

Vostro™ | A90

Setup and Quick Reference Guide

This guide provides a features overview, specifications, and quick setup, software, and troubleshooting information for your computer. For more information about your operating system, devices, and technologies, see the *Dell Technology Guide* at support.dell.com.

Notes, Notices, and Cautions



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



NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.



CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

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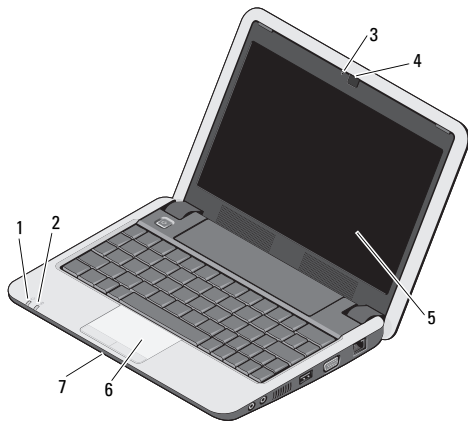
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About Your Computer

Front View



- | | | | |
|---|-------------------------------------|---|---------------|
| 1 | power light | 2 | battery light |
| 3 | camera activity light | 4 | camera |
| 5 | display | 6 | touch pad |
| 7 | integrated single analog microphone | | |



Power light – Turns on when you turn on the computer.

The light operates as follows:

On AC adapter -

- Solid white:
 - The computer is on.
 - The computer is off or in hibernate mode with less than 90 per cent battery charge and the battery is charging.
- Flashing white: The computer is in standby mode.
- Off: The computer is off or in hibernate mode and the battery is adequately charged.

On battery -

- Solid white: The computer is on.
- Flashing white: The computer is in standby mode.
- Off: The computer is off or in hibernate mode.



Battery status light – Blinks amber to indicate that the battery charge is low. Connect to an AC adapter to charge the battery.

CAMERA ACTIVITY LIGHT — Indicates when the camera is on or off.

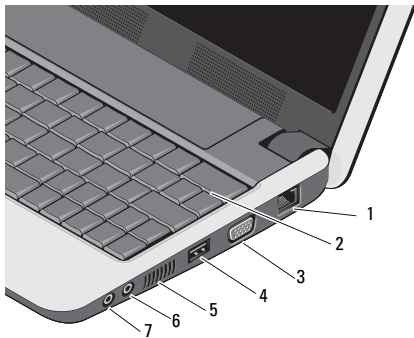
CAMERA — Built-in camera for video capture, conferencing, and chat.

DISPLAY — For more information on the display, see *Dell Technology Guide*.

TOUCH PAD — Provides the functionality of a mouse.

INTEGRATED SINGLE ANALOG MICROPHONE — Used for chatting and voice recording.

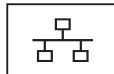
Right View



- | | | | |
|---|-------------------|---|---------------|
| 1 | network connector | 2 | keyboard |
| 3 | VGA connector | 4 | USB connector |

- | | | | |
|---|-------------------------------|---|-------------------------------|
| 5 | air vents | 6 | audio-in/microphone connector |
| 7 | audio out/headphone connector | | |

NETWORK CONNECTOR (RJ-45)



Connects the computer to a network. The two lights next to the connector indicate status and activity for wired network connections.

KEYBOARD — For more information on the keyboard, see *Dell Technology Guide*. Wireless and volume control keys are also located on the keyboard.



Press <Fn><2> to turn on/off your wireless devices



Press <Fn><3> to view details of your battery status, battery health, and to get battery tips



Press <Fn><4> to mute the sound



Press <Fn><5> to turn down the volume



Press <Fn><6> to turn up the volume

USING WIRELESS — To turn on/off wireless, press the wireless key combination (<Fn><2>) on the keyboard. A confirmation of your selection

appears on the screen. This key allows you to quickly turn all of your wireless radios (Bluetooth and WiFi) off, such as when you are asked to disable all wireless radios on an airplane flight.

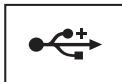
Pressing <Fn><2> one time turns all your radios off and pressing the key combination again returns your wireless radios to their respective states they were in before you pressed the key the first time.

VGA CONNECTOR



Connects video devices, such as a monitor.

USB CONNECTOR




Connects USB devices, such as a mouse, keyboard, or printer.


AIR VENTS — The computer creates airflow through the vents, which prevents the computer from overheating.



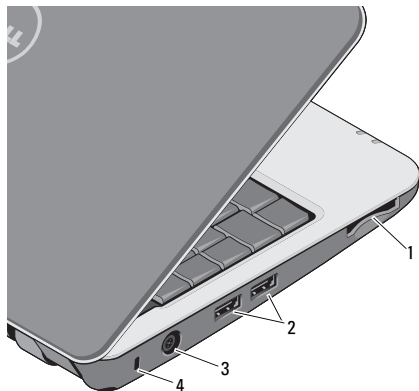
CAUTION: Do not block, push objects into, or allow dust to accumulate in the air vents. Do not store your Dell™ computer in a low-airflow environment, such as a closed briefcase, while it is running. Restricting the airflow can damage the computer or cause a fire.

