

REFERENCE AND TROUBLESHOOTING GUIDE

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Safety Instructions

As you use your computer, observe the following safety guidelines:



CAUTION: Do not allow your portable computer to operate with the base resting directly on exposed skin. With extended operation, heat can potentially build up in the base. Allowing sustained contact with the skin could cause discomfort or, eventually, a burn.

- Do not attempt to service the computer yourself. Always follow installation instructions closely.
- Do not carry a battery pack in your pocket, purse, or other container where metal objects (such as car keys) could short-circuit the battery terminals. The resulting excessive current flow can cause extremely high temperatures and may result in damage from burns.
- Be sure that nothing rests on your AC adapter's power cable and that the cable is not located where it can be tripped over or stepped on.
- Place the AC adapter in a ventilated area, such as a desk top or on the floor, when you use it to run the computer or to charge the battery. Do not cover the AC adapter with papers or other items that will reduce cooling; also, do not use the AC adapter inside a carrying case.
- Do not use your computer in a wet environment, for example, near a bathtub, sink, or swimming pool or in a wet basement.
- Do not push objects into air vents or openings of your computer. Doing so can cause fire or electric shock by shorting out interior components.
- Use only the AC adapter and batteries that are approved for use with this computer as indicated in this document. Use of another type of battery pack or AC adapter may risk fire or explosion.
- Before you connect the computer to a power source, ensure that the voltage rating of the AC adapter matches that of the available power source:
 - 115 volts (V)/60 hertz (Hz) in most of North and South America and some Far Eastern countries such as South Korea and Taiwan
 - 100 V/50 Hz in eastern Japan and 100 V/60 Hz in western Japan
 - 230 V/50 Hz in most of Europe, the Middle East, and the Far East

- To help prevent electric shock, plug the AC adapter and peripheral power cables into properly grounded power sources. 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.
- If you use an extension cable with your AC adapter, ensure that the total ampere rating of the products plugged in to the extension cable does not exceed the ampere rating of the extension cable.
- To remove power from the computer, turn it off, remove the battery pack, and disconnect the AC adapter from the electrical outlet.
- If your computer includes an integrated or optional (PC Card) modem, disconnect the modem cable during an electrical storm to avoid the remote risk of electric shock from lightning via the telephone line.
- 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.
- PC Cards may become very warm during normal operation. Use care when removing PC Cards after their continuous operation.
- Do not dispose of battery packs in a fire. They may explode. Check with local authorities for disposal instructions.
- When traveling, do not check the computer as baggage. You can put your computer through an X-ray security machine, but *never* put your computer through a metal detector. If you have the computer checked by hand, be sure to have a charged battery available in case you are asked to turn on the computer.
- When traveling with the hard-disk drive removed from the computer, wrap the drive in a nonconducting material, such as cloth or paper. If you have the drive checked by hand, be ready to install the drive in the computer. You can put the hard-disk drive through an X-ray security machine, but *never* put the drive through a metal detector.
- When traveling, do not place the computer in overhead storage compartments where it could slide around. Do not drop your computer or subject it to other mechanical shocks.
- Protect your computer, battery, and hard-disk drive from environmental hazards such as dirt, dust, food, liquids, temperature extremes, and overexposure to sunlight.
- When you move your computer between environments with very different temperature and/or humidity ranges, condensation may form on or within the computer. To avoid damaging the computer, allow sufficient time for the moisture to evaporate before using the computer.

NOTICE: When taking the computer from low-temperature conditions into a warmer environment or from high-temperature conditions into a cooler environment, allow the computer to acclimate to room temperature before turning on power.

- When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. As you pull out the connector, keep it evenly aligned to avoid bending any connector pins. Also, before you connect a cable make sure both connectors are correctly oriented and aligned.
- Handle components with care. Hold a component such as a memory module by its edges, not its pins.
- When removing a memory module from the system board or disconnecting a peripheral device from the computer, wait 5 seconds after turning off the computer before removing the memory module or disconnecting the device to help avoid possible damage to the system board.
- Before you clean your computer, turn it off, unplug it from its power source, and remove the battery pack(s).
- Clean your computer with a soft cloth dampened with water rather than with liquid or aerosol cleaners.
- Clean the display with a soft, clean cloth and commercial window cleaner that does not contain wax or abrasives. Apply the cleaner to the cloth; then stroke the cloth across the display in one direction, moving from the top of the display to the bottom. If the display contains grease or some other contaminant, use isopropyl alcohol instead of commercial window cleaner.
- If your computer gets wet or is damaged, follow the procedures described in Chapter 3, “Basic Troubleshooting.” If, after following these procedures, you confirm that your computer is not operating properly, contact Dell Computer Corporation. (See Chapter 5, “Getting Help,” for the appropriate telephone number.)

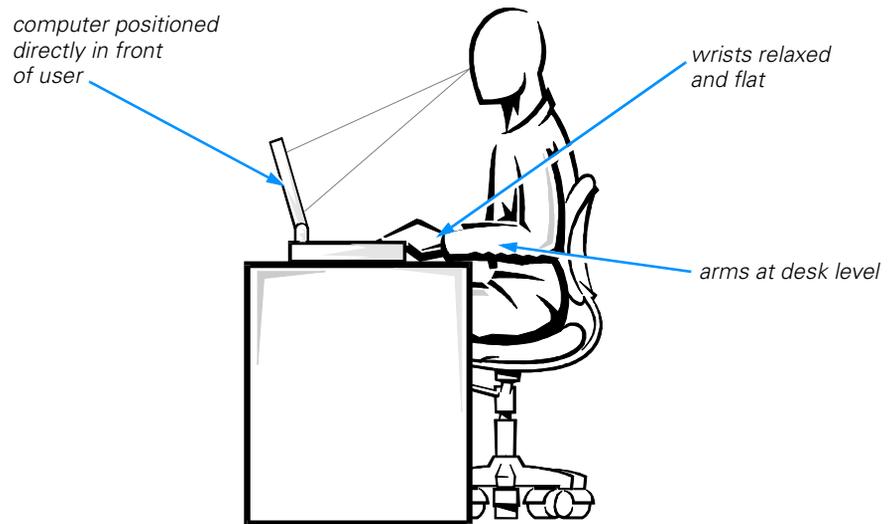
Ergonomic Computing Habits



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



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



For comfort and efficiency, observe the following ergonomic guidelines when setting up and using your computer:

- When setting up the computer for work, place it on a level surface.
- Position your computer directly in front of you as you work.
- Adjust the tilt of the computer's display, its contrast and/or brightness settings, and the lighting around you (such as overhead lights, desk lamps, and the curtains or blinds on nearby windows) to minimize reflections and glare on the display.
- When using an external monitor with your computer, set the monitor at a comfortable viewing distance (usually 510 to 610 millimeters [20 to 24 inches] from your eyes). Make sure the monitor screen is at eye level or slightly lower when you are sitting in front of the monitor.
- Use a chair that provides good lower-back support.
- Keep your forearms horizontal with your wrists in a neutral, comfortable position while using the keyboard, trackball, touch pad, or external mouse.
- Always use the palmrest with the keyboard, touch pad, or trackball. Leave space to rest your hands when using an external mouse.
- Let your upper arms hang naturally at your sides.
- Sit erect with your feet resting on the floor and your thighs level.
- When sitting, make sure the weight of your legs is on your feet and not on the front of your chair seat. Adjust your chair's height or use a footrest, if necessary, to maintain proper posture.
- Vary your work activities. Try to organize your work so that you do not have to type for extended periods of time. When you stop typing, try to do things that use both hands.

When Removing or Installing Memory Modules

Before removing or installing memory modules, perform the following steps in the sequence indicated.

NOTICE: The only time you should ever access the inside of your computer is when you are installing memory modules.

NOTICE: Wait 5 seconds after turning off the computer before disconnecting a peripheral device or removing a memory module to help prevent possible damage to the system board.

1. Turn off your computer and any attached peripherals.
2. Disconnect your computer and peripherals from the electrical outlets to reduce the potential for personal injury or shock. Also, disconnect any telephone or telecommunication lines from the computer.
3. Remove the main battery from the battery bay and, if necessary, the second battery from the media bay.
4. Ground yourself by touching the unpainted metal surface of the I/O panel on the back of the computer.

While you work, periodically touch the I/O panel to dissipate any static electricity that might harm internal components.

Protecting Against Electrostatic Discharge

Static electricity can harm electronic 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 a memory module. You can do so by touching an unpainted metal surface on the computer's I/O panel.

As you continue to work inside the computer, periodically touch an I/O connector to remove any static charge your body may have accumulated.

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

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

The following notice may appear throughout this document to remind you of these precautions:

NOTICE: See “Protecting Against Electrostatic Discharge” in the safety instructions at the front of this guide.



Preface

About This Guide

This guide is intended for anyone who uses a Dell portable computer. It can be used by both first-time and experienced computer users who want to learn about the features of the computer. This guide also provides basic troubleshooting procedures and instructions for using the Dell Diagnostics to test your computer and its components.

Summaries of the chapters and appendixes of this guide follow:

- Chapter 1, “Introduction,” provides an overview of the computer features and a list of available upgrades.
- Chapter 2, “Options and Upgrades,” describes the installation procedures for the options and upgrades available from Dell for your computer.
- Read Chapter 3, “Basic Troubleshooting,” for some initial checks and procedures that you can use to solve basic computer problems and for some general guidelines on analyzing software problems.
- Chapter 4, “System Software Solutions,” provides detailed instructions for reinstalling system drivers and software.
- Chapter 5, “Getting Help,” describes the help tools Dell provides to assist you if you have a problem with the computer. It also explains how and when to call Dell for technical assistance.
- Appendix A, “Technical Specifications,” is intended primarily as reference material if you are interested in learning more about the details of your computer.
- Read Appendix B, “Using the System Setup Program,” to learn how to access the System Setup program, which allows you to change system settings, such as your computer’s power conservation features.
- Appendix C, “Error Messages and Flash Codes,” defines system messages and error codes.
- Appendix D, “Regulatory Notices,” is for users who are interested in which regulatory agencies have tested and approved your computer.
- Appendix E, “Warranty, Return Policy, and Year 2000 Statement of Compliance,” describes the warranty for your Dell computer, the “Total Satisfaction” Return Policy, and the year 2000 compliance of Dell-branded hardware products.

Warranty and Return Policy Information

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.

For information about the Dell warranty and return policy, see Appendix E, “Warranty, Return Policy, and Year 2000 Statement of Compliance.”

Other Documents You May Need

In addition to this *Reference and Troubleshooting Guide*, the following documentation is included with your computer:

- The *Setup Guide* provides instructions for setting up a Dell Inspiron computer and for using your computer’s hardware.
- The system *Help* contains essential information you need to use your computer.
To open the *Help*, click the **Start** button, point to **Programs—> Dell Documents**, and click **Dell Inspiron 3700 System Help**.

You may also have one or more of the following documents:

- Information updates describing changes to your computer or software.
*NOTE: Always read any included update **before** consulting any other documentation because the updates contain the latest information.*
- Operating system documentation is included if Dell installed the operating system on your hard-disk drive. This documentation describes how to configure and use your operating system software.



Notational Conventions

The following subsections list notational conventions used in this document.

Notes, Notices, and Cautions

Throughout this guide, blocks of text may be accompanied by an icon and printed in bold type or in italic type. These blocks are notes, notices, and cautions, and they are used as follows:



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

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 potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Typographical Conventions

The following list defines (where appropriate) and illustrates typographical conventions used as visual cues for specific elements of text throughout this document:

- *Interface components* are window titles, button and icon names, menu names and selections, and other options that appear on the monitor screen or display. They are presented in bold.
Example: Click **OK**.
- *Keycaps*, the labeling that appears on the keys on a keyboard, are enclosed in angle brackets.
Example: <Enter>
- *Key combinations* are series of keys to be pressed simultaneously (unless otherwise indicated) to perform a single function.
Example: <Ctrl><Alt><Enter>
- *Commands* presented in lowercase bold are for reference purposes only and are not intended to be typed at that particular point in the discussion.
Example: "Use the **setup** command to . . ."

In contrast, commands presented in the Courier New font are intended to be typed as part of an instruction.
Example: "Type `format` to format the diskette in drive A."
- *Filenames* and *directory names* are presented in lowercase bold.
Examples: **autoexec.bat** and **c:\windows**
- *Syntax lines* consist of a command and all its possible parameters. Commands are displayed in lowercase bold; variable parameters (those for which you substitute a value) are displayed in lowercase italics; constant parameters are displayed in lowercase bold. The brackets indicate items that are optional.
Example: **del** [*drive:*] [*[[path]filename]*] [**/p**]
- *Command lines* consist of a command and may include one or more of the command's possible parameters. Command lines are presented in the Courier New font.
Example: `del c:\myfile.doc`

- *Screen text* is text that appears on the screen of your display or external monitor. It can be a system message, for example, or it can be text that you are instructed to type as part of a command (referred to as a *command line*). Screen text is presented in the Courier New font.

Example: The following message appears on your screen:

```
No boot device available
```

- *Variables* are symbols for which you substitute a value. They are presented in italics.

Example: module *n* (where *n* represents the memory module number)



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CHAPTER 1

Introduction

This chapter provides information about the major hardware and software features of your computer, as well as available upgrades.

Hardware Features

Your computer includes the following hardware features:

- An Intel® mobile microprocessor incorporating the latest processor technology.
- An internal, Level 1 (L1) cache consisting of 64 kilobytes (KBs) of high-speed memory that resides in the processor core. The microprocessor has either a 128-KB or 256-KB (integrated) Level 2 (L2) cache.
- A minimum of 32 megabytes (MB) of synchronous dynamic random access memory (SDRAM) system memory, with support for a maximum of 512 MB.
- A media bay in which you can install a variety of modules, including a diskette drive, CD-ROM drive, DVD-ROM drive (on computers running Microsoft® Windows® 98 Second Edition), Zip drive, LS-120 drive, second battery, or a second hard-disk drive.



NOTE: Your computer was shipped with a diskette drive in the media bay. For information on removing the diskette drive and installing a different device in the bay, see "Using the Media Bay" in Chapter 2.

Because the Microsoft Windows NT® operating system does not support DVD technology, the DVD-ROM drive is available only on computers that use the Windows 98 Second Edition operating system.

- A 64-bit hardware-accelerated ATI Mobility-M video controller with 8 MB of video memory, accelerated graphics port (AGP) 2X, 3D assist, motion compensation, extended desktop, OpenGL support, and a flicker-free TV-out S-video connector.
- An active-matrix extended graphics array (XGA) or super extended graphics array (SXGA) thin-film transistor (TFT) color display.
- ESS Maestro-2E audio controller with hardware wavetable support and 3D surround sound.
- Integrated stereo speakers and microphone.

- Connectors for connecting external speakers, headphones, or an external microphone to the computer.
- A TV-out S-video connector and composite TV-out adapter cable that allows you to connect a television to your computer. You can obtain the latest video drivers on Dell's World Wide Web site at <http://www.dell.com/filelib>.
- Ultra direct memory access (DMA)/33 data transfer protocol for Advanced Technology Attachment (ATA)/integrated drive electronics (IDE) hard-disk drive interface. Ultra DMA/33 allows data transfer rates of up to 33 MB/sec.
- An integrated keyboard that includes two special keys that support the Windows operating systems.
- Dell™ DualPoint™ integrated pointing device, which provides a Personal System/2 (PS/2)-compatible touch pad that provides full mouse functionality, and a track stick to control the cursor on the display screen. These pointing devices are positioned for both left- and right-handed users. The track stick is positioned in the keyboard to allow you to move the cursor while keeping your fingers in a typing position. Two sets of left and right buttons, located above and below the touch pad, mimic mouse buttons. You can also perform many pointing functions by tapping the touch pad or the track stick. Click-and-drag buttonless functions are also supported.
- Universal serial bus (USB) capability, which simplifies connecting peripheral devices such as mice, printers, and computer speakers. The USB connector on your computer's back panel provides a single connection point for multiple USB-compliant devices such as keyboards, mice, printers, and computer speakers. Also, you can connect and disconnect USB-compliant devices while the computer is running.



NOTES: Windows NT does not support USB functions.

If you attach a USB device that was not included in your original system configuration, you may need to install a specific driver for that device to obtain its full functionality. Contact the USB device manufacturer for more information.

- A lithium-ion battery in the battery bay, with support for a second battery in the media bay. The Dell ExpressCharge™ technology charges a single battery in approximately 1 hour (when the computer is off or in save-to-disk suspend mode).

NOTICE: Do not puncture or incinerate the battery. When your battery no longer holds a charge, call your local waste disposal agency or environmental agency for advice on disposing of the computer's lithium-ion battery. The lithium-ion technology used in the battery is significantly less hazardous to the environment than the lithium metal technology used in some other batteries (such as watch batteries).

- An Infrared Data Association (IrDA) 1.1-compliant infrared port that permits you to transfer files without connecting cables.



NOTE: Windows NT does not support IrDA.



- A PC Card slot with connectors for two 3.3- or 5-volt (V) cards. Both PC Card connectors support CardBus technology. In addition, the lower PC Card connector (slot 0) supports the use of a zoomed video (ZV) port card.

NOTES: The PC Card controller supports the CardBus standard for 32-bit data transfer on the PC Card.

Windows NT does not support zoomed video.

- One high-performance serial port connector.
- One parallel port connector that can be set to AT, PS/2, Enhanced Parallel Port (EPP), or Extended Capabilities Port (ECP) mode.
- One PS/2 keyboard/mouse port connector.
- One docking connector for the optional advanced port replicator.
- A security cable connector to which you can attach a commercially available security cable to prevent unauthorized removal of the computer.
- Two power conservation modes—*standby mode* and *save-to-disk suspend mode*—that help you conserve battery power. If the batteries run out of power, save-to-disk suspend mode prevents data loss by copying all system data to the hard-disk drive and turning off the computer.
- An automatic thermal management system that uses a variable-speed fan and microprocessor speed changes to keep the computer running at the optimum temperature.



CAUTION: Do not allow your Inspiron portable computer to operate with the base resting directly on exposed skin. With extended operation, heat can potentially build up in the base. Allowing sustained contact with the skin could cause discomfort or, eventually, a burn.

Front View of the Computer

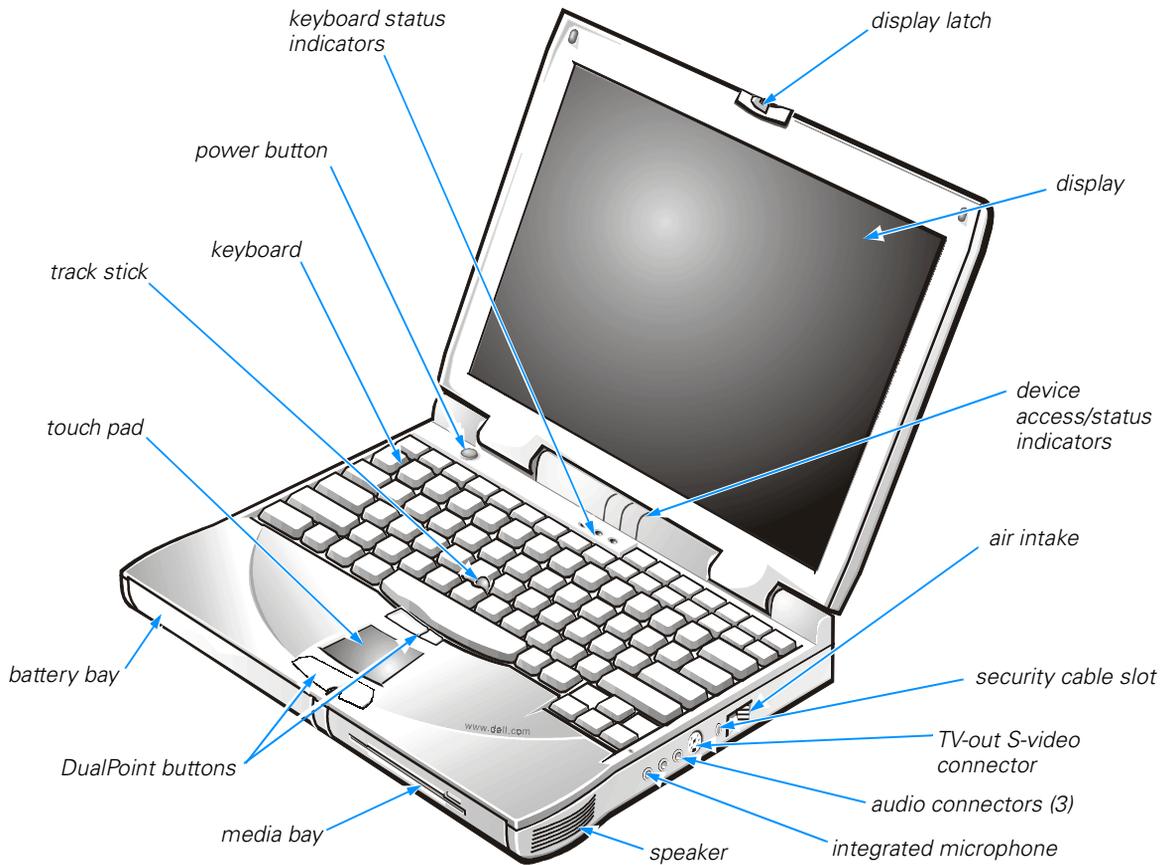


Figure 1-1. Front View of the Computer

The following components are visible from the front of the computer, as illustrated in Figure 1-1:

- **Touch pad** — The PS/2-compatible touch pad gives the computer full mouse functionality. Use the touch pad buttons in the same way that you would use mouse buttons.
- **Keyboard** — The keyboard includes an embedded numeric keypad and two special keys that support the Microsoft Windows 98 Second Edition operating system.
- **Track stick** — Use the track stick in the same way that you would use mouse buttons. You may also use the track stick with the DualPoint buttons.
- **Power button** — Under normal circumstances, you should use the power button only to turn on the computer or to resume operation from save-to-disk suspend



mode. To shut down the computer, click the **Start** button in the Windows operating system, and then click **Shut Down**.

NOTE: If your operating system is "locked up"—that is, it does not respond to commands—press and hold down the power button for at least 5 seconds.

- **Keyboard status indicators** — The numbers lock indicator is green when you press the <Num Lk> key. The capitals lock indicator is green when you press the <Caps Lock> key. The scroll lock indicator is green when you press the <Fn><Scroll Lock> key combination.
- **Device access/status indicators** — The three indicators above the keyboard status indicators report, from left to right, system power, hard-disk drive access, and battery status.
- **Display** — The computer has an active-matrix XGA or SXGA color display.
- **Air intake** — The air intake works with the fan as part of the computer's automatic thermal management system. When operating conditions make it necessary, a small internal fan turns on and helps draw air through the air intake.

NOTICE: Do not push objects into the air intake. Keep the opening free from dust and other foreign particles. When using the computer, do not block the air intake.

- **Security cable slot** — To prevent unauthorized removal of the computer, use a security cable to attach the computer to an immovable object.
- **TV-out S-video connector** — This connector allows you to connect your computer to a television. If your television has an S-video cable, you can plug it directly into the computer. If your television has a composite cable, use the cable that came with your computer to connect it to the computer.



NOTE: Refer to the user manual that came with your television for instructions on connecting a composite cable or an S-video device.

- **Audio connectors (3)** — Allow you to connect audio devices such as speakers, microphones, headphones, and record/playback devices to your computer.
- **Integrated microphone** — Allows you to record from a distance of 1 meter (m) (3.3 ft) in a normal tone of voice.
- **Speaker** — You can enable or disable the integrated stereo speakers or external speakers by pressing <Fn><End>. You can increase speaker volume by pressing <Fn><Page Up> and decrease speaker volume by pressing <Fn><Page Down>.



NOTES: Certain audio utilities installed on your computer also allow you to control speaker volume.

*On an external keyboard, press <Scroll Lock> with the appropriate keys if the **External Hot Key** option is enabled in the System Setup program.*

*If no sound comes from the speakers, press <Fn><End> and make sure the volume control is not set to **Mute** by clicking the volume icon in the Microsoft Windows desktop taskbar. Also check the volume control wheel to make sure it is not turned down.*



- **Media bay** — The standard configuration of your computer includes a diskette drive installed in the media bay. You can also install a battery, a CD-ROM drive, a DVD-ROM drive, a SuperDisk LS-120 drive, a second battery, or a second hard-disk drive in the media bay. You remove and install all devices in the same way.

NOTE: Because the Microsoft Windows NT operating system does not support DVD technology, the DVD-ROM drive is available only on computers that use the Windows 98 Second Edition operating system.

- **DualPoint buttons** — Your computer is equipped with the unique Dell DualPoint integrated pointing device. The DualPoint integrated pointing device supports two types of cursor pointing devices that perform traditional mouse functions: the touch pad and the track stick. You can choose to use the touch pad only, the track stick only, or both at the same time.
- **Battery bay** — The standard configuration of your computer includes a battery installed in the battery bay.

Back View of the Computer

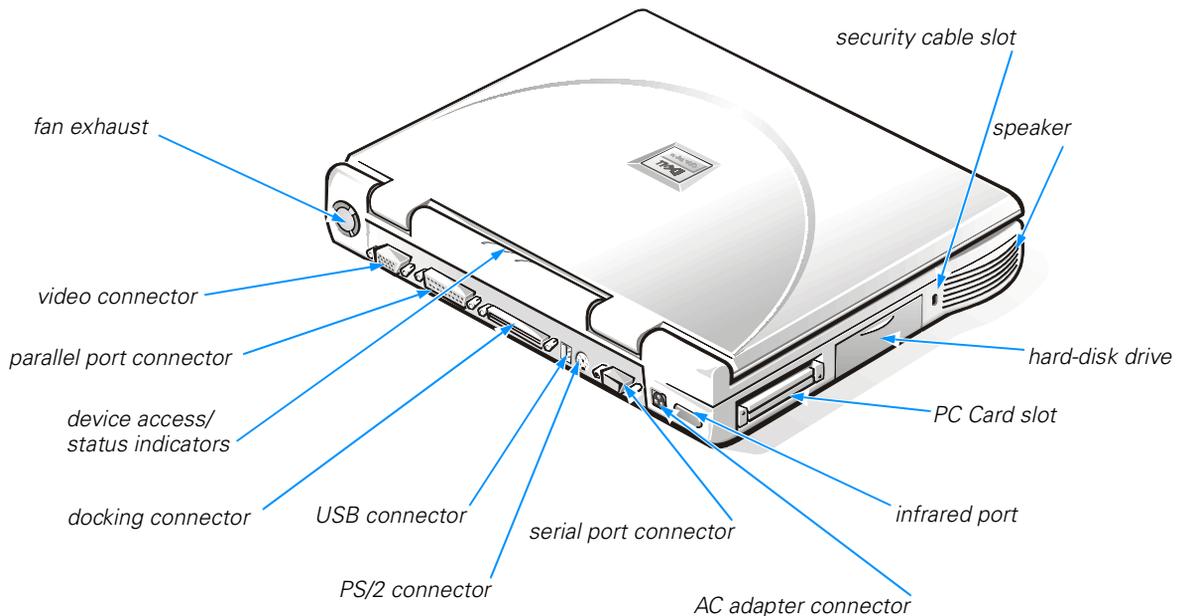


Figure 1-2. Back View of the Computer

The following components are visible from the back of the computer, as illustrated in Figure 1-2:

- **Fan exhaust** — Works with the air intake as part of the computer's automatic thermal management system. When operating conditions make it necessary, the small internal fan turns on and helps draw air through the air intake.
NOTICE: Do not push objects into the fan opening. Doing so can cause fire or electric shock to the interior components. Keep the opening free from dust and other foreign particles. When using the computer, do not block the fan opening.
- **Video connector** — Use the video connector to attach an external monitor to the computer.
- **Parallel port connector** — Use the parallel port connector to attach a parallel device to the computer. The parallel port connector is used primarily for printers. You can also connect the diskette drive that came with your computer to the parallel port connector using the cable that came with your computer.
- **Docking connector** — Use this connector to attach the computer to the optional port replicator.
- **USB connector** — Use the USB connector to attach a USB device, such as a mouse, a digital camera, or speakers to the computer. USB is a peripheral bus standard that enables automatic detection of USB-compliant peripheral devices.
- **PS/2 connector** — Use this connector to attach PS/2-compatible devices such as a mouse, keyboard, or external numeric keypad.



