capacities of the drives. If you have two 160-GB drives installed, you have 320 GB on which to store data.

➡ **NOTICE:** Because RAID level 0 provides no data redundancy, if one drive fails, then the data on the other drive is also inaccessible. Therefore, ensure that you perform regular backups when you use a RAID level 0 configuration.

RAID Level 1

RAID level 1 uses a data-redundancy storage technique known as "mirroring." When data is written to the primary drive, it is then duplicated, or mirrored, on the other drive. A RAID level 1 configuration sacrifices high data access rates for its data redundancy advantages.



If a drive failure occurs, subsequent read and write operations are directed to the surviving drive. A replacement drive can then be rebuilt using the data from the surviving drive. Also, because data is duplicated on both drives, two 160-GB RAID level 1 drives collectively have a maximum of 160-GB on which to store data.

Copying CDs and DVDs

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 **NOTE:** Ensure that you follow all copyright laws when you create CDs or DVDs.

This section applies only to computers that have a CD-R, CD-RW, DVD+RW, DVD+R, or DVD/CD-RW combo drive.

The following instructions show how to make an exact copy of a CD or DVD. You can also use Sonic RecordNow for other purposes, including creating CDs from audio files on your computer and creating MP3 CDs. For instructions, see the Sonic RecordNow documentation that came with your computer. Open Sonic RecordNow, click the question mark icon in the upper-right corner of the window, and then click **RecordNow Help** or **RecordNow Tutorial**.

How to Copy a CD or DVD

 **NOTE:** If you have a DVD/CD-RW combo drive and you experience recording problems, check for available software patches at the Sonic support website at support.sonic.com.

Currently, five DVD-writable disc formats are available: DVD+R, DVD+RW, DVD-R, DVD-RW, and DVD-RAM. The DVD-writable drives installed in Dell™ computers can write to DVD+R and DVD+RW media, and can read DVD-R and DVD-RW media. However, DVD-writable drives do not write to and might not read DVD-RAM media. In addition, commercially available DVD players for home theater systems might not read all five formats.

 **NOTE:** Most commercial DVDs have copyright protection and cannot be copied using Sonic RecordNow.

1. Click the **Start** button, point to **All Programs**→ **Sonic**→ **RecordNow!**, and then click **RecordNow!**
2. Click either the audio tab or the data tab, depending on the kind of CD or DVD you want to copy.
3. Click **Exact Copy**.
4. To copy the CD or DVD:
 - *If you have one CD or DVD drive*, ensure that the settings are correct and click **Copy**. The computer reads your source CD or DVD and copies it to a temporary folder on your computer hard drive.

When prompted, insert a blank CD or DVD into the CD or DVD drive and click **OK**.

- *If you have two CD or DVD drives*, select the drive into which you have inserted your source CD or DVD and click **Copy**. The computer copies the data on the CD or DVD to the blank CD or DVD.

Once you have finished copying the source CD or DVD, the CD or DVD that you have created automatically ejects.

Using Blank CD-Rs and CD-RWs

Your CD-RW drive can write to two different types of recording media—CD-Rs and CD-RWs (including high-speed CD-RWs). Use blank CD-Rs to record music or permanently store data files. After creating a CD-R, you cannot write to that CD-R again without changing your method of recording (see the Sonic documentation for more information). Use blank CD-RWs to write to CDs or to erase, rewrite, or update data on CDs.

Your DVD-writable drive can write to four different types of recording media—CD-Rs, CD-RWs (including high-speed CD-RWs), DVD+Rs, and DVD+RWs. Blank DVD+Rs can be used to permanently store large amounts of information. After you

create a DVD+R disc, you may not be able to write to that disc again if the disc is "finalized" or "closed" during the final stage of the disc creation process. Use blank DVD+RWs if you plan to erase, rewrite, or update information on that disc later.

Helpful Tips

- Use Microsoft® Windows® Explorer to drag and drop files to a CD-R or CD-RW only after you start Sonic RecordNow and open a RecordNow project.
- You must use CD-Rs to burn music CDs that you want to play in regular stereos. CD-RWs do not play in most home or car stereos.
- You cannot create audio DVDs with Sonic RecordNow.
- Music MP3 files can be played only on MP3 players or on computers that have MP3 software installed.
- Do not burn a blank CD-R or CD-RW to its maximum capacity; for example, do not copy a 650-MB file to a 650-MB blank CD. The CD-RW drive needs 1 or 2 MB of the blank CD to finalize the recording.
- Use a blank CD-RW to practice CD recording until you are familiar with CD recording techniques. If you make a mistake, you can erase the data on the CD-RW and try again. You can also use blank CD-RWs to test music file projects before you record the project permanently to a blank CD-R.
- See the Sonic support website at **support.sonic.com** for additional information.

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Before You Begin

Dell Precision™ Workstation 370 User's Guide

This chapter provides procedures for removing and installing the components in your computer. Unless otherwise noted, each procedure assumes that the following conditions exist:


- You have performed the steps in "[Turn Off Your Computer](#)" and "[Before Working Inside Your Computer](#)."
- You have read the safety information in your Dell™ *Product Information Guide*.
- A component can be replaced by performing the removal procedure in reverse order.

Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Flash BIOS update program floppy disk or CD

Turn Off Your Computer

 **NOTICE:** To avoid losing data, save and close any open files and exit any open programs before you turn off your computer.

1. Shut down the operating system:
 - a. Save and close any open files, exit any open programs, click the **Start** button, and then click **Turn Off Computer**.
 - b. In the **Turn off computer** window, click **Turn off**.


The computer turns off after the operating system shutdown process finishes.

2. Ensure that the computer and any attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, turn them off now.


Before Working Inside Your Computer


Use the following safety guidelines to help protect your computer from potential damage and to help ensure your own personal safety.


 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

 **CAUTION:** Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its


edges, not by its pins.

 **NOTICE:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

 **NOTICE:** When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

 **NOTICE:** To avoid damaging the computer, perform the following steps before you begin working inside the computer.


1. [Turn off your computer.](#)

 **NOTICE:** To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall jack.

2. Disconnect any telephone or telecommunication lines from the computer.
3. Disconnect your computer and all attached devices from their electrical outlets, and then press the power button to ground the system board.

 **CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

4. [Open the computer cover.](#)

 **NOTICE:** Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate any static electricity that could harm internal components.

Opening the Computer Cover

Dell Precision™ Workstation 370 User's Guide

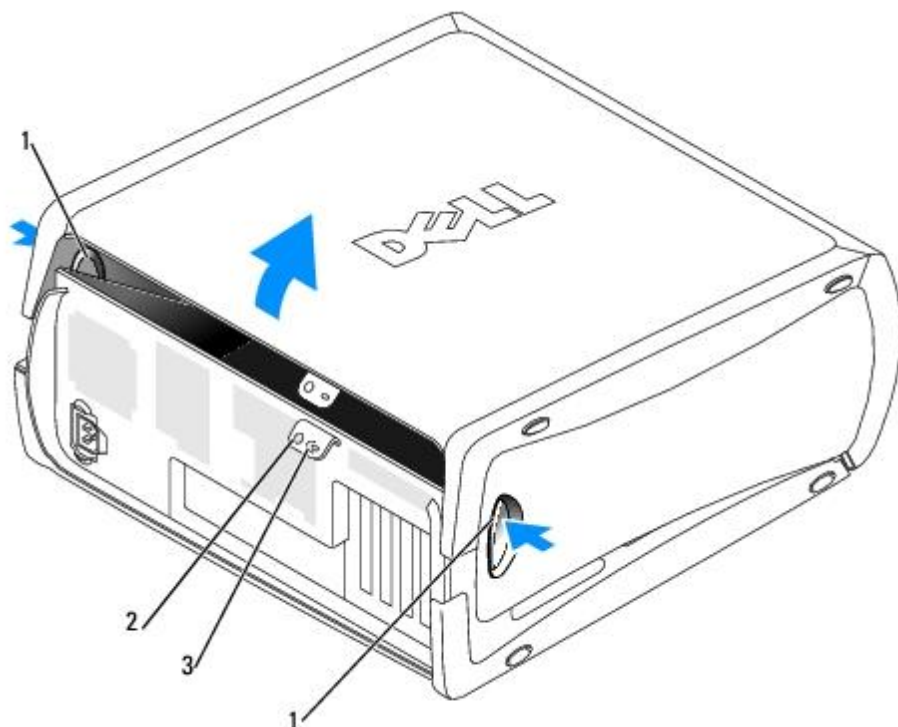
⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

⚠ CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

1. Follow the procedures in "[Before You Begin](#)."
2. If you have installed a padlock through the padlock ring on the back panel, remove the padlock.

➡ NOTICE: Ensure that sufficient space exists to support the open cover—at least 30 cm (1 ft) of desk top space.

3. Lay the computer on its side as shown in the illustration.
4. Open the cover:
 - a. Facing the back of the computer, press the release button on the right side of the computer with one hand while pulling up on the top of the cover with the other hand.
 - b. Press the release button on the left side of the computer with one hand while pulling up on the top of the cover with the other hand.
 - c. Hold the bottom of the computer with one hand, and then pull open the cover with the other hand.



1	release buttons
2	security cable slot

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Memory

Dell Precision™ Workstation 370 User's Guide

- [Memory Overview](#)
- [Installing Memory](#)
- [Removing Memory](#)

➔ **NOTICE:** Before you install new memory modules, download the most recent BIOS for your computer from the Dell™ Support website at support.dell.com.

Memory Overview

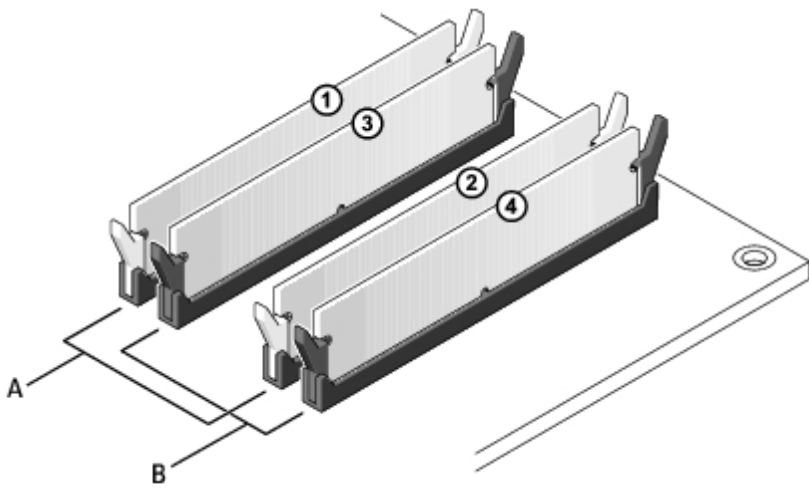
- For information on the type of memory supported by your computer, see "[Specifications](#)."
- Memory modules should be installed in *pairs of matched memory size, speed, and technology*. If the memory modules are not installed in matched pairs, the computer will continue to operate, but with a slight reduction in performance. See the label in the upper-right corner of the module to determine the module's capacity.




✎ **NOTE:** Always install memory modules in the order indicated on the system board.


The recommended memory configurations are:

- A pair of matched memory modules installed in connectors DIMM_1 and DIMM_2
- or
- A pair of matched memory modules installed in connectors DIMM_1 and DIMM_2 and another matched pair installed in connectors DIMM_3 and DIMM_4
- If you install mixed pairs of DDR2 400-MHz (PC2-3200) and DDR2 533-MHz (PC2-4300) memory, the modules function at the slowest speed installed.
 - Be sure to install a single memory module in DIMM connector 1, the connector closest to the processor, before you install modules in the other connectors.
 - While installing memory modules, ensure that you do not mix ECC and non-ECC memory.



A	matched pair of memory modules in connectors DIMM_1 and DIMM_2 (white securing clips)
B	matched pair of memory modules in connectors DIMM_3 and DIMM_4 (black securing clips)

 **NOTE:** Memory purchased from Dell is covered under your computer warranty.

 **NOTICE:** If you remove your original memory modules from the computer during a memory upgrade, keep them separate from any new modules that you may have, even if you purchased the new modules from Dell. If possible, *do not* pair an original memory module with a new memory module. Otherwise, your computer may not start properly. You should install your original memory modules in pairs either in connectors DIMM1 and DIMM2 or connectors DIMM3 and DIMM4.

Addressing Memory With 4-GB Configurations

Your computer supports a maximum of 4 GB of memory when you use four 1-GB DIMMs. Current operating systems, such as Microsoft® Windows XP, can only use a maximum of 4 GB of address space; however, the amount of memory available to the operating system is less than 4 GB. Certain components within the computer require address space in the 4-GB range. Any address space reserved for these components cannot be used by computer memory.

The following components require memory address space:

- System ROM
- APIC(s)
- Integrated PCI devices, such as network connectors, SCSI controllers, and IEEE 1394 controllers
- PCI or PCI Express devices/cards

At start-up, the BIOS identifies the components that require address space. The BIOS dynamically calculates the amount of reserved address space required. The BIOS then subtracts the reserved address space from 4 GB to determine the amount of usable space.

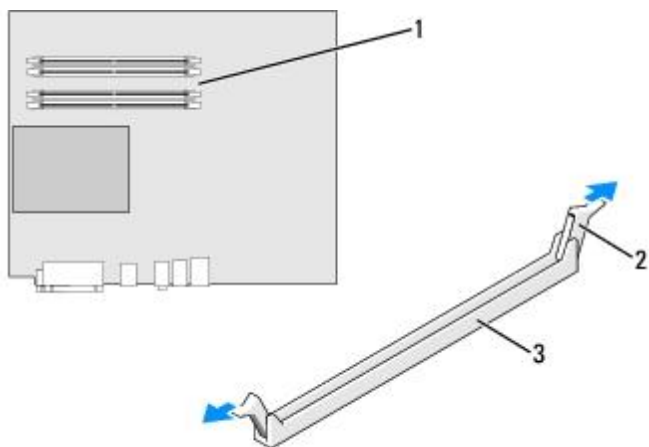
- If the total installed computer memory is less than the usable space, all installed computer memory is available for use only by the operating system.
- If the total installed computer memory is equal to or greater than the usable address space, a small portion of installed memory is available for use by the operating system.

Installing Memory

⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

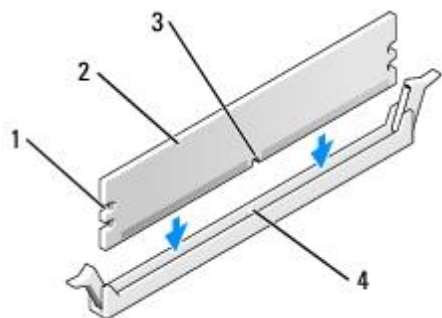
👉 NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer.

1. Follow the procedures in "[Before You Begin](#)."
2. Press out the securing clip at each end of the memory module connector.



1	memory connector closest to processor
2	securing clips (2)
3	connector

3. Align the notch on the bottom of the module with the crossbar in the connector.

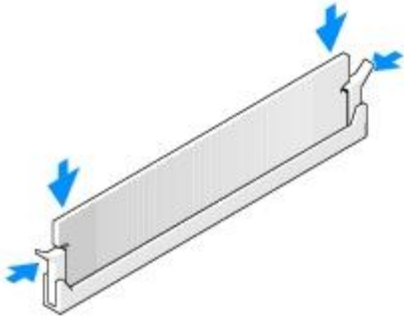


1	cutouts (2)
2	memory module
3	notch
4	crossbar

👉 NOTICE: To avoid damage to the memory module, press the module straight down into the connector while you apply equal force to each end of the module.

4. Insert the module into the connector until the module snaps into position.

If you insert the module correctly, the securing clips snap into the cutouts at each end of the module.



5. [Close the computer cover.](#)

NOTICE: To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

6. Connect your computer and devices to electrical outlets, and turn them on.
7. Press <F2> to enter system setup and check the value for **System Memory**.

The computer should have changed the value of **System Memory** to reflect the newly installed memory. Verify the new total. If it is correct, skip to [step 9](#).

8. If the memory total is incorrect, turn off and disconnect your computer and devices from their electrical outlets. [Open the computer cover](#) and check the installed memory modules to ensure that they are seated properly in their sockets. Then repeat steps [5](#), [6](#), and [7](#).
9. When the **System Memory** total is correct, press <Esc> to exit system setup.
10. Run the [Dell Diagnostics](#) to verify that the memory modules are operating properly.

Removing Memory

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer.

1. Follow the procedures in "[Before You Begin](#)."
2. Press out the securing clip at each end of the memory module connector.
3. Grasp the module and pull up.

If the module is difficult to remove, gently ease the module back and forth to remove it from the connector.

Drives

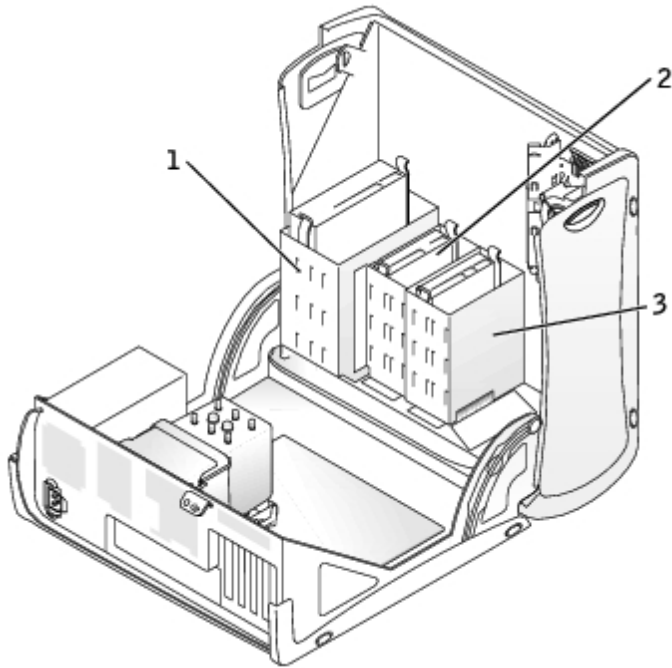
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- [Overview](#)
- [Hard Drive](#)
- [Front-Panel Inserts](#)
- [Floppy Drive](#)
- [CD/DVD Drive](#)

Overview

Your computer supports:

- Two hard drives (Serial ATA or SCSI, with optional SCSI controller)
- Two floppy drives
- Two CD or DVD drives



1	CD/DVD drive(s)
2	floppy drive(s)
3	hard drive(s)

General Installation Guidelines

Connect hard drives to the connector labeled "SATA" and connect CD/DVD drives to the connector labeled "IDE".

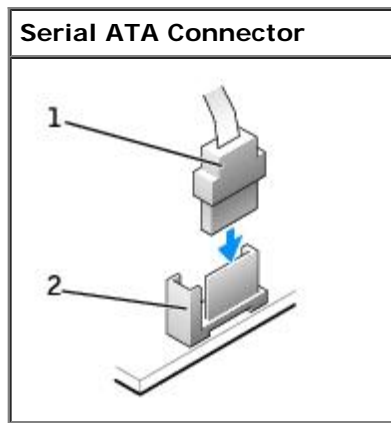
Serial ATA hard drives should be connected to the connector labeled SATA on the system board. IDE CD/DVD drives should be connected to the connector labeled IDE.

When you connect two IDE devices to a single IDE interface cable and configure them for the cable select setting, the device attached to the last connector on the interface cable is primary or the boot device (drive 0), and the device attached to the middle connector on the interface cable is the secondary device (drive 1). See the drive documentation in your upgrade kit for information on configuring devices for the cable select setting.

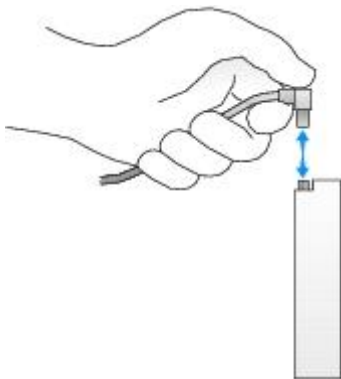
Connecting Drive Cables

When you install a drive, you connect two cables—a DC power cable and a data cable—to the back of the drive and to the system board. Some CD/DVD drives may also have an audio connector; one end of the audio cable will attach to the drive connector and the other will attach to the system board.

Drive Interface Connectors



1	interface cable
2	interface connector



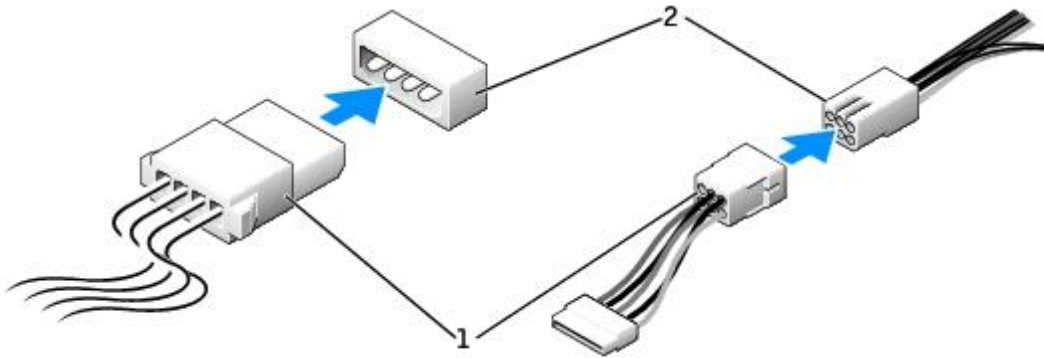
Most connectors are keyed for correct insertion; that is, a notch or a missing pin on one connector matches a tab or a filled-in hole on the other connector.

When connecting an IDE cable, ensure you align the colored stripe with the pin 1 connector. When disconnecting an IDE cable, grasp the colored pull tab and pull until the connector detaches.

When connecting and disconnecting a serial ATA cable, hold the cable by the connector at each end.

NOTE: The system board serial ATA connector may have an attached cover or shroud.

Power Cable Connector



1	power cable
2	power input connector

SCSI Device Installation Guidelines

This section describes how to configure and install SCSI devices in your computer.

SCSI ID Numbers

Internal SCSI devices must have a unique SCSI ID number from 0 to 15. Each SCSI bus has a set of SCSI ID numbers from 0 to 15.

When SCSI devices are shipped from the factory, the default SCSI ID numbers are assigned as follows:

System Board Controller		Controller Card	
Device	ID	Device	ID
Controller	7	Controller	7
Boot hard drive	0	Boot hard drive	0
		CD or DVD drive	5
		tape or DAT drive	6

NOTE: There is no requirement that SCSI ID numbers be assigned sequentially or that devices be attached to the cable in order by ID number. If two or more devices use the same ID, your computer may hang during POST and in SCSI BIOS.

SCSI devices installed by Dell are configured correctly during the manufacturing process. You do not need to set the SCSI ID for these SCSI devices.

If you attach additional optional SCSI devices, see the documentation for each device for information about setting the appropriate SCSI ID number.

NOTE: Dell recommends that you use only SCSI cables purchased from Dell. Cables purchased elsewhere are not guaranteed to work with Dell computers.

Device Termination

SCSI logic requires that termination be enabled for the two devices at opposite ends of the SCSI chain and disabled for all devices in between.

It is recommended that you use terminated cables and that you disable termination on all devices. See the documentation provided with any optional SCSI device you purchase for information on disabling termination on the device.

General Guidelines


Follow these general guidelines when installing SCSI devices in your computer:

- Although you install SCSI devices essentially the same way as other devices, their configuration requirements are different. For details on configuring your particular SCSI subsystem, see the documentation for your SCSI devices and/or your host adapter card.
- Configure the device for a SCSI ID number and disable termination, if necessary.
- Connect one end of the external SCSI cable to the connector on the back of the SCSI device. Attach the other end of the external SCSI cable to the connector on the controller card installed in the computer.
- After you install a SCSI hard drive, **Primary Drive 0** and **Primary Drive 1** should be set to **None** in [system setup](#) if no IDE hard drives are installed.
- You may need to use programs other than those provided with the operating system to partition and format SCSI hard drives. See the documentation that came with your SCSI software drivers for information on installing the appropriate drivers and preparing your SCSI hard drive for use.

SCSI Cables

Ultra 320 (optional on the Dell Precision 370 computer), Ultra 160/m and Ultra2/Wide LVD drives (typically hard drives) both use a 68-pin cable. One end of the cable attaches to the SCSI connector on the system board or the SCSI controller card installed in your computer. The remaining connectors on the cable attach to the various drives.


Narrow SCSI drives (tape drives, CD drives, and some hard drives) use a 50-pin cable. One end of this cable attaches to the SCSI controller card. The remaining connectors on the cable attach to the various narrow SCSI devices.

 **NOTICE:** Dell recommends that you use only SCSI cables purchased from Dell. Cables purchased elsewhere are not guaranteed to work with Dell computers.

Hard Drive

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

 **CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

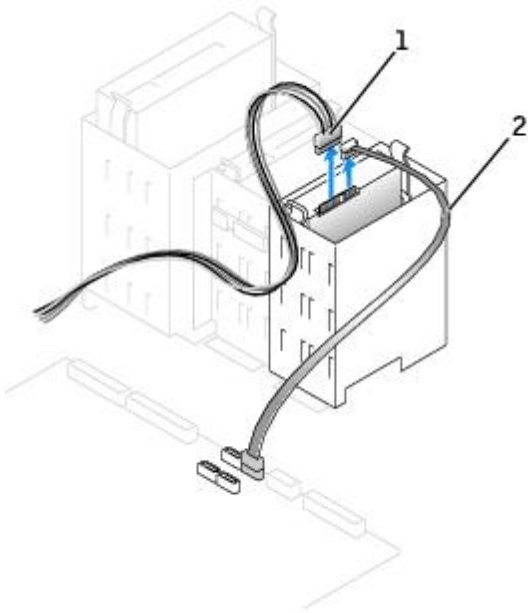
 **NOTICE:** To avoid damage to the drive, do not set it on a hard surface. Instead, set the drive on a surface, such as a foam pad, that will sufficiently cushion it.

1. If you are replacing a hard drive that contains data you want to keep, back up your files before you begin this procedure.

2. Follow the procedures in "[Before You Begin.](#)"

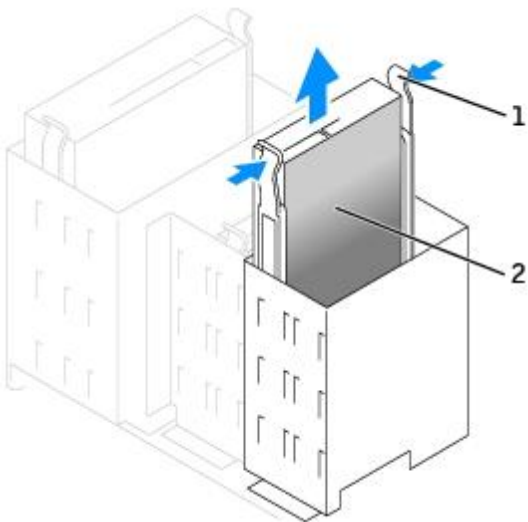
Removing a Hard Drive

1. Disconnect the power and hard-drive cables from the drive.



1	power cable
2	hard-drive cable

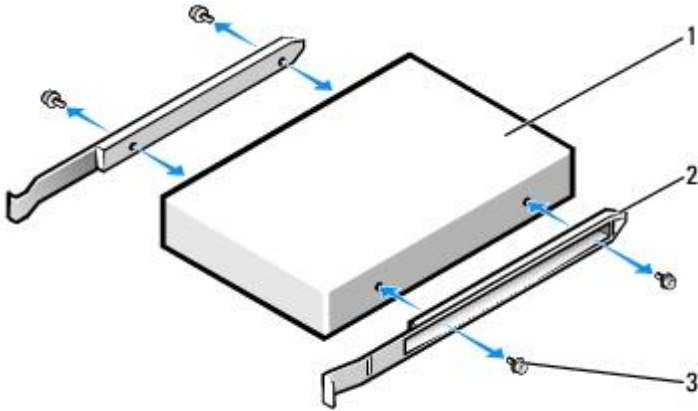
2. Press in on the tabs on each side of the drive and slide the drive up and out.



1	tabs (2)
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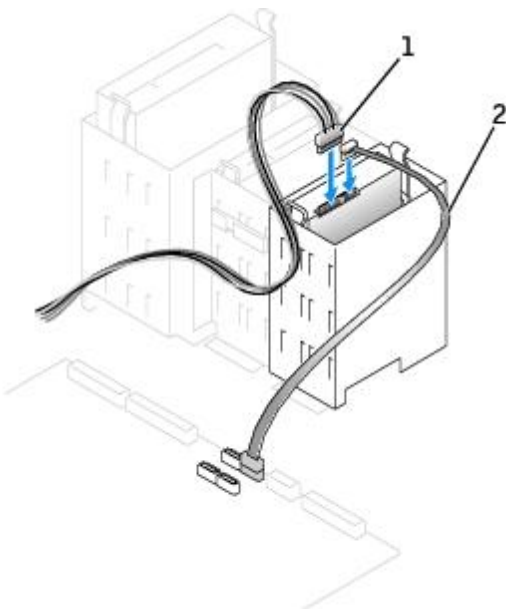
Installing a Hard Drive

1. Unpack the replacement hard drive, and prepare it for installation.
2. Check the documentation for the drive to verify that it is configured for your computer.
3. If your replacement hard drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive. Attach the bracket rails to the new drive by aligning the screw holes on the drive with the screw holes on the bracket rails and then inserting and tightening all four screws (two screws on each rail).




1	drive
2	bracket rails (2)
3	screws (4)

4. Install the hard drive into the computer by gently sliding the drive into place until you hear it securely click.
5. Connect the power and hard-drive cables to the drive.



1	power cable
2	hard-drive cable

6. Check all connectors to be certain that they are properly cabled and firmly seated.
7. [Close the computer cover.](#)

 **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

8. Connect your computer and devices to electrical outlets, and turn them on.


See the documentation that came with the drive for instructions on installing any software required for drive operation.

9. If the drive you just installed is the primary drive, insert a bootable floppy disk into drive A.
10. Turn on the computer.
11. [Enter system setup](#), and update the appropriate **Primary Drive** option (**0** or **1**).
12. Exit system setup, and reboot the computer.
13. Partition and logically format your drive before you proceed to the next step.


See the documentation for your operating system for instructions.

14. Test the hard drive by running the [Dell Diagnostics](#).
15. If the drive you just installed is the primary drive, install your operating system on the hard drive.

Adding a Second Hard Drive


 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

 **CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

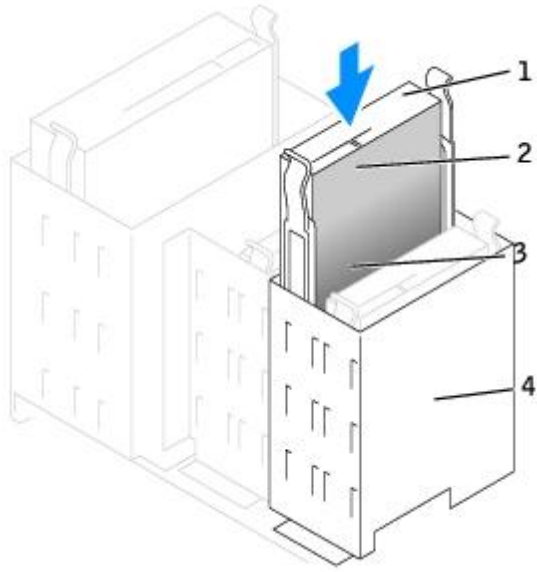
 **NOTICE:** To avoid damage to the drive, do not set it on a hard surface. Instead, set the drive on a surface, such as a foam pad, that will sufficiently cushion it.

1. Check the documentation for the drive to verify that it is configured for your computer.
2. Follow the procedures in "[Before You Begin](#)."
3. Remove the two plastic rails from the inside of the empty hard-drive bay by gently pulling the rails up and out of the bay.
4. Attach the rails to the hard drive using the two screws attached to the rails.

Ensure that the rail tabs are positioned at the back of the hard drive.

 **NOTICE:** Do not install any drive into the lower hard-drive bay until you have removed the green drive rails from the inside of the hard-drive bay.

5. Gently slide the new hard drive into empty bay until you hear a click.



1	rail tabs (2)
2	second hard drive in upper bay
3	first hard drive in lower bay
4	hard drive bay

6. Connect a power cable to the drive.
7. Connect the hard-drive cable to the drive and to the system board (see [System Board Components](#)).
8. [Close the computer cover](#).

