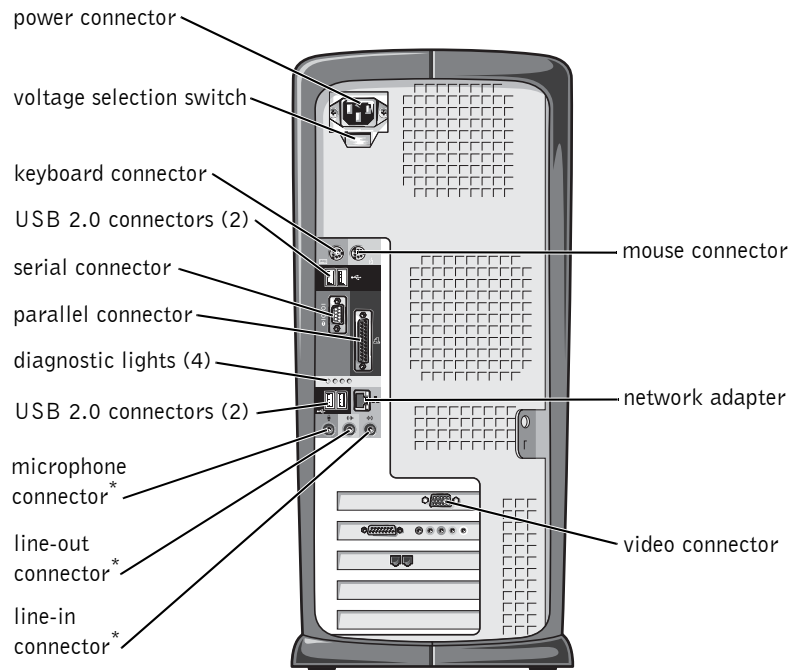
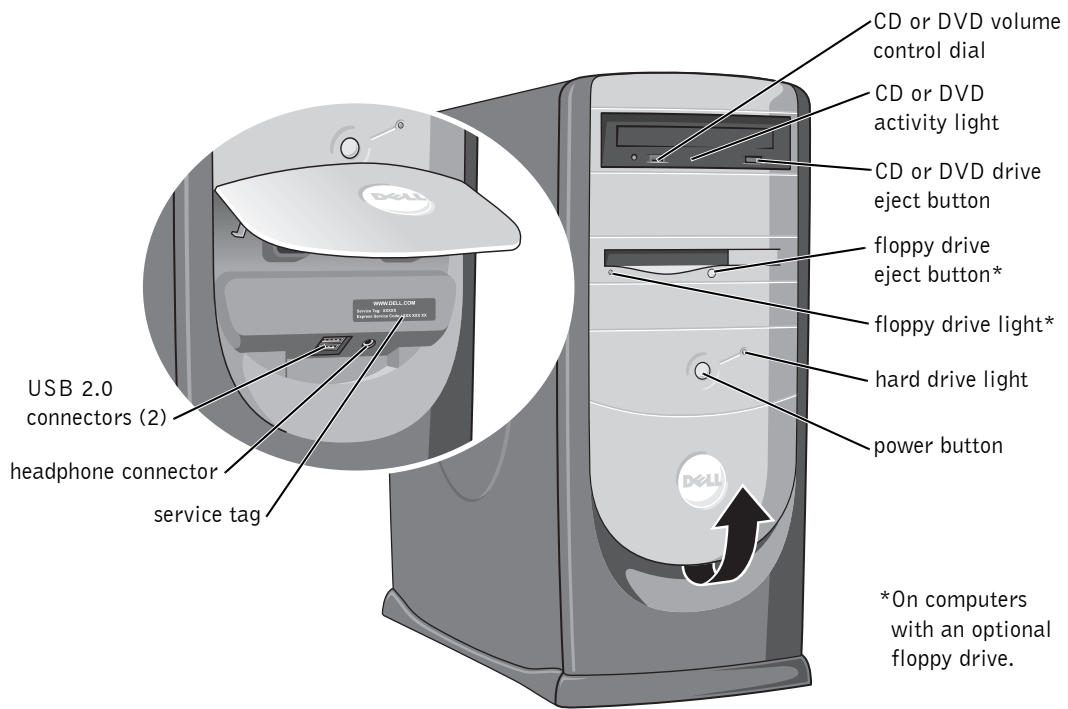





# Dell™ Dimension™ 4550 Series



\* On computers with integrated audio.



## Hints, Notices, and Cautions

-  **HINT:** A HINT indicates important information that helps you make better use of your computer.
-  **NOTICE:** A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.
-  **CAUTION:** A CAUTION indicates a potential for property damage, personal injury, or death.

## Abbreviations and Acronyms

For a complete list of abbreviations and acronyms, see the *Tell Me How* help file. To access help files, see page 38.

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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## **CAUTION: Safety Instructions**

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

### **General**

- Do not attempt to service the computer yourself unless you are a trained service technician. Always follow installation instructions closely.
- To help prevent electric shock, plug the computer and device power cables into properly grounded electrical outlets. These cables are equipped with 3-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a 3-wire cable with properly grounded plugs.



- To help avoid the potential hazard of electric shock, do not use your computer during an electrical storm.
- To help avoid the potential hazard of electric shock, do not connect or disconnect any cables or perform maintenance or reconfiguration of this product during an electrical storm.
- If your computer includes a modem, the cable used with the modem should be manufactured with a minimum wire size of 26 American wire gauge (AWG) and an FCC-compliant RJ-11 modular plug.
- 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.
- To help avoid possible damage to the system board, wait 5 seconds after turning off the computer before disconnecting a device from the computer.

## **CAUTION: Safety Instructions (*continued*)**

- To avoid shorting out your computer when disconnecting a network cable, first unplug the cable from the network adapter on the back of your computer, and then from the network jack. When reconnecting a network cable to your computer, first plug the cable into the network jack, and then into the network adapter.
- To help protect your computer from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Ensure that nothing rests on your computer's cables and that the cables are not located where they can be stepped on or tripped over.
- Do not push any objects into the openings of your computer. Doing so can cause fire or electric shock by shorting out interior components.
- Keep your computer away from radiators and heat sources. Also, do not block cooling vents. Avoid placing loose papers underneath your computer; do not place your computer in a closed-in wall unit or on a bed, sofa, or rug.

## When Using Your Computer

As you use your computer, observe the following safe-handling guidelines.

**⚠ CAUTION:** Do not operate your computer with any cover(s) (including computer covers, bezels, filler brackets, front-panel inserts, and so on) removed.

- Your computer is equipped with one of the following:
  - A fixed-voltage power supply — Computers with a fixed-voltage power supply do not have a voltage selection switch on the back panel and operate at only one voltage (see the regulatory label on the outside of the computer for its operating voltage).
  - An auto-sensing voltage circuit — Computers with an auto-sensing voltage circuit do not have a voltage selection switch on the back panel and automatically detect the correct operating voltage.
  - A manual voltage selection switch — Computers with a voltage selection switch on the back panel must be manually set to operate at the correct operating voltage.





- **➡ NOTICE:** To help avoid damaging a computer with a manual voltage selection switch, set the switch for the voltage that most closely matches the AC power available in your location. For Japan, the voltage selection switch must be set to the 115-V position even though the AC power available in Japan is 100 V. Also, ensure that your monitor and attached devices are electrically rated to operate with the AC power available in your location.
- Before working inside the computer, unplug the computer to help prevent electric shock or system board damage. Certain system board components continue to receive power any time the computer is connected to AC power.

## When Using Your Computer (*continued*)

### When Working Inside Your Computer

Before you open the computer cover, perform the following steps in the sequence indicated.

 **CAUTION:** Do not attempt to service the computer yourself, except as explained in your online Dell™ documentation or in instructions otherwise provided to you by Dell. Always follow installation and service instructions closely.

 **NOTICE:** To help avoid possible damage to the system board, wait 5 seconds after turning off the computer before removing a component from the system board or disconnecting a device from the computer.

- 1 Perform an orderly computer shutdown using the operating system menu.
- 2 Turn off your computer and any devices connected to the computer.
- 3 Ground yourself by touching an unpainted metal surface on the chassis, such as the metal around the card-slot openings at the back of the computer, before touching anything inside your computer.

While you work, periodically touch an unpainted metal surface on the computer chassis to dissipate any static electricity that might harm internal components.

- 4 Disconnect your computer and devices, including the monitor, from their electrical outlets. Also, disconnect any telephone or telecommunication lines from the computer.


Doing so reduces the potential for personal injury or shock.

In addition, take note of these safety guidelines when appropriate:

- 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 disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

## When Using Your Computer (*continued*)

- 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 microprocessor chip by its edges, not by its pins.

 **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. Do not dispose of the battery along with household waste. Contact your local waste disposal agency for the address of the nearest battery deposit site.**

### Protecting Against Electrostatic Discharge

Static electricity can harm delicate components inside your computer. To prevent static damage, discharge static electricity from your body before you touch any of your computer's electronic components, such as the microprocessor. You can do so by touching an unpainted metal surface on the computer chassis.

As you continue to work inside the computer, periodically touch an unpainted metal surface to remove any static charge your body may have accumulated.

You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- Do not remove components from their antistatic packing material until you are ready to install the component in your computer. Just before unwrapping the antistatic packaging, discharge static electricity from your body.
- When transporting an electrostatic sensitive component, first place it in an antistatic container or packaging.
- Handle all electrostatic sensitive components in a static-safe area. If possible, use antistatic floor pads and workbench pads.

### Ergonomic Computing Habits

 **CAUTION: Improper or prolonged keyboard use may result in injury.**

 **CAUTION: Viewing the monitor screen for extended periods of time may result in eye strain.**

For comfort and efficiency, observe the ergonomic guidelines in the *Tell Me How* help file when setting up and using your computer.

## When Using Your Computer (*continued*)



### Battery Disposal

Your computer uses a lithium coin-cell battery. The lithium coin-cell battery is a long-life battery, and it is very possible that you will never need to replace it. However, should you need to replace it, see page 113.

Do not dispose of the battery along with household waste. Contact your local waste disposal agency for the address of the nearest battery deposit site.

# Finding Information for Your Computer

---

## What Are You Looking For?

- A diagnostic program for my computer
- Drivers for my computer
- My computer documentation
- My device documentation

## Find it Here

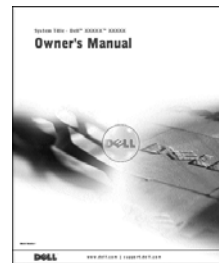
### Resource CD



You can use this CD to access documentation and reinstall drivers (see page 65).

- 
- How to set up a printer
  - How to troubleshoot and solve problems
  - How to add parts
  - How to contact Dell
  - Warranty information

### Owner's Manual



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

### Express Service Code and Product Key



Located on your computer.

---

**What Are You Looking For?**

- How to reinstall my operating system

**Find it Here****Operating System CD**

If you reinstall your operating system, use the ResourceCD to reinstall drivers for the devices that came with your computer.

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

**Dell Support website**

The Dell Support website provides several online tools, including:

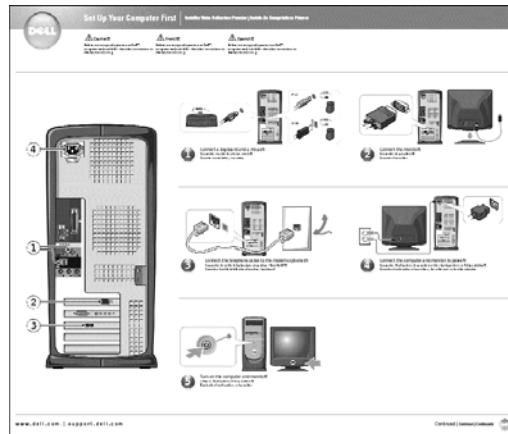
- Knowledge Base — hints, tips, and online courses
- Customer Forum — online discussion with other Dell customers
- Upgrades — upgrade information for components, such as memory, the hard drive, and the operating system
- Customer Care — contact information, order status, warranty, and repair information
- Downloads — drivers, patches, and software updates
- Reference — computer documentation, product specifications, and white papers



---

**What Are You Looking For?**

- How to set up my computer

**Find it Here****Setup diagram**

- 
- Tips on using Windows
  - How to clean my computer
  - How to use my mouse and keyboard

**Tell Me How help file**

- 1** Click the **Start** button, and then click **Help and Support**.
- 2** Click **User and system guides**, and then click **User's guides**.
- 3** Click **Tell Me How**.

- 
- How to use Windows XP
  - Documentation for my computer and devices

**Windows XP Help and Support Center**

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



SECTION 1

## **Setting Up and Using Your Computer**

---

Setting Up a Printer

Connecting Two Monitors

Transferring Information to a New Computer

Setting Up a Home and Office Network

Connecting to the Internet


Copying CDs

Hyper-Threading

Booting to a USB Device

Turning Off the Computer

## 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

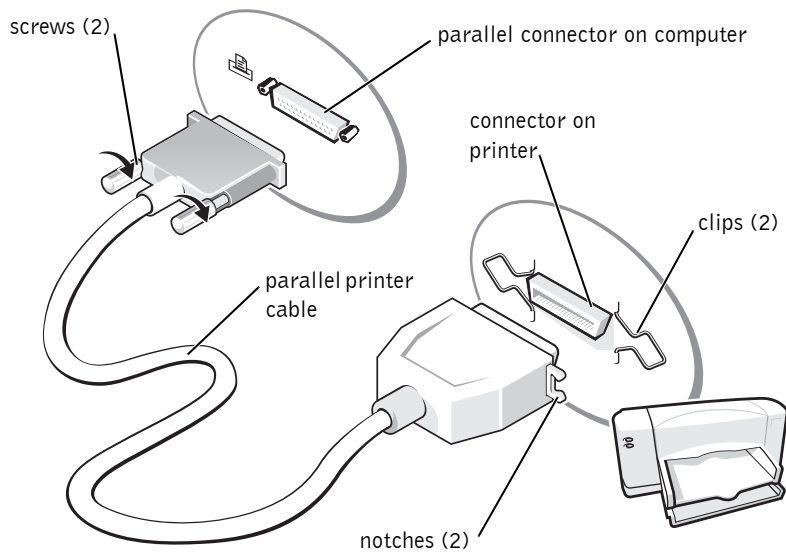
Your printer connects to your computer with either a USB cable or a parallel cable. Your printer may not come with a printer cable, so if you purchase a cable separately, ensure that it is compatible with your printer. If you purchased a printer cable at the same time you purchased your computer, the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

### Connecting a Parallel Printer

- 1 Complete the operating system setup, if you have not already done so.
- 2 Turn off the computer (see page 33).

 **NOTICE:** For best results, use a 3 m (10 ft) or shorter parallel cable.


- 3 Attach the parallel printer cable to the parallel connector on the computer and tighten the two screws. Attach the cable to the connector on the printer and snap the two clips into the two notches.

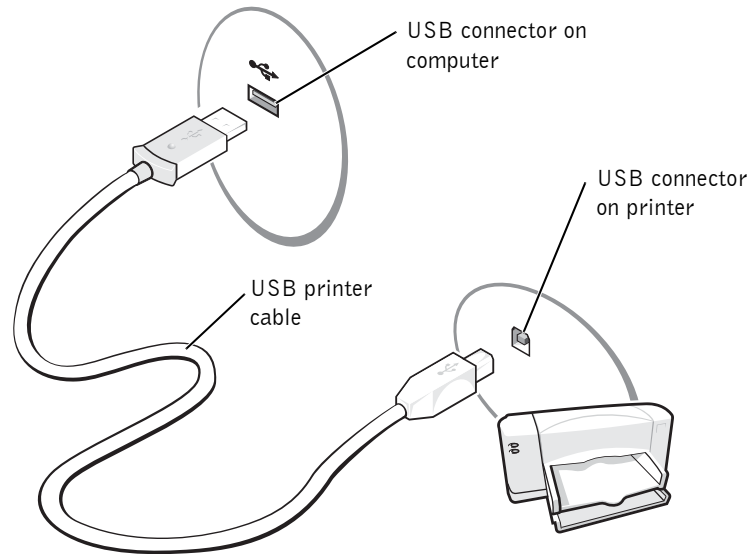


- 4 Turn on the printer and then turn on the computer. If the **Add New Hardware Wizard** window appears, click **Cancel**.
- 5 Install the printer driver if necessary. See the documentation that came with your printer.

### Connecting a USB Printer

- 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 connector on the computer and the printer. The USB connectors fit only one way.

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



## Connecting Two Monitors

If you purchased a video card that supports dual monitors, follow the instructions in this section to connect and enable your monitors.

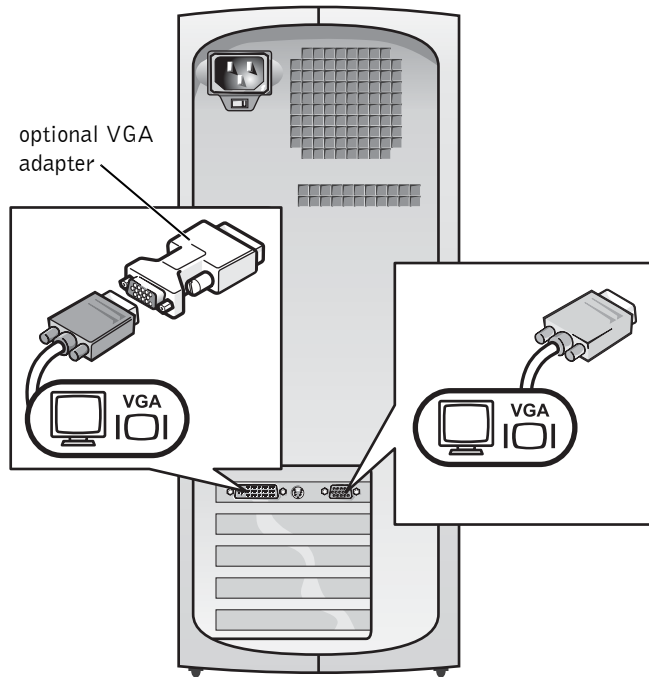
### Connecting the Monitors to Your Computer

- 1 Save any open files, close any open programs, and shut down the computer.
- 2 Connect the monitor cables to the connectors on the back of the computer.

**HINT:** If both monitors have VGA connectors, you must have the optional VGA adapter.

If both monitors have VGA connectors:

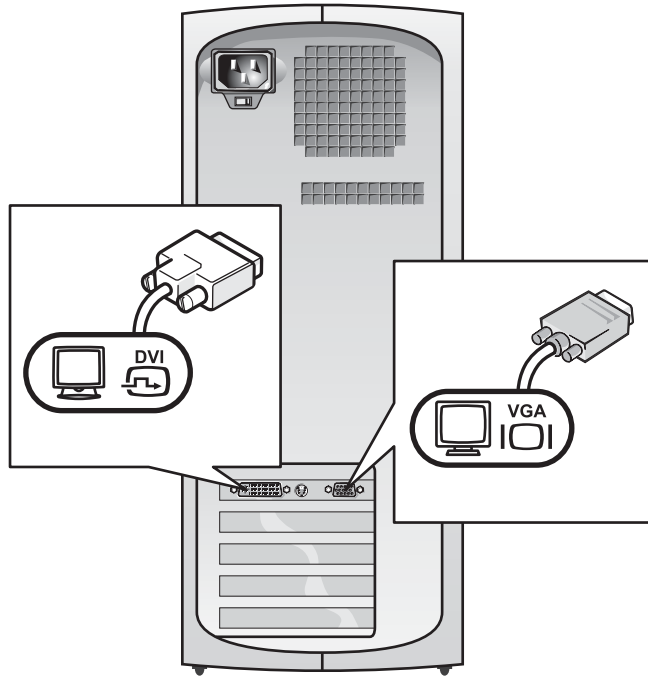
- a Connect one of the monitors to the VGA (blue) connector on the computer.
- b Connect the other monitor to the optional VGA adapter, and then connect the VGA adapter to the DVI (white) connector on the computer.



If one monitor has a VGA connector and the other one has a DVI connector:

- a Connect the VGA connector on the monitor to the VGA (blue) connector on the computer.
- b Connect the DVI connector on the other monitor to the DVI (white) connector on the computer.

**HINT:** If you are connecting two flat-panel monitors, at least one of them must have a VGA connector.



- 3 Restart the computer.

The Microsoft® Windows® desktop displays on the primary monitor.

- 4 Use the instructions in the following sections to enable clone mode or extended desktop mode in the display settings.

For more information on changing display settings, see the Help and Support Center (click the **Start** button and click **Help and Support**).

### Enabling Clone Mode

In clone mode, both monitors display the same image.

- 1 Right-click an empty spot on the desktop and click **Properties**.
- 2 Click the **Settings** tab and click **Advanced**.
- 3 Click the **nView** tab, click **Clone**, and click **OK**.



- 4 Click **OK** to continue.

The screen temporarily blacks out, and then the same image displays on both monitors.

- 5 Click **Yes** to accept the changes.

### **Enabling Extended Desktop Mode**

In extended desktop mode, you can drag objects from one screen to the other, effectively doubling the amount of viewable work space.

- 1 Right-click an empty spot on the desktop and click **Properties**.

- 2 Click the **Settings** tab.

Two monitors are displayed on the **Settings** tab.

- 3 Click the grayed-out monitor icon.

- 4 Click **Extend my Windows desktop onto this monitor**, and click **OK**.

The screen temporarily blacks out, and then the desktop displays on both monitors.

## **Transferring Information to a New Computer**

The Microsoft® Windows® XP operating system provides a Files and Settings Transfer wizard to move data from the source computer to the new computer. You can move data such as:

- E-mails
- Toolbar settings
- Window sizes
- Internet bookmarks

You can transfer the data to the new computer over a network or serial connection, or you can store it on a removable medium, such as a writable CD or floppy disk.

To prepare the new computer for the file transfer:

- 1 Click the **Start** button, point to **All Programs**→**Accessories**→**System Tools**, and then click **Files and Settings Transfer Wizard**.
- 2 When the **Files and Settings Transfer Wizard** welcome screen appears, click **Next**.
- 3 On the **Which computer is this?** screen, click **New Computer**, and then click **Next**.
- 4 On the **Do you have a Windows XP CD?** screen, click **I will use the wizard from the Windows XP CD**, and then click **Next**.
- 5 When the **Now go to your old computer** screen appears, go to your old or source computer. Do not click **Next** at this time.

To copy data from the old computer:

- 1 On the old computer, insert the *Windows XP Operating System* CD into your CD or DVD drive.
- 2 On the **Welcome to Microsoft Windows XP** screen, click **Perform additional tasks**.
- 3 Under **What do you want to do?**, click **Transfer files and settings**.
- 4 On the **Files and Settings Transfer Wizard** welcome screen, click **Next**.
- 5 On the **Which computer is this?** screen, click **Old Computer**, and then click **Next**.
- 6 On the **Select a transfer method** screen, click the transfer method you prefer.
- 7 On the **What do you want to transfer?** screen, select the items you want to transfer and then click **Next**.

After the information has been copied, the **Completing the Collection Phase** screen appears.

- 8 Click **Finish**.

To transfer data to the new computer:

- 1 On the **Now go to your old computer** screen on the new computer, click **Next**.

- 2 On the **Where are the files and settings?** screen, select the method you chose for transferring your settings and files, and then click **Next**.

The wizard reads the collected files and settings and applies them to your new computer.

When all of the settings and files have been applied, the **Finished** screen appears.

- 3 Click **Finished** and restart the new computer.


