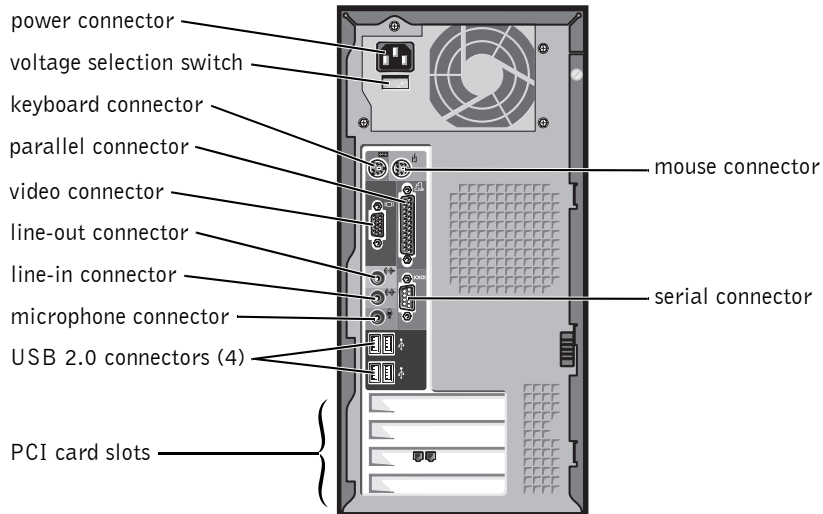
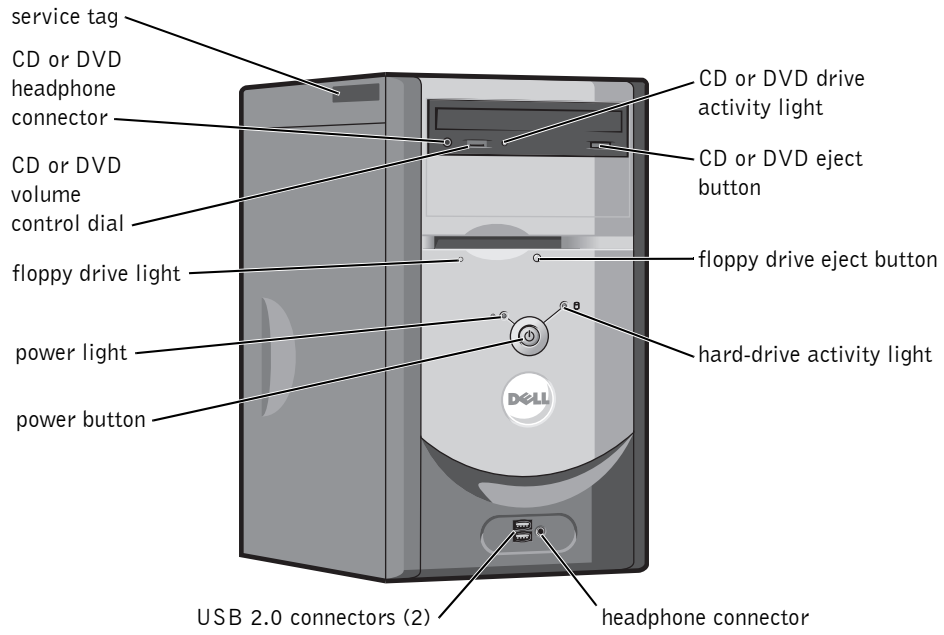





# Dell™ Dimension™ 2300



## 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 the help file, see page 32.

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**August 2002 P/N 3T560 Rev. A01**

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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).
- Be sure 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 otherwise provided to you. 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. To access the *Tell Me How* help file, see "Finding Help Information" on page 32.

## 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 "Replacing the Battery" on page 90.

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?

## Find it Here

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

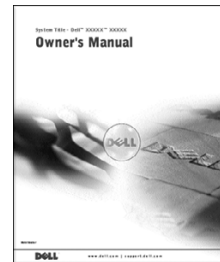
**ResourceCD**



You can use this CD to access documentation and reinstall drivers (see page 59).

- 
- 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
  - Windows® License Label

**Express Service Code and Windows License Label**



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 (see page 59).

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

---

**Dell Support website****support.dell.com**

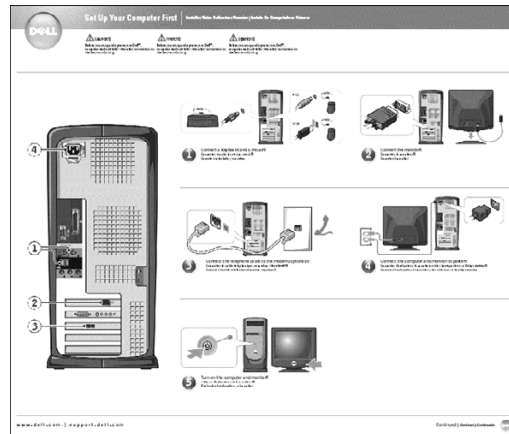
The Dell Support website provides several online tools, including:

- 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

Transferring Information to a New Computer


Setting Up a Home and Office Network

Connecting to the Internet

Copying CDs

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

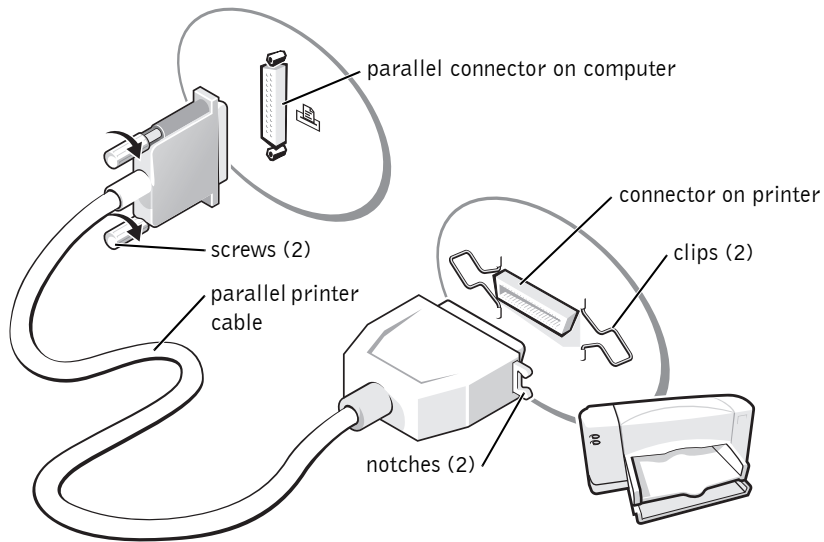
Your printer connects to your computer with either a USB cable or a parallel cable. Your printer may not come with a printer cable, so if you purchase a cable separately, ensure that it is compatible with your printer. If you purchased a printer cable at the same time you purchased your computer, the 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 27).

 **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.

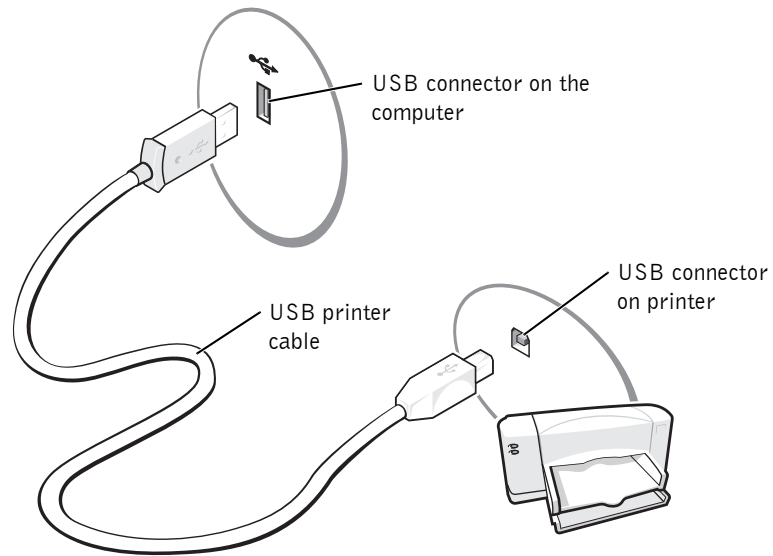


- 4 Turn on the printer and then turn on the computer. If the **Add New Hardware Wizard** window appears, click **Cancel**.
- 5 Install the printer driver if necessary. See the documentation that came with your printer.

### 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.




## Transferring Information to a New Computer

Windows XP provides a Files and Settings Transfer Wizard to move data, such as e-mails, window sizes, toolbar settings, and Internet bookmarks from one computer to another. First you collect the data from the source computer, and then you import the data to the new computer.

If the source computer uses another Windows operating system, the wizard can be launched from the Windows XP operating system CD or from a floppy disk created on the Windows XP computer. 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 floppy disk, a Zip disk, or a writable CD.

To transfer information to a new computer:

- 1 Click the **Start** button, point to **All Programs**→ **Accessories**→ **System Tools**, and then click **Files and Settings Transfer Wizard**.
- 2 On the welcome screen, click **Next**.
- 3 On the **Which computer is this?** screen, select **New Computer**, and then click **Next**.
- 4 Follow the instructions on the screen.

 **HINT:** The CD that you need to place in your CD or DVD drive is titled *Operating System*.


## Setting Up a Home and Office Network


### Connecting to a Network Adapter

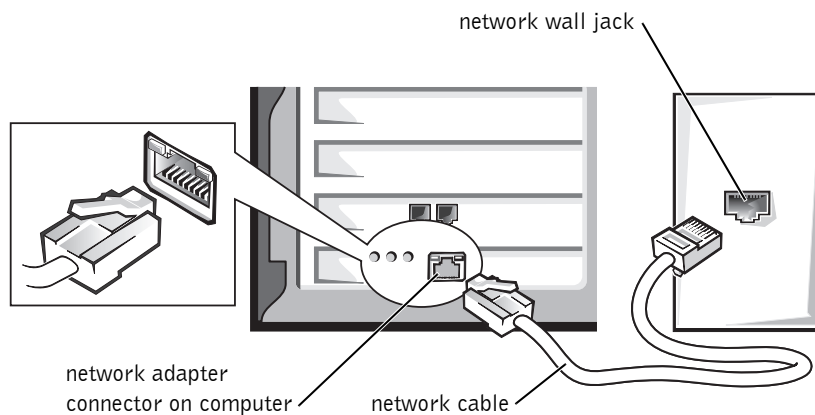
Before you connect your computer to a network, it must have a network adapter installed and a network cable connected to it.