AUDIO CONNECTORS

Attach headphones to the  connector

Attach a microphone to the  connector

Left View



- | | | | |
|---|-------------------------------|---|---------------------|
| 1 | 3-in-1 media card reader slot | 2 | USB connectors (2) |
| 3 | AC adapter connector | 4 | security cable slot |

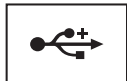
3-IN-1 MEDIA CARD READER — Provides a fast and convenient way to view and share digital photos, music, videos, and documents stored on the following digital memory cards:

- Secure digital (SD) memory card
- Secure Digital High Capacity (SDHC) card
- Multi Media card (MMC)
- Memory Stick



NOTE: Your computer ships with a plastic blank installed in the media card slot. Blanks protect unused slots from dust and other particles. Save the blank for use when no media card is installed in the slot. Blanks from other computers may not fit your computer.

USB CONNECTORS



Connect USB devices, such as a mouse, keyboard, or printer.

AC ADAPTER CONNECTOR — Attaches an AC adapter to the computer. The AC adapter converts AC power to the DC power required by the computer. You can connect the AC adapter with your computer turned on or off.



CAUTION: The AC adapter works with electrical outlets worldwide. However, power connectors and power strips vary among countries. Using an incompatible cable or improperly connecting the cable to the power strip or electrical outlet may cause fire or equipment damage.



NOTICE: When you disconnect the AC adapter cable from the computer, grasp the connector, not the cable itself, and pull firmly, but gently to help prevent damage to the cable.



NOTE: Plug the power cord and the adapter firmly in, and ensure that the light is on.

SECURITY CABLE SLOT — Lets you attach a commercially available antitheft device to the computer.

Battery Removal



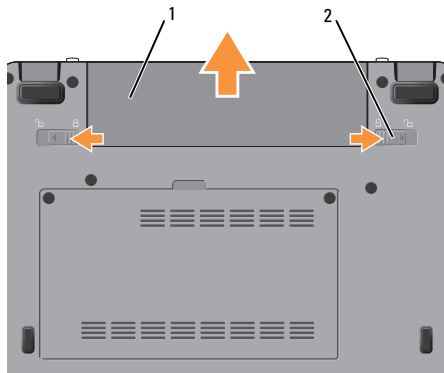
CAUTION: Before you begin any of the procedures in this section, follow the safety instructions that shipped with your computer.



CAUTION: Using an incompatible battery may increase the risk of fire or explosion. Replace the battery only with a compatible battery purchased from Dell. The battery is designed to work with your Dell™ computer. Do not use a battery from other computers with your computer.



CAUTION: Before removing or replacing the battery, turn off the computer, disconnect the AC adapter from the electrical outlet and the computer, disconnect the modem from the wall connector and computer, and remove any other external cables from the computer.



1 battery

2 battery release latch (2)

About Your Computer

To remove the battery:

- 1** Ensure that the computer is turned off.
- 2** Slide the two battery release latches to the unlock position.
- 3** Slide the battery out.

To replace the battery, slide the battery into the bay until it clicks into place.

Quick Setup



CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.



CAUTION: Do not block, push objects into, or allow dust to accumulate in the air vents. Do not store your computer in a low-airflow environment, such as a closed briefcase, while it is running. Restricting the airflow can damage the computer or cause a fire.



CAUTION: The AC adapter works with electrical outlets worldwide. However, power connectors and power strips vary among countries. Using an incompatible cable or improperly connecting the cable to the power strip or electrical outlet may cause fire or equipment damage.

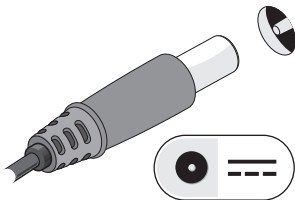


NOTICE: When you disconnect the AC adapter cable from the computer, grasp the connector, not the cable itself, and pull firmly but gently to avoid damaging the cable. When you wrap the AC adapter cable, ensure that you follow the angle of the connector on the AC adapter to avoid damaging the cable.



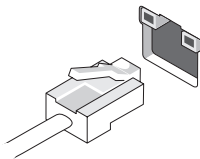
NOTE: Some devices may not be included if you did not order them.

- 1 Connect the AC adapter to the AC adapter connector on the computer and to the electrical outlet.

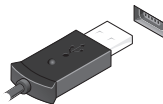


Quick Setup

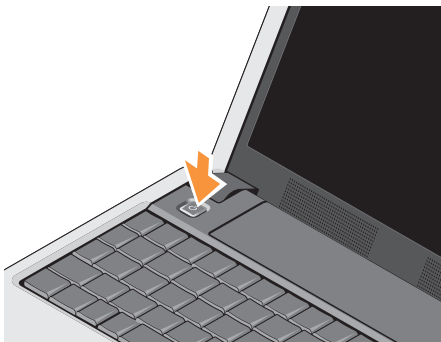
- 2 Connect the network cable.



- 3 Connect USB devices, such as a mouse or keyboard.

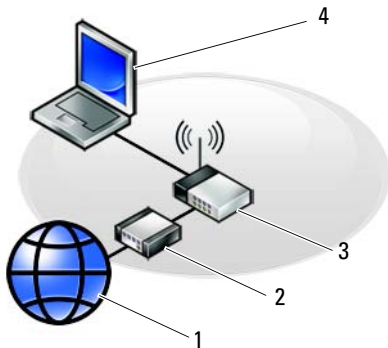


- 4 Open the computer display and press the power button to turn on the computer.