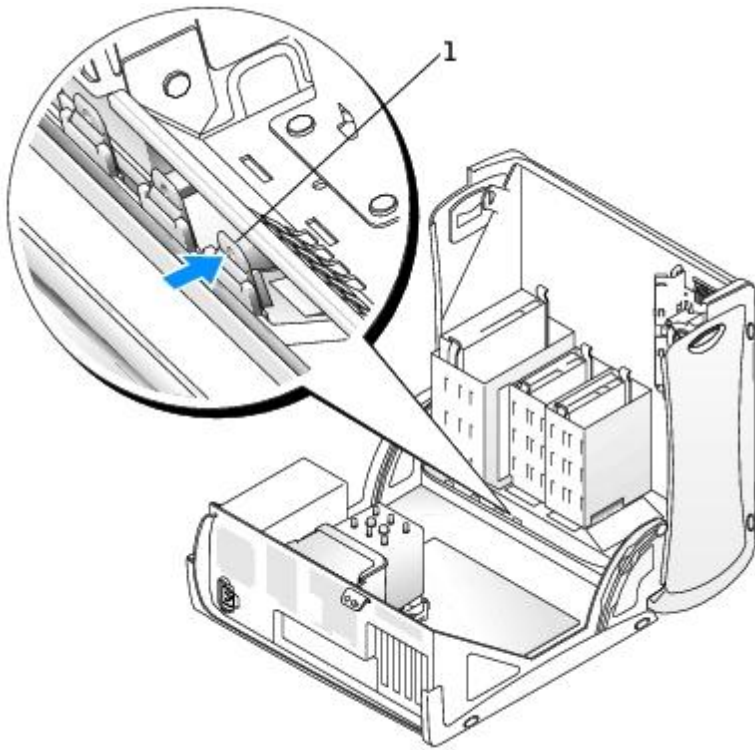
NOTICE: To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

9. Connect your computer and devices to their electrical outlets, and turn them on.
10. See the documentation that came with the drive for instructions on installing any software required for drive operation.

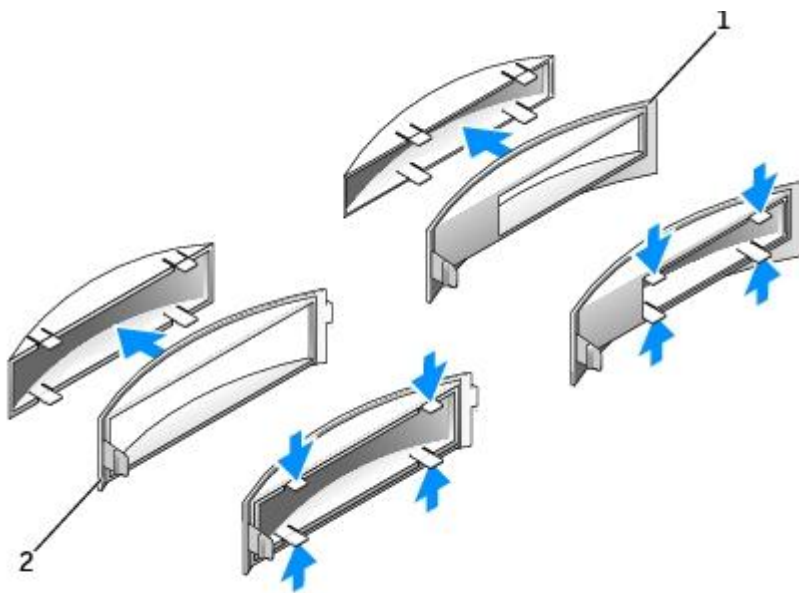
Front-Panel Inserts

If you are installing a new floppy or CD/DVD drive instead of replacing a drive, remove the front-panel inserts.

1. Open the cover to a 90-degree angle.
2. Locate the insert that is in front of the drive bay that you want to use.
3. From inside the computer, press in the release tab of the insert.



4. From the outside of the computer, pull the insert away from the computer's front panel.
5. Remove the insert from the insert frame by pressing on the four tabs.



1	insert frame for CD/DVD drive bay
2	insert frame for floppy drive bay

6. Reattach the empty insert frame over the front of the drive bay.

The insert frame fits only one way.




- a. Face the front of the computer and slip the left side of the insert in to the left side of the drive bay opening.

- b. Slightly press the right-side insert release tab and gently push in the insert.

If you are adding a floppy drive and you purchased the drive from Dell, you received a front panel insert in your floppy drive kit. Attach this insert over the front of the drive bay.

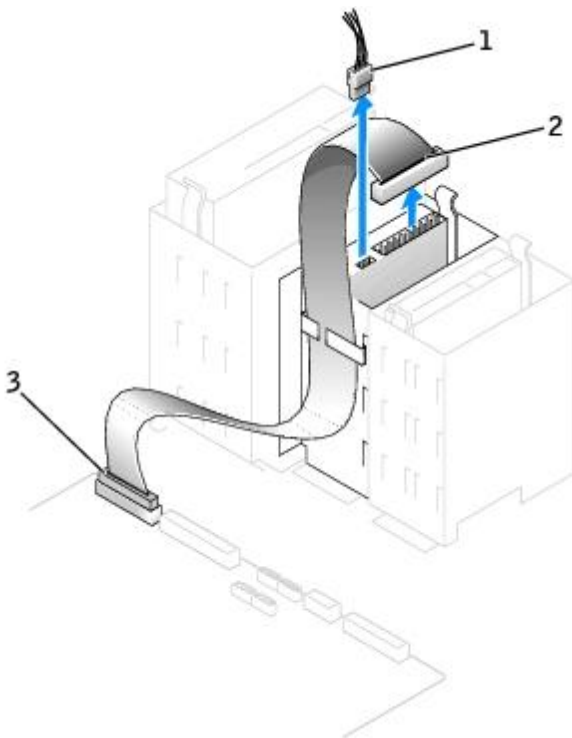
If you adding a floppy that was not purchased from Dell, reattach the empty insert frame over the front of the drive bay.

Floppy Drive

-  **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.
-  **CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.
-  **NOTE:** If you are adding a floppy drive, see "[Installing a Floppy Drive](#)."

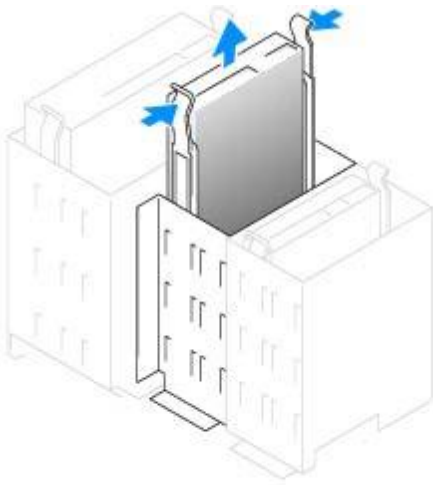
Removing a Floppy Drive

1. Follow the procedures in "[Before You Begin](#)."
2. Disconnect the power and floppy-drive cables from the back of the floppy drive.
3. Disconnect the other end of the floppy-drive cable from the system board (labeled DSKT).



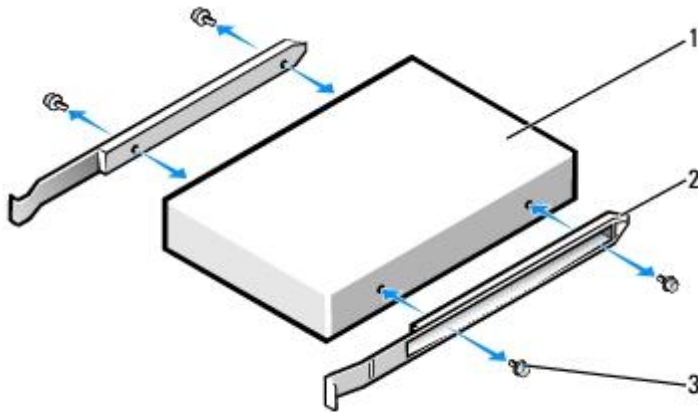
1	power cable
2	floppy-drive cable
3	floppy-drive connector (DSKT)

4. Press inward on the two tabs on the sides of the drive, slide the drive upward, and remove it from the floppy-drive bay.



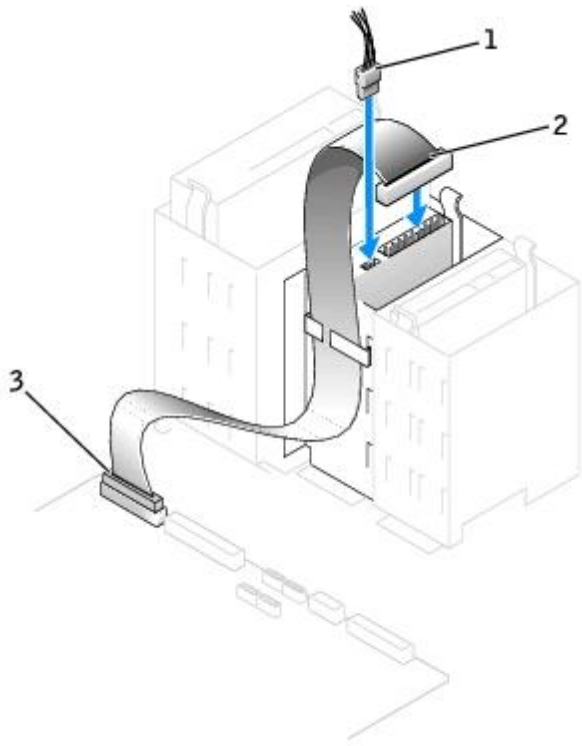
Installing a Floppy Drive

1. If you are replacing a drive and the new drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive. Attach the bracket to the new drive by aligning the screw holes on the drive with the screw holes on the bracket rails and then inserting and tightening all four screws (two screws on each rail).



1	drive
2	bracket rails (2)
3	screws (4)

2. Gently slide the drive into place until the tabs securely click into position.
3. Attach the power and floppy-drive cables to the floppy drive.
4. Connect the other end of the floppy-drive cable to the connector labeled "FLOPPY" on the system board. For more information on system board, see "[System Board Components](#)."



1	power cable
2	floppy-drive cable
3	floppy-drive connector (DSKT)

5. If you are installing a new floppy drive rather than replacing a drive, remove the [front-panel inserts](#).
6. Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.
7. [Close the computer cover.](#)

NOTICE: To connect a network cable, first plug the cable in to the network wall jack and then plug it in to the computer.

8. Connect your computer and devices to their electrical outlets, and turn them on.

See the documentation that came with the drive for instructions on installing any software required for drive operation.

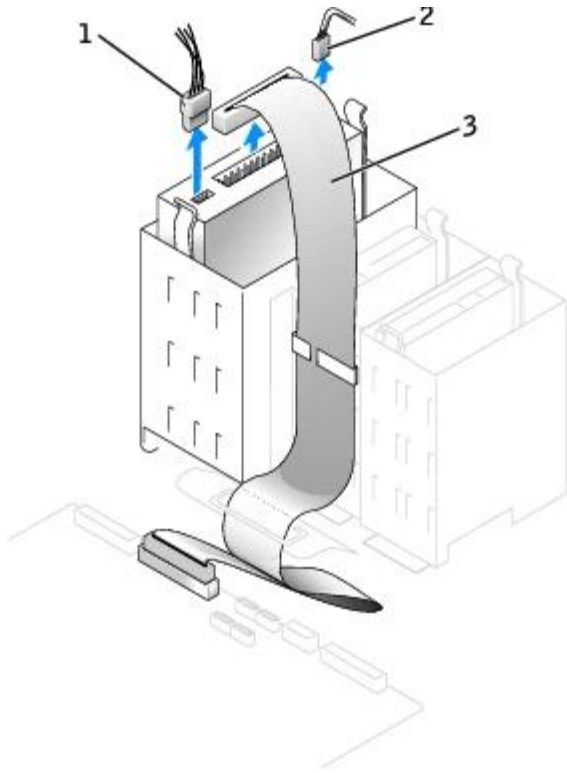
9. [Enter system setup](#) and select the appropriate **Diskette Drive** option.
10. Verify that your computer works correctly by running the [Dell Diagnostics](#).

CD/DVD Drive

- CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.
- CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

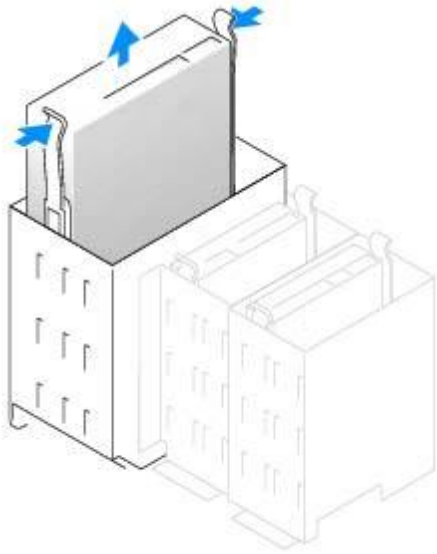
Removing a CD/DVD Drive

1. Follow the procedures in "[Before You Begin.](#)"
2. Disconnect the power, audio, and CD/DVD drive cables from the back of the drive.



1	power cable
2	audio cable
3	CD/DVD drive cable

3. Press inward on the two tabs on the sides of the drive, and then slide the drive upward and remove it from the drive bay.

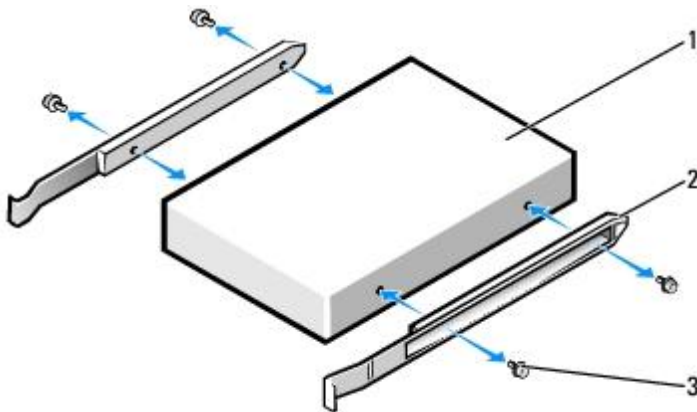


Installing a CD/DVD Drive

1. If you are installing a new drive, unpack the drive and prepare it for installation.

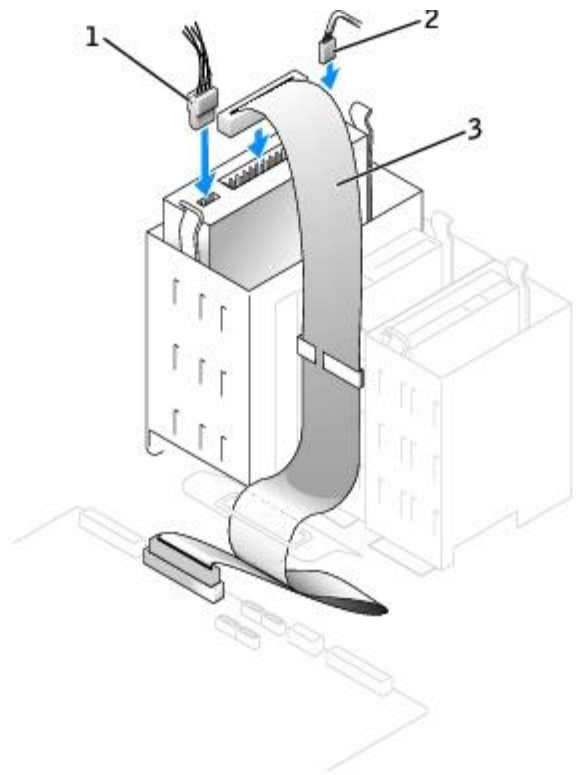
Check the documentation that accompanied the drive to verify that the drive is configured for your computer. If you are installing an IDE drive, configure the drive for the cable select setting.

2. Connect the new drive to the set of rails that are attached to the inside of the cover. If a set of rails is not attached inside the cover, [contact Dell](#).
3. If you are installing a replacement drive and the new drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive. Attach the bracket to the new drive by aligning the screw holes on the drive with the screw holes on the bracket rails and then inserting and tightening all four screws (two screws on each rail).



1	drive
2	bracket rails (2)
3	screws (4)

4. Gently slide the drive into place until the tabs securely click into position.
5. Connect the power, audio, and CD/DVD drive cables to the drive.



1	power cable
2	audio cable
3	CD/DVD drive cable

6. If you are installing a new CD/DVD drive rather than replacing a drive, remove the [front panel inserts](#).
7. Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.
8. [Close the computer cover](#).

NOTICE: To connect a network cable, first plug the cable in to the network wall jack and then plug it in to the computer.

9. Connect your computer and devices to their electrical outlets, and turn them on.

See the documentation that came with the drive for instructions on installing any software required for drive operation.

10. [Enter system setup](#) and select the appropriate **Drive** option.
11. Verify that your computer works correctly by running the [Dell Diagnostics](#).

Cards

Dell Precision™ Workstation 370 User's Guide

• [PCI Cards](#)

• [PCI Express Cards](#)

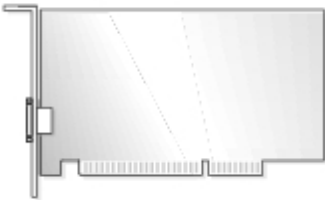
⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

👉 NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer.

Your Dell™ computer provides the following slots for PCI and PCI Express cards:

- three [PCI card slots](#)
 - one [PCI Express_x16](#) card slot
 - one [PCI Express_x1](#) card slot
-

PCI Cards



If you are installing or replacing a card, follow the procedures in the next section. If you are removing but not replacing a card, see "[Removing a PCI Card](#)."

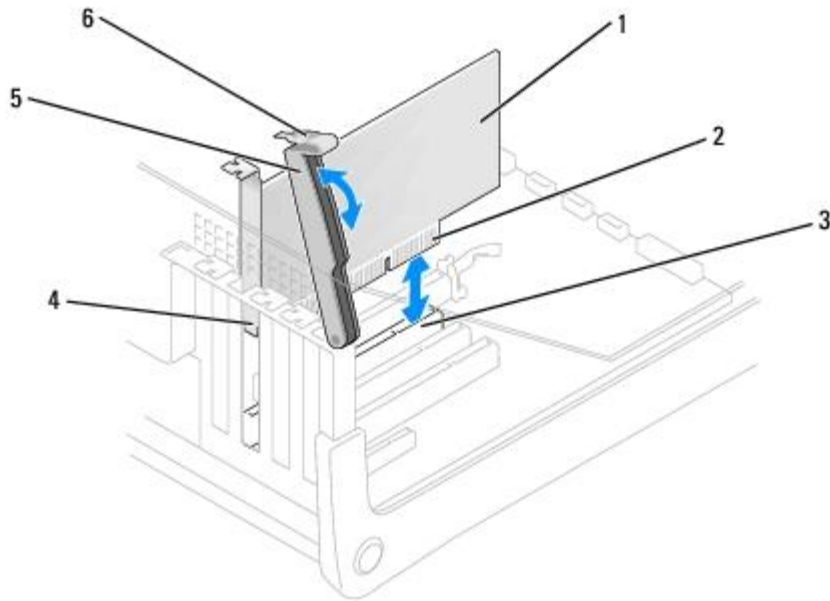
If you are replacing a card, remove the current driver for the card from the operating system.

If you are installing or replacing a PCI Express card, see "[Installing a PCI Express Card](#)."

Installing a PCI Card

🔧 NOTE: For your Dell Precision 370 desktop computer, Dell offers a customer kit for Audigy II and IEEE 1394 PCI add-in-cards that includes a cable to connect the card to the I/O panel that enables the front mounted IEEE 1394 connector. You will need to remove the plug on the front of the computer, by grasping the sides of the plug and pulling the plug straight out. For more information about connecting the card cable to the I/O panel, see [I/O Panel](#).

1. Follow the procedures in "[Before You Begin](#)."
2. Press the lever on the card retention arm and raise the retention arm.



1	PCI card	4	filler bracket
2	edge connector	5	retention arm
3	card connector	6	lever

3. If you are installing a new card, remove the filler bracket to create a card-slot opening. Then continue with [step 5](#).
4. If you are replacing a card that is already installed in the computer, remove the card.

If necessary, disconnect any cables connected to the card. Grasp the card by its top corners, and ease it out of its connector.

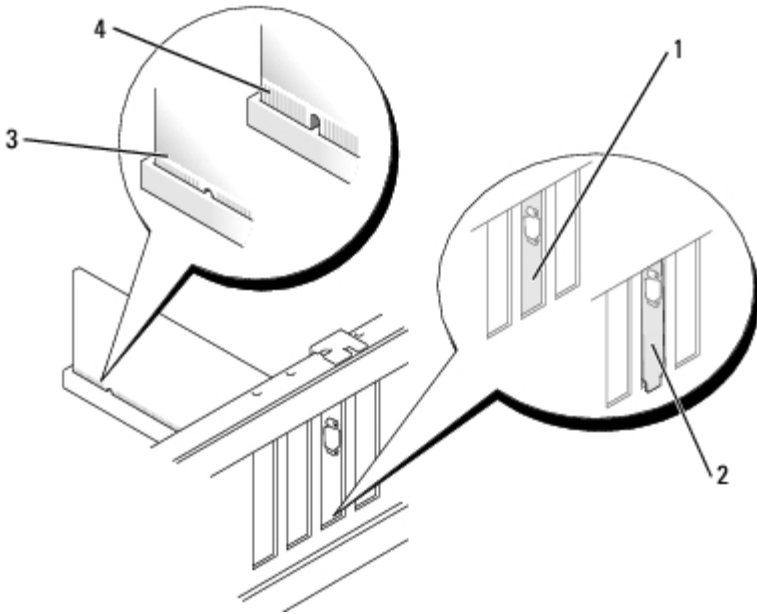
5. Prepare the card for installation.

See the documentation that came with the card for information on configuring the card, making internal connections, or otherwise customizing it for your computer.

⚠ CAUTION: Some network adapters automatically start the computer when they are connected to a network. To guard against electrical shock, be sure to unplug your computer from its electrical outlet before installing any cards.

6. Place the card in the connector and press down firmly. Ensure that the card is fully seated in the slot.

If the card is full-length, insert the end of the card into the card guide bracket as you lower the card toward its connector on the system board. Insert the card firmly into the card connector on the system board.

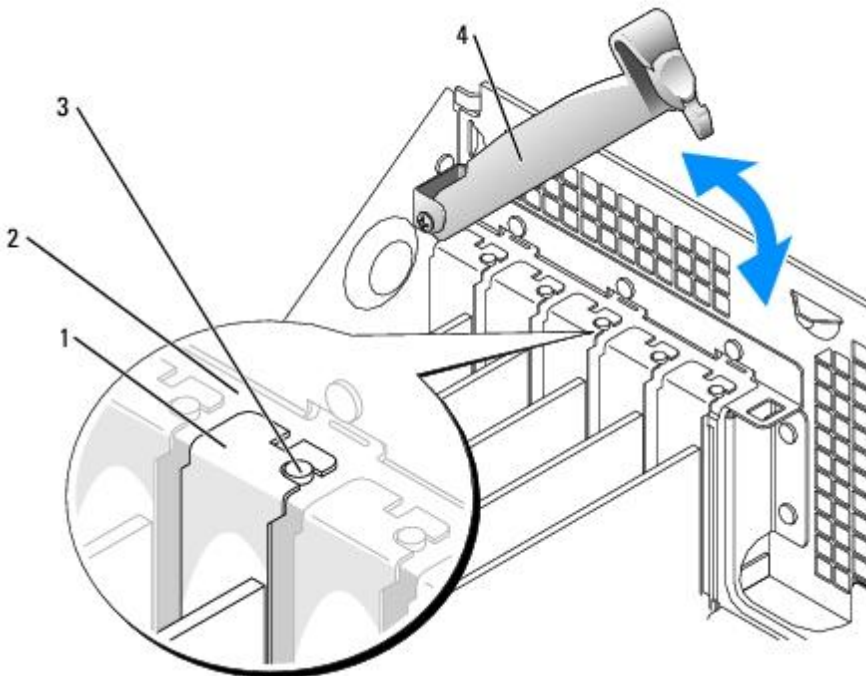


1	bracket within slot
2	bracket caught outside of slot
3	fully seated card
4	not fully seated card


7. Before you lower the retention arm, ensure that:

- The tops of all cards and filler brackets are flush with the alignment bar.
- The notch in the top of the card or filler bracket fits around the alignment guide.

8. Press the retention arm into place, securing the card(s) in the computer.




1	filler bracket
2	alignment bar
3	alignment guide
4	retention arm

 **NOTICE:** Do not route card cables over or behind the cards. Cables routed over the cards can prevent the computer cover from closing properly or cause damage to the equipment.

9. Connect any cables that should be attached to the card.

See the documentation for the card for information about the card's cable connections.


 **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

10. [Close the computer cover](#), reconnect the computer and devices to electrical outlets, and turn them on.
11. If you installed a sound card:
 - a. [Enter system setup](#), select **Audio Controller**, and change the setting to **Off**.
 - b. Connect external audio devices to the sound card's connectors. Do not connect external audio devices to the microphone, speaker/headphone, or line-in connectors on the back panel.
12. If you installed an add-in network adapter:
 - a. [Enter system setup](#), select Network Controller, and change the setting to Off.
 - b. Connect the network cable to the add-in network adapter's connectors. Do not connect the network cable to the integrated connector on the back panel.
13. Install any drivers required for the card as described in the card documentation.


Removing a PCI Card

1. Follow the procedures in "[Before You Begin](#)."
2. Press the lever on the card retention arm and raise the retention arm.
3. If necessary, disconnect any cables connected to the card.
4. Grasp the card by its top corners, and ease it out of its connector.
5. If you are removing the card permanently, install a filler bracket in the empty card-slot opening.

If you need a filler bracket, contact Dell.

 **NOTE:** Installing filler brackets over empty card-slot openings is necessary to maintain FCC certification of the computer. The brackets also keep dust and dirt out of your computer.

6. Lower the retention arm and press it into place, securing the card(s) in the computer.

 **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

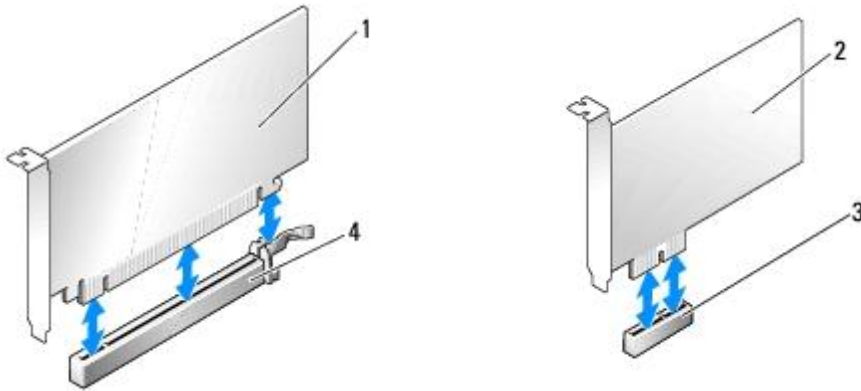
7. [Close the computer cover](#), reconnect the computer and devices to electrical outlets, and turn them on.
8. Remove the card's driver from the operating system.

9. If you removed a sound card:
 - a. [Enter system setup](#), select **Audio Controller**, and change the setting to **On**.
 - b. Connect external audio devices to the audio connectors on the computer back panel.
10. If you removed an add-in network connector:
 - a. [Enter system setup](#), select Network Controller, and change the setting to **On**.
 - b. Connect the network cable to the integrated connector on the computer back panel.

PCI Express Cards

Your computer supports one PCI Express x16 card and one PCI Express x1 card.

- ➡ **NOTICE:** PCI Express graphics cards that run higher than 75 watts require an additional cooling fan installed. Otherwise, your card could overheat and damage your computer. If your computer has a PCI Express graphics card without a cooling card fan, contact Dell to purchase a card fan.



1	PCI Express card x16	3	PCI Express card slot x1
2	PCI Express card x1	4	PCI Express card slot x16

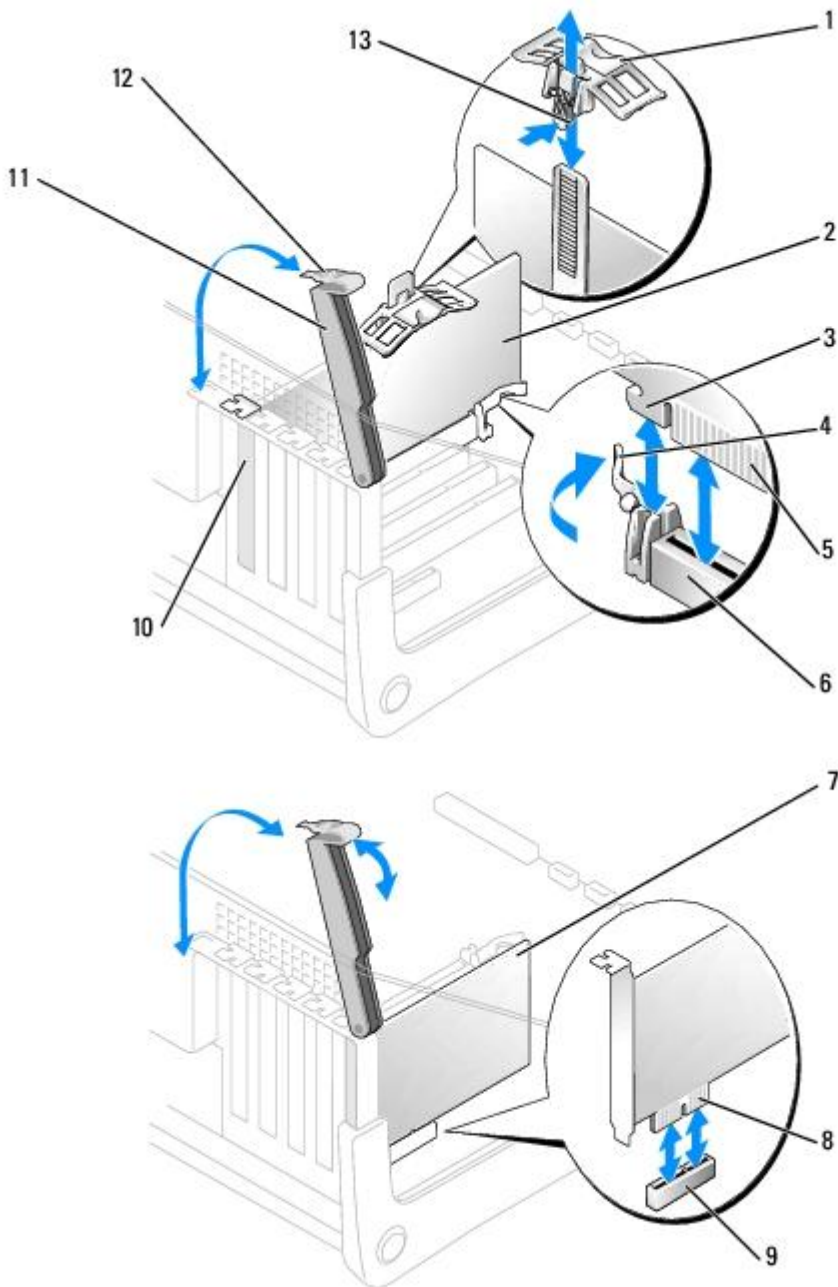
If you are installing or replacing a PCI Express card, follow the procedures in the next section. If you are removing but not replacing a card, see "[Removing a PCI Express Card](#)."

If you are replacing a card, remove the current driver for the card from the operating system.

If you are installing or replacing a PCI card, see "[Installing a PCI Card](#)."

Installing a PCI Express Card

1. Follow the procedures in "[Before You Begin](#)."
2. Press the lever on the card retention arm and raise the retention arm.



1	top of retention mechanism	8	edge connector
2	PCI Express x16 card	9	card connector
3	securing slot	10	filler bracket
4	securing tab	11	retention arm
5	edge connector	12	lever
6	card connector	13	tab
7	PCI Express x1 card		

3. If you are installing a new card, remove the filler bracket to create a card-slot opening. Then continue with [step 5](#).
4. If you are replacing a card that is already installed in the computer, remove the card.

If necessary, disconnect any cables connected to the card. If your card includes a retention mechanism, remove the top of the retention mechanism by pressing the tab and pulling up on the top. Gently pull the securing tab, grasp the card

by its top corners, and ease it out of its connector.

