



# DELL™ Documents

## Dell™ Latitude™ LS Family Portable Computers User's Guide

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Model PP01S

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# Preface: Dell™ Latitude™ LS Portable Computers User's Guide

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## About This Guide

This guide is intended for anyone who uses the Dell Latitude LS portable computers. 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. The sections are summarized as follows:

- ["Introduction"](#) — overview of the computer features and available upgrades
- ["Setup and Operation"](#) — instructions on operating your computer
- ["Powering Your Computer"](#) — instructions and options on how to power your computer
- ["Traveling With Your Computer"](#) — suggestions on how to travel safely with your computer
- ["Drivers"](#) — instructions on how to install driver software on your computer
- ["Customizing Your Computer"](#) — instructions on accessing the system setup program, power management software, and the Suspend-to-Disk utility, all of which allow you to change system settings affecting your computer's power conservation features
- ["Replacing the Hard-Disk Drive"](#) — instructions on how to remove and install hard-disk drives
- ["Troubleshooting Your Computer"](#) — initial checks and procedures that can be used to solve basic computer problems; general guidelines on analyzing software problems and messages
- ["Technical Specifications"](#) — reference material about the details of your computer
- ["Getting Help"](#) — help tools Dell provides to assist you if you have a problem with the computer; information on how and when to call Dell for technical assistance.

## 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 your Dell Latitude *System Information* guide.

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## Other Documents You May Need

Besides this *User's Guide*, the following documentation is included with your computer.



*NOTE: Documentation updates are sometimes included with your computer to describe changes to your computer or software. Always read these updates **before** consulting any other documentation because the updates contain the latest information.*

- The operating system *Setup Guide*, which describes how to set up the Dell-installed operating system on your computer.
  - Microsoft® Windows 95®, Windows 98, and Windows NT® operating system documentation is included if you ordered your operating system from Dell. This documentation describes how to configure and use your operating system software.
  - Online documentation is included for your computer devices (such as the modem) and for any options you purchase separately from your computer. To access this supplemental documentation, double-click the **Dell Documents** icon on the Windows desktop, click **System Information**, and then click **System Documentation**.
  - "Readme" files may be installed on your hard-disk drive to provide last-minute updates about technical changes to your computer or advanced technical reference material intended for experienced users or technicians.
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## 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.*

**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 the potential for bodily harm and tells you how to avoid the problem.**

## 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 a:` 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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# Introduction: Dell™ Latitude™ LS Portable Computers User's Guide

[Overview](#)

[Available Options](#)

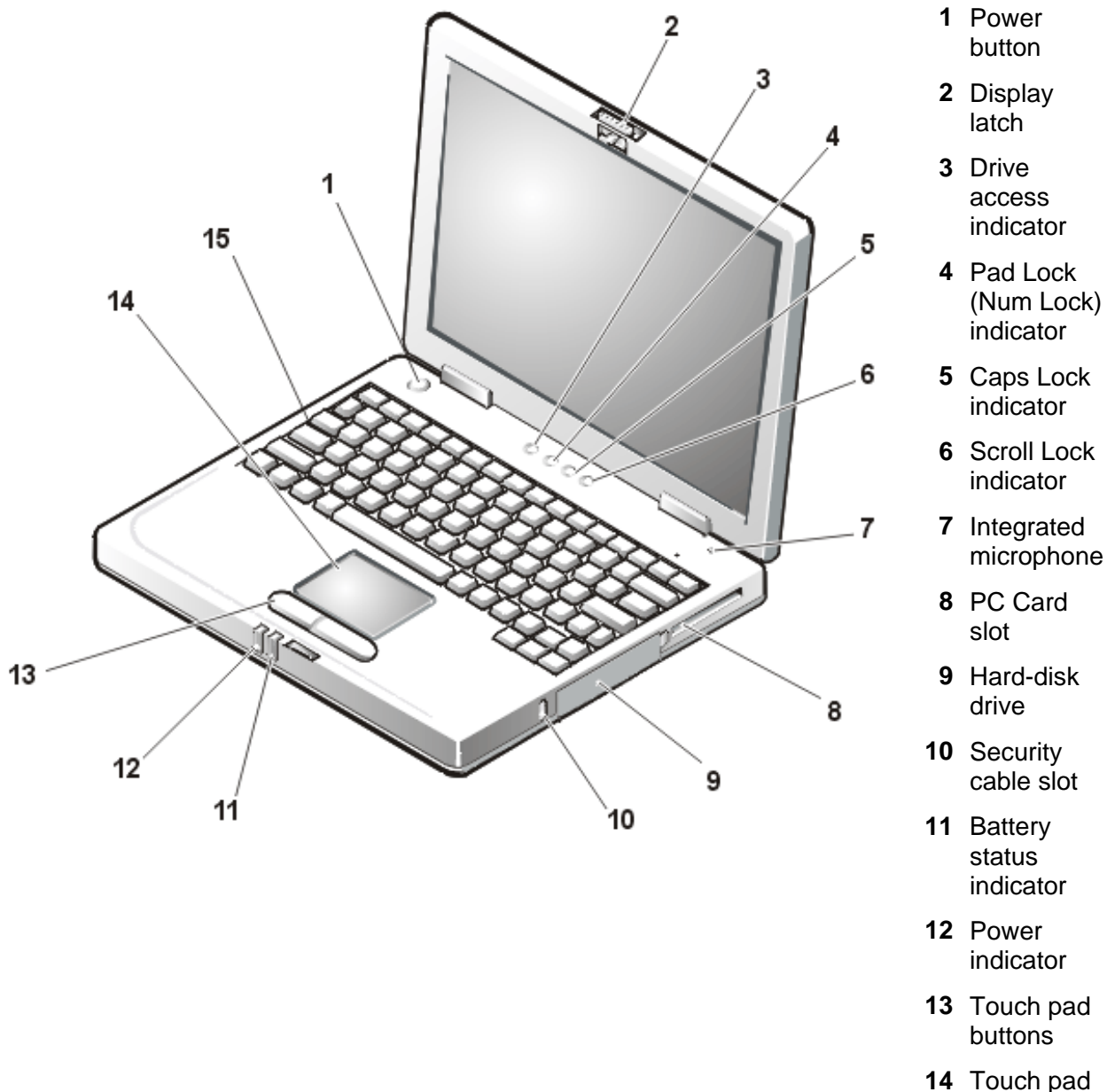
[Features](#)

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## Overview

The Dell Latitude LS portable computer is an expandable multimedia system designed around an Intel® Mobile Pentium® III microprocessor with Peripheral Component Interconnect (PCI) technology. This section describes the major hardware and software features of your computer. [Figure 1](#), [Figure 2](#), and [Figure 3](#) show the front/right, back/left, and bottom views of the computer.

**Figure 1. Front/Right View of the Computer**



**NOTICE:** To avoid overheating the computer, do not place the external media bay close to the air inlet or fan intake/exhaust vents (see Figure 2).

**NOTICE:** Do not confuse the modem and NIC connectors on your computer. Do *not* plug a telephone line into the NIC connector (see Figure 2).

Figure 2. Back/Left View of the Computer

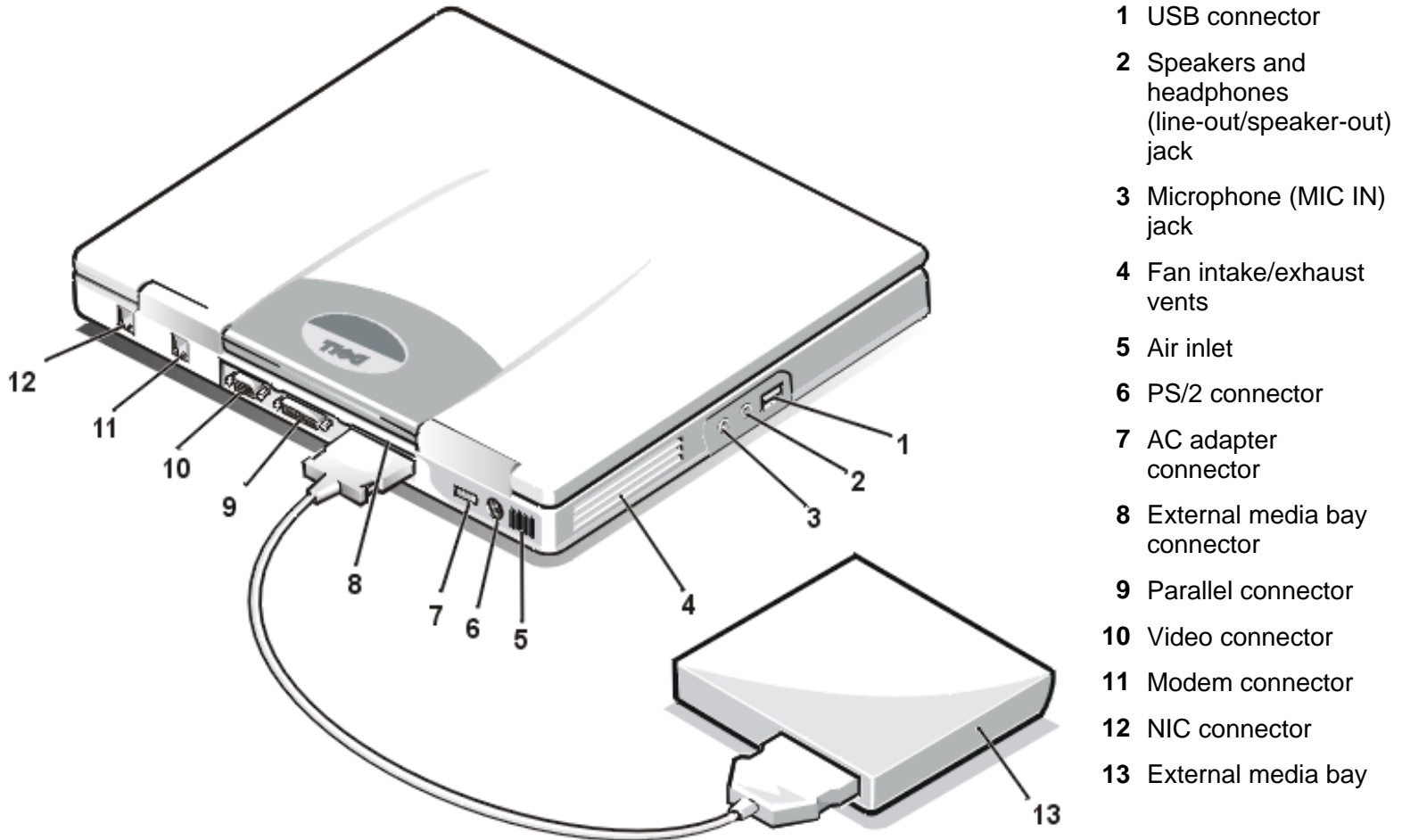


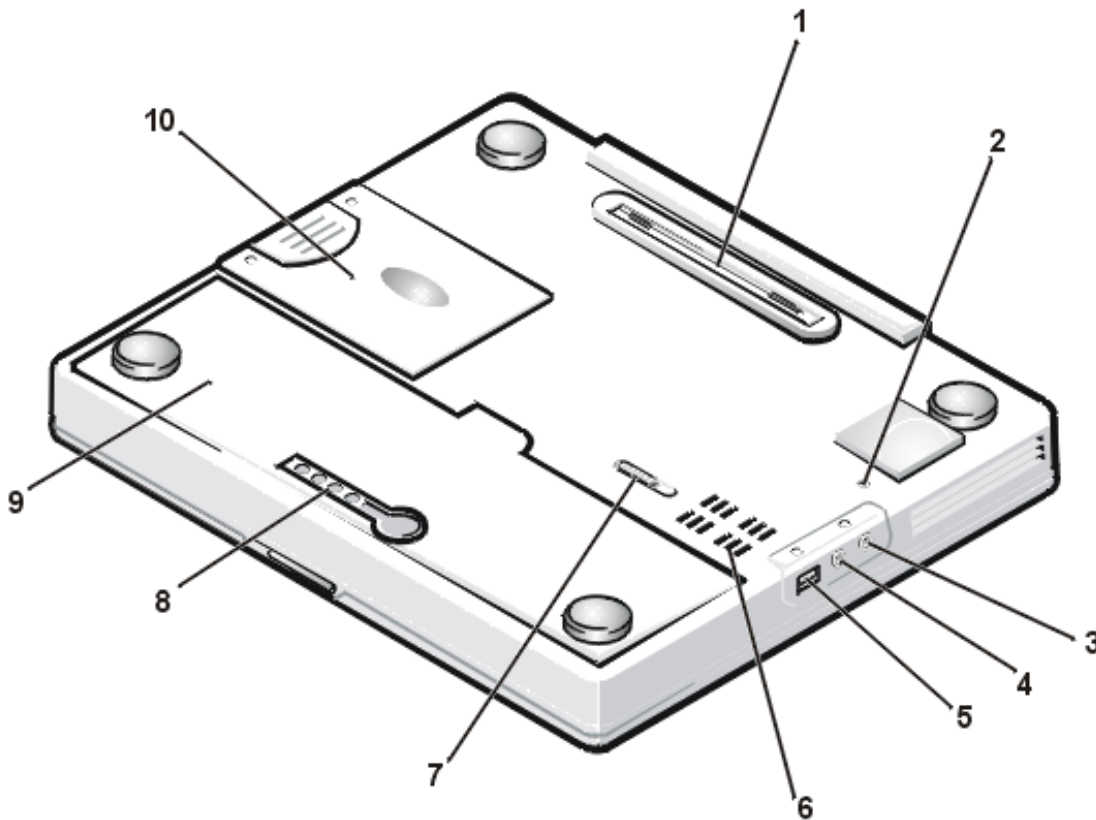
Figure 3. Bottom View of the Computer

- 1 Docking connector
- 2 [Reset switch](#) access hole
- 3 Microphone (MIC IN) jack
- 4 Speakers and headphones (line-out/speaker-out) jack
- 5 USB connector
- 6 Speaker
- 7 Battery latch
- 8 Battery charge gauge




9 Battery

10 Hard-disk drive bay



## Features

Your Dell computer provides the following features:

- Full multimedia capability through the following standard features:
  - A 12.1-inch super video graphics array (SVGA), 800 x 600 thin film transistor (TFT) active-matrix color display
  - An external media bay that supports storage devices such as a DVD-ROM, CD-ROM, diskette, or SuperDisk LS-120 drive
  -  **NOTE:** For information on installing devices in the external media bay, see "[External Media Bay](#)."
  - 256-bit hardware-accelerated video support, with 2.5 megabytes (MB) of video memory
  - Accelerated graphics port (AGP) architecture that increases the computer's video performance
  - Support for a zoomed video (ZV) PC Card in the PC Card slot
  - Two audio jacks for connecting a microphone and external stereo speakers or headphones
  - Integrated microphone and speaker
  - Software wavetable support and Sound Blaster software-emulation capability
- System memory consisting of 64 or 128 MB of synchronous dynamic random-access memory (SDRAM) small outline, dual-inline memory modules (SODIMMs).

- Two power conservation modes—*suspend (or standby) mode* and *suspend-to-disk (S2D) mode*—that help you conserve battery power. If the batteries run out of power, S2D mode prevents data loss by copying all system data to the hard-disk drive and turning off the computer.
- Connector for one 3.3-volt (V) or 5-V PC Card. The PC Card slot supports type II PC Cards, including ZV PC Cards.



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

- Hardware and software support for the Dell Latitude LS Advanced Port Replicator (APR).
- A touch-pad pointing device positioned for both left- and right-handed users. The left and right touch-pad buttons mimic mouse buttons; you can also perform many pointing functions by tapping the touch pad itself. Click-and-drag buttonless functions are supported.
- A lithium ion battery in the battery bay. A 4-cell battery is standard, with a 6-cell battery optional at the time of purchase, or as post-sale customer kit.

**NOTICE:** The batteries are designed to work only with Dell Latitude LS portable computers. Do not use the Latitude LS batteries with other computers, and do not use batteries from other computers with the Dell Latitude LS.



**CAUTION:** 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.

- A high-performance parallel port and a multipurpose Personal System/2 (PS/2) connector for attaching external devices, a monitor connector for attaching an external monitor to your computer, and a Universal Serial Bus (USB) connector that supports stand-alone and hub devices.
- An integrated 56-kilobits per second (Kbps) v.90 controllerless modem with support for telephone hardware worldwide.
- An integrated 3Com® 10/100-BASET<sub>X</sub> PCI bus master Ethernet network interface controller (NIC).
- A reset switch (accessible through the reset switch access hole on the bottom of the computer) for restarting the computer without turning the power off and on.



**NOTE:** To restart the computer using the reset switch, straighten a paper clip and press it into the [reset switch access hole](#) for about one second.

- An automatic thermal management system that uses a fan and microprocessor speed changes to keep the computer running at an optimum temperature.



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

The following software is included with your Dell computer:

- The Microsoft® Windows® 95, Windows 98 Second Edition, or Windows NT® 4.0 or later operating system installed on your hard-disk drive. For more information, see your operating system documentation.
- The [system setup program](#) that lets you view and change the system configuration.
- The *Dell System Software* CD that allows you to run the Dell Diagnostics and reinstall, if necessary, the device drivers that Dell installed on your computer's hard-disk drive.
- [Dell Diagnostics](#) for evaluating the computer's components and devices.



*NOTE: If Dell did not install an operating system on your hard-disk drive, the drivers, system utilities, and diagnostics are available separately from Dell. To order them, see "[Getting Help](#)" for the appropriate telephone number in your location.*

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## Available Options

Dell offers the following devices and upgrade options:

- Latitude LS APR
- Additional batteries
- External keyboards and keypads
- External monitors
- External pointing devices
- External speakers, headphones, and microphones
- Printers
- Dell Latitude storage devices such as hard-disk drives, CD-ROM drives, DVD-ROM drives, and SuperDisk LS-120 drives
- AC adapter
- PC Cards
- Carrying cases

Instructions for connecting or installing these options are included in the upgrade kit you receive from Dell. For more information on options available for your computer, visit the Dell World Wide Web site at <http://www.dell.com>.

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## Getting Help










If at any time you don't 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 on these help tools, see "[Getting Help](#)."

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# Setup and Operation: Dell™ Latitude™ LS Portable Computers User's Guide

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# Powering Your Computer: Dell™ Latitude™ LS Portable Computers User's Guide

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# Traveling With Your Computer: Dell™ Latitude™ LS Portable Computers User's Guide



[Identifying Your Computer](#)



[Preparing Your Computer for Travel](#)



[Travel Tips](#)

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## Identifying Your Computer

As an antitheft measure, assign a primary password and a hard-disk drive password to prohibit unauthorized access to the computer.

Dell recommends that you follow these precautions before you travel with your computer:

- Write down your [service tag](#) and put it in a safe place separate from the computer or carrying case. If the computer is lost or stolen, use the service tag number when reporting to law enforcement officials and to Dell.
- Use a text editor (such as Microsoft® Windows® Notepad) to create a file called **if\_found** in your root directory. Place information such as your name, address, and telephone number in this file. (For instructions on using the appropriate text editor, see the documentation that came with your operating system.)
- Attach your business card or other name tag to the computer.
- Contact your credit-card company and ask if it offers coded identification tags that allow your property to be returned to you without the risk of revealing your name, address, or telephone number.
- Use a permanent marking or stenciling device to write your driver's license number or some other unique identifying mark on the computer. If a lost or stolen computer is recovered, such marking identifies the computer as your property.

## Service Tag

The service tag is an alphanumeric sequence on a bar code label located on the bottom of the computer. The service tag is unique to your computer and allows Dell technical assistance

personnel to identify the computer and its configuration quickly if you call for assistance.

## If Your Computer Is Lost or Stolen

If your computer is lost or stolen, Dell suggests that you perform the following steps:

1. Call a law enforcement agency to report the lost or stolen computer.

Include the service tag in your description of the computer. Ask that a case number be assigned, and write it down. Also write down the name, address, and telephone number of the law enforcement agency. If possible, obtain the name of the investigating officer.

If you know where the computer was lost or stolen, call a law enforcement agency in that area. If you do not know, call a law enforcement agency where you live.

2. If the computer belongs to a company, notify the security office of the firm.

3. Call Dell technical assistance to report the missing computer.

Provide the computer's service tag, the case number, and the name, address, and telephone number of the law enforcement agency to which you reported the missing computer. If possible, give the name of the investigating officer.

The Dell support technician will log your report under the computer's service tag and flag the computer as missing or stolen. If someone calls Dell for technical assistance and gives your service tag, the computer is identified automatically as missing or stolen. The technician will attempt to get the phone number and address of the caller. Dell will then contact the law enforcement agency to which you made the report of the missing or stolen computer.

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## Preparing Your Computer for Travel

To prepare your computer for travel, perform the following steps:

1. Detach any external devices attached to the computer, and store them in a safe place. Remove any cables attached to installed PC Cards (you do not have to remove the PC Card itself).
2. To maximize battery life, check the charge on your battery. Then fully charge the battery and any spares you plan to carry with you. For more information, see "[Batteries](#)."
3. For systems running Windows 95, turn off the computer or press <Fn><a> to enter [suspend-to-disk](#) (S2D) mode. (On a French keyboard, press <Fn><q>.) For systems running Windows 98, turn off the computer.

**NOTICE:** When you disconnect the AC adapter from the computer, grasp the adapter cable's connector, not the cable itself, and pull gently but firmly to avoid damaging the

## **cable.**

4. Disconnect the AC adapter.

**NOTICE: When the display is closed, items left on the keyboard could damage the display.**

5. Make sure that there is nothing on the keyboard and palmrest that can damage the display when you close it. Then close the display.
6. Pack all your computing accessories.

With an optional Dell carrying case, you can pack the computer and its accessories together. A lightweight portfolio travel case without storage space is also available.



*NOTE: Follow the travel tips and take special precautions if you are planning to travel by air.*

## **Accessories**

You may want to take some of the following accessories with you when you travel:

- Spare batteries
- Cables for PC Cards (if necessary)
- AC adapter and AC power cable
- Power adapters for foreign electrical outlets and modem cable adapters for foreign telephone networks
- Appropriate printer driver files if you will be using a printer
- External media bay and its cable
- Additional storage devices such as the CD-ROM and diskette drives
- Backup diskettes
- *Dell System Software CD*

## **Traveling by Air**

You may want to take the following precautions when you are traveling by air with your computer:

- Notify airport security in advance that you are bringing a portable computer.



- Be sure to have a charged battery or the AC adapter and power cable available in case you are asked to turn on the computer.
- Do not check the computer as baggage.

**NOTICE: Have airport security personnel check the computer by hand. If the computer passes through a metal detector, data loss may occur. If you must pass the computer through a metal detector, first remove the hard-disk drive.**

- Do not put the computer through a metal detector. (The computer can safely go through an airport X-ray security machine.)
- Before you use the computer on an airplane, check the in-flight magazine or ask the flight crew to verify that such use is permitted. Some airlines forbid the use of electronic devices during the flight. All airlines forbid the use of electronic devices during takeoff and landing.
- Use a carrying case (available from Dell) to protect the computer and accessories during travel.
- If you pack the computer in a suitcase, do not pack so tightly that the computer display breaks or so loosely that the computer slides around.
- Avoid packing the computer with items such as shaving cream, colognes, perfumes, or food.
- Protect the computer, the battery, and the hard-disk drive from hazards such as extreme temperatures; overexposure to sunlight; and exposure to dirt, dust, or liquids.
- Pack the computer so that it does not slide around in the trunk of your car or in an overhead storage compartment.
- If you are carrying a hard-disk drive separately from your computer, protect the drive from exposure to static electricity by placing it in the case you received it in or in an antistatic bag, or wrapping it in a nonconductive fabric.