NOTES: If the computer is in standby or save-to-disk suspend mode when you attach a mouse, you can use the mouse when the computer resumes normal operation.

While the mouse is attached to the computer, the touch pad is still enabled.

- **Serial port connector** — Use the serial port connector to attach a serial device to the computer.
- **AC adapter connector** — Use this connector to attach an AC adapter to the computer.
- **Infrared port** — The infrared port lets you transfer files from the computer to another infrared device without using cable connections.
- **PC Card slot** — The PC Card slot has two connectors that support Type I, Type II, and Type III PC Cards.
- **Security cable slot** — To prevent unauthorized removal of the computer, use a security cable to attach the computer to an immovable object.
- **Speaker** — You can enable or disable the integrated stereo speakers or external speakers by pressing <Fn><End>. You can increase speaker volume by pressing <Fn><Page Up> and decrease speaker volume by pressing <Fn><Page Down>.



NOTES: Certain audio utilities installed on your computer also allow you to control speaker volume.

On an external keyboard, press <Scroll Lock> with the appropriate keys if the **External Hot Key** option is enabled in the System Setup program.

If no sound comes from the speakers, press <Fn><End> and make sure the volume control is not set to **Mute** by clicking the volume icon in the Microsoft Windows desktop taskbar. Also check the volume control wheel to make sure it is not turned down.

Software Features

Your computer includes the following software features:

- Microsoft Windows 98 Second Edition or Windows NT operating system installed on your hard-disk drive.
- Virus-scanning software for computers that ship with Windows 98.
- A standard set of video drivers provided for supporting video resolutions greater than 640 x 480 pixels.
- Audio utilities for computers with integrated audio capabilities.
- DualPoint integrated pointing device software, which allows you to set the default for the type of cursor pointing device you want to use, as well as sensitivity, motion, and drag-and-drop features of both the touch pad and track stick.
- Optional software DVD decoder driver on computers that use the Microsoft Windows 98 Second Edition operating system.



NOTE: Windows NT does not support the DVD decoder driver.

- Two power conservation modes—*standby mode* and *save-to-disk suspend mode*—that help you conserve battery power. If the batteries run out of power, save-to-disk suspend mode prevents data loss by copying all system data to the hard-disk drive and turning off the computer.
- The System Setup program for quickly viewing and changing system configuration information. For information on using the System Setup program, refer to Appendix B, "Using the System Setup Program."
- Software support for the optional advanced port replicator.
- Dell Diagnostics for evaluating the computer's components and devices. For information on using the diagnostics, refer to "Running the Dell Diagnostics" in Chapter 3.

Available Options and Upgrades

Dell offers the following upgrade options:

- Advanced port replicator (APR)
- Additional batteries

- External keyboards and a numeric keypad
- External monitors
- External pointing devices
- External speakers, headphones, and microphones
- Printers
- Hard-disk drives
- Second hard-disk drive for the media bay
- DVD-ROM drives
- SuperDisk LS-120 drives
- AC adapter
- PC Cards
- 32-, 64-, 128-, 192-, and 256-MB memory modules
- Carrying case

To order any of these options or upgrades, call Dell. For instructions, see Chapter 5, "Getting Help," or the "Contacting Dell" section of the system *Help*.

Getting Help

If at any time you do not understand a procedure described in this guide, or if your computer does not perform as expected, Dell provides a number of tools to help you. For more information, see Chapter 5, "Getting Help."



CHAPTER 2

Options and Upgrades

This chapter describes the installation procedures for the options and upgrades available from Dell for your computer.

Using the AC Adapter

The AC adapter converts AC power to the DC power required by the computer. The AC adapter kit includes two cables: the AC adapter cable and an AC power cable (see Figure 2-1).

You can connect the AC adapter with your computer either turned on or off.

The AC adapter works with electrical outlets worldwide. However, power connectors vary among countries. Before you use AC power in a foreign country, you may need to obtain a new power cable designed for use in that country.



NOTE: If you are running your computer on AC power with a battery installed, the AC adapter charges the battery (if needed) and then maintains the battery's charge.

NOTICE: The AC adapter should be in a ventilated area, such as on a desktop or on the floor, when used to power the computer or charge the battery. Do not use the AC adapter in a poorly ventilated environment, such as inside a carrying case.

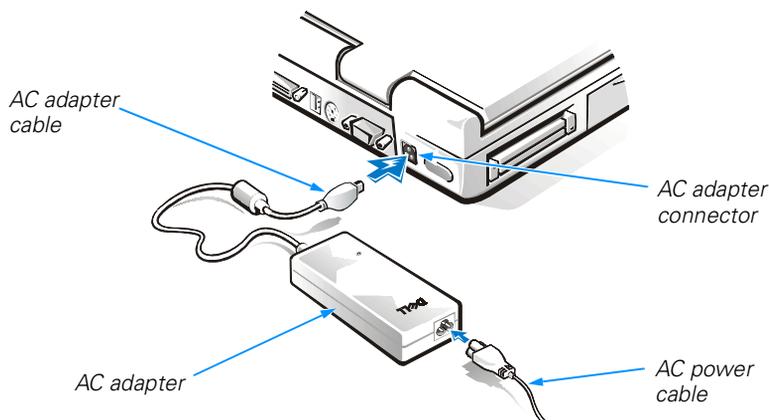


Figure 2-1. Using the AC Adapter

To connect the AC adapter, perform the following steps:

1. Connect the AC adapter power cable to the AC adapter (see Figure 2-1).
2. Plug the AC adapter power cable into an electrical outlet.
3. Plug the AC adapter cable into the AC adapter connector on the computer.

Using the Media Bay

You can use the media bay to install one of the following devices:

- Diskette drive
- CD-ROM drive
- DVD-ROM



NOTE: Because the Microsoft Windows NT operating system does not support DVD technology, the DVD-ROM drive is available only on computers that use the Microsoft Windows 98 Second Edition operating system. If you choose to install Windows NT on a computer that originally came with a DVD-ROM drive, the DVD-ROM drive will function as a CD-ROM drive.

- SuperDisk LS-120 drive
- Zip drive
- Second battery
- Second hard-disk drive

When you receive your computer, a diskette drive is installed in the media bay.

NOTICE: Do not change devices while the computer is connected to a port replicator. The docking connector can be irreparably damaged.

To change a device in the media bay, perform the following steps:

1. Verify that the **Diskette Reconfig** option in the System Setup program is set to **Any Time**.
2. Save and close any open files, exit any open application programs, and shut down the computer.
3. If the computer is docked, undock it.

For instructions, see your *Advanced Port Replicator User's Guide*.

NOTICE: When the CD-ROM, DVD-ROM, SuperDisk LS-120, and diskette drives are not inside the computer, they are fragile and must be handled carefully to avoid damage. Do not press down on the drives or place heavy objects on top of them. Place the drives in a travel case to keep them free of dust and liquids. Store the drives in a safe place.

4. If your computer does not have Softex Docking Services or Softex BayManager, go to step 6. Otherwise, continue to step 5.
5. If your computer is running Microsoft Windows NT with Softex Docking Services installed or if your computer is running Windows 98 with Softex BayManager installed, perform the following steps:
 - a. Double-click the **Docking Services** or **BayManager** icon in the Windows system tray on the taskbar. The **Softex BayManager** window appears for Windows 98. The **Docking Services** window appears for Windows NT.
 - b. Click the **Remove/Swap** button.
6. If the media bay contains a device, remove the device as follows (see Figure 2-2):
 - a. Close the computer display and turn the computer over.
 - b. Slide the media bay latch toward the unlock icon.
 - c. Keep holding the media bay latch with one hand while pulling the device out of the bay with the other hand.
 - d. Release the media bay latch after the device is removed.

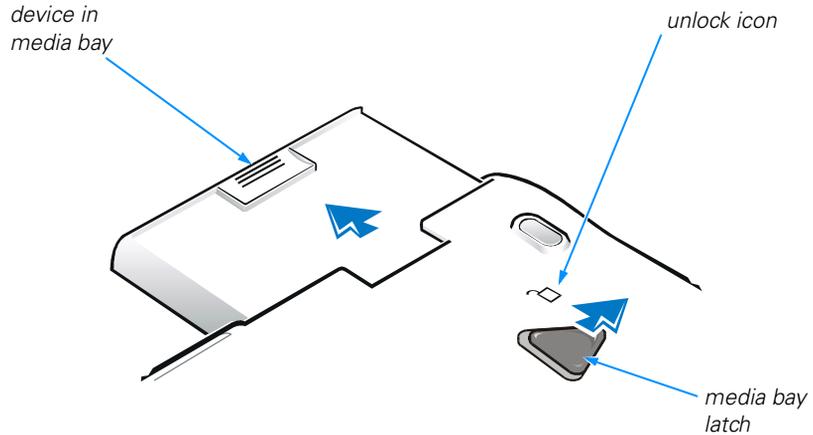


Figure 2-2. Removing a Device From the Media Bay

7. Slide the new device firmly into the media bay.

You should hear a click when the device is fully seated.



*NOTE: Softex BayManager and Docking Services do not report a second battery installed in the media bay on the **Storage Devices** tab.*

8. If your computer is running Microsoft Windows NT with Softex Docking Services or Windows 98 with Softex BayManager, click **OK**. Then click **OK** again to close the Softex window.
9. If you turned off the computer or put the computer into standby mode or save-to-disk suspend mode, press the power button to resume normal operation.

Installing Devices With Softex Docking Services or BayManager Software

Your computer may be using Windows 98 with Softex BayManager software or Windows NT with Softex Docking Services software. This software allows you to hot-swap devices such as diskette drives, hard-disk drives, SuperDisk LS-120 drives, CD-ROM drives, DVD-ROM drives, and Zip drives to and from your computer's media bay. Hot-swapping capability allows you to remove and replace a device while the computer is on. You do not have to shut down or restart the computer for the device to be recognized.

For the latest information on these services and their use, and to view the Softex software user's guides, see the following World Wide Web sites on the Internet:

- <http://www.dell.com/products/notebook/latitude/win98.htm>
- <http://www.dell.com/products/notebook/latitude/NT40.htm>

If you are removing a device from the media bay and installing a battery, refer to “Installing a Second Battery” found later in this chapter.

Installing a Battery

Your computer comes with a lithium-ion battery installed in the battery bay. The battery provides power to your computer when AC power is not available.

NOTICE: This battery is designed to work with Dell Inspiron 3700 computers only. To avoid damaging the battery or the computer, do not use the battery with other computers, and do not use a battery from another computer.



NOTE: You can also install a second battery in the media bay. If the computer already contains a battery in the battery bay and you are installing a second battery, see “Installing a Second Battery” found later in this chapter.

To install a battery in the battery bay, perform the following steps:

1. Save and close any open files, exit any open application programs, and shut down the computer.
2. If the computer is docked, undock it.

For instructions, see your *Advanced Port Replicator User's Guide*.

NOTICE: To avoid data loss, do not replace a battery while the computer is turned on unless the computer is connected to an electrical outlet or a second battery is installed.

3. If the media bay contains a battery, go to step 5. Otherwise, continue to step 4.
4. If the only battery in the computer is in the battery bay and that is the battery you want to replace, connect the computer to an electrical outlet and then preserve your data in one of the following ways:

- Use standby mode.

Place the computer in standby mode by pressing <Fn><Esc> (or <Scroll Lock><Esc> on an external keyboard if the **External Hot Key** option is enabled in the System Setup program). Then shut down the computer.

- Use save-to-disk suspend mode.

Place the computer in save-to-disk suspend mode by pressing <Fn><a> (or <Fn><q> on a French keyboard). When the green power indicator turns off, continue to step 5.

5. Remove the battery from the battery bay:
 - a. Close the computer display and turn the computer over (see Figure 2-3).
 - b. Slide the battery bay latch toward the **Unlock** icon. Keep holding the latch with one hand while pulling the battery out of the bay with the other hand (see Figure 2-4).
 - c. Release the latch after you remove the battery.
 - d. Slide the new battery firmly into the battery bay. You should hear a click when the battery is fully seated.

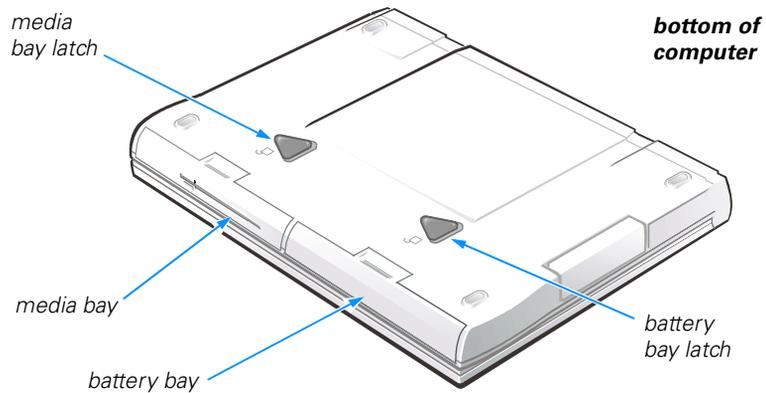


Figure 2-3. Media Bay and Battery Bay Latches

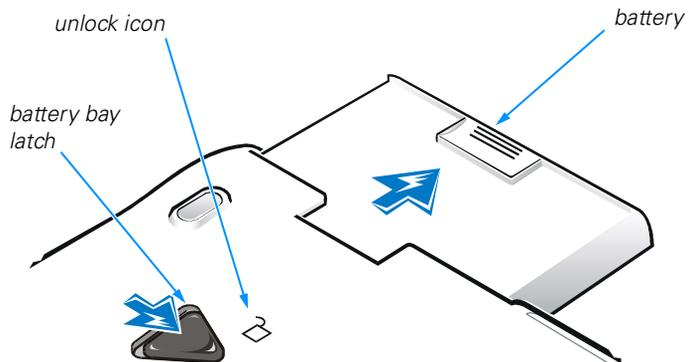


Figure 2-4. Removing a Battery From the Battery Bay

6. If you put the computer into standby or save-to-disk suspend mode, press the power button to resume normal operation.

Installing a Second Battery

NOTICE: To avoid data loss, do not replace a battery in the media bay while the computer is turned on unless the computer is connected to an electrical outlet or a battery is already installed in the battery bay.

To install a battery in the media bay, perform the following steps:

1. Save and close any open files, exit any open application programs, and shut down the computer.
2. If the computer is docked, undock it.

For instructions, see your *Advanced Port Replicator User's Guide*.

3. If your computer does not have Softex Docking Services or Softex BayManager software, go to step 5. Otherwise, continue to step 4.
4. If your computer is running Windows NT with Softex Docking Services installed or if your computer is running Windows 98 with Softex BayManager installed, perform the following steps:
 - a. Double-click the **Docking Services** or **BayManager** icon in the Windows system tray on the taskbar. The **Softex BayManager** window appears for Windows 98. The **Docking Services** window appears for Windows NT.
 - b. Click the **Remove/Swap** button.
5. Preserve your data in one of the following ways and then go to step 6:
 - Place the computer in standby mode by pressing <Fn><Esc> (or <Scroll Lock><Esc> on an external keyboard if the **External Hot Key** option is enabled in the System Setup program).
 - Place the computer in save-to-disk suspend mode by pressing <Fn><a> (or <Fn><q> on a French keyboard). When the green power indicator turns off, continue to step 6.
6. Remove any device that may be installed in the media bay (see Figure 2-5):
 - a. Close the computer display and turn the computer over.
 - b. Slide the media bay latch toward the unlock icon to release the device in the bay.
 - c. Hold the latch in the unlock position while pulling the device out of the bay.
 - d. Release the latch after you remove the device.
 - e. Slide the new battery firmly into the battery bay. You should hear a click when the battery is fully seated.

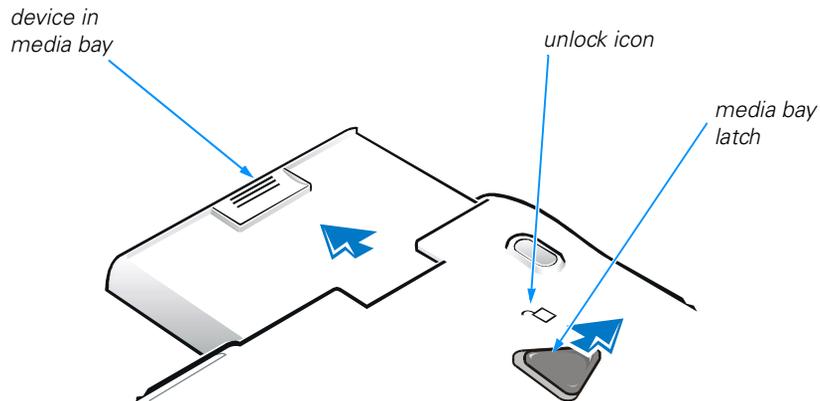


Figure 2-5. Removing a Device From the Media Bay



*NOTE: Softex BayManager and Docking Services do not report a second battery installed in the media bay on the **Storage Devices** tab.*

7. If your computer is running Windows NT with Softex Docking Services or Windows 98 with Softex BayManager, click **OK**. Then click **OK** to close the Softex window.
8. If you put the computer into standby, save-to-disk suspend mode, or shut down mode, press the power button to resume normal operation.

The first time you install a second hard-disk drive in the media bay, you must format that drive. For instructions, see the documentation that came with the device.

Attaching the Composite TV-Out Adapter Cable

Your computer has a TV-out S-video connector for connecting a television to the computer. To connect a television, perform the following steps:

1. Save and close any open files, exit any open application programs, and shut down the computer.
2. If the television has an S-video cable, plug the cable directly into the computer at the TV-out S-video connector. If the television has only a composite cable connector, connect the composite TV-out adapter cable that came with your computer to the TV-out S-video connector on the computer (see Figure 2-6), and then connect the other end of the adapter cable to the television's composite cable.



NOTE: If your television did not come with a composite video cable, you can purchase one from a local electronics store.

3. Turn on the computer.

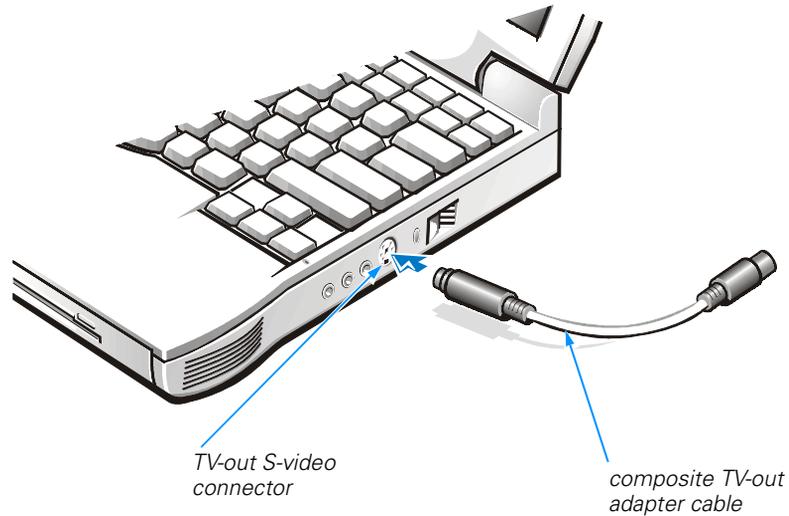


Figure 2-6. Using the Composite TV-Out Adapter Cable

Installing an Internal Hard-Disk Drive



NOTES: If you ordered a second hard-disk drive from Dell, refer to the documentation that accompanied the drive(s) for instructions on installing it in the media bay.

You will need the Microsoft Windows installation CD and the System Software CD to install software on the new hard-disk drive.

The computer's basic input/output system (BIOS) may not support hard-disk drives obtained from vendors other than Dell. Dell does not guarantee compatibility or provide support for hard-disk drives obtained from other sources.

NOTICE: Hard-disk drives are extremely fragile and must be handled carefully. Follow these guidelines when handling hard-disk drives

NOTICE: The hard-disk drive is installed in a metal carrier to protect the drive and make installation easier. When removing and installing hard-disk drives, handle the drive carrier, not the drive itself.

NOTICE: Never press down on the top of the drive.

NOTICE: Do not drop the drive. Even a slight jar or bump can damage the spinning heads and plates, thus rendering the drive inoperable.



CAUTION: The hard-disk drive may be hot to the touch. Do not touch the metal housing of the hard-disk drive if you remove the drive from the computer when the drive is hot.

1. Save and close any open files, exit any open application programs, and shut down the computer.

Wait for the computer's power indicator to turn off before continuing this procedure.

2. If the computer is docked, undock it.

For instructions, see your *Advanced Port Replicator User's Guide*.

3. Remove any batteries installed in the battery bay or media bay.
4. If necessary, remove the hard-disk drive currently installed in the hard-disk drive bay.

Close the computer display and turn the computer over. Use a small Phillips-head screwdriver to remove the one or two screws that hold the drive carrier in the drive bay. Save the screw(s) for use later in this procedure (see Figure 2-7).

Gently pull the drive carrier out of the drive bay.

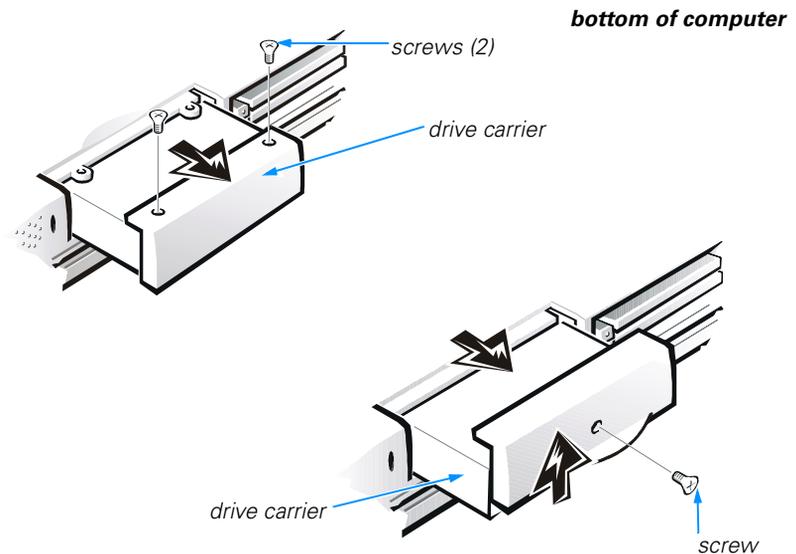


Figure 2-7. Removing the Internal Hard-Disk Drive

5. Remove the new hard-disk drive from its packaging.

Save the original packaging to use when storing or shipping the hard-disk drive.

6. Install the new hard-disk drive into the computer (the drive comes in a drive carrier).

NOTICE: If the drive does not slide easily into the drive bay, pull it out and try again. Do not force the drive into the drive bay.

NOTICE: Be sure that the screws are set straight into the holes. Do not try to tighten the screws if they are angled into the holes. If the screws do not tighten easily, remove them and try again. Do not overtighten the screws.

Gently push the hard-disk drive in its drive carrier into the drive bay until the carrier door is flush with the computer case. Replace the screws you removed in step 4.

7. Turn on the computer.
8. Partition and format the drive as described in “Partitioning and Formatting the Hard-Disk Drive” in Chapter 4.
9. Install the operating system on the drive.

For instructions, see Chapter 4, “System Software Solutions.”

10. Test the drive by running the **IDE Devices** device group tests in the Dell Diagnostics.

For instructions, see “Running the Dell Diagnostics” in Chapter 3.

Returning a Hard-Disk Drive to Dell

If you need to return your hard-disk drive, you must ship it to Dell in its original foam packaging (see Figure 2-7). Otherwise, the hard-disk drive may be damaged while in transit.

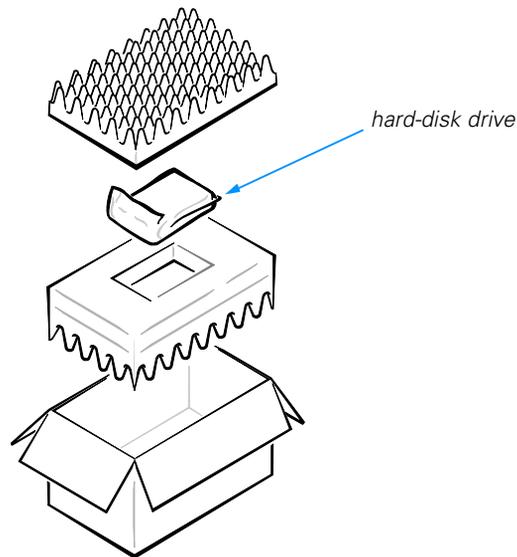


Figure 2-8. Repackaging the Hard-Disk Drive

Installing a Second Hard-Disk Drive

For instructions on installing a second hard-disk drive in the media bay, refer to the documentation that came with the drive.

Installing Memory Modules

Memory modules for your computer are available in 32-, 64-, 128-, 192-, and 256-MB sizes.



NOTE: *Your computer has two memory module sockets, labeled “DIMM A” and “DIMM B.” You can install all sizes of memory modules you purchase from Dell (but which Dell does not install), except the 192-MB memory module, in either socket. If you purchase a non-Dell-installed 192-MB memory module, you must install it in the socket labeled “DIMM B.”*

To install memory module(s), perform the following steps.



CAUTION: Before working inside your computer, read “Protecting Against Electrostatic Discharge” in the “Safety Instructions” of this guide.

NOTICE: Do not install or remove a memory module when the computer is turned on or in save-to-disk suspend mode.

1. Save and close any open files, exit any open application programs, and shut down the computer. Then turn off your any peripherals, and disconnect them from their electrical outlets.
2. If the computer is docked, undock it.

For instructions, see your *Advanced Port Replicator User's Guide*.

3. Disconnect the AC adapter and any attached peripherals, including telephone or telecommunication lines, from the computer.
4. Remove the battery from the battery bay or the media bay.
5. Close the display, turn the computer upside down, and remove the memory module cover.

Locate the small rectangular indentation at one end of the memory module cover. Place the tip of your finger under the cover by the indentation and firmly lift it up. When the door pops up, lift it up to remove it and expose the memory modules underneath it.

NOTICE: Ground yourself by touching an unpainted metal surface of a connector on the back of the computer. While you work, periodically touch the connector to dissipate any static electricity that might harm internal components.

6. If you are *replacing* a memory module, remove the old one.

Carefully spread apart the *inner tabs* of the memory module socket just far enough for the memory module to disengage from the socket (it should pop up slightly). Then lift the memory module away from the socket (see Figure 2-9).

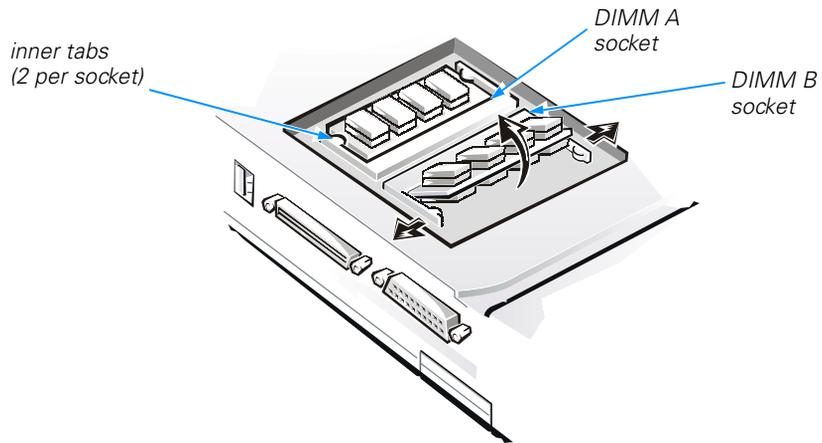


Figure 2-9. Removing a Memory Module

7. Ground yourself, and unpack the memory module from the memory upgrade kit.
8. Install the new memory module into the appropriate socket.

The socket labeled “DIMM A” should be populated before the socket labeled “DIMM B.” If you only have one memory module, you should install it in the “DIMM A” socket (see Figure 2-9).

Memory modules are keyed, or designed to fit into their sockets in only one direction. The slots on the system board are notched so that the memory module can be firmly seated only one way.