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.

 **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 then 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 America Online or DellNet™ by 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 cable 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 America Online or DellNet by MSN connection:

- 1 Save any work in progress and close all 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 any work in progress and close all open programs.
- 2 Click the **Start** button and click **Control Panel**.
- 3 Click **Network and Internet Connections**.
- 4 Click **Set up or change your Internet connection**.
- 5 In the **Internet Properties** window, click **Setup** and then click **Next**.  
The **New Connection Wizard** appears.
- 6 Click **Connect to the Internet**.
- 7 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**.
- 8 Click **Next**.


If you selected **Set up my connection manually**, continue to step 9. Otherwise, follow the instructions on the screen to complete the setup.


- 9 Click the appropriate option under **How do you want to connect to the Internet?**, and then click **Next**.
- 10 Use the setup information provided by your ISP to complete the setup.



**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.

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

## Copying CDs

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 "Finding Help Information" on page 32). 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 experience recording problems, check the Roxio support website at [support.roxio.com](http://support.roxio.com) for available software patches.

- 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

The 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.


## Turning Off the Computer

 **NOTICE:** To prevent data loss, you must turn off your computer through the **Start** menu rather than by pressing the power button.

- 1 Save and close any open files and exit any open programs.
- 2 Click the **Start** button and then click **Turn off Computer**.
- 3 Click **Turn off**.

The computer automatically turns off after the shutdown process finishes.

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

 **HINT:** If you are having difficulty turning off your computer, see "General Problems" on page 38.



# 2

## SECTION 2

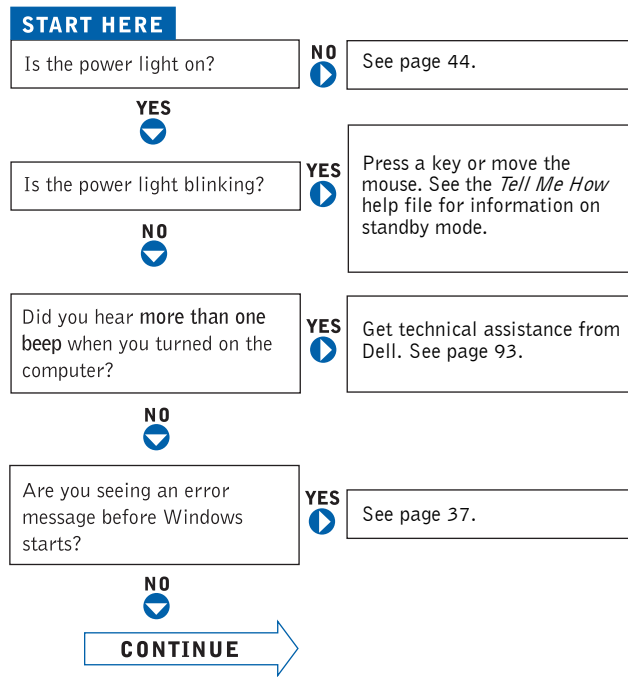
# Solving Problems

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- Finding Solutions
- Finding Help Information
- Battery Problems
- Drive Problems
- E-Mail, Modem, and Internet Problems
- Error Messages
- General Problems
- 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 50.
		sound or the speakers?	<b>YES</b> ▶	See page 48.
		the printer?	<b>YES</b> ▶	See page 46.
		the modem?	<b>YES</b> ▶	See page 35.
		the mouse?	<b>YES</b> ▶	See page 42.
		the keyboard?	<b>YES</b> ▶	See page 41.
		the hard drive or a disk drive?	<b>YES</b> ▶	See page 33.
		the network adapter?	<b>YES</b> ▶	See page 43.
		the scanner?	<b>YES</b> ▶	See page 47.
		Windows error messages?	<b>YES</b> ▶	See page 37.
		a program?	<b>YES</b> ▶	See page 38.
		the Internet?	<b>YES</b> ▶	See page 35.
		your e-mail?	<b>YES</b> ▶	See page 35.
	Are you having some other type of problem?	<b>YES</b> ▶	See page 38.	

## 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 13.

## 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 7.

**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 90. If the battery still does not work properly, contact Dell (see page 93).



# Drive Problems

## Floppy drive problems

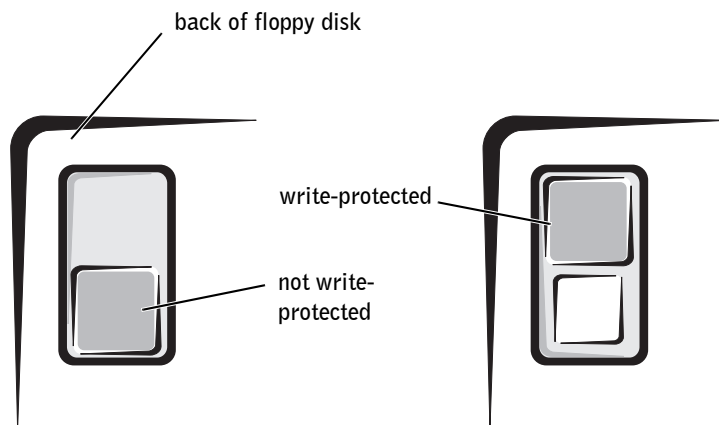
**ENSURE THAT WINDOWS® RECOGNIZES THE DRIVE** — Click the Start button and click My Computer. If the floppy drive is not listed, perform a full scan with your antivirus software to check for and remove viruses. Viruses can sometimes prevent Windows from recognizing the drive.

**TEST THE DRIVE** —

- 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.



**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.



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

## 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 sidebar 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 48.

**ENSURE THAT WINDOWS RECOGNIZES THE DRIVE** — Click the **Start** button and 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 32.

## Problems writing to a CD-RW drive

**CLOSE OTHER PROGRAMS** — 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.

**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 32.


## 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 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 32.

**CHECK FOR INTERRUPT REQUEST CONFLICTS** — See page 58.

 **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 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**.

## E-Mail, Modem, and Internet Problems

**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.

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

**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 **All Programs**, and then click **Modem Helper**. Follow the instructions on the screen to identify and resolve modem problems. (Modem Helper is not available on all computers.)

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

- 1 Click the **Start** button, and 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 58.

## 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** — The operating system is trying to boot to a nonbootable floppy disk or CD. Insert a bootable floppy disk or CD.

**NON-SYSTEM DISK ERROR** — A floppy disk is in the floppy drive. Remove the floppy disk and restart the computer.

**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 93).

**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

### The computer stops responding

**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 stops responding

**END THE PROGRAM** —

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

## A program crashes repeatedly

**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" for more information about the website (see page 14). See "Dell Technical Support Policy (U.S. Only)" on page 92 for a description of the hardware and software support provided by Dell.

**CALL DELL** — If you cannot solve your problem by using the Dell Support website or e-mail service, call Dell for technical assistance (see page 93). See "Dell Technical Support Policy (U.S. Only)" on page 92 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 58.

## Keyboard Problems

**RESTART THE COMPUTER** —

- If the mouse is functioning, shut down the computer (see page 27) through the **Start** menu. 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 27), reconnect the keyboard cable as shown on the setup diagram for your computer, and then restart the computer.
- Ensure that the keyboard cable is firmly connected to the computer.
- Check the cable connector for bent or broken pins and for damaged or frayed cables. Straighten bent pins.
- Remove keyboard extension cables and connect the keyboard directly to the computer.

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

**CHECK FOR INTERRUPT REQUEST CONFLICTS —** See page 58.

## **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.

**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 59.

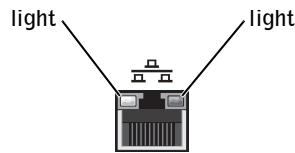
**CHECK FOR INTERRUPT REQUEST CONFLICTS** — See page 58.

## Network Problems

**CHECK THE NETWORK CABLE CONNECTOR** — Ensure that the network cable is connected as shown on page 21.

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

No light indicates that there is no network communication. Try replacing the network cable.



**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 58.

## Power Problems

**⚠ CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 7.

**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 32.

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

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

- 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 9).
- 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 70).
- Ensure that the power supply cables are securely connected to the system board (see page 70).
- Remove and then reinstall the memory modules (see page 80).
- Remove and then reinstall any cards (see page 71).
- Remove and then reinstall the video card, if applicable (see page 71).
- If the problem persists, contact Dell (see page 93).

**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



**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.

## 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 cables are securely connected to the printer and the computer (see page 18).

**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 the printer documentation for instructions.

# 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.

 **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.



**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.

## 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.

**ENABLE DIGITAL MODE** — Your speakers do not work if the CD or DVD drive is not operating in digital 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.

You may also need to change the playback mode in Windows Media Player:

- 1 Click the **Start** button, point to **All Programs**, and then point to **Windows Media Player**.
- 2 Click **Tools**.
- 3 Click **Options**.
- 4 Click the **Devices** tab.
- 5 Double-click the name of your CD or DVD drive, and then select **Digital** as playback mode.



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

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

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

**REINSTALL THE AUDIO (SOUND) DRIVER** — See page 59.

**CHECK FOR INTERRUPT REQUEST CONFLICTS** — See page 58.

## No sound from headphones

**CHECK THE HEADPHONE CABLE CONNECTION** — Ensure that the headphone cable is securely inserted into the headphone connector (see page 64).

**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.

You may also need to change the playback mode in Windows Media Player:

- 1 Click the **Start** button, point to **All Programs**, and then point to **Windows Media Player**.
- 2 Click **Tools**.
- 3 Click **Options**.
- 4 Click the **Devices** tab.
- 5 Double-click the name of your CD or DVD drive, and then select **Analog** as playback mode.

## Video and Monitor Problems

### If the screen is blank



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

**CHECK THE MONITOR POWER LIGHT** — If the power light is off, firmly press the button to ensure that the monitor is turned on. If the power light is lit or blinking, the monitor has power. If the power light is blinking, press a key on the keyboard or move the mouse.

**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.

### 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 32.



# 3

SECTION 3

## **Advanced Troubleshooting**

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Using System Restore


Drivers

Resolving Software and Hardware Incompatibilities

Reinstalling Windows® XP

## 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 32.


 **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.
- 2 Click **Help and Support**.
- 3 Click **System Restore**.
- 4 Follow the instructions on the screen.

