

# Dell Desktop and Notebooks User's Guide



# Notes, Cautions, and Warnings

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

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

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

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# Introduction

This User's Guide is developed to help the users to efficiently use Dell desktops and notebooks.

The following information is covered in this document:

1. Battery (for notebooks only)
2. Display (for notebooks only)
3. Connecting to a network
4. Connecting to an external device
5. Drives and ports
6. Power management
7. Keyboard and touchpad
8. Security
9. Power management
10. Software and applications
11. Troubleshooting

## 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 be shipped with your computer.

## Using the Dell Support Site

Visit the Dell Support website at [dell.com/support](http://dell.com/support).

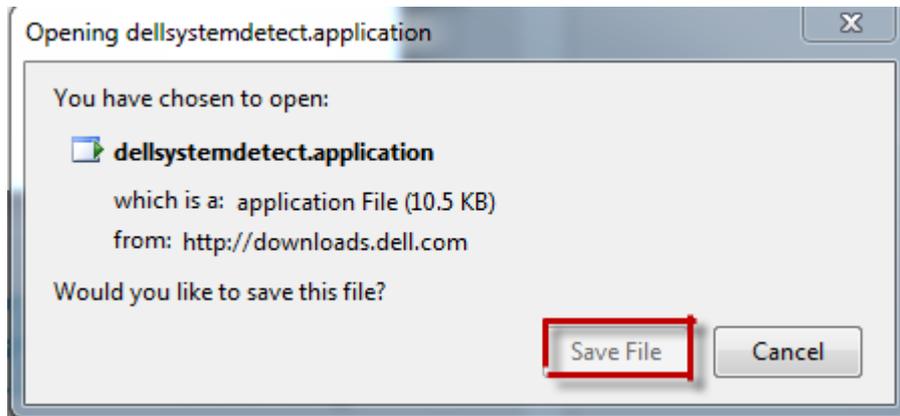
 **NOTE:** The website may not be available in all regions and the user interface may vary depending on your selections.

## Finding the Product Using Service Tag

You can enter your service tag in the **Enter Your Service Tag To Get Started** text box and click **Submit**. After you enter your product service tag and click Submit, the support page for your product appears. You can view all relevant information for your product, such as Warranty, Drivers & Downloads, Parts & Upgrades, Manuals & Documentation, and so on.

You can also select  to find your product information. If you select **Detect Service Tag** option, the **May we automatically detect your Service Tag** pop-up appears for your confirmation. Read the terms and conditions, and select . After you select **Yes, I agree**, the Service Tag detection will be in process, and after a few minutes, the **Download and install the Dell**

**System Detect application to proceed** pop-up appears. Read the terms and conditions, and select **Yes, I agree** . Save the **dellssystemdetect.application** file to complete the Service-Tag detection.



 **NOTE:** Only after a successful installation will the application identify the Service Tag of the computer.

## Selecting the Product

If you do not have the Service Tag, you can visit the Product Selection page, [dell.com/support/drivers/us/en/19/drivershome/showproductselector?fkey=drivers\\_ps](http://dell.com/support/drivers/us/en/19/drivershome/showproductselector?fkey=drivers_ps) and select one of the following options:

- **Automatically detect my Service Tag for me**
- **Choose from My Products and Services List** - You have to sign in with your email address and password to continue further. To register with a new account, visit [ecomm.dell.com/dellstore/myaccount/signup.aspx?cs=19](http://ecomm.dell.com/dellstore/myaccount/signup.aspx?cs=19)
- **Choose from a list of all Dell Products**

After selecting the option, click **Continue**

## Choosing the Product

You can choose the Dell products that you wish to select. The product categories are:

- **Desktops and All-in-Ones**
- **Laptops**
- **Servers, Storage & Networking**
- **Printers**
- **Software & Security**
- **Monitors & Projectors**
- **Tablets & Mobile Devices**
- **Electronics & Accessories**

What Are You Looking For?	Find It Here
<ul style="list-style-type: none"><li>• A diagnostic program for my computer</li></ul>	<b>Resource Media</b>

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## What Are You Looking For?

## Find It Here

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- Drivers for my computer

 **NOTE:** The Resource media may be optional and may not ship with your computer.

Drivers are already installed on your computer. You can use the media to re-install drivers (see "[Reinstalling Drivers](#)"). To run Dell Diagnostics (see "[Dell Diagnostics](#)"), or to access your documentation. Read-me files may be included in your media to provide last-minute updates about technical changes to your computer or advanced technical reference material for technicians or experienced users.

 **NOTE:** Drivers and documentation updates can be found at [dell.com/support](http://dell.com/support)



- My device documentation
- How to set up my computer
- Basic troubleshooting information
- How to run the Dell Diagnostics

### Setup and Features Information Tech Sheet / Quick Start Guide

This document includes a front and back view of your computer, along with basic setup information.

 **NOTE:** This document may be optional and may not ship with your computer.

 **NOTE:** This document is available as a PDF at [dell.com/support](http://dell.com/support)

- Warranty information
- Terms and Conditions (U.S. only)
- Safety instructions
- Regulatory information
- Ergonomics information
- End User License Agreement
  
- Service Tag and Express Service Code
- Microsoft Windows License Label

### Safety, Environmental, Regulatory Information Guide

[dell.com/regulatory\\_compliance](http://dell.com/regulatory_compliance)

### Service Tag and Microsoft Windows License

These labels are located on your computer. Enter the Express Service Code to direct your call when contacting Dell technical support.



- Solutions — Troubleshooting hints and tips, articles from technicians, online courses, and frequently asked questions.
- Community — Online discussion with other Dell customers.
- Upgrades — Upgrade information for components, such as memory, the hard drive, and the operating system.
- Customer Care — Contact information, service call and order status, warranty, and repair information.
- Service and support — Service call status and support history, service contract, online discussions with technical support.
- Dell Technical Update Service — Proactive e-mail notification of software and hardware updates for your computer.
- Reference — Computer documentation, details on my computer configuration, product specifications, and white papers.
- Downloads — Certified drivers, patches, and software updates.
- Dell System Software (DSS)— If you reinstall the operating system for your computer, you should also reinstall the DSS utility. DSS provides critical updates for your operating system and support for Dell 3.5-inch USB floppy drives, Intel processors, optical drives, and USB devices. DSS is necessary for correct operation of your Dell computer. The software automatically detects your computer and operating system and installs the updates appropriate for your configuration.

Dell System Software is available on the support site, under the system utilities section. It usually will be named Dell-Utility and applies to Software Release Vehicle (SRV), Software (SW), Dell Support System (DSS).

- How to use Windows 7
- How to work with programs and files
- How to personalize my desktop
  
- How to reinstall my operating system

Windows Help and Support Center

1. Click **Start** or  → **Help and Support**.
2. Type a word or phrase that describes your problem and search.
3. Click the topic that describes your problem.
4. Follow the instructions on the screen.

Operating System Media



**NOTE:** The Operating System media may be optional and may not ship with your computer.

The operating system is already installed on your computer. To reinstall your operating system, use the Operating System media (see *Reinstalling Windows*)

After you reinstall your operating system, use the Resources media to reinstall drivers for the devices that came with your computer. Your operating system product key label is located on the base cover of your computer.

## Documents Shipped with Your Computer and Available Online

### Quick Start Guide

This document includes the following information:

- Windows 8 basic setup instructions
- Explore resources
- Features of the computer with callouts

### Setup and Features Information Tech Sheet (SFITS)

This document includes the following information:

- Front and back view of the computer
- Basic quick setup
- Basic Specifications

The SFITS is an optional document that is shipped with the computer and is also available on the support site at: [www.dell.com/support](http://www.dell.com/support)

### Safety and Regulatory Documents

These documents include the following information:

- Warranty information
- Terms and Conditions (U.S. only)
- Safety instructions
- Regulatory information
- Ergonomics information
- End User License Agreement

These documents are shipped with every computer.

## Owner's Manual

This document includes the following information:

- Removing and Installing Components
- BIOS/System Setup
- Diagnostics and Troubleshooting
- Technical Specifications
- Contacting Dell

The document is only available online at [www.dell.com/support](http://www.dell.com/support)

## 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 [dell.com](http://dell.com). For the telephone number to call to speak to a sales specialist, see the contact numbers for your region from [dell.com/support](http://dell.com/support).

## My Dell Support Center

My Dell Support Center is a one-stop control panel for system tools and diagnostics. It provides access to online tools, Dell technical support links, Dell customer support channels, device manager, network connections, system alerts, performance improvement offers, warranty and system information, and links to other Dell tools and diagnostic services.

To download or upgrade to the latest version of My Dell Support Center, go to [dell.com/support/contents/us/en/19/category/Product-Support/Self-support-Knowledgebase/software-and-downloads](http://dell.com/support/contents/us/en/19/category/Product-Support/Self-support-Knowledgebase/software-and-downloads) Website.

 **NOTE:** It is recommended to download the software from the Internet when prompted during the installation of My Dell Support Center .

Touch or click this tile on the Start screen to launch My Dell Support Center.

My Dell Support Center home page displays your computer's model number, Service Tag, Express Service Code, warranty status, and alerts on improving the performance of your computer. The home page also provides links to access:

**PC Checkup:** Run hardware diagnostics, see which program occupies the maximum memory on your hard drive, and track the changes made to your computer each day.

### PC Checkup Utilities

- **Drive Space Manager:** Manage your hard drive using a visual representation of space consumed by each type of file.
- **Performance and Configuration History:** Monitor system events and changes over time. This utility displays all hardware scans, tests, system changes, critical events and restoration points on the day they occurred.
  - **Detailed System Information:** View detailed information about your hardware and operating system configurations; access copies of your service contracts, warranty information, and warranty-renewal options.

- **Get Help:** View Dell Technical Support options, Customer Support, Tours and Training, Online Tools, Owner's Manual, Warranty Information, FAQs, and so on.
- **Backup and Recovery:** Create recovery media, launch recovery tool, and online file backup.
- **System Performance Improvement Offers:** Acquire software and hardware solutions that will help improve your system performance.

For more information about My Dell Support Center and to download and install the available support tools, go to [dell.com/dellsupportcenter](http://dell.com/dellsupportcenter)

# Using The Battery

## Battery Performance

 **NOTE:** For information about the Dell warranty for your computer, see the paper warranty document that shipped with your computer. You can also verify the warranty details from the Dell support site after you enter the Service Tag or the Express Service Code.

For optimal computer performance and to help preserve BIOS settings, operate your Dell computer with the main battery installed at all times. One battery is supplied as standard equipment in the battery bay.

 **NOTE:** Connect your battery using the AC adapter, to an electrical outlet, when you use your computer for the first time. For best results, operate the computer with the AC adapter until the battery is fully charged.

 **NOTE:** Battery operating time (the time the battery can hold a charge) decreases over time. Depending on how often the battery is used and the conditions under which it is used, you may need to purchase a new battery during the life of your computer.

Battery operating time varies depending on the battery type and usage.

Operating time is significantly reduced when you perform operations including, but not limited to, the following:

- Using optical drives.
- Using wireless communications devices, PC Cards, ExpressCards, media memory cards, or USB devices.
- Using high-brightness display settings, 3D screen savers, or other power-intensive programs such as 3D games.
- Running the computer in maximum performance mode.

 **NOTE:** Dell recommends you connect your computer to an electrical outlet when writing to an optical drive.

You can check the battery charge before you insert the battery into the computer. You can also set power options to alert you when the battery charge is low.

 **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 lithium-ion battery is designed to work with your Dell computer. Do not use a battery from any other manufacturers in your computer.

 **CAUTION:** Do not dispose batteries with household waste. When your battery no longer holds a charge, call your local waste disposal or environmental agency for advice on disposing off a lithium-ion battery.

 **CAUTION:** Misuse of the battery may increase the risk of fire or chemical burn. Do not puncture, incinerate, disassemble, or expose the battery to temperatures above 65 °C (149 °F). Keep the battery away from children. Handle damaged or leaking batteries with extreme care. Damaged batteries may leak and cause personal injury or equipment damage.

## Checking the Battery Charge

The Dell ControlPoint Manager Battery Meter, the Microsoft Windows **Power Meter** window and the battery meter icon, the battery charge gauge and health gauge, and the low-battery warning provide information on the battery charge.

## Dell Battery Information Utility

 **NOTE:** The battery operating time (the time the battery can hold a charge) decreases over time. Depending on how often the battery is used, and the conditions under which it is used, you may need to purchase a new battery during the life of your computer.

The Dell Battery Information Utility denotes the health of your primary and secondary (if installed) battery. Green denotes that there are no problems, while yellow and red requires your attention.

This screen also gives you more information like, if the battery installed is a Dell-branded battery, the battery manufacturer, and the battery's serial number.

 **NOTE:** If the battery health is rated Fair or Poor, a link to 'order a new battery' will appear.

## Conserving Battery Power

Perform the following actions to conserve battery power:

- Connect the computer to an electrical outlet when possible because battery life is largely determined by the number of times the battery is used and recharged.
- Place the computer in standby mode or hibernate mode when you leave the computer unattended for long periods of time.
- Use the Power Management Wizard to select options to optimize your computer's power usage. These options can also be set to change when you press the power button, close the display, or press <Fn><Esc>

## Storing a Battery

Remove the battery when you store your computer for an extended period of time. A battery discharges during prolonged storage. After a long storage period, recharge the battery fully before you use it.