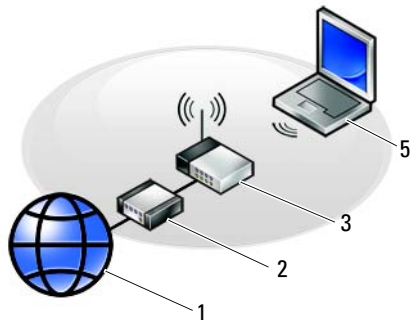


NOTE: It is recommended that you turn on and shut down your computer at least once before you install any cards or connect the computer to a docking device or other external device, such as a printer.

- 5 Connect to the Internet. See "Connecting to the Internet" on page 16 for more information.



- 1 Internet service
- 2 cable or DSL modem
- 3 wireless router
- 5 laptop with *wireless* connection



- 2 cable or DSL modem
- 3 wireless router
- 4 laptop with *wired* connection
- 5 laptop with *wireless* connection

Connecting to the Internet



NOTE: ISPs (Internet Service Providers) and ISP offerings vary by country.

To connect to the Internet, you need a modem or network connection and an Internet service provider (ISP). If you are using a dial-up connection, connect a telephone line to the modem connector on your computer and to the telephone wall connector before you set up your Internet connection. If you are using a DSL or cable/satellite modem connection, contact your ISP or cellular phone service for setup instructions.

Setting Up Your Internet Connection



NOTE: The instructions in this section are for computers with Windows XP operating system only.

To set up an Internet connection with a desktop shortcut provided by your ISP:

- 1 Save and close any open files, and exit any open programs.

- 2 Double-click the ISP icon on the Microsoft® Windows® desktop.
- 3 Follow the instructions on the screen to complete the setup.

If you do not have an ISP icon on your desktop or if you want to set up an Internet connection with a different ISP, perform the steps in the appropriate section below.



NOTE: If you cannot connect to the Internet, see the *Dell Technology Guide*. If you have successfully connected in the past, the ISP might have a service outage. Contact your ISP to check the service status, or try connecting again later.



NOTE: Have your ISP information ready. If you do not have an ISP, consult the **Connect to the Internet** wizard.

Microsoft® Windows® XP Operating System

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

- 4 Click **Next**.

If you selected **Set up my connection manually** in step 3, continue to step 5. Otherwise, follow the instructions on the screen to complete the setup.



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

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

Transferring Information to a New Computer

Windows XP provides the Files and Settings Transfer Wizard to move data from a source computer to a new computer.

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



NOTE: You can transfer information from an old computer to a new computer by directly connecting a serial cable to the input/output (I/O) ports of the two computers. For instructions on setting up a direct cable connection between two computers, see Microsoft Knowledge Base Article #305621, titled *How to Set Up a Direct Cable Connection Between Two Computers in Windows XP*. This information may not be available in certain countries.

For transferring information to a new computer, you must run the Files and Settings Transfer Wizard.

Running the Files and Settings Transfer Wizard With the Operating System Media



NOTE: This procedure requires the *Operating System* media. This media is optional and may not be included with certain computers.



NOTE: Your computer may or may not have an optical drive. Use an external optical drive or any external storage device for the procedures that involve media.

To prepare a new computer for the file transfer:

- 1 Open the Files and Settings Transfer Wizard: click **Start**→**All Programs**→**Accessories**→**System Tools**→**Files and Settings Transfer Wizard**.
- 2 When the Files and Settings Transfer Wizard welcome screen appears, click **Next**.
- 3 On the **Which computer is this?** screen, click **New Computer**→**Next**.

- 4 On the **Do you have a Windows XP CD?** screen, click **I will use the wizard from the Windows XP CD**→**Next**.
- 5 When the **Now go to your old computer** screen appears, go to your old or source computer. Do *not* click **Next** at this time.

To copy data from the old computer:

- 1 On the old computer, insert the *Windows XP Operating System* media.
- 2 On the **Welcome to Microsoft Windows XP** screen, click **Perform additional tasks**.
- 3 Under **What do you want to do?**, click **Transfer files and settings**→**Next**.
- 4 On the **Which computer is this?** screen, click **Old Computer**→**Next**.
- 5 On the **Select a transfer method** screen, click the transfer method you prefer.
- 6 On the **What do you want to transfer?** screen, select the items you want to transfer and click **Next**.

- 7 After the information has been copied, the **Completing the Collection Phase** screen appears.
- 8 Click **Finish**.

To transfer data to the new computer:

- 1 On the **Now go to your old computer** screen on the new computer, click **Next**.
- 2 On the **Where are the files and settings?** screen, select the method you chose for transferring your settings and files and click **Next**.
- 3 The wizard applies the collected files and settings to your new computer.
- 4 On the **Finished** screen, click **Finished**, and restart the new computer.

Running the Files and Settings Transfer Wizard Without the Operating System Media



NOTE: Your computer may or may not have an optical drive. Use an external optical drive or any external storage device for the procedures that involve media.

To run the Files and Settings Transfer Wizard without the *Operating System* media, you must create a wizard disk that will allow you to create a backup image file to removable media.

To create a wizard disk, use your new computer with Windows XP and perform the following steps:

- 1 Open the Files and Settings Transfer Wizard: click **Start**→**All Programs**→**Accessories**→**System Tools**→**Files and Settings Transfer Wizard**.
- 2 When the Files and Settings Transfer Wizard welcome screen appears, click **Next**.
- 3 On the **Which computer is this?** screen, click **New Computer**→**Next**.