### Restoring the Computer to an Earlier Operating State

If problems occur after installing a device driver, first try using Device Driver Rollback (see page 57). If that is unsuccessful, then use System Restore.

 **NOTICE:** Before restoring 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 then 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 then 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 undoing 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 then the computer automatically 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 then 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.

# 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.
- You reinstall your operating system.
- You 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 to update the driver, if necessary.


## Identifying Drivers

- 1 Click the **Start** button and click **Control Panel**.
- 2 In the **Control Panel** window, under **Pick a Category**, click **Performance and Maintenance**.
- 3 In the **Performance and Maintenance** window, 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 In the **Control Panel** window, under **Pick a Category**, click **Performance and Maintenance**.
- 3 In the **Performance and Maintenance** window, click **System**.
- 4 In the **System Properties** screen, click the **Hardware** tab.
- 5 Click **Device Manager**.
- 6 In the **Device Manager** window, 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 54) to return your operating system to the operating state it was in before you installed the new driver.

### Using the Dell Dimension ResourceCD

If using Device Driver Rollback or System Restore (see page 54) 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.



**HINT:** The ResourceCD displays drivers only for hardware that came on your computer. If you installed additional hardware, those drivers 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.

- 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.

## Resolving Software and Hardware Incompatibilities

Microsoft® 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 then click **Control Panel**.
- 2 Click **Performance and Maintenance**, and then click **System**.
- 3 Click the **Hardware** tab, and then 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 conflicting device listed to bring up the **Properties** window to determine what needs to be reconfigured or removed from the Device Manager.

Resolve these conflicts before checking specific devices.

- 6 Double-click the malfunctioning device type in the **Device Manager** list.
- 7 Double-click the icon for the specific device in the expanded list.  
The **Properties** window appears.
- 8 Resolve any **IRQ** conflicts, as described in step 5.  
If an **IRQ** conflict exists, the **Device** status area in the **Properties** window reports the cards or devices that share the device's **IRQ**.

To use the Windows XP Hardware Troubleshooter:

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

## Reinstalling Windows<sup>®</sup> 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 57) 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 54) 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, follow the instructions 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 27) 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.
- 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 automatically restarts multiple times.

### Completing the GUI Setup

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 **Regional and Language Options** screen appears, select the settings for your location, and then click **Next**.
- 2 Enter your name and organization (optional) in the **Personalize Your Software** screen, and then 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 then 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**.


If your computer has a modem installed, the **Modem Dialing Information** screen appears.

- 4 Enter the requested information and click **Next**.
- 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*, click **Typical** in the **Networking Settings** screen and click **Next**.

*If your computer does not have a network adapter*, you do not see this option.

- 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 and configures the computer. The computer automatically restarts.

 **HINT:** The time required to complete the setup depends on the size of the hard drive and the speed of your computer. You can step away from the computer at this time if you need to do so.

### **Completing the Operating System Setup**

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, click **No, not at this time**, and then click **Next**.
- 4** When the **Who will use this computer?** screen appears, you can enter up to five users.
- 5** Click **Next**.
- 6** Click **Finish** to complete the setup, and remove the CD from the drive.

### **Reinstalling Drivers and Software**

- 1** Reinstall the appropriate drivers (see page 57).
- 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

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Front and Back View of the Computer

Removing the Computer Cover

Looking Inside Your Computer

Adding Cards

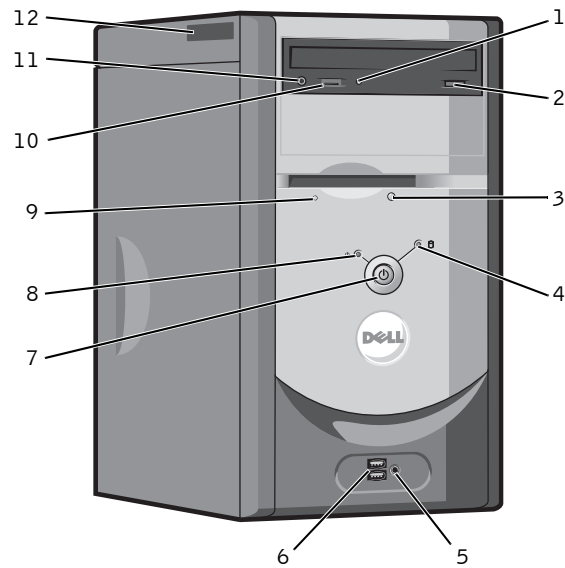
Adding a Second CD or DVD Drive

Adding Memory

Replacing the Computer Cover



## Front and Back View of the Computer

### Front View

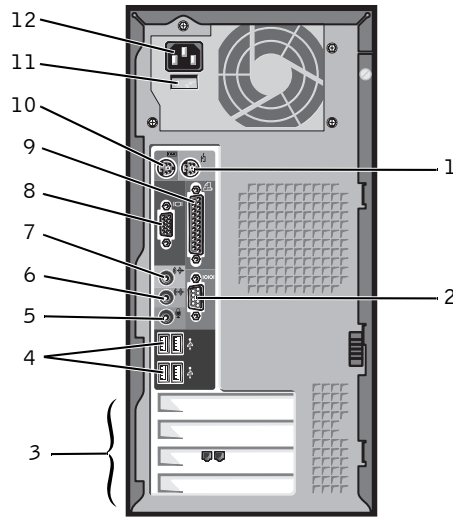


1	CD or DVD drive activity light	The drive activity light is on when the computer reads data from the CD or DVD drive.
2	CD or DVD eject button	Press this button to eject your CD from the CD or DVD drive.
3	floppy drive eject button	Press this button to eject a disk from the floppy drive.
4	hard drive light	The hard drive light is on when the computer reads data from or writes data to your hard drive.
5	headphone connector	Use the headphone connector to attach headphones and most speakers for listening to all sounds in your computer, including your CD or DVD player and system sounds such as beeps.




6	USB 2.0 connectors (2)	For quick connections, Dell recommends using the front USB connectors for USB devices such as digital cameras, gaming controllers, and scanners. Use the back-panel USB connectors for USB mouse and keyboard connections.
7	power button	Press the power button to turn on the computer.  <b>NOTICE:</b> To turn off your computer, perform a Windows® shutdown instead of pressing the power button. Otherwise, you may lose data.
8	power light	The power light is solid green for the computer's power-on state and blinking green for its standby state.
9	floppy drive light	The floppy drive light is on when the computer reads data from or writes data to the floppy drive.
10	CD or DVD volume control dial	Move the dial to adjust the volume of your audio CD or DVD disc.
11	CD or DVD headphone connector	Use the headphone connector to attach headphones to the CD or DVD drive. Your headphones won't work if the drive is operating in digital mode. To disable digital mode: <b>1</b> Click the <b>Start</b> button, click <b>Control Panel</b> , and then click <b>Sounds, Speech, and Audio Devices</b> . <b>2</b> Click <b>Sounds and Audio Devices</b> . <b>3</b> Click the <b>Hardware</b> tab. <b>4</b> Double-click the name of your CD or DVD drive. <b>5</b> Click the <b>Properties</b> tab. <b>6</b> Uncheck the <b>Enable digital CD audio for this CD-ROM device</b> box.
12	service tag	 <b>HINT:</b> Express Service may not be available in some countries.  This label lists your computer's service tag and your Express Service Code (if applicable). If you call Dell technical support, use your Express Service Code to route the call directly to the correct support personnel. The Dell technical support staff will ask for your service tag.

## Back View




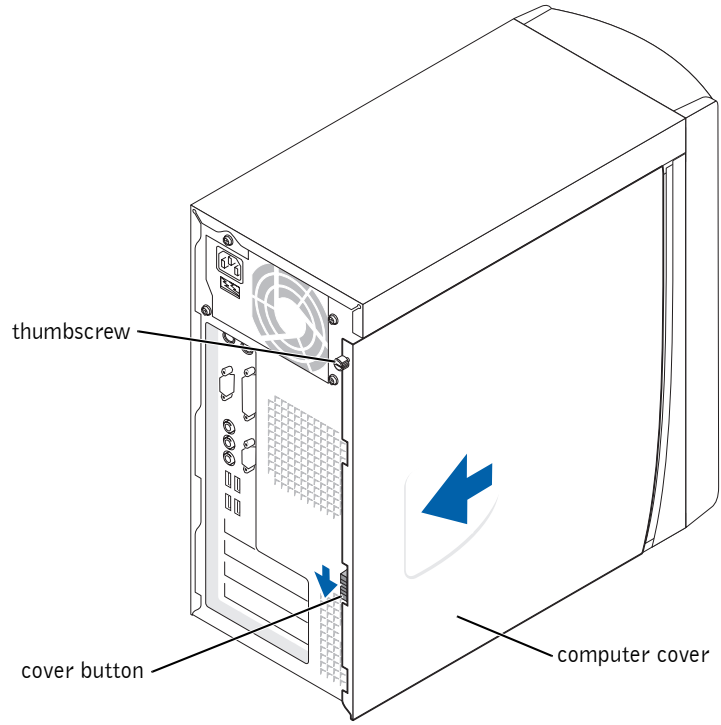
1	mouse connector	Plug your computer's PS/2 mouse into the green mouse connector. Turn off the computer and any attached devices before you connect a mouse to the computer.
2	serial connector	Connect a serial device, such as a handheld device, to the serial port.
3	card slots	Use these slots for PCI cards, such as a modem or a network adapter.
4	USB 2.0 connectors (4)	Connect USB devices such as a mouse, keyboard, printer, joystick, and computer speakers into any of the USB connectors.
5	microphone connector	Use the pink microphone connector to attach a personal computer microphone for voice or musical input to a sound or telephony program.
6	line-in connector	Use the blue line-in connector to attach a record/playback device such as a cassette player, CD player, or VCR.
7	line-out connector	Use the green line-out connector to attach headphones and most speakers with integrated amplifiers.
8	video connector	Plug the cable from your monitor into the blue connector.
9	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.
10	keyboard connector	Plug your computer's PS/2 keyboard into the purple keyboard connector. Turn off the computer and any attached devices before you connect a keyboard to the computer.
11	voltage selection switch	See safety instructions on page 9 for more information.
12	power connector	Connect the power cable.

## Removing the Computer Cover

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 7.

 **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 27).
-  **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 Loosen the thumbscrew.
- 5 Push down on the cover button.
- 6 Grip the indent in the middle of the computer cover, and slide the computer cover towards the back of the computer.

