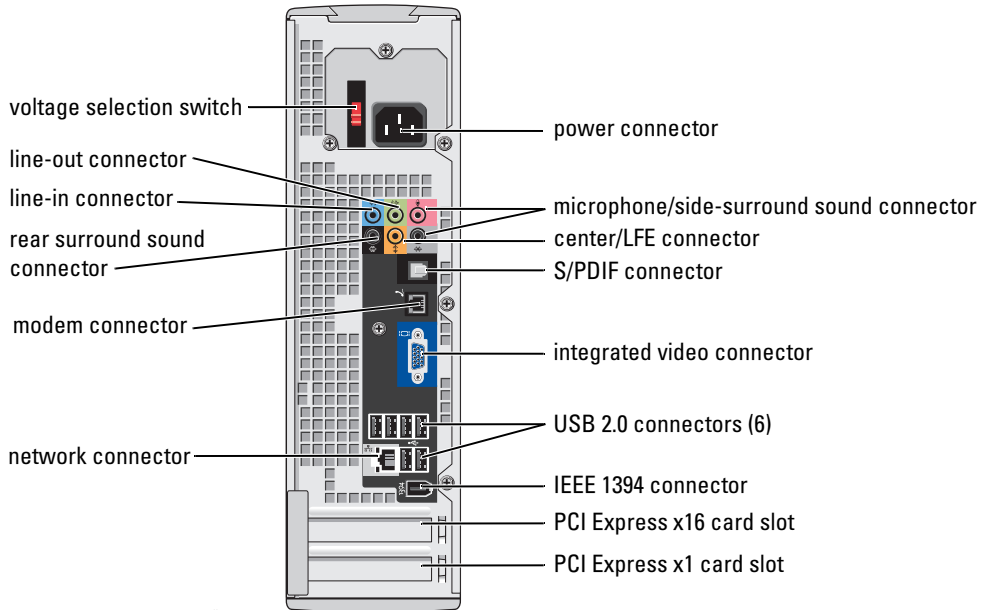
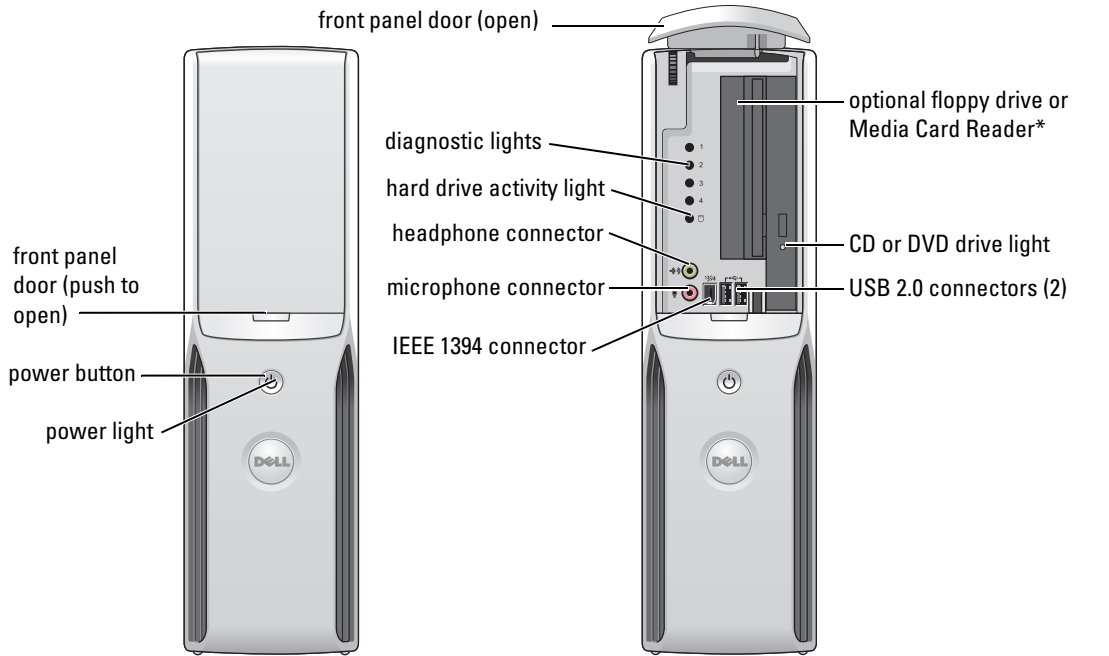


# Dell™ XPS™ 210

## Owner's Manual



\*Not present on certain computers.

Model DCCY

# 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.

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 DCCY

August 2006

P/N FJ055

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## Finding Information

 **NOTE:** Some features or media may be optional and may not ship with your computer. Some features or media may not be available in certain countries.

 **NOTE:** This Owner's Manual is available as a PDF at [support.dell.com](http://support.dell.com).

 **NOTE:** Additional information may ship with your computer.

---

### What Are You Looking For?

- A diagnostic program for my computer
- Drivers for my computer
- My device documentation
- Desktop System Software (DSS)

### Find It Here

#### Drivers and Utilities CD (ResourceCD)

**NOTE:** The *Drivers and Utilities* CD may be optional and may not ship with your computer.

Documentation and drivers are already installed on your computer. You can use the CD to reinstall drivers (see "Drivers" on page 54), run the Dell diagnostics (see "Dell Diagnostics" on page 52), or access your documentation.

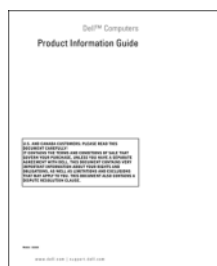


Readme files may be included on your CD to provide last-minute updates about technical changes to your computer or advanced technical reference material for technicians or experienced users.

**NOTE:** Drivers and documentation updates can be found at [support.dell.com](http://support.dell.com).

- 
- Warranty information
  - Terms and Conditions (U.S. only)
  - Safety instructions
  - Regulatory information
  - Ergonomics information
  - End User License Agreement

#### Dell™ Product Information Guide



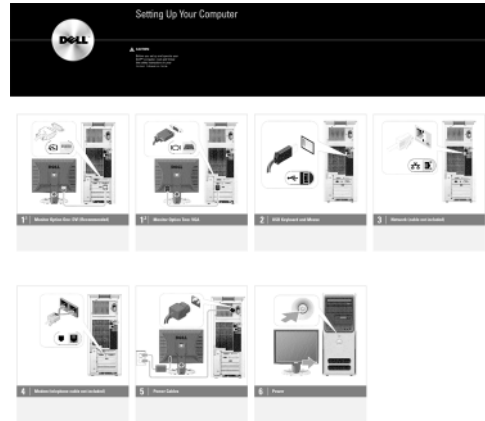
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## What Are You Looking For?

- How to set up my computer

## Find It Here

### Setup Diagram



- 
- Service Tag and Express Service Code
  - Microsoft® Windows® Product Key Label

### Service Tag and Microsoft Windows Product Key

These labels are located on your computer.

- Use the Service Tag to identify your computer when you use [support.dell.com](http://support.dell.com) or contact support.



- Enter the Express Service Code to direct your call when contacting support.

---

**What Are You Looking For?**

- Solutions — Troubleshooting hints and tips, articles from technicians, online courses, and frequently asked questions
- Community — Online discussion with other Dell customers
- Upgrades — Upgrade information for components, such as the memory, hard drive, and operating system
- Customer Care — Contact information, service call and order status, and warranty and repair information
- Service and support — Service call status, support history, service contract, and online discussions with support
- Reference — Computer documentation, details on my computer configuration, product specifications, and white papers
- Downloads — Certified drivers, patches, and software updates
- Desktop System Software (DSS)— If you reinstall the operating system for your computer, you should also reinstall the DSS utility. DSS automatically detects your computer and operating system and installs the updates appropriate for your configuration, providing critical updates for your operating system and support for Dell™ 3.5-inch USB floppy drives, Intel® processors, optical drives, and USB devices. DSS is necessary for correct operation of your Dell computer.

- How to use Windows XP
- How to work with programs and files
- How to personalize my desktop

---

**Find It Here**

**Dell Support Website** — [support.dell.com](http://support.dell.com)

**NOTE:** Select your region or business segment to view the appropriate support site.

To download Desktop System Software:

- 1** Go to [support.dell.com](http://support.dell.com), select your region or business segment, then enter your Service Tag or product model.
- 2** Select **Drivers & Downloads**, then click **Go**.
- 3** Select your operating system and language, and then search for the keyword *Desktop System Software*.

**NOTE:** The [support.dell.com](http://support.dell.com) user interface may vary depending on your selections.

---

**Windows Help and Support Center**

- 1** Click **Start** → **Help and Support**.
- 2** Type a word or phrase that describes your problem and click the arrow icon.
- 3** Click the topic that describes your problem.
- 4** Follow the instructions on the screen.

---

## What Are You Looking For?

- How to reinstall my operating system

---

## Find It Here

### Operating System CD

**NOTE:** The *Operating System CD* may be optional and may not ship with your computer.

The operating system is already installed on your computer. To reinstall your operating system see "Restoring Your Operating System" on page 56.



After you reinstall your operating system, use the *Drivers and Utilities CD (ResourceCD)* to reinstall drivers for the devices that came with your computer.

Your operating system product key label is located on your computer.

**NOTE:** The color of your *Operating System CD* varies according to the operating system you ordered.

- 
- How to use Linux
  - E-mail discussions with users of Dell Precision™ products and the Linux operating system
  - Additional information regarding Linux and my Dell Precision computer


### Dell Supported Linux Sites

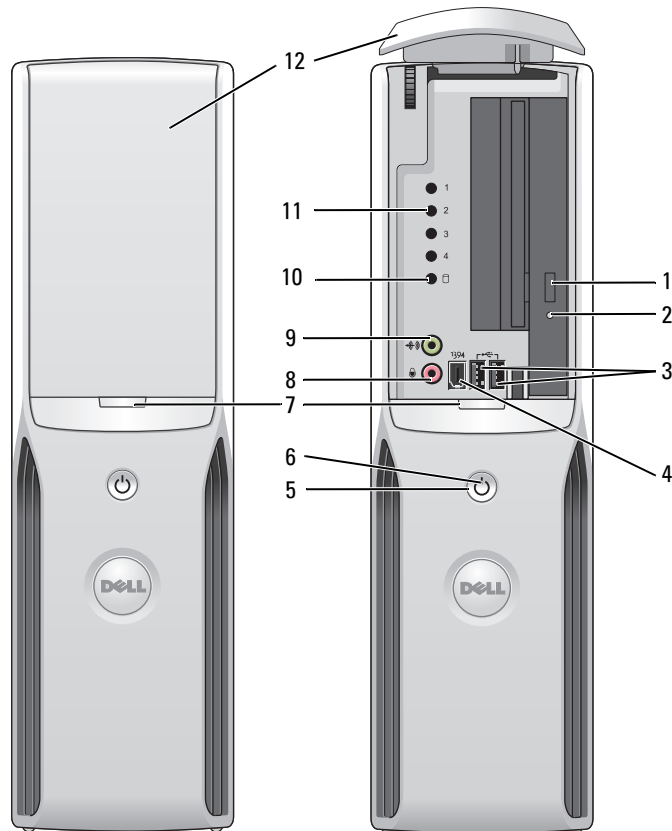
- [linux.dell.com](http://linux.dell.com)
- [lists.us.dell.com/mailman/listinfo/linux-precision](http://lists.us.dell.com/mailman/listinfo/linux-precision)


# Setting Up and Using Your Computer

## Front and Back View of the Computer

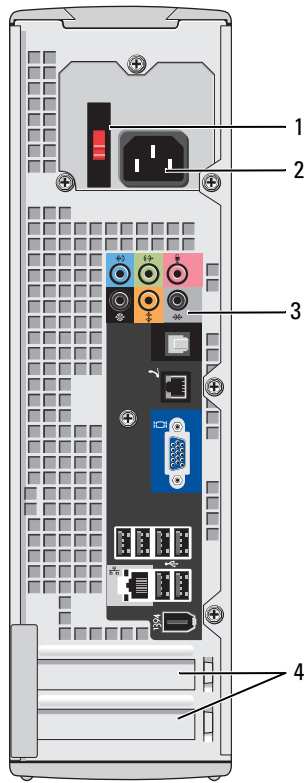
### Front View

 **NOTE:** The front panel door does not close when you are using the Flash Media, IEEE 1394, USB, or headphone connectors.



- |    |                                 |  |
|----|---------------------------------|--|
| 1  | CD/DVD drive eject button       | Press this button to eject a CD/DVD from the drive.  |
| 2  | CD/DVD drive-activity light     | The drive activity light is on when the computer reads data from the CD or DVD drive.  |
| 3  | USB 2.0 connectors (2)          | Use the front USB connectors for devices that you connect occasionally, such as joysticks or cameras (see "System Setup" on page 101 for more information on booting to a USB device).<br><br>It is recommended that you use the back USB connectors for devices that typically remain connected, such as printers and keyboards.  |
| 4  | IEEE 1394 connector             | Attach high-speed serial multimedia devices, such as digital video cameras.<br><br>It is recommended that you use the back IEEE 1394 connector for devices that typically remain connected, such as external hard drives and other storage devices.  |
| 5  | power button                    | Press this button to turn on the computer.<br><br> <b>NOTICE:</b> To avoid losing data, do not use the power button to turn off the computer. Instead, perform an operating system shutdown.  |
| 6  | power light                     | The power light illuminates and blinks or remains solid to indicate different states: <ul style="list-style-type: none"> <li>• No light — The computer is turned off.</li> <li>• Steady green — The computer is in a normal operating state.</li> <li>• Blinking green — The computer is in a power-saving state.</li> <li>• Blinking or solid amber — See "Power Problems" on page 43.</li> </ul> |
| 7  | front-panel door release button | Press this button to access the front-panel connectors.  |
| 8  | microphone connector            | Use the pink microphone connector to attach a personal computer microphone for voice or musical input into a sound or telephony program.<br><br>On computers with a sound card, the microphone connector is on the card.   |
| 9  | headphone connector             | Use the green headphone connector to attach headphones and most kinds of speakers.   |
| 10 | hard-drive activity light       | The hard drive activity 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 a CD player is operating.   |
| 11 | diagnostic lights               | For more information on what each diagnostic light means, see "Diagnostic Lights" on page 49.  |
| 12 | front-panel door                | This panel covers the CD/DVD drive, the Media Card Reader, and the optional floppy drive.  |

## Back View



- 1 voltage selection switch
- 2 power connector
- 3 back panel connectors
- 4 card slots

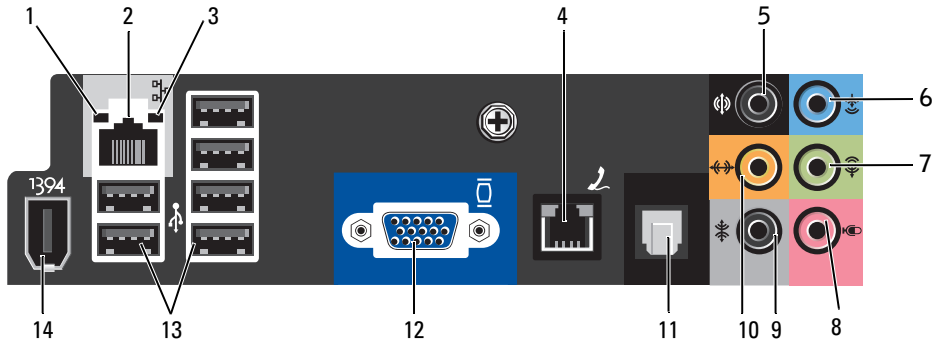
See the safety instructions in the *Product Information Guide* for more information.

Insert the power cable.

Plug IEEE 1394, USB and other devices into the appropriate connector.

Access connectors for any installed PCI Express cards.

## Back I/O Connectors



- |   |                               |   |
|---|-------------------------------|---|
| 1 | link integrity light          | <ul style="list-style-type: none"> <li>• Green — A good connection exists between a 10-Mbps network and the computer.</li> <li>• Orange — A good connection exists between a 100-Mbps network and the computer.</li> <li>• Off — The computer is not detecting a physical connection to the network.</li> </ul>   |
| 2 | 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 the back panel of your computer. A click indicates that the network cable has been securely attached.</p> <p><b>NOTE: Do not plug a telephone cable into the network connector.</b></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> |
| 3 | 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>  |
| 4 | modem connector               | <p>Use the modem connector to connect your computer to the Internet.</p>  |
| 5 | rear surround sound connector | <p>Use the black surround sound connector to attach multichannel-capable speakers.</p>  |
| 6 | 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>  |
| 7 | 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>  |



8	microphone	Use the pink 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.
9	side surround sound connector	Use the grey surround sound connector to attach multichannel-capable speakers.
10	center/LFE connector	LFE (Low Frequency Effects) Audio channel found in digital surround sound audio schemes that carries only low frequency information of 80 Hz and below. The LFE channel drives a subwoofer to provide extremely low bass extension. Systems not using subwoofers can shunt the LFE information to the main speakers in the surround sound set-up.
11	S/PDIF connector	This connector is used to transmit digital audio without going through an analog audio conversion process.
12	VGA connector	If your monitor has a VGA connector, plug it into the VGA connector on the computer.
13	USB 2.0 connectors (6)	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 joysticks or cameras.
14	IEEE 1394 connector	Attach high-speed serial multimedia devices, such as digital video cameras.

## Setting Up a Printer



**NOTICE:** Complete the operating system setup before you connect a printer to the computer.

See the documentation that came with the printer for setup information, including how to:

- Obtain and install updated drivers.
- Connect the printer to the computer.
- Load paper and install the toner or ink cartridge.
- Contact the printer manufacturer for technical assistance.

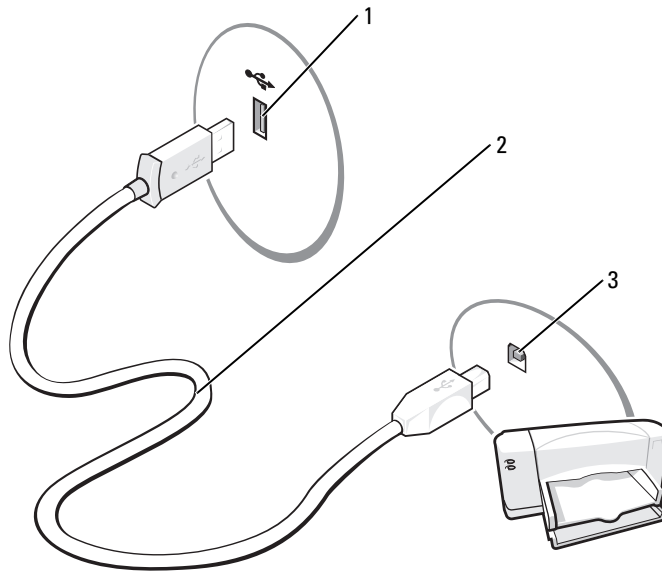
### Printer Cable

Your printer connects to your computer with a USB cable. Your printer may not come with a printer cable, so if you purchase a cable separately, ensure that it is compatible with your printer. If you purchased a printer cable at the same time you purchased your computer, the cable may arrive in the computer box.

## Connecting a USB Printer

**NOTE:** You can connect USB devices while the computer is turned on.

- 1 Complete the operating system setup, if you have not already done so.
- 2 Install the printer driver if necessary. See the documentation that came with your printer.
- 3 Attach the USB printer cable to the USB connectors on the computer and the printer. The USB connectors fit only one way.



1 USB connector on computer

2 USB printer cable

3 USB connector on printer

## Using a Media Card Reader (Optional)

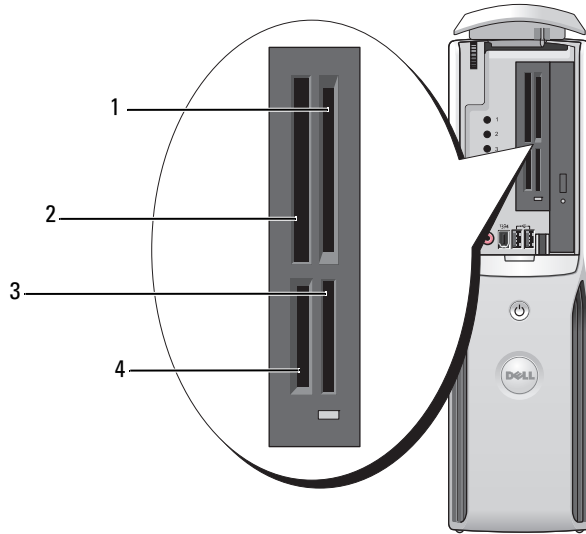
Use the Media Card Reader to transfer data directly to your computer.

The Media Card Reader supports the following memory types:

- xD-Picture Card
- SmartMedia (SMC)
- CompactFlash Type I and II (CF I/II)
- MicroDrive (mini SD and MS Pro Duo can be supported with an adapter)
- SecureDigital Card (SD)
- Mini SD Card

- MultiMediaCard (MMC)
- Reduced size MMC
- Memory Stick (MS/MS Pro/Duo Pro)

For information on installing a Media Card Reader, see "Installing a Media Card Reader" on page 87.



- |   |                                      |   |  |
|---|--------------------------------------|---|--|
| 1 | xD-Picture Card and SmartMedia (SMC) | 2 | CompactFlash Type I and II (CF I/II) and MicroDrive Card |
| 3 | Memory Stick (MS/MS Pro)             | 4 | SecureDigital Card (SD)/ MultiMediaCard (MMC)            |


To use the Media Card Reader:

- 1 Check the media or card to determine the proper orientation for insertion.

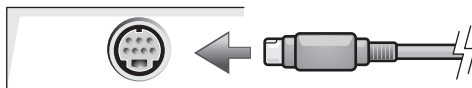
**➔ NOTICE:** If you encounter resistance, do not force the media or card. Check the card orientation and try again.

- 2 Slide the media or card into the appropriate slot until it is completely seated in the connector.

## Connecting a TV (Optional)

 **NOTE:** To connect a TV to your computer, you must have a video card that has TV-out functionality and an S-video cable, which is available at most consumer electronics stores. An S-video cable is not included with your computer.