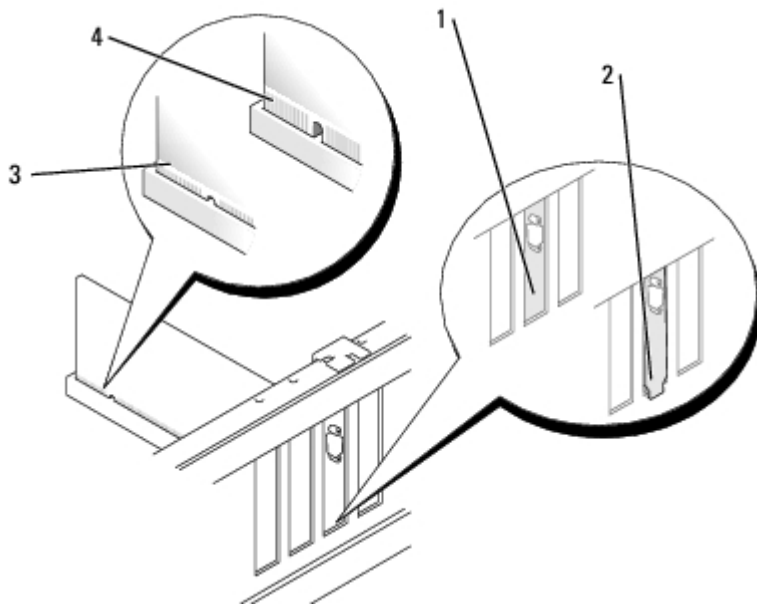
5. Prepare the card for installation.

See the documentation that came with the card for information on configuring the card, making internal connections, or otherwise customizing it for your computer.

⚠ CAUTION: Some network adapters automatically start the computer when they are connected to a network. To guard against electrical shock, be sure to unplug your computer from its electrical outlet before installing any cards.

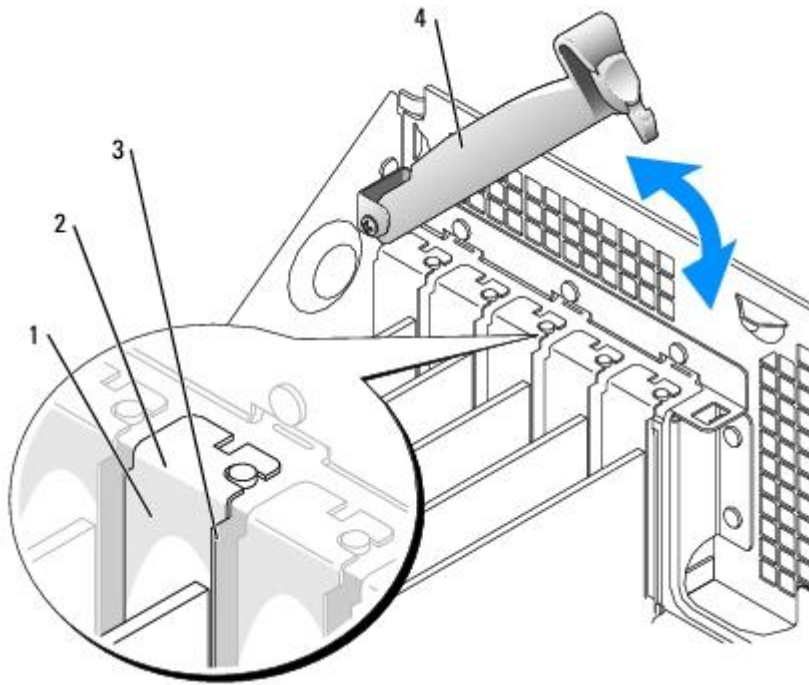
6. If you are installing the card into the x16 card connector, position the card so the securing slot is aligned with the securing tab, and gently pull the securing tab.
7. Place the card in the connector and press down firmly. Ensure that the card is fully seated in the slot.

Insert the card firmly into the card connector on the system board.



1	bracket within slot
2	bracket caught outside of slot
3	fully seated card
4	not fully seated card

8. If you replaced a card that was already installed in the computer and you removed the top of the retention mechanism, you may reinstall the top.
9. Before you lower the retention arm, ensure that:
 - The tops of all cards and filler brackets are flush with the alignment bar.
 - The notch in the top of the card or filler bracket fits around the alignment guide.
10. Press the retention arm into place, securing the card(s) in the computer.



1	filler bracket
2	alignment bar
3	alignment guide
4	retention arm

NOTICE: Do not route card cables over or behind the cards. Cables routed over the cards can prevent the computer cover from closing properly or cause damage to the equipment.

11. If you installed a PCI Express graphics card that runs up to 150 W, [install the card fan](#).
12. Connect any cables that should be attached to the card.

See the documentation for the card for information about the card's cable connections.

NOTICE: To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

13. [Close the computer cover](#), reconnect the computer and devices to electrical outlets, and turn them on.
14. If you installed a sound card:
 - a. [Enter system setup](#), select **Audio Controller**, and change the setting to **Off**.
 - b. Connect external audio devices to the sound card's connectors. Do not connect external audio devices to the microphone, speaker/headphone, or line-in connectors on the back panel.
15. If you installed an add-in network adapter:
 - a. [Enter system setup](#), select **Network Controller**, and change the setting to Off.
 - b. Connect the network cable to the add-in network adapter's connectors. Do not connect the network cable to the integrated connector on the back panel.
16. Install any drivers required for the card as described in the card documentation.

Removing a PCI Express Card

1. Follow the procedures in "[Before You Begin](#)."
2. Press the lever on the card retention arm and raise the retention arm.
3. If necessary, disconnect any cables connected to the card.
4. If your card includes a retention mechanism, remove the top of the retention mechanism by pressing the tab and pulling up on the top.
5. Gently pull back the securing tab, grasp the card by its top corners, and ease it out of its connector.
6. If you are removing the card permanently, install a filler bracket in the empty card-slot opening.

If you need a filler bracket, [contact Dell](#).



NOTE: Installing filler brackets over empty card-slot openings is necessary to maintain FCC certification of the computer. The brackets also keep dust and dirt out of your computer.

7. Lower the retention arm and press it into place, securing the card(s) in the computer.



NOTICE: To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

8. [Close the computer cover](#), reconnect the computer and devices to electrical outlets, and turn them on.
9. Remove the card's driver from the operating system.
10. If you installed a sound card:
 - a. [Enter system setup](#), select **Audio Controller**, and change the setting to **Off**.
 - b. Connect external audio devices to the sound card's connectors. Do not connect external audio devices to the microphone, speaker/headphone, or line-in connectors on the back panel.
11. If you installed an add-in network adapter:
 - a. [Enter system setup](#), select **Network Controller**, and change the setting to Off.
 - b. Connect the network cable to the add-in network adapter's connectors. Do not connect the network cable to the integrated connector on the back panel.
12. Install any drivers required for the card as described in the card documentation.

Installing the Card Fan

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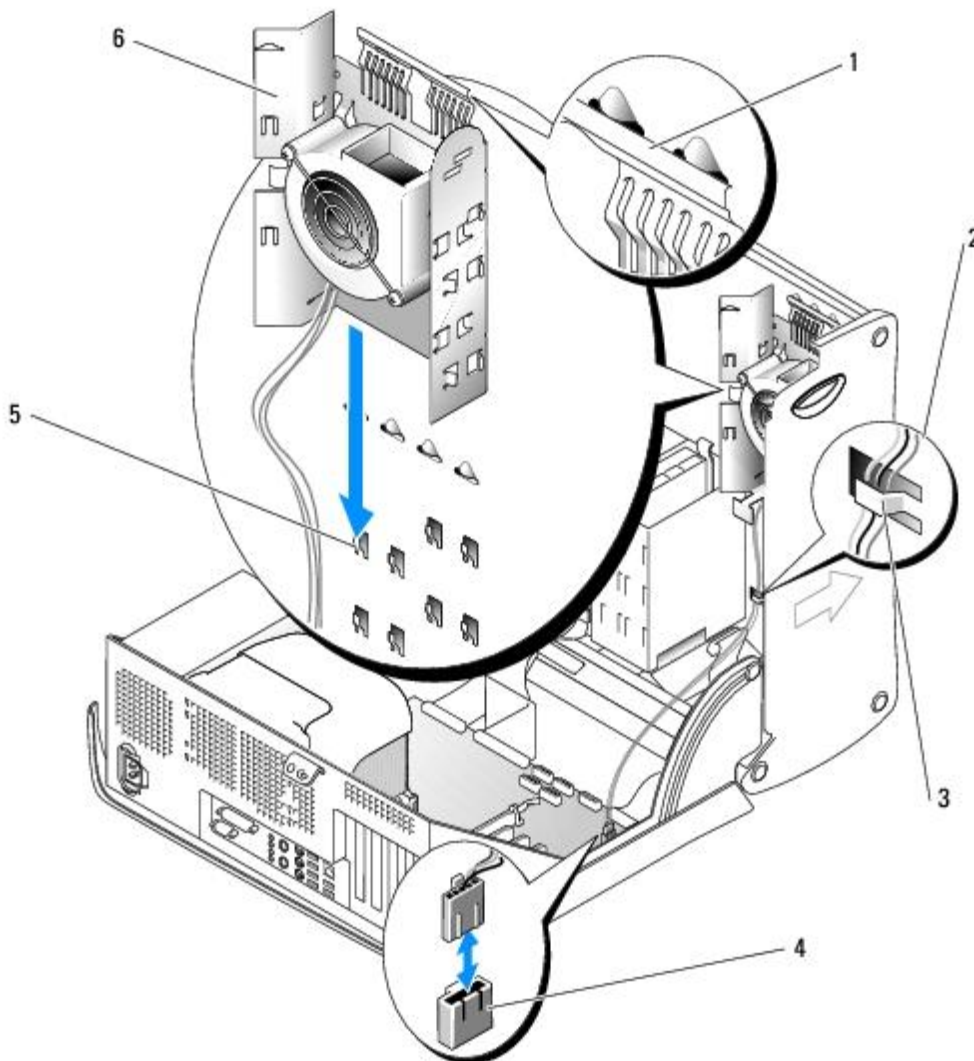
NOTICE: PCI Express graphics cards that run higher than 75 W require an additional cooling fan installed. Otherwise, your card could overheat and damage your computer.

If a card fan is not present in your computer and you are installing a graphics card that runs higher than 75 W, contact Dell to purchase a card fan.

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

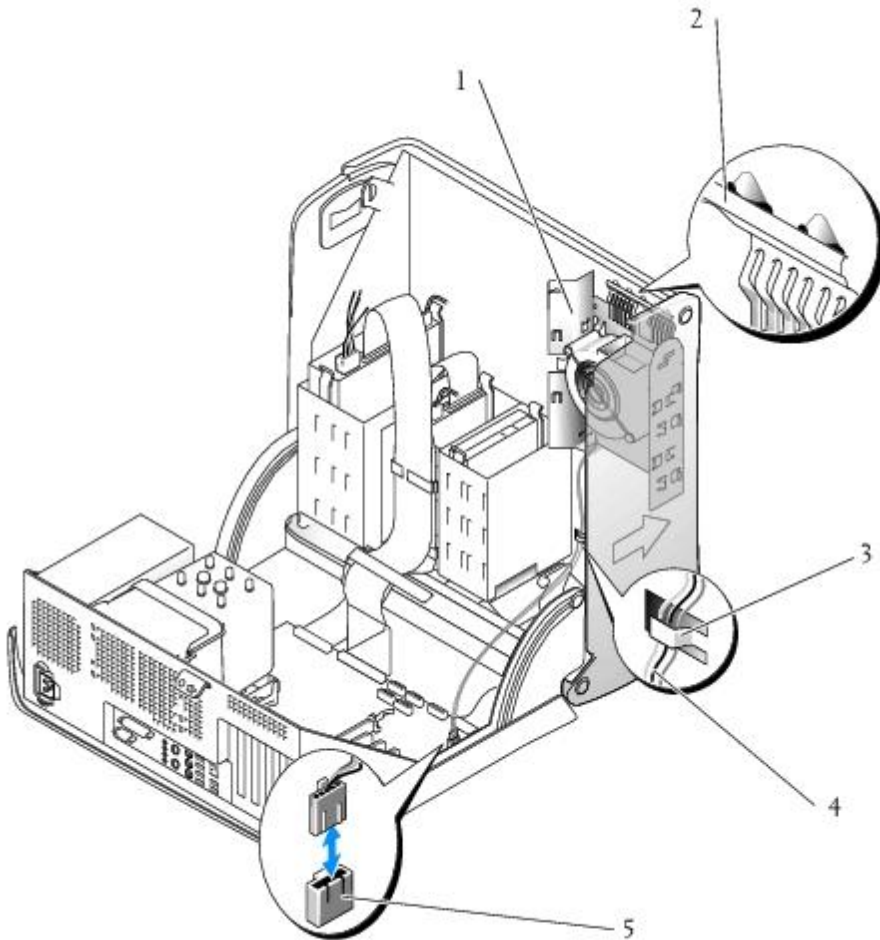
CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

1. Follow the procedures in "[Before You Begin](#)."
2. If spare drive rails are installed on the inside of the computer cover, remove them by gently pulling the rails up and out.



1	top edge of card fan bracket	4	card fan connector on system board
2	card fan cable	5	hooks on inside of computer cover
3	cabling slot	6	card fan bracket

- Slide the card fan bracket onto the hooks on the inside of the computer cover.
- Press the top edge of the card fan bracket toward the computer cover until it clicks.
- Route the card fan cable through the cabling slots.



1	card fan bracket	4	card fan cable
2	top edge of card fan bracket	5	card fan connector on system boards
3	cabling slot		

- Plug the card fan cable into the card fan connector labeled "PCI FAN" on the system board. For more information on system board , see "[System Board Components](#)."
- If you removed drive rails in [step 2](#), you may attach them to the side of the card fan bracket for convenient storage.
- [Close the computer cover](#).

NOTICE: To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

9. Connect your computer and devices to their electrical outlets, and turn them on.

[Back to Contents Page](#)

Airflow Shroud and Processor

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● [Airflow Shroud](#)

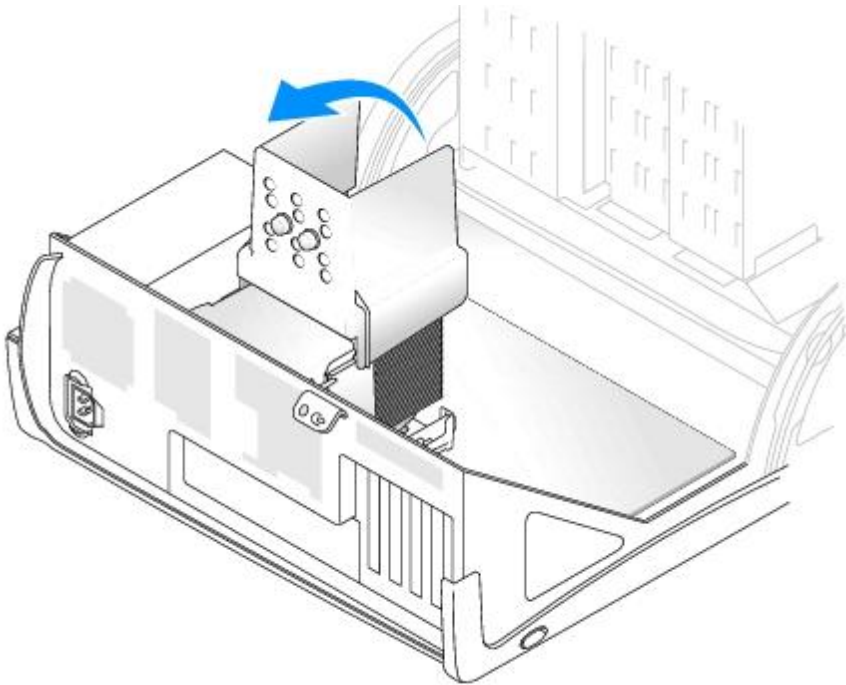
● [Processor](#)

Airflow Shroud

Removing the Airflow Shroud for the Mini-Tower Computer

⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

1. Follow the procedures in "[Before You Begin](#)."
2. Disconnect the cooling fan cable from the fan connector on the system board.
3. Disconnect the power cable from the power connector on the system board.
4. Lift up the airflow shroud.

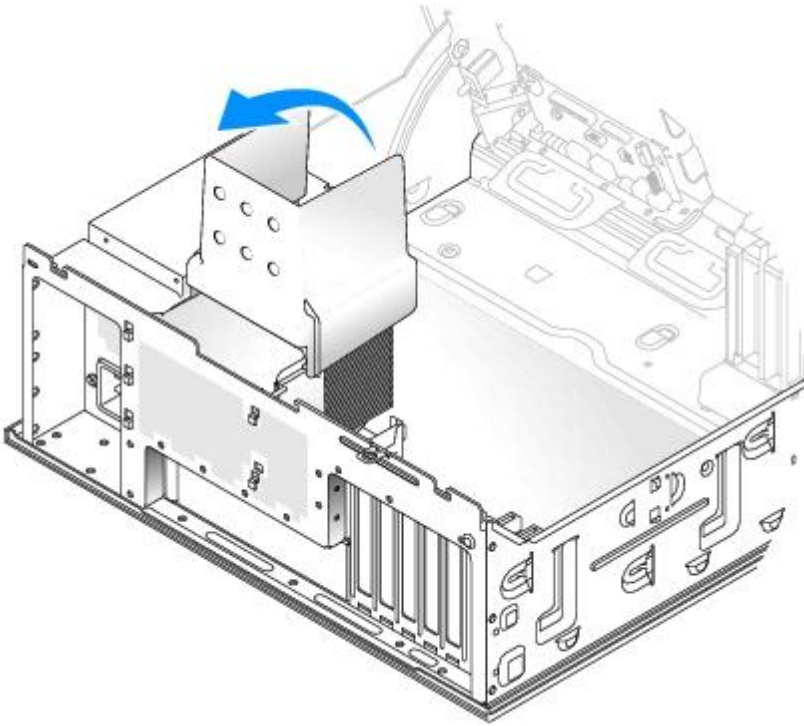


Removing the Airflow Shroud for the Desktop Computer

⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

1. Follow the procedures in "[Before You Begin](#)."

2. Disconnect the cooling fan power cable from the fan connector on the system board.
3. Disconnect the power cable from the power connector on the system board.
4. Lift up the airflow shroud.



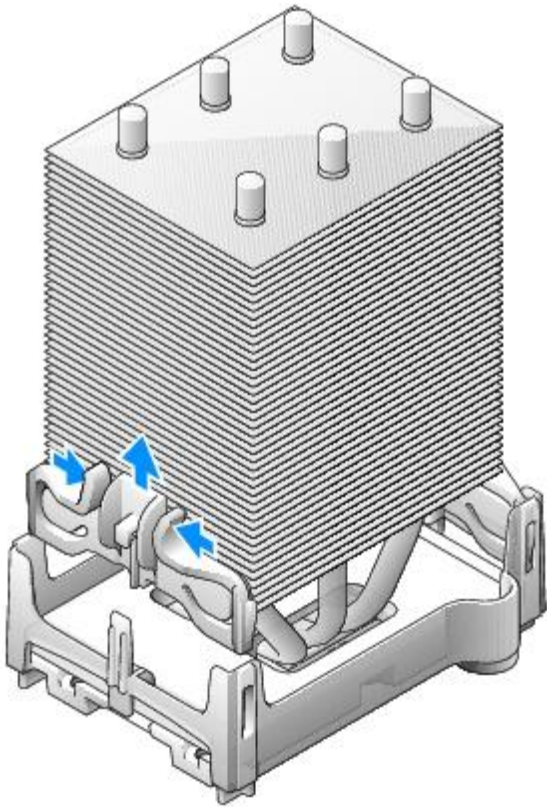
Processor

- CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.
- NOTICE:** To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer.

1. Follow the procedures in "[Before You Begin](#)."

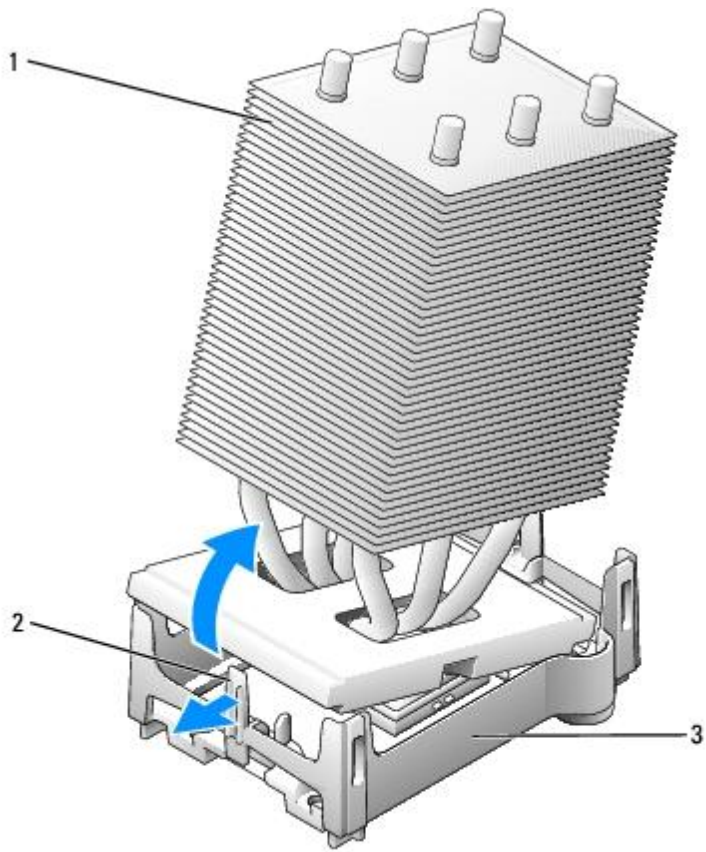
- CAUTION:** The heat sink can get very hot during normal operation. Be sure that the heat sink has had sufficient time to cool before you touch it.

2. Remove the heat sink:
 - a. Remove the retention module clips. Press the tabs toward the center of the clip and lift up.



- b. On the retention base locate the tab opposite the power supply. Press on the retention base tab until the heat sink pops up slightly.
- c. Press out on the second retention tab while lifting the heat sink up and out of the retention base.

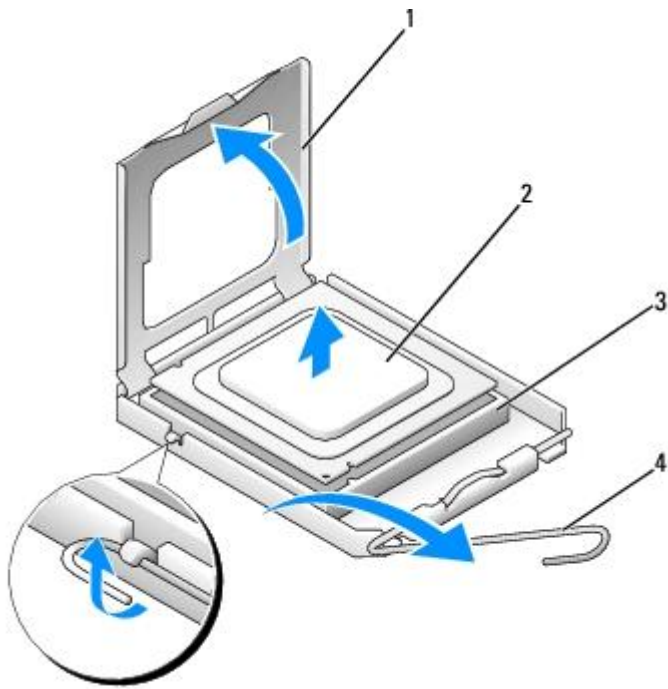
NOTICE: Lay the heat sink down on its side. Do not touch or remove the thermal grease on the bottom of the heat sink.



1	retention tab
2	heat sink
3	retention base

NOTICE: If you are installing a processor upgrade kit from Dell, discard the original heat sink. If you are *not* installing a processor upgrade kit from Dell, reuse the original heat sink and blower when you install your new processor.

3. Push down and out on the socket release lever.
4. Open the processor cover.



1	processor cover
2	processor
3	socket
4	socket

5. Remove the processor from the socket.

Leave the release lever extended in the release position so that the socket is ready for the new processor.

Installing the Processor

➡ **NOTICE:** Ground yourself by touching an unpainted metal surface on the back of the computer.

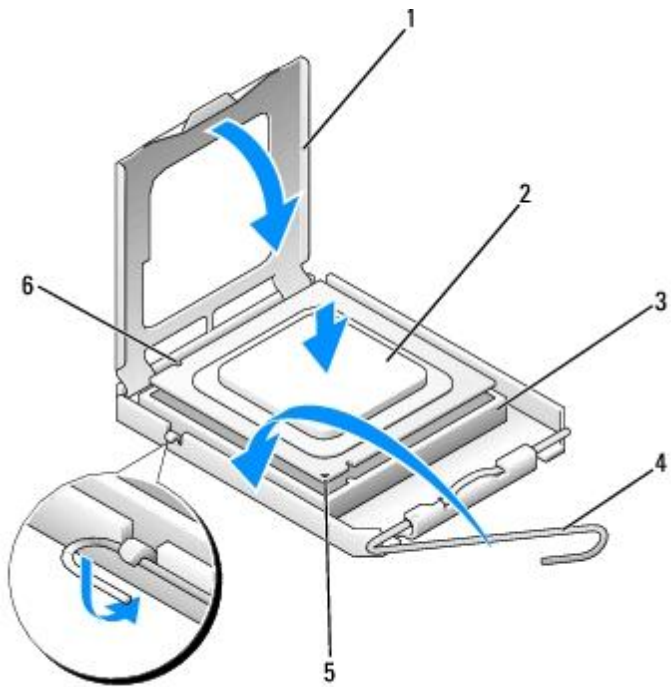
1. Unpack the new processor.

➡ **NOTICE:** You must position the processor correctly in the socket to avoid permanent damage to the processor and the computer when you turn on the computer.

2. If the release lever on the socket is not fully extended, move it to that position.

3. Align the pin-1 corners of the processor and socket.

➡ **NOTICE:** To avoid damage, ensure that the processor aligns properly with the socket, and do not use excessive force when you install the processor.



1	processor cover
2	processor
3	socket
4	socket release lever
5	pin-1 corner
6	notch (2)

➡ **NOTICE:** Be careful not to touch or bend the pins on the system board.

4. Set the processor lightly in the socket and ensure that the processor is level in the socket. When the processor is positioned correctly, press it with minimal pressure to seat it.
5. When the processor is fully seated in the socket, close the processor cover.

Ensure that the tab on the processor cover is positioned underneath the center cover latch on the socket.

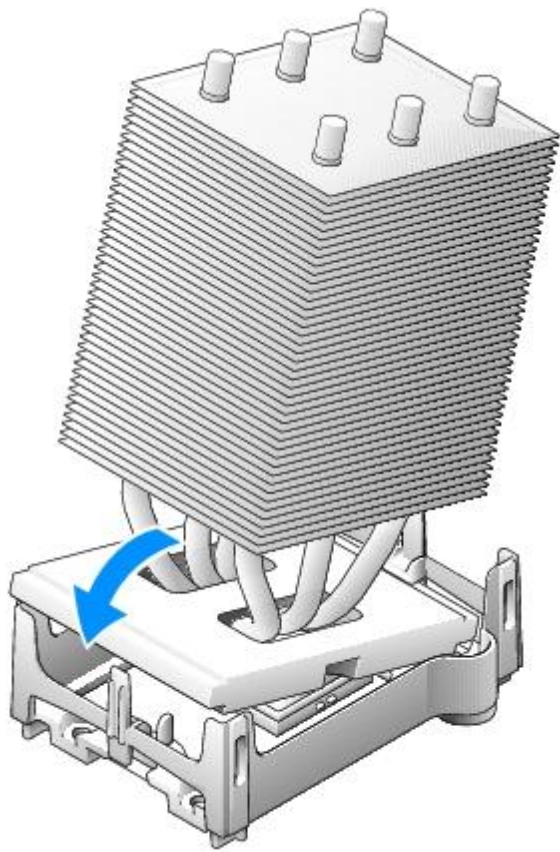
6. Pivot the socket release lever back toward the socket and snap it into place to secure the processor.

➡ **NOTICE:** If you are *not* installing a processor upgrade kit from Dell, reuse the original heat sink assembly when you replace the processor.

If you installed a processor replacement kit from Dell, return the original heat sink assembly and processor to Dell in the same package in which your replacement kit was sent.

7. Install the heat sink:
 - a. Slide one end of the heat sink under the retention tab.
 - b. Pull out the other retention tab and lower the heat sink until it fits securely in the base.

➡ **NOTICE:** Ensure the heat sink is correctly seated and secure.



8. Reinstall the retention module clips.
9. Lower the airflow shroud over the heat sink.
10. Reconnect the cooling fan power cable to the fan connector on the system board.
11. Reconnect the power cable to the power connector on the system board.
12. [Close the computer cover.](#)


➡ **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.


13. Connect your computer and devices to electrical outlets, and turn them on.

Battery

Dell Precision™ Workstation 370 User's Guide

Replacing the Battery

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

 **NOTICE:** To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer.

A coin-cell battery maintains computer configuration, date, and time information. The battery can last several years.

The battery may need replacing if you have repeatedly reset the time and date information after turning on the computer or if one of the following messages appear:

```
Time-of-day not set - please run SETUP program
```

or


```
Invalid configuration information -  
please run SETUP program
```

or


```
Strike the F1 key to continue,  
F2 to run the setup utility
```

To determine whether you need to replace the battery, reenter the time and date in system setup and exit the program to save the information. Turn off your computer and disconnect it from the electrical outlet for a few hours; then reconnect the computer, turn it on, and enter system setup. If the date and time are not correct in system setup, replace the battery.

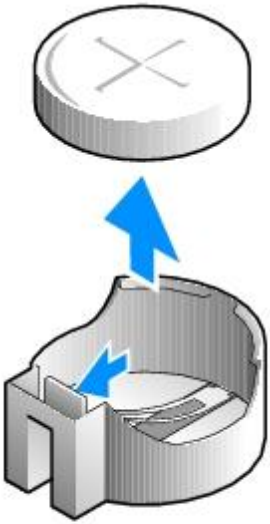
You can operate your computer without a battery; however, without a battery, the configuration information is erased if the computer is turned off or unplugged from the electrical outlet. In this case, you must enter system setup and reset the configuration options.

 **CAUTION:** A new battery can explode if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

1. Follow the procedures in "[Before You Begin](#)."
2. Locate the battery socket.

 **NOTICE:** If you pry the battery out of its socket with a blunt object, be careful not to touch the system board with the object. Ensure that the object is inserted between the battery and the socket before you attempt to pry out the battery. Otherwise, you may damage the system board by prying off the socket or by breaking circuit traces on the system board.

3. Remove the battery by carefully prying it out of its socket with your fingers or with a blunt, nonconducting object such as a plastic screwdriver.
4. Insert the new battery into the socket with the side labeled "+" facing up, and snap the battery into place.



5. [Close the computer cover.](#)

➡ **NOTICE:** To connect a network cable, first plug the cable into the network device and then plug it into the computer.



6. Connect your computer and devices to electrical outlets, and turn them on.
7. [Enter system setup](#) and restore the settings you recorded in step 1.
8. Properly dispose of the old battery. For more information see your *Product Information Guide*.