If the computer is connected to an electrical outlet, the battery indicator light operates as follows:

- Solid green: The battery is charging.
- Flashing green: The battery is almost fully charged.
- Off: The battery is adequately charged (or external power is not available to charge the battery).

If the computer is running on a battery, the battery indicator light operates as follows:

- Off: The battery is adequately charged (or the computer is turned off).
- Flashing orange: The battery charge is low.
- Solid orange: The battery charge is critically low.

# Using the Display

## Adjusting Brightness

When a Dell computer is running on battery power, you can conserve power by setting the display brightness to the lowest comfortable setting by pressing <Fn> and the up- or down-arrow key on the keyboard.

 **NOTE:** Brightness key combinations only affect the display on your portable computer, not monitors or projectors that you attach to your portable computer or docking device. If your computer is connected to an external monitor and you try to change the brightness level, the Brightness Meter may appear, but the brightness level on the external device does not change.

## Switching the Image From Computer Display to a Projector

### Adjusting Brightness

When you start the computer with an external device (such as an external monitor or projector) attached and turned on, the image may appear on either the computer display or the external device.

Press <Fn><F8> to switch the video image between the display only, the external device only, or the display and the external device simultaneously.

## Making Images and Text Look Bigger or Sharper on the Screen: Setting Display Resolution and Refresh Rate

 **NOTE:** If you change the display resolution from the current settings, the image may appear blurry or text may be hard to read if you change the resolution to one not supported by your computer and display. Before you change any of the display settings, make a note of the current settings so you can change back to the previous settings if you need to.

You can enhance the legibility of text and change the appearance of images on the screen by adjusting display resolution. As you increase resolution, items appear smaller on the screen. In contrast, lower resolution causes text and images to appear larger and can benefit people with vision impairments. To display a program at a specific resolution, both the video card and the display must support the program, and the necessary video drivers must be installed.

 **NOTE:** Use only the Dell-installed video drivers, which are designed to offer the best performance with your Dell-installed operating system.

If you choose a resolution or color palette that is higher than what the display supports, the settings adjust automatically to the closest supported values.

To set the display resolution and refresh rate for your display, perform the steps in the following section that corresponds to the operating system your computer is using.

## Windows 7

1. Click the **Start** button > **Control Panel** > **Display**.
2. In the **Make it easier to read what's on your screen**, select **Smaller, Medium, or Larger**.

Windows 7 also provides a Magnifier tool that temporarily enlarges just a part of the screen.

If the video resolution setting is higher than that supported by the display, the computer enters the pan mode. In pan mode, the entire video image cannot be displayed at one time, and the taskbar that usually appears at the bottom of the desktop may no longer be visible. To view the parts of the video image that are not visible, you can use the touchpad or trackstick to "pan" (or move) the image up, down, left, and right.

## Windows 8

1. You can find more settings on the **Ease of Access** page. If you use a touch-enabled device, swipe in from the right edge of the screen, and then tap **Search**. If you are using a mouse, point to the upper-right corner of the screen, move the mouse pointer down, and then click **Search**.
2. Enter **Ease of Access** in the search box, tap or click **Settings**, and then tap or click **Ease of Access** in the results.
3. Choose **Make everything on your screen bigger**. If things on your screen are too small to read, you can use this setting to magnify everything on the screen.

# Using the Ambient-Light Sensor

## Overview

The ambient-light sensor is located on the front of the computer display. The sensor detects available environmental light and automatically increases or decreases the display backlighting to compensate for low-light and high-light environments.

You can enable or disable the ambient-light sensor feature by pressing the <Fn> and the left-arrow key combination.

 **NOTE:** Do not cover the ambient-light sensor with any adhesive labels. If covered up, the sensor—when enabled—automatically sets the display brightness to the minimum level.

The ambient-light sensor is disabled when your computer is shipped to you. If you enable the sensor and then use any of the display brightness key combinations, the sensor is disabled and the display brightness is increased or decreased accordingly.

Dell QuickSet is a utility that allows you to enable or disable the ambient-light sensor feature. You can also adjust maximum and minimum brightness settings that are activated when you enable the ambient-light sensor feature. For more information about QuickSet, right-click the QuickSet icon in the taskbar, and click **Help**.

 **NOTE:** Rebooting the computer returns the ambient-light sensor to the setting (either enabled or disabled) as it was before it was adjusted.



**NOTE:** The ambient-light sensor adjusts the display backlighting on your portable computer only. It does not control the brightness on any external monitors or projectors.

# Playing Multimedia

## Adjusting the Volume

Most speakers have a volume control, but you can also control the overall level of sound on your computer using Windows. The quickest way to change the volume for your computer speakers is to click the Speakers button in the notification area of the taskbar, and then move the sliders up or down to increase or decrease the speaker volume.

After you open the Speaker volume, click Mixer if you want to separately control the volume of your speakers and other sound devices or programs using the Volume Mixer

## Adjusting the Display

### Microsoft Windows 7

Microsoft Windows 7 provides the ability to scale the desktop to one of three pre-defined settings. To access the display scaling:

- Right-click over the desktop and select Screen resolution.
- You can modify the resolution, orientation and multiple displays value using the drop-down menu.

### Microsoft Windows 8

Microsoft Windows 8 provides the ability to scale the desktop to one of three pre-defined settings. To access the display scaling:

- Right-click over the desktop and select Screen resolution.
- Select **Make text and other items larger or smaller** from the bottom of the display settings.

## Connecting to External Storage Devices

There are three main types of portable storage devices: portable hard-drives, desktop drives, and USB drives. To connect the external storage device to the computer, insert the USB connector straight into a USB port.

You can now transfer data from the computer to the external storage device.

# Connecting to a Network

## Connecting a Network or Broadband Modem Cable

Before you connect your computer to a network, the computer must have a network adapter installed and a network cable (RJ-45) connected to it.

1. Connect the network cable to the network adapter connector at the back of your computer.
  -  **NOTE:** Insert the cable connector until it clicks into place, and then gently pull the cable to ensure that it is securely attached.
2. Connect the other end of the network cable to a network connection device or a network wall connector.
  -  **NOTE:** Do not use a network cable with a telephone wall connector.

## Connecting to a Wireless Local Area Network (WLAN)

Before you can set up a WLAN Internet connection, you need:

- High-speed (broadband) Internet access (such as cable or DSL)
- A broadband modem that is connected and working
- A wireless router or access point
  -  **NOTE:** Please check if your modem is wireless ready. If yes, you do not require a wireless router.
- A wireless network card for each computer that you want to connect to your WLAN
- A network cable with the network (RJ-45) connector
- Contact your Internet Service provider for setting up the wireless network or follow the instructions provided by the wireless router manufacturer

Follow the steps below to connect to a wireless network:

### Windows 7

When you turn on your computer and a network (for which your computer is not configured) is detected in the area, a pop-up may appear near the network icon in the notification area (in the lower-right corner of the Windows desktop).

1. Click **Start** , type *network* in the search box, and then click **Network and Sharing Center** → **Set up a new connection or network** → **Connect to the Internet**. The **Connect to the Internet** window appears.
2. Follow the instructions on the screen to complete the setup.

### Windows 8

1. Point to the upper-right edge of the screen to bring the charms menu and click **Search**.
2. In the search box, type *network* and then click **Network and Sharing Center** → **Set up a new connection or network** → **Connect to the Internet**. The **Connect to the Internet** window appears.

 **NOTE:** If you select a secured network, you must enter a WEP or WPA key when prompted. Network security settings are unique to your network. Dell cannot provide this information.

 **NOTE:** Your computer can take up to 1 minute to connect to the network.

## Setting Up Local Area Network (LAN) and Wireless Local Area Network (WLAN)

### Setting Up a Local Area Network (LAN)

The following steps are general guidelines for setting up a LAN:

- Cable or DSL broadband modem with Internet access established.
- A router connects computers and peripherals on the network to each other, allowing the computers to share Internet access provided by the broadband modem. A router has multiple ports, each supporting one computer or one peripheral such as a printer.
- Install any software required for your router. Your router may have been shipped with installation media, which usually contains installation and troubleshooting information.
- Install the required software according to the instructions provided by the router manufacturer.
- Use either CAT 5 or CAT 5e network cables.
- Network interface card

### Setting Up a Wireless Local Area Network (WLAN)

The following are general requirements for setting up a WLAN:

- Broadband Internet connection (such as cable or DSL)
- A broadband modem
- A wireless router
- A wireless network adapter for each computer that you want to connect to your WLAN
- A network cable with network (RJ-45) connectors

To set up WLAN in Windows 7 and Windows Vista:

1. Set up your wireless router. See the documentation that shipped with the wireless router.
2. Click **Start**, type *network* in the search box, and then click **Network and Sharing Center** → **Set up a new connection or network** → **Connect to the Internet**.
3. The Connect to the Internet window appears.
4. Follow the instructions on the screen.

To set up WLAN in Windows XP:

1. Set up your wireless router. See the documentation that shipped with the wireless router.
2. Click **Start**, and then click **Control Panel**.
3. In windows classic view, double-click **Network Connections**.
4. Click **Create a new connection**.

5. Follow the instructions on the screen.

## Connecting to a WLAN

 **NOTE:** Before you connect to a WLAN, ensure that you have followed the instructions in "[Setting Up Local Area Network \(LAN\) and Wireless Local Area Network \(WLAN\)](#)"

 **NOTE:** The following networking instructions do not apply to internal cards with Bluetooth wireless technology or cellular products.

This section provides general procedures for connecting to a network using wireless technology. Specific network names and configuration details vary. See "[Setting Up Local Area Network \(LAN\) and Wireless Local Area Network \(WLAN\)](#)" for more information about how to prepare for connecting your computer to a WLAN.

Your wireless network card requires specific software and drivers for connecting to a network. The software is already installed.

 **NOTE:** If the software is removed or corrupted, follow the instructions in the user documentation for your wireless network card. Verify the type of wireless network card installed in your computer and then search for that name on the Dell Support website at [www.dell.com/support](http://www.dell.com/support).

## Dell QuickSet Utilities/Dell ControlPoint

The Dell QuickSet Utilities/ Dell ControlPoint are a suite of software applications that provide enhanced functionality to a Dell portable computer. The software provides easy access to a number of functions that would normally require several steps. Some of the features include:

- Brightness and Audio Controls through Keyboard Keystrokes
- Power Management Controls
- Battery Information
- Icon Resizing
- Wireless Enable/Disable

## Mobile Broadband or Wireless Wide Area Network (WWAN)

### Mobile Broadband or Wireless Wide Area Network (WWAN)

Much like a WLAN, a Mobile Broadband network (also known as a WWAN) is a series of interconnected computers that communicate with each other through wireless technology. However, a Mobile Broadband network uses cellular technology and therefore provides Internet access in the same varied locations from which cellular telephone service is available. Your computer can maintain the Mobile Broadband network connection regardless of its physical location, as long as the computer remains in the service area of your cellular service provider.

 **NOTE:** Even if you are able to make a call from your cellular phone in a specific geographical location, that location may not necessarily be within a cellular-data coverage zone.

### What You Need to Establish a Mobile Broadband Network Connection

 **NOTE:** Depending on your computer, you can use either a Mobile Broadband ExpressCard or Mini-Card, but not both, to establish a Mobile Broadband network connection.

To set up a Mobile Broadband network connection, you need:

- A Mobile Broadband ExpressCard or Mini-Card (depending on your computer's configuration).
- An activated Mobile Broadband ExpressCard or activated Subscriber Identity Module (SIM) for your service provider.
- The Dell Mobile Broadband Card Utility (already installed on your computer if you purchased the card when you purchased your computer, or on the CD that accompanied your card if purchased separately from your computer).

If the utility is corrupted or deleted from your computer, see the *Dell Mobile Broadband Card Utility user's guide* for instructions. The user's guide is available through the Windows Help and Support Center (or on the CD that accompanied your card if you purchased it separately from your computer). To access the Help and Support Center, see *Windows Help and Support Center*.

# Connect to a Device

## Connecting the Computer to a Television (TV)

 **NOTE:** To connect your computer to a TV, your computer needs to have an output port that matches one of the input ports on your TV, such as VGA, DVI, or HDMI ports.

After you have the right cable, follow these steps to connect your computer to your TV:

1. Turn off your computer and position it within easy reach of your TV. Disconnect the monitor (for desktops), but leave the mouse and keyboard connected.
2. Connect the appropriate video cable from your computer's output to your TV.
3. Turn on your TV and set it to the input that matches the output on your computer. You can refer to the user's guide included with your TV for instructions on how to do this.

 **NOTE:** For laptop press <Fn><F8> to configure the display profile.

4. Turn on your computer.

You should see Windows displayed on your TV. If the screen looks stretched, or part of the screen seems cut off, you probably need to adjust the screen resolution in Windows. If you cannot see Windows on your TV, you might need to re-connect the computer to your monitor and adjust the screen resolution before you connect to your TV.

 **NOTE:** If your computer does not support the type of video connection you need, then you must install a new video card that has the right connection.

## Enabling the Display Settings for a Television (TV)

### Enabling TV Display Settings:

 **NOTE:** Connect your TV to the video card's TV-out port before starting your computer.

To enable TV Display settings, follow these steps:

1. Connect the video cable(s) from the computer to the TV.
2. Start your computer.
3. Click **Start**, then select **Settings**, then **Control Panel**. The Control Panel window opens.
4. Double-click the **Display** icon. The Display Properties window opens.
5. Click your video card's TV tab (such as the **Output Device** tab) or if you cannot see your video card's TV tab, click the **Settings** tab, click **Advanced**, then click the TV tab.
6. Send the video signal to your TV by clicking **Enable output to TV**. Different brands of video cards may have slightly different wording of this option, such as **Output Device: TV**.
7. Click **OK**. The video signal is sent to your TV, your computer monitor goes blank, and a window opens asking if you want to keep this setting.