## Setting Up a Home and Office Network


### Connecting to a Network Adapter

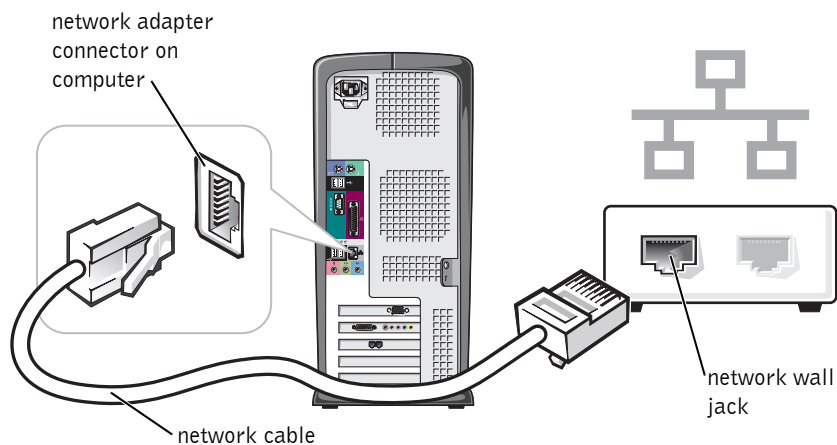
Before you connect your computer to a network, it must have a network adapter installed and a network cable connected to it.

To connect a network cable:

- 1 Connect the network cable to the network adapter connector on the back of your computer.
- 2 Connect the other end of the network cable to a network connection device, such as a network wall jack.

 **HINT:** Insert the cable until it clicks into place, and then gently pull it to ensure that it is secure.

 **HINT:** Do not use a network cable with a telephone wall jack.





**HINT:** Selecting the connection method **This computer connects directly to the Internet** enables the integrated firewall provided with Windows XP.

## Network Setup Wizard

Windows XP 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**.
- 4 Complete the checklist and required preparations, and return to the **Network Setup Wizard**.
- 5 Follow the instructions on the screen.

## Connecting to the Internet

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 phone line. Dial-up connections are considerably slower than DSL and cable modem connections.
- DSL connections that provide high-speed Internet access through your existing phone line. With a DSL connection, you can access the Internet and use your phone 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 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**.
- 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 42. 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.



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

 **HINT:** Ensure that you follow all copyright laws when you create CDs.

 **HINT:** The information in this section also applies to using Easy CD Creator Basic with a DVD+RW or a DVD+R drive.

 **HINT:** Some music and game CDs are copy-protected. If you have a CD that cannot be copied, you must use the original CD for everyday use.

## Copying CDs

This section applies only to computers that have a CD- or DVD-recording device.

The information in this section is based on the Roxio Easy CD Creator Basic documentation that came with your computer. See the following section, "Using Easy CD Creator Basic," for instructions on how to locate that documentation.

To burn CDs, you need to use CD-burner software. Roxio Easy CD Creator Basic is your computer's CD-burner software. The software includes these project programs that enable you to record specialty CDs for different types of uses:

- DirectCD allows you to format a blank CD-R or CD-RW disc so that you can use Microsoft® Windows® Explorer to drag and drop data files to the CD-RW drive. You can use a DirectCD-formatted CD-RW disc like another hard drive on your computer because CD-RW discs are fully rewritable (CD-R discs can be used with DirectCD, but that media type has overwriting limitations—see "Using Blank CD-R Discs or Blank CD-RW Discs" for recording media differences).
- MusicCD allows you to burn custom music CDs.
- DataCD allows you to copy a variety of your documents, such as spreadsheet or accounting files, to a CD for permanent storage.
- Disc Copier allows you to make a backup copy of almost any type of CD. This program allows you to make a copy of a CD for everyday use so that you can archive and save the original copy. (Disc Copier is titled "CD Copier" in some versions of Roxio CD Creator Basic.)

All four project programs are available on the Easy CD Creator Basic **Select a Project** menu screen. To view the **Select a Project** menu screen, click the **Start** button, point to **All Programs**→**Roxio Easy CD Creator**, and then click **Project Selector**.

## Using Easy CD Creator Basic

See the Easy CD Creator Basic documentation for instructions on how to use the program, information about different recording techniques, and CD media limitations. The Easy CD Creator Basic documentation is located in the Microsoft® Windows® XP Help and Support Center (see page 17). The documentation is also provided on the *Dell Dimension ResourceCD*, which is included with your computer. Each Easy CD Creator Basic project program also has thorough online help files.

## Using Blank CD-R Discs or Blank CD-RW Discs

Your CD-RW drive writes to two different types of recording media—CD-R and CD-RW discs. Use blank CD-R (CD-Recordable) disks to record music or permanently store data files. After creating a CD-R disc, you cannot write to that disc again without changing your method of recording (see the Roxio documentation for more information). Use blank CD-RW (CD-ReWritable) discs when you want to write, erase, rewrite, and update your files onto CDs.

## Helpful Tips

- You must use the Easy CD Creator Basic project programs to copy and record all music and data CDs. You can use Windows Explorer to drag and drop files to a CD-R or CD-RW disc only after you first use DirectCD to format the disc.
- You must use CD-R discs to burn music CDs that you want to play in regular stereos. CD-RW discs do not play in most home or car stereos.
- If you want to copy files from the Internet or files from a floppy or Zip drive, copy those files to your hard drive first, and then burn your CD. Your CD-RW drive requires a steady stream of data to properly record. Direct Internet downloads, floppy drives, and Zip drives may not be able to provide a steady data stream to your CD-RW drive.
- Music MP3 files can be played only on MP3 players or on computers that have MP3 software installed.
- Ensure that you set the sampling rate to at least 128 Kbps when you burn MP3 files to a CD. Otherwise, recording errors may occur.



**HINT:** If you have a DVD/CD-RW combo drive and you experience recording problems, first check for available software patches at the Dell Support website at [support.dell.com](http://support.dell.com) and if necessary, the Roxio support website at [support.roxio.com](http://support.roxio.com).

- Do not burn a blank CD-R or CD-RW disc to its maximum capacity; for example, do not copy a 650-MB file to a 650-MB blank CD. The CD-RW drive needs 1 or 2 MB of the blank CD to finalize the recording.
- Use a blank CD-RW disc to practice CD recording until you are familiar with CD recording techniques. If you make a mistake, you can erase the CD-RW disc and try again. You can also use blank CD-RW discs to test music file projects before you record the project permanently to a blank CD-R disc.
- See the Roxio support website at [support.roxio.com](http://support.roxio.com) for additional helpful tips.

### How to Copy a CD

This procedure assumes that your computer is equipped with a single CD-RW drive (without an additional CD drive). If your computer is equipped with both types of drives, see the Roxio documentation for instructions on how to copy CDs from a CD drive to a CD-RW drive.

- 1 Click the **Start** button, point to **All Programs**→**Roxio Easy CD Creator**, and then click **Project Selector**.

The **Select a Project** window appears.

- 2 Click **Disc Copier**. (Disc Copier is titled "CD Copier" in some versions of Easy CD Creator Basic.)

The **Disc Copier** window appears and displays your CD-RW drive in the **Copy from** and the **Record to** lists.

- 3 Insert the source CD that you want to copy into the CD-RW drive.

The Disc Copier project program briefly checks the source CD in the CD-RW drive to ensure that it is a readable CD.

- 4 Click **Copy**.


Depending on the size of the files that are being copied, the copy process may take a few minutes.

- 5 After the source CD is copied, remove the source CD from the CD-RW drive tray.

The CD-RW drive tray opens automatically after the source CD is copied.



- 6 Insert a blank CD into the CD-RW drive and close the tray.  
The recording starts automatically.
- 7 After the recording completes, click **OK**.


 **HINT:** You must use CD-R discs to burn music CDs that you want to play in regular stereos. CD-RW discs do not play in most home or car stereos.

## Hyper-Threading


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


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


- 1 Click the **Start** button, right-click **My Computer**, and then click **Properties**.
- 2 Click **Hardware** and click **Device Manager**.
- 3 In the **Device Manager** window, click the plus (+) sign next to the processor type. If Hyper-Threading is enabled, the processor is listed twice.

 **HINT:** Hyper-Threading is supported only on computers that have 3.06-GHz microprocessors (or higher) installed.

You can enable or disable Hyper-Threading through the system setup program. For information on accessing the system setup program, see page 110. For more information on Hyper-Threading, search the Knowledge Base on the Dell Support website at [support.dell.com](http://support.dell.com).

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

 **HINT:** This procedure changes the boot sequence for one time only. On the next start-up, the computer boots according to the devices specified in the system setup program.

 **HINT:** If you are having difficulty turning off your computer, see "General Problems" on page 45.

## Booting to a USB Device

To reboot your computer to a USB device such as a floppy drive, memory key, or CD-RW drive:


- 1 Connect the USB device to a USB connector (see page 76 and page 78).
- 2 Shut down (see the following section) and restart the computer.
- 3 Turn on the computer.
- 4 When the DELL™ logo appears, press <F12> immediately.

If you wait too long and the Microsoft® Windows® logo appears, continue to wait until you see the Windows desktop. Then shut down your computer through the **Start** menu and try again.

- 5 When the boot device list appears, highlight USB Flash Device and press <Enter>.

The computer reboots to the connected USB device.

## Turning Off the Computer

 **NOTICE:** To avoid losing data, turn off your computer by performing a Microsoft® Windows® operating system shutdown, as described next, rather than by pressing the power button.

- 1 Save and close any open files, exit any open programs, click the **Start** button, and then click **Turn Off Computer**.
- 2 In the **Turn off computer** window, click **Turn off**.

The computer turns off after the shutdown process finishes.

- 3 Turn off your monitor and any other devices connected to power.

# 2

## SECTION 2

# **Solving Problems**

---

Finding Solutions

Finding Help Information

Battery Problems

Drive Problems

E-Mail, Modem, and Internet Problems

Error Messages

Keyboard Problems

Mouse Problems

Network Problems

Power Problems

Printer Problems

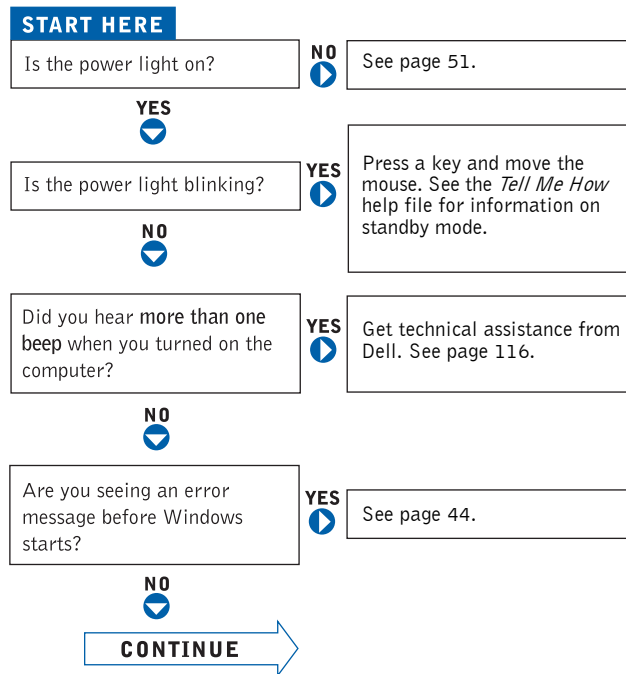
Scanner Problems

Sound and Speaker Problems

Video and Monitor Problems

## Finding Solutions

Sometimes it's difficult to figure out where to go for answers. Use this chart to help you quickly find the answers to your questions.



Are you having a problem with...  <b>NO</b>	▶	video or the monitor?	<b>YES</b> ▶	See page 57.
		sound or the speakers?	<b>YES</b> ▶	See page 55.
		the printer?	<b>YES</b> ▶	See page 53.
		the modem?	<b>YES</b> ▶	See page 42.
		the mouse?	<b>YES</b> ▶	See page 49.
		the keyboard?	<b>YES</b> ▶	See page 48.
		the hard drive or a disk drive?	<b>YES</b> ▶	See page 39.
		the network adapter?	<b>YES</b> ▶	See page 50.
		the scanner?	<b>YES</b> ▶	See page 54.
		Windows error messages?	<b>YES</b> ▶	See page 44.
		a program?	<b>YES</b> ▶	See page 45.
		the Internet?	<b>YES</b> ▶	See page 42.
		your e-mail?	<b>YES</b> ▶	See page 42.
	Are you having some other type of problem?	<b>YES</b> ▶	See page 45.	

## Finding Help Information

### **TO ACCESS THE *Tell Me How* HELP FILE —**


- 1 Click the **Start** button, and then click **Help and Support**.
- 2 Click **User and system guides**, and then click **User's guides**.
- 3 Click **Tell Me How**.


### **TO ACCESS WINDOWS HELP —**

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

**TO LOCATE ADDITIONAL INFORMATION FOR YOUR COMPUTER —** See page 15.

## 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 on page 9.

**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 page 113). If the battery still does not work properly, contact Dell (see page 116).

# Drive Problems

## Floppy drive problems

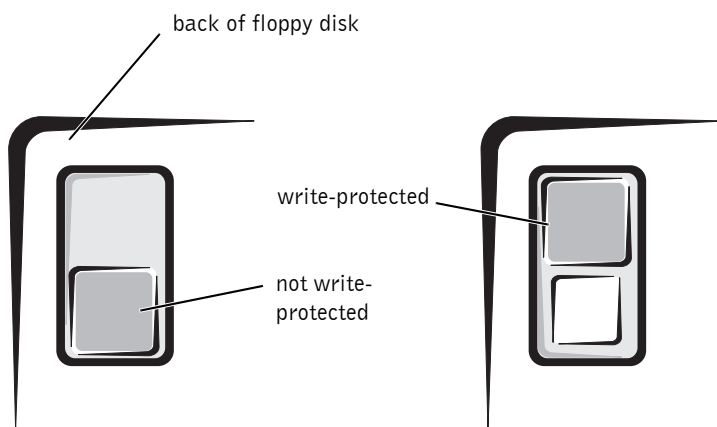
**ENSURE THAT WINDOWS® RECOGNIZES THE DRIVE** — Click the Start button, and then double-click My Computer. If the floppy drive is not listed, perform a full scan with your antivirus software to check for and remove viruses. Viruses can sometimes prevent Windows from recognizing the drive.

### TEST THE DRIVE —

- Eject and firmly reinsert the floppy disk.
- Insert another disk to eliminate the possibility that the original floppy disk is defective.
- Insert a bootable floppy disk and reboot the computer.

### ENSURE THAT THE DISK IS NOT FULL OR WRITE-PROTECTED —

Ensure that the disk has available space and that it is not write-protected (locked). See the following illustration.





**HINT:** High-speed CD drive vibration is normal and may cause noise. This does not indicate a defect in the drive or the CD.



**NOTICE:** Do not attempt to clean drive heads with a swab. You may accidentally misalign the heads, which can render the drive inoperable.

**CLEAN THE DRIVE** — Use a commercially available cleaning kit.

## CD drive problems

**ADJUST THE WINDOWS VOLUME CONTROL** — Click the speaker icon in the lower-right corner of your screen.

- Ensure that the volume is turned up by clicking the slider and dragging it up.
- Ensure that the sound is not muted by clicking any boxes that are checked.

**TEST THE DRIVE WITH ANOTHER CD** — Insert another CD to eliminate the possibility that the original CD is defective.

**CHECK THE SPEAKERS AND SUBWOOFER** — See "Sound and Speaker Problems" on page 55.

**ENSURE THAT WINDOWS RECOGNIZES THE DRIVE** — Click the Start button, and then double-click **My Computer**. If the CD 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.

**CLEAN THE DISC** — See the *Tell Me How* help file for instructions on cleaning your CDs. To access help files, see page 38.


**CHECK FOR INTERRUPT REQUEST CONFLICTS** — See page 70.



## Problems writing to a CD-RW drive

**TURN OFF STANDBY MODE IN WINDOWS BEFORE WRITING TO A CD-RW DISC** — For information on power conservation modes, see the *Tell Me How* help file or search for the keyword *standby* in Windows Help. To access help files, see page 38.

**SEE THE CD-RW DOCUMENTATION FOR INSTRUCTIONS** — The CD-RW drive must receive a steady stream of data when writing. If the stream is interrupted, an error occurs. Try closing all programs before writing to the CD-RW.

 **HINT:** If you disable standby mode to write to a CD-RW drive, remember to reenable standby mode when you finish writing to the CD.


## DVD drive problems

**TEST THE DRIVE WITH ANOTHER DVD** — Insert another DVD to eliminate the possibility that the original DVD is defective.

**ENSURE THAT WINDOWS RECOGNIZES THE DRIVE** — Click the **Start** button, and then double-click **My Computer**. If the 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.

**CLEAN THE DISC** — See the *Tell Me How* help file for instructions on cleaning your DVDs. To access help files, see page 38.

**CHECK FOR INTERRUPT REQUEST CONFLICTS** — See page 70.

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

## Hard drive problems

### **RUN CHECK DISK —**

- 1 Click the **Start** button, and then double-click **My Computer**.
- 2 Right-click the drive letter (local disk) that you want to scan for errors, and then click **Properties**.
- 3 Click the **Tools** tab.
- 4 Under **Error-checking**, click **Check Now**.
- 5 Click **Start**.

**CHECK FOR INTERRUPT REQUEST CONFLICTS —** See page 70.

## E-Mail, Modem, and Internet Problems



**HINT:** 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 TELEPHONE LINE CONNECTION —** Verify that the telephone line is connected to the jack on the modem. (The jack has either a green label or a connector-shaped icon next to it.) Ensure that you hear a click when you insert the telephone line connector into the modem.

**CHECK THE TELEPHONE JACK —** Disconnect the telephone line from the modem and connect it to a telephone. Listen for a dial tone.

### **CONNECT THE MODEM DIRECTLY TO THE TELEPHONE WALL JACK —**

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.

**USE A DIFFERENT TELEPHONE LINE —** 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 **Programs**, and then click **Modem Helper**. Follow the instructions on the screen to identify and resolve modem problems. (Modem Helper is not available on all computers.)

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

- 1 Click the **Start** button, and 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 responses, the modem is operating properly.

**TURN OFF CALL WAITING (CATCH-PHONE) —** See your telephone directory for instructions on deactivating this feature. Then adjust the dial-up networking connection properties.

- 1 Click the **Start** button, and then click **Control Panel**.
- 2 Click **Printers and Other Hardware**, and then click **Phone and Modem Options**.
- 3 Click your connection type to highlight it.
- 4 Click the **Dialing Rules** tab, and then click **Edit**.
- 5 Click the **To Disable Call Waiting** box to place a checkmark in it.
- 6 Select the disable code from the drop-down menu (for example, \*70).
- 7 Click **Apply**, and then click **OK**.

**ENSURE THAT YOU ARE CONNECTED TO THE INTERNET —** 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.

**ENSURE THAT YOU HAVE SUBSCRIBED TO AN INTERNET SERVICE PROVIDER —** Contact an Internet service provider to subscribe.

**CONTACT YOUR INTERNET SERVICE PROVIDER —** Contact your Internet service provider for assistance.

**CHECK FOR INTERRUPT REQUEST CONFLICTS —** See page 70.

## Error Messages

**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.
- 2 Click **Control Panel**.
- 3 Click **Add or Remove Programs**.
- 4 Select the program you want to remove.
- 5 Click the **Change or Remove Program** icon.
- 6 See the program documentation for installation instructions.

**INSERT BOOTABLE MEDIA  
NON-SYSTEM DISK ERROR**

**NTLOADER MISSING —** A non-bootable floppy disk may be in the floppy drive. Remove the floppy disk and restart the computer. Insert a bootable floppy disk or CD.

**NOT ENOUGH MEMORY OR RESOURCES. CLOSE SOME PROGRAMS AND TRY AGAIN —** You have too many programs open. Close all windows and open the program that you want to use. In some cases, you might have to restart your computer to restore computer resources. If so, try running the program that you want to use first.

**OPERATING SYSTEM NOT FOUND —** Contact Dell (see page 116).

**THE FILE BEING COPIED IS TOO LARGE FOR THE DESTINATION DRIVE —** The file that you are trying to copy is too large to fit on the disk. Try copying the file to a blank disk or using a larger-capacity disk.

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

# General Problems

## A program stops responding


### END THE PROGRAM —

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

**TURN THE COMPUTER OFF —** If your computer locks up and you are unable to get a response by pressing a key on your keyboard or moving your mouse, press and hold the power button for at least 8 to 10 seconds until the computer turns off. Then press the power button again to turn on the computer. You might lose data if you are unable to perform an operating system shutdown.

## A program crashes repeatedly

**CHECK THE SOFTWARE DOCUMENTATION —** Many software manufacturers maintain websites with information that may help you solve the problem. Ensure that you properly installed and configured the program. If necessary, uninstall and then reinstall the program.

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

## A program is designed for an earlier Windows operating system

### RUN THE PROGRAM COMPATIBILITY WIZARD —

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

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

## A solid blue screen appears

**TURN THE COMPUTER OFF** — If the computer does not respond to a keystroke or a proper shutdown, press the power button for at least 8 to 10 seconds until the computer turns off. Press the power button again to restart the computer. The chkdsk program automatically runs during the start-up process. Follow the instructions on the screen.

## Other software problems

**CHECK THE SOFTWARE DOCUMENTATION OR CONTACT THE SOFTWARE MANUFACTURER FOR TROUBLESHOOTING INFORMATION**

**BACK UP YOUR FILES IMMEDIATELY** — If your computer has a CD-RW drive or a zip drive installed, see the drive's documentation for instructions.

**ENSURE THAT YOU HAVE NOT MADE AN ERROR WHILE ENTERING DATA** — See the program documentation to make sure that the values or characters you are entering are valid.

**CHECK FOR VIRUSES** — Use a virus-scanning program to check the hard drive, floppy disks, or CDs.

**RESTART THE COMPUTER** — Save and close any open files, exit any open programs, and then shut down your computer through the **Start** menu instead of pressing the power button. Otherwise, you may lose data.

**CHECK FOR COMPATIBILITY** —

- Ensure that the program is compatible with the operating system installed on your computer and that your computer meets the minimum hardware requirements needed to run the software. See the software documentation for information.
- If necessary, uninstall and then reinstall the program.

**ENSURE THAT YOU PROPERLY INSTALLED AND CONFIGURED THE PROGRAM** — See the software documentation for information. If necessary, uninstall and then reinstall the program.

## Other technical problems

**GO TO THE DELL SUPPORT WEBSITE** — Go to [support.dell.com](http://support.dell.com) for help with general usage, installation, and troubleshooting questions. The support website offers several different tools to help you, such as Dell Forum—a chat room where you can communicate with other Dell customers about their computers and gain access to technical support through e-mail. See "Dell Support website" on page 16 for more information about the website. See "Dell Technical Support Policy (U.S. Only)" on page 114 for a description of the hardware and software support provided by Dell.

**CALL DELL** — If you cannot solve your problem using the Dell Support website or e-mail service, call Dell for technical assistance (see page 116). See "Dell Technical Support Policy (U.S. Only)" on page 114 for a description of the hardware and software support provided by Dell.

## General hardware problems

If your computer exhibits one or more of the following symptoms, a device conflict may exist:

- Your computer locks up, particularly while using a specific device.
- A recently added device does not work.
- A sound card emits noise or demonstrates other problems.
- Unintelligible characters print from the printer.
- The mouse pointer does not move or "stutters" when it moves.
- Messages appear stating that the computer is not operating at maximum performance.
- Errors occur and programs crash for no apparent reason.
- Nothing displays on the monitor.