- 1 Follow the procedures in "Before You Begin" on page 61.
- 2 Connect one end of the S-video cable to the TV-OUT connector on the back of the computer.
- 3 Connect the other end of the S-video cable to the S-video input connector on your TV.




## Changing the Display Settings

- 1 After you connect the TV, turn on the computer.  
The Microsoft® Windows® desktop displays on the monitor.
- 2 Enable clone mode or extended desktop mode in the display settings.
  - In clone mode, the monitor and TV display the same image.
  - In extended desktop mode, you can drag objects from one screen to the other, effectively doubling the amount of viewable work space.

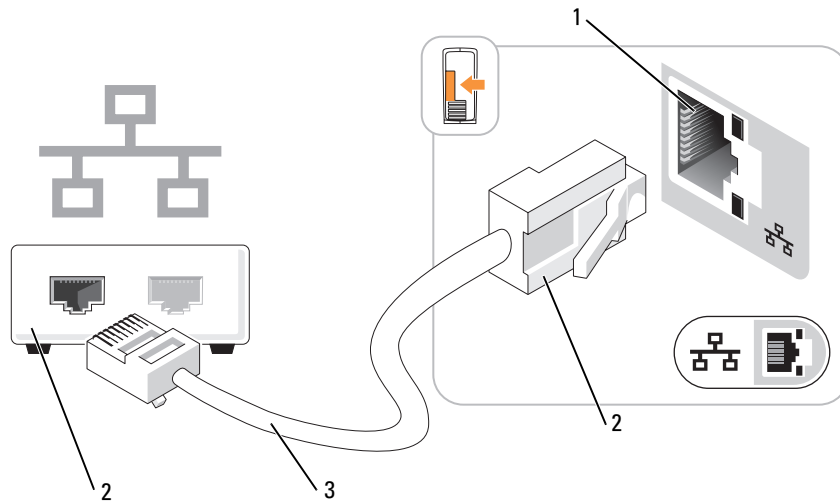
For information on changing the display settings for your graphics card, see the user's guide in the Help and Support Center (click the **Start** button, click **Help and Support**, click **User and system guides**, click **Device guides**, and then click the guide for your graphics card).

## Setting Up a Home and Office Network

### Connecting to a Network Adapter

 **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 adapter connector on computer | 2 | network adapter connector |
| 3 | network cable                         | 4 | network device            |

## 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 Service Pack 1 (SP1) or later operating systems.

- 4 Complete the checklist and required preparations.
- 5 Return to the Network Setup Wizard and follow the instructions on the screen.

## Connecting to the Internet

 **NOTE:** ISPs and ISP offerings vary by country.

To connect to the Internet, you need a modem or network connection and an Internet service provider (ISP), such as AOL or MSN. Your ISP will offer one or more of the following Internet connection options:

- Dial-up connections that provide Internet access through a telephone line. Dial-up connections are considerably slower than DSL and cable modem connections.
- DSL connections that provide high-speed Internet access through your existing telephone line. With a DSL connection, you can access the Internet and use your telephone on the same line simultaneously.
- Cable modem connections that provide high-speed Internet access through your local cable TV line.

If you are using a dial-up connection, connect a telephone line to the modem connector on your computer and to the telephone wall jack before you set up your Internet connection. If you are using a DSL or cable modem connection, contact your ISP for setup instructions.

### Setting Up Your Internet Connection

To set up an AOL or MSN connection:


- 1 Save and close any open files, and exit any open programs.
- 2 Double-click the **MSN Explorer** or **AOL** icon on the Microsoft® Windows® desktop.
- 3 Follow the instructions on the screen to complete the setup.

If you do not have an **MSN Explorer** or **AOL** icon on your desktop, or if you want to set up an Internet connection with a different ISP:

- 1 Save and close any open files, and exit any open programs.
- 2 Click the **Start** button and click **Internet Explorer**.  
The **New Connection Wizard** appears.
- 3 Click **Connect to the Internet**.
- 4 In the next window, click the appropriate option:
  - If you do not have an ISP and want to select one, click **Choose from a list of Internet service providers (ISPs)**.
  - If you have already obtained setup information from your ISP, but you did not receive a setup CD, click **Set up my connection manually**.
  - If you have a CD, click **Use the CD I got from an ISP**.
- 5 Click **Next**.

If you selected **Set up my connection manually**, continue to step 6. Otherwise, follow the instructions on the screen to complete the setup.


- 6 Click the appropriate option under **How do you want to connect to the Internet?**, and then click **Next**.

 **NOTE:** If you do not know which type of connection to select, contact your ISP.

- 7 Use the setup information provided by your ISP to complete the setup.

If you are having problems connecting to the Internet, see "E-Mail, Modem, and Internet Problems" on page 35. If you cannot connect to the Internet, but have successfully connected in the past, the ISP might have a service outage. Contact your ISP to check the service status, or try connecting again later.

## Playing a CD or DVD

 **NOTICE:** Do not press down on the CD or DVD tray when you open or close it. Keep the tray closed when you are not using the drive.


 **NOTICE:** Do not move the computer when you are playing CDs or DVDs.

- 1 Press the eject button on the front of the drive.
- 2 Place the disc, label side up in the center of the tray.
- 3 Press the disc into the center of the tray until it clicks into place.











- 4 Press the eject button or gently push in the tray.

To format CDs for storing data, to create music CDs, or to copy CDs, see the CD software that came with your computer.

 **NOTE:** Ensure that you observe all copyright laws when creating CDs or DVDs.

A CD player includes the following basic buttons:








---

	Play.
	Move backward within the current track.
	Pause.
	Move forward within the current track.
	Stop.
	Go to the previous track.
	Eject.
	Go to the next track.

---

A DVD player includes the following basic buttons:

---


	Stop.
	Play.
	Fast forward.
	Pause.
	Fast reverse.
	Go to the next title or chapter.
	Go to the previous title or chapter.

---

For more information on playing CDs or DVDs, click **Help** on the CD or DVD player (if available).



## Adjusting the Volume

 **NOTE:** When the speakers are muted, you do not hear the CD or DVD playing.

- 1 Click the **Start** button, point to **All Programs**→ **Accessories**→ **Entertainment**, and then click **Volume Control**.
- 2 In the **Volume Control** window, click the bar in the **Volume Control** column and slide it up or down to increase or decrease the volume.


For more information on volume control options, click **Help** in the **Volume Control** window.

## Adjusting the Picture

If an error message notifies you that the current resolution and color depth are using too much memory and preventing DVD playback, adjust the display properties.

- 1 Click the **Start** button, then click **Control Panel**.
- 2 Under **Pick a category**, click **Appearance and Themes**.
- 3 Under **Pick a task...**, click **Change the screen resolution**.
- 4 In the **Display Properties** window, click and drag the bar in **Screen resolution** to change the setting to 800 by 600 pixels.
- 5 Click the drop-down menu under **Color quality**, and then click **Medium (16 bit)**.
- 6 Click **OK**.

## Copying CDs and DVDs


 **NOTE:** Ensure that you observe all copyright laws when creating CDs or DVDs.

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

 **NOTE:** The types of CD or DVD drives offered by Dell may vary by country.

The following instructions explain how to make an exact copy of a CD or DVD using Roxio Creator Plus - Dell Edition. You can also use Roxio Creator Plus for other purposes, such as creating music CDs from audio files stored on your computer or backing up important data. For help, open Roxio Creator Plus, and then click the question mark icon in the upper-right corner of the window.

### How to Copy a CD or DVD

 **NOTE:** CD-RW/DVD combo drives cannot write to DVD media. If you have a CD-RW/DVD combo drive and you experience recording problems, check for available software patches on the Sonic support website at [www.sonic.com](http://www.sonic.com).

The DVD-writable drives installed in Dell computers can write to and read DVD +/-R, DVD +/-RW and DVD+R DL (dual layer) media, but cannot write to and may not read DVD-RAM or DVD-R DL media.

 **NOTE:** Most commercial DVDs have copyright protection and cannot be copied using Roxio Creator Plus.

- 1 Click the **Start** button, point to **All Programs**→**Roxio**→**Creator Projects**, and then click **RecordNow Copy**.
- 2 Under the **Copy** tab, click **Disc Copy**.
- 3 To copy the CD or DVD:
  - *If you have one CD/DVD drive*, ensure that the settings are correct and click the **Disc Copy** button. The computer reads your source CD or DVD and copies the data to a temporary folder on your computer hard drive.  
When prompted, insert a blank CD or DVD into the drive and click **OK**.
  - *If you have two CD/DVD drives*, select the drive into which you have inserted your source CD or DVD and click the **Disc Copy** button. The computer copies the data from the source 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 CDs and DVDs

CD-RW drives can write to CD recording media only (including high-speed CD-RW media) while DVD-writable drives can write to both CD and DVD recording media.

Use blank CD-Rs to record music or permanently store data files. After the maximum storage capacity of a CD-R is reached, you cannot write to that CD-R again (see the Sonic documentation for more information). Use blank CD-RWs if you plan to erase, rewrite, or update information on the CD later.

Blank DVD+/-Rs can be used to permanently store large amounts of data. 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 the disc later.

#### CD-Writable Drives

Media Type	Read	Write	Rewritable
CD-R	Yes	Yes	No
CD-RW	Yes	Yes	Yes

## DVD-Writable Drives


Media Type	Read	Write	Rewritable
CD-R	Yes	Yes	No
CD-RW	Yes	Yes	Yes
DVD+R	Yes	Yes	No
DVD-R	Yes	Yes	No
DVD+RW	Yes	Yes	Yes
DVD-RW	Yes	Yes	Yes
DVD+R DL	Yes	Yes	No


## Helpful Tips

- Use Microsoft® Windows® Explorer to drag and drop files to a CD-R or CD-RW only after you start Roxio Creator Plus and open a Creator project.
- Use CD-Rs to burn music CDs that you want to play in regular stereos. CD-RWs may not play in many home or car stereos.
- You cannot create audio DVDs with Roxio Creator Plus.
- Music MP3 files can be played only on MP3 players or on computers that have MP3 software installed.
- Commercially available DVD players used in home theater systems may not support all available DVD formats. For a list of formats supported by your DVD player, see the documentation provided with your DVD player or contact the manufacturer.
- 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 blank 650-MB CD. The CD-RW drive needs 1–2 MB of blank space 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 website at [www.sonic.com](http://www.sonic.com) for additional information.

# Power Management


The Microsoft® Windows® XP power management features can reduce the amount of electricity your computer uses when it is on and you are not using it. You can reduce power to just the monitor or the hard drive, or you can use standby mode or hibernate mode to reduce power to the entire computer. When the computer exits from a power conservation mode, the Windows desktop is restored to the state it was in before it entered the mode.

 **NOTE:** If your computer has a card in the PCI Express x16 slot and you add a peripheral that does not support S3 suspend, your computer will not be able to enter stand-by

 **NOTE:** Windows XP Professional includes security and networking features not available in Windows XP Home Edition. When a Windows XP Professional computer is connected to a network, different options related to security and networking appear in certain windows.

## Standby Mode

Standby mode conserves power by turning off the display and the hard drive after a designated period of time, known as a time-out. When the computer exits from standby mode, it computer returns to the operating state it was in prior to entering standby mode.

 **NOTICE:** If your computer loses power while in standby mode, it may lose data.

To set standby mode to automatically activate after a defined period of inactivity:

- 1 Click **Start**, then click **Control Panel**.
- 2 Under **Pick a category**, click **Performance and Maintenance**.
- 3 Under or pick a **Control Panel icon**, click **Power Options**.

To immediately activate standby mode without a period of inactivity, click **Start**, click **Turn Off Computer**, and then click **Stand by**.

To exit from standby mode, press a key on the keyboard or move the mouse.

## Hibernate Mode

Hibernate mode conserves power by copying system data to a reserved area on the hard drive, and then completely turning off the computer. When the computer exits from hibernate mode, the desktop is restored to the state it was in prior to entering hibernate mode.

To activate hibernate mode:

- 1 Click **Start**, then click **Control Panel**.
- 2 Under **Pick a category**, click **Performance and Maintenance**.
- 3 Under or pick a **Control Panel icon**, click **Power Options**.
- 4 Define your hibernate settings on the **Power Schemes** tab, **Advanced** tab, and **Hibernate** tab.

To exit from hibernate mode, press the power button. The computer may take a short time to exit from hibernate mode. Because the keyboard and mouse do not function in hibernate mode, pressing a key on the keyboard or moving the mouse does not bring the computer out of hibernation.

Because hibernate mode requires a special file on your hard drive with enough disk space to store the contents of the computer memory, Dell creates an appropriately sized hibernate mode file before shipping the computer to you. If the computer's hard drive becomes corrupted, Windows XP recreates the hibernate file automatically.

## Power Options Properties

Define your standby mode settings, hibernate mode settings, and other power settings in the **Power Options Properties** window. To access the **Power Options Properties** window:

- 1 Click **Start**, then click **Control Panel**.
- 2 Under **Pick a category**, click **Performance and Maintenance**.
- 3 Under or pick a **Control Panel icon**, click **Power Options**.
- 4 Define your power settings on the **Power Schemes** tab, **Advanced** tab, and **Hibernate** tab.

## Power Schemes Tab

Each standard power setting is called a scheme. If you want to select one of the standard Windows schemes installed on your computer, choose a scheme from the **Power schemes** drop-down menu. The settings for each scheme appear in the fields below the scheme name. Each scheme has different settings for starting standby mode, hibernate mode, turning off the monitor, and turning off the hard drive.

The **Power schemes** drop-down menu displays the following schemes:

- **Always On** (default) — If you want to use your computer with no power conservation.
- **Home/Office Desk** — If you want your home or office computer to run with little power conservation.
- **Portable/Laptop** — If your computer is a portable computer that you use for traveling.
- **Presentation** — If you want your computer to run without interruption (using no power conservation).
- **Minimal Power Management** — If you want your computer to run with minimal power conservation.
- **Max Battery** — If your computer is a portable computer and you run your computer from batteries for extended periods of time.


If you want to change the default settings for a scheme, click the drop-down menu in the **Turn off monitor**, **Turn off hard disks**, **System stand by**, or **System hibernates** field, and then select a time-out from the displayed list. Changing the time-out for a scheme field permanently changes the default settings for that scheme, unless you click **Save As** and enter a new name for the changed scheme.



**NOTICE:** If you set the hard drive (hard disk) to time-out before the monitor does, your computer may appear to be locked up. To recover, press any key on the keyboard or click the mouse. To avoid this problem, always set the monitor to time-out before the hard drive.

## Advanced Tab

The **Advanced** tab allows you to:

- Place the power options icon  in the Windows taskbar for quick access.
- Set the computer to prompt you for your Windows password before the computer exits from standby mode or hibernate mode.
- Program the power button to activate standby mode, activate hibernate mode, or turn off the computer.

To program these functions, click an option from the corresponding drop-down menu and click **OK**.

## Hibernate Tab

The **Hibernate** tab allows you to enable hibernate mode. If you want to use the hibernate settings you defined on the **Power Schemes** tab, click the **Enable hibernate support** check box on the **Hibernate** tab.

For more information on power management options:

- 1 Click the **Start** button, then click **Help and Support**.
- 2 In the **Help and Support** window, click **Performance and maintenance**.
- 3 In the **Performance and maintenance** window, click **Conserving power on your computer**.

## Intel® Viiv™ Technology (Optional)

Intel Viiv technology is a technology aimed at the digital home enthusiast that includes:

- A BIOS that supports Intel® Quick Resume Technology
- Device drivers

This technology allows the user's system to quickly return to an active state after non-use.

Intel Viiv technology is an option for systems that are ordered with Microsoft® Windows® XP Media Center Edition 2005 and dual core processors.

### Using Intel® Viiv™ Quick Resume Technology (Optional)

When running in the Intel Viiv Quick Resume Technology (QRT) mode, your power button is used as a quick on/off feature. Pressing the power button once causes the display to go blank and the audio to mute. In this mode, the computer is still operating as indicated by the power button indicator and diagnostic lights 1, 2, and 4 being lit. Also, you may notice that the hard drive indicator may blink when the hard drive is being accessed by an external device.

To resume normal computer operation, briefly press the power button, press any key on the keyboard, move the mouse, or press a button on the optional Microsoft® Windows® XP Media Center Edition 2005 remote control.

## Enabling the QRT Feature in System Setup

The QRT drivers must be installed before this feature becomes active. These drivers are installed when this option is ordered. Also, Quick Resume is enabled in system setup when this feature is ordered.

- 1 Enter system setup (see page 102).
- 2 Press the arrow keys to highlight the **Power Management** menu option, then press <Enter> to access the menu.
- 3 Press the up- and down-arrow keys to highlight the **Quick Resume** option, then press <Enter> to access the menu.
- 4 Press the left- and right-arrow keys to highlight the **On** option, and then press <Enter> to enable the Quick Resume feature.

## Enabling the QRT feature in the Operating system

- 1 Click the **Start** button, then click **Control Panel**.
- 2 Under **Pick a category**, click **Performance and Maintenance**.
- 3 Under **or pick a Control Panel icon**, click **Power Options**.
- 4 Click the **Away** tab.
- 5 Ensure that the check boxes for **Enable away mode** and **Options** are checked.
- 6 Click the **Advanced** tab.
- 7 From the **When I press the power button on my computer** drop-down menu, select **Do Nothing**.
- 8 From the **When I press the sleep button on my computer** drop-down menu, select **Do Nothing**.

## Hyper-Threading and Dual-Core Technology

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. Dual-Core is an Intel technology in which two physical computational units exist inside a single CPU package, thereby increasing computing efficiency and multi-tasking ability. If dual-core technology is supported, two processors are visible. It is recommended that you use the Microsoft® Windows® XP Service Pack 1 (SP1), or later, operating system because Windows XP is optimized to take advantage of Hyper-Threading technology. While many programs can benefit from Hyper-Threading and dual-core technology, some programs have not been optimized for them and may require an update from the software manufacturer. Contact the software manufacturer for updates and information about using Hyper-Threading or dual-core technology 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**, then click **Device Manager**.
- 3** In the **Device Manager** window, click the plus (+) sign next to **Processors**. If Hyper-Threading is enabled, the processor is listed twice.

You can enable or disable Hyper-Threading through system setup. For more information on accessing system setup, see "Entering System Setup" on page 102.



# Solving 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



**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" on page 94). If the battery still does not work properly, contact Dell (see "Contacting Dell" on page 112).

# Drive Problems



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

**ENSURE THAT MICROSOFT® WINDOWS® RECOGNIZES THE DRIVE** — Click the **Start** button, then 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 drive is defective.
- Insert a bootable floppy disk and restart the computer.

**NOTE:** This system supports an optional USB floppy drive.

**CLEAN THE DRIVE OR DISK** — See "Cleaning Your Computer" on page 109.

## **CHECK THE CABLE CONNECTIONS**

**RUN THE HARDWARE TROUBLESHOOTER** — See "Resolving Software and Hardware Incompatibilities" on page 56.

**RUN THE DELL DIAGNOSTICS** — See "Dell Diagnostics" on page 52.

## **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 sidebar 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" on page 46.

## Problems writing to a CD/DVD-RW drive

**CLOSE OTHER PROGRAMS** — The CD/DVD-RW drive must receive a steady stream of data during the writing process. 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 "Power Management" on page 28 or search for the keyword *standby* in Windows Help and Support Center for information on power management modes.

## Hard drive problems

### **RUN CHECK DISK** —

- 1 Click **Start**, then 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**.

## 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, as needed.

**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 or feel 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 certain computers.

**VERIFY THAT THE MODEM IS COMMUNICATING WITH WINDOWS —**

**1** Click **Start**, then 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 a response, 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.

## Error Messages

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

If the error 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.

**drive letter : \ IS NOT ACCESSIBLE. THE DEVICE IS NOT READY** — The drive cannot read the disk. Insert a disk into the drive and try again.

**INSERT BOOTABLE MEDIA** — Insert a bootable floppy disk or CD.

**NOTE:** This system supports an optional USB floppy drive.

**NON-SYSTEM DISK ERROR** — Remove the floppy disk from the drive and restart your computer.

**NOTE:** This system supports an optional USB floppy drive.

**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 may 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 (see "Contacting Dell" on page 112).

## Media Card Reader Problems

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

### **NO DRIVE LETTER IS ASSIGNED —**

When Microsoft Windows XP detects the Media Card Reader, the device is automatically assigned a drive letter as the next logical drive after all other physical drives in the system. If the next logical drive after the physical drives is mapped to a network drive, Windows XP does not automatically assign a drive letter to the Media Card Reader.

To manually assign a drive for the Media Card Reader:

- 1 Right-click **My Computer**, then select **Manage**.
- 2 Select the **Disk Management** option.
- 3 Right-click the corresponding drive letter in the right pane that needs to be changed.
- 4 Select **Drive Letter and Paths**.
- 5 From the drop-down list, select the new drive letter assignment for the Media Card Reader.
- 6 Click **OK** to confirm your selection.

**NOTE:** The Media Card Reader appears as a mapped drive only when it is connected. Each of the four Media Card Reader slots are mapped to a drive even if no media is installed. If you attempt to access the Media Card Reader when no media is inserted, you are prompted to insert media.

## 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*.

**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 —**

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

**IF YOU HAVE PROBLEMS WITH A DELL IEEE 1394 DEVICE —** Contact Dell (see "Contacting Dell" on page 112).

**IF YOU HAVE PROBLEMS WITH A NON-DELL IEEE 1394 DEVICE —** Contact the manufacturer of the IEEE 1394 device.

## 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.
- Reconnect the keyboard cable as shown on the setup diagram for your computer.
- Ensure that the cable is not damaged or frayed and check cable connectors for bent or broken pins. Straighten any bent pins.
- Remove any keyboard extension cables and connect the keyboard directly to the computer.

**TEST THE KEYBOARD** — Connect a properly working keyboard to the computer, then try using the keyboard.

**RUN THE HARDWARE TROUBLESHOOTER** — See "Resolving Software and Hardware Incompatibilities" on page 56.

## 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** — See "Diagnostic Lights" on page 49.

**ENSURE THAT THE POWER CABLE IS FIRMLY CONNECTED TO THE COMPUTER AND TO THE ELECTRICAL OUTLET**

### The computer stops responding

 **NOTICE:** You may 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, and then restart your computer.

## A program stops responding

### END THE PROGRAM —

- 1 Press <Ctrl><Shift><Esc> simultaneously to access the Windows Task Manager.
- 2 Click the **Applications** tab.
- 3 Click to select the program that is no longer responding.
- 4 Click **End Task**.

