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Notes, Notices, and Cautions

-  **NOTE:** A NOTE indicates important information that helps you make better use of your computer.
-  **NOTICE:** A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.
-  **CAUTION:** A CAUTION indicates a potential for property damage, personal injury, or death.

Abbreviations and Acronyms

For a complete list of abbreviations and acronyms, see the [Glossary](#).

If you purchased a Dell™ n Series computer, any references in this document to Microsoft® Windows® operating systems are not applicable.

The *Drivers and Utilities* CD (*ResourceCD*), operating system media, and *Quick Reference Guides* are optional and may not ship with all computers.

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Models MTC2 and DHS

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Advanced Troubleshooting

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Dell Diagnostics

When to Use the Dell Diagnostics

If you experience a problem with your computer, perform the checks in "[Solving Problems](#)" and run the Dell Diagnostics before you [contact Dell](#) for technical assistance. Running the Dell Diagnostics may help you resolve the problem without contacting Dell. If you do contact Dell, the test results can provide important information for Dell's service and support personnel.

The Dell Diagnostics allows you to:

- 1 Perform tests on one or all devices.
- 1 Select tests based on a symptom of the problem you are having.
- 1 Choose how many times a test is run.
- 1 Suspend testing if an error is detected.
- 1 Access help information that describes the tests and devices.
- 1 Receive status messages that tell you whether tests completed successfully.
- 1 Receive error messages if problems are detected.

Starting the Dell Diagnostics

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

 **NOTICE:** Use the Dell Diagnostics to test your Dell™ computer only. Using this program with other computers can result in error messages.

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

Start the Dell Diagnostics from either your [hard drive](#) or from the [optional Drivers and Utilities CD](#).

Starting the Dell Diagnostics From Your Hard Drive

1. Shut down and restart the computer.

 **NOTE:** When the DELL™ logo appears, press <F12> immediately. If you see a message stating that no diagnostics utility partition has been found, run the Dell Diagnostics from your optional *Drivers and Utilities CD*.

If you wait too long and the Microsoft® Windows® logo appears, continue to wait until you see the Windows desktop. Then shut down your computer through the **Start** menu and try again.

2. When the boot device list appears, highlight **Boot to Utility Partition** and press <Enter>.
3. When the Dell Diagnostics **Main Menu** appears, select the test you want to run.

Starting the Dell Diagnostics From the Optional Drivers and Utilities CD

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

When the DELL logo appears, press <F12> immediately.

If you wait too long and the Windows logo appears, continue to wait until you see the Windows desktop. Then shut down your computer through the **Start** menu and try again.

 **NOTE:** This feature changes the boot sequence for one time only. On the next start-up, the computer boots according to the devices specified in system setup.

3. When the boot device list appears, highlight **IDE CD-ROM Device** and press <Enter>.
4. Select the **IDE CD-ROM Device** option from the CD boot menu.
5. Select the **Boot from CD-ROM** option from the menu that appears.
6. Type 1 to start the Drivers and Utilities CD menu.
7. Type 2 to start the Dell Diagnostics.
8. Select **Run the 32 Bit Dell Diagnostics** from the numbered list. If multiple versions are listed, select the version appropriate for your computer.
9. When the Dell Diagnostics **Main Menu** appears, select the test you want to run.

Dell Diagnostics Main Menu

1. After the Dell Diagnostics loads and the **Main Menu** screen appears, click the button for the option you want.

Option	Function
Express Test	Performs a quick test of devices. This test typically takes 10 to 20 minutes and requires no interaction on your part. Run Express Test first to increase the possibility of tracing the problem quickly.
Extended Test	Performs a thorough check of devices. This test typically takes an hour or more and requires you to answer questions periodically.
Custom Test	Tests a specific device. You can customize the tests you want to run.
Symptom Tree	Lists the most common symptoms encountered and allows you to select a test based on the symptom of the problem you are having.

2. If a problem is encountered during a test, a message appears with an error code and a description of the problem. Write down the error code and problem description and follow the instructions on the screen.

If you cannot resolve the error condition, contact Dell.

 **NOTE:** The Service Tag for your computer is located at the top of each test screen. If you contact Dell, technical support will ask for your Service Tag number.

3. If you run a test from the **Custom Test** or **Symptom Tree** option, click the applicable tab described in the following table for more information.

Tab	Function
Results	Displays the results of the test and any error conditions encountered.
Errors	Displays error conditions encountered, error codes, and the problem description.
Help	Describes the test and may indicate requirements for running the test.
Configuration	Displays your hardware configuration for the selected device. The Dell Diagnostics obtains configuration information for all devices from system setup, memory, and various internal tests, and it displays the information in the device list in the left pane of the screen. The device list may not display the names of all the components installed on your computer or all devices attached to your computer.
Parameters	Allows you to customize the test by changing the test settings.

4. When the tests are completed, if you are running the Dell Diagnostics from the *Drivers and Utilities* CD, remove the CD.
5. Close the test screen to return to the **Main Menu** screen. To exit the Dell Diagnostics and restart the computer, close the **Main Menu** screen.

Drivers

What Is a Driver?

A driver is a program that controls a device such as a printer, mouse, or keyboard. All devices require a driver program.

A driver acts like a translator between the device and 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.



NOTICE: The *Drivers and Utilities* CD 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:

- 1 Upgrade your operating system.
- 1 Reinstall your operating system.
- 1 Connect or install a new device.

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 XP

1. Click the **Start** button and click **Control Panel**.
2. Under **Pick a Category**, click **Performance and Maintenance**.
3. Click **System**.
4. In the **System Properties** window, click the **Hardware** tab.
5. Click **Device Manager**.
6. Scroll down the list to see if any device has an exclamation point (a yellow circle with a [!]) on the device icon.

If an exclamation point is next to the device name, you may need to reinstall the driver or install a new driver.

Windows 2000

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click **System**.
3. In the **System Properties** window, click the **Hardware** tab.
4. Click **Device Manager**.
5. Scroll down the list to see if any device has an exclamation point (a yellow circle with a [!]) on the device icon.

If an exclamation point is next to the device name, you may need to reinstall the driver or install a new driver.

Reinstalling Drivers and Utilities

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

Using Windows XP Device Driver Rollback

If a problem occurs on your computer after you install or update a driver, use Windows XP Device Driver Rollback to replace the driver with the previously installed version.

1. Click the **Start** button and click **Control Panel**.
2. Under **Pick a Category**, click **Performance and Maintenance**.
3. Click **System**.
4. In the **System Properties** window, click the **Hardware** tab.
5. Click **Device Manager**.
6. Right-click the device for which the new driver was installed and click **Properties**.
7. Click the **Drivers** tab.
8. Click **Roll Back Driver**.

If Device Driver Rollback does not resolve the problem, then use System Restore to return your computer to the operating state that existed before you installed the new driver.

Using the Optional Drivers and Utilities CD

If using Device Driver Rollback or [System Restore](#) does not resolve the problem, then reinstall the driver from the *Drivers and Utilities* CD.

 **NOTE:** To access device drivers and user documentation, you must use the Drivers and Utilities CD while your computer is running Windows.

1. Insert the *Drivers and Utilities* CD.

If this is your first time to use the *Drivers and Utilities* CD, the **Installation** window opens to inform you that the CD will begin the installation. Click OK and respond to the installation program prompts to complete the installation.

2. Click **Next** at the **Welcome Dell System Owner** screen.
3. Choose the appropriate selections for **System Model**, **Operating System**, **Device Type**, and **Topic**.
4. Click **My Drivers** in the **Topic** drop-down menu.

The *Drivers and Utilities* CD scans your computer's hardware and operating system and then displays a list of device drivers for your system configuration.

5. Click the appropriate driver and follow the instructions to download the driver for your computer.

To view a list of all available drivers for your computer, click **Drivers** in the **Topic** drop-down menu.

To access the help files on the Drivers and Utilities CD, click the question mark button or the **Help** link at the top of the screen.

Using Microsoft® Windows® XP System Restore

The Microsoft Windows XP operating system provides System Restore to allow you to return your computer to an earlier operating state (without affecting data files) if changes to the hardware, software, or other system settings have left the computer in an undesirable operating state. See the Windows Help and Support Center for information on using System Restore.

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

Creating a Restore Point

1. Click the **Start** button and click **Help and Support**.
2. Click **System Restore**.
3. Follow the instructions on the screen.

Restoring the Computer to an Earlier Operating State

 **NOTICE:** Before you restore the computer to an earlier operating state, save and close any open files and exit any open programs. Do not alter, open, or delete any files or programs until the system restoration is complete.

1. Click the **Start** button, point to **All Programs**→**Accessories**→**System Tools**, and then click **System Restore**.
2. Ensure that **Restore my computer to an earlier time** is selected and click **Next**.
3. Click a calendar date to which you want to restore your computer.

The **Select a Restore Point** screen provides a calendar that allows you to see and select restore points. All calendar dates with available restore points appear in boldface type.

4. Select a restore point and click **Next**.

If a calendar date has only one restore point, then that restore point is automatically selected. If two or more restore points are available, click the restore point that you prefer.

5. Click **Next**.

The **Restoration Complete** screen appears after System Restore finishes collecting data and then the computer restarts.

6. After the computer restarts, click **OK**.

To change the restore point, you can either repeat the steps using a different restore point, or you can undo the restoration.

Undoing the Last System Restore

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

1. Click the **Start** button, point to **All Programs**→**Accessories**→**System Tools**, and then click **System Restore**.
2. Click **Undo my last restoration** and click **Next**.
3. Click **Next**.

The System Restore screen appears and the computer restarts.

4. After the computer restarts, click **OK**.

Enabling System Restore

If you reinstall Windows XP with less than 200 MB of free hard-disk space available, System Restore is automatically disabled. To see if System Restore is enabled:

1. Click the **Start** button and click **Control Panel**.
2. Click **Performance and Maintenance**.
3. Click **System**.
4. Click the **System Restore** tab.

Ensure that **Turn off System Restore** is unchecked.

Reinstalling Microsoft® Windows® XP

Before You Begin

If you are considering reinstalling the Windows XP operating system to correct a problem with a newly installed driver, first try using Windows XP [Device Driver Rollback](#). If Device Driver Rollback does not resolve the problem, then use [System Restore](#) to return your operating system to the operating state it was in before you installed the new device driver.

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

To reinstall Windows XP, you need the following items:

- 1 Dell™ *Operating System CD*
- 1 Dell *Drivers and Utilities CD*

- 📀 **NOTE:** The *Drivers and Utilities CD* contains drivers that were factory installed during assembly of the computer. Use the *Drivers and Utilities CD* to load any required drivers, including those drivers required if your computer has a RAID controller.

- 1 Product Key (Product ID Number)

- 📀 **NOTE:** The Product Key is the bar code number on the sticker that is located on the external side cover of your computer. You may be prompted for the Product Key when using the *Operating System CD* under certain conditions.

Reinstalling Windows XP

To reinstall Windows XP, perform all the steps in the following sections in the order in which they are listed.

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

- ➔ **NOTICE:** The *Operating System CD* provides options for reinstalling Windows XP. The options can overwrite files and possibly affect programs installed on your hard drive. Therefore, do not reinstall Windows XP unless instructed to do so by a Dell technical support representative.
- ➔ **NOTICE:** To prevent conflicts with Windows XP, disable any virus protection software installed on your computer before you reinstall Windows XP. See the documentation that came with the software for instructions.

Booting From the Operating System CD

1. Save and close any open files and exit any open programs.
2. Insert the *Operating System CD*. If any program starts automatically, exit the program before proceeding.
3. Shut down the computer through the **Start** menu and **restart the computer**. Press <F12> immediately after the DELL™ logo appears.

If the operating system logo appears, wait until you see the Windows desktop, and then [shut down your computer](#) and try again.

4. Press the arrow keys to select **CD-ROM**, and then press <Enter>.
5. When the **Press any key to boot from CD** message appears, press any key.

Windows XP Setup

1. When the **Windows XP Setup** screen appears, press <Enter> to select **To set up Windows now**.
2. Read the information on the **Microsoft Windows Licensing Agreement** screen, and press <F8> to accept the license agreement.
3. If your computer already has Windows XP installed and you want to recover your current Windows XP data, type **r** to select the repair option, and then

remove the CD.

4. If you want to install a new copy of Windows XP, press <Esc> to select that option.
5. Press <Enter> to select the highlighted partition (recommended), and then follow the instructions on the screen.

The **Windows XP Setup** screen appears, and the operating system begins to copy files and install the devices. The computer automatically restarts multiple times.