**NOTICE: Carefully handle the hard-disk drive only by its carrier; do not touch the drive itself. The drive comes in a metal carrier for protection and easy installation. The drive is vulnerable to static electricity and scratches when outside the computer because the drive carrier protects only the sides of the drive, leaving the top and bottom of the drive exposed.**

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## Travel Tips

- Consider changing the settings of your [power management](#) options to maximize battery life if you will be using battery power for extended periods.
- If you are traveling internationally, carry proof of ownership to speed your passage through customs. If the computer is provided by your employer, carry documentation of your right to use the computer. Investigate the customs regulations of the countries you plan to visit, and consider acquiring an international [carnet](#) from your government if you travel through many different countries.
- Power interruptions can occur frequently in some countries. Always have a charged battery available if traveling abroad.
- Credit card holders should check with their credit card companies for information about the kinds of emergency travel assistance they offer to users of portable computers. Many companies provide services that help you solve problems, such as quickly locating 3.5-inch diskettes or providing a direct-dial telephone line for your modem connection.

**NOTICE: Do not use a device in the external media bay while the computer is in motion. Doing so could interrupt the flow of data between the device and the hard-disk drive.**

### Carnet

A carnet is an international customs document (also known as a *merchandise passport*) that facilitates temporary imports into foreign countries and is valid for up to 1 year.

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# Drivers: Dell™ Latitude™ LS Portable Computers User's Guide

 [Installing Microsoft® Windows® 95 and Windows 98 Drivers](#)

 [Installing Microsoft® Windows NT® Drivers](#)



*NOTE: For more information on using the operating system installed on your computer by Dell, see the operating system user's guide that came with your computer.*

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# Customizing Your Computer: Dell™ Latitude™ LS Portable Computers User's Guide

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 [Suspend-to-Disk Utility](#)

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# Replacing the Hard-Disk Drive: Dell™ Latitude™ LS Portable Computers User's Guide

Read the following notices carefully before attempting to replace your hard-disk drive:

**NOTICE:** To prevent data loss, turn off your computer before you remove the hard-disk drive. Do not remove the hard-disk drive if the computer is in [suspend](#) (or [standby](#)) mode or if the [drive access indicator](#) is lit. Removing the drive under these conditions will lead to loss of data.

**NOTICE:** Hard-disk drives are extremely fragile and must be handled carefully to avoid damage. Follow these guidelines:

- Handle the hard-disk drive only by its carrier; do not touch the drive itself. The drive comes in a metal carrier for protection and easy installation. The drive is vulnerable to static electricity and scratches when outside the computer because the drive carrier protects only the sides of the drive, leaving the top and bottom of the drive exposed.
- Never press down on the top of the drive.
- Do not drop the drive. Even a slight jar or bump can damage the drive heads and spinning plates, thus rendering the drive inoperable.



**CAUTION:** The hard-disk drive may be hot to the touch under extreme environmental conditions. If the drive is hot, allow it to cool before you replace it.

To replace a hard-disk drive, perform the following steps:

1. Save any open files, turn off the computer, and remove the system battery (see [step 3](#) in "Replacing the Battery").

**NOTICE:** To avoid scratching the top of the computer, make sure that your work surface is clean. You may want to put down a protective mat before turning over the computer.

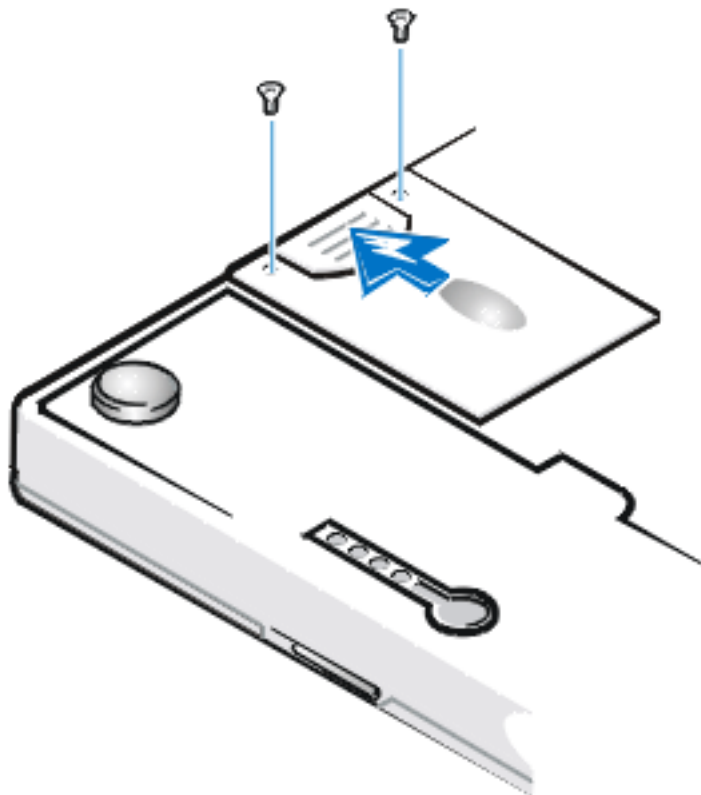
**NOTICE:** When the hard-disk drive is not in the computer, protect the drive by following the [guidelines](#) at the beginning of this section.

2. Remove the old hard-disk drive carrier assembly from the drive bay.

Close the display and turn the computer over. Using a #0 (very small) Phillips-head screwdriver, remove the two screws that secure the drive carrier assembly (see Figure 1). Save the screws for use later in this procedure.

With the computer still upside-down, press down on the drive carrier assembly's three grip lines and pull the assembly straight out to the side to remove it.

**Figure 1. Removing a Hard-Disk Drive**



3. Remove the new hard-disk drive carrier assembly from its packaging.

Save the original packaging to use when you store or ship the hard-disk drive.

**NOTICE: If the hard-disk drive carrier assembly does not slide in easily, pull it out and try again. To avoid damage, do not force the drive carrier assembly into the bay.**

4. Install the new hard-disk drive in the computer.

Insert the hard-disk drive carrier assembly into the drive bay, connector first and label facing down (toward the top of the computer). Push the assembly straight in until it snaps into place, with the assembly flush with the computer case.

5. Replace the screws you removed in step 2. Be careful not to overtighten the screws.

If you have installed a new hard-disk drive, follow the directions that came with the drive to partition and logically format the drive and to create a [suspend-to-disk](#) (S2D) file.

## Preparing a New Primary Drive

Every primary hard-disk drive must be physically formatted, partitioned, and logically formatted before it can be used to store data. Every primary hard-disk drive from Dell is physically formatted before it is sent to you. Use the program(s) provided by your operating system to



partition and logically format the hard-disk drive. For more information, see both your operating system and your drive documentation.

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# Troubleshooting Your Computer: Dell™ Latitude™ LS Portable Computers User's Guide

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- [Battery](#)
- [AC Adapter](#)
- [Physical](#)
- [Environmental \(Computer\)](#)
- [Touch Pad](#)

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## Chip Set and Bus

System chip set	Intel® Mobile Pentium® III with 443BX/PIIX4m
Microprocessor data bus width	64 bits
DRAM bus width	64 bits
Address bus width	32 bits
Flash EPROM	4 megabits (Mb)
AGP bus	66 MHz
PCI bus	33 MHz

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## PC Cards

CardBus controller	Texas Instruments PCI 1211 CardBus controller
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PC Card slots	one (supports type I and type II cards, including ZV cards on computers running the Microsoft® Windows® 95 or 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

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## Memory

Architecture	SDRAM
Memory module socket	144-pin industrial standard SODIMM socket
Memory module capacities and type	64 or 128 MB of 3.3-V SDRAM <sup>1</sup> module
Standard RAM	64-MB memory module
Maximum RAM	128 MB
Memory clock speed	100 MHz

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## Connectors

Parallel	unidirectional, bidirectional, or ECP connector
IDE	IDE connector for external media bay
Video	SVGA connector
PS/2	mini-DIN connector
Audio	microphone-in jack; headphones/speakers jack
USB	USB-compliant connector
Docking	connector for the Dell Latitude LS Advanced Port Replicator (APR)
Modem	RJ-45 connector

NIC	RJ-11 connector
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## Audio

Audio type	Sound Blaster (software emulation-capable)
Audio controller	NeoMagic NMG5 + AC97 CODEC
Stereo conversion	16 bit (analog-to-digital and digital-to-analog)
Interfaces:	
Internal	PCI bus/AC97
External	microphone-in minijack; headphones/speakers-out minijack
Speaker	2.5-ohm speaker
Internal speaker amplifier	500 mW
Controls	volume can be controlled through key combinations, application program menus, or the <b>Speaker</b> window in the Dell Control Center (Windows 95 only)

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## Video

Video type	256-bit hardware-accelerated
Data bus	AGP
Video controller	NeoMagic NM2200
Video memory	2.5 MB

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## Display

Type	SVGA TFT
Dimensions (active area):	
Height	184.5 mm (7.26 inches)
Width	246 mm (9.68 inches)
Diagonal	307.3 mm (12.1 inches)

Maximum resolution/colors	800 x 600; 262,144 colors
Response time (typical)	50 ms
Viewing angles:	
Horizontal	± 45°
Vertical	+10°/–30°
Dot pitch	0.30 mm
Power consumption:	
Panel (typical)	825 mW
Backlight	2.9 W
Controls	brightness can be controlled through a key combination

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## Network Interface Controller

Integrated network interface chip	3Com® 3C920 10/100-BASET X PCI bus master Ethernet chip
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## Integrated Modem

DataFax Modem	Worldwide 56-Kbps v.90 Lucent 1646 controllerless Data Access Arrangement (DAA) modem. For more information, see the <a href="#">online documentation</a> for the modem.
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## Keyboard

Number of keys	84, 85, and 87 keys for US, Europe, and Japan, respectively
Key travel	2.5 mm (.098 inch) ± .2mm (.008 inches)
Key spacing	18 mm (.70 inch)

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## Battery

Type	lithium ion
------	-------------

**Dimensions:**

Height	12.7 mm (0.5 inch)
Depth	57.25 mm (2.25 inches)
Width	262.49 mm (10.33 inches)
Weight	214 g (.47 lb) for 4-cell version; 288 g (0.63 lb) for 6-cell version
Voltage	14.8 for 4-cell version; 11.10 VDC for 6-cell version
Capacity	23 WH for 4-cell version; 34 WH for 6-cell version
Charge time (approximate): <sup>2</sup>	
Computer on	About 1.5 hours
Computer off	About 1.5 hours
Life span (approximate) <sup>2</sup>	350 discharge/charge cycles
Temperature range:	
Charge	0° to 40°C (32° to 104°F)
Storage	-20° to 50°C (-4° to 122°F)

**AC Adapter**

Input voltage	100 to 240 VAC
Input current (maximum)	1.5 A
Input frequency	50 to 60 Hz
Output current	2.64 A (maximum)
Rated output voltage	19.0 VDC
Height	29 mm (1.14 inches)
Width	46.3 mm (1.82 inches)
Depth	108 mm (4.25 inches)
Weight (with cables)	355 g (0.78 lb)
Temperature range:	

Operating	0° to 40°C (32° to 104°F)
Storage	–20° to 60°C (–4° to 140°F)

---

## Physical

Height	25.7 mm (1.01 inches)
Width	272 mm (10.7 inches)
Depth	220.0 mm (8.66 inches)
Weight	1.665 kg (3.67 lb) with 6-cell battery 1.618 kg (3.57 lb) with 4-cell battery

---

## Environmental (Computer)

### Temperature:

Operating	5° to 35°C (41° to 95°F)
Storage	–20° to 60°C (–4° to 140°F)

### Relative humidity (maximum):

Operating	20 % to 80% (noncondensing)
Storage	8% to 90% (noncondensing)

### 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:[3](#)

Operating	152.4 cm/sec (60.0 inches/sec) (equal to a half-sine pulse 2 ms in width)
Storage	203.2 cm/sec (80 inches/sec) (equal to a half-sine pulse 2 ms in width)

### 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 with Microsoft mouse driver)
X/Y position resolution	Minimum 20 points/mm (500 points/inch) (graphics tablet mode)
Size:	
Thickness	0.69 ± 0.15-mm (0.027 ± 0.006-inch) printed-circuit board (PCB) thickness (including mylar cover)
Width	64.88 mm (2.55-inch)
Height	48.88 mm (1.92 inches)
Weight	6.0 ± 0.5g (0.21 oz)
Power:	
Supply voltage	5 V ± 10%
Supply current	4.0 mA (nominal operating)
ESD	15 kV applied to front surface (when properly mounted)

---

### NOTES:

<sup>1</sup> The Dell Latitude LS portable computer supports only 100-ns SDRAM SODIMMs. It does not support EDO memory modules.

<sup>2</sup> Battery performance features such as charge time and life span can vary according to the conditions under which the computer and battery are used.

<sup>3</sup> Measured with the hard-disk drive in head-parked position.

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# Getting Help: Dell™ Latitude™ LS Portable Computers User's Guide

 [Help Overview](#)

 [Contacting Dell](#)

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# External Media Bay: Dell™ Latitude™ LS Family Portable Computers User's Guide

You can use the external media bay (see [Figure 1](#)) for the diskette drive that comes with your system. Alternatively, you can install an optional device (such as a CD-ROM, CD-RW, DVD-ROM, SuperDisk LS-120, or non-bootable second hard-disk drive) in the bay.



*NOTE: If desired, you can use the media bay cable to connect a device directly to the external media bay connector, without using the external media bay.*

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

1. If your computer is running the Dell-installed Microsoft® Windows® 95, Windows 98, or Windows NT® operating system with Softex BayManager installed: Right-click the Softex icon (the icon looks like an open portable computer) in the Windows system tray on the taskbar. Then click either **Remove or Swap Devices** or **Insert Bay Devices**, either of which causes the system to enter [suspend](#) (or [standby](#)) mode.

*If your Windows NT, Windows 95, or Windows 98 system is not running one of the Softex programs: Save your work, close all open files and application programs, and turn off the computer.*

*If your system is running Windows 2000: Device swapping in the media bay is supported by the operating system. Although you can physically remove and install devices as described in the following subsections, refer to the information on unplugging or ejecting hardware in your Windows 2000 documentation instead of following the Softex-related steps in this section.*

**NOTICE: When a device is not inside the external media bay, it is fragile and must be handled carefully to avoid damage. Do not press down on it or place a heavy object on top of it. Place extra devices in a travel case to keep them free of dust and liquids. Store devices in a safe place.**

2. If the external media bay contains a device, remove the device as follows:
  - a. Remove the media bay cable from the back of the bay.
  - b. Turn the media bay over.
  - c. Slide the release latch on the bottom of the bay toward the unlock icon.
  - d. Hold the latch in the unlock position with one hand and pull the device out of the bay with the other hand.
  - e. Release the latch, and then turn the media bay back over.
3. Slide the new device firmly into the external media bay.

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

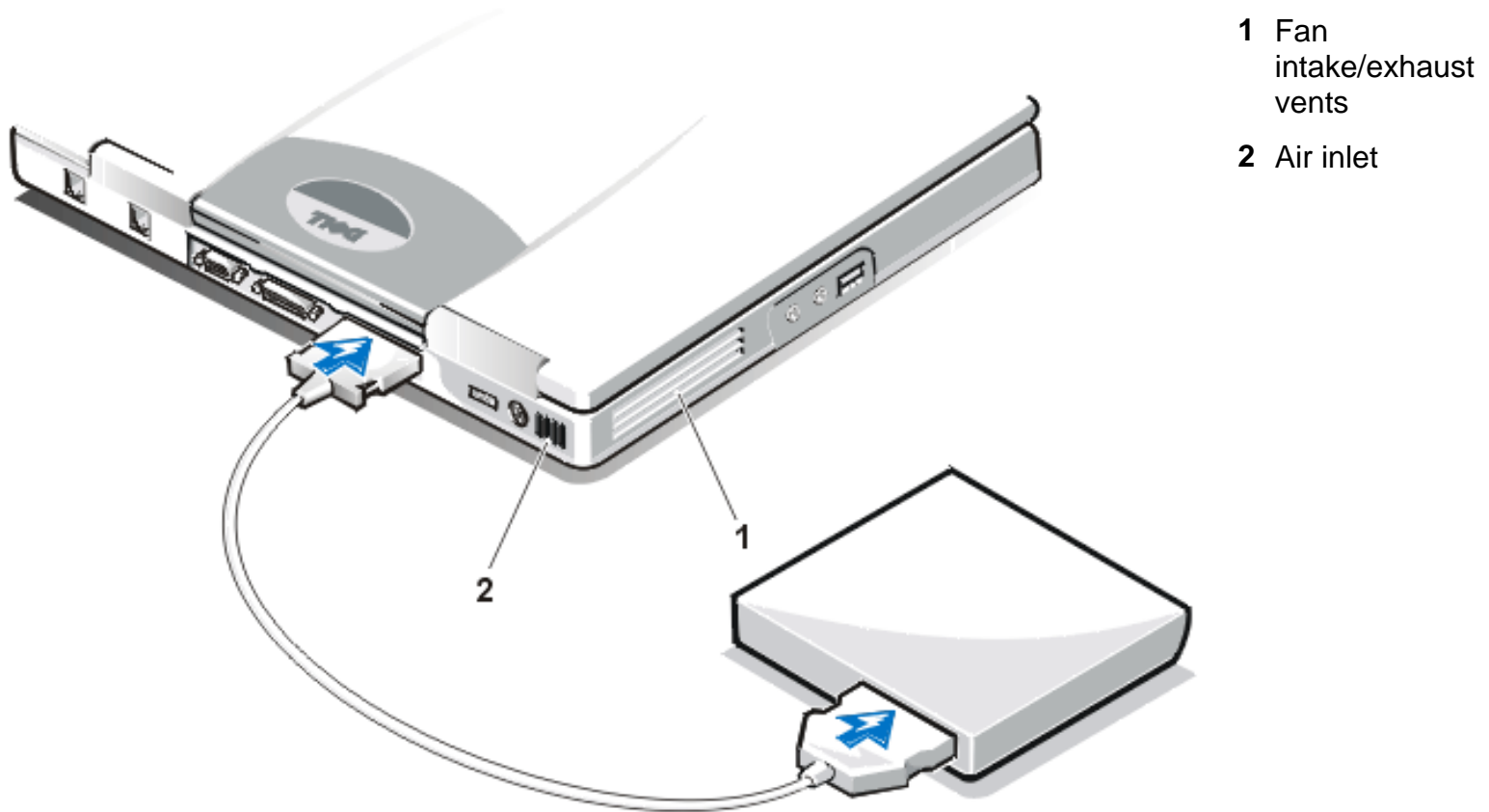
**NOTICE: To avoid overheating the computer, do not place the external media bay close to the air inlet or fan intake/exhaust vents (see [Figure 1](#)).**

4. Connect the media bay cable as follows:
  - a. Position the larger of the cable connectors with its shiny metal lip down, and connect it firmly to the

device through the slot in the back of the bay.

- b. Make sure that the securing clips are fully engaged and the connector is fully seated.
- c. Connect the other end of the cable to the media bay connector at the back of the computer (see Figure 1).

**Figure 1. External Media Bay**



5. *If your computer is running Softex Bay Manager:* Click **OK** at the **Softex Bay Manager** screen. Click **OK** at the **Device Removal** screen (if it appears), and then click **OK** at the **Device Configured** screen.

*If you turned off the computer in step 1:* Press the power button to turn the computer back on.

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# Using the System Setup Program: Dell™ Latitude™ LS Portable Computers User's Guide

 [Overview](#)

 [Entering the System Setup Program](#)

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## Overview

Each time you turn on your computer, it compares the installed hardware with the system configuration information stored in nonvolatile random-access memory (NVRAM). If the system detects a discrepancy, it generates an error message for each incorrect configuration setting. You can use the system setup program to adjust the configuration settings.

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 setup 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 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.

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

---

## Entering the System Setup Program

To enter the system setup program, turn on the computer and press <F2> as soon as you see the Dell logo screen and before the Microsoft® Windows® logo screen appears. The computer reboots automatically when you exit the Setup program.

The system setup screens display the current setup and configuration information and optional settings for your computer. Information on the screens is organized in four areas:

- The menu across the top of each screen lists the six top-level screens ([Main](#), [Advanced](#), [Security](#), [Power](#), [Boot](#), and [Exit](#)) to aid you in moving from screen to screen.
- The large box on the left two-thirds of each screen lists options that define the installed hardware and the power conservation and security features of your computer.
- The smaller box on the right third of the screen provides item-specific help information about the currently selected option.
- The information across the bottom of all screens lists keys and their functions within the system setup program.

To exit the system setup program, press <Esc> and select one of the exit options.










*NOTE: To reset the default values for each option in a menu, press <F9> and then press <Enter> to confirm. To save the current values and exit the system setup program, press <F10> and then press <Enter> to confirm.*

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

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# Dell™ Diagnostics: Dell Latitude™ LS Portable Computers User's Guide

-  [Overview](#)
-  [Features of the Dell Diagnostics](#)
-  [When to Use the Dell Diagnostics](#)
-  [Starting the Dell Diagnostics](#)
-  [Dell Diagnostics Main Screen Overview](#)
-  [Confirming the System Configuration Information](#)
-  [How to Use Dell Diagnostics](#)

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## Overview

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.**

---

## Features of the Dell Diagnostics

The Dell Diagnostics provides a series of menus and options from which you choose particular test groups or subtests. You can also control the sequence in which the tests are run. The diagnostic test 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 test 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 **Devices** menu that briefly describes each test and its parameters
  - A **Config** menu that describes the configuration of the devices in the selected device group
  - Status messages that inform you whether test groups or subtests were completed successfully
  - Error messages that appear if any problems are detected
- 

## When to Use the Dell Diagnostics

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 section.

---

## Starting the Dell Diagnostics

Perform the following steps to start the diagnostics.



**NOTE:** Before booting from the Dell System Software CD, you may want to print this section so that you can refer to it while running the diagnostics.

1. Turn off the computer.
2. Undock the computer if you have it docked.
3. Turn on the computer and press <F2> as soon as you see the Dell logo screen. If you wait too long and the operating system begins to load into memory, *let the computer complete the load operation*. Then shut down the system and try again.

4. In the system setup program, go to the [Boot screen](#) and set the following boot sequence:

1. **Removable Devices**
2. **ATAPI CD-ROM Drive**
3. **Hard Disk**
4. **Boot to LAN**

5. Save the changes and exit the system setup program.

6. Insert the *Dell System Software* CD into the CD-ROM or DVD-ROM drive.

7. Turn the computer off.

8. Turn the computer on. The computer restarts and automatically begins to run the Dell Diagnostics.

9. When you have completed running diagnostics, remove the *Dell System Software* CD from the CD-ROM or DVD-ROM drive.

To return to the boot sequence you use for normal operation, repeat steps 1 through 5, customizing the boot sequence to fit your needs. Then restart your computer.

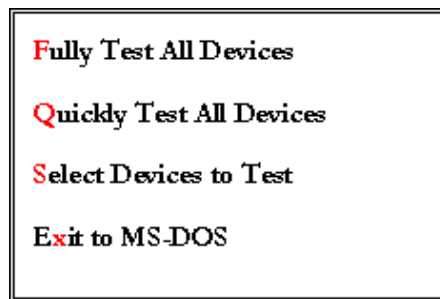
When you start the diagnostics, the Dell logo screen appears, followed by a message telling you that the diagnostics is loading.

After the diagnostics loads, the **Diagnostics Menu** appears (see [Figure 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 **Quickly Test All Devices**. 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 **Fully Test All Devices**. To check a particular area of your computer, select **Select Devices to Test**.

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 1. Diagnostics Menu**



## Dell Diagnostics Main Screen Overview

When you select **Select Devices to Test** from the **Diagnostics Menu**, the main screen of the diagnostics appears (see [Figure 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. From this screen, you can enter two other types of screens.

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. 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.
- The lower-right side of the screen displays information about your drive(s).



- 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 2. Dell Diagnostics Main Screen**



## Confirming the System Configuration Information

When you boot your computer from the *Dell 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. 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 in the **Parallel Ports** tests.

## How to Use 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 **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 Category

**Menu** describes the main menu screen area, the **Device Groups**, and the different diagnostic menus and commands and instructions on how to use them.