**REMOVE ANY RECENTLY ADDED HARDWARE TO SEE IF IT RESOLVES THE CONFLICT** — If removing the hardware resolves the conflict, see the hardware documentation for configuration and troubleshooting instructions. If the problem persists, contact the hardware manufacturer for technical assistance.

**CHECK YOUR OPERATING SYSTEM DOCUMENTATION FOR ADDITIONAL TROUBLESHOOTING INFORMATION**

**CHECK FOR INTERRUPT REQUEST CONFLICTS** — See page 70.

## Keyboard Problems

### **RESTART THE COMPUTER** —

- If the mouse is functioning, shut down the computer (see page 34). After the computer shuts down, press the power button to restart the computer.
- If the computer does not respond to a keystroke or the mouse, press the power button for at least 8 to 10 seconds until the computer turns off. Press the power button again to restart the computer.

### **CHECK THE KEYBOARD CABLE** —

- Ensure that the keyboard cable is firmly connected to the computer.
- Shut down the computer (see page 34), reconnect the keyboard cable as shown on the setup diagram for your computer, and then restart the computer.
- Check the cable connector for bent or broken pins and for damaged or frayed cables. Straighten bent pins.
- Remove keyboard extension cables and connect the keyboard directly to the computer.

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

### **IF THE KEYBOARD IS WIRELESS, REPLACE THE KEYBOARD BATTERY** —

See the wireless keyboard documentation for more information.

**CHECK FOR INTERRUPT REQUEST CONFLICTS** — See page 70.



# Mouse Problems

## **RESTART THE COMPUTER —**

- 1 Simultaneously press <Ctrl><Esc> to display the **Start** menu.
- 2 Type **u**, press the keyboard arrow keys to highlight **Shut down** or **Turn Off**, and then press <Enter>.
- 3 After the computer turns off, press the power button to restart the computer.

## **IF YOU CONNECTED THE MOUSE BEFORE TURNING ON THE COMPUTER, RECONNECT THE MOUSE CABLE —**

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

## **IF YOU CONNECTED THE MOUSE AFTER TURNING ON THE COMPUTER, REMOVE THE POWER CABLE, AND THEN RECONNECT THE MOUSE CABLE —** If the mouse is connected after the power is turned on, the mouse appears to be nonfunctional. To make the mouse function properly:

- 1 While your computer is on, remove the power cable from the back of the computer.
- 2 Connect the mouse to the computer.
- 3 Reconnect the power cable.
- 4 Turn on your computer.

Pressing the power button does not clear the computer's settings and does not restore mouse functionality.

## **CHECK THE MOUSE CABLE —**

- Check the cable connector for bent or broken pins and for damaged or frayed cables. Straighten bent pins.
- Ensure that the cable is firmly connected to the computer.

**TEST THE MOUSE —** Connect a properly working mouse to the computer, and try using the mouse. If the new mouse works, the original mouse was faulty.

**IF THE MOUSE IS WIRELESS, REPLACE THE MOUSE BATTERY —**

See the wireless mouse documentation for more information.

**CHECK THE MOUSE SETTINGS —**

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

**REINSTALL THE MOUSE DRIVER —** See page 65.

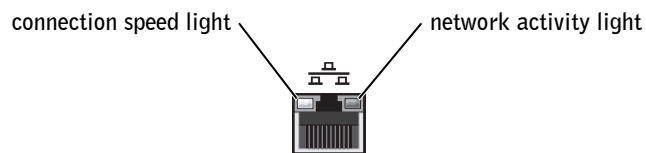
**CHECK FOR INTERRUPT REQUEST CONFLICTS —** See page 70.

## Network Problems

**CHECK THE NETWORK CABLE CONNECTOR —** Ensure that the network cable is connected as shown on page 27.

**CHECK THE NETWORK LIGHTS ON THE BACK OF THE COMPUTER —**

No light indicates that no network communication exists. Replace the network cable.




**ENSURE THAT THE COMPUTER IS PLUGGED IN AND TURNED ON**

**RESTART THE COMPUTER AND TRY TO LOG ON TO THE NETWORK AGAIN**

**CHECK YOUR NETWORK SETTINGS** — Contact your network administrator or the person who set up your network to verify that your network settings are correct and that the network is functioning.


**CHECK FOR INTERRUPT REQUEST CONFLICTS** — See page 70.

## Power Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

**ADJUST THE POWER PROPERTIES** — Your computer may be in standby or hibernate mode. For information on power conservation modes, see the *Tell Me How* help file, or search for the keyword *standby* or *hibernate* in Windows® Help. To access help files, see page 38.

**IF THE POWER LIGHT IS BLINKING GREEN** — The computer is in standby mode. Press a key on the keyboard and move the mouse to resume normal operation.

 **HINT:** If the power light on the front is green and your computer is not responding, see "Diagnostic Lights" on page 60.

**IF THE POWER LIGHT IS OFF** — The computer is either turned off or is not receiving power.

- Ensure that the power cable is firmly inserted into both the power connector on the back of the computer and the electrical outlet.
- If the computer is plugged into a power strip, ensure that the power strip is plugged into an electrical outlet and that the power strip is turned on.
- Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
- Ensure that the voltage selection switch is set to match the AC power at your location (see page 11).
- Bypass power protection devices, power strips, and power extension cables to verify that the computer turns on.
- Swap the computer and monitor power cables to determine if the power cable is defective.
- Ensure that the microprocessor power cable is securely connected to the system board (see page 85).
- Ensure that the power supply cables are securely connected to the system board (see page 85).
- Remove and then reinstall the memory modules (see page 92).
- Remove and then reinstall any cards (see page 86).
- Remove and then reinstall the video card, if applicable (see page 94).
- If the problem persists, contact Dell (see page 116).

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

- Ensure that the microprocessor power cable is securely connected to the system board (see page 85).
- If the problem persists, contact Dell (see page 116).

**ELIMINATE INTERFERENCE** — Electrical appliances on the same circuit or operating near the computer can cause interference. Other causes of interference are:

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

# Printer Problems

**CHECK THE PRINTER DOCUMENTATION** — See the printer documentation for setup and troubleshooting information.

**ENSURE THAT THE PRINTER IS TURNED ON** — See the printer documentation for power button information.

**VERIFY THE PRINTER CABLE CONNECTIONS** —

- See the printer documentation for cable connection information.
- Ensure that the printer cable is connected as described on page 20.
- Ensure that the printer cables are securely connected to the printer and the computer.


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

**VERIFY THAT THE PRINTER IS RECOGNIZED BY WINDOWS®** —

- 1 Click the **Start** button.
- 2 Click **Control Panel**.
- 3 Click **Printers and Other Hardware**.
- 4 Click **View installed printers or fax printers**. If the printer is listed, right-click the printer icon.
- 5 Click **Properties**, and then select the **Ports** tab. For a parallel printer, ensure that the **Print to the following port(s):** setting is **LPT1 (Printer Port)**. For a USB printer, ensure that the **Print to the following port(s):** setting is **USB**.

**REINSTALL THE PRINTER DRIVER** — See page 65.

**CHECK FOR INTERRUPT REQUEST CONFLICTS** — See page 70.

 **HINT:** Dell does not cover the printer's warranty. If you need technical assistance for your printer, call the printer's manufacturer. See the printer documentation for the correct phone number.



**HINT:** Dell does not cover the scanner's warranty. If you need technical assistance for your scanner, call the scanner's manufacturer. See the scanner documentation for the correct phone number.

## Scanner Problems

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

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

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

**CHECK THE CABLE CONNECTIONS** —

- If your scanner has a power cable, ensure that the power cable is firmly connected to a working electrical outlet and that the scanner is turned on.
- Ensure that the scanner cable is firmly connected to the computer and to the scanner.

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

- 1 Click the Start button.
- 2 Click Control Panel.
- 3 Click Printers and Other Hardware.
- 4 Click Scanners and Cameras. If your scanner is listed, Windows recognizes the scanner.

**REINSTALL THE SCANNER DRIVER** — See the scanner documentation for instructions.

# Sound and Speaker Problems

## No sound from speakers

**CHECK THE SPEAKER CABLE CONNECTIONS** — Ensure that the speakers are connected as shown on the setup diagram supplied with the speakers.

**ENSURE THAT THE SUBWOOFER AND THE SPEAKERS ARE TURNED ON** — See the setup diagram supplied with the speakers. If your speakers have volume controls, adjust the volume, bass, or treble to eliminate distortion.

**ADJUST THE WINDOWS VOLUME CONTROL** — Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.


**DISCONNECT HEADPHONES FROM THE HEADPHONE CONNECTOR** — Sound from the speakers is automatically disabled when headphones are connected to the computer's front-panel headphone connector.

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

**ENABLE DIGITAL MODE** — Your speakers do not work if the CD drive is operating in analog mode. To enable digital mode:

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

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

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

**RUN THE SPEAKER DIAGNOSTICS** — Some speaker systems have self-diagnostics. See the speaker documentation for diagnostics instructions.

**REINSTALL THE AUDIO (SOUND) DRIVER** — See page 65.

**CHECK FOR INTERRUPT REQUEST CONFLICTS** — See page 70.

## No sound from headphones

**CHECK THE HEADPHONE CABLE CONNECTION** — If your computer has a front-panel headphone connector, ensure that the headphone cable is securely inserted into that connector (see page 76).

**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.

**DISABLE DIGITAL MODE** — Your headphones do not work if the CD drive is operating in digital mode. To disable digital mode:

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



# Video and Monitor Problems

## If the screen is blank

**CHECK THE MONITOR POWER LIGHT** — If the power light is lit or blinking, the monitor has power. If the power light is blinking, press a key on the keyboard or move the mouse.

**PRESS THE MONITOR POWER BUTTON** — Firmly press the button to ensure that the monitor is turned on.

**CHECK THE MONITOR CABLE CONNECTION** — Check the connector for bent or broken pins. (It is normal for monitor cable connectors to have missing pins.) Ensure that the video cable is connected as shown on the setup diagram for your computer.


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

**SWAP THE POWER CABLES** — Swap the computer and monitor power cables to determine if the power cable is defective.

**TEST THE VIDEO EXTENSION CABLE (IF USED)** — If you are using a video extension cable and removing the cable solves the problem, the cable is defective.

**TEST ANOTHER MONITOR** — If another monitor is available, connect it to the computer.

**CHECK THE DIAGNOSTIC LIGHTS** — See page 60.

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

## If the screen is difficult to read

**CHECK THE MONITOR SETTINGS** — See the monitor documentation for instructions on adjusting the contrast and brightness, demagnetizing (degaussing) the monitor, and running the monitor self-test.

**MOVE THE SUBWOOFER AWAY FROM THE MONITOR** — If your speaker system includes a subwoofer, ensure that the subwoofer is at least 60 cm (2 ft) away from the monitor.

**MOVE THE MONITOR AWAY FROM EXTERNAL POWER SOURCES** — Fans, fluorescent lights, halogen lamps, and other electrical devices can cause the screen image to appear "shaky." Turn off nearby devices to check for interference.

**ROTATE THE MONITOR TO FACE A DIFFERENT DIRECTION** — Eliminate sunlight glare, which can cause poor picture quality.

**ADJUST THE WINDOWS® DISPLAY SETTINGS** —

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

**RESTORE THE RECOMMENDED SETTINGS** — Restore the original resolution and refresh rate settings. See the *Tell Me How* help file for instructions. To access help files, see page 38.

**CHECK FOR INTERRUPT REQUEST CONFLICTS** — See page 70.

# 3

## SECTION 3

# Advanced Troubleshooting

Diagnostic Lights

Dell Diagnostics

Drivers

Using System Restore

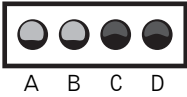
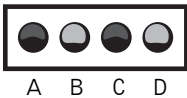
Resolving Software and Hardware Incompatibilities





Reinstalling Microsoft® Windows® XP

## Diagnostic Lights

To help you troubleshoot a problem, your computer is equipped with four lights on the back panel labeled "A," "B," "C," and "D" (see page 78). These lights can be yellow or green. When the computer starts normally, the lights flash. After the computer starts, the lights remain green. If the computer malfunctions, the color and sequence of the lights identify the problem.

**⚠ CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

Diagnostic Code	Definition	Corrective Action
<p>Y Y G G</p>  <p>A B C D</p>	<p>Memory modules are detected, but a memory failure has occurred.</p>	<ul style="list-style-type: none"> <li>• If you have one memory module installed, reinstall it (see page 92), and then restart the computer.</li> <li>• If you have two or more memory modules installed, remove the modules, reinstall one module (see page 92), and then restart the computer. If the computer starts normally, reinstall an additional module. Continue until you identify a faulty module or reinstall all modules without error.</li> <li>• If available, install properly working memory of the same type into your computer (see page 92).</li> <li>• If the problem persists, contact Dell (see page 116).</li> </ul>
<p>G Y G Y</p>  <p>A B C D</p>	<p>Memory modules are detected, but a memory configuration or compatibility error exists.</p>	<ul style="list-style-type: none"> <li>• Be sure that there are no special memory module/memory connector placement requirements (see page 92).</li> <li>• Verify that the memory modules that you are installing are compatible with the computer (see page 107).</li> <li>• If the problem persists, contact Dell (see page 116).</li> </ul>

Diagnostic Code	Definition	Corrective Action
<p>G G G Y</p>  <p>A B C D</p>	Other failure.	<ul style="list-style-type: none"> <li>• Ensure that the cables are properly connected from the hard drive, CD drive, and DVD drive to the system board (see page 85).</li> <li>• If the problem persists, contact Dell (see page 116).</li> </ul>
<p>Y G Y Y</p>  <p>A B C D</p>	PCI bus failure has occurred.	<ol style="list-style-type: none"> <li><b>1</b> Determine if a conflict exists by removing a card (not the video card) (see page 90) and then restarting the computer.</li> <li><b>2</b> If the problem persists, reinstall the card that you removed, remove a different card (see page 90), and then restart the computer.</li> <li><b>3</b> Repeat this process for each card. If the computer starts normally, troubleshoot the last card removed from the computer for resource conflicts (see "Resolving Software and Hardware Incompatibilities" on page 70).</li> <li><b>4</b> If the problem persists, contact Dell (see page 116).</li> </ol>
<p>Y G Y G</p>  <p>A B C D</p>	Video controller failure.	<ul style="list-style-type: none"> <li>• If the computer has a video card, remove the card and reinstall it (see page 94).</li> <li>• If the problem persists or the computer has integrated video, contact Dell (see page 116).</li> </ul>
<p>G Y Y Y</p>  <p>A B C D</p>	No memory modules are detected.	<ul style="list-style-type: none"> <li>• Reinstall all memory modules (see page 92) and then restart the computer.</li> <li>• If the problem persists, contact Dell (see page 116).</li> </ul>

# Dell Diagnostics


## When to Use the Dell Diagnostics

If you experience a problem with your computer, perform the checks in "Solving Problems" (see page 35) and run the Dell Diagnostics before you contact Dell for technical assistance. Running the Dell Diagnostics may help you resolve the problem without contacting Dell. If you do contact Dell, the test results can provide important information for Dell's service and support personnel.

The Dell Diagnostics allows you to:

- Perform express, extended, or custom tests on one or all devices.
- Select tests based on a symptom of the problem you are having.
- Choose how many times a test is run.
- Display test results.
- Suspend testing if an error is detected.
- Access online help information that describes the tests and devices.
- Receive status messages that tell you whether tests completed successfully.
- Receive error messages if problems are detected.


## Starting the Dell Diagnostics

 **NOTICE:** Only use the Dell Diagnostics to test your Dell™ computer. Using this program with other computers can result in error messages.

Start the Dell Diagnostics from either your hard drive (see page 63) or from the *Dell Dimension ResourceCD* (see page 63).


### Starting the Dell Diagnostics From Your Hard Drive

- 1 Shut down and restart the computer.
- 2 When the DELL™ logo appears, press <F12> immediately.  
If you wait too long and the Microsoft® Windows® logo appears, continue to wait until you see the Windows desktop. Then shut down your computer through the **Start** menu and try again.
- 3 When the boot device list appears, highlight **Boot to Utility Partition** and press <Enter>.
- 4 When the Dell Diagnostics Main Menu appears, select the test you want to run (see page 64).

 **HINT:** If you receive a message stating that no Diagnostics utility partition has been found, follow the instructions to run the Dell Diagnostics from your ResourceCD (see page 63).

### Starting the Dell Diagnostics From the ResourceCD

- 1 Insert the ResourceCD into the CD drive.
- 2 Shut down and restart the computer.  
When the DELL™ logo appears, press <F12> immediately.  
If you wait too long and the Windows logo appears, continue to wait until you see the Windows desktop. Then shut down your computer through the **Start** menu and try again.
- 3 When the boot device list appears, highlight **IDE CD-ROM Device** and press <Enter>.
- 4 Select the **IDE CD-ROM Device** option from the CD boot menu.
- 5 Select the **Boot from CD-ROM** option from the menu that appears.
- 6 Type 1 to start the ResourceCD menu.
- 7 Type 2 to start the Dell Diagnostics.
- 8 Select **Run the 32 Bit Dell Diagnostics** from the numbered list. If multiple versions are listed, select the version appropriate for your platform.
- 9 When the Dell Diagnostics Main Menu appears, select the test you want to run (see page 64).

 **HINT:** This procedure changes the boot sequence for one time only. On the next start-up, the computer boots according to the devices specified in the system setup program.



**HINT:** The Service Tag number for your computer is located at the top of each test screen.

### Dell Diagnostics Main Menu

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

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

- 2 If a problem is encountered during a test, a message displaying the error code and a description of the problem appear. Write down the error code and problem description and follow the instructions on the screen.

If you cannot resolve the error condition, contact Dell (see page 116).

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

Tab	Function
Results	Displays the results of the test and any error conditions encountered.
Errors	Displays error conditions encountered, error codes, and problem description.
Help	Describes the test and may indicate requirements for running the test.



<b>Tab</b>	<b>Function</b>
Configuration	<p>Displays your hardware configuration for the selected device.</p> <p>The Dell Diagnostics obtains your configuration information for all devices from the system setup program, memory, and various internal tests and displays it in the device list in the left pane of the screen. The device list may not display the names of all the components installed on your computer or all devices attached to your computer.</p>
Parameters	Allows you to customize the test by changing the test settings.

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

## Drivers

### What Is a Driver?

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

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

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

If you experience a problem with any device, perform the steps in the following sections to identify whether the driver is the source of your problem and if necessary, to update the driver.

## Identifying Drivers

- 1 Click the **Start** button and click **Control Panel**.
- 2 Under **Pick a Category**, click **Performance and Maintenance**.
- 3 Click **System**.
- 4 In the **System Properties** screen, click the **Hardware** tab.
- 5 Click **Device Manager**.
- 6 In the **Device Manager** window, scroll down the list to see if any device has an exclamation point (a yellow circle with a [!]) on the device icon.  
  
If an exclamation point is next to the device name, you may need to reinstall the driver or install a new driver.

## Reinstalling drivers



**NOTICE:** The Dell Support website and your *Dell Dimension ResourceCD* provide approved drivers for Dell™ computers. If you install drivers obtained from other sources, your computer might not work correctly.

## Using Windows XP Device Driver Rollback

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

To use Device Driver Rollback:

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

If Device Driver Rollback does not resolve the problem, then use System Restore (see page 69) to return your computer to the operating state that existed before you installed the new driver.

### Using the Dell Dimension ResourceCD

If using Device Driver Rollback or System Restore (see page 69) does not resolve the problem, then reinstall the driver from the *Dell Dimension ResourceCD*:

- 1 With the Windows desktop displayed, insert the ResourceCD into the CD or DVD drive.

If this is your first time to use the ResourceCD, go to step 2. If not, go to step 5.


- 2 When the ResourceCD installation program starts, follow the prompts on the screen.
- 3 When the **InstallShield Wizard Complete** window appears, remove the ResourceCD and click **Finish** to restart the computer.
- 4 When you see the Windows desktop, reinsert the ResourceCD into the CD or DVD drive.
- 5 At the **Welcome Dell System Owner** screen, click **Next**.

A message stating that the ResourceCD is detecting hardware in your computer appears.

The drivers that are used by your computer are automatically displayed in the **My Drivers—The ResourceCD has identified these components in your system** window.


- 6 Click the driver that you want to reinstall and follow the instructions on the screen.

If a particular driver is not listed, then that driver is not required by your operating system.

 **HINT:** The ResourceCD displays drivers only for hardware that came on your computer. If you installed additional hardware, the drivers for the new hardware might not be displayed by the ResourceCD. If those drivers are not displayed, exit the ResourceCD program. For drivers information, see the documentation that came with that product.

## Using 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 Windows Help for information on using System Restore. To access Windows Help, see page 17.


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

### Creating a Restore Point

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

### Restoring the Computer to an Earlier Operating State

If problems occur after installing a device driver, use Device Driver Rollback (see page 66) to resolve the problem. If that is unsuccessful, then use System Restore.

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

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

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

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

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


- 5 Click **Next**.

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

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

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

### Undoing the Last System Restore

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

- 1 Click the **Start** button, point to **All Programs**→**Accessories**→**System Tools**, and then click **System Restore**.

- 2 Select **Undo my last restoration** and click **Next**.

- 3 Click **Next**.

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

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

### Enabling System Restore

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

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

- 2 Click **Performance and Maintenance**.

- 3 Click **System**.

- 4 Click the **System Restore** tab.

- 5 Make sure that **Turn off System Restore** is unchecked.

## Resolving Software and Hardware Incompatibilities

Windows XP IRQ conflicts occur if a device either is not detected during the operating system setup or is detected but incorrectly configured.

To check for conflicts on a computer running Windows XP:

- 1 Click the **Start** button and click **Control Panel**.
- 2 Click **Performance and Maintenance** and click **System**.
- 3 Click the **Hardware** tab and click **Device Manager**.
- 4 In the **Device Manager** list, check for conflicts with the other devices.  
Conflicts are indicated by a yellow exclamation point (!) beside the conflicting device or a red x if the device has been disabled.
- 5 Double-click any conflict to display the **Properties** window.  
If an **IRQ** conflict exists, the **Device** status area in the **Properties** window reports the cards or devices that share the device's **IRQ**.
- 6 Resolve conflicts by reconfiguring the devices or removing the devices from the **Device Manager**.

To use the Windows XP Hardware Troubleshooter:

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

## Reinstalling Microsoft® Windows® XP

### Before You Reinstall

If you are reinstalling the Windows XP operating system to correct a problem with a newly installed driver, use Windows XP Device Driver Rollback (see page 66) to replace the device driver with the previously installed version.

If Device Driver Rollback does not resolve the problem, then use System Restore (see page 68) to return your operating system to the operating state it was in before you installed the new device driver.

## Reinstalling Windows XP

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

The reinstallation process can take 1 to 2 hours to complete. After the reinstallation is complete, you will need to reinstall the device drivers, virus protection program, and other software.

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

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

## Preparing to Boot From the Operating System CD

- 1 Insert the *Operating System* CD into the CD or DVD drive.
- 2 Exit any program or utility that might run after you insert the CD.
- 3 Shut down (see page 33) and restart the computer.
- 4 Press <F12> immediately after the DELL™ logo appears.  
If the operating system logo appears, wait until you see the Windows desktop, and then shut down the computer and try again.
- 5 Use the arrow keys to select CD-ROM, and then press <Enter>.
- 6 Press any key when the `Press any key to boot from CD` message appears on the screen.

## Starting Windows XP Setup

- 1 When the **Windows XP Setup** screen appears, press <Enter> to select **To set up Windows now**.
- 2 Read the information in the **Microsoft Windows Licensing Agreement** screen, and then press <F8> on your keyboard to accept the license agreement.