 **NOTE:** The time required to complete the setup depends on the size of the hard drive and the speed of your computer.

 **NOTICE:** Do not press any key when the following message appears: *Press any key to boot from the CD.*

6. When the **Regional and Language Options** screen appears, select the settings for your location, and then click **Next**.
7. Enter your name and organization (optional) in the **Personalize Your Software** screen and click **Next**.
8. At the **Computer Name and Administrator Password** window, enter a name for your computer (or accept the one provided) and a password, and then click **Next**.
9. If the **Modem Dialing Information** screen appears, enter the requested information and click **Next**.
10. Enter the date, time, and time zone in the **Date and Time Settings** window and click **Next**.
11. If the **Networking Settings** screen appears, click **Typical** and click **Next**.
12. If you are reinstalling Windows XP Professional and you are prompted to provide further information regarding your network configuration, enter your selections. If you are unsure of your settings, accept the default selections.

Windows XP installs the operating system components and configures the computer. The computer automatically restarts.

 **NOTICE:** Do not press any key when the following message appears: *Press any key to boot from the CD.*

13. When the **Welcome to Microsoft** screen appears, click **Next**.
14. When the *How will this computer connect to the Internet?* message appears, click **Skip**.
15. When the **Ready to register with Microsoft?** screen appears, select **No, not at this time** and click **Next**.
16. When the **Who will use this computer?** screen appears, you can enter up to five users. Click **Next**.
17. Click **Finish** to complete the setup, and remove the CD.
18. Reinstall the appropriate drivers using the *Drivers and Utilities* CD.
19. Reinstall your virus protection software.

Resolving Software and Hardware Incompatibilities

Microsoft® Windows® XP

Windows XP IRQ conflicts occur if a device either is not detected during the operating system setup or is detected but incorrectly configured.

To check for conflicts on a computer running Windows XP:

1. Click the **Start** button and click **Control Panel**.
2. Click **Performance and Maintenance** and click **System**.
3. Click the **Hardware** tab and click **Device Manager**.
4. In the **Device Manager** list, check for conflicts with the other devices.

Conflicts are indicated by a yellow exclamation point (!) beside the conflicting device or a red X if the device has been disabled.

5. Double-click any conflict to display the **Properties** window.

If an IRQ conflict exists, the **Device** status area in the **Properties** window reports the cards or devices that share the device's IRQ.

6. Resolve conflicts by reconfiguring the devices or removing the devices from the **Device Manager**.

To use the Windows XP Hardware Troubleshooter:

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

Windows 2000

To check for conflicts on a computer running Windows 2000:

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. In the **Control Panel** window, double-click **System**.
3. Click the **Hardware** tab.
4. Click **Device Manager**.
5. Click **View** and click **Resources by connection**.
6. Double-click **Interrupt request (IRQ)** to view the IRQ assignments.

Conflicts are indicated by a yellow exclamation point (!) beside the conflicting device or a red x if the device has been disabled.

7. Double-click any conflict to display the **Properties** window.

If an IRQ conflict exists, the **Device** status area in the **Properties** window reports the cards or devices that share the device's IRQ.

8. Resolve conflicts by reconfiguring the devices or removing the devices from the Device Manager.

To use the Windows 2000 Hardware Troubleshooter:

1. Click the **Start** button and click **Help**.
2. Click **Troubleshooting and Maintenance** on the **Contents** tab, click **Windows 2000 troubleshooters**, and then click **Hardware**.
3. In the **Hardware Troubleshooter** list, click **I need to resolve a hardware conflict on my computer** and click **Next**.

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LegacySelect Technology Control

LegacySelect technology control offers legacy-full, legacy-reduced, or legacy-free solutions based on common platforms, hard-drive images, and help desk procedures. Control is provided to the administrator through system setup, Dell OpenManage™ IT Assistant, or Dell™ custom factory integration.

LegacySelect allows administrators to electronically activate or deactivate connectors and media devices that include serial and USB connectors, a parallel connector, a floppy drive, PCI slots, and a PS/2 mouse. Connectors and media devices that are deactivated make resources available. You must restart the computer to effect the changes.

Manageability

Dell OpenManage™ IT Assistant

IT Assistant configures, manages, and monitors computers and other devices on a corporate network. IT Assistant manages assets, configurations, events (alerts), and security for computers equipped with industry-standard management software. It supports instrumentation that conforms to SNMP, DMI, and CIM industry standards.

Dell OpenManage Client instrumentation, which is based on DMI and CIM, is available for your computer. For information on IT Assistant, see the *Dell OpenManage IT Assistant User's Guide* available on the Dell Support website at support.dell.com.

Dell OpenManage Client Instrumentation

Dell OpenManage Client Instrumentation is software that enables remote management programs such as IT Assistant to do the following:

- 1 Access information about your computer, such as how many processors it has and what operating system it is running
- 1 Monitor the status of your computer, such as listening for thermal alerts from temperature probes or hard-drive failure alerts from storage devices
- 1 Change the state of your computer, such as updating its BIOS or shutting it down remotely

For information about Dell OpenManage Client Instrumentation, see the *Dell OpenManage Client Instrumentation User's Guide* available on the Dell Support website at support.dell.com.

Security

Security Cable Slot

Attach a commercially available antitheft device to the security cable slot on the back of the computer.

 **NOTE:** Before you purchase an antitheft device, make sure that it works with the security cable slot on your computer.

Antitheft devices usually include a segment of metal-stranded cable with an attached locking device and key. The documentation that comes with the device contains instructions for installing it.

Padlock Ring

The small desktop computer has a padlock ring. Use one of the following methods to secure your computer:

- 1 Use a padlock alone or a padlock and looped security cable with the padlock ring.

A padlock alone prevents the computer from being opened.

- 1 A security cable looped around a stationary object is used in conjunction with a padlock to prevent unauthorized movement of the computer.
-

Password Protection

 **NOTICE:** Although passwords provide security for the data on your computer, they are not foolproof. If your data requires more security, it is your responsibility to obtain and use additional forms of protection, such as data encryption programs.

System Password

 **NOTICE:** If you leave your computer running and unattended without having a system password assigned, or if you leave your computer unlocked so that someone can disable the password by changing a jumper setting, anyone can access the data stored on your hard drive.

Option Settings

You cannot change or enter a new system password if either of the following two options is displayed:

- 1 **Enabled** — A system password is assigned.
- 1 **Disabled** — The system password is disabled by a jumper setting on the system board.

You can only assign a system password when the following option is displayed:

- 1 **Not Enabled** — No system password is assigned and the password jumper on the system board is in the enabled position (the default).

Assigning a System Password

To escape from the field without assigning a system password, press <Tab> or the <Shift><Tab> key combination to move to another field, or press <Esc> at any time before you complete step 5.

1. [Enter system setup](#) and verify that **Password Status** is set to **Unlocked**.
2. Highlight **System Password**, and then press the <Enter> key.

The option heading changes to **Enter Password**, followed by an empty 32-character field in square brackets.

3. Type your new system password.

You can use up to 32 characters. To erase a character when entering your password, press <Backspace> or the left-arrow key. The password is not case sensitive.

Certain key combinations are not valid. If you enter one of these combinations, the speaker emits a beep.

As you press each character key (or the spacebar for a blank space), a placeholder appears in the field.

4. Press <Enter>.

If the new system password is less than 32 characters, the whole field fills with placeholders. Then the option heading changes to **Verify Password**, followed by another empty 32-character field in square brackets.

5. To confirm your password, type it a second time and press <Enter>.

The password setting changes to **Enabled**.

6. Exit system setup.

Password protection takes effect when you restart the computer.

Typing Your System Password

When you start or restart your computer, one of the following prompts appears on the screen.

If **Password Status** is set to **Unlocked**:

```
Type in the password and
- press <ENTER> to leave password security enabled.
- press <CTRL><ENTER> to disable password security.
Enter password:
```

If **Password Status** is set to **Locked**:

```
Type the password and press <Enter>.
```

If you have assigned a setup password, the computer accepts your setup password as an alternate system password.

If you type a wrong or incomplete system password, the following message appears on the screen:

```
** Incorrect password. **
```

If you again type an incorrect or incomplete system password, the same message appears on the screen. The third and subsequent times you type an incorrect or incomplete system password, the computer displays the following message:

```
** Incorrect password. **
Number of unsuccessful password attempts: 3
System halted! Must power down.
```

Even after your computer is turned off and on, the previous message is displayed each time you type an incorrect or incomplete system password.



NOTE: You can use **Password Status** in conjunction with **System Password** and **Setup Password** to further protect your computer from unauthorized changes.

Deleting or Changing an Existing System Password

1. [Enter system setup](#) and verify that **Password Status** is set to **Unlocked**.
2. Restart your computer.
3. When prompted, type the system password.
4. Press <Ctrl><Enter> to disable the existing system password.
5. Confirm that **Not Enabled** is displayed for the **System Password** option.

If **Not Enabled** is displayed, the system password is deleted. If **Not Enabled** is not displayed, press <Alt> to restart the computer, and then repeat [step 3](#) through [step 5](#).

To assign a new password, follow the procedure in "[Assigning a System Password](#)."

6. Exit system setup.

Setup Password

Option Settings

1. **Enabled** — Does not allow assignment of setup passwords; users must enter a setup password to make changes to system setup
1. **Not Enabled** — Allows assignment of setup passwords; password feature is enabled but no password is assigned

Assigning a Setup Password

The setup password can be the same as the system password.

 **NOTE:** If the two passwords are different, the setup password can be used as an alternate system password. However, the system password cannot be used in place of the setup password.

1. [Enter system setup](#) and verify that **Setup Password** is set to **Not Enabled**.
2. Highlight **Setup Password** and press the left- or right-arrow key.

The computer prompts you to type and verify the password. If a character is not permitted, the computer emits a beep.

3. Type and then verify the password.

After you verify the password, the **Setup Password** setting changes to **Enabled**. The next time you enter system setup, the computer prompts you for the setup password.

4. Exit system setup.

A change to **Setup Password** becomes effective immediately (no need to restart the computer).

Operating Your Computer With a Setup Password Enabled

When you enter system setup, the **Setup Password** option is highlighted, prompting you to type the password.

If you do not type the correct password, the computer lets you view, but not modify, system setup options.

 **NOTE:** You can use **Password Status** in conjunction with **Setup Password** to protect the system password from unauthorized changes.

Deleting or Changing an Existing Setup Password

To change an existing setup password, you must know the setup password.

1. [Enter system setup.](#)
2. Type the setup password at the prompt.
3. Highlight **Setup Password** and press the left- or right-arrow key to delete the existing setup password.

The setting changes to **Not Enabled**.

To assign a new setup password, perform the steps in "[Assigning a System Password](#)."

4. Exit system setup.

Disabling a Forgotten Password and Setting a New Password

 **NOTICE:** This process erases both the system and setup passwords.

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

1. [Remove the computer cover.](#)

 **NOTICE:** Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate any static electricity that could harm internal components.

2. Remove the jumper from the connector labeled "CLEAR PASSWORD."

See "[Jumper Settings](#)" to locate the password jumper.

3. [Replace the computer cover.](#)
4. Reconnect your computer and devices to electrical outlets and turn them on.

This disables the existing password(s).

5. [Enter system setup](#) and verify that **Setup Password** is set to **Disabled**.
6. Exit system setup.
7. [Remove the computer cover.](#)

 **NOTICE:** Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate any static electricity that could harm internal components.

8. Replace the CLEAR PASSWORD jumper plug.
9. Replace the computer cover and reconnect the computer and devices to electrical outlets and turn them on.

This reenables the password feature. When you enter system setup, both password options appear as **Not Enabled**—the password feature is enabled but no password is assigned.

10. Assign a new system and/or setup password.

System Setup

Use system setup settings as follows:

- 1 To set user-selectable options such as date and time or system password
- 1 To read the current amount of memory or set the type of hard drive installed

Print the system setup screens (by pressing <Print Screen>) or record the information for future reference.

Before you use system setup, you must know the kind of floppy drive(s) and hard drive(s) installed in your computer. To confirm this information, see the Manufacturing Test Report that came with your computer, or find this information in the online **Dell Accessories** folder.

Entering System Setup

1. Turn on or restart your computer.
2. When **Press <F2> to Enter Setup** appears in the upper-right corner of the screen, press <F2> immediately.
3. If you wait too long and the Microsoft® Windows® logo appears, continue to wait until you see the Windows desktop. Then [shut down your computer](#) and try again.

System Setup Screens

System setup screens display current configuration information for your computer. Information on the screen is organized into four areas:

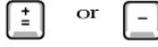
1. Title — The box at the top of all screens that lists the computer name.
1. Computer data — Two boxes below the title box that display your computer processor, L2 cache, service tag, and the version number of the BIOS.
1. Options — A scrollable box listing options that define the configuration of your computer, including installed hardware, power conservation, and security features.