### Keys Category

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

### Device Group Category

**Device Group** 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 Category

**Device** 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 **Device** 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 Category

**Test** provides a thorough explanation of the subtest for each selected device group. For example, the following description is provided for the **Diskette Drive Seek Test**:

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 Category

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

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# AC Adapter: Dell™ Latitude™ LS Portable Computers User's Guide

[Using the AC Adapter](#)[Connecting the AC Adapter](#)[Turning On the Computer](#)

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## Using the AC Adapter

The AC adapter converts AC power from an electrical outlet to the DC power used by the computer. The AC adapter kit includes the AC adapter with its attached DC cable (which connects to the computer) as well as an AC power cable that connects the adapter to an electrical outlet.

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.

If the computer is docked to the Dell Latitude LS Advanced Port Replicator (APR), it obtains power through the APR, which must be connected to an electrical outlet through the AC adapter.



*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.**

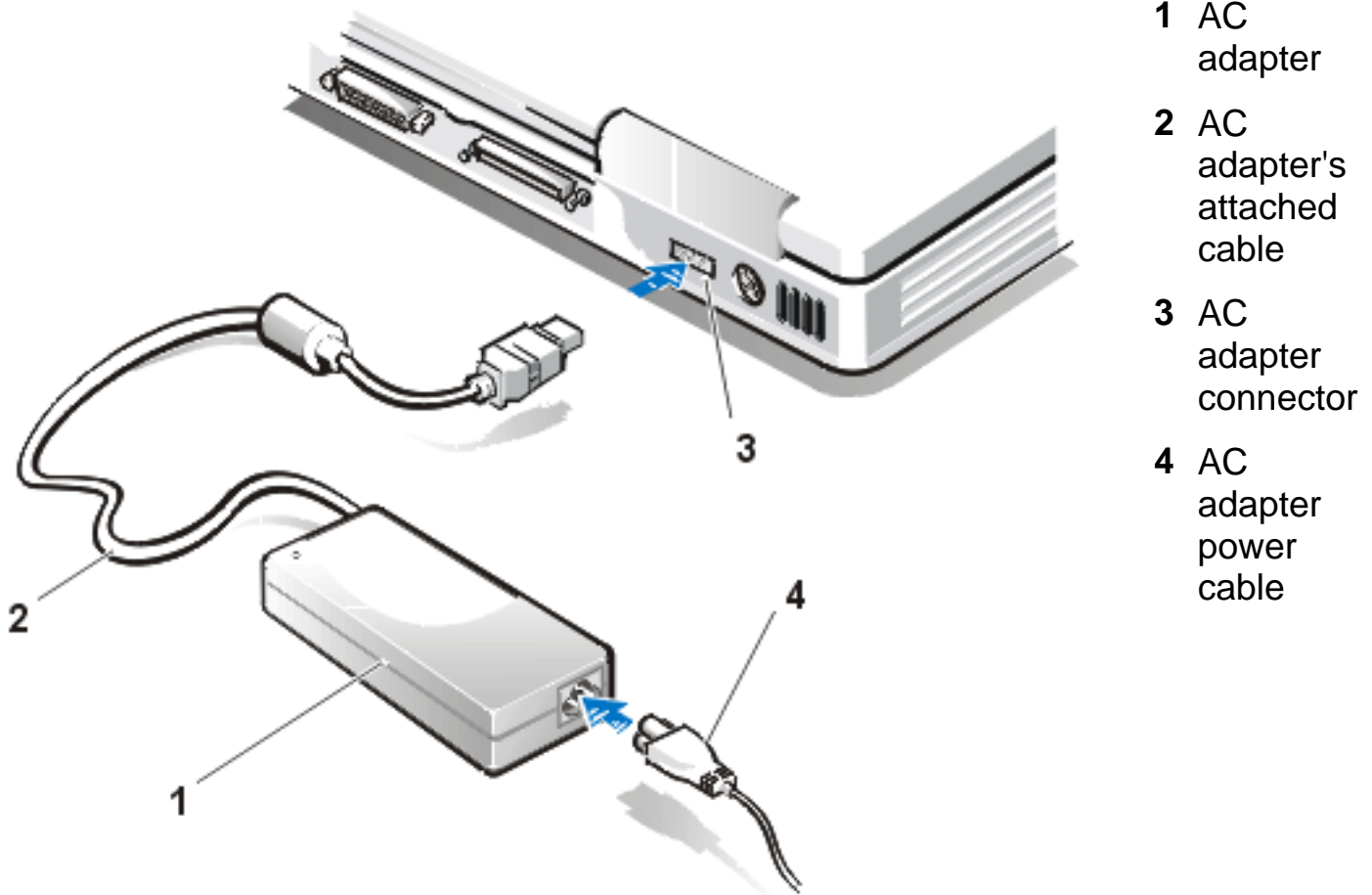
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## Connecting the AC Adapter

1. Connect the AC adapter's attached cable into the computer's AC adapter connector (see [Figure 1](#)).
2. Plug the AC adapter power cable into the other end of the AC adapter.

3. Plug the AC adapter power cable into an electrical outlet.

**Figure 1. Connecting the AC Adapter**



## Turning On the Computer

To turn on the computer, press the [power button](#).















**NOTES:** If your computer's operating system is "locked up"—that is, it does not respond to commands—press and hold down the power button for at least five seconds to turn off the computer.

If the operating system locks up and does not respond to the power button, you can restart the computer using the reset switch on the bottom of the computer. To do so, straighten a paper clip and press it into the [reset switch access hole](#) for about one second.

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# Batteries: Dell™ Latitude™ LS Portable Computers User's Guide

-  [About the Batteries](#)
-  [Using the Battery](#)
-  [Charging the Battery](#)
-  [Charging a Hot Battery](#)
-  [Replacing the Battery](#)
-  [Battery Charge Gauge](#)
-  [First Low-Battery Warning](#)
-  [Second Low-Battery Warning](#)
-  [Detecting Battery Problems](#)
-  [Battery Disposal](#)
-  [About Battery Power](#)
-  [Turning On the Computer](#)

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## About the Batteries

Your computer includes a 4-cell or 6-cell lithium ion battery that provides power when an electrical outlet is not available. The battery is installed on the underside of the computer and forms part of the bottom of the computer. Lithium ion batteries are longer lived than conventional batteries and do not require replacement as often. You do not need to drain a lithium ion battery completely before recharging it.

Do not place spent batteries with common household waste products. See [Battery Disposal](#) for more information.

Keep the following information in mind when you are running your computer from the battery:

- A fully charged 6-cell, 34-watt-hour (WH) battery provides approximately 2 hours of battery life; a fully charged 4-cell, 23-WH battery provides approximately 1 hour of battery life. Actual performance varies, depending on which power management features are enabled and which application programs you are using.
- The [integrated battery charge gauge](#) lets you check the charge status of an installed or uninstalled battery at any time.
- The battery's self-test capability alerts you to battery conditions such as low charge.



*NOTE: If the battery is totally drained the alert functions will not operate.*

- You can charge the battery whenever you like without fear of reducing its charge capacity.
- A battery has a life span of up to 350 full charges and 2000 partial charges, provided it is charged at normal room temperature.

**NOTICE: The batteries are designed to work only with Dell Latitude LS portable computers. Do not use the Latitude LS batteries with other computers, and do not use batteries from other computers with the Dell Latitude LS.**

---

## Using the Battery

The battery is partially charged when you receive it. Dell recommends that you charge your battery to full capacity before using it to power the computer.

If you are powering the computer from a battery, try to conserve battery power. A number of factors affect battery operating time:

- Power conservation features that you use
- Type of display and microprocessor installed
- Brightness setting of the display
- Use of storage media
- Number and type of external devices and type of PC Cards that you use




*NOTE: You can extend battery life by removing PC Cards when they are not being used.*

- Kinds of application programs that you run
- Capacity of the memory module installed (the higher the capacity, the more power used)

When you activate [suspend](#) mode (known as [standby](#) in the Microsoft® Windows® 98 operating system), the computer can remain in suspend mode on battery power for approximately one week (if the battery was fully charged before activating suspend or standby mode).


If you are going to store the computer, disconnect all devices and turn off the computer. Remove the battery when you store your computer for an extended period of time. A battery will drain when not in use during prolonged storage. After a long storage period, recharge the battery fully before you attempt to run your computer from battery power.

 **NOTE:** To extend battery life, store batteries at room temperature.

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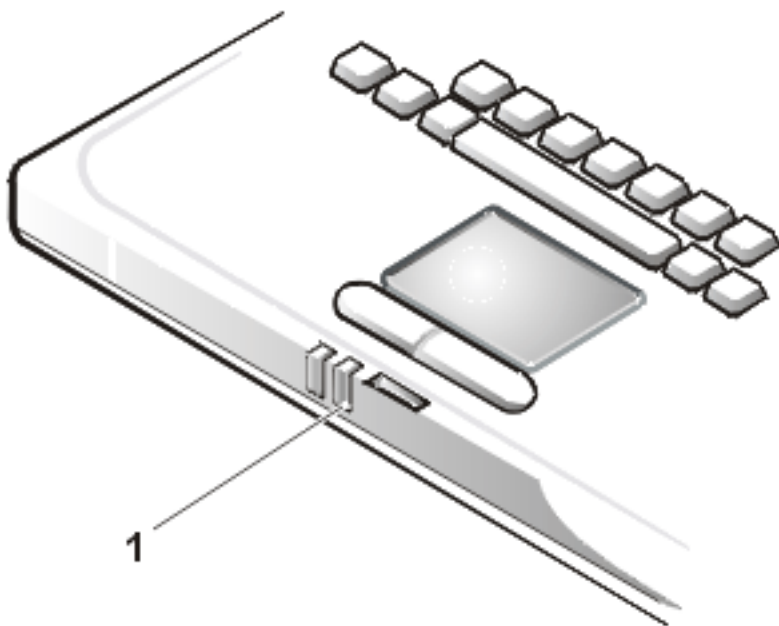
## Charging the Battery

Each time you connect the computer to an electrical outlet or install a battery in a computer that is connected to an electrical outlet, the computer checks the battery's charge. The AC adapter charges the battery (if needed) and then maintains the battery's charge.


 **NOTE:** For maximum battery performance, charge the battery only at room temperature.

The battery status indicator (see [Figure 1](#)) turns orange while the battery is charging and then turns green when the charge cycle is complete. It takes about 1.5 hours to completely charge the battery, whether the computer is turned on or off.

### Figure 1. Battery Status Indicator



1 Battery status indicator

 **NOTE:** You can leave the battery in the computer as long as you like. The battery's integrated circuitry prevents the battery from overcharging.

---

## Charging a Hot Battery

If your battery is hot from being used in your computer or being in a hot environment, take note of the following precautions:

- A hot battery will not charge when you connect the AC adapter to the computer. This safety feature is important because charging a hot battery shortens the battery's life span

and may damage the battery and the computer.

- If the computer is not allowed to return to room temperature, the battery stops charging before it reaches its full capacity.

## Replacing the Battery

To replace a battery in the battery bay, perform the following steps (see [Figure 2](#)).



*NOTES: If necessary, print these instructions for reference before proceeding.*

*Dell recommends that you turn the computer off before replacing the battery.*

*If you want to replace the battery while the computer is running, you must first connect the computer to an electrical outlet or enter [suspend](#) (or [standby](#)) mode or [suspend-to-disk](#) (S2D) mode. You cannot replace the battery while the computer is running on battery power.*

1. If the computer is docked, undock it. (See the documentation that came with your docking device.)

**NOTICE: If you choose to replace the battery with the computer in suspend (or standby) mode, you have up to 2 minutes to complete the battery replacement.**

2. Connect the computer to an electrical outlet and then preserve your data in one of the following ways:
  - Place the computer in suspend (or standby) mode.

Press <Fn><Esc> (or <Scroll Lock><Esc> on an external keyboard if the [External Hot Key](#) option is enabled in the system setup program).

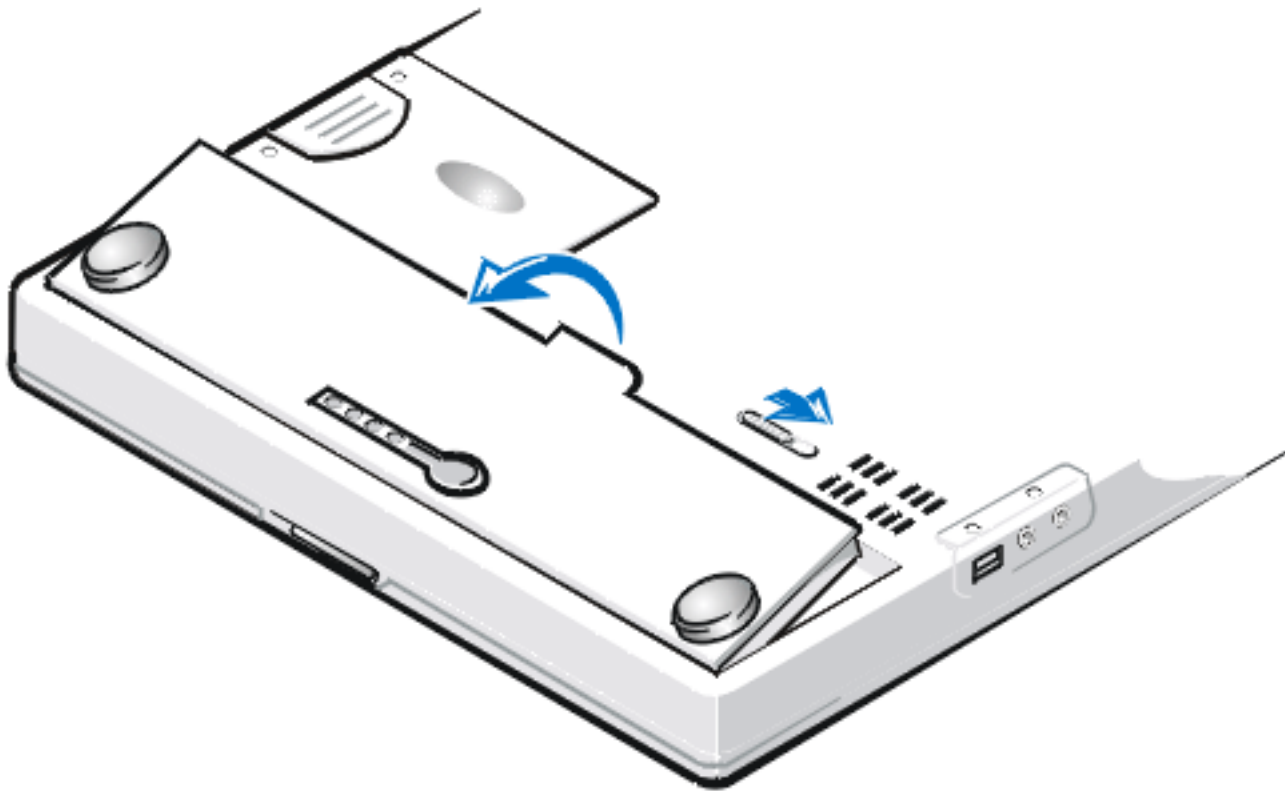
- (For Windows 95 only) Place the computer in S2D mode.

Press <Fn><a> (or <Fn><q> on a French keyboard). When the green power indicator turns off, go to step 3.

3. Remove the battery from the battery bay.

Close the computer display and turn the computer over. Slide the battery bay latch to the unlock position (see [Figure 2](#)), causing the battery to pop up slightly on one side. While keeping the latch in the unlock position, pivot the battery up and out of the bay. Release the latch.

### Figure 2. Removing a Battery



4. Position the new battery as shown in Figure 2, and lower the outside edge of the battery into the battery compartment.

Four small tabs on the battery fit into four slots in the side wall of the computer.

5. Press the battery firmly into place, flush with the surrounding surface.

Make sure that the battery latch is completely closed before turning the computer right-side up.

6. If you put the computer into suspend (or standby) mode or S2D mode in step 2, press the power button to resume normal operation.

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## Battery Charge Gauge

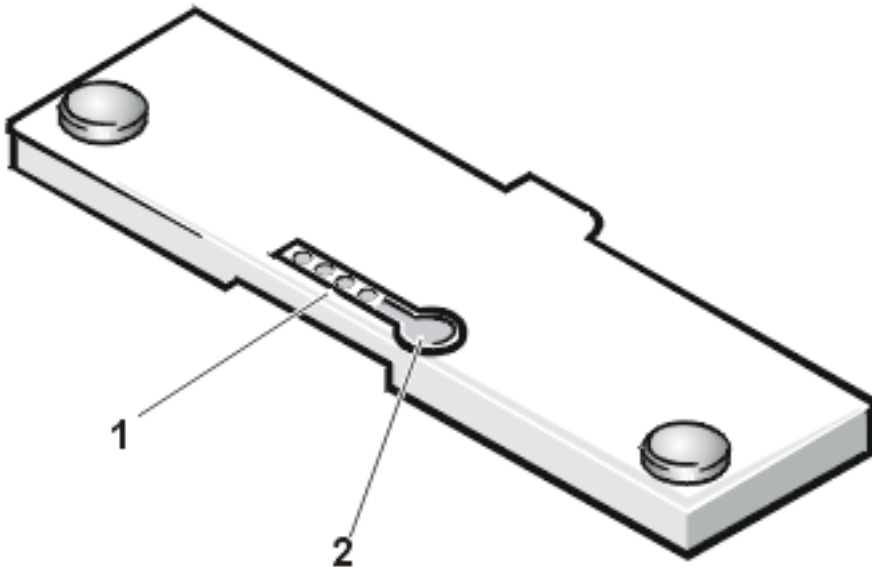
The battery charge gauge, located on the battery and accessible on the underside of the computer, consists of four indicators and a test button. Each indicator represents 25 [percent of full charge](#). If only one indicator lights up, recharge the battery before using it.

To check the charge level, press the battery test button (see [Figure 3](#)). The appropriate number of indicators lights up for a few seconds to indicate the amount of charge remaining in the battery.

### Figure 3. Battery Charge Gauge



- 1 Battery charge indicators (4)
- 2 Battery test button



**NOTES:** A charge indicator that blinks rapidly indicates a temporary failure or a potentially recoverable failure such as overheating. Allow the battery to cool for several minutes before checking the charge level again.

If the battery has permanently failed or completely discharged, no charge indicators will light when you press the battery test button. If you install a failed or completely discharged battery in the computer and the [battery status indicator](#) turns red, the battery has failed. If the battery status indicator turns red, allow the battery to charge overnight and check it the next day. If the battery is fully discharged, it takes a much longer time than usual to recharge it.

To purchase a new battery, [call Dell](#) or access the Dell World Wide Web site at <http://www.dell.com>. [Dispose](#) of the old battery properly.

## Percentage of Charge

The [battery charge gauge](#) uses its four indicator lights to show the percent of charge remaining in the battery:

- If one indicator lights up, the battery has 1 to 25 percent of its charge remaining.
- If two indicators light up, the battery has 26 to 50 percent of its charge remaining.
- If three indicators light up, the battery has 51 to 75 percent of its charge remaining.
- If four indicators light up, the battery has 76 to 100 percent of its charge remaining.



## First Low-Battery Warning

The first low-battery warning—consisting of a battery warning icon that appears on the screen and a triple beep from the speaker—occurs when you have about 20 minutes of battery life left under current conditions and the computer is not connected to an electrical outlet.

**NOTICE:** When you receive a low-battery warning, save your work immediately. Then [replace the battery](#) or connect your computer to an electrical outlet.

---

## Second Low-Battery Warning

The second low-battery warning consists of a triple beep from the speaker, with the computer entering [suspend](#) (or [standby](#)) mode immediately after the beep if **Battery Low Suspend** is enabled in the system setup program. If **Battery Low Suspend** is disabled, a low-battery icon appears on the display screen. This warning occurs when you have about 15 minutes of battery life left under current conditions and the computer is not connected to an electrical outlet.

After the second low-battery warning, if no further input/output (I/O) activity occurs within a few seconds, the computer enters [S2D mode](#). If the computer has no S2D file, it enters suspend (or standby) mode, in which it can preserve data for several hours.

If the computer is already in suspend (or standby) mode when a final low-battery warning occurs, the computer enters S2D mode immediately. If S2D mode has been disabled, the computer reenters suspend (or standby) mode.

**NOTICE:** To avoid losing data and possibly corrupting data areas on your hard-disk drive, save your work immediately after a second low-battery warning. Then connect your computer to an electrical outlet, or place the computer in suspend (or standby) mode. If the battery runs completely out of power, the computer turns off without properly closing any open files.

---

## Detecting Battery Problems

A battery problem may prevent the battery from being charged to its full potential and can lead to unpredictable operation. To obtain a new battery, [call Dell](#) or access the Dell World Wide Web site at <http://www.dell.com>.

To avoid installing a defective battery in your computer, first check the battery's charge, indicated by the battery charge indicators on the battery itself, by pressing the battery test button (see [Figure 3](#)).



*NOTE: If the battery has 0 (zero) percent charge, you cannot use the battery test button to check the battery's capacity. The battery charge indicators will not light if the battery is completely drained.*

---



## Battery Disposal



**CAUTION: Do not puncture or incinerate the battery.**



**NOTE:** To purchase a new battery, [call Dell](http://www.dell.com) or access the Dell World Wide Web site at <http://www.dell.com>.

Your computer system uses both a lithium-ion battery pack and a nickel-metal hydride (NiMH) coin cell battery. For instructions about replacing the lithium-ion battery pack in your computer, see "[Replacing the Battery](#)." 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 these batteries along with household waste. Contact your local waste disposal agency for the address of the nearest battery deposit site.

---

## About Battery Power

You automatically conserve battery power each time you connect the computer to an electrical outlet. The battery is even being recharged when you use AC power. The battery's life expectancy is largely determined by the number of charges it receives, so use an electrical outlet to run the computer whenever possible.

You can customize power management by individually controlling the computer's [power conservation features](#). These features reduce power consumption by monitoring application programs and computer devices for inactivity and slowing down or stopping some of the computer's internal devices.



**NOTES:** When you use power conservation features, you often trade some of the performance of the computer for increased battery operating time. For example, if you turn off the hard-disk drive, you may experience a delay the next time the computer tries to access the hard-disk drive.

Other power conservation features, such as [suspend](#) (or [standby](#)) mode, stop almost all system activity. They allow you to maximize power conservation when your work is interrupted.

Experiment with power conservation features to achieve the optimum power conservation for your work environment.

---

## Turning On the Computer

To turn on the computer, press the [power button](#).



*NOTES: If your computer's operating system is "locked up"—that is, it does not respond to commands—press and hold down the power button for at least five seconds to turn off the computer.*



*If the operating system locks up and does not respond to the power button, you can restart the computer using the reset switch on the bottom of the computer. To do so, straighten a paper clip and press it into the [reset switch access hole](#) for about one second.*

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# Display: Dell™ Latitude™ LS Portable Computers User's Guide

-  [Adjusting the Brightness](#)
-  [Expanded Video Mode](#)
-  [Video Drivers and Video Resolution](#)
-  [Customizing Video Resolution](#)
-  [Dual-Display Mode](#)
-  [If You Have Display Problems](#)
-  [Cleaning the Display and Touch Pad](#)

## Adjusting the Brightness

To adjust the brightness of the display, you can use the key combinations shown in [Table 1](#).



*NOTE: When you run the computer on battery power, set your computer's brightness control to the lowest setting that affords comfortable viewing. You can extend your battery life by using the minimum brightness setting.*

**Table 1. Brightness Key Combinations and Their Functions**



Key Combinations	Function
<Fn> + down arrow	Decreases brightness
<Fn> + up arrow	Increases brightness



*NOTE: To use key combinations on an external keyboard, enable the [External Hot-Key](#) option in the system setup program and use <Scroll Lock> instead of <Fn>.*

## Expanded Video Mode

When working in MS-DOS® text mode, you can select the font used to display text. Press <Fn><F7> to toggle between regular video mode (serif font) and expanded video mode (a serif font with extra leading). In expanded video mode, items in resolutions other than 800 x 600 expand to fill the screen, which is useful if you are working in 800 x 600 resolution on a 12.1-inch super video graphics array (SVGA) display.