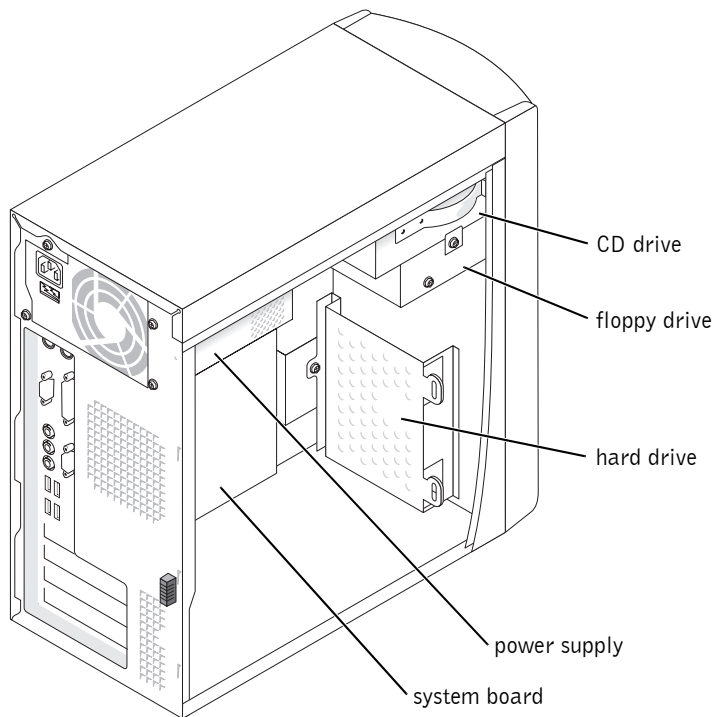


**7** Place the computer cover on a level surface.

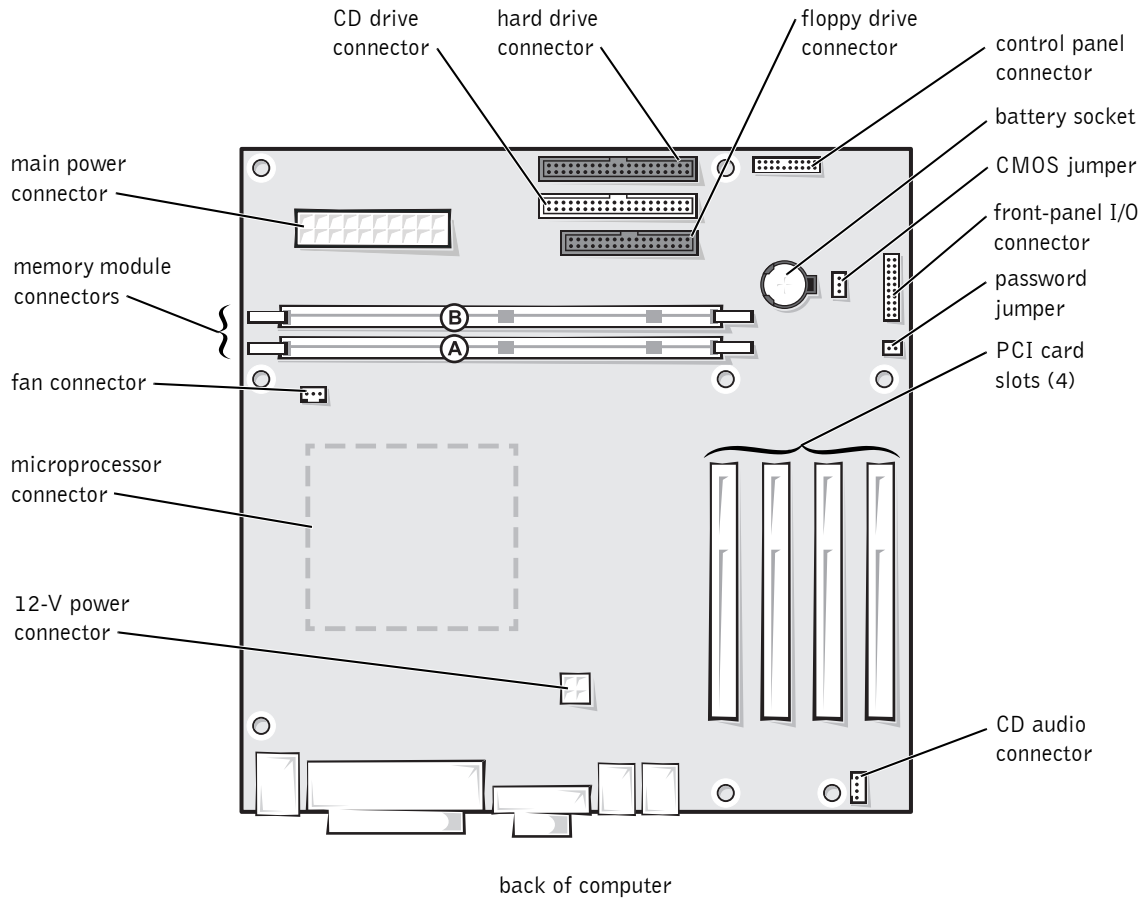
## Looking Inside Your Computer

**⚠ CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 7.

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



### System Board



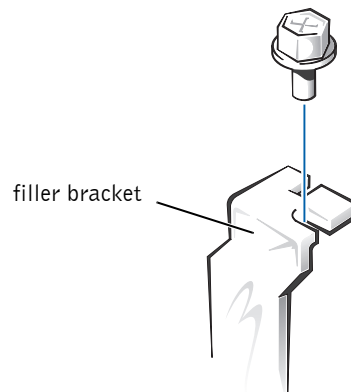
## Adding Cards

**⚠ CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 7.

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

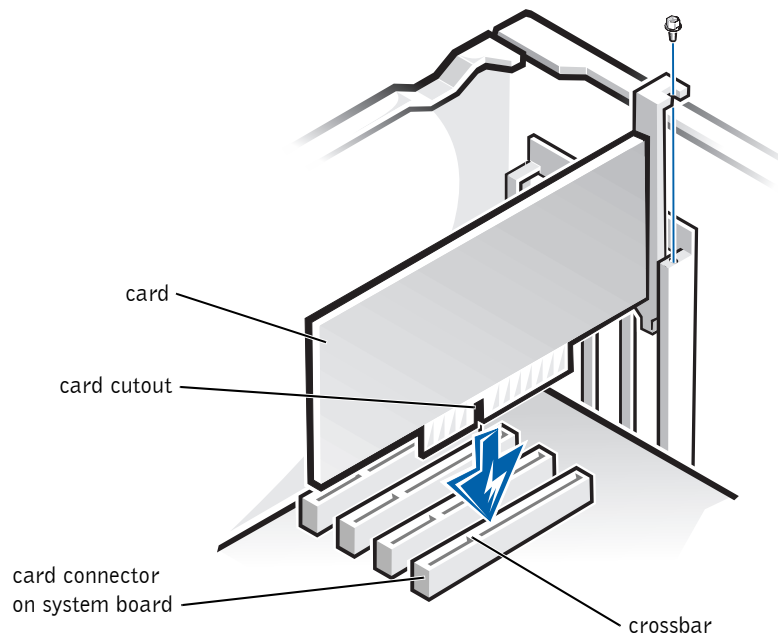
The computer's card connectors allow you to install different types of devices, such as modems and network adapters.

- 1 Shut down the computer (see page 27).
- ➡ 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. Disconnect the computer power cable from the wall outlet, and then press the power button to ground the system board.
- 3 Remove the computer cover (see page 67).
- 4 Lay the computer on its side so that the system board is on the bottom of the inside of the computer.
- 5 Unscrew and remove the filler bracket for the card slot you want to use.



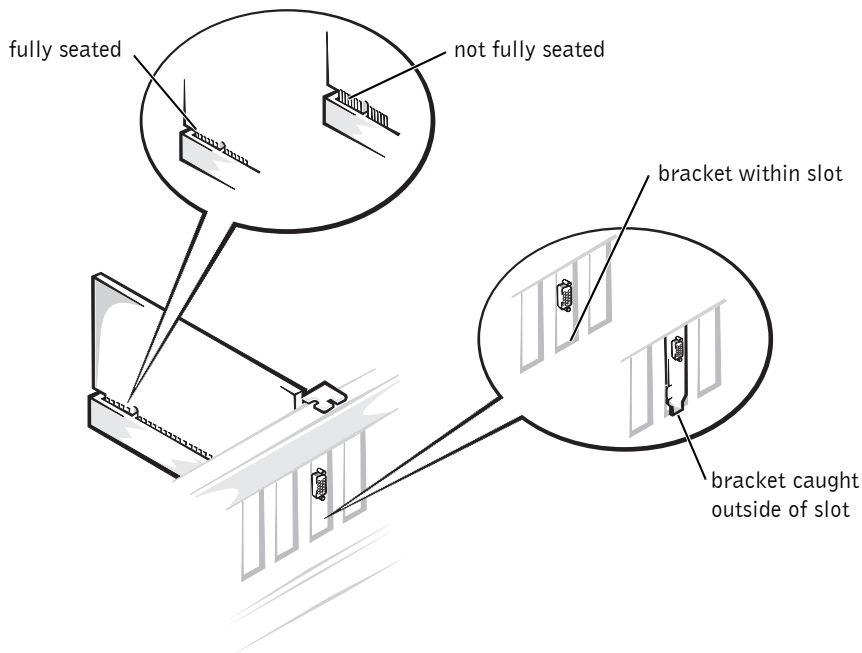
**⚠ CAUTION:** Some network adapters automatically start the computer when they are connected to a network. To guard against electrical shock, be sure to unplug your computer from its electrical outlet before installing any cards.

- 6 Align the cutout on the bottom of the card with the crossbar in the system board connector. Gently rock the card into the connector until it is fully seated.



Ensure that the card is fully seated and that its bracket is within the card slot.





- 7 Secure the filler bracket onto the end of the card with the screw you removed in step 5.
- 8 Connect any cables required for the card as described in the card documentation.
- ➔ **NOTICE:** Do not route card cables over or behind the cards. Cables routed over the cards can cause damage to the equipment.
- 9 Replace the computer cover (see page 82).
- ➔ **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.
- 10 Connect your computer and devices to electrical outlets, and turn them on.
- 11 Install any drivers required for the card as described in the card documentation.



**HINT:** Drives sold by Dell come with their own operating software and documentation. After you install a drive, see the documentation that came with the drive for instructions on installing and using the drive software.