8. Click **Yes**.

## Using An External Monitor

### Overview

You can attach your computer to an external monitor or projector and use it as an extension of your display (known as "dual independent display" or "extended desktop" mode). Extended desktop will allow you to use both screens independently and drag objects from one screen to the other, effectively doubling the amount of viewable work space. To use extended desktop mode, perform the steps in the following section that corresponds to the operating system your computer is using.

#### Windows 7

 **NOTE:** Please set up your computer before using this document.

Go to the Desktop Screen, right-click on the desktop and choose **screen resolution**. Click on **Detect** and choose the extra display as an **Extended display** or **Duplicate** by clicking on the **Multiple displays** drop box. Click on **apply** and then **OK**.

#### Windows 8

 **NOTE:** Please set up your computer before using this document.

Open the Devices charm on the right-side of your desktop, and then tap or click **Second screen**. Tap or click **Duplicate** if you want the same content on both your PC and your TV, or tap or click **Extend**.

## Using an External Monitor as Your Primary Display: Swapping Primary and Secondary Displays

### Overview

To use extended desktop/swap the displays, perform the steps in the following section that corresponds to the operating system your computer is using.

#### Windows 7

 **NOTE:** Please set up your computer before using this document.

Go to the Desktop Screen. Right click on the desktop and choose **screen resolution**. Select the display that you want as Primary display in the **Display** drop box and check the option **Make this my main display**. Click on **apply** and then **OK**.

#### Windows 8

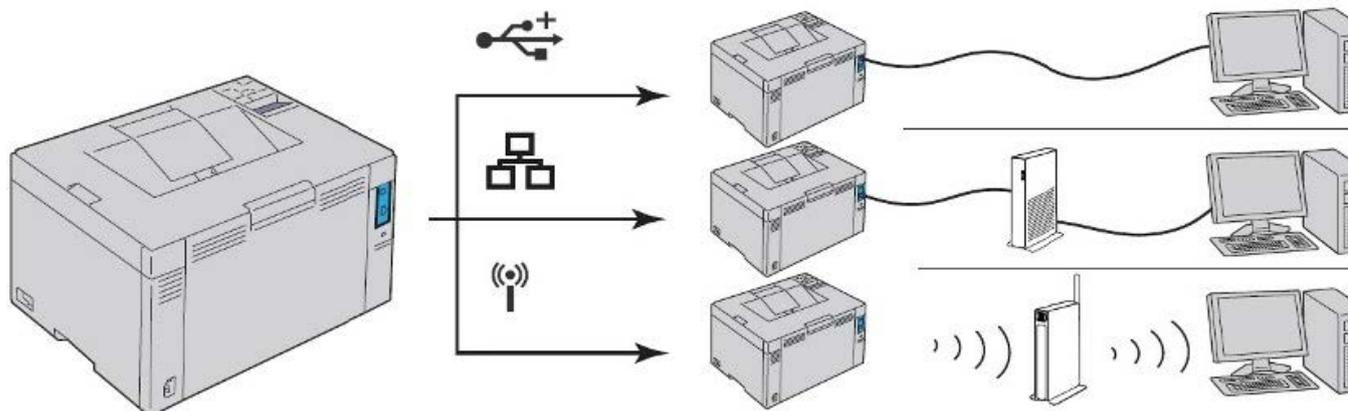
 **NOTE:** Please set up your computer before using this document.

Open the **Devices charm** on the right-side of your desktop, and then tap or click **Second screen**. Tap or click **PC screen only**, where the second screen is simply ignored and only the computer's primary display is used. Tap or click **Second screen only**, where the main PC display (on a laptop or tablet, the display that's built into the device) will be disabled and only the secondary screen is used. For more advanced

multi-monitor configuration, you will need to access the **Screen Resolution** control panel, which is similar to that in Windows 7.

## Setting Up Your Printer

You can connect one or more printers to your computer and also add one or more computers to your printer.



## Adding a Printer

### Windows 7

1. In Windows 7, click Start  → **Devices and Printers**.
2. Click **Add a Printer**. The Add Printer Wizard appears.
3. Follow the instructions in the Add Printer Wizard.

### Windows 8

1. Click on **Desktop Icon** → **Click on Computer** → **Open Control Panel** → **Device and Printers**.
2. Click **Add a Printer**. The Add Printer Wizard appears.
3. Follow the instructions in the Add Printer Wizard.

## Wireless Printing

Wireless printing is a cost-effective way to easily and flexibly print wherever you are. Virtually any printing application can go wireless – especially situations where cabling is either inconvenient or impossible. You do not need to be in the same room as a Wi-Fi printer in order to print. It's easy to print from multiple computers, and with tablet and smartphone apps available for many brands of printer you can also print wirelessly from these devices, too.

 **NOTE:** Before you can print, you must connect the printer to your home network. To do this you need a wireless router and a Wi-Fi printer.

## Wi-Fi setup using Wireless Protected Setup (WPS)

If your printer and router are both compatible with WPS there should be an option in the printer's network menu to use this method of setup. If so, when prompted, press the WPS button on your router and the corresponding button on the printer to wirelessly connect the printer to the network.

## Connect using a network key or PIN

If your printer does not have WPS, you will probably have to enter a 'network key' – a series of numbers and letters – into the printer using the function buttons and screen on the printer in order to establish the connection between your printer and router.

## Connecting a device using Bluetooth

Before you can add a Bluetooth-enabled device to your computer, you must do two things to make sure your computer and the device are ready to connect:

1. Add a Bluetooth adapter to your computer if it does not already have one. You can do this by plugging the adapter into a USB port.
2. Set up the Bluetooth-enabled device so that your computer can find it.

Once you've verified that a Bluetooth adapter is installed on your computer, and the device you want to connect with is discoverable, you can add most Bluetooth-enabled devices to your computer. To add the device follow the steps:

1. Open **Devices and Printers** by clicking the **Start** button , and on the start menu, click **Devices and Printers**.
2. Click **Add a device**, and then follow the instructions.
3. Click on the name of the Bluetooth-enabled device you want to add to your computer, and then click **Next**. If you do not see the device you want to add, make sure the Bluetooth device is turned on and discoverable. If you just turned on the device, it may take Windows several seconds to detect it.

## Drives and Ports

Depending on your computer model, the location of the drives and ports and their location may differ. Some ports may be offered only with Notebooks. For specific information on the ports available on your computer, see the *Quick Start Guide / Setup Features and Information Tech Sheet / Owner's Manual* available on <http://www.dell.com/support/>.

### DisplayPorts / Mini-DisplayPorts

DisplayPort is a digital display interface that defines a royalty-free, digital audio/video interconnect. DisplayPort allows you to connect a computer to a display or home-theater system.

Mini-DisplayPort is a smaller version of the DisplayPort. Dell provides Mini-DisplayPorts in place of DisplayPorts on the Dell Inspiron Mini series of computers.

 **NOTE:** DisplayPorts and Mini-DisplayPorts vary in size. To connect devices that support DisplayPort to a Mini-DisplayPort connector, you must use a Mini-DisplayPort-DisplayPort adapter.

#### Advantages of DisplayPort

- DP natively supports high resolutions and high refresh rates
- Supports 3D stereo transmission, making it an ideal gaming interface
- DisplayPort cables can extend up to 15 meters (49.21 feet) without requiring signal boosters
- Delivers a bandwidth of up to 10.8 Gbps over standard cables
- Natively supports fiber optic cables
- Blu-ray Disc ready with built-in support for HDCP. With its unique direct drive capability, DisplayPort simplifies the design of ultra-elegant HDTVs, enabling ultra-thin high definition display panels with separate electronics units that can be hidden from view.
- Supports plug-and-play adapters that allow you to connect displays using older connection standards such as DVI, HDMI, and VGA.

## Audio Connectors

Audio connectors allow you to connect to amplifiers, speakers, headphones, microphones, sound systems, or TVs for digital audio output.

**Table 1. Types of Audio Connectors**

Microphone connector — Connect a personal computer microphone for voice or sound input.

Line-in connector — Connect a recording/playback device such as a cassette player, CD player, or VCR.

Line-out connector — Connect headphones or speakers with integrated amplifiers.

Rear surround out — Connect multichannel-capable speakers.

Center/LFE surround out — Connect a single subwoofer.

 **NOTE:** The Low Frequency Effects (LFE) audio channel, found in digital surround sound audio schemes, carries only frequency information (80 Hz and below). The LFE channel drives a subwoofer to provide extremely low bass extension. Systems not using subwoofers can shunt the LFE information to the main speakers in the surround sound setup.

Side surround sound connector — Connect additional speakers.

RCA S/PDIF connector — Transmit digital audio without the need of analog audio conversion.

Optical S/PDIF connector — Transmit digital audio without the need of analog audio conversion.

## 5.1 Audio

The 5.1 refers to the number of audio channels in most surround-sound configurations. A 5.1 audio system uses five main audio channels (front left, front right, center, left surround, and right surround) and one low-frequency audio channel.

## 7.1 Audio

The 7.1 refers to the number of audio channels in high-end surround-sound configurations. A 7.1 audio system uses two additional speakers (rear left and rear right) in combination with the 5.1 audio system.

 **NOTE:** The 5.1 or 7.1 audio may not be supported on all computers.

 **NOTE:** On computers with a discrete sound card, connect the speakers to the connectors on the card.

## eSATA Connector

eSATA is a bus technology designed to connect external mass storage devices, such as hard drives and optical drives, to your computer. eSATA provides considerably higher throughput as compared to USB 2.0 or FireWire 800. eSATA cables can be up to 2 meters long.

eSATA ports can be standalone or can be present in the form of an eSATA/USB combo port.

# High Definition Multimedia Interface (HDMI)

HDMI transmit audio and video signals in a single digital interface. HDMI connects audio and video sources such as set-top boxes, DVD players, Blu-ray Disc players, computers, and video game consoles to compatible digital audio devices, such as computers, monitors, video projectors, and digital televisions.

## Advantages of HDMI

- Delivers high-quality audio and video without the loss in quality due to the conversion or compression of a video or audio signal.
- Delivers smoother and sharper pictures with a distinct reduction in video noise. Sound is crisp and distortion free.
- Since it is a digital interface, HDMI is compatible with fixed-pixel displays such as LCDs, plasma displays, and projectors.

# Network Connectors

## Network connector (RJ-45)

 **NOTE:** The network connector is slightly larger than the modem connector. To avoid damaging the computer, do not plug a telephone line into the network connector.

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

## Modem connector (RJ-11)

Connects the telephone line to the modem connector.

# IEEE 1394

The IEEE 1394 interface is a serial bus interface standard and enables simple, low-cost, high-bandwidth isochronous (real-time) data interaction between computers, peripherals, and consumer electronics products such as camcorders, VCRs, printers, TVs, and digital cameras. With IEEE 1394-compatible products and systems, you can transfer video or still images without losing quality.

## Key Features

- Digital — Provides better signal quality as it does not require digital-analog-digital conversion.
- Connectivity — Uses a thin serial cable that, through the use of repeaters, can be extended to 100 meters or more over CAT5, fiber optic, or coaxial cables.
- Easy to use — Eliminates the need for special drivers or perform complicated set-ups.
- Hot pluggable — Enables devices to be added and removed while the device and computer are turned on.
- Flexible — Allows you to connect devices to each other by daisy-chaining them together, without the need for hubs or switches. Also supports branching, looping, and other topologies, which reduces cabling complexity. Supports up to 64 devices on a single connection.

- Fast — Supports delivery of time-critical data at multiple speeds, currently including 100, 200, 400, and 800 Megabits per second over a single continuous cable or bus. This enables high-quality audio and video applications at low costs.

## **Sony/Philips Digital Interface Format (S/PDIF)**

S/PDIF is a standard for transferring audio in digital format.

You can connect the S/PDIF output from your computer to the S/PDIF input on your home theater receiver. This connection allows you to set up a 5.1 audio (also known as 6-channel audio) connection.

There are two kinds of S/PDIF connections:

- Optical — Set up by optical fiber with TOSLINK connectors
- Coaxial — Set up by coaxial cable with RCA connectors

# Power Management Modes

The following section describes the various power management modes available in Windows.

Power management modes helps you reduce the power consumption of your computer by regulating power supply to the various components. The system setup and the operating system allows you to configure when the power supply to certain components should be reduced or cut off.

Some common power-saving states in Microsoft Windows are:

**Table 2. Power-Saving States**

<b>Sleep</b>	Sleep is a power-saving state that allows a computer to quickly resume full-power operation (typically within several seconds) when you want to start working again. Putting your computer into the sleep state is like pausing a DVD player; the computer immediately stops what it is doing and is ready to start again when you want to resume working.
<b>Hibernation</b>	Hibernation is a power-saving state designed primarily for laptops. While sleep puts your work and settings in memory and draws a small amount of power, hibernation puts your open documents and programs on your hard disk, and then turns off your computer. Of all the power-saving states in Windows, hibernation uses the least amount of power. On a laptop, use hibernation when you know that you would not use your laptop for an extended period and would not have an opportunity to charge the battery during that time.
<b>Hybrid sleep</b>	Hybrid sleep is designed primarily for desktop computers. Hybrid sleep is a combination of sleep and hibernate states; it puts any open documents and programs in memory and on your hard disk, and then puts your computer into a low-power state so that you can quickly resume your work. That way, if a power failure occurs, Windows can restore your work from your hard disk. When hybrid sleep is turned on, putting your computer into sleep automatically puts your computer into hybrid sleep. Hybrid sleep is typically turned on by default on desktop computers.