*NOTE: You may have difficulty using the display fonts feature with MS-DOS programs that use downloaded fonts. For optimum video performance in these cases, do not use expanded video mode.*

## Video Drivers and Video Resolution

The Dell-installed video drivers work with the operating system to let you customize the video resolution, number of screen colors, and refresh rate of your display.



*NOTE: The Dell-installed video drivers are designed to offer the best performance on your computer. Dell recommends that you use only these drivers with your factory-installed operating system.*

**Table 2. Combinations of Resolutions and Colors Supported**

Resolution	Color Options		Display Refresh Rate	External Monitor Refresh Rate	
640 x 480	256 colors	High Color (16-bit) (65,536 colors)	True Color (24-bit) (1,677,721 colors)	60 Hz	60, 75, or 85 Hz
800 x 600	256 colors	High Color (16-bit) (65,536 colors)	True Color (24-bit) (1,677,721 colors)	60 Hz	60, 75, or 85 Hz
1024 x 768*	256 colors	High Color (16-bit) (65,536 colors)	True Color (24-bit) (1,677,721 colors)	60 Hz	60, 75, or 85 Hz
1280 x 1024*	256 colors	N/A	N/A	60 Hz	60 Hz

\* At this resolution, only an external monitor will display the entire desktop area at one time. For

*the computer's display, using this resolution sets the display to pan mode, which allows you to scroll left, right, up, and down to view the entire desktop.*

To use the 1280 x 1024 or the 1024 x 768 resolution on an external monitor for a system running the Microsoft® Windows® 95 or Windows 98 operating system, set the external monitor to **Plug and Play Monitor** as described in the following procedures.

For Windows 95, perform the following steps:

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Display** icon.
3. Click the **Settings** tab, click **Advanced Properties**, and click the **Monitor** tab.
4. Click **Change...**, click **Plug and Play Monitor**, and click **OK** twice.
5. Set **Display area** to **1280 x 1024** or **1024 x 768** and click **OK**.

For Windows 98, perform the following steps:

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Display** icon.
3. Click the **Settings** tab, click **Advanced...**, and click the **Monitor** tab.
4. Click **Change...**, click **Next**, and click **Display a list of all the drivers**.
5. Click **Next**, and click **Show all hardware**.
6. Under **Manufacturers**, click **(Standard monitor types)**.
7. Under **Models**, click **Plug & Play Monitor**, and click **Next**.
8. Click **Next** again, click **Finish**, and click **Close**.
9. At the **Display Properties** screen, set **Screen area** to **1280 x 1024** or **1024 x 768**, and click **Apply**.
10. Click **OK**, click **Yes**, and click **OK**.

To display more colors, select a lower resolution. If you select a resolution and color combination that the computer does not support, the computer automatically selects the next

supported combination.

---

## Customizing Video Resolution

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, and then set the resolution by dragging the slider in the **Desktop Area** box. In the **Color Palette** box, choose the number of colors from the menu provided. For more information, see your operating system documentation.

If you choose a resolution or color palette that is higher than is supported, the settings adjust automatically to the closest possible setting.

4. To change the refresh rate, click the **NeoMagic** tab, and then follow the instructions on your display.



*NOTE: You can adjust the refresh rate only on an external monitor. If the **NeoMagic** tab is inactive, your external monitor adjusts the refresh rate automatically.*

---

## Dual-Display Mode

With Windows 98, you can use an external monitor as an extension of your display (see your operating system documentation for more information). To set up your computer for dual-display mode, perform the following steps:

1. Connect the [external monitor](#).
2. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
3. In the **Control Panel** window, double-click the **Display** icon.
4. In the **Display Properties** window, click the **Settings** tab.
5. Change the **Colors** option to **High Color (16 bit)**.

6. Change the **Desktop Area** to **1024 by 768 pixels**.
  7. Click **Advanced....**
  8. Click the **NeoMagic** tab.
  9. Select the **Set Dual-Display** checkbox and click **Apply**.
  10. Click **Yes** when prompted to restart your computer.
  11. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
  12. Double-click **Display**, and then click the **Settings** tab.  
  
Two display icons appear in the **Settings** window.
  13. Click the display icon marked "2."
  14. When asked if you want to enable this monitor, click **Yes**.
  15. Click **Apply**, and then click **OK**.
- 

## If You Have Display Problems

If your 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, try the following measures to resolve the problem:

1. If the display is blank, you may be in suspend, standby, or suspend-to-disk (S2D) mode. Press the power button to resume.

If the display is blank and the power indicator is on, the display may have timed out. In this case, press any key on the keyboard to resume normal operation.

2. If the [low-battery warning](#) occurs, [connect](#) the AC adapter to the computer or replace the battery.
3. Adjust the [brightness](#).
4. If your computer is attached to an external monitor, press <Fn><F8> to switch the video image to the display.





*NOTE: It takes several seconds to switch the video image.*

---

## **Cleaning the Display and Touch Pad**

If the display or touch pad become smudged from use, they can be cleaned using a soft, clean cloth slightly dampened with water. Always turn off the computer before cleaning the display or touch pad.

To clean the display, stroke the cloth across the display in one direction, moving from the top of the display to the bottom.

To clean the touch pad, stroke the cloth gently across the surface of the touch pad. Do not allow water from the cloth to seep between the touch pad and the top cover of the computer.

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# Media Options: Dell™ Latitude™ LS Portable Computers User's Guide

 [External Media Bay](#)

 [CD-ROM and DVD-ROM Drives](#)

 [Diskette Drive](#)

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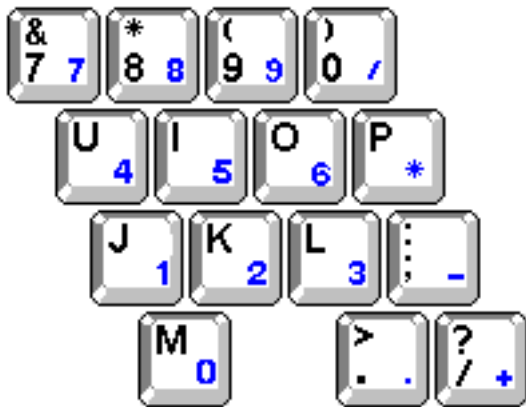
# Keyboard: Dell™ Latitude™ LS Portable Computers User's Guide

- [Embedded Numeric Keypad](#)
  - [Display Key Combinations](#)
  - [Power Conservation Key Combinations](#)
- [Speaker Key Combinations](#)
  - [System Function Key Combinations](#)
  - [CD-ROM and DVD-ROM Drive Key Combinations](#)

## Embedded Numeric Keypad

As you work, you may want to use the embedded numeric keypad (see [Figure 1](#)) to enter numbers in spreadsheet or financial programs. The embedded numeric keypad shares some of the keys on your computer's keyboard. On these keys, the number and symbol characters of the numeric keypad appear in blue to the right of the main keypad characters. To activate the embedded numeric keypad, press <Fn><Pad Lock> (the [Pad Lock indicator](#) lights up while the embedded numeric keypad is active).

**Figure 1. Embedded Numeric Keypad**



Some key combinations can be used whether or not the keypad is activated.



**NOTE:** On an external keyboard, use <Scroll Lock> with the appropriate keys if the [External Hot-Key](#) option is enabled in the system setup program.

Use the numeric keypad combinations in Table 1 to enable and disable several numeric keypad functions.

**Table 1. Embedded Numeric Keypad Key Combinations**

When Keypad Is On	Function
<Fn><F9>	Toggles the embedded numeric keypad off
When Keypad Is Off	Function
<Fn><F9>	Toggles the embedded numeric keypad on

## Display Key Combinations



*NOTE: On an external keyboard, use <Scroll Lock> with the appropriate keys if the [External Hot-Key](#) option is enabled in the system setup program.*

Use the key combinations in Table 2 to adjust the computer's display.

**Table 2. Display Key Combinations**

Key Combinations	Function
<Fn> + down arrow	Incrementally decreases brightness
<Fn> + up arrow	Incrementally increases brightness
<Fn><F7>	Toggles the computer's display between expanded video mode and regular video mode
<Fn><F8>	Switches the video image to the next display in the following sequence: the display, an external monitor, or both displays simultaneously
<Fn><F1>	Turns off the display



*NOTE: Contrast cannot be changed on an active-matrix (thin film transistor [TFT]) display, such as the display in your computer.*

## Power Conservation Key Combinations



**NOTE:** On an external keyboard, use <Scroll Lock> with the appropriate keys if the [External Hot-Key](#) option is enabled in the system setup program.

Use the key combinations in Table 3 to activate or turn off the computer's power conservation features.

**Table 3. Power Conservation Key Combinations**

Key Combinations	Function
<Fn><F1>	Turns off the display
<Fn><F3>	Displays the battery status icon
<Fn><Esc>	Activates <a href="#">suspend</a> or <a href="#">standby</a> mode
<Fn><a>* or <Fn><q>* on French keyboards	Activates <a href="#">suspend-to-disk</a> (S2D) mode

\* This key combination does not function under an operating system with the Advanced Configuration and Power Interface (ACPI), such as Microsoft® Windows® 98.

## Speaker Key Combinations



**NOTE:** On an external keyboard, use <Scroll Lock> with the appropriate keys if the [External Hot-Key](#) option is enabled in the system setup program.

Use the key combinations in Table 4 to adjust the computer's speaker volume and to enable and disable the speakers.

**Table 4. Speaker Key Combinations**

Key Combinations	Function
<Fn><F5> *	Increases the volume of the integrated speaker and the external speakers, if attached
<Fn><F6> *	Decreases the volume of the integrated speaker and the external speakers, if attached

\* This key combination does not function under an operating system with ACPI, such as Windows 98.

## System Function Key Combinations



*NOTE: On an external keyboard, use <Scroll Lock> with the appropriate keys if the [External Hot-Key](#) option is enabled in the system setup program.*

Use the key combinations in Table 5 to boot the computer in MS-DOS® mode and enter the system setup program.

**Table 5. System Function Key Combinations**

Key Combinations	Function
<Ctrl><Alt><Del>	Restarts (reboots) the computer in MS-DOS mode. In Windows 95, Windows 98, or Windows NT, click the <b>Start</b> button and click <b>Shut Down</b> .
<F2>	Enters the system setup program (at system start-up only).

## CD-ROM and DVD-ROM Drive Key Combinations



*NOTE: On an external keyboard, use <Scroll Lock> with the appropriate keys if the [External Hot-Key](#) option is enabled in the system setup program.*

To eject the CD-ROM or DVD-ROM tray, press <Fn><e>.

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# PC Cards: Dell™ Latitude™ LS Portable Computers User's Guide

 [About PC Cards](#) [Removing PC Cards](#) [Installing PC Cards](#) [Configuring PC Cards](#)

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## About PC Cards

On the right side of the computer is a PC Card slot in which you can install PC Cards that comply with Release 2.01 of the Personal Computer Memory Card International Association (PCMCIA) standard and Release 4.2 of the Japanese Electronic Industry Development Association (JEIDA) standard.

The computer supports type I and type II PC Cards, such as modems, local area network (LAN) cards, wireless LAN cards, and small computer system interface (SCSI) cards. Also supported are such memory devices as static random-access memory (SRAM) cards that emulate diskettes, random-access memory (RAM) cards, and one-time programmable (OTP) ROM cards, and advanced technology attachment (ATA) cards that emulate integrated drive electronics (IDE) hard-disk drives.

If you are using the Microsoft® Windows® 95 or Windows 98 operating system, you can use a zoomed video (ZV) PC Card, such as a hardware Moving Picture Experts Group (MPEG) decoder. (The Microsoft Windows NT® 4.0 operating system does not support ZV.)



*NOTES: A PC Card is not a boot device.*

*The "type" of a card refers to its thickness, not its functionality.*

*Your computer recognizes most input/output (I/O) cards and automatically loads the device driver associated with that card.*

**NOTICE: Take extra precautions if you use extended PC Cards in your computer. Extended cards are longer versions of standard PC Cards. They fit into, and operate correctly with, your computer. However, they extend beyond the edge of the computer when installed. If something strikes the exposed end of an installed card, your system board can be damaged. Always remove an extended PC Card before you pack the computer in its carrying case.**

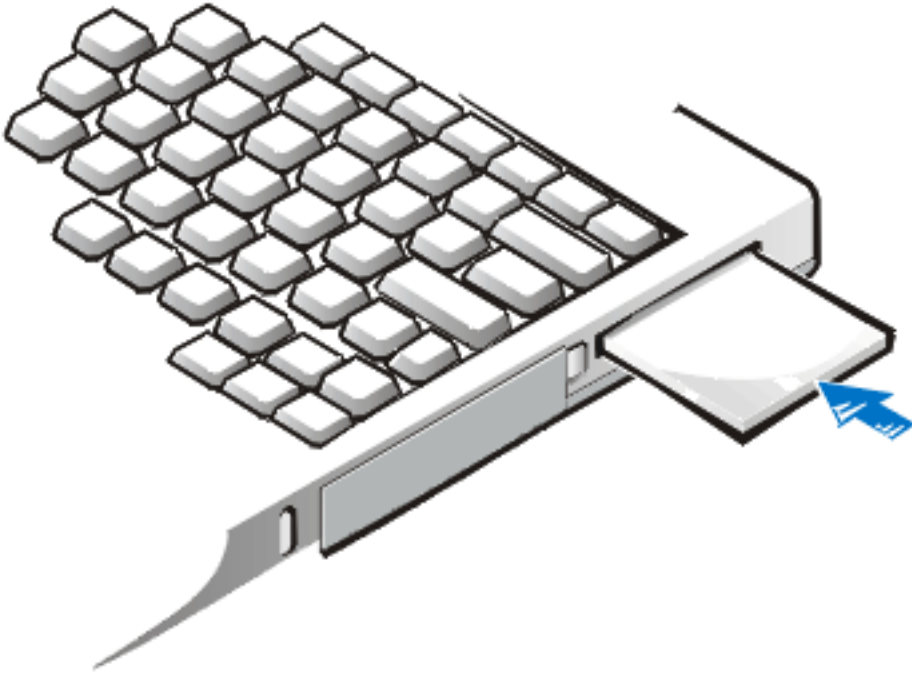
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## Installing PC Cards

PC Cards are generally marked with a symbol, such as a triangle or an arrow, to indicate which end should be inserted into the slot. The cards are keyed to prevent incorrect insertion. If card orientation is not clear, see the documentation that came with the card.

You do not need to turn off your computer or exit suspend or standby mode before you install a PC Card. To install a PC Card (see Figure 1), perform the following steps.

### Figure 1. Installing a PC Card



1. If necessary, remove the blank from the PC Card slot. Press the eject button once to pop the button out, press it again to eject the blank partway, and then pull the blank out.
2. Make sure that the eject button is pressed all the way in. Hold the card with its orientation symbol pointing into the slot and the top side of the card facing up.
3. Insert the card into the slot and press in firmly until the card is completely seated in the internal PC Card connector.
4. If you encounter too much resistance when inserting it, do not force the card. Check the card's orientation and try again.

### PC Card Blanks

Save the blank to use whenever you do not have a PC Card installed. The blank protects the PC Card slot from dust and other particles.

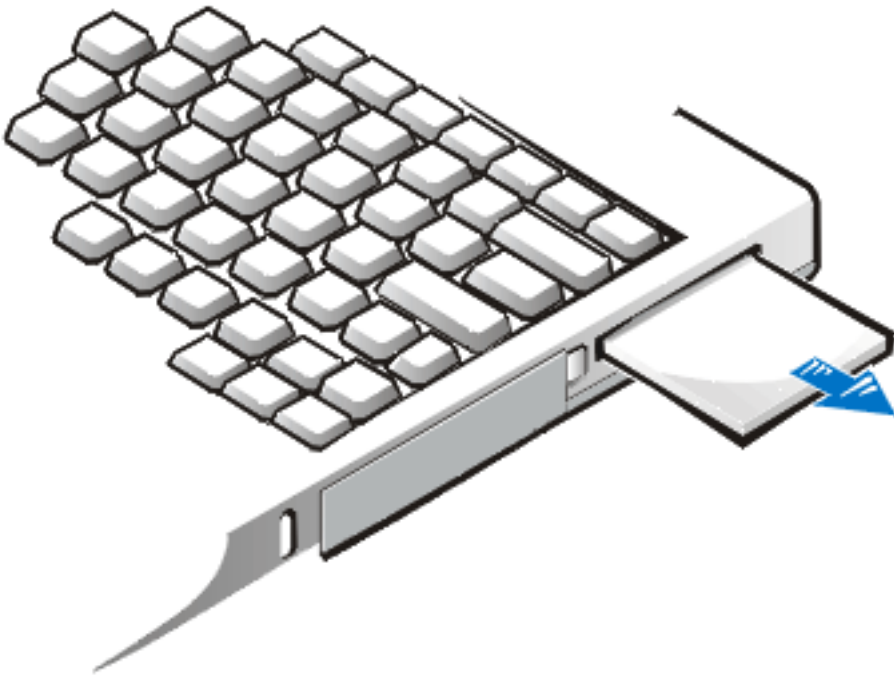


## Removing PC Cards

**NOTICE:** If you are using Windows 95 or Windows 98, use the PC Card configuration utility on the taskbar to select and stop a card before you remove it. If you do not stop the card using the configuration utility, you could lose data from open application programs.

To remove a PC Card (see Figure 2), perform the following steps.

### Figure 2. Removing a PC Card



1. Press the PC Card eject button once to pop the button out, and then press the button in again to eject the card partway. (The button may or may not pop out again when you eject the card.)
2. Gently remove the card.

To protect the PC Card slot, install a blank if you are not going to use the slot.

---

## Configuring PC Cards

The PC Card configuration utility performs the following functions:

- Notifies you whenever a PC Card is inserted and tells you how the card is configured
- Automatically loads the proper device driver if it is available on the hard-disk drive

- If drivers are not available on the hard-disk drive, prompts you to install them by using the device driver diskette that came with the card

The operating system automatically detects a PC Card and opens the **Add New Hardware** menu from the **Control Panel**. For information, see the PC Card operating system documentation.

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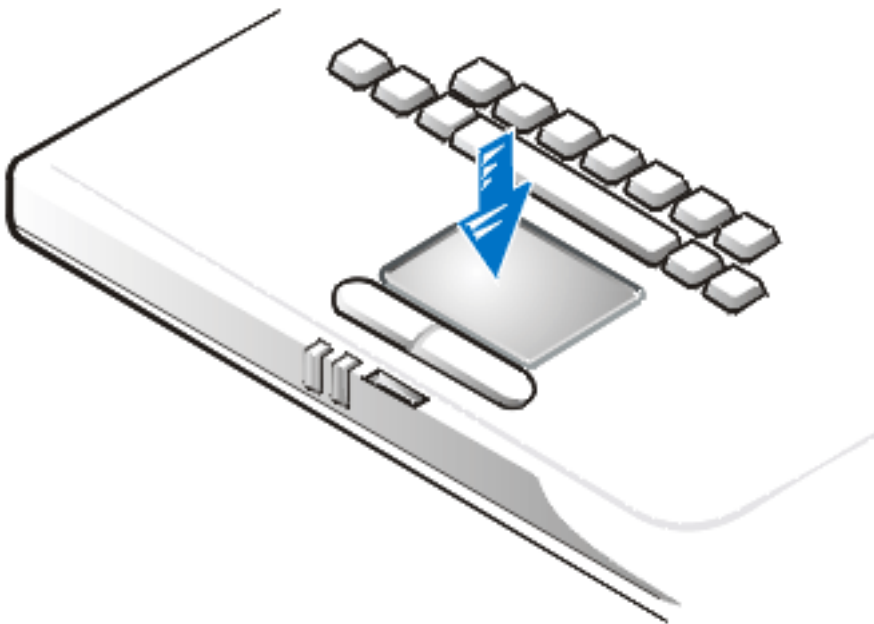
# Touch Pad: Dell™ Latitude™ LS Portable Computers User's Guide

- [Using the Touch Pad](#)
  - [Customizing the Touch Pad](#)
  - [Cleaning the Touch Pad and Display](#)
- 

## Using the Touch Pad

The touch pad (see [Figure 1](#)) detects the position of your finger over a touch-sensitive area and provides the computer full mouse functionality. The touch pad's two buttons correspond to the left and right buttons on a standard mouse.

**Figure 1. Touch Pad**



To best use the touch pad, follow these techniques:

- To move the cursor, lightly slide your finger over the smooth sensor area.

- To select an object, gently tap once on the surface of the touch pad.
- To select and move (or drag) an object, position the cursor on the object and tap down-up-down on the touch pad. On the second down motion, leave your finger on the touch pad and move the selected object by sliding your finger across the surface.
- To double-click an object, position the cursor on the object and then tap twice.



*NOTES: When enabled, the touch pad uses interrupt request (IRQ) 12. No other device can use IRQ12 while the touch pad is enabled.*

*When you attach an external Personal System (PS)/2 mouse to the computer, the touch pad is automatically disabled.*

---

## Customizing the Touch Pad

To customize the touch pad, perform the following steps:

1. Click the **Start** button, point to **Settings**, and click **Control Panel**.
2. Double-click the **Mouse** icon to open the **Mouse Properties** window and click the **Touch** tab.
3. Select the settings that work best for you and click **Apply**.
4. Check the **Button Configuration**, **Pointers**, **Motion**, **Touch**, **Edge Motion**, **Scrolling**, **Button Actions** and **More Features** tabs and make any desired changes to those settings.
5. Click **OK** to save the settings and close the window.

You can also click the touch pad icon on the taskbar and click **TouchPad Properties** to open the **Mouse Properties** control panel.

---

## Cleaning the Touch Pad and Display

If the touch pad or display become smudged from use, it can be cleaned using a soft, clean cloth slightly dampened with water. Always turn off the computer before cleaning the display or touch pad.

To clean the touch pad, stroke the cloth gently across the surface of the touch pad. Do not allow water from the cloth to seep between the touch pad and the top cover of the computer.

To clean the display, stroke the cloth across the display in one direction, moving from the top of

the display to the bottom.

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# Securing Your Computer: Dell™ Latitude™ LS Portable Computers User's Guide

-  [About Passwords](#)
-  [Using a Supervisor Password](#)
-  [Using a User Password](#)
-  [Using a Hard-Disk Drive Password](#)
-  [Physically Securing the Computer and the Hard-Disk Drive](#)

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## About Passwords

A user password prevents unauthorized access to the computer at start-up. A supervisor password provides access to the system setup program. A hard-disk drive password helps prevent the unauthorized access of data on the hard-disk drive, even when the device is placed into another computer.



*NOTES: All three passwords are disabled when you receive your computer. You need to assign those passwords if you require password security for your computer. Some companies may assign any or all of these passwords before distributing the computer.*

Use the [system setup program](#) to assign all passwords.

**NOTICE: The password features provide a high level of security for the data in your computer or hard-disk drive. 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.**

If you forget any of your passwords, [call Dell](#). For your protection, Dell's technical support staff will ask you for proof of your identity to make sure that an unauthorized person is not trying to use the computer.

---

## Using a Supervisor Password

The supervisor password is designed to give system administrators or service technicians in large companies access to computers for repair or reconfiguration. The administrators or technicians can assign identical supervisor passwords to groups of computers as they are unpacked and configured, leaving the [user password](#) free to be assigned by the user.

The supervisor password overrides the user password. Whenever you are prompted to enter the user password, you can enter the supervisor password instead.



*NOTE: The supervisor password provides access to the computer, but it does not provide access to the hard-disk drive when the drive is protected by a [password](#).*

If you forget the user password and do not have a supervisor password assigned, or if you have both a user and a supervisor password assigned but forget them both, [call Dell](#).

**NOTICE: Disabling the supervisor password disables the user password.**

---

## Using a User Password

The user password allows you to protect the computer from unauthorized access.



*NOTE: Before assigning a user password, you must set a [supervisor password](#).*

After assigning a user password, you must enter it each time you turn on your computer. The following message appears at the bottom of the screen each time you turn on the computer:

Enter Password

To continue, type your password and press <Enter>.