Fields to the right of the option titles contain settings or values. The fields that you can change appear bright on the screen. The fields that you cannot change (because they are set by the computer) appear less bright. When <Enter> appears to the right of an option title, press <Enter> to access a popup menu of additional options.

1. Key functions — A line of boxes across the bottom of all screens that lists keys and their functions within system setup.

System Setup Navigation Keys

Keys	Action
 OR 	Moves to the next field.
  OR 	Moves to the previous field.
 OR 	Cycles through the options in a field. In many fields, you can also type the appropriate value.
 OR 	Scrolls through help information.
	Enters the selected field's popup options menu.
spacebar or	In the selected field's popup options menu, cycles through the options in a field.

	
	Exits system setup without restarting the computer and returns the computer to the boot routine.
	Exits system setup and restarts the computer, implementing any changes you have made.
	Resets the selected option to the default.
	Restores all system settings to the default configuration.

Boot Sequence

This feature allows users to change the sequence of devices from which the computer boots.

Option Settings

- 1 **Normal** — (Available only for the current boot process) The computer attempts to boot from the sequence of devices specified in system setup.
- 1 **Diskette Drive** — The computer attempts to boot from the floppy drive. If the floppy disk in the drive is not bootable, or if no floppy disk is in the drive, the computer generates an error message.
- 1 **Hard Drive** — The computer attempts to boot from the primary hard drive. If no operating system is on the drive, the computer generates an error message.
- 1 **CD Drive** — The computer attempts to boot from the CD drive. If no CD is in the drive, or if the CD has no operating system, the computer generates an error message.
- 1 **PXE** — (Available only for the future boot process) As the computer boots, it prompts the user to press <Ctrl><Alt>. Pressing this key combination causes a menu to display that allows you to select a method for booting from a network server. If a boot routine is not available from the network server, the system attempts to boot from the next device in the boot sequence list.
- 1 **USB Flash Device** — Insert the memory device into a USB port and restart the computer. When F12 = Boot Menu appears in the upper-right corner of the screen, press <F12>. The BIOS detects the device and adds the USB flash option to the boot menu.

 **NOTE:** To boot to a USB device, the device must be bootable. To make sure your device is bootable, check the device documentation.

Changing Boot Sequence for the Current Boot

You can use this feature, for example, to tell the computer to boot from the CD drive so you can run the Dell Diagnostics, but specify that the computer boots from the hard drive when the diagnostic tests are complete.

1. Turn on or restart your computer.
2. When F2 = Setup, F12 = Boot Menu appears in the upper-right corner of the screen, press <F12>.

If you wait too long and the Windows logo appears, continue to wait until you see the Windows desktop. Then [shut down your computer](#) and try again.

The **Boot Device Menu** appears, listing all available boot devices. Each device has a number next to it. At the bottom of the menu, enter the number of the device that is to be used for the current boot only.

Changing Boot Sequence for Future Boots

1. [Enter system setup.](#)
2. Use the arrow keys to highlight the **Boot Sequence** menu option and press <Enter> to access the popup menu.

 **NOTE:** Write down your current boot sequence in case you want to restore it.

3. Press the up- and down-arrow keys to move through the list of devices.
4. Press the spacebar to enable or disable a device (enabled devices have a checkmark).
5. Press the plus (+) or minus (-) keys to move a selected device up or down the list.

System Setup Options

 **NOTE:** Depending on your computer and installed devices, all of the items listed in the section may or may not appear.

Drive Configuration

- 1 **Diskette Drive A** — Identifies the floppy drive attached to the DSKT connector on the system board. The two options are **3.5 Inch, 1.44 MB** and **Not Installed**.

Tape drives are not reflected in the **Diskette Drive A** option. For example, if a single floppy drive and a tape drive are attached to the floppy drive interface cable, set **Diskette Drive A** to **3.5 Inch, 1.44 MB**.

- 1 **SATA Primary Drive** — Identifies the Serial ATA drive attached to the SATA connector on the system board.
- 1 **Primary Master Drive** — Identifies the IDE hard drive attached to the IDE1 connector on the system board.
- 1 **Primary Slave Drive** — Identifies the IDE device attached to the IDE2 connector on the system board.
- 1 **Secondary Master Drive** — Identifies the device that is cabled with the drive on the IDE1 data cable.
- 1 **Secondary Slave Drive** — Identifies the device that is cabled with the device on the IDE2 data cable.
- 1 **IDE Drive UDMA** — Sets the mode for all installed hard drives.

NOTE: You must have an IDE device connected to the primary IDE interface if you have an IDE device connected to the secondary IDE interface.

If You Have a Problem — See "[Hard drive problems](#)."

Hard-Disk Drive Sequence — If you insert a boot device and reboot, this option will appear in your system setup menu.

- 1 **System BIOS boot device**
- 1 **USB Device**

NOTE: To boot from a USB memory device, select the USB device and move it to make it the first device in the list.

Boot Sequence — See "[Boot Sequence](#)" for more information on this option.

Memory Information — Indicates amount of installed memory, computer memory speed, amount of video memory, and size of the display cache.

CPU Information

- 1 **Hyper-threading** — Enables or disables **Hyper-Threading** technology for operating systems that support **Hyper-Threading**. The default setting is **Disabled**. The other two settings are **Enabled** and **Default**.
- 1 **CPU Speed** — The processor speed at which the computer boots.

Press the left- or right-arrow key to toggle the **CPU Speed** option between the resident processor's rated speed (the default) and a lower-compatibility speed. A change to this option takes effect immediately (no restart is necessary).

To toggle between the rated processor speed and the compatibility speed while the computer is running in real mode, press <Ctrl><Alt><\>. (For keyboards that do not use American English, press <Ctrl><Alt><#>.)

- 1 **Bus Speed** — The speed of the processor's system bus.
- 1 **Processor ID** — The manufacturer's identification code(s) for the installed processor.
 - o **Clock Speed** — The core speed at which the processor(s) operates.
 - o **Cache Size** — The size of the processor's L2 cache.

Integrated Devices (Legacy Select Options) — Configures the following devices integrated with the system board:

- 1 **Sound** — The settings are **On** (default) or **Off**.
- 1 **Network Interface Controller** — The settings are **On** (default), **Off**, or **On w/ PXE**.
- 1 **Mouse Port** — The settings are **On** (default) or **Off**.
- 1 **USB Emulation** — The settings are **On** (default) and **Off**.
- 1 **USB Controller** — The settings are **On** (default) or **Off**.
- 1 **Serial Port 1** — The settings are **Auto** (default), **COM1**, **COM3**, and **Off**. **Auto** automatically configures a connector to a particular designation (COM1 or COM3).
- 1 **Parallel Port** — The settings are **Mode**, **I/O Address**.
 - o **Mode** settings are **PS/2** (default), **EPP**, **ECP**, **AT**, or **Off**. Set the **Mode** option according to the type of device connected to the parallel connector. To determine the correct mode to use, see the documentation that came with the device.

 **NOTE:** If **Mode** is set to **ECP**, **DMA Channel** appears as an option. Settings are **DMA 1**, **DMA 3**, or **Off**.

- o **I/O Address** settings are **378h** (default), **278h**, or **3BCh**. The settings are not available when **Mode** is set to **Off**.

NOTE: You cannot set the parallel connector to **3BCh** if **Mode** is set to **EPP**.

- 1 **Diskette Interface** — The settings are **Auto** (default), **Read Only**, and **Off**.
 - o **Auto** turns off the integrated floppy drive controller when necessary to accommodate a controller card installed in an expansion slot.
 - o **Read Only** prevents the computer's integrated floppy drive controller from writing to floppy drives and activates **Auto**.
- 1 **PC Speaker** — The settings are **On** (default) and **Off**.
- 1 **Primary Video Controller** — The settings are **Auto** (default) and **Onboard**.
- 1 **Onboard Video Buffer** — The settings are **1 MB** (default) and **8 MB**.

Power Management — See "[Power Management](#)" for more information.

- 1 **Suspend Mode** — The options are **S1** or **S3**.
- 1 **AC Power Recovery** — Determines what happens when AC power is restored to the computer.
 - o **Off** (default) — The computer remains off when AC power is restored.
 - o **On** — The computer starts when AC power is restored.
 - o **Last** — The computer returns to the AC power state existing at the time that AC power was lost.
- 1 **Low Power Mode** — The settings are **Enabled** and **Disabled**.

System Security — See "[Security](#)" for more information.

Keyboard NumLock — The settings are **On** and **Off** (does not apply to 84-key keyboards).

- o **On** (default) — activates the rightmost bank of keys so they provide the mathematical and numeric functions shown at the top of each key.
- o **Off** — activates the rightmost bank of keys so they provide cursor-control functions shown by the label on the bottom of each key.

Report Keyboard Errors — Settings are **Report** (default) and **Do Not Report**.

Auto Power On —

Sets time and days of week to automatically turn on the computer. Time is kept in a 24-hour format (hours:minutes).

- 1 **Mode** — Settings are **Disabled** (default), **Weekdays**, or **Everyday**.
- 1 **Auto Power On Time** — Change the start-up time by pressing the right- or left-arrow keys to increase or decrease the numbers or type numbers in both the date and time fields.

This feature does not work if you turn off your computer using a power strip or surge protector.

Remote Wake Up — provides the ability either to remotely wake a computer from a low-power sleep state or to remotely start up a computer that is turned off but connected to a power source.

- 1 **On** — The computer will start up when the appropriate signal is received by the network adapter or modem.
- 1 **Off** — The computer will not start up remotely.
- 1 **On w/Boot to NIC** — When the network adapter or modem receives the appropriate signal, the computer attempts to boot from a network server. If a boot routine is not available from the network server, the computer attempts to boot from the devices specified in the boot sequence.

Fastboot

- 1 **On** (default) — Your computer boots in 10 seconds or less, skipping certain configurations and tests.
- 1 **Off** — Your computer does not skip certain configurations and tests during the boot process.

OS Install Mode

Settings are **Off** and **On**.

- 1 **On** — the amount of system memory available to the operating system is 256 MB, regardless of how much memory is present in the system.
- 1 **Off** — all of the system memory available to the operating system.

Hard Drive Acoustics Mode

The acoustics mode field may contain the following options:

- 1 **Quiet** (default) — The hard drive operates in its quietest setting.
- 1 **Performance** — The hard drive operates at its maximum speed.

NOTE: Switching to Performance mode may cause the drive to be noisier, but its performance is not affected.

- 1 **Bypass** — Your computer does not test or change the current acoustics mode setting.
- 1 **Suggested** — The hard drive operates at the level suggested by the hard-drive manufacturer.

NOTE: Changing the acoustics setting does not alter your hard-drive image.

System Event Log — View or clear system event logs.

Asset Tag — Displays the customer-programmable asset tag number for the computer if an asset tag number is assigned.

Booting to a USB Device

 **NOTE:** To boot to a USB device, the device must be bootable. To ensure that your device is bootable, check the device documentation.

Memory Key

1. Insert the memory key into a USB port and restart the computer.
2. When F12 = Boot Menu appears in the upper-right corner of the screen, press <F12>.

The BIOS detects the device and adds the USB flash option to the boot menu.

3. From the boot menu, select the number that appears next to the USB device.

The computer boots to the USB device.

Floppy Drive

1. Disable the integrated floppy controller by entering system setup, going to integrated devices, and setting the diskette interface to **Off**.
2. Make sure that under **Drive Configuration, Diskette Drive A** is set to **3.5 inch, 1.44 MB**.
3. Connect the USB floppy drive, insert a bootable diskette, and reboot the system.

Power Button

 **NOTICE:** To turn off your computer, perform an orderly [computer shutdown](#) when possible.

You can use the ACPI feature to configure the function of Windows 2000 and Windows XP operating systems.

Power Button Functions With ACPI Enabled

Action	Results		
	Computer Turned On and ACPI Enabled	Computer in Standby Mode	Computer Turned Off
Press power button	Computer goes into standby mode or turns off (depending on the operating system setup)	Computer turns on	Boots and computer turns on
Hold power button for 6 seconds	Computer turns off	Computer turns off	Boots and computer turns on
NOTE: Pressing or holding the power button to shut down the computer may result in data loss. Use the power button to shut down the computer only if the operating system is not responding.			

Power Button Functions With ACPI Disabled

Action	Results		
	Computer Turned On and ACPI Disabled	Computer in Suspend Mode	Computer Turned Off
Press power button	Computer turns off immediately	Computer turns off immediately	Boots and computer turns on
Hold power button for 6 seconds	Computer turns off	Computer turns off immediately	Boots and computer turns on
NOTE: Pressing or holding the power button to shut down the computer may result in data loss. Use the power button to shut down the computer only if the operating system is not responding.			