## A program crashes repeatedly



**NOTE:** Most software 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

### RUN THE PROGRAM COMPATIBILITY WIZARD —

The Program Compatibility Wizard configures a program so that it runs in an environment similar to non-Windows XP operating system environments.

- 1 Click the **Start**, 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, and 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**

## Memory Problems



**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" on page 68).
- Reseat the memory modules (see "Memory" on page 66) to ensure that your computer is successfully communicating with the memory.
- Run the Dell Diagnostics (see "Dell Diagnostics" on page 52).

#### **IF YOU EXPERIENCE OTHER MEMORY PROBLEMS —**

- Reseat the memory modules (see "Memory" on page 66) to ensure that your computer is successfully communicating with the memory.
- Ensure that you are following the memory installation guidelines (see "Installing Memory" on page 68).
- Ensure that the memory you are using is supported by your computer. For more information about the type of memory supported by your computer, see "Memory" on page 66.
- Run the Dell Diagnostics (see "Dell Diagnostics" on page 52).

## **Mouse Problems**



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

**CLEAN THE MOUSE —** See "Mouse" on page 110.

#### **CHECK THE MOUSE CABLE —**

- Ensure that the cable is not damaged or frayed and check cable connectors for bent or broken pins. Straighten any bent pins.
- Remove any mouse extension cables, and connect the mouse directly to the computer.
- Verify that the mouse cable is connected as shown on the setup diagram for your computer.

#### **RESTART THE COMPUTER —**

- 1 Simultaneously press <Ctrl> <Esc> to display the **Start** menu.
- 2 Press <u>, press the up- and down-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 setup diagram.
- 4 Turn on the computer.

**TEST THE MOUSE —** Connect a properly working mouse to the computer, then try using the mouse.

#### **CHECK THE MOUSE SETTINGS —**

- 1 Click **Start**, click **Control Panel**, and then click **Printers and Other Hardware**.
- 2 Click **Mouse**.
- 3 Adjust the settings, as needed.

**REINSTALL THE MOUSE DRIVER —** See "Reinstalling Drivers" on page 55.

**RUN THE HARDWARE TROUBLESHOOTER** — See "Resolving Software and Hardware Incompatibilities" on page 56.

## Network Problems

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

**CHECK THE NETWORK LIGHTS ON THE BACK OF THE COMPUTER** — If the link integrity light is off (see "Controls and Lights" on page 100), no network communication exists. Replace the network cable.

**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.

**RUN THE HARDWARE TROUBLESHOOTER** — See "Resolving Software and Hardware Incompatibilities" on page 56.

## Power Problems

 **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" on page 49.

**IF THE POWER LIGHT IS BLINKING GREEN** — The computer is in standby mode. Press a key on the keyboard, move the mouse, or press the power button 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 in the power connector on the back of the computer and the electrical outlet.
- Bypass power strips, power extension cables, and other power protection devices to verify that the computer turns on properly.
- Ensure that any power strips being used are plugged into an electrical outlet and are turned on.
- 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 (see "System Board Components" on page 65).

**IF THE POWER LIGHT IS STEADY AMBER** — A device may be malfunctioning or incorrectly installed.

- Ensure that the processor cable is securely connected to the system board (see "System Board Components" on page 65).
- Remove and then reinstall all memory modules (see "Memory" on page 66).
- Remove and then reinstall any expansion cards, including graphics cards (see "Cards" on page 70).

**IF THE POWER LIGHT IS BLINKING AMBER** — The computer is receiving electrical power, but an internal power problem may exist.

- Ensure that the voltage selection switch is set to match the AC power at your location (if applicable).
- Ensure that all components and cables are properly installed and securely connected to the system board (see "System Board Components" on page 65).

**ELIMINATE INTERFERENCE** — Some possible causes of interference are:

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

## Printer Problems



**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 (see "Printer Cable" on page 17).

**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 —**

- 1** Click **Start**, 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**, then click the **Ports** tab. For a USB printer, ensure that **Print to the following port(s):** is set to **USB**.

**REINSTALL THE PRINTER DRIVER —** See the printer documentation for information on reinstalling the printer driver.

## Scanner Problems



**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 scanner, contact the scanner's manufacturer.

**CHECK THE SCANNER DOCUMENTATION —** See the scanner documentation for setup and troubleshooting information.

**UNLOCK THE SCANNER —** Ensure that your scanner is unlocked (if the scanner has a locking tab or button).

**RESTART THE COMPUTER AND TRY THE SCANNER AGAIN**

#### **CHECK THE CABLE CONNECTIONS —**

- See the scanner documentation for information on cable connections.
- Ensure that the scanner cables are securely connected to the scanner and the computer.

**VERIFY THAT THE SCANNER IS RECOGNIZED BY MICROSOFT WINDOWS —**

1 Click Start, click Control Panel, and then click Printers and Other Hardware.

2 Click Scanners and Cameras.

If your scanner is listed, Windows recognizes the scanner.

**REINSTALL THE SCANNER DRIVER —** See the scanner documentation for information on reinstalling the scanner driver.

## Sound and Speaker Problems



**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 MP3 and other media players may override the Windows volume setting. Always check to ensure that the volume on the media player(s) has not been turned 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 a sound 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.

**ELIMINATE POSSIBLE INTERFERENCE —** Turn off nearby fans, fluorescent lights, or halogen lamps to check for interference.

**RUN THE SPEAKER DIAGNOSTICS** — See your speaker documentation for more information.

**REINSTALL THE SOUND DRIVER** — See "Reinstalling Drivers" on page 55.

**RUN THE HARDWARE TROUBLESHOOTER** — See "Resolving Software and Hardware Incompatibilities" on page 56.

## No sound from headphones

**CHECK THE HEADPHONE CABLE CONNECTION** — Ensure that the headphone cable is securely inserted into the headphone connector (see "Front and Back View of the Computer" on page 13).

**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



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



**NOTE:** See the monitor documentation for troubleshooting procedures.

### The screen is blank

#### **CHECK THE MONITOR CABLE CONNECTION** —

- Ensure that the monitor cable is connected as shown on the setup diagram for your computer.
- Remove any video extension cables and connect the monitor directly to the computer.
- Swap the computer and monitor power cables to determine if the monitor's power cable is defective.
- Check the connectors 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 lit or blinking, the monitor has power.
- If the power light is off, firmly press the button to ensure that the monitor is turned on.
- If the power light is blinking, press a key on the keyboard or move the mouse to resume normal operation.

**TEST THE ELECTRICAL OUTLET** — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

**CHECK THE DIAGNOSTIC LIGHTS** — See "Diagnostic Lights" on page 49.

## 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.

### **ROTATE THE MONITOR TO ELIMINATE SUNLIGHT GLARE AND POSSIBLE INTERFERENCE**

#### **ADJUST THE WINDOWS DISPLAY SETTINGS** —

- 1 Click **Start**, click **Control Panel**, and then click **Appearance and Themes**.
- 2 Click **Display**, then click the **Settings** tab.
- 3 Adjust **Screen resolution** and **Color quality** settings, as needed.
















# Troubleshooting Tools






## 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 1, 2, 3, and 4 on the front panel (see "Front View" on page 13). When the computer starts normally, the lights flash before turning off. If the computer malfunctions, the sequence of the lights identify the problem.

 **NOTE:** After the computer completes POST, all four lights turn off before booting to the operating system.

Light Pattern	Problem Description	Suggested Resolution
   	The computer is in a normal <i>off</i> condition or a possible pre-BIOS failure has occurred.	<ul style="list-style-type: none"> <li>• Plug the computer into a working electrical outlet (see "Power Problems" on page 43).</li> <li>• If the problem persists, contact Dell (see "Contacting Dell" on page 112).</li> </ul>
   	A possible processor failure has occurred.	Contact Dell (see "Contacting Dell" on page 112).
   	Memory modules are detected, but a memory failure has occurred.	<ul style="list-style-type: none"> <li>• If two or more memory modules are installed, remove the modules (see "Removing Memory" on page 70), then reinstall one module (see "Installing Memory" on page 68) and restart the computer. If the computer starts normally, continue to install additional memory modules (one at a time) until you have identified a faulty module or reinstalled all modules without error.</li> <li>• If available, install properly working memory of the same type into your computer (see "Installing Memory" on page 68).</li> <li>• If the problem persists, contact Dell (see "Contacting Dell" on page 112).</li> </ul>

Light Pattern	Problem Description	Suggested Resolution
	A possible graphics card failure has occurred.	<ul style="list-style-type: none"> <li>• Reseat any installed graphics cards (see "Cards" on page 70).</li> <li>• If available, install a working graphics card into your computer.</li> <li>• If the problem persists or the computer has integrated graphics, contact Dell (see "Contacting Dell" on page 112).</li> </ul>
	A possible floppy drive or hard drive failure has occurred.	Reseat all power and data cables.
	A possible USB failure has occurred.	Reinstall all USB devices and check all cable connections.
	No memory modules are detected.	<ul style="list-style-type: none"> <li>• If two or more memory modules are installed, remove the modules (see "Removing Memory" on page 70), then reinstall one module (see "Installing Memory" on page 68) and restart the computer. If the computer starts normally, continue to install additional memory modules (one at a time) until you have identified a faulty module or reinstalled all modules without error.</li> <li>• If available, install properly working memory of the same type into your computer (see "Installing Memory" on page 68).</li> <li>• If the problem persists, contact Dell (see "Contacting Dell" on page 112).</li> </ul>
	Memory modules are detected, but a memory configuration or compatibility error has occurred.	<ul style="list-style-type: none"> <li>• Ensure that no special requirements for memory module/connector placement exist (see "Memory" on page 66).</li> <li>• Ensure that the memory you are using is supported by your computer (see "Memory" on page 66).</li> <li>• If the problem persists, contact Dell (see "Contacting Dell" on page 112).</li> </ul>

Light Pattern	Problem Description	Suggested Resolution
	<p>A possible expansion card failure has occurred.</p>	<ol style="list-style-type: none"> <li><b>1</b> Determine if a conflict exists by removing an expansion card (not a graphics card) and restarting the computer (see "Cards" on page 70).</li> <li><b>2</b> If the problem persists, reinstall the card that you removed, then remove a different card and restart the computer.</li> <li><b>3</b> Repeat this process for each expansion card installed. If the computer starts normally, troubleshoot the last card removed from the computer for resource conflicts (see "Resolving Software and Hardware Incompatibilities" on page 56).</li> <li><b>4</b> If the problem persists, contact Dell (see "Contacting Dell" on page 112).</li> </ol>
	<p>The system is operating in the quick resume mode. For additional information see "Using Intel® Viiv™ Quick Resume Technology (Optional)" on page 30.</p>	<ul style="list-style-type: none"> <li>• Press the power button.</li> <li>• Move the mouse.</li> <li>• Press any key on the keyboard.</li> <li>• Press any key on the optional MCE remote control.</li> </ul>
	<p>Another failure has occurred.</p>	<ul style="list-style-type: none"> <li>• Ensure that all hard drive and CD/DVD drive cables are properly connected to the system board (see "System Board Components" on page 65).</li> <li>• If there is an error message on your screen identifying a problem with a device (such as the floppy drive or hard drive), check the device to make sure it is functioning properly.</li> <li>• If the operating system is attempting to boot from a device (such as the floppy drive or hard drive), check system setup (see "System Setup" on page 101) to make sure the boot sequence is correct for the devices installed on your computer.</li> <li>• If the problem persists, contact Dell (see "Contacting Dell" on page 112).</li> </ul>

# 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" on page 33 and run the Dell Diagnostics before you contact Dell for technical assistance.



**NOTE:** The Dell Diagnostics only operate on Dell computers.



## Starting the Dell Diagnostics

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



**NOTE:** Keyboard failure may result when a key is held down for extended periods of time. To avoid possible keyboard failure, press and release <F12> in even intervals to open the **Boot Device Menu**.

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 At the **Boot Device Menu**, use the up- and down-arrow keys or press the appropriate number on the keyboard to highlight **Boot to Utility Partition**, and then press <Enter>.  
 **NOTE:** The Quickboot feature changes the boot sequence for the current boot only. Upon restart, the computer boots according to the boot sequence specified in system setup.
- 4 At the Dell Diagnostics **Main Menu**, left-click with the mouse, or press <Tab> and then <Enter>, to select the test you want to run (see "Dell Diagnostics Main Menu" on page 53).  
 **NOTE:** Write down any error codes and problem descriptions exactly as they appear and follow the instructions on the screen.
- 5 After all tests have completed, close the test window to return to the Dell Diagnostics **Main Menu**.
- 6 Close the **Main Menu** window to exit the Dell Diagnostics and restart the computer.

## Dell Diagnostics Main Menu

The following tests can be run from the Dell Diagnostics **Main Menu**:

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

For any problem 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 exactly as it appears and follow the instructions on the screen. If you cannot resolve the problem, contact Dell (see "Contacting Dell" on page 112).



**NOTE:** The Service Tag for your computer is located at the top of each test screen. When contacting Dell support, have your Service Tag ready.

The following tabs provide additional information for tests run from the **Custom Test** or **Symptom Tree** option:

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 any requirements for running the test.
Configuration (Custom Test only)	Displays the 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. <b>NOTE:</b> The device list may not display the names of all the components installed on your computer or all devices attached to your computer.
Parameters (Custom Test only)	Allows you to customize the test, if applicable, by changing the test settings.

# 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 the driver for that device recognizes.

Required drivers are already installed on your computer—no further installation or configuration is needed.

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, then 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 of devices and check for an exclamation point (a circle with a [!]) next to the device name.

If an exclamation point appears next to the device name, you may need to reinstall the driver or install a new driver (see "Reinstalling Drivers" on page 55).

## Reinstalling Drivers



**NOTICE:** The Dell Support website at [support.dell.com](http://support.dell.com) provides approved drivers for your Dell™ computer. If you install drivers obtained from other sources, your computer may not function properly.

### 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 **Start**, then 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, then click **Properties**.
- 7 Click the **Driver** tab.
- 8 Click **Roll Back Driver**.

### Manually Reinstalling Drivers

After copying driver files to your hard drive, you may be required to update the driver manually.



Drivers can be manually updated for any hardware device installed in your computer.

- 1 Click **Start**, then 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 Double-click the type of device for which you are installing the driver.
- 7 Right-click the device for which the driver is being reinstalled, then click **Properties**.
- 8 Click the **Driver** tab.
- 9 Click **Update Driver**.
- 10 Click **Install from a list or specific location (Advanced)**, then click **Next**.
- 11 Click to check **Include this location in the search**, then click **Browse** and navigate to where the driver files are located on your hard drive.
- 12 When the name of the appropriate driver appears, click **Next**.
- 13 Click **Finish** and restart your computer.

If Device Driver Rollback and manually reinstalling the driver do not resolve the problem, use System Restore to return your computer to the operating state that existed before you installed the new driver (see "Using Microsoft Windows XP System Restore" on page 56).

## 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.

- 1 Click **Start**, then click **Help and Support**.
- 2 Type `hardware troubleshooter` in the **Search** field, then 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 then click **Next**.

## Restoring Your Operating System

You can restore your operating system in the following ways:


- Microsoft Windows XP System Restore returns your computer to an earlier operating state without affecting data files.
- Dell PC Restore by Symantec restores your hard drive to the operating state it was in when you purchased the computer. Dell PC Restore permanently deletes all data on the hard drive and removes any applications installed after you received the computer.

 **NOTE:** Dell PC Restore is available only on computers purchased in certain regions.

### 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.


 **NOTE:** The procedures in this document were written for the Windows default view and may not apply if your computer has been set to the Windows Classic view.


### Creating a Restore Point

- 1 Click **Start**, then 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 process is complete.

 **NOTE:** If a problem occurs after you install a device driver, first try to resolve the problem by using Windows XP Device Driver Rollback (see "Using Windows XP Device Driver Rollback" on page 55).


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

 **NOTE:** Calendar dates with available restore points appear in bold. If a calendar date has only one restore point available, that restore point is automatically selected.


- 4 Under **Confirm Restore Point Selection**, click Next.

The System Restore process collects necessary data, then restarts the computer.

- 5 Under **Restoration Complete** (after the computer has restarted), click OK.

 **NOTE:** After your computer has been restored to an earlier operating state, you can repeat the restoration process and use a different restore point, or you can undo the restoration and return the computer to its original operating state.

## Undoing the Last System Restore

 **NOTICE:** Before you undo the most recent 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 process is complete.

- 1 Click Start, point to All Programs→ Accessories→ System Tools, and then click System Restore.
- 2 Ensure that **Undo my last restoration** is selected, then click Next.
- 3 Under **Confirm Restoration Undo**, click Next.


The System Restore process collects necessary data, then restarts the computer.

- 4 Under **Undo Complete** (after the computer has restarted), 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 determine if System Restore is enabled:


- 1 Click **Start**, then click **Control Panel**.
- 2 Under **Pick a Category**, click **Performance and Maintenance**.
- 3 Click **System**.
- 4 In the **System Properties** window, click the **System Restore** tab.
- 5 Ensure that **Turn off System Restore** is unchecked.

 **NOTE:** To disable System Restore, check **Turn off System Restore**.

## Using Dell PC Restore by Symantec


 **NOTE:** Dell PC Restore is available only on computers purchased in certain regions.

Use Dell PC Restore by Symantec only as the last method to restore your operating system. PC Restore restores your hard drive to the operating state it was in when you purchased the computer. Any programs or files added after you received your computer—including data files—are permanently deleted from the hard drive. Data files include documents, spreadsheets, e-mail messages, digital photos, music files, etc. If possible, back up all data before using PC Restore.

 **NOTICE:** Using PC Restore permanently deletes all data on the hard drive and removes any applications or drivers installed after you received your computer. If possible, back up the data before using PC Restore.

To use PC Restore:

- 1 Turn on the computer.  
During the boot process, a blue bar with [www.dell.com](http://www.dell.com) appears at the top of the screen.
- 2 When the blue bar appears, immediately, press <Ctrl><F11>.  
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 On the next screen that appears, click **Restore**.

 **NOTE:** If you wish to exit PC Restore without restoring your operating system, click **Reboot**.

- 4 On the next screen, click **Confirm**.  
The restore process takes approximately 6–10 minutes to complete.

 **NOTICE:** Do not manually shut down the computer. Click **Finish** and let the computer completely reboot.

- 5 When prompted, click **Finish** to reboot the computer.
- 6 When prompted, click **Yes**.

The computer restarts. Because the computer is restored to its original operating state, the screens that appear, such as the End User License Agreement, are the same ones as they appeared the first time the computer was turned on.

- 7 Click **Next**.

The **System Restore** screen appears and the computer restarts.

- 8 After the computer restarts, click **OK**.

### Removing Dell PC Restore



**NOTICE:** Removing Dell PC Restore from the hard drive permanently deletes the PC Restore utility from your computer. After you have removed Dell PC Restore, you will not be able to use it to restore your computer's operating system.

Dell PC Restore enables you to restore your hard drive to the operating state it was in when you purchased your computer. It is recommended that you *do not* remove PC Restore from your computer, even to gain additional hard-drive space. If you remove PC Restore from the hard drive, you can never recall it, and you will not be able to use PC Restore to return your computer's operating system to its original state.

- 1 Log on to the computer as a local administrator.
- 2 In Windows Explorer, go to `c:\dell\utilities\DSR`.
- 3 Double-click the filename **DSRIRRemv2.exe**.



**NOTE:** If you do not log on as a local administrator, a message appears stating that you must log on as administrator. Click **Quit**, and then log on as a local administrator.



**NOTE:** If the partition for PC Restore does not exist on your computer's hard drive, a message appears stating that the partition was not found. Click **Quit**; there is no partition to delete.

- 4 Click **OK** to remove the PC Restore partition on the hard drive.
- 5 Click **Yes** when a confirmation message appears.

The PC Restore partition is deleted and the newly available disk space is added to the free space allocation on the hard drive.

- 6 Right-click **Local Disk (C)** in Windows Explorer, click **Properties**, and verify that the additional disk space is available as indicated by the increased value for **Free Space**.
- 7 Click **Finish** to close the **PC Restore Removal** window.
- 8 Restart the computer.



# Removing and Installing Parts

## Before You Begin

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 "Turning Off Your Computer" on page 61 and "Before Working Inside Your Computer" on page 62.
- You have read the safety information in your Dell™ *Product Information Guide*.
- A component can be replaced or—if purchased separately—installed 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

## Turning 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 **Start**, 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, press and hold the power button for 4 seconds.


## 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 located 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. 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 (see "Turning Off Your Computer" on page 61).


 **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 network cables 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 Remove the computer cover (see "Removing the Computer Cover" on page 62).

 **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.

## Removing the Computer Cover

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

1 Shut down the computer through the Start menu (see "Turning Off Your Computer" on page 61).

 **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.

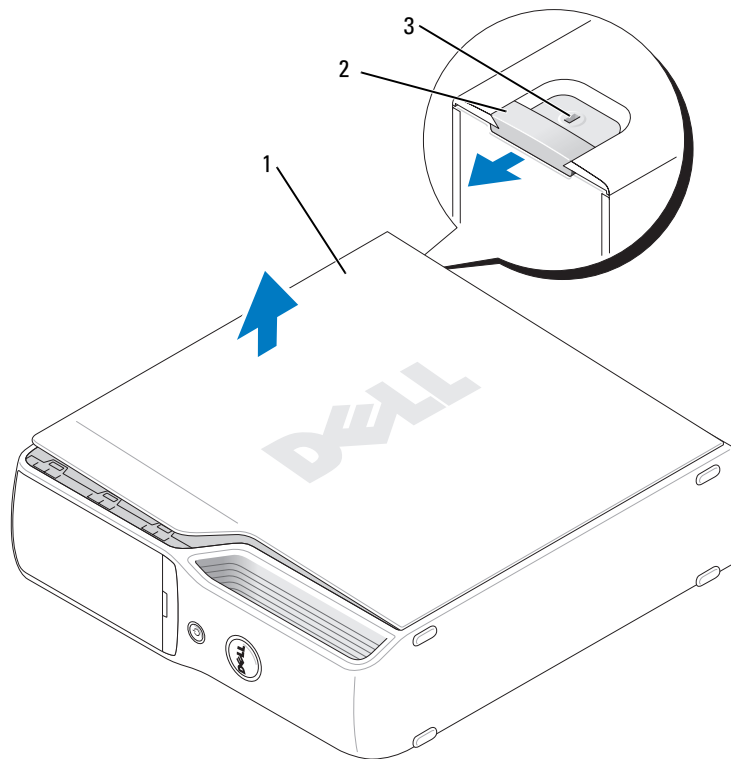
**⚠ CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

**➡ NOTICE:** Ensure that sufficient space exists to support the removed cover—at least 30 cm (1 ft) of desktop space.

**➡ NOTICE:** Ensure that you are working on a level, protected surface to avoid scratching the computer or the surface on which it is resting.