If you assigned a supervisor password, you can use it instead of the user password. The computer does not specifically prompt you for the supervisor password.

**NOTICE: Disabling the supervisor password disables the user password.**

---

## Using a Hard-Disk Drive Password

The hard-disk drive password helps protect the data on your hard-disk drive from unauthorized access.



*NOTE: Hard-disk drives that are not purchased from Dell for use with your computer may not support the hard-disk drive password option.*

After assigning a hard-disk drive password, you must enter it each time you turn on the computer and each time you resume normal operation from suspend mode or standby mode.

If the hard-disk drive password is enabled, the following message appears each time you turn on the computer:

Enter HD1 Password

To continue, enter the hard-disk drive password. Press <Esc> to return the computer to its previous state—suspend, standby, or off.

If you enter the wrong password, the following message appears:

```
Invalid password  
[Press Enter to retry]
```

If the correct password is not entered in three attempts, you receive a message stating that the hard-disk drive cannot be accessed. If the hard-disk drive is inaccessible and the [boot options](#) in the system setup program are set to allow booting from another device, the computer tries to boot from another device. If all boot attempts are unsuccessful, the computer prompts you to enter the system setup program and modify the boot options.



*NOTES: If the hard-disk drive password is different from the [user password](#), you are prompted for both. Two different passwords provide greater security.*

*The [supervisor password](#) provides access to the computer, but it does not provide access to the hard-disk drive when the drive is protected by a password.*

---

## Physically Securing the Computer and the Hard-Disk Drive

To prevent unauthorized removal of the computer, you can use a security cable to attach the computer to an immovable object. Your computer has a security cable slot located on the right side of the computer next to the hard-disk drive ([see Figure 1](#)).

### Description of Security Cable Slots

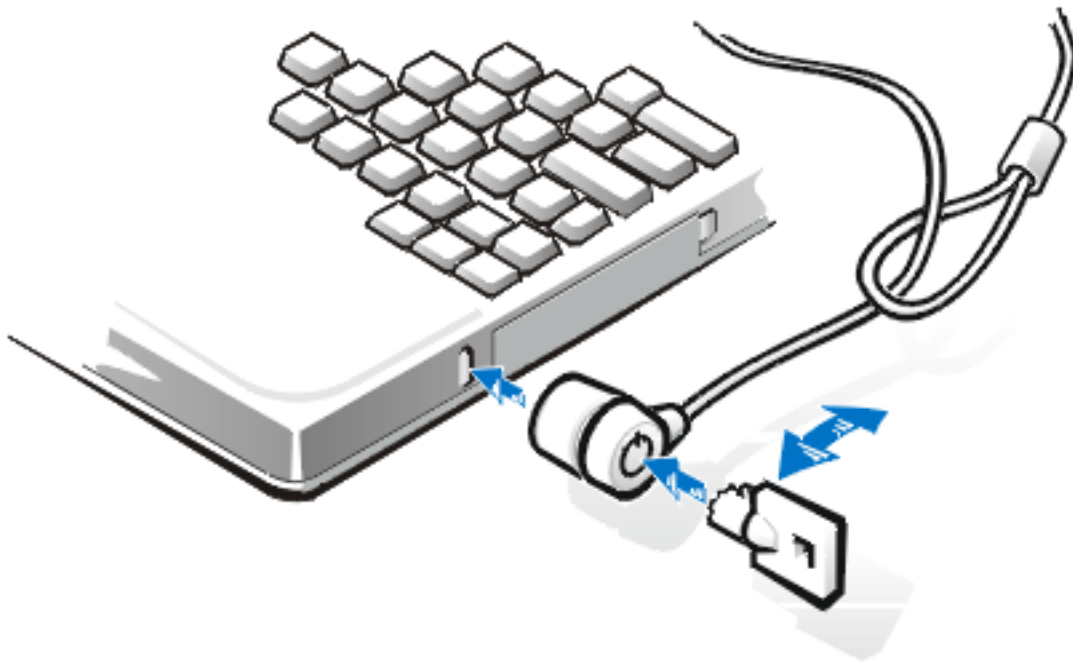
The security cable slot allows you to attach a commercially available antitheft device to the computer. Antitheft devices for portable computers usually include a segment of metal-stranded cable with an attached locking device and associated key. You can use a security cable on your computer whether it is undocked or docked in a Dell Latitude LS Advanced Port Replicator (APR).

### Basic Instructions for Using Security Cable Slots

To prevent unauthorized removal of your computer, loop the cable around an immovable object, insert the locking device into the security cable slot, and lock the device. See Figure 1 for an example of how to secure your computer. Complete instructions for installing this kind of antitheft device are usually included with the device.

### Figure 1. Securing the Computer





*NOTE: Antitheft devices are of differing designs. Before purchasing such a device, make sure that it will work with the security cable slot in your computer.*

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# Connecting External Devices: Dell™ Latitude™ LS Portable Computers User's Guide

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- [AC Adapter](#)
- [Mouse, Keyboard, and External Numeric Keypad](#)
- [Audio Devices](#)
- [USB Devices](#)
- [Modem Connector](#)
- [Parallel Devices](#)
- [NIC Connector](#)
- [Advanced Port Replicator](#)
- [External Media Options](#)
- [External Monitor](#)

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## About the I/O Connectors

You can connect external devices to the input/output (I/O) connectors on the back and left side of the computer (see [Figure 1](#)). The computer's basic input/output system (BIOS) detects the presence of the external devices when you boot (start) or reboot your computer. You can connect to the Dell Latitude LS Advanced Port Replicator (APR) through the [docking connector](#) on the bottom of the computer.

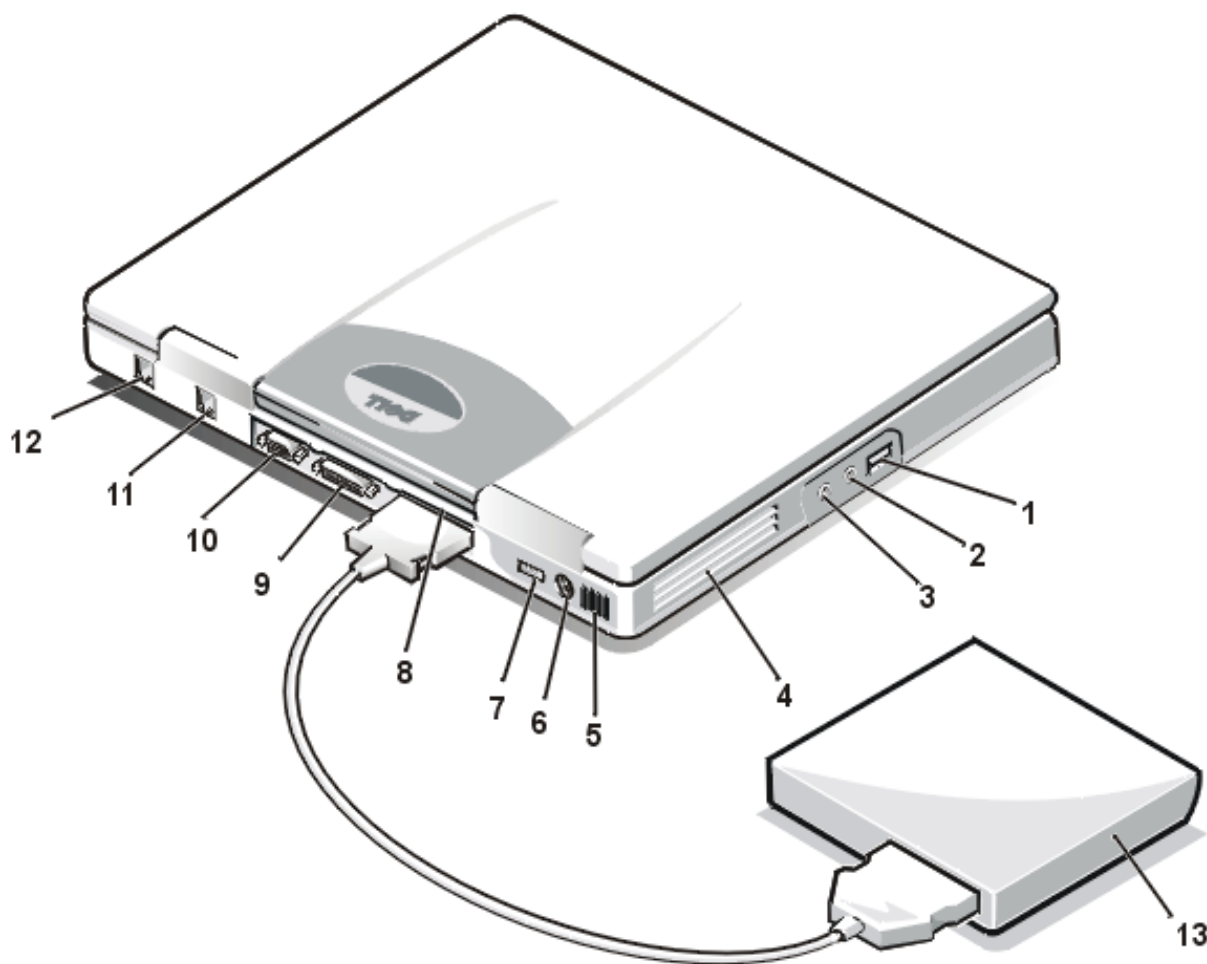


*NOTES: Some external devices require you to load software called device drivers into system memory before using the devices. These device drivers help your computer recognize the external device and direct its operation. Instructions for installing this software are usually included in the upgrade kits.*

*The APR provides the same I/O connectors as your computer and, in addition, provides a serial port. For more information on the APR, see the documentation that came with it.*

### Figure 1. I/O Connectors On the Computer

- 1 [USB connector](#)
- 2 [Speakers and headphones \(line-out/speaker-out\) jack](#)
- 3 [Microphone \(MIC IN\) jack](#)
- 4 Fan intake/exhaust vents
- 5 Air inlet
- 6 [PS/2 \(mini-DIN\) connector](#)



- 7 [AC adapter connector](#)
- 8 [External media bay connector](#)
- 9 [Parallel connector](#)
- 10 [Video connector](#)
- 11 [Modem connector](#)
- 12 [NIC connector](#)
- 13 [External media bay](#)

## Mouse, Keyboard, and External Numeric Keypad

You can attach a Personal System (PS)/2-compatible device such as a mouse, 101- or 102-key keyboard, or external numeric keypad to the mini-DIN PS/2 connector.

### Mouse



**NOTE:** If the computer is in [suspend](#) (or [standby](#)) or [suspend-to-disk \(S2D\)](#) mode when you attach a mouse, you can use the mouse when the computer resumes normal operation. However, programs that were already running may need to be restarted to recognize the mouse. If the computer is not in [suspend](#) (or [standby](#)) or [S2D](#) mode when you attach the mouse, you must reboot the computer to use the mouse.

When you attach a PS/2 mouse to the computer, the touch pad is automatically disabled. If you disconnect the mouse, you must shut down the computer or enter suspend or standby mode and then resume from it before the touch pad is operational. If you do not do this, the touch pad resumes operation in standard PS/2 mode, which means that many of the configuration features are disabled.

If you are using a PS/2-compatible mouse that is not made by Microsoft and the mouse does not work properly, reboot the computer. If the mouse still does not work, install the drivers from the diskette that came with the mouse and reboot the computer.

### Keyboard



**NOTE:** If the computer is in [suspend](#) (or [standby](#)) mode or [S2D](#) mode when you attach an external keyboard, the device is recognized immediately by the computer when it resumes normal operation.

You can use the computer's keyboard and an external keyboard at the same time. When you attach a keyboard to the

computer, the embedded numeric keypad is automatically disabled.

On an external keyboard, the <Scroll Lock> key acts the same way as the <Fn> key on the computer's keyboard (if the [External Hot-Key](#) option is enabled in the system setup program).

## External Numeric Keypad



*NOTE: If the computer is in suspend (or standby) mode or S2D mode when you attach an external numeric keypad, the device is recognized immediately by the computer when it resumes normal operation.*

When you attach an external numeric keypad to the computer, the numeric keypad on the computer keyboard is automatically disabled. The indicators on the integrated keyboard track the operation of an external numeric keypad.

---

## USB Devices

You can attach a USB hub device to the USB connector. The USB hub device can support multiple USB devices (typically low-speed peripherals such as mice, keyboards, printers, and computer speakers).

---

## Parallel Devices

You can attach a parallel device (usually a printer) to the 25-pin parallel connector. You can also connect the diskette drive to the parallel connector.

The parallel port sends and receives data in parallel format, where eight data bits (one byte) are sent simultaneously over eight separate lines. The port can be configured as a unidirectional (output-only) port for devices such as a printer or as a bidirectional port for devices such as a network adapter.

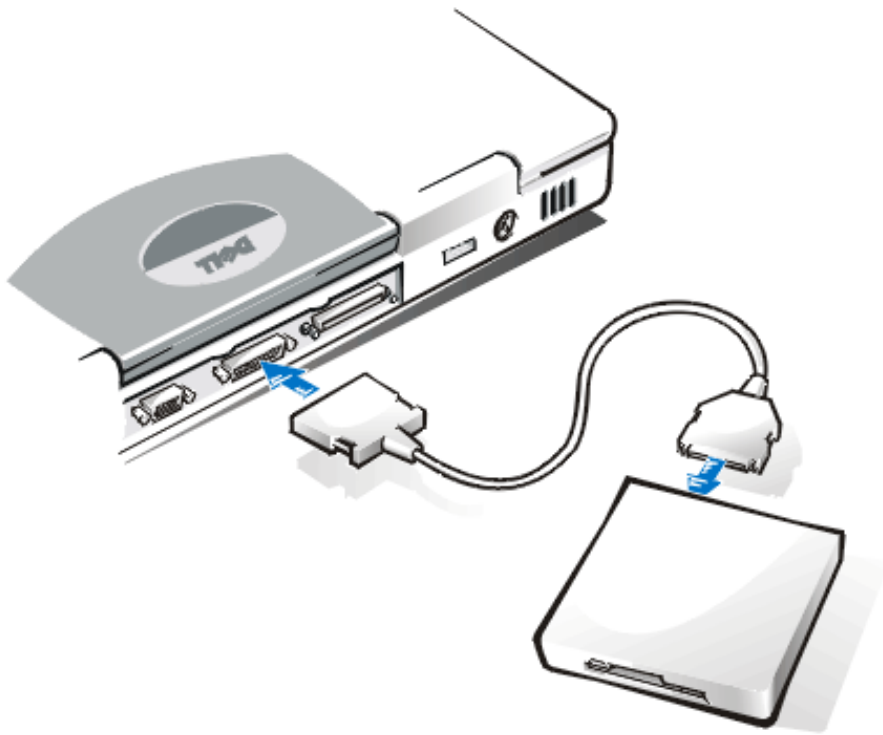
The computer's integrated parallel port is designated as LPT1. The Microsoft® Windows® 95 and Windows 98 operating systems automatically recognize the parallel device and configure it correctly. The parallel port can also be configured for compatibility with the PS/2 standard.

### Connecting a Diskette Drive to the Parallel Connector

You can use the diskette drive as a second external device if you already have a device connected to the media bay connector. The diskette drive letter is A, unless a diskette drive is already installed in the external media bay, in which case the drive connected to the parallel connector is drive B.

To connect the drive to the parallel connector on the I/O panel, use the optional parallel diskette-drive cable (available from Dell), as shown in Figure 2.

### Figure 2. Connecting a Diskette Drive to the Parallel Connector



**NOTICE:** When the diskette drive is not being used externally, remove the parallel diskette-drive cable from the parallel connector.

**NOTICE:** Use the parallel diskette-drive cable only with the diskette drive. Do not try to connect any other device to the computer with this cable.

The [drive access indicator](#) does not blink when data is being accessed from the diskette drive connected to the parallel connector.

**NOTICE:** Protect the diskette drive when it is not in the external media bay. Do not squeeze the drive or place objects on top of it; doing so could damage the drive motor.

---

## Advanced Port Replicator

You can attach your computer to the Latitude LS APR through the [docking connector](#) on the bottom of the computer. For information on docking your computer, see the documentation that came with the APR.

---

## External Monitor

You can use the 15-pin video connector to attach an external monitor to the computer.

### Connecting an External Monitor

To attach an external monitor, perform the following steps.

**NOTICE:** Do not place the monitor directly on top of your portable computer, even if it is closed. Doing so can crack the computer case, the display, or both.

1. Make sure that the external monitor is turned off. Set the monitor on a monitor stand, desk top, or other level surface near your computer.
2. Connect the external monitor's video cable to the computer.

Plug the video cable connector into the matching [video connector](#) on the back of the computer. If the video

cable is not permanently attached to the monitor, connect it to the monitor.

Be sure to tighten all the screws on the video cable connector(s) to eliminate radio frequency interference (RFI).

3. Connect your external monitor to a grounded electrical outlet.

Plug the three-prong connector on one end of the monitor's power cable into a grounded power strip or some other grounded power source. If the cable is not permanently attached to the monitor, connect it to the monitor.

You can also connect an external monitor to the [APR](#).



*NOTE: If you are using the Microsoft Windows 98 operating system, you can use an external monitor as an extension of your display. For more information, see the Windows 98 documentation or "[Dual-Display Mode](#)."*

## Using an External Monitor

When an external monitor is connected to the computer, the video image automatically appears on the external monitor's screen when you boot your computer.

To toggle the video image between the display, an external monitor, or both simultaneously, press <Fn><F8> on the keyboard. Press <Scroll Lock><F8> on an external keyboard if the [External Hot-Key](#) option is enabled in the system setup program.

If the external monitor is turned off when you boot your computer, the computer still sends the video image to the external monitor, but you will not see an image on either the computer's display or the external monitor. To see an image, turn on the external monitor or switch the video image to the computer's display by pressing <Fn><F8> on the keyboard or <Scroll Lock><F8> on an external keyboard if the **External Hot-Key** option is enabled in the system setup program.



*NOTE: If you are using your external monitor at a resolution greater than the display supports, the simultaneous display feature is disabled. To use the display, switch to a resolution that the computer supports, or disconnect the external monitor and restart your computer.*

---

## AC Adapter

You can attach the [AC adapter](#) to the computer by using the AC adapter connector. The AC adapter converts AC power to the DC power required by the computer.

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

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

---

## Audio Devices

You can connect audio devices such as speakers, microphones, and headphones to the two [audio jacks](#), as follows:

- Connect the audio cable from a microphone to the microphone jack, also called the MIC IN jack.
- Connect the audio cable from speakersto the headphones/speakers jack, also called the line-out/speaker-out jack.

If your computer is running the Windows 95 operating system, you can control the sound on your computer through the **Dell Control Center Speaker** window, the [system setup](#) program, and [key combinations](#).

---

## Modem Connector

You can connect a telephone line to the integrated modem through the RJ11 modem connector on the back of the computer.

**NOTICE:** Do not confuse the [modem and NIC connectors](#) on your computer. Do *not* plug a telephone line into the NIC connector.

---

## NIC Connector

You can connect to the integrated network interface controller (NIC) through the RJ45 connector on the back of the computer.

**NOTICE:** Do not confuse the [modem and NIC connectors](#) on your computer. Do *not* plug a telephone line into the NIC connector.

---

## External Media Options









You can connect [external media options](#) such CD-ROM, DVD-ROM, SuperDisk LS-120, and diskette drives to the external media bay connector.

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# Power Management Settings: Dell™ Latitude™ LS Portable Computers User's Guide

-  [Experimenting With Power Conservation](#)
  -  [Using Key Combinations](#)
  -  [Closing the Display](#)
  -  [Suspend Mode](#)
  -  [Standby Mode](#)
  -  [Suspend-to-Disk \(Hibernate\) Mode](#)
  -  [Power Management Properties for Windows 98](#)
  -  [Power Management Properties for Windows NT](#)
- 

## Experimenting With Power Conservation

In general, the lower the value you set for each power conservation feature, the longer the [battery's charge](#) lasts. On the other hand, setting high values tends to optimize the computer's performance.

To evaluate the way that different settings affect how long you can operate the computer on battery power versus the relative efficiency of how the software performs, experiment as follows:

- Use the computer with all the options set at their default values.
  - Use the computer with all the options disabled or set to **Off**.
  - Use the computer with all the options set to their minimum or maximum values.
- 

## Using Key Combinations

[Table 1](#) identifies the power management key combinations.



*NOTE: To use key combinations on an external keyboard, enable the [External Hot-Key](#) option in the system setup program, and press <Scroll Lock> instead of <Fn>.*

**Table 1. Key Combinations**

Feature	Activate/Deactivate
---------	---------------------



Turn off display	To activate, press <Fn><F1>.  To deactivate, move the cursor or press a key on the integrated or external keyboard. (If nothing happens, the computer may be in <a href="#">suspend</a> or <a href="#">standby</a> mode. Press the power button to resume normal operation.)
<a href="#">Suspend</a> (or <a href="#">standby</a> ) mode	To activate, press <Fn><Esc>.  To deactivate, press the power button.
<a href="#">Suspend-to-disk</a> mode*	To activate, press <Fn><a>. (On a French keyboard, press <Fn><q>.)  To deactivate, press the power button.
View battery status icon	Press <Fn><F3>.

\* *This key combination does not function under an operating system with the Advanced Configuration and Power Interface (ACPI), such as Microsoft® Windows® 98.*

## Closing the Display

One way to conserve power on the computer is to close the display when the computer is not in use. When you close the display and an external monitor is *not* connected, the computer's display shuts off and the computer enters [suspend](#) mode ([standby](#) mode in Windows 98).



*NOTE: If an external monitor is connected when you close the display, the computer does not activate suspend (or standby) mode. You can still use the external monitor.*

To resume work, open the display. (The computer may take several seconds to resume operation.)

## Suspend Mode

If your computer is running the Microsoft Windows 95 or Microsoft Windows NT® operating system, suspend mode stops almost all computer activity, but leaves the computer ready to resume operations immediately in about 20 to 30 seconds. Use suspend mode whenever you leave the computer unattended.

**NOTICE: Windows 95 and Windows NT save data to random-access memory (RAM), not to your hard-disk drive, before entering suspend mode. If the computer enters suspend mode while running on battery power, data loss from RAM can occur if the battery discharges completely.**

Suspend mode conserves battery power by turning off the microprocessor clock; the display; the hard-disk drive; the CD-ROM, DVD-ROM, or LS-120 drive module (if installed); the external monitor connector; the external keyboard (if attached); the parallel port; the serial port; the touch pad; and the diskette drive.

You can enter suspend mode immediately 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).

When you enter suspend mode, the [power indicator](#) is not lit.

Resume from suspend mode by pressing the power button. The computer may take several seconds to return to normal operation.



*NOTES: On resumption from suspend mode, if a [password](#) is set, the computer displays the password prompt screen.*

*Suspend mode is known as standby mode under the Microsoft Windows 98 operating system.*

---

## Standby Mode

If your computer is running the Microsoft Windows 98 operating system, standby mode turns off the display, stops the hard-disk drive, and turns off other internal devices so that the computer uses less battery power. When the computer resumes operation from standby mode, the desktop is restored exactly as it was before entering standby mode.

**NOTICE: Windows 98 saves data to random-access memory (RAM), not to your hard-disk drive, before entering standby mode. If the computer enters standby mode while running on battery power, data loss from RAM can occur if the battery discharges completely.**

You can enter standby mode by pressing <Fn><Esc>. To resume operation from standby mode, press the power button.

---

## Suspend-to-Disk (Hibernate) Mode

Suspend-to-disk (S2D) mode (known as *hibernate* under the Microsoft Windows 98 operating system) copies all system data to a reserved area—the S2D file—on the hard-disk drive and then turns off all power to the computer. When you resume normal operation, the same programs will be running and the same files will be open that were loaded before you activated this mode.

Place the computer in S2D mode if you intend to store the computer for a month or more. S2D mode preserves the configuration information stored in nonvolatile random-access memory (NVRAM). The reserve battery maintains this information, but it may run out of energy after about a month.