## Adding a Second CD or DVD Drive



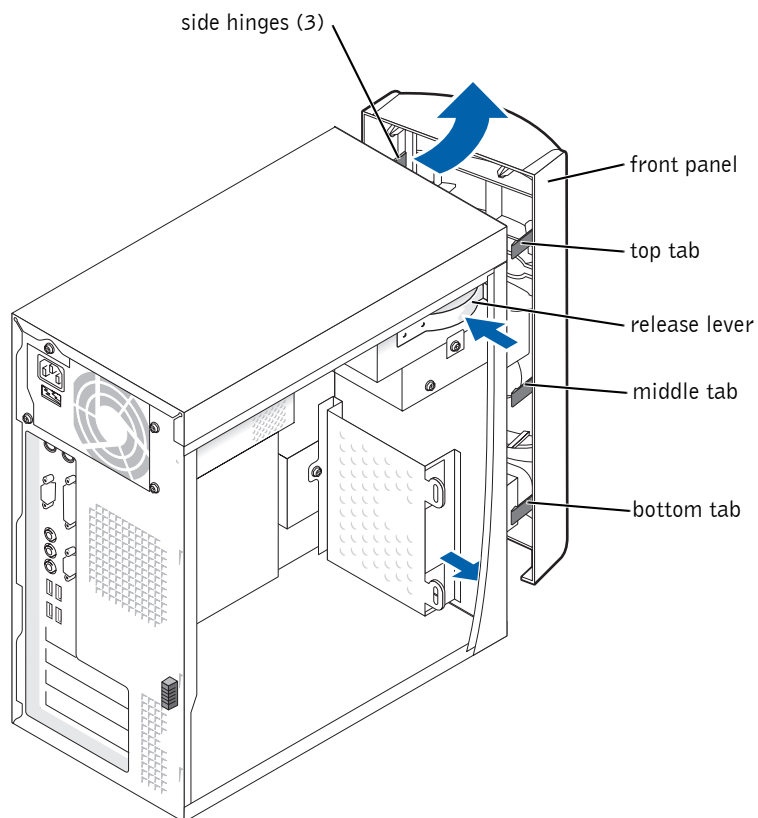
**CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 7.



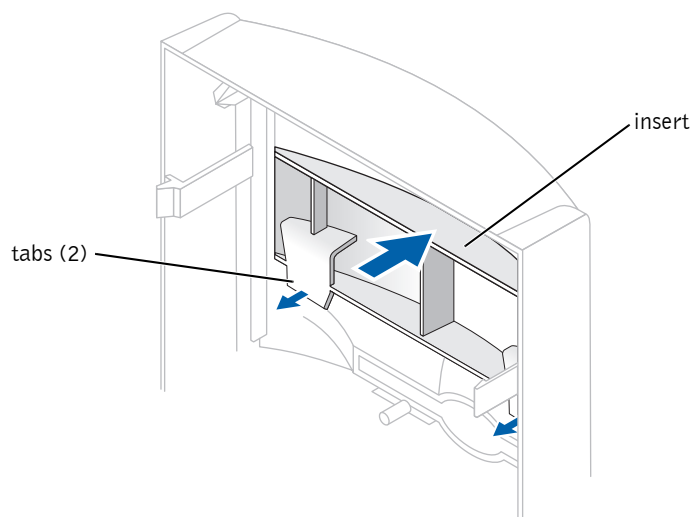
**CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

- 1 Shut down the computer (see page 27).
-  **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 Remove the computer cover (see page 67).

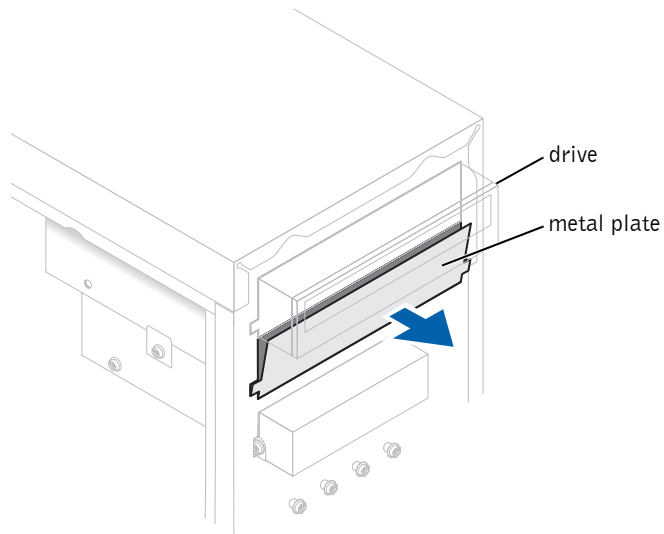
- 5** Release and remove the front panel:
- a** Push the release lever to release the top tab.
  - b** Reach inside the computer and push the bottom tab towards you to release it (the middle tab releases automatically).
  - c** Rotate the front panel to separate it from the side hinges.



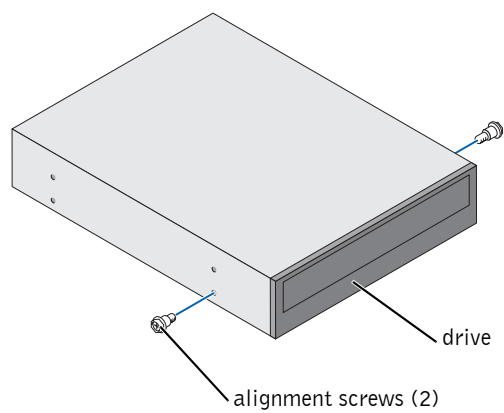
- 6 Pull the two front-panel tabs towards you, and then push out the front-panel insert.



- 7 Reach inside the computer and push the metal plate towards you so that it snaps off of the computer or insert a small screwdriver inside one of the holes on the front of the metal plate and pry it towards you until it snaps off.

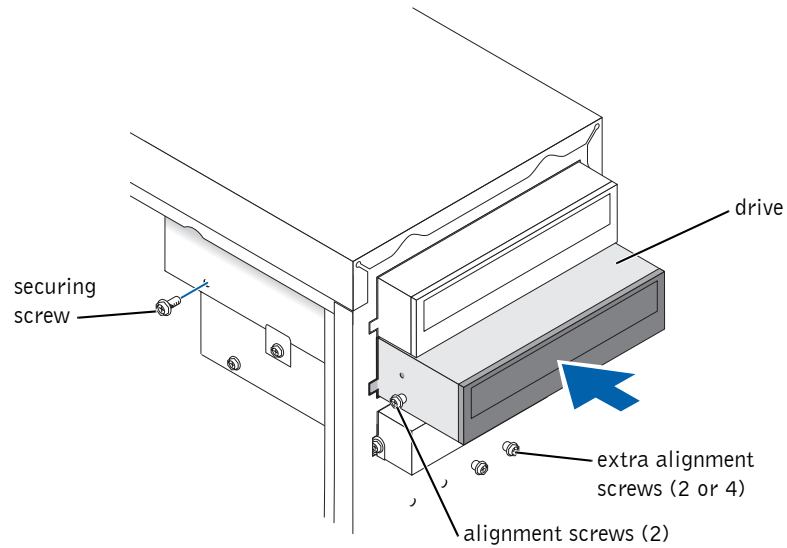


- 8 Ensure that the jumper setting on the new drive is set for "cable select" (see the documentation that came with the drive for information).
- 9 Remove two of the extra alignment screws from the front of the computer and insert them into the drive.



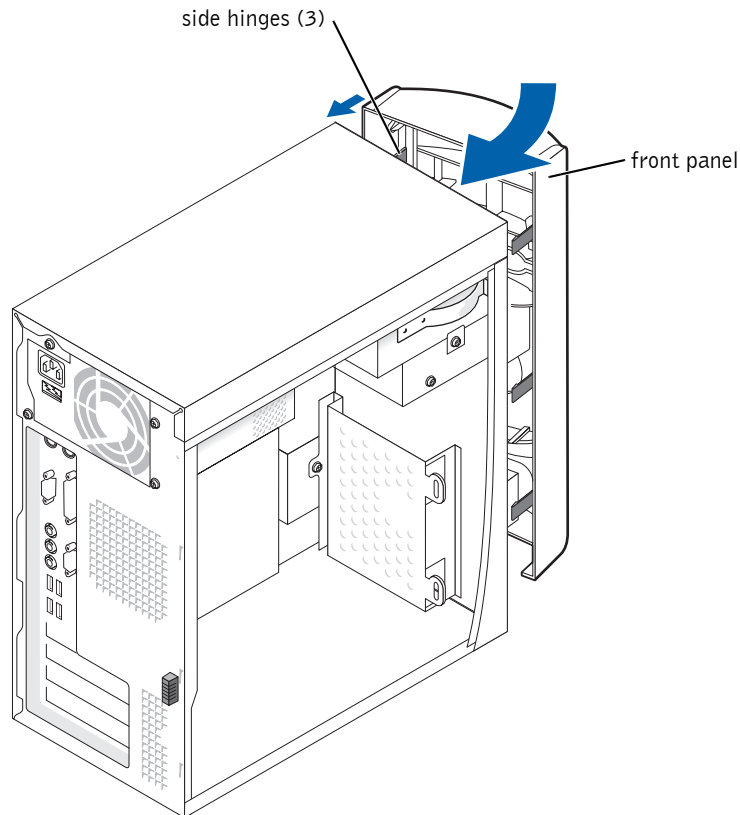
**HINT:** Some computers come with only two extra alignment screws; others come with four. You only need two alignment screws for this procedure.

**10** Gently slide the drive into place.



- 11** Once the drive is in place, apply pressure to ensure the drive is fully seated.
- 12** Use the securing screw that came with the drive to attach the drive to the computer.
- CAUTION:** Match the colored strip on the cable with pin 1 on the drive (pin 1 is marked as "1").
- 13** Connect the power cable to the system board.
- 14** Locate the data cable from the CD or DVD drive in the upper drive bay and connect its middle data connector to the new drive.
- 15** Check all cable connections, and then fold the cables out of the way to provide airflow for the fan and cooling vents.


- 16 Reattach the front panel to the side hinges, and then rotate the panel until it snaps onto the front of the computer.



- 17 Replace the computer cover (see page 82).

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

- 18 Connect your computer and devices to electrical outlets, and then turn them on.
- 19 See the documentation that came with the drive for instructions on installing any software required for drive operation.