- 4 Lay your computer on its side with the computer cover facing up.

- 5 Pull back the cover release latch on the top panel.



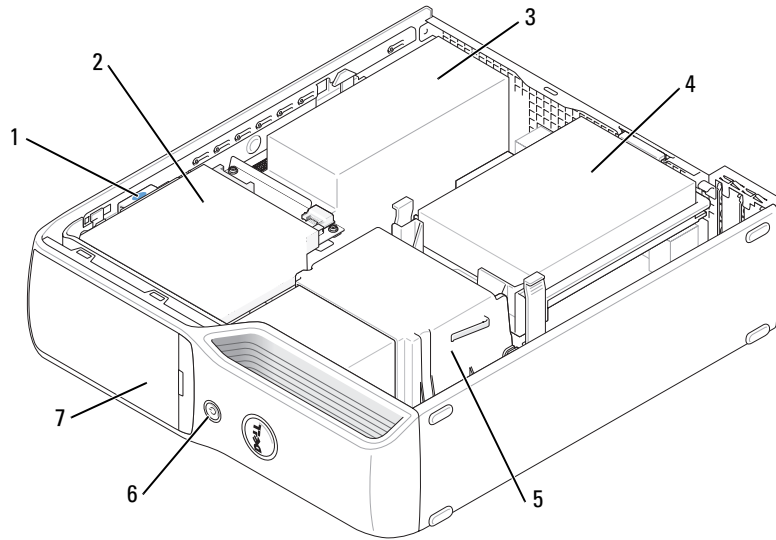
1 computer cover      2 cover release latch      3 security cable slot

- 6 Locate the two hinge tabs on the bottom edge of the computer.
- 7 Grip the sides of the computer cover and pivot the cover up, using the bottom hinges as leverage points.
- 8 Release the cover from the hinge tabs and set it aside in a secure location.

## Inside View of Your Computer

**⚠ 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 drive release latch

4 hard drive

7 front-panel door

2 CD/DVD drive

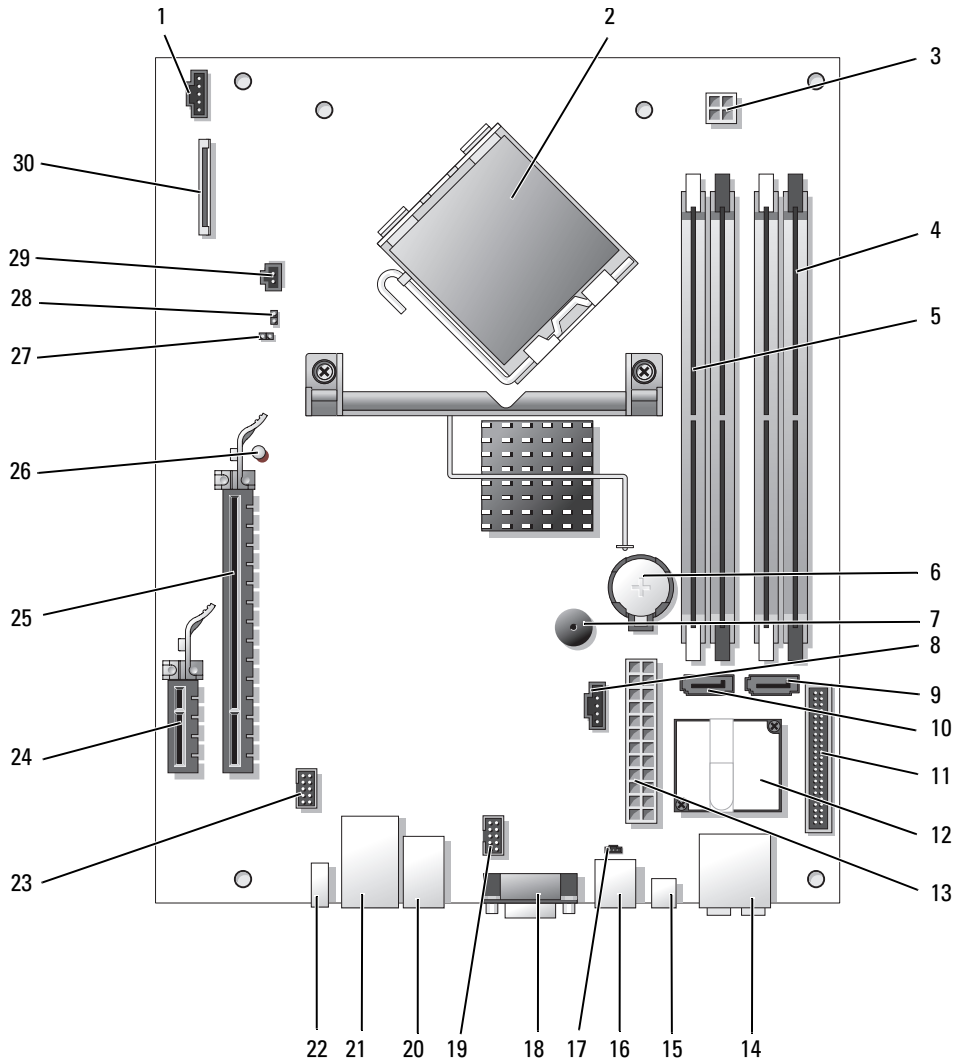
5 heat sink assembly

3 power supply and fan

6 power button



# System Board Components




- |   |  |
|---|--|
| 1 processor fan connector (CPUFAN)  | 16 modem connector (RJ11)                                    |
| 2 processor connector (CPU)   | 17 RJ11 internal connector (RJ11INT)                         |
| 3 processor power connector (POWER12V)                                    | 18 video connector (VGA)                                     |
| 4 memory module connectors (2, 4)   | 19 Media Card Reader connector (USBINT)                      |
| 5 memory module connectors (1, 3)   | 20 USB connectors (4) (USB_BACK)                             |
| 6 battery socket (BATTERY)  | 21 network connector (NIC) and USB connectors (2) (NIC_USB1) |
| 7 internal speaker (SPKR)   | 22 back-panel IEEE 1394 connector (BACK1394)                 |
| 8 hard disk fan connector (HDDFAN)  | 23 IEEE 1394 connector (INT1394)                             |
| 9 hard disk connector (SATA0)   | 24 PCI Express x1 connector (SLOT2)                          |
| 10 CD/DVD connector (SATA1)   | 25 PCI Express x16 connector (SLOT1)                         |
| 11 front-panel connector (FRONT PANEL)                                    | 26 standby LED (STBYLED)                                     |
| 12 modem  | 27 password jumper (CLRPSWD)                                 |
| 13 power connector (POWER)  | 28 RTC reset jumper (CLRCMOS)                                |
| 14 line-in, line-out, microphone, center, and LFE connectors (AUDIOBACK1) | 29 temperature connector (THRM)                              |
| 15 S/PDIF audio connector (SPDIF)   | 30 floppy drive connector (FLOPPY)                           |

## Memory

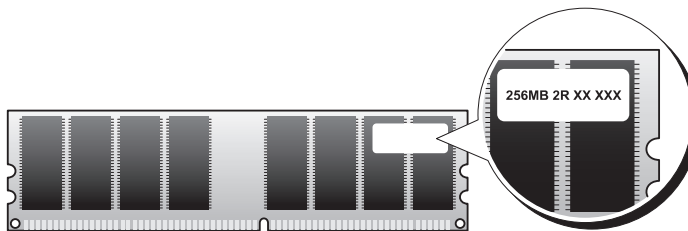
You can increase your computer memory by installing memory modules on the system board.


Your computer supports unbuffered, non-ECC, DDR2 memory.

 **NOTE:** Buffered memory is not supported on this computer.

### DDR2 Memory Overview

DDR2 memory modules should be installed in *pairs of matched memory size, speed, and technology*. If the DDR2 memory modules are not installed in matched pairs, the computer will continue to operate, but with a slight reduction in performance. See the label on the module to determine the module's capacity.



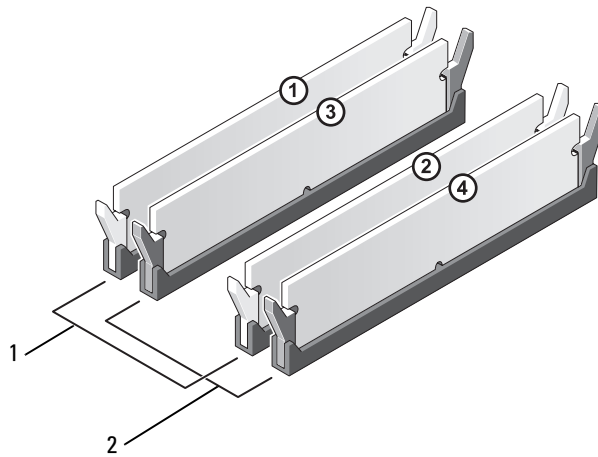
 **NOTE:** Always install DDR2 memory modules in the order indicated on the system board.

The recommended memory configurations are:

- A pair of matched memory modules installed in DIMM connectors 1 and 2 (white securing clips)  
or
- A pair of matched memory modules installed in DIMM connectors 1 and 2 and another matched pair installed in DIMM connectors 3 and 4 (black securing clips)

**➔ NOTICE:** Do not install ECC memory modules.

- If you install mixed pairs of DDR2 800-MHz (PC2-6400) and DDR2 533-MHz (PC2-4300) memory, the modules function at the speed of the slowest module 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.



1 matched pair of memory modules in DIMM connectors 1 and 2 (white securing clips)

2 matched pair of memory modules in DIMM connectors 3 and 4 (black securing clips)

**➔ 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 DIMM connectors 1 and 2 or DIMM connectors 3 and 4.

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

## Addressing Memory With 4-GB Configurations

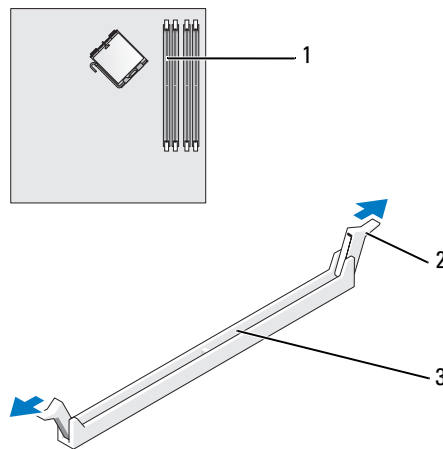
Your computer supports a maximum of 4 GB of memory when you use two 2-GB DIMMs. Current operating systems, such as Microsoft® Windows® XP, can use a maximum of 4 GB of address space; however, the amount of memory available to the operating system is less than 4 GB. Certain components within the computer require address space in the 4-GB range. Any address space reserved for these components cannot be used by computer memory.

## Installing Memory

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

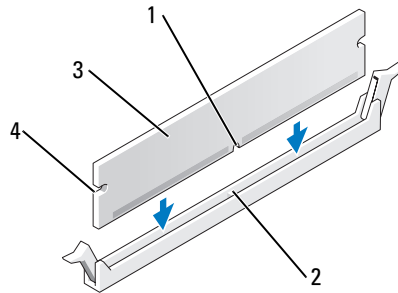
**➡ NOTICE:** To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.

- 1 Follow the procedures in "Before You Begin" on page 61.
- 2 Remove the CD/DVD drive (see "Removing a CD/DVD Drive" on page 81).
- 3 Remove the optional Media Card Reader or optional floppy drive, (see "Removing a Media Card Reader" on page 85 or "Removing a Floppy Drive" on page 89) if installed.
- 4 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

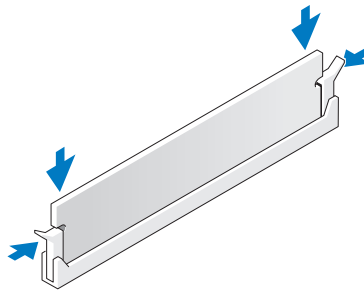
- 5 Align the notch on the bottom of the module with the crossbar in the connector.



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

**➔ 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.

- 6 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.



- 7 Replace the computer cover, (see "Replacing the Computer Cover" on page 96).

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

- 8 Connect your computer and devices to electrical outlets, and turn them on.
- 9 Right-click the **My Computer** icon and click **Properties**.
- 10 Click the **General** tab.
- 11 To verify that the memory is installed correctly, check the amount of memory (RAM) listed.

## 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 chassis.

- 1 Follow the procedures in "Before You Begin" on page 61.
- 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.

## Cards

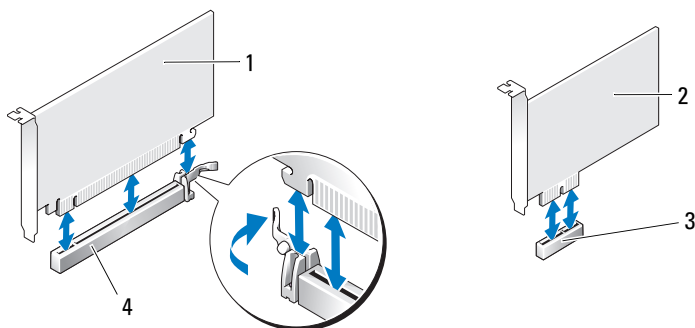
**⚠ CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions located in the *Product Information Guide*.

**➡ 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 chassis.

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

- One PCI Express x16 card slot
- One PCI Express x1 card slot

**🔧 NOTE:** The slots for the PCI Express x16 and PCI Express x1 cards are half-height slots.



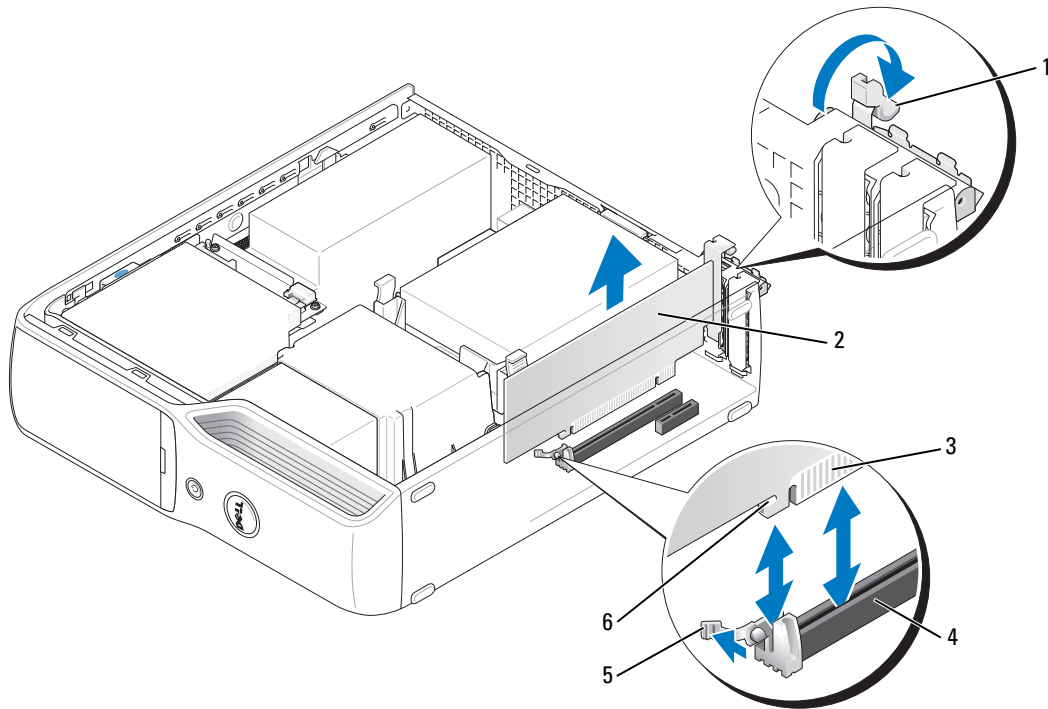
- |   |                          |   |                           |
|---|--------------------------|---|---------------------------|
| 1 | PCI Express x16 card     | 2 | PCI Express x1 card       |
| 3 | PCI Express x1 card slot | 4 | PCI Express x16 card slot |

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" on page 74.

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

### Installing a PCI Express Card

- 1 Follow the procedures in "Before You Begin" on page 61.
- 2 Gently push the release tab on the card retention door from the inside to pivot the door open. Because the door is attached, it will remain in the open position.



- |   |                   |   |                  |   |                |
|---|-------------------|---|------------------|---|----------------|
| 1 | retention arm tab | 2 | PCI Express card | 3 | edge connector |
| 4 | card connector    | 5 | securing tab     | 6 | securing slot  |

- 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.

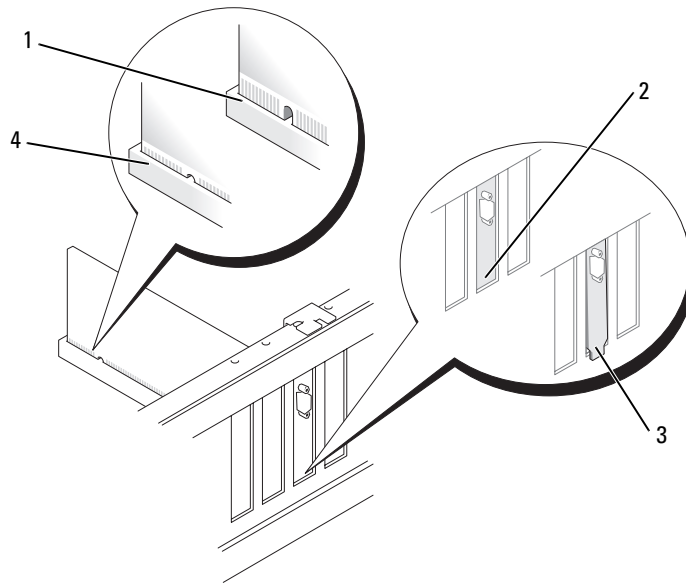


**CAUTION: Some network adapters automatically start the computer when they are connected to a network. To guard against electrical shock, be sure to unplug your computer from its electrical outlet before installing any cards.**

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

7 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.

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



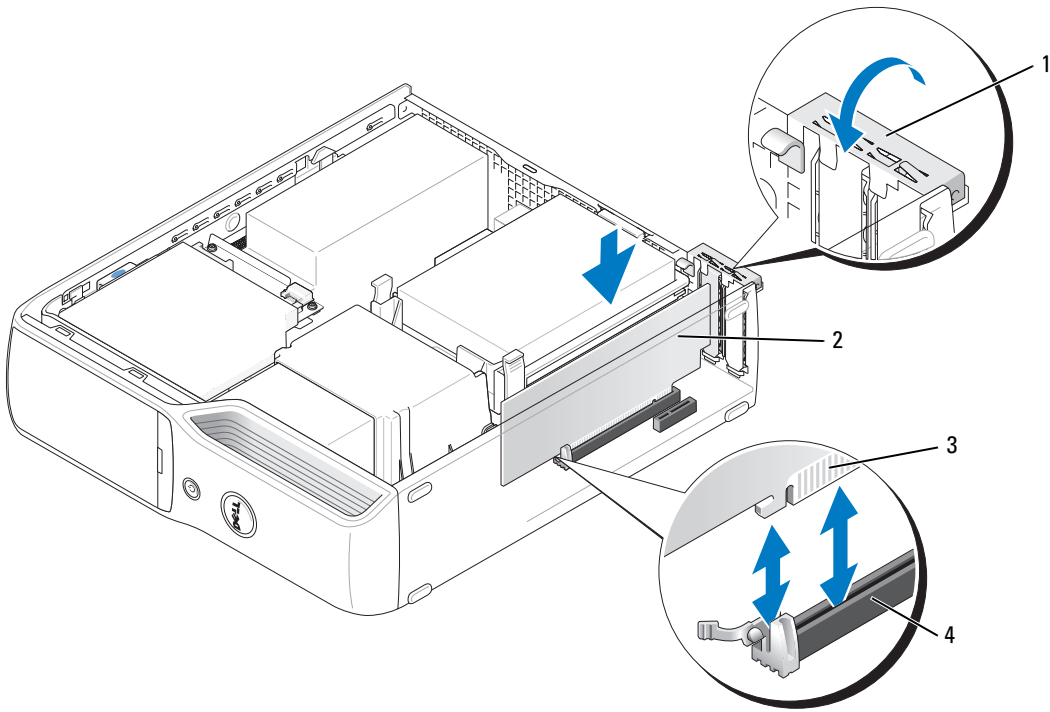
- |   |                                |   |                     |
|---|--------------------------------|---|---------------------|
| 1 | card not fully seated          | 2 | bracket within slot |
| 3 | bracket caught outside of slot | 4 | card fully seated   |

9 Before you close the card retention door, 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 Close the card retention door by snapping it into place.



- |   |                |   |                  |
|---|----------------|---|------------------|
| 1 | retention arm  | 2 | PCI Express card |
| 3 | edge connector | 4 | card connector   |

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

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


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

12 Replace the computer cover (see "Replacing the Computer Cover" on page 96), reconnect the computer and devices to electrical outlets, and then turn them on.

13 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" on page 61.
- 2 If necessary, disconnect any cables connected to the card.
- 3 Gently pull back the securing tab, grasp the card by its top corners, and then ease it out of its connector.
- 4 If you are removing the card permanently, install a filler bracket in the empty card-slot opening.