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

- 3 If your computer already has Windows XP installed and you want to recover your current Windows XP data, type `r` to select the repair option, and then remove the CD from the drive.
- 4 If you want to install a new copy of Windows XP, press `<Esc>` to select the fresh copy option.
- 5 Press `<Enter>` to select the highlighted partition (recommended), and then follow the instructions on the screen.

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

### Completing the GUI Setup



**NOTICE:** When the computer restarts, the following message appears: Press any key to boot from the CD. *Do not* press any key when this message appears.

- 1 When the **Regional and Language Options** screen appears, select the settings for your location and click **Next**.
- 2 Enter your name and organization (optional) in the **Personalize Your Software** screen and click **Next**.
- 3 *If you are reinstalling Windows XP Home Edition*, at the **What's your computer's name** window, enter a name for your computer (or accept the name provided) and click **Next**.

*If you are reinstalling Windows XP Professional*, at the **Computer Name and Administrator Password** window, enter a name for your computer (or accept the one provided) and a password, and then click **Next**.

- 4 If you have a modem installed, enter the requested information and click **Next** when the **Modem Dialing Information** screen appears.
- 5 Enter the date, time, and time zone in the **Date and Time Settings** window and click **Next**.
- 6 *If your computer has a network adapter*, select **Typical** in the **Networking Settings** screen and click **Next**.

*If your computer does not have a network adapter*, this option does not appear.



- 7 If you are reinstalling Windows XP Professional, you may be prompted to provide further network information regarding your network configuration, such as the domain name or workgroup name. If you are unsure of your settings, accept the default selections.

Windows XP installs the operating system components, configures the computer, and then restarts the computer.

### Completing the Operating System Setup



**NOTICE:** When the computer restarts, you will see the following message:  
Press any key to boot from the CD. *Do not* press any key when this message appears.

- 1 When the **Welcome to Microsoft** screen appears, click **Next**.
- 2 When the **How will this computer connect to the Internet?** message appears, click **Skip**.
- 3 When the **Ready to register with Microsoft?** screen appears, select **No, not at this time** and click **Next**.

When the **Who will use this computer?** screen appears, you can enter up to five users.

- 4 Click **Next**.
- 5 Click **Finish** to complete the setup and remove the CD from the drive.

### Reinstalling Drivers and Software

- 1 Reinstall the appropriate drivers (see page 66).
- 2 Reinstall your virus protection software. See the documentation that came with the software for instructions.
- 3 Reinstall your other software programs. See the documentation that came with the software for instructions.



# 4

## SECTION 4

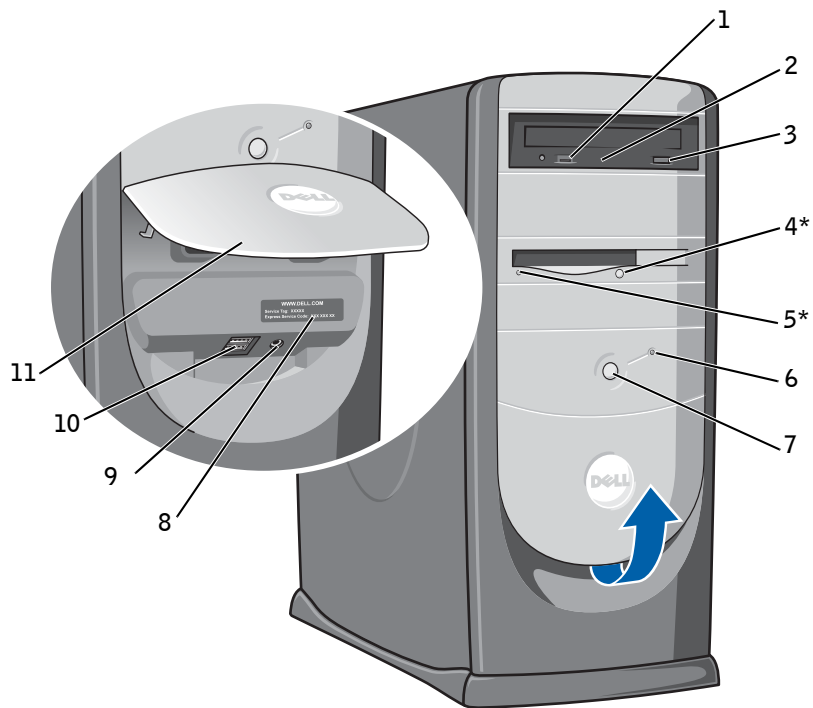
# Adding Parts

Front and Back View of the Computer  
Reattaching the Front Door and Hinge Arms  
Opening the Computer Cover  
Looking Inside Your Computer  
Installing and Removing Cards  
Adding Memory  
Adding or Replacing the AGP Card  
Adding a Second Hard Drive  
Adding a Floppy Drive  
Closing the Computer Cover


## Front and Back View of the Computer

### Front View

The front-panel door is removable; if you remove it or accidentally knock it off its hinges, it snaps back in place. For instructions on how to reattach the door, see page 80.

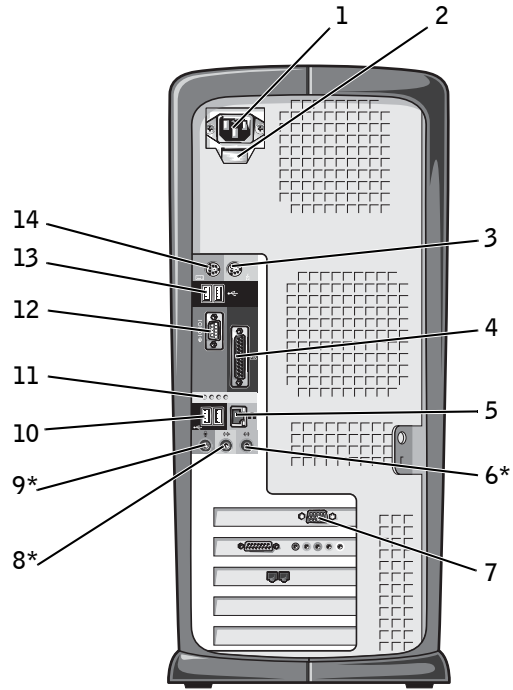


\*On computers with an optional floppy drive.

1	CD or DVD volume control dial	Move the dial to adjust the volume of your audio CD or DVD disc.
2	CD or DVD drive activity light	The drive activity light is on when the computer reads data from the CD or DVD drive.
3	CD or DVD eject button	Press this button to eject your CD from the CD or DVD drive.
4	floppy-drive eject button*	Press this button to eject a floppy disk from the floppy drive.
5	floppy-drive light button*	The floppy-drive light is on when the computer reads data from or writes data to the floppy drive. Wait until this light turns off before you remove the floppy disk from the drive.
6	hard drive light	The hard-drive light is on when the computer reads data from or writes data to the hard drive. The light might also be on when devices such as your CD player are operating.
7	power button	Press this button to turn on the computer.   <b>NOTICE:</b> To avoid losing data, do not use the power button to turn off the computer. Instead, perform a Windows shutdown.
8	service tag	The tag is used to identify your computer when you access the Dell Support website or call technical support.
9	headphone connector	Attach headphones. Use the headphone connector to attach headphones and most kinds of speakers. You can then hear all of the sounds your computer emits, such as system beeps and CDs.
10	USB 2.0 connectors (2)	Use the front USB connectors for devices that you connect occasionally, such as joysticks or cameras.  It is recommended that you use the back USB connectors for devices that typically remain connected, such as printers and keyboards.
11	front-panel door	Open the door to use the front-panel connectors.

\*On computers with an optional floppy drive.

### Back View



\*On computers with integrated audio.

1	power connector	The connection for the power cable.
2	voltage selection switch (may not be available on all computers)	Set the switch for the voltage that most closely matches the AC power available in your location. See "When Using Your Computer" on page 11 for additional information.
3	mouse connector	Plug a standard mouse into the green mouse connector. Turn off the computer and any attached devices before you connect a mouse to the computer. If you have a USB mouse, plug it into a USB connector.
4	parallel connector	Connect a parallel device, such as a printer, to the parallel connector. If you have a USB printer, plug it into a USB connector.
5	network adapter	Attach the UTP cable to an RJ45 jack wall plate or to an RJ45 port on a UTP concentrator or hub and press the other end of the UTP cable into the network adapter connector until the cable snaps securely into place.  Dell recommends the use of Category 5 wiring and connectors for our customers' networks.
6	line-in connector*	Use the blue line-in connector (available on computers with integrated sound) to attach a record/playback device such as a cassette player, CD player, or VCR.  On computers with a sound card, the line-in connector is on the card.
7	video connector	Plug the cable from your monitor into the blue connector.
8	line-out connector*	Use the green line-out connector (available on computers with integrated sound) to attach headphones and most speakers with integrated amplifiers.  On computers with a sound card, the line-out connector is on the card.
9	microphone connector*	Use the pink microphone connector (available on computers with integrated sound) 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.
10	USB 2.0 connectors (2)	Connect a USB device such as a mouse, keyboard, printer, joystick, or speaker system into any of the USB connectors.
11	diagnostic lights (4)	Use the lights to help you troubleshoot a computer problem based on the diagnostic code. For more information, see page 60.
12	serial connector	Connect a serial device, such as a handheld device, to the serial port.
13	USB 2.0 connectors (2)	Connect a USB device such as a mouse, keyboard, printer, joystick, or speaker system into any of the USB connectors.
14	keyboard connector	If you have a standard keyboard, plug it into the purple keyboard connector. If you have a USB keyboard, plug it into a USB connector.

\*On computers with integrated audio.

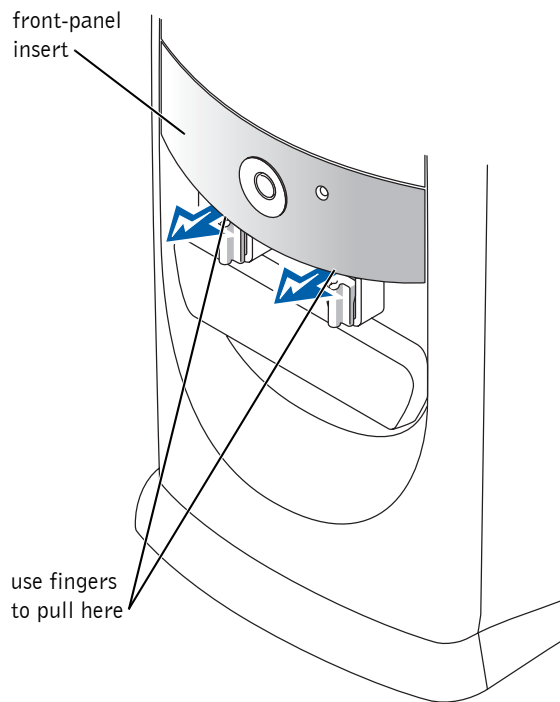
## Reattaching the Front Door and Hinge Arms

To prevent damage to your computer, the front-panel door is designed to "break away" if it is lifted up too far. If the front-panel door is open and it is pushed inward too hard, the hinge arms may also break away (the hinge arms are loose when they are detached).

### Reattaching the Hinge Arms

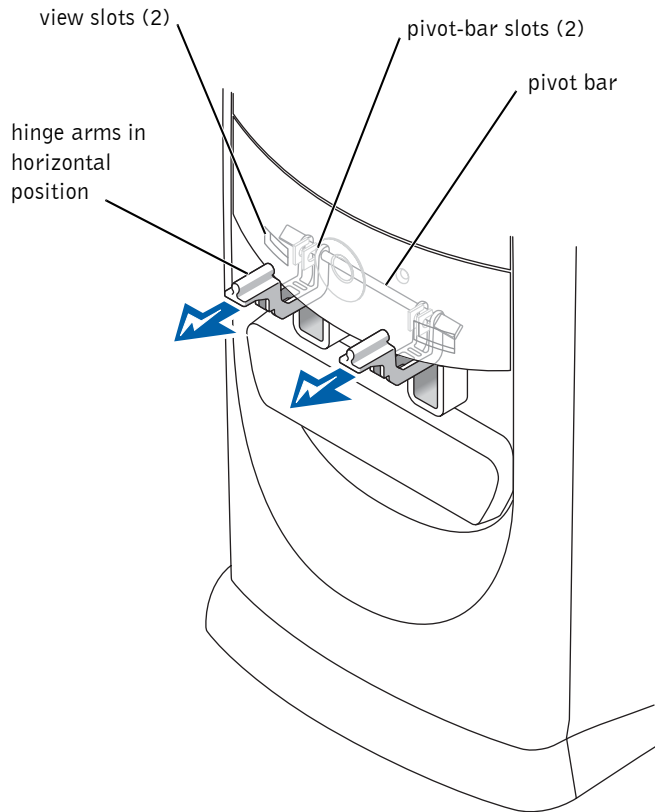
**⚠ CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions listed in "When Working Inside Your Computer" on page 12.

- 1 Shut down the computer through the **Start** menu (see page 33).
- 2 Disconnect the computer power cable from the electrical outlet.
- 3 Remove the front-panel door by gently snapping it off the two hinge arms.
- 4 Remove the front-panel insert above the door bay area by pulling the bottom of the insert with your fingers.





- 5 Lift both hinge arms to the horizontal position.
- 6 Use the two view slots to align the pivot bar with the two pivot-bar slots.



**ⓘ 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.

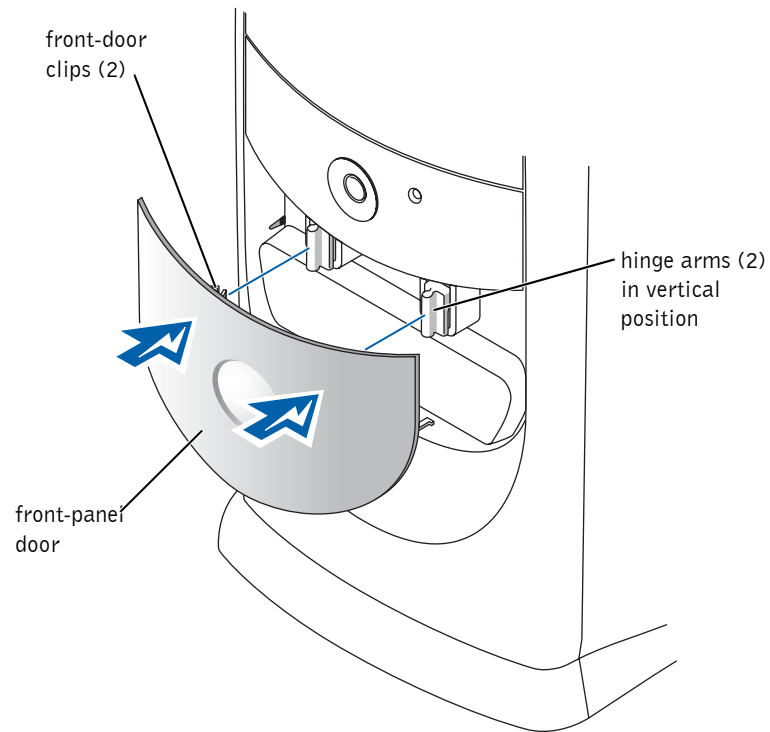
- 7 Pull the arms toward you until they snap into position.  
If the hinge arms do not snap back into position on the first attempt, slightly reposition the arms and try again.
- 8 After the hinge arms snap into position, lower and raise the arms two or three times to properly seat them.
- 9 Reattach the front-panel insert.

- 10 Reconnect the computer power cable to the electrical outlet.
- 11 Reattach the front door (see page 80).

### Reattaching the Front Door

**⚠ CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions listed in "When Working Inside Your Computer" on page 12.

- 1 Shut down the computer through the Start menu (see page 33).
- 2 Disconnect the computer power cable from the electrical outlet.
- 3 Lower the hinge arms to the vertical position.
- 4 Align the two clips on the inside of the front door with the two hinge arms.
- 5 Press inward on the front door until it clips to both hinge arms.



## Opening the Computer Cover

**⚠ CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

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

1 Shut down the computer (see page 33).

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

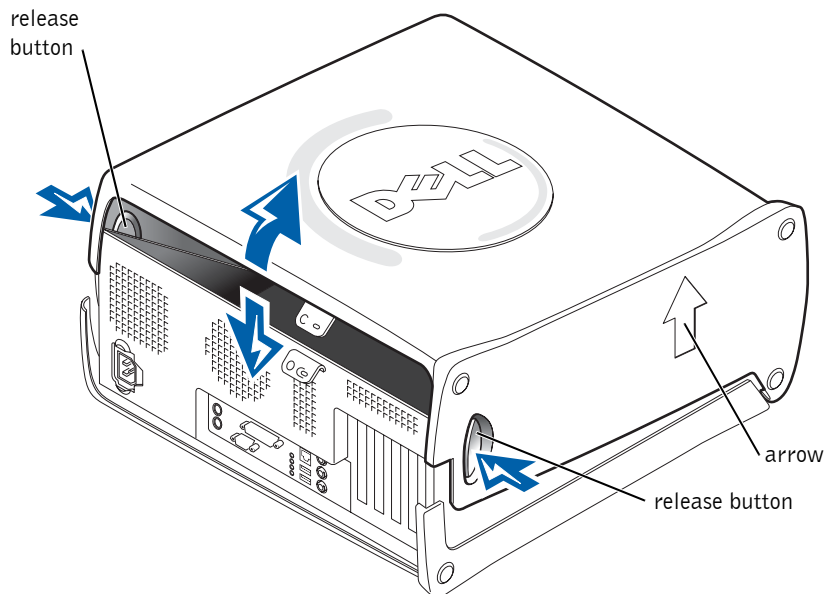
2 Turn off any attached devices and disconnect them from their electrical outlets.

3 Disconnect the computer power cable from the wall outlet, and then press the power button to ground the system board.

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

4 Lay the computer on its side so that the arrow on the bottom of the computer points up.

5 Locate the *two* release buttons shown in the illustration, and then press the *two* release buttons as you lift the cover.



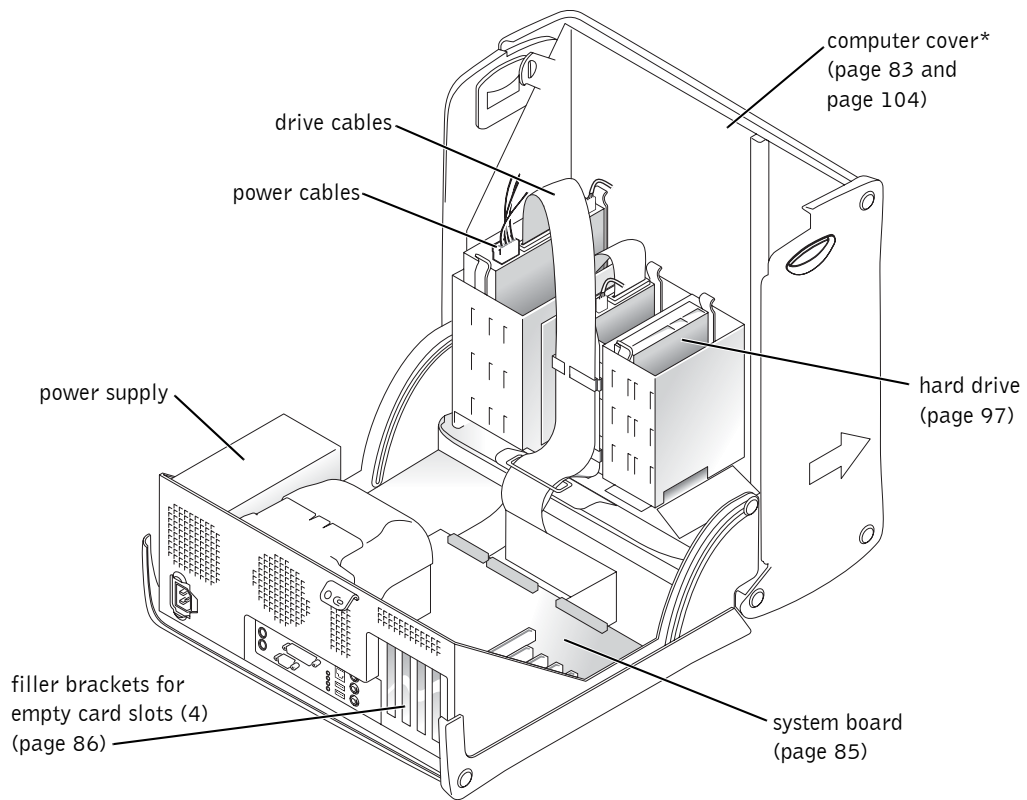
**HINT:** The AGP card is removed from the following illustration to provide a better view of the inside of your computer.

## Looking Inside Your Computer

**CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

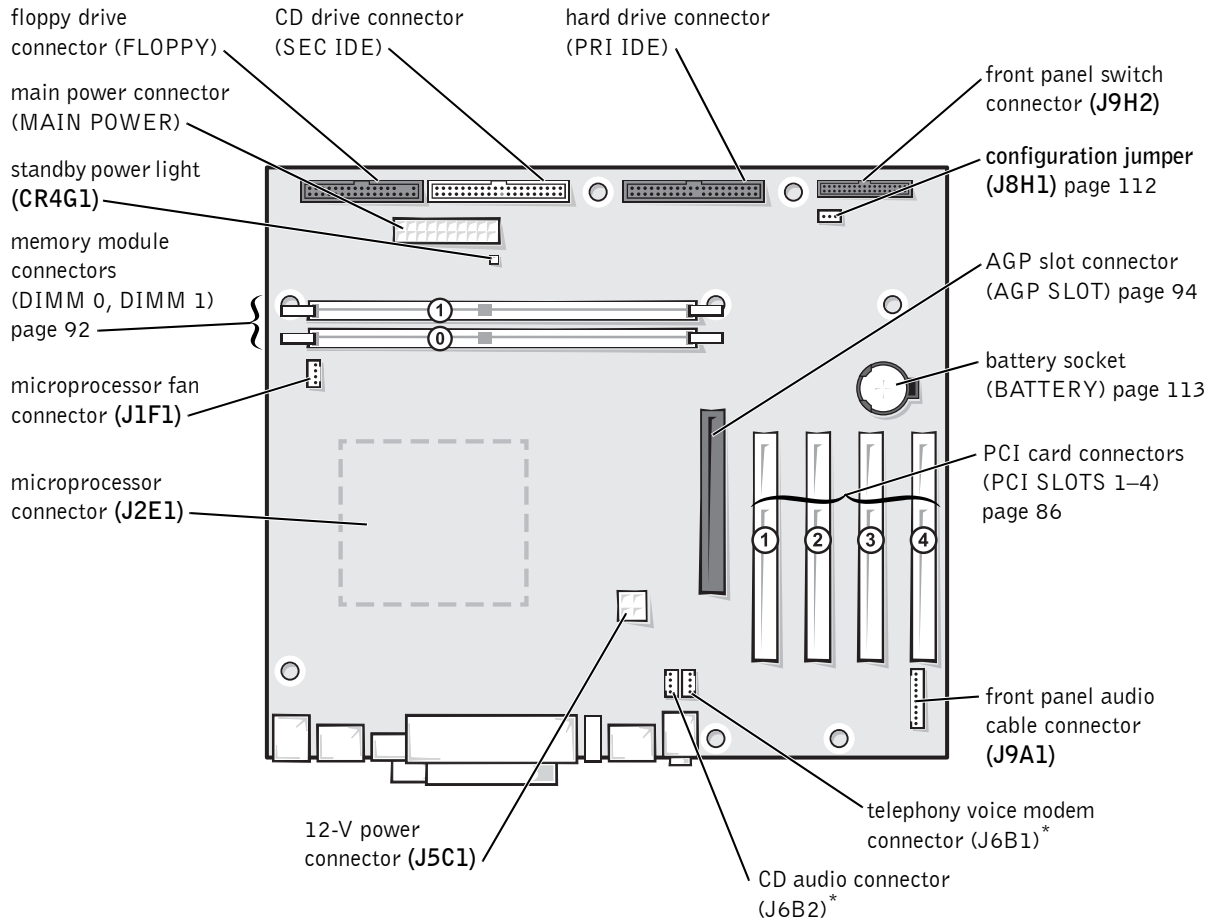
**CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

**NOTICE:** Be careful when opening the computer cover to ensure that you do not inadvertently disconnect cables from the system board.