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

## Adding Memory

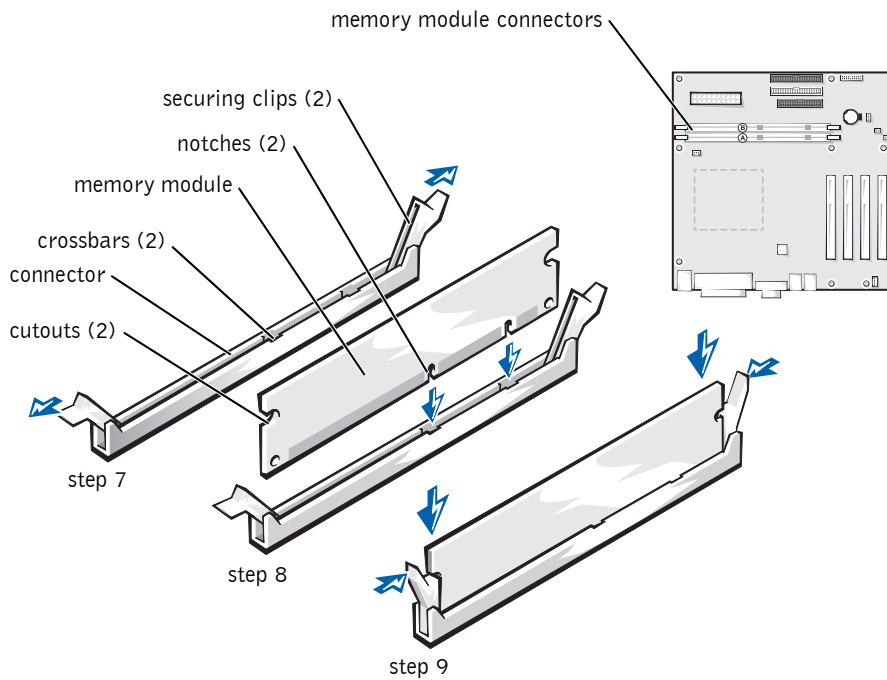
 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 7.

 **CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the computer 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, see "Memory" on page 85.

- 1 Shut down the computer (see page 27).
-  **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 Remove the computer cover (see page 67).
- 5 Lay the computer on its side so that the system board is on the bottom of the inside of the computer.
- 6 If necessary, remove a memory module:
  - a Press out the securing clip at each end of the memory module connector.
  - b 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.
- 7 To insert a module, press out the securing clip at each end of the memory module connector.





**8** Align the notches on the bottom of the module with the crossbars in the connector.

**➔ NOTICE:** To avoid breaking the memory module, do not press near the middle of the module.

**9** 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.

**10** Replace the computer cover (see page 82).

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

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

- 12 Click the **Start** button, right-click **My Computer**, and then click **Properties**.
- 13 Click the **General** tab.
- 14 To verify that the memory is installed correctly, check the amount of memory (RAM) listed.

## Replacing the Computer Cover

- 1 Ensure that all cables are connected, and fold cables out of the way. Make sure cables are not routed over the drive cage—they will prevent the cover from closing properly.
- 2 Ensure that no tools or extra parts are left inside the computer.
- 3 Place the computer cover on the computer.
- 4 Slide the computer cover towards the front of the computer until it fits completely into place.
- 5 Tighten the computer cover thumbscrew.
- ➡ **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 then turn them on.

SECTION 5

## Appendix

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

## Specifications

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### Microprocessor

Microprocessor type	Intel® Pentium® or Celeron®
L1 cache	8 KB first-level (Pentium 4); 32 KB (16-KB data cache; 16-KB instruction cache) (Celeron).
L2 cache	256- or 512-KB (displayed in the system setup program) pipelined-burst, eight-way set associative, write-back SRAM (Pentium 4); 128-KB SRAM that resides in the processor's core. The L2 cache runs at the processor's internal clock speed (Celeron).

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### System Information

System chip set	Intel 845GL
DMA channels	seven
Interrupt levels	24 APIC mode
System BIOS chip	2 Mb (256 KB)
System clock	400-MHz data rate

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### Expansion Bus

Bus types	PCI
Bus speed	PCI: 33 MHz
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	SDRAM
Memory connectors	two
Memory capacities	128-, 256-, or 512-MB
Minimum memory	128 MB
Maximum memory	1 GB
Memory type	PC133 SDRAM (non-ECC)

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**Drives**

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Externally accessible	two 5.25-inch bays one 3.5-inch bay
Internally accessible	one bay for 1-inch-high IDE hard 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
Mouse	6-pin mini-DIN connector
USB	two front-panel and four back-panel USB 2.0-compliant connectors
Audio	three back miniature connectors for line-in, line-out, and microphone; one front miniature connector for line-out

## 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

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**Video**

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Video controller	Intel integrated AGP graphics*
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\*Integrated AGP graphics uses a maximum of 32 MB of main memory.

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**Audio**

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Audio controller	Integrated AC97
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**Controls and Lights**

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Power control	push button
Front-panel power light	solid green for power-on state; blinking green for standby state
Hard-drive access light	green

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**Power**

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## DC power supply:

Wattage	200 W
Heat dissipation	682 BTU (fully-loaded computer without monitor)
Voltage (see page 7 for important voltage setting information)	100 to 120 V at 60 Hz; 200 to 240 V at 50 Hz
Backup battery	3-V CR2032 coin cell

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**Physical**

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Height x Width x Depth	36.8 x 18.4 x 42.6 cm (14.5 x 7.25 x 16.75 inches)
Weight	10.4 kg (23 lb)

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## Environmental

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### Temperature:

Operating 0° to 35°C (32° to 95°F)

Storage -20° to 70°C (-4° to 158°F)

Relative humidity 20% to 80% (noncondensing)

### Maximum vibration:

Operating 0.25 G at 10 to 500 Hz at 1/2 octave/min

Storage 1.48 G at 10 to 500 Hz, vibration with the computer


### Maximum shock:

Nonoperating (half-sine pulse) 105 G, 2 ms

Nonoperating (faired-square wave) 32 G with a velocity change of 596.9 cm/sec (235 inches/sec)

## 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.

Main		Advanced	Security	Power	Boot	Exit
Date (mm:dd:yy)	Tue, 05/21/2002	Item Help				
Time (hh:mm:ss)	14:10:39					
BIOS version	A00					
Processor Type	Intel® Pentium® 4					
Processor Speed	1.80 GHz					
System Bus Speed	400 MHz					
Cache RAM	128 KB					
Service Tag	xxxxxxx					
Total Memory	512 MB					
Memory Bank 0	512 MB					
Memory Bank 1	[Not Installed]					

→ ← Move Menu    ↑ ↓ Move Item    Tab: Move Field    Enter: Select    +/-/PU/PD: Value  
 Esc: Exit    F10: Save    F1: General Help    F5: Previous Values    F9: Setup Defaults

## 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 screens are organized into the following sections:

- The menu bar at the top provides access to the main program screens:
  - **Main** provides settings for the basic computer configuration.
  - **Advanced** provides detailed settings for some computer features.




- **Security** provides indications and settings for user and setup passwords.
  - **Power** provides settings for system power management features.
  - **Boot** provides information about how the computer starts.
  - **Exit** provides selections for saving and loading the program settings.
- The left side lists configuration options and their settings for the hardware installed in your computer.
- You can change settings enclosed in brackets, but not those that are grayed out. Options identified by an arrowhead (>) provide access to submenus.
- The top-right side displays help information for a highlighted option.
  - The bottom-right side lists keys and their functions for the displayed screen.



## Clearing Forgotten Passwords

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 7.


If you forget your supervisor 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 27).
-  **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 power cable from your computer, and then press the power button to ground the system board.
- 4 Remove the computer cover (see page 67).
- 5 Locate the 2-pin password jumper (see page 70) on the system board, and then remove the jumper.

When you receive your computer, the jumper is attached to only one pin.


- 6 Replace the computer cover (see page 82).
- 7 Connect your computer and devices to electrical outlets, and turn them on.
- 8 After the Microsoft Windows desktop appears on your computer, shut down the computer (see page 27).
-  **NOTICE:** To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall jack.
- 9 Turn off any attached devices and disconnect them from their electrical outlets.
- 10 Disconnect the power cable from your computer, and then press the power button to ground the system board.
- 11 Remove the computer cover (see page 67).
- 12 Replace the password jumper.  
Attach the jumper to only one pin so that you do not lose it.
- 13 Replace the computer cover (see page 82).
-  **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.
- 14 Connect your computer and devices to electrical outlets, and turn them on.
- 15 If you are prompted to press <F1> to continue, press <F1>.

## Replacing the Battery

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions on page 7.

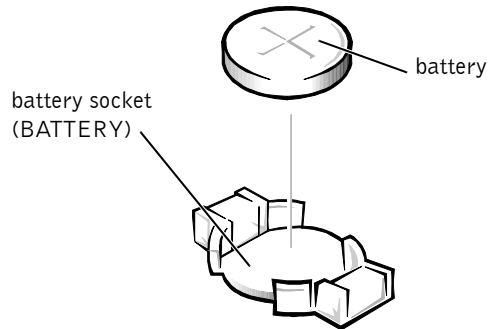
A coin-cell battery maintains computer configuration, date, and time information. The battery can last several years.

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 87) so that you can restore the correct settings when you perform step 7.
- 2 Open the computer cover (see page 67).
- 3 Locate the battery socket BATTERY (see page 70).
- 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 the battery into place.
- ➔ **NOTICE:** To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.
- 6 Connect your computer and devices to electrical outlets, and turn them on.
  - 7 Access the system setup program (see page 87) and restore the settings you recorded in step 1.
  - 8 Properly dispose of the old battery (see page 12).