- a. Align the memory module’s edge connector with the slot in the center of the memory module socket.
- b. With the module at a 45-degree angle, press the memory module’s edge connector firmly into the memory module socket.
- c. Pivot the memory module down until it clicks into place.
- d. If you do not hear a click as each end of the memory module snaps into the tabs, remove the memory module and reinstall it.

9. Replace the memory module cover:
 - a. Set the memory module cover loosely over the opening, making sure that the tabs on the bottom of the cover catch in the slots on either side of the opening.
 - b. Slide the cover into place and press down on it until you hear it click.

NOTICE: After installation, if the memory module cover does not fit or is difficult to close, you may have installed the memory modules improperly into the wrong slots. Remove the memory modules and reinstall them. Do not force the memory module cover to close because you may damage your computer.

10. Reconnect your computer and peripherals to their electrical outlets and turn them on.

As the computer boots, it detects the presence of additional memory and automatically updates the system configuration information.

11. In one of the following ways, verify that the computer recognizes the newly installed memory:

- Click the **Start** button, point to **Settings**, click **Control Panel**, and double-click the **System** icon. The amount of memory installed in the computer is displayed in the lower-right corner of the **General** tab window.
- Enter the System Setup program to verify that the **System Memory** option reflects the additional memory.

To enter the System Setup program, press <Fn><F1> on the computer's keyboard (or press <Scroll Lock><F1> on an external keyboard if the **External Hot Key** option is enabled in the System Setup program).

If the total amount of random access memory (RAM) displayed is incorrect, the memory module(s) may not be installed properly. Repeat steps 1 through 10 until the memory total is correct.

12. Run the **System Memory** device group of the Dell Diagnostics to confirm that all installed memory modules are operating correctly.

For instructions, see "Running the Dell Diagnostics" in Chapter 3.

13. Use the save-to-disk suspend (S2D) utility to update the S2D partition on your hard-disk drive.



NOTE: The S2D partition receives the system data transferred during save-to-disk suspend mode.

For instructions, see "Save-to-Disk Suspend Utility" in Chapter 4.

Port Replicator

If you purchased a port replicator from Dell, see the documentation that came with the port replicator for instructions on its use.

Connecting Other External Devices

You can connect a variety of external devices to your computer. For instructions, refer to the section titled “Connecting External Devices” in the system *Help*. To open the *Help*, click the **Start** button, point to **Programs—> Dell Documents**, and click **Dell Inspiron 3700 System Help**.



CHAPTER 3

Basic Troubleshooting

This chapter guides you through some initial checks and procedures that can solve basic computer problems. It also provides detailed troubleshooting information and procedures to solve more complex problems. Complete the checks in this chapter before you call Dell for technical assistance; even if these checks do not provide an immediate solution, they can help technicians help you diagnose and fix the problem.



NOTE: When you see the question “Is the problem resolved?” in a troubleshooting procedure, repeat the operation that caused the problem to see if it still occurs.



CAUTION: The only time you should ever access the inside of your computer is when you are installing memory modules.



CAUTION: To help prevent possible damage to the system board, wait 5 seconds after turning off the computer before you disconnect a peripheral device or remove a memory module.

Checking the Basics

To perform an initial check of your computer, perform the following steps.



NOTE: If your computer is wet or damaged, refer to “Troubleshooting a Wet Computer” or “Troubleshooting a Damaged Computer” found later in this chapter.

1. If the problem you are experiencing began after making a change to your computer, such as installing new hardware or software, undo the change if possible.

If the problem is resolved, check any documentation that came with the option you attempted to install or that describes the change you made. In particular, read any text files (such as **readme.txt**) included with the software package or hardware product; such files contain information that updates or supplements the documentation for the software or hardware. Typically, readme files provide installation information, describe new product enhancements or corrections that have not yet been documented, and list known problems.

If you were trying to install new hardware, double-check configuration settings and available system resources. Refer to the documentation that accompanied the hardware device for more information. Also make sure you changed the appropriate settings in the System Setup program for the system's new hardware configuration (refer to Appendix B, "Using the System Setup Program").

If you need technical assistance, contact the product manufacturer or the company from whom you purchased the product.



NOTE: DellWareSM products are supported by the item's manufacturer. To receive product support information, refer to the manufacturer's documentation that accompanied the item.

2. Perform the steps described in the next subsection, "Checking Connections."
3. Check the items listed in "Environmental Factors" found later in this chapter.
4. For power problems, refer to "Power" found later in this chapter.
5. Check the boot routine indications in Table 3-1.



NOTE: The boot routine is the operating system's attempt to load its files into memory from the boot-up sector on the hard-disk drive or bootable diskette.

6. If you see an error message or flash code, refer to Appendix C, "Error Messages and Flash Codes."
7. If appropriate, refer to the subsections titled "Monitor," "Speakers," "Modem," and "Drives" found later in this chapter.
8. Verify that the settings in the System Setup program match your computer's configuration as explained in Appendix B, "Using the System Setup Program."
9. Use the Dell Diagnostics to check your computer (refer to "Running the Dell Diagnostics" found later in this chapter).
10. If the problem persists, refer to Chapter 5, "Getting Help," for instructions on obtaining technical assistance.

Checking Connections

Loose or improperly connected cables are likely sources of problems for your computer, external monitor, or other peripherals (such as a printer, external keyboard, or mouse). A quick check of all cable connections can easily solve these problems. If the connector has two small screws, make sure the screws are tight. In addition, check for damaged or frayed cables and for bent pins on connectors.



NOTE: See the "System Features" section of the system Help for the location of your computer's external connectors and controls.

Be sure the following items are properly connected or installed:

- AC adapter and AC power cable
- Second battery or any other optional device installed in the media bay
- Cables that connect external devices through the input/output (I/O) connectors and ports on the computer.

Environmental Factors

A number of external factors, including temperature extremes and humidity, magnetic influences, sources of electromagnetic interference (EMI), and poor input power or signal quality, can interfere with the performance of your computer and attached devices. Monitors are especially susceptible to these environmental factors. The following items can adversely affect the performance of a computer:

- Inadequate ventilation from operating the computer in a confined space, such as a desk enclosure
- Direct sunlight causing the computer to overheat
- Line noise or power drops and surges from electrical outlets due to poor wiring
- Line noises or surges through telephone lines
- High-voltage electrical appliances on the same circuit or operating in close proximity to the computer
- Speakers, especially subwoofer, or telephone too close to the monitor, generating magnetic fields that distort the display image
- Fluorescent lights causing display flickering or distortion
- Electrical extension cords and keyboard and mouse extension cables
- Too many devices on a power strip or multiple power strips from one electrical outlet
- Electrical conduits in an adjoining wall or elevators on the other side of the wall
- Large metal beams inside the wall behind the computer

If removing potential sources of problems does not help, try moving the computer.

Power

If you are experiencing problems with power to your computer, perform the following tasks:

- Check the computer's power indicator. When lit, the power indicator verifies that the power supply is operating.
- If your computer is connected to a power strip, turn the power strip off and then on again.

- Plug the computer directly into an electrical outlet, bypassing any power protection devices.
- Plug a device, such as a lamp that you know works, into the electrical outlet to make sure the power source is okay.

Modem

NOTICE: Connect the modem to an analog line only. Using a nonanalog line, such as a digital or private branch exchange (PBX) line, will damage the modem.



NOTE: If your modem can dial and connect to one Internet service provider (ISP) or to a fax machine, your modem is functioning properly. For assistance, contact the ISP to which you cannot connect.

If you are experiencing problems with a modem, perform the following checks:

- If you have any other telephone devices plugged into this line, such as answering machines, dedicated fax machines, or line splitters, then bypass them and plug the modem cable directly into the telephone connector on the wall.
- Reseat the cable connections.
- Try a different cable; if you are using a cable that is 10 feet or more in length, try a shorter one.
- Disconnect the cable from the modem and plug it directly into a telephone. Listen for a dial tone.
- Low connection speeds can be caused by line noise. If you have persistent problems, contact your telephone company to check for data noise and imbalanced lines.

Drives

If you have diskette drive problems, perform the following checks:

- Make sure the diskette is not write-protected if you are trying to copy data to it.
- Try a different diskette in the drive. If the new diskette works, the original one may be defective.
- Check drive operations at the MS-DOS prompt in the Dell Diagnostics (refer to “Running the Dell Diagnostics” found later in this chapter) and the Windows operating system.
- Check the settings on the **Page One** submenu of the System Setup program as described in Appendix B, “Using the System Setup Program.”
- Run the **Diskette** device group as described in “Running the Dell Diagnostics” found later in this chapter.

If you have CD-ROM or DVD-ROM drive problems, perform the following checks.



NOTE: Inconsistencies in the manufacturing of CD-ROM media may cause some higher-speed CD-ROM drives to vibrate more than others. Such vibration and associated noise do not indicate a defect in the drive or the CD.

- Double-click **My Computer** and check to see if the drive is recognized by the computer. Most of the common boot sector viruses cause the CD-ROM or DVD-ROM drive to “disappear.” Use virus-scanning software (if Dell installed Windows 98 on your computer, you should already have virus-scanning software) to check for and remove any viruses.
- Clean the disc with a soft, lint-free cloth and isopropyl alcohol.
- Clean the drive as described in the next subsection, “Cleaning Diskette Drives.”
- Try another CD or DVD title.



NOTE: Because of different conventions currently used in the industry, not all DVD titles work in all DVD-ROM drives.

- Run the **IDE Devices** device group as described in “Running the Dell Diagnostics” found later in this chapter.
- Refer to “Troubleshooting the CD-ROM or DVD-ROM Drive” found later in this chapter for further troubleshooting information.

If you have hard-disk drive problems, perform the following checks:

- For Windows 98, run the **ScanDisk** utility by clicking the **Start** button, pointing to **Programs—> Accessories—> System Tools**, and clicking **ScanDisk**.
- For Windows NT, run the error-checking utility by opening the property sheet of the affected volume(s) and clicking **Check Now** in the **Error-checking** section of the **Tools** tab.
- Run the **IDE Devices** device group as described in “Running the Dell Diagnostics” found later in this chapter.
- Check the settings on the **IDE Configuration** submenu of the System Setup program as described in Appendix B, “Using the System Setup Program.”

Cleaning Diskette Drives

You can clean a diskette drive using a commercially available cleaning kit. These kits contain pretreated diskettes to nonabrasively remove contaminants that accumulate during normal operation.

If the kit does not contain instructions, insert a pretreated diskette into the drive and turn on the system. After 20 or 30 seconds, remove the diskette from the drive.

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

Look and Listen

Looking at and listening to your computer is important in determining the source of a problem. Look and listen for the indications described in Table 3-1.

If the problem is still not resolved, see the next subsection, “System Setup Program Options.”

Table 3-1. Boot Routine Indications

Look for:	Action
An error message	See Appendix C, “Error Messages and Flash Codes.”
The power indicator	If the computer’s power status indicator does not come on, see “Troubleshooting a Power Failure” found later in this chapter.
The keyboard status indicators	Press the <Num Lock> key, the <Caps Lock> key, and the <Scroll Lock> key to toggle their respective status indicator. If the indicators do not light up, run the PC-AT Compatible Keyboards device group in the Dell Diagnostics (for instructions, see “Running the Dell Diagnostics” found later in this chapter).
The diskette-drive access indicator	The diskette-drive access indicator lights up when data is accessed on the diskette drive. You can test this indicator by inserting a diskette into the drive, typing <code>dir a:</code> at an MS-DOS prompt, and pressing <Enter>. If the diskette-drive access indicator does not light up, see “Troubleshooting the Diskette Drive” found later in this chapter.
The CD-ROM/hard-disk drive access indicator	The CD-ROM/hard-disk drive access indicator lights up when data is accessed on the CD-ROM drive or the hard-disk drive. You can test this indicator by typing <code>dir c:</code> at an MS-DOS prompt and pressing <Enter>. If the CD-ROM/hard-disk drive access indicator does not light up, see “Troubleshooting the Hard-Disk Drive” or “Troubleshooting the CD-ROM or DVD-ROM Drive” found later in this chapter.
A series of flashes	See Appendix C, “Error Messages and Flash Codes.”
An unfamiliar constant scraping or grinding sound when a drive is accessed	Make sure the sound is not caused by the application program that is running. The sound could also be caused by a hardware malfunction. See Chapter 5, “Getting Help,” for instructions on obtaining technical assistance from Dell.
The absence of a familiar sound	When you turn on the computer, you can hear the hard-disk drive spin up, and the computer tries to access the boot files from the hard-disk drive or the diskette drive. If your computer does not boot, call Dell for technical assistance. (See Chapter 5, “Getting Help,” for instructions.) Otherwise, see “Running the Dell Diagnostics” found later in this chapter.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

System Setup Program Options

You can easily correct certain computer problems by verifying the settings for System Setup program options. When you boot the computer, it compares the system configuration information with the current hardware configuration. If the computer’s

hardware configuration doesn't match the information recorded by the System Setup program options, an error message may appear on the display.

To fix this problem, correct the appropriate options in the System Setup program. See Appendix B, "Using the System Setup program," for detailed information about the System Setup program and its options.

If, after checking the setup options, you have not resolved the problem, see "Running the Dell Diagnostics" found later in this chapter.

Finding Software Solutions

Because most computers have several application programs installed in addition to the operating system, isolating a software problem can be confusing. Software errors can also appear to be hardware malfunctions at first. Software problems can result from the following circumstances:

- Improper installation or configuration of a program
- Input errors
- Drivers that may conflict with certain application programs
- Memory conflicts resulting from the use of terminate-and-stay-resident (TSR) programs, such as drivers
- Interrupt conflicts between devices

You can confirm that a computer problem is caused by software by first running the **System Board Devices** device group as described in "Running the Dell Diagnostics" found later in this chapter. If all tests in the device group complete successfully, the error condition is most likely caused by software.

The following subsections provide general guidelines for analyzing some software problems. For detailed troubleshooting information on a particular program, see the documentation that accompanied the software or consult the support service for the software.

Installing and Configuring Software

When you obtain software, check it for viruses using virus-scanning software before installing it on the computer's hard-disk drive. Viruses can quickly use all available system memory, damage and/or destroy data stored on the hard-disk drive, and permanently affect the performance of the programs they infect. Several commercial virus-scanning programs are available for purchase, and most bulletin board services (BBSs) archive freely distributed virus-scanning programs that you can download with a modem.

Before installing a program, read its documentation to learn how the program works, what hardware it requires, and what its defaults are. A program usually includes installation instructions in its accompanying documentation and a software installation routine on its program diskettes.

The software installation routine assists you in transferring the appropriate program files to the computer's hard-disk drive. Installation instructions may provide details about how to configure the operating system to successfully run the program. Always read the installation instructions before running a program's installation routine. If you are instructed to modify the start-up files, see the documentation that came with the operating system for instructions.

When you run the installation routine, be prepared to respond to prompts for information about how the computer's operating system is configured, what type of computer you have, and what peripherals are connected to the computer.

Start-Up Files

Whenever you start or reboot the computer, the operating system executes commands from its start-up files.

These files contain commands that automatically configure the operating system by setting system parameters, starting memory-resident programs, and loading device driver software. If you experience program conflicts or memory error messages, check the commands for memory-resident programs in the start-up files of the operating system. (For information on start-up files, see the documentation that came with the operating system). If a program or peripheral does not work correctly, check the product's documentation to see if you need to modify these files.

Using Software

The following subsections discuss errors that can occur while using software.

Error Messages

Error messages can be produced by an application program, the operating system, or the computer. Appendix C, "Error Messages and Flash Codes," discusses the error messages generated by the computer. If you receive an error message not listed in Appendix C, check the operating system or application program documentation.

Input Errors

If a specific key or set of keys is pressed at the wrong time, a program may give you unexpected results. See the documentation that came with the application program to make sure the values or characters you are entering do not conflict with the application program you are using.

Make sure the operating system is compatible with the programs you use. Keep in mind that whenever you change the parameters of the computer's operating system, you may affect the successful operation of the programs. Sometimes, after modifying the operating system, you may need to reinstall a program that no longer runs properly.

Memory-Resident Programs

There are a variety of utilities and supplementary programs that can be loaded either when the computer boots or from an operating system prompt. These programs are designed to stay resident in system memory and thus always be available for use. Because they remain in the computer's memory, memory conflicts and errors can result when other programs require use of all or part of the memory already occupied by these TSR programs.

Typically, the operating system's start-up files contain commands to start TSR programs when you boot the computer. If you suspect that one of these TSR programs is causing a memory conflict, remove the commands that start them from the start-up file. If the problem you were experiencing does not recur, one of the TSR programs probably created the conflict. Add the TSR commands back into the start-up files one at a time until you identify which TSR program is creating the conflict.

Program Conflicts

Some programs may leave portions of their setup information behind, even though you have exited from them. As a result, other programs cannot run. Rebooting the computer can confirm whether or not these programs are the cause of the problem.

Other programs use specialized subroutines called *drivers* that can cause problems in the computer. For example, a variation in the way the data is sent to an external monitor may require a special screen driver program that *expects* a certain kind of video mode or monitor. In such cases, you may have to develop an alternative method of running that particular program—for example, the creation of a boot file made especially for that program. For help with this situation, call the support service offered by the manufacturer of the software you are using.

Avoiding Interrupt Assignment Conflicts

Problems can arise if two devices attempt to use the same interrupt request (IRQ) line. To avoid this type of conflict, check the documentation for the default IRQ line setting for each installed device. Then consult Table 3-2 to configure the device for one of the available IRQ lines.



NOTES: Installed devices cannot share the same COM port address. The default address of the computer's serial port is COM1.

*To view IRQ line assignments in the Microsoft Windows 98 operating system, click the **Start** button, point to **Settings**, and click **Control Panel**. Double-click the **System** icon. Select the **Device Manager** tab, and then double-click **Computer**.*

Table 3-2. IRQ Line Assignments

IRQ Line	Used/Available
IRQ0	Reserved; generated by the system timer
IRQ1	Reserved; generated by the keyboard controller to signal that the keyboard output buffer is full
IRQ2	Reserved; generated internally by the interrupt controller to enable IRQ8 through IRQ15
IRQ3	Available for use by a PC Card unless the integrated serial port or infrared port is configured for COM2 or COM4
IRQ4	Available for use by a PC Card unless the integrated serial port or infrared port is configured for COM1 (the default) or COM3
IRQ5	Available for use by the audio controller
IRQ6	Generated by the diskette drive controller to indicate that the diskette drive requires the attention of the microprocessor
IRQ7	Available for use by a PC Card or audio controller if the parallel port is disabled
IRQ8	Reserved; generated by the system I/O controller's RTC
IRQ9	Reserved; generated by the video controller
IRQ10	Available for use by a PC Card or audio controller unless the C/Port Family APR or C/Dock Family Expansion Station is attached
IRQ11	Generated by USB, PC Card, and audio controllers; available for use by a PC Card
IRQ12	Reserved; generated by the keyboard controller to indicate that the output buffer of the DualPoint integrated pointing device or the external PS/2 mouse is full
IRQ13	Reserved; generated by the math coprocessor
IRQ14	Reserved; generated by the hard-disk drive to indicate that the drive requires the attention of the microprocessor
IRQ15	Reserved; generated by CD-ROM drive in the media bay to indicate that the drive requires the attention of the microprocessor

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Troubleshooting Procedures

This section provides troubleshooting procedures for integrated components (such as the display) and for external devices that connect to the computer (such as an external monitor). Before performing any of the procedures in this section, see “Checking the Basics” found earlier in this chapter and read the safety instructions at the front of this guide. Then perform the appropriate troubleshooting procedure for the component or equipment that is malfunctioning.



NOTE: When you see the question “Is the problem resolved?” in a troubleshooting procedure, perform the operation that caused the problem to see if the problem still occurs.

Troubleshooting a Wet Computer

Liquids, spills and splashes, rain, and excessive humidity can cause moisture damage to the computer. If the computer gets wet or if condensation forms on the computer because of humid conditions, perform the following steps.



CAUTION: Perform step 1 of the following procedure only after you are certain that it is safe to do so. If the computer is connected to an electrical outlet, Dell recommends turning off AC power at the circuit breaker before attempting to remove the power cables from the electrical outlet. Use the utmost caution when removing wet cables from live power.

1. Turn off the computer and disconnect it from the AC adapter. Then disconnect the AC adapter from the electrical outlet. Turn off any attached peripherals and disconnect them from their power sources and then from the computer.
2. Ground yourself by touching one of the metal connectors on the back of the computer.
3. If the media bay is wet, remove the device from the bay. If the PC Card slot is wet, remove any PC Cards. Put the device and cards in a safe place to dry.
4. Remove any installed batteries.

Wipe off each battery and store it in a safe place to dry.

5. Remove the hard-disk drive.

For instructions, refer to “Installing an Internal Hard-Disk Drive” in Chapter 2.

6. Remove the memory module(s).

For instructions, refer to “Installing Memory Modules” in Chapter 2.

7. Open the display, and place the computer across two books or similar props to let air circulate all around it. Let the computer dry for at least 24 hours.

Place the computer in a dry area at room temperature. Do not use artificial means to speed up the drying process.



CAUTION: Before continuing with the remainder of this procedure, verify that the computer is thoroughly dry.

8. Ground yourself by touching one of the unpainted metal connectors on the I/O panel.
9. Replace the memory module(s).
10. Replace the memory module cover.
11. Reinstall the hard-disk drive.
12. Reinstall the media bay and PC Cards that you removed in step 3.
13. Replace any batteries that you removed in step 4.
14. Reconnect the computer and peripherals to an electrical outlet and turn them on.
15. Does the computer work properly?

Yes. The problem is resolved.

No. If the computer is able to boot, run the Dell Diagnostics to identify computer damage. If the computer is unable to boot, see “Troubleshooting a Power Failure” found later in this section. If you cannot identify the damaged component(s), call Dell for technical assistance. (See Chapter 5, “Getting Help,” for instructions.)

Troubleshooting a Damaged Computer

If the computer is dropped or damaged, perform the following steps:

1. Save and close any open files, exit any open application programs, and shut down the computer.
2. Disconnect the computer from the electrical outlet. Then disconnect the AC adapter from the electrical outlet. Turn off any attached peripherals and disconnect them from the electrical outlet and then from the computer.
3. Ground yourself by touching one of the metal connectors on the back of the computer.
4. Remove any installed batteries or other devices from the media bay.
5. Remove the hard-disk drive.

For instructions, refer to “Installing an Internal Hard-Disk Drive” in Chapter 2.

6. Remove the memory module cover and the memory module(s).
For instructions, refer to “Installing Memory Modules” in Chapter 2.
7. Reinstall the memory modules, making sure to seat them properly.
8. Replace the memory module cover.
9. Reinstall the hard-disk drive.
10. Verify that any installed PC Cards are properly seated in the PC Card connectors.
11. Reinstall the battery or other device(s) removed from the media bay in step 4. Verify that the device(s) is seated properly.
12. Reconnect the computer and peripherals to the electrical outlet and turn them on.
13. Run the Dell Diagnostics to verify that the computer is operating properly. (For instructions, see “Running the Dell Diagnostics” found later in this chapter.)
14. If the computer does not operate properly, make a copy of the Diagnostics Checklist found in Chapter 5 and fill it out. Then call Dell for technical assistance. (See Chapter 5, “Getting Help,” for instructions.)

Troubleshooting a Power Failure

Occasionally, you may experience a power failure in all or part of the computer. A total power failure is indicated by the absence of electrical activity (such as status indicators and sounds) from the keyboard, display, hard-disk drive, and diskette drive. In a partial power failure, one or more of these indicators shows that there is power to a part of the computer.

To determine if there is any power to the computer, make a copy of the Diagnostics Checklist found in Chapter 5 and fill it out as you perform the following steps:

1. Connect the AC adapter to the computer and to an electrical outlet.
2. Remove all peripherals, including internal devices such as the diskette drive, hard-disk drive, and battery.
3. Try turning on the computer.
4. Does the computer turn on properly?
Yes. The problem is resolved.
No. Go to Step 5.
5. Turn off the computer. Does the power status indicator light up?
Yes. Go to step 6.
No. Go to step 7.

6. Remove any installed batteries and disconnect the AC adapter. Then reinstall the batteries, reconnect the AC adapter, and turn on the computer. Does the power status indicator light up?

Yes. Go to step 8.

No. Go to step 7.
7. Turn off the computer, wait a few seconds, and then turn on the computer again. Does the power status indicator light up?

Yes. Your computer is receiving power. Go to step 8.

No. Your computer is not receiving power. Go to step 9.
8. Does the computer boot successfully?

Yes. The problem is resolved.

No. Go to step 9.
9. Reseat (remove and reinstall) any installed batteries, and check the AC adapter connection. Does the power status indicator light up?

Yes. The problem is resolved.

No. If the computer is powered by the AC adapter, see the next subsection, "Total Power Failure When Using the AC Adapter." If the computer is using battery power, see "Total Power Failure When Using a Battery" found later in this section.

Total Power Failure When Using the AC Adapter

If no signs of power are present in the computer when using the AC adapter, make a copy of the Diagnostics Checklist found in Chapter 5, "Getting Help," and fill it out as you perform the following steps:

1. Turn off the computer and peripherals and disconnect them from the electrical outlet. If you are using a surge protector, remove it.
2. Make sure the AC adapter is connected to the computer, and then verify that the power cable is firmly attached to the AC adapter and to the electrical outlet.

See "Checking Connections" found earlier in this chapter.
3. Does the LED on top of the AC adapter turn on?

Yes. Go to step 4.

No. The AC adapter may be defective. Go to step 5.
4. Turn on the computer. Does the power status indicator light up?

Yes. The problem is resolved.

No. Go to step 5.

5. Call Dell for technical assistance.

See Chapter 5, "Getting Help," for instructions.

Total Power Failure When Using a Battery

If an AC adapter is not connected to your computer, the computer's power source is its battery. If the computer does not turn on when a battery is installed, the battery's charge may be depleted. To troubleshoot this problem, make a copy of the Diagnostics Checklist found in Chapter 5 and fill it out as you perform the following steps:

1. Turn off the computer and peripherals. Disconnect the peripherals from the electrical outlet.
2. Reseat each installed battery by first removing and then replacing the battery in its bay.
3. Press the power button. Does the computer turn on?

Allow one minute for the computer to initialize its components before checking for signs of power.

Yes. Go to step 4.

No. Use the AC adapter to connect your computer to an electrical outlet. If the computer operates normally when using AC power, go to step 7. If the computer does not boot when using the AC adapter, see the preceding subsection, "Total Power Failure When Using the AC Adapter."
4. Is the battery status indicator blinking, indicating that the battery is charging?

Yes. Go to step 6.

No. Go to step 5.
5. Does the battery status indicator remain constantly lit (not blinking)?

Yes. Go to step 7.

No. The battery is defective. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)
6. Use the AC adapter to fully charge the battery.

For instructions, see the topic titled "Charging the Battery" in the system *Help*.
7. Does the battery status indicator remain constantly lit (not blinking), indicating that the battery is fully charged?

Yes. The problem is resolved. Turn on the computer.

No. You may have a defective battery. Go to step 8.
8. Disconnect the AC adapter. If a fully charged spare battery is available, install it in the computer.

9. Press the power button. Does computer turn on?

Yes. Your original battery is defective. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

No. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

No Power to a Part of the Computer

If the power status indicator shows that your computer is receiving power, but the display remains blank, part of your computer is probably not receiving power. To troubleshoot this problem, make a copy of the Diagnostics Checklist found in Chapter 5 and fill it out as you perform the following steps:

1. Turn off the computer and peripherals and disconnect them from the electrical outlet. Disconnect any attached peripherals from the computer.
2. Make sure that the AC adapter is connected to the computer and to an electrical outlet, or confirm that a fully charged battery is properly seated in the media bay.
3. Turn on the computer. Is the display on?

Allow 1 minute for the computer to initialize its components before checking for signs of power.

Yes. The entire computer is receiving power; the problem is resolved.

No. Adjust the brightness of the display. If the display still does not show an image, call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

Troubleshooting the Diskette Drive

During the power-on self-test (POST), the computer checks the diskette drive, comparing its characteristics with the system configuration information. (The diskette-drive access indicator blinks as the computer performs this check on a diskette drive.)

If the drive fails POST or if the access indicators do not appear, make a copy of the Diagnostics Checklist found in Chapter 5 and fill it out as you perform the following steps:

1. Save and close any open files, exit any open application programs, and shut down the computer.
2. Remove the diskette drive combination module from the media bay.
3. Reinstall the diskette drive.