\*Depending on the types of drives installed in your computer, the cover may not open as widely as shown in the figure.

## System Board



\* On computers with integrated audio.


## Installing and Removing Cards


 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

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

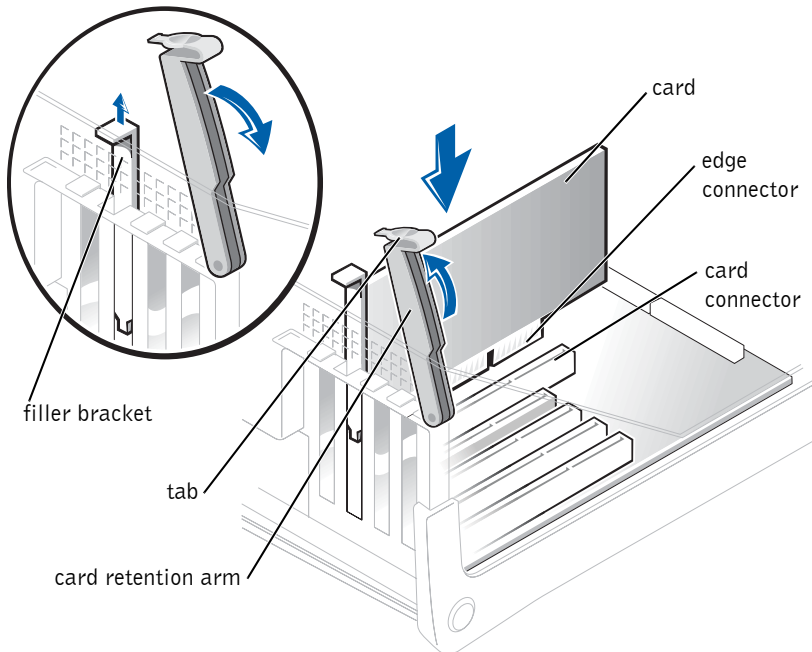
The computer's card connectors allow you to install different types of devices such as modems, network adapters, and video cards.

### Installing a Card

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

- 1 If you are replacing a card, remove the current driver for the card from the operating system.
  - 2 Shut down the computer (see page 33).
-  **NOTICE:** To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall jack.
- 3 Turn off any attached devices and disconnect them from their electrical outlets.
  - 4 Disconnect the computer power cable from the wall outlet, and then press the power button to ground the system board.
  - 5 Open the computer cover (see page 83).

- 6 Press the tab on the card retention arm and raise the retention arm.



- 7 If you are installing a new card, remove the filler bracket to create a card-slot opening. Then continue with step 9.

- 8 If you are replacing a card that is already installed in the computer, remove the card (see page 90).

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

- 9 Prepare the card for installation.

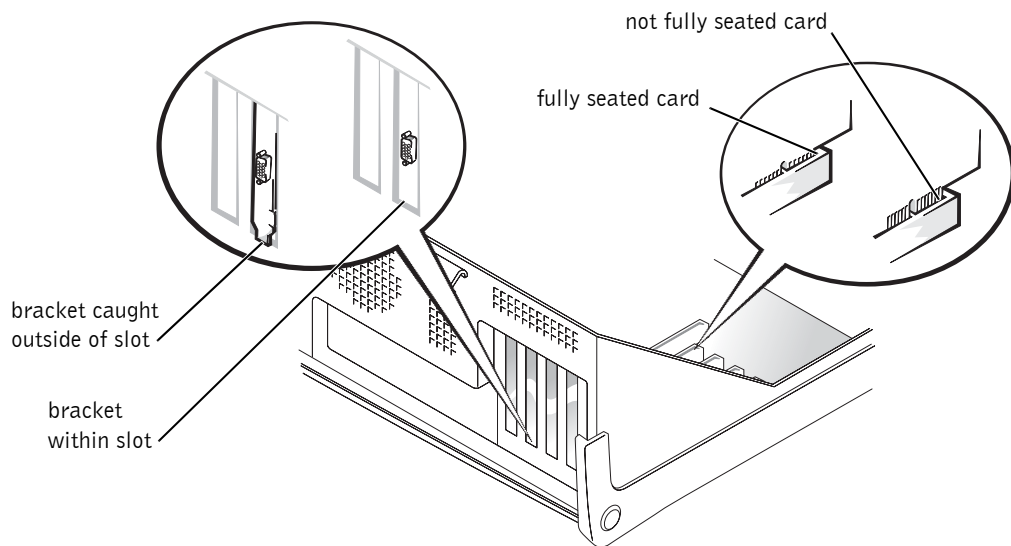
See the documentation that came with the card for information on configuring the card, making internal connections, or otherwise customizing it for your computer.

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

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

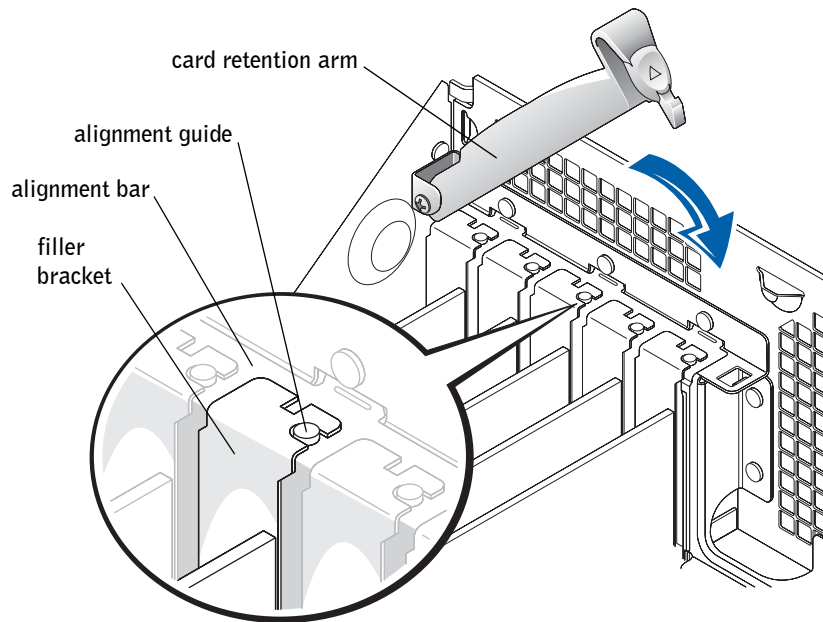
- 11** Before you lower the retention arm, ensure that:

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



- 12** Press the arm into place, securing the card(s) in the computer.





➔ **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.

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

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

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

**14** Close the computer cover (see page 104), reconnect the computer and devices to electrical outlets, and turn them on.

**15** Install any drivers required for the card as described in the card documentation.

## Removing a Card

**⚠ CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

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

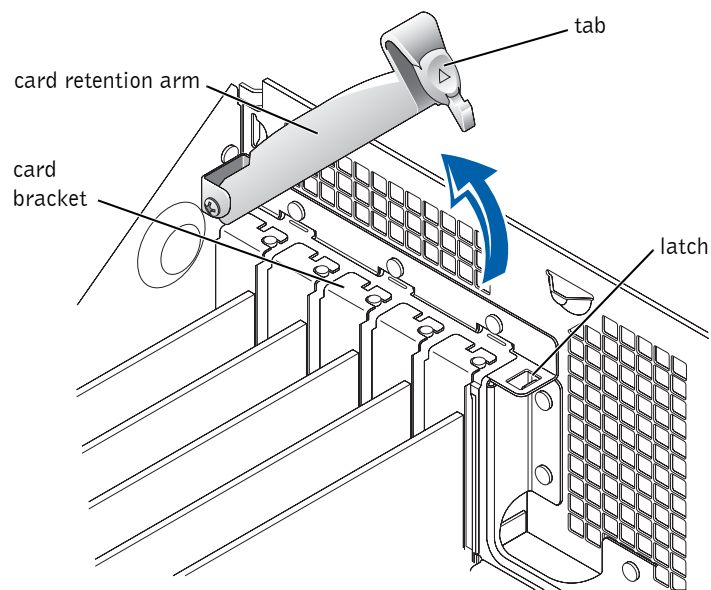
1 Shut down the computer (see page 33).

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

2 Turn off any attached devices and disconnect them from their electrical outlets.

3 Disconnect the computer power cable from the wall outlet, and then press the power button to ground the system board.

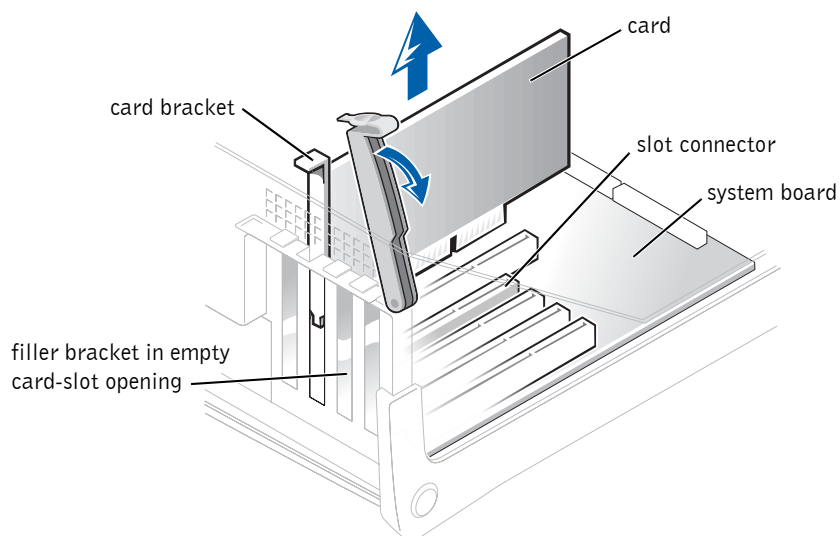
4 Press the tab on the card retention arm and raise the retention arm.



5 If necessary, disconnect any cables connected to the card.


6 Grasp the card by its top corners, and ease it out of its connector.

- 7 If you are removing the card permanently, install a filler bracket in the empty card-slot opening.




If you need a filler bracket, contact Dell.

- 8 Lower the retention arm and press it into place, securing the card(s) in the computer.
- ➔ **NOTICE:** 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.
- 9 Close the computer cover, reconnect the computer and devices to electrical outlets, and turn them on.
  - 10 Remove the card's driver from the operating system.

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


## Adding Memory

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

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

You can increase your computer memory by installing memory modules on the system board. For information on the type of memory supported by your computer, look under "Memory" in "Technical Specifications" on page 107.

1 Shut down the computer (see page 33).

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

2 Turn off any attached devices and disconnect them from their electrical outlets.

3 Disconnect the computer power cable from the wall outlet, and then press the power button to ground the system board.

4 Open the computer cover (see page 83).

### Removing a Memory Module

1 If your computer has an AGP card, remove it (see page 94).

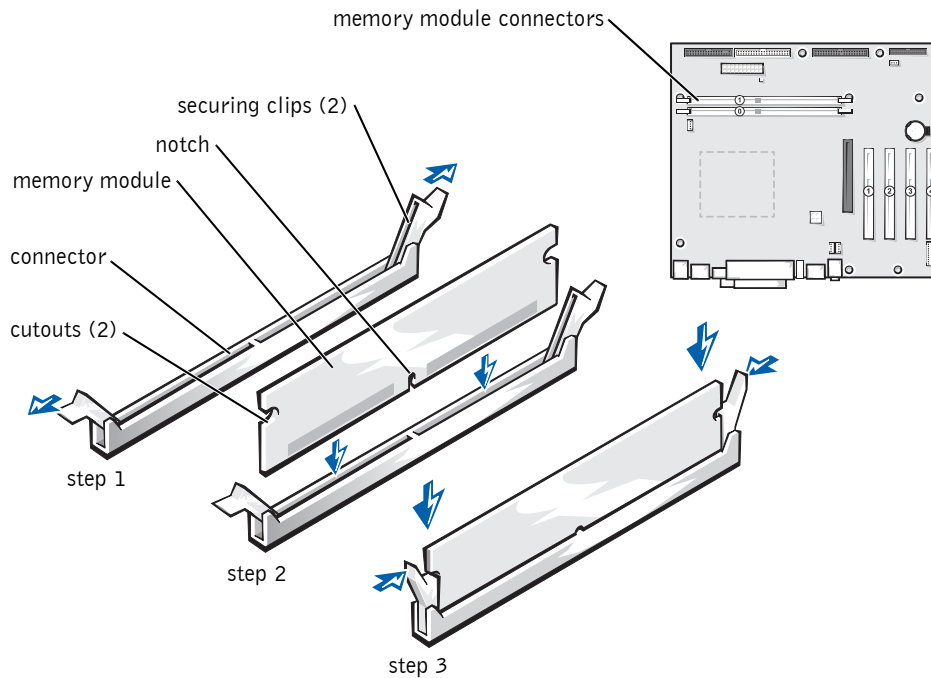
2 Press out the securing clip at each end of the memory module connector.

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.

## Adding a Memory Module

- 1 Press out the securing clip at each end of the memory module connector.



- 2 Align the notch on the bottom of the module with the crossbars in the connector.

**NOTICE:** To avoid damage to the memory module, press the module straight down into the socket with equal force applied at each end of the module.


- 3 Insert the module straight down into the connector, ensuring that it fits into the vertical guides at each end of the connector. Press firmly on the ends of the module until it snaps into place.

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

- 4 Close the computer cover (see page 104).

- ➡ **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.
- 5 Connect your computer and devices to electrical outlets, and turn them on.
- 6 Click the **Start** button, right-click **My Computer**, and then click **Properties**.
- 7 Click the **General** tab.
- 8 To verify that the memory is installed correctly, check the amount of memory (RAM) listed (see page 110).

## Adding or Replacing the AGP Card

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

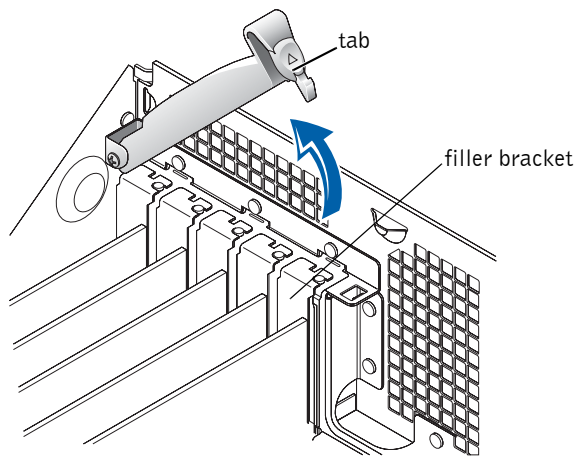
 **CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

Your Dell™ computer provides a connector for an AGP card.

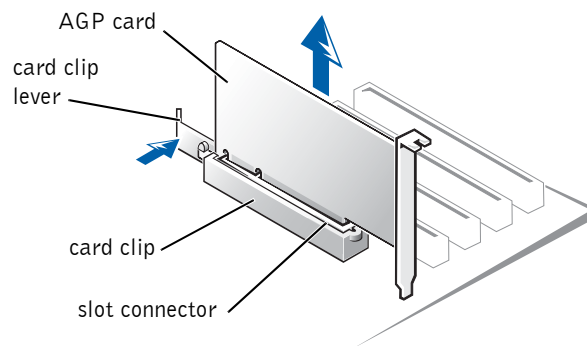
- 1 Shut down the computer (see page 33).
- ➡ **NOTICE:** To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall jack.
- 2 Turn off any attached devices and disconnect them from their electrical outlets.
- 3 Disconnect the computer power cable from the wall outlet, and then press the power button to ground the system board.
- 4 Open the computer cover (see page 83).

## Card Removal

- 1 Some AGP cards require a power cable. If the card has a power cable attached to it, disconnect the cable from the card.
- 2 Remove the filler bracket by raising the card retention arm and sliding the bracket up.

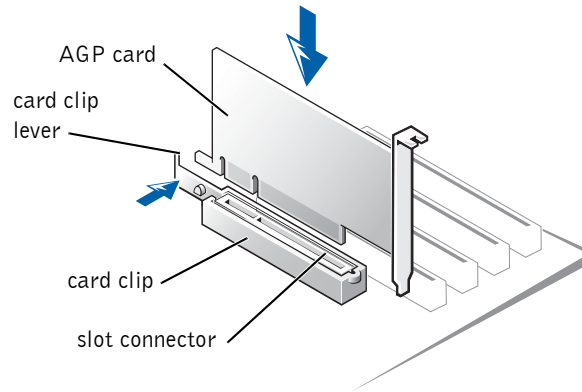


- 3 On the card clip, press the tab toward the card slot.
- 4 Pull the card up and out of the card clip.



## Card Installation


- 1 To add or replace the card, gently press it down into the slot connector until it clicks into place.




- 2 Release the card clip lever, ensuring that the tab on the card clip lever fits into the notch on the front end of the card.
- 3 Secure the card by lowering the hinged lever on the back panel.
- 4 If you disconnected a power cable from the card in step 1 of the previous procedure, reconnect the cable to the card.
- 5 Close the computer cover (see page 104).
- ➡ **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.
- 6 Connect your computer and devices to electrical outlets, and turn them on.



## Adding a Second Hard Drive


 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

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

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


- 1 Check the documentation for the drive to verify that it is configured for your computer.
- 2 Perform an orderly computer shutdown using the operating system menu.
- 3 Turn off your computer and any devices.
- 4 Ground yourself by touching an unpainted metal surface on the chassis, such as the metal around the card-slot openings at the back of the computer, before touching anything inside your computer.

While you work, periodically touch an unpainted metal surface on the computer chassis to dissipate any static electricity that might harm internal components.

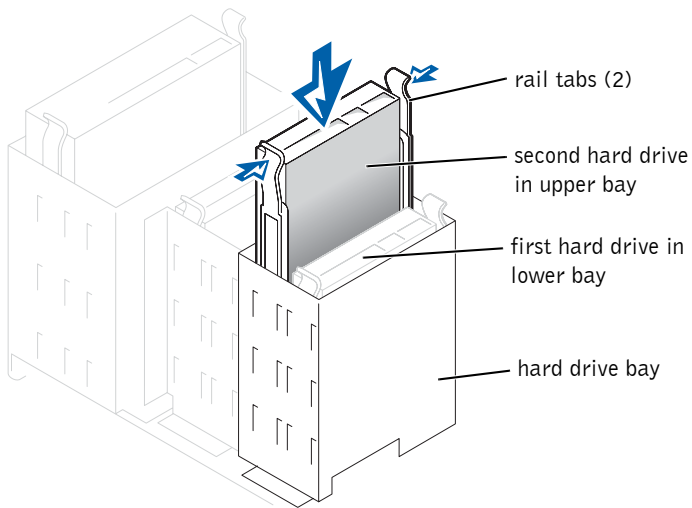
 **NOTICE:** To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall jack.

- 5 Disconnect your computer and devices from their power sources. Also, disconnect any telephone or telecommunication lines from the computer.
- 6 Disconnect the computer power cable from the wall outlet, and then press the power button to ground the system board.
- 7 Open the computer cover (see page 83).
- 8 Remove the two green plastic rails from the inside of the hard-drive bay by gently pulling the rails up and out of the bay.
- 9 Attach the rails to the hard drive using the two screws attached to the rails.

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

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

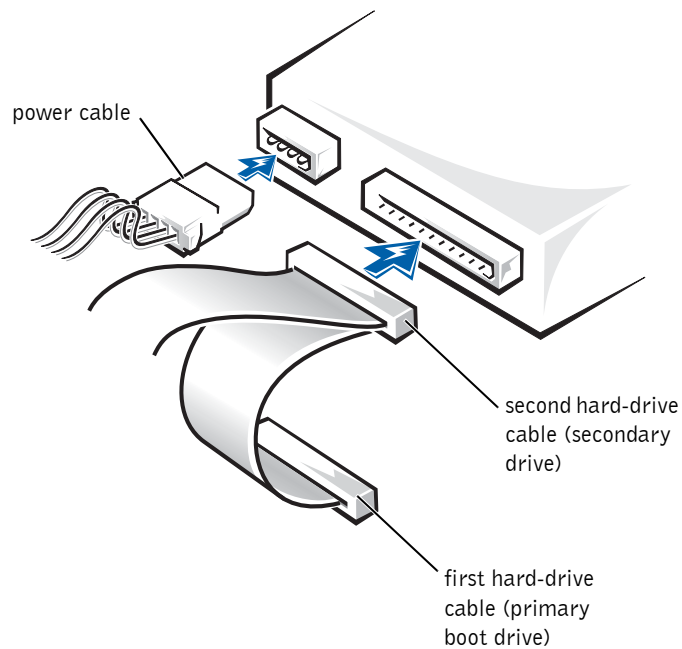
- 10** Remove the first hard drive from the upper bay and install it in the lower bay:
  - a** Disconnect the power and the hard-drive cables from the back of the first hard drive.
  - b** Press in the two green rail tabs and pull the first hard drive out of the upper bay.
  - c** Gently slide the first hard drive into the lower bay until you hear a click.
  - d** Reconnect the power and hard-drive cables to the back of the first hard drive.
- 11** Gently slide the new hard drive into the upper bay until you hear a click.



- 12** Connect a power cable to the drive.
- ➔ NOTICE:** Match the colored strip on the cable with pin 1 on the drive.
- 13** Locate the extra connector on the drive cable that is attached to your first hard drive and attach the connector to the second hard drive.


Your computer uses cable-select drive cables, which means that the device connected to the end connector of the drive cable is the master device and the device connected to the middle connector is the slave device. Ensure that the jumper setting on the new device is set for

"cable select" (see the documentation that came with the drive for information).



- 14 Close the computer cover (see page 104).
- ➔ **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.
- 15 Connect your computer and devices to electrical outlets, and turn them on.
- 16 See the documentation that came with the drive for instructions on installing any software required for drive operation.


## Adding a Floppy Drive

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

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

- 1 Perform an orderly computer shutdown using the operating system menu.
- 2 Turn off your computer and any devices.
- 3 Ground yourself by touching an unpainted metal surface on the computer, such as the metal around the card-slot openings on the back of the computer, before you touch anything inside your computer.

While you work, periodically touch an unpainted metal surface on the computer to dissipate any static electricity that might harm internal components.