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Control Panel

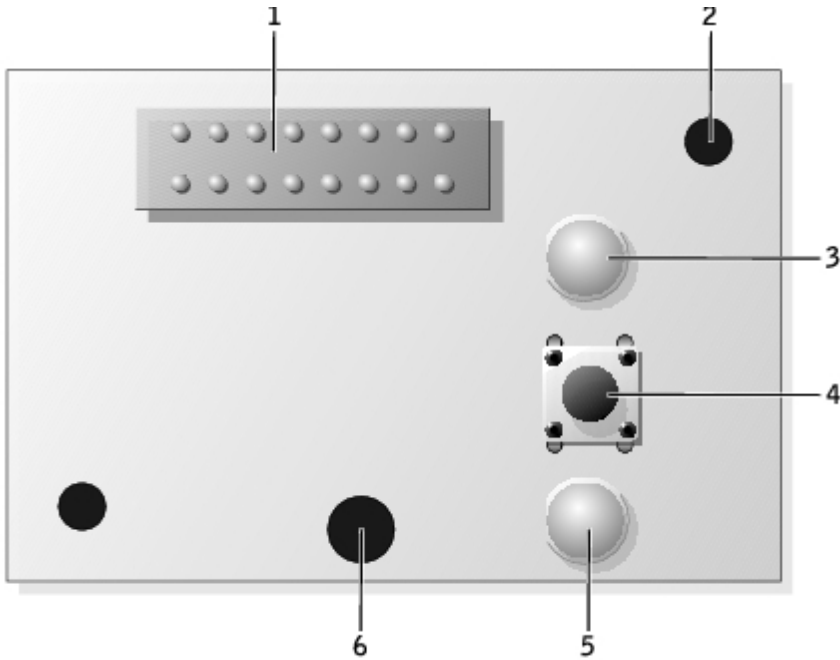
Dell Precision™ Workstation 370 User's Guide

- [Control-Panel Components](#)
- [Removing the Control Panel](#)
- [Replacing the Control Panel](#)

-  **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.
-  **CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

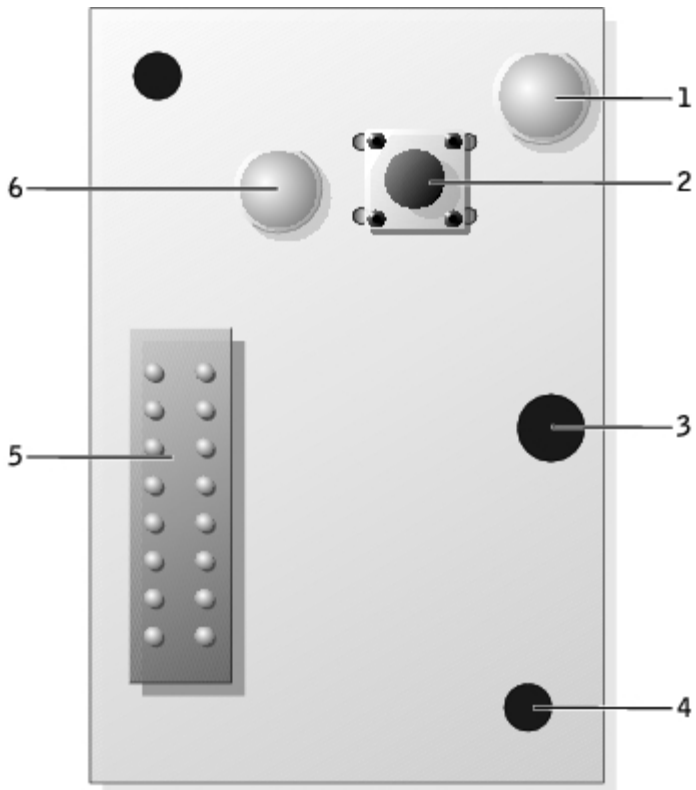
Control-Panel Components

Mini-Tower Computer



1	control-panel connector
2	alignment hole
3	hard-drive access light
4	power button
5	power light
6	screw hole

Desktop Computer

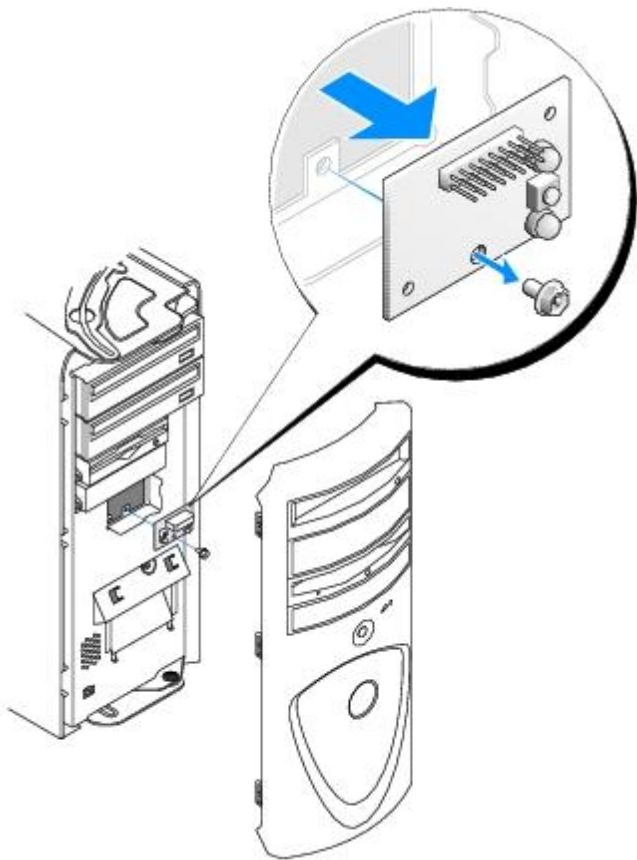


1	hard-drive access light
2	power button
3	screw hole
4	alignment hole
5	control-panel connector
6	power light

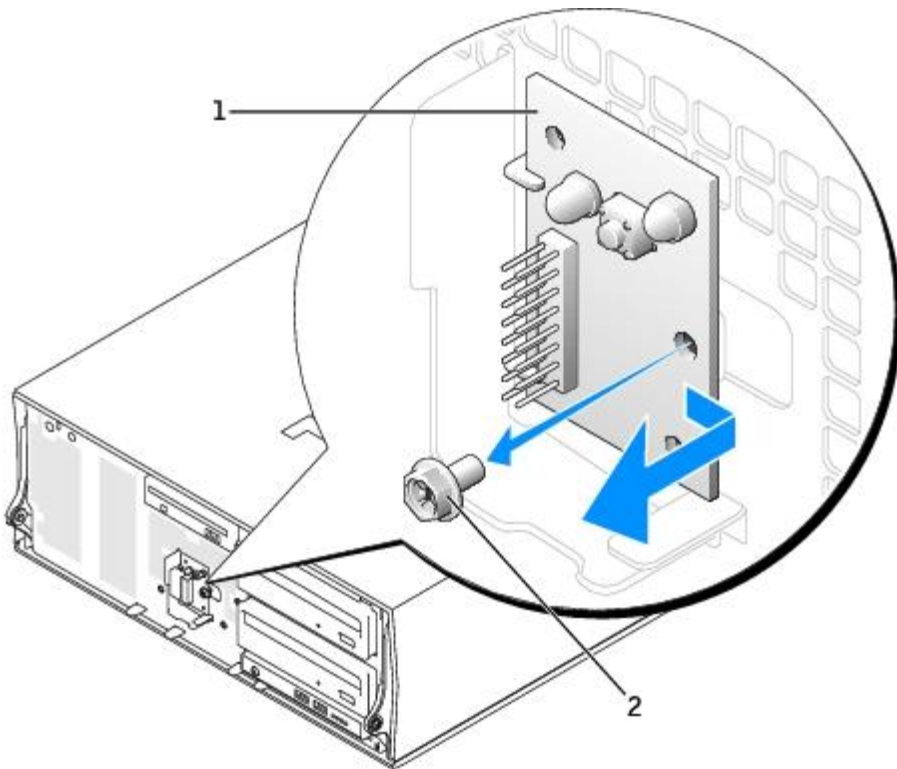
Removing the Control Panel

1. Follow the procedures in "[Before You Begin.](#)"
2. Remove the front panel.
3. Disconnect the control-panel cable from the I/O panel connector.
4. Disconnect the I/O panel cable from the connector on the system board. To locate the system board connector, for mini-tower computer, see "[System Board Components](#)" for the desktop computer, see "[System Board Components.](#)"
5. Remove the mounting screw from the control panel.
6. Lift the control panel away from the computer.

Mini-Tower Computer



Desktop Computer



1	control panel
2	mounting screw

Replacing the Control Panel

Follow the [removal procedure](#) in reverse order, ensuring that the tabs on the top panel, bottom panel, and front panel are secure.

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I/O Panel

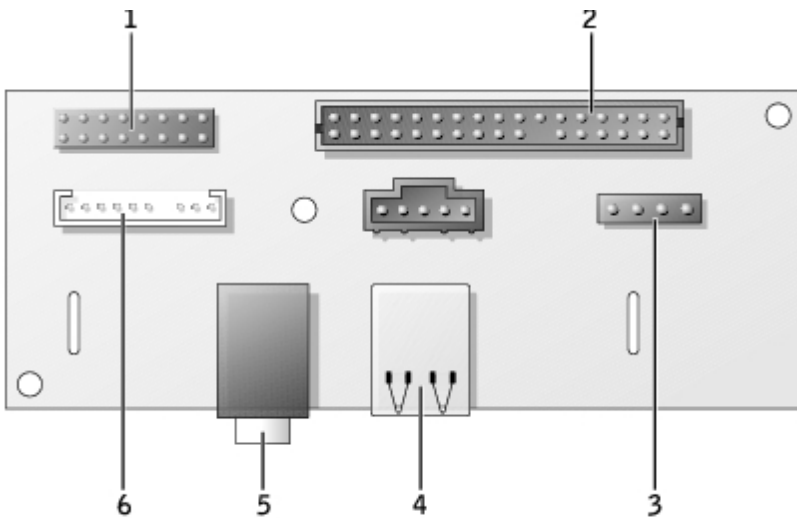
Dell Precision™ Workstation 370 User's Guide

- [I/O Panel Components](#)
- [Removing the I/O Panel](#)
- [Replacing the I/O Panel](#)

- CAUTION:** Before performing any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.
- CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

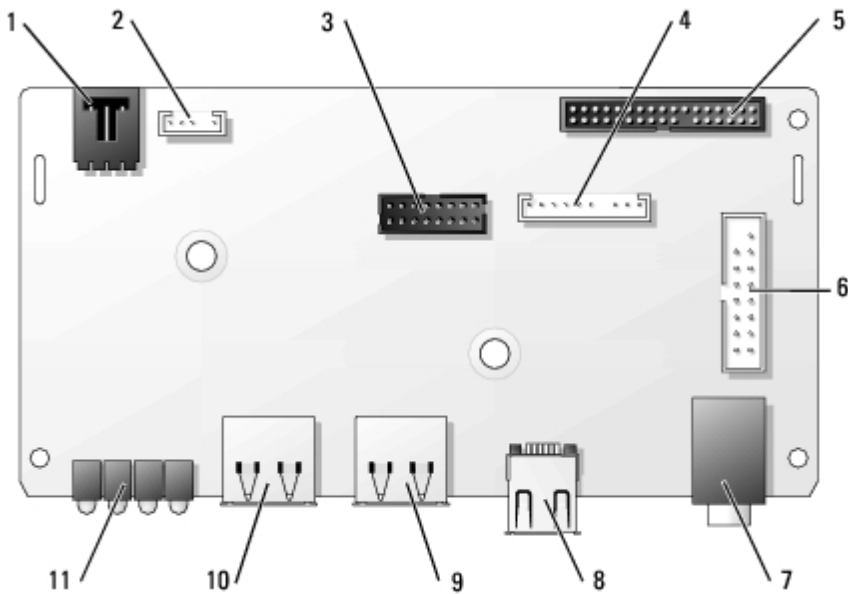
I/O Panel Components

Mini-Tower Computer



1	control-panel connector	4	USB 2.0 connectors (2)
2	front-panel connector	5	headphone connector
3	speaker connector	6	audio connector

Desktop Computer



1	chassis-intrusion switch connector	7	headphone connector
2	speaker connector	8	IEEE 1394 connector
3	front-panel IEEE 1394 connector	9	USB 2.0 connector (2)
4	audio connector	10	USB 2.0 connector (2)
5	front panel connector	11	diagnostic lights (4)
6	control-panel connector		

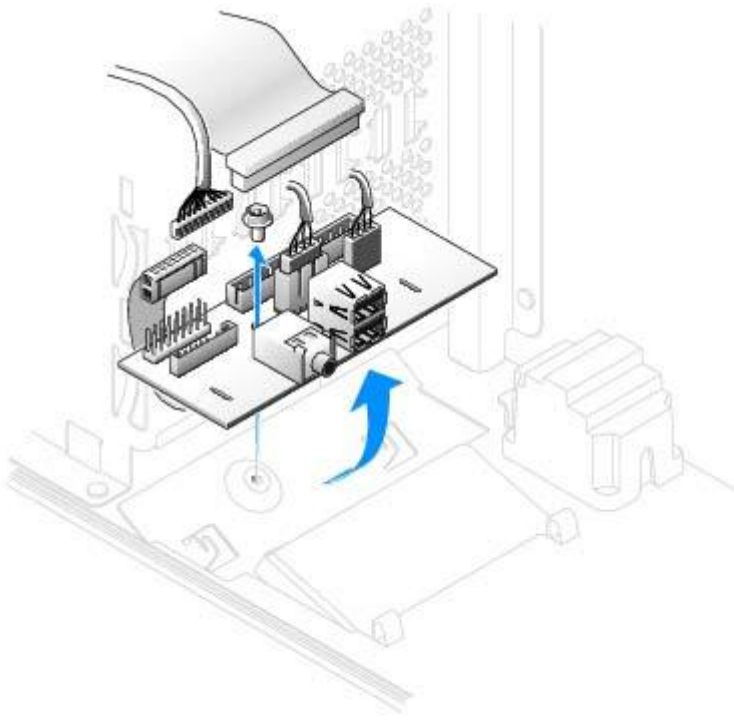
Removing the I/O Panel

1. Follow the procedures in "[Before You Begin.](#)"
2. Disconnect all cables that are connected to the I/O panel.

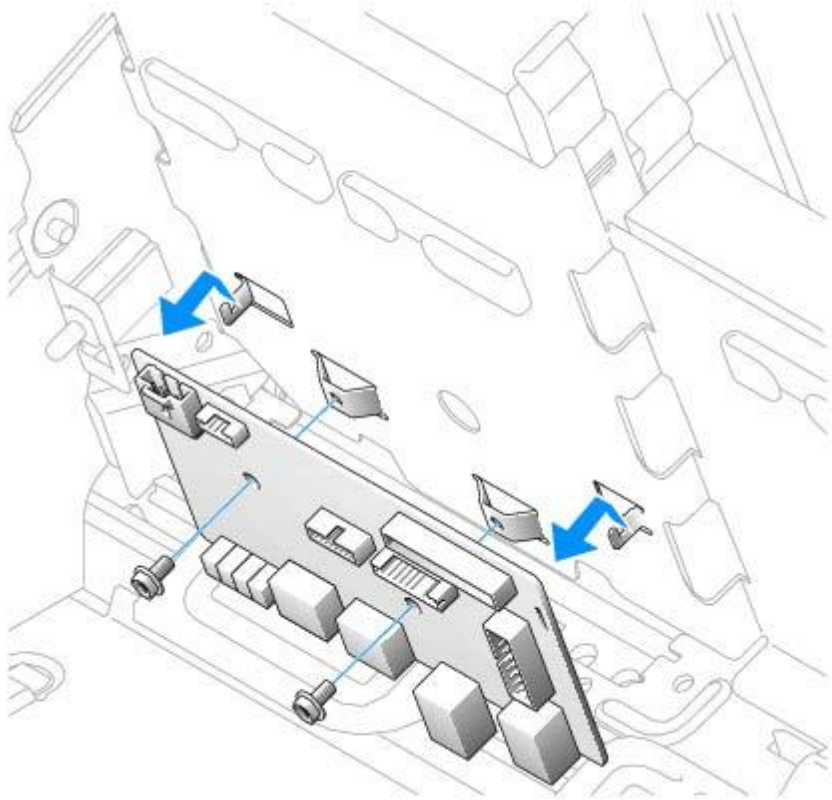
Note the routing of the control panel cable as you remove it from the computer so that you can replace it correctly.

3. From inside the computer cover, remove the mounting screw that secures the I/O panel to the computer.
4. Remove the I/O panel from the computer.

Mini-Tower Computer



Desktop Computer



Replacing the I/O Panel

To replace the I/O panel, follow the [removal procedures](#) in the reverse order.

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Power Supply

Dell Precision™ Workstation 370 User's Guide

[Removing the Power Supply](#)

[Replacing the Power Supply](#)

CAUTION: Before performing any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer.

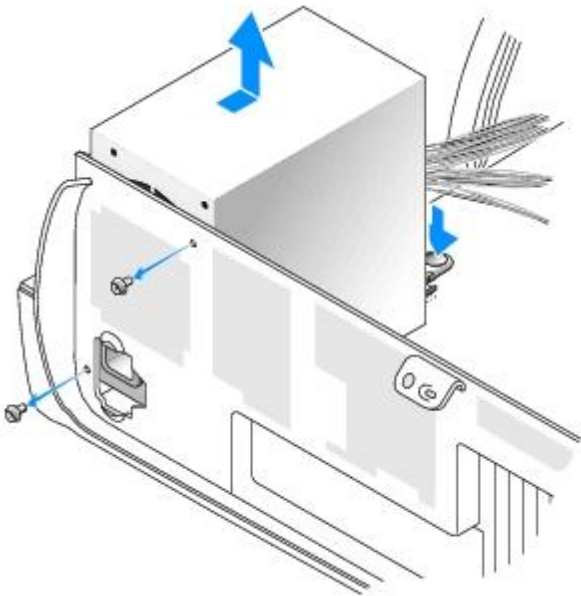
Removing the Power Supply

1. Disconnect the DC power cables from the system board and the drives.

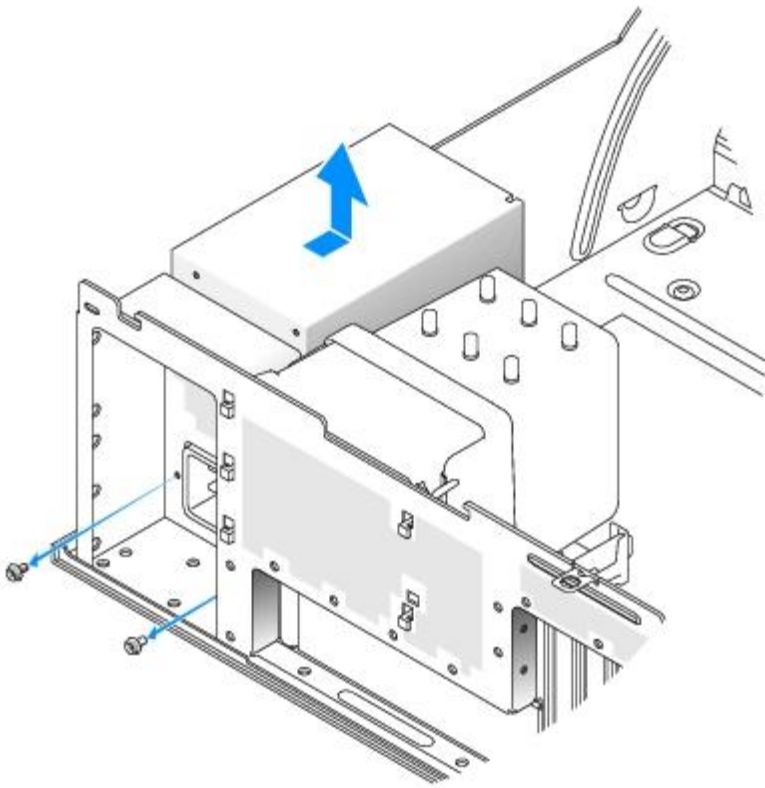
Note the routing of the DC power cables underneath the tabs in the computer frame as you release the tabs and remove the cables from the system board and drives. You must route these cables properly when you replace them to prevent their being pinched or crimped.

2. Remove the two screws that attach the power supply to the back of the computer frame.
3. On the mini-tower computer, press the release button located on the floor of the computer frame.

Mini-Tower Computer




Desktop Computer



4. Slide the power supply toward the front of the computer approximately 1 inch.
5. Lift the power supply up and out of the computer.

Replacing the Power Supply

1. Slide the power supply into place.
2. Replace the two screws that secure the power supply to the back of the computer frame.
3. Reconnect the DC power cables.
4. On the desktop computer, reattach the power cables to the side of the hard drive.
5. Run the cables underneath the tabs, and press the tabs to close them over the cables.
6. [Close the computer cover.](#)

 **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

7. Connect your computer and devices to electrical outlets, and turn them on.

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Tools to Help Solve Problems

Dell Precision™ Workstation 370 User's Guide

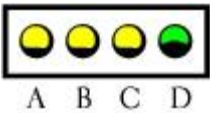
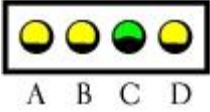
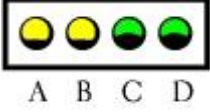
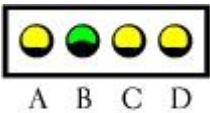
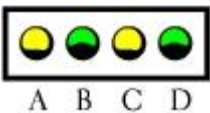
- [Diagnostic Lights](#)
- [Beep Codes](#)
- [Error Messages](#)
- [Dell Diagnostics](#)
- [Drivers](#)
- [Using Microsoft® Windows® XP System Restore](#)
- [Resolving Software and Hardware Incompatibilities](#)
- [Reinstalling Microsoft® Windows® XP](#)

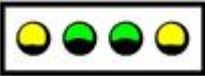


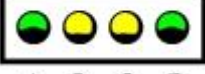
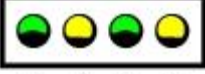
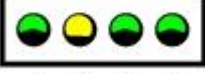
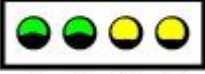
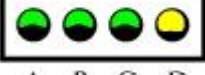
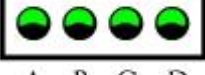
Diagnostic Lights

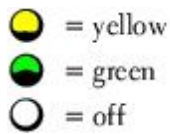
⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

To help you troubleshoot a problem, your computer has four lights labeled "A," "B," "C," and "D" on the front of the desktop computer and on the back of the mini-tower computer. The lights can be yellow or green. When the computer starts normally, the lights flash. After the computer starts, all four lights display solid green. If the computer malfunctions, the color and sequence of the lights identify the problem.

Diagnostic Light Codes During POST

Light Pattern	Problem Description	Suggested Resolution
	A possible BIOS failure has occurred; the computer is in the recovery mode.	Run the BIOS Recovery utility, wait for recovery completion, and then restart the computer.
	A possible processor failure has occurred.	Reinstall the processor and restart the computer.
	Memory modules are detected, but a memory failure has occurred.	<ol style="list-style-type: none"> Reseat the memory modules to ensure that your computer is successfully communicating with the memory. Restart the computer. Run the Dell Diagnostics. If the problem persists, contact Dell.
	A possible expansion card failure has occurred.	<ol style="list-style-type: none"> Determine if a conflict exists by removing a card (not the graphics card) and then restarting the computer. If the problem persists, reinstall the card that you removed, remove a different card, and then restart the computer. Repeat this process for each card. If the computer starts normally, troubleshoot the last card removed from the computer for resource conflicts (see "Resolving Software and Hardware Incompatibilities"). If the problem persists, contact Dell.
	A possible graphics card failure has occurred.	<ol style="list-style-type: none"> If the computer has a graphics card, remove the card, reinstall it, and then restart the computer. If the problem still exists, install a graphics card that you know works and restart the computer. If the problem persists or the computer has integrated graphics, contact Dell.

 <p>A B C D</p>	<p>A possible floppy or hard drive failure has occurred.</p>	<p>Reseat all power and data cables and restart the computer.</p>
 <p>A B C D</p>	<p>A possible USB failure has occurred.</p>	<p>Reinstall all USB devices, check cable connections, and then restart the computer.</p>
 <p>A B C D</p>	<p>No memory modules are detected.</p>	<ul style="list-style-type: none"> • If you have one memory module installed, reinstall it and restart the computer. • If you have two or more memory modules installed, remove the modules, reinstall one module, and then restart the computer. If the computer starts normally, reinstall an additional module. Continue until you have identified a faulty module or reinstalled all modules without error. • If available, install properly working memory of the same type into your computer. • If the problem persists, contact Dell.
 <p>A B C D</p>	<p>System board failure has occurred.</p>	<p>Contact Dell for technical assistance.</p>
 <p>A B C D</p>	<p>Memory modules are detected, but a memory configuration or compatibility error exists.</p>	<ul style="list-style-type: none"> • Ensure that no special memory module/memory connector placement requirements exist. • Verify that the memory modules that you are installing are compatible with your computer. • Reinstall the memory modules and restart the computer. • If the problem persists, contact Dell.
 <p>A B C D</p>	<p>A possible system board resource and/or hardware failure has occurred.</p>	<p>Perform the procedures in "Resolving Software and Hardware Incompatibilities."</p> <p>If the problem persists, contact Dell.</p>
 <p>A B C D</p>	<p>A possible expansion card failure has occurred.</p>	<ol style="list-style-type: none"> 1. Determine if a conflict exists by removing a card (not a graphics card) and restarting the computer. 2. If the problem persists, reinstall the card that you removed, remove a different card, and then restart the computer. 3. Repeat this process for each card. If the computer starts normally, troubleshoot the last card removed from the computer for resource conflicts (see "Resolving Software and Hardware Incompatibilities"). 4. If the problem persists, contact Dell.
 <p>A B C D</p>	<p>Another failure has occurred.</p>	<ul style="list-style-type: none"> • Ensure that the cables are properly connected to the system board from the hard drive, CD drive, and DVD drive. • If the problem persists, contact Dell.
 <p>A B C D</p>	<p>The computer is in a normal operating condition after POST.</p>	<p>None.</p>



Beep Codes

Your computer might emit a series of beeps during start-up if the monitor cannot display errors or problems. This series of beeps, called a beep code, identifies a problem. One possible beep code (code 1-3-1) consists of one beep, a burst of three beeps, and then one beep. This beep code tells you that the computer encountered a memory problem.

If your computer beeps during start-up:


1. Write down the beep code on the [Diagnostics Checklist](#).
2. Run the [Dell Diagnostics](#) to identify a more serious cause.
3. Contact Dell for technical assistance.

Code	Cause
1-1-2	Microprocessor register failure
1-1-3	NVRAM read/write failure
1-1-4	ROM BIOS checksum failure
1-2-1	Programmable interval timer failure
1-2-2	DMA initialization failure
1-2-3	DMA page register read/write failure
1-3	Video Memory Test failure
1-3-1 through 2-4-4	Memory not being properly identified or used
3-1-1	Slave DMA register failure
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	NVRAM power loss
3-3-2	Invalid NVRAM configuration
3-3-4	Video Memory Test failure
3-4-1	Screen initialization failure
3-4-2	Screen retrace failure
3-4-3	Search for video ROM failure
4-2-1	No timer tick
4-2-2	Shutdown failure
4-2-3	Gate A20 failure
4-2-4	Unexpected interrupt in protected mode

4-3-1	Memory failure above address 0FFFFh
4-3-3	Timer-chip counter 2 failure
4-3-4	Time-of-day clock stopped
4-4-1	Serial or parallel port test failure
4-4-2	Failure to decompress code to shadowed memory
4-4-3	Math-coprocessor test failure
4-4-4	Cache test failure

Error Messages

Fill out the [Diagnostics Checklist](#) as you complete these checks.

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

If the message is not listed, see the documentation for the operating system or the program that was running when the message appeared.

A filename cannot contain any of the following characters: \ / : * ? " < > | — Do not use these characters in filenames.

A required .DLL file was not found — The program that you are trying to open is missing an essential file. To remove and then reinstall the program:

1. Click the **Start** button, click **Control Panel**, and then click **Add or Remove Programs**.
2. Select the program you want to remove.
3. Click the **Change or Remove Program** icon.
4. See the program documentation for installation instructions.

Alert! CPU Fan Not Detected — Ensure that the cooling fan and airflow shroud are properly installed and working.

Alert! Previous attempts at booting this system have failed at checkpoint [nnnn]. For help in resolving this problem, please note this checkpoint and contact Dell Technical Support — Contact Dell and report the checkpoint code (nnnn) to the support technician.

Alert! Previous Fan Failures —

Alert! Previous Processor Thermal Failure —

Alert! Previous Shutdown Due to Thermal Event —

Ensure that nothing is blocking the airflow vents and that all the fans are properly installed and operating correctly. Also, ensure that the processor heat sink is properly installed.

Alert! Previous Reboot Was Due to Voltage Regulator Failure — Contact Dell for assistance.

Alert! Previous Voltage Failure — See "[Power Problems](#)."

Alert! System Battery Voltage is Low — Replace the battery. See Replacing the Battery.

Alert! Unable to Initialize all Installed Memory —

Alert! Uncorrectable Memory Error Previously Detected... Address xxxxxxxh, Device RIMM_Y —

See "[Memory Problems.](#)"

Attachment failed to respond — See "[Drive Problems.](#)"

Bad command or file name — Ensure that you spelled the command correctly, put spaces in the proper place, and used the correct path name.

Bad error-correction code (ECC) on disk read — See "[Drive Problems.](#)"

Controller has failed — See "[Drive Problems.](#)"

Data error — See "[Drive Problems.](#)"

Decreasing available memory —

See "[Lockups and Software Problems.](#)"

Diskette drive 0 seek failure — See "[Drive Problems.](#)"

Diskette read failure —

See "[Drive Problems.](#)"

Diskette subsystem reset failed — Run the [Dell Diagnostics.](#)

Diskette write protected — Slide the write-protect notch to the open position.

Drive not ready — Put a floppy disk in the drive.

Gate A20 failure —

See "[Lockups and Software Problems.](#)"

Hard-disk configuration error —

Hard-disk controller failure —

Hard-disk drive failure —

Hard-disk drive failure —

See "[Drive Problems.](#)"

Insert bootable media Insert a bootable floppy disk or CD.

Invalid configuration information - please run SETUP program — [Enter system setup](#) and correct the computer configuration information.

Keyboard failure — See "[Keyboard Problems.](#)"

Memory address line failure at *address*, read *value* expecting *value* — See "[Lockups and Software Problems.](#)"

Memory allocation error —

1. Turn off the computer, wait 30 seconds, and then restart the computer.
2. Try to run the program again.
3. 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 —

Memory size in CMOS invalid —

See "[Lockups and Software Problems](#)."

No boot device available —

- If the floppy drive is your boot device, ensure that a bootable floppy disk is in the drive.
- If the hard drive is your boot device, ensure that the cables are connected and that the drive is installed properly and partitioned as a boot device.
- [Enter system setup](#) and ensure that the boot sequence information is correct.

No boot sector on hard-disk drive — [Enter system setup](#) and ensure that the computer configuration information for the hard drive is correct.

If the message continues to appear after you ensure that the information in system setup is correct, see your operating system documentation for reinstallation information.

No timer tick interrupt — Run the [Dell Diagnostics](#).

Non-system disk or disk error — Replace the floppy disk with one that has a bootable operating system or remove the floppy disk from drive A and restart the computer.

Not a boot diskette — Insert a bootable floppy disk and restart your computer.

Not enough memory or resources. Close some programs and try again — Close all windows and open the program that you want to use. In some cases, you might have to restart your computer to restore computer resources. If so, run the program that you want to use first.

Operating system not found — Contact Dell.

Please Connect USB Keyboard/Mouse to USB Ports on the Back of the Computer — Turn your computer off, connect the USB keyboard and/or mouse to the USB connectors on the back of the computer, and then restart your computer.

Plug and Play Configuration Error —

1. Turn your computer off, unplug it from the electrical outlet, and then remove all but one of the cards.
2. Plug in your computer and reboot it.
3. If the message reappears, the installed card might be malfunctioning. If the message does not reappear, turn off the computer and reinsert one of the other cards.
4. Repeat this process until you identify which card is malfunctioning.

Read fault —

Requested sector not found —

Reset failed —

See "[Drive Problems](#)."

Sector not found —

- Run the Windows error-checking utility to check the file structure on the floppy disk or hard drive. See Windows Help for instructions.
- If a large number of sectors are defective, back up the data (if possible), and then reformat the floppy disk or hard drive.

Seek error — See "[Drive Problems](#)."

Shutdown failure — Run the [Dell Diagnostics](#).

Time-of-day clock stopped —

Time-of-day not set — [Enter system setup](#) and correct the date or time. If the problem persists, replace the

battery. See "Replacing the Battery."

Timer chip counter 2 failed — Run the [Dell Diagnostics](#).

Unexpected interrupt in protected mode — Run the [Dell Diagnostics](#).

WARNING: Dell's Disk Monitoring System has detected that drive [0/1] on the [primary/secondary] IDE controller is operating outside of normal specifications. It is advisable to immediately back up your data and replace your hard drive by calling your support desk or Dell —

If no replacement drive is immediately available and the drive is not the only bootable drive, [enter system setup](#) and change the appropriate drive setting to **None**. Then remove the drive from the computer.

Write fault —

Write fault on selected drive —

See "[Drive Problems](#)."

<drive letter>:\ is not accessible. The device is not ready — The floppy drive cannot read the disk. Insert a floppy disk into the drive and try again.


Dell Diagnostics

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

When to Use the Dell Diagnostics

If you experience a problem with your computer, perform the checks in "[Solving Problems](#)" and run the Dell Diagnostics before you contact Dell for technical assistance.

It is recommended that you print these procedures before you begin.


 **NOTICE:** The Dell Diagnostics works only on Dell™ computers.

[Enter system setup](#), review your computer's configuration information, and ensure that the device you want to test displays in system setup and is active.