4. Reboot the computer. Does the diskette-drive access indicator blink during the boot routine?
Yes. Go to step 6.
No. Go to step 5.
5. Remove and reinsert the diskette drive (or disconnect and reconnect the drive if used externally). Reboot the computer. Does the diskette-drive access indicator light up during the boot routine?
Yes. Go to step 6.
No. Go to step 9.
6. Does the computer display a drive error message?
Yes. See Table 3-2 for an explanation of the message, and then go to step 7.
No. Go to step 9.
7. Insert a bootable 1.44-megabyte (MB) diskette into the diskette drive and reboot the computer.
8. Does the diskette-drive access indicator blink during the boot routine, and does the drive boot the operating system?
Yes. The diskette drive problem has probably been resolved. If you continue to experience trouble, call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)
No. Go to step 9.
9. Call Dell for technical assistance.
See Chapter 5, "Getting Help," for instructions.

Troubleshooting the CD-ROM or DVD-ROM Drive

During POST, the computer checks the CD-ROM or DVD-ROM drive, comparing its characteristics with the system configuration information. (The CD-ROM/hard-disk drive access indicator blinks as the computer performs this check.)

If a failure occurs with the drive, make a copy of the Diagnostics Checklist found in Chapter 5 and fill it out as you perform the following steps:

1. Save and close any open files, exit any open application programs, and shut down the computer.
2. Remove the drive from the media bay.
3. Reinstall the drive.

4. Reboot the computer. Does the drive access indicator blink during the boot routine?

Yes. Go to step 6.

No. Go to step 5.
5. Remove and reinsert the drive. Reboot the computer. Does the drive access indicator blink during the boot routine?

Yes. Go to step 6.

No. Go to step 10.
6. Remove the hard-disk drive and boot the computer from a bootable CD. Does the drive access indicator blink?

Yes. Go to step 7.

No. Go to step 10.
7. Reinstall the hard-disk drive. Then check the **config.sys** file (in Windows 98, check the CD-ROM or DVD-ROM drive configuration in the **Settings** folder). Is the CD-ROM or DVD-ROM driver installed?

Yes. Go to step 8.

No. Load the driver, and return to step 1 to begin this procedure again. (To load the driver, use the *System Software* CD you received with your Dell computer.)
8. Insert a bootable diskette into drive A and reboot the computer.
9. Type `d:` and press <Enter>. Then type `dir` and press <Enter>. Does MS-DOS display the root directory contents for drive D?

Yes. The problem is resolved.

No. Go to step 10.
10. Insert your Dell Diagnostics diskette into drive A and reboot the computer. Then run the **IDE Devices** device group. Does your CD-ROM drive pass all the tests?

Yes. Return to step 1 and perform this troubleshooting procedure again. If you continue to experience trouble, call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

No. Go to step 11.
11. Call Dell for technical assistance.

See Chapter 5, "Getting Help," for instructions.

Troubleshooting the Hard-Disk Drive

During POST, the computer checks the hard-disk drive, comparing its characteristics with the system configuration information. (The drive access indicator, located to the right of the display latch, blinks as the computer performs this check.) If a failure occurs with the drive, make a copy of the Diagnostics Checklist found in Chapter 5 and fill it out as you perform the following steps:

1. Shut down the computer.
2. Reboot the computer. Does the drive access indicator blink during the boot routine, and does the drive boot the operating system?

Yes. If a message appears on the display, see Appendix C, "Error Messages and Flash Codes," for an explanation of the message and possible corrective actions. Then go to step 7.

No. Go to step 3.

3. Insert a bootable diskette into drive A and reboot the computer.
4. Type `c:` and press <Enter>. Then type `dir` and press <Enter>. Does MS-DOS display the root directory contents for drive C?

Yes. Go to step 6.

No. Go to step 5.

5. If your hard-disk drive has more than one logical drive, type `d:` and press <Enter>. Then type `dir` and press <Enter>. Does MS-DOS display the root directory contents for drive D?

Yes. You may have a corrupted boot sector or file allocation table (FAT) on drive C. Go to step 9.

No. Go to step 8.

6. Rename your **autoexec.bat** and **config.sys** files, remove the operating system diskette from drive A, and reboot the computer. Does the operating system load now?

Yes. You have an error in your **autoexec.bat** or **config.sys** file. Use a text editor to examine the contents of these files and locate the error. For information on the correct syntax for commands in these files, see the documentation that accompanied your operating system.

No. Go to step 7.

7. Insert your diagnostics diskette into drive A and reboot the computer. Then run the **IDE Devices** device group. Does your drive pass all the tests?

Yes. Go to step 8.

No. Go to step 9.

8. Replace your diagnostics diskette with the operating system diskette, and reboot the computer. Does the operating system load now?

Yes. The hard-disk drive may contain a corrupted operating system or it may have bad sectors. Reinstall the operating system as described in the documentation that came with it. If reinstalling the operating system does not correct the problem, go to step 9.

No. Go to step 9.

9. Call Dell for technical assistance.

See Chapter 5, "Getting Help," for instructions.

Troubleshooting an External Keyboard

When you attach an external keyboard, the integrated keyboard remains fully functional. During POST, the computer checks whether an external keyboard is connected; if it is, the computer recognizes both the integrated keyboard and the external keyboard. If an attached external keyboard does not work when you boot the computer, make a copy of the Diagnostics Checklist found in Chapter 5 and fill it out as you perform the following steps:

1. Turn off the computer, and then remove the keyboard cable and check it for bent or broken pins.

Yes. If you see bent pins and they can be straightened, straighten them and go to step 2. If they cannot be straightened, or are broken, you need a new keyboard.

No. Go to step 2.

2. Reconnect the keyboard to the computer.
3. Make sure the cable from the external keyboard is firmly connected to the keyboard/mouse connector on the back of the computer. (See "Checking Connections" found earlier in this chapter.)
4. Turn on the computer.
5. If you are using a keyboard that can be configured with various switch settings, make sure the switch is set to **PS/2**, **Enhanced XT/AT**, or **PC/AT**.

The switch settings are usually on the bottom of the keyboard, sometimes behind a panel tab. Refer to the documentation that came with the keyboard for more information.

6. Turn off the computer, wait one minute, and then turn it on again. During the boot routine, do the Num Lock, Caps Lock, and Scroll Lock indicators on the external keyboard blink momentarily?

Yes. Go to step 7.

No. You may have a defective keyboard. Go to step 10.

7. Does the computer recognize the external keyboard?

Use the external keyboard to type some characters. Do they appear on the display?

Yes. The problem is resolved.

No. Go to step 8.

8. Turn off the computer and disconnect the external keyboard from the computer.

9. Turn on the computer. Does the computer recognize the integrated keyboard?

Allow one minute for the computer to initialize its components. Then use the computer's integrated keyboard to type some characters. Do the characters appear on the display?

Yes. The external keyboard may be defective. Run the **PC-AT Compatible Keyboards** device group in the Dell Diagnostics. If you cannot isolate the problem after running the diagnostics, call Dell for technical assistance.

No. Go to step 10.

10. Call Dell for technical assistance.

See Chapter 5, "Getting Help," for instructions.

Troubleshooting Memory

During POST, the computer checks the computer's memory, and then writes to and reads from the number of available bytes to ensure proper operation. If the memory count displayed is less than the amount installed, make a copy of the Diagnostics Checklist found in Chapter 5 and fill it out as you perform the following steps:

1. Reboot the computer. Does the random-access memory (RAM) count displayed correctly match the actual amount of memory installed in the computer?

Yes. The computer needed to update the memory; the memory check phase is okay now.

No. Go to step 2.

2. Save and close any open files, exit any open application programs, and remove any installed batteries.
3. Turn off the computer and disconnect it from the AC adapter. Then disconnect the AC adapter from the electrical outlet. Turn off any attached peripherals, and disconnect them from their power sources and then from the computer.
4. Ground yourself by touching one of the metal connectors on the back of the computer.

5. Turn the computer over and remove the memory module cover and the memory modules.

Refer to “Installing Memory Modules” in Chapter 2.

6. Install the new memory module(s).

Refer to “Installing Memory Modules” in Chapter 2.

7. Replace the memory module cover.

8. Reboot the computer, and press <F2> when prompted to enter the System Setup program.

9. Call Dell for technical assistance.

See Chapter 5, “Getting Help,” for instructions.

Troubleshooting the Display

If the computer is receiving power, but nothing appears on your display (such as light, text, or graphics) or the display image does not appear as you would expect, make a copy of the Diagnostics Checklist found in Chapter 5 and fill it out as you perform the following steps.



NOTE: Extended graphics array (XGA) displays support 1024 x 768 pixels, and super extended graphics array (SXGA) displays support 1280 x 1024 pixels. If your application program uses a higher resolution, you must attach an external video graphics array (VGA) monitor to your computer.

1. If the computer is running, press any key on the integrated keyboard. Is the full display readable?

Yes. The computer was in standby or suspend mode. The problem is resolved.

No. Go to step 2.

2. Is an external monitor connected to the computer?

Yes. Go to step 3.

No. Go to step 4.

3. Press the <Fn><F8> key combination. Is the full display readable?

Yes. The problem is resolved.

No. Go to step 8.

4. Turn off the computer and any attached peripherals. Disconnect all peripherals from the computer.

5. Make sure the AC adapter is firmly connected to the computer and to an electrical outlet, or verify that a fully charged battery is properly seated in its bay.

6. Turn on the computer. Is the display on?
Allow one minute for the computer to initialize its components.
Yes. Go to step 7.
No. Go to step 9.
7. Press the <Fn> down-arrow or <Fn> up-arrow key combination to adjust the brightness. Is the full display readable?
Yes. Go to step 8.
No. Go to step 9.
8. Has an error message or flash code appeared?
Yes. Refer to Appendix C, "Error Messages and Flash Codes," to find the message or flash code, along with its explanation. If you can't find the message or code, call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)
No. If you still have a display problem but the display is not completely blank, run the Video device group in the Dell Diagnostics. Then call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)
9. Turn off your computer and connect an external monitor to the computer.
10. Turn on the computer and the monitor and adjust the monitor's brightness and contrast controls. Is the monitor readable?
Yes. The computer's display may be defective. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)
No. The computer's video controller on the system board may be defective. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

Troubleshooting an External Monitor

During POST, the computer checks to see if an external monitor is attached to the computer. If no image appears on the external monitor when the computer boots, make a copy of the Diagnostics Checklist found in Chapter 5, "Getting Help," and fill it out as you perform the following steps:

1. Press the <Fn><F8> key combination on the integrated keyboard several times. Does an image appear on the external monitor?
Yes. The problem is resolved.
No. Go to step 3.
2. Make sure the external monitor's video cable is firmly connected to the computer's external video connector, and then verify that the monitor's power cable (if it has one) is firmly plugged into an electrical outlet. Make sure the monitor is turned on.

3. Check the monitor cable for bent pins.
4. Turn off the computer, wait a minute, and then turn the computer back on. Adjust the monitor's brightness and contrast controls. Is the monitor readable?

Allow one minute for the computer to initialize its components.

Yes. The problem is resolved.

No. Go to step 6.

5. Raise your computer's display into viewing position, if necessary, and press <Fn><F8> to switch the video image from the external monitor to the display.
6. Press the <Fn> down-arrow or <Fn> up-arrow key combination to adjust the brightness. Is the full display readable?

Yes. The external monitor may be defective. Go to step 8.

No. The video controller on the system board may be defective. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

7. Turn off the computer and any attached peripherals. Disconnect all peripherals from the computer. Attach another external monitor to the computer.

If you do not have another external monitor, call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

8. Reboot the computer, and adjust the monitor's brightness and contrast. Is the monitor readable?

Allow one minute for the computer to initialize its components.

Yes. The original monitor is defective. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

No. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

Troubleshooting the Serial and Parallel Ports

This section provides a procedure for troubleshooting the computer's serial and parallel ports and any attached peripheral devices.

If a system error message indicates a port problem or if equipment connected to a port seems to perform incorrectly or not at all, the source of the problem may be any of the following:

- A faulty connection between the I/O port and the peripheral device
- Incorrect settings for Setup options
- Incorrect settings in the operating system's configuration files
- A faulty cable between the I/O port and the peripheral device
- A faulty peripheral device

- Faulty I/O port logic on the system board
- Conflicting COM port settings
- Lack of drivers

Troubleshooting the Basic I/O Functions

Make a copy of the Diagnostics Checklist found in Chapter 5, "Getting Help," and fill it out as you perform the following steps:

1. Check the settings for the **Serial Port** and **Parallel Mode** options in the **Page Two** menu of the System Setup program.

For information on the System Setup program, see Appendix B, "Using the System Setup Program." Are the communication port options set correctly for the peripheral devices connected to the computer?

Yes. Go to step 3.

No. Go to step 2.

2. Change the **Serial Port** and **Parallel Mode** options to the appropriate settings, and then reboot the system.

Is the problem resolved?

Yes. The problem is resolved.

No. Go to step 3.

3. Check the contents of your initialization and start-up files. (See "Installing and Configuring Software" found earlier in this chapter.)

Are the port configuration commands correct?

Yes. Go to step 5.

No. Go to step 4.

4. Change the necessary statements in the start-up files.

If the port problem is confined to a particular application program, see the application program's documentation for specific port configuration requirements.

Is the problem resolved?

Yes. The problem is resolved.

No. Go to step 5.

5. Insert your *System Software* CD into the CD-ROM drive, reboot the computer, and run the **Serial Ports** device group and/or the **Parallel Ports** device group in the Dell Diagnostics. (See “Running the Dell Diagnostics” found later in this chapter.)

The **Serial Ports** device group and the **Parallel Ports** device group check the basic functions of the system board’s I/O port logic. Also, if a parallel printer is connected to the parallel port, the **Parallel Ports** device group tests the communication link between the system board’s I/O port logic and the printer.

Do the tests complete successfully?

Yes. Go to step 6.

No. Call Dell for technical assistance. (See Chapter 5, “Getting Help,” for instructions.)

6. If the problem persists, go to “Troubleshooting a Parallel Printer” or “Troubleshooting a Serial I/O Device” found later in this chapter.

Troubleshooting a Parallel Printer

If the preceding procedure, “Troubleshooting the Basic I/O Functions,” indicates that the problem is with a parallel printer, perform the following steps:

1. Turn off the parallel printer and computer.
2. Swap the parallel printer’s interface cable with a known working cable.
3. Turn on the parallel printer and computer.
4. Attempt a print operation on the parallel printer.

Does the print operation complete successfully?

Yes. You probably need a new interface cable. Call Dell for technical assistance. (See Chapter 5, “Getting Help,” for instructions.)

No. Go to step 5.

5. Run the parallel printer’s self-test.

Does the self-test complete successfully?

Yes. Go to step 6.

No. The printer is probably defective. If you bought the printer from Dell, call Dell for technical assistance. (See Chapter 5, “Getting Help,” for instructions.) If you purchased the printer elsewhere, take it to one of the manufacturer’s authorized service centers for repair.

6. Attempt another print operation on the parallel printer.

Does the print operation complete successfully?

Yes. The problem is resolved.

No. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

Troubleshooting a Serial I/O Device

If the procedure titled "Troubleshooting the Basic I/O Functions" found earlier in this section indicates that the problem is with a device connected to one of the serial ports, perform the following steps:

1. Exit any open application programs, and then turn off the computer and the serial device.
2. Swap the device's interface cable with a known working cable.
3. Turn on the computer and the serial device.

Is the problem resolved?

Yes. You probably need a new interface cable. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

No. Go to step 4.

4. Turn off the computer and the serial device and swap the device with a comparable working device.

For example, if your serial mouse has a problem, swap it with a serial mouse you know is working properly.

5. Turn on the computer and the serial device.

Is the problem resolved?

Yes. You probably need a new device. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

No. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

Troubleshooting the Infrared Port

This section provides a procedure for troubleshooting the computer's infrared (IR) port.

Make a copy of the Diagnostics Checklist found in Chapter 5, "Getting Help," and fill it out as you perform the following steps:

1. Check the setting for the **Infrared Port** option in the **Page Two** menu of the System Setup program.

For information on the System Setup program, see Appendix B, "Using the System Setup Program." Is the **Infrared Port** option set correctly for the external device with which you are communicating?

Yes. Go to step 3.

No. Go to step 2.

2. Change the **Infrared Port** option to the appropriate setting, and then reboot the computer.

Is the problem resolved?

Yes. The problem is resolved.

No. Go to step 3.

3. Insert the *System Software* CD into the CD-ROM drive, reboot the computer, and run the **Serial Ports** device group in the Dell Diagnostics. (See "Running the Dell Diagnostics" found later in this chapter.) The **Serial/Infrared Ports** device group checks the basic functions of the computer's infrared logic.

4. Do the tests complete successfully?

Yes. The infrared port is functioning properly. There may be a problem with the infrared application program or with the external device. Check the documentation that came with the application program and with the external device.

No. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

Troubleshooting the Touch Pad

Make a copy of the Diagnostics Checklist found in Chapter 5, "Getting Help," and fill it out as you perform the following steps:

1. Insert your *System Software* CD into the CD-ROM drive, reboot the computer, and run the **Mouse** test in the **Pointing Devices** device group in the Dell Diagnostics. (See "Running the Dell Diagnostics" found later in this chapter.) The **Mouse** test checks the functionality of the mouse controller (which affects the ability to move the pointer around the screen) and the operation of the touch pad buttons.

2. Do the tests complete successfully?

Yes. The controller is functioning properly. If the problem persists, call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

No. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

Troubleshooting Audio Functions

Make a copy of the Diagnostics Checklist found in Chapter 5, "Getting Help," and fill it out as you perform the following steps:

1. Insert your *System Software* CD into the CD-ROM drive, reboot the computer, and run the **Misc. PCI Devices** device group in the Dell Diagnostics. (See "Running the Dell Diagnostics" found later in this chapter.) The **Misc. PCI Devices** device group checks the functionality of the audio controller.

2. Do the tests complete successfully?

Yes. The controller is functioning properly. If the problem persists, call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

No. Call Dell for technical assistance. (See Chapter 5, "Getting Help," for instructions.)

Running the Dell Diagnostics

Unlike many diagnostic programs, the Dell Diagnostics helps you check your computer's hardware without any additional equipment and without destroying any data. By using the diagnostics, you can have confidence in your computer's operation. And if you find a problem you cannot solve by yourself, the diagnostic tests can provide you with important information you will need when talking to Dell's service and support personnel.

NOTICE: Use the Dell Diagnostics to test only your Dell computer. Using this program with other computers may cause incorrect computer responses or result in error messages.

The Dell Diagnostics provides a series of menus and options from which you choose particular device groups or subtests. You can also control the sequence in which the tests are run. The diagnostic device groups or subtests also have these helpful features:

- **Options** that let you run tests individually or collectively
- An option that allows you to choose the number of times a device group or subtest is repeated
- The ability to display or print out test results, or to save them in a file
- Options to temporarily suspend testing if an error is detected, or to terminate testing when an adjustable error limit is reached

- A menu category called **Devices** that briefly describes each test and its parameters
- A menu category called **Config** that describes the configuration of the devices in the selected device group
- Status messages that inform you whether device groups or subtests were completed successfully
- Error messages that appear if any problems are detected

Whenever a major component or device in your computer does not function properly, you may have a component failure. As long as the microprocessor and the input and output components of your computer (the display, keyboard, and diskette drive) are working, you can use the Dell Diagnostics. If you are experienced with computers and know what component(s) you need to test, simply select the appropriate diagnostic test group(s) or subtest(s). If you are unsure about how to begin diagnosing a problem, read the rest of this chapter.

Starting the Dell Diagnostics

To start the diagnostics, perform the following steps:

1. Turn off the computer.
2. If the computer is docked, undock it.

For instructions, see your *Advanced Port Replicator User's Guide*.
3. Turn on the computer.
4. Press <F2> at the Dell BIOS splash screen to access the System Setup menu.
5. Press the down-arrow key to move to the field, and press the left- or right-arrow key to change the device setting. Select the following boot sequence:

- **Boot First Device: Diskette Drive**
- **Boot Second Device: CDROM/DVDROM Drive**
- **Boot Third Device: Internal HDD**

6. Turn the computer off (power down).
7. Insert the *Dell System Software* CD into the CD-ROM drive.

If your computer has a diskette drive attached, make sure that the drive does not contain a diskette.
8. Turn the computer on. The computer restarts and automatically begins to run the Dell Diagnostics.



NOTES: After running the Dell Diagnostics, to change the boot sequence, repeat steps 1 through 8 and then restart your computer.

Before you read the rest of this subsection, you may want to start the Dell Diagnostics so that you can see it on your display.

When you start the diagnostics, the Dell logo screen appears, followed by a message telling you that the diagnostics is loading.

After the diagnostics loads, the **Diagnostics Menu** appears (see Figure 3-1). The menu allows you to run all or specific diagnostic tests or to exit to the MS-DOS prompt.

For a quick check of your computer, select the **Quickly Test All Devices** option. This option runs only the subtests that do not require user interaction and that do not take a long time to run. Dell recommends that you choose this option first to increase the odds of tracing the source of the problem quickly. For a thorough check of your computer, select the **Fully Test All Devices** option. To check a particular area of your computer, select the **Select Devices to Test** option.

To select an option from this menu, highlight the option and press <Enter>, or press the key that corresponds to the highlighted letter in the option you choose.

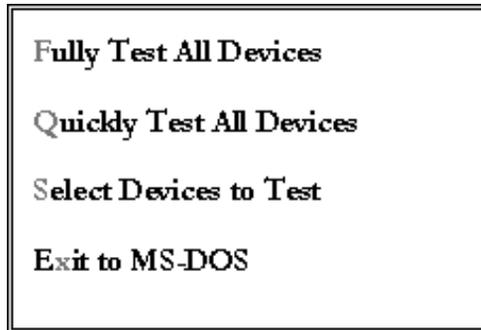


Figure 3-1. Diagnostics Menu

Dell Diagnostics Main Screen

When you select **Select Devices to Test** from the **Diagnostics Menu**, the main screen of the diagnostics appears (see Figure 3-2). The main screen lists the diagnostic test device groups, lists the devices of the selected device group, and allows you to select categories from a menu.

Information on the main screen of the diagnostics is presented in the following five areas:

- Two lines at the top of the screen identify the version number of the Dell Diagnostics.
- On the left side of the screen, the **Device Groups** area lists the diagnostic test groups in the order they will run if you select **All** from the **Run** tests menu category. Press the up- or down-arrow key to highlight a test device group.
- On the right side of the screen, the **Devices for Highlighted Group** area lists the computer's currently detected hardware and some of the relevant settings.

- Two lines at the bottom of the screen make up the menu area. The first line lists the categories you can select; press the left- or right-arrow key to highlight a menu category. The second line gives information about the category currently highlighted.



NOTE: The options displayed on your screen should reflect the hardware configuration of your computer.

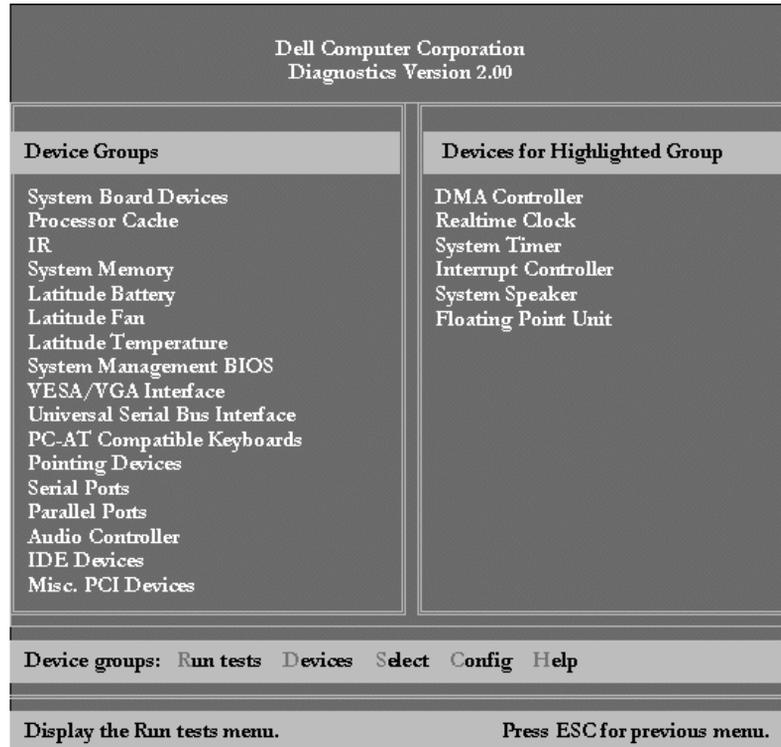


Figure 3-2. Dell Diagnostics Main Screen

Confirming the System Configuration Information

When you boot your computer from your *System Software* CD, the diagnostics checks your system configuration information and displays it in the **Device Groups** area on the main screen.

The following sources supply this configuration information for the diagnostics:

- The system configuration information settings (stored in nonvolatile random-access memory [NVRAM]) that you selected while using the System Setup program

- Identification tests of the microprocessor, the video controller, the keyboard controller, and other key components
- Basic input/output system (BIOS) configuration information temporarily saved in RAM

Do not be concerned if the **Device Groups** area does not list the names of all the components or devices you know are part of your computer. For example, you may not see a printer listed, although you know one is attached to your computer. Instead, the printer is listed as a parallel port. The computer recognizes the parallel port as LPT1, which is an address that tells the computer where to send outgoing information and where to look for incoming information. Because your printer is a parallel communications device, the computer recognizes the printer by its LPT1 address and identifies it as a parallel port. You can test your printer connection with the **Parallel Ports** tests.

Using the Dell Diagnostics

Six comprehensive, menu-driven, online Help categories provide instructions on how to use the program and explain each menu item, test group, subtest, and test and error result. To enter the **Help** menu, perform the following steps:

1. Highlight **Select Devices to Test** in the **Diagnostics Menu**.
2. Press <Enter>.
3. Press <h>.

The six **Help** menu categories are **Menu**, **Keys**, **Device Group**, **Device**, **Test**, and **Versions**. The online Help also provides detailed descriptions of the devices that you are testing. The **Help** categories are explained in the following subsections.

Menu

The **Menu** Help category provides descriptions of the main menu screen area, the **Device Groups**, and the different diagnostic menus and commands and instructions on how to use them.

Keys

The **Keys** Help category explains the functions of the all of the keystrokes that can be used in Dell Diagnostics.

Device Group

The **Device Group** Help category describes the test group that is presently highlighted in the **Device Groups** list on the main menu screen. It also provides reasoning for using some tests.

Device

The **Device** Help category is the educational section of online Help. It describes the function and purpose of the highlighted device in the **Device Groups**. For example, the following information appears when you select the **Device Help** category for **Diskette** in the **Device Groups** list:

Diskette drive A:

The diskette disk drive device reads and writes data to and from diskettes. Diskettes are flexible recording media, sometimes contained in hard shells. Diskette recording capacities are small and access times are slow relative to hard disk drives, but they provide a convenient means of storing and transferring data.

Test

The **Test** Help category provides a thorough explanation of the test procedure of each presently highlighted test group subtest. An example of the **Diskette** subtest **Diskette Drive Seek Test** is as follows:

Diskette drive A: - Diskette Drive Seek Test

This test verifies the drive's ability to position its read/write heads. The test operates in two passes: first, seeking from the beginning to ending cylinders inclusively, and second, seeking alternately from the beginning to ending cylinders with convergence towards the middle.

Versions

The **Versions** Help category lists the version numbers of the subtests that are used by the Dell Diagnostics.



CHAPTER 4

System Software Solutions

This chapter explains how to reinstall Dell device drivers and utilities on your Dell computer running the Microsoft Windows 98 Second Edition operating system or the Microsoft Windows NT operating system. You may need to use this document under the following conditions:

- You are reinstalling the version of the Windows operating system that came with your computer, and you need to reinstall the drivers and utilities that Dell provides.
- You have a new hard-disk drive and you need to install all of the system software.

Partitioning and Formatting the Hard-Disk Drive

Before you can store data on a hard-disk drive, you must partition and format the drive. Then you must assign logical drive letters to the partitions you created.