- 4 On the **Do you have a Windows XP CD?** screen, click **I want to create a Wizard Disk in the following drive**→**Next**.
- 5 Insert the removable media, such as a writable CD, and click **OK**.
- 6 When the disk creation completes and the **Now go to your old computer** message appears, *do not* click **Next**.
- 7 Go to the old computer.

To copy data from the old computer:

- 1 On the old computer, insert the wizard disk, and click **Start**→**Run**.
- 2 In the **Open** field on the **Run** window, browse to the path for **fastwiz** (on the appropriate removable media) and click **OK**.
- 3 On the Files and Settings Transfer Wizard welcome screen, click **Next**.
- 4 On the **Which computer is this?** screen, click **Old Computer**→**Next**.
- 5 On the **Select a transfer method** screen, click the transfer method you prefer.

- 6 On the **What do you want to transfer?** screen, select the items you want to transfer and click **Next**.
- 7 After the information has been copied, the **Completing the Collection Phase** screen appears.
- 8 Click **Finish**.

To transfer data to the new computer:

- 1 On the **Now go to your old computer** screen on the new computer, click **Next**.
- 2 On the **Where are the files and settings?** screen, select the method you chose for transferring your settings and files and click **Next**. Follow the instructions on the screen.
- 3 The wizard reads the collected files and settings and applies them to your new computer.
- 4 When all of the settings and files have been applied, the **Finished** screen appears.
- 5 Click **Finished** and restart the new computer.



NOTE: For more information about this procedure, search support.dell.com for document #154781 (*What Are The Different Methods To Transfer Files From My Old Computer To My New Dell™ Computer Using the Microsoft® Windows® XP Operating System?*).



NOTE: Access to the Dell™ Knowledge Base document may not be available in certain countries.

Specifications



NOTE: Offerings may vary by region. For more information regarding the configuration of your computer, click **Start**→**Help and Support** and select the option to view information about your computer.

Processor

Processor type	Intel® Atom™ N270
L2 cache	512 KB
External bus frequency	533 MHz

Computer Information

System Chipset	Intel 945GSE
Data bus width	64 bits
DRAM bus width	single channel 64-bit buses

Computer Information (Continued)

Processor address bus width	32 bits
Flash EPROM	1 MB
PCI bus	32 bits

Memory

Memory module connector	one internally-accessible SODIMM socket
Memory module capacities	1 GB
Memory type	533/667/800 MHz DDR2 SODIMM

NOTE: For instructions on upgrading your memory, see the *Service Manual* on the Dell Support website at support.dell.com.

Specifications

Internal Storage

Type	SSD (Solid-state drive) (MLC)
Capacity	8 GB

Ports and Connectors

Audio	integrated analog microphone, microphone connector, one stereo headphone/speakers connector
Network adapter	RJ-45 port
USB	three 4-pin USB 2.0-compliant connectors
Video	15-hole connector

Communications

Modem Type	External V.92 56K USB Modem
Modem interface	Universal Serial Bus (USB)
Network adapter	10/100 Ethernet LAN on system board
Wireless	internal WLAN (Mini-Card) with WiFi bg, Bluetooth [®] wireless technology

Video

Video controller	Intel 945GSE UMA
Video memory	8 MB of system memory
LCD interface	LVDS

Audio	
Audio type	two-channel high definition audio
Audio controller	Realtek ALC268
Stereo conversion	24-bit (analog-to-digital and digital-to-analog)
Internal interface	Intel high-definition audio
External interface	integrated analog microphone, microphone-in connector, stereo headphones/speakers connector
Speaker	two 4-ohm speakers
Internal speaker amplifier	0.5 watt per channel into 4 ohms
Volume controls	program menus

Display	
Type (TrueLife)	8.9 inch WSVGA
Dimensions:	
Height	129.55 mm (5.1 in)
Width	213.36 mm (8.2 in)
Maximum resolution	1024 x 600
Refresh rate	60 Hz
Operating angle	0° (closed) to 135°
Viewing angles:	
Horizontal	+/- 40° (LED) min.
Vertical	+15°/ -30° (LED) min.
Pixel pitch	0.2235 mm

Specifications

Display (Continued)

Controls	brightness can be controlled through keyboard shortcuts (see <i>Dell Technology Guide</i> for more information.)
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Keyboard

Number of keys	61 (U.S. and Canada); 66 (Europe); 68 (Japan); 62 (Korea)
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Touch Pad

X/Y position resolution (graphics table mode)	240 cpi
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Touch Pad (Continued)

Size:	
Width	62 mm (2.44 in) sensor-active area
Height	32.5 mm (1.28 in) rectangle

Camera

Pixel	0.3 megapixel
Video resolution	640x480 at 30fps
Diagonal viewing angle	66°

Battery

Type	4-cell lithium ion
Depth	58.23 mm (2.30 in)
Height	21.5 mm (0.8 in)
Width	140.6 mm (5.54 in)

Battery (Continued)

Weight	0.23 kg (0.5 lb)
Voltage	14.8 VDC
Charge time (approximate):	4 hours (when computer is off)
Operating time	Battery operating time varies depending on operating conditions and can be significantly reduced under certain power-intensive conditions. <i>See Dell Technology Guide</i> for more information.
Life span (approximate)	300 discharge/charge cycles

Battery (Continued)

Temperature range:	
Operating	0° to 35°C (32° to 95°F)
Storage	-40° to 65°C (-40° to 149°F)
Coin-cell battery	CR-2032