## Power Plans

A power plan is a collection of hardware and system settings that manages how your computer uses power. Power plans can help you save energy, maximize system performance, or achieve a balance between the two.

Windows 8 and Windows 7 provide the following power plans:

1. Balanced
2. Power saver
3. High performance
4. Custom power plan

To select a particular power plan:

1. Click the power/battery icon on the taskbar.

 **NOTE:** The battery icon is available only in notebook computers.

2. Click **More Power Options**. A new window displaying the power options is displayed.

3. Select the power plan that you wish to change or select for your computer.

 **NOTE:** For more information about the configuration of your computer, go to Help and Support in your Windows operating system and select the option to view information about your computer.

# Keyboard and Touchpad

## Using the Keyboard and Touchpad

The following section lists several basic functions available on your computer keyboard and notebook's touchpad:

### Keyboard Properties

Open the Keyboard icon from the **Printers And Other Hardware** category of the **Control Panel**; the Keyboard Properties dialog box is displayed. The following settings can be configured here:

- Setting Description Repeat delay — Delay between starting to hold down a key and when the key begins repeating
- Repeat rate — How fast the key repeats
- Cursor blink rate — How fast the cursor blinks
- **Speed tab** : You can configure the **Character Repeat** and **Cursor Blink Rate settings** here.
- **Hardware tab** : Provides you access to the keyboard devices plugged into the computer and enables you to view and control properties such as driver installation and updates.

### Touchpad

A touchpad is a device designed to translate user input in the form of motions aimed at moving a cursor in a computer. It works much like a mouse, allowing users to move a cursor to select items and perform other functions. It is commonly found embedded into laptops, personal digital assistants, and portable media players.

### Customizing the Touchpad and Trackstick

You can disable the touchpad and trackstick or adjust their settings using the Mouse Properties window.

1. Click the **Start button** > **Control Panel**.
2. Click **Printers and Other Hardware** > click **Mouse**.
3. In the **Mouse Properties** window, click the **Device Settings** tab.
4. To disable the touchpad or mouse, highlight the device and click **Disable**. To change the touchpad or mouse settings, highlight the device, click **Settings**, select the desired setting(s), and then click **Apply**.
5. Click **OK** to save the settings and close the window, and then click **OK** again to exit the **Mouse Properties** window.

## **Changing the Trackstick Cap**

You can replace your trackstick cap if it wears down from prolonged use or if you prefer a different color.

# Security

The following section covers information about various PC cards which can be used with your laptop/desktop.

## Using PC Cards

See the *specifications* section of the *Owner's Manual* for information on supported PC card types.

 **NOTE:** A PC Card is not a bootable device.

The PC Card slot has one connector that supports a single Type I or Type II card. The PC Card slot supports CardBus technology and extended PC Cards. "Type" of card refers to its thickness, not its functionality.

The ExpressCard slot has one connector that supports 54-mm cards. The slot also supports adapters for 34-mm cards. A few commonly sold PC cards are :

- SD Card
- SIM Card
- ExpressCard

## Card Blanks

Your computer is shipped with a plastic blank installed in the card slots. Blanks protect unused slots from dust and other particles. Save the blank for use when no PC Card is installed in the slot; blanks from other computers may not fit your computer.

## Extended Cards

An extended card (for example, a wireless network adapter) is longer than a standard card and extends outside the computer. Follow these precautions when using extended PC or ExpressCards:

 **NOTE:** Always remove an extended card before you pack the computer in its carrying case.

 **CAUTION:** Protect the exposed end of an installed card. Striking the end of the card can damage the system board.

## Smart Cards

Smart cards are portable credit-card shaped devices with internal integrated circuits. The top surface of the smart card usually contains an embedded processor under the gold contact pad. The combination of the small size and integrated circuits make smart cards valuable tools for security, data storage, and special programs. Using smart cards can improve system security by combining something a user has

(the smart card) with something only the user should know (a PIN) to provide more secure user-authentication than passwords alone.

## Installing a Smart Card

You can install a smart card in the computer while the computer is running. The computer automatically detects the card.

To install a smart card:

1. Hold the card so that the gold contact pad is facing upward and pointing toward the smart card slot.
2. Slide the smart card into the smart card slot until the card is completely seated in its connector. The smart card protrudes approximately 0.5 inch from the slot.

 **NOTE:** The smart card slot is located below the PC Card slot. If you encounter too much resistance, do not force the card. Check the card orientation and try again.

## Passwords

 **NOTE:** Passwords are disabled when you receive your computer.

A primary (or system) password, an administrator password, and a hard drive password all prevent unauthorized access to your computer in different ways. The following table identifies types and features of passwords available on your computer.

Type of Password	Features
Primary/System	<ul style="list-style-type: none"><li>• Protects the computer from unauthorized access</li></ul>
Administrator	<ul style="list-style-type: none"><li>• Gives system administrators or service technicians access to computers for repair or re-configuration</li><li>• Allows you to restrict access to system setup in the same way a primary password restricts access to the computer</li><li>• Can be used instead of the primary password</li></ul>
Hard drive	<ul style="list-style-type: none"><li>• Helps protect the data on your hard drive or external hard drive (if one is being used) from unauthorized access</li></ul>

 **NOTE:** Passwords provide a high level of security for data in your computer or hard drive. However, they are not foolproof. If you require more security, obtain and use additional forms of protection, such as smart cards, data encryption programs, or PC Cards with encryption features.

 **NOTE:** Some hard drives do not support hard drive passwords.

If you forget any of your passwords, contact your system administrator or contact Dell (see "[Contact Dell](#)"). For your protection, Dell support personnel will ask you for proof of your identity to ensure that only an authorized person can use the computer.

## Using a Primary/System Password

The primary (system) password allows you to protect the computer from unauthorized access.

Access User Accounts from the Control Panel to create user accounts and add or change passwords. After assigning a primary password, you must enter it each time you turn on your computer.

If you do not enter a password within 2 minutes, the computer returns to its previous operating state.

 **NOTE:** If you disable the administrator password, the primary password is also disabled.

If you have assigned an administrator password, you can use it instead of the primary password. The computer does not specifically prompt you for the administrator password.

## Using an Administrator Password

The administrator password is designed to give system administrators or service technicians access to computers for repair or re-configuration. The administrators or technicians can assign identical administrator passwords to groups of computers, allowing you to assign a unique primary password.

To set or change administrator passwords, access **User Accounts** from the Control Panel.

When you set an administrator password, the **Configure Setup** option becomes available in the system setup program. The **Configure Setup** option allows you to restrict access to system setup in the same way that a primary password restricts access to the computer.

The administrator password can be used instead of the primary password. Whenever you are prompted to enter the primary password, you can enter the administrator password.

 **NOTE:** If you disable the administrator password, the primary password is also disabled.

 **NOTE:** The administrator password provides access to the computer, but it does not provide access to the hard drive when a hard-drive password is assigned.

If you forget the primary password and do not have an administrator password assigned, or if you have both a primary and an administrator password assigned but forget them both, contact your system administrator or contact Dell.

## Using a Hard-Drive Password

The hard-drive password helps protect the data on your hard drive from unauthorized access. You can also assign a password for an external hard drive (if one is being used) that can be the same as or different from the password for the primary hard drive.

- After assigning a hard-drive password, you must enter it each time you turn on the computer and each time you restore the computer to normal operation from standby mode.
- If the hard-drive password is enabled, you must enter it each time you turn on the computer: A message appears asking for the hard-drive password.
- To continue, enter your password (with no more than eight characters) and press **Enter**.
- If you do not enter a password within 2 minutes, the computer returns to its previous operating state.
- If you enter the wrong password, a message tells you that the password is invalid. Press **Enter** to try again.
- If you do not enter the correct password in three attempts, the computer tries to start from another bootable device if the **Boot First Device** option in the system setup program is set to allow start-up from another device. If the **Boot First Device** option is not set to allow the computer to start from another device, the computer returns to the operating state it was in when you turned it on.
- If the hard-drive password, the external hard-drive password, and the primary password are the same, the computer prompts you only for the primary password. If the hard-drive password is different from

the primary password, the computer prompts you for both. Two different passwords provide greater security.

 **NOTE:** The administrator password provides access to the computer, but it does not provide access to the hard drive when a hard-drive password is assigned.

If the administrative password is installed when the user creates the primary hard-drive password, then the administrative password can be used in place of the primary hard-drive password. This feature allows an administrator to unlock password-protected hard drives as long as an administrative password is installed before deploying the computers.

There are two behaviors associated with this feature that help to preserve the integrity of the hard-drive's password:

- The administrative password will only work to unlock a hard drive on the computer on which the hard-drive password was created. This means a password-protected hard drive cannot be removed from one computer, placed in a second computer and be unlocked using the administrative password on the second computer.
- Installing an administrative password on a computer after the hard-drive password has been created will not enable unlocking of the hard drive using the administrative password.

## Trusted Platform Module (TPM)

 **NOTE:** Computers shipping into China are not equipped with the TPM feature.

 **NOTE:** The TPM feature supports encryption only if the operating system supports TPM. For more information, see the *TPM software documentation* and the help files that came with the software.

TPM is a hardware-based security feature that can be used to create and manage computer-generated encryption keys. When combined with security software, the TPM enhances existing network and computer security by enabling features such as file protection capabilities and protected e-mail. The TPM feature is enabled through a system setup option.

 **NOTE:** To secure your TPM data and encryption keys, follow the backup procedures documented in the Archive and Restore section of the EMBASSY Security Center help file. The EMBASSY Security Center is launched through the pre-installed Dell Control Point software on your computer. In the event of these backups being incomplete, lost, or damaged, Dell will be unable to assist in the recovery of encrypted data.

### Enabling the TPM Feature

1. Enable the TPM software:
  - a. Restart the computer and press **<F2>** during the Power On Self Test (POST) to enter the system setup program.
  - b. Select **Security > TPM Security** and press **Enter**.
  - c. Under **TPM Security**, select **On**.
  - d. Press **<Esc>** to exit the setup program.
  - e. If prompted, click **Save/Exit**.
2. Activate the TPM setup program:
  - a. Restart the computer and press **<F2>** during the Power On Self Test to enter the system setup program.

- b. Select **Security > TPM** Activation and press **Enter**.
- c. Under TPM Activation, select **Activate** and press **Enter**.
  -  **NOTE:** You only need to activate TPM feature once.
- d. After you complete this process, the computer either restarts automatically or prompts you to restart your computer.

## Drivers

A driver is a program that controls a device such as a printer, mouse, or keyboard. All devices require a driver program. A driver acts like a translator between the device and any other programs that use the device. Each device has its own set of specialized commands that only its driver recognizes. Dell ships your computer to you with required drivers already installed—no further installation or configuration is needed. The Drivers and Utilities media may contain drivers for operating systems that are not on your computer. Ensure that you are installing software appropriate for your operating system. Many drivers, such as the keyboard driver, come with your Microsoft Windows operating system. You may need to install drivers if you:

- Upgrade your operating system
- Reinstall your operating system
- Connect or install a new device
- Encounter issues with your device

You can download the latest drivers from the Dell Support site, [dell.com/support](http://dell.com/support).

## 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.

### Windows 7

Perform a Windows Update to let Windows install drivers for your hardware automatically. You should avoid manually updating a driver unless technical support personnel ask you to install drivers from an optical drive or from the device manufacturer's website. To manually update drivers for a device:

 **NOTE:** You must be logged on as an administrator to perform these steps.

1. Click the Windows Start button  → **Control Panel** → **Device Manager**. If you are prompted for an administrator password or confirmation, type the password or provide confirmation. The Device Manager window appears.
2. Identify the device you want to update, and then double-click the device name. The **Properties** window appears.
3. Select the **Driver** tab. Click **Update Driver** and follow the instructions.

Some updates may require you to restart the computer.

### Windows 8

1. Identify the device you want to update, and then double-click the device name. The Properties window appears.
2. Select the **Driver** tab. Click **Update Driver** and follow the instructions.

## Reinstalling Drivers

Follow the steps below after extracting the driver files to your hard drive as described in the previous section:

1. Click the Windows Start button  > **Control Panel** > **Device Manager**.
2. Right-click the device and select **Update Driver Software** > **Browse my computer for driver software**.
3. Enter the path, where the file was extracted to, or click **Browse** to browse to the location of the file > click **Next** and close after the driver is installed.

# Restoring Your Operating System

You can restore your operating system by performing any of the following:

- Microsoft Windows System Restore
  - Restoring your computer
  - Undoing the system restore
- Restoring to Dell Factory Image
  - Restoring to factory settings
- Using the Operating System

## My Dell Downloads

My Dell Downloads is a software repository that allows you to download and install software that you purchased or was pre-installed on your computer and did not receive the media for.

 **NOTE:** My Dell Downloads may not be available in all regions.

 **NOTE:** You must register to access My Dell Downloads.

My Dell Downloads allows you to:

- View all software that was originally shipped with the system.
- Download and install entitled software.
- Change your My Dell Downloads account password.
- Access your My Dell Downloads account through the Dell support website.