To partition and format the new hard-disk drive, and then assign logical drive letters to the partitions you created, perform the following steps.

NOTICE: Formatting a hard-disk drive erases all the data stored on the drive; however, the formatting utility included with the operating system may allow you to restore the data from a hard-disk drive immediately after you format it. Partitioning a hard-disk drive permanently deletes all data stored on the drive.

1. Partition the hard-disk drive using the partitioning software for your particular operating system.

When you set up the partition(s) on the hard-disk drive, set aside some disk space for the save-to-disk suspend (S2D) partition rather than allocating the entire hard-disk drive to your operating system. Use the following guidelines to determine the size of the S2D partition:

- If you are using Windows 98 with a 16-bit file allocation table (FAT16), leave 4 megabytes (MB) of storage space for an S2D partition. For a 32-bit file allocation table (FAT32), leave 8 MB.

- For any operating system that uses a file system other than FAT16 or FAT32, including compressed file systems such as DriveSpace, use the following algorithm to determine the amount of disk space to reserve for an S2D partition:

Size of system memory + size of video memory + 1 percent of size of system memory + 2 MB rounded up to the next cylinder

Examples:

$32 \text{ MB} + 4 \text{ MB} + .36 \text{ MB} + 2 \text{ MB} = 38.36 \text{ MB}$ (approximately 1.25 percent of a 3-GB drive)

$256 \text{ MB} + 6 \text{ MB} + 2.62 \text{ MB} + 2 \text{ MB} = 266.62 \text{ MB}$ (approximately 4.4 percent of a 4-GB drive)

2. Format the hard-disk drive and assign logical drive letters to the partitions you created according to the instructions provided with your operating system.
3. Restart the computer from a bootable diskette such as the *Microsoft Boot Disk Windows 98 Series* diskette.
4. Create the S2D partition.

For instructions, see "Save-to-Disk Suspend Utility" found later in this chapter.

5. Follow the instructions found later in this chapter to install the appropriate device drivers.
6. Install your application programs on the hard-disk drive.

If you have trouble with the hard-disk drive, run the **IDE Devices** device group tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.

7. If you ever need to remove the S2D partition to free up storage space on the hard-disk drive, do so by using the **rms2d.exe** utility on the *System Software* CD. See "Removing the Save-to-Disk Suspend Partition" found later in this chapter for instructions. When more space is available on the drive, you can also recreate the S2D partition using the **mks2d.exe** utility. See "Creating the Save-to-Disk Suspend Partition" found later in this chapter for instructions.

Installing the Windows 98 Operating System

You must install Windows 98 on the hard-disk drive, as described in the following steps, before you install any device drivers:

1. Insert the *Microsoft Boot Disk Windows 98 Series* diskette into the diskette drive.
2. Restart the computer.

3. When the **Microsoft Windows 98 Startup** menu appears, insert the *Microsoft Windows 98* CD into the CD-ROM or DVD-ROM drive.
4. Select **Start Windows 98 Setup from CD-ROM** and press <Enter>. The Setup program runs ScanDisk to check your hard-disk drive.
5. When the hard-disk drive check is completed, type x to exit ScanDisk.
6. Follow the prompts on your screen to continue with the installation.
7. When prompted to create a start-up diskette, remove the *Microsoft Boot Disk Windows 98 Series* diskette, and click **Next>**.
8. Label a blank, high-density diskette as instructed, insert the diskette into the diskette drive, and then click **OK**.
9. Follow the prompts on your screen to complete the installation.

Installing Drivers and Utilities for Windows 98

All of your computer's drivers for Dell-installed devices are operative when you receive the computer no further installation or configuration is needed. However, if you ever need to reinstall any of these drivers, the driver files are provided on the *System Software* CD. For instructions on reinstalling a particular driver, see the following subsection that corresponds to that driver.

Often device problems can be corrected by reinstalling the appropriate drivers. Also, hardware manufacturers frequently provide updated drivers that support feature enhancements or that correct problems. Obtain updated drivers for products purchased from Dell from the support section of the Dell World Wide Web site (<http://support.dell.com>).

NOTICE: Drivers available on the Dell Web site have been validated for correct operation on Dell systems. Installing drivers obtained from other sources may cause errors or performance degradation.

To install the system software, you need the following items:

- *System Software* CD
- CD-ROM or DVD-ROM drive installed in the media bay of the computer
- *Microsoft Windows 98* CD
- *Microsoft Boot Disk Windows 98 Series* diskette



NOTE: Verify that Windows 98 is already installed on the hard-disk drive before you install any device drivers. For instructions, see the preceding section, "Installing the Windows 98 Operating System."

The following subsections describe the installation instructions for the drivers and utilities that are provided on the *System Software* CD for use with a system running the Windows 98 Second Edition operating system.

Installing the Video Driver

The video driver controls features such as video resolution and the color palette.



NOTE: If you need to use extended video modes, check the documentation that came with the application program to determine if the drivers are provided. If not, contact the software manufacturer to get the necessary drivers.

To install the video driver for Windows 98, perform the following steps:

1. Save your work in all open application programs, because you will need to restart your computer at the end of this procedure to complete the installation.
2. Insert the *System Software* CD into the CD-ROM drive.
3. Click the **Start** button, and then click **Run**.

The **Run** dialog box appears.

4. Type `x:\drivers\win98\video\setup`, where `x` is the drive letter of your CD-ROM drive, and click **OK** or press <Enter>.
5. Follow the instructions on your display.
6. After the files are copied to your hard-disk drive, click **Finish** to restart your computer.

After installing the video drivers and restarting your computer, perform the following steps to set the display parameters:

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

The **Control Panel** window appears.

2. Double-click the **Display** icon.

The **Display Properties** window appears.

3. Click the **Settings** tab.
4. Change the **Colors** option from **256 colors** to **True Color (24 bit)**.
5. Set the **Screen** area for your display to **1024 x 768**.
6. Click **Apply**.

Installing the Audio Driver

The audio driver allows you to customize the sound features of your computer. To install the audio driver, perform the following steps:

1. Save your work in all open application programs, because you will need to restart your computer at the end of this procedure to complete the installation.
2. Insert the *System Software* CD into the CD-ROM drive.
3. Click the **Start** button, and then click **Run**.
4. The **Run** dialog box appears.
5. Type `x:\drivers\win98\audio\setup`, where *x* is the drive letter of your CD-ROM drive, and click **OK** or press <Enter>.
6. Follow the instructions on your display.
7. After the files are copied to your hard-disk drive, click **Finish**.

Installing the DualPoint Integrated Pointing Device Drivers

DualPoint integrated pointing device drivers and associated utilities allow you to use and customize the integrated touch pad, track stick, or an external mouse. To install these drivers, perform the following steps:

1. Save your work in all open application programs, because you will need to restart your computer at the end of this procedure to complete the installation.
2. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
3. Double-click **Mouse**.
The **Mouse Properties** window appears.
4. Click the **General** tab, and then click the **Change** button.
The **Select Device** window appears.
5. Click on **Have Disk**.
The **Install From Disk** window appears.
6. Insert the *System Utilities* CD into the drive.
7. Double click the **setup.exe** file in the `x:\drivers\win98\CD-ROM\touch` folder, where *x* is the drive letter of your CD-ROM drive.
8. The **Select Device** window appears. The **Alps Touch Pad** should be highlighted.
9. Click **OK**.
10. After the files are copied, the **Name** property should be **Alps Touch Pad**.

11. Click **Close**.
12. Restart your computer to activate the drivers.

Enabling Microsoft Infrared Support

You must enable Microsoft infrared support for Windows 98 before you can install the infrared drivers. To enable Microsoft infrared support, perform the following steps:

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Add New Hardware** icon.

The **Add New Hardware Wizard** appears.

3. Click **Next** to continue.

*NOTE: If the infrared device is not listed, click **No**, and then click **Next**.*

4. When the **Add New Hardware Wizard** asks to search for new hardware, click **No** and then click **Next**.
5. When the **Hardware Types** window appears, click **Infrared** and then click **Next**.
6. When the **Add Infrared Device Wizard** window appears, click **Next**.
7. To complete this portion of the installation, follow the instructions on your display.
8. To enable infrared support, shut down and reboot your computer.



Installing System Utilities

System utilities let you configure features such as the save-to-disk suspend file. To copy the system utilities to your hard-disk drive, perform the following steps.

NOTE: You can also run the system utilities directly from the System Software CD.

1. Insert the *System Software* CD into the CD-ROM drive.
2. Copy each of the utilities on the *System Software* CD to the **c:\dell** directory on your hard-disk drive. The utilities have the following filenames: **mks2d.exe**, **rms2d.exe**, **asset.com**, and **readme.s2d**.

For more information on copying files, see the documentation that came with the operating system.

After you copy the utilities to your hard-disk drive, you must restart your computer in the MS-DOS mode to use the utilities.

See the **readme.s2d** file on the *System Software* CD for more information on using the save to-disk suspend utilities.



Installing Docking Drivers (Optional)

To install the advanced port replicator (APR), perform the following steps:

1. *If the computer has never been turned on*, turn it on now while it is undocked and complete the operating system setup. Then go to step 2.

If you have completed the operating system setup, turn on the computer, and then go to step 2.

For setup instructions, see the *Dell Inspiron Systems Setup Guide* that came with the computer.

2. Dock the computer.

For instructions, see your *Advanced Port Replicator User's Guide*.

The operating system creates a hardware profile for the APR.

3. To load the appropriate drivers for use with the APR, follow the instructions on the display. When prompted, restart the computer.
4. Install the appropriate drivers to use with a network interface controller (NIC) in the APR.

Installing the Software DVD Decoder (Optional)

The DVD decoder driver allows you to play DVD movies on the computer.



NOTE: When you are prompted to select a directory, Dell recommends using the default directory settings.

1. Insert the *Software DVD Decoder* CD into the DVD-ROM drive.
2. Click the **Start** button, and then click **Run**.
3. In the **Run** dialog box, type `x:\setup.exe`, where *x* is the DVD-ROM drive letter.

The DVD-ROM drive letter is usually *D*.

4. Click **OK**.
5. The **Welcome** window appears. Click **Next>**.
6. At the **Choose Destination Location** screen, click **Next>**.
7. At the **Select Program Folder** screen, click **Next>**.
8. At the **Start Copying Files** screen, click **Next>**.
9. At the **Setup Complete** screen, be sure that the **Yes, I want to restart my computer now** radio button is selected, and then click **Finish**.

The first time you play a DVD after installing this driver, you may be prompted to change the region setting.

Installing the System Help

The Dell Inspiron system *Help* is available on the *System Software* CD. You can also access it from Dell's support Web site (<http://support.dell.com>).

Installing Help From the CD

To install the system *Help* from the *System Software* CD, perform the following steps:

1. Insert the CD into the CD-ROM or DVD-ROM drive.
2. Double-click the **My Computer** icon, and then double-click the **CD-ROM** or **DVD-ROM** drive icon.
3. Double-click the **Guide** folder.
4. Right-click the **popup.ocx** file, and then click **Copy**.



*NOTE: You must copy the **popup.ocx** file into the Windows registry; otherwise, error messages may appear.*

5. Double-click the **My Computer** icon, and then double-click the **C:** drive icon.
6. Double-click the **Windows** folder, then double-click the **System** folder, and then right-click **Paste**.
7. Click **Start**, and then click **Run**.
8. Type `regsvr32 popup.ocx` and then press <Enter>.
9. Click **OK** when a window indicates the file was successfully registered.
10. Double-click the **My Computer** icon, and then double-click the **CD-ROM** or **DVD-ROM** icon.
11. Double-click the **Guide** folder, and then double-click the appropriate language folder for the version of the *Help* you want to install.
12. Right-click and hold **3700help** and drag it to the Windows desktop.
13. Release the right mouse button.
14. Left-click **Copy Here**.
15. Double-click the **3700help** icon to access the system *Help*.

Downloading Help From the Support Web Site

To download the system *Help* from <http://support.dell.com>, perform the following steps:

1. Click **Support Your Dell**.

2. Type your computer's service tag sequence, if available, click **Submit**, and go to step 5.

If the service tag is not available, go to step 3.

3. Click **Inspiron Notebooks**.
4. Click **3700**.
5. Click **Dell Documents (Technical Information)**.

Follow the instructions on the page to save the file to your hard-disk drive.

6. Click **System Help**.

When prompted, you can save the *Help* file to your hard-disk drive.

Installing Drivers and Utilities for Windows NT

This section explains how to reinstall device drivers and utilities on your Dell portable computer running the Microsoft Windows NT 4.0 operating system.

To install the system software, you need the following items:

- *Microsoft Windows NT 4.0* CD
- *Microsoft Windows NT 4.0 Service Pack 5* CD
- *System Software* CD
- CD-ROM drive (installed)
- One formatted diskette

The following subsections describe the drivers and utilities that are provided on the *System Software* CD.



NOTE: To install the drivers and utilities correctly, you must install them in the order presented in this document.

Installing the Video Driver

The video driver controls features such as video resolution and the color palette.



NOTE: If you need to use extended video modes, check the documentation that came with the application program to determine if the drivers are provided. If not, contact the software manufacturer to get the necessary drivers.

To install the video driver for Windows NT 4.0, perform the following steps:

1. Save your work in all open application programs, because you will need to restart your computer at the end of this procedure to complete the installation.
2. Insert the *System Software* CD into the CD-ROM drive.

3. Click the **Start** button, point to **Settings**, and then click **Control Panel**.

The **Control Panel** window appears.

4. Double-click the **Display** icon.

The **Display Properties** window appears.

5. Click the **Settings** tab.

6. Click the **Display Type** button.

The **Display Type** window appears.

7. In the **Adapter Type** box, click the **Change** button.

8. The **Change Display** window appears.

9. Click the **Have Disk** button.

10. Verify that `x:\drivers\winnt4\video` is displayed in the **Install from Disk** box, where *x* is the drive letter of your CD-ROM drive, and then click **OK**.

The CD-ROM drive letter is usually *D*.

11. When the **Change Display** window appears, verify that the **ATI** option is highlighted, and then click **OK**.

A progress bar is shown while the driver files are copied to your hard-disk drive.

After the drivers are successfully installed, the **Installing Driver** window appears.

12. Click **OK** in the **Installing Driver** window.

13. Click the **Close** button in the **Display Type** window, and then click the **Close** button in the **Display Properties** window.

14. To activate the drivers, remove the *System Software* CD from the CD-ROM drive, and restart your computer.

Installing the Power Management Utility

Dell provides a power management utility that helps you conserve battery power and view available power levels. To install the power management utility, perform the following steps:

1. Save your work in all open application programs, because you will need to restart your computer at the end of this procedure to complete the installation.
2. Insert the *System Software* CD into the CD-ROM drive.
3. Click the **Start** button, and then click **Run**.

The **Run** dialog box appears.

4. Type `x:\drivers\winnt4\powermgt` (where *x* is the drive letter of your CD-ROM drive), and then click **OK**.

Follow the instructions on the display.

5. When prompted, restart your computer to activate the utility.

Installing the PC Card Utility

Dell provides a PC Card utility that allows you to view and configure settings for your PC Card(s). To install the PC Card utility, perform the following steps:

1. Save your work in all open application programs, because you will need to restart your computer at the end of this procedure to complete the installation.
2. Insert the *System Software* CD into the CD-ROM drive.
3. Click the **Start** button, and then click **Run**.

The **Run** dialog box appears.

4. Type `x:\drivers\winnt4\pccard` (where *x* is the drive letter of your CD-ROM drive), and then click **OK**.

Follow the instructions on your display.

5. Restart your computer.
6. When the computer completes the starting sequence, the **Softex PC Card Controller Diagnostics** window appears.
7. Follow the instructions on your display, and when prompted, restart your computer to activate the utility.

Installing Softex Docking Services

Dell provides Softex Docking Services software that contains support for the following features:

- Hot-docking and warm-undocking your portable computer from the port replicator
- Hot-swapping devices such as diskette drives, hard-disk drives, large-storage drives, DVD-ROM drives, and CD-ROM drives to and from your portable computer's media bay
- Compatibility with the power management controller, which allows you to suspend and resume the operation of your portable computer without affecting your ability to use the port replicator
- Docking or undocking your portable computer while it is in standby mode
- Docking services available in French, German, Spanish, and Japanese

For information about installing Softex Docking Services, see the Softex Docking Services user's guides at <http://www.dell.com/products/notebook/inspiron/NT40.htm> and see your Dell-Installed *Microsoft Windows NT Workstation Setup Guide*.

Installing the Audio Drivers

Dell provides audio drivers so that you can customize the sound features of your computer.

To install the audio drivers, perform the following steps:

1. Save your work in all open application programs, because you will need to restart your computer at the end of this procedure to complete the installation.
2. Insert the *System Software* CD into the CD-ROM drive.
3. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
4. Double-click the **Multimedia** icon.

The **Multimedia Properties** dialog box appears.

5. Click the **Devices** tab.
6. Click **Add**.

The **Add** dialog box appears, displaying a list of drivers.

7. Click the **Unlisted or Updated Driver** option, and then click **OK**.

The **Install Driver** dialog box appears.

8. Verify that **X:** is highlighted, (where x is the drive letter of your CD-ROM drive), and then click **OK**.

The **Add Unlisted or Updated Driver** window appears.

9. Verify that the **ESS AudioDrive MZE** audio driver is highlighted, and then click **OK**.

The **Audio** dialog box appears.

10. Click **OK**.
11. After installation is completed, restart your computer to activate the drivers.

Installing DualPoint Integrated Pointing Device Drivers

DualPoint integrated pointing device drivers allow you to use and customize the integrated touch pad, the track stick, or an external mouse. To install these drivers, perform the following steps:

1. Save your work in all open application programs, because you will need to restart your computer at the end of this procedure to complete the installation.

2. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
3. Double-click **Mouse**.
The **Mouse Properties** window appears.
4. Click the **General** tab, and then click the **Change** button.
The **Select Device** window appears.
5. Click on **Have Disk**.
The **Install From Disk** window appears.
6. Insert the *System Software* CD into the CD-ROM drive. Then click **OK**.
The **Select Device** window appears.
7. Verify that **x:\drivers\winnt4\touch** is highlighted, (where x is the drive letter of your CD-ROM drive), and then click **OK**.
8. Click **OK**.
9. After the files are copied, the **Name** property should be **Alps Glide Point**.
10. Click **Close**.
11. Restart your computer to activate the drivers.

Installing System Utilities

System utilities let you configure features such as the save-to-disk suspend partition. To copy the system utilities to your hard-disk drive, perform the following steps.



NOTE: You can also run the system utilities directly from the System Software CD.

1. Insert the *System Software* CD into the CD-ROM drive.
2. Copy each of the utilities on the *System Software* CD to the **c:\dell** directory on your hard-disk drive. The utilities have the following filenames: **mks2d.exe**, **rms2d.exe**, **asset.com**, and **readme.s2d**.

For more information on copying files, see the documentation that came with the operating system.

After you copy the utilities to your hard-disk drive, you must restart your computer in the MS-DOS mode to use the utilities.

See the **readme.s2d** file on the *System Software* CD for more information on using the save-to-disk suspend partition utilities.

Installing the System Help

The Dell Inspiron system *Help* is available on the *System Software* CD. You can also access it from Dell's support Web site (<http://support.dell.com>).



NOTE: You must install Microsoft Internet Explorer 4.01 from the Microsoft Windows NT 4.0 Service Pack 5 CD prior to installing the system Help.

Installing Help From the CD

To install the system *Help* from the *System Software* CD, perform the following steps:

1. Insert the CD into the CD-ROM drive.
2. Double-click the **My Computer** icon, and then double-click the **CD-ROM** drive icon.
3. Double-click the **Guide** folder, and then double-click the appropriate language folder for the version of the *Help* you want to install.
4. Right-click and hold **3700help** and drag it to the Windows desktop.
5. Release the right mouse button.
6. Left-click **Copy Here**.
7. Double-click the **3700help** icon to access the system *Help*.

Downloading Help From the Support Web Site

To download the system *Help* from <http://support.dell.com>, perform the following steps:

1. Click **Support Your Dell**.
2. Type your service tag sequence, if available, click **Submit**, and go to step 5.
If the service tag is not available, go to step 3.
3. Click **Inspiron Notebooks**.
4. Click **3700**.
5. Click **Dell Documents (Technical Information)**.

Follow the instructions on the page to save the file to your hard-disk drive.

6. Click **System Help**.

When prompted, you can save the system *Help* to your hard-disk drive.

Save-to-Disk Suspend Utility

The save-to-disk suspend (S2D) utility allows you to manage the S2D partition in your file system as your computing needs change. For instance, you can remove the S2D partition if you need the space on the hard-disk drive for other purposes, or you can use the S2D utility to create the partition if you have removed it.

Removing the Save-to-Disk Suspend Partition

If you want to use the S2D partition on your hard-disk drive for another purpose (for instance, if you are running out of file space), perform the following steps to remove the partition:

1. Insert the *Dell System Software* CD into the CD-ROM drive.
2. Turn off the computer.
3. If the computer is docked, undock it.

For instructions, see your *Advanced Port Replicator User's Guide*.

4. Turn on the computer.
5. Press <F2> at the Dell BIOS splash screen to access the System Setup menu.
6. Press the down-arrow key to move to the field, and press the left- or right-arrow key to change the device setting. Select the following boot sequence:

- **Boot First Device: Diskette Drive**
- **Boot Second Device: CDROM/DVDROM Drive**
- **Boot Third Device: Internal HDD**

7. Turn the computer off (power down).

If your computer has a diskette drive attached, make sure that the drive does not contain a diskette.

8. Turn the computer on. The computer restarts and automatically begins to run the Dell Diagnostics.
9. Type `x` to exit to MS-DOS.
10. At the MS-DOS prompt, type `cd x:\drivers\winx\s2d` (where `x` is the drive letter of your CD-ROM drive and `winx` is your operating system), and press <Enter> to change to the directory on the *System Software* CD that contains the S2D utility files.
11. Type `rms2d` and press <Enter>.

Status messages appear on the display as the removal process progresses. When the S2D partition has been removed, the following message appears:

```
The S2D partition was successfully removed.
```



NOTE: After you remove the S2D partition, the computer cannot activate save-to-disk suspend mode until you recreate the partition. If you try to activate save-to-disk suspend mode and receive the message `No Suspend-To-Disk partition available`, you must create an S2D partition.

Creating the Save-to-Disk Suspend Partition

The **mks2d.exe** file creates the S2D partition the computer uses to store the system data that is saved when you put the computer in save-to-disk suspend mode. Use the **mks2d.exe** file to create a new S2D partition in the following cases:

- If you increase the amount of system memory by adding a memory module
- If you used the **rms2d.exe** file to remove the original S2D partition and now want to recreate the partition
- If your hard-disk drive becomes corrupted
- If you install a new hard-disk drive
- If you received the system utilities separately on CD or if you deleted the S2D utility from your hard-disk drive

To create an S2D partition, perform the following steps:

1. Insert the *Dell System Software* CD into the CD-ROM drive.
2. Turn off the computer.
3. If the computer is docked, undock it.

For instructions, see your *Advanced Port Replicator User's Guide*.

4. Turn on the computer.
5. Press <F2> at the Dell BIOS splash screen to access the System Setup menu.
6. Press the down-arrow key to move to the field, and press the left- or right-arrow key to change the device setting. Select the following boot sequence:

- **Boot First Device: Diskette Drive**
- **Boot Second Device: CDROM/DVDROM Drive**
- **Boot Third Device: Internal HDD**

7. Turn the computer off (power down).

If your computer has a diskette drive attached, make sure that the drive does not contain a diskette.

8. Turn the computer on. The computer restarts and automatically begins to run the Dell Diagnostics.
9. Type `x` to exit to MS-DOS.

10. At the MS-DOS prompt, type `cd x:\drivers\winx\s2d` (where *x* is the drive letter of your CD-ROM drive and *winx* is your operating system), and press <Enter> to change to the directory on the *System Software* CD that contains the S2D utility files.
11. Type `mks2d` and press <Enter>.

As the utility builds the partition, status messages appear on the display. If an error message appears, it provides information about which steps to take to continue building the partition.

When the S2D partition has been built and verified, the following message appears:

```
The S2D partition was successfully created.
```

Contacting Dell

Dell's technical assistance Web site (<http://support.dell.com>) provides driver and utility updates, as well as technical assistance with questions about your computer. In addition, if you have access to a computer with a modem and/or fax capabilities, you can access Dell's TechConnect bulletin board service (BBS), AutoTech service, and TechFax service. Dell's Web site also contains links to some of these services.

Dell regularly tests and officially releases new drivers and utilities for Inspiron computers. A list of the latest drivers and utilities is available at <http://support.dell.com>.



CHAPTER 5

Getting Help

This chapter describes the tools Dell provides to help you when you have a problem with your computer. It also tells you when and how to call Dell for technical or customer assistance.

Technical Assistance

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

1. Complete the troubleshooting checks in Chapter 3, “Basic Troubleshooting.”
2. Run the Dell Diagnostics as described in “Running the Dell Diagnostics” in Chapter 3.
3. Make a copy of the Diagnostics Checklist (found later in this chapter), and fill it out.
4. Use Dell’s extensive suite of online services available at Dell’s World Wide Web site (<http://www.dell.com>) for help with installation and troubleshooting procedures.

For more information, refer to “World Wide Web on the Internet” found later in this chapter.

5. If the preceding steps have not resolved the problem and you need to talk to a Dell technician, call Dell’s technical support service.

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



NOTES: The Express Service Code is shown on the bottom of the computer.

Dell’s Express Service Code system may not be available in all countries.

For instructions on using the technical support service, refer to “Technical Support Service” and “Before You Call” found later in this chapter.

Help Tools

Dell provides a number of tools to assist you. These tools are described in the following subsections.



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

World Wide Web

The Internet is your most powerful tool for obtaining information about your computer and other Dell products. Through the Internet, you can access most of the services described in this chapter, including AutoTech, TechFax, order status, technical support, and product information.



From Dell's World Wide Web home page (www.dell.com), click the **Support** icon, and click **Support Your Dell**. Enter your service tag number (or, if you have one, your Express Service Code) and click **Submit**. The service tag and Express Service Code are shown on the bottom of the computer.

You can also select support by clicking **Inspiron** and selecting your system by name.

Your system information is presented on the system support page, including the following tools and information:

- Technical information — Details on every aspect of your system, including hardware specifications.
- Self-diagnostic tool — A system-specific troubleshooting application for resolving many computer-related issues by following interactive flowcharts.
- Drivers, files, and utilities — The latest drivers and BIOS updates to keep your system functioning at its best.
- Component support — Technical information, documentation, and troubleshooting tips for different system components.
- Online Communications Center — Tool for submitting requests for both technical and non-technical information on Dell products. Avoid telephone delays by receiving an e-mail response to your request for information if your computer is not functioning properly or if you have questions regarding your computer's hardware or operation.

Dell can be accessed electronically using the following addresses:

- World Wide Web
 - <http://www.dell.com/>**
 - <http://www.dell.com/ap/>** (for Asian/Pacific countries only)
 - <http://www.euro.dell.com>** (for Europe only)

- Anonymous file transfer protocol (FTP)

ftp.dell.com/

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

- Electronic Support Service

mobile_support@us.dell.com

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

support.euro.dell.com (for Europe only)

- Electronic Quote Service

sales@dell.com

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

- Electronic Information Service

info@dell.com

AutoTech Service

Dell's automated technical support service—AutoTech—provides recorded answers to the questions most frequently asked by Dell customers.

When you call AutoTech, you use your touch-tone telephone to select the subjects that correspond to your questions. You can even interrupt an AutoTech session and continue the session later. The code number that the AutoTech service gives you allows you to continue your session where you ended it.

The AutoTech service is available 24 hours a day, seven days a week. You can also access this service through the technical support service. For the telephone number to call, refer to "Dell Contact Numbers" found later in this chapter.

TechFax Service

Dell takes full advantage of fax technology to serve you better. Twenty-four hours a day, seven days a week, you can call the Dell TechFax line toll-free for all kinds of technical information.

Using a touch-tone phone, you can select from a full directory of topics. The technical information you request is sent within minutes to the fax number you designate. For the TechFax telephone number to call, refer to "Dell Contact Numbers" found later in this chapter.