*NOTE: S2D mode helps preserve system data by quickly saving it to the hard-disk drive if you are about to run out of [battery](#) power.*

If the [External Hot-Key](#) option is enabled in the system setup program, you can enter S2D mode by pressing <Fn><a> (or <Scroll Lock><a> on an external keyboard). On a French keyboard, press <Fn><q> or <Scroll Lock><q>.



*NOTE: These key combinations do not function under an operating system with ACPI, such as Windows 98.*

Resume operation from S2D mode by pressing the power button.

Some PC Cards may not operate correctly after resuming from S2D mode. If you encounter problems with a card, [remove and reinsert the card](#).



*NOTE: Dell creates an appropriately sized S2D file before shipping the computer to you. Use the Suspend-to-Disk Utility to remove the file, to increase the size of the file, or to add the S2D file if you removed it. For information on creating a S2D file, see "[Suspend-to-Disk Utility](#)."*

## Power Management Properties for Windows 98

Windows 98 with ACPI provides the **Power Management Properties** window for setting power conservation features.



*NOTE: Set timeouts and enable hibernate ([S2D](#)) mode through the **Power Management Properties** window rather than through the [Power](#) screen in the system setup program.*

To access the **Power Management Properties** window and set the power management features, perform the following steps:

1. Click the **Start** button, point to **Settings**, and click **Control Panel**.
2. Double-click the **Power Management Properties** icon.

The **Power Management Properties** window contains the following tabs:

- **Power Scheme** — allows you to change individual power management settings or select one of three power mode settings (**Always On**, **Home/Office Desk**, or **Portable/Laptop**) that each provide a set of default

power management settings.

- **Alarms** — allows you to set the **Low Battery** and **Critical Battery** alarms to alert you when the [battery](#) charge falls below a certain percentage. When you received your computer, the **Low Battery** and **Critical Battery** alarm options were not checked. Dell recommends that you do not select these options.
  - **Power Meter** — allows you to view the percentage of battery life remaining when your computer is operating on battery power. If your computer is operating on AC power, the computer displays a message.
  - **Advanced** — allows you to display the **Power Meter** on the Windows 98 taskbar and to display a password prompt when the computer resumes operation from [standby](#) mode. **Advanced** also allows you to define the action of the Power buttons.
  - **Hibernate** — allows you to enable hibernate (S2D) mode in Windows 98.
- 

## Power Management Properties for Windows NT

Dell provides Softex software compatible with the Power Management Controller, which allows you to suspend and resume your portable computer without affecting your ability to use the Latitude LS Advanced Port Replicator (APR).











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

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# Installing the Microsoft® Windows® 95 and Windows 98 Operating System Drivers: Dell™ Latitude™ LS Portable Computers User's Guide

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-  [Installing Audio Drivers](#)
-  [Installing Software Wavetable](#)
-  [Installing Touch Pad Drivers](#)
-  [Installing MS-DOS CD-ROM Drivers](#)
-  [Installing the Internal Modem Driver](#)
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## Overview

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, use the *Dell System Software* CD you received with your computer to reinstall drivers for the Microsoft® Windows® 95 or Windows 98 operating system.

The following subsections describe how to reinstall individual drivers. To reinstall all device drivers, see the documentation accompanying the *Dell System Software* CD.



*NOTES: Your computer is already configured to work with the Dell Latitude LS Advanced Port Replicator (APR).*

*For more information on using your Dell-installed operating system, see the operating system user's guide that came with your computer. You can also access system tools and documentation from Dell's technical support page at <http://support.dell.com>. To do so, click **Support Your Dell**, enter your [service tag](#), and click **Submit**.*

**NOTICE: Do not dock the computer before turning it on the first time.**

---

## Installing Video Drivers for Windows 95

Video drivers control features such as screen resolution and the number of screen colors.



*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 drivers for Windows 95, 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 *Dell System Software* CD into the CD-ROM or DVD-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 **Advanced Properties**.  
The **Advanced Display Properties** window appears.
7. Click the **Adapter** tab and then click **Change....**  
The **Select Device** window appears.
8. Click **Have Disk....**
9. In the **Install from Disk** field, browse to **d:\video\setup** (where **d** is your drive letter) and then click **OK**.
10. When the **Select Device** window appears, verify that the **NeoMagic MagicMedia 256AV** 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 **Advanced Display Properties** window appears.
11. In the **Advanced Display Properties** window, click **Apply** and **OK**.
12. Click **Close** in the **Display Properties** window.

13. To activate the drivers, remove the CD and restart your computer.

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

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 **Color palette** option from **256 colors** to **True Color (24 bit)**.

5. Set the **Desktop** area for your display to **800 x 600**.

6. Click **Apply**.

---

## Installing Video Drivers for Windows 98

Video drivers control features such as screen resolution and the number of screen colors.



*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 drivers 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 *Dell System Software* CD into the CD-ROM or DVD-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 and then click **Advanced....**

6. Click the **Adapter** tab and then click **Change....**



7. When the **Update Driver Wizard** appears, click **Next>**.
8. Select **Display a list of all the drivers in a specific location**, and click **Next>**.
9. When prompted for the location of the drivers, click **Have Disk....**
10. In the **Install from Disk** field, browse to **d:\video\setup** (where **d** is your drive letter) and click **OK**.  
The **Select Device** window appears.
11. Make sure that **NeoMagic MagicMedia 256AV** is highlighted, and click **OK**.
12. In the **Update Device Driver Wizard** window, click **Next>** to begin copying the files, and then click **Finish**.
13. Close the **Display Properties** window.
14. When prompted to restart the computer, remove the CD and then click **Yes**.

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

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 **Color palette** option from **256 colors** to **True Color (24 bit)**.
  5. Set the **Desktop** area for your display to **800 x 600**.
  6. Click **Apply**.
-



## Installing Audio Drivers

Dell provides audio drivers so that you can customize the audio 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 *Dell System Software* CD into the CD-ROM or DVD-ROM drive.
  3. Click the **Start** button, then click **Run....**  
The **Run** dialog box appears.
  4. Type `d:\audio\setup` (where `d` is your drive letter), and then 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**.
- 

## Installing Software Wavetable

The software wavetable allows you to customize certain audio features. To install the software wavetable, 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 *Dell System Software* CD into the CD-ROM or DVD-ROM drive.
  3. Click the **Start** button, and then click **Run....**  
The **Run** dialog box appears.
  4. Type `d:\yamaha\setup` (where `d` is your drive letter), and then click **OK** or press `<Enter>`.
  5. Follow the instructions on your display.
  6. After the installation is complete, remove the CD, and restart your computer to use the software wavetable.
-

## Installing Touch Pad Drivers

Touch pad drivers and associated utilities allow you to use and customize the integrated touch pad or an external mouse. To install the touch pad 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 *Dell System Software* CD into the CD-ROM or DVD-ROM drive.

3. Click the **Start** button, and then click **Run....**

The **Run** dialog box appears.

4. Type `d:\touchpad\setup` (where `d` is your drive letter), and then click **OK** or press `<Enter>`.

5. To activate the drivers, remove the CD and restart your computer.
- 

## Installing MS-DOS® CD-ROM Drivers

You must install CD-ROM drivers to use the MS-DOS CD-ROM utility. To install the CD-ROM 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 *Dell System Software* CD into the CD-ROM or DVD-ROM drive.

3. Click the **Start** button, and then click **Run....**

The **Run** dialog box appears.

4. Type `d:\cdrom\setup` (where `d` is your drive letter), and then click **OK** or press `<Enter>` to install the utility on your hard-disk drive.

5. Follow the instructions on your display.

6. When prompted, remove the CD and restart your computer to activate the drivers.
- 

## Installing the Internal Modem Driver

The modem driver allows you to customize the operation of your internal modem. To install the internal modem 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 *Dell System Software* CD into the CD-ROM or DVD-ROM drive, and browse to the modem driver directory.
3. Double-click **setup.exe**.
4. At the **Welcome** screen, click **Next>**.

The internal modem files are copied to your hard-disk drive.

5. At the **Setup Complete** window, click **Finish**.
6. After the computer restarts, click the **Start** button, point to **Settings**, and click **Control Panel**.
7. At the **Control Panel**, double-click the **System** icon.
8. Click the **Device Manager** tab. Be sure that **View devices by type** (default) is selected.
9. In the device list, double-click **Other devices** and then click **Unknown Device**.
10. Click **Remove** and then click **OK** at the **Confirm Device Removal** window.
11. Click **Close**.
12. Exit the **Control Panel** window.
13. Shut down and then restart the computer.



*NOTE: Keep the Dell System Software CD in the CD-ROM or DVD-ROM drive to continue with the modem installation process.*

After the computer restarts, the **New Hardware Found** window appears listing the **LT Win Modem**.

14. When the **Insert Disk** window appears, click **OK**.
15. In the **Copy Files From** box, type `d:\modem\setup`, where `d` is the drive letter of the CD-ROM or DVD-ROM drive. Click **OK**.

The **Insert Disk** window appears again.

16. Click **OK**.

After the files are copied to the hard-disk drive, the modem driver installation is complete.

---

## Installing the NIC Driver

To install the NIC 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 *Dell System Software* CD into the CD-ROM or DVD-ROM drive.
  3. Browse to **d:\3com\setup** (where **d** is your drive letter) and click **OK**.
  4. Double-click the **System** icon, and click the **Device Manager** tab.
  5. Click **Update Drivers** and follow the instructions on the screen to complete the installation
- 

## Installing the Softex Bay Manager Drivers

To install the Softex Bay Manager 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 *Dell System Software* CD into the CD-ROM or DVD-ROM drive.
  3. Browse to **d:\softex\setup** (where **d** is your drive letter), and then click **OK** or press <Enter>.
  4. Follow the instructions on the screen to complete the installation.
- 

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# Installing the Microsoft® Windows NT® Operating System Drivers: Dell™ Latitude™ LS Portable Computers User's Guide



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## Overview

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, use the *Dell System Software* CD you received with your computer to reinstall drivers for the Microsoft® Windows NT® operating system.

The following subsections describe how to reinstall individual drivers. To reinstall all device drivers, see the documentation accompanying the *Dell System Software* CD.



*NOTE: You may need administrator privileges to perform some of procedures in this section. Dell recommends that you check with your network administrator before performing the procedures.*

*For more information on using your Dell-installed operating system, see the operating system user's guide that came with your computer.*

You can also access system tools and documentation from Dell's technical support page at <http://support.dell.com>. To do so, click **Support Your Dell**, enter your [service tag](#), and click **Submit**.

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## Installing Video Drivers

Video drivers control features such as screen resolution and the number of screen colors.



*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 drivers 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 *Dell System Software* CD into the CD-ROM or DVD-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 **Display Type....**

The **Display Type** window appears.

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

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

9. Click **Have Disk....**

10. In the **Install from Disk** field, browse to **d:\video\** (where **d** is your drive letter), and then click **OK**.

11. When the **Change Display** window appears, verify that the **NeoMagic MagicMedia 256AV** 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 **Close** in the **Display Type** window, and then click **Close** in the **Display Properties** window.

14. To activate the drivers, remove the CD 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 *Dell System Software* CD into the CD-ROM or DVD-ROM drive.

3. Click the **Start** button, and then click **Run...**

The **Run** dialog box appears.

4. Type `d:\softex\apm\setup` (where `d` is your drive letter), and then click **OK** or press `<Enter>`.

Follow the instructions on the display.

5. When prompted, remove the CD and 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 *Dell System Software* CD into the CD-ROM or DVD-ROM drive.

3. Click the **Start** button, and then click **Run...**

The **Run** dialog box appears.

4. Type `d:\softex\pccard\setup` (where `d` is your drive letter), and then click **OK** or press `<Enter>`.

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, remove the CD and restart your computer to activate the utility.
- 

## Installing Audio Drivers

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 *Dell System Software* CD into the CD-ROM or DVD-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. Browse to **d:\audio\** (where **d** is your drive letter), and then click **OK**.

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

9. Verify that **NeoMagic MagicMedia 256AV** is highlighted, and then click **OK**.

The **Audio** dialog box appears.

10. Click **OK**.

11. After installation is completed, remove the CD and restart your computer to activate the drivers.
- 

## Installing Touch Pad Drivers

Touch pad drivers and associated utilities allow you to use and customize the integrated touch pad or an external mouse. To install the touch pad 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 *Dell System Software* CD into the CD-ROM or DVD-ROM drive.
3. Click the **Start** button, and then click **Run...**

The **Run** dialog box appears.

4. Type `d:\touchpad\setup` (where `d` is your drive letter), and then click **OK** or press `<Enter>`.

Follow the instructions on your display.

5. When prompted, remove the CD and restart the computer to activate the drivers.
- 

## Installing the Software Wavetable

The software wavetable allows you to customize certain audio features. To install the software wavetable, 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 *Dell System Software* CD into the CD-ROM or DVD-ROM drive.
3. Click the **Start** button, and then click **Run...**

The **Run** dialog box appears.

4. Type `d:\yamaha\setup` (where `d` is your drive letter), and then click **OK** or press `<Enter>`.

Follow the instructions on your display.

5. After the installation is complete, remove the CD and restart your computer to use the software wavetable.
- 

## Installing the Softex Bay Manager Drivers

To install the Softex Bay Manager 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 *Dell System Software* CD into the CD-ROM or DVD-ROM drive.

3. Browse to `d:\softex\baymgr\setup` (where `d` is your drive letter), and then click **OK** or press `<Enter>`.
  4. Follow the instructions on the screen to complete the installation.
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# System Setup Options: Dell™ Latitude™ LS Portable Computers User's Guide

[Main Screen](#)[Power Screen](#)[Advanced Screen](#)[Boot Screen](#)[Security Screen](#)[Exit Screen](#)

## Main Screen

PhoenixBIOS Setup Utility		
Main	Advanced	Security
System Time:	[10:10:00]	Item Specific Help  <Tab>, <Shift-Tab>, or <Enter> selects field.
System Date:	[06/09/1998]	
Diskette A:	[1.44 Mb 3 <sup>1/2</sup> "	
Diskette B:	[Disabled]	
IDE Adapter 0 Master	3253MB	
HDD0 Master ID:	33890883	
IDE Adapter 1 Master	None	
PS/2 Pointing Device:	[Auto Detect]	
Summary Screen:	[Enabled]	
Quiet Boot:	[Enabled]	
System Memory:	640 KB	
Extended Memory:	64512 KB	
F1 Help    ↑↓ Select Item    Space Change Values    F9 Setup Defaults		
Esc Exit    ←→ Select Menu    Enter Select    ▶ Sub-Menu    F10 Save and Exit		

**Table 1. Main Screen Options**

Option	Function

System Time	Sets the computer to the time you specify (usually the current time) in 24-hour format. Type the appropriate information. Use the tab key to move between the hours, minutes, and seconds fields. This option is useful if you travel between time zones.
System Date	Sets the computer to the date you specify (usually the current date). Type the appropriate information. Use the tab key to move between the month, day, and year fields.
Diskette A, Diskette B	Identifies the primary 3.5-inch diskette drive installed in the external media bay or attached to the parallel port. <b>Diskette Drive B</b> identifies a second 3.5-inch diskette drive, if installed.
IDE Adapter 0 Master	Identifies the hard-disk drive installed in your computer. No user-selectable settings are available for this option.
IDE Adapter 1 Master	Identifies an integrated drive electronics (IDE) device (such as a CD-ROM or DVD-ROM drive) attached to the media bay connector through the media bay cable.
PS/2 Pointing Device	<b>Auto Detect</b> (the default) allows the basic input/output system (BIOS) to detect and enable an external Personal System (PS)/2 mouse (if attached) or enable the touch pad. <b>Enabled</b> enables the touch pad only. <b>Disabled</b> allows the use of a serial mouse.
Summary Screen	When <b>Summary Screen</b> is <b>Enabled</b> (the default), a Phoenix BIOS Setup Utility summary screen appears during system boot after the power-on self-test (POST). The summary screen lists many of the system setup settings. When this option is set to <b>Disabled</b> , the summary screen does not appear.
Quiet Boot	When this option is set to <b>Enabled</b> (the default), the POST messages and summary screen do not appear at system start-up, and you cannot choose a boot device as the system initializes. When this option is set to <b>Disabled</b> , the POST messages and summary screen do appear at system start-up.
System Memory	Displays the base amount of dynamic random-access memory (DRAM) installed in the computer. Each computer has 640 kilobytes (KB) of base memory. This option has no user-selectable settings.
Extended Memory	Displays the total amount of memory above 1 megabyte (MB). Each computer comes with at least 64 MB of memory installed. This option has no user-selectable settings.

## Advanced Screen

PhoenixBIOS Setup Utility	
Main	Advanced
<p style="text-align: center;">Setup Warning Setting items on this menu to incorrect values may cause your system to malfunction.</p> <p>▶ I/O Device Configuration</p> <p>L2 Cache [Enabled]</p> <p>Plug &amp; Play O/S: [Yes]</p> <p>Large Disk Access Mode: [DOS]</p> <p>External Hot-Key: [Scroll Lock]</p> <p>Display Device Selection: [LCD/CRT]</p> <p>Display Mode: [Expanded]</p>	<p style="text-align: center;">Item Specific Help</p> <p>Peripheral Configuration.</p>
<p>F1 Help    ↑↓ Select Item    Space Change Values    F9 Setup Defaults</p> <p>Esc Exit    ←→ Select Menu    Enter Select    ▶ Sub-Menu    F10 Save and Exit</p>	

**Table 2. Advanced Screen Options**

Option	Function
I/O Device Configuration	Select this option and press <Enter> to display the <a href="#">I/O Device Configuration submenu</a> .
L2 Cache	Sets the level-2 (L2) cache to <b>Enabled</b> (the default) or <b>Disabled</b> .
Plug & Play O/S	Options are <b>Yes</b> (the default) and <b>No</b> . Set this option to <b>Yes</b> unless your computer is running a non-Microsoft operating system such as Linux.
Large Disk Access Mode	Options are <b>DOS</b> (the default) and <b>Other</b> . Set this option to <b>DOS</b> unless your computer is running a non-Microsoft operating system such as Linux.
External Hot-Key	Lets you use the <Scroll Lock> key on the external keyboard the same way you use the <Fn> key on the computer's keyboard. Set this option to <b>Scroll Lock</b> (the default) if you are using an external keyboard. Set this option to <b>Disabled</b> to disable this function on the external keyboard.

Display Device Selection	Specifies whether the screen image will appear on the computer display, an attached external monitor, or both. Options are <b>LCD</b> (the display), <b>CRT</b> (an external monitor), and <b>LCD/CRT</b> . If this option is set to <b>CRT</b> but no external monitor is connected, the screen image appears on the computer display.
Display Mode	Allows you to switch between <b>Standard</b> and <b>Expanded</b> mode. Under <b>Expanded</b> mode, resolutions other than 800 x 600 expand to fill the screen.

## I/O Device Configuration Submenu

PhoenixBIOS Setup Utility		
I/O Device Configuration		Item Specific Help
Serial port A:	[Auto]	Configure Serial Port A Using Options
Parallel port:	[Enabled]	
Mode:	[Bi-directional]	
Base I/O address:	[378 IRQ7]	
Local bus IDE controller:	[Both]	
PCI Devices		
Modem:	[Auto]	
LAN:	[Auto]	
F1 Help    ↑↓ Select Item    Space Change Values    F9 Setup Defaults Esc Exit    ←→ Select Menu    Enter Select    ▸ Sub-Menu    F10 Save and Exit		

**Table 3. I/O Device Configuration Submenu Options**

Option	Function
Serial port A	<p>Lets you map the address of the serial port to avoid address conflicts with other devices or disable the port for security. Dell recommends that you retain <b>Auto</b> (the default) to allow the operating system or the BIOS to configure the port automatically. Other options are <b>Disabled</b>, which disables the serial port, and <b>Enabled</b>.</p> <p>To enter a custom configuration, set <b>Serial port A</b> to <b>Enabled</b> and then configure <b>Base I/O Address</b>.</p>

Serial port: Base I/O Address	Appears only if <b>Serial port A</b> is set to <b>Enabled</b> . Allows you to configure the base address and interrupt request (IRQ). Options are: <ul style="list-style-type: none"><li>● <b>3F8h IRQ4</b></li><li>● <b>2F8h IRQ3</b></li><li>● <b>3E8h IRQ4</b></li><li>● <b>2E8h IRQ3</b></li></ul>
Parallel port	<p>Controls whether the computer's parallel port acts as an advanced technology (AT)-compatible unidirectional, a PS/2-compatible bidirectional, an Enhanced Parallel Port (EPP)-compatible, or an Extended Capabilities Port (ECP)-compatible port. Dell recommends that you retain <b>Auto</b> (the default) to allow the operating system or the BIOS to configure the port automatically. Other options are <b>Disabled</b>, which disables the parallel port, and <b>Enabled</b>.</p> <p>To enter a custom configuration, set <b>Parallel Port</b> to <b>Enabled</b> and then configure <b>Mode</b>, <a href="#">Base I/O Address</a>, and <a href="#">DMA channel</a>.</p>
Parallel port: Mode	Appears only if <b>Parallel port</b> is set to <b>Enabled</b> or <b>Auto</b> . Lets you specify the operating mode of the parallel port. Options are: <ul style="list-style-type: none"><li>● <b>Output Only</b> (compatible mode)</li><li>● <b>Bi-directional</b> (extended mode)</li><li>● <b>EPP</b></li><li>● <b>ECP</b></li></ul> <p>If you select <b>ECP</b> mode, you can also select the <a href="#">DMA Channel</a>.</p>
Parallel port: Base I/O Address	Appears only if <b>Parallel port</b> is set to <b>Enabled</b> . Lets you configure the base address and IRQ. Options are: <ul style="list-style-type: none"><li>● <b>378h IRQ7</b></li><li>● <b>3BCh IRQ7</b></li><li>● <b>378h IRQ5</b></li><li>● <b>278h IRQ5</b></li></ul>

Parallel Port: DMA Channel	If <b>Parallel port: Mode</b> is set to <b>ECP</b> , you can use <b>Parallel port: DMA Channel</b> to select the DMA channel. Options are: <ul style="list-style-type: none"> <li>● <b>DMA 0</b></li> <li>● <b>DMA 1</b></li> <li>● <b>DMA 3</b></li> <li>● <b>Disabled</b></li> </ul>
Local bus IDE controller	Enables the integrated local-bus IDE interface. Options are <b>Both</b> (the default), <b>Disabled</b> , <b>Primary</b> , or <b>Secondary</b> . If <b>Both</b> is selected, you can access both the hard-disk drive and an external IDE storage device attached to the media bay connector. If <b>Primary</b> is selected, only the hard-disk drive is accessible.
Modem	Options are <b>Auto</b> (the default) and <b>Disabled</b> . Setting <b>Modem</b> to <b>Auto</b> automatically configures the internal modem.
LAN	Options are <b>Auto</b> (the default) and <b>Disabled</b> . Setting <b>LAN</b> to <b>Auto</b> automatically configures the integrated network interface controller (NIC).

## Security Screen

PhoenixBIOS Setup Utility	
Main	Advanced
Security Power Boot Exit	Item Specific Help
HD Password is: Clear User Password is Clear Supervisor Password is Clear  Set HD Password [Enter] Set User Password [Enter] Set Supervisor Password [Enter]  Password on boot [Enabled] Diskette access: [Supervisor]	
F1 Help    ↑↓ Select Item    Space Change Values    F9 Setup Defaults	
Esc Exit    ←→ Select Menu    Enter Select    ▶ Sub-Menu    F10 Save and Exit	

**Table 4. Security Screen Options**



Option	Function
HD Password is:	Indicates whether a password has been assigned for the hard-disk drive. Settings are <b>Set</b> and <b>Clear</b> . This option has no user-selectable settings.
User Password is:	Indicates whether a user password has been assigned. Settings are <b>Set</b> and <b>Clear</b> . This option has no user-selectable settings.
Supervisor Password is:	Indicates whether a supervisor password has been assigned. Settings are <b>Set</b> and <b>Clear</b> . This option has no user-selectable settings.
Set HD Password	To set a hard-disk drive password, select <b>Set HD Password</b> and press <Enter>. Enter the new password and confirm it by entering it a second time as instructed.
Set User Password	To set a user password, select <b>Set User Password</b> and press <Enter>. Enter the new password and confirm it by entering it a second time as instructed.
Set Supervisor Password	To set a supervisor password, select <b>Set Supervisor Password</b> and press <Enter>. Enter the new password and confirm it by entering it a second time as instructed.
Password on Boot	To prompt for a password at system startup, select <b>Enabled</b> (the default). Otherwise, select <b>Disabled</b> .
Diskette access	Specifies which level of password is required to access the diskette drive. Select <b>Supervisor</b> or <b>User</b> .