Power Management

Your computer can be set to use less power when you are not working. You control the power usage through the operating system installed on your computer and certain option settings in [system setup](#). The following periods of reduced power are called "sleep states."

- 1 **Standby** — In this sleep state, power is reduced or turned off for most components, including the cooling fans. However, system memory remains active.

 **NOTE:** All components installed in the computer must support this feature and have the appropriate drivers loaded to enter standby. For more information, see the manufacturer's documentation for each component.

- 1 **Hibernate** — This sleep state reduces power consumption to a minimum by writing all data in system memory to a hard drive and then removing system power. Waking up from this state restarts the computer, and the memory contents are restored. Operation then resumes where the computer left off when it entered the hibernation state.

 **NOTE:** All components installed in the computer must support this feature and have the appropriate drivers loaded to enter hibernation. For more information, see the manufacturer's documentation for each component.

- 1 **Shutdown** — This sleep state removes all power from the computer except a small auxiliary amount. As long as the computer remains connected to an electrical outlet, it can be automatically or remotely started. For example, the **Auto Power On** option in [system setup](#) allows the computer to automatically start at a specified time. Also, your network administrator can remotely start your computer using a power management event such as Remote Wake Up.

The following table lists the sleep states and the methods you can use to wake the computer from each state.

Sleep State	Wake-Up Methods (Windows 2000 and XP)
Standby	<ul style="list-style-type: none"> 1 Press the power button 1 Auto power on 1 Move or click the mouse 1 Type on the keyboard 1 USB device activity 1 Power management event
Hibernate	<ul style="list-style-type: none"> 1 Press the power button 1 Auto power on 1 Power management event
Shutdown	<ul style="list-style-type: none"> 1 Press the power button 1 Auto power on 1 Power management event

 **NOTE:** For more information on power management, see your operating system documentation.

Hyper-Threading

Hyper-Threading is an Intel® technology that can enhance overall computer performance by allowing one physical processor to function as two logical processors, capable of performing certain tasks simultaneously. It is recommended that you use the Microsoft® Windows® XP Service Pack 1 (SP1) or later operating system because Windows XP is optimized to take advantage of Hyper-Threading technology. While many programs can benefit from Hyper-Threading, some programs have not been optimized for Hyper-Threading and may require an update from the software manufacturer. Contact the software manufacturer for updates and information about using Hyper-Threading with your software.

To determine if your computer is using Hyper-Threading technology:

1. Click the **Start** button, right-click **My Computer**, and then click **Properties**.
2. Click **Hardware** and click **Device Manager**.
3. In the **Device Manager** window, click the plus (+) sign next to the processor type. If Hyper-Threading is enabled, the processor is listed twice.

You can enable or disable Hyper-Threading through system setup.

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Battery

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 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

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

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

The battery may need replacing if an incorrect time or date is displayed during the boot routine along with a message such as:

```
Time-of-day not set - please run SETUP program
```

or

```
Invalid configuration information -  
please run SETUP program
```

or

```
Strike the F1 key to continue,  
F2 to run the setup utility
```

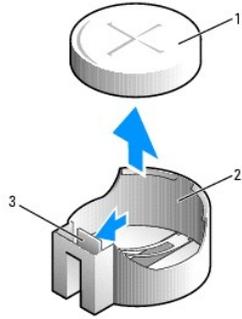
To determine whether you need to replace the battery, reenter the time and date in system setup and exit the program to save the information. Turn off your computer and disconnect it from the electrical outlet for a few hours; then reconnect the computer, turn it on, and enter system setup. If the date and time are not correct in system setup, replace the battery.

You can operate your computer without a battery, however, without a battery, the configuration information is erased if the computer is turned off or unplugged from the electrical outlet. In this case, you must enter system setup and reset the configuration options.

 **CAUTION:** A new battery can explode if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

To replace the battery:

1. If you have not already done so, make a copy of your configuration information, found in [system setup](#).
2. Follow the procedures in "[Before You Begin](#)."
3. Remove the battery by pressing the tab, which releases the battery from the battery socket.
4. Insert the new battery into the socket with the side labeled "+" facing up, and snap the battery into place.



1	battery
2	battery socket
3	tab

5. Replace the computer cover.

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

6. Connect your computer and devices to electrical outlets, and turn them on.
7. [Enter system setup](#) and restore the settings you recorded in step 1.
8. Properly dispose of the old battery.

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Before You Begin

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This chapter provides procedures for removing and installing the components in your computer. Unless otherwise noted, each procedure assumes that the following conditions exist:

- 1 You have performed the steps in "[Turning Off Your Computer](#)" and "[Before Working Inside Your Computer](#)."
- 1 You have read the safety information in your Dell™ *Product Information Guide*.
- 1 A component can be replaced by performing the removal procedure in reverse order.

Recommended Tools

The procedures in this document may require the following tools:

- 1 Small flat-blade screwdriver
- 1 Phillips screwdriver
- 1 Flash BIOS update program floppy disk or CD

Turning Off Your Computer

 **NOTICE:** To avoid losing data, save and close any open files and exit any open programs before you turn off your computer.

1. Shut down the operating system:
 - a. Save and close any open files, exit any open programs, click the **Start** button, and then click **Turn Off Computer**.
 - b. In the **Turn off computer** window, click **Turn off**.

The computer turns off after the operating system shutdown process finishes.
2. Ensure that the computer and any attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, turn them off now.

Before Working Inside Your Computer

Use the following safety guidelines to help protect your computer from potential damage and to help ensure your own personal safety.

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

 **CAUTION:** Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

 **NOTICE:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

 **NOTICE:** When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

 **NOTICE:** To avoid damaging the computer, perform the following steps before you begin working inside the computer.

1. Turn off your computer.

 **NOTICE:** To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall jack.

2. Disconnect any telephone or telecommunication lines from the computer.
3. Disconnect your computer and all attached devices from their electrical outlets, and then press the power button to ground the system board.

4. Remove the computer stand, if it is attached.

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

5. Open the computer cover.

 **NOTICE:** Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate any static electricity that could harm internal components.

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Cleaning Your Computer

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- [Computer, Keyboard, and Monitor](#)
- [Mouse](#)
- [Floppy Drive](#)
- [CDs and DVDs](#)

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

Computer, Keyboard, and Monitor

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

- 1 Use a vacuum cleaner with a brush attachment to gently remove dust from the slots and holes on your computer and from between the keys on the keyboard.

 **NOTICE:** Do not wipe the display screen with any soap or alcohol solution. Doing so may damage the antiglare coating.

- 1 To clean your monitor screen, lightly dampen a soft, clean cloth with water. If possible, use a special screen-cleaning tissue or solution suitable for the monitor's antistatic coating.
- 1 Wipe the keyboard, computer, and plastic part of the monitor with a soft cleaning cloth moistened with a solution of three parts water and one part dishwashing detergent.

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

Mouse

If your screen cursor skips or moves abnormally, clean the mouse. To clean a non-optical mouse:

1. Turn the retainer ring on the underside of your mouse counterclockwise, and then remove the ball.
 2. Wipe the ball with a clean, lint-free cloth.
 3. Blow carefully into the ball cage to dislodge dust and lint.
 4. If the rollers inside the ball cage are dirty, clean the rollers with a cotton swab moistened lightly with isopropyl alcohol.
 5. Recenter the rollers in their channels if they are misaligned. Ensure that fluff from the swab is not left on the rollers.
 6. Replace the ball and retainer ring, and turn the retainer ring clockwise until it clicks into place.
-

Floppy Drive

 **NOTICE:** Do not attempt to clean drive heads with a swab. You might accidentally misalign the heads, which prevents the drive from operating.

Clean your floppy drive using a commercially available cleaning kit. These kits contain pretreated floppy disks to remove contaminants that accumulate during normal operation.

CDs and DVDs

➡ **NOTICE:** Always use compressed air to clean the lens in the CD/DVD drive, and follow the instructions that come with the compressed air. Never touch the lens in the drive.

If you notice problems, such as skipping, with the playback quality of your CDs or DVDs, try cleaning the discs.

1. Hold the disc by its outer edge. You can also touch the inside edge of the center hole.

➡ **NOTICE:** To prevent 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 safe to use on DVDs.

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Chassis Speaker

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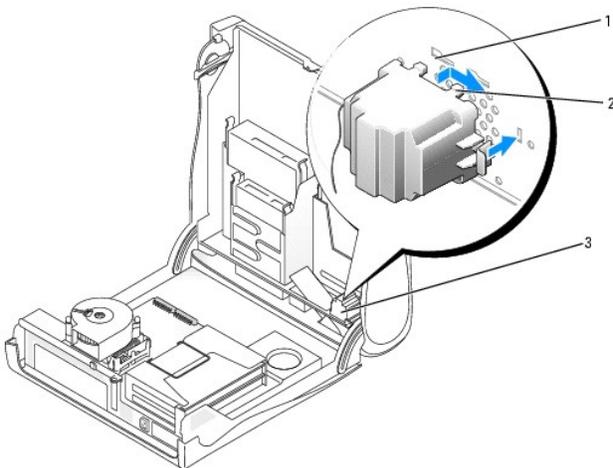
- [Installing the Optional Chassis Speaker](#)
- [Removing the Chassis Speaker](#)

Installing the Optional Chassis Speaker

⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

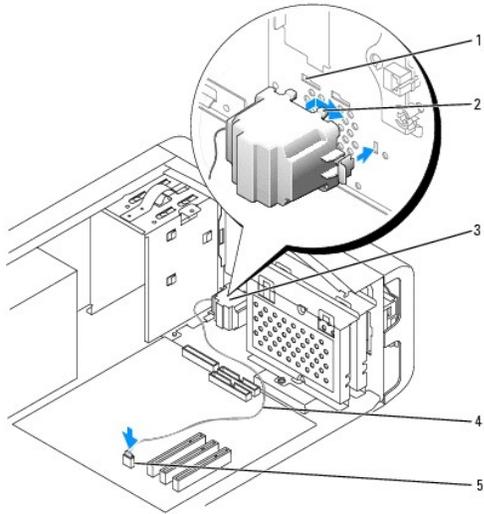
1. Follow the procedures in "[Before You Begin](#)."
2. Lay the computer on its side so that the system board is on the bottom of the inside of the computer.
3. Insert the four tabs on the speaker into four slots on the chassis.
4. Slide the speaker toward the hard drive until the speaker is seated securely.
5. Attach the cable to the connector on the [I/O panel](#).

Desktop Computer



1	chassis slots (4)
2	speaker tabs (4)
3	chassis speaker

Minitower Computer

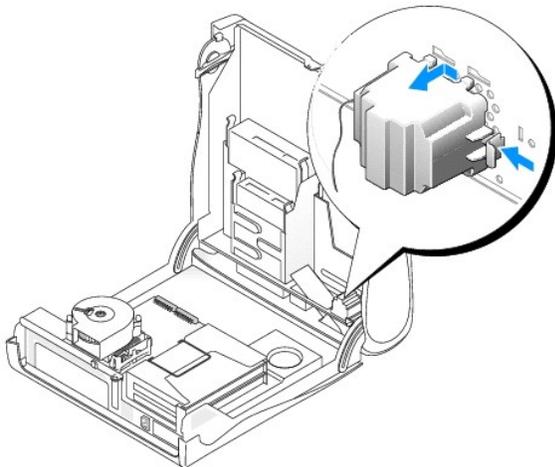


1	chassis slots (4)
2	speaker tabs (4)
3	chassis speaker
4	chassis speaker cable
5	chassis speaker connector

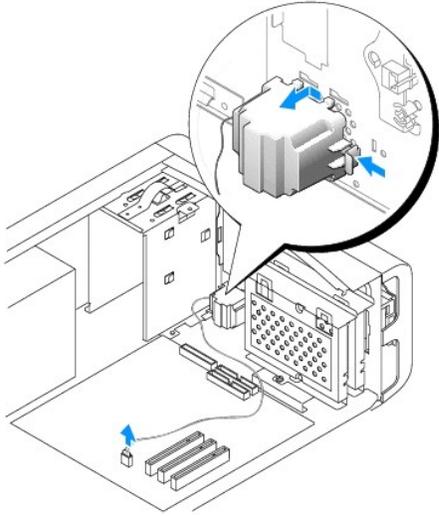
Removing the Chassis Speaker

1. Disconnect the cable from the system board.
2. Press the lever to unseat the speaker, slide the speaker toward the CD drive, and then remove it.