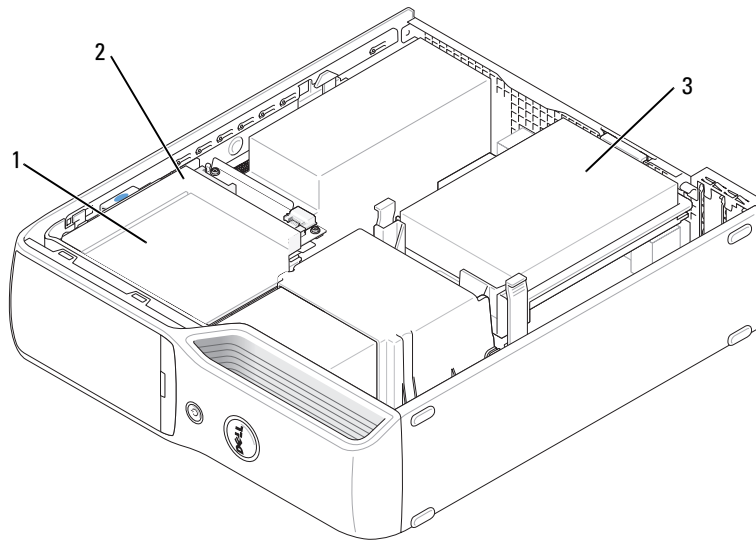
 **NOTE:** Installing filler brackets over empty card-slot openings is necessary to maintain FCC certification of the computer. The brackets also keep dust and dirt out of your computer.

- 5 Replace the computer cover (see "Replacing the Computer Cover" on page 96), reconnect the computer and devices to electrical outlets, and then turn them on.
- 6 Uninstall the card's driver.

## Drives

Your computer supports a combination of these devices:

- One SATA (serial ATA) drive
- One FlexBay drive (optional floppy drive or Media Card Reader)
- One CD or DVD drive



- 1 FlexBay for optional floppy drive or Media Card Reader (under CD/DVD drive)      2 CD/DVD drive      3 hard drive

Connect a SATA optical drive to the connector labeled "SATA1" on the system board. A serial ATA hard drive should be connected to the connector labeled "SATA0 (blue connector)" on the system board.

## Connecting Drive Cables

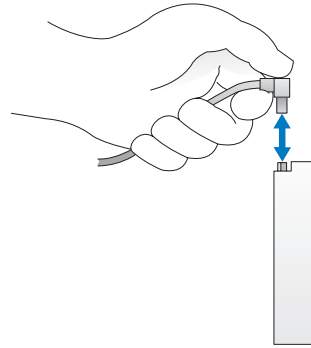
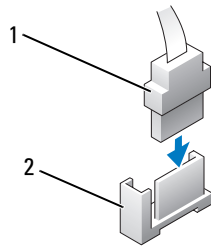
When you install a drive, you connect two cables—a DC power cable and a data cable—or a single interface cable to the back of the drive and to the system board.

### Drive Interface Connectors

Most interface 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. Serial ATA cables go to the pin-1 end of the connector. The pin-1 end of a connector on a board or a card is usually indicated by a silk-screened “1” printed directly on the board or card.

**➔ NOTICE:** When you connect a SATA interface cable, do not place the colored stripe away from pin 1 of the connector. Reversing the cable prevents the drive from operating and could damage the controller, the drive, or both.

#### Serial ATA Connector

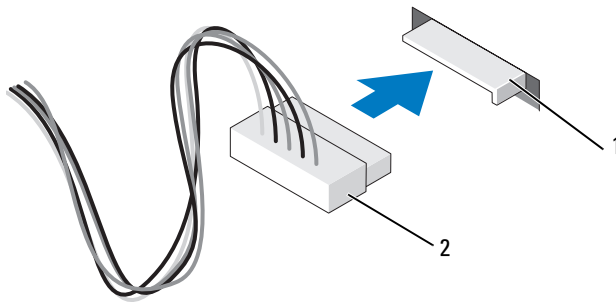


1 SATA interface cable

2 interface connector

### Power Cable Connector

To connect a drive using the power cable, locate the power input connector on the system board.

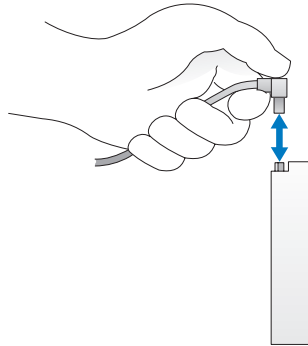


1 power input connector

2 power cable connector

## Connecting and Disconnecting Drive Cables

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



## Hard Drive

**⚠ 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 removing the cover.

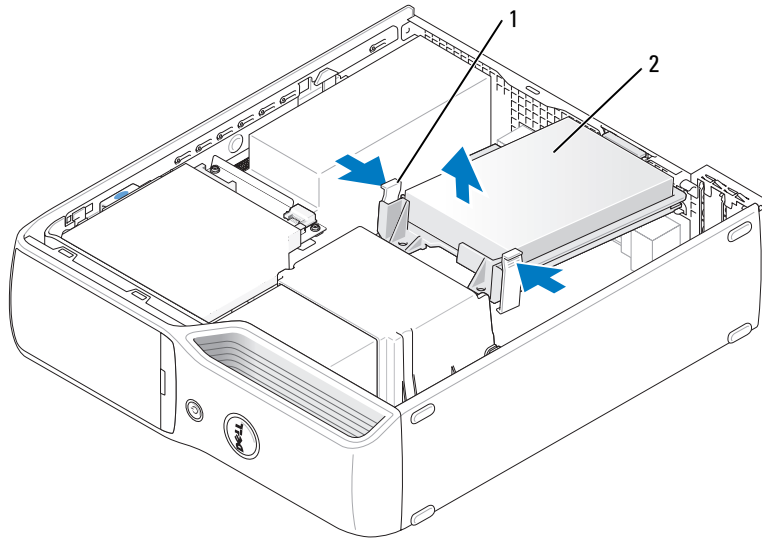
**➡ NOTICE:** To avoid damage to the drive, do not set it on a hard surface. Instead, set the drive on a surface, such as a foam pad, that will sufficiently cushion it.

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

Check the documentation for the drive to verify that it is configured for your computer.

### Removing a Hard Drive

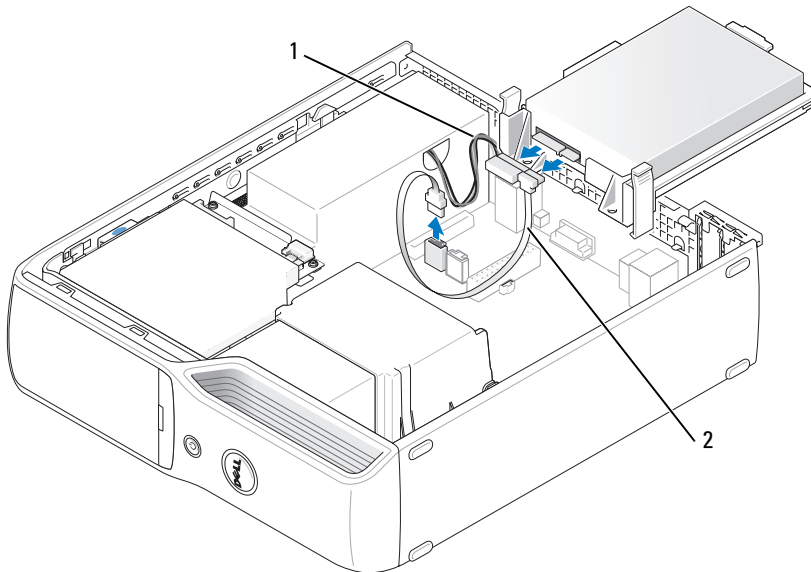
- 1 Follow the procedures in "Before You Begin" on page 61.
- 2 Press in on the blue tabs on each side of the drive and slide the drive up and out of the computer.



1 tabs (2) 2 hard drive

➔ **NOTICE:** Do not pull the drive out of the computer by the drive cables. Doing so may cause damage to cables and the cable connectors.


- 3 Lift the drive out of the computer and disconnect the power and hard-drive cables from the drive.

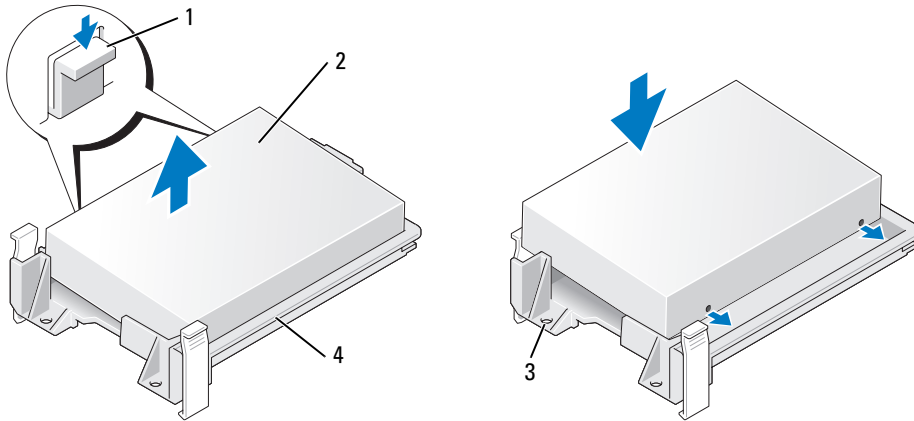


1 power cable 2 hard drive cable or serial ATA data cable

## 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.

 **NOTE:** If your replacement hard drive does not have the plastic guide bracket attached, remove the bracket from the old drive by unsnapping it from the drive. Snap the bracket onto the new drive.



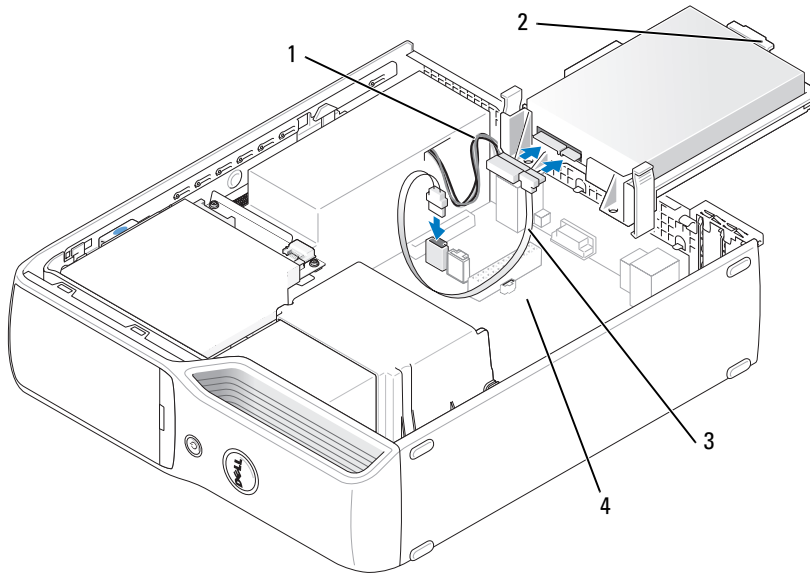
1 tabs (2)

3 drive screw holes

2 drive

4 drive bracket


3 Connect the power cable and hard-drive or SATA cable to the drive.

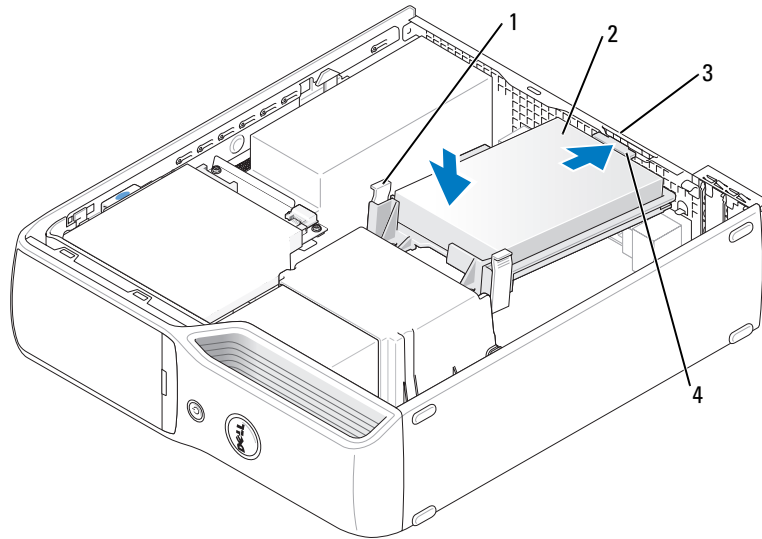


- |   |   |   |                          |
|---|---|---|--------------------------|
| 1 | power cable                               | 2 | hard drive plastic latch |
| 3 | hard drive cable or serial ATA data cable | 4 | open bay                 |

4 Check all connectors to be certain that they are properly cabled and firmly seated.

5 Gently slide the drive into the open bay until the hard drive plastic latch attaches to the hard drive holder on the chassis.

 **NOTE:** The plastic latch fits into a small rectangular hole on the chassis. The rectangular hole is larger than the other small holes on the back of the chassis.



- |   |                                  |   |                          |
|---|----------------------------------|---|--------------------------|
| 1 | tabs (2)                         | 2 | hard drive               |
| 3 | hard drive holder on the chassis | 4 | hard drive plastic latch |

**6** Align the drive screw holes with the screws projecting up on the heat sink holder.

**7** Firmly press on the blue tab on each side of the drive until you hear a click.

**8** Replace the computer cover ("Replacing the Computer Cover" on page 96).

**➔ 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.



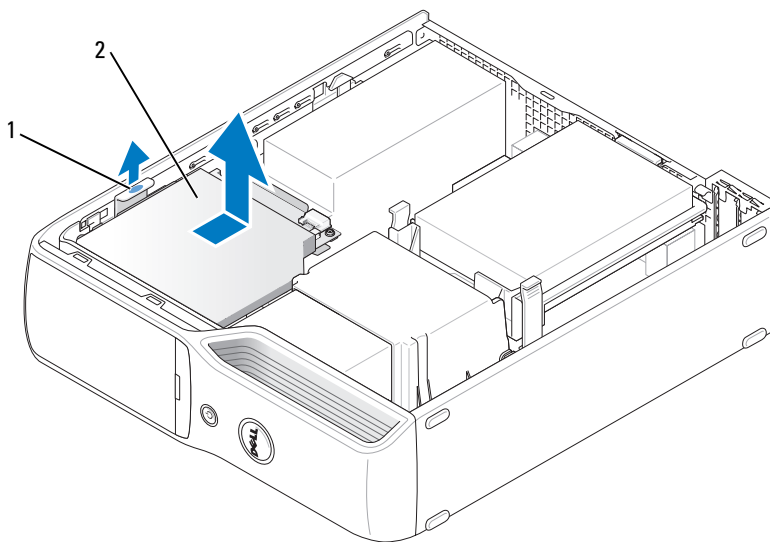
## CD/DVD Drive

**⚠ 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 removing the computer cover.

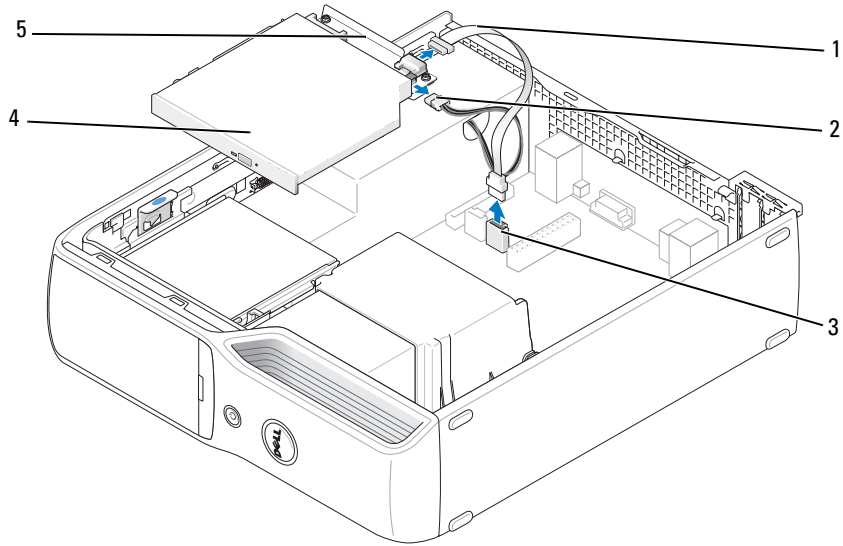
### Removing a CD/DVD Drive

- 1 Follow the procedures in "Before You Begin" on page 61.
- 2 Lay the computer on its side so that the system board is on the bottom of the inside of the computer.
- ➡ NOTICE:** Do not pull the drive out of the computer by the drive cables. Doing so may cause damage to cables and the cable connectors.
- 3 Pull up on the drive release latch and slide the drive towards the back of the computer.
- 4 Carefully, so as not to damage the attached interface cable, lift the drive away from the computer.



1 drive release latch      2 CD/DVD drive

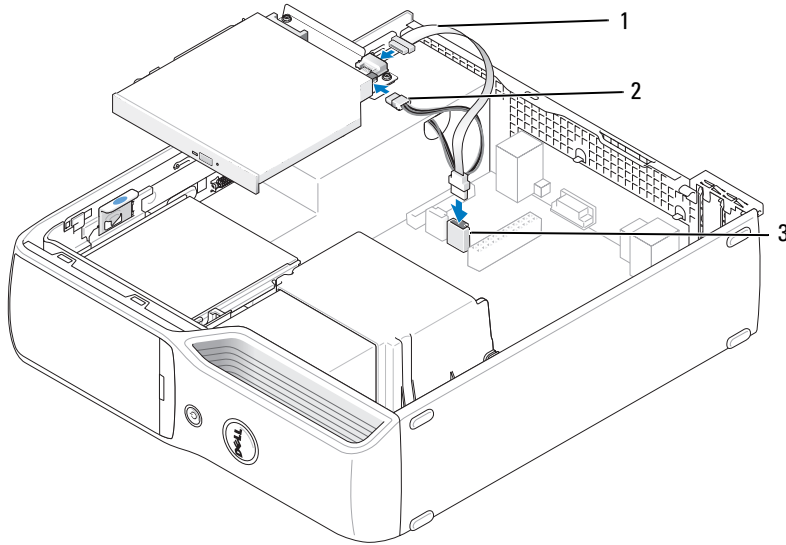
- 5 Disconnect the data cable from the system board connector.
- 6 Disconnect the power cable and data cable from the back of the drive.



- |   |              |   |                      |   |                        |
|---|--------------|---|----------------------|---|------------------------|
| 1 | data cable   | 2 | power cable          | 3 | system board connector |
| 4 | CD/DVD drive | 5 | CD/DVD drive bracket |   |                        |

## Installing a CD/DVD Drive

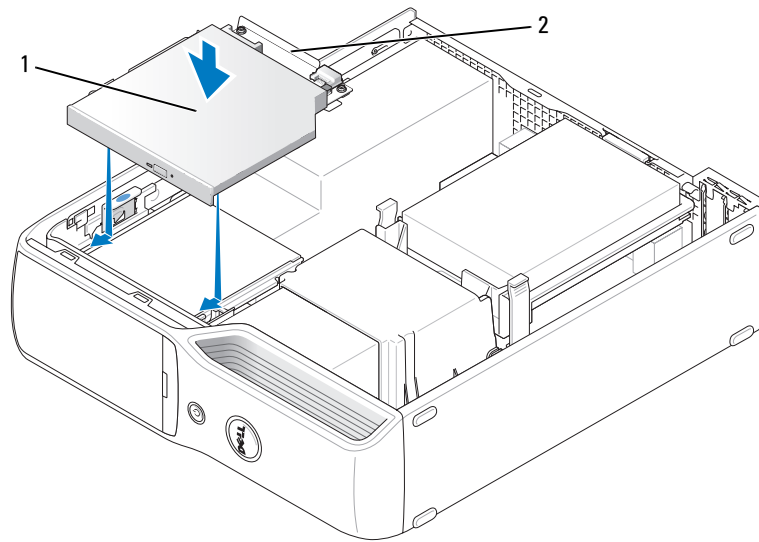
- 1 Unpack the drive and prepare it for installation.  
Check the documentation that accompanied the drive to verify that the drive is configured for your computer.
- 2 Connect the power and data cables to the drive.



1 data cable    2 power cable    3 system board connector

- 3 Connect the data cable to the system board connector on the system board.

- 4 Gently position the drive until it clicks into place.



1 CD/DVD drive    2 CD/DVD drive bracket

- 5 Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.
- 6 Replace the computer cover (see "Replacing the Computer Cover" on page 96).
- 7 Connect your computer and devices to their electrical outlets, and turn them on.
- 8 See the documentation that came with the drive for instructions on installing any software required for drive operation.
- 9 Enter system setup (see "System Setup" on page 101) and select the appropriate **Drive** option.
- 10 Verify that your computer works correctly by running the Dell Diagnostics (see "Dell Diagnostics" on page 52).

## Media Card Reader

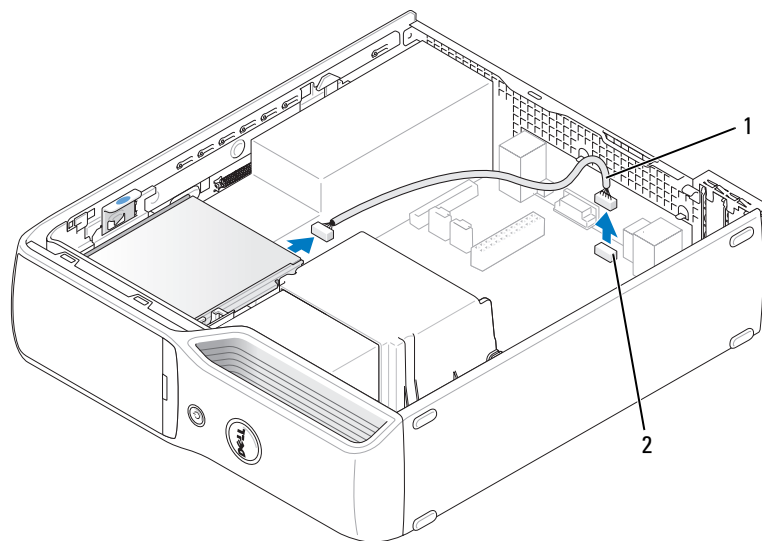
For information about using the Media Card Reader, see "Using a Media Card Reader (Optional)" on page 18.