To register and use My Dell Downloads:

1. Go to [smartsource.dell.com/Web/Welcome.aspx?ReturnUrl=/Web/Login.aspx](https://smartsource.dell.com/Web/Welcome.aspx?ReturnUrl=/Web/Login.aspx) Website.
2. Follow the instructions on the screen to register and download the software.
3. Reinstall the software or create a backup media for future use.

# My Dell Support Center

My Dell Support Center is a one-stop control panel for system tools and diagnostics. It provides access to online tools, Dell technical support links, Dell customer support channels, device manager, network connections, system alerts, performance improvement offers, warranty and system information, and links to other Dell tools and diagnostic services.

To download or upgrade to the latest version of My Dell Support Center, go to [dell.com/support/contents/us/en/19/category/Product-Support/Self-support-Knowledgebase/software-and-downloads](https://dell.com/support/contents/us/en/19/category/Product-Support/Self-support-Knowledgebase/software-and-downloads) Website.

 **NOTE:** It is recommended to download the software from the Internet when prompted during the installation of My Dell Support Center .

Touch or click this tile on the Start screen to launch My Dell Support Center.

My Dell Support Center home page displays your computer's model number, Service Tag, Express Service Code, warranty status, and alerts on improving the performance of your computer. The home page also provides links to access:

**PC Checkup:** Run hardware diagnostics, see which program occupies the maximum memory on your hard drive, and track the changes made to your computer each day.

## PC Checkup Utilities

- **Drive Space Manager:** Manage your hard drive using a visual representation of space consumed by each type of file.
- **Performance and Configuration History:** Monitor system events and changes over time. This utility displays all hardware scans, tests, system changes, critical events and restoration points on the day they occurred.
  - **Detailed System Information:** View detailed information about your hardware and operating system configurations; access copies of your service contracts, warranty information, and warranty-renewal options.
  - **Get Help:** View Dell Technical Support options, Customer Support, Tours and Training, Online Tools, Owner's Manual, Warranty Information, FAQs, and so on.
  - **Backup and Recovery:** Create recovery media, launch recovery tool, and online file backup.
  - **System Performance Improvement Offers:** Acquire software and hardware solutions that will help improve your system performance.

For more information about My Dell Support Center and to download and install the available support tools, go to [dell.com/dellsupportcenter](https://dell.com/dellsupportcenter) [dell.com/dellsupportcenter](https://dell.com/dellsupportcenter).

# Smart Settings

## Overview

The **Smart Settings** is an application that enables you to make optimal use of your laptop computer's resources by selecting different modes. The modes allows you to enable or disable certain computer's features like Keyboard Backlight, Ambient Light Sensor and so on.

You can launch Smart Settings by clicking on the icon  in the system notification area.

 **NOTE:** You can enable multiple modes at the same time.

## Smart Setting Modes

Customize the following settings by clicking the **Edit** link:

- Presentation Mode — optimized settings for connecting an external display, like projectors.
- Video Mode — optimized settings for playing multi-media files stored in the computer or through the CD/DVD player.
- Outdoor Mode — optimized display settings for outdoor use.
- Airplane Mode — switches off all the wireless devices like Bluetooth, WWAN card, WPAN card and so on.

 **NOTE:** If the **Turn Off Wi-Fi Radio** checkbox is not selected, the Wi-Fi card is still enabled in the Airplane Mode.

## Editing Smart Settings Modes

Click **Edit** next to the mode that you want to edit. Turn on or off the features as needed.

 **NOTE:** You cannot edit the **Airplane mode**.

## Dell Digital Delivery

Dell Digital Delivery is an easy and new way to buy software when you purchase a computer. You can automatically download and install available software titles on select computers. All it takes is an Internet connection and a few minutes- so you can enjoy the customization Dell stands for, without the wait, and get right back to work.

### How does it work?

Dell Digital Delivery allows you to purchase select software titles at the same time you purchase your computer. Then, when you receive your computer, you can automatically download and install the software. Here's how it works:

1. Purchase select software titles at the time your new computer is ordered.
2. When your system is powered on for the first time, you will be guided through setup, including how to connect to the Internet. A broadband Internet connection is recommended.
3. On the second start of the system, a **Dell Digital Delivery** installer application will run automatically.
4. After the **Dell Digital Delivery** application starts, you will have the option to **Download Now** or **Remind Me Later**. If you choose **Remind Me Later**, you will be asked again the next time the computer is started and on subsequent restarts until you decide to start the download.
5. Once you select **Download Now**, the software will download and install automatically and indicate when setup is complete. If a restart of the system is required, you will be prompted. Newly installed programs can be accessed from the Windows Start menu and will be highlighted. You will not receive media (CDs or DVDs) or printed documentation for software purchased using Dell Digital Delivery, as an online restore capability is provided with your purchase.

### Reinstalling Software

The Dell Digital Delivery application enables you to reinstall purchased software applications without physical CDs or DVDs; your system and software license information is saved by Dell.

- **Basic reinstall** – To reinstall a specific program purchased through Dell Digital Delivery, select Start  → **Programs** → **Dell** → **Dell Digital Delivery**. The program will start and allow you to download any purchased programs not currently installed on the computer by clicking the **reinstall**.
- **Reinstall with license key** – certain applications require a license key to be entered during the install process. In the Dell Digital Delivery application window, **View Key** will appear next to any software program which requires a license key. Click **View Key** to display the license key. If **View Key** is not visible, a license key is not required.
- **Dell Digital Delivery client application reinstall** – the Dell Digital Delivery client application is required to install any software you have purchased through Dell Digital Delivery. If the client application has been uninstalled from your system, it can be downloaded and installed from the Dell Support Website. Click **Drivers and Downloads**, then enter your computer's service tag to find the Dell Digital Delivery software.

## Windows Live Essentials 2011

Windows Essentials (formerly Windows Live Essentials and Windows Live Installer) is a suite of freeware applications by Microsoft that offer integrated and bundled e-mail, instant messaging, photo-sharing, blog publishing, and security services. Essentials programs are designed to integrate well with each other, with Microsoft Windows, and with other Microsoft web-based services such as SkyDrive and Outlook.com.

The updated applications in Windows Live Essentials 2011 include Windows Live Messenger, Mail, Photo Gallery, Movie Maker, Writer, Family Safety, Mesh, and Messenger Companion. The Windows Live Toolbar has been replaced by the Bing Bar.

### Bing Bar

Bing Bar is a browser extension toolbar for Internet Explorer, developed by Microsoft.

Bing Bar incorporates features from Windows Live and from the Bing search engine. The Bing Bar user-interface enables visual effects such as flip, slide and rollover animations, colors and themes. The toolbar features "flyout" content windows, which enables users to view the latest content from the MSN Portal without requiring them to move from the internet page they are currently browsing.

The Bing Bar features integration with Microsoft Bing search engine. In addition to the traditional web search functions, Bing Bar also allows search on other Bing services such as Images, Video, News, Shopping, Maps, Travel, and XRank. When users perform a search on another search engine, the Bing Bar's search box will automatically populate itself, allowing the user to view the results from Bing, should it be desired.

Bing Bar also incorporates Windows Live features such Hotmail, Windows Live Messenger and Windows Live ID. When signed in to Windows Live ID through Bing Bar, the user will receive notifications and an instant preview of new emails in their Hotmail, inbox, can instantly send the current page via email or instant message to their contacts and can quickly access other Windows Live functionality.

# Dell Webcam Manager

The Dell Webcam Manager acts as a hub for all the webcam features and configuration options. Dell Webcam Manager includes:

- Webcam Center – Control core recording functions of the webcam such as video recording, motion detection, and photo capture.
- Webcam Console – Configure webcam features like picture quality, face tracking, pan and zoom, audio and video effects, and so on.

## Accessing Dell Webcam Manager

1. Click Start  → **All Programs / Programs**.
2. Click **Dell Webcam** → **Dell Webcam Manager**. The **Dell Webcam Manager** window appears.

## Enabling the Digital Array Microphone in the Dell Webcam Center

1. Click Start  → **All Programs / Programs**.
2. Click **Dell Webcam** → **Dell Webcam Manager**. The **Dell Webcam Manager** window appears.
3. Click **Webcam Center**.
4. Click the drop-down arrow next to **Audio Source** and click **Digital Mic (Realtek High Definition Audio)** to enable the microphone.
5. The digital array microphone is activated.

## Using a Touchscreen Display (For Tablet PC's)

The touchscreen feature converts your computer into an interactive display.

The following are some of the basic tasks that you can perform using a touchscreen display:

- Tap or double-tap a folder or an application to open it.
- Move a finger quickly in the desired direction to flip through content in the active window like pages in a book.
- Zoom-in by moving two fingers apart to enlarge the view of the active window.
- Zoom-out by moving two fingers close together to reduce the view of the active window.
- Press and hold a finger on the touch screen to open context-sensitive menus.
- Rotate the active content by keeping a finger or thumb in place and moving the other finger in an arched direction to the right or left.

## System Setup

System Setup enables you to manage your computer hardware and specify BIOS-level options. From the System Setup, you can:

- Change the NVRAM settings after you add or remove hardware
- View the system hardware configuration
- Enable or disable integrated devices
- Set performance and power management thresholds
- Manage your computer security

## Boot Sequence

Boot Sequence allows you to bypass the System Setup-defined boot device order and boot directly to a specific device (for example: optical drive or hard drive). During the Power-on Self Test (POST), when the Dell logo appears, you can:

- Access System Setup by pressing <F2> key
- Bring up the one-time boot menu by pressing <F12> key

The one-time boot menu displays the devices that you can boot from including the diagnostic option. The boot-menu options are:

- Removable Drive (if available)
- STXXXX Drive
  - ✎ **NOTE:** XXX denotes the SATA drive number.
- Optical Drive
- Diagnostics
  - ✎ **NOTE:** Choosing Diagnostics, will display the **ePSA diagnostics** screen.

The boot sequence screen also displays the option to access the System Setup screen.

## Navigation Keys

The following table displays the system setup navigation keys.

- ✎ **NOTE:** For most of the system setup options, changes that you make are recorded but do not take effect until you re-start the system.

**Table 3. Navigation Keys**

Keys	Navigation
Up arrow	Moves to the previous field.
Down arrow	Moves to the next field.
<Enter>	Allows you to select a value in the selected field (if applicable) or follow the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
<Tab>	Moves to the next focus area.
	 <b>NOTE:</b> For the standard graphics browser only.
<Esc>	Moves to the previous page till you view the main screen. Pressing <Esc> in the main screen displays a message that prompts you to save any unsaved changes and restarts the system.
<F1>	Displays the System Setup help file.

## Updating the BIOS

It is recommended to update your BIOS (system setup), on replacing the system board or if an update is available. For laptops, ensure that your computer battery is fully charged and connected to a power outlet

1. Re-start the computer.
2. Go to **dell.com/support**.
3. Enter the **Service Tag** or **Express Service Code** and click **Submit**.
  -  **NOTE:** To locate the Service Tag, click **Where is my Service Tag?**
  -  **NOTE:** If you cannot find your Service Tag, click **Detect My Product**. Proceed with the instructions on screen.
4. If you are unable to locate or find the Service Tag, click the Product Category of your computer.
5. Choose the **Product Type** from the list.
6. Select your computer model and the **Product Support** page of your computer appears.
7. Click **Get drivers** and click **View All Drivers**.

The Drivers and Downloads page opens.
8. On the Drivers and Downloads screen, under the **Operating System** drop-down list, select **BIOS**.
9. Identify the latest BIOS file and click **Download File**.

You can also analyze which drivers need an update. To do this for your product, click **Analyze System for Updates** and follow the instructions on the screen.
10. Select your preferred download method in the **Please select your download method below window**; click **Download File**.

The **File Download** window appears.
11. Click **Save** to save the file on your computer.
12. Click **Run** to install the updated BIOS settings on your computer.

Follow the instructions on the screen.

# System and Setup Password

You can create a system password and a setup password to secure your computer.

Password Type	Description
System password	Password that you must enter to log on to your system.
Setup password	Password that you must enter to access and make changes to the BIOS settings of your computer.

 **CAUTION:** The password features provide a basic level of security for the data on your computer.

 **CAUTION:** Anyone can access the data stored on your computer if it is not locked and left unattended.

 **NOTE:** Your computer is shipped with the system and setup password feature disabled.

## Assigning a System Password and Setup Password

You can assign a new **System Password** and/or **Setup Password** or change an existing **System Password** and/or **Setup Password** only when **Password Status** is **Unlocked**. If the Password Status is **Locked**, you cannot change the System Password.

 **NOTE:** If the password jumper is disabled, the existing System Password and Setup Password is deleted and you need not provide the system password to log on to the computer.

To enter a system setup, press <F2> immediately after a power-on or re-boot.

1. In the **System BIOS** or **System Setup** screen, select **System Security** and press <Enter>. The **System Security** screen appears.
2. In the **System Security** screen, verify that **Password Status** is **Unlocked**.
3. Select **System Password**, enter your system password, and press <Enter> or <Tab>. Use the following guidelines to assign the system password:
  - A password can have up to 32 characters.
  - The password can contain the numbers 0 through 9.
  - Only lower case letters are valid, upper case letters are not allowed.
  - Only the following special characters are allowed: space, ("), (+), (.), (-), (.), (/), (:), (I), (\), (l), (').

Re-enter the system password when prompted.