Desktop Computer



Minitower Computer



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Replacing the Computer Cover

Dell™ OptiPlex™ 170L User's Guide

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

1. Ensure that all cables are connected, and fold cables out of the way.
2. Ensure that no tools or extra parts are left inside the computer.
3. On the small desktop computer:
 - a. Pivot the cover down.
 - b. Press down on the right side of the cover until it closes.
 - c. Press down on the left side of the cover until it closes.
 - d. Ensure that both sides of the cover are locked. If not, repeat [step b](#).
4. On the mini-tower computer, place the cover on the computer and slide the cover toward the front of the computer until it fits completely into place.

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

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

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Finding Information for Your Computer

Dell™ OptiPlex™ 170L User's Guide

What are you looking for?	Find It Here
<ul style="list-style-type: none"> 1 A diagnostic program for my computer 1 Drivers for my computer 1 My computer documentation 1 My device documentation 1 Desktop System Software (DSS) 	<p>Drivers and Utilities CD (also known as the ResourceCD)</p>  <p>Documentation and drivers are already installed on your computer when shipped from Dell. You can use the CD to reinstall drivers, run the Dell Diagnostics, or access your documentation. See "Reinstalling Drivers and Utilities" and "Dell Diagnostics" for more information.</p> <p>Readme files may be included on your CD to provide last-minute updates about technical changes to your computer or advanced technical-reference material for experienced users or technicians.</p> <p>NOTE: The latest drivers and documentation updates can be found at support.dell.com.</p> <p>NOTE: The <i>Drivers and Utilities</i> CD is optional and may not ship with all computers.</p>
<ul style="list-style-type: none"> 1 How to set up my computer 1 Troubleshooting information 1 How to run the Dell Diagnostics 1 Error codes and diagnostic lights 1 Tools and utilities 	<p>Quick Reference Guide</p>  <p>NOTE: The <i>Quick Reference Guide</i> is optional and may not ship with all computers.</p>
<ul style="list-style-type: none"> 1 Warranty information 1 Safety instructions 1 Regulatory information 1 Ergonomics information 1 End User License Agreement 	<p>Dell™ Product Information Guide</p> 
<ul style="list-style-type: none"> 1 Operating system updates and patches 	<p>Desktop System Software (DSS)</p> <p>The DSS is located on the <i>Drivers and Utilities</i> CD and on the Dell Support website.</p>
<ul style="list-style-type: none"> 1 Express Service Code and Service Tag 1 Microsoft® Windows® License Label 	<p>Service Tag and Microsoft Windows License</p> <p>These labels are located on the bottom of your computer.</p>  <ul style="list-style-type: none"> 1 Use the Service Tag to identify your computer when you use support.dell.com or contact technical support. 1 Enter the Express Service Code to direct your call when contacting technical support.
<ul style="list-style-type: none"> 1 Latest drivers for my computer 1 Answers to technical service and support questions 1 Online discussions with other users and technical support 1 Documentation for my computer 	<p>Dell Support Website — support.dell.com</p> <p>The Dell Support website provides several online tools, including:</p> <ul style="list-style-type: none"> 1 Solutions — Troubleshooting hints and tips, articles from technicians, and online courses 1 Community Forum — Online discussion with other Dell customers 1 Upgrades — Upgrade information for components, such as memory, the hard drive, and the operating system 1 Customer Care — Contact information, order status, warranty, and repair information 1 Downloads — Drivers, patches, and software updates 1 Reference — Computer documentation, product specifications, and white papers
<ul style="list-style-type: none"> 1 Service call status and support history 1 Top technical issues for my computer 1 Frequently asked questions 1 File downloads 1 Details on my computer configuration 	<p>Dell Premier Support Website — premiersupport.dell.com</p> <p>The Dell Premier Support website is customized for corporate, government, and education customers. This website may not be available in all regions.</p>

<ul style="list-style-type: none"> 1 Service contract for my computer 	
<ul style="list-style-type: none"> 1 How to use Windows XP 1 Documentation for my computer 1 Documentation for devices (such as a modem) 	<p>Windows Help and Support Center</p> <ol style="list-style-type: none"> 1. Click the Start button and click Help and Support. 2. Type a word or phrase that describes your problem and click the arrow icon. 3. Click the topic that describes your problem. 4. Follow the instructions on the screen.
<ul style="list-style-type: none"> 1 How to reinstall my operating system 	<p>Operating System CD</p> <p>The operating system is already installed on your computer. To reinstall your operating system, use the <i>Operating System CD</i>.</p> <p>After you reinstall your operating system, use the <i>Drivers and Utilities CD</i> to reinstall drivers for the devices that came with your computer.</p> <div style="display: flex; align-items: center;">  <p>Your operating system product key label is located on your computer.</p> </div> <p>NOTE: The color of your CD varies based on the operating system you ordered.</p> <p>NOTE: The operating system media are optional and may not ship with all computers.</p>

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Glossary

Dell™ OptiPlex™ 170L Systems User's Guide

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Terms in this Glossary are provided for informational purposes only and may or may not describe features included with your particular computer.

A

AC — alternating current — The form of electricity that powers your computer when you plug the AC adapter power cable in to an electrical outlet.

ACPI — advanced configuration and power interface — A power management specification that enables Microsoft® Windows® operating systems to put a computer in standby or hibernate mode to conserve the amount of electrical power allocated to each device attached to the computer.

AGP — accelerated graphics port — A dedicated graphics port that allows system memory to be used for video-related tasks. AGP delivers a smooth, true-color video image because of the faster interface between the video circuitry and the computer memory.

antivirus software — A program designed to identify, quarantine, and/or delete viruses from your computer.

APR — advanced port replicator — A docking device that allows you to conveniently use a monitor, keyboard, mouse, and other devices with your portable computer.

ASF — alert standards format — A standard to define a mechanism for reporting hardware and software alerts to a management console. ASF is designed to be platform- and operating system-independent.

B

backup — A copy of a program or data file on a floppy disk, CD, or hard drive. As a precaution, back up the data files from your hard drive regularly.

battery — An internal power source used to operate portable computers when not connected to an AC adapter and an electrical outlet.

battery life span — The length of time (years) during which a portable computer battery is able to be depleted and recharged.

battery operating time — The length of time (minutes or hours) that a portable computer battery holds a charge while powering the computer.

BIOS — basic input/output system — A program (or utility) that serves as an interface between the computer hardware and the operating system. Unless you understand what effect the settings have on the computer, do not change the settings for this program. Also referred to as *system setup*.

bit — The smallest unit of data interpreted by your computer.

Bluetooth™ — A wireless technology standard for short-range (9 m [29 feet]) networking devices that allows for enabled devices to automatically recognize each other.

boot sequence — Specifies the order of the devices from which the computer attempts to boot.

bootable CD — A CD that you can use to start your computer. In case your hard drive is damaged or your computer has a virus, ensure that you always have a bootable CD or floppy disk available. Your *Drivers and Utilities* or Resource CD is a bootable CD.

bootable disk — A disk that you can use to start your computer. In case your hard drive is damaged or your computer has a virus, ensure that you always have a bootable CD or floppy disk available.

bps — bits per second — The standard unit for measuring data transmission speed.

BTU — British thermal unit — A measurement of heat output.

bus — A communication pathway between the components in your computer.

bus speed — The speed, given in MHz, that indicates how fast a bus can transfer information.

byte — The basic data unit used by your computer. A byte is usually equal to 8 bits.

C

C — Celsius — A temperature measurement system where 0° is the freezing point and 100° is the boiling point of water.

cache — A special high-speed storage mechanism which can be either a reserved section of main memory or an independent high-speed storage device. The cache enhances the efficiency of many processor operations.

L1 cache — Primary cache stored inside the processor.

L2 cache — Secondary cache which can either be external to the processor or incorporated into the processor architecture.

carnet — An international customs document that facilitates temporary imports into foreign countries. Also known as a *merchandise passport*.

CD — compact disc — An optical form of storage media, typically used for audio and software programs.

CD drive — A drive that uses optical technology to read data from CDs.

CD player — The software used to play music CDs. The CD player displays a window with buttons that you use to play a CD.

CD-R — CD recordable — A recordable version of a CD. Data can be recorded only once onto a CD-R. Once recorded, the data cannot be erased or written over.

CD-RW — CD rewritable — A rewritable version of a CD. Data can be written to a CD-RW disc, and then erased and written over (rewritten).

CD-RW drive — A drive that can read CDs and write to CD-RW (rewritable CDs) and CD-R (recordable CDs) discs. You can write to CD-RW discs multiple times, but you can write to CD-R discs only once.

CD-RW/DVD drive — A drive, sometimes referred to as a combo drive, that can read CDs and DVDs and write to CD-RW (rewritable CDs) and CD-R (recordable CDs) discs. You can write to CD-RW discs multiple times, but you can write to CD-R discs only once.

clock speed — The speed, given in MHz, that indicates how fast computer components that are connected to the system bus operate.

COA — Certificate of Authenticity — The Windows alpha-numeric code located on a sticker on your computer. You may need the COA to complete the operating system setup or reinstallation. Also referred to as the *Product Key* or *Product ID*.

Control Panel — A Windows utility that allows you to modify operating system and hardware settings, such as display settings.

controller — A chip that controls the transfer of data between the processor and memory or between the processor and devices.

CRIMM — continuity rambus in-line memory module — A special module that has no memory chips and is used to fill unused RIMM slots.

cursor — The marker on a display or screen that shows where the next keyboard, touch pad, or mouse action will occur. It often is a blinking solid line, an underline character, or a small arrow.

D

DDR SDRAM — double-data-rate SDRAM — A type of SDRAM that doubles the data burst cycle, improving system performance.

device — Hardware such as a disk drive, printer, or keyboard that is installed in or connected to your computer.

device driver — See *driver*.

DIN connector — A round, six-pin connector that conforms to DIN (Deutsche Industrie-Norm) standards; it is typically used to connect PS/2 keyboard or mouse cable connectors.

disk striping — A technique for spreading data over multiple disk drives. Disk striping can speed up operations that retrieve data from disk storage. Computers that use disk striping generally allow the user to select the data unit size or stripe width.

DMA — direct memory access — A channel that allows certain types of data transfer between RAM and a device to bypass the processor.

docking device — See *APR*.

DMTF — Distributed Management Task Force — A consortium of hardware and software companies who develop management standards for distributed desktop, network, enterprise, and Internet environments.

domain — A group of computers, programs, and devices on a network that are administered as a unit with common rules and procedures for use by a specific group of users. A user logs on to the domain to gain access to the resources.

DRAM — dynamic random-access memory — Memory that stores information in integrated circuits containing capacitors.

driver — Software that allows the operating system to control a device such as a printer. Many devices do not work properly if the correct driver is not installed in the computer.

DSL — Digital Subscriber Line — A technology that provides a constant, high-speed Internet connection through an analog telephone line.

dual display mode — A display setting that allows you to use a second monitor as an extension of your display. Also referred to as *extended display mode*.

DVD — digital versatile disc — A disc usually used to store movies. DVDs are double-sided, whereas CDs are single-sided. DVD drives read most CD media as well.

DVD drive — A drive that uses optical technology to read data from DVDs and CDs.

DVD player — The software used to watch DVD movies. The DVD player displays a window with buttons that you use to watch a movie.

DVD+RW — DVD rewritable — A rewritable version of a DVD. Data can be written to a DVD+RW disc, and then erased and written over (rewritten). (DVD+RW technology is different from DVD-RW technology.)

DVD+RW drive — A drive that can read DVDs and most CD media and write to DVD+RW (rewritable DVDs) discs.

DVI — digital video interface — A standard for digital transmission between a computer and a digital video display; the DVI adapter works through the computer's integrated graphics.

E

ECC — error checking and correction — A type of memory that includes special circuitry for testing the accuracy of data as it passes in and out of memory.

ECP — extended capabilities port — A parallel connector design that provides improved bidirectional data transmission. Similar to EPP, ECP uses direct memory access to transfer data and often improves performance.

EIDE — enhanced integrated device electronics — An improved version of the IDE interface for hard drives and CD drives.

EMI — electromagnetic interference — Electrical interference caused by electromagnetic radiation.

ENERGY STAR® — Environmental Protection Agency requirements that decrease the overall consumption of electricity.

EPP — enhanced parallel port — A parallel connector design that provides bidirectional data transmission.

ESD — electrostatic discharge — A rapid discharge of static electricity. ESD can damage integrated circuits found in computer and communications equipment.

expansion card — A circuit board that installs in an expansion slot on the system board in some computers, expanding the capabilities of the computer. Examples include video, modem, and sound cards.

expansion slot — A connector on the system board (in some computers) where you insert an expansion card, connecting it to the system bus.