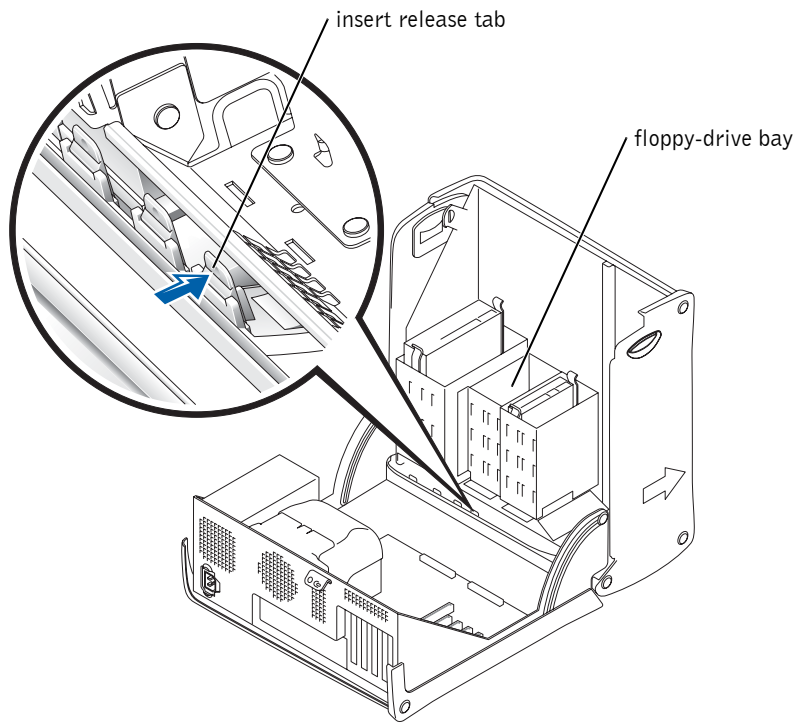
 **NOTICE:** To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall jack.

- 4 Disconnect your computer and devices from their electrical outlets and disconnect any telephone or telecommunication lines from the computer.
- 5 Disconnect the computer power cable from the electrical outlet and press the power button to ground the system board.

### Removing the Front-Panel Insert

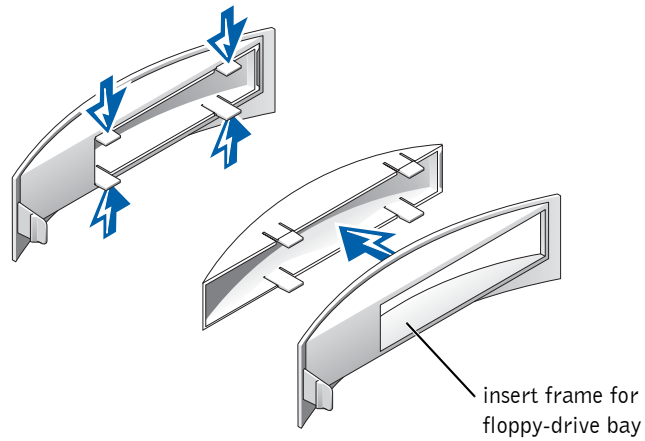
Remove the front-panel insert before you install the floppy drive:

- 1 Open the computer cover to a 90-degree angle (see page 83).
- 2 Locate the insert in front of the floppy-drive bay.
- 3 From inside the computer, push in the release tab of the insert.



- 4 From outside the computer, pull the insert away from the computer's front panel.

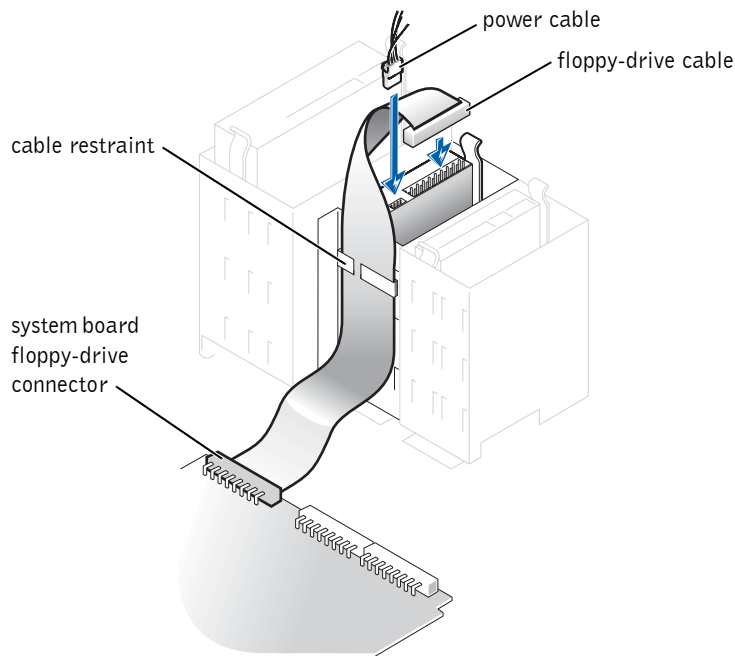
- 5 Remove the insert from the insert frame by pressing on the four tabs.



- 6 Reattach the empty insert frame over the front of the drive bay.  
The insert frame fits only one way.

### Installing a Floppy Drive

- 1 Gently slide the drive into place until the tabs securely click into position.
- 2 Attach the floppy-drive cable to the floppy drive and to the system board floppy-drive connector.  
Ensure that you route the floppy-drive cable through the cable restraint located on the side of the floppy-drive bay.
- 3 Attach the floppy-drive power cable to the floppy drive.



4 Check all cable connections and fold cables out of the way to provide airflow for the fan and cooling vents.

5 Close the computer cover (see page 104).


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

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

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

Use the **Boot Sequence** option in the system setup program to adjust the boot order of the floppy drive. For more information about the system setup program, see page 110.

## Closing the Computer Cover

- 1 Ensure that all cables are connected, and fold cables out of the way. Ensure that cables are not routed over the drive cage—they can prevent the cover from closing properly.
  - 2 Ensure that no tools or extra parts are left inside the computer.
  - 3 Pivot the cover down and ensure that the release buttons click into place.
-  **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.
- 4 Connect your computer and devices to electrical outlets, and turn them on.



# 5

SECTION 5

## **Appendix**

- Specifications
- Standard Settings
- Clearing Forgotten Passwords
- Replacing the Battery
- Dell Technical Support Policy (U.S. Only)
- Contacting Dell
- Regulatory Information
- Limited Warranties and Return Policy

## Specifications

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### Microprocessor

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Microprocessor type	Intel® Pentium® 4
L1 cache	8 KB first-level
L2 cache	integrated 256-KB or 512-KB at full microprocessor speed

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### System Information

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System chip set	Intel 845PE
DMA channels	four
Interrupt levels	15
System BIOS chip	4 Mb (512 KB)
System clock	400- or 533-MHz data rate

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### Expansion Bus

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Bus types	PCI and AGP
Bus speed	PCI: 33 MHz; AGP: 66 MHz
AGP connector	one
AGP connector size	172 pins
AGP connector data width (maximum)	32 bits
AGP bus protocols	4x/2x modes at 1.5 V
PCI connectors	four
PCI connector size	120 pins
PCI connector data width (maximum)	32 bits

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**Memory**

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Architecture	DDR SDRAM
Memory connectors	two
Memory capacities	128-, 256-, and 512-MB non-ECC DDR SDRAM
Minimum memory	128 MB
Maximum memory	1 GB
Memory type	DDR 333 (non-ECC) only on computers with 533-MHz system clock speed DDR 266 (non-ECC) on computers with either 400- or 533-MHz system clock speed
BIOS address	F8000h

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**Drives**

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Externally accessible	two 5.25-inch bays two 3.5-inch bays
Internally accessible	two bays for 1-inch-high IDE hard drives
Available devices	ATA-100 Ultra DMA hard drive, CD drive, floppy drive, Zip drive, DVD drive, DVD+R/RW drive, and CD-RW drive

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**Ports and Connectors**

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## Externally accessible:

Serial	9-pin connector; 16550C-compatible
Parallel	25-hole connector (bidirectional)
Video	15-hole connector
Keyboard	6-pin mini-DIN connector or USB connector
Mouse	6-pin mini-DIN connector or USB connector
USB	two front-panel and four back-panel USB 2.0-compliant connectors
NIC	RJ45 connector
Headphone	front-panel miniature connector

**Ports and Connectors** *(continued)*

Audio <sup>1</sup>	three miniature connectors for line-in, line-out, and microphone
Internally accessible:	
Primary IDE channel	40-pin connector on PCI local bus
Secondary IDE channel	40-pin connector on PCI local bus
Floppy drive	34-pin connector

**Video**

Video controller	AGP 4X
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**Audio<sup>1</sup>**

Audio controller	1981A Codec
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**Network**

NIC controller	Integrated Intel 10/100 Ethernet/Intel 82562ET (10/100)
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**Controls and Lights**

Power control	push button
Power light	green light on power button—blinking green in sleep state; solid green for power-on state; solid amber for possible internal power problem
Hard-drive access light	green
Diagnostic code lights	four bicolor (amber and green) located on back panel

<sup>1</sup> For computers with integrated audio.

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**Power**

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## DC power supply:

Wattage	250 W
Heat dissipation	853 BTU (fully loaded computer without monitor)
Voltage (see page 11 for important voltage setting information)	90 to 135 V at 50/60 Hz; 180 to 265 V at 50/60 Hz; 100 V at 50/60 Hz for Japanese computers
Backup battery	3-V CR2032 coin cell

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**Physical**

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Height x Width x Depth	42.5 x 18.1 x 44.7 cm (16.7 x 7.1 x 17.6 inches)
Weight	12.7 kg (28 lb)

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**Environmental**

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## Temperature:

Operating	10° to 35°C (50° to 95°F) <sup>2</sup>
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 1/2 octave/min
Storage	0.5 G at 3 to 200 Hz at 1/2 octave/min

## Maximum shock:

Operating	bottom half-sine pulse with a change in velocity of 50.8 cm/sec (20 inches/sec)
Storage	23-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) <sup>2</sup>
Storage	-15.2 to 10,670 m (-50 to 35,000 ft)

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<sup>2</sup> At 35°C (95°F), the maximum operating altitude is 914 m (3000 ft).

## Standard Settings

The system setup program contains the standard settings for your computer.

**NOTICE:** Unless you are an expert computer user, don't change the settings for this program. Certain changes might make your computer work incorrectly.

See the following figure for an example of the main program screen.

Dell - Dimension 4550			
Intel® Pentium® 4 Processor: <i>nan</i> GHz		BIOS Version: <i>xxxx</i>	
Level 2 Cache: <i>nan</i> KB Integrated		Service Tag: <i>xxxxxxx</i>	
System Time .....00:00:00 System Date .....DY/MO/DATE/YR  Diskette Drive A: .....3.5 inch, 1.44 MB  Primary Drive 0 .....Hard Drive Primary Drive 1 .....Off Secondary Drive 0 .....CD-ROM Reader Secondary Drive 1 .....Off  Boot Sequence .....<Enter>  Memory Information .....<Enter> CPU Information .....<Enter>  Integrated Devices (LegacySelect Options) .....<Enter> PCI IRQ Assignments .....<Enter> IRQ Reservations .....<Enter> System Security .....<Enter>  Keyboard NumLock .....On Report Keyboard Errors .....Report  Auto Power On .....Disabled Remote Wake Up .....Off AC Power Recovery .....Last Fast Boot .....On Suspend Mode .....S3  System Event Log .....<Enter>  Asset Tag .....XXXXXX			
↓↑ to select	SPACE, +, - to change	ESC to exit	F1 = Help

## Viewing Settings

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

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

## System Setup Program Screens


The system setup program screens display the current configuration information for your computer. Information on the screen is divided into five areas:

- Title — The area at the top of all system setup screens that displays your computer's model number.
- Computer data — Two boxes below the title that display the system processor, L2 cache, service tag, and the version number of the BIOS.
- Options — A scrollable box listing options that define the configuration of your computer (including installed hardware, power conservation, and security features).


Fields to the right of the listed options contain settings or values. The settings and values that you can change are brighter on the screen. All other settings and values are set by the computer and cannot be changed. When <Enter> appears to the right of an option, press <Enter> to access a pop-up menu of additional options.

- Key functions — A line of boxes across the bottom of all system setup screens that lists keys and their functions within the system setup program.
- Help — Press <F1> for information on the option that is selected (highlighted).

## Clearing Forgotten Passwords

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

If you forget your system or setup password, you cannot operate your computer or change settings in the system setup program until you clear the forgotten password(s).

- 1 Shut down the computer (see page 33).
- 2 Turn off any attached devices and disconnect them from their electrical outlets.
-  **NOTICE:** To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall jack.
- 3 Disconnect the computer power cable from the wall outlet, and then press the power button to ground the system board.
- 4 Open the computer cover (see page 83).
- 5 Locate the password jumper on the system board (see page 85) and remove the jumper plug.
- 6 Close the computer cover (see page 104), plug your computer into an electrical outlet, and turn on the computer.
- 7 When the blue DELL™ logo appears, press <F2> immediately to enter the system setup program.

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.



- 8 Use the arrow keys to scroll down to the **System Security** option on the system setup program main screen, and then press <Enter>.

To reset the system password, press <Enter> twice in the **System Password** option.


To reset the setup password, press <Enter> twice in the **Setup Password** option.

- 9 Press <Esc> twice, and then select **Save Changes and Exit** to exit the system setup program.
- 10 Shut down the computer (see page 33).




- 11 Turn off any attached devices and disconnect them from their electrical outlets.
-  **NOTICE:** To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall jack.
- 12 Disconnect the computer power cable from the wall outlet, and then press the power button to ground the system board.
- 13 Open the computer cover (see page 83).
- 14 Reconnect the jumper plug to the password jumper (see page 85).
- 15 Close the computer cover (see page 104).
-  **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.
- 16 Connect your computer and devices to their electrical outlets, and turn them on.
- 17 Reenter the system setup program as described in step 7 and set new passwords.

## Replacing the Battery

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 9.

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

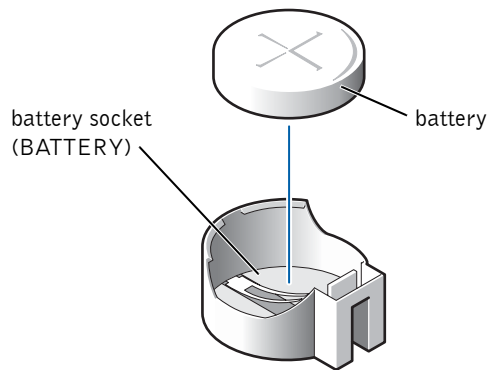
If you have to repeatedly reset time and date information after turning on the computer, replace the battery.

 **CAUTION:** A new battery can explode if it is incorrectly installed. Replace the 3-V CR2032 battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

- 1 Record all the screens in the system setup program (see page 110) so that you can restore the correct settings at step 7.
- 2 Open the computer cover (see page 83).
- 3 Locate the battery socket labelled BATTERY (see page 85).

- 4 Remove the battery by carefully prying it out of its socket with your fingers or with a blunt, nonconducting object such as a plastic screwdriver.

**➔ NOTICE:** To avoid damage to the system board while you pry the battery loose, be sure to insert the plastic screwdriver between the battery and the socket (not the system board).



- 5 Insert the new battery into the socket with the side labeled "+" facing up and snap it into place.

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

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

- 7 Access the system setup program (see page 110) and restore the settings you recorded in step 1.

- 8 Properly dispose of the old battery (see page 14).

## 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, application software, 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 application software that is preinstalled on the computer during the manufacturing process (Microsoft Office, Norton Antivirus, and so on).

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 application software sold by Dell not under the Dell brand (printers, scanners, cameras, games, and so on). Support for all third-party software and peripherals is provided by the original manufacturer of the product.

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

## 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) (technical support)
- [premiersupport.dell.com](http://premiersupport.dell.com) (technical support for educational, government, healthcare, and medium/large business customers, including Premier, Platinum, and Gold customers)

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

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

### Contact Numbers and Addresses

<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	General Support	toll-free: 800-335-0031
Antigua and Barbuda	General Support	1-800-805-5924
Argentina (Buenos Aires)	Website: <a href="http://www.dell.com.ar">www.dell.com.ar</a>	
International Access Code: 00	Tech Support and Customer Care	toll-free: 0-800-444-0733
Country Code: 54	Sales	0-810-444-3355
City Code: 11	Tech Support Fax	11 4515 7139
	Customer Care Fax	11 4515 7138
Aruba	General Support	toll-free: 800-1578

<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>
Australia (Sydney)	E-mail (Australia): au_tech_support@dell.com	
International Access Code: 0011	E-mail (New Zealand): nz_tech_support@dell.com	
Country Code: 61	Home and Small Business	1-300-65-55-33
City Code: 2	Government and Business	toll-free: 1-800-633-559
	Preferred Accounts Division (PAD)	toll-free: 1-800-060-889
	Customer Care	toll-free: 1-800-819-339
	Corporate Sales	toll-free: 1-800-808-385
	Transaction Sales	toll-free: 1-800-808-312
	Fax	toll-free: 1-800-818-341
Austria (Vienna)	Website: support.euro.dell.com	
International Access Code: 900	E-mail: tech_support_central_europe@dell.com	
Country Code: 43	Home/Small Business Sales	01 795 67602
City Code: 1	Home/Small Business Fax	01 795 67605
	Home/Small Business Customer Care	01 795 67603
	Preferred Accounts/Corporate Customer Care	0660 8056
	Home/Small Business Technical Support	01 795 67604
	Preferred Accounts/Corporate Technical Support	0660 8779
	Switchboard	01 491 04 0
Bahamas	General Support	toll-free: 1-866-278-6818
Barbados	General Support	1-800-534-3066
Belgium (Brussels)	Website: support.euro.dell.com	
International Access Code: 00	E-mail: tech_be@dell.com	
Country Code: 32	E-mail for French Speaking Customers: support.euro.dell.com/be/fr/emailldell/	
City Code: 2	Technical Support	02 481 92 88
	Customer Care	02 481 91 19
	Home/Small Business Sales	toll-free: 0800 16884
	Corporate Sales	02 481 91 00
	Fax	02 481 92 99
	Switchboard	02 481 91 00

<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>
Bermuda	General Support	1-800-342-0671
Bolivia	General Support	toll-free: 800-10-0238
<b>Brazil</b>	Website: <a href="http://www.dell.com/br">www.dell.com/br</a>	
International Access Code: 00	Customer Support, Technical Support	0800 90 3355
Country Code: 55	Tech Support Fax	51 481 5470
City Code: 51	Customer Care Fax	51 481 5480
	Sales	0800 90 3390
<b>British Virgin Islands</b>	General Support	toll-free: 1-866-278-6820
<b>Brunei</b>	Customer Technical Support (Penang, Malaysia)	604 633 4966
Country Code: 673	Customer Service (Penang, Malaysia)	604 633 4949
	Transaction Sales (Penang, Malaysia)	604 633 4955
<b>Canada (North York, Ontario)</b>	Automated Order-Status System	toll-free: 1-800-433-9014
International Access Code: 011	AutoTech (automated technical support)	toll-free: 1-800-247-9362
	TechFax	toll-free: 1-800-950-1329
	Customer Care (home/small business)	toll-free: 1-800-847-4096
	Customer Care (med./large business, government)	toll-free: 1-800-326-9463
	Technical Support (home/small business)	toll-free: 1-800-847-4096
	Technical Support (med./large bus., government)	toll-free: 1-800-847-4096
	Sales (direct sales—from outside Toronto)	toll-free: 1-800-387-5752
	Sales (direct sales—from within Toronto)	416 758-2200
	Sales (federal government, education, and medical)	toll-free: 1-800-567-7542
<b>Cayman Islands</b>	General Support	1-800-805-7541
<b>Chile (Santiago)</b>	Sales, Customer Support, and Technical Support	toll-free: 1230-020-4823
Country Code: 56		
City Code: 2		

<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>
China (Xiamen) Country Code: 86 City Code: 592	Tech Support website: <a href="http://support.ap.dell.com/china">support.ap.dell.com/china</a> Tech Support E-mail: <a href="mailto:cn_support@dell.com">cn_support@dell.com</a> Tech Support Fax	818 1350
	Home and Small Business Technical Support	toll-free: 800 858 2437
	Corporate Accounts Technical Support	toll-free: 800 858 2333
	Customer Experience	toll-free: 800 858 2060
	Home and Small Business	toll-free: 800 858 2222
	Preferred Accounts Division	toll-free: 800 858 2062
	Large Corporate Accounts GCP	toll-free: 800 858 2055
	Large Corporate Accounts Key Accounts	toll-free: 800 858 2628
	Large Corporate Accounts North	toll-free: 800 858 2999
	Large Corporate Accounts North Government and Education	toll-free: 800 858 2955
	Large Corporate Accounts East	toll-free: 800 858 2020
	Large Corporate Accounts East Government and Education	toll-free: 800 858 2669
	Large Corporate Accounts Queue Team	toll-free: 800 858 2572
	Large Corporate Accounts South	toll-free: 800 858 2355
	Large Corporate Accounts West	toll-free: 800 858 2811
	Large Corporate Accounts Spare Parts	toll-free: 800 858 2621
<b>Colombia</b>	General Support	980-9-15-3978
<b>Costa Rica</b>	General Support	0800-012-0435
<b>Czech Republic (Prague)</b> International Access Code: 00 Country Code: 420 City Code: 2	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 TechFax Switchboard	02 22 83 27 27 02 22 83 27 11 02 22 83 27 14 02 22 83 27 28 02 22 83 27 11

<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>Denmark (Copenhagen)</b> International Access Code: 00 Country Code: 45	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> E-mail Support (portable computers): <a href="mailto:den_nbk_support@dell.com">den_nbk_support@dell.com</a> E-mail Support (desktop computers): <a href="mailto:den_support@dell.com">den_support@dell.com</a> E-mail Support (servers): <a href="mailto:Nordic_server_support@dell.com">Nordic_server_support@dell.com</a>	
	Technical Support	7023 0182
	Customer Care (Relational)	7023 0184
	Home/Small Business Customer Care	3287 5505
	Switchboard (Relational)	3287 1200
	Fax Switchboard (Relational)	3287 1201
	Switchboard (Home/Small Business)	3287 5000
	Fax Switchboard (Home/Small Business)	3287 5001
<b>Dominica</b>	General Support	toll-free: 1-866-278-6821
<b>Dominican Republic</b>	General Support	1-800-148-0530
<b>Ecuador</b>	General Support	toll-free: 999-119
<b>El Salvador</b>	General Support	01-899-753-0777
<b>Finland (Helsinki)</b> 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:fin_support@dell.com">fin_support@dell.com</a> E-mail Support (servers): <a href="mailto:Nordic_support@dell.com">Nordic_support@dell.com</a>	
	Technical Support	09 253 313 60
	Technical Support Fax	09 253 313 81
	Relational Customer Care	09 253 313 38
	Home/Small Business Customer Care	09 693 791 94
	Fax	09 253 313 99
	Switchboard	09 253 313 00



<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) International Access Code: 00 Country Code: 33 City Codes: (1) (4)	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> E-mail: <a href="mailto:support.euro.dell.com/fr/fr/emaildell/">support.euro.dell.com/fr/fr/emaildell/</a> <b>Home and Small Business</b> Technical Support Customer Care Switchboard Switchboard (calls from outside of France) Sales Fax Fax (calls from outside of France) <b>Corporate</b> Technical Support Customer Care Switchboard Sales Fax	0825 387 270 0825 823 833 0825 004 700 04 99 75 40 00 0825 004 700 0825 004 701 04 99 75 40 01 0825 004 719 0825 338 339 01 55 94 71 00 01 55 94 71 00 01 55 94 71 01
Germany (Langen) International Access Code: 00 Country Code: 49 City Code: 6103	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> Technical Support Home/Small Business Customer Care Global Segment Customer Care Preferred Accounts Customer Care Large Accounts Customer Care Public Accounts Customer Care Switchboard	06103 766-7200 0180-5-224400 06103 766-9570 06103 766-9420 06103 766-9560 06103 766-9555 06103 766-7000
Grenada	General Support	toll-free: 1-866-540-3355
Guatemala	General Support	1-800-999-0136
Guyana	General Support	toll-free: 1-877-270-4609