Start the Dell Diagnostics from either your [hard drive or from the Drivers and Utilities CD](#) (also known as the ResourceCD).

Starting the Dell Diagnostics From Your Hard Drive

1. Turn on (or restart) your computer.
2. When the DELL™ logo appears, press <F12> immediately.

 **NOTE:** If you see a message stating that no diagnostics utility partition has been found, run the [Dell Diagnostics](#) from your *Drivers and Utilities CD*.

If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows® desktop. Then [shut down your computer](#), and try again.


3. When the boot device list appears, highlight **Boot to Utility Partition** and press <Enter>.
4. When the Dell Diagnostics **Main Menu** [appears, select the test you want to run.](#)

Starting the Dell Diagnostics From the Drivers and Utilities CD

1. Insert the *Drivers and Utilities* CD.
2. [Shut down your computer.](#)

When the DELL logo appears, press <F12> immediately.

If you wait too long and the Windows logo appears, continue to wait until you see the Windows desktop. Then [shut down your computer.](#) and try again.

 **NOTE:** The next steps change the boot sequence for one time only. On the next start-up, the computer boots according to the devices specified in system setup.

3. When the boot device list appears, highlight **IDE CD-ROM Device** and press <Enter>.
4. Select the **IDE CD-ROM Device** option from the CD boot menu.
5. Select the **Boot from CD-ROM** option from the menu that appears.
6. Type 1 to start the ResourceCD menu.
7. Type 2 to start the Dell Diagnostics.
8. Select **Run the 32 Bit Dell Diagnostics** from the numbered list. If multiple versions are listed, select the version appropriate for your computer.
9. When the Dell Diagnostics **Main Menu** [appears, select the test you want to run.](#)


Dell Diagnostics Main Menu

1. After the Dell Diagnostics loads and the **Main Menu** screen appears, click the button for the option you want.

Option	Function
Express Test	Performs a quick test of devices. This test typically takes 10 to 20 minutes and requires no interaction on your part. Run Express Test first to increase the possibility of tracing the problem quickly.
Extended Test	Performs a thorough check of devices. This test typically takes an hour or more and requires you to answer questions periodically.
Custom Test	Tests a specific device. You can customize the tests you want to run.
Symptom Tree	Lists the most common symptoms encountered and allows you to select a test based on the symptom of the problem you are having.

2. If a problem is encountered during a test, a message appears with an error code and a description of the problem. Write down the error code and problem description and follow the instructions on the screen.

If you cannot resolve the error condition, [contact Dell.](#)

 **NOTE:** The Service Tag for your computer is located at the top of each test screen. If you contact Dell, technical support will ask for your Service Tag.

3. If you run a test from the **Custom Test** or **Symptom Tree** option, click the applicable tab described in the following table for more information.

Tab	Function
Results	Displays the results of the test and any error conditions encountered.
Errors	Displays error conditions encountered, error codes, and the problem description.
Help	Describes the test and may indicate requirements for running the test.
Configuration	Displays your hardware configuration for the selected device. The Dell Diagnostics obtains configuration information for all devices from system setup, memory, and various internal tests, and it displays the information in the device list in the left pane of the screen. The device list may not display the names of all the components installed on your computer or all devices attached to your computer.
Parameters	Allows you to customize the test by changing the test settings.

- When the tests are completed, if you are running the Dell Diagnostics from the *Drivers and Utilities* CD, remove the CD.
- Close the test screen to return to the **Main Menu** screen. To exit the Dell Diagnostics and restart the computer, close the **Main Menu** screen.


Drivers

What Is a Driver?

A driver is a program that controls a device such as a printer, mouse, or keyboard. All devices require a driver program.

A driver acts like a translator between the device and any other programs that use the device. Each device has its own set of specialized commands that only its driver recognizes.

Dell ships your computer to you with required drivers already installed—no further installation or configuration is needed.

 **NOTICE:** The *Drivers and Utilities* CD may contain drivers for operating systems that are not on your computer. Ensure that you are installing software appropriate for your operating system.

Many drivers, such as the keyboard driver, come with your Microsoft® Windows® operating system. You may need to install drivers if you:

- Upgrade your operating system.
- Reinstall your operating system.
- Connect or install a new device.

Identifying Drivers

If you experience a problem with any device, identify whether the driver is the source of your problem and, if necessary, update the driver.

Windows XP

1. Click the **Start** button and click Control Panel.
2. Under Pick a Category, click Performance and Maintenance.
3. Click System.
4. In the System Properties window, click the Hardware tab.
5. Click Device Manager.
6. Scroll down the list to see if any device has an exclamation point (a yellow circle with a [!]) on the device icon.

If an exclamation point is next to the device name, you may need to [reinstall the driver](#) or install a new driver.

Windows 2000

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click **System**.
3. In the System Properties window, click the Hardware tab.
4. Click Device Manager.
5. Scroll down the list to see if any device has an exclamation point (a yellow circle with a [!]) on the device icon.

If an exclamation point is next to the device name, you may need to reinstall the driver or install a new driver.

Reinstalling Drivers and Utilities



NOTICE: The Dell Support website at support.dell.com and your *Drivers and Utilities* CD provide approved drivers for Dell™ computers. If you install drivers obtained from other sources, your computer might not work correctly.

Using Windows XP Device Driver Rollback

If a problem occurs on your computer after you install or update a driver, use Windows XP Device Driver Rollback to replace the driver with the previously installed version.

1. Click the **Start** button and click Control Panel.
2. Under Pick a Category, click Performance and Maintenance.
3. Click System.
4. In the System Properties window, click the Hardware tab.
5. Click Device Manager.
6. Right-click the device for which the new driver was installed and click **Properties**.
7. Click the **Drivers** tab.
8. Click **Roll Back Driver**.


If Device Driver Rollback does not resolve the problem, then use System Restore to return your computer to the operating state that existed before you installed the new driver.

Using the Drivers and Utilities CD

If using Device Driver Rollback or [System Restore](#) does not resolve the problem, then reinstall the driver from the *Drivers and Utilities* CD (also known as the Resource CD).

Using Microsoft® Windows® XP System Restore


The Microsoft® Windows® XP operating system provides System Restore to allow you to return your computer to an earlier operating state (without affecting data files) if changes to the hardware, software, or other system settings have left the computer in an undesirable operating state. See the Windows Help and Support Center for information on using System Restore.

 **NOTICE:** Make regular backups of your data files. System Restore does not monitor your data files or recover them.

Creating a Restore Point

1. Click the Start button and click Help and Support.
2. Click System Restore.
3. Follow the instructions on the screen.

Restoring the Computer to an Earlier Operating State

 **NOTICE:** Before you restore the computer to an earlier operating state, save and close any open files and exit any open programs. Do not alter, open, or delete any files or programs until the system restoration is complete.

1. Click the **Start** button, point to **All Programs**→ **Accessories**→ **System Tools**, and then click **System Restore**.
2. Ensure that **Restore my computer to an earlier time** is selected and click **Next**.
3. Click a calendar date to which you want to restore your computer.

The Select a **Restore Point** screen provides a calendar that allows you to see and select restore points. All calendar dates with available restore points appear in boldface type.

4. Select a restore point and click **Next**.

If a calendar date has only one restore point, then that restore point is automatically selected. If two or more restore points are available, click the restore point that you prefer.


5. Click **Next**.

The **Restoration Complete** screen appears after System Restore finishes collecting data and then the computer restarts.

6. After the computer restarts, click **OK**.

To change the restore point, you can either repeat the steps using a different restore point, or you can undo the restoration.

Undoing the Last System Restore

 **NOTICE:** Before you undo the last system restore, save and close all open files and exit any open programs. Do not alter, open, or delete any files or programs until the system restoration is complete.

1. Click the **Start** button, point to **All Programs**→ **Accessories**→ **System Tools**, and then click **System Restore**.
2. Click **Undo my last restoration** and click **Next**.
3. Click **Next**.

The System Restore screen appears and the computer restarts.

4. After the computer restarts, click **OK**.

Enabling System Restore

If you reinstall Windows XP with less than 200 MB of free hard-disk space available, System Restore is automatically disabled. To see if System Restore is enabled:

1. Click the **Start** button and click **Control Panel**.
2. Click **Performance and Maintenance**.
3. Click **System**.
4. Click the **System Restore** tab.
5. Ensure that **Turn off System Restore** is unchecked.

Resolving Software and Hardware Incompatibilities

If a device is either not detected during the operating system setup or is detected but incorrectly configured, you can use the Hardware Troubleshooter to resolve the incompatibility. In the Microsoft® Windows® 2000 operating system, you can also use Device Manager to resolve incompatibilities.

Windows XP

To resolve incompatibilities using the Hardware Troubleshooter:

1. Click the **Start** button and click **Help and Support**.
2. Type `hardware troubleshooter` in the **Search** field and click the arrow to start the search.
3. Click **Hardware Troubleshooter** in the **Search Results** list.
4. In the **Hardware Troubleshooter** list, click **I need to resolve a hardware conflict on my computer**, and click **Next**.

Windows 2000

To resolve incompatibilities using Device Manager:

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. In the **Control Panel** window, double-click **System**.
3. Click the **Hardware** tab.
4. Click **Device Manager**.
5. Click **View** and click **Resources by connection**.
6. Double-click **Interrupt request (IRQ)**.

Incorrectly configured devices are indicated by a yellow exclamation point (!) or a red x if the device has been disabled.

7. Double-click any device marked with an exclamation point to display the **Properties** window.

The **Device** status area in the **Properties** window reports the cards or devices that need to be reconfigured.

8. Reconfigure the devices or remove the devices from the Device Manager. See the documentation that came with the device for information on configuring the device.

To resolve incompatibilities using the Hardware Troubleshooter:

1. Click the **Start** button and click **Help**.
2. Click **Troubleshooting and Maintenance** on the **Contents** tab, click **Windows 2000 troubleshooters**, and then click **Hardware**.
3. In the **Hardware Troubleshooter** list, click **I need to resolve a hardware conflict on my computer** and click **Next**.

Reinstalling Microsoft® Windows® XP

 **NOTICE:** You must use Windows XP Service Pack 1 (SP1) or later when you reinstall Windows XP.

Before You Begin

If you are considering reinstalling the Windows XP operating system to correct a problem with a newly installed driver, first try using Windows XP [Device Driver Rollback](#). If Device Driver Rollback does not resolve the problem, then use [System Restore](#) to return your operating system to the operating state it was in before you installed the new device driver.

To avoid critical setup issues when you reinstall the Microsoft Windows XP operating system on your computer, you must also reinstall the device drivers located on the *ResourceCD* that was shipped with your computer.

NOTICE: Before you reinstall the device drivers and the Windows XP operating system, back up all data files on your



primary hard drive. For conventional hard drive configurations, the primary hard drive is the first drive detected by the computer.

To reinstall the drivers and Windows XP, you need the following items:

- One blank floppy disk
- Dell Operating System CD
- Dell *Drivers and Utilities* CD



NOTE: The *Drivers and Utilities* CD contains drivers that were installed during assembly of the computer. Use the *Drivers and Utilities* CD to load additional required drivers, including the drivers required if your computer has a RAID controller.

Creating an Intel SATA Drivers Floppy Disk

1. Save and close any open files and exit any open programs.
2. Insert the *ResourceCD*.
3. Turn on (or restart) your computer.
4. Press <F12> immediately after the DELL™ logo appears.

If the operating system logo appears, wait until you see the Windows desktop, and then shut down the computer and try again.

5. Use the up- and down-arrow keys to select **IDE CD** drive from the menu or enter the associated menu option number.
6. After the system boots using the ResourceCD, select the number associated with the **Create a SATA RAID driver diskette** menu option.
7. Follow the instructions on the screen to create the floppy disk.
8. After you create the floppy disk, exit to DOS.
9. Remove the *ResourceCD*.
10. Remove the floppy disk.

Label it *Intel SATA Drivers*.

11. Restart your computer.


Reinstalling Windows XP

To reinstall Windows XP, perform all the steps in the following sections in the order in which they are listed.

The reinstallation process can take 1 to 2 hours to complete. After you reinstall the operating system, you must also reinstall any additional device drivers, the virus protection program, and other software.



NOTICE: The *Operating System* CD provides options for reinstalling Windows XP. The options can overwrite files and possibly affect programs installed on your hard drive. Therefore, do not reinstall Windows XP unless a Dell technical support representative instructs you to do so.

-  **NOTICE:** To prevent conflicts with Windows XP, disable any virus protection software installed on your computer before you reinstall Windows XP. See the documentation that came with the software for instructions.

Booting From the Operating System CD

1. Save and close any open files and exit any open programs.
2. Insert the *Operating System* CD. Click **Exit** if `Install Windows XP` message appears.
3. Restart the computer.
4. Press <F12> immediately after the DELL™ logo appears.

If the operating system logo appears, wait until you see the Windows desktop, and then shut down the computer and try again.


5. Press the arrow keys to select **CD-ROM**, and press <Enter>.
6. When the `Press any key to boot from CD` message appears, press any key.

Installing the SATA RAID Drivers Using the Intel SATA Drivers Floppy Disk

1. Press <F6> when you see the following prompt at the bottom of the screen.

```
Press F6 if you need to install a third party SCSI or RAID driver...
```

2. When prompted, type `s` to select **Specify Additional Device**.


 **NOTE:** If your system is unable to find a drive for installation, go back to [step 3](#) and try again. Make sure you follow each step.


3. When prompted, insert the *Intel SATA Drivers* floppy disk you created and press <Enter>.
4. Highlight **Intel(R)82801ER SATA RAID Controller** and press <Enter>.
5. Press <Enter> again to continue.
6. Leave the *Intel SATA Drivers* floppy disk in the computer.

Windows XP Setup

1. When the **Windows XP Setup** screen appears, press <Enter> to select **To set up Windows now**.
2. Read the information on the **Microsoft Windows Licensing Agreement** screen, and press <F8> to accept the license agreement.
3. If your computer already has Windows XP installed and you want to recover your current Windows XP data, type `r` to select the repair option, and remove the CD.
4. If you want to install a new copy of Windows XP, press <Esc> to select that option.
5. Press <Enter> to select the highlighted partition (recommended), and follow the instructions on the screen.


The **Windows XP Setup** screen appears, and the operating system begins to copy files and install the devices. The computer automatically restarts multiple times.

 **NOTE:** The time required to complete the setup depends on the size of the hard drive and the speed of your computer.


 **NOTICE:** Do not press any key when the following message appears: *Press any key to boot from the CD.*

6. When the **Regional and Language Options** screen appears, select the settings for your location and click **Next**.
7. Enter your name and organization (optional) in the **Personalize Your Software** screen, and click **Next**.
8. At the **Computer Name and Administrator Password** window, enter a name for your computer (or accept the one provided) and a password, and click **Next**.
9. If the **Modem Dialing Information** screen appears, enter the requested information and click **Next**.
10. Enter the date, time, and time zone in the **Date and Time Settings** window, and click **Next**.
11. If the **Networking Settings** screen appears, click **Typical** and click **Next**.
12. If you are reinstalling Windows XP Professional and you are prompted to provide further information regarding your network configuration, enter your selections. If you are unsure of your settings, accept the default selections.


Windows XP installs the operating system components and configures the computer. The computer automatically restarts.

 **NOTICE:** Do not press any key when the following message appears: *Press any key to boot from the CD.*

13. When the **Welcome to Microsoft** screen appears, click **Next**.
14. When the *How will this computer connect to the Internet?* message appears, click **Skip**.
15. When the **Ready to register with Microsoft?** screen appears, select **No, not at this time** and click **Next**.
16. When the **Who will use this computer?** screen appears, you can enter up to five users.
17. Click **Next**.
18. Click **Finish** to complete the setup, and remove the CD.

 **NOTE:** When Windows Setup completes, remove the *Intel SATA Drivers* floppy disk and store it in a safe place.

19. [Reinstall](#) the appropriate drivers with the *Drivers and Utilities* CD.
20. Reinstall your virus protection software.
21. Reinstall your programs.

 **NOTE:** To reinstall and activate your Microsoft Office or Microsoft Works Suite programs, you need the Product Key number located on the back of the Microsoft Office or Microsoft Works Suite CD sleeve.

Solving Problems

Dell Precision™ Workstation 370 User's Guide

- [Troubleshooting Tips](#)
 - [Battery Problems](#)
 - [Card Problems](#)
 - [Card Fan Problems](#)
 - [Drive Problems](#)
 - [E-Mail, Modem, and Internet Problems](#)
 - [IEEE 1394 Device Problems](#)
 - [Keyboard Problems](#)
 - [Lockups and Software Problems](#)
 - [Memory Problems](#)
 - [Mouse Problems](#)
 - [Network Problems](#)
 - [Power Problems](#)
 - [Printer Problems](#)
 - [Serial or Parallel Device Problems](#)
 - [Sound and Speaker Problems](#)
 - [Video and Monitor Problems](#)
-



Troubleshooting Tips

Follow these tips when you troubleshoot your computer:

- If you added or removed a part before the problem started, review the installation procedures and ensure that the part is correctly installed.
 - If a peripheral device does not work, ensure that the device is properly connected.
 - If an error message appears on the screen, write down the exact message. This message may help technical support personnel diagnose and fix the problem(s).
 - If an error message occurs in a program, see the program's documentation.
-

Battery Problems


Fill out the [Diagnostics Checklist](#) as you complete these checks.

-  **CAUTION:** There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.
-  **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

Replace the battery — If you have to repeatedly reset time and date information after turning on the computer, or if an incorrect time or date displays during start-up, replace the battery. See "Replacing the Battery." If the battery still does not work properly, [contact Dell](#).

Card Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

Check the card seating and cable —

1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and then [open the computer cover](#).
2. Ensure that each card is firmly seated in its connector. Reseat any loose cards.
3. Ensure that all cables are firmly connected to their corresponding connectors on the cards. If any cables appear loose, reconnect them.

For instructions on which cables should be attached to specific connectors on a card, see the card's documentation.

4. [Close the computer cover](#) reconnect the computer and devices to electrical outlets, and then turn them on.

Test the graphics card —

1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and then open the computer cover.
2. Remove all cards except the graphics card. See "[Removing a PCI Card](#)."

If your primary hard drive is connected to a drive controller card and not to one of the system board IDE connectors, leave the drive controller card installed in the computer.

3. [Close the computer cover](#), reconnect the computer and devices to electrical outlets, and then turn them on.
4. Run the [Dell Diagnostics](#).

Test the cards —

1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and then open the computer cover.
2. Reinstall one of the cards that you removed previously. See [Installing a PCI Card](#).
3. [Close the computer cover](#), reconnect the computer and devices to electrical outlets, and then turn them on.
4. Run the [Dell Diagnostics](#).

If any of the tests fail, the card you just reinstalled is faulty and needs to be replaced.


5. Repeat this process until you have reinstalled all cards.

Card Fan Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

Check the cable connections — Make sure the card fan cable is connected firmly to the card fan connector on the system board (for the mini-tower computer see "[System Board Components](#)" for the desktop computer, see "[System Board Components](#)").

Drive Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

Fill out the [Diagnostics Checklist](#) as you complete these checks.

Ensure that Microsoft® Windows® recognizes the drive — Click the **Start** button and click **My Computer**. If the floppy, CD, or DVD drive, is not listed, perform a full scan with your antivirus software to check for and remove viruses. Viruses can sometimes prevent Windows from recognizing the drive.

Test the drive —

- Insert another floppy disk, CD, or DVD to eliminate the possibility that the original one is defective.
- Insert a bootable floppy disk and restart the computer.


Clean the drive or disk — See "[Cleaning Your Computer](#)."

Check the cable connections

[Check for Software and Hardware Conflicts](#)

Run the [Dell Diagnostics](#)

CD and DVD drive problems

 **NOTE:** High-speed CD or DVD drive vibration is normal and may cause noise, which does not indicate a defect in the drive or the CD or DVD.

 **NOTE:** Because of different regions worldwide and different disc formats, not all DVD titles work in all DVD drives.

Adjust the Windows volume control —

- Click the speaker icon in the lower-right corner of your screen.
- Ensure that the volume is turned up by clicking the slider and dragging it up.
- Ensure that the sound is not muted by clicking any boxes that are checked.

Check the speakers and subwoofer — See "[Sound and Speaker Problems](#)."

Problems writing to a CD/DVD-RW drive

Close other programs — The CD/DVD-RW drive must receive a steady stream of data when writing. If the stream is interrupted, an error occurs. Try closing all programs before you write to the CD/DVD-RW.

Turn off Standby mode in Windows before writing to a CD/DVD-RW disc — See your computer documentation for information on [Power Management](#) modes.

Hard drive problems

Running the Dell IDE Hard Drive Diagnostics —

The Dell IDE Hard Drive Diagnostics is a utility that tests the hard drive to troubleshoot or confirm a hard drive failure.

1. Turn on your computer (if your computer is already on, restart it).
2. When **F2 = Setup** appears in the upper-right corner of the screen, press <Ctrl><Alt><d>.
3. Follow the instructions on the screen.

Run Check Disk —

Windows XP

1. Click the **Start** button and click **My Computer**.
2. Right-click **Local Disk C:**.
3. Click **Properties**.
4. Click the **Tools** tab.
5. Under **Error-checking**, click **Check Now**.
6. Click **Scan for and attempt recovery of bad sectors**.
7. Click **Start**.


Windows 2000


1. Double-click **My Computer** on the Windows desktop.
2. Click the **Tools** tab.
3. Under **Error-checking**, click **Check Now**.
4. Click **Start**.

MS-DOS®

Type `scandisk x:` at an MS-DOS prompt, where *x* is the hard drive letter, and then press <Enter>. Click the **Start** button and click **My Computer**.

E-Mail, Modem, and Internet Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

 **NOTE:** Connect the modem to an analog telephone jack only. The modem does not operate while it is connected to a digital telephone network.

Check the Microsoft Outlook® Express Security Settings — If you cannot open your e-mail attachments:

1. In Outlook Express, click **Tools**, click **Options**, and then click **Security**.
2. Click **Do not allow attachments** to remove the checkmark.

Check the telephone line connection —

Check the telephone jack —

Connect the modem directly to the telephone wall jack —

Use a different telephone line —

- Verify that the telephone line is connected to the jack on the modem. (The jack has either a green label or a connector-shaped icon next to it.)
- Ensure that you hear a click when you insert the telephone line connector into the modem.
- Disconnect the telephone line from the modem and connect it to a telephone. Listen for a dial tone.
- If you have other telephone devices sharing the line, such as an answering machine, fax machine, surge protector, or line splitter, then bypass them and use the telephone to connect the modem directly to the telephone wall jack. If you are using a line that is 3 m (10 ft) or more in length, try a shorter one.

Run the Modem Helper diagnostics — Click the **Start** button, point to **All Programs**, and then click **Modem Helper**. Follow the instructions on the screen to identify and resolve modem problems. (Modem Helper is not available on all computers.)

Verify that the modem is communicating with Windows —


1. Click the **Start** button and click **Control Panel**.


2. Click **Printers and Other Hardware**.
3. Click **Phone and Modem Options**.
4. Click the **Modems** tab.
5. Click the COM port for your modem.
6. Click **Properties**, click the **Diagnostics** tab, and then click **Query Modem** to verify that the modem is communicating with Windows.

If all commands receive responses, the modem is operating properly.

Ensure that you are connected to the Internet — Ensure that you have subscribed to an Internet provider. With the Outlook Express e-mail program open, click **File**. If **Work Offline** has a checkmark next to it, click the checkmark to remove it and connect to the Internet. For help, contact your Internet service provider.

IEEE 1394 Device Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

 **NOTE:** On the Dell Precision 370 desktop computer, the front IEEE 1394 connector is optional and only available if you purchased an add-in IEEE 1394 card. To order a card, contact Dell.

Ensure that the IEEE 1394 device is properly connected —

Ensure that the cable for the IEEE 1394 device is properly inserted into the device and into the connector on the computer.

Ensure that the IEEE 1394 device is recognized by Windows — *Windows XP*

1. Click the **Start** button and click **Control Panel**.
2. Click **Printers and Other Hardware**.
If your IEEE 1394 device is listed, Windows recognizes the device.

Windows 2000

1. Click the **Start** button, point to **Settings**→ **Control Panel**, and then click **System**.
2. Click the **Hardware** tab.
3. Click **Device Manager** and ensure that there is not a ! next to the device name.
4. Click **Printers and Other Hardware**.


If your IEEE 1394 device is listed, Windows recognizes the device.

If you have problems with a Dell-provided IEEE 1394 device —

If you have problems with an IEEE 1394 device not provided by Dell —

Contact Dell or the IEEE 1394 device manufacturer.

Keyboard Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.


Check the keyboard cable —

- Ensure that the keyboard cable is firmly connected to the computer.
- [Shut down your computer](#), reconnect the keyboard cable as shown in the *Setup and Quick Reference Guide* for your computer, and then restart the computer.
- Check the cable connector for bent or broken pins and for damaged or frayed cables. Straighten bent pins.
- Remove keyboard extension cables and connect the keyboard directly to the computer.

Test the keyboard — Connect a properly working keyboard to the computer, and try using the keyboard. If the new keyboard works, the original keyboard is faulty.

[Check for Software and Hardware Conflicts](#)

Lockups and Software Problems


 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

The computer does not start up

Check the [Diagnostic Lights](#)

Ensure that the Power Cable is Firmly Connected to The Computer and to The Electrical Outlet

The computer stops responding

 **NOTICE:** You might lose data if you are unable to perform an operating system shutdown.


Turn the computer off — If you are unable to get a response by pressing a key on your keyboard or moving your mouse, press and hold the power button for at least 8 to 10 seconds until the computer turns off. Then restart your computer.

A program stops responding

End the program —

1. Press <Ctrl><Shift><Esc> simultaneously.
2. Click **Applications**.
3. Click the program that is no longer responding.
4. Click **End Task**.

A program crashes repeatedly

 **NOTE:** Software usually includes installation instructions in its documentation or on a floppy disk or CD.

Check the software documentation — If necessary, uninstall and then reinstall the program.

A program is designed for an earlier Windows operating system

If You Are Using Windows XP, Run the Program Compatibility Wizard —

The Program Compatibility Wizard configures a program so it runs in an environment similar to non-Windows

XP operating system environments.

1. Click the **Start** button, point to **All Programs**→ **Accessories**, and then click **Program Compatibility Wizard**.
2. In the welcome screen, click **Next**.
3. Follow the instructions on the screen.

A solid blue screen appears

Turn the computer off — If you are unable to get a response by pressing a key on your keyboard or moving your mouse, press and hold the power button for at least 8 to 10 seconds until the computer turns off. Then restart your computer.

Other software problems

Check the software documentation or contact the software manufacturer for troubleshooting information —

- Ensure that the program is compatible with the operating system installed on your computer.
- Ensure that your computer meets the minimum hardware requirements needed to run the software. See the software documentation for information.
- Ensure that the program is installed and configured properly.
- Verify that the device drivers do not conflict with the program.
- If necessary, uninstall and then reinstall the program.

Back up your files immediately


Use a virus-scanning program to check the hard drive, floppy disks, or CDs

Save and close any open files or programs and shut down your computer through the Start menu

Run the [Dell Diagnostics](#) — If all tests run successfully, the error condition is related to a software problem.

Memory Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

If you receive an insufficient memory message —

- Save and close any open files and exit any open programs you are not using to see if that resolves the problem.
- See the software documentation for minimum memory requirements. If necessary, install additional memory. See [Installing Memory](#).
- Reseat the memory modules to ensure that your computer is successfully communicating with the memory. See [Memory](#).
- Run the [Dell Diagnostics](#).

If you experience other memory problems —

- Reseat the memory modules to ensure that your computer is successfully communicating with the memory. See [Memory](#).
- Ensure that you are following the memory installation guidelines. See [Installing Memory](#).

- Run the [Dell Diagnostics](#).

Mouse Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

Check the mouse cable —

1. Check the cable connector for bent or broken pins and for damaged or frayed cables. Straighten bent pins.
2. Remove mouse extension cables, if used, and connect the mouse directly to the computer.
3. [Shut down your computer](#), reconnect the mouse cable as shown in the *Setup and Quick Reference Guide* for your computer, and then restart the computer.

Restart the computer —

1. Simultaneously press <Ctrl><Esc> to display the **Start** menu.
2. Type **u**, press the keyboard arrow keys to highlight **Shut down** or **Turn Off**, and then press <Enter>.
3. After the computer turns off, reconnect the mouse cable as shown on the in the *Setup and Quick Reference Guide* for your computer.
4. Start the computer.

Test the mouse — Connect a properly working mouse to the computer, and try using the mouse. If the new mouse works, the original mouse is faulty.

Check the mouse settings —

Windows XP

1. Click the **Start** button, click **Control Panel**, and then click **Printers and Other Hardware**.
2. Click **Mouse**.
3. Try adjusting the settings.

Windows 2000

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Mouse** icon.
3. Try adjusting the settings.

If you are using a PS/2 mouse

1. [Enter system setup](#) and ensure that **Mouse Port** under the **Integrated Devices** option is set to **On**.
2. Exit system setup and restart the computer.

Reinstall the mouse driver — See [Drivers](#).

[Check for Software and Hardware Conflicts](#)

Network Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

Check the network cable connector — Ensure that the network cable is firmly inserted into both the

network connector on the back of the computer and the network jack.

Check the network lights on the back of the computer — No light indicates that no network communication exists. Replace the network cable. For a description of network lights, see "[Controls and Lights](#)."


Restart the computer and log on to the network again

Check your network settings — Contact your network administrator or the person who set up your network to verify that your network settings are correct and that the network is functioning.

[Check for Software and Hardware Conflicts](#)

Power Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

If the power light is green and the computer is not responding — See "[Diagnostic Lights](#)."

If the power light is blinking green — The computer is in standby mode. Press a key on the keyboard or move the mouse to resume normal operation.

If the power light is off — The computer is either turned off or is not receiving power.

- Reseat the power cable into both the power connector on the back of the computer and the electrical outlet.
- If the computer is plugged into a power strip, ensure that the power strip is plugged into an electrical outlet and that the power strip is turned on. Also bypass power protection devices, power strips, and power extension cables to verify that the computer turns on properly.
- Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
- Ensure that the main power cable and front panel cable are securely connected to the system board.

If the power light is amber and green or steady amber — A device might be malfunctioning or incorrectly installed.

- Remove and then reinstall the memory modules. See [Memory](#).
- Remove and then reinstall any cards. See [Cards](#).
- Remove and then reinstall the graphics card, if applicable. See [Cards](#).

If the power light is blinking amber —

The computer is receiving electrical power, but an internal power problem might exist.


- Ensure that the [voltage selection switch](#) is set to match the AC power at your location (if applicable).
- Ensure that the processor power cable is securely connected to the system board.


Eliminate interference — Some possible causes of interference are:

- Power, keyboard, and mouse extension cables
- Too many devices on a power strip
- Multiple power strips connected to the same electrical outlet

Printer Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

 **NOTE:** If you need technical assistance for your printer, contact the printer's manufacturer.

Check the printer documentation — See the printer documentation for setup and troubleshooting information.

Ensure that the printer is turned on

Check the printer cable connections —

- See the printer documentation for cable connection information.
- Ensure that the printer cables are securely connected to the printer and the computer.

Test the electrical outlet — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

Verify that the printer is recognized by Windows —

Windows XP

1. Click the **Start** button, click **Control Panel**, and then click **Printers and Other Hardware**.
2. Click View installed printers or fax printers.

If the printer is listed, right-click the printer icon.

3. Click **Properties** and click the **Ports** tab. For a parallel printer, ensure that the **Print to the following port(s):** setting is **LPT1 (Printer Port)**. For a USB printer, ensure that the **Print to the following port(s):** setting is **USB**.

Windows 2000

1. Click the **Start** button, point to **Settings**, and then click **Printers**.

If the printer is listed, right-click the printer icon.

2. Click **Properties** and click the Ports tab.


For a parallel printer, ensure that the **Print to the following port(s):** setting is **LPT1 (Printer Port)**. For a USB printer, ensure that the **Print to the following port(s):** setting is **USB**.

Reinstall the printer driver — See the printer documentation for instructions

Serial or Parallel Device Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.


 **NOTE:** If you are having a problem with a printer, see "[Printer Problems](#)."

Check the option setting — See the device's documentation for the recommended settings. Then [enter system setup](#) and go to the **Integrated Devices** option settings. Ensure that the **Serial Port** setting or the **Parallel Port** setting matches the recommended settings.


Run the [Dell Diagnostics](#)

Sound and Speaker Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

No sound from speakers

 **NOTE:** The volume control in some MP3 players overrides the Windows volume setting. If you have been listening to MP3 songs, ensure that you did not turn the player volume down or off.