Express Service Code — A numeric code located on a sticker on your Dell™ computer. Use the Express Service Code when contacting Dell for assistance. Express Service Code service may not be available in some countries.

extended display mode — A display setting that allows you to use a second monitor as an extension of your display. Also referred to as *dual display mode*.

extended PC Card — A PC Card that extends beyond the edge of the PC Card slot when installed.

F

Fahrenheit — A temperature measurement system where 32° is the freezing point and 212° is the boiling point of water.

FCC — Federal Communications Commission — A U.S. agency responsible for enforcing communications-related regulations that state how much radiation computers and other electronic equipment can emit.

floppy drive — A disk drive that can read and write to floppy disks.

folder — A term used to describe space on a disk or drive where files are organized and grouped. Files in a folder can be viewed and ordered in various ways, such as alphabetically, by date, and by size.

format — The process that prepares a drive or disk for file storage. When a drive or disk is formatted, the existing information on it is lost.

FSB — front side bus — The data path and physical interface between the processor and RAM.

FTP — file transfer protocol — A standard Internet protocol used to exchange files between computers connected to the Internet.

G

G — gravity — A measurement of weight and force.

GB — gigabyte — A measurement of data storage that equals 1024 MB (1,073,741,824 bytes). When used to refer to hard drive storage, the term is often rounded to 1,000,000,000 bytes.

GHz — gigahertz — A measurement of frequency that equals one thousand million Hz, or one thousand MHz. The speeds for computer processors, buses, and interfaces are often measured in GHz.

graphics mode — A video mode that can be defined as x horizontal pixels by y vertical pixels by z colors. Graphics modes can display an unlimited variety of shapes and fonts.

GUI — graphical user interface — Software that interacts with the user by means of menus, windows, and icons. Most programs that operate on the Windows operating systems are GUIs.

H

hard drive — A drive that reads and writes data on a hard disk. The terms hard drive and hard disk are often used interchangeably.

heat sink — A metal plate on some processors that helps dissipate heat.

help file — A file that contains descriptive or instructional information about a product. Some help files are associated with a particular program, such as *Help* in Microsoft Word. Other help files function as stand-alone reference sources. Help files typically have a filename extension of **.hlp** or **.chm**.

hibernate mode — A power management mode that saves everything in memory to a reserved space on the hard drive and then turns off the computer. When you restart the computer, the memory information that was saved to the hard drive is automatically restored.

HTML — hypertext markup language — A set of codes inserted into an Internet web page intended for display on an Internet browser.

HTTP — hypertext transfer protocol — A protocol for exchanging files between computers connected to the Internet.

Hz — hertz — A unit of frequency measurement that equals 1 cycle per second. Computers and electronic devices are often measured in kilohertz (kHz), megahertz (MHz), gigahertz (GHz), or terahertz (THz).

I

IC — Industry Canada — The Canadian regulatory body responsible for regulating emissions from electronic equipment, much as the FCC does in the United States.

IC — integrated circuit — A semiconductor wafer, or chip, on which thousands or millions of tiny electronic components are fabricated for use in computer, audio, and video equipment.

IDE — integrated device electronics — An interface for mass storage devices in which the controller is integrated into the hard drive or CD drive.

infrared sensor — A port that allows you to transfer data between the computer and infrared-compatible devices without using a cable connection.

integrated — Usually refers to components that are physically located on the computer's system board. Also referred to as *built-in*.

I/O — input/output — An operation or device that enters and extracts data from your computer. Keyboards and printers are I/O devices.

I/O address — An address in RAM that is associated with a specific device (such as a serial connector, parallel connector, or expansion slot) and allows the processor to communicate with that device.

IrDA — Infrared Data Association — The organization that creates international standards for infrared communications.

IRQ — interrupt request — An electronic pathway assigned to a specific device so that the device can communicate with the processor. Each device connection must be assigned an IRQ. Although two devices can share the same IRQ assignment, you cannot operate both devices simultaneously.

ISP — Internet service provider — A company that allows you to access its host server to connect directly to the Internet, send and receive e-mail, and access websites. The ISP typically provides you with a software package, user name, and access phone numbers for a fee.

K

Kb — kilobit — A unit of data that equals 1024 bits. A measurement of the capacity of memory integrated circuits.

KB — kilobyte — A unit of data that equals 1024 bytes but is often referred to as 1000 bytes.

key combination — A command requiring you to press multiple keys at the same time.

kHz — kilohertz — A measurement of frequency that equals 1000 Hz.

L

LAN — local area network — A computer network covering a small area. A LAN usually is confined to a building or a few nearby buildings. A LAN can be connected to another LAN over any distance through telephone lines and radio waves to form a wide area network (WAN).

LCD — liquid crystal display — The technology used by portable computer and flat-panel displays.

LED — light-emitting diode — An electronic component that emits light to indicate the status of the computer.

local bus — A data bus that provides a fast throughput for devices to the processor.

LPT — line print terminal — The designation for a parallel connection to a printer or other parallel device.

M

Mb — megabit — A measurement of memory chip capacity that equals 1024 Kb.

Mbps — megabits per second — One million bits per second. This measurement is typically used for transmission speeds for networks and modems.

MB — megabyte — A measurement of data storage that equals 1,048,576 bytes. 1 MB equals 1024 KB. When used to refer to hard drive storage, the term is often rounded to 1,000,000 bytes.

MB/sec — megabytes per second — One million bytes per second. This measurement is typically used for data transfer ratings.

memory — A temporary data storage area inside your computer. Because the data in memory is not permanent, it is recommended that you frequently save your files while you are working on them, and always save your files before you shut down the computer. Your computer can contain several different forms of memory, such as RAM, ROM, and video memory. Frequently, the word memory is used as a synonym for RAM.

memory address — A specific location where data is temporarily stored in RAM.

memory mapping — The process by which the computer assigns memory addresses to physical locations at start-up. Devices and software can then identify information that the processor can access.

memory module — A small circuit board containing memory chips, which connects to the system board.

MHz — megahertz — A measure of frequency that equals 1 million cycles per second. The speeds for computer processors, buses, and interfaces are often measured in MHz.

modem — A device that allows your computer to communicate with other computers over analog telephone lines. Three types of modems include: external, PC Card, and internal. You typically use your modem to connect to the Internet and exchange e-mail.

module bay — A bay that supports devices such as optical drives, a second battery, or a Dell TravelLite™ module.

monitor — The high-resolution TV-like device that displays computer output.

mouse — A pointing device that controls the movement of the cursor on your screen. Typically you roll the mouse over a hard, flat surface to move the pointer or cursor on your screen.

ms — millisecond — A measure of time that equals one thousandth of a second. Access times of storage devices are often measured in ms.

N

network adapter — A chip that provides network capabilities. A computer may include a network adapter on its system board, or it may contain a PC Card with an adapter on it. A network adapter is also referred to as a *NIC* (network interface controller).

NIC — See *network adapter*.

notification area — The section of the Windows taskbar that contains icons for providing quick access to programs and computer functions, such as the clock, volume control, and print status. Also referred to as *system tray*.

ns — nanosecond — A measure of time that equals one billionth of a second.

NVRAM — nonvolatile random access memory — A type of memory that stores data when the computer is turned off or loses its external power source. NVRAM is used for maintaining computer configuration information such as date, time, and other system setup options that you can set.

O

optical drive — A drive that uses optical technology to read or write data from CDs, DVDs, or DVD+RWs. Example of optical drives include CD drives, DVD drives, CD-RW drives, and CD-RW/DVD combo drives.

P

parallel connector — An I/O port often used to connect a parallel printer to your computer. Also referred to as an *LPT port*.

partition — A physical storage area on a hard drive that is assigned to one or more logical storage areas known as logical drives. Each partition can contain multiple logical drives.

PC Card — A removable I/O card adhering to the PCMCIA standard. Modems and network adapters are common types of PC Cards.

PCI — peripheral component interconnect — PCI is a local bus that supports 32- and 64-bit data paths, providing a high-speed data path between the processor and devices such as video, drives, and networks.

PCMCIA — Personal Computer Memory Card International Association — The organization that establishes standards for PC Cards.

PIN — personal identification number — A sequence of numerals and/or letters used to restrict unauthorized access to computer networks and other secure systems.

PIO — programmed input/output — A method of transferring data between two devices through the processor as part of the data path.

pixel — A single point on a display screen. Pixels are arranged in rows and columns to create an image. A video resolution, such as 800 x 600, is expressed as the number of pixels across by the number of pixels up and down.

Plug-and-Play — The ability of the computer to automatically configure devices. Plug and Play provides automatic installation, configuration, and compatibility with existing hardware if the BIOS, operating system, and all devices are Plug and Play compliant.

POST — power-on self-test — Diagnostics programs, loaded automatically by the BIOS, that perform basic tests on the major computer components, such as memory, hard drives, and video. If no problems are detected during POST, the computer continues the start-up.

processor — A computer chip that interprets and executes program instructions. Sometimes the processor is referred to as the CPU (central processing unit).

program — Any software that processes data for you, including spreadsheet, word processor, database, and game packages. Programs require an operating system to run.

PS/2 — personal system/2 — A type of connector for attaching a PS/2-compatible keyboard, mouse, or keypad.

PXE — pre-boot execution environment — A WfM (Wired for Management) standard that allows networked computers that do not have an operating system to be configured and started remotely.

R

RAID — redundant array of independent disks — A method of providing data redundancy. Some common implementations of RAID include RAID 0, RAID 1, RAID 5, RAID 10, and RAID 50.

RAM — random-access memory — The primary temporary storage area for program instructions and data. Any information stored in RAM is lost when you shut down your computer.

readme file — A text file included with a software package or hardware product. Typically, readme files provide installation information and describe new product enhancements or corrections that have not yet been documented.

read-Only — Data and/or files you can view but cannot edit or delete. A file can have read-only status if:

- 1 It resides on a physically write-protected floppy disk, CD, or DVD.
- 1 It is located on a network in a directory and the system administrator has assigned rights only to specific individuals.

refresh rate — The frequency, measured in Hz, at which your screen's horizontal lines are recharged (sometimes also referred to as its *vertical frequency*). The higher the refresh rate, the less video flicker can be seen by the human eye.

resolution — The sharpness and clarity of an image produced by a printer or displayed on a monitor. The higher the resolution, the sharper the image.

RFI — radio frequency interference — Interference that is generated at typical radio frequencies, in the range of 10 kHz to 100,000 MHz. Radio frequencies are at the lower end of the electromagnetic frequency spectrum and are more likely to have interference than the higher frequency radiations, such as infrared and light.

ROM — read-only memory — Memory that stores data and programs that cannot be deleted or written to by the computer. ROM, unlike RAM, retains its contents after you shut down your computer. Some programs essential to the operation of your computer reside in ROM.

RPM — revolutions per minute — The number of rotations that occur per minute. Hard drive speed is often measured in rpm.

RTC — real time clock — Battery-powered clock on the system board that keeps the date and time after you shut down the computer.

RTCST — real-time clock reset — A jumper on the system board of some computers that can often be used for troubleshooting problems.

S

ScanDisk — A Microsoft utility that checks files, folders, and the hard disk's surface for errors. ScanDisk often runs when you restart the computer after it has stopped responding.

SDRAM — synchronous dynamic random-access memory — A type of DRAM that is synchronized with the optimal clock speed of the processor.

serial connector — An I/O port often used to connect devices such as a handheld digital device or digital camera to your computer.

Service Tag — A bar code label on your computer that identifies your computer when you access Dell Support at support.dell.com or when you call Dell for customer service or technical support.

setup program — A program that is used to install and configure hardware and software. The **setup.exe** or **install.exe** program comes with most Windows software packages. *Setup program* differs from *system setup*.

shortcut — An icon that provides quick access to frequently used programs, files, folders, and drives. When you place a shortcut on your Windows desktop and double-click the icon, you can open its corresponding folder or file without having to find it first. Shortcut icons do not change the location of files. If you delete a shortcut, the original file is not affected. Also, you can rename a shortcut icon.

shutdown — The process of closing windows and exiting programs, exiting the operating system, and turning off your computer. You can lose data if you turn off your computer before completing a shutdown.

smart card — A card that is embedded with a processor and a memory chip. Smart cards can be used to authenticate a user on computers equipped for smart cards.

software — Anything that can be stored electronically, such as computer files or programs.

S/PDIF — Sony/Philips Digital Interface — An audio transfer file format that allows the transfer of audio from one file to another without converting it to and from an analog format, which could degrade the quality of the file.

standby mode — A power management mode that shuts down all unnecessary computer operations to save energy.

surge protectors — Prevent voltage spikes, such as those that may occur during an electrical storm, from entering the computer through the electrical outlet. Surge protectors do not protect against lightning strikes or against brownouts, which occur when the voltage drops more than 20 percent below the normal AC-line voltage level.