TechConnect BBS

Use your modem to access Dell's TechConnect bulletin board service (BBS) 24 hours a day, seven days a week. The service is menu-driven and fully interactive. The protocol parameters for the BBS are 1200 to 19.2K baud, 8 data bits, no parity, 1 stop bit.

Automated Order-Status System

You can call this automated service to check on the status of any Dell products that you have ordered. A recording prompts you for the information needed to locate and report on your order. For the telephone number to call, refer to “Dell Contact Numbers” found later in this chapter.

Technical Support Service

Dell’s industry-leading hardware technical-support service is available 24 hours a day, seven days a week, to answer your questions about Dell hardware.

Our technical support staff pride themselves on their track record: more than 90 percent of all problems and questions are taken care of in just one toll-free call, usually in less than 10 minutes. When you call, our experts can refer to records kept on your Dell system to better understand your particular question. Our technical support staff use computer-based diagnostics to provide fast, accurate answers to questions.

To contact Dell’s technical support service, first refer to the section titled “Before You Call” and then call the number for your country as listed in “Dell Contact Numbers” found later in this chapter.

Problems With Your Order

If you have a problem with your order, such as missing parts, wrong parts, or incorrect billing, contact Dell Computer Corporation for customer assistance. Have your invoice or packing slip handy when you call. For the telephone number to call, refer to “Dell Contact Numbers” found later in this chapter.

Product Information

If you need information about additional products available from Dell Computer Corporation, or if you would like to place an order, visit Dell’s World Wide Web site at <http://www.dell.com/>. For the telephone number to call to speak to a sales specialist, refer to “Dell Contact Numbers” found later in this chapter.

Returning Items for Warranty Repair or Credit

Dell's technical support staff will work with you to solve any problem you may have with your computer. Sometimes, though, a part needs to be returned to Dell for repair or credit. Use the following procedure to prepare all items being returned:

1. Call Dell to obtain an authorization number, and write it clearly and prominently on the outside of the box.

For the telephone number to call, refer to "Dell Contact Numbers" found later in this chapter.
2. Include a copy of the invoice and a letter describing the reason for the return.
3. Include a copy of the Diagnostics Checklist indicating the tests you have run and any error messages reported by the Dell Diagnostics.
4. Include any accessories that belong with the item(s) being returned (power cables, software diskettes, guides, and so on) if the return is for credit.
5. Pack the equipment to be returned in the original (or equivalent) packing materials.

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

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

Before You Call



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

Remember to fill out the Diagnostics Checklist (Figure 5-1). If possible, turn on your system before you call Dell for technical assistance and call from a telephone at or near the computer. You may be asked to type some commands at the keyboard, relay detailed information during operations, or try other troubleshooting steps possible only at the computer system itself. Make sure the system documentation is available.

Diagnostics Checklist

Name: _____ Date: _____

Address: _____ Phone number: _____

Service tag (bar code on the back of the computer): _____

Express Service Code: _____

Return Material Authorization Number (if provided by Dell support technician): _____

Operating system and version: _____

Peripherals: _____

Expansion cards: _____

Are you connected to a network? yes no

Network, version, and network card: _____

Programs and versions: _____

Refer to your operating system documentation to determine the contents of the system's start-up files. If the computer is connected to a printer, print each file. Otherwise, record the contents of each file before calling Dell.

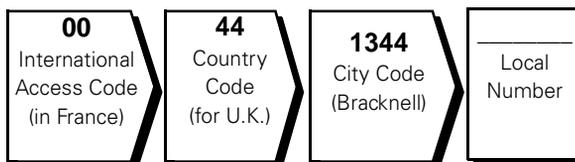
Error message, beep code, or diagnostic code: _____

Description of problem and troubleshooting procedures you performed: _____

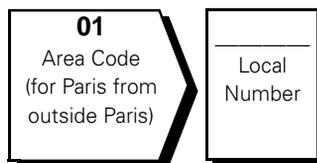
Figure 5-1. Diagnostics Checklist

Dell Contact Numbers

When you need to contact Dell, use the telephone numbers and codes provided in Tables 5-1 and 5-2. Table 5-1 provides the various codes required to make long-distance and international calls. Table 5-2 provides local telephone numbers, area codes, and toll-free numbers, if applicable, for each department or service available in various countries around the world. If you are making a direct-dialed call to a location outside of your local telephone service area, determine which codes to use (if any) in Table 5-1 in addition to the local numbers provided in Table 5-2. For example, to place an international call from Paris, France to Bracknell, England, dial the international access code for France followed by the country code for the U.K., the city code for Bracknell, and then the local number as shown in the following illustration.



To place a long-distance call within your own country, use area codes instead of international access codes, country codes, and city codes. For example, to call Paris, France from Montpellier, France, dial the area code plus the local number as shown in the following illustration.



The codes required depend on where you are calling from as well as the destination of your call; in addition, each country has a different dialing protocol. If you need assistance in determining which codes to use, contact a local or an international operator.



NOTE: Toll-free numbers are for use only within the country for which they are listed. Area codes are most often used to call long distance within your own country (not internationally)—in other words, when your call originates in the same country you are calling.

Table 5-1. International Dialing Codes

Country (City)	International Access Code	Country Code	City Code
Australia (Sydney)	0011	61	2
Austria (Vienna)	900	43	1
Belgium (Brussels)	00	32	2
Brunei	—	673	—
Canada (North York, Ontario)	011	—	Not required
Chile (Santiago)	—	56	2
China (Xiamen)	—	86	592
Czech Republic (Prague)	00	420	2
Denmark (Horsholm)	009	45	Not required
Finland (Helsinki)	990	358	9
France (Paris) (Montpellier)	00	33	(1) (4)
Germany (Langen)	00	49	6103
Hong Kong	001	852	Not required
Ireland (Bray)	16	353	1
Italy (Milan)	00	39	2
Japan (Kawasaki)	001	81	44
Korea (Seoul)	001	82	2
Luxembourg	00	352	—
Macau	—	853	Not required
Malaysia (Penang)	00	60	4
Mexico (Colonia Granada)	95	52	5
Netherlands (Amsterdam)	00	31	20
New Zealand	00	64	—
Norway (Lysaker)	095	47	Not required
Poland (Warsaw)	011	48	22
Singapore (Singapore)	005	65	Not required
South Africa (Johannesburg)	09/091	27	11
Spain (Madrid)	07	34	91

Table 5-1. International Dialing Codes (continued)

Country (City)	International Access Code	Country Code	City Code
Sweden (Upplands Vasby)	009	46	8
Switzerland (Geneva)	00	41	22
Taiwan	002	886	—
Thailand	001	66	—
U.K. (Bracknell)	010	44	1344
U.S.A. (Austin, Texas)	011	1	Not required

Table 5-2. Dell Contact Numbers

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
Australia (Sydney)	Customer Technical Support		toll free: 1-800-633-559
	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) <i>NOTE: Customers in Austria call Germany for technical support and customer assistance.</i>	Home/Small Business Sales	01	795 567602
	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
	Web site: http://support.euro.dell.com/at		
E-mail: tech_support_germany@dell.com			

Table 5-2. Dell Contact Numbers (continued)

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
Belgium* (Brussels)	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
	Web site: http://support.euro.dell.com/be E-mail: tech_be@dell.com		
Brunei <i>NOTE: Customers in Brunei call Malaysia for sales, customer, and technical assistance.</i>	Customer Technical Support (Penang, Malaysia)		810 4966
	Customer Service (Penang, Malaysia)		810 4949
	Transaction Sales (Penang, Malaysia)		810 4955
Canada (North York, Ontario) <i>NOTE: Customers in Canada call the U.S.A. for access to TechConnect BBS.</i>	Automated Order-Status System		toll free: 1-800-433-9014
	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
TechConnect BBS (Austin, Texas, U.S.A.)	512	728-8528	
TechFax		toll free: 1-800-950-1329	
Chile (Santiago) <i>NOTE: Customers in Chile call the U.S.A for sales, customer, and technical assistance.</i>	Sales, Customer Support, and Technical Support		toll free: 1230-020-4823

Table 5-2. Dell Contact Numbers (continued)

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
China (Xiamen)	Customer Service		toll free: 800 858 2437
	Sales.		toll free: 800 858 2222
Czech Republic (Prague)	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
	Web site: http://support.euro.dell.com/cz		
	E-mail: czech_dell@dell.com		
Denmark (Horsholm)	Technical Support		45170182
	Customer Care		45170181
	Switchboard		45170100
	Fax Technical Support (Upplands Vasby, Sweden)		859005594
	Fax Switchboard		45170117
	Web site: http://support.euro.dell.com/dk		
E-mail: den_support@dell.com			
Finland (Helsinki)	Technical Support	09.	253 313 60
	Technical Support Fax.	09.	253 313 81
	Customer Care	09.	253 313 61
	Fax	09.	253 313 99
	Switchboard	09.	253 313 00
	Web site: http://support.euro.dell.com/fin		
E-mail: fin_support@dell.com			

Table 5-2. Dell Contact Numbers (continued)

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
France (Paris/Montpellier)	Technical Support	0803 . . . . .	.387 270
	Customer Care (Paris)	01 . . . . .	.47 62 68 92
	Customer Care (Montpellier)	04 . . . . .	.67 06 61 96
	TechConnect BBS (Montpellier)	04 . . . . .	.67 22 53 04
	Fax (Montpellier)	04 . . . . .	.67 06 60 07
	Switchboard (Paris)	01 . . . . .	.47 62 69 00
	Switchboard (Montpellier)	04 . . . . .	.67 06 60 00
	Web site: http://support.euro.dell.com/fr		
	E-mail: web_fr_tech@dell.com		
Germany (Langen)	Technical Support	06103 . . . . .	.971-200
	Technical Support Fax	06103 . . . . .	.971-222
	Home/Small Business Customer Care	06103 . . . . .	.971-530
	Preferred Accounts Customer Care	06103 . . . . .	.971-420
	TechConnect BBS	06103 . . . . .	.971-666
	Switchboard	06103 . . . . .	.971-0
	Corporate Customer Care	06103 . . . . .	.971-560
	Web site: http://www.dell.de/support		
	E-mail: tech_support_germany@dell.com		
Hong Kong <i>NOTE: Customers in Hong Kong call Malaysia for customer assistance.</i>	Technical Support		toll free: 800 96 4107
	Customer Service (Penang, Malaysia) . . . . .		.810 4949
	Transaction Sales		toll free: 800 96 4109
	Corporate Sales		toll free: 800 96 4108

Table 5-2. Dell Contact Numbers (continued)

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
Ireland (Bray) <i>NOTE: Customers in Ireland call the U.K. for Home/Small Business customer assistance.</i>	Technical Support		1-850-543-543
	Customer Care	01	204 4026
	Home/Small Business Customer Care (Bracknell, U.K.)		0870 906 0010
	Sales		1-850-235-235
	SalesFax	01	286 2020
	Fax	01	286 6848
	TechConnect BBS	01	204 4711
	TechFax	01	204 4708
	Switchboard	01	286 0500
	Web site: http://support.euro.dell.com/ie E-mail: dell_direct_support@dell.com		
Italy (Milan)	Technical Support	2	57782.690
	Customer Care	2	57782.555
	Sales	2	57782.411
	Fax	2	57503530
	Switchboard	2	57782.1
	Web site: http://support.euro.dell.com/it E-mail: support_italy@dell.com		
Japan (Kawasaki)	Technical Support		toll free: 0088-22-7890
	Technical Support (Inspiron™)		toll free: 0120-1982-56
	Y2K Support	044	556-4298
	Customer Care	044	556-4240
	Direct Sales	044	556-3344
	Commercial Sales	044	556-3430
			556-3440
	Faxbox Service		03-5972-5840
Switchboard	044	556-4300	

Table 5-2. Dell Contact Numbers (continued)

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
Korea (Seoul) <i>NOTE: Customers in Korea call Malaysia for customer assistance.</i>	Technical Support		toll free: 080-200-3800
	Transaction Sales		toll free: 080-200-3600
	Corporate Sales		toll free: 080-200-3900
	Customer Service (Penang, Malaysia)		810 4949
	Fax		394 3122
	Switchboard		287 5600
Latin America <i>NOTE: Customers in Latin America call the U.S.A. for sales, customer, and technical assistance.</i>	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
			728-3772
Luxembourg <i>NOTE: Customers in Luxembourg call Belgium for sales, customer, and technical assistance.</i>	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
	Web site: http://support.euro.dell.com/be E-mail: tech_be@dell.com		
Macau <i>NOTE: Customers in Macau call Malaysia for customer assistance.</i>	Technical Support		toll free: 0800 582
	Customer Service (Penang, Malaysia)		810 4949
	Transaction Sales		toll free: 0800 581
Malaysia (Penang)	Technical Support		toll free: 1 800 888 298
	Customer Service	04	810 4949
	Transaction Sales		toll free: 1 800 888 202
	Corporate Sales		toll free: 1 800 888 213

Table 5-2. Dell Contact Numbers (continued)

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
Mexico (Colonia Granada) <i>NOTE: Customers in Mexico call the U.S.A. for access to the Automated Order-Status System and AutoTech.</i>	Automated Order-Status System (Austin, Texas, U.S.A.)	512	728-0685
	AutoTech (Automated technical support) (Austin, Texas, U.S.A.)	512	728-0686
	Customer Technical Support.	525	228-7870
	Sales.	525	228-7811
			toll free: 91-800-900-37
			toll free: 91-800-904-49
	Customer Service	525	228-7878
Main	525	228-7800	
Netherlands (Amsterdam)	Technical Support	020	581 8838
	Customer Care	020	581 8740
	Home/Small Business Sales		toll free: 0800-0663
	Home/Small Business Sales Fax	020	682 7171
	Corporate Sales	020	581 8818
	Corporate Sales Fax	020	686 8003
	Fax	020	686 8003
	Switchboard	020	581 8818
	Web site: http://support.euro.dell.com/nl		
	E-mail: tech_nl@dell.com		
New Zealand	Technical Support (Dell Dimension systems only) (\$2.50 + GST per call)		0900 51010
	Technical Support (Other systems)		0800 446 255
	Customer Service		0800 444 617
	Sales		0800 441 567
	Fax		0800 441 566
Norway (Lysaker) <i>NOTE: Customers in Norway call Sweden for fax technical support.</i>	Technical Support		671 16882
	Customer Care		671 16881
	Switchboard	67	1 16800
	Fax Technical Support (Upplands Vasby, Sweden)		590 05 594
	Fax Switchboard		671 16865
		Web site: http://support.euro.dell.com/no	
	E-mail: nor_support@dell.com		

Table 5-2. Dell Contact Numbers (continued)

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
Poland (Warsaw)	Technical Support	22	60 61 999
	Customer Care	22	60 61 999
	Sales	22	60 61 999
	Fax	22	60 61 998
	Switchboard	22	60 61 999
	Web site: http://support.euro.dell.com/pl		
E-mail: pl_support@dell.com			
Singapore (Singapore)	Technical Support		toll free: 800 6011 051
	Customer Service (Penang, Malaysia)	04	810 4949
	Transaction Sales		toll free: 800 6011 054
	Corporate Sales		toll free: 800 6011 053
<i>NOTE: Customers in Singapore call Malaysia for customer assistance.</i>			
South Africa (Johannesburg)	Technical Support	011	709 7710
	Customer Care	011	709 7710
	Sales	011	706 7700
	Fax	011	709 0495
	Switchboard	011	709 7700
Web site: http://support.euro.dell.com/za			
E-mail: dell_za_support@dell.com			
Southeast Asian/ Pacific Countries (excluding Australia, Brunei, China, Hong Kong, Japan, Korea, Macau, Malaysia, New Zealand, Singapore, Taiwan, and Thailand—refer to individual listings for these countries)	Customer Technical Support, Customer Service, and Sales (Penang, Malaysia)		60 4 810-4810

Table 5-2. Dell Contact Numbers (continued)

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
Spain (Madrid)	Technical Support Corporate Customer Care Home/Small Business Customer Care TechConnect BBS. 91 Corporate Sales Home/Small Business Sales Switchboard 91 Web site: http://support.euro.dell.com/es E-mail: es_support@dell.com		902 100 130 902 118 546 902 118 540 329 33 53 902 100 185 902 118 541 722 92 00
Sweden (Upplands Vasby)	Technical Support 08 Customer Care 08 Fax Technical Support. 08 Sales. 08 Web site: http://support.euro.dell.com/se E-mail: swe_support@dell.com		590 05 199 590 05 169 590 05 594 590 05 185
Switzerland (Geneva)	Technical Support Customer Care Fax 022 Switchboard 022 Web site: http://support.euro.dell.com/ch E-mail: swisstech@dell.com		0844 811 411 0848 802 802 799 01 90 799 01 01
Taiwan NOTE: Customers in Taiwan call Malaysia for customer assistance.	Technical Support toll free: 0080 651 226/0800 33 557 Customer Service (Penang, Malaysia) 810 4949 Transaction Sales toll free: 0080 651 228/0800 33 556 Corporate Sales toll free: 0080 651 227/0800 33 555		
Thailand NOTE: Customers in Thailand call Malaysia for customer assistance.	Technical Support toll free: 0880 060 07 Customer Service (Penang, Malaysia) 810 4949 Sales. toll free: 0880 060 06		

Table 5-2. Dell Contact Numbers (continued)

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
U.K. (Bracknell)	Technical Support		0870-908-0800
	Corporate Customer Care	01344	720206
	Home/Small Business Customer Care		0870-906-0010
	TechConnect BBS		0870-908-0610
	Sales	01344	720000
	AutoFax		0870-908-0510
	Web site: http://support.euro.dell.com/uk E-mail: dell_direct_support@dell.com		

Table 5-2. Dell Contact Numbers (continued)

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number	
U.S.A. (Austin, Texas)	Automated Order-Status System		toll free: 1-800-433-9014	
	AutoTech (Automated technical support)		toll free: 1-800-247-9362	
	Dell Home and Small Business Group:	Customer Technical Support		(Return Material Authorization Numbers) toll free: 1-800-624-9896
	Customer Technical Support		(Home sales purchased via http://www.dell.com)	toll free: 1-877-576-3355)
	Customer Service		(Credit Return Authorization Numbers)	toll free: 1-800-624-9897
	National Accounts (systems purchased by established Dell national accounts [have your account number handy], medical institutions, or value-added resellers [VARs]):	Customer Service and Technical Support		(Return Material Authorization Numbers) toll free: 1-800-822-8965
	Public Americas International (systems purchased by governmental agencies [local, state, or federal] or educational institutions):	Customer Service and Technical Support		(Return Material Authorization Numbers) toll free: 1-800-234-1490
	Dell Sales			toll free: 1-800-289-3355
				toll free: 1-800-879-3355
	Spare Parts Sales			toll free: 1-800-357-3355
	Dedicated Inspiron 3700 Technical Support			toll free: 1-877-595-3355
	DellWare SM			toll free: 1-800-753-7201
	DellWare FaxBack Service	512		728-1681
	Fee-Based Technical Support			toll free: 1-800-433-9005
	Sales (Catalogs)			toll free: 1-800-426-5150
	Fax			toll free: 1-800-727-8320
	TechFax			toll free: 1-800-950-1329
	TechConnect BBS	512		728-8528
	Dell Services for the Deaf, Hard-of-			Hearing, or Speech-Impaired toll free: 1-877-DELLTTY (1-877-335-5889)
	Switchboard			512338-4400



APPENDIX A

Technical Specifications

The most complete specifications for your computer are available on Dell's World Wide Web support site at <http://support.dell.com>. Enter your service tag sequence (or, if you have one, your Express Service Code) and click **Submit**. The service tag and Express Service Code are shown on the bottom of the computer.

You can also access the same support information by clicking **Inspiron** and selecting your system by name, but you have to select options from a series of menus to reach the same information.

Table A-1. Technical Specifications

Microprocessor	
Microprocessor type	Intel mobile microprocessor
L1 cache	32 KB (internal)
L2 cache	128 or 256 KB (integrated) or 512-KB pipelined-burst SRAM (external)
External bus frequency	100 MHz
Math coprocessor	internal to the microprocessor

Chip Set and Bus Architecture	
System chip set	Intel Mobile 440BX AGP
Data bus width	64 bits
DRAM bus width	64 bits
Microprocessor address bus width	32 bits
Flash EPROM	4 Mb
AGP bus	66 MHz
PCI bus	33 MHz

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table A-1. Technical Specifications (continued)

PC Card	
PCI controller	Texas Instruments PCI 1225 CardBus controller
PC Card connectors	two (supports Type I and Type II cards in any combination; Type III cards can be used only in the lower connector; the lower connector supports zoomed video cards on computers using the Microsoft Windows 98 operating system)
Cards supported	3.3 V and 5 V
PC Card connector size	68 pins
Data width (maximum)	
PCMCIA	16 bits
CardBus	32 bits

Memory	
Architecture	SDRAM
Memory module sockets	two
Memory module capacities and type	32-, 64-, 128-, 192-, and 256-MB 3.3-V SDRAM modules
Minimum RAM	64-MB memory module
Maximum RAM	512 MB
Memory clock speed	100 MHz
Memory access time	CL2 or CL3 (Note: CL3 indicates a CAS latency of 3 clocks)
BIOS address	FF000:0000-F000:FFFF

Connectors	
Serial (DTE)	9-pin connector; 16550-compatible, 16-byte buffer
Parallel	25-hole connector; unidirectional, bidirectional, EPP 1.9, or ECP
Video	15-hole connector
PS/2	6-pin mini-DIN connector
Infrared	IrDA 1.1 connector

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table A-1. Technical Specifications (continued)

Connectors (continued)	
Audio	one microphone-in connector; one line-in/audio-in connector; one headphones/speakers connector
USB	4-pin connector
Docking	240-pin connector
TV-out S-video	7-pin mini-DIN connector (an S-video to composite video adapter is also included with the computer)

Audio	
Audio type	Sound Blaster (software emulation-capable)
Audio controller	ESS Maestro 2E
Stereo Conversion	16 bit (analog-to-digital and digital-to-analog)
Interfaces:	
Internal	PCI bus/AC97
External	microphone (minijack); headphone; line-in
Speakers	two 8-ohm speakers
Internal speaker amplifier	1 W into 8 ohms stereo
Controls	volume can be controlled through key combinations, application program menus

Video	
Video type	256-bit hardware-accelerated
Data bus	2X AGP
Video controller	ATI Mobility M1
Video memory	8.0 MB

Display	
Type	SVGA, active-matrix color (TFT)
Maximum resolution/colors	800 x 600 pixels; 262,144-color display
Response time (typical)	30 ms rise; 20 ms fall
Operating angle	0° (closed) to 180°
Dot pitch	0.30 mm

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table A-1. Technical Specifications (continued)

Display (continued)	
Power consumption	
Panel (typical) . . . . .	.7 W
Backlight	1.6 W
Controls	brightness can be controlled through a key combination

Keyboard	
Number of keys	87 (U.S., Canada, Korea, Thailand, and locations that use traditional Chinese); 88 (Europe); 90 (Japan)
Key travel	3.0 mm + 0.5 mm/–0.2 mm (0.12 inch + 0.02 inch/–0.0008 inch)
Key spacing	19.05 mm ± 0.3 mm (0.75 inch ± 0.012 inch)

Battery	
Type	lithium ion
Dimensions:	
Height	21.5 mm (0.83 inch)
Depth	88.5 mm (3.48 inches)
Width	139.0 mm (5.47 inches)
Weight	0.39 kg (0.87 lb)
Voltage	14.8 VDC
Capacity	53 WH
Charge time (approximate): ¹	
Computer on	2.5 hours
Computer off	1 hour
Life span (approximate) ¹	500 discharge/charge cycles
Temperature range:	
Charge	0° to 40°C (32° to 104°F)
Storage	–20° to 60°C (–4° to 140°F)

¹ Battery performance features such as charge time and life span can vary according to the conditions under which the computer and battery are used.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table A-1. Technical Specifications (continued)

AC Adapter	
Input voltage	90 to 135 VAC and 164 to 264 VAC
Input current (maximum)	1.5 A
Input frequency	47 to 63 Hz
Output current	4.5 A (maximum at 4-second pulse); 3.51 A (continuous)
Rated output voltage	20.0 VDC
Dimensions:	
Height	27.94 mm (1.1 inches)
Width	58.42 mm (2.3 inches)
Depth	133.35 mm (5.25 inches)
Weight (with cables)	0.4 kg (0.9 lb)
Temperature range:	
Operating	0° to 40°C (32° to 104°F)
Storage	-20° to 60°C (-4° to 140°F)

Physical	
Dimensions:	
Height	38.6 mm (1.52 inches)
Width	306.0 mm (12.05 inches)
Depth	241.0 mm (9.49 inches)

Environmental (Computer)	
Temperature:	
Operating	0° to 40°C (32° to 104°F)
Storage	-20° to 60°C (-4° to 140°F)
Relative humidity (maximum):	
Operating	10% to 90% (noncondensing)
Storage	5% to 95% (noncondensing)

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table A-1. Technical Specifications (continued)

Environmental (Computer) (continued)	
Maximum vibration:	
Operating	0.9 GRMS using a random-vibration spectrum that simulates user environment
Storage	1.3 GRMS using a random-vibration spectrum that simulates air/truck shipment
Maximum shock: ¹	
Operating	152.4 cm/sec (60.0 inches/sec) (equal to a half-sine pulse width of 2 ms)
Storage	203.2 cm/sec (80 inches/sec) (equal to a half-sine pulse width of 2 ms)
Altitude (maximum):	
Operating	-18 to 3048 m (-59 to 10,000 ft)
Storage	-18 to 10,600 m (-59 to 35,000 ft)

Touch Pad

Interface	PS/2-compatible
X/Y position resolution (graphics table mode)	240 cpi
Size:	
Thickness	2.8 mm (0.11 inch) at highest component
Width (sensor-active area)	55mm (2.17 inch)
Height	39-mm (1.54-inch rectangle)
Weight	9.02 g (0.29 oz)
Power:	
Supply voltage	5 V \pm 10%
Supply current	25 mA (maximum operating for track stick and touch pad combined)
ESD	In accordance with IEC-801-2

¹ Measured with the hard-disk drive in head-parked position.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table A-1. Technical Specifications (continued)

Track Stick	
Interface	PS/2-compatible
X/Y position resolution.	250 counts/sec.@100gf
Size	Protrudes .5 mm higher than surrounding keycaps
Power:	
Supply voltage	5 V ± .5 VDC
Supply current	25 mA (maximum operating for track stick and touch pad combined)
ESD	In accordance with IEC-801-2

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.



APPENDIX B

Using the System Setup Program

This appendix describes the System Setup program, which you can use to configure your computer as well as enable and disable your computer's password features.

Your computer retains system configuration information in the nonvolatile random-access memory (NVRAM) maintained by your computer's reserve battery. Each time you turn on your computer, it compares the installed hardware with the system configuration information stored in NVRAM. If the computer detects a discrepancy, it generates an error message that identifies the incorrect configuration setting.

You can use the System Setup program as follows:

- To set or change user-selectable features—for example, your password or power management features
- To verify information about your computer's current configuration, such as the amount of system memory

For some options, you must reboot the computer before any changes take effect. Changes for other options take effect immediately.



NOTE: If you change an option that is activated by rebooting, the System Setup program displays the setting you selected rather than the setting currently in effect. You must reboot the computer for the new setting to take effect.

After you set up your computer, run the System Setup program to familiarize yourself with your system configuration information and optional settings. Dell recommends that you write down the information for future reference.



NOTE: If the computer uses the Microsoft Windows NT 4.0 or Windows 98 operating system, you must use the System Setup program to view and change your system configuration.

Entering the System Setup Program

Enter and use the System Setup program as follows:

- Press <Fn><F1> at any time on the keyboard (or <Scroll Lock><F1> on an external keyboard if the **External Hot Key** option is enabled). If you press <Fn><F3> (or <Scroll Lock><F3> on an external keyboard if the **External Hot Key** option is enabled), the System Setup program opens directly to the **Battery Status** screen.
- To enter the System Setup program while your computer is booting, press <F2> when the Dell screen appears.
- Press <Esc> to exit the System Setup program. If you change the setting of an option that requires rebooting to take effect, exit the operating system before rebooting. (The Help text in the upper-right corner of System Setup pages 1, 2, and 4 tells you if the computer must be rebooted.)