<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>Hong Kong</b>	Technical Support (Dimension™ and Inspiron™)	296 93188
International Access Code: 001 Country Code: 852	Technical Support (OptiPlex™, Latitude™, and Dell Precision™)	296 93191
	Customer Service (non-technical, post-sales issues)	800 93 8291
	Transaction Sales	toll-free: 800 96 4109
	Large Corporate Accounts HK	toll-free: 800 96 4108
	Large Corporate Accounts GCP HK	toll-free: 800 90 3708
<b>India</b>	Technical Support	1600 33 8045
	Sales	1600 33 8044
<b>Ireland (Cherrywood)</b>	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 16 Country Code: 353 City Code: 1	E-mail: <a href="mailto:dell_direct_support@dell.com">dell_direct_support@dell.com</a>	
	Ireland Technical Support	1850 543 543
	U.K. Technical Support (dial within U.K. only)	0870 908 0800
	Home User Customer Care	01 204 4095
	Small Business Customer Care	01 204 4444
	U.K. Customer Care (dial within U.K. only)	0870 906 0010
	Corporate Customer Care	01 204 4003
	Ireland Sales	01 204 4444
	U.K. Sales (dial within U.K. only)	0870 907 4000
	SalesFax	01 204 0144
	Fax	01 204 5960
	Switchboard	01 204 4444

<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: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	E-mail: <a href="mailto:support.euro.dell.com/it/it/emaildell/">support.euro.dell.com/it/it/emaildell/</a>	
Country Code: 39	<b>Home and Small Business</b>	
City Code: 02	Technical Support	02 577 826 90
	Customer Care	02 696 821 14
	Fax	02 696 821 13
	Switchboard	02 696 821 12
	<b>Corporate</b>	
	Technical Support	02 577 826 90
	Customer Care	02 577 825 55
	Fax	02 575 035 30
	Switchboard	02 577 821
<b>Jamaica</b>	General Support (dial from within Jamaica only)	1-800-682-3639

<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>Japan (Kawasaki)</b> International Access Code: <b>001</b> Country Code: <b>81</b> City Code: <b>44</b>	Website: <a href="http://support.jp.dell.com">support.jp.dell.com</a>	
	Technical Support (servers)	toll-free: 0120-198-498
	Technical Support outside of Japan (servers)	81-44-556-4162
	Technical Support (Dimension™ and Inspiron™)	toll-free: 0120-198-226
	Technical Support outside of Japan (Dimension and Inspiron)	81-44-520-1435
	Technical Support (Dell Precision™, OptiPlex™, and Latitude™)	toll-free: 0120-198-433
	Technical Support outside of Japan (Dell Precision, OptiPlex, and Latitude)	81-44-556-3894
	24-Hour Automated Order Service	044-556-3801
	Customer Care	044-556-4240
	Business Sales Division (up to 400 employees)	044-556-1465
	Preferred Accounts Division Sales (over 400 employees)	044-556-3433
	Large Corporate Accounts Sales (over 3500 employees)	044-556-3430
	Public Sales (government agencies, educational institutions, and medical institutions)	044-556-1469
	Global Segment Japan	044-556-3469
	Individual User	044-556-1760
Faxbox Service	044-556-3490	
Switchboard	044-556-4300	
<b>Korea (Seoul)</b> International Access Code: <b>001</b> Country Code: <b>82</b> City Code: <b>2</b>	Technical Support	toll-free: 080-200-3800
	Sales	toll-free: 080-200-3600
	Customer Service (Seoul, Korea)	toll-free: 080-200-3800
	Customer Service (Penang, Malaysia)	604 633 4949
	Fax	2194-6202
Switchboard	2194-6000	

<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	E-mail: <a href="mailto:tech_be@dell.com">tech_be@dell.com</a>	
Country Code: 352	Technical Support (Brussels, Belgium)	02 481 92 88
	Home/Small Business Sales (Brussels, Belgium)	toll-free: 080016884
	Corporate Sales (Brussels, Belgium)	02 481 91 00
	Customer Care (Brussels, Belgium)	02 481 91 19
	Fax (Brussels, Belgium)	02 481 92 99
	Switchboard (Brussels, Belgium)	02 481 91 00
<b>Macao</b>	Technical Support	toll-free: 0800 582
Country Code: 853	Customer Service (Penang, Malaysia)	604 633 4949
	Transaction Sales	toll-free: 0800 581
<b>Malaysia (Penang)</b>	Technical Support	toll-free: 1 800 888 298
International Access Code: 00	Customer Service	04 633 4949
Country Code: 60	Transaction Sales	toll-free: 1 800 888 202
City Code: 4	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> International Access Code: 00 Country Code: 52	Customer Technical Support  Sales  Customer Service  Main	001-877-384-8979 or 001-877-269-3383 50-81-8800 or 01-800-888-3355 001-877-384-8979 or 001-877-269-3383 50-81-8800 or 01-800-888-3355
<b>Montserrat</b>	General Support	toll-free: 1-866-278-6822
<b>Netherlands Antilles</b>	General Support	001-800-882-1519
<b>Netherlands (Amsterdam)</b> International Access Code: 00 Country Code: 31 City Code: 20	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> E-mail (Technical Support): (Enterprise): <a href="mailto:nl_server_support@dell.com">nl_server_support@dell.com</a> (Latitude): <a href="mailto:nl_latitude_support@dell.com">nl_latitude_support@dell.com</a> (Inspiron): <a href="mailto:nl_inspiron_support@dell.com">nl_inspiron_support@dell.com</a> (Dimension): <a href="mailto:nl_dimension_support@dell.com">nl_dimension_support@dell.com</a> (OptiPlex): <a href="mailto:nl_optiplex_support@dell.com">nl_optiplex_support@dell.com</a> (Dell Precision): <a href="mailto:nl_workstation_support@dell.com">nl_workstation_support@dell.com</a>	
	Technical Support	020 674 45 00
	Technical Support Fax	020 674 47 66
	Home/Small Business Customer Care	020 674 42 00
	Relational Customer Care	020 674 4325
	Home/Small Business Sales	020 674 55 00
	Relational Sales	020 674 50 00
	Home/Small Business Sales Fax	020 674 47 75
	Relational Sales Fax	020 674 47 50
	Switchboard	020 674 50 00
	Switchboard Fax	020 674 47 50

<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>New Zealand</b>	E-mail (New Zealand): nz_tech_support@dell.com	
International Access Code: 00	E-mail (Australia): au_tech_support@dell.com	
Country Code: 64	Home and Small Business	0800 446 255
	Government and Business	0800 444 617
	Sales	0800 441 567
	Fax	0800 441 566
<b>Nicaragua</b>	General Support	001-800-220-1006
<b>Norway (Lysaker)</b>	Website: support.euro.dell.com	
International Access Code: 00	E-mail Support (portable computers):	
Country Code: 47	nor_nbk_support@dell.com	
	E-mail Support (desktop computers):	
	nor_support@dell.com	
	E-mail Support (servers):	
	nordic_server_support@dell.com	
	Technical Support	671 16882
	Relational Customer Care	671 17514
	Home/Small Business Customer Care	23162298
	Switchboard	671 16800
	Fax Switchboard	671 16865
<b>Panama</b>	General Support	001-800-507-0962
<b>Peru</b>	General Support	0800-50-669
<b>Poland (Warsaw)</b>	Website: support.euro.dell.com	
International Access Code: 011	E-mail: pl_support@dell.com	
Country Code: 48	Customer Service Phone	57 95 700
City Code: 22	Customer Care	57 95 999
	Sales	57 95 999
	Customer Service Fax	57 95 806
	Reception Desk Fax	57 95 998
	Switchboard	57 95 999

<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>Portugal</b>	E-mail: <a href="mailto:support.euro.dell.com/es/es/emaildell/">support.euro.dell.com/es/es/emaildell/</a>	
International Access Code: 00	Technical Support	800 834 077
Country Code: 35	Customer Care	800 300 415 or 800 834 075
	Sales	800 300 410 or 800 300 411 or 800 300 412 or 121 422 07 10
	Fax	121 424 01 12
<b>Puerto Rico</b>	General Support	1-800-805-7545
<b>St. Kitts and Nevis</b>	General Support	toll-free: 1-877-441-4731
<b>St. Lucia</b>	General Support	1-800-882-1521
<b>St. Vincent and the Grenadines</b>	General Support	toll-free: 1-877-270-4609
<b>Singapore (Singapore)</b>	Technical Support	toll-free: 800 6011 051
International Access Code: 005	Customer Service (Penang, Malaysia)	604 633 4949
Country Code: 65	Transaction Sales	toll-free: 800 6011 054
	Corporate Sales	toll-free: 800 6011 053
<b>South Africa (Johannesburg)</b>	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	Technical Support	011 709 7710
City Code: 11	Customer Care	011 709 7707
	Sales	011 709 7700
	Fax	011 706 0495
	Switchboard	011 709 7700
<b>Southeast Asian and Pacific Countries</b>	Customer Technical Support, Customer Service, and Sales (Penang, Malaysia)	604 633 4810



<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>
Spain (Madrid)	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	E-mail: <a href="mailto:support.euro.dell.com/es/es/emaildell/">support.euro.dell.com/es/es/emaildell/</a>	
Country Code: 34	<b>Home and Small Business</b>	
City Code: 91	Technical Support	902 100 130
	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	902 118 546
	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	E-mail: <a href="mailto:swe_support@dell.com">swe_support@dell.com</a>	
Country Code: 46	E-mail Support for Latitude and Inspiron: <a href="mailto:Swe-nbk_kats@dell.com">Swe-nbk_kats@dell.com</a>	
City Code: 8	E-mail Support for OptiPlex: <a href="mailto:Swe_kats@dell.com">Swe_kats@dell.com</a>	
	E-mail Support for Servers: <a href="mailto:Nordic_server_support@dell.com">Nordic_server_support@dell.com</a>	
	Technical Support	08 590 05 199
	Relational Customer Care	08 590 05 642
	Home/Small Business Customer Care	08 587 70 527
	Employee Purchase Program (EPP) Support	20 140 14 44
	Fax Technical Support	08 590 05 594
	Sales	08 590 05 185

<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) International Access Code: 00 Country Code: 41 City Code: 22	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> E-mail: <a href="mailto:swisstech@dell.com">swisstech@dell.com</a> E-mail for French-speaking HSB and Corporate Customers: <a href="http://support.euro.dell.com/ch/fr/emaildell/">support.euro.dell.com/ch/fr/emaildell/</a> Technical Support (Home and Small Business) Technical Support (Corporate) Customer Care (Home and Small Business) Customer Care (Corporate) Fax Switchboard	0844 811 411 0844 822 844 0848 802 202 0848 821 721 022 799 01 90 022 799 01 01
Taiwan International Access Code: 002 Country Code: 886	Technical Support (portable and desktop computers) Technical Support (servers) Transaction Sales Corporate Sales	toll-free: 00801 86 1011 toll-free: 0080 60 1256 toll-free: 0080 651 228 or 0800 33 556 toll-free: 0080 651 227 or 0800 33 555
Thailand International Access Code: 001 Country Code: 66	Technical Support Customer Service (Penang, Malaysia) Sales	toll-free: 0880 060 07 604 633 4949 toll-free: 0880 060 09
Trinidad/Tobago	General Support	1-800-805-8035
Turks and Caicos Islands	General Support	toll-free: 1-866-540-3355

<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.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> Customer Care website: <a href="http://dell.co.uk/lca/customerservices">dell.co.uk/lca/customerservices</a> E-mail: <a href="mailto:dell_direct_support@dell.com">dell_direct_support@dell.com</a>	
	Technical Support (Corporate/Preferred Accounts/PAD [1000+ employees])	0870 908 0500
	Technical Support (direct/PAD and general)	0870 908 0800
	Global Accounts Customer Care	01344 373 185 or 01344 373 186
	Home and Small Business Customer Care	0870 906 0010
	Corporate Customer Care	0870 908 0500
	Preferred Accounts (500–5000 employees) Customer Care	01344 373 196
	Central Government Customer Care	01344 373 193
	Local Government & Education Customer Care	01344 373 199
	Health Customer Care	01344 373 194
	Home and Small Business Sales	0870 907 4000
	Corporate/Public Sector Sales	01344 860 456
<b>Uruguay</b>	General Support	toll-free: 000-413-598-2521

<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
	<b>Consumer</b> (Home and Home Office)	
	Technical Support	toll-free: 1-800-624-9896
	Customer Service	toll-free: 1-800-624-9897
	DellNet™ Service and Support	toll-free: 1-877-Dellnet (1-877-335-5638)
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-695-8133
	Financial Services website: <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 Technical Support	toll-free: 1-800-822-8965
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-695-8133
	Projectors Technical Support	toll-free: 1-877-459-7298
	<b>Public</b> (government, education, and healthcare)	
	Customer Service and Technical Support	toll-free: 1-800-456-3355
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-234-1490
	Dell Sales	toll-free: 1-800-289-3355 or toll-free: 1-800-879-3355
	Dell Outlet Store (Dell refurbished computers)	toll-free: 1-888-798-7561
	Software and Peripherals Sales	toll-free: 1-800-671-3355
	Spare Parts Sales	toll-free: 1-800-357-3355
	Extended Service and Warranty Sales	toll-free: 1-800-247-4618
	Fax	toll-free: 1-800-727-8320
	Dell Services for the Deaf, Hard-of-Hearing, or Speech-Impaired	toll-free: 1-877-DELLTTY (1-877-335-5889)
U.S. Virgin Islands	General Support	1-877-673-3355
Venezuela	General Support	8001-3605

## **Returning Items for Warranty Repair or Credit**

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

- 1** Call Dell to obtain an authorization number, and write it clearly and prominently on the outside of the box.
- 2** Include a copy of the invoice and a letter describing the reason for the return.
- 3** Include any accessories that belong with the item(s) being returned (power cables, CDs, guides, and so on) if the return is for credit.
- 4** Pack the equipment to be returned in the original (or equivalent) packing materials.

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

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

## **Regulatory Information**

Electromagnetic Interference (EMI) is any signal or emission, radiated in free space or conducted along power or signal leads, that endangers the functioning of a radio navigation or other safety service or seriously degrades, obstructs, or repeatedly interrupts a licensed radio communications service. Radio communications services include but are not limited to AM/FM commercial broadcast, television, cellular services, radar, air-traffic control, pager, and Personal Communication Services (PCS). These licensed services, along with unintentional radiators such as digital devices, including computer systems, contribute to the electromagnetic environment.

Electromagnetic Compatibility (EMC) is the ability of items of electronic equipment to function properly together in the electronic environment. While this computer system has been designed and determined to be compliant with regulatory agency limits for EMI, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference with radio communications services, 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 computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so that the computer and the receiver are on different branch circuits.

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

Dell computer systems are designed, tested, and classified for their intended electromagnetic environment. These electromagnetic environment classifications generally refer to the following harmonized definitions:

- Class A is typically for business or industrial environments.
- Class B is typically for residential environments.

For additional regulatory information, see the *Tell Me How* help file that accompanied your computer. To access the help file, see page 38.

### **NOM Information (Mexico Only)**

The following information is provided on the device(s) described in this document in compliance with the requirements of the official Mexican standards (NOM):

Exporter:	Dell One Dell Way Round Rock, TX 78682
Importer:	Dell Computer de México, S.A. de C.V. Paseo de la Reforma 2620 - 11° Piso Col. Lomas Altas 11950 México, D.F.
Ship to:	Dell Computer de México, S.A. de C.V. al Cuidado de Kuehne & Nagel de México S. de R.I. Avenida Soles No. 55 Col. Peñon de los Baños 15520 México, D.F.
Model number:	DHM
Supply voltage:	115/230 VAC
Frequency:	60/50 Hz
Current consumption:	3.0/1.5 A





# Limited Warranties and Return Policy

Dell-branded hardware products purchased in the U.S. or Canada come with either a 90-day (U.S. only), one-year, two-year, three-year, or four-year limited warranty. To determine which warranty you purchased, see the invoice that accompanied your hardware product(s). The following sections describe the limited warranties and return policy for the U.S., the limited warranties and return policy for Canada, and the manufacturer guarantee for Latin America and the Caribbean.

## Limited Warranty for the U.S.

### What is covered by this limited warranty?

This limited warranty covers defects in materials and workmanship in your—our end-user customer's—Dell-branded hardware products, including Dell-branded peripheral products, such as monitors, keyboards, pointing devices (mice), and wireless devices.

### What is not covered by this limited warranty?

This limited warranty does not cover:

- Software, including the operating system and software added to the Dell-branded hardware products through our factory-integration system, third-party software, or the reloading of software
- Non-Dell-branded products and accessories
- Problems that result from:
  - External causes such as accident, abuse, misuse, or problems with electrical power
  - Servicing not authorized by us
  - Usage that is not in accordance with product instructions
  - Failure to follow the product instructions or failure to perform preventive maintenance
  - Problems caused by using accessories, parts, or components not supplied by us
- Products with missing or altered service tags or serial numbers
- Products for which we have not received payment

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION). DELL'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS WARRANTY STATEMENT. ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN TIME TO THE TERM OF THE LIMITED WARRANTY PERIOD REFLECTED ON YOUR INVOICE. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE LIMITED WARRANTY PERIOD HAS EXPIRED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THIS LIMITATION MAY NOT APPLY TO YOU.**

**WE DO NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS LIMITED WARRANTY OR FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY FOR THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES, FOR PRODUCTS NOT BEING AVAILABLE FOR USE, OR FOR LOST DATA OR LOST SOFTWARE. OUR LIABILITY WILL BE NO MORE THAN THE AMOUNT YOU PAID FOR THE PRODUCT THAT IS THE SUBJECT OF A CLAIM. THIS IS THE MAXIMUM AMOUNT FOR WHICH WE ARE RESPONSIBLE.**

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

### How long does this limited warranty last?

This limited warranty lasts for the time period indicated on your invoice, except that the limited warranty on Dell-branded batteries lasts only one year and the limited warranty on the lamps for Dell-branded projectors lasts only ninety days. The limited warranty begins on the date of the invoice. The warranty period is not extended if we repair or replace a warranted product or any parts. Dell may change the availability of limited warranties, at its discretion, but any changes will not be retroactive.

### What do I do if I need warranty service?

Before the warranty expires, please call us at the relevant number listed in the following table. Please also have your Dell service tag number or order number available.

<b>Individual Home Consumers:</b>	<b>US. Only</b>
Technical Support	1-800-624-9896
Customer Service	1-800-624-9897
<b>Individual Home Consumers who purchased through an Employee Purchase Program:</b>	
Technical Support and Customer Service	1-800-822-8965
<b>Home and Small Business Commercial Customers:</b>	
Technical Support and Customer Service	1-800-456-3355
<b>Medium, Large, or Global Commercial Customers, Healthcare Customers, and Value Added Resellers (VARs):</b>	
Technical Support and Customer Service	1-800-822-8965
<b>Government and Education Customers:</b>	
Technical Support and Customer Service	1-800-234-1490
<b>Dell-Branded Memory</b>	1-888-363-5150

### What will Dell do?

**During the first 90 days of the 90-day limited warranty and the first year of all other limited warranties:** For the first 90 days of the 90-day limited warranty and the first year of all other limited warranties, we will repair any Dell-branded hardware products returned to us that prove to be defective in materials or workmanship. If we are not able to repair the product, we will replace it with a comparable product that is new or refurbished.

When you contact us, we will issue a Return Material Authorization Number for you to include with your return. You must return the products to us in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk if the product is lost or damaged in shipment. We will return the repaired or replacement products to you. We will pay to ship the repaired or replaced products to you if you use an address in the United States (excluding Puerto Rico and U.S. possessions and territories). Otherwise, we will ship the product to you freight collect.

If we determine that the product is not covered under this warranty, we will notify you and inform you of service alternatives that are available to you on a fee basis.

**NOTE:** Before you ship the product(s) to us, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). Remove any confidential, proprietary, or personal information and removable media such as floppy disks, CDs, or PC Cards. We are not responsible for any of your confidential, proprietary, or personal information; lost or corrupted data; or damaged or lost removable media.

**During the remaining years:** For the remaining period of the limited warranty, we will replace any defective part with new or refurbished parts, if we agree that it needs to be replaced. When you contact us, we will require a valid credit card number at the time you request a replacement part, but we will not charge you for the replacement part as long as you return the original part to us within thirty days after we ship the replacement part to you. If we do not receive the original part within thirty days, we will charge to your credit card the then-current standard price for that part.

We will pay to ship the part to you if you use an address in the United States (excluding Puerto Rico and U.S. possessions and territories). Otherwise, we will ship the part freight collect. We will also include a prepaid shipping container with each replacement part for your use in returning the replaced part to us.

**NOTE:** Before you replace parts, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). We are not responsible for lost or corrupted data.

#### **What if I purchased a service contract?**

If your service contract is with Dell, service will be provided to you under the terms of the service agreement. Please refer to that contract for details on how to obtain service.

If you purchased through us a service contract with one of our third-party service providers, please refer to that contract for details on how to obtain service.

#### **How will you fix my product?**

We use new and refurbished parts made by various manufacturers in performing warranty repairs and in building replacement parts and systems. Refurbished parts and systems are parts or systems that have been returned to Dell, some of which were never used by a customer. All parts and systems are inspected and tested for quality. Replacement parts and systems are covered for the remaining period of the limited warranty for the product you bought.

### What do I do if I am not satisfied?

We pride ourselves on our great customer service. If you are not satisfied with the service you receive under this limited warranty, please let us know. We have found that the best way to resolve issues regarding our limited warranty is to work together. If, after those discussions, you are still not satisfied, we believe arbitration is the most expeditious way to resolve your concerns. Therefore, **ANY CLAIM, DISPUTE, OR CONTROVERSY (WHETHER IN CONTRACT, TORT, OR OTHERWISE, WHETHER PREEXISTING, PRESENT, OR FUTURE, AND INCLUDING STATUTORY, COMMON LAW, INTENTIONAL TORT, AND EQUITABLE CLAIMS) AGAINST DELL** arising from or relating to this limited warranty, its interpretation, or the breach, termination, or validity thereof, the relationships which result from this limited warranty (including, to the full extent permitted by applicable law, relationships with third parties), Dell's advertising, or any related purchase **SHALL BE RESOLVED EXCLUSIVELY AND FINALLY BY BINDING ARBITRATION ADMINISTERED BY THE NATIONAL ARBITRATION FORUM (NAF)** under its Code of Procedure then in effect (available via the Internet at [www.arb-forum.com/](http://www.arb-forum.com/) or via telephone at 1-800-474-2371). The arbitration will be limited solely to the dispute or controversy between you and Dell. Any award of the arbitrator(s) shall be final and binding on each of the parties, and may be entered as a judgment in any court of competent jurisdiction. Information may be obtained and claims may be filed with the NAF at P.O. Box 50191, Minneapolis, MN 55405. This provision applies only to individual home consumers and consumers who purchased through an employee purchase program. It does not apply to small, medium, large, and global commercial customers or government, education, and healthcare customers.