Network connections cannot be protected by surge protectors. Always disconnect the network cable from the network connector during electrical storms.

SVGA — super-video graphics array — A video standard for video cards and controllers. Typical SVGA resolutions are 800 x 600 and 1024 x 768. The number of colors and resolution that a program displays depends on the capabilities of the monitor, the video controller and its drivers, and the amount of video memory installed in the computer.

S-video TV-out — A connector used to attach a TV or digital audio device to the computer.

SXGA — super-extended graphics array — A video standard for video cards and controllers that supports resolutions up to 1280 x 1024.

SXGA+ — super-extended graphics array plus — A video standard for video cards and controllers that supports resolutions up to 1400 x 1050.

system board — The main circuit board in your computer. Also known as the *motherboard*.

system setup — A utility that serves as an interface between the computer hardware and the operating system. System setup allows you to configure user-selectable options in the BIOS, such as date and time or system password. Unless you understand what effect the settings have on the computer, do not change the settings for this program.

system tray — See *notification area*.

T

TAPI — telephony application programming interface — Enables Windows programs to operate with a wide variety of telephony devices, including voice, data, fax, and video.

text editor — A program used to create and edit files that contain only text; for example, Windows Notepad uses a text editor. Text editors do not usually provide word wrap or formatting functionality (the option to underline, change fonts, and so on).

travel module — A plastic device designed to fit inside the module bay of a portable computer to reduce the weight of the computer.

U

UPS — uninterruptible power supply — A backup power source used when the electrical power fails or drops to an unacceptable voltage level. A UPS keeps a computer running for a limited amount of time when there is no electrical power. UPS systems typically provide surge suppression and may also provide voltage regulation. Small UPS systems provide battery power for a few minutes to enable you to shut down your computer.

USB — universal serial bus — A hardware interface for a low-speed device such as a USB-compatible keyboard, mouse, joystick, scanner, set of speakers, printer, broadband devices (DSL and cable modems), imaging devices, or storage devices. Devices are plugged directly in to a 4-pin socket on your computer or in to a multi-port hub that plugs in to your computer. USB devices can be connected and disconnected while the computer is turned on, and they can also be daisy-chained together.

UTP — unshielded twisted pair — Describes a type of cable used in most telephone networks and some computer networks. Pairs of unshielded wires are twisted to protect against electromagnetic interference, rather than relying on a metal sheath around each pair of wires to protect against interference.

UXGA — ultra extended graphics array — A video standard for video cards and controllers that supports resolutions up to 1600 x 1200.

V

video controller — The circuitry on a video card or on the system board (in computers with an integrated video controller) that provides the video capabilities—in combination with the monitor—for your computer.

video memory — Memory that consists of memory chips dedicated to video functions. Video memory is usually faster than system memory. The amount of video memory installed primarily influences the number of colors that a program can display.

video mode — A mode that describes how text and graphics are displayed on a monitor. Graphics-based software, such as Windows operating systems, displays in video modes that can be defined as x horizontal pixels by y vertical pixels by z colors. Character-based software, such as text editors, displays in video modes that can be defined as x columns by y rows of characters.

video resolution — See *resolution*.

virus — A program that is designed to inconvenience you or to destroy data stored on your computer. A virus program moves from one computer to another through an infected disk, software downloaded from the Internet, or e-mail attachments. When an infected program starts, its embedded virus also starts.

A common type of virus is a boot virus, which is stored in the boot sectors of a floppy disk. If the floppy disk is left in the drive when the computer is shut down and then turned on, the computer is infected when it reads the boot sectors of the floppy disk expecting to find the operating system. If the computer is infected, the boot virus may replicate itself onto all the floppy disks that are read or written in that computer until the virus is eradicated.

V — volt — The measurement of electric potential or electromotive force. One V appears across a resistance of 1 ohm when a current of 1 ampere flows through that resistance.

W

W — watt — The measurement of electrical power. One W is 1 ampere of current flowing at 1 volt.

Whr — watt-hour — A unit of measure commonly used to indicate the approximate capacity of a battery. For example, a 66-Whr battery can supply 66 W of power for 1 hour or 33 W for 2 hours.

wallpaper — The background pattern or picture on the Windows desktop. Change your wallpaper through the Windows Control Panel. You can also scan in your favorite picture and make it wallpaper.

write-protected — Files or media that cannot be changed. Use write-protection when you want to protect data from being changed or destroyed. To write-protect a 3.5-inch floppy disk, slide its write-protect tab to the open position.

X

XGA — extended graphics array — A video standard for video cards and controllers that supports resolutions up to 1024 x 768.

Z

ZIF — zero insertion force — A type of socket or connector that allows a computer chip to be installed or removed with no stress applied to either the chip or its socket.

Zip — A popular data compression format. Files that have been compressed with the Zip format are called Zip files and usually have a filename extension of **.zip**. A special kind of zipped file is a self-extracting file, which has a filename extension of **.exe**. You can unzip a self-extracting file by double-clicking it.

Zip drive — A high-capacity floppy drive developed by Iomega Corporation that uses 3.5-inch removable disks called Zip disks. Zip disks are slightly larger than regular floppy disks, about twice as thick, and hold up to 100 MB of data.

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Getting Help

Dell™ OptiPlex™ 170L User's Guide

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Technical Assistance

If you need help with a technical problem, Dell is ready to assist you.

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

1. Complete the procedures in "[Solving Problems](#)."
2. Run the [Dell Diagnostics](#).
3. Make a copy of the [Diagnostics Checklist](#) and fill it out.
4. Use Dell's extensive suite of online services available at Dell Support (support.dell.com) for help with installation and troubleshooting procedures.
5. If the preceding steps have not resolved the problem, contact Dell.

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

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

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

For instructions on using the technical support service, see "[Technical Support Service](#)."

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

Online Services

You can access Dell Support at support.dell.com. Select your region on the **WELCOME TO DELL SUPPORT** page, and fill in the requested details to access help tools and information.

You can contact Dell electronically using the following addresses:

- 1 World Wide Web

www.dell.com/

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

www.dell.com/jp (Japan only)

www.euro.dell.com (Europe only)

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

www.dell.ca (Canada only)

- 1 Anonymous file transfer protocol (FTP)

ftp.dell.com/

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

- 1 Electronic Support Service

mobile_support@us.dell.com

support@us.dell.com

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

support.jp.dell.com (Japan only)

support.euro.dell.com (Europe only)

- 1 Electronic Quote Service

sales@dell.com

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

sales_canada@dell.com (Canada only)

- 1 Electronic Information Service

info@dell.com

AutoTech Service

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

Automated Order-Status Service

To check on the status of any Dell™ products that you have ordered, you can go to support.dell.com, or you can call the automated order-status service. A recording prompts you for the information needed to locate and report on your order. For the telephone number to call, see the [contact numbers](#) for your region.

Technical Support Service

Dell's technical support service is available 24 hours a day, 7 days a week, to answer your questions about Dell hardware. Our technical support staff uses computer-based diagnostics to provide fast, accurate answers.

To contact Dell's technical support service, see "[Technical Assistance](#)" and then call the number for your country as listed in "[Contacting Dell](#)."

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 the [contact numbers](#) for your region.

Product Information

If you need information about additional products available from Dell, or if you would like to place an order, visit the Dell website at www.dell.com. For the telephone number to call to speak to a sales specialist, see the [contact numbers](#) for your region.

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.

2. Include a copy of the invoice and a letter describing the reason for the return.
3. Include a copy of the [Diagnostics Checklist](#) indicating the tests you have run and any error messages reported by the Dell Diagnostics.
4. Include any accessories that belong with the item(s) being returned (power cables, software 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 ready when you call. The code helps Dell's automated-support telephone system direct your call more efficiently.

Remember to fill out the [Diagnostics Checklist](#). If possible, turn on your 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.

⚠ CAUTION: Before working inside your computer, follow the safety instructions in the *Product Information Guide*.

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:

Contacting Dell

To contact Dell electronically, you can access the following websites:

- 1 www.dell.com
- 1 support.dell.com (technical support)
- 1 premiersupport.dell.com (technical support for educational, government, healthcare, and medium/large business customers, including Premier, Platinum, and Gold customers)

For specific web addresses for your country, find the appropriate country section in the table below.

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

When you need to contact Dell, use the electronic addresses, telephone numbers, and codes provided in the following table. If you need assistance in determining which codes to use, contact a local or an international operator.

Country (City) International Access Code Country Code City Code	Department Name or Service Area, Website and E-Mail Address	Area Codes, Local Numbers, and Toll-Free Numbers
Anguilla	General Support	toll-free: 800-335-0031
Antigua and Barbuda	General Support	1-800-805-5924
Argentina (Buenos Aires)	Website: www.dell.com.ar	
International Access Code: 00	E-mail: us_latin_services@dell.com	
Country Code: 54	E-mail for desktop and portable computers: la-techsupport@dell.com	
City Code: 11	E-mail for servers and EMC: la_enterprise@dell.com	
	Customer Care	toll-free: 0-800-444-0730
	Tech Support	toll-free: 0-800-444-0733
	Tech Support Services	toll-free: 0-800-444-0724
	Sales	0-810-444-3355
Aruba	General Support	toll-free: 800-1578
Australia (Sydney)	E-mail (Australia): au_tech_support@dell.com	

International Access Code: 0011 Country Code: 61 City Code: 2	E-mail (New Zealand): nz_tech_support@dell.com	
	Home and Small Business	1-300-655-533
	Government and Business	toll-free: 1-800-633-559
	Preferred Accounts Division (PAD)	toll-free: 1-800-060-889
	Customer Care	toll-free: 1-800-819-339
	Technical Support (portables and desktops)	toll-free: 1-300-655-533
	Technical Support (servers and workstations)	toll-free: 1-800-733-314
	Corporate Sales	toll-free: 1-800-808-385
	Transaction Sales	toll-free: 1-800-808-312
Fax	toll-free: 1-800-818-341	
Austria (Vienna)	Website: support.euro.dell.com	
International Access Code: 900 Country Code: 43 City Code: 1	E-mail: tech_support_central_europe@dell.com	
	Home/Small Business Sales	0820 240 530 00
	Home/Small Business Fax	0820 240 530 49
	Home/Small Business Customer Care	0820 240 530 14
	Preferred Accounts/Corporate Customer Care	0820 240 530 16
	Home/Small Business Technical Support	0820 240 530 14
	Preferred Accounts/Corporate Technical Support	0660 8779
	Switchboard	0820 240 530 00
Bahamas	General Support	toll-free: 1-866-278-6818
Barbados	General Support	1-800-534-3066
Belgium (Brussels)	Website: support.euro.dell.com	
International Access Code: 00 Country Code: 32 City Code: 2	E-mail for French Speaking Customers: support.euro.dell.com/be/fr/emaildell/	
	Technical Support	02 481 92 88
	Technical Support Fax	02 481 92 95
	Customer Care	02 713 15 .65
	Corporate Sales	02 481 91 00
	Fax	02 481 92 99
	Switchboard	02 481 91 00
Bermuda	General Support	1-800-342-0671
Bolivia	General Support	toll-free: 800-10-0238
Brazil	Website: www.dell.com/br	
International Access Code: 00 Country Code: 55 City Code: 51	Customer Support, Technical Support	0800 90 3355
	Technical Support Fax	51 481 5470
	Customer Care Fax	51 481 5480
	Sales	0800 90 3390
British Virgin Islands	General Support	toll-free: 1-866-278-6820
Brunei Country Code: 673	Customer Technical Support (Penang, Malaysia)	604 633 4966
	Customer Service (Penang, Malaysia)	604 633 4949
	Transaction Sales (Penang, Malaysia)	604 633 4955
Canada (North York, Ontario) International Access Code: 011	Online Order Status: www.dell.ca/ostatus	
	AutoTech (automated technical support)	toll-free: 1-800-247-9362
	Customer Care (Home Sales/Small Business)	toll-free: 1-800-847-4096
	Customer Care (med./large business, government)	toll-free: 1-800-326-9463
	Technical Support (Home Sales/Small Business)	toll-free: 1-800-847-4096
	Technical Support (med./large bus., government)	toll-free: 1-800-387-5757
	Sales (Home Sales/Small Business)	toll-free: 1-800-387-5752
	Sales (med./large bus., government)	toll-free: 1-800-387-5755
Spare Parts Sales & Extended Service Sales	1 866 440 3355	
Cayman Islands	General Support	1-800-805-7541
Chile (Santiago) Country Code: 56 City Code: 2	Sales, Customer Support, and Technical Support	toll-free: 1230-020-4823
China (Xiamen) Country Code: 86 City Code: 592	Technical Support website: support.dell.com.cn	
	Technical Support E-mail: cn_support@dell.com	
	Customer Care E-mail: customer_cn@dell.com	
	Technical Support Fax	818 1350
	Technical Support (Dimension™ and Inspiron™)	toll-free: 800 858 2969