AC Adapter

Input voltage	100–240 VAC
Input current (maximum)	1.0 A
Input frequency	50–60 Hz
Output current	1.58 A (maximum)
Output power	30 W
Rated output voltage	19.5 +/-1.0 VDC

Specifications

AC Adapter (Continued)

Dimensions:

30 W (APD):

Height	59.2 mm (2.33 in)
Width	34.0 mm (1.34 in)
Depth	85.0 mm (3.35in)
Weight (with cables)	0.15 kg (0.33 lb)

30 W (ESP):

Height	57.0 mm (2.24 in)
Width	40.0 mm (1.57 in)
Depth	80.0 mm (3.15in)
Weight (with cables)	0.18 kg (0.40 lb)

AC Adapter (Continued)

30 W (PI):

Height	70.0 mm (2.76 in)
Width	36.0 mm (1.42 in)
Depth	78.0 mm (3.07in)
Weight (with cables)	0.156 kg (0.34 lb)

Physical

Height	27.2 mm to 31.7 mm (1.07 in to 1.25 in)
Width	232 mm (9.1 in)
Depth	172 mm (6.80 in)

Weight (with 4-cell battery):

Configurable to less than	1.07 kg (2.36 lb)
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Computer Environment

Temperature range:

Operating	0° to 35°C (32° to 95°F)
Storage	-40° to 65°C (-40° to 149°F)

Relative humidity (maximum):

Operating	10% to 90% (noncondensing)
Storage	5% to 95% (noncondensing)

Maximum vibration (using a random-vibration spectrum that simulates user environment):

Operating	0.66 GRMS
Storage	1.3 GRMS

Maximum shock (measured with solid-state drive in head-parked position and a 2-ms half-sine pulse):

Computer Environment (Continued)

Operating	110 G
Storage	163 G
Altitude (maximum):	
Operating	-15.2 to 3048 m (-50 to 10,000 ft)
Storage	-15.2 to 10,668 m (-50 to 35,000 ft)
Airborne containment level	G2 or lower as defined by ISA-S71.04-1985

Troubleshooting Tips



CAUTION: Always unplug your computer from the electrical outlet before opening the cover.

Using the Hardware Troubleshooter

To start the Hardware Troubleshooter:

- 1 Click **Start**→**Help and Support**.
- 2 Type `hardware troubleshooter` in the search field and press <Enter> to start the search.
- 3 In the **Fix a Problem** section, click **Hardware Troubleshooter**.
- 4 In the **Hardware Troubleshooter** list, select the option that best describes the problem and click **Next** to follow the remaining troubleshooting steps.

Tips

- If a device does not work, ensure that the device is properly connected.
- If you added or removed a part before the problem started, review the installation procedures and ensure that the part is correctly installed.
- If an error message appears on the screen, write down the exact message. This message may help support personnel to diagnose and fix the problem(s).
- If an error message occurs in a program, see the program documentation.

Power Problems



CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see www.dell.com/regulatory_compliance.

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

- Reseat the power cable in the power connector on the back of the computer and the electrical outlet.
- Bypass power strips, power extension cables, and other power protection devices to verify that the computer turns on properly.
- Ensure that any power strips being used are plugged into an electrical outlet and are turned on.
- Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

- Ensure that the main power cable and front panel cable are securely connected to the system board.

IF THE POWER LIGHT IS SOLID WHITE AND THE COMPUTER IS NOT RESPONDING —

The display may not be responding. Press the power button until the computer turns off and then turn it back on. If the problem persists, see the *Dell Technology Guide* on your computer or on the Dell Support website at support.dell.com.

IF THE POWER LIGHT IS BLINKING

WHITE — The computer is in standby mode. Press a key on the keyboard, move the mouse, or press the power button to resume normal operation.

ELIMINATE INTERFERENCE — Some possible causes of interference are:

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

Memory Problems



CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see www.dell.com/regulatory_compliance.

IF YOU RECEIVE AN INSUFFICIENT MEMORY MESSAGE —

- Save and close any open files and exit any open programs you are not using to see if that resolves the problem.
- See the software documentation for minimum memory requirements. If necessary, install additional memory.
- Reseat the memory modules to ensure that your computer is successfully communicating with the memory.
- Run the Dell Diagnostics (see "Dell Diagnostics" on page 36).

IF YOU EXPERIENCE OTHER MEMORY PROBLEMS —

- Reseat the memory modules to ensure that your computer is successfully communicating with the memory.
- Ensure that you are following the memory installation guidelines.
- Ensure that the memory you are using is supported by your computer. For more information about the type of memory supported by your computer, see "Specifications" on page 23.
- Run the Dell Diagnostics (see "Dell Diagnostics" on page 36).

Lockups and Software Problems



NOTE: The procedures in this document were written for the Windows default view, so they may not apply if you set your Dell computer to the Windows Classic view.

The computer does not start up

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

A program stops responding

END THE PROGRAM —

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

A program crashes repeatedly



NOTE: Most software includes installation instructions in its documentation or on a floppy disk, CD, or DVD.

CHECK THE SOFTWARE

DOCUMENTATION — If necessary, uninstall and then reinstall the program.

A program is designed for an earlier Microsoft® Windows® operating system

RUN THE PROGRAM COMPATIBILITY WIZARD —

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

- 1 Click **Start**→**All Programs**→**Accessories**→**Program Compatibility Wizard**→**Next**.
- 2 Follow the instructions on the screen.