### May I transfer the limited warranty?

Limited warranties on systems may be transferred if the current owner transfers ownership of the system and records the transfer with us. The limited warranty on Dell-branded memory may not be transferred. You may record your transfer by going to Dell's website:

- If you are an Individual Home Consumer, go to [www.dell.com/us/en/dhs/topics/sbtopic\\_015\\_ccare.htm](http://www.dell.com/us/en/dhs/topics/sbtopic_015_ccare.htm)
- If you are a Small, Medium, Large, or Global Commercial Customer, go to [www.dell.com/us/en/biz/topics/sbtopic\\_ccare\\_nav\\_015\\_ccare.htm](http://www.dell.com/us/en/biz/topics/sbtopic_ccare_nav_015_ccare.htm)
- If you are a Government, Education, or Healthcare Customer, or an Individual Consumer who purchased through an employee purchase program, go to [www.dell.com/us/en/pub/topics/sbtopic\\_015\\_ccare.htm](http://www.dell.com/us/en/pub/topics/sbtopic_015_ccare.htm)

If you do not have Internet access, call your customer care representative or call 1-800-624-9897.

### "Total Satisfaction" Return Policy (U.S. Only)

We value our relationship with you and want to make sure that you're satisfied with your purchases. That's why we offer a "Total Satisfaction" return policy for most products that you—the end-user customer—purchase directly from Dell. Under this policy, you may return to Dell products that you purchased directly from Dell for a credit or a refund of the purchase price paid, less shipping and handling and applicable restocking fees as follows:

- **New Hardware Products and Accessories** — All new hardware, accessories, parts, and unopened software still in its sealed package, excluding the products listed below, may be returned within thirty days from the invoice date. To return applications software or an operating system that has been installed by Dell, you must return the entire computer. A different return policy applies to nondefective products purchased through Dell's Software and Peripherals division by customers of our Small and Medium Business divisions. Those products may be returned within thirty days from the invoice date, but a fifteen percent (15%) restocking fee will be deducted from any refund or credit. The "Total Satisfaction" Return Policy and Software and Peripherals division return policy are not available for Dell | EMC storage products, EMC-branded products, or enterprise software.

- **Reconditioned or Refurbished Dell-Branded Hardware Products and Parts** — All reconditioned or refurbished Dell-branded server and storage products may be returned within thirty days from the invoice date. All other reconditioned or refurbished Dell-branded hardware products and parts may be returned within fourteen days of the invoice date.

To return products, e-mail or call Dell customer service to receive a Credit Return Authorization Number within the return policy period applicable to the product you want to return. You must obtain a Credit Return Authorization Number in order to return the product. See "Contacting Dell" (see page 116) in your customer documentation (or [www.dell.com/us/en/gen/contact.htm](http://www.dell.com/us/en/gen/contact.htm)) to find the appropriate contact information for obtaining customer assistance.

You must ship the products to Dell within five days of the date that Dell issues the Credit Return Authorization Number. You must also return the products to Dell in their original packaging, in as-new condition along with any media, documentation, and all other items that were included in the original shipment, prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipment.

## Limited Warranty Terms for Canada

### What is covered by this limited warranty?

This limited warranty covers defects in materials and workmanship in your—our end-user customer's—Dell-branded hardware products, including Dell-branded peripheral products, such as monitors, keyboards, pointing devices (mice), and wireless devices.

### What is not covered by this limited warranty?

This limited warranty does not cover:

- Software, including the operating system and software added to the Dell-branded hardware products through our factory-integration system, or the reloading of the software
- Non-Dell branded products and accessories
- Problems that result from:
  - External causes such as accident, abuse, misuse, or problems with electrical power
  - Servicing not authorized by us
  - Usage that is not in accordance with product instructions
  - Failure to follow the product instructions or failure to perform preventive maintenance
  - Problems caused by using accessories, parts, or components not supplied by us
- Products with missing or altered service tags or serial numbers
- Products for which we have not received payment

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM PROVINCE TO PROVINCE. DELL'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN PRODUCT IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS WARRANTY STATEMENT, FOR THE TERM OF THE WARRANTY PERIOD REFLECTED ON YOUR INVOICE. EXCEPT FOR THE EXPRESS WARRANTIES CONTAINED IN THIS WARRANTY STATEMENT, DELL DISCLAIMS ALL OTHER WARRANTIES AND CONDITIONS, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES AND**

CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. SOME PROVINCES DO NOT ALLOW THE EXCLUSION OF CERTAIN IMPLIED WARRANTIES OR CONDITIONS, OR LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY OR CONDITION LASTS. THEREFORE, THE FOREGOING EXCLUSIONS AND LIMITATIONS MAY NOT APPLY TO YOU.

WE DO NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS WARRANTY STATEMENT OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY FOR THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES, FOR PRODUCTS NOT BEING AVAILABLE FOR USE, OR FOR LOST DATA OR LOST SOFTWARE. OUR LIABILITY WILL BE NO MORE THAN THE AMOUNT YOU PAID FOR THE PRODUCT THAT IS THE SUBJECT OF A CLAIM. THIS IS THE MAXIMUM AMOUNT FOR WHICH WE ARE RESPONSIBLE.

SOME PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

### How long does this limited warranty last?

This limited warranty lasts for the time period indicated on your invoice, except that the limited warranty on Dell-branded batteries lasts only one year and the limited warranty on the lamps for Dell-branded projectors lasts only ninety days. The limited warranty begins on the date of the invoice. The warranty period is not extended if we repair or replace a warranted product or any parts. Dell may change the terms and availability of limited warranties, at its discretion, but any changes will not be retroactive (that is, the warranty terms in place at the time of purchase will apply to your purchase).

### What do I do if I need warranty service?

Before the warranty expires, please call us at the relevant number listed in the following table. Please also have your Dell service tag number or order number available.

<b>Individual Home Consumers; Home Office and Small Business Customers:</b>	<b>Canada Only</b>
Technical Support and Customer Service	1-800-847-4096
<b>Medium, Large, and Global Commercial Customers; Government, Education, and Healthcare Customers; and Value Added Resellers (VARs):</b>	
Technical Support	1-800-387-5757
Customer Service	1-800-326-9463
<b>Government or Education Customers, or Individual Home Consumers who purchased through an Employee Purchase Program:</b>	
Technical Support	1-800-387-5757
Customer Service	1-800-326-9463 (Extension 8221 for Individual Consumers)
<b>Dell-Branded Memory</b>	1-888-363-5150

## What will Dell do?

**During the first year of all limited warranties:** During the first year of all limited warranties, we will repair any Dell-branded hardware products returned to us that prove to be defective in materials or workmanship. If we are not able to repair the product, we will replace it with a comparable product that is new or refurbished.

When you contact us, we will issue a Return Material Authorization Number for you to include with your return. You must return the products to us in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk if the product is lost or damaged in shipment. We will return the repaired or replacement products to you. We will pay to ship the repaired or replaced products to you if you use an address in Canada. Otherwise, we will ship the product to you freight collect.

If we determine that the problem is not covered under this warranty, we will notify you and inform you of service alternatives that are available to you on a fee basis.

**NOTE:** Before you ship the product(s) to us, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). Remove any confidential, proprietary or personal information, removable media, such as floppy disks, CDs, or PC Cards. We are not responsible for any of your confidential, proprietary or personal information; lost or corrupted data; or damaged or lost removable media.

**During the remaining years following the first year of all limited warranties:** We will replace any defective part with new or refurbished parts, if we agree that it needs to be replaced. When you contact us, we will require a valid credit card number at the time you request a replacement part, but we will not charge you for the replacement part as long as you return the original part to us within thirty days after we ship the replacement part to you. If we do not receive the original part within thirty days, we will charge to your credit card the then-current standard price for that part.

We will pay to ship the part to you if you use an address in Canada. Otherwise, we will ship the part freight collect. We will also include a prepaid shipping container with each replacement part for your use in returning the replaced part to us.

**NOTE:** Before you replace parts, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). We are not responsible for lost or corrupted data.

## What if I purchased an on-site service contract?

If your service contract is with Dell, service will be provided to you under the terms of the service contract. Please refer to that contract for details on how to obtain service. Dell's service contracts can be found online at [www.dell.ca](http://www.dell.ca) or by calling Customer Care at 1-800-847-4096. If you purchased through us a service contract with one of our third-party service providers, please refer to that contract (mailed to you with your invoice) for details on how to obtain service.

## How will you fix my product?

We use new and refurbished parts made by various manufacturers in performing warranty repairs and in building replacement parts and systems. Refurbished parts and systems are parts or systems that have been returned to Dell, some of which were never used by a customer. All parts and systems are inspected and tested for quality. Replacement parts and systems are covered for the remaining period of the limited warranty for the product you bought. Dell owns all parts removed from repaired products.

### What do I do if I am not satisfied?

We pride ourselves on our great customer service. If you are not satisfied with the service you receive under this limited warranty, please let us know. We have found that the best way to resolve issues regarding our limited warranty is to work together. If, after those discussions, you are still not satisfied, we believe arbitration is the most expeditious way to resolve your concerns. Therefore, **ANY CLAIM, DISPUTE, OR CONTROVERSY (WHETHER IN CONTRACT, TORT, OR OTHERWISE, WHETHER PREEXISTING, PRESENT OR FUTURE, AND INCLUDING STATUTORY, COMMON LAW, INTENTIONAL TORT, AND EQUITABLE CLAIMS) AGAINST DELL** arising from or relating to this limited warranty, its interpretation, or the breach, termination or validity thereof, the relationships which result from this limited warranty (including, to the full extent permitted by applicable law, relationships with third parties), Dell's advertising, or any related purchase **SHALL BE RESOLVED EXCLUSIVELY AND FINALLY BY BINDING ARBITRATION ADMINISTERED BY THE NATIONAL ARBITRATION FORUM (NAF)** under its Code of Procedure then in effect (available via the Internet at [www.arb-forum.com/](http://www.arb-forum.com/), or via telephone at 1-800-474-2371). The arbitration will be limited solely to the dispute or controversy between you and Dell. Any award of the arbitrator(s) shall be final and binding on each of the parties, and may be entered as a judgment in any court of competent jurisdiction. Information may be obtained and claims may be filed with the NAF at P.O. Box 50191, Minneapolis, MN 55405.

### May I transfer the limited warranty?

Limited warranties on systems may be transferred if the current owner transfers ownership of the system and records the transfer with us. The limited warranty on Dell-branded memory may not be transferred. You may record your transfer by going to our website:

- If you are an Individual Home Consumer, go to [www.dell.com/us/en/dhs/topics/sbtopic\\_016\\_ccare.htm](http://www.dell.com/us/en/dhs/topics/sbtopic_016_ccare.htm)
- If you are a Home Office, Small, Medium, Large, or Global Commercial Customer, go to [www.dell.com/us/en/biz/topics/sbtopic\\_ccare\\_nav\\_016\\_ccare.htm](http://www.dell.com/us/en/biz/topics/sbtopic_ccare_nav_016_ccare.htm)
- If you are a Government, Education, or Healthcare Customer, or an Individual Home Consumer who purchased through an Employee Purchase Program, go to [www.dell.com/us/en/pub/topics/sbtopic\\_016\\_ccare.htm](http://www.dell.com/us/en/pub/topics/sbtopic_016_ccare.htm)

If you do not have Internet access, please call Dell at 1-800-326-9463.

### "Total Satisfaction" Return Policy (Canada Only)

If you are an end-user customer who bought new products directly from Dell, you may return them to Dell up to 30 days after you receive them for a refund or credit of the product purchase price. If you are an end-user customer who bought reconditioned or refurbished products from Dell, you may return them to Dell within 14 days after the date of invoice for a refund or credit of the product purchase price. In either case, the refund or credit will not include any shipping and handling charges shown on your invoice and will be subject to a fifteen percent (15%) restocking fee, unless otherwise prohibited by law. If you are an organization that bought the products under a written agreement with Dell, the agreement may contain different terms for the return of products than specified by this policy.

To return products, you must call Dell Customer Service at 1-800-387-5759 to receive a Credit Return Authorization Number. To expedite the process of your refund or credit, Dell expects you to return the products to Dell in their original packaging within five days of the date that Dell issues the Credit Return Authorization Number. You must also prepay shipping charges and insure the shipment or accept the risk of loss or damage during shipment. You may return software for a refund or credit only if the sealed package containing the floppy



disk(s) or CD(s) is unopened. Returned products must be in as-new condition, and all of the manuals, floppy disk(s), CD(s), power cables, and other items included with a product must be returned with it. For customers who want to return, for refund or credit only, either application or operating system software that has been installed by Dell, the whole system must be returned, along with any media and documentation that may have been included in the original shipment.

The "Total Satisfaction" Return Policy does not apply to Dell | EMC storage products. It also does not apply to products purchased through Dell's Software and Peripherals division. For those products, please instead refer to Dell's Software and Peripheral's then-current return policy (see the following section, "Dell Software and Peripherals" (Canada Only)).

## **Dell Software and Peripherals (Canada Only)**

### **Third-Party Software and Peripherals Products**

Similar to other resellers of software and peripherals, Dell does not warrant third-party products. Third-party software and peripheral products are covered by the warranties provided by the original manufacturer or publisher only. Third party manufacturer warranties vary from product to product. Consult your product documentation for specific warranty information. More information may also be available from the manufacturer or publisher.

While Dell offers a wide selection of software and peripheral products, we do not specifically test or guarantee that all of the products we offer work with any or all of the various models of Dell computers, nor do we test or guarantee all of the products we sell on the hundreds of different brands of computers available today. If you have questions about compatibility, we recommend and encourage you to contact the third-party software and peripheral product manufacturer or publisher directly.

### **Dell-Branded Peripheral Products**

Dell does provide a limited warranty for new Dell-branded peripheral products (products for which Dell is listed as the manufacturer) such as monitors, batteries, memory, docking stations, and projectors). To determine which limited warranty applies to the product you purchased, see the Dell invoice and/or the product documentation that accompanied your product. Descriptions of Dell's limited warranties are described in preceding sections.

### **Return Policy**

If you are an end-user customer who bought Dell Software and Peripherals products directly from a Dell company, you may return Dell Software and Peripherals products that are in as-new condition to Dell up to 30 days from the date of invoice for a refund of the product purchase price if already paid. This refund will not include any shipping and handling charges shown on your invoice; you are responsible for those.

To return products, you must call Dell Customer Service at 1-800-387-5759 to receive a Credit Return Authorization Number. You must ship the Dell Software and Peripherals products back to Dell in their original manufacturer's packaging (which must be in as-new condition), prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipment.

To qualify for refund or replacement, returned products must be in as-new condition, software products must be unopened, and all of the manuals, floppy disk(s), CD(s), power cables, and other items included with a product must be returned with it.

## **One-Year End-User Manufacturer Guarantee (Latin America and the Caribbean Only)**

### **Guarantee**

Dell Computer Corporation ("Dell") warrants to the end user in accordance with the following provisions that its branded hardware products, purchased by the end user from a Dell company or an authorized Dell distributor in Latin America or the Caribbean, will be free from defects in materials, workmanship, and design affecting normal use, for a period of one year from the original purchase date. Products for which proper claims are made will, at Dell's option, be repaired or replaced at Dell's expense. Dell owns all parts removed from repaired products. Dell uses new and reconditioned parts made by various manufacturers in performing repairs and building replacement products.

### **Exclusions**

This Guarantee does not apply to defects resulting from: improper or inadequate installation, use, or maintenance; actions or modifications by unauthorized third parties or the end user; accidental or willful damage; or normal wear and tear.

### **Making a Claim**

Claims must be made in Latin America or the Caribbean by contacting the Dell point of sale within the guarantee period. The end user must always supply proof of purchase, indicating name and address of the seller, date of purchase, model and serial number, name and address of the customer, and details of symptoms and configuration at the time of malfunction, including peripherals and software used. Otherwise, Dell may refuse the guarantee claim. Upon diagnosis of a warranted defect, Dell will make arrangements and pay for ground freight and insurance to and from Dell's repair/replacement center. The end user must ensure that the defective product is available for collection properly packed in original or equally protective packaging together with the details listed above and the return number provided to the end user by Dell.

### **Limitation and Statutory Rights**

Dell makes no other warranty, guarantee or like statement other than as explicitly stated above, and this Guarantee is given in place of all other guarantees whatsoever, to the fullest extent permitted by law. In the absence of applicable legislation, this Guarantee will be the end user's sole and exclusive remedy against Dell or any of its affiliates, and neither Dell nor any of its affiliates shall be liable for loss of profit or contracts, or any other indirect or consequential loss arising from negligence, breach of contract, or howsoever.

**This Guarantee does not impair or affect mandatory statutory rights of the end user against and/or any rights resulting from other contracts concluded by the end user with Dell and/or any other seller.**

#### **Dell World Trade LP**

One Dell Way, Round Rock, TX 78682, USA

**Dell Computadores do Brasil Ltda (CNPJ No. 72.381.189/0001-10)/**

**Dell Commercial do Brasil Ltda (CNPJ No. 03 405 822/0001-40)**

Avenida Industrial Belgraf, 400

92990-000 - Eldorado do Sul – RS - Brasil

#### **Dell Computer de Chile Ltda**

Coyancura 2283, Piso 3- Of. 302,

Providencia, Santiago - Chile

Dell Computer de Colombia Corporation  
Carrera 7 #115-33 Oficina 603  
Bogota, Colombia

Dell Computer de Mexico SA de CV  
Paseo de la Reforma 2620 - 11° Piso  
Col. Lomas Altas  
11950 México, D.F.

## Intel® Warranty Statement for Pentium® and Celeron® Processors Only (U.S. and Canada Only)

### Intel's Three Year Limited Warranty

#### Limited Warranty

Intel warrants that its family of Pentium® and Celeron® processors, if properly used and installed, will be free from defects in materials and workmanship and will substantially conform to Intel's publicly available specifications for a period of three (3) years after the date the Pentium or Celeron processor was purchased (whether purchased separately or as part of a computer system).

If the Pentium or Celeron processor, which is the subject of this Limited Warranty, fails during the warranty period for reasons covered by this Limited Warranty, Intel, at its option, will:

- REPAIR the Pentium or Celeron processor by means of hardware and/or software; OR
- REPLACE the Pentium or Celeron processor with another Pentium or Celeron processor; OR
- if Intel is unable to repair or replace the particular Pentium or Celeron processor,
- REFUND the then-current value of the Pentium or Celeron processor.

THIS LIMITED WARRANTY, AND ANY IMPLIED WARRANTIES THAT MAY EXIST UNDER STATE LAW, APPLY ONLY TO THE ORIGINAL PURCHASER OF THE PENTIUM OR CELERON PROCESSOR, OR PENTIUM OR CELERON PROCESSOR-BASED COMPUTER AND LAST ONLY FOR AS LONG AS SUCH PURCHASER CONTINUES TO OWN THE PROCESSOR.

#### Extent of Limited Warranty

Intel does not warrant that your Pentium or Celeron processor will be free from design defects or errors known as "errata." Current characterized errata are available upon request. This limited warranty is for purchasers in the United States and Canada only. The limited warranty does not cover any costs relating to removal or replacement of any Pentium or Celeron processors that are soldered or otherwise permanently affixed to your system's motherboard.

This limited warranty does not cover damages due to external causes, including accident, problems with electrical power, usage not in accordance with product instructions, misuse, neglect, alteration, repair, improper installation, or improper testing.

#### How to Obtain Warranty Service

To obtain warranty service for your Pentium or Celeron processor, you may contact your computer system manufacturer in accordance with its instructions, or you may contact Intel.

To request warranty service from Intel, you should call Intel at 1-800-628-8686 during the warranty period during normal business hours (Pacific Time), excluding holidays. Please be prepared to provide:

- (1) your name, address, and telephone numbers;
- (2) proof of purchase;
- (3) this Intel warranty card;
- (4) a description of the computer system including the brand and model; and
- (5) an explanation of the problem.

[Note: The Customer Service Representative may need additional information from you depending on the nature of the problem.]

The replacement processor is warranted under this written warranty and is subject to the same limitations and exclusions for the remainder of the original warranty period or one (1) year, whichever is longer.

#### WARRANTY LIMITATIONS AND EXCLUSIONS

THESE WARRANTIES REPLACE ALL OTHER WARRANTIES, EXPRESS OR IMPLIED INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. INTEL MAKES NO EXPRESS WARRANTIES BEYOND THOSE STATED HERE. INTEL DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

SOME LAWS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES SO THIS LIMITATION MAY NOT APPLY TO YOU. IF THESE LAWS APPLY, THEN ALL EXPRESS AND IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE LIMITED WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD. SOME LAWS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THIS LIMITATION MAY NOT APPLY TO YOU.

#### LIMITATIONS OF LIABILITY

INTEL'S RESPONSIBILITY UNDER THIS, OR ANY OTHER WARRANTY, IMPLIED OR EXPRESS, IS LIMITED TO REPAIR, REPLACEMENT OR REFUND, AS SET FORTH ABOVE. THESE REMEDIES ARE THE SOLE AND EXCLUSIVE REMEDIES FOR ANY BREACH OF WARRANTY. INTEL IS NOT RESPONSIBLE FOR INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR UNDER ANY OTHER LEGAL THEORY INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, DOWNTIME, GOODWILL, DAMAGE TO OR REPLACEMENT OF EQUIPMENT AND PROPERTY, AND ANY COSTS OF RECOVERING, REPROGRAMMING, OR REPRODUCING ANY PROGRAM OR DATA STORED IN OR USED WITH A SYSTEM CONTAINING YOUR PENTIUM PROCESSOR. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

THE LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM JURISDICTION TO JURISDICTION.

**Intel Pentium® and Celeron® Processors are backed by a three-year limited warranty.  
Please refer to the reverse side of this card for complete warranty details.**

**Intel's Commitment to Quality**

Intel is committed to producing the highest quality processors available. That's why we have hundreds of people dedicated to continuously improve our design, manufacturing, and testing technology.

We put every one of our Pentium® and Celeron® processors through a rigorous battery of tests during the design and manufacturing processes.

To verify that the new chip will correctly run the software written for Intel Architecture processors, a team of Intel engineers is dedicated to compatibility testing. In a state-of-art lab, this group runs an extensive set of operating systems, applications, network tests and stress tests repeatedly to ensure that the processor is compatible with representative software.

Just as importantly, we work with hardware and software companies in the computer industry to ensure that our processors are compatible with their products.

Additionally, a sampling of Intel processors are subjected to a rigorous "burn-in" test whereby the chip is operated at higher-than-normal temperatures and voltages. During this burn-in period, the processor experiences the equivalent of weeks of normal usage. These units are monitored for failures as part of our ongoing quality assurance process.

As a result, today's microprocessors from Intel are among the most reliable components in computers.

**What are 'Errata'?**

Exhaustive product testing can highlight differences between the actual behavior of the microprocessor and its specifications. Sometimes the discrepancies are caused by a design defect or error, which we call errata. Rigorous validation identifies most errata during the development of the processor, but we do detect additional errata during the life cycle of a microprocessor.

When an erratum is identified, our engineers work to characterize it and find a solution. We work with system designers and software developers to ensure that the discrepancy does not affect their products. If necessary, special software or hardware solutions (sometimes known as "work arounds") are implemented in the system design to prevent computer users from encountering the problem. Errata may then be corrected in future revisions of the microprocessor.

No microprocessor is perfect, and Intel recognizes that some consumers want to know about any errata, whether or not the errata affect them. Intel makes documentation of all characterized Pentium and Celeron processor errata publicly available through our Technical Documentation Service.

*At Intel, our goal is to make every computer user satisfied with his or her Pentium or Celeron processor. Should you have any questions, comments or concerns about your Intel microprocessor, please call us at 1-800-628-8686.*

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