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## Power Screen

PhoenixBIOS Setup Utility							
Main	Advanced	Security	Power	Boot	Exit	Item Specific Help	
Power Switch Mode:			[On/Off]				
PM Control:			[Battery Only]				
Power Management:			[Customized]				
Video Timeout:			[2 Minutes]				
Hard Disk Timeout:			[2 Minutes]				
Auto Suspend Timeout:			[10 Minutes]				
Battery Low Suspend:			[Enabled]				
Suspend Mode:			[Save To RAM]				
Resume On Modem Ring:			[Off]				
Resume On Time:			[Off]				
Auto Dim:			[Enabled]				
Lid Close:			[Suspend]				
F1 Help    ↑↓ Select Item    Space Change Values    F9 Setup Defaults							
Esc Exit    ←→ Select Menu    Enter Select    ▶ Sub-Menu    F10 Save and Exit							



**NOTE:** In the Microsoft® Windows® 98 operating system, if you change settings in the **Power Management Properties** window in the **Control Panel**, you override settings in the **Power** screen of the system setup program. You must enable power management and set timeouts in the **Power Management Properties** window, not in the system setup program.

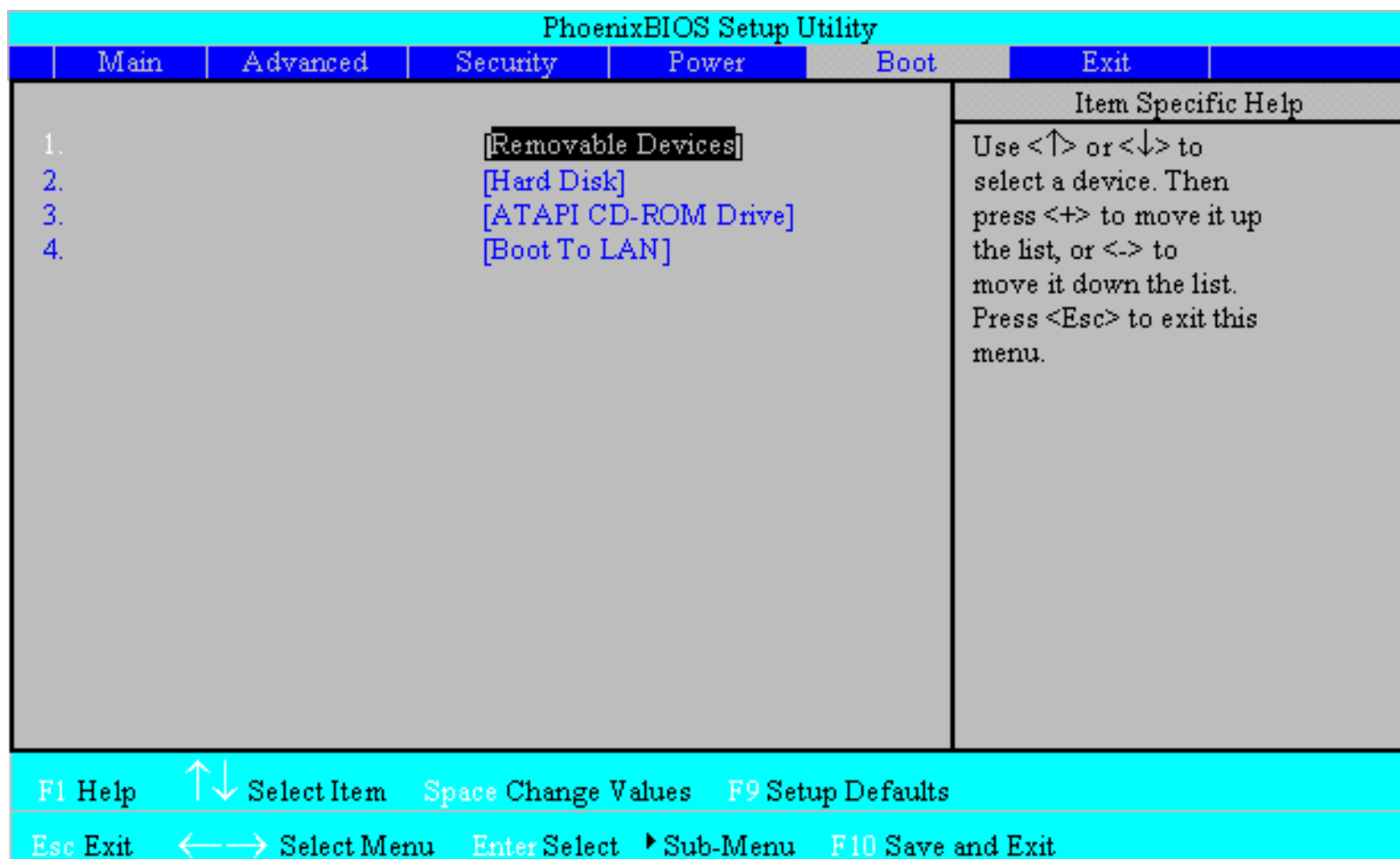
**Table 5. Power Screen Options**

Option	Function
Power Switch Mode	<p>Allows you to specify whether the power button operates in <b>On/Off</b> or <b>Suspend/Resume</b> mode.</p> <p>When set to <b>On/Off</b>, the power button turns the computer on and off. When set to <b>Suspend/Resume</b>, the power button suspends or resumes the computer.</p>
PM Control	<p>Enables or disables all power management features for the battery only or for both the battery and the AC power adapter. <b>AC/Battery</b> enables the power management features regardless of power source. <b>Battery Only</b> (the default) enables power management features only while the computer is running on battery power. <b>Disabled</b> completely disables the power management features.</p>

Power Management	<p>Allows you to select from three power management timeout strategies:</p> <ul style="list-style-type: none"> <li>● <b>Maximum Battery Life</b> — conserves the greatest amount of system power; sets <b>Video Timeout</b>, <b>Hard Disk Timeout</b>, and <b>Auto Suspend Timeout</b> to 2 minutes each.</li> <li>● <b>Maximum Performance</b> — conserves power but allows better system performance; sets <b>Video Timeout</b> to 10 minutes, <b>Hard Disk Timeout</b> to 5 minutes, and <b>Auto Suspend Timeout</b> to 10 minutes.</li> <li>● <b>Customized</b> (the default) — allows you to set each timeout as desired.</li> </ul>
Video Timeout	<p>Sets an inactivity timeout period for the keyboard, touch pad, and PS/2 mouse. After the specified period of inactivity (if one is set) the display and backlight power down. The display and backlight power up again at the first attempt to access the keyboard, touch pad, PS/2 mouse, or display memory. Settings are <b>Off</b>, <b>30 Minutes</b>, <b>20 Minutes</b>, <b>15 Minutes</b>, <b>10 Minutes</b>, <b>5 Minutes</b>, <b>2 Minutes</b>.</p> <p><i>NOTE: You can set this timeout only if <a href="#">Power Management</a> is set to <b>Customized</b>.</i></p>
Hard Disk Timeout	<p>Sets an inactivity timeout period for the hard-disk drive. After the specified period of inactivity (if one is set) the hard-disk spindle motor powers down. The motor starts up again at the first attempt to access the hard-disk drive. Settings are <b>Off</b>, <b>30 Minutes</b>, <b>20 Minutes</b>, <b>10 Minutes</b>, <b>5 Minutes</b>, and <b>2 Minutes</b>.</p> <p><i>NOTE: You can set this timeout only if <a href="#">Power Management</a> is set to <b>Customized</b>.</i></p>
Auto Suspend Timeout	<p>Specifies how long the computer remains idle before before activating <a href="#">suspend-to-disk</a> (S2D) mode. Settings are <b>Off</b>, <b>30 Minutes</b>, <b>20 Minutes</b>, <b>10 Minutes</b>, <b>5 Minutes</b>, <b>2 Minutes</b>, and <b>1 Minute</b>.</p> <p><i>NOTE: You can set this timeout only if <a href="#">Power Management</a> is set to <b>Customized</b>.</i></p>
Battery Low Suspend	<p>Sets the computer to enter <a href="#">suspend</a> (or <a href="#">standby</a>) mode when the battery is low. Options are <b>Enabled</b> (the default) and <b>Disabled</b>. <b>Disabled</b> turns off the low-battery suspend function, but the <b>Auto Suspend Timeout</b> setting is still operative.</p>

Suspend Mode	<p>Lets you select one of two suspend modes: <b>Save to RAM</b> and <b>Save to Disk</b>.</p> <p><b>Save to RAM</b> conserves battery power by stopping almost all computer activity, but leaves the computer ready to resume operations in seconds when the power button is pressed. <b>Save to Disk</b> saves all system data to your hard-disk drive and then turns off all power. Use <b>Save to Disk</b> to conserve battery power or (in conjunction with <b>Battery Low Suspend</b>) to preserve system data quickly if you are about to run out of battery power.</p>
Resume on Modem Ring	<p>Sets the computer to resume normal operation when an incoming call is detected by the modem and the computer is in <a href="#">suspend</a> (or <a href="#">standby</a>) mode. Settings are <b>On</b> and <b>Off</b>.</p> <p><i>NOTE: To use this option, you must set <a href="#">Suspend Mode</a> to <b>Save to RAM</b>. If <a href="#">Suspend Mode</a> is set to <b>Save to Disk</b>, <b>Resume on Modem Ring</b> does not function.</i></p>
Resume On Time	<p>Sets the computer to resume operation at a time you specify in the <b>Resume Time</b> option. (<b>Resume Time</b> appears on the screen only when <b>Resume On Time</b> is set to <b>On</b>.) Settings are <b>On</b> and <b>Off</b>.</p> <p><i>NOTE: To use this option, you must set <a href="#">Suspend Mode</a> to <b>Save to RAM</b>. If <a href="#">Suspend Mode</a> is set to <b>Save to Disk</b>, <b>Resume on Time</b> does not function.</i></p>
Resume Time	<p><b>Resume Time</b> appears on the screen only when <b>Resume On Time</b> is set to <b>On</b>. Use this option to specify a time for the computer to resume operation from <a href="#">suspend</a> (or <a href="#">standby</a>) mode.</p> <p><i>NOTE: To use this option, you must set <a href="#">Suspend Mode</a> to <b>Save to RAM</b>. If <a href="#">Suspend Mode</a> is set to <b>Save to Disk</b>, <b>Resume Time</b> does not function.</i></p> <p>Use &lt;Tab&gt; or &lt;Shift&gt;&lt;Tab&gt; to move between fields in the time setting. Either enter the time or use the spacebar to increase/decrease the numbers.</p>
Auto Dim	<p>Extends battery life by setting the computer to automatically decrease the brightness of the display when running on battery power. Options are <b>Enabled</b> (the default) and <b>Disabled</b>.</p>
Lid Close	<p>Specifies how the computer will respond when the display lid is closed:</p> <ul style="list-style-type: none"> <li>● <b>Active</b> (the default) — the computer switches the display image to an <a href="#">attached monitor</a>.</li> <li>● <b>Suspend</b> — the computer <a href="#">suspends to RAM</a>.</li> </ul>

## Boot Screen



The **Boot Screen** defines the order of the devices from which the computer attempts to boot when you turn it on (see Table 6).

The boot device options appear in a list on the screen. When you turn on the computer, it attempts to boot from the first option on the list. If no bootable files are present on the first option, the computer tries to boot from the second option, and so on down the list (except where noted in the following table).

To arrange the boot sequence, use the up- or down-arrow key to select a device, and then press <F6> or the plus key (<+>) to move the device up the list or <F5> or the minus key (<->) to move it down the list.

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.

**Table 6. Boot Screen Options**

Option	Function
Removable Devices	If this option appears first on the list, the computer attempts to boot first from a bootable diskette or SuperDisk. If there is a diskette present but it does not contain the required boot files, an error message appears.

Hard Disk	If this option appears first on the list, the computer boots only from the hard-disk drive.
ATAPI CD-ROM Drive	If this option appears first on the list, the computer attempts to boot first from a bootable CD. If it does not detect a bootable CD in the CD-ROM or DVD-ROM drive, the computer tries to boot from the next device on the list. If there is a CD present but it does not contain the required boot files, an error message appears.
Boot to LAN	If this option appears first on the list, the computer to attempt to boot first from a local area network (LAN).

## Exit Screen

**PhoenixBIOS Setup Utility**

Main	Advanced	Security	Power	Boot	Exit
Exit Saving Changes Exit Discarding Changes Load Setup Defaults Discard Changes Save Changes					<b>Item Specific Help</b>  Exit System Setup and save your changes to CMOS.
F1 Help    ↑↓ Select Item    Space Change Values    F9 Setup Defaults					
Esc Exit    ←→ Select Menu    Enter Select    ▶ Sub-Menu    F10 Save and Exit					

**Table 7. Exit Screen Options**

Option	Function
Exit Saving Changes	Saves the any changes you made and exits the system setup program.
Exit Discarding Changes	Discards any changes you made and exits the system setup program.




Load Setup Defaults	Discards any changes you made and reverts all options to their defaults, without exiting the system setup program.
Discard Changes	Returns any options you changed during the current session to their previous values.
Save Changes	Saves any changes you made, but does not exit the system setup program.

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# Suspend-to-Disk Utility: Dell™ Latitude™ LS Portable Computers User's Guide

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  -  [Creating an S2D File for Windows 95 or Windows 98](#)
  -  [Creating an S2D File for Windows NT](#)
- 

## Overview

If you are installing a new hard-disk drive or rebuilding one and you want to be able to use [suspend-to-disk](#) (S2D) mode (called *hibernate* in the Microsoft® Windows® 98 operating system), you must create an S2D file on the hard-disk drive. This allows all system data to be stored in the S2D file whenever you activate S2D mode.

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## Creating an S2D File for Windows 95 or Windows 98



*NOTE: The following procedure assumes that your hard-disk drive is already partitioned and formatted. For information on partitioning and formatting your drive, see both your operating system and your drive documentation.*

To create the S2D file for computers running the Windows 95 or Windows 98 operating system, perform the following steps:

1. Insert the *Dell System Software* CD into the CD-ROM or DVD-ROM drive.
2. Turn on or restart the computer.
3. Press <F2> as soon as you see the Dell logo screen to enter the system setup program. If you wait too long and the operating system begins to load into memory, *let the computer complete the load operation*. Then shut down the computer and try again.
4. Enter the [Boot screen](#), select **ATAPI CD-ROM Drive**, and move it to the first position in the boot sequence.
5. Press <F10> to save the settings and exit the system setup program.



The computer restarts and automatically begins to run the Dell Diagnostics.

6. Type `x` to exit to MS-DOS® mode.
7. At the MS-DOS prompt, type `d:\`, where `d` is the drive letter for your CD-ROM or DVD-ROM drive, and press `<Enter>`.

Your MS-DOS prompt changes from `A:\>` to `D:\>`, assuming that `D` is your drive letter.

8. Type `cd\utilities` and press `<Enter>`.
9. Type `phdisk /create /file` and press `<Enter>`.



**NOTE:** Include a space before each forward slash.

The utility calculates the size of the file in megabytes (MB), based on the amount of system memory in your computer, plus 2 MB to handle video memory and additional system requirements.

10. Follow the instructions on your screen to create the S2D file.

To check the size of the S2D file, at an MS-DOS prompt type `phdisk /info` and press `<Enter>`.

If you need to delete the S2D file, at an MS-DOS prompt type `phdisk /delete /file` and press `<Enter>`.

**NOTICE:** The S2D file is placed in your computer's root directory, where it may be a hidden file, depending on how you set up your operating system. Do not delete the file inadvertently.

To restore the default boot sequence, perform the following steps:

1. Turn on or restart the computer.
2. Press `<F2>` as soon as you see the Dell logo screen to enter the system setup program. If you wait too long and the operating system begins to load into memory, *let the computer complete the load operation*. Then shut down the computer and try again.
3. Enter the [Boot screen](#), and press `<F9>` to restore the default boot sequence.
4. Press `<F10>` to save the settings and exit the system setup program.

## Creating an S2D File for Windows NT®



*NOTE: The following procedure assumes that your hard-disk drive is unpartitioned and unformatted or you have a minimum of 150 MB of unpartitioned space on the drive. For information on partitioning and formatting your drive, see both your operating system and your drive documentation.*

To create the S2D file for computers running Microsoft Windows NT, perform the following steps:

1. Insert the *Dell System Software* CD into the CD-ROM or DVD-ROM drive.
2. Turn on or restart the computer.
3. Press <F2> as soon as you see the Dell logo screen to enter the system setup program. If you wait too long and the operating system begins to load into memory, *let the computer complete the load operation*. Then shut down the computer and try again.
4. Enter the **Boot** screen, select **ATAPI CD-ROM Drive**, and move it to the first position in the boot sequence.
5. Press <F10> to save the settings and exit the system setup program.

The computer restarts and automatically begins to run the Dell Diagnostics.

6. Type `x` to exit to MS-DOS mode.
7. At the MS-DOS prompt, type `d:\`, where `d` is the drive letter for your CD-ROM or DVD-ROM drive, and press <Enter>.

Your MS-DOS prompt changes from `A:\>` to `D:\>`, assuming that D is your drive letter.

8. Type `cd\utilities` and press <Enter>.
9. Type `phdisk /create /partition` and press <Enter>.



*NOTE: Include a space before each forward slash.*

The utility calculates the size of the file in MB, based on the amount of system memory in your computer, plus 2 MB to handle video memory and additional system requirements.

10. Follow the instructions on your screen to create the S2D file.

To check the size of the S2D file, at an MS-DOS prompt type `phdisk /info` and press <Enter>.

If you need to delete the S2D file, at an MS-DOS prompt type `phdisk /delete /partition` and press <Enter>.

**NOTICE: The S2D file is placed in your computer's root directory, where it may be a hidden file, depending on how you set up your operating system. Do not delete the file inadvertently.**

To restore the default boot sequence, perform the following steps:

1. Turn on or restart the computer.
2. Press <F2> as soon as you see the Dell logo screen to enter the system setup program. If you wait too long and the operating system begins to load into memory, *let the computer complete the load operation*. Then shut down the computer and try again.
3. Enter the [Boot screen](#), and press <F9> to restore the default boot sequence.
4. Press <F10> to save the settings and exit the system setup program.

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# Error Messages, IRQs, and Memory Assignments: Dell™ Latitude™ LS Portable Computers User's Guide

[Error Messages](#)[Memory Allocations](#)[Avoiding IRQ Assignment Conflicts](#)[I/O Memory Map](#)

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## Error Messages

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).

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 1](#). The messages are listed alphabetically.



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

**Table 1. System Error Messages**

Message	Cause	Action
0271: Check date and time settings	The real-time clock has reverted to a default date and time.	Enter the system setup program and change the date and time back to the correct settings. If the problem persists, <a href="#">call Dell</a> for technical assistance.

<p>02B0:Diskette drive A error</p> <p>02B1:Diskette drive B error</p>	<p>A connector may be loose or the diskette may be faulty.</p>	<p>If the diskette-drive access indicator lights up when you access a file on the diskette, but you still get this error message, try a different diskette. If the message reappears, shut down the computer, remove the drive from the external media bay, and then reinsert it. Turn the computer back on, and check for the error message.</p> <p>If the problem persists, run the <b>Diskette Drive</b> test in the <a href="#">Dell Diagnostics</a>. If the problem still persists, <a href="#">call Dell</a> for technical assistance.</p>
<p>0232:Extended RAM Failed at address line: <i>nnnn</i></p>	<p>Extended memory is not configured properly or has failed at memory address <i>nnnn</i>.</p>	<p><a href="#">Call Dell</a> for technical assistance.</p>
<p>0200:Failure Fixed Disk</p>	<p>The hard-disk drive failed to initialize.</p>	<p>Remove and reseal the hard-disk drive and reboot the computer. If the problem persists, run the <b>Hard-Disk Drive</b> tests in the <a href="#">Dell Diagnostics</a>.</p>
<p>02B2:Incorrect drive A type—run Setup</p> <p>02B3:Incorrect drive B type—run Setup</p>	<p>The diskette drive is not identified properly in the system setup program.</p>	<p>Shut down the computer, remove the drive from the external media bay, and then reinsert it. Turn the computer back on and check for the error message.</p> <p>If the problem persists, reboot the computer and press &lt;F2&gt; as soon as you see the Dell logo screen to enter the system setup program. Write down the setting for <b>IDE Adapter 1 Master</b> on the <b>Main</b> screen. Then <a href="#">call Dell</a> for technical</p>

		assistance.
0212:Keyboard controller failed	The keyboard controller is faulty.	<a href="#">Call Dell</a> for technical assistance.
0211:Keyboard error	<p>If an external keyboard is being used, a cable or connector may be loose or the keyboard may be faulty.</p> <p>If the built-in keyboard is being used, it may be faulty. A key on the built-in keyboard may have been pressed while the computer was booting.</p>	<p>If using an external keyboard, check and reseat the keyboard cable. Check and reseat the diskette drive cable. If the problem persists, run the <b>Stuck Key</b> test in the <a href="#">Dell Diagnostics</a>. If the problem cannot be corrected, <a href="#">call Dell</a> for technical assistance.</p>
0280:Previous boot incomplete-Default configuration used	The computer has attempted to boot three times unsuccessfully, and will now attempt to boot using the default BIOS settings.	<p>If the computer completes the boot routine, enter the system setup program and reset any default settings you had previously customized for your computer.</p> <p>If you receive this message the next time you restart the computer, <a href="#">Call Dell</a> for technical assistance.</p>
0270:Real time clock error	The CMOS battery that supports data stored in NVRAM may be dead.	<a href="#">Call Dell</a> for technical assistance.
0231:Shadow RAM failed at offset: <i>nnnn</i>	Shadow RAM failed at address <i>nnnn</i> .	<a href="#">Call Dell</a> for technical assistance.
0210:Stuck Key	If the built-in keyboard is being used, it may be faulty. A key on the built-in keyboard may have been pressed while the computer was booting.	Run the <b>Stuck Key</b> test in the <a href="#">Dell Diagnostics</a> . If the problem cannot be corrected, <a href="#">call Dell</a> for technical assistance.
0250:System battery is dead-Replace and run Setup	The system battery does not have enough charge to power the computer.	Connect the computer to electrical power to recharge the battery, or replace the battery. Then check your system setup settings.

02D0: System cache error—cache disabled	The primary cache internal to the microprocessor has failed.	<a href="#">Call Dell</a> for technical assistance.
0251: System CMOS checksum bad—default configuration used	The BIOS has been changed. CMOS has been corrupted or modified, possibly by an application program that changes data stored in CMOS.	Reboot the computer. As soon as you see the Dell logo screen, press <F2> to enter the system setup program and reconfigure the system. If the problem persists, <a href="#">call Dell</a> for technical assistance.
0230: System RAM failed at offset: <i>nnnn</i>	System RAM failed at address <i>nnnn</i> in the 64-KB block at which the error was detected.	<a href="#">Call Dell</a> for technical assistance.
0260: System timer error	A chip on the system board may be malfunctioning.	Run the <b>System Set</b> test group and the <b>Keyboard Controller Test</b> in the <a href="#">Dell Diagnostics</a> .

## Avoiding IRQ 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 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 your computer's serial port is COM1.