NOTE: If the System Setup program is running when the computer enters standby mode, the computer exits the System Setup program and then activates standby mode.

System Setup Program Screens

The System Setup screens display the current setup and configuration information and optional settings for your computer. Information on the screens (or “pages”) is organized in five boxed areas:

- **Title** — The box at the top of all screens lists the page number, system name, and version number of the basic input/output system (BIOS).
- **Options** — The box on the left half of pages 1, 2, and 4 lists options that define the installed hardware in your computer and the power conservation and security features for your computer.

Fields next to the options contain settings or values. You can change those values that appear bright on the screen. Options or values that you cannot change (because they are determined or calculated by the computer) appear less bright.

- **Help** — The box on the upper-right half of pages 1, 2, and 4 displays help information for the option with a currently highlighted field.
- **Computer data** — The box in the lower-right corner of pages 1, 2, and 4 displays information about your computer.
- **Key functions** — The line of boxes across the bottom of all screens lists keys and their functions within the System Setup program.

Page 1

See Figure B-1 and Table B-1 for an explanation of the options and settings on **Page 1** of the System Setup program.

Dell Computer Corporation (www.dell.com)		Setup	BIOS Version:
Page 1 of 4	Dell Inspiron 3700		
Time: 15:26:23	Date: Thu Aug 26, 1999	This category sets the time in 24-hour format (hours:minutes:seconds) for the built-in system clock.	
Primary Hard Drive:	None	To change the value in a field, enter digits or use the left- or right-arrow key to decrease or increase the value.	
Diskette Drive A:	Not Installed	Changes take effect immediately.	
Diskette Drive B:	Not Installed		
Diskette Reconfig:	Any Time		
Modular Bay:	Not Installed		
Docking Ethernet:	Enabled		
Docking IRQ:	Optimized		
Docking Status:	Undocked		
Universal Connect:	Enabled		
Boot Speed:		Microprocessor:	
Boot First device:	Diskette Drive	System Memory:	
Boot Second device:	Internal HDD	Video Memory:	
Boot Third device:	NONE	Cache ???: error	
		Service Tag: Not Installed	
		Asset Tag: Not Installed	
↑,↓ change fields | ←,→ change values | Alt-P page | Esc exit			

Figure B-1. Page 1 of the System Setup Program

Table B-1. Page 1 Options

Option	Function
Time	Resets the time on the computer's internal clock. Time is kept in a 24-hour format (hours:minutes:seconds). <i>NOTE: If a network server controls the time reflected by the Time option, changing this option has no effect.</i> A change to the Time option takes effect immediately (rebooting is not required). However, you must reboot to make the change apparent to the operating system.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-1. Page 1 Options (continued)

Option	Function
Date	<p>Resets the date on the computer's internal calendar.</p> <p>Your computer automatically displays the day of the week corresponding to the settings in the three fields that follow (month, day-of-the-month, and year).</p> <p>A change to the Date option takes effect immediately (rebooting is not required). However, you must reboot to make the change apparent to the operating system.</p> <p>To change the date, press the right-arrow key to increase the number in the highlighted field, or press the left-arrow key to decrease the number. If you prefer, you can type in numbers in the month and day-of-the-month fields.</p>
Primary Hard Drive	<p>Displays the capacity of the computer's internal hard-disk drive. This option does not have any user-selectable settings.</p> <p><i>NOTE: The optional second or third hard-disk drives do not appear in this option, even if installed.</i></p>
Diskette Drive A	<p>Identifies the location of the 3.5-inch diskette drive: Modular Bay, Parallel Port, or Not Installed. No user-selectable settings are available for this option.</p>
Diskette Drive B	<p>Identifies the location of a second 3.5-inch diskette drive: Parallel Port, Modular Bay, or Not Installed. No user-selectable settings are available for this option.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-1. Page 1 Options (continued)

Option	Function
Diskette Reconfig	<p>Allows application programs that access the diskette drive to run at their optimum speed. Settings are At Reboot Only and Any Time.</p> <p>When Diskette Reconfig is set to Any Time (the default), you do not have to reboot after you install a diskette drive in the media bay or attach a diskette drive to the parallel connector on the back of the computer. However, some application programs such as virus scans that access the diskette drive will run very slowly if the diskette drive is not in the media bay or connected to the parallel port.</p> <p>When Diskette Reconfig is set to At Reboot Only, such application programs run at normal speed, but you must reboot after installing or attaching a diskette drive.</p>
Modular Bay	<p>(Media Bay) Identifies the kind of device—Diskette Drive, Battery, or CD-ROM Drive—that is installed in the media bay. If the media bay does not contain a device or if a travel bay is installed, this option reads Not Installed. No user-selectable settings are available for this option.</p>
Docking Ethernet	<p>Controls the internal ethernet controller in the advanced port replicator. A change to this option takes effect when you reboot.</p>
Docking IRQ	<p>Tells the computer which IRQ to assign to the advanced port replicator during the boot sequence. If this option is set to Optimized, the docking station or replicator is assigned a dedicated IRQ during the boot sequence. Select IRQ 11 if a peripheral device requires the use of the dedicated IRQ.</p>
Docking Status	<p>Shows whether the computer is attached to an advanced port replicator. No user-selectable settings are available for this option.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-1. Page 1 Options (continued)

Option	Function
Universal Connect	<p>Functions with the advanced port replicator (APR) if the computer uses Windows 98.</p> <p>Set this option to Enabled (the default) if you often use more than one APR and want to minimize the initialization time when you connect the replicator to the computer. When this option is set to Disabled, the APR is reinitialized each time it is connected to the computer.</p>
Boot Speed	<p>Allows you to choose between the computer's processing speed (the default) and Compatible, a slower compatibility speed. The compatibility speed varies, depending on the configuration of your system.</p> <p>When you change the setting in the Boot Speed option, the System Setup program stores and continues to display the new setting even if you do not reboot your computer when you exit the System Setup program. If you start the System Setup program again during your current work session, the processing speed displayed for the Boot Speed option may not match the actual speed at which your computer is running.</p> <p>For a change in the Boot Speed option to take effect, you must reboot your computer.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-1. Page 1 Options (continued)

Option	Function
Boot First device	<p>Determines which disk device your computer uses to find the software needed to start the operating system.</p> <p>The term boot refers to the computer's start-up procedure. When you turn on the computer, it "bootstraps" itself into an operational state by loading into memory a small program, which in turn loads the necessary operating system. Boot First device tells the computer where to look first for the files that it needs to load.</p> <p>Settings for this option are:</p> <p>Diskette Drive (the default) — Causes your computer to attempt first to boot from a bootable diskette</p> <p>Internal HDD — Causes your computer to boot from the hard-disk drive</p> <p>CDROM/DVDROM Drive — Causes your computer to attempt first to boot from a bootable CD</p> <p>Modular Bay HDD — Causes your computer to attempt first to boot from the second hard-disk drive installed in the modular (media) bay</p> <p>None</p> <p>I3700 APR NIC — Causes your computer to attempt first to boot from a network source.</p> <p>For a change in the Boot First device option to take effect, you must reboot your computer.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-1. Page 1 Options (continued)

Option	Function
Boot Second device	<p>If the computer cannot find the software it needs to start the operating system on the drive identified in Boot First device, it will search the device named in Boot Second device.</p> <p>Settings for the option are:</p> <p>Internal HDD (the default) — Causes your computer to attempt to boot from the hard-disk drive</p> <p>Diskette Drive — Causes your computer to attempt to boot from the diskette drive</p> <p>CDROM/DVDROM Drive — Causes your computer to attempt to boot from a bootable CD</p> <p>Modular Bay HDD — Causes your computer to boot from the second hard-disk drive installed in the modular (media) bay</p> <p>None</p> <p>I3700 APR NIC — Causes your computer to attempt first to boot from a network source.</p> <p>For a change in the Boot Second device option to take effect, you must reboot your computer.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-1. Page 1 Options (continued)

Option	Function
Boot Third device	<p>If the computer cannot find the software it needs to start the operating system on the drive identified in Boot Second device, it will search the device named in Boot Third device.</p> <p>Settings for the option are:</p> <p>None (the default)</p> <p>Internal HDD — Causes your computer to attempt to boot from the hard-disk drive</p> <p>Diskette Drive — Causes your computer to attempt to boot from the diskette drive</p> <p>CDROM/DVDROM Drive — Causes your computer to attempt to boot from a bootable CD</p> <p>Modular Bay HDD — Causes your computer to attempt to boot from the second hard-disk drive installed in the modular (media) bay</p> <p>I3700 APR NIC — Causes your computer to attempt first to boot from a network source.</p> <p>For a change in the Boot Third device option to take effect, you must reboot your computer.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Page 2

See Figure B-2 and Table B-2 for an explanation of the options and settings on **Page 2** of the System Setup program.

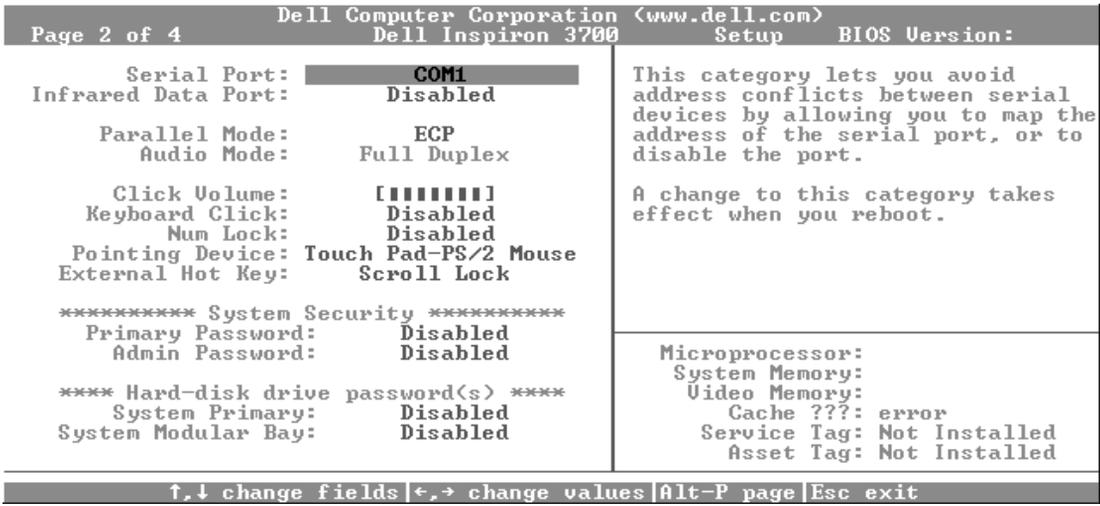


Figure B-2. Page 2 of the System Setup Program

Table B-2. Page 2 Options

Option	Function
Serial Port	<p>Allows you to map the address of the serial port or to disable the serial port.</p> <p>Settings for this option are:</p> <p>COM1 (the default) — Maps the serial port to COM1</p> <p>COM2 — Maps the serial port to COM2</p> <p>COM3 — Maps the serial port to COM3</p> <p>COM4 — Maps the serial port to COM4</p> <p>Disabled — Disables the serial port and its assigned COM address, freeing that interrupt for another device to use</p> <p>For a change in the Serial Port option to take effect, you must reboot your computer.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-2. Page 2 Options (continued)

Option	Function
Infrared Data Port	<p>Allows you to avoid resource conflicts by remapping the address of the infrared ports or disabling the port. The COM1, COM2, COM3, and COM4 settings allow you to take advantage of the computer's Fast IR support.</p> <p>Settings for this option are:</p> <p>Disabled — Disables the infrared data port and makes the direct memory access (DMA), interrupt request (IRQ), and I/O resources available for another serial device to use</p> <p>COM1 — Maps the infrared data port to COM1</p> <p>COM2 — Maps the infrared data port to COM2</p> <p>COM3 (the default) — Maps the infrared data port to COM3</p> <p>COM4 — Maps the infrared data port to COM4</p> <p>For a change in the Infrared Data Port option to take effect, you must reboot your computer.</p>
Infrared Mode	<p>If Infrared Data Port is set to any function other than Disabled, specify the Infrared Mode by selecting one of the following functions:</p> <p>Fast IR — Use Fast IR if the infrared device supports the Fast IR specification.</p> <p>Slow IR — Use Slow IR if the infrared device does not support the Fast IR specification.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-2. Page 2 Options (continued)

Option	Function
Parallel Mode	<p>Controls whether the computer's integrated parallel port acts as a Personal System/2 (PS/2)-compatible (Bidirectional) port, Advanced Technology (AT)-compatible (Normal) port, or Extended Capabilities Port (ECP)-compatible port. The default for Parallel Mode is ECP.</p> <p>Windows 98 uses ECP protocol automatically if it detects an ECP-compatible device.</p> <p>Set this option according to the type of peripheral device connected to the parallel port. To determine the correct mode to use, see the documentation that came with the device.</p> <p><i>NOTE: The ECP setting also works for most software written for the AT and PS/2 modes. Devices that use ECP mode may come with special drivers that need to be installed in order to use these modes.</i></p> <p>Setting Parallel Mode to Disabled disables the parallel port and its assigned LPT address, freeing its interrupt for another device to use.</p> <p>For a change in the Parallel Mode option to take effect, you must reboot your computer.</p>
Audio Mode	<p>Defines the audio resources of the computer and the external devices you use with it. Audio Mode is set to Full Duplex, which allows the computer's audio system to play and record sounds simultaneously.</p>
Click Volume	<p>Allows you to disable or adjust the volume of the keyboard clicks if the Keyboard Click option is enabled. The default is Maximum.</p> <p>A change to the Click Volume option takes effect immediately (rebooting is not required).</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-2. Page 2 Options (continued)

Option	Function
Keyboard Click	<p>Lets you choose whether the integrated keyboard makes audible clicking sounds. The Click Volume option must be enabled for this option to function. The volume of the simulated key clicks is controlled by the setting in the Click Volume option.</p> <p>Settings for this option are Disabled (the default) and Enabled.</p> <p>A change to the Keyboard Click option takes effect immediately (rebooting is not required).</p>
Num Lock	<p>Determines if the system boots with the Num Lock enabled or disabled when an external keyboard is attached.</p> <p>Settings for this options are Disabled (the default) and Enabled.</p> <p>A change to the Num Lock option has no effect when the system is booted unless an external keyboard is attached.</p>
Pointing Device	<p>Enables and disables the computer's touch pad and track stick.</p> <p>Settings for this option are:</p> <p>Touch Pad-PS/2 Mouse (the default)</p> <p>Serial Mouse — Disables the touch pad and track stick and allows you to use a mouse connected to the serial connector on the I/O port</p> <p>If you want to use a serial mouse, you must first set the Pointing Device option to Serial Mouse.</p> <p>For a change in the Pointing Device option to take effect, you must reboot your computer.</p>
External Hot Key	<p>Lets you use the <Scroll Lock> key on the external keyboard the same way you use the <Fn> key on the computer's built-in keyboard. Set this option to Scroll Lock (the default) if you are using an external keyboard. Set this option to Not Installed to disable this function on the external keyboard.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-2. Page 2 Options (continued)

Option	Function
System Security Primary Password	<p>Displays the current status of the primary password and allows you to assign or change this password.</p> <p>Settings for this option are:</p> <p>Disabled (the default) — Indicates that no primary password is assigned</p> <p>Enabled — Indicates that a primary password is currently assigned</p> <p>If you assign a primary password, the computer prompts you for the password each time you boot the computer</p> <p>NOTICE: The password features provide a high level of security for the data in your computer. However, they are not foolproof. If your data requires more security, you should obtain and use additional forms of protection, such as data encryption programs or PC Cards with encryption features.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-2. Page 2 Options (continued)

Option	Function
Admin Password	<p>Displays the current status of your administrator password and allows you to assign or change this password. Settings for this option are:</p> <p>Disabled (the default) — Indicates that no administrator password is assigned.</p> <p>Enabled — Indicates that an administrator password is currently assigned. To enable a password, set the Admin Password option to Enabled, then enter a password when prompted. When prompted to verify the password, re-enter the password.</p> <p><i>NOTE: When Admin Password is enabled, all System Setup options, except passwords, are locked out.</i></p> <p>The administrator password is designed for use by system administrators and service technicians in corporate environments. If an administrator password is assigned, you can use it to access the computer even if you do not know the primary password.</p> <p>NOTICE: The password features provide a high level of security for the data in your computer. However, they are not foolproof. If your data requires more security, you should obtain and use additional forms of protection, such as data encryption programs or PC Cards with encryption features.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-2. Page 2 Options (continued)

Option	Function
Hard-disk drive password(s) System Primary System Modular Bay	<p>Displays the current status of the primary hard-disk drive password and allows you to assign or change this password. You can set a primary password for the system.</p> <p>Settings for this option are:</p> <p>Disabled (the default) — Indicates that no password is assigned</p> <p>Enabled — Indicates that a password is currently assigned</p> <p>NOTICE: The password features provide a high level of security for the data in your computer. However, they are not foolproof. If your data requires more security, you should obtain and use additional forms of protection, such as data encryption programs or PC Cards with encryption features.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Page 3

See Figure B-3 and Table B-3 for an explanation of the options and settings on **Page 3** of the System Setup program.

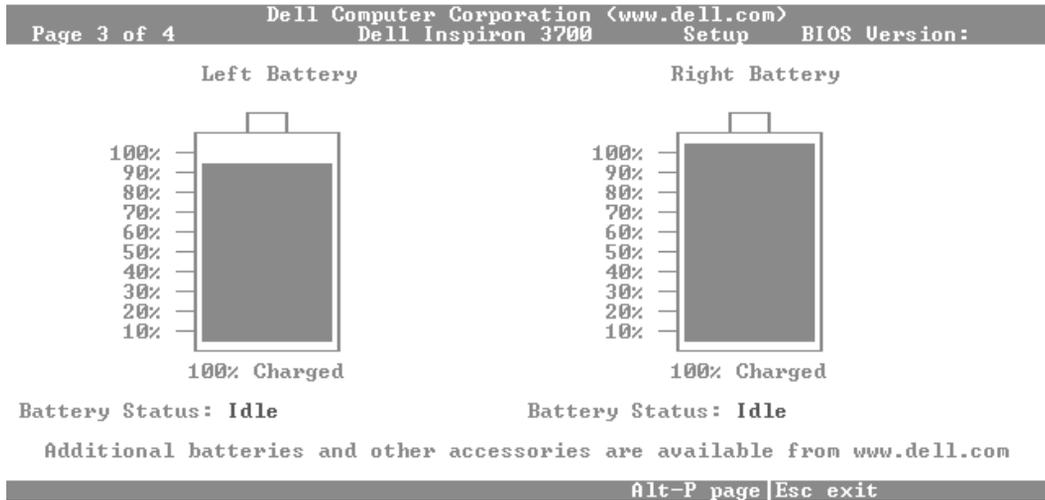


Figure B-3. Page 3 of the System Setup Program

Table B-3. Page 3 Options

Option	Function
Battery Status Left Battery Right Battery	Displays the charge status of the installed batteries.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-4. Page 4 Options (continued)

Option	Function
Power Management	<p>Allows you to enable or disable power conservation features when the computer is being powered by a battery or AC power.</p> <p>If you want to use any of the time-out options while using battery power, set the Battery option to Enabled. If you want to use the time-out options while using AC power, set the AC option to Enabled.</p> <p>A change to the Power Management option takes effect immediately (rebooting is not required).</p>
Display Time-Out	<p>When the Power Management option is set to Enabled, you may set the Display Time-Out option. This option determines how long the display is inactive before it turns off.</p> <p>Settings for this option are Disabled, 1 minute, 2 minutes, 3 minutes, 4 minutes, 5 minutes, 10 minutes, 15 minutes, 30 minutes, or 1 hour.</p> <p>A change in this option takes effect immediately.</p>
Disk Time-Out	<p>When the Power Management option is set to Enabled, you may set the Disk Time-Out option. This option determines how long the hard-disk drive is inactive before it turns off.</p> <p>Settings for this option are Disabled, 15 seconds, 1 minute, 2 minutes, 3 minutes, 4 minutes, 5 minutes, 10 minutes, 15 minutes, 30 minutes, or 1 hour.</p> <p>A change in this option takes effect immediately.</p>
Suspend Time-Out	<p>When the Power Management option is set to Enabled, you may set the Suspend Time-Out option. This option determines how long the computer is inactive before it enters standby mode.</p> <p>Settings for this option are Disabled, 1 minute, 2 minutes, 3 minutes, 4 minutes, 5 minutes, 10 minutes, 15 minutes, 30 minutes, or 1 hour.</p> <p>A change in this option takes effect immediately.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-4. Page 4 Options (continued)

Option	Function
S2D Time-Out	<p>When the Power Management option is set to Enabled, you may set the S2D Time-Out option. This option determines how long the computer is inactive before it copies all system information to a file on the hard-disk drive. This setting has no effect when the computer is docked.</p> <p>Settings for this option are Disabled, 30 minutes, 1 hour, 2 hours, 3 hours, 4 hours, 6 hours, 8 hours, or 12 hours.</p> <p>A change in this option takes effect immediately.</p>
Smart CPU Mode	<p>When the Power Management option is set to Enabled, you may set the Smart CPU Mode option. This option is key to good thermal performance.</p> <p>When set to Disabled, the microprocessor runs at its highest speed and may impact thermal performance.</p> <p>When set to Enabled, the computer changes the clock speed according to the needs of the application.</p> <p>A change in this option takes effect immediately.</p>
Display Close	<p>Lets you determine whether your computer enters standby mode when the display is closed or whether only the display is turned off.</p> <p>Suspend (the default) — Allows the computer to enter standby mode when the display is closed.</p> <p>Active — Turns off the display, but does not put the computer into standby mode.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-4. Page 4 Options (continued)

Option	Function
Ring/Event Resume	<p>Lets you determine if the computer exits standby mode when an installed modem card receives an incoming call. This feature must be supported by your modem PC Card and your operating system.</p> <p>Settings for this option are:</p> <p>Disabled (the default) — Resumes normal operation when the computer detects a modem ring</p> <p>Enabled — Keeps the computer in standby mode when the computer detects a modem ring</p> <p><i>NOTES: Dell recommends that you set Ring/Event Resume to Disabled when an external serial device, other than a modem, is connected to your computer.</i></p> <p><i>In order for the Ring/Event Resume option to work properly, this feature must be enabled in the device driver for your modem PC Card. All drivers supplied by Dell with your computer are configured to allow the computer to resume normal operation when a modem receives an incoming call. If you use a PC Card that you did not receive from Dell, check the documentation to make sure this feature is set to Enabled.</i></p> <p>A change to the Ring/Event Resume option takes effect immediately (rebooting is not required).</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table B-4. Page 4 Options (continued)

Option	Function
Alarm Resume	<p>Directs the computer to resume normal operation when it is in suspend mode and detects an alarm from the RTC. Such alarms can be set through various application programs. In order for the alarms in these programs to work, the Alarm Resume option must be set to Enabled.</p> <p>Settings for this option are:</p> <p>Enabled (the default) — Resumes normal operation when the computer detects an alarm.</p> <p>Disabled — Keeps the computer in suspend mode even if the computer detects an alarm.</p> <p>A change to the Alarm Resume option takes effect immediately (rebooting is not required).</p>
Wakeup On LAN	<p>Enables the computer to power up when triggered by a special LAN signal.</p> <p>A change to the Wakeup On LAN option takes effect immediately.</p>

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.



APPENDIX C

Error Messages and Flash Codes

Your application programs, operating system, and the computer itself can identify problems and alert you to them. When this occurs, a message may appear on the computer's display or on an external monitor (if one is attached), or a flash code may be emitted. This appendix documents the diagnostic codes, flash codes, and system messages generated by the system basic input/output system (BIOS). For other messages, refer to the documentation for your application program or operating system.

System Messages

If an error message appears on the display or external monitor, make a note of the message. For an explanation of the message and suggestions for correcting any errors, see Table C-1. The messages are listed alphabetically.



NOTE: If the message is not listed in Table C-1, see the documentation for the application program that was running at the time the message appeared and/or the operating system documentation for an explanation of the message and a recommended action.