4. Type the system password that you entered earlier and click **OK**.
5. Select **Setup Password**, type your system password and press <Enter> or <Tab>. A message prompts you to re-type the setup password.
6. Type the setup password that you entered earlier and click **OK**.
7. Press <Esc> and a message prompts you to save the changes.
8. Press <Y> to save the changes. The computer reboots.

## Deleting or Changing an Existing System and/or Setup Password

Ensure that the **Password Status** is Unlocked (in the System Setup) before attempting to delete or change the existing System and/or Setup password. You cannot delete or change an existing System or Setup password, if the **Password Status** is Locked.

To enter the System Setup, press <F2> immediately after a power-on or reboot.

1. In the **System BIOS** or **System Setup** screen, select **System Security** and press <Enter>. The **System Security** screen is displayed.
2. In the **System Security** screen, verify that **Password Status** is **Unlocked**.
3. Select **System Password**, alter or delete the existing system password and press <Enter> or <Tab>.
4. Select **Setup Password**, alter or delete the existing setup password and press <Enter> or <Tab>.

 **NOTE:** If you change the System and/or Setup password, re-enter the new password when promoted. If you delete the System and/or Setup password, confirm the deletion when promoted.

5. Press <Esc> and a message prompts you to save the changes.
6. Press <Y> to save the changes and exit from the System Setup. The computer reboots.

## Disabling a System Password

The system's software security features include a system password and a setup password. The password jumper disables any password(s) currently in use. There are 2-pins for the PSWD jumper.

 **NOTE:** The password jumper is disabled by default.

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the cover.
3. Identify the PSWD jumper on the system board. For identifying the PSWD jumper on the system board, see the System Board Components.
4. Remove the PSWD jumper from the system board.

 **NOTE:** The existing passwords are not disabled (erased) until the computer boots without the jumper.

5. Install the cover.

 **NOTE:** If you assign a new system and/or setup password with the PSWD jumper installed, the system disables the new password(s) the next time it boots.

6. Connect the computer to the electrical outlet and power-on the computer.
7. Power-off the computer and disconnect the power cable from the electrical outlet.
8. Remove the cover.
9. Replace the jumper on the pins.
10. Install the cover.
11. Follow the procedures in *After Working Inside Your Computer*.
12. Power-on the computer.
13. Go to the system setup, and assign a new system or setup password.

# Troubleshooting Your Computer

You can troubleshoot your computer using indicators like Diagnostic Lights, Beep Codes, and Error Messages during the operation of the computer.

## Dell Technical Update Service

The Dell Technical Update service provides proactive e-mail notification of software and hardware updates for your computer. The service is free and can be customized for content, format, and how frequently you receive notifications.

To register for the Dell Technical Update service, go to [dell.com/support](http://dell.com/support).

## Dell Diagnostics

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the Owner's Manual.

### When to Use the Dell Diagnostics?

If you experience a problem with your computer, run the Dell Diagnostics before you contact Dell for technical assistance.

It is recommended that you print these procedures before you begin.

 **CAUTION:** The Dell Diagnostics works only on Dell computers.

Enter the system setup program, review your computer's configuration information, and ensure that the device you want to test displays in the system setup program and is active.

## Drive Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the Owner's Manual.

1. Ensure that Microsoft Windows recognizes the drive.
2. Test the drive.
3. Insert another floppy disk, CD, or DVD to eliminate the possibility that the original one is defective.
4. Insert a bootable floppy disk and restart the computer.
5. Clean the drive or disk.

 **NOTE:** See "[Cleaning Your Computer](#)".

6. Ensure that the optical drive is snapped onto the spindle.

7. Check the cable connections.
8. Check the hardware incompatibilities.

 **NOTE:** See "*Using the Hardware Troubleshooter Tool*".

9. Run the Dell diagnostics.

 **NOTE:** See "[Dell Diagnostics](#)".

## E-Mail, Modem, and Internet Problems

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

### Check the Microsoft Outlook Settings

If you cannot open your e-mail attachments.

- Check the telephone line connection
- Check the telephone connector
- Connect the modem directly to the telephone wall connector
- Use the different telephone line:
  - a. Verify that the telephone line is connected to the connector on the modem. (The connector has either a green label or a connector-shaped icon next to it.)
  - b. Ensure that you insert the telephone line connector into the modem until it clicks into place.
  - c. Disconnect the telephone line from the modem and connect it to a telephone. Listen for a dial tone.
  - d. If you have other telephone devices sharing the line, such as an answering machine, fax machine, surge protector, or line splitter, bypass the devices and connect the modem directly to the telephone wall connector. If you are using a line that is 3 m (10 ft) or more in length, try a shorter one.

### Verify that the modem is communicating with Windows

1. Click **Start > Control Panel > Printers and Other Hardware > Phone and Modem Options > Modems**.
2. Click the COM port for your modem, and then click **Properties > Diagnostics > Query Modem** to verify that the modem is communicating with Windows.

If all commands receive responses, the modem is operating properly.

### Ensure that you are connected to the Internet

Ensure that you have subscribed to an Internet provider. With the Outlook Express e-mail program open, click **File**. If **Work Offline** has a checkmark next to it, click the checkmark to remove it and connect to the Internet. For help, contact your Internet provider.

### Scan the computer for Spyware

If you are experiencing slow computer performance, you frequently receive pop-up advertisements, or you are having problems connecting to the Internet, your computer might be infected with spyware. Use an anti-virus program that includes anti-spyware protection (your program may require an upgrade) to

scan the computer and remove spyware. For more information, go to <https://www.dell.com/support> and search for the keyword *spyware*.

## **Error Messages**

If the message is not listed, see the documentation for the operating system or the program that was running when the message appeared.

### **Auxillary device failure**

The touchpad, trackstick, or external mouse may be faulty. For an external mouse, check the cable connection. Enable the Pointing Device option in the system setup program. If the problem persists, [Contact Dell](#).

### **Bad command or file name**

Ensure that you have spelled the command correctly, put spaces in the proper place, and used the correct pathname.

### **Cache disabled due to failure**

The primary cache internal to the microprocessor has failed. [Contact Dell](#).

### **CD Drive controller failure**

The CD drive does not respond to commands from the computer.

### **Data error**

The hard drive cannot read the data.

### **Decreasing available memory**

One or more memory modules may be faulty or improperly seated. Reinstall the memory modules or, if necessary, replace them.

### **DISK C: Failed initialization**

The hard drive failed initialization. Run the hard drive tests in the [Dell Diagnostics](#).

### **Drive not ready**

The operation requires a hard drive in the bay before it can continue. Install a hard drive in the hard drive bay.

### **Error reading PCMCIA Card**

The computer cannot identify the PC Card. Re-insert the card or try another PC Card.

## **Extended memory size has changed**

The amount of memory recorded in NVRAM does not match the memory installed in the computer. Restart the computer. If the error appears again, [Contact Dell](#).

## **The file being copied is too large for the destination drive**

The file that you are trying to copy is too large to fit on the disk, or the disk is too full. Try copying the file to a different disk or use a larger capacity disk.

## **A Filename cannot contain any of the following characters**

\ / : \* ? " < > | — Do not use these characters in filenames.

## **Gate A20 failure**

A memory module may be loose. Reinstall the memory modules and, if necessary, replace them.

## **General failure**

The operating system is unable to carry out the command. The message is usually followed by specific information; for example, Printer out of paper. Take the appropriate action.

## **Hard-disk drive configuration error**

The computer cannot identify the drive type. Shut down the computer, remove the hard drive, and boot the computer from a CD or DVD. Then shut down the computer, reinstall the hard drive, and restart the computer. Run the Hard-Disk Drive tests in the [Dell Diagnostics](#).

## **Hard-disk drive controller failure 0**

The hard drive does not respond to commands from the computer. Shut down the computer, remove the hard drive, and boot the computer from a CD or DVD. Then shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the Hard-Disk Drive tests in the [Dell Diagnostics](#).

## **Hard-drive disk failure**

The hard drive does not respond to commands from the computer. Shut down the computer, remove the hard drive, and boot the computer from a CD or DVD. Then shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the Hard-Disk Drive tests in the [Dell Diagnostics](#).

## **Hard-disk drive read failure**

The hard drive may be defective. Shut down the computer, remove the hard drive, and boot the computer from a CD or DVD. Then shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the Hard-Disk Drive tests in the [Dell Diagnostics](#).

## **Insert bootable media**

The operating system is trying to boot to a non-bootable CD or DVD. Insert a bootable CD or DVD.

## **Invalid configuration information-Please run system setup program**

The system configuration information does not match the hardware configuration. The message is most likely to occur after a memory module is installed. Correct the appropriate options in the system setup program.

## **Keyboard clock line failure**

For external keyboards, check the cable connection. Run the Keyboard Controller test in the [Dell Diagnostics](#).

## **Keyboard controller failure**

For external keyboards, check the cable connection. Restart the computer, and avoid touching the keyboard or the mouse during the boot routine. Run the Keyboard Controller test in the [Dell Diagnostics](#).

## **Keyboard data-line failure**

For external keyboards, check the cable connection. Run the Keyboard Controller test in the [Dell Diagnostics](#).

## **Keyboard stuck-key failure**

For external keyboards or keypads, check the cable connection. Restart the computer, and avoid touching the keyboard or keys during the boot routine. Run the Stuck Key test in the [Dell Diagnostics](#).

## **Memory address line failure at address, read value expecting value**

A memory module may be faulty or improperly seated. Re-install the memory modules or, if necessary, replace them.

## **Memory allocation error**

The software you are attempting to run is conflicting with the operating system, another program, or a utility. Shut down the computer, wait 30 seconds, and then restart it. Try to run the program again. If the error message still appears, see the *software documentation*.

## **Memory data line failure at address, read value expecting value**

A memory module may be faulty or improperly seated. Re-install the memory modules or, if necessary, replace them.

## **Memory double word logic failure at address, read value expecting value**

A memory module may be faulty or improperly seated. Re-install the memory modules or, if necessary, replace them.

## **Memory odd/even logic failure at address, read value expecting value**

A memory module may be faulty or improperly seated. Re-install the memory modules or, if necessary, replace them.

## **Memory read/write failure at address, read value expecting value**

A memory module may be faulty or improperly seated. Re-install the memory modules or, if necessary, replace them.

## **No boot device available**

The computer cannot find the hard drive. If the hard drive is your boot device, ensure that the drive is installed, properly seated, and partitioned as a boot device.

## **No boot sector on hard drive**

The operating system may be corrupted. [Contact Dell.](#)

## **No timer tick interrupt**

A chip on the system board may be malfunctioning. Run the System Set tests in the [Dell Diagnostics](#).

## **Not enough memory or resources. Exit some programs and try again**

You have too many programs open. Close all windows and open the program that you want to use.

## **Operating system not found**

Reinstall the hard drive. If the problem persists, [Contact Dell.](#)

## **Optional ROM bad checksum**

The optional ROM apparently failed. [Contact Dell.](#)

## **A required .DLL file was not found**

The program that you are trying to open is missing an essential file. Remove and then re-install the program.

- Click **Control Panel > Program and Features**.
- Select the program you want to remove.
- Click **Uninstall** or **Change** or **Repair** and follow the prompts on the screen.
- See the program documentation for installation instructions.

## **Seek error**

The operating system cannot find a specific track on the hard drive.

## Shutdown failure

A chip on the system board may be malfunctioning. Run the System Set tests in the [Dell Diagnostics](#).

## Time-of-day clock lost power

System configuration settings are corrupted. Connect your computer to an electrical outlet to charge the battery. If the problem persists, try to restore the data by entering the system setup program. Then immediately exit the program. If the message reappears, [Contact Dell](#).

## Time-of-day clock stopped

The battery that supports the system configuration settings may be out of charge. Replace the coin-cell battery. If the problem persists, [Contact Dell](#).

## Time-of-day not set- Please run the system setup program

The time or date stored in the system setup program does not match the system clock. Correct the settings for the **Date** and **Time** options.

## Timer chip counter 2 failed

A chip on the system board may be malfunctioning. Run the System Set tests in the [Dell Diagnostics](#).

## Unexpected interrupt in protected mode

The keyboard controller may be malfunctioning, or a memory module may be loose. Run the System Memory tests and the Keyboard Controller test in the [Dell Diagnostics](#).

## X: \ is not accessible, The device is not ready

Insert a disk into the drive and try again.

## WARNING: Battery is critically low

The battery is running out of charge. Replace the battery, or connect the computer to an electrical outlet. Otherwise, activate hibernate mode or shut down the computer.

## Keyboard / External Keyboard Problems

 **NOTE:** Use the integrated keyboard when running the Dell Diagnostics or the system setup program. When you attach an external keyboard, the integrated keyboard remains fully functional.

Check the following if you encounter any issues with your external keyboard:

### Check the Keyboard Cable

Shut down the computer. Disconnect the keyboard cable and check it for damage, and firmly reconnect the cable.

If you are using a keyboard extension cable, disconnect it and connect the keyboard directly to the computer.

## Check the External Keyboard

1. Shut down the computer, wait for one minute, and turn on the computer again.
2. Verify that the numbers, capitals, and scroll lock lights on the keyboard blink during the boot routine.
3. From the Windows desktop, click **All Programs > Accessories > Notepad**.
4. Type some characters on the external keyboard and verify that they appear on the display. If you cannot verify these steps, you may have a defective external keyboard.

## Check the Integrated Keyboard

To verify that the problem is with the external keyboard, check the integrated keyboard:

1. Shut down the computer.
2. Disconnect the external keyboard.
3. Turn on the computer.
4. From the Windows desktop, click **All Programs > Accessories > Notepad**.
5. Type some characters on the internal keyboard and verify that they appear on the display. If the characters appear now but did not with the external keyboard, you may have a defective external keyboard. [Contact Dell](#).