**⚠ 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 chassis.

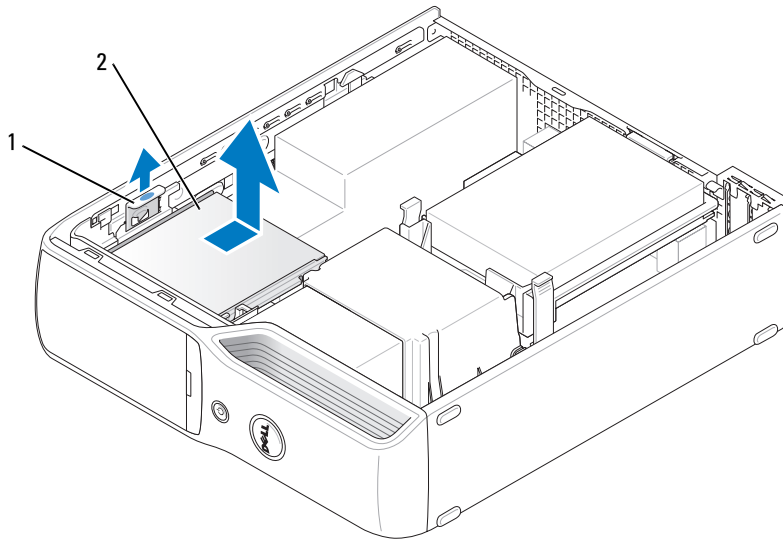
### Removing a Media Card Reader

- 1 Follow the procedures in "Before You Begin" on page 61.
- 2 Remove the CD/DVD drive (see "Removing a CD/DVD Drive" on page 81).
- 3 Remove the hard drive (see "Removing a Hard Drive" on page 76).
- 4 Disconnect the interface cable from the back of the Media Card Reader and from the Media Card Reader connector on the system board (see "System Board Components" on page 65).



1 interface cable    2 Media Card Reader connector

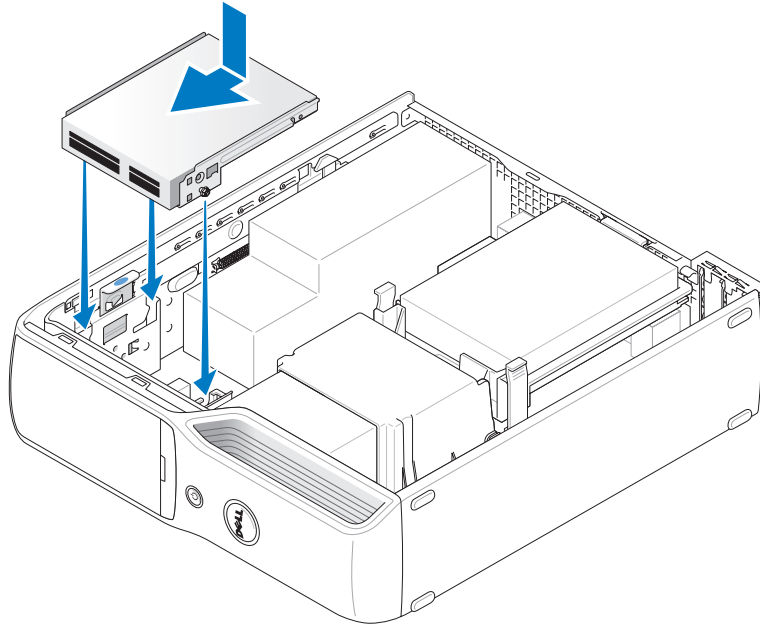
- 5 Pull up on the drive release latch and slide the Media Card Reader towards the back of the computer, then lift to remove the drive from the computer.



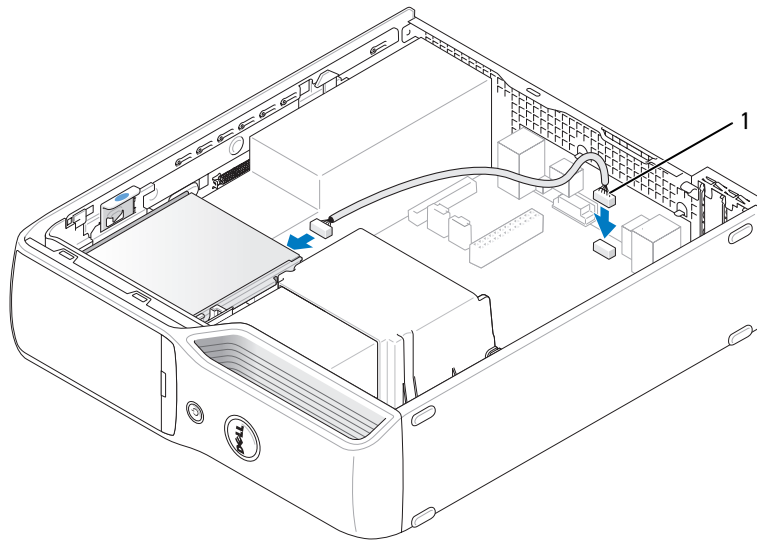
1 drive release latch    2 Media Card Reader

## Installing a Media Card Reader

- 1 Follow the procedures in "Before You Begin" on page 61.
- 2 Remove the Media Card Reader from its packaging.
- 3 Slide the drive into place until you hear a click or feel the drive securely installed.



- 4 Connect the interface cable to the back of the Media Card Reader and to the Media Card Reader connector on the system board.



1 interface cable

- 5 Replace the CD/DVD drive (see "Installing a CD/DVD Drive" on page 83).
- 6 Replace the hard drive (see "Installing a Hard Drive" on page 78).
- 7 Replace the computer cover (see "Replacing the Computer Cover" on page 96).
- ➔ **NOTICE:** To connect a network cable, first plug the cable in to the network device 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 (see "System Setup" on page 101) and select the appropriate **Drive** option.
- 10 Verify that your computer works correctly by running the Dell Diagnostics (see "Dell Diagnostics" on page 52).



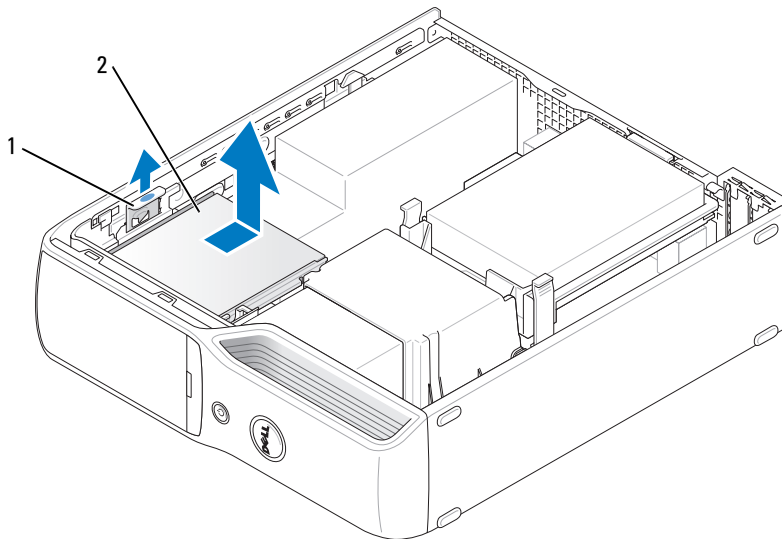
## Floppy Drive (Optional)

 **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 removing the cover.


### Removing a Floppy Drive

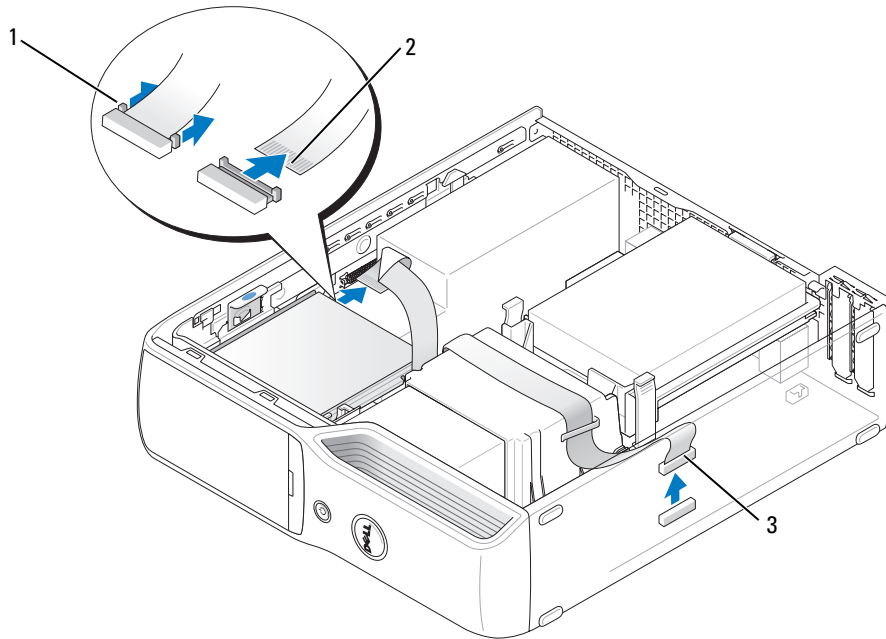
- 1 Follow the procedures in "Before You Begin" on page 61.
- 2 Remove the CD/DVD drive (see "Removing a CD/DVD Drive" on page 81).
- 3 Pull up on the drive release latch and slide the drive toward the back of the computer.
- 4 Carefully, so as not to damage the attached interface cable, lift the drive away from the computer.



1 drive release latch    2 floppy drive


5 Disconnect the interface cable from the system board (see "System Board Components" on page 65).

 **NOTE:** The interface cable is held in place by the metal drive bracket and does not need to be removed from the drive.

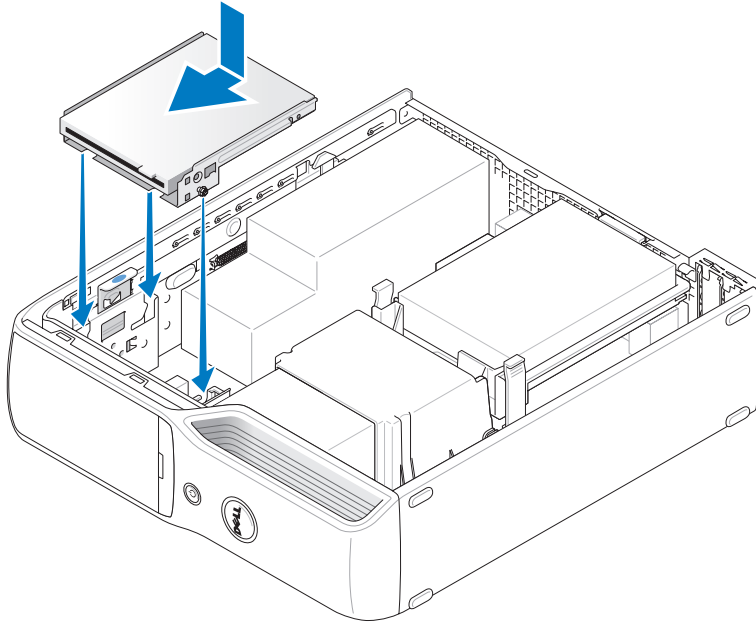


1 cable release tab    2 interface cable edge connector    3 interface cable

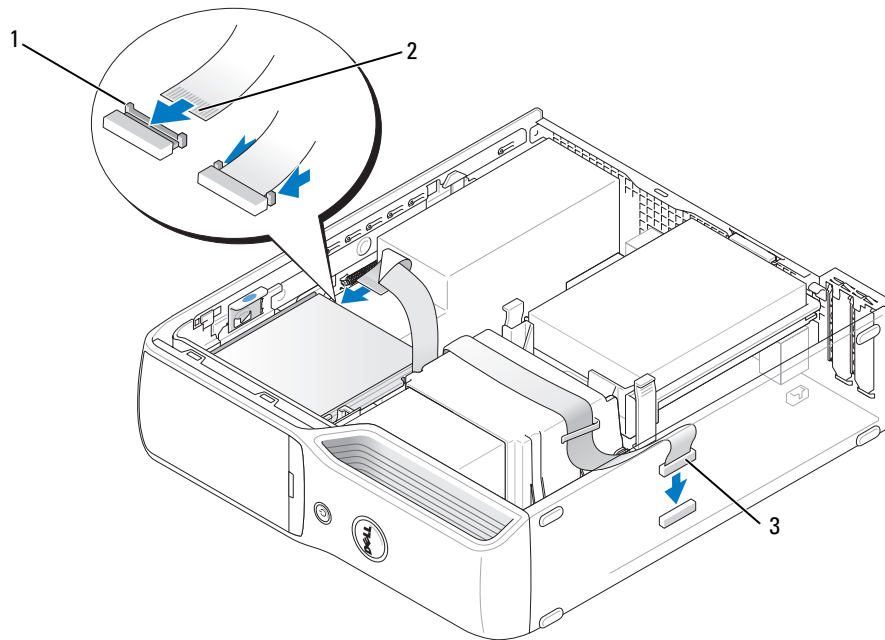
## Installing a Floppy Drive

 **NOTE:** The interface cable is held in place by the metal drive bracket and does not need to be removed from the drive.

- 1 Follow the procedures in "Before You Begin" on page 61.
- 2 Gently slide the drive into place until you hear a click or feel the drive securely installed.



- 3 Attach the interface cable to the system board (see "System Board Components" on page 65).



1 cable release tab    2 interface cable edge connector    3 interface cable

- 4 Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.
- 5 Replace the CD/DVD drive (see "Installing a CD/DVD Drive" on page 83).
- 6 Replace the computer cover (see "Replacing the Computer Cover" on page 96).
- NOTICE:** To connect a network cable, first plug the cable in to the network device and then plug it in to the computer.
- 7 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.
- 8 Enter system setup (see "System Setup" on page 101) and select the appropriate **Diskette Drive** option.
- 9 Verify that your computer works correctly by running the Dell Diagnostics (see "Dell Diagnostics" on page 52).

# Modem

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

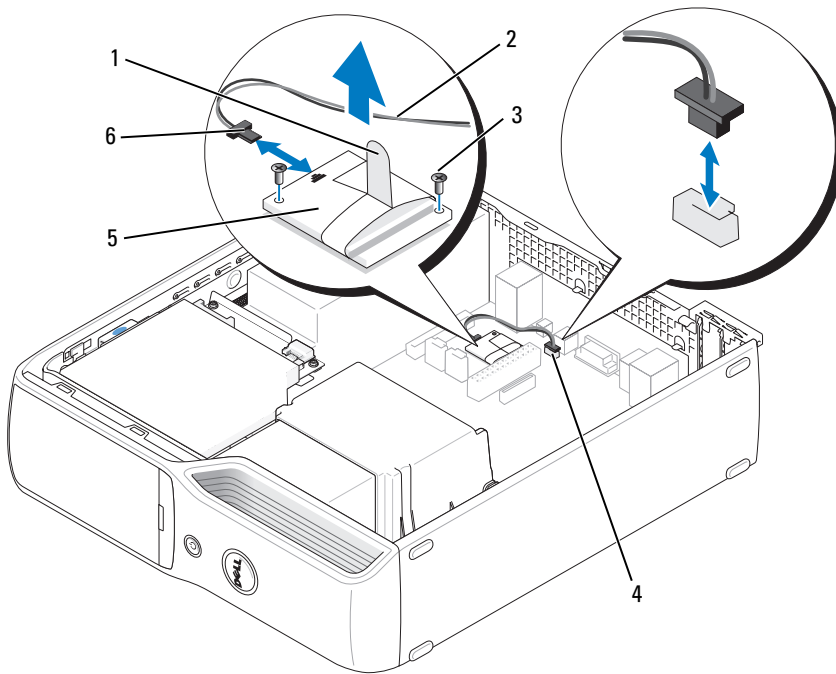
**NOTICE:** Before you remove or install the modem, make sure to disconnect all telephone and network cables from your computer.

**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 chassis.


## Replacing the Modem

1 Follow the procedures in "Before You Begin" on page 61.

**NOTE:** For easier access to the modem, it may be necessary to remove the power cable from the power connector on the system board (see "System Board Components" on page 65).




- |   |                                   |   |             |   |  |
|---|-----------------------------------|---|-------------|---|--|
| 1 | pull tab                          | 2 | modem cable | 3 | screws (2)                                     |
| 4 | RJ11 internal connector (RJ11INT) | 5 | modem       | 6 | T-shaped connector attached to the modem cable |

- 2 Remove the existing modem:
    - a Remove the modem cable from the RJ11 internal connector.
    - b Use a small Phillips screwdriver to remove the two screws securing the modem to the system board, and set the screws aside.
    - c Pull straight up on the attached pull-tab to lift the modem out of its connector on the system board.
    - d Remove the modem cable from the modem.
  - 3 Install the new modem:
    - a Replace the T-shaped connector of the modem cable to the modem.
    - b Align the modem with the screw holes and press the modem into its connector on the system board.
-  **NOTICE:** The connectors are keyed to ensure correct insertion. If you feel resistance, check the connectors and realign the card.
- c Use a Phillips screwdriver to replace and tighten the two screws that secure the modem to the system board.
  - d Replace the other end of the modem cable to the RJ11 internal connector.
- 4 Replace the computer cover (see "Replacing the Computer Cover" on page 96).

## 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 chassis.

A coin-cell battery maintains computer configuration, date, and time information. The battery can last several years. If you have to repeatedly reset time and date information after turning on the computer, replace the battery.

 **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.

### Replacing the Battery

 **NOTE:** For information regarding the type of coin-cell battery, see "Power" on page 100.

- 1 Record all the screens in system setup (see "System Setup" on page 101) so that you can restore the correct settings in step 9.
- 2 Follow the procedures in "Before You Begin" on page 61.

3 Remove the computer cover (see "Removing the Computer Cover" on page 62).

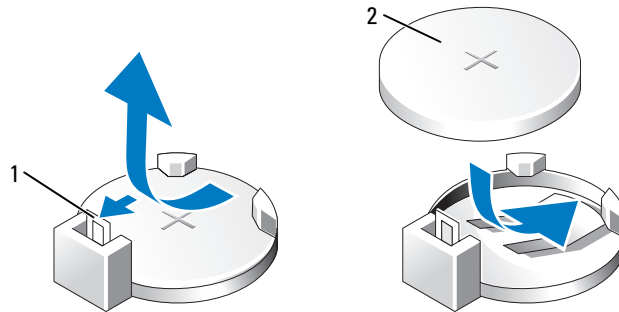
4 Locate the battery socket (see "System Board Components" on page 65).

**→ 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.

5 Remove the system battery.

a Press the battery release lever to raise the battery up at a slight angle.

b While supporting the battery connector, pry the battery up out of its securing tabs.



1 battery release lever      2 battery (positive side)

**→ NOTICE:** To avoid damage to the battery connector, you must firmly support the connector while installing or removing a battery.

6 Hold the battery with the "+" facing up, and press the battery straight down into the connector until it snaps into place.

7 Replace the computer cover (see "Replacing the Computer Cover" on page 96).

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

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

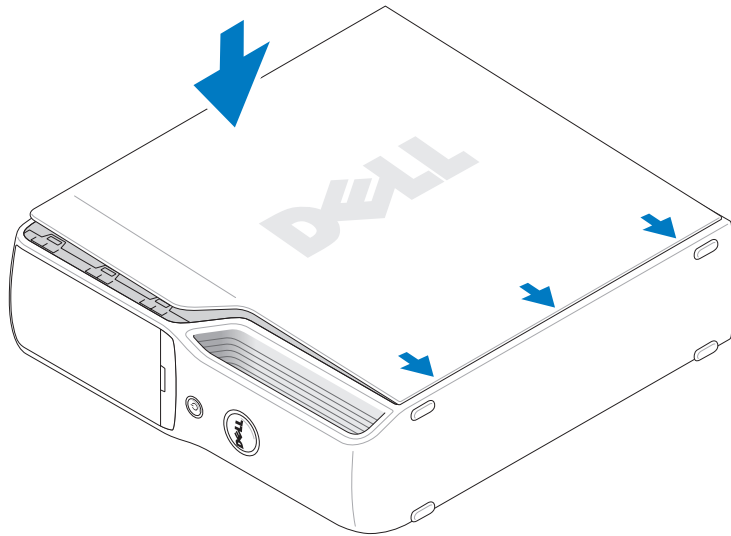
9 Enter system setup (see "System Setup" on page 101) and restore the settings you recorded in step 1.

10 Properly dispose of the old battery. See the *Product Information Guide* for battery disposal information.

## Replacing the Computer Cover

**⚠ 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 Install the cover:
  - a Align the bottom of the cover with the tabs located along the bottom of edge of the computer.
  - b Using the tabs as leverage, rotate the cover downward.



- c Snap the cover into place by pulling back on the cover release latch, and then releasing the latch when the cover is properly seated.
- d Ensure that the cover is seated correctly before moving the computer to the upright position.