Table C-1. System Error Messages

Message	Cause	Action
Auxiliary device failure	The touch pad, track stick, or external PS/2 mouse may be faulty.	If you are using an external mouse only, check the connection for a loose or improperly connected cable. If the problem persists, enable the Pointing Device option in the System Setup program. For instructions, see Appendix B, "Using the System Setup Program." If the problem persists, call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
Bad command or file name	The command you entered does not exist or is not in the pathname you specified.	Make sure that you have typed the command correctly, placed spaces in the proper location, and used the correct pathname.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table C-1. System Error Messages (continued)

Message	Cause	Action
Cache disabled due to failure	The primary cache internal to the microprocessor has failed.	Call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
CD-ROM drive controller failure 1	The CD-ROM drive does not respond to commands from the computer.	Turn off the computer, remove the drive, and boot the computer from a bootable diskette. Then turn off the computer again, reinstall the drive, and reboot the computer. (For instructions, see "Installing an Internal Hard-Disk Drive" in Chapter 2.) If the problem persists, try another drive. Then run the IDE Devices tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
Data error	The diskette or hard-disk drive cannot read the data.	Run the appropriate utility to check the file structure of the diskette drive or hard-disk drive. See the documentation that came with your operating system.
Decreasing available memory	One or more memory modules may be faulty or improperly seated.	Reseat the memory modules and, if necessary, replace them. For instructions, see "Installing Memory Modules" in Chapter 2.
Disk C: failed initialization	The hard-disk drive failed initialization.	Run the IDE Devices tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
Diskette drive 0 seek failure	A cable may be loose, or the system configuration information may not match the hardware configuration.	Run the Diskette tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3. If error is not corrected, have the cables checked by an authorized service technician.
Diskette read failure	A cable may be loose, or the diskette may be faulty.	If the diskette-drive access indicator lights up, try a different diskette.
Diskette subsystem reset failed	The diskette drive controller may be faulty.	Run the Diskette tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
Diskette write-protected	Because the diskette is write-protected, the operation cannot be completed.	Slide the write-protect notch up.
Drive not ready	No diskette is in the diskette drive, or no hard-disk drive is in the media bay. The operation requires a diskette in the drive or a hard-disk drive in the media bay before it can continue.	Put a diskette in the diskette drive, or push the diskette all the way into the drive until the eject button pops out. Or, install a hard-disk drive in the media bay. For instructions, see the documentation that accompanied your hard-disk drive.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table C-1. System Error Messages (continued)

Message	Cause	Action
Error reading PCMCIA card	The computer cannot identify the PC Card.	Reseat the card or try another PC Card that you know works.
Extended memory size has changed	The amount of memory recorded in NVRAM does not match the memory installed in the computer.	Reboot the computer. If the error appears on the display again, call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
Gate A20 failure	An installed memory module may be loose.	Reseat the memory modules and, if necessary, replace them. For instructions, see "Installing Memory Modules" in Chapter 2.
General failure	The operating system is unable to carry out the command.	This message is usually followed by specific information—for example, <code>Printer out of paper</code> . Respond by taking the appropriate action.
Hard-disk drive configuration error	The computer cannot identify the drive type.	Turn off the computer, remove the drive, and boot the computer from a bootable diskette. Then turn off the computer, reinstall the drive, and reboot the computer. (For instructions, see "Installing an Internal Hard-Disk Drive" in Chapter 2.) Run the IDE Devices tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
Hard-disk drive controller failure 0	The hard-disk drive does not respond to commands from the computer.	Turn off the computer, remove the drive, and boot the computer from a bootable diskette. Then turn off the computer again, reinstall the drive, and reboot the computer. (For instructions, see "Installing an Internal Hard-Disk Drive" in Chapter 2.) If the problem persists, try another drive. Then run the IDE Devices tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
Hard-disk drive failure	The hard-disk drive does not respond to commands from the computer.	Turn off the computer, remove the drive, and boot the computer from a bootable diskette. Then turn off the computer again, reinstall the drive, and reboot the computer. (For instructions, see "Installing an Internal Hard-Disk Drive" in Chapter 2.) If the problem persists, try another drive. Then run the IDE Devices tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table C-1. System Error Messages (continued)

Message	Cause	Action
Hard-disk drive read failure	The hard-disk drive may be faulty.	Turn off the computer, remove the drive, and boot the computer from a bootable diskette. Then turn off the computer again, reinstall the drive, and reboot the computer. (For instructions, see "Installing an Internal Hard-Disk Drive" in Chapter 2.) If the problem persists, try another drive. Then run the IDE Devices tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
Invalid configuration information-please run System Setup Program	The system configuration information does not match the hardware configuration. This message is most likely to occur after a memory module is installed.	Correct the appropriate options in the System Setup program. For instructions, see Appendix B, "Using the System Setup Program."
Keyboard clock line failure	A cable or connector may be loose, or the keyboard may be faulty.	Run the PC-AT Compatible Keyboards test in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
Keyboard controller failure	A cable or connector may be loose, or the keyboard may be faulty.	Reboot the computer, and avoid touching the keyboard or the mouse during the boot routine. If the problem persists, run the PC-AT Compatible Keyboards test in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
Keyboard data line failure	A cable or connector may be loose, or the keyboard may be faulty.	Run the PC-AT Compatible Keyboards test in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
Keyboard stuck key failure	If an external keyboard or keypad is being used, a cable or connector may be loose or the keyboard may be faulty. If the integrated keyboard is being used, the keyboard may be faulty. A key on the integrated keyboard or external keyboard may have been pressed while the computer was booting.	Run the PC-AT Compatible Keyboards test in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
Memory address line failure at address, read value expecting value	An installed memory module may be faulty or improperly seated.	Reseat the memory modules and, if necessary, replace them. For instructions, see "Installing Memory Modules" in Chapter 2.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table C-1. System Error Messages (continued)

Message	Cause	Action
Memory allocation error	The software you are attempting to run is conflicting with the operating system, another application program, or a utility.	Turn off the computer, wait 30 seconds, and then restart it. Try to run the program again. If the problem persists, contact the software company.
Memory data line failure at address, read value expecting value	An installed memory module may be faulty or improperly seated.	Reseat the memory modules and, if necessary, replace them. For instructions, see "Installing Memory Modules" in Chapter 2.
Memory double word logic failure at address, read value expecting value	An installed memory module may be faulty or improperly seated.	Reseat the memory modules and, if necessary, replace them. For instructions, see "Installing Memory Modules" in Chapter 2.
Memory odd/even logic failure at address, read value expecting value	An installed memory module may be faulty or improperly seated.	Reseat the memory modules and, if necessary, replace them. For instructions, see "Installing Memory Modules" in Chapter 2.
Memory write/read failure at address, read value expecting value	An installed memory module may be faulty or improperly seated.	Reseat the memory modules and, if necessary, replace them. For instructions, see "Installing Memory Modules" in Chapter 2.
No boot device available	The computer cannot find the diskette or hard-disk drive.	If the diskette drive is your boot device, make sure that there is a bootable diskette in the drive. If the hard-disk drive is your boot device, make sure that the drive is installed, properly seated, and partitioned as a boot device. (For instructions, see "Installing an Internal Hard-Disk Drive" in Chapter 2.)
No boot sector on hard-disk drive	The operating system may be corrupted.	Reinstall your operating system. See the documentation that came with your operating system.
No timer tick interrupt	A chip on the system board may be malfunctioning.	Run the System Board Devices tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table C-1. System Error Messages (continued)

Message	Cause	Action
Non-system disk or disk error	The diskette in drive A or your hard-disk drive does not have a bootable operating system installed on it.	If you are trying to boot from the diskette, replace it with one that has a bootable operating system.
Not a boot diskette	There is no operating system on the diskette.	Boot the computer with a diskette that contains an operating system.
Optional ROM bad checksum	The optional ROM apparently failed.	Call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
Sector not found	The operating system cannot locate a sector on the diskette or hard-disk drive. You probably have a bad sector or corrupted FAT on the diskette or hard-disk drive.	Run the appropriate utility to check the file structure on the diskette or hard-disk drive. If a large number of sectors are defective, back up the data (if possible), and then reformat the diskette or hard-disk drive.
Seek error	The operating system cannot find a specific track on the diskette or hard-disk drive.	If the error is on the diskette drive, try another diskette in the drive.
Shutdown failure	A chip on the system board may be malfunctioning.	Run the System Board Devices tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
Time-of-day clock lost power	Data stored in NVRAM has become corrupted.	Connect your computer to an electrical outlet to charge the battery. If the problem persists, try to restore the data. To restore the data, press <Fn><F1> to enter the System Setup program. Then immediately exit it. If the message reappears, call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
Time-of-day clock stopped	The reserve battery that supports the data stored in NVRAM may be read.	Connect your computer to an electrical outlet to charge the battery. If the problem persists, call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
Time-of-day not set-please run the System Setup program	The time or date stored in the System Setup program does not watch the system clock.	Correct the settings for the Date and Time options. For instructions, see Appendix B, "Using the System Setup Program."
Timer chip counter 2 failed	A chip on the system board may be malfunctioning.	Run the System Board Devices tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table C-1. System Error Messages (continued)

Message	Cause	Action
Unexpected interrupt in protected mode	The keyboard controller may be malfunctioning, or an installed memory module may be loose.	Run the System Memory tests and the PC-AT Compatible Keyboards test in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
Warning: Battery is critically low.	The battery is running out of charge.	Replace the battery, or connect the computer to an electrical outlet. Otherwise, activate save-to-disk suspend mode or turn off the computer. For instructions, see "Save-to-Disk Suspend Utility" in Chapter 2.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

System Flash Codes

When errors that occur during the boot routine cannot be reported on the integrated display or on an external monitor (if attached), the keyboard status indicators (see Figure C-1) may flash together in a pattern of lights (a *flash code*) that identifies the problem. For example, one flash, followed by a second flash, and then a burst of three flashes (code 1-1-3) means that the computer was unable to read the data in nonvolatile random-access memory (NVRAM). This information is important to the Dell support staff if you need to call for technical assistance.

The keyboard status indicators flash briefly when the computer is turned on. The flash codes, if needed, occur after the boot routine.

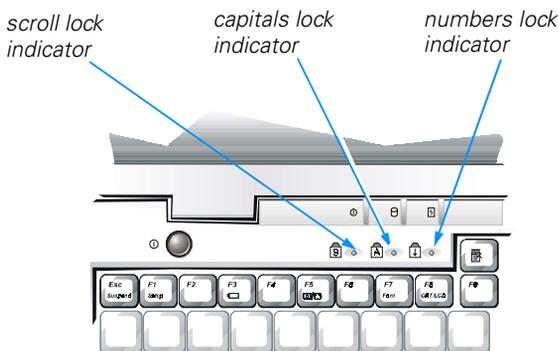


Figure C-1. Keyboard Status Indicators as Flash Code Indicators

When the computer emits a flash code, write it down on a copy of the Diagnostics Checklist (see Figure 5-1) and then look up its cause and meaning in Table C-2. If you are unable to resolve the problem, run the Dell Diagnostics to identify a more serious

cause. (See “Running the Dell Diagnostics” in Chapter 3 for instructions.) If you are unable to resolve the problem, call Dell for technical assistance. (See Chapter 5, “Getting Help,” for instructions.)

Table C-2. Flash Codes and Corrective Actions

Message	Cause	Action
1-1-3	NVRAM write/read failure.	Run the System Board Devices tests in the Dell Diagnostics. For instructions, see “Running the Dell Diagnostics” in Chapter 3. If the program does not load, call Dell for technical assistance. For instructions, see Chapter 5, “Getting Help.”
1-1-4	ROM BIOS checksum failure.	Run the System Board Devices tests in the Dell Diagnostics. For instructions, see “Running the Dell Diagnostics” in Chapter 3. If the program does not load, call Dell for technical assistance. For instructions, see Chapter 5, “Getting Help.”
1-2-1	Programmable interval timer failure.	Run the System Board Devices tests in the Dell Diagnostics. For instructions, see “Running the Dell Diagnostics” in Chapter 3. If the program does not load, call Dell for technical assistance. For instructions, see Chapter 5, “Getting Help.”
1-2-2	DMA initialization failure.	Run the System Board Devices tests in the Dell Diagnostics. For instructions, see “Running the Dell Diagnostics” in Chapter 3. If the program does not load, call Dell for technical assistance. For instructions, see Chapter 5, “Getting Help.”
1-2-3	DMA page register write/read failure.	Run the System Board Devices tests in the Dell Diagnostics. For instructions, see “Running the Dell Diagnostics” in Chapter 3. If the program does not load, call Dell for technical assistance. For instructions, see Chapter 5, “Getting Help.”
1-3-1 through 2-4-4	An installed memory module is not being properly identified or used.	Make sure that a memory module is installed in one of the memory module sockets on the system board. The computer will not function unless at least one memory module is installed. For instructions, see “Installing Memory Modules” in Chapter 2.
3-1-1	Slave DMA register failure.	Run the System Board Devices tests in the Dell Diagnostics. For instructions, see “Running the Dell Diagnostics” in Chapter 3. If the program does not load, call Dell for technical assistance. For instructions, see Chapter 5, “Getting Help.”

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table C-2. Flash Codes and Corrective Actions (continued)

Message	Cause	Action
3-1-2	Master DMA register failure.	Run the System Board Devices tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3. If the program does not load, call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
3-1-3	Master interrupt mask register failure.	Call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
3-1-4	Slave interrupt mask register failure.	Call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
3-2-4	Keyboard controller test failure.	Run the PC-AT Compatible Keyboards test in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
3-3-4	Display memory test failure.	Run the VESA/VGA Interface test in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
3-4-1	Display initialization failure.	Run the VESA/VGA Interface tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
3-4-2	Display retrace test failure.	Run the VESA/VGA Interface tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
4-2-1	No timer tick.	Call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
4-2-2	Shutdown failure.	Call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
4-2-3	Gate A20 failure.	Call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
4-2-4	Unexpected interrupt in protected mode.	Call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
4-3-1	Memory failure above address 0FFFFh.	Run the System Memory tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
4-3-3	Timer chip counter 2 failure.	Call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."
4-3-4	Time-of-day clock stopped.	Call Dell for technical assistance. For instructions, see Chapter 5, "Getting Help."

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.

Table C-2. Flash Codes and Corrective Actions (continued)

Message	Cause	Action
4-4-1	Serial port failure.	Run the Serial Ports tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.
5-1-2	No usable memory.	Run the System Memory tests in the Dell Diagnostics. For instructions, see "Running the Dell Diagnostics" in Chapter 3.

NOTE: For the full name of an abbreviation or acronym used in this table, see the Glossary in the system Help.



APPENDIX D

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 Technical Support representative of Dell Computer Corporation or an experienced radio/television technician for additional suggestions. You may find the *FCC Interference Handbook, 1986*, to be helpful. It is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00450-7 or on the World Wide Web at <http://www.fcc.gov/Bureaus/Compliance/WWW/tvibook.html>.

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

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

Information Technology Equipment (ITE), including peripherals, expansion cards, printers, input/output (I/O) devices, monitors, and so on, that are integrated into or connected to the system should match the electromagnetic environment classification of the computer system.

A Notice About Shielded Signal Cables: Use only shielded cables for connecting peripherals to any Dell device to reduce the possibility of interference with radio communications services. Using shielded cables ensures that you maintain the appropriate EMC classification for the intended environment. For parallel printers, a cable is available from Dell Computer Corporation. If you prefer, you can order a cable from Dell Computer Corporation on the World Wide Web at <http://www.dell.com/products/dellware/index.htm>.

A Notice About Networked Computer Systems: Some Dell computer systems that are classified for Class B environments may include an on-board network interface controller (NIC). If your Class B system contains a NIC, it may be considered to be a Class A system at the time that the NIC is connected to a network. When the NIC is not connected to a network, your system is considered to be a Class B digital device.

Most Dell computer systems are classified for Class B environments. To determine the electromagnetic classification for your system or device, refer to the following sections specific for each regulatory agency. Each section provides country-specific EMC/EMI or product safety information.

FCC Notices (U.S. Only)

Most Dell computer systems are classified by the Federal Communications Commission (FCC) as Class B digital devices. However, the inclusion of certain options can change the rating of some configurations to Class A. To determine which classification applies to your computer system, examine all FCC registration labels located on the bottom or back panel of your computer, on card-mounting brackets, and on the cards themselves. If any one of the labels carries a Class A rating, your entire system is considered to be a Class A digital device. If *all* labels carry an FCC Class B rating as distinguished by either an FCC ID number or the FCC logo, (FCC), your system is considered to be a Class B digital device.

Once you have determined your system's FCC classification, read the appropriate FCC notice. Note that FCC regulations provide that changes or modifications not expressly approved by Dell Computer Corporation could void your authority to operate this equipment.

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

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

Class A

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Class B

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

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

- Model number: PPX
- Company name: Dell Computer Corporation
EMC Engineering Department
One Dell Way
Round Rock, Texas 78682 USA
512-338-4400

IC Notice (Canada Only)

Most Dell computer systems (and other Dell digital apparatus) are classified by the Industry Canada (IC) Interference-Causing Equipment Standard #3 (ICES-003) as Class B digital devices. To determine which classification (Class A or B) applies to your computer system (or other Dell digital apparatus), examine all registration labels located on the bottom or the back panel of your computer (or other digital apparatus). A statement in the form of “IC Class A ICES-3” or “IC Class B ICES-3” will be located on one of these labels. Note that Industry Canada regulations provide that changes or modifications not expressly approved by Dell Computer Corporation could void your authority to operate this equipment.

This Class B (or Class A, if so indicated on the registration label) digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B (ou Classe A, si ainsi indiqué sur l'étiquette d'enregistrement) respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

CE Notice (European Union)

Marking by the symbol **CE** indicates compliance of this Dell system to the EMC Directive and the Low Voltage Directive of the European Union. Such marking is indicative that this Dell system meets the following technical standards:

- EN 55022 — “Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment.”
- EN 50082-1: 1992 — “Electromagnetic compatibility—Generic immunity standard Part 1: Residential, commercial, and light industry.”
- EN 60950 — “Safety of Information Technology Equipment.”

NOTE: EN 55022 emissions requirements provide for two classifications:

- *Class A is for typical commercial areas.*
- *Class B is for typical domestic areas.*

A “Declaration of Conformity” in accordance with the preceding directives and standards has been made and is on file at Dell Products Europe BV, Limerick, Ireland.



Battery Disposal

Your computer uses both a lithium-ion battery and a nickel-metal hydride (NiMH) coin cell battery. For instructions about replacing the lithium-ion battery in your computer, refer to “Installing a Battery” in Chapter 2. The NiMH battery is a long-life battery, and it is very possible that you will never need to replace it. However, if this battery ever needs to be replaced, the procedure must be performed by an authorized service technician.



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

EN 55022 Compliance (Czech Republic Only)

This device belongs to Class B devices as described in EN 55022, unless it is specifically stated that it is a Class A device on the specification label. The following applies to devices in Class A of EN 55022 (radius of protection up to 30 meters). The user of the device is obliged to take all steps necessary to remove sources of interference to telecommunication or other devices.

Pokud není na typovém štítku počítače uvedeno, že spadá do třídy A podle EN 55022, spadá automaticky do třídy B podle EN 55022. Pro zařízení zařazená do třídy A (ochranné pásmo 30m) podle EN 55022 platí následující. Dojde-li k rušení telekomunikačních nebo jiných zařízení, je uživatel povinen provést taková opatření, aby rušení odstranil.

VCCI Notice (Japan Only)

Most Dell computer systems are classified by the Voluntary Control Council for Interference (VCCI) as Class B information technology equipment (ITE). However, the inclusion of certain options can change the rating of some configurations to Class A. ITE, including peripherals, expansion cards, printers, input/output (I/O) devices, monitors, and so on, integrated into or connected to the system, should match the electromagnetic environment classification (Class A or B) of the computer system.

To determine which classification applies to your computer system, examine the regulatory labels/markings (see Figures D-1 and D-2) located on the bottom or back panel of your computer. Once you have determined your system's VCCI classification, read the appropriate VCCI notice.

Class A ITE

この装置は、情報処理装置等電波障害自主規制協議会 (VCCI) の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI) for information technology equipment. If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

VCCI-A

Figure D-1. VCCI Class A ITE Regulatory Mark

Class B ITE

この装置は、情報処理装置等電波障害自主規制協議会 (VCCI) の基準に基づくクラス B 情報技術装置です。この装置は家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用させると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

This is a Class B product based on the standard of the Voluntary Control Council for Interference (VCCI) for information technology equipment. If this equipment is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.



Figure D-2. VCCI Class B ITE Regulatory Mark

MOC Notice (South Korea Only)

To determine which classification (Class A or B) applies to your computer system (or other Dell digital device), examine the South Korean Ministry of Communications (MOC) registration labels located on your computer (or other Dell digital device). The MOC label may be located separately from the other regulatory marking applied to your product. The English text, "EMI (A)," for Class A products, or "EMI (B)" for Class B products, appears in the center of the MOC label (see Figures D-3 and D-4).



NOTE: MOC emissions requirements provide for two classifications:

- *Class A devices are for business purposes.*
- *Class B devices are for nonbusiness purposes.*

Class A Device

장치 종류	사용자 안내문
A 급 기기	이 장치는 업무용으로 전자파 적합등록을 한 장치이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며 만약 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

Please note that this device has been approved for business purposes with regard to electromagnetic interference. If you find that this device is not suitable for your use, you may exchange it for a nonbusiness device.

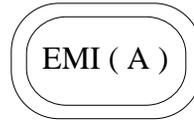


Figure D-3. MOC Class A Regulatory Mark

Class B Device

장치 종류	사용자 안내문
B 급 기기	이 장치는 가정용으로 전자파 적합등록을 한 장치로서 주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

Please note that this device has been approved for nonbusiness purposes and may be used in any environment, including residential areas.

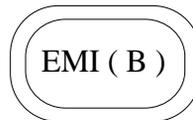


Figure D-4. MOC Class B Regulatory Mark

Polish Center for Testing and Certification Notice

The equipment should draw power from a socket with an attached protection circuit (a three-prong socket). All equipment that works together (computer, monitor, printer, and so on) should have the same power supply source.

The phasing conductor of the room's electrical installation should have a reserve short-circuit protection device in the form of a fuse with a nominal value no larger than 16 amperes (A).

To completely switch off the equipment, the power supply cable must be removed from the power supply socket, which should be located near the equipment and easily accessible.

A protection mark "B" confirms that the equipment is in compliance with the protection usage requirements of standards PN-93/T-42107 and PN-89/E-06251.

Wymagania Polskiego Centrum Badań i Certyfikacji

Urządzenie powinno być zasilane z gniazda z przyłączonym obwodem ochronnym (gniazdo z kołkiem). Współpracujące ze sobą urządzenia (komputer, monitor, drukarka) powinny być zasilane z tego samego źródła.

Instalacja elektryczna pomieszczenia powinna zawierać w przewodzie fazowym rezerwową ochronę przed zwarciami, w postaci bezpiecznika o wartości znamionowej nie większej niż 16A (amperów).

W celu całkowitego wyłączenia urządzenia z sieci zasilania, należy wyjąć wtyczkę kabla zasilającego z gniazdka, które powinno znajdować się w pobliżu urządzenia i być łatwo dostępne.

Znak bezpieczeństwa "B" potwierdza zgodność urządzenia z wymaganiami bezpieczeństwa użytkowania zawartymi w PN-93/T-42107 i PN-89/E-06251.

Pozostałe instrukcje bezpieczeństwa

- Nie należy używać wtyczek adapterowych lub usuwać kołka obwodu ochronnego z wtyczki. Jeżeli konieczne jest użycie przedłużacza to należy użyć przedłużacza 3-żyłowego z prawidłowo połączonym przewodem ochronnym.
- System komputerowy należy zabezpieczyć przed nagłymi, chwilowymi wzrostami lub spadkami napięcia, używając eliminatora przepięć, urządzenia dopasowującego lub bezzakłócenowego źródła zasilania.
- Należy upewnić się, aby nic nie leżało na kablach systemu komputerowego, oraz aby kable nie były umieszczone w miejscu, gdzie można byłoby na nie nadeptywać lub potykać się o nie.
- Nie należy rozlewać napojów ani innych płynów na system komputerowy.
- Nie należy wpychać żadnych przedmiotów do otworów systemu komputerowego, gdyż może to spowodować pożar lub porażenie prądem, poprzez zwarcie elementów wewnętrznych.

- System komputerowy powinien znajdować się z dala od grzejników i źródeł ciepła. Ponadto, nie należy blokować otworów wentylacyjnych. Należy unikać kładzenia luźnych papierów pod komputer oraz umieszczania komputera w ciasnym miejscu bez możliwości cyrkulacji powietrza wokół niego.

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
Importer:	Dell Computer de México, S.A. de C.V. Rio Lerma No. 302 - 4° Piso Col. Cuauhtemoc 16500 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.
Supply voltage:	100–200 VAC
Frequency:	60–50 Hz
Input current rating:	1.5 A

Información para NOM (únicamente para México)

La información siguiente se proporciona en el dispositivo o en los dispositivos descritos en este documento, en cumplimiento con los requisitos de la Norma Oficial Mexicana (NOM):

Exportador:	Dell Computer Corporation One Dell Way Round Rock, TX 78682
Importador:	Dell Computer de México, S.A. de C.V. Rio Lerma No. 302 - 4° Piso Col. Cuauhtemoc 16500 México, D.F.
Embarcar a:	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.
Tensión alimentación:	100–200 VAC
Frecuencia:	60–50 Hz
Consumo de corriente:	1.5 A



APPENDIX E

Warranty, Return Policy, and Year 2000 Statement of Compliance

Limited Three-Year Warranty (U.S. 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 warranty. Otherwise, this 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 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 DellWareSM products. Monitors, keyboards, and mice that are Dell-branded or that are included on Dell's standard price list are covered under this warranty; all other monitors, keyboards, and mice (including those sold through the DellWare program) are not covered. Batteries for portable computers are covered only during the initial one-year period of this 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 call Dell's Customer Technical Support within the warranty period. Refer to Chapter 5, "Getting Help," or the section titled "Contacting Dell" in your system *Help* to find the appropriate telephone number 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 the continental U.S., 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-disk drive(s) and any other storage device(s) in the product(s). Remove any removable media, such as diskettes, 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.

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 the continental U.S., 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

THIS WARRANTY GIVES YOU SPECIFIC LEGAL 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 OF AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE WARRANTY PERIOD SET FORTH ABOVE AND NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER SUCH PERIOD.

SOME STATES (OR JURISDICTIONS) DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE PRECEDING LIMITATION MAY NOT APPLY TO YOU.

DELL DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES SET FORTH IN THIS WARRANTY STATEMENT OR LIABILITY FOR INCIDENTAL 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 OR CONSEQUENTIAL DAMAGES, SO THE PRECEDING EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU.

These provisions apply to Dell's limited three-year warranty only. For provisions of any service contract covering your system, refer to 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 warranty.



NOTE: If you chose one of the available warranty and service options in place of the standard limited three-year warranty described in the preceding text, the option you chose will be listed on your invoice.

Limited Three-Year 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 warranty. Otherwise, this 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 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 DellWare products. Monitors, keyboards, and mice that are Dell-branded or that are included on Dell's standard price list are covered under this warranty; all other monitors, keyboards, and mice (including

those sold through the DellWare program) are not covered. Batteries for portable computers are covered only during the initial one-year period of this 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 call Dell's Customer Technical Support within the warranty period. Refer to Chapter 5, "Getting Help," or the section titled "Contacting Dell" in your system *Help* to find the appropriate telephone number 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-disk drive(s) and any other storage device(s) in the product(s). Remove any removable media, such as diskettes, 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.

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 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 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 WARRANTY STATEMENT OR LIABILITY FOR INCIDENTAL 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 OR CONSEQUENTIAL DAMAGES, SO THE PRECEDING EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU.

These provisions apply to Dell's limited three-year warranty only. For provisions of any service contract covering your system, refer to 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 warranty.



NOTE: If you chose one of the available warranty and service options in place of the standard limited three-year warranty described in the preceding text, the option you chose will be listed on your invoice.

“Total Satisfaction” Return Policy (U.S. and Canada Only)

If you are an end-user customer who bought new products directly from a Dell company, you may return them to Dell within 30 days of the date of invoice for a refund or credit of the product purchase price. If you are an end-user customer who bought reconditioned or refurbished products from a Dell company, you may return them to Dell within 14 days of the date of invoice for a refund or credit of the product purchase price. In either case, the refund or credit will not include any shipping and handling charges shown on your invoice. If you are an organization that bought the products under a written agreement with Dell, the agreement may contain different terms for the return of products than specified by this policy.

To return products, you must call Dell Customer Service to receive a Credit Return Authorization Number. Refer to Chapter 5, "Getting Help," or the section titled "Contacting Dell" in your system *Help* to find the appropriate telephone number for obtaining customer assistance. To expedite the processing of your refund or credit, Dell expects you to return the products to Dell in their original packaging within five days of the date that Dell issues the Credit Return Authorization Number. You must also prepay shipping charges and insure the shipment or accept the risk of loss or damage during shipment. You may return software for refund or credit only if the sealed package containing the diskette(s) or CD(s) is unopened. Returned products must be in as-new condition, and all of the manuals, diskette(s), CD(s), power cables, and other items included with a product must be returned with it. For customers who want to return, for refund or credit only, either applications software or an operating system that has been installed by Dell, the whole system must be returned, along with any media and documentation that may have been included in the original shipment.

This "Total Satisfaction" Return Policy does not apply to DellWare products, which may be returned under DellWare's then-current return policy. In addition, reconditioned parts purchased through Dell Spare Parts Sales in Canada are nonreturnable.

Year 2000 Statement of Compliance for Dell-Branded Hardware Products

Dell-branded hardware products shipped on or after January 1, 1997, are eligible to carry the "NSTL Hardware Tested Year 2000 Compliant" logo by virtue of formal testing with, and successful completion of, the National Software Testing Laboratories (NSTL) YMARK2000 test.* Dell will treat a failure to pass the YMARK2000 test as a covered event under Dell's warranty for the product, subject to the normal warranty limitations.** For a complete copy of Dell's warranty, see the product's documentation. Dell-branded hardware products will also recognize the year 2000 as a leap year.

*The YMARK2000 standard tests the ability of system hardware and firmware to support the transition to the year 2000 (and to recognize leap years, when appropriate, for years 2000 through 2009 inclusive) and not that of options, operating systems, or applications software. Dell-branded hardware products that pass the YMARK2000 test conform to BSI-DISC PD 2000-1.

** Except for this clarification of Dell's warranty for NSTL logo hardware, all other warranties, conditions and remedies, express or implied, relating to year 2000 readiness or compliance are disclaimed. To make a claim under this warranty for NSTL logo hardware, customers must contact Dell prior to January 1, 2001. To make a claim, write to:

Dell Computer Corporation
PO. Box 149258
Austin, Texas 78714-9258
Attention: Year 2000

Despite a system's ability to pass the YMARK2000 test, actual rollover results in specific operating environments may vary depending on other factors including, but not limited to, other hardware, operating systems, and applications software.

Previous Products

For Dell-branded hardware products shipped prior to January 1, 1997, that have an upgradable basic input/output system (BIOS), Dell makes available a BIOS upgrade. Although these products may not have been tested under the YMARK2000 test, Dell believes that the hardware would pass the YMARK2000 test, provided the appropriate BIOS upgrade is properly loaded.

For Dell-branded hardware products that do not have an upgradable BIOS, Dell has made available, as a convenience to customers, the Dell Program Patch, a software utility designed to assist customers in managing the year 2000 rollover.

Software

Dell specifically excludes all non-Dell-developed software from this compliance statement. All software run on Dell-branded hardware products should be independently verified by customers to be year 2000-compliant.

The factory-installed software on your system is the current version provided by the software manufacturer and is validated by Dell for installation. Dell recommends that you check each software manufacturer's year 2000 Web site for updates to their products. Links to a number of these Web sites can be found at the Dell year 2000 Web sites.

Additional Information

For additional information on year 2000 compliance of Dell-branded hardware products, refer to the following Dell year 2000 Web sites, or contact a Dell customer service representative in your area:

- **<http://www.dell.com/year2000>** (Americas)
- **<http://www.dell.com/jp/year2000>** (Japan)
- **<http://www.euro.dell.com/year2000>** (Europe)
- **<http://www.dell.com/ap/year2000>** (Asia Pacific)



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