## Run the Keyboard Diagnostics Tests

Run the PC-AT Compatible Keyboards tests in the Dell Diagnostics. If the tests indicate a defective external keyboard, [Contact Dell](#).

## Unexpected Characters

If you encounter any unexpected characters, disable the numeric keypad. To disable the numeric keypad:

1. Press **(Num Lock)** to disable the numeric keypad if numbers are displayed instead of letters.
2. Verify the number-lock light is not turned on.

# Lockups and Software Problems

## The computer does not start

Ensure that the AC adapter is firmly connected to the computer and to the electrical outlet.

## The computer stops responding

 **NOTE:** You might lose data if you are unable to perform an operating system shutdown.

**Turn the computer OFF** - If you are unable to get a response by pressing a key on your keyboard or moving your Troubleshooting mouse, press and hold the power button for at least 8 to 10 seconds until the computer turns off. Then restart your computer.

## A program stops responding or crashes repeatedly

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

### End the program -

1. Press the **[Ctrl] + [Shift] + [Esc]** keys simultaneously.
2. Click **Task Manager > Applications**.
3. Select the program that is no longer responding.
4. Click **End Task**.

**Check the software documentation** - If necessary, uninstall and then re-install 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 it runs in an environment similar to Windows XP operating system environments.

1. Click **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 8 to 10 seconds until the computer turns off. Then restart your computer.

## Other software problems

### Check the software documentation or contact the 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 re-install the program.

### Backup your files immediately

### Use a virus scan program to check hard drives and CDs for any malicious programs

### Save and close any open files or programs and shutdown your computer from the Start menu.

**Scan the computer for spyware** - If you are experiencing slow computer performance, you frequently receive pop-up advertisements, or you are having problems connecting to the Internet, then your computer might be infected with spyware. Use an anti-virus program that includes anti-spyware protection (your program may require an upgrade) to scan the computer and remove spyware. For more information, go to <https://www.dell.com/support> and search for the keyword *spyware*.

**Run the Dell diagnostics** - If all tests run successfully, the error condition is related to a software problem.

## PC Card or ExpressCard Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Safety and Regulatory Information documents*.

**Check the card** - Ensure that the card is properly inserted into the connector.

**Ensure that the card is recognized by Windows** - Double-click the **Safely Remove Hardware** icon in the Windows taskbar. Ensure that the card is listed.

**If you have problems with a Dell provided card** - [Contact Dell](#).

**If you have problems with a card not provided by Dell** - Contact the PC Card manufacturer.

## Network Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Safety and Regulatory Information documents*.

### General

**Check the network-cable connector** - Ensure that the network cable is firmly inserted into both, the network connector on the back of the computer and the network connector.

**Check the network lights on the network connector** - No light indicates that no network communication exists. Replace the network cable.

**Plug the A/C power adapter into the computer** - If battery power only, the QuickSet utility can disable the onboard network card to save battery life.

**Check your network settings** - Contact your network administrator or the person who set up your network to verify that your network settings are correct and that the network is functioning.

## Power Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Safety and Regulatory Information documents*.

**Check the power light** - When the power light is lit or blinking, the computer has power. If the power light is blinking, the computer is in standby mode - press the **Power** button to exit the standby mode. If the light is off, press the **Power** button to turn on the computer.

**Charge the battery** -The battery charge may be depleted.

1. Reinstall the battery.
2. Use the AC adapter to connect the computer to an electrical outlet.
3. Turn on the computer.

 **NOTE:** Battery operating time (the time the battery can hold a charge) decreases over time. Depending on how often the battery is used and the conditions under which it is used, you may need to purchase a new battery during the life of your computer.

**Check the battery status light** - If the battery status light flashes orange or is a steady orange the battery charge is low or depleted. Connect the computer to an electrical outlet.

If the battery status light flashes green and orange, the battery is too hot to charge. Shut down the computer, disconnect the computer from the electrical outlet, and then let the battery and computer cool to room temperature.

If the battery status light rapidly flashes orange, the battery may be defective. [Contact Dell](#).

**Check the battery temperature** - If the battery temperature is below 0 °C (32 °F), the computer will not start up.

**Test the electrical outlet** - Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

**Check the AC adapter** - Check the AC adapter cable connections. If the AC adapter has a light, ensure that the light is on.

**Connect the computer directly to an electrical outlet** - Bypass power protection devices, power strips, and the extension cable to verify that the computer turns on.

**Eliminate possible interference** - Turn off nearby fans, fluorescent lights, halogen lamps, or other appliances.

**Reseat the memory modules** - If the computer power light turns on but the display remains blank, re-install the memory modules.

## Ensuring Sufficient Power for Your Computer

Your computer is designed to use a 65 W or 90 W AC adapter. However, for optimum system performance, you should always use a 90 W adapter.

Using less-powerful AC adapters, will cause you to receive a **WARNING** message.

## Docking Power Considerations

If a computer is connected to a Dell docking station while the computer is running, presence of the docking device is ignored until the AC adapter is connected to the computer.

## Docking While the Computer Is Running

If a computer is connected to a Dell docking station while the computer is running, presence of the docking device is ignored until the AC adapter is connected to the computer.

## AC Power Loss While the Computer Is Docked

If a computer loses AC power while docked to a Dell docking station, the computer immediately goes into low-performance mode.

## Printer Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the Owner's Manual.

 **NOTE:** If you need technical assistance for your printer, contact the *printer's manufacturer*.

### Ensure that the printer is turned on

#### Check the printer cable connections

- See the *printer documentation* for cable connection information.
- Ensure that the printer cables are securely connected to the printer and the computer.

### Verify that the printer is recognized by Windows

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

**Re-install the printer driver** - See the *printer documentation* for instructions.

## Scanner Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Safety and Regulatory Information documents*.

 **NOTE:** If you need technical assistance for your scanning device, contact the *scanner's manufacturer*.

**Check the scanner documentation** - See the *scanner documentation* for *setup and troubleshooting* information.

**Unlock the scanner** - Ensure that your scanner is unlocked if it has a locking tab or button.

**Restart the computer and try the scanner again.**

#### Check the cable connections -

- See the *scanner documentation* for *cable connection* information.
- Ensure that the scanner cables are securely connected to the scanner and the computer.

### Verify that the scanner is recognized by Windows

1. Click **Start > Control Panel > Printers and Other Hardware > Scanners and Cameras**.

2. If your scanner is listed, Windows recognizes the scanner.

**Re-install the scanner driver** – See the *scanner documentation* for instructions.

## Sound and Speaker Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Safety and Regulatory Information documents*.

 **NOTE:** If you need technical assistance for your speaker, contact the *speaker's manufacturer*.

### No sound from integrated speakers

**Adjust the Windows volume control** - Double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted. Adjust the volume, bass, or treble controls to eliminate distortion.

**Re-install the sound (audio) driver.**

### No sound from external speakers

Tasks	Description
<b>Ensure that the subwoofers and speakers are turned on</b>	See the <i>Setup diagram</i> supplied by the speaker's manufacturer. If your speakers have volume controls, adjust the volume, bass, or treble to eliminate the distortion.
<b>Adjust the Windows volume control</b>	Click or double-click the speaker icon at the lower-right corner of your screen. Ensure that the volume is turned up and the sound is not muted.
<b>Disconnect the headphones from the headphone connector</b>	Sound from the speakers is automatically disabled when the headphone is connected to the computer's front-panel headphone connector.
<b>Test the electrical outlet</b>	Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
<b>Eliminate possible interference</b>	Turn off nearby fans, fluorescent lights, or halogen lamps to check for interference.
<b>Re-install the audio driver</b>	Ensure you have the latest audio driver for your operating system.

### Run the diagnostics

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

### No sound from headphones

**Check the headphone cable connection** - Ensure that the headphone cable is inserted into the headphone connector.

**Adjust the windows volume control** - Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.

## Touchpad or Mouse Problems

### Check the touchpad settings

1. Click **Start > Control Panel > Printers and Other Hardware > Mouse**.
2. Try adjusting the settings.

**Check the mouse cable** - Shut down the computer. Disconnect the mouse cable, check it for damage, and firmly re-connect the cable.

If you are using a mouse extension cable, disconnect it and connect the mouse directly to the computer.

**To verify that the problem is with the mouse, check the touchpad -**

1. Shut down the computer.
2. Disconnect the mouse.
3. Turn on the computer.
4. At the Windows desktop, use the touchpad to move the cursor around, select an icon, and open it. If the touchpad operates correctly, the mouse may be defective.

Tasks	Description
<b>Check the system setup program settings</b>	Verify that the system setup program lists the correct device for the pointing device option. (The computer automatically recognizes a USB mouse without making any setting adjustments.)
<b>Test the mouse controller</b>	To test the mouse controller (which affects pointer movement) and the operation of the touch pad or mouse buttons, run the Mouse test in the <b>Pointing Devices</b> test group in the <a href="#">Dell Diagnostics</a>
<b>Re-install the touchpad driver</b>	Ensure you have the latest touchpad driver installed on your computer.

## Video and Display Problems

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Safety and Regulatory Information documents*.

### If the display is blank

 **NOTE:** If you are using a program that requires a higher resolution than your computer supports, it is recommended that you attach an external monitor to your notebook.

Tasks	Description
<b>Check the battery</b>	If you are using a battery to power your computer, the battery charge may be depleted. Connect the computer to an electrical outlet using the AC adapter, and turn on the computer.
<b>Test the electrical outlet</b>	Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
<b>Check the AC adapter</b>	Check the AC adapter cable connections. If the AC adapter has a light, ensure that the light is on.
<b>Connect the computer directly to an electrical outlet</b>	Bypass power protection devices, power strips, and the extension cable to verify that the computer turns on.
<b>Adjust the power properties</b>	Search for the keyword <i>standby</i> in the Windows Help and Support Center or Click <b>Start &gt; Help and Support</b> .
<b>Switch the video image</b>	If your computer is attached to an external monitor, press <b>[Fn] [F8]</b> to switch the video image to the display.

## If the display is difficult to read

Tasks	Description
<b>Adjust the brightness</b>	Press <b>[Fn]</b> and the up- or down-arrow key.
<b>Move the external subwoofer away from the computer or the monitor</b>	If your external speaker system includes a subwoofer, ensure that the subwoofer is at least 60 cm (2 ft) away from the computer or external monitor.
<b>Eliminate possible interference</b>	Turn off nearby fans, fluorescent lights, halogen lamps, or other appliances.
<b>Rotate the computer to face a different direction</b>	Eliminate sunlight glare, which can cause poor picture quality.
<b>Adjust the Windows display settings</b>	Eliminate sunlight glare, which can cause poor picture quality.

1. Click **Start > Control Panel > Appearance and Themes**.
2. Click the area you want to change or click the **Display** icon.
3. Try different settings for **Color quality** and **Screen resolution**.

**Run the video diagnostics test** - If no error message appears and you still have a display problem, but the display is not completely blank, run the **Video** device group in the [Dell Diagnostics](#).

## If only part of the display is readable

### Connect an external monitor -

1. Shut down your computer and connect an external monitor to the computer.
2. Turn on the computer and the monitor. Then, adjust the monitor brightness and contrast controls.

If the external monitor works, the computer display or video controller may be defective. [Contact Dell.](#)

# Getting Help and Contacting Dell

If you need information about Dell products or services, or if you experience problems using your computer, you can get help from one of the self-help resources, or you can call Dell to get help from a Dell technician.

## Self-Help Options

- Access **Windows Help and Support** by clicking **Start** → **Help and Support**.
- See the Microsoft Website, [microsoft.com](http://microsoft.com), for more information about your Microsoft Windows operating system.

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

- [dell.com](http://dell.com)
- [dell.com/ap](http://dell.com/ap) (Asian/Pacific countries only)
- [dell.com/jp](http://dell.com/jp) (Japan only)
- [euro.dell.com/content/default.aspx](http://euro.dell.com/content/default.aspx) (Europe only)
- [dell.com/la](http://dell.com/la) (Latin American and Caribbean countries)
- [dell.com/ca](http://dell.com/ca) (Canada only)

The Dell Support site, <http://www.dell.com/support> provides access to troubleshooting wizards, user manuals, technical help blogs, download Dell driver and software updates, and so on.

## Contacting Dell

Customers in the United States, call 800-WWW-DELL (800-999-3355).

 **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. Go to [dell.com/ContactDell](http://dell.com/ContactDell).
2. Select your country or region.
3. Select the appropriate service or support link based on your requirement.
4. Choose the method of contacting Dell that is convenient for you.

## Microsoft Knowledge Base

Microsoft Knowledge Base is a repository of over 150,000 articles made available to the public by Microsoft Corporation. It contains information on many problems encountered by users of Microsoft

products. Each article bears an ID number and articles are often referred to by their Knowledge Base (KB) ID.

## How to query the Microsoft Knowledge Base by using keywords and query words

To quickly find an article in the Microsoft Knowledge Base, you can search by using keywords and query words. This article lists keywords and query words that you can use in your searches. You can also find keywords and query words by looking in the "Keywords" and "Additional query words" sections that are found in some articles. Using the keywords and query words that are listed in one article may help find other articles that have similar content. However, some query words are only used for older content and may not help you find the most current information. Use a variety of search techniques to make sure that you receive the best search result.