To view IRQ line assignments in the Microsoft® Windows® 95 and Windows 98 operating systems, 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 2. IRQ Line Assignments**

IRQ Line	Assigned Device
IRQ0	Reserved; generated by the system timer
IRQ1	Reserved, generated by the keyboard controller
IRQ2	Cascade from the secondary interrupt controller
IRQ3	Available
IRQ4	Serial port; available if serial port is not configured for COM1 or COM3
IRQ5	Available

IRQ6	Generated by the diskette drive controller to indicate that the diskette drive requires the attention of the microprocessor
IRQ7	Parallel port; available if parallel port is disabled
IRQ8	Reserved; generated by the real time clock
IRQ9	SCI in ACPI mode
IRQ10	PCI IRQA, B, C, D
IRQ11	Available
IRQ12	Reserved; generated by the keyboard controller to indicate that the output buffer of the touch pad or 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 the CD-ROM or DVD-ROM drive in the external media bay to indicate that the drive requires the attention of the microprocessor

## Memory Allocations

[Table 3](#) provides a map of the conventional memory area. When the microprocessor or a program addresses a location within the conventional memory range, it is physically addressing a location in main memory.

 **NOTE:** To view memory allocations in Windows 95 and Windows 98, click the **Start** button, point to **Settings**, and click **Control Panel**. Double-click the **System** icon. Click the **Device Manager** tab, and then double-click **Computer**.

**Table 3. Conventional Memory Map**

Address Range	Use
0000h-003FFh	Interrupt vector table
00400h-004FFh	BIOS data area
00500h-005FFh	MS-DOS® and BASIC work area
00600h-9FBFFh	User memory

[Table 4](#) provides a map of the upper memory area. Some of these addresses are dedicated to various system devices, such as the system/video basic input/output system (BIOS). Others are available for use by expansion cards and/or an expanded memory manager (EMM).



When the microprocessor or a program addresses a location within the upper memory area, it is physically addressing a location within one of these devices.

**Table 4. Upper Memory Map**

Address Range	Use
0009FC00-0009FFFF	PS/2-mouse data area
000A0000-000BFFFF	Video RAM
000C0000-000CBFFF	Video BIOS
000CC000-000CD7FF	3Com boot ROM
000DC000-000DFFFF	SMBIOS data area
000E8000-000FFFFFF	System BIOS
00100000-03FFFFFF	High memory area
FD000000-FDFFFFFF (approximate; not a fixed location)	Video RAM
FF200000-FF2FFFFFF (approximate; not a fixed location)	Video RAM
FFF80000-FFFFFFFF	BIOS ROM

## I/O Memory Map

[Table 5](#) provides a map of memory addresses reserved by the computer for peripheral input/output (I/O) devices. Use the information in Table 5 to determine if the memory address of an external device (such as a PC Card) conflicts with a memory address reserved by the computer.

Check the documentation of the external I/O device to determine its memory address. If a device's memory address conflicts with a memory address reserved by the computer, change the address of the device.



**NOTE:** To view I/O addresses in Windows 95 and Windows 98, click the **Start** button, point to **Settings**, and click **Control Panel**. Double-click the **System** icon. Click the **Device Manager** tab, and then double-click **Computer**.

**Table 5. I/O Memory Map**

Address	Device
0000-001F	DMA controller #1
0020-003F	Interrupt controller #1
0040-005F	System timers

0060-0060	Keyboard controller
0061-0061	System speaker
0064-0064	Keyboard controller
0070-007F	RTC and NMI enable
0080-009F	DMA page registers
00A0-00BF	Interrupt controller #2
00C0-00DF	DMA controller #2
00F0-00FF	Math coprocessor
0170-0177	CD-ROM drive controller
01F0-01F7	Hard-disk drive controller
0376-0376	IDE controller
0378-037F	LPT1
03B0-03BB	VGA
03C0-03DF	VGA
03E0-03E1	PC Card controller
03F2-03F5; 03F7-03F7	Diskette controller
03F8-03FF	COM1

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# Help Overview: Dell™ Latitude™ LS Portable Computers User's Guide



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## Technical Assistance

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

1. Run the Dell Diagnostics as described in "[Dell Diagnostics](#)."
2. Make a copy of the [Diagnostics Checklist](#) and fill it out.
3. 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.
4. 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.



*NOTE: 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](#)."

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## Help Tools

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



*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 on the Internet

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 section, including AutoTech, TechFax, order status, technical support, and product information.



From Dell's World Wide Web home page (<http://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**. If you don't have your service tag number or Express Service Code available, you can also select support information by system.

Everything you need to know about your system 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 tools — A system-specific troubleshooting application for resolving many computer-related issues by following interactive flowcharts.
- Drivers, files, and utilities — The latest drivers and basic input/output system (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 nontechnical 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 "[Contacting Dell](#)."

## **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 "[Contacting Dell](#)."

## **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 "[Contacting Dell](#)."

## 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 "[Before You Call](#)" and then call the number for your country as listed in "[Contacting Dell](#)."

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## Problems With Your Order

If you have a problem with your order, such as missing parts, wrong parts, or incorrect billing, contact Dell for customer assistance. Have your invoice or packing slip handy when you call. For the telephone number to call, refer to "[Contacting Dell](#)."

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## Product Information

If you need information about additional products available from Dell, 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 "[Contacting Dell](#)."

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## Returning Items for Warranty Repair or Credit

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

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

For the telephone number to call, refer to "[Contacting Dell](#)."

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. 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](#). 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.



**CAUTION: If you need to remove the computer covers, be sure to first disconnect the computer system's power and modem cables from all electrical outlets.**

## Diagnostics Checklist

Date:
Name:
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:

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# Contacting Dell: Dell™ Latitude™ LS Portable Computers User's Guide

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- [International Dialing Codes](#)
- [Americas Contact Numbers](#)
- [Europe Contact Numbers](#)
- [Asia and Other Regions Contact Numbers](#)

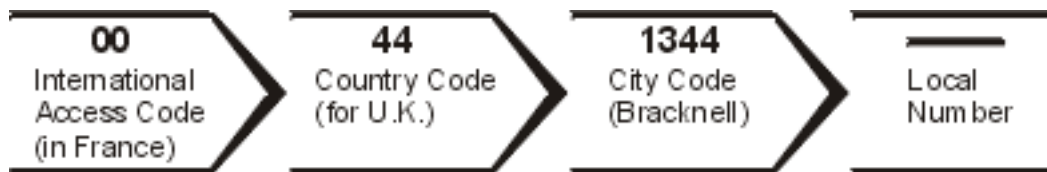
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## Overview

When you need to contact Dell, use the telephone numbers, codes, and electronic addresses provided in the following sections. "[International Dialing Codes](#)" provides the various codes required to make long-distance and international calls. "[Americas Contact Numbers](#)," "[Europe Contact Numbers](#)," and "[Asia and Other Regions Contact Numbers](#)" provide local telephone numbers, area codes, toll-free numbers, and e-mail addresses, 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 "[International Dialing Codes](#)," in addition to the local numbers provided in the other sections.

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.



*NOTES: 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.*

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

## International Dialing Codes

Click a listed country to obtain the appropriate contact numbers.

Country (City)	International Access Code	Country Code	City Code
<a href="#">Australia</a> (Sydney)	0011	61	2
<a href="#">Austria</a> (Vienna)	900	43	1
<a href="#">Belgium</a> (Brussels)	00	32	2
<a href="#">Brunei</a>	—	673	—
<a href="#">Canada</a> (North York, Ontario)	011	—	Not required
<a href="#">Chile</a> (Santiago)	—	56	2
<a href="#">China</a> (Xiamen)	—	86	592
<a href="#">Czech Republic</a> (Prague)	00	420	2
<a href="#">Denmark</a> (Horsholm)	009	45	Not required
<a href="#">Finland</a> (Helsinki)	990	358	9

<a href="#">France</a> (Paris) (Montpellier)	00	33	(1) (4)
<a href="#">Germany</a> (Langen)	00	49	6103
<a href="#">Hong Kong</a>	001	852	Not required
<a href="#">Ireland</a> (Bray)	16	353	1
<a href="#">Italy</a> (Milan)	00	39	2
<a href="#">Japan</a> (Kawasaki)	001	81	44
<a href="#">Korea</a> (Seoul)	001	82	2
<a href="#">Luxembourg</a>	00	352	—
<a href="#">Macau</a>	—	853	Not required
<a href="#">Malaysia</a> (Penang)	00	60	4
<a href="#">Mexico</a> (Colonia Granada)	95	52	5
<a href="#">Netherlands</a> (Amsterdam)	00	31	20
<a href="#">New Zealand</a>	00	64	—
<a href="#">Norway</a> (Lysaker)	095	47	Not required
<a href="#">Poland</a> (Warsaw)	011	48	22
<a href="#">Singapore</a> (Singapore)	005	65	Not required
<a href="#">South Africa</a> (Johannesburg)	09/091	27	11
<a href="#">Spain</a> (Madrid)	07	34	91
<a href="#">Sweden</a> (Upplands Vasby)	009	46	8
<a href="#">Switzerland</a> (Geneva)	00	41	22

<a href="#">Taiwan</a>	002	886	—
<a href="#">Thailand</a>	001	66	—
<a href="#">U.K.</a> (Bracknell)	010	44	1344
<a href="#">U.S.A.</a> (Austin, Texas)	011	1	Not required

## Americas Contact Numbers

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
<b>Canada</b> (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	

<b>Chile</b> (Santiago)  <i>NOTE:</i> <i>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
<b>Latin America</b>  <i>NOTE:</i> <i>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
<b>Mexico</b> (Colonia Granada)  <i>NOTE:</i> <i>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
<b>U.S.A.</b> (Austin, Texas)	Automated Order-Status System		toll free: 1-800-433-9014

AutoTech (Automated technical support)		toll free: 1-800-247-9362
<b>Dell Home and Small Business Group:</b>		
Customer Technical Support (Return Material Authorization Numbers)		toll free: 1-800-624-9896
Customer Service (Credit Return Authorization Numbers)		toll free: 1-800-624-9897
<b>National Accounts</b> (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
<b>Public Americas International</b> (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
DellWare <sup>SM</sup>		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	512	338-4400

## Europe Contact Numbers

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
<b>Austria</b> (Vienna)  <i>NOTE:</i> <i>Customers in Austria call Langen, Germany for Technical Support and Customer Care.</i>	Switchboard	01	491 040
	Home/Small Business Sales	01	795676-02
	Home/Small Business Sales Fax	01	795676-05
	Home/Small Business Customer Care	01	795676-03
	Preferred Accounts/Corporate Customer Care		0660-8056
	Home/Small Business Technical Support	01	795676-04
	Preferred Accounts/Corporate Technical Support		0660-8779
	Web site: <a href="http://support.euro.dell.com/at">http://support.euro.dell.com/at</a>		
	E-mail: tech_support_germany@dell.com		
<b>Belgium</b> (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: <b><a href="http://support.euro.dell.com/be">http://support.euro.dell.com/be</a></b>		
	E-mail: tech_be@dell.com		
<b>Czech Republic</b> (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: <b><a href="http://support.euro.dell.com/cz">http://support.euro.dell.com/cz</a></b>		
	E-mail: czech_dell@dell.com		
<b>Denmark</b> (Horsholm)  <i>NOTE: Customers in Denmark call Sweden for fax technical support.</i>	Technical Support		45170182
	Customer Care		45170181
	Switchboard		45170100
	Fax Technical Support (Upplands Vasby, Sweden)		859005594
	Fax Switchboard		45170117
	Web site: <b><a href="http://support.euro.dell.com/dk">http://support.euro.dell.com/dk</a></b>		
	E-mail: den_support@dell.com		
<b>Finland</b> (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: <b><a href="http://support.euro.dell.com/fin">http://support.euro.dell.com/fin</a></b>		
	E-mail: <a href="mailto:fin_support@dell.com">fin_support@dell.com</a>		
<b>France</b> (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: <b><a href="http://support.euro.dell.com/fr">http://support.euro.dell.com/fr</a></b>		
	E-mail: <a href="mailto:web_fr_tech@dell.com">web_fr_tech@dell.com</a>		
<b>Germany</b> (Langen)	Technical Support	06103	971-200
	Technical Support Fax	06103	971-222
	Home/Small Business Customer Care	06103	971-530
	Corporate Customer Care	06103	971-560
	Preferred Accounts Customer Care	06103	971-420
	TechConnect BBS	06103	971-666
	Switchboard	06103	971-0
	Web site: <b><a href="http://www.dell.de/support">http://www.dell.de/support</a></b>		
	E-mail: <a href="mailto:tech_support_germany@dell.com">tech_support_germany@dell.com</a>		
<b>Ireland</b>	Technical Support		1-850-543-543

<b>(Bray)</b>  <i>NOTE: Customers in Ireland call the U.K. for Home/Small Business customer assistance.</i>	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: <b><a href="http://support.euro.dell.com/ie">http://support.euro.dell.com/ie</a></b>		
	E-mail: dell_direct_support@dell.com		
<b>Italy (Milan)</b>	Technical Support	2	57782.690
	Customer Care	2	57782.555
	Sales	2	57782.411
	Fax	2	57503530
	Switchboard	2	57782.1
	Web site: <b><a href="http://support.euro.dell.com/it">http://support.euro.dell.com/it</a></b>		
	E-mail: support_italy@dell.com		
<b>Luxembourg</b>  <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
	Switchboard (Brussels, Belgium)	02	481 91 00
	Fax (Brussels, Belgium)	02	481 92 99
	Web site: <b><a href="http://support.euro.dell.com/be">http://support.euro.dell.com/be</a></b>		
	E-mail: tech_be@dell.com		
<b>Netherlands</b> (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: <b><a href="http://support.euro.dell.com/nl">http://support.euro.dell.com/nl</a></b>		
	E-mail: tech_nl@dell.com		
<b>Norway</b> (Lysaker) <i>NOTE: Customers in Norway call Sweden for fax technical support.</i>	Technical Support		671 16882
	Customer Care		671 16881
	Switchboard		671 16800
	Fax Technical Support (Upplands Vasby, Sweden)		590 05 594
	Fax Switchboard		671 16865
	Web site: <b><a href="http://support.euro.dell.com/no">http://support.euro.dell.com/no</a></b>		

	E-mail: <a href="mailto:nor_support@dell.com">nor_support@dell.com</a>		
<b>Poland</b> (Warsaw)	Technical Support	22	60 61 999
	Customer Care	22	60 61 999
	Sales	22	60 61 999
	Switchboard	22	60 61 999
	Fax	22	60 61 998
	Web site: <a href="http://support.euro.dell.com/pl">http://support.euro.dell.com/pl</a>		
	E-mail: <a href="mailto:pl_support@dell.com">pl_support@dell.com</a>		
<b>Spain</b> (Madrid)	Technical Support		902 100 130
	Corporate Customer Care		902 118 546
	Home/Small Business Customer Care		902 118 540
	TechConnect BBS	91	329 33 53
	Corporate Sales		902 100 185
	Home/Small Business Sales		902 118 541
	Switchboard	91	722 92 00
	Web site: <a href="http://support.euro.dell.com/es">http://support.euro.dell.com/es</a>		
	E-mail: <a href="mailto:es_support@dell.com">es_support@dell.com</a>		
<b>Sweden</b> (Upplands Vasby)	Technical Support	08	590 05 199
	Customer Care	08	590 05 169
	Fax Technical Support	08	590 05 594
	Sales	08	590 05 185
	Web site: <a href="http://support.euro.dell.com/se">http://support.euro.dell.com/se</a>		

	E-mail: swe_support@dell.com		
<b>Switzerland</b> (Geneva)	Technical Support		0844 811 411
	Customer Care		0848 802 802
	Switchboard	022	799 01 01
	Fax	022	799 01 90
	Web site: <a href="http://support.euro.dell.com/ch">http://support.euro.dell.com/ch</a>		
	E-mail: swisstech@dell.com		
<b>U.K.</b> (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: <a href="http://support.euro.dell.com/uk">http://support.euro.dell.com/uk</a>		
	E-mail: dell_direct_support@dell.com		

## Asia and Other Regions Contact Numbers

Country (City)	Department Name or Service	Area Code	Local Number or Toll-Free Number
<b>Australia</b> (Sydney)	Customer Technical Support (Dell™ Dimension™ systems only)		1-300-65-55-33
	Customer Technical Support (Other systems)		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
<b>Brunei</b>	Customer Technical Support (Penang, Malaysia)		810 4966
<i>NOTE: Customers in Brunei call Malaysia for customer assistance.</i>	Customer Service (Penang, Malaysia)		810 4949
	Transaction Sales (Penang, Malaysia)		810 4955
<b>China (Xiamen)</b>	Customer Service		toll free: 800 858 2437
	Sales		toll free: 800 858 2222
<b>Hong Kong</b>	Technical Support		toll free: 800 96 4107
<i>NOTE: Customers in Hong Kong call Malaysia for customer assistance.</i>	Customer Service (Penang, Malaysia)		810 4949
	Transaction Sales		toll free: 800 96 4109
	Corporate Sales		toll free: 800 96 4108
<b>Japan (Kawasaki)</b>	Technical Support		toll free: 0088-22-7890
	Technical Support (Server)		toll free: 0120-1984-35
	Technical Support (Dimension and Inspiron™)		toll free: 0120-1982-56
	Technical Support (WorkStation, OptiPlex™, and Latitude™)		toll free: 0120-1984-39
	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
<b>Korea</b> (Seoul)	Technical Support		toll free: 080-200-3800
<i>NOTE: Customers in Korea call Malaysia for customer assistance.</i>	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
<b>Macau</b>	Technical Support		toll free: 0800 582
<i>NOTE: Customers in Macau call Malaysia for customer assistance.</i>	Customer Service (Penang, Malaysia)		810 4949
	Transaction Sales		toll free: 0800 581
<b>Malaysia</b> (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
<b>New Zealand</b>	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
<b>Singapore</b> (Singapore)	Technical Support		toll free: 800 6011 051
<i>NOTE: Customers in Singapore call Malaysia for customer assistance.</i>	Customer Service (Penang, Malaysia)	04	810 4949
	Transaction Sales		toll free: 800 6011 054
	Corporate Sales		toll free: 800 6011 053
<b>South Africa</b> (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: <b><a href="http://support.euro.dell.com/za">http://support.euro.dell.com/za</a></b>		
	E-mail: dell_za_support@dell.com		
<b>Southeast Asian/Pacific Countries</b> (excluding Australia, Brunei, China, Hong Kong, Japan, Korea, Macau, Malaysia, New Zealand, Singapore, Taiwan, and	Customer Technical Support, Customer Service, and Sales (Penang, Malaysia)		60 4 810-4810



Thailand—refer to individual listings for these countries)			
<b>Taiwan</b>  <i>NOTE: Customers in Taiwan call Malaysia for customer assistance.</i>	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
<b>Thailand</b>  <i>NOTE: Customers in Thailand call Malaysia for customer assistance.</i>	Technical Support		toll free: 0880 060 07
	Customer Service (Penang, Malaysia)		810 4949
	Sales		toll free: 0880 060 06

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# CD-ROM and DVD-ROM Drives: Dell™ Latitude™ LS Portable Computers User's Guide

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## Using CD-ROM and DVD-ROM Drives

CD-ROM and DVD-ROM drives are read-only devices that can play most commercially available 8- or 12-centimeter (cm) sound and video CDs. Dell installed the appropriate CD-ROM device drivers on your hard-disk drive. Dell also installed the drivers that will allow a DVD-ROM drive to play most CDs and read data from a DVD.



*NOTE: "Reading data" does not refer to playing a movie. However, if you are using the Microsoft® Windows® 95 or Windows 98 operating system, you can play DVD movies in your DVD-ROM drive by installing a zoomed video (ZV) PC Card, such as a hardware Moving Picture Experts Group (MPEG) decoder, in the PC card slot. You must also install the drivers that came with the card.*

To use a CD-ROM or DVD-ROM drive, install it in the computer's [external media bay](#).

**NOTICE: Protect the CD-ROM and DVD-ROM drives when they are not in the external media bay. Do not squeeze a drive or place objects on top of it; doing so could damage the drive motor. Keep the drive as clean as possible.**

To play a CD or DVD, press the eject button on the face of the CD-ROM or DVD-ROM drive or press <Fn><e>. When the tray slides out, place the disc into the tray, label side up. Make sure that the CD or DVD is seated correctly on the spindle by pressing down on the disc until it clicks in place. Then gently push in the tray.

**NOTICE: If the CD or DVD is not seated correctly, the disc or drive can be damaged.**

**NOTICE: Do not use the CD-ROM or DVD-ROM drive while the computer is in motion. Doing so could interrupt the flow of data between the CD-ROM or DVD-ROM drive and the hard-disk or diskette drive.**

When the CD-ROM or DVD-ROM drive is in use, the [drive access indicator](#) blinks.

If you are using the Microsoft Windows 95 or Windows 98 operating system, disable the autoplay feature while you use the CD-ROM or DVD-ROM drive. (The autoplay feature can interfere with the computer's [power management](#) functions.) If Dell installed the operating system, the autoplay feature has been disabled. If you reinstall the operating system or if you installed it yourself, be sure to disable the autoplay feature if you want to use the CD-ROM or DVD-ROM drive.

For instructions on changing the **Auto Insert Notification** option, see the operating system user's guide.

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## Caring for CDs and DVDs

When handling and using CDs and DVDs, follow these precautions:

- Never use a damaged or warped CD or DVD.
  - Always hold the CD or DVD by its edges. Do not touch the surface of the disc.
  - Use a clean, dry cloth to remove dust, smudges, or fingerprints from the surface of the CD or DVD. When cleaning, wipe from the center of the CD or DVD to the edge.
  - Never use solvents, such as benzene, record cleaners, or antistatic sprays, to clean the CD or DVD.
  - Do not write on the surface of the CD or DVD.
  - Store CD or DVDs in their containers, placing them in a cool, dry place. Extreme temperatures may damage CDs or DVDs.
  - Do not bend or drop a CD or DVD.
  - Do not place objects on top of a CD or DVD.
- 

## Types of Supported Discs

Your computer's CD-ROM and DVD-ROM drives are able to play the following disc formats:

- CD-ROM red-book audio discs (CD-DA)
- CD-ROM yellow-book mode-1 and mode-2 data discs
- CD-ROM XA (mode-2 form 1 and form 2; without Adaptive Differential Pulse Code modulation [ADPCM])

- CD-I (mode-2 form 1 and form 2)
  - CD-I Ready
  - CD-Bridge
  - Photo CD, CD-recordable (CD-R) (single and multisession)
  - Video CD
  - CD-rewritable (CD-RW). The 24x CD-ROM and DVD-ROM drives support reading CD-RW discs. This format is supported as read-only; neither the CD-ROM nor the DVD-ROM drive can write to CD-RW discs.
  - DVD-5 (the DVD-ROM drive supports the DVD-5 format)
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# Diskette Drive: Dell™ Latitude™ LS Portable Computers User's Guide

Your computer was shipped with a 3.5-inch diskette drive installed in the external media bay. For more information on using and installing devices in the external media bay, see "[External Media Bay](#)."

The diskette drive lets you install programs and transfer data using 3.5-inch diskettes.

To use the diskette drive, insert a 3.5-inch diskette into the drive (label side up and metal end first). Push the diskette into the drive until the eject button extends outside the drive casing.

**NOTICE: Do not travel with a diskette in the diskette drive. Doing so could break the eject button and damage the drive.**

To remove a diskette from the drive, press the eject button to release the diskette, and then pull the diskette out of the drive.

When data is being accessed from the diskette drive, the [drive access indicator](#) blinks.



*NOTE: As an alternative diskette drive configuration, you can [connect the diskette drive to the parallel connector](#) on the back of the computer using an optional cable available from Dell. If you are running either the Microsoft® Windows® 95 or Windows 98 operating system on your computer, you do not have to reboot the computer when you connect the diskette drive to the parallel connector. If you are running the Microsoft Windows NT® operating system on your computer, reboot the computer after you connect the diskette drive.*

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