A solid blue screen appears

TURN THE COMPUTER OFF — If you are unable to get a response by pressing a key on your keyboard or moving your mouse, press and hold the power button for at least 6 seconds (until the computer turns off), and then restart your computer.

Other software problems


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

- Ensure that the program is compatible with the operating system installed on your computer.
- Ensure that your computer meets the minimum hardware requirements needed to run the software. See the software documentation for information.
- Ensure that the program is installed and configured properly.
- Verify that the device drivers do not conflict with the program.
- If necessary, uninstall and then reinstall the program.

Dell Technical Update Service

The Dell Technical Update service provides proactive e-mail notification of software and hardware updates for your computer. To enroll for the Dell Technical Update service, go to support.dell.com/technicalupdate.

Dell Support Utility

The Dell Support Utility provides self-support information, software updates, and health scans of your computing environment. Access the Dell Support Utility from the  icon on the taskbar, or from the **Start** menu.

If the Dell Support icon does not appear in your taskbar:

- 1 Click **Start**→**All Programs**→**Dell Support**→**Dell Support Settings**.
- 2 Ensure that the **Show icon on the taskbar** option is checked.

Troubleshooting Tips



NOTE: If the Dell Support Utility is not available from the **Start** menu, go to support.dell.com and download the software.

For more information about the Dell Support Utility, click the question mark (?) at the top of the **Dell™ Support** screen.

Dell Diagnostics



CAUTION: Before you begin any of the procedures in this section, read the safety information that shipped with your computer. For additional best practices information see www.dell.com/regulatory_compliance.

Starting the Dell Diagnostics From Your Solid-state Drive

- 1 Ensure that the computer is connected to a working electrical outlet.
- 2 Turn on (or restart) your computer.

- 3 When the **DELL™** logo appears, press <0> immediately. Select **Diagnostics** from the start menu and press <Enter>.



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



NOTE: If you see a message stating that no diagnostics utility partition has been found, run the Dell Diagnostics from the *Drivers and Utilities* media.

- 4 Press any key to start the Dell Diagnostics from the diagnostics utility partition on your solid-state drive, and follow the instructions on the screen.

Starting the Dell Diagnostics From the Dell *Drivers and Utilities Media*



NOTE: The Dell *Drivers and Utilities media* is optional and may not ship with your computer.



NOTE: Your computer may or may not have an optical drive. Use an external optical drive or any external storage device for the procedures that involve media.

- 1 Insert the *Drivers and Utilities media*.
- 2 Shut down and restart the computer.

When the DELL logo appears, press <0> immediately.



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



NOTE: The next steps change the boot sequence for one time only. On the next start-up, the computer starts according to the devices specified in the system setup program.

- 3 When the boot device list appears, highlight **CD/DVD/CD-RW** and press <Enter>.
- 4 Select the **Boot from CD-ROM** option from the menu that appears and press <Enter>.
- 5 Type **1** to start the CD menu and press <Enter> to proceed.
- 6 Select **Run the 32 Bit Dell Diagnostics** from the numbered list. If multiple versions are listed, select the version that is appropriate for your computer.
- 7 When the Dell Diagnostics **Main Menu** appears, select the test that you want to run, and follow the instructions on the screen.

Reinstalling Software

Drivers

Identifying Drivers

If you experience a problem with any device, identify whether the driver is the source of your problem and, if necessary, update the driver.

- 1 Click **Start**→**Control Panel**→**System**.
- 2 In the **System Properties** window, click the **Hardware** tab, and click **Device Manager**.

Scroll down the list of devices and check if any device has an exclamation point (a yellow circle with a [!]) on the device icon.

If an exclamation point is next to the device name, you may need to reinstall the driver or install a new driver (see "Reinstalling Drivers and Utilities" on page 39).

Reinstalling Drivers and Utilities



NOTICE: The Dell Support website at support.dell.com and your *Drivers and Utilities* media provide approved drivers for Dell™ computers. If you install drivers obtained from other sources, your computer might not work correctly.

Returning to a Previous Device Driver Version

- 1 Click **Start**→**My Computer**→**Properties**→**Hardware**→**Device Manager**.
- 2 Right-click the device for which the new driver was installed and click **Properties**.
- 3 Click the **Drivers** tab→**Roll Back Driver**.

If Device Driver Rollback does not resolve the problem, then use System Restore (see "Restoring Your Operating System" on page 41) to return your computer to the operating state that existed before you installed the new driver.

Using the Drivers and Utilities Media

If using Device Driver Rollback or System Restore (see "Restoring Your Operating System" on page 41) does not resolve the problem, reinstall the driver from your *Drivers and Utilities* media.

- 1 With the Windows desktop displayed, insert your *Drivers and Utilities* media.

If this is your first time to use the *Drivers and Utilities* media, go to step 2. If not, go to step 5.

- 2 When the *Drivers and Utilities* media installation program starts, follow the prompts on the screen.



NOTE: In most cases, the *Drivers and Utilities* program starts running automatically. If it does not, start

Windows Explorer, click your media drive directory to display the media contents, and then double-click the **autorcd.exe** file.

- 3 When the **InstallShield Wizard Complete** window appears, remove the *Drivers and Utilities* media and click **Finish** to restart the computer.
- 4 When you see the Windows desktop, reinsert the *Drivers and Utilities* media.
- 5 At the **Welcome Dell System Owner** screen, click **Next**.