Check the speaker cable connections — Ensure that the speakers are connected as shown on the setup diagram supplied with the speakers. If you purchased an audio card, ensure that the speakers are connected to the card.

Ensure that the subwoofer and the speakers are turned on — See the setup diagram supplied with the speakers. If your speakers have volume controls, adjust the volume, bass, or treble to eliminate distortion.

Adjust the Windows volume control — Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.

Disconnect headphones from the headphone connector — Sound from the speakers is automatically disabled when headphones are connected to the computer's front-panel headphone connector.

Test the electrical outlet — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

Enable digital mode — Your speakers do not work if the CD drive is operating in analog mode.

Windows XP

1. Click the **Start** button, click **Control Panel**, and then click **Sounds, Speech, and Audio Devices**.
2. Click **Sounds and Audio Devices**.
3. Click the **Hardware** tab.
4. Double-click the name of your CD drive.
5. Click the **Properties** tab
6. Check the **Enable digital CD audio for this CD-ROM device** box.

Windows 2000

1. Click the **Start** button, point to **Settings**→ **Control Panel**, and then click **Sounds and Multimedia**.
2. Click the **Hardware** tab.
3. Click the name of your CD drive and click **Properties**.
4. Click the **Properties** tab.
5. Check the **Enable digital CD audio for this CD-ROM device** box.

Eliminate possible interference — Turn off nearby fans, fluorescent lights, or halogen lamps to check for interference.

Run the speaker diagnostics

Reinstall the audio driver —

See [Reinstalling Drivers and Utilities](#).

Check the device option setting — [Enter system setup](#) and ensure that **Sound** under the **Integrated Devices** option is set to **On**. Exit system setup and restart your computer.

Run the [Dell Diagnostics](#)

[Check for Software and Hardware Conflicts](#)

No sound from headphones

Check the headphone cable connection — Ensure that the headphone cable is securely inserted into the headphone connector. See "[Your Desktop Computer](#)" or "[Your Mini-Tower Computer](#)."

Disable digital mode — Your headphones do not work if the CD drive is operating in digital mode.

Windows XP

1. Click the **Start** button, click **Control Panel**, and then click **Sounds, Speech, and Audio Devices**.
2. Click **Sounds and Audio Devices**.
3. Click the **Hardware** tab.
4. Double-click the name of your CD drive.
5. Click the **Properties** tab.
6. Uncheck the **Enable digital CD audio for this CD-ROM device** box.

Windows 2000

1. Click the **Start** button, point to **Settings**→ **Control Panel**, and then click **Sounds and Multimedia**.
2. Click the **Hardware** tab.
3. Click the name of your CD drive and click **Properties**.
4. Click the **Properties** tab.
5. Uncheck the **Enable digital CD audio for this CD-ROM device** box.

Adjust the Windows volume control — Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.

Video and Monitor Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.



CAUTION: Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

If the screen is blank



NOTE: See the monitor documentation for troubleshooting procedures.

Check the monitor cable connection —

- If you purchased a graphics card, ensure that the monitor is connected to the card.
- Ensure that your monitor is properly connected (see the *Setup and Quick Reference Guide* that came with your computer).
- If you are using a graphics extension cable and removing the cable solves the problem, the cable is defective.
- Swap the computer and monitor power cables to determine if the power cable is defective.
- Check the connector for bent or broken pins. (It is normal for monitor cable connectors to have missing pins.)

Check the monitor power light — If the power light is off, firmly press the button to ensure that the monitor is turned on. If the power light is lit or blinking, the monitor has power. If the power light is blinking, press a key on the keyboard or move the mouse.

Test the electrical outlet — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

Test the monitor — Connect a properly working monitor to the computer, and try using the monitor. If the new monitor works, the original monitor is faulty.

Check the [Diagnostic Lights](#)

Check the card setting — [Enter system setup](#) and ensure that **Primary Video Controller** under the **Integrated Devices** option is set correctly. For an AGP card, set **Primary Video Controller** to **AGP**. For a PCI card, set **Primary Video Controller** to **Auto**. Exit system setup and restart your computer.

Run the [Dell Diagnostics](#)

If the screen is difficult to read

Check the monitor settings — See the monitor documentation for instructions on adjusting the contrast and brightness, demagnetizing (degaussing) the monitor, and running the monitor self-test.

Move the subwoofer away from the monitor — If your speaker system includes a subwoofer, ensure that the subwoofer is at least 60 cm (2 ft) away from the monitor.

Move the monitor away from external power sources — Fans, fluorescent lights, halogen lamps, and other electrical devices can cause the screen image to appear "shaky." Turn off nearby devices to check for interference.

Adjust the Windows display settings —

Windows XP

1. Click the **Start** button, click **Control Panel**, and then click **Appearance and Themes**.
2. Click **Display** and click the **Settings** tab.
3. Try different settings for **Screen resolution** and **Color quality**.


Windows 2000

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Display** icon and click the **Settings** tab.
3. Try different settings for **Screen area** or **Desktop area**.


Cleaning Your Computer

Dell Precision™ Workstation 370 User's Guide


- [Computer, Keyboard, and Monitor](#)
- [Mouse](#)
- [Floppy Drive](#)
- [CDs and DVDs](#)

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

Computer, Keyboard, and Monitor

 **CAUTION:** Before you clean your computer, disconnect the computer from the electrical outlet. Clean your computer with a soft cloth dampened with water. Do not use liquid or aerosol cleaners, which may contain flammable substances.

- Use a vacuum cleaner with a brush attachment to gently remove dust from the slots and holes on your computer and from between the keys on the keyboard.

 **NOTICE:** Do not wipe the display screen with any soap or alcohol solution. Doing so may damage the antiglare coating.

- To clean your monitor screen, lightly dampen a soft, clean cloth with water. If possible, use a special screen-cleaning tissue or solution suitable for the monitor's antistatic coating.
- Wipe the keyboard, computer, and plastic part of the monitor with a soft cleaning cloth moistened with a solution of three parts water and one part dishwashing detergent.

Do not soak the cloth or let water drip inside your computer or keyboard.

Mouse

If your screen cursor skips or moves abnormally, clean the mouse. To clean a non-optical mouse:

1. Turn the retainer ring on the underside of your mouse counterclockwise, and then remove the ball.
 2. Wipe the ball with a clean, lint-free cloth.
 3. Blow carefully into the ball cage to dislodge dust and lint.
 4. If the rollers inside the ball cage are dirty, clean the rollers with a cotton swab moistened lightly with isopropyl alcohol.
 5. Recenter the rollers in their channels if they are misaligned. Ensure that fluff from the swab is not left on the rollers.
 6. Replace the ball and retainer ring, and turn the retainer ring clockwise until it clicks into place.
-

Floppy Drive

- ➡ **NOTICE:** Do not attempt to clean drive heads with a swab. You might accidentally misalign the heads, which prevents the drive from operating.

Clean your floppy drive using a commercially available cleaning kit. These kits contain pretreated floppy disks to remove contaminants that accumulate during normal operation.

CDs and DVDs

- ➡ **NOTICE:** Always use compressed air to clean the lens in the CD/DVD drive, and follow the instructions that come with the compressed air. Never touch the lens in the drive.

If you notice problems, such as skipping, with the playback quality of your CDs or DVDs, try cleaning the discs.

1. Hold the disc by its outer edge. You can also touch the inside edge of the center hole.

- ➡ **NOTICE:** To prevent damaging the surface, do not wipe in a circular motion around the disc.

2. With a soft, lint-free cloth, gently wipe the bottom of the disc (the unlabeled side) in a straight line from the center to the outer edge of the disc.

For stubborn dirt, try using water or a diluted solution of water and mild soap. You can also purchase commercial products that clean discs and provide some protection from dust, fingerprints, and scratches. Cleaning products for CDs are safe to use on DVDs.

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Features of Windows XP

Dell Precision™ Workstation 370 User's Guide

- [Transferring Information to a New Computer](#)
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 - [Choosing a Desktop Theme](#)
 - [Creating and Arranging Shortcuts](#)
 - [Desktop Cleanup Wizard](#)
 - [Internet Connection Firewall](#)
 - [Setting Up a Home and Office Network](#)
-

Transferring Information to a New Computer

The Microsoft® Windows® XP operating system provides a Files and Settings Transfer wizard to move data from the source computer to the new computer. You can move data such as:

- E-mails
- Toolbar settings
- Window sizes
- Internet bookmarks

You can transfer the data to the new computer over a network or serial connection, or you can store it on a removable medium, such as a writable CD or floppy disk.

To prepare the new computer for the file transfer:

1. Click the **Start** button, point to **All Programs**→ **Accessories**→ **System Tools**, and then click **Files and Settings Transfer Wizard**.
2. When the **Files and Settings Transfer Wizard** welcome screen appears, click **Next**.
3. On the **Which computer is this?** screen, click **New Computer** and click **Next**.
4. On the **Do you have a Windows XP CD?** screen, click **I will use the wizard from the Windows XP CD** and click **Next**.
5. When the **Now go to your old computer** screen appears, go to your old or source computer. *Do not* click **Next** at this time.

To copy data from the old computer:

1. On the old computer, insert the Windows XP *Operating System* CD.
2. On the **Welcome to Microsoft Windows XP** screen, click **Perform additional tasks**.
3. Under **What do you want to do?**, click **Transfer files and settings**.
4. On the **Files and Settings Transfer Wizard** welcome screen, click **Next**.
5. On the **Which computer is this?** screen, click **Old Computer** and click **Next**.

6. On the **Select a transfer method** screen, click the transfer method you prefer.
7. On the **What do you want to transfer?** screen, select the items you want to transfer and click **Next**.

After the information has been copied, the **Completing the Collection Phase** screen appears.

8. Click **Finish**.

To transfer data to the new computer:

1. On the **Now go to your old computer** screen on the new computer, click **Next**.
2. On the **Where are the files and settings?** screen, select the method you chose for transferring your settings and files and click **Next**.

The wizard reads the collected files and settings and applies them to your new computer.

When all of the settings and files have been applied, the **Finished** screen appears.

3. Click **Finished** and restart the new computer. Trademarks that appear in this module: Microsoft®, Windows®, Dell™

Switching to Microsoft® Windows® Classic View

You can change the appearance of the Windows desktop, **Start** menu, and Control Panel so that they look more like previous versions of the Windows operating system.



NOTE: The procedures in this document were written for the Windows default view, so they may not work if you set your Dell™ computer to the Windows classic view.

Desktop

1. Click the **Start** button and click **Control Panel**.
2. Under **Pick a category**, click **Appearance and Themes**.
3. Under **Pick a task...**, click **Change the computer's theme**.
4. In the **Theme** drop-down menu, click **Windows Classic**.
5. Click **OK**.

Start Menu

1. Right-click the **Start** button and click **Properties**.
2. Click the **Start Menu** tab.
3. Click **Classic Start menu** and click **OK**.

Control Panel

1. Click the **Start** button and click **Control Panel**.
 2. In the left panel, click **Switch to Classic View**.
-

Choosing a Wallpaper

You can set background colors and patterns on the Windows desktop choosing a wallpaper.

1. Click the **Start** button, click **Control Panel**, and then click **Appearance and Themes**.
2. Under **Pick a task...**, click **Change the desktop background**.
3. In the **Display Properties** window, click one of the following options:
 - The name of the wallpaper image
 - **(None)** for no wallpaper image
 - **Browse** to select a wallpaper image from a directory



NOTE: You can choose either an HTML file or any image file, such as a bitmap or JPEG file, as a wallpaper.

4. To select the placement of your wallpaper on your desktop, click one of the following options in the **Position** drop-down menu:
 - **Tile** to place multiple copies of an image across the screen
 - **Center** to place a single copy of an image in the center of the screen
 - **Stretch** to place a single copy of an image to fit the size of the screen
 5. Click **OK** to accept the settings and close the **Display Properties** window.
-

Choosing a Screen Saver

1. Click the **Start** button, click **Control Panel**, and then click **Appearance and Themes**.
2. Under **Pick a task...**, click **Choose a screen saver**.
3. Choose a screen saver from the **Screen Saver** drop-down menu or click **(None)** if you prefer not to activate a screen saver.

If you select a screen saver, you can click **Settings** to change the various features of the screen saver.

4. Click **Preview** to run the currently selected screen saver and press <Esc> to cancel the preview.
 5. Click **OK** to accept the settings and close the **Display Properties** window.
-

Choosing a Desktop Theme

To change the appearance of your desktop and add sound effects by using desktop themes:

1. Click the **Start** button, click **Control Panel**, and then click **Appearance and Themes**.
 2. Under **Pick a task...**, click **Change the computer's theme**.
 3. In the **Display Properties** window, select a theme from the **Theme** drop-down menu.
 4. Click **OK**.
-

Creating and Arranging Shortcuts

A shortcut is an icon on the desktop that provides quick access to programs, files, folders, and drives you might frequently use.

Creating Shortcuts

1. Open Windows Explorer or My Computer and find the file, program, or drive for which you want to create a shortcut.



NOTE: If you cannot see your desktop, minimize any open windows to make your desktop visible.

2. Right-click and drag the highlighted item to the Windows desktop.
3. Click **Create Shortcut(s) Here** in the pop-up menu.

You can double-click the shortcut icon that appears on your desktop to open the item.

Arranging Shortcuts

To move a shortcut, click and drag the shortcut to the desired location.

To arrange all the shortcut icons at one time:

1. Right-click an empty spot on the Windows desktop to display a pop-up menu.
 2. Point to **Arrange Icons By** and click the option for the icon arrangement you prefer.
-

Desktop Cleanup Wizard

Your computer is set up to use the Desktop Cleanup Wizard to move programs that are not frequently used to a designated folder 7 days after you first start your computer and every 60 days after that. The appearance of the **Start** menu changes as programs are moved.

To turn off the Desktop Cleanup Wizard, perform the following steps.



NOTE: You can run the Desktop Cleanup Wizard any time by clicking **Clean Desktop Now** under **Run Desktop Cleanup Wizard every 60 days**.

1. Right-click an empty spot on the desktop and click **Properties**.

2. Click the **Desktop** tab and click **Customize Desktop**.
3. Click **Run Desktop Cleanup Wizard every 60 days** to remove the check mark.
4. Click **OK**.

To run the Desktop Cleanup Wizard at any time:

1. Right-click an empty spot on the desktop and click **Properties**.
2. Click the **Desktop** tab and click **Customize Desktop**.
3. Click **Clean Desktop Now**.
4. When the Desktop Cleanup Wizard appears, click **Next**.
5. In the list of shortcuts, deselect any shortcuts you want to leave on the desktop and click **Next**.
6. Click **Finish** to remove the shortcuts and close the wizard.

Internet Connection Firewall

The Internet Connection Firewall provides basic protection from unauthorized access to the computer while the computer is connected to the Internet. When the firewall is enabled for a network connection, the firewall icon appears with a red background in the **Network Connections** section of the Control Panel.

Note that enabling the Internet Connection Firewall does not reduce the need for virus-checking software.

For more information, see the [Windows Help and Support Center](#) (Microsoft® Windows® XP).

Setting Up a Home and Office Network

Connecting to a Network Adapter

Before you connect your computer to a network, the computer must have a network adapter installed and a network cable connected to it.

To connect a network cable:

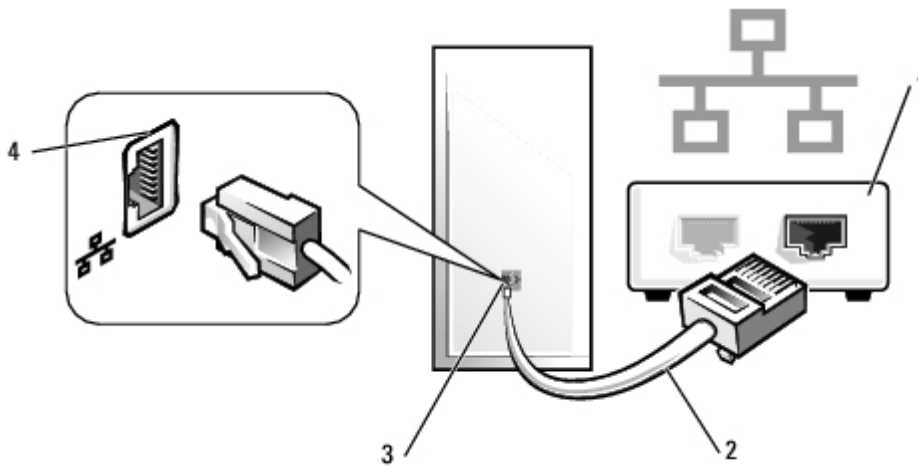


NOTE: Plug the network cable into the network adapter connector on the computer. Do not plug the network cable into the modem connector on the computer. Do not plug a network cable into a telephone wall jack.

1. Connect the network cable to the network adapter connector on the back of your computer.

Insert the cable until it clicks into place, and then gently pull it to ensure that it is secure.

2. Connect the other end of the network cable to a network device.




1	network devices
2	network cables
3	network adapter connector on computer
4	network adapter connector

Network Setup Wizard

The Microsoft® Windows® XP operating system provides a Network Setup Wizard to guide you through the process of sharing files, printers, or an Internet connection between computers in a home or small office.

1. Click the **Start** button, point to **All Programs**→ **Accessories**→ **Communications**, and then click **Network Setup Wizard**.
2. On the welcome screen, click **Next**.
3. Click **Checklist for creating a network**.

 **NOTE:** Selecting the connection method **This computer connects directly to the Internet** enables the integrated firewall provided with Windows XP.

4. Complete the checklist and required preparations.
5. Return to the Network Setup Wizard and follow the instructions on the screen.

System Board

Dell Precision™ Workstation 370 User's Guide

[Removing the System Board](#)

[Replacing the System Board](#)

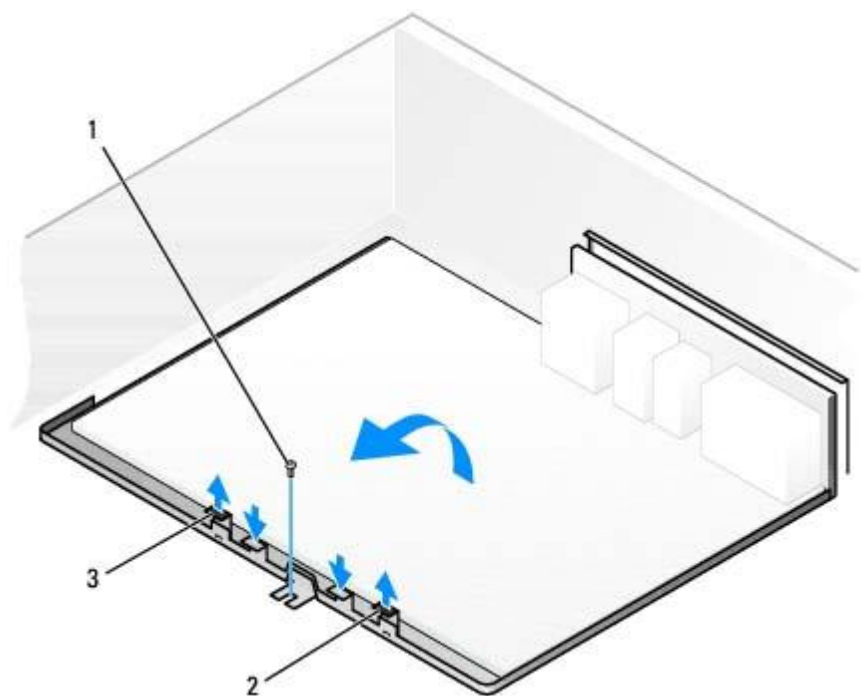
CAUTION: Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer.

NOTICE: The system board and metal tray are connected and are removed as one piece.

Removing the System Board

1. Follow the procedures in "[Before You Begin](#)."
1. Remove any components that restrict access to the system board.
2. Disconnect all cables from the system board.
3. Before you remove the existing system board assembly, visually compare the replacement system board to the existing system board to make sure that you have the correct part.
4. Remove the system board screw.




1	system board screw
2	tab
3	tab


-
5. Pull up on the two tabs, slide the system board assembly toward the front of the computer, and then lift the assembly up and away.
 6. Place the system board assembly that you just removed next to the replacement system board.
-

Replacing the System Board


1. Transfer components from the existing system board to the replacement system board:
 - a. Remove the memory modules and install them on the replacement board. See [Memory](#) for more information.

 **CAUTION:** The processor package and heat-sink assembly can get hot. To avoid burns, ensure that the package and assembly have had sufficient time to cool before you touch them.

- b. Remove the heat-sink assembly and processor from the existing system board and transfer them to the replacement system board. See [Processor](#) for more information.
2. Configure the settings of the replacement system board.
3. Set the jumpers on the replacement system board so they are identical to the ones on the existing board.

 **NOTE:** Some components and connectors on the replacement system board may be in different locations than the corresponding connectors on the existing system board.


4. Orient the replacement board by aligning the notches on the bottom of the board with the tabs on the computer.
5. Slide the system board assembly toward the back of the computer until the assembly clicks into position.
6. Replace any components and cables that you removed from the system board.
7. Reconnect all cables to their connectors at the back of the computer.
8. [Close the computer cover.](#)

 **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

9. Connect your computer and devices to electrical outlets, and turn them on.

Closing the Computer Cover


Dell Precision™ Workstation 370 User's Guide

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

1. Ensure that all cables are connected, and fold cables out of the way.

Gently pull the power cables toward you so that they do not get caught underneath the drives.

2. Ensure that no tools or extra parts are left inside the computer.
3. Close the cover:
 - a. Pivot the cover down.
 - b. Press down on the right side of the cover until it closes.
 - c. Press down on the left side of the cover until it closes.
 - d. Ensure that both sides of the cover are locked. If not, repeat all of [step 3](#).

 **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

4. Connect your computer and devices to electrical outlets, and turn them on.

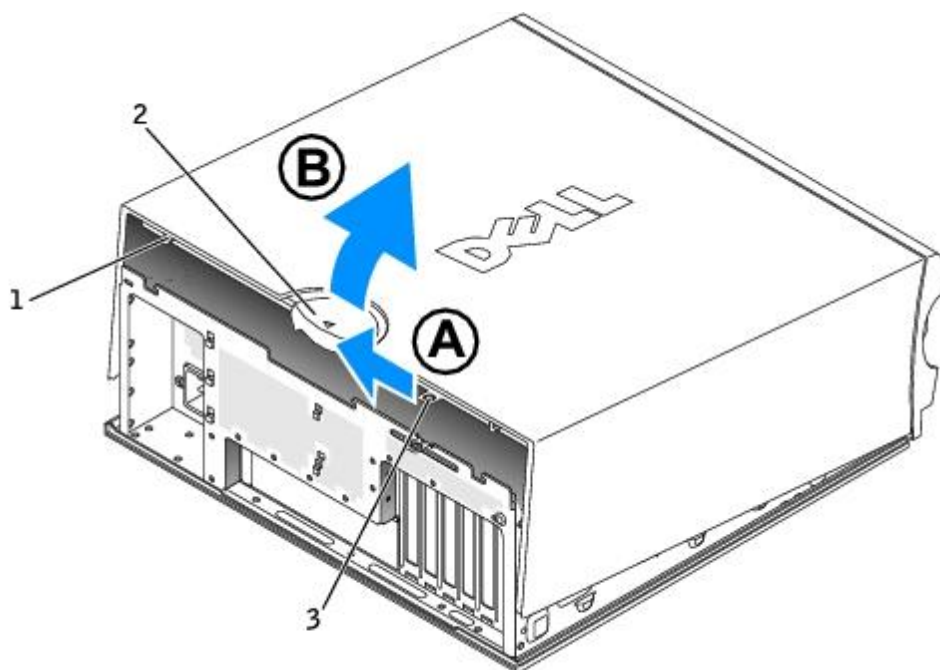
Opening the Computer Cover

Dell Precision™ Workstation 370 User's Guide

⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

⚠ CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer.

1. Follow the procedures in "[Before You Begin](#)."
2. Slide the cover release latch to the left.
3. Raise the cover, and pivot it toward the front of the computer.



1	security cable slot
2	cover release latch
3	padlock ring

Drives

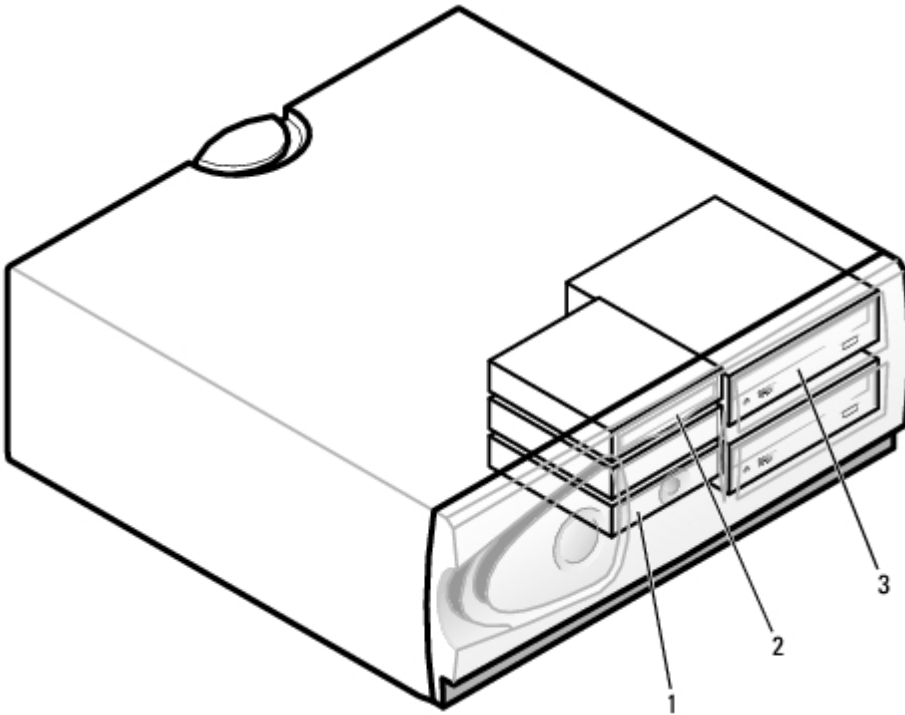
Dell Precision™ Workstation 370 User's Guide

- [Overview](#)
- [Hard Drive](#)
- [Floppy Drive](#)
- [Front Panel](#)
- [CD/DVD Drive](#)

Overview

Your computer supports:

- Two hard drives (Serial ATA or SCSI, with optional SCSI controller)
- One floppy drive
- Two CD or DVD drives



1	hard drive(s)
2	floppy drive(s)
3	CD/DVD drive(s)

General Installation Guidelines

Connect hard drives to the connector labeled "SATA" and connect CD/DVD drives to the connector labeled "IDE".

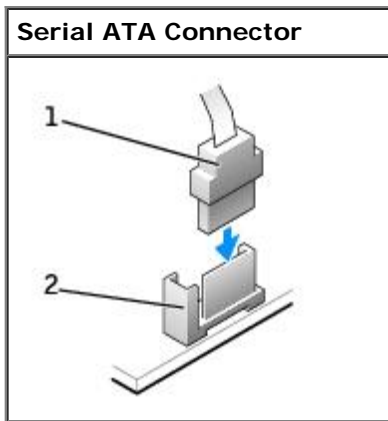
Serial ATA hard drives should be connected to the connector labeled SATA on the system board. IDE CD/DVD drives should be connected to the connector labeled IDE.

When you connect two IDE devices to a single IDE interface cable and configure them for the cable select setting, the device attached to the last connector on the interface cable is primary or the boot device (drive 0), and the device attached to the middle connector on the interface cable is the secondary device (drive 1). See the drive documentation in your upgrade kit for information on configuring devices for the cable select setting.

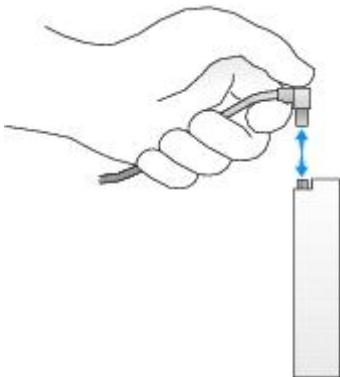
Connecting Drive Cables

When you install a drive, you connect two cables—a DC power cable and a data cable—to the back of the drive and to the system board. Some CD/DVD drives may also have an audio connector; one end of the audio cable will attach to the drive connector and the other will attach to the system board.

Drive Interface Connectors




1	interface cable
2	interface connector



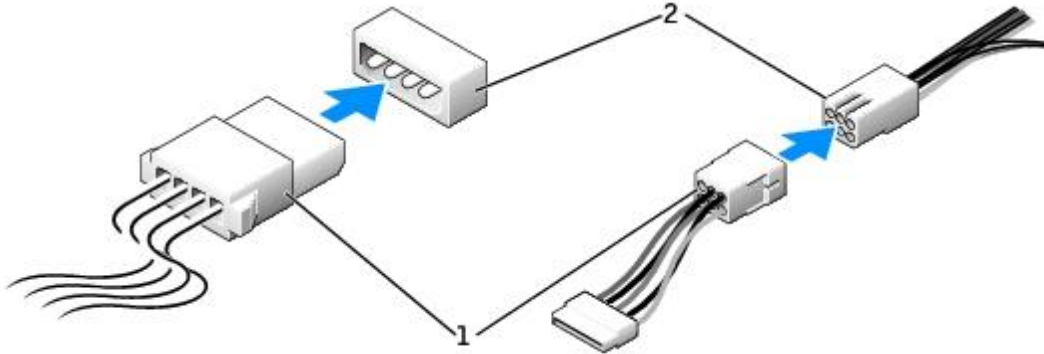
Most connectors are keyed for correct insertion; that is, a notch or a missing pin on one connector matches a tab or a filled-in hole on the other connector.

When connecting an IDE cable, ensure you align the colored stripe with the pin 1 connector. When disconnecting an IDE cable, grasp the colored pull tab and pull until the connector detaches.

When connecting and disconnecting a serial ATA cable, hold the cable by the connector at each end.

 **NOTE:** The system board serial ATA connector may have an attached cover or shroud.


Power Cable Connector



1	power cable
2	power input connector

SCSI Device Installation Guidelines

This section describes how to configure and install SCSI devices in your computer.

 **NOTE:** The system board SCSI controller supports hard drives only. Do not connect CD or DVD drives, tape drives, DAT drives, and so on.

SCSI ID Numbers

Internal SCSI devices must have a unique SCSI ID number from 0 to 15. If you are using the SCSI connector on the system board and a SCSI controller card installed in your computer, you have two separate SCSI buses operating. Each SCSI bus has a set of SCSI ID numbers from 0 to 15.

When SCSI devices are shipped from the factory, the default SCSI ID numbers are assigned as follows:


System Board Controller		Controller Card	
Device	ID	Device	ID
Controller	7	Controller	7
Boot hard drive	0	Boot hard drive	0
		CD or DVD drive	5
		tape or DAT drive	6

NOTE: There is no requirement that SCSI ID numbers be assigned sequentially or that devices be attached to the cable in order by ID number. If two or more devices use the same ID, your computer may hang during POST and in SCSI BIOS.

SCSI devices installed by Dell are configured correctly during the manufacturing process. You do not need to set the SCSI ID

for these SCSI devices.

If you attach additional optional SCSI devices, see the documentation for each device for information about setting the appropriate SCSI ID number.

 **NOTICE:** Dell recommends that you use only SCSI cables purchased from Dell. Cables purchased elsewhere are not guaranteed to work with Dell computers.

Device Termination

SCSI logic requires that termination be enabled for the two devices at opposite ends of the SCSI chain and disabled for all devices in between.

It is recommended that you use terminated cables and that you disable termination on all devices. See the documentation provided with any optional SCSI device you purchase for information on disabling termination on the device.

General Guidelines


Follow these general guidelines when installing SCSI devices in your computer:

- Although you install SCSI devices essentially the same way as other devices, their configuration requirements are different. For details on configuring your particular SCSI subsystem, see the documentation for your SCSI devices and/or your host adapter card.
- Configure the device for a SCSI ID number and disable termination, if necessary.
- To use an external SCSI device, you must have a SCSI controller card installed in your computer. Connect one end of the external SCSI cable to the connector on the back of the SCSI device. Attach the other end of the external SCSI cable to the connector on the controller card installed in the computer.
- After you install a SCSI hard drive, **Primary Drive 0** and **Primary Drive 1** should be set to **None** in [system setup](#) if no IDE hard drives are installed.
- You may need to use programs other than those provided with the operating system to partition and format SCSI hard drives. See the documentation that came with your SCSI software drivers for information on installing the appropriate drivers and preparing your SCSI hard drive for use.