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

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



# Specifications

<b>Processor</b>	
Processor types	Intel® Pentium® 4, Pentium® D, Celeron® D, Intel Core™ processor
Level 2 (L2) cache	1 MB for Pentium 4 5XX processors (with Hyper Threading) 2 MB for Pentium 4 6XX processors (with Hyper Threading) 2 x 2 MB for Pentium D 9XX processors (with dual core) 2 x 1 MB for Pentium D 8XX processors (with dual core) 256K for Celeron® D 3XX processors 2 MB for Intel Core™ E6400 processors and earlier 4 MB for Intel Core™ E6600 processors and later
<b>Memory</b>	
Type	533-, 667-, and 800- MHz DDR2
Memory connectors	four
Memory capacities	256 MB, 512 MB, 1 GB, or 2 GB
Minimum memory	256 MB
Maximum memory	4 GB <b>NOTE:</b> See "Addressing Memory With 4-GB Configurations" on page 68 to verify the amount of memory available to the operating system.
BIOS address	F0000h
<b>Computer Information</b>	
Chipset	Intel G965 Express
DMA channels	eight
Interrupt levels	24
BIOS chip (NVRAM)	4 Mb
NIC	Integrated network interface capable of 10/100-Mbps communication
System clock	533-, 800- or 1066- MHz data rate (depending on your processor)

<b>Video</b>	
Type	integrated Intel Graphics Media Accelerator X3000 or PCI Express x16 graphics expansion slot
<b>Audio</b>	
Type	Internal 7.1 channel Intel High Definition Audio (Sigmatel STAC9227)
<b>Expansion Bus</b>	
Bus type	PCI Express x1 and x16
Bus speed	PCI Express: x1 slot bidirectional speed: 500 MB/sec x16 slot bidirectional speed: 8 GB/sec
PCI Express:	
connector	one x1
connector size	36 pins
connector data width (maximum)	one PCI Express lane
PCI Express:	
connector	one x16
connector size	164 pins
connector data width (maximum)	16 PCI Express lanes
<b>Drives</b>	
Externally accessible	one slimline 3.5-inch media bay one slimline 5.25-inch drive bay
Available devices	Serial ATA drive, USB memory devices, floppy drive, CD drive, DVD drive, DVD+RW drive, DVD/CD-RW combo drive, DVD+/-RW drive, and Media Card Reader
Internally accessible	one bay for 1-inch high hard drive
<b>Connectors</b>	
External connectors:	
IEEE 1394	one 6-pin powered back-panel connector one 6-pin powered front-panel connector
Video	15-hole D-SUB connector

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## Connectors

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USB	10-pin header for optional Media Card Reader (3.5 inch bay device) and two front-panel and six back-panel USB 2.0-compliant connectors <b>NOTE:</b> The 10-pin header connector used for the optional Media Card Reader is populated with only nine pins for keying purposes.
Audio	six back-panel connectors for line-in, line-out/headphone, rear surround sound, microphone, side surround sound, and center/Low Frequency Effects (LFE) channel back-panel S/PDIF connector front-panel miniature headphone connector for line-out front-panel microphone connector
Network adapter	RJ45 connector
Modem	RJ11 (MDC 1.5) connector and internally accessible 3-pin header that connects the modem to RJ11
Temperature Sensor	one 2-pin connector
System board connectors:	
Serial ATA	two 7-pin connectors
Fan	two 5-pin connectors (one for the CPU fan and one for the optional hard disk fan connector.)
PCI Express x1	36-pin connector
PCI Express x16	164-pin connector
USB	10-pin header for optional Media Card Reader (3.5-inch bay device)
MDC	one 12-pin connector
Floppy connector	one 26-pin connector
Front panel	one 40-pin header
Power	one 2 x 12 connector
Processor power	one 2 x 2 connector
IEEE 1394	one 2 x 5 header — always connected by cable to the front panel; supports front-panel IEEE 1394 port

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**Controls and Lights**

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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" on page 43).
Hard drive access light	green
Link integrity light (on integrated network adapter)	green light — A good connection exists between a 10-Mbps network and the computer.  orange light — A good connection exists between a 100-Mbps network and the computer.  off (no light) — The computer is not detecting a physical connection to the network.
Activity light (on integrated network adapter)	yellow blinking light
Diagnostic lights	four lights on the front panel (see "Diagnostic Lights" on page 49 for an explanation of the diagnostic light codes)
Standby power light	STBYLED on the system board
Activity light (optional Media Card Reader)	green blinking light

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**Power**

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DC power supply:	
Wattage	275 W
Heat dissipation	935 BTU/hr
Voltage (See the safety instructions in the <i>Product Information Guide</i> for important voltage setting information.)	manual selection power supplies — 90 to 135 V at 50/60 Hz; 180 to 265 V at 50/60 Hz
Backup battery	3-V CR2032 lithium coin cell

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**Physical**

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Height	31.8 cm (12.5 inches)
Width	9.4 cm (3.7 inches)
Depth	36.8 cm (14.5 inches)
Weight	6.89 kg (15.2 lb)

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## Environmental

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### Temperature:

Operating	10° to 35°C (50° to 95°F)
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 50.8 cm/sec (20 inches/sec)
Storage	27-G faired square wave with a velocity change of 508 cm/sec (200 inches/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)


## 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.

 **NOTICE:** Do not change the settings in system setup unless you are an expert computer user. Certain changes can cause your computer to work incorrectly.

## Entering System Setup

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



**NOTE:** Keyboard failure may result when a key on the keyboard is held down for extended periods of time. To avoid possible keyboard failure, press and release <F2> in even intervals until the system setup screen appears.


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.

<p><b>Options List</b> — 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.</p> <p>Scroll up and down the list with the up- and down-arrow keys. As an option is highlighted, the <b>Option Field</b> displays more information about that option and the option's current and available settings.</p> <p>Press &lt;Enter&gt; to expand or contract each of the main option fields.</p>	<p><b>Option Field</b> — This field contains information about each option. In this field you can view your current settings and make changes to your settings.</p> <p>Press the right- and left-arrow keys to highlight an option. Press &lt;Enter&gt; to make that selection active.</p> <hr/> <p><b>Key Functions</b> — This field appears below the <b>Option Field</b> and lists keys and their functions within the active system setup field.</p>
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## System Setup Options

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

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<b>System</b>	
System Info	Lists system information such as the computer name, the BIOS version number and date, system tags, and other system-specific information. <b>NOTE:</b> The system name listed in the BIOS may not appear exactly as the name that appears on the computer or in the computer's documentation.
CPU Info	Identifies whether the computer's processor supports Hyper-Threading and lists the processor bus speed, processor ID, clock speed, and L2 cache.
Memory Info	Indicates the amount of installed memory, memory speed, channel mode (dual or single), and type of memory installed.
Date/Time	Displays current date and time settings.
Boot Sequence	The computer attempts to boot from the sequence of devices specified in this list. <b>NOTE:</b> If you insert a boot device and restart the computer, the device appears in the system setup menu. To boot from a USB memory device, select the USB device and move it so that it becomes the first device in the list.
<b>Drives</b>	
Diskette Drive	Identifies and defines the floppy drive attached to the FLOPPY connector on the system board as <b>Off</b> , <b>USB</b> , <b>Internal</b> , or <b>Read Only</b> .
Drives 0 through 1	Identifies the drives attached to the SATA connectors on the system board, and lists the capacity for the drives.
SATA Operation	Identifies and defines the SATA modes. You can set the SATA controller to <b>AHCI</b> or <b>ATA</b> mode.
<b>Onboard Devices</b>	
NIC Controller	You can set the NIC to <b>On</b> (default), <b>Off</b> , or <b>On w/PXE</b> . When the <b>On w/PXE</b> setting is active (available only for the future boot process), the computer prompts the user to press <Ctrl><Alt><b>. 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 computer attempts to boot from the next device in the boot sequence list.
1394 Controller	Enables or disables the IEEE 1394 connections.
Card Reader	Enables or disables the optional Media Card Reader.
Audio Controller	Enables or disables the onboard audio controller.

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USB Controller	Set to <b>On</b> (default) so that USB devices will be detected and supported in the operating system. The <b>No Boot</b> option enables a USB controller, but it does not recognize a USB storage device.
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## Video

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Primary Video	This setting specifies which video controller is primary when two video controllers are present on the computer.
Video Memory Size	Use this option to select 8 MB (default) or 1 MB of system memory for an integrated video controller.

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## Performance

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HyperThreading	If your computer's processor supports Hyper-Threading, this option appears in the <b>Options List</b> .
SpeedStep	This field specifies whether Enhanced Intel SpeedStep® Technology will be enabled for any supported processor in the computer.
HDD Acoustic Mode	<ul style="list-style-type: none"> <li>• <b>Bypass</b> — Your computer does not test or change the current acoustics mode setting.</li> <li>• <b>Quiet</b> (default) — The hard drive operates at its most quiet setting.</li> <li>• <b>Suggested</b> — The hard drive operates at the level suggested by the drive manufacturer.</li> <li>• <b>Performance</b> — The hard drive operates at its maximum speed.</li> </ul> <p><b>NOTE:</b> Switching to performance mode may cause the drive to be noisier, but the drive's performance is not affected.</p> <p><b>NOTE:</b> Changing the acoustics setting does not alter your hard drive image.</p>

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## Security

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DEP (Execute Disable)	<ul style="list-style-type: none"> <li>• <b>Opt-In</b> (default) — DEP is enabled by default on computers with NX-capable processors. Only Windows system binaries are covered by DEP with this option. Applications may enable DEP protection through creating an application compatibility shim and installing that shim with the application.</li> <li>• <b>Opt-Out</b> — DEP is enabled for all processes. Users can manually create exceptions for specific applications in System Properties, or IT Pros and ISVs can use the Application Compatibility Toolkit to opt-out.</li> <li>• <b>Always On</b> — Full DEP coverage with no exceptions.</li> <li>• <b>Always Off</b> — No user-mode DEP coverage. Drivers and the Windows core kernel binaries are covered by DEP, but no other binaries are included in the set of covered applications.</li> </ul>
Unlock Setup	Use this option with an <b>Admin Password</b> to unlock setup options. <b>NOTE:</b> This option appears only when the <b>Admin Password</b> option is enabled.

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Admin Password	<p>This option provides restricted access to the computer's system setup in the same way that access to the computer can be restricted with the <b>System Password</b> option.</p> <p><b>NOTE:</b> To delete a password, enter the old password and press &lt;Enter&gt; two times.</p>
System Password	Displays the current status of the system's password security feature and allows a new system password to be assigned and verified.
Password Status	This option locks the system password field with the setup password. When the field is locked, you can no longer disable password security by pressing <Ctrl><Enter> when the computer starts.
<b>Power Management</b>	
AC Recovery	Determines what happens when AC power is restored to the computer.
Auto Power On	<p>Sets the computer to automatically turn on. Choices are <b>every day</b> or <b>every Monday through Friday</b>.</p> <p>The default setting is <b>Off</b>.</p> <p>This feature does not work if you turn off your computer using a power strip or surge protector.</p>
Auto Power Time	<p>Sets time to automatically turn on the computer.</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>This feature does not work if you turn off your computer using a power strip or surge protector.</p>
Suspend Mode	The options are <b>S1</b> , a suspend state where the computer is running in a low-power mode, and <b>S3</b> , a standby state where the power is reduced or turned off for most components, but system memory remains active..
Quick Resume	<p>This feature enables/disables the Intel Viiv <b>Quick Resume Technology</b>.</p> <p>The default setting is <b>Off</b>.</p>
<b>Maintenance</b>	
Event Log	Displays the system event log.
<b>POST Behavior</b>	
Fastboot	When set to <b>On</b> (default), your computer starts more quickly because it skips certain configurations and tests.
Numlock Key	This option involves the rightmost bank of keys on your keyboard. When set to <b>On</b> (default), this option activates the numeric and mathematical features shown at the top of each key. When set to <b>Off</b> , this option activates the cursor-control functions labeled on the bottom of each key.

POST Hotkeys	This option allows you to specify the function keys to display on the screen when the computer starts.
Keyboard Errors	This option disables or enables keyboard error reporting when the computer starts.

## Boot Sequence

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



**NOTICE:** If you modify any boot sequence settings, save the new settings to avoid losing the changes.

### Option Settings

- **Diskette Drive** — The computer attempts to boot from the floppy drive. If the floppy disk in the drive is not bootable, the computer generates an error message. If no floppy disk is in the drive, or if there is no floppy drive installed in the computer, the computer attempts to boot from the next bootable device in the boot sequence.
- **Hard Drive** — The computer attempts to boot from the primary hard drive. If no operating system is on the drive, the computer attempts to boot from the next bootable device in the boot sequence.
- **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 attempts to boot from the next bootable device in the boot sequence.
- **USB Flash 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 that your device is bootable, check the device documentation.

### Changing Boot Sequence for the Current Boot

You can use this feature, for example, to boot your computer to a USB device such as a floppy drive or memory key.


- 1 If you are booting to a USB device, connect the USB device to a USB connector (see "Front and Back View of the Computer" on page 13).
- 2 Turn on (or restart) your computer.
- 3 When the DELL logo appears, press <F12> immediately.



**NOTE:** Keyboard failure may result when a key on the keyboard is held down for extended periods of time. To avoid possible keyboard failure, press and release <F12> in even intervals until the **Boot Device Menu** appears.


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.

- 4 At the **Boot Device Menu**, use the up- and down-arrow keys or press the appropriate number on the keyboard to highlight the device that is to be used for the current boot only, and then press <Enter>. 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.

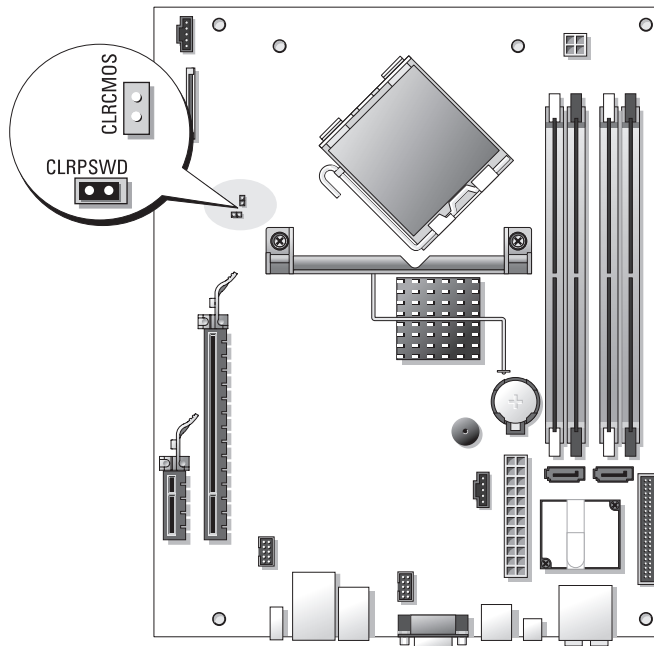
### Changing Boot Sequence for Future Boots





- 1 Enter system setup (see "Entering System Setup" on page 102).
- 2 Press the arrow keys to highlight the **Boot Sequence** menu option and press <Enter> to access the 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 the <u> key or the <d> key to move a selected device up or down the list.

## Jumper Settings



Jumper	Setting	Description
CLRPSWD		Password features are enabled (default setting).
		Password features are disabled.
CLRCMOS		The real-time clock has not been reset.
		The real-time clock is being reset (jumped temporarily).


 *jumped*    
 *unjumped*

## 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 administrator passwords.


- 1 Follow the procedures in "Before You Begin" on page 61.
  - 2 Remove the computer cover ("Removing the Computer Cover" on page 62).
  - 3 Locate the 2-pin password jumper (CLRPSWD) on the system board, and remove the jumper to clear the password (see "System Board Components" on page 65).
  - 4 Replace the computer cover (see "Replacing the Computer Cover" on page 96).
  - 5 Connect your computer and monitor to electrical outlets, and then turn them on.
  - 6 After the Microsoft® Windows® desktop appears on your computer, shut down the computer (see "Turning Off Your Computer" on page 61).
  - 7 Turn off the monitor and disconnect it from the electrical outlet.
  - 8 Disconnect the computer power cable from the electrical outlet, and press the power button to ground the system board.
  - 9 Remove the computer cover (see "Replacing the Computer Cover" on page 96).
  - 10 Locate the 2-pin password jumper (CLRPSWD) on the system board (see "System Board Components" on page 65) and attach the jumper to re-enable the password feature.
  - 11 Replace the computer cover (see "Replacing the Computer Cover" on page 96).
- ➡ NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.
- 12 Connect your computer and devices to electrical outlets, and then turn them on.

 **NOTE:** In you system setup (see "System Setup" on page 101), both system and administrator password options appear as **Not Set**. The password feature is enabled but a password is not assigned.


13 Assign a new system and/or administrator password, as needed.

## Clearing CMOS Settings


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

 **NOTE:** This procedure does not clear or reset system and setup passwords.

- 1 Follow the procedures in "Before You Begin" on page 61.
- 2 Remove the computer cover ("Removing the Computer Cover" on page 62).
- 3 Reset the current CMOS settings:
- 4 Locate the 2-pin password (CLRPSWD) and CMOS (CLRCMOS) jumpers on the system board (see "System Board Components" on page 65).
- 5 Remove the password jumper plug, then place the plug on the CLRCMOS jumper pins and wait approximately 5 seconds.

 **NOTICE:** The password jumper plug must be reinstalled on the password jumper pins in order to enable the password feature.

- 6 Remove the jumper plug from the CLRCMOS jumper pins and place it back on the password jumper pins.
- 7 Replace the computer cover (see "Replacing the Computer Cover" on page 96).


 **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 then turn them on.


## Cleaning Your Computer

 **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 then turn the retainer ring clockwise until it clicks into place.

## 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.

## Dell Technical Support Policy (U.S. Only)

Technician-assisted technical support requires the cooperation and participation of the customer in the troubleshooting process and provides for restoration of the operating system, software programs, and hardware drivers to the original default configuration as shipped from Dell, as well as the verification of appropriate functionality of the computer and all Dell-installed hardware. In addition to this technician-assisted technical support, online technical support is available at [support.dell.com](http://support.dell.com). Additional technical support options may be available for purchase.

Dell provides limited technical support for the computer and any "Dell-installed" software and peripherals<sup>1</sup>. Support for third-party software and peripherals is provided by the original manufacturer, including those purchased and/or installed through Dell Software and Peripherals, Readyware, and Custom Factory Integration<sup>2</sup>.

- <sup>1</sup> Repair services are provided pursuant to the terms and conditions of your limited warranty and any optional support service contract purchased with the computer.
- <sup>2</sup> All Dell-standard components included in a Custom Factory Integration (CFI) project are covered by the standard Dell limited warranty for your computer. However, Dell also extends a parts replacement program to cover all nonstandard, third-party hardware components integrated through CFI for the duration of the computer's service contract.

### **Definition of "Dell-Installed" Software and Peripherals**

Dell-installed software includes the operating system and some of the software programs that are installed on the computer during the manufacturing process (Microsoft<sup>®</sup> Office, Norton Antivirus, etc.).

Dell-installed peripherals include any internal expansion cards, or Dell-branded module bay or PC Card accessories. In addition, any Dell-branded monitors, keyboards, mice, speakers, microphones for telephonic modems, docking stations/port replicators, networking products, and all associated cabling are included.

### **Definition of "Third-Party" Software and Peripherals**

Third-party software and peripherals include any peripheral, accessory, or software program sold by Dell not under the Dell brand (printers, scanners, cameras, games, etc.). Support for all third-party software and peripherals is provided by the original manufacturer of the product.

## **FCC Notices (U.S. Only)**

### **FCC Class B**

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 and television reception. 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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1 This device may not cause harmful interference.
- 2 This device must accept any interference received, including interference that may cause undesired operation.



**NOTICE:** The FCC regulations provide that changes or modifications not expressly approved by Dell Inc. could void your authority to operate this equipment.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with 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 the receiving antenna.
- Relocate the system with respect to the receiver.
- Move the system away from the receiver.
- Plug the system into a different outlet so that the system and the receiver are on different branch circuits.

If necessary, consult a representative of Dell Inc. or an experienced radio/television technician for additional suggestions.

The following information is provided on the device or devices covered in this document in compliance with the FCC regulations:


Product name: Dell™ XPS™ 210  
Model number: DCCY  
Company name: Dell Inc.  
Worldwide Regulatory Compliance & Environmental Affairs  
One Dell Way  
Round Rock, TX 78682 USA  
512-338-4400


## Contacting Dell

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


- [www.dell.com](http://www.dell.com)
- [support.dell.com](http://support.dell.com) (support)

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.

 **NOTE:** In certain countries, support specific to Dell™ XPS™ computers is available at a separate telephone number listed for those countries. If you do not see a telephone number listed that is specific for XPS computers, you may contact Dell through the support number listed and your call will be routed appropriately.

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 international operator.

 **NOTE:** The contact information provided was deemed correct at the time that this document went to print and is subject to change.