## 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.


## 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.

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

<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) International Access Code: 00 Country Code: 54 City Code: 11	Website: <a href="http://www.dell.com.ar">www.dell.com.ar</a> Tech Support and Customer Care Sales Tech Support Fax Customer Care Fax	toll-free: 0-800-444-0733 0-810-444-3355 11 4515 7139 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/emaildell/	
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
	Customer Care (from outside Toronto)	toll-free: 1-800-387-5759
	Customer Care (from within Toronto)	416 758-2400
	Customer Technical Support	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
	Sales (major accounts)	toll-free: 1-800-387-5755
	TechFax	toll-free: 1-800-950-1329
<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	
Colombia	General Support	980-9-15-3978
Costa Rica	General Support	0800-012-0435
Czech Republic (Prague) International Access Code: 00 Country Code: 420 City Code: 2	Website: <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	02 22 83 27 27
	Customer Care	02 22 83 27 11
	Fax	02 22 83 27 14
	TechFax	02 22 83 27 28
Switchboard	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>
Denmark (Copenhagen) 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
Finland (Helsinki) International Access Code: 990 Country Code: 358 City Code: 9	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> E-mail: <a href="mailto: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	0825 387 270
	Customer Care	0825 823 833
	Switchboard	0825 004 700
	Switchboard (calls from outside of France)	04 99 75 40 00
	Sales	0825 004 700
	Fax	0825 004 701
	Fax (calls from outside of France)	04 99 75 40 01
	<b>Corporate</b>	
	Technical Support	0825 004 719
	Customer Care	0825 338 339
	Switchboard	01 55 94 71 00
	Sales	01 55 94 71 00
Fax	01 55 94 71 01	
<b>Germany (Langen)</b>	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	E-mail: <a href="mailto:tech_support_central_europe@dell.com">tech_support_central_europe@dell.com</a>	
Country Code: 49	Technical Support	06103 766-7200
City Code: 6103	Home/Small Business Customer Care	0180-5-224400
	Global Segment Customer Care	06103 766-9570
	Preferred Accounts Customer Care	06103 766-9420
	Large Accounts Customer Care	06103 766-9560
	Public Accounts Customer Care	06103 766-9555
	Switchboard	06103 766-7000
<b>Grenada</b>	General Support	toll-free: 1-866-540-3355
<b>Guatemala</b>	General Support	1-800-999-0136
<b>Guyana</b>	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>
<b>Italy (Milan)</b>	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>	Website: <a href="http://support.jp.dell.com">support.jp.dell.com</a>	
International Access Code: 001	Technical Support (servers)	toll-free: 0120-1984-98
Country Code: 81	Technical Support outside of Japan (servers)	81-44-556-4162
City Code: 44	Technical Support (Dimension™ and Inspiron™)	toll-free: 0120-1982-26
	Technical Support outside of Japan (Dimension and Inspiron)	81-44-520-1435
	Technical Support (Dell Precision™, OptiPlex™, and Latitude™)	toll-free: 0120-1984-33
	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>	Technical Support	toll-free: 080-200-3800
International Access Code: 001	Sales	toll-free: 080-200-3600
Country Code: 82	Customer Service (Seoul, Korea)	toll-free: 080-200-3800
City Code: 2	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>
<b>Latin America</b>	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: <a href="mailto:support.euro.dell.com/nl/nl/emaildell/">support.euro.dell.com/nl/nl/emaildell/</a> Technical Support <b>Home/Small and Medium Business</b> Home/Small and Medium Business Fax Home/Small and Medium Business Customer Care <b>Corporate</b> Corporate Fax Corporate Customer Care	020 674 45 00 020 674 55 00 020 674 47 75 020 674 42 00 020 674 50 00 020 674 47 79 020 674 43 25
<b>New Zealand</b> International Access Code: 00 Country Code: 64	E-mail (New Zealand): <a href="mailto:nz_tech_support@dell.com">nz_tech_support@dell.com</a> E-mail (Australia): <a href="mailto:au_tech_support@dell.com">au_tech_support@dell.com</a> Home and Small Business Government and Business Sales Fax	0800 446 255 0800 444 617 0800 441 567 0800 441 566
<b>Nicaragua</b>	General Support	001-800-220-1006

<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>Norway (Lysaker)</b>	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	E-mail Support (portable computers):	
Country Code: 47	<a href="mailto:nor_nbk_support@dell.com">nor_nbk_support@dell.com</a>	
	E-mail Support (desktop computers):	
	<a href="mailto:nor_support@dell.com">nor_support@dell.com</a>	
	E-mail Support (servers):	
	<a href="mailto:nordic_server_support@dell.com">nordic_server_support@dell.com</a>	
	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: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 011	E-mail: <a href="mailto:pl_support@dell.com">pl_support@dell.com</a>	
Country Code: 48	Customer Service Phone	57 95 700
City Code: 22	Customer Care	57 95 999
	Sales	57 95 999
	Customer Service Fax	57 95 806
	Reception Desk Fax	57 95 998
	Switchboard	57 95 999
<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>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>
Puerto Rico	General Support	1-800-805-7545
St. Kitts and Nevis	General Support	toll-free: 1-877-441-4731
St. Lucia	General Support	1-800-882-1521
St. Vincent and the Grenadines	General Support	toll-free: 1-877-270-4609
Singapore (Singapore)	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>Spain (Madrid)</b>	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

<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>
Sweden (Upplands Vasby) International Access Code: 00 Country Code: 46 City Code: 8	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a> E-mail: <a href="mailto:swe_support@dell.com">swe_support@dell.com</a> E-mail Support for Latitude and Inspiron: <a href="mailto:Swe-nbk_kats@dell.com">Swe-nbk_kats@dell.com</a> 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 Relational Customer Care Home/Small Business Customer Care Employee Purchase Program (EPP) Support Fax Technical Support Sales	08 590 05 199 08 590 05 642 08 587 70 527 20 140 14 44 08 590 05 594 08 590 05 185
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

<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>
Thailand	Technical Support	toll-free: 0880 060 07
International Access Code: 001	Customer Service (Penang, Malaysia)	604 633 4949
Country Code: 66	Sales	toll-free: 0880 060 09
Trinidad/Tobago	General Support	1-800-805-8035
Turks and Caicos Islands	General Support	toll-free: 1-866-540-3355
U.K. (Bracknell)	Website: <a href="http://support.euro.dell.com">support.euro.dell.com</a>	
International Access Code: 00	Customer Care website:	
Country Code: 44	<a href="http://dell.co.uk/lca/customerservices">dell.co.uk/lca/customerservices</a>	
City Code: 1344	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
Uruguay	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)	
	Customer 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)
	Software Application Support	toll-free: 1-800-433-9005
	Employee Purchase Program (EPP) (Customer Service and Technical Support)	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> (small businesses with <400 employees [excluding their employees]; medium/large businesses with >400 employees [including their employees])	
	Service and Technical Support	toll-free: 1-800-822-8965
	<b>Public</b> (government, education, and healthcare)	
	Service and Technical Support	toll-free: 1-800-234-1490
	Employee Purchase Program (EPP) (Customer Service and Technical Support)	toll-free: 1-800-695-8133
	Dell Sales	toll-free: 1-800-289-3355 or toll-free: 1-800-879-3355
	Dell Outlet Store (Dell refurbished computers)	toll-free: 1-888-798-7561
	Software and Peripherals Sales	toll-free: 1-800-671-3355
	Spare Parts Sales	toll-free: 1-800-357-3355
	Extended Service and Warranty Sales	toll-free: 1-800-247-4618
	Fax	toll-free: 1-800-727-8320
	Dell Services for the Deaf, Hard-of-Hearing, or Speech-Impaired	toll-free: 1-877-DELLTTY (1-877-335-5889)

<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. 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 Notices**

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.

For additional regulatory information, see the *Tell Me How* help file that accompanied your computer. To access the help file, see page 32.

### **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 Computer Corporation One Dell Way Round Rock, TX 78682 512-338-4400
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:	MTC2
Supply voltage:	115/230 VAC
Frequency:	60–50 Hz
Input current rating:	5.0/2.5 A





## Limited Warranties and Return Policy

Dell-branded hardware products purchased in the U.S. or Canada come with either a 90-day, one-year, two-year, three-year, or four-year (U.S. only) limited warranty. To determine which warranty you purchased, see the Dell invoice that accompanied your computer. The following sections describe the limited warranties for the U.S., the Return Policy for the U.S., the limited warranties 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 monitors, keyboards, and pointing devices (mice).

#### 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 last 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>	
Technical Support	800 624 9896
Customer Service	800 624 9897
<b>Individual Home Consumers who purchased through an Employee Purchase Program:</b>	
Technical Support and Customer Service	800 822 8965
<b>Home and Small Business Commercial Customers:</b>	
Technical Support and Customer Service	800 456 3355
<b>Medium, Large, or Global Commercial Customers, Healthcare Customers, and Value Added Resellers (VARs):</b>	
Technical Support and Customer Service	800 822 8965
<b>Government and Education Customers:</b>	
Technical Support and Customer Service	800 234 1490
<b>Dell-Branded Memory</b>	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). 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 diskettes, 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). 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 on-site service contract is with Dell, on-site service will be provided to you under the terms of the on-site 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 discussion, 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 <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 [http://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 [http://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 [http://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, please 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, 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 "Getting Help" or "Contacting Dell" in your computer's documentation 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 for Canada

### One-Year Limited Warranty (Canada Only)

Dell Computer Corporation ("Dell") manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry-standard practices. Dell warrants that the hardware products it manufactures will be free from defects in materials and workmanship. The limited warranty term is one year beginning on the date of invoice, as further described in the following text.

Damage due to shipping the products to you is covered under this limited warranty. Otherwise, this limited warranty does not cover damage due to external causes, including accident, abuse, misuse, problems with electrical power, servicing not authorized by Dell, usage not in accordance with product instructions, failure to perform required preventive maintenance, and problems caused by use of parts and components not supplied by Dell.

This limited warranty does not cover any items that are in one or more of the following categories: software; external devices (except as specifically noted); accessories or parts added to a Dell system after the system is shipped from Dell; accessories or parts added to a Dell system through Dell's system integration department; accessories or parts that are not installed in the Dell factory; or Dell Software and Peripherals products. Monitors, keyboards, and mice that are Dell-branded or that are included on Dell's standard price list are covered under this limited warranty; all other monitors, keyboards, and mice (including those sold through the Dell Software and Peripherals program) are not covered.

Dell will repair or replace products covered under this limited warranty that are returned to Dell's facility. To request warranty service, you must contact Dell's Customer Technical Support within the warranty period. See "Contacting Dell" on page 93 to find the appropriate contact information for obtaining customer assistance. If warranty service is required, Dell will issue a Return Material Authorization Number. You must ship the products back to Dell in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipment. Dell will ship the repaired or replacement products to you (freight prepaid) if you use an address in Canada, where applicable. Shipments to other locations will be made freight collect.

**NOTE:** Before you ship the product(s) to Dell, back up the data on the hard drive(s) and any other storage device(s) in the product(s). Remove any removable media, such as floppy disks, CDs, or PC Cards. Dell does not accept liability for lost data or software.