SCSI Cables


Ultra 320 (optional on the Dell Precision 370 computer), Ultra 160/m and Ultra2/Wide LVD drives (typically hard drives) both use a 68-pin cable. One end of the cable attaches to the SCSI connector on the system board or the SCSI controller card installed in your computer. The remaining connectors on the cable attach to the various drives.

Narrow SCSI drives (tape drives, CD drives, and some hard drives) use a 50-pin cable. One end of this cable attaches to the SCSI controller card. The remaining connectors on the cable attach to the various narrow SCSI devices.

 **NOTICE:** Dell recommends that you use only SCSI cables purchased from Dell. Cables purchased elsewhere are not guaranteed to work with Dell computers.

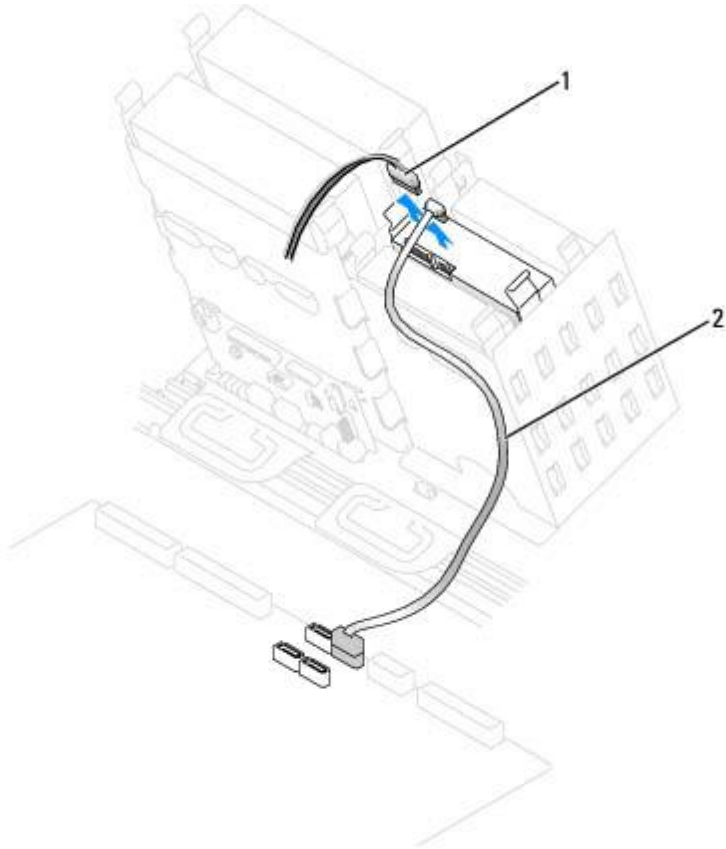
Hard Drive

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

 **NOTICE:** To avoid damage to the drive, do not set it on a hard surface. Instead, set the drive on a surface, such as a foam pad, that will sufficiently cushion it.

Removing a Hard Drive

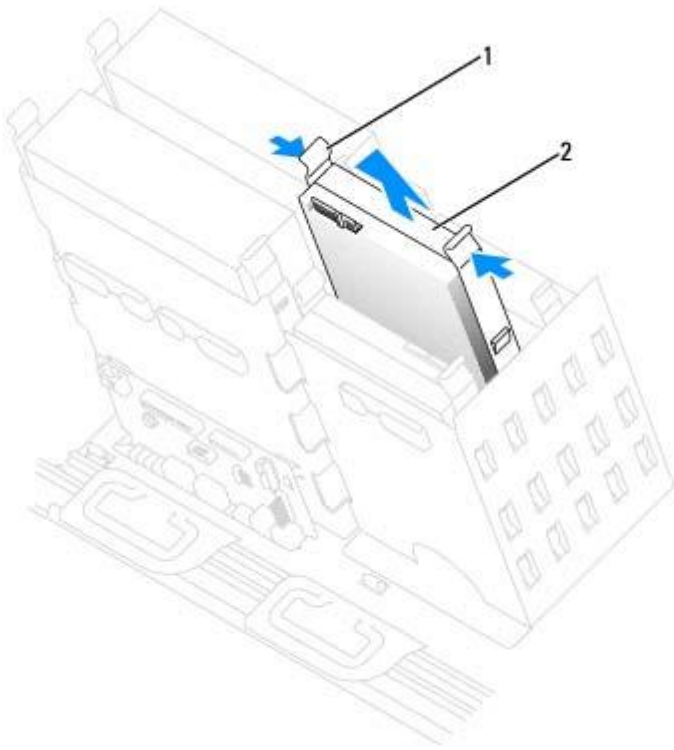
1. If you are replacing a hard drive that contains data you want to keep, back up your files before you begin this procedure.
2. Follow the instructions in "[Before You Begin.](#)"
3. Disconnect the power and hard-drive cables from the drive.



1	power cable
2	serial ATA hard-drive cable

4. Press in on the tabs on each side of the drive and slide the drive up and out.

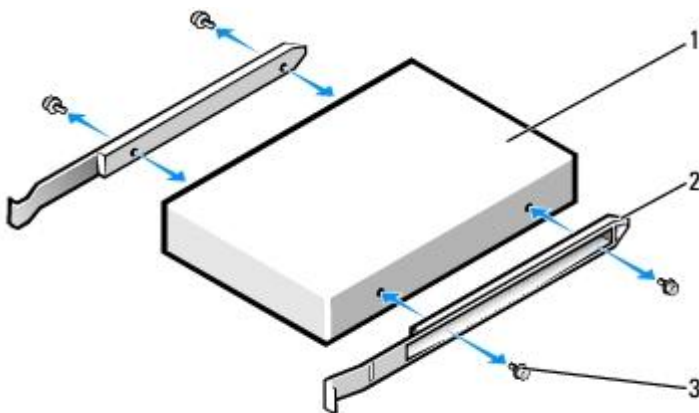
Serial ATA Drive



1	tab (2)
2	hard drive


Installing a Hard Drive

1. Unpack the replacement hard drive, and prepare it for installation.
2. Check the documentation for the drive to verify that it is configured for your computer.
3. If your replacement hard drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive. Attach the bracket rails to the new drive by aligning the screw holes on the drive with the screw holes on the bracket rails and then inserting and tightening all four screws (two screws on each rail).

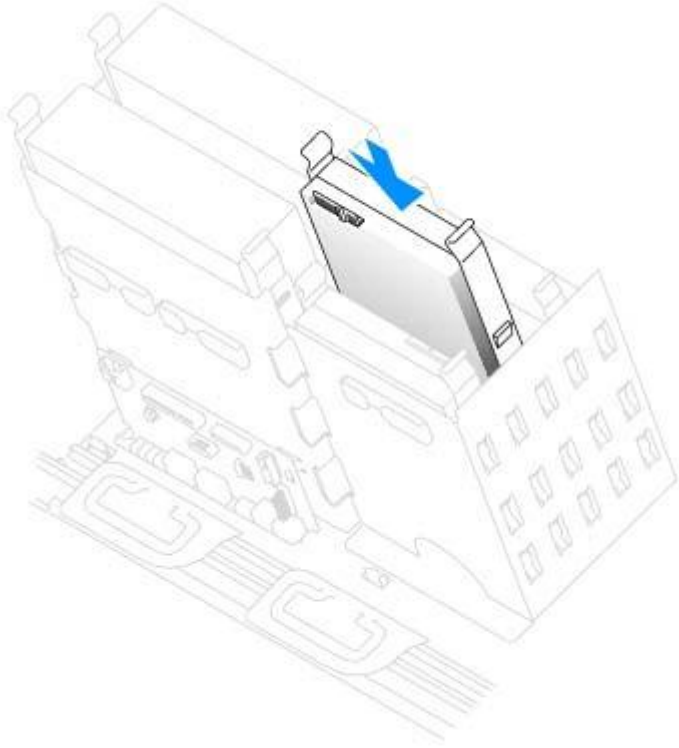


1	drive
2	bracket rails (2)

4. Gently slide the drive into place until the tabs securely click into position.

 **NOTE:** If you are installing a hard drive in the lower bay, the drive should be placed in the bay so that the power connector is on the left-hand side (opposite of the top hard drive).

Serial ATA Drive

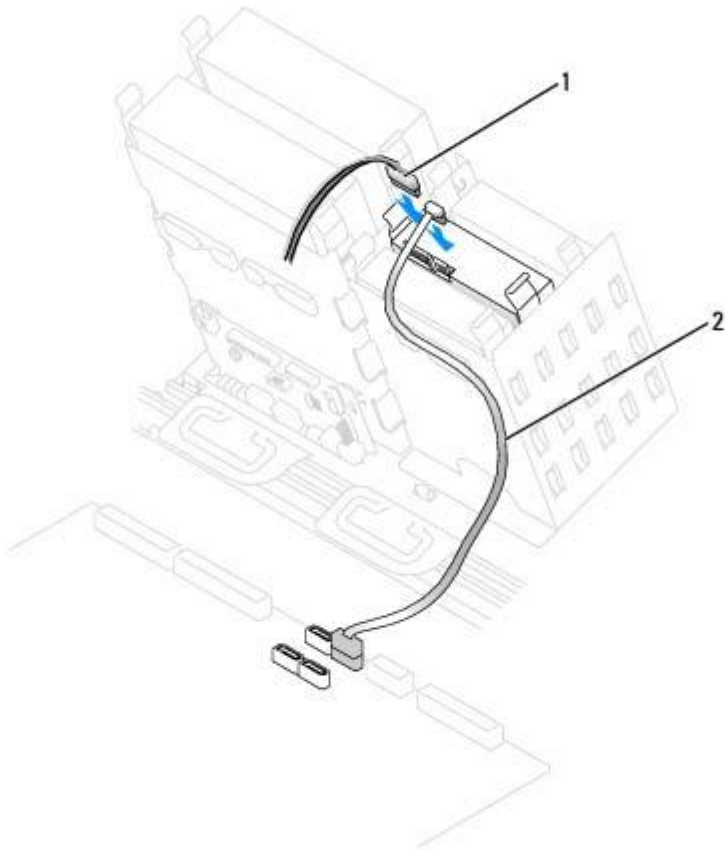


5. If you are installing a drive that has its own controller card, install the controller card in an expansion slot.

See the documentation that accompanied the drive and controller card to verify that the configuration is correct for your computer.

6. Connect the power and hard-drive cables to the drive.

Serial ATA Drive



1	power cable
2	serial ATA hard-drive cable

7. Check all connectors to be certain that they are properly cabled and firmly seated.
8. [Close the computer cover.](#)

➡ NOTICE: To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

9. Connect your computer and devices to electrical outlets, and turn them on.


See the documentation that came with the drive for instructions on installing any software required for drive operation.

10. If the drive you just installed is the primary drive, insert a bootable floppy disk into drive A.
11. Turn on the computer.
12. [Enter](#) system setup, and update the appropriate **Primary Drive** option (**0** or **1**).
13. Exit system setup, and reboot the computer.
14. Partition and logically format your drive before you proceed to the next step.

See the documentation for your operating system for instructions.

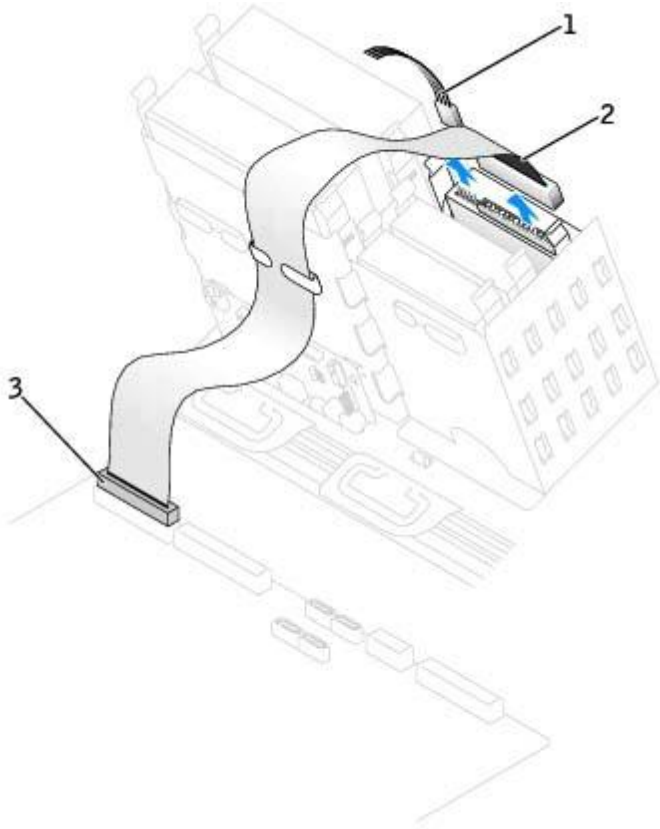
15. Test the hard drive by running the [Dell Diagnostics](#).
 16. If the drive you just installed is the primary drive, install your operating system on the hard drive.
-

Floppy Drive

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

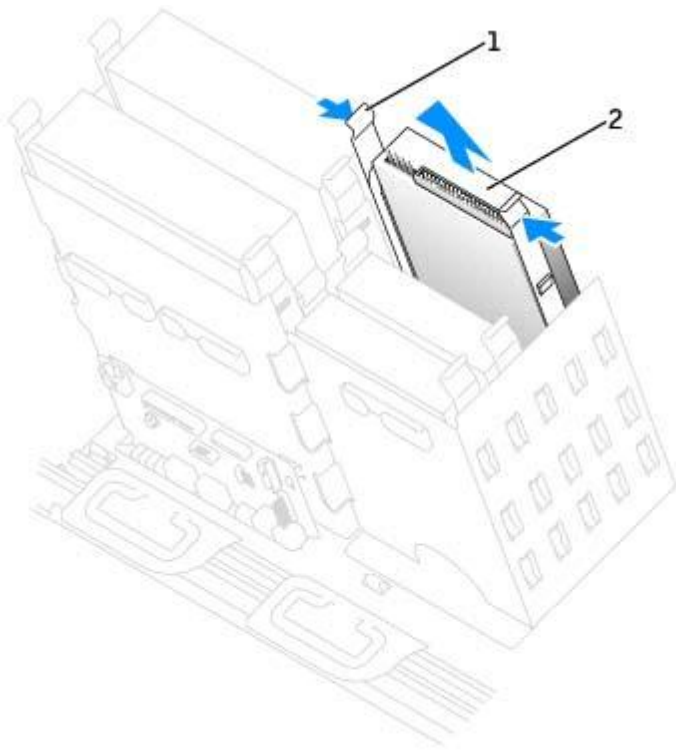
Removing a Floppy Drive

1. Follow the procedures in "[Before You Begin](#)."
2. Disconnect the power and floppy-drive cables from the back of the floppy drive.
3. Disconnect the other end of the floppy-drive cable from the system board (labeled DSKT).



1	power cable
2	floppy-drive cable
3	floppy-drive connector (DSKT)

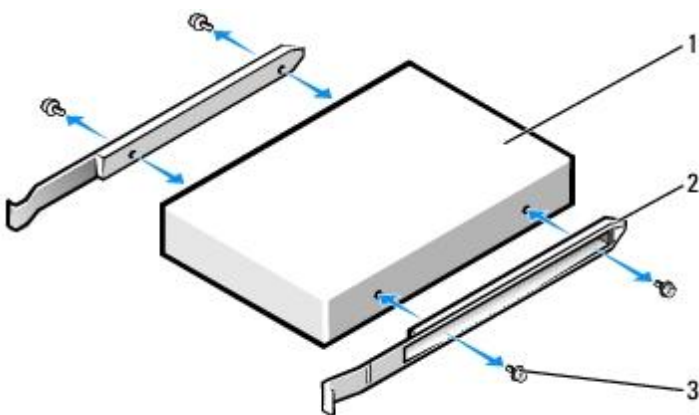
4. Press inward on the two tabs on the sides of the drive, slide the drive upward, and remove it from the floppy-drive bay.



1	tabs (2)
2	floppy drive

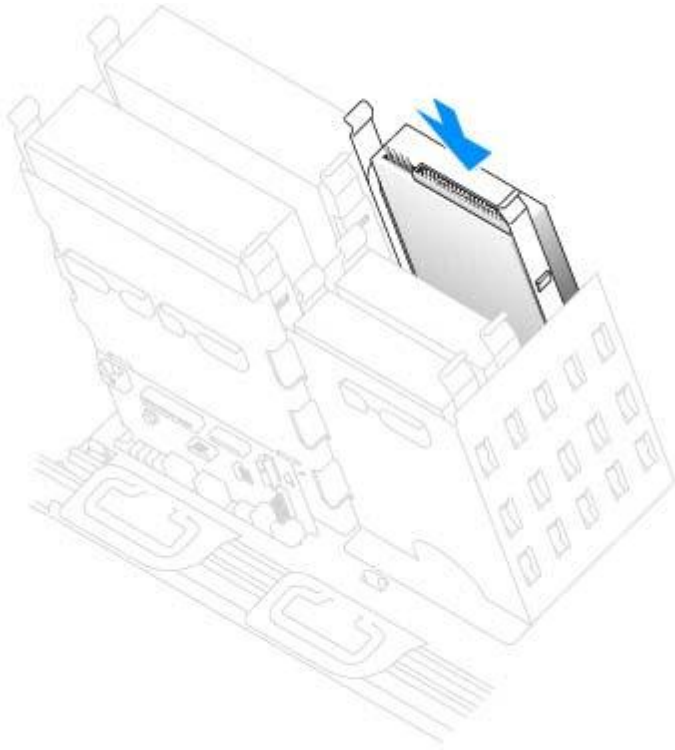
Installing a Floppy Drive

1. If you are replacing a drive and the new drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive. Attach the bracket to the new drive by aligning the screw holes on the drive with the screw holes on the bracket rails and then inserting and tightening all four screws (two screws on each rail).

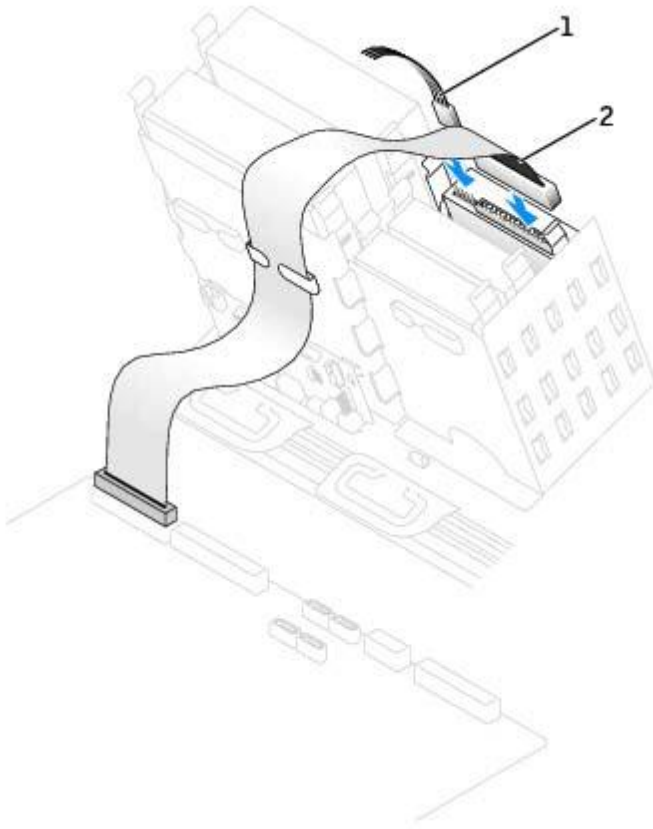


1	drive
2	bracket rails (2)
3	screws (4)

2. Gently slide the drive into place until the tabs securely click into position.



3. Attach the power and floppy-drive cables to the floppy drive.




1	power cable
2	floppy-drive cable

4. If you are installing a new floppy drive rather than replacing a drive, remove the front-panel inserts.

From inside the drive bay, gently press on each side of the insert until it pops out.

5. Connect the other end of the floppy-drive cable to the connector labeled "DSKT" on the system board. For more information on system board, see "[System Board Components](#)."
6. Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.
7. [Close the computer cover](#).


 **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.


8. Connect your computer and devices to electrical outlets, and turn them on.

See the documentation that came with the drive for instructions on installing any software required for drive operation.

9. [Enter system setup](#) and update the appropriate **Diskette Drive A** option to reflect the size and capacity of your new floppy drive.
10. To verify that your computer works correctly, run the [Dell Diagnostics](#).

Front Panel

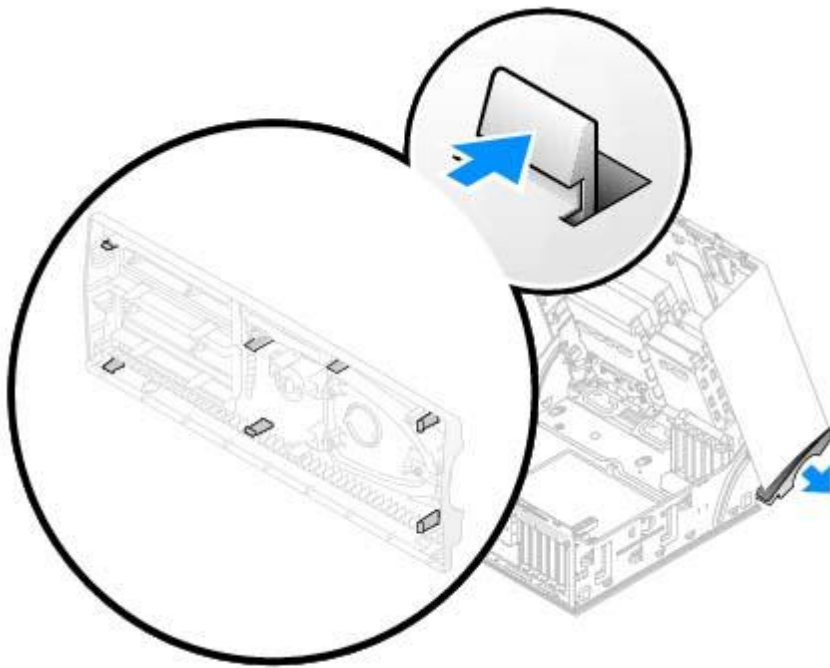
 **CAUTION:** To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer.

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

Removing the Front Panel

1. Follow the procedures in "[Before You Begin](#)."
2. Disconnect and remove all disk drives (for more information, see mini-tower "[Drives](#)" or the desktop "[Drives](#).")
3. Release the front panel by pressing each of the front-panel release tabs.

The *desktop computer* has seven release tabs.



4. [Close the computer cover](#), halfway and pull the front panel away from the computer.

👉 **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer

Replacing the Front Panel

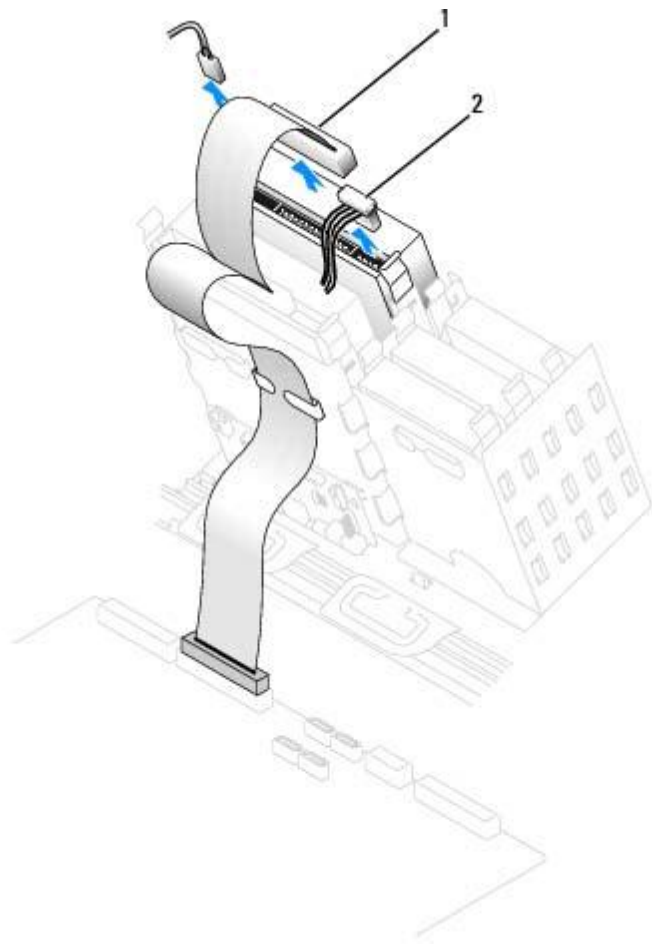
To replace the front panel, perform the [removal procedure](#) in reverse.

CD/DVD Drive

⚠️ **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

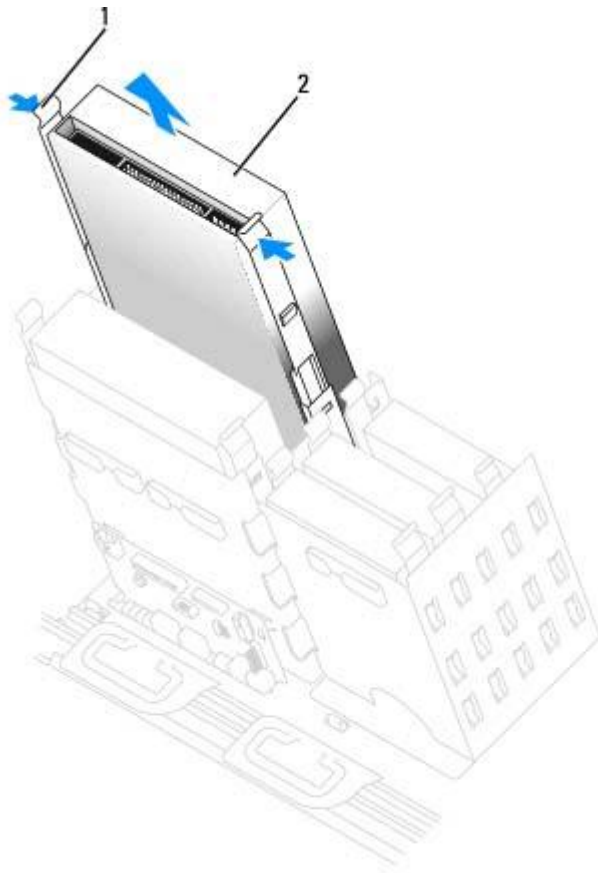
Removing a CD/DVD Drive

1. Follow the procedures in "[Before You Begin](#)."
2. Disconnect the power and CD/DVD drive cables from the back of the drive.



1	CD/DVD drive cable
2	power cable

3. Press inward on the two tabs on the sides of the drive, and then slide the drive upward and remove it from the drive bay.



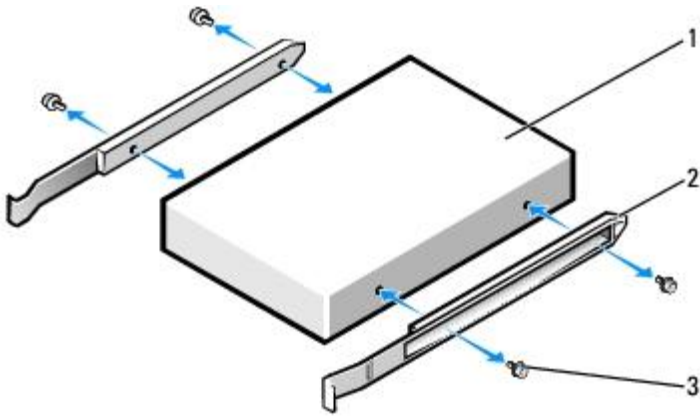
1	tabs (2)
2	CD/DVD drive

Installing a CD/DVD Drive

1. If you are installing a new drive, unpack the drive and prepare it for installation.

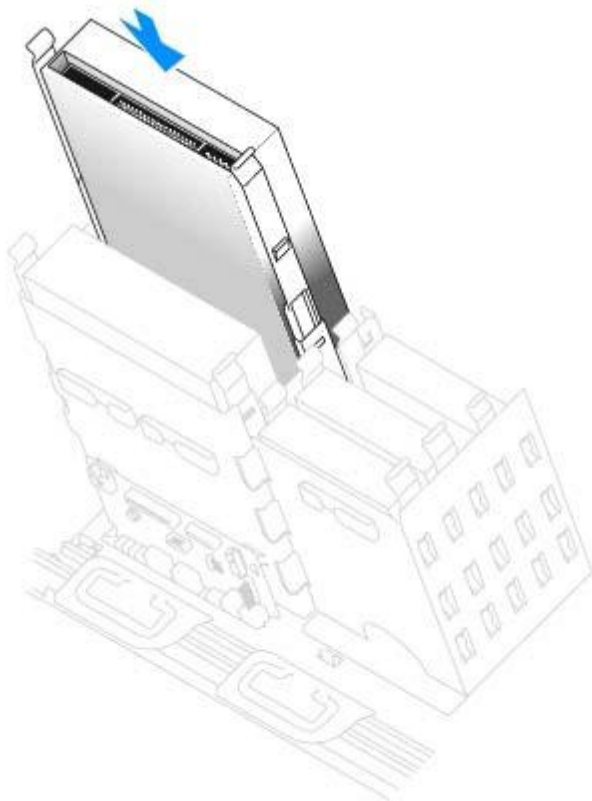
Check the documentation that accompanied the drive to verify that the drive is configured for your computer. If you are installing an IDE drive, configure the drive for the cable select setting.

2. Connect the new drive to the set of rails that are attached to the inside of the computer cover. If a set of rails is not attached inside the cover, see "[Contacting Dell](#)" for the number to call for assistance.
3. If you are installing a replacement drive and the new drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive. Attach the bracket to the new drive by aligning the screw holes on the drive with the screw holes on the bracket rails and then inserting and tightening all four screws (two screws on each rail).



1	drive
2	bracket rails (2)
3	screws (4)

4. Gently slide the drive into place until the tabs securely click into position.
5. Connect the power, audio, and CD/DVD drive cables to the drive.

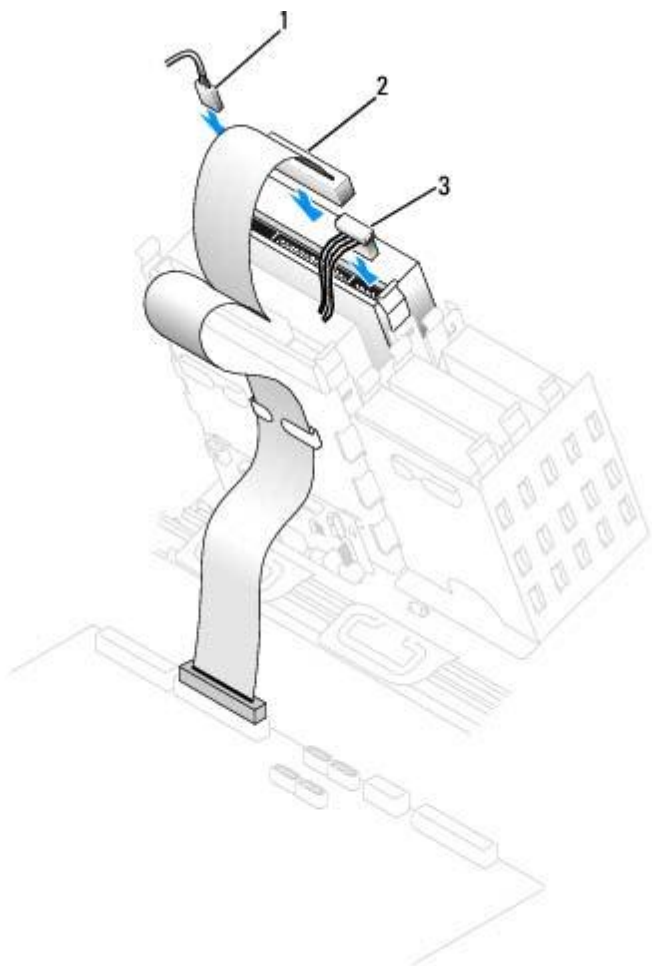


6. If you are installing a drive that has its own controller card, install the controller card in an expansion slot.

See the documentation that accompanied the drive and controller card to verify that the configuration is correct for your computer.

7. Connect the power and CD/DVD drive cables to the drive.

If you are adding a drive that has an audio cable, connect the audio cable to the audio connector on the system board.