NOTE: The *Drivers and Utilities* program displays drivers only for hardware that came installed in your computer. If you installed additional hardware, the drivers for the new hardware might not be displayed. If those drivers are not displayed, exit the *Drivers and Utilities* program. For drivers information, see the documentation that came with the device.

A message appears, stating that the *Drivers and Utilities* media is detecting hardware in your computer.

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

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

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

Manually Reinstalling Drivers

After extracting the driver files to your solid-state drive as described in the previous section:

- 1 Click **Start**→**My Computer**→**Properties**→**Hardware**→**Device Manager**.
- 2 Double-click the type of device for which you are installing the driver (for example, **Audio** or **Video**).

- 3 Double-click the name of the device for which you are installing the driver.
- 4 Click the **Driver** tab→**Update Driver**.
- 5 Click **Install from a list or specific location (Advanced)**→**Next**.
- 6 Click **Browse** and browse to the location to which you previously copied the driver files.
- 7 When the name of the appropriate driver appears, click the name of the driver→**OK**→**Next**.
- 8 Click **Finish** and restart your computer.

Restoring Your Operating System

You can restore your operating system in the following ways:

- Microsoft Windows System Restore returns your computer to an earlier operating state without affecting data files. Use System Restore as the first solution for restoring your operating system and preserving data files.

Reinstalling Software

- If you received the *Operating System* media with your computer, you can use it to restore your operating system. However, using the *Operating System* media also deletes all data on the solid-state drive. Use the media *only* if System Restore did not resolve your operating system problem.

Using Microsoft® Windows® System Restore

The Windows operating systems provide a System Restore option that allows you to return your computer to an earlier operating state (without affecting data files) if changes to the hardware, software, or other system settings have left the computer in an undesirable operating state. Any changes that System Restore makes to your computer are completely reversible.



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



NOTE: The procedures in this document were written for the Windows default view, so they may not apply if you set your Dell™ computer to the Windows Classic view.



NOTE: Set your Dell™ computer to the Windows Classic view.

Starting System Restore

- 1 Click **Start**→**All Programs**→**Accessories**→**System Tools**→**System Restore**.
- 2 Click either **Restore my computer to an earlier time** or **Create a restore point**.
- 3 Click **Next** and follow the remaining prompts on the screen.

In the event that System Restore did not resolve the issue, you may undo the last system restore (see "Undoing the Last System Restore" on page 43).

Undoing the Last System Restore



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

- 1 Click **Start**→**All Programs**→**Accessories**→**System Tools**→**System Restore**.
- 2 Click **Undo my last restoration** and click **Next**.

Using the Operating System Media

Before you Begin

If you are considering reinstalling the Windows operating system to correct a problem with a newly installed driver, first try using Windows Device Driver Rollback. See "Returning to a Previous Device Driver Version" on page 39. If Device Driver Rollback does not resolve the problem, use Microsoft Windows System Restore to return your operating system to the operating state it was in

before you installed the new device driver. See "Using Microsoft® Windows® System Restore" on page 42.



NOTICE: Before performing the installation, back up all data files on your primary solid-state drive. For conventional solid-state drive configurations, the primary solid-state drive is the first drive detected by the computer.

To reinstall Windows, you need the Dell™ *Operating System* media and the Dell *Drivers and Utilities* media.



NOTE: The Dell *Drivers and Utilities* media contains drivers that were installed during the assembly of the computer. Use the Dell *Drivers and Utilities* media to load any required drivers. Depending on the region from which you ordered your computer, or whether you requested the media, the Dell *Drivers and Utilities* media and Dell *Operating System* media may not ship with your computer.

Reinstalling Windows

The reinstallation process can take 1 to 2 hours to complete. After you reinstall the operating system, you must also reinstall the device drivers, virus protection program, and other software.

- 1 Save and close any open files and exit any open programs.
- 2 Insert the *Operating System* media.
- 3 If the `Install Windows` message appears, click **Exit**.
- 4 Restart the computer.

When the DELL logo appears, press <0> immediately.



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



NOTE: The next steps change the boot sequence for one time only. On the next start-up, the computer boots according to the devices specified in the system setup program.

- 5 When the boot device list appears, highlight **CD/DVD/CD-RW Drive** and press <Enter>.
- 6 Press any key to **Boot from CD-ROM**, and follow the instructions on the screen to complete the installation.

Finding Information



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



NOTE: Additional information may ship with your computer.

Document/Media/Label	Contents
Service Tag/Express Service Code The Service Tag/Express Service Code is located on your computer.	<ul style="list-style-type: none">• Use the Service Tag to identify your computer when you use support.dell.com or contact support.• Enter the Express Service Code to direct your call when contacting support <p>NOTE: Your Service Tag/Express Service Code is located on your computer.</p>

Document/Media/Label	Contents
Drivers and Utilities Media The <i>Drivers and Utilities</i> media is a CD or DVD that may have shipped with your computer.	<ul style="list-style-type: none">• A diagnostic program for your computer• Drivers for your computer• Drivers and documentation updates can be found at support.dell.com.• Notebook System Software (NSS)• Readme files <p>NOTE: Readme files may be included on your media to provide last-minute updates about technical changes to your computer or advanced technical-reference material for technicians or experienced users.</p>
Operating System Media The <i>Operating System</i> media is a CD or DVD that may have shipped with your computer.	Reinstall your operating system