Dell owns all parts removed from repaired products. Dell uses new and reconditioned parts made by various manufacturers in performing warranty repairs and building replacement products. If Dell repairs or replaces a product, its warranty term is not extended.

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DELL'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS LIMITED WARRANTY STATEMENT. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION).

DELL DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES SET FORTH IN THIS LIMITED WARRANTY STATEMENT OR LIABILITY FOR INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION ANY LIABILITY FOR PRODUCTS NOT BEING AVAILABLE FOR USE OR FOR LOST DATA OR SOFTWARE.

SOME STATES (OR JURISDICTIONS) DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, SO THE PRECEDING EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU.

These provisions apply to Dell's one-year limited warranty only. For provisions of any service contract covering your system, see your invoice or the separate service contract that you will receive.

If Dell elects to exchange a product or portion of a product, the exchange will be made in accordance with Dell's Exchange Policy in effect on the date of the exchange. In any instance in which Dell issues a Return Material Authorization Number, Dell must receive the product(s) for repair prior to the expiration of the warranty period in order for the repair(s) to be covered by the limited warranty.

### **Two-Year Limited Warranty (Canada Only)**

Dell Computer Corporation ("Dell") manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry-standard practices. Dell warrants that the hardware products it manufactures will be free from defects in materials and workmanship. The warranty term is two years beginning on the date of invoice, as described in the following text.

Damage due to shipping the products to you is covered under this limited warranty. Otherwise, this limited warranty does not cover damage due to external causes, including accident, abuse, misuse, problems with electrical power, servicing not authorized by Dell, usage not in accordance with product instructions, failure to perform required preventive maintenance, and problems caused by use of parts and components not supplied by Dell.

This limited warranty does not cover any items that are in one or more of the following categories: software; external devices (except as specifically noted); accessories or parts added to a Dell system after the system is shipped from Dell; accessories or parts added to a Dell system through Dell's system integration department; accessories or parts that are not installed in the Dell factory; or Dell Software and Peripherals products. Monitors, keyboards, and mice that are Dell-branded or that are included on Dell's standard price list are covered under this limited warranty; all other monitors, keyboards, and mice (including those sold through the Dell Software and Peripherals program) are not covered. Batteries for portable computers are covered only during the initial one-year period of this limited warranty.

### ***Limited Warranty Coverage During Year One***

During the one-year period beginning on the invoice date, Dell will repair or replace products covered under this limited warranty that are returned to Dell's facility. To request warranty service, you must contact Dell's Customer Technical Support within the warranty period. See "Contacting Dell" on page 93 to find the appropriate contact information for obtaining customer assistance. If warranty service is required, Dell will issue a Return Material Authorization Number. You must ship the products back to Dell in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipment. Dell will ship the repaired or replacement products to you freight prepaid if you use an address in Canada, where applicable. Shipments to other locations will be made freight collect.

**NOTE:** Before you ship the product(s) to Dell, back up the data on the hard drive(s) and any other storage device(s) in the product(s). Remove any removable media, such as floppy disks, CDs, or PC Cards. Dell does not accept liability for lost data or software.

Dell owns all parts removed from repaired products. Dell uses new and reconditioned parts made by various manufacturers in performing warranty repairs and building replacement products. If Dell repairs or replaces a product, its warranty term is not extended.

### ***Limited Warranty Coverage During Year Two***

During the second year of this limited warranty, Dell will provide, on an exchange basis and subject to Dell's Exchange Policy in effect on the date of the exchange, replacement parts for the Dell hardware product(s) covered under this limited warranty when a part requires replacement. You must report each instance of hardware failure to Dell's Customer Technical Support in advance to obtain Dell's concurrence that a part should be replaced and to have Dell ship the replacement part. Dell will ship parts (freight prepaid) if you use an address in Canada, where applicable. Shipments to other locations will be made freight collect. Dell will include a prepaid shipping container with each replacement part for your use in returning the replaced part to Dell. Replacement parts are new or reconditioned. Dell may provide replacement parts made by various manufacturers when supplying parts to you. The warranty term for a replacement part is the remainder of the limited warranty term.

You will pay Dell for replacement parts if the replaced part is not returned to Dell. The process for returning replaced parts, and your obligation to pay for replacement parts if you do not return the replaced parts to Dell, will be in accordance with Dell's Exchange Policy in effect on the date of the exchange.

You accept full responsibility for your software and data. Dell is not required to advise or remind you of appropriate backup and other procedures.

### ***General Provisions***

DELL MAKES NO EXPRESS WARRANTIES OR CONDITIONS BEYOND THOSE STATED IN THIS LIMITED 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. SOME STATES (OR JURISDICTIONS) DO NOT ALLOW LIMITATIONS ON IMPLIED WARRANTIES OR CONDITIONS, SO THIS LIMITATION MAY NOT APPLY TO YOU.

DELL'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS LIMITED WARRANTY STATEMENT. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION).

DELL DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES SET FORTH IN THIS LIMITED WARRANTY STATEMENT OR LIABILITY FOR INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION ANY LIABILITY FOR PRODUCTS NOT BEING AVAILABLE FOR USE OR FOR LOST DATA OR SOFTWARE.

**SOME STATES (OR JURISDICTIONS) DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, SO THE PRECEDING EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU.**

These provisions apply to Dell's two-year limited warranty only. For provisions of any service contract covering your system, see your invoice or the separate service contract that you will receive.

If Dell elects to exchange a system or component, the exchange will be made in accordance with Dell's Exchange Policy in effect on the date of the exchange. In any instance in which Dell issues a Return Material Authorization Number, Dell must receive the product(s) for repair prior to the expiration of the warranty period in order for the repair(s) to be covered by the limited warranty.

### **Three-Year Limited Warranty (Canada Only)**

Dell Computer Corporation ("Dell") manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry-standard practices. Dell warrants that the hardware products it manufactures will be free from defects in materials and workmanship. The warranty term is three years beginning on the date of invoice, as described in the following text.

Damage due to shipping the products to you is covered under this limited warranty. Otherwise, this limited warranty does not cover damage due to external causes, including accident, abuse, misuse, problems with electrical power, servicing not authorized by Dell, usage not in accordance with product instructions, failure to perform required preventive maintenance, and problems caused by use of parts and components not supplied by Dell.

This limited warranty does not cover any items that are in one or more of the following categories: software; external devices (except as specifically noted); accessories or parts added to a Dell system after the system is shipped from Dell; accessories or parts added to a Dell system through Dell's system integration department; accessories or parts that are not installed in the Dell factory; or Dell Software and Peripherals products. Monitors, keyboards, and mice that are Dell-branded or that are included on Dell's standard price list are covered under this limited warranty; all other monitors, keyboards, and mice (including those sold through the Dell Software and Peripherals program) are not covered. Batteries for portable computers are covered only during the initial one-year period of this limited warranty.

#### ***Limited Warranty Coverage During Year One***

During the one-year period beginning on the invoice date, Dell will repair or replace products covered under this limited warranty that are returned to Dell's facility. To request warranty service, you must contact Dell's Customer Technical Support within the warranty period. To request warranty service, you must contact Dell's Customer Technical Support within the warranty period. See "Contacting Dell" on page 93 to find the appropriate contact information for obtaining customer assistance. If warranty service is required, Dell will issue a Return Material Authorization Number. You must ship the products back to Dell in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipment. Dell will ship the repaired or replacement products to you freight prepaid if you use an address in Canada, where applicable. Shipments to other locations will be made freight collect.

**NOTE:** Before you ship the product(s) to Dell, back up the data on the hard drive(s) and any other storage device(s) in the product(s). Remove any removable media, such as floppy disks, CDs, or PC Cards. Dell does not accept liability for lost data or software.

Dell owns all parts removed from repaired products. Dell uses new and reconditioned parts made by various manufacturers in performing warranty repairs and building replacement products. If Dell repairs or replaces a product, its warranty term is not extended.



### ***Limited Warranty Coverage During Years Two and Three***

During the second and third years of this limited warranty, Dell will provide, on an exchange basis and subject to Dell's Exchange Policy in effect on the date of the exchange, replacement parts for the Dell hardware product(s) covered under this limited warranty when a part requires replacement. You must report each instance of hardware failure to Dell's Customer Technical Support in advance to obtain Dell's concurrence that a part should be replaced and to have Dell ship the replacement part. Dell will ship parts (freight prepaid) if you use an address in Canada, where applicable. Shipments to other locations will be made freight collect. Dell will include a prepaid shipping container with each replacement part for your use in returning the replaced part to Dell. Replacement parts are new or reconditioned. Dell may provide replacement parts made by various manufacturers when supplying parts to you. The warranty term for a replacement part is the remainder of the limited warranty term.

You will pay Dell for replacement parts if the replaced part is not returned to Dell. The process for returning replaced parts, and your obligation to pay for replacement parts if you do not return the replaced parts to Dell, will be in accordance with Dell's Exchange Policy in effect on the date of the exchange.

You accept full responsibility for your software and data. Dell is not required to advise or remind you of appropriate backup and other procedures.

### ***General Provisions***

DELL MAKES NO EXPRESS WARRANTIES OR CONDITIONS BEYOND THOSE STATED IN THIS LIMITED 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. SOME STATES (OR JURISDICTIONS) DO NOT ALLOW LIMITATIONS ON IMPLIED WARRANTIES OR CONDITIONS, SO THIS LIMITATION MAY NOT APPLY TO YOU.

DEL'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS LIMITED WARRANTY STATEMENT. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION).

DELL DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES SET FORTH IN THIS LIMITED WARRANTY STATEMENT OR LIABILITY FOR INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION ANY LIABILITY FOR PRODUCTS NOT BEING AVAILABLE FOR USE OR FOR LOST DATA OR SOFTWARE.

SOME STATES (OR JURISDICTIONS) DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, SO THE PRECEDING EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU.

These provisions apply to Dell's three-year limited warranty only. For provisions of any service contract covering your system, see your invoice or the separate service contract that you will receive.

If Dell elects to exchange a system or component, the exchange will be made in accordance with Dell's Exchange Policy in effect on the date of the exchange. In any instance in which Dell issues a Return Material Authorization Number, Dell must receive the product(s) for repair prior to the expiration of the warranty period in order for the repair(s) to be covered by the limited warranty.

## **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.

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#### LIMITATIONS OF LIABILITY

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THIS 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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