1	audio cable (some drives do not have this cable)
2	CD/DVD drive cable
3	power cable

8. If you are installing a new CD/DVD drive rather than replacing a drive, remove the front- panel inserts.

From inside the drive bay, gently press on each side of the insert until it pops out.

9. Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.

10. [Close the computer cover.](#)

NOTICE: To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

11. Connect your computer and devices to electrical outlets, and turn them on.

See the documentation that came with the drive for instructions on installing any software required for drive operation.

12. Update your configuration information by setting the appropriate **Drive** option (**0** or **1**) under **Drives: Secondary** to **Auto**. See "Primary Drive n and Secondary Drive n" for more information.

13. To verify that your computer works correctly, run the [Dell Diagnostics](#).

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Appendix

Dell Precision™ Workstation 370 User's Guide

- [Getting Help](#)
 - [Problems With Your Order](#)
 - [Product Information](#)
 - [Returning Items for Warranty Repair or Credit](#)
 - [Before You Call](#)
-

Getting Help

Technical Assistance

If you need help with a technical problem, Dell is ready to assist you.

 **CAUTION:** If you need to remove the computer covers, first disconnect the computer power and modem cables from all electrical outlets.

1. Complete the procedures in "[Solving Problems](#)."
2. Run the [Dell Diagnostics](#).
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 (support.dell.com) for help with installation and troubleshooting procedures.
5. If the preceding steps have not resolved the problem, contact Dell.

NOTE: Call technical support from a telephone near or at the computer 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](#)."

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

`mobile_support@us.dell.com`

`support@us.dell.com`

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

support.jp.dell.com (Japan only)

support.euro.dell.com (Europe only)

- Electronic Quote Service

`sales@dell.com`

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

`sales_canada@dell.com` (Canada only)

- 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 computers.

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. For the telephone number to call, see the [contact numbers](#) 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. For the telephone number to call, see the [contact numbers](#) 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 uses computer-based diagnostics to provide fast, accurate answers.

To contact Dell's technical support service, see "[Getting Help](#)" and then call the number for your country as listed in "[Contacting Dell](#)."

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 handy when you call. For the telephone number to call, [contact numbers](#) see the 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 numbers](#) 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 numbers](#) for your region.

2. Include a copy of the invoice and a letter describing the reason for the return.
3. Include a copy of the [Diagnostics Checklist](#) indicating the tests you have run and any error messages reported by the Dell Diagnostics.

4. Include any accessories that belong with the item(s) being returned (power cables, software floppy disks, guides, and so on) 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 Dell's 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 computer 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 itself. Ensure that the computer documentation is available.



CAUTION: Before working inside your computer, read the safety instructions in your *System Information Guide*.

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:
Devices:
Expansion cards:
Are you connected to a network? Yes No
Network, version, and network adapter:
Programs and versions:
See your operating system documentation to determine the contents of the system's start-up files. If the computer is connected to a printer, 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:

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Contacting Dell

Dell Precision™ Workstation 370 User's Guide

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

- www.dell.com
- support.dell.com (technical support)
- 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) International Access Code: 00 Country Code: 54 City Code: 11	Website: www.dell.com.ar	
	Tech Support and Customer Care	toll-free: 0-800-444-0733
	Sales	0-810-444-3355
	Tech Support Fax	11 4515 7139
	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	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

City Code: 1	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 City Code: 1	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
	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	Website: support.euro.dell.com	
	E-mail: support.euro.dell.com/it/it/emaildell/	
	Home and Small Business	

City Code: 02	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	Website: support.euro.dell.com	
International Access Code: 00	E-mail: tech_be@dell.com	
Country Code: 352	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
City Code: 4	Transaction Sales	toll-free: 1 800 888 202
	Corporate Sales	toll-free: 1 800 888 213
Mexico	Customer Technical Support	001-877-384-8979 or 001-877-269-3383
International Access Code: 00	Sales	50-81-8800 or 01-800-888-3355
Country Code: 52	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)	Website: support.euro.dell.com	
International Access Code: 00	E-mail (Technical Support):	
Country Code: 31	(Enterprise): nl_server_support@dell.com	
City Code: 20	(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	E-mail (New Zealand): nz_tech_support@dell.com	
International Access Code: 00	E-mail (Australia): au_tech_support@dell.com	
Country Code: 64	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)	Website: support.euro.dell.com	
International Access Code: 00	E-mail Support (portable computers): nor_nbk_support@dell.com	
Country Code: 47	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)	Website: support.euro.dell.com	
International Access Code: 011	E-mail: pl_support_tech@dell.com	
Country Code: 48	Customer Service Phone	57 95 700
City Code: 22	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	Website: support.euro.dell.com	
International Access Code: 00	E-mail: support.euro.dell.com/pt/en/emaildell/	
	Technical Support	707200149

Country Code: 351	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/emailldell/	
	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
Switzerland (Geneva)	Website: support.euro.dell.com	
International Access Code: 00	E-mail: Tech_support_central_Europe@dell.com	
Country Code: 41	E-mail for French-speaking HSB and Corporate Customers: support.euro.dell.com/ch/fr/emaildell/	
City Code: 22	Technical Support (Home and Small Business)	0844 811 411
	Technical Support (Corporate)	0844 822 844
	Customer Care (Home and Small Business)	0848 802 202
	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
Country Code: 886	Transaction Sales	toll-free: 0080 651 228
	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
U.K. (Bracknell)	Website: support.euro.dell.com	
International Access Code: 00	Customer Care website: support.euro.dell.com/uk/en/ECare/Form/Home.asp	
Country Code: 44	E-mail: dell_direct_support@dell.com	
City Code: 1344	Technical Support (Corporate/Preferred Accounts/PAD [1000+ employees])	0870 908 0500
	Technical Support (direct/PAD and general)	0870 908 0800
	Global Accounts Customer Care	01344 373 186
	Home and Small Business Customer Care	0870 906 0010
	Corporate Customer Care	01344 373 185
	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
U.S.A. (Austin, Texas) International Access Code: 011 Country Code: 1	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	
	Customer Service and Technical Support	toll-free: 1-800-822-8965
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-695-8133
	Printers and Projectors Technical Support	toll-free: 1-877-459-7298
	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

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Glossary

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Terms in this Glossary are provided for informational purposes only and may or may not describe features included with your particular computer.

A

AC — alternating current — The form of electricity that powers your computer when you plug the AC adapter power cable in to an electrical outlet.

ACPI — advanced configuration and power interface — A power management specification that enables Microsoft® Windows® operating systems to put a computer in standby or hibernate mode to conserve the amount of electrical power allocated to each device attached to the computer.

AGP — accelerated graphics port — A dedicated graphics port that allows system memory to be used for video-related tasks. AGP delivers a smooth, true-color video image because of the faster interface between the video circuitry and the computer memory.

antivirus software — A program designed to identify, quarantine, and/or delete viruses from your computer.

APR — advanced port replicator — A docking device that allows you to conveniently use a monitor, keyboard, mouse, and other devices with your portable computer.

ASF — alert standards format — A standard to define a mechanism for reporting hardware and software alerts to a management console. ASF is designed to be platform- and operating system-independent.

B

backup — A copy of a program or data file on a floppy disk, CD, or hard drive. As a precaution, back up the data files from your hard drive regularly.

battery — An internal power source used to operate portable computers when not connected to an AC adapter and an electrical outlet.

battery life span — The length of time (years) during which a portable computer battery is able to be depleted and recharged.

battery operating time — The length of time (minutes or hours) that a portable computer battery holds a charge while powering the computer.

BIOS — basic input/output system — A program (or utility) that serves as an interface between the computer hardware and the operating system. Unless you understand what effect the settings have on the computer, do not change the settings for this program. Also referred to as *system setup*.

bit — The smallest unit of data interpreted by your computer.

Bluetooth™ — A wireless technology standard for short-range (9 m [29 feet]) networking devices that allows for enabled devices to automatically recognize each other.

boot sequence — Specifies the order of the devices from which the computer attempts to boot.

bootable CD — A CD that you can use to start your computer. In case your hard drive is damaged or your computer has a virus, ensure that you always have a bootable CD or floppy disk available. Your *Drivers and Utilities* or Resource CD is a bootable CD.

bootable disk — A disk that you can use to start your computer. In case your hard drive is damaged or your computer has a virus, ensure that you always have a bootable CD or floppy disk available.

bps — bits per second — The standard unit for measuring data transmission speed.

BTU — British thermal unit — A measurement of heat output.

bus — A communication pathway between the components in your computer.

bus speed — The speed, given in MHz, that indicates how fast a bus can transfer information.

byte — The basic data unit used by your computer. A byte is usually equal to 8 bits.

C

C — Celsius — A temperature measurement system where 0° is the freezing point and 100° is the boiling point of water.

cache — A special high-speed storage mechanism which can be either a reserved section of main memory or an independent high-speed storage device. The cache enhances the efficiency of many processor operations.

L1 cache — Primary cache stored inside the processor.

L2 cache — Secondary cache which can either be external to the processor or incorporated into the processor architecture.

carnet — An international customs document that facilitates temporary imports into foreign countries. Also known as a *merchandise passport*.

CD — compact disc — An optical form of storage media, typically used for audio and software programs.

CD drive — A drive that uses optical technology to read data from CDs.

CD player — The software used to play music CDs. The CD player displays a window with buttons that you use to play a CD.

CD-R — CD recordable — A recordable version of a CD. Data can be recorded only once onto a CD-R. Once recorded, the data cannot be erased or written over.

CD-RW — CD rewritable — A rewritable version of a CD. Data can be written to a CD-RW disc, and then erased and written over (rewritten).

CD-RW drive — A drive that can read CDs and write to CD-RW (rewritable CDs) and CD-R (recordable CDs) discs. You can write to CD-RW discs multiple times, but you can write to CD-R discs only once.

CD-RW/DVD drive — A drive, sometimes referred to as a combo drive, that can read CDs and DVDs and write to CD-RW (rewritable CDs) and CD-R (recordable CDs) discs. You can write to CD-RW discs multiple times, but you can write to CD-R discs only once.

clock speed — The speed, given in MHz, that indicates how fast computer components that are connected to the system bus operate.

COA — Certificate of Authenticity — The Windows alpha-numeric code located on a sticker on your computer. You may need the COA to complete the operating system setup or reinstallation. Also referred to as the *Product Key* or *Product ID*.

Control Panel — A Windows utility that allows you to modify operating system and hardware settings, such as display settings.

controller — A chip that controls the transfer of data between the processor and memory or between the processor and devices.

CRIMM — continuity rambus in-line memory module — A special module that has no memory chips and is used to fill unused RIMM slots.

cursor — The marker on a display or screen that shows where the next keyboard, touch pad, or mouse action will occur. It often is a blinking solid line, an underline character, or a small arrow.

D

DDR SDRAM — double-data-rate SDRAM — A type of SDRAM that doubles the data burst cycle, improving system

performance.

device — Hardware such as a disk drive, printer, or keyboard that is installed in or connected to your computer.

device driver — See *driver*.

DIN connector — A round, six-pin connector that conforms to DIN (Deutsche Industrie-Norm) standards; it is typically used to connect PS/2 keyboard or mouse cable connectors.

disk striping — A technique for spreading data over multiple disk drives. Disk striping can speed up operations that retrieve data from disk storage. Computers that use disk striping generally allow the user to select the data unit size or stripe width.

DMA — direct memory access — A channel that allows certain types of data transfer between RAM and a device to bypass the processor.

docking device — See *APR*.

DMTF — Distributed Management Task Force — A consortium of hardware and software companies who develop management standards for distributed desktop, network, enterprise, and Internet environments.

domain — A group of computers, programs, and devices on a network that are administered as a unit with common rules and procedures for use by a specific group of users. A user logs on to the domain to gain access to the resources.

DRAM — dynamic random-access memory — Memory that stores information in integrated circuits containing capacitors.

driver — Software that allows the operating system to control a device such as a printer. Many devices do not work properly if the correct driver is not installed in the computer.

DSL — Digital Subscriber Line — A technology that provides a constant, high-speed Internet connection through an analog telephone line.

dual display mode — A display setting that allows you to use a second monitor as an extension of your display. Also referred to as *extended display mode*.

DVD — digital versatile disc — A disc usually used to store movies. DVDs are double-sided, whereas CDs are single-sided. DVD drives read most CD media as well.

DVD drive — A drive that uses optical technology to read data from DVDs and CDs.

DVD player — The software used to watch DVD movies. The DVD player displays a window with buttons that you use to watch a movie.

DVD+RW — DVD rewritable — A rewritable version of a DVD. Data can be written to a DVD+RW disc, and then erased and written over (rewritten). (DVD+RW technology is different from DVD-RW technology.)

DVD+RW drive — A drive that can read DVDs and most CD media and write to DVD+RW (rewritable DVDs) discs.

DVI — digital video interface — A standard for digital transmission between a computer and a digital video display; the DVI adapter works through the computer's integrated graphics.

E

ECC — error checking and correction — A type of memory that includes special circuitry for testing the accuracy of data as it passes in and out of memory.

ECP — extended capabilities port — A parallel connector design that provides improved bidirectional data transmission. Similar to EPP, ECP uses direct memory access to transfer data and often improves performance.

EIDE — enhanced integrated device electronics — An improved version of the IDE interface for hard drives and CD drives.

EMI — electromagnetic interference — Electrical interference caused by electromagnetic radiation.

ENERGY STAR® — Environmental Protection Agency requirements that decrease the overall consumption of electricity.

EPP — enhanced parallel port — A parallel connector design that provides bidirectional data transmission.

ESD — electrostatic discharge — A rapid discharge of static electricity. ESD can damage integrated circuits found in computer and communications equipment.

expansion card — A circuit board that installs in an expansion slot on the system board in some computers, expanding the capabilities of the computer. Examples include video, modem, and sound cards.

expansion slot — A connector on the system board (in some computers) where you insert an expansion card, connecting it to the system bus.

Express Service Code — A numeric code located on a sticker on your Dell™ computer. Use the Express Service Code when contacting Dell for assistance. Express Service Code service may not be available in some countries.

extended display mode — A display setting that allows you to use a second monitor as an extension of your display. Also referred to as *dual display mode*.

extended PC Card — A PC Card that extends beyond the edge of the PC Card slot when installed.

F

Fahrenheit — A temperature measurement system where 32° is the freezing point and 212° is the boiling point of water.

FCC — Federal Communications Commission — A U.S. agency responsible for enforcing communications-related regulations that state how much radiation computers and other electronic equipment can emit.

floppy drive — A disk drive that can read and write to floppy disks.

folder — A term used to describe space on a disk or drive where files are organized and grouped. Files in a folder can be viewed and ordered in various ways, such as alphabetically, by date, and by size.

format — The process that prepares a drive or disk for file storage. When a drive or disk is formatted, the existing information on it is lost.

FSB — front side bus — The data path and physical interface between the processor and RAM.

FTP — file transfer protocol — A standard Internet protocol used to exchange files between computers connected to the Internet.

G

G — gravity — A measurement of weight and force.

GB — gigabyte — A measurement of data storage that equals 1024 MB (1,073,741,824 bytes). When used to refer to hard drive storage, the term is often rounded to 1,000,000,000 bytes.

GHz — gigahertz — A measurement of frequency that equals one thousand million Hz, or one thousand MHz. The speeds for computer processors, buses, and interfaces are often measured in GHz.

graphics mode — A video mode that can be defined as x horizontal pixels by y vertical pixels by z colors. Graphics modes can display an unlimited variety of shapes and fonts.

GUI — graphical user interface — Software that interacts with the user by means of menus, windows, and icons. Most programs that operate on the Windows operating systems are GUIs.

H

hard drive — A drive that reads and writes data on a hard disk. The terms hard drive and hard disk are often used interchangeably.

heat sink — A metal plate on some processors that helps dissipate heat.

help file — A file that contains descriptive or instructional information about a product. Some help files are associated with a particular program, such as *Help* in Microsoft Word. Other help files function as stand-alone reference sources. Help files typically have a filename extension of **.hlp** or **.chm**.

hibernate mode — A power management mode that saves everything in memory to a reserved space on the hard drive and

then turns off the computer. When you restart the computer, the memory information that was saved to the hard drive is automatically restored.

HTML — hypertext markup language — A set of codes inserted into an Internet web page intended for display on an Internet browser.

HTTP — hypertext transfer protocol — A protocol for exchanging files between computers connected to the Internet.

Hz — hertz — A unit of frequency measurement that equals 1 cycle per second. Computers and electronic devices are often measured in kilohertz (kHz), megahertz (MHz), gigahertz (GHz), or terahertz (THz).

I

IC — Industry Canada — The Canadian regulatory body responsible for regulating emissions from electronic equipment, much as the FCC does in the United States.

IC — integrated circuit — A semiconductor wafer, or chip, on which thousands or millions of tiny electronic components are fabricated for use in computer, audio, and video equipment.

IDE — integrated device electronics — An interface for mass storage devices in which the controller is integrated into the hard drive or CD drive.

IEEE 1394 — Institute of Electrical and Electronics Engineers, Inc. — A high-performance serial bus used to connect IEEE 1394-compatible devices, such as digital cameras and DVD players, to the computer.

infrared sensor — A port that allows you to transfer data between the computer and infrared-compatible devices without using a cable connection.

integrated — Usually refers to components that are physically located on the computer's system board. Also referred to as *built-in*.

I/O — input/output — An operation or device that enters and extracts data from your computer. Keyboards and printers are I/O devices.

I/O address — An address in RAM that is associated with a specific device (such as a serial connector, parallel connector, or expansion slot) and allows the processor to communicate with that device.

IrDA — Infrared Data Association — The organization that creates international standards for infrared communications.

IRQ — interrupt request — An electronic pathway assigned to a specific device so that the device can communicate with the processor. Each device connection must be assigned an IRQ. Although two devices can share the same IRQ assignment, you cannot operate both devices simultaneously.

ISP — Internet service provider — A company that allows you to access its host server to connect directly to the Internet, send and receive e-mail, and access websites. The ISP typically provides you with a software package, user name, and access phone numbers for a fee.

K

Kb — kilobit — A unit of data that equals 1024 bits. A measurement of the capacity of memory integrated circuits.

KB — kilobyte — A unit of data that equals 1024 bytes but is often referred to as 1000 bytes.

key combination —

A command requiring you to press multiple keys at the same time.

kHz — kilohertz — A measurement of frequency that equals 1000 Hz.

L

LAN — local area network — A computer network covering a small area. A LAN usually is confined to a building or a few

nearby buildings. A LAN can be connected to another LAN over any distance through telephone lines and radio waves to form a wide area network (WAN).

LCD — liquid crystal display — The technology used by portable computer and flat-panel displays.

LED — light-emitting diode — An electronic component that emits light to indicate the status of the computer.

local bus — A data bus that provides a fast throughput for devices to the processor.

LPT — line print terminal — The designation for a parallel connection to a printer or other parallel device.

M

Mb — megabit — A measurement of memory chip capacity that equals 1024 Kb.

Mbps — megabits per second — One million bits per second. This measurement is typically used for transmission speeds for networks and modems.

MB — megabyte — A measurement of data storage that equals 1,048,576 bytes. 1 MB equals 1024 KB. When used to refer to hard drive storage, the term is often rounded to 1,000,000 bytes.

MB/sec — megabytes per second — One million bytes per second. This measurement is typically used for data transfer ratings.

memory — A temporary data storage area inside your computer. Because the data in memory is not permanent, it is recommended that you frequently save your files while you are working on them, and always save your files before you shut down the computer. Your computer can contain several different forms of memory, such as RAM, ROM, and video memory. Frequently, the word memory is used as a synonym for RAM.

memory address — A specific location where data is temporarily stored in RAM.

memory mapping — The process by which the computer assigns memory addresses to physical locations at start-up. Devices and software can then identify information that the processor can access.

memory module — A small circuit board containing memory chips, which connects to the system board.

MHz — megahertz — A measure of frequency that equals 1 million cycles per second. The speeds for computer processors, buses, and interfaces are often measured in MHz.

modem — A device that allows your computer to communicate with other computers over analog telephone lines. Three types of modems include: external, PC Card, and internal. You typically use your modem to connect to the Internet and exchange e-mail.

module bay — A bay that supports devices such as optical drives, a second battery, or a Dell Travellite™ module.

monitor — The high-resolution TV-like device that displays computer output.

mouse — A pointing device that controls the movement of the cursor on your screen. Typically you roll the mouse over a hard, flat surface to move the pointer or cursor on your screen.

ms — millisecond — A measure of time that equals one thousandth of a second. Access times of storage devices are often measured in ms.

N

network adapter — A chip that provides network capabilities. A computer may include a network adapter on its system board, or it may contain a PC Card with an adapter on it. A network adapter is also referred to as a *NIC* (network interface controller).

NIC — See *network adapter*.

notification area — The section of the Windows taskbar that contains icons for providing quick access to programs and computer functions, such as the clock, volume control, and print status. Also referred to as *system tray*.

ns — nanosecond — A measure of time that equals one billionth of a second.

NVRAM — nonvolatile random access memory — A type of memory that stores data when the computer is turned off or loses its external power source. NVRAM is used for maintaining computer configuration information such as date, time, and other system setup options that you can set.

O

optical drive — A drive that uses optical technology to read or write data from CDs, DVDs, or DVD+RWs. Example of optical drives include CD drives, DVD drives, CD-RW drives, and CD-RW/DVD combo drives.

P

parallel connector — An I/O port often used to connect a parallel printer to your computer. Also referred to as an *LPT port*.

partition — A physical storage area on a hard drive that is assigned to one or more logical storage areas known as logical drives. Each partition can contain multiple logical drives.

PC Card — A removable I/O card adhering to the PCMCIA standard. Modems and network adapters are common types of PC Cards.

PCI — peripheral component interconnect — PCI is a local bus that supports 32- and 64-bit data paths, providing a high-speed data path between the processor and devices such as video, drives, and networks.

PCMCIA — Personal Computer Memory Card International Association — The organization that establishes standards for PC Cards.

PIN — personal identification number — A sequence of numerals and/or letters used to restrict unauthorized access to computer networks and other secure systems.

PIO — programmed input/output — A method of transferring data between two devices through the processor as part of the data path.

pixel — A single point on a display screen. Pixels are arranged in rows and columns to create an image. A video resolution, such as 800 x 600, is expressed as the number of pixels across by the number of pixels up and down.

Plug-and-Play — The ability of the computer to automatically configure devices. Plug and Play provides automatic installation, configuration, and compatibility with existing hardware if the BIOS, operating system, and all devices are Plug and Play compliant.

POST — power-on self-test — Diagnostics programs, loaded automatically by the BIOS, that perform basic tests on the major computer components, such as memory, hard drives, and video. If no problems are detected during POST, the computer continues the start-up.

processor — A computer chip that interprets and executes program instructions. Sometimes the processor is referred to as the CPU (central processing unit).

program — Any software that processes data for you, including spreadsheet, word processor, database, and game packages. Programs require an operating system to run.

PS/2 — personal system/2 — A type of connector for attaching a PS/2-compatible keyboard, mouse, or keypad.

PXE — pre-boot execution environment — A WfM (Wired for Management) standard that allows networked computers that do not have an operating system to be configured and started remotely.

R

RAID — redundant array of independent disks — A method of providing data redundancy. Some common implementations of RAID include RAID 0, RAID 1, RAID 5, RAID 10, and RAID 50.

RAM — random-access memory — The primary temporary storage area for program instructions and data. Any information stored in RAM is lost when you shut down your computer.

readme file — A text file included with a software package or hardware product. Typically, readme files provide installation

information and describe new product enhancements or corrections that have not yet been documented.

read-only — Data and/or files you can view but cannot edit or delete. A file can have read-only status if:

- It resides on a physically write-protected floppy disk, CD, or DVD.
- It is located on a network in a directory and the system administrator has assigned rights only to specific individuals.

refresh rate — The frequency, measured in Hz, at which your screen's horizontal lines are recharged (sometimes also referred to as its *vertical frequency*). The higher the refresh rate, the less video flicker can be seen by the human eye.

resolution — The sharpness and clarity of an image produced by a printer or displayed on a monitor. The higher the resolution, the sharper the image.

RFI — radio frequency interference — Interference that is generated at typical radio frequencies, in the range of 10 kHz to 100,000 MHz. Radio frequencies are at the lower end of the electromagnetic frequency spectrum and are more likely to have interference than the higher frequency radiations, such as infrared and light.

ROM — read-only memory — Memory that stores data and programs that cannot be deleted or written to by the computer. ROM, unlike RAM, retains its contents after you shut down your computer. Some programs essential to the operation of your computer reside in ROM.

RPM — revolutions per minute — The number of rotations that occur per minute. Hard drive speed is often measured in rpm.

RTC — real time clock — Battery-powered clock on the system board that keeps the date and time after you shut down the computer.

RTCST — real-time clock reset — A jumper on the system board of some computers that can often be used for troubleshooting problems.

S

ScanDisk — A Microsoft utility that checks files, folders, and the hard disk's surface for errors. ScanDisk often runs when you restart the computer after it has stopped responding.

SDRAM — synchronous dynamic random-access memory — A type of DRAM that is synchronized with the optimal clock speed of the processor.

serial connector — An I/O port often used to connect devices such as a handheld digital device or digital camera to your computer.

Service Tag — A bar code label on your computer that identifies your computer when you access Dell Support at support.dell.com or when you call Dell for customer service or technical support.

setup program — A program that is used to install and configure hardware and software. The **setup.exe** or **install.exe** program comes with most Windows software packages. *Setup program* differs from *system setup*.

shortcut — An icon that provides quick access to frequently used programs, files, folders, and drives. When you place a shortcut on your Windows desktop and double-click the icon, you can open its corresponding folder or file without having to find it first. Shortcut icons do not change the location of files. If you delete a shortcut, the original file is not affected. Also, you can rename a shortcut icon.

shutdown — The process of closing windows and exiting programs, exiting the operating system, and turning off your computer. You can lose data if you turn off your computer before completing a shutdown.

smart card — A card that is embedded with a processor and a memory chip. Smart cards can be used to authenticate a user on computers equipped for smart cards.

software — Anything that can be stored electronically, such as computer files or programs.

S/PDIF — Sony/Philips Digital Interface — An audio transfer file format that allows the transfer of audio from one file to another without converting it to and from an analog format, which could degrade the quality of the file.

standby mode — A power management mode that shuts down all unnecessary computer operations to save energy.

surge protectors — Prevent voltage spikes, such as those that may occur during an electrical storm, from entering the computer through the electrical outlet. Surge protectors do not protect against lightning strikes or against brownouts, which occur when the voltage drops more than 20 percent below the normal AC-line voltage level.

Network connections cannot be protected by surge protectors. Always disconnect the network cable from the network connector during electrical storms.

SVGA — super-video graphics array — A video standard for video cards and controllers. Typical SVGA resolutions are 800 x 600 and 1024 x 768. The number of colors and resolution that a program displays depends on the capabilities of the monitor, the video controller and its drivers, and the amount of video memory installed in the computer.

S-video TV-out — A connector used to attach a TV or digital audio device to the computer.

SXGA — super-extended graphics array — A video standard for video cards and controllers that supports resolutions up to 1280 x 1024.

SXGA+ — super-extended graphics array plus — A video standard for video cards and controllers that supports resolutions up to 1400 x 1050.

system board — The main circuit board in your computer. Also known as the *motherboard*.

system setup — A utility that serves as an interface between the computer hardware and the operating system. System setup allows you to configure user-selectable options in the BIOS, such as date and time or system password. Unless you understand what effect the settings have on the computer, do not change the settings for this program.

system tray — See *notification area*.

T

TAPI — telephony application programming interface — Enables Windows programs to operate with a wide variety of telephony devices, including voice, data, fax, and video.

text editor — A program used to create and edit files that contain only text; for example, Windows Notepad uses a text editor. Text editors do not usually provide word wrap or formatting functionality (the option to underline, change fonts, and so on).

travel module — A plastic device designed to fit inside the module bay of a portable computer to reduce the weight of the computer.

U

UPS — uninterruptible power supply — A backup power source used when the electrical power fails or drops to an unacceptable voltage level. A UPS keeps a computer running for a limited amount of time when there is no electrical power. UPS systems typically provide surge suppression and may also provide voltage regulation. Small UPS systems provide battery power for a few minutes to enable you to shut down your computer.

USB — universal serial bus — A hardware interface for a low-speed device such as a USB-compatible keyboard, mouse, joystick, scanner, set of speakers, printer, broadband devices (DSL and cable modems), imaging devices, or storage devices. Devices are plugged directly in to a 4-pin socket on your computer or in to a multi-port hub that plugs in to your computer. USB devices can be connected and disconnected while the computer is turned on, and they can also be daisy-chained together.

UTP — unshielded twisted pair — Describes a type of cable used in most telephone networks and some computer networks. Pairs of unshielded wires are twisted to protect against electromagnetic interference, rather than relying on a metal sheath around each pair of wires to protect against interference.

UXGA — ultra extended graphics array — A video standard for video cards and controllers that supports resolutions up to 1600 x 1200.

V

video controller — The circuitry on a video card or on the system board (in computers with an integrated video controller) that provides the video capabilities—in combination with the monitor—for your computer.

video memory — Memory that consists of memory chips dedicated to video functions. Video memory is usually faster than

system memory. The amount of video memory installed primarily influences the number of colors that a program can display.

video mode — A mode that describes how text and graphics are displayed on a monitor. Graphics-based software, such as Windows operating systems, displays in video modes that can be defined as *x* horizontal pixels by *y* vertical pixels by *z* colors. Character-based software, such as text editors, displays in video modes that can be defined as *x* columns by *y* rows of characters.

video resolution — See *resolution*.

virus — A program that is designed to inconvenience you or to destroy data stored on your computer. A virus program moves from one computer to another through an infected disk, software downloaded from the Internet, or e-mail attachments. When an infected program starts, its embedded virus also starts.

A common type of virus is a boot virus, which is stored in the boot sectors of a floppy disk. If the floppy disk is left in the drive when the computer is shut down and then turned on, the computer is infected when it reads the boot sectors of the floppy disk expecting to find the operating system. If the computer is infected, the boot virus may replicate itself onto all the floppy disks that are read or written in that computer until the virus is eradicated.

V — volt — The measurement of electric potential or electromotive force. One V appears across a resistance of 1 ohm when a current of 1 ampere flows through that resistance.

W

W — watt — The measurement of electrical power. One W is 1 ampere of current flowing at 1 volt.

WHr — watt-hour — A unit of measure commonly used to indicate the approximate capacity of a battery. For example, a 66-WHr battery can supply 66 W of power for 1 hour or 33 W for 2 hours.

wallpaper — The background pattern or picture on the Windows desktop. Change your wallpaper through the Windows Control Panel. You can also scan in your favorite picture and make it wallpaper.

write-protected — Files or media that cannot be changed. Use write-protection when you want to protect data from being changed or destroyed. To write-protect a 3.5-inch floppy disk, slide its write-protect tab to the open position.

X

XGA — extended graphics array — A video standard for video cards and controllers that supports resolutions up to 1024 x 768.

Z

ZIF — zero insertion force — A type of socket or connector that allows a computer chip to be installed or removed with no stress applied to either the chip or its socket.

Zip — A popular data compression format. Files that have been compressed with the Zip format are called Zip files and usually have a filename extension of **.zip**. A special kind of zipped file is a self-extracting file, which has a filename extension of **.exe**. You can unzip a self-extracting file by double-clicking it.


Zip drive — A high-capacity floppy drive developed by Iomega Corporation that uses 3.5-inch removable disks called Zip disks. Zip disks are slightly larger than regular floppy disks, about twice as thick, and hold up to 100 MB of data.

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FCC Notices (U.S. Only)

Dell Precision™ Workstation 370 User's Guide

- [Class A](#)
- [Class B](#)
- [FCC Identification Information](#)

Most Dell computer systems are classified by the Federal Communications Commission (FCC) as Class B digital devices. To determine which classification applies to your computer system, examine all FCC registration labels located on the bottom, side, or back panel of your computer, on card-mounting brackets, and on the cards themselves. If any one of the labels carries a Class A rating, your entire system is considered to be a Class A digital device. If *all* labels carry an FCC Class B rating as distinguished by either an FCC ID number or the FCC logo, (), your system is considered to be a Class B digital device.

Once you have determined your system's FCC classification, read the appropriate FCC notice. Note that FCC regulations provide that changes or modifications not expressly approved by Dell could void your authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Class A

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Class B

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and the receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/television technician for help.
-

FCC Identification Information

The following information is provided on the device or devices covered in this document in compliance with FCC regulations:

- Model number: DHM and WHM
- Company name:

Dell Inc.
One Dell Way
Round Rock, Texas 78682 USA
512-338-4400

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