Document/Media/Label	Contents
Safety, Regulatory, Warranty, and Support Documentation This type of information may have shipped with your computer. For additional regulatory information, see the Regulatory Compliance Homepage on www.dell.com at the following location: www.dell.com/regulatory_compliance .	<ul style="list-style-type: none">• Warranty information• Terms and Conditions of Sale (U.S. and Canada)• Safety instructions• Regulatory information• Ergonomics information• End User License Agreement
Service Manual The <i>Service Manual</i> for your computer can be found at support.dell.com .	<ul style="list-style-type: none">• How to remove and replace parts• How to configure system settings• How to troubleshoot and solve problems
Dell Technology Guide The <i>Dell Technology Guide</i> is available at support.dell.com .	<ul style="list-style-type: none">• About your operating system• Using and maintaining devices• Understanding technologies such as RAID, Internet, Bluetooth[®] wireless technology, e-mail, networking, and more.
Microsoft[®] Windows[®] License Label Your Microsoft Windows License is located on your computer.	<ul style="list-style-type: none">• Provides your operating system product key.

Getting Help

Obtaining Assistance



CAUTION: If you need to remove the computer cover, first disconnect the computer power and modem cables from all electrical outlets. Follow the safety instructions that shipped with your computer.

If you experience a problem with your computer, you can complete the following steps to diagnose and troubleshoot the problem:

- 1 See "Troubleshooting Tips" on page 31 for information and procedures that pertain to the problem your computer is experiencing.
- 2 See "Dell Diagnostics" on page 36 for procedures on how to run Dell Diagnostics.
- 3 Fill out the "Diagnostics Checklist" on page 53.

- 4 Use Dell's extensive suite of online services available at Dell Support (support.dell.com) for help with installation and troubleshooting procedures. See "Online Services" on page 50 for a more extensive list of Dell Support online.
- 5 If the preceding steps have not resolved the problem, see "Contacting Dell" on page 54.



NOTE: Call Dell Support from a telephone at or near the affected computer so that the support staff can assist you with any necessary procedures.



NOTE: Dell's Express Service Code system may not be available in all countries.

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

Getting Help

the **Dell Accessories** folder, double-click the **Express Service Code** icon, and follow the directions.

For instructions on using the Dell Support, see "Technical Support and Customer Service" on page 50.



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

Technical Support and Customer Service

Dell's support service is available to answer your questions about Dell™ hardware. Our support staff uses computer-based diagnostics to provide fast, accurate answers.

To contact Dell's support service, see "Before You Call" on page 52, and then see the contact information for your region or go to support.dell.com.

Online Services

You can learn about Dell products and services at the following websites:

www.dell.com

www.dell.com/ap (Asian/Pacific countries only)

www.dell.com/jp (Japan only)

www.euro.dell.com (Europe only)

www.dell.com/la (Latin American and Caribbean countries)

www.dell.ca (Canada only)

You can access Dell Support through the following websites and e-mail addresses:

- Dell Support websites:
support.dell.com
support.jp.dell.com (Japan only)
support.euro.dell.com (Europe only)

- Dell Support e-mail addresses:
mobile_support@us.dell.com
support@us.dell.com
suporte@dell.com (Brazil)
la-techsupport@dell.com (Latin America and Caribbean countries only)
apsupport@dell.com (Asian/Pacific countries only)
- Dell Marketing and Sales e-mail addresses:
apmarketing@dell.com (Asian/Pacific countries only)
sales_canada@dell.com (Canada only)
- Anonymous file transfer protocol (FTP):
<ftp.dell.com> – log in as user `anonymous`, and use your e-mail address as your password

AutoTech Service

Dell's automated support service—AutoTech—provides recorded answers to the questions most frequently asked by Dell customers about their laptop and desktop computers.

When you call AutoTech, use your touch-tone telephone to select the subjects that correspond to your questions. For the telephone number to call for your region, see "Contacting Dell" on page 54.

Automated Order-Status Service

To check on the status of any Dell products that you have ordered, you can go to support.dell.com, or you can call the automated order-status service. A recording prompts you for the information needed to locate and report on your order. For the telephone number to call for your region, see "Contacting Dell" on page 54.

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 available when you call. For the telephone number to call for your region, see "Contacting Dell" on page 54.

Product Information

If you need information about additional products available from Dell, or if you would like to place an order, visit the Dell website at www.dell.com. For the telephone number to call for your region or to speak to a sales specialist, see "Contacting Dell" on page 54.

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. You may also be asked for your Service Tag (located on the back or bottom of your computer).

Remember to fill out the Diagnostics Checklist (see "Diagnostics Checklist" on page 53). If possible, turn on your computer before you call Dell for 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 itself. Ensure that the computer documentation is available.



CAUTION: Before working inside your computer, follow the safety instructions in the documentation that shipped with your computer.

Diagnostics Checklist

Name:

Date:

Address:

Phone number:

Service Tag (bar code on the back or bottom of the computer):

Express Service Code:

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

Operating system and version:

Devices:

Expansion cards:

Are you connected to a network? Yes No

Network, version, and network adapter:

Programs and versions:

See 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:

Contacting Dell



NOTE: If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

- 1** Visit support.dell.com, and verify your country or region in the **Choose A Country/Region** drop-down menu at the bottom of the page.
- 2** Click **Contact Us** on the left side of the page, and select the appropriate service or support link based on your need.
- 3** Choose the method of contacting Dell that is convenient for you.

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