### Using keywords in your searches

Some articles have a "Keywords" section. The Knowledge Base is large, and it is constantly being updated. The team responsible for managing the Knowledge Base regularly adds keywords to Knowledge Base articles to help automate this work. You can use these keywords in your searches to locate articles that are related to your specific issue.

The following is a list of frequently used keywords. However, keep in mind that there are many keywords that are not listed here. Check the articles that you most frequently use to find keywords that may not be listed here, but that may help in your other searches.

**Table 4. Windows Keywords**

<b>Query Word</b>	<b>Description</b>
kbBackup	Creating or restoring backups of the computer system
kbClustering	Server Cluster
kbDefrag	Microsoft Defragmenter
kbDisasterRec	Disaster recovery
kbDualBoot	Dual booting
kbenable	Accessibility: information
kbEnableHear	Accessibility: hearing features
kbEnableLearn	Accessibility: learning features
kbEnableMove	Accessibility: sight features
kbenv	Environment and configuration information including OS, registry
kbEvent	Events, event models, custom events
kbEventLog	Event logging
kbFax	Fax
kbformat	Formatting

<b>Query Word</b>	<b>Description</b>
kbkern32dll	Kernel 32 issues and errors in Windows
kbKernBase	Kernel/Base issues
kbNLB	Network Load Balancing Cluster, Windows Load Balancing Service (WLBS)
kbRD	Remote Desktop
kbRegistry	Windows registry
kbRPC	Remote procedure calls
kbSafeMod	Safe Mode
kbScanDisk	Microsoft ScanDisk
kbshell	The Windows shell that lets users group-start and otherwise control applications
kbsound	Sound/audio
kbSysPrepTool	Microsoft Systems Preparation Tool
kbSysSettings	Operating system setup and registry settings
kbTimeServ	W32 time service
kbVirtualMem	Virtual memory
kbwindowsupdate	Windows Update
kbWinsock	Communication sockets such as NET Winsock and MFC Socks

**Table 5. Topic of article keywords**

<b>Query Word</b>	<b>Description</b>
kbAppCompatibility	Application compatibility
kbConfig	Configuration after initial setup
kbdisplay	Displaying information on a monitor
kberrmsg	Error messages and error message follow-up information
kbgraphic	Graphics
kbHardware	Hardware
kbinterop	Operation between applications
kbmm	Multimedia
kbMobility	Mobile Information Server and ActiveSync
kbprint	Printing
kbproof	Spelling and grammar checking tools

Query Word	Description
kbRepair	Repair processes and tools
kbsetup	Setup
kbui	Configuring the user interface
kbUpgrade	Upgrading or migration
kbUSB	Universal serial bus
kbvirus	Viruses and macro viruses
kbwizard	Using wizards

**Table 6. Type of article keywords**

Query Word	Description
atDownload	Contains a software update download
Kbqfe	Contains a hotfix
kbhowto	Describes a feature or describes how to perform a task
kbtshoot	Describes a problem or bug, how to fix a problem or bug, or for content about a virus.

**Table 7. Security-related keywords**

Query Word	Description
KbSECBulletin	Security bulletins
kbSecurity	Security
KbSECVulnerability	Known software vulnerabilities

## Automated Order-Status Service

To check on the status of any Dell products that you have ordered, you can go to <http://www.dell.com/support>, 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, see the *contact numbers* for your region on [dell.com/support](http://dell.com/support).

## AutoTech Service

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

When you call AutoTech, use your touch-tone telephone to select the subjects that correspond to your questions.

The AutoTech service is available 24 hours a day, 7 days a week. You can also access this service through the technical support service. For the telephone number to call, see the *contact numbers* for your region on [dell.com/support](http://dell.com/support).

## Dell Connect / GoToAssit

DellConnect / GoToAssit is a Web-based technology that enables Dell service and support associates to access a customer's computer to diagnose and repair it, all under the customer's supervision. With this technology, a representative has the ability to:

- Communicate with the customer via a chat box.
- View or take control of customer's desktop.
- Use the pen, highlighter, and arrow stamper tools on the shared desktop.
- Share control of the mouse and keyboard.
- Push/send URLs.
- Send and receive files.
- Reboot and reconnect to the customer's computer.
- Transfer a session to Level 2 / Manager.
- Invite a co-worker to assist you or learn from a session.
- Use Diagnostic Tools to retrieve key information on the status of the customer's computer.

## 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, See *contact numbers* for your region from [dell.com/support](http://dell.com/support).

## 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 [dell.com](http://dell.com). For the telephone number to call to speak to a sales specialist, see the contact numbers for your region from [dell.com/support](http://dell.com/support).

## Returning Items for Warranty Repair or Credit

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

1. Call **Dell** to obtain a *Return Material Authorization Number*, and write it clearly and prominently on the outside of the box.  
For the telephone number to call, see the *contact numbers* for your region from [dell.com/support](http://dell.com/support).
2. Include a copy of the invoice and a letter describing the reason for the return.
3. Include a list 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 floppy disks, 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 Dell's receiving dock and returned to you.

## Before You Call

 **NOTE:** Have your Express Service Code / Service Tag 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 below. If possible, turn on your computer 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 itself. Ensure that the computer documentation is available.

 **NOTE:** Before working inside your computer, read the safety instructions in your *Owner's Manual*.

### Diagnostics Checklist

Name:

Date:

Address:

Phone number:

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

Express Service Code:

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

Operating system and version:

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:

## Travel Tips

 **NOTE:** Do not move the computer while using the optical drive to prevent loss of data.

 **NOTE:** Do not check the computer as baggage.

- Consider changing your power management options to maximize battery operating time.
- If you are traveling internationally, carry proof of ownership—or of your right to use the computer if it is company-owned—to speed your passage through customs. Investigate the customs regulations of the countries you plan to visit, and consider acquiring an international carnet (also known as a *merchandise passport*) from your government.
- Find out what type of electrical outlets are used in the countries you will visit, and have appropriate power adapters.
- Check with your credit card / Insurance company for information about the kinds of emergency travel assistance it offers to users of portable computers.

### Traveling by Air

 **NOTE:** Do not take the computer through a metal detector. Send the computer through an X-ray machine or have it hand-inspected.

- Ensure that you have a charged battery available in case you are asked to turn on the computer. Prior to entering the airplane, verify that using a computer is permitted. Some airlines forbid the use of electronic devices during flight. All airlines forbid the use of electronic devices during takeoff and landing.

# Pro Support

## Support Services for End Users and IT Professionals

Minimize disruptions and maintain a high level of productivity through Dell's suite of support services that you can tailor to align with your organization's entire IT landscape.

Dell offers world-class support services such as ProSupport service to fit any size and type of business. Dell Support services provide end users and IT professionals with various remote and on-site technical support solutions for all of your Dell and non Dell hardware and software needs. Dell provides customers with world-class remote technical support with several different options and levels of on-site support, ranging from next business day to two-hour response times.

Dell can also assist with proactive problem avoidance, remote monitoring and self-support options to help you maximize productivity. We have expertise in supporting specialized applications and technology, such as virtualization, systems management and Microsoft products. Our Global Command Centers track parts and labor dispatches around the clock to help meet your critical IT needs with prompt, comprehensive support to help you solve even the most complex problems. Speak to a Dell Services representative to help you choose the support services that best suit your business and IT environment.

Customer Location	Master Services Agreement & Service Contracts	PartnerDirect and Reseller Terms & Conditions	Dell Services Acceptable Use Policy
United States, Latin America & the Caribbean	<a href="http://www.dell.com/servicesdescriptions">www.dell.com/servicesdescriptions</a>	<a href="http://www.dell.com/termsandconditions">www.dell.com/termsandconditions</a>	<a href="http://www.dell.com/aup">www.dell.com/aup</a>
Canada	<a href="http://www.dell.ca/servicecontracts">www.dell.ca/servicecontracts</a>	<a href="http://www.dell.ca">www.dell.ca</a>	<a href="http://www.dell.com/aup">www.dell.com/aup</a>
Europe, Middle East & Africa	<a href="http://www1.euro.dell.com/content/topics/global.aspx/services/service-contracts/service-contracts?c=cz&amp;l=cs&amp;s=dhs&amp;cs=czdhs1&amp;redirect=1">http://www1.euro.dell.com/content/topics/global.aspx/services/service-contracts/service-contracts?c=cz&amp;l=cs&amp;s=dhs&amp;cs=czdhs1&amp;redirect=1</a>	<a href="http://partner.euro.dell.com/Main/Pages/DPPEM/EA/UK/TermsOfUse.aspx">http://partner.euro.dell.com/Main/Pages/DPPEM/EA/UK/TermsOfUse.aspx</a>	<a href="http://www.dell.com/aup">www.dell.com/aup</a>
Asia, Pacific & Japan	<a href="http://www.dell.com">www.dell.com</a>	<a href="http://www.dell.com">www.dell.com</a>	<a href="http://www.dell.com/aup">www.dell.com/aup</a>

# Cleaning Your Computer

## Computer, Keyboard, and Display

 **CAUTION:** Before you clean your computer, disconnect the computer from the electrical outlet and remove any installed batteries. Clean your computer with a soft cloth dampened with water. Do not use liquid or aerosol cleaners, which may contain flammable substances.

- Use a can of compressed air to remove dust from between the keys on the keyboard.
  - ▣ **NOTE:** To avoid damaging the computer or display, do not spray cleaning solution directly onto the display. Only use products designed for cleaning displays, and follow the instructions that are included with the product.
- Moisten a soft, lint-free cloth with either water or a display cleaner, and wipe the display till it is clean.
  - ▣ **NOTE:** To prevent damage to the anti-glare coating, do not wipe the display with soap or alcohol.
- Moisten a soft, lint-free cloth with water and wipe the computer and keyboard. Do not allow water from the cloth to seep between the touchpad and the surrounding palmrest.
- To clean your monitor screen or display, lightly dampen a soft, clean cloth with water. You can also use a special screen-cleaning tissue or solution suitable for the monitor's anti-static coating.
- Wipe the keyboard, computer, and monitor plastics with a soft cleaning cloth moistened with a solution of three parts water and one part dish-washing detergent.

 **CAUTION:** Do not soak the cloth or let water drip inside your computer or keyboard.

## Touchpad

1. Turn the computer off.
2. Disconnect the computer from the electrical outlet, and disconnect all the devices from the computer.
3. Remove the battery.
4. Moisten a soft, lint-free cloth with water, and wipe it gently across the surface of the touch pad. Do not allow water from the cloth to seep between the touchpad and the surrounding palmrest.

## Mouse

If your screen cursor skips or moves abnormally, clean the mouse.

 **NOTE:** Disconnect the mouse from the computer before cleaning the mouse.

## Cleaning a Non-Optical Mouse

1. Clean the outside casing of the mouse with a cloth moistened with a mild cleaning solution.

2. Turn the retainer ring on the underside of your mouse counterclockwise to release it, and remove the ball.
3. Wipe the ball with a clean, lint-free cloth.
4. Blow carefully into the ball cage or use a can of compressed air to dislodge dust and lint.
5. If the rollers inside the ball cage are dirty, clean the rollers with a cotton swab moistened lightly with isopropyl alcohol.
6. Re-center the rollers in their channels if they are misaligned. Ensure that fluff from the swab is not left on the rollers.
7. Replace the ball and the retainer ring, and turn the retainer ring clockwise to secure the ball.

## Cleaning an Optical Mouse

Clean the outside casing of the mouse with a cloth moistened with a mild cleaning solution.

## Optical Disk

If you notice problems, such as skipping, with the playback quality of your CD or DVD, try cleaning the disc.

1. Hold the disc by its outer edge. You can also touch the inside edge of the center hole.  
 **NOTE:** To avoid damaging the surface, do not wipe in a circular motion around the disc.
2. With a soft, lint-free cloth, gently wipe the bottom of the disc (the unlabeled side) in a straight line from the center to the outer edge of the disc.  
For stubborn dirt, try using water or a diluted solution of water and mild soap. You can also purchase commercial products that clean discs and provide some protection from dust, fingerprints, and scratches. Cleaning products for CDs are also safe to use on DVDs.

# Traveling With Your Computer

## Identifying Your Computer

- Attach a name tag or business card to the computer.
- Write down your Service Tag and store it in a safe place away from the computer or carrying case. Use the Service Tag if you need to report a loss or theft to law enforcement officials and to Dell.
- Create a file on the Microsoft Windows desktop called if\_found. Place information such as your name, address, and phone number in this file.
- Contact your credit card company and ask if it offers coded identification tags.

## Packing the Computer

- Remove any external devices attached to the computer and store them in a safe place. Remove any cables attached to installed PC Cards, and remove any extended PC Cards.
- To make the computer as light as possible, replace any devices installed in the module bay with the Dell Travellite module.
- Fully charge the main battery and any spare batteries that you plan to carry with you.
- Shut down the computer.
- Disconnect the AC adapter.
  - ✎ **NOTE:** When the display is closed, extraneous items on the keyboard or palm rest could damage the display.
- Remove any extraneous items, such as paper clips, pens, and paper, from the keyboard and palm rest and close the display.
- Use the optional Dell carrying case to pack the computer and its accessories together safely.
- Avoid packing the computer with items such as shaving cream, colognes, perfumes, or food.
  - ✎ **NOTE:** If the computer has been exposed to extreme temperatures, allow it to acclimatize to room temperature for 1 hour before turning it on.
- Protect the computer, the batteries, and the hard drive from hazards such as extreme temperatures and overexposure to sunlight, 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.