<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
Anguilla	Website: <a href="http://www.dell.com.ai">www.dell.com.ai</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> Technical Support	toll-free: 800-335-0031
Antigua and Barbuda	Website: <a href="http://www.dell.com.ag">www.dell.com.ag</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> Technical Support	1-800-805-5924
Aomen	Technical Support (Dell™ Dimension™, Dell Inspiron™, Dell OptiPlex™, Dell Latitude™, and Dell Precision™) Technical Support (servers and storage)	0800-105 0800-105
Argentina (Buenos Aires) International Access Code: 00 Country Code: 54 City Code: 11	Website: <a href="http://www.dell.com.ar">www.dell.com.ar</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> E-mail for desktop and portable computers: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> E-mail for servers and EMC® storage products: <a href="mailto:la_enterprise@dell.com">la_enterprise@dell.com</a> Customer Care Technical Support Technical Support Services Sales	toll-free: 0-800-444-0730 toll-free: 800-222-0154 toll-free: 0-800-444-0724 0-810-444-3355
Aruba	Website: <a href="http://www.dell.com.aw">www.dell.com.aw</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> Technical Support	toll-free: 800-1578
Australia (Sydney) International Access Code: 0011 Country Code: 61 City Code: 2	Website: <a href="http://support.ap.dell.com">support.ap.dell.com</a> E-mail: <a href="mailto:support.ap.dell.com/contactus">support.ap.dell.com/contactus</a> General Support	13DELL-133355

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
<b>Austria</b> International Access Code: 900	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> E-mail: <a href="mailto:tech_support_central_europe@dell.com">tech_support_central_europe@dell.com</a>	
	Home/Small Business Sales	0820 240 530 00
	Home/Small Business Fax	0820 240 530 49
	Home/Small Business Customer Care	0820 240 530 14
	Preferred Accounts/Corporate Customer Care	0820 240 530 16
	Support for XPS	0820 240 530 81
	Home/Small Business Support for all other Dell computers	0820 240 530 17
	Preferred Accounts/Corporate Support	0820 240 530 17
	Switchboard	0820 240 530 00
<b>Bahamas</b>	Website: <a href="http://www.dell.com.bs">www.dell.com.bs</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	Technical Support	toll-free: 1-866-874-3038
<b>Barbados</b>	Website: <a href="http://www.dell.com/bb">www.dell.com/bb</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	Technical Support	1-800-534-3142
<b>Belgium (Brussels)</b> International Access Code: 00 Country Code: 32 City Code: 2	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> Tech Support for XPS Tech Support for all other Dell computers Tech Support Fax Customer Care Corporate Sales Fax Switchboard	02 481 92 96 02 481 92 88 02 481 92 95 02 713 15 65 02 481 91 00 02 481 92 99 02 481 91 00
<b>Bermuda</b>	Website: <a href="http://www.dell.com/bm">www.dell.com/bm</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	Technical Support	toll-free: 1-877-890-0754
<b>Bolivia</b>	Website: <a href="http://www.dell.com/bo">www.dell.com/bo</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	General Support	toll-free: 800-10-0238

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
<b>Brazil</b>	Website: <a href="http://www.dell.com/br">www.dell.com/br</a>	
International Access Code: 00	E-mail: <a href="mailto:BR-TechSupport@dell.com">BR-TechSupport@dell.com</a>	
Country Code: 55	Customer Care and Tech Support	0800 90 3355
City Code: 51	Technical Support Fax	51 2104 5470
	Customer Care Fax	51 2104 5480
	Sales	0800 722 3498
<b>British Virgin Islands</b>	General Support	toll-free: 1-866-278-6820
<b>Brunei</b>	Technical Support (Penang, Malaysia)	604 633 4966
Country Code: 673	Customer Care (Penang, Malaysia)	604 633 4888
	Transaction Sales (Penang, Malaysia)	604 633 4955
<b>Canada (North York, Ontario)</b>	Online Order Status: <a href="http://www.dell.ca/ostatus">www.dell.ca/ostatus</a>	
International Access Code: 011	AutoTech (automated Hardware and Warranty Support)	toll-free: 1-800-247-9362
	Customer Service (Home Sales/Small Business)	toll-free: 1-800-847-4096
	Customer Service (med./large business, government)	toll-free: 1-800-326-9463
	Customer Service (printers, projectors, televisions, handhelds, digital jukebox, and wireless)	toll-free: 1-800-847-4096
	Hardware Warranty Support (Home Sales/Small Business)	toll-free: 1-800-906-3355
	Hardware Warranty Support (med./large bus., government)	toll-free: 1-800-387-5757
	Hardware Warranty Support (printers, projectors, televisions, handhelds, digital jukebox, and wireless)	1-877-335-5767
	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
<b>Cayman Islands</b>	E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	Technical Support	toll-free: 1-877-261-0242

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
Chile (Santiago) Country Code: 56 City Code: 2	Website: <a href="http://www.dell.com/cl">www.dell.com/cl</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> Sales and Customer Support Technical Support (CTC) Technical Support (ENTEL)	toll-free: 1230-020-4823 toll-free: 800730222 toll-free: 1230-020-3762
China (Xiamen) Country Code: 86 City Code: 592	Technical Support website: <a href="http://support.dell.com.cn">support.dell.com.cn</a> Technical Support E-mail: <a href="mailto:cn_support@dell.com">cn_support@dell.com</a> Customer Care E-mail: <a href="mailto:customer_cn@dell.com">customer_cn@dell.com</a> Technical Support Fax Technical Support (Dimension and Inspiron) Technical Support (OptiPlex, Latitude, and Dell Precision) Technical Support (servers and storage) Technical Support (projectors, PDAs, switches, routers, and so on) Technical Support (printers) Customer Care Customer Care Fax Home and Small Business Preferred Accounts Division Large Corporate Accounts GCP Large Corporate Accounts Key Accounts Large Corporate Accounts North Large Corporate Accounts North Government and Education Large Corporate Accounts East Large Corporate Accounts East Government and Education Large Corporate Accounts Queue Team Large Corporate Accounts South Large Corporate Accounts West Large Corporate Accounts Spare Parts	592 818 1350 toll-free: 800 858 2969 toll-free: 800 858 0950 toll-free: 800 858 0960 toll-free: 800 858 2920 toll-free: 800 858 2311 toll-free: 800 858 2060 592 818 1308 toll-free: 800 858 2222 toll-free: 800 858 2557 toll-free: 800 858 2055 toll-free: 800 858 2628 toll-free: 800 858 2999 toll-free: 800 858 2955 toll-free: 800 858 2020 toll-free: 800 858 2669 toll-free: 800 858 2572 toll-free: 800 858 2355 toll-free: 800 858 2811 toll-free: 800 858 2621

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
Colombia	Website: <a href="http://www.dell.com/cl">www.dell.com/cl</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> Technical Support	toll-free: 1-800-915-5704
Costa Rica	Website: <a href="http://www.dell.com/cr">www.dell.com/cr</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> Technical Support	toll-free: 800-012-0232
Czech Republic (Prague) International Access Code: 00 Country Code: 420	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> E-mail: <a href="mailto:czech_dell@dell.com">czech_dell@dell.com</a> Technical Support Customer Care Fax Technical Fax Switchboard	22537 2727 22537 2707 22537 2714 22537 2728 22537 2711
Denmark (Copenhagen) International Access Code: 00 Country Code: 45	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> Technical Support for XPS Technical Support for all other Dell computers Customer Care (Relational) Home/Small Business Customer Care Switchboard (Relational) Switchboard Fax (Relational) Switchboard (Home/Small Business) Switchboard Fax (Home/Small Business)	7010 0074 7023 0182 7023 0184 3287 5505 3287 1200 3287 1201 3287 5000 3287 5001
Dominica	Website: <a href="http://www.dell.com/dm">www.dell.com/dm</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> General Support	toll-free: 1-866-278-6821
Dominican Republic	Website: <a href="http://www.dell.com/do">www.dell.com/do</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> Technical Support	toll-free: 1-888-156-1834 or toll-free: 1-888-156-1584

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
Ecuador	Website: <a href="http://www.dell.com/ec">www.dell.com/ec</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> General Support (calling from Quito) General Support (calling from Guayaquil)	toll-free: 999-119-877-655-3355 toll-free: 1800-999-119-877-655-3355
El Salvador	Website: <a href="http://www.dell.com/ec">www.dell.com/ec</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> Technical Support (Telephonica)	toll-free: 8006170
Finland (Helsinki) International Access Code: 990 Country Code: 358 City Code: 9	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> E-mail: <a href="mailto:fi_support@dell.com">fi_support@dell.com</a> Technical Support Customer Care Switchboard Sales under 500 employees Fax Sales over 500 employees Fax	0207 533 555 0207 533 538 0207 533 533 0207 533 540 0207 533 530 0207 533 533 0207 533 530

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
France (Paris) (Montpellier)	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	<b>Home and Small Business</b>	
Country Code: 33	Technical Support for XPS	0825 387 129
City Codes: (1) (4)	Technical Support for all other Dell computers	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
	<b>Corporate</b>	
	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 (Frankfurt)	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	E-mail: <a href="mailto:tech_support_central_europe@dell.com">tech_support_central_europe@dell.com</a>	
Country Code: 49	Technical Support for XPS	069 9792 7222
City Code: 69	Technical Support for all other Dell computers	069 9792-7200
	Home/Small Business Customer Care	0180-5-224400
	Global Segment Customer Care	069 9792-7320
	Preferred Accounts Customer Care	069 9792-7320
	Large Accounts Customer Care	069 9792-7320
	Public Accounts Customer Care	069 9792-7320
	Switchboard	069 9792-7000

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
Greece	Website: support.euro.dell.com	
International Access Code: 00	Technical Support	00800-44 14 95 18
Country Code: 30	Gold Service Technical Support	00800-44 14 00 83
	Switchboard	2108129810
	Gold Service Switchboard	2108129811
	Sales	2108129800
	Fax	2108129812
Grenada	E-mail: la-techsupport@dell.com	
	General Support	toll-free: 1-866-540-3355
Guatemala	E-mail: la-techsupport@dell.com	
	General Support	1-800-999-0136
Guyana	E-mail: la-techsupport@dell.com	
	General Support	toll-free: 1-877-270-4609
Hong Kong	Website: support.ap.dell.com	
International Access Code: 001	Technical Support E-mail: HK_support@Dell.com	
Country Code: 852	Technical Support (Dimension and Inspiron)	00852-2969 3188
	Technical Support (OptiPlex, Latitude, and Dell Precision)	00852-2969 3191
	Technical Support (servers and storage)	00852-2969 3196
	Technical Support (projectors, PDAs, switches, routers, and so on)	00852-3416 0906
	Customer Care	00852-3416 0910
	Large Corporate Accounts	00852-3416 0907
	Global Customer Programs	00852-3416 0908
	Medium Business Division	00852-3416 0912
	Home and Small Business Division	00852-2969 3105



<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
India	E-mail: india_support_desktop@dell.com india_support_notebook@dell.com india_support_Server@dell.com Technical Support	1600338045 and 1600448046
	Sales (Large Corporate Accounts)	1600 33 8044
	Sales (Home and Small Business)	1600 33 8046
<b>Ireland (Cherrywood)</b>	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	E-mail: dell_direct_support@dell.com	
Country Code: 353	<b>Sales</b>	
City Code: 1	Ireland Sales	01 204 4444
	Dell Outlet	1850 200 778
	Online Ordering HelpDesk	1850 200 778
	<b>Customer Care</b>	
	Home User Customer Care	01 204 4014
	Small Business Customer Care	01 204 4014
	Corporate Customer Care	1850 200 982
	<b>Technical Support</b>	
	Technical Support for XPS computers only	1850 200 722
	Technical Support for all other Dell computers	1850 543 543
	<b>General</b>	
	Fax/Sales Fax	01 204 0103
	Switchboard	01 204 4444
	U.K. Customer Care (dial within U.K. only)	0870 906 0010
	Corporate Customer Care (dial within U.K. only)	0870 907 4499
	U.K. Sales (dial within U.K. only)	0870 907 4000

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
Italy (Milan)	Website: support.euro.dell.com	
International Access Code: 00	<b>Home and Small Business</b>	
Country Code: 39	Technical Support	02 577 826 90
City Code: 02	Customer Care	02 696 821 14
	Fax	02 696 821 13
	Switchboard	02 696 821 12
	<b>Corporate</b>	
	Technical Support	02 577 826 90
	Customer Care	02 577 825 55
	Fax	02 575 035 30
	Switchboard	02 577 821
Jamaica	E-mail: la-techsupport@dell.com	
	Technical Support (dial from within Jamaica only)	toll-free: 1-800-326-6061 or toll-free: 1-800-975-1646

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
Japan (Kawasaki)	Website: <a href="http://support.jp.dell.com">support.jp.dell.com</a>	
International Access Code: 001	Technical Support (servers)	toll-free: 0120-198-498
Country Code: 81	Technical Support outside of Japan (servers)	81-44-556-4162
City Code: 44	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 (PDAs, projectors, printers, routers)	toll-free: 0120-981-690
	Technical Support outside of Japan (PDAs, projectors, printers, routers)	81-44-556-3468
	Faxbox Service	044-556-3490
	24-Hour Automated Order Status 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
	Public Sales (government agencies, educational institutions, and medical institutions)	044-556-5963
	Global Segment Japan	044-556-3469
	Individual User	044-556-1760
	Switchboard	044-556-4300
Korea (Seoul)	E-mail: <a href="mailto:krsupport@dell.com">krsupport@dell.com</a>	
International Access Code: 001	Support	toll-free: 080-200-3800
Country Code: 82	Support (Dimension, PDA, Electronics and Accessories)	toll-free: 080-200-3801
City Code: 2	Sales	toll-free: 080-200-3600
	Fax	2194-6202
	Switchboard	2194-6000

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
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
<b>Luxembourg</b>	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	Support	342 08 08 075
Country Code: 352	Home/Small Business Sales	+32 (0)2 713 15 96
	Corporate Sales	26 25 77 81
	Customer Care	+32 (0)2 481 91 19
	Fax	26 25 77 82
<b>Macao</b>	Technical Support	toll-free: 0800 105
Country Code: 853	Customer Service (Xiamen, China)	34 160 910
	Transaction Sales (Xiamen, China)	29 693 115
<b>Malaysia (Penang)</b>	Website: <a href="http://support.ap.dell.com">support.ap.dell.com</a>	
International Access Code: 00	Technical Support (Dell Precision, OptiPlex, and Latitude)	toll-free: 1 800 880 193
Country Code: 60	Technical Support (Dimension, Inspiron, and Electronics and Accessories)	toll-free: 1 800 881 306
City Code: 4	Technical Support (PowerApp, PowerEdge, PowerConnect, and PowerVault)	toll-free: 1800 881 386
	Customer Care	toll-free: 1800 881 306 (option 6)
	Transaction Sales	toll-free: 1 800 888 202
	Corporate Sales	toll-free: 1 800 888 213

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
<b>Mexico</b>	E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
International Access Code: <b>00</b>	Technical Support (TelMex)	toll-free: 1-866-563-4425
Country Code: <b>52</b>	Sales	50-81-8800
		or 01-800-888-3355
	Customer Service	001-877-384-8979
		or 001-877-269-3383
	Main	50-81-8800
		or 01-800-888-3355
<b>Montserrat</b>	E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	General Support	toll-free: 1-866-278-6822
<b>Netherlands Antilles</b>	E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	General Support	001-800-882-1519
<b>Netherlands (Amsterdam)</b>	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: <b>00</b>	Technical Support for XPS	020 674 45 94
Country Code: <b>31</b>	Technical Support for all other Dell computers	020 674 45 00
City Code: <b>20</b>	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
<b>New Zealand</b>	Website: <a href="http://support.ap.dell.com">support.ap.dell.com</a>	
International Access Code: <b>00</b>	E-mail: <a href="mailto:support.ap.dell.com/contactus">support.ap.dell.com/contactus</a>	
Country Code: <b>64</b>	General Support	0800 441 567
<b>Nicaragua</b>	E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	Technical Support	toll-free: 1-800-220-1378

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
Norway (Lysaker)	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	Technical Support for XPS	815 35 043
Country Code: 47	Technical Support for all other Dell products	671 16882
	Relational Customer Care	671 17575
	Home/Small Business Customer Care	23162298
	Switchboard	671 16800
	Fax Switchboard	671 16865
Panama	E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	Technical Support	toll-free: 1-800-507-1385
	Technical Support (CLARACOM)	toll-free: 1-866-633-4097
Peru	E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	Technical Support	toll-free: 0800-50-869
Poland (Warsaw)	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 011	E-mail: <a href="mailto:pl_support_tech@dell.com">pl_support_tech@dell.com</a>	
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: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	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	E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	Technical Support	toll-free: 1-866-390-4695
St. Kitts and Nevis	Website: <a href="http://www.dell.com/kn">www.dell.com/kn</a>	
	E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	Technical Support	toll-free: 1-866-540-3355

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
St. Lucia	Website: <a href="http://www.dell.com/lc">www.dell.com/lc</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> Technical Support	toll-free: 1-866-464-4352
St. Vincent and the Grenadines	Website: <a href="http://www.dell.com/vc">www.dell.com/vc</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> Technical Support	toll-free: 1-866-464-4353
Singapore (Singapore) International Access Code: 005 Country Code: 65	<b>NOTE:</b> The phone numbers in this section should be called from within Singapore or Malaysia only. <b>Website: <a href="http://support.ap.dell.com">support.ap.dell.com</a></b> Technical Support (Dimension, Inspiron, and Electronics and Accessories) Technical Support (OptiPlex, Latitude, and Dell Precision) Technical Support (PowerApp, PowerEdge, PowerConnect, and PowerVault) Customer Care Transaction Sales Corporate Sales	toll-free: 1 800 394 7430 toll-free: 1 800 394 7488 toll-free: 1 800 394 7478 toll-free: 1 800 394 7430 (option 6) toll-free: 1 800 394 7412 toll-free: 1 800 394 7419
Slovakia (Prague) International Access Code: 00 Country Code: 421	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> E-mail: <a href="mailto:czech_dell@dell.com">czech_dell@dell.com</a> Technical Support Customer Care Fax Tech Fax Switchboard (Sales)	02 5441 5727 420 22537 2707 02 5441 8328 02 5441 8328 02 5441 7585

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
South Africa (Johannesburg)	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 09/091	E-mail: <a href="mailto:dell_za_support@dell.com">dell_za_support@dell.com</a>	
Country Code: 27	Gold Queue	011 709 7713
City Code: 11	Technical Support	011 709 7710
	Customer Care	011 709 7707
	Sales	011 709 7700
	Fax	011 706 0495
	Switchboard	011 709 7700
<b>Southeast Asian and Pacific Countries</b>	Technical Support, Customer Service, and Sales (Penang, Malaysia)	604 633 4810
Spain (Madrid)	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	<b>Home and Small Business</b>	
Country Code: 34	Technical Support	902 100 130
City Code: 91	Customer Care	902 118 540
	Sales	902 118 541
	Switchboard	902 118 541
	Fax	902 118 539
	<b>Corporate</b>	
	Technical Support	902 100 130
	Customer Care	902 115 236
	Switchboard	91 722 92 00
	Fax	91 722 95 83
Sweden (Upplands Vasby)	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	Technical Support for XPS	0771 340 340
Country Code: 46	Technical Support for all other Dell products	08 590 05 199
City Code: 8	Relational Customer Care	08 590 05 642
	Home/Small Business Customer Care	08 587 70 527
	Employee Purchase Program (EPP) Support	020 140 14 44
	Technical Support Fax	08 590 05 594
	Sales	08 590 05 185



<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
Switzerland (Geneva)	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	E-mail: <a href="mailto:Tech_support_central_Europe@dell.com">Tech_support_central_Europe@dell.com</a>	
Country Code: 41	Technical Support for XPS	0848 33 88 57
City Code: 22	Technical Support (Home and Small Business) for all other Dell products	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	Website: <a href="http://support.ap.dell.com">support.ap.dell.com</a>	
International Access Code: 002	E-mail: <a href="mailto:ap_support@dell.com">ap_support@dell.com</a>	
Country Code: 886	Technical Support (OptiPlex, Latitude, Inspiron, Dimension, and Electronics and Accessories)	toll-free: 0080 186 1011
	Technical Support (servers and storage)	toll-free: 0080 160 1256
	Customer Care	toll-free: 0080 160 1250 (option 5)
	Transaction Sales	toll-free: 0080 165 1228
	Corporate Sales	toll-free: 0080 165 1227
Thailand	Website: <a href="http://support.ap.dell.com">support.ap.dell.com</a>	
International Access Code: 001	Technical Support (OptiPlex, Latitude, and Dell Precision)	toll-free: 1800 0060 07
Country Code: 66	Technical Support (PowerApp, PowerEdge, PowerConnect, and PowerVault)	toll-free: 1800 0600 09
	Customer Care	toll-free: 1800 006 007 (option 7)
	Corporate Sales	toll-free: 1800 006 009
	Transaction Sales	toll-free: 1800 006 006
Trinidad/Tobago	Website: <a href="http://www.dell.com/tt">www.dell.com/tt</a>	
	E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a>	
	Technical Support	toll-free: 1-888-799-5908

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
Turks and Caicos Islands	Website: <a href="http://www.dell.com/tc">www.dell.com/tc</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> General Support	toll-free: 1-877-441-4735
U.K. (Bracknell) International Access Code: 00 Country Code: 44 City Code: 1344	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> E-mail: <a href="mailto:dell_direct_support@dell.com">dell_direct_support@dell.com</a> Customer Care website: <a href="http://support.euro.dell.com/uk/en/ECare/form/home.asp">support.euro.dell.com/uk/en/ECare/form/home.asp</a> <b>Sales</b> Home and Small Business Sales Corporate/Public Sector Sales <b>Customer Care</b> Home and Small Business Customer Care Corporate Customer Care Preferred Accounts (500–5000 employees) Global Accounts Customer Care Central Government Customer Care Local Government & Education Customer Care Health Customer Care <b>Technical Support</b> Technical Support for XPS computers only Technical Support (Corporate/Preferred Accounts/PAD [1000+ employees]) Technical Support for all other products <b>General</b> Home and Small Business Fax	0870 907 4000 01344 860 456 0870 906 0010 01344 373 185 0870 906 0010 01344 373 186 01344 373 193 01344 373 199 01344 373 194 0870 366 4180 0870 908 0500 0870 353 0800 0870 907 4006
Uruguay	Website: <a href="http://www.dell.com/uy">www.dell.com/uy</a> E-mail: <a href="mailto:la-techsupport@dell.com">la-techsupport@dell.com</a> Technical Support	toll-free: 413-598-2522

<b>Country (City) International Access Code Country Code City Code</b>	<b>Department Name or Service Area, Website and E-Mail Address</b>	<b>Area Codes, Local Numbers, and Toll-Free Numbers</b>
U.S.A. (Austin, Texas)	Automated Order-Status Service	toll-free: 1-800-433-9014
International Access Code: 011 Country Code: 1	AutoTech (portable and desktop computers)	toll-free: 1-800-247-9362
	Hardware and Warranty Support (Dell TV, Printers, and Projectors) for Relationship customers	toll-free: 1-877-459-7298
	Americas Consumer XPS Support	toll-free: 1-800-232-8544
	<b>Consumer</b> (Home and Home Office) Support for all other Dell products	toll-free: 1-800-624-9896
	Customer Service	toll-free: 1-800-624-9897
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-695-8133
	Financial Services website: <a href="http://www.dellfinancialservices.com">www.dellfinancialservices.com</a>	
	Financial Services (lease/loans)	toll-free: 1-877-577-3355
	Financial Services (Dell Preferred Accounts [DPA])	toll-free: 1-800-283-2210
	<b>Business</b>	
	Customer Service and Support	toll-free: 1-800-456-3355
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-695-8133
	Support for printers, projectors, PDAs, and MP3 players	toll-free: 1-877-459-7298
	<b>Public</b> (government, education, and healthcare)	
	Customer Service and Support	toll-free: 1-800-456-3355
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-695-8133
	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)

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
U.S. Virgin Islands	E-mail: la-techsupport@dell.com Technical Support	toll-free: 1-877-702-4360
Venezuela	Website: www.dell.com/ve E-mail: la-techsupport@dell.com Technical Support	toll-free: 0800-100-2513

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