	Technical Support (OptiPlex™, Latitude™, and Dell Precision™)	toll-free: 800 858 0950
	Technical Support (servers and storage)	toll-free: 800 858 0960
	Technical Support (projectors, PDAs, printers, switches, routers, and so on)	toll-free: 800 858 2920
	Customer Care	toll-free: 800 858 2060
	Customer Care Fax	592 818 1308
	Home and Small Business	toll-free: 800 858 2222
	Preferred Accounts Division	toll-free: 800 858 2557
	Large Corporate Accounts GCP	toll-free: 800 858 2055
	Large Corporate Accounts Key Accounts	toll-free: 800 858 2628
	Large Corporate Accounts North	toll-free: 800 858 2999
	Large Corporate Accounts North Government and Education	toll-free: 800 858 2955
	Large Corporate Accounts East	toll-free: 800 858 2020
	Large Corporate Accounts East Government and Education	toll-free: 800 858 2669
	Large Corporate Accounts Queue Team	toll-free: 800 858 2572
	Large Corporate Accounts South	toll-free: 800 858 2355
	Large Corporate Accounts West	toll-free: 800 858 2811
	Large Corporate Accounts Spare Parts	toll-free: 800 858 2621
Colombia	General Support	980-9-15-3978
Costa Rica	General Support	0800-012-0435
Czech Republic (Prague)	Website: support.euro.dell.com	
International Access Code: 00	E-mail: czech_dell@dell.com	
Country Code: 420	Technical Support	22537 2727
	Customer Care	22537 2707
	Fax	22537 2714
	Tech Fax	22537 2728
	Switchboard	22537 2711
Denmark (Copenhagen)	Website: support.euro.dell.com	
International Access Code: 00	E-mail: http://support.euro.dell.com/dk/da/emaildell/	
Country Code: 45	Technical Support	7023 0182
	Customer Care (Relational)	7023 0184
	Home/Small Business Customer Care	3287 5505
	Switchboard (Relational)	3287 1200
	Switchboard Fax (Relational)	3287 1201
	Switchboard (Home/Small Business)	3287 5000
	Switchboard Fax (Home/Small Business)	3287 5001
Dominica	General Support	toll-free: 1-866-278-6821
Dominican Republic	General Support	1-800-148-0530
Ecuador	General Support	toll-free: 999-119
El Salvador	General Support	01-899-753-0777
Finland (Helsinki)	Website: support.euro.dell.com	
International Access Code: 990	E-mail: http://support.euro.dell.com/fi/fi/emaildell/	
Country Code: 358	Technical Support	09 253 313 60
	Customer Care	09 253 313 38
	Fax	09 253 313 99
City Code: 9	Switchboard	09 253 313 00
France (Paris) (Montpellier)	Website: support.euro.dell.com	
International Access Code: 00	E-mail: support.euro.dell.com/fr/fr/emaildell/	
Country Code: 33	Home and Small Business	
	Technical Support	0825 387 270
	Customer Care	0825 823 833
	Switchboard	0825 004 700
	Switchboard (calls from outside of France)	04 99 75 40 00
	Sales	0825 004 700
	Fax	0825 004 701
	Fax (calls from outside of France)	04 99 75 40 01
	Corporate	
	Technical Support	0825 004 719

	Customer Care	0825 338 339
	Switchboard	01 55 94 71 00
	Sales	01 55 94 71 00
	Fax	01 55 94 71 01
Germany (Langen)	Website: support.euro.dell.com	
International Access Code: 00	E-mail: tech_support_central_europe@dell.com	
Country Code: 49	Technical Support	06103 766-7200
City Code: 6103	Home/Small Business Customer Care	0180-5-224400
	Global Segment Customer Care	06103 766-9570
	Preferred Accounts Customer Care	06103 766-9420
	Large Accounts Customer Care	06103 766-9560
	Public Accounts Customer Care	06103 766-9555
	Switchboard	06103 766-7000
Greece	Website: support.euro.dell.com	
International Access Code: 00	E-mail: support.euro.dell.com/gr/en/emaiddell/	
Country Code: 30	Technical Support	00800-44 14 95 18
	Gold Service Technical Support	00800-44 14 00 83
	Switchboard	2108129810
	Gold Service Switchboard	2108129811
	Sales	2108129800
	Fax	2108129812
Grenada	General Support	toll-free: 1-866-540-3355
Guatemala	General Support	1-800-999-0136
Guyana	General Support	toll-free: 1-877-270-4609
Hong Kong	Website: support.ap.dell.com	
International Access Code: 001	Technical Support E-mail: apsupport@dell.com	
Country Code: 852	Technical Support (Dimension and Inspiron)	2969 3188
	Technical Support (OptiPlex, Latitude, and Dell Precision)	2969 3191
	Technical Support (PowerApp™, PowerEdge™, PowerConnect™, and PowerVault™)	2969 3196
	Customer Care	3416 0910
	Large Corporate Accounts	3416 0907
	Global Customer Programs	3416 0908
	Medium Business Division	3416 0912
	Home and Small Business Division	2969 3105
India	Technical Support	1600 33 8045
	Sales (Large Corporate Accounts)	1600 33 8044
	Sales (Home and Small Business)	1600 33 8046
Ireland (Cherrywood)	Website: support.euro.dell.com	
International Access Code: 16	E-mail: dell_direct_support@dell.com	
Country Code: 353	Technical Support	1850 543 543
City Code: 1	U.K. Technical Support (dial within U.K. only)	0870 908 0800
	Home User Customer Care	01 204 4014
	Small Business Customer Care	01 204 4014
	U.K. Customer Care (dial within U.K. only)	0870 906 0010
	Corporate Customer Care	1850 200 982
	Corporate Customer Care (dial within U.K. only)	0870 907 4499
	Ireland Sales	01 204 4444
	U.K. Sales (dial within U.K. only)	0870 907 4000
	Fax/Sales Fax	01 204 0103
	Switchboard	01 204 4444
Italy (Milan)	Website: support.euro.dell.com	
International Access Code: 00	E-mail: support.euro.dell.com/it/it/emaiddell/	
Country Code: 39	Home and Small Business	
City Code: 02	Technical Support	02 577 826 90
	Customer Care	02 696 821 14
	Fax	02 696 821 13
	Switchboard	02 696 821 12
	Corporate	

	Technical Support	02 577 826 90
	Customer Care	02 577 825 55
	Fax	02 575 035 30
	Switchboard	02 577 821
Jamaica	General Support (dial from within Jamaica only)	1-800-682-3639
Japan (Kawasaki)	Website: support.jp.dell.com	
International Access Code: 001	Technical Support (servers)	toll-free: 0120-198-498
Country Code: 81	Technical Support outside of Japan (servers)	81-44-556-4162
City Code: 44	Technical Support (Dimension and Inspiron)	toll-free: 0120-198-226
	Technical Support outside of Japan (Dimension and Inspiron)	81-44-520-1435
	Technical Support (Dell Precision, OptiPlex, and Latitude)	toll-free: 0120-198-433
	Technical Support outside of Japan (Dell Precision, OptiPlex, and Latitude)	81-44-556-3894
	Technical Support (PDAs, projectors, printers, routers)	toll-free: 0120-981-690
	Technical Support outside of Japan (PDAs, projectors, printers, routers)	81-44-556-3468
	Faxbox Service	044-556-3490
	24-Hour Automated Order Service	044-556-3801
	Customer Care	044-556-4240
	Business Sales Division (up to 400 employees)	044-556-1465
	Preferred Accounts Division Sales (over 400 employees)	044-556-3433
	Large Corporate Accounts Sales (over 3500 employees)	044-556-3430
	Public Sales (government agencies, educational institutions, and medical institutions)	044-556-1469
	Global Segment Japan	044-556-3469
	Individual User	044-556-1760
	Switchboard	044-556-4300
Korea (Seoul)	Technical Support	toll-free: 080-200-3800
International Access Code: 001	Sales	toll-free: 080-200-3600
Country Code: 82	Customer Service (Penang, Malaysia)	604 633 4949
City Code: 2	Fax	2194-6202
	Switchboard	2194-6000
	Technical Support (Electronics and Accessories)	toll-free: 080-200-3801
Latin America	Customer Technical Support (Austin, Texas, U.S.A.)	512 728-4093
	Customer Service (Austin, Texas, U.S.A.)	512 728-3619
	Fax (Technical Support and Customer Service) (Austin, Texas, U.S.A.)	512 728-3883
	Sales (Austin, Texas, U.S.A.)	512 728-4397
	SalesFax (Austin, Texas, U.S.A.)	512 728-4600
		or 512 728-3772
Luxembourg	Website: support.euro.dell.com	
International Access Code: 00	E-mail: tech_be@dell.com	
Country Code: 352	Technical Support (Brussels, Belgium)	3420808075
	Home/Small Business Sales (Brussels, Belgium)	toll-free: 080016884
	Corporate Sales (Brussels, Belgium)	02 481 91 00
	Customer Care (Brussels, Belgium)	02 481 91 19
	Fax (Brussels, Belgium)	02 481 92 99
	Switchboard (Brussels, Belgium)	02 481 91 00
Macao	Technical Support	toll-free: 0800 105
Country Code: 853	Customer Service (Xiamen, China)	34 160 910
	Transaction Sales (Xiamen, China)	29 693 115
Malaysia (Penang)	Website: support.ap.dell.com	toll-free: 1 800 88 0193
International Access Code: 00	Technical Support (Dell Precision, OptiPlex, and Latitude)	toll-free: 1 800 88 1306
Country Code: 60	Technical Support (Dimension, Inspiron, and Electronics and Accessories)	
City Code: 4	Technical Support (PowerApp, PowerEdge, PowerConnect, and PowerVault)	toll-free: 1800 88 1386
	Customer Service (Penang, Malaysia)	04 633 4949
	Transaction Sales	toll-free: 1 800 888 202
	Corporate Sales	toll-free: 1 800 888 213
Mexico	Customer Technical Support	001-877-384-8979
International Access Code: 00		or 001-877-269-3383
Country Code: 52	Sales	50-81-8800

		or 01-800-888-3355
	Customer Service	001-877-384-8979
		or 001-877-269-3383
	Main	50-81-8800
		or 01-800-888-3355
Montserrat	General Support	toll-free: 1-866-278-6822
Netherlands Antilles	General Support	001-800-882-1519
Netherlands (Amsterdam)	Website: support.euro.dell.com	
International Access Code: 00	Technical Support	020 674 45 00
Country Code: 31	Technical Support Fax	020 674 47 66
City Code: 20	Home/Small Business Customer Care	020 674 42 00
	Relational Customer Care	020 674 4325
	Home/Small Business Sales	020 674 55 00
	Relational Sales	020 674 50 00
	Home/Small Business Sales Fax	020 674 47 75
	Relational Sales Fax	020 674 47 50
	Switchboard	020 674 50 00
	Switchboard Fax	020 674 47 50
New Zealand	E-mail (New Zealand): nz_tech_support@dell.com	
International Access Code: 00	E-mail (Australia): au_tech_support@dell.com	
Country Code: 64	Technical Support (for desktop and portable computers)	toll-free: 0800 446 255
	Technical Support (for servers and workstations)	toll-free: 0800 443 563
	Home and Small Business	0800 446 255
	Government and Business	0800 444 617
	Sales	0800 441 567
	Fax	0800 441 566
Nicaragua	General Support	001-800-220-1006
Norway (Lysaker)	Website: support.euro.dell.com	
International Access Code: 00	E-mail: http://support.euro.dell.com/no/no/emaildell/	
Country Code: 47	Technical Support	671 16882
	Relational Customer Care	671 17575
	Home/Small Business Customer Care	23162298
	Switchboard	671 16800
	Fax Switchboard	671 16865
Panama	General Support	001-800-507-0962
Peru	General Support	0800-50-669
Poland (Warsaw)	Website: support.euro.dell.com	
International Access Code: 011	E-mail: pl_support_tech@dell.com	
Country Code: 48	Customer Service Phone	57 95 700
City Code: 22	Customer Care	57 95 999
	Sales	57 95 999
	Customer Service Fax	57 95 806
	Reception Desk Fax	57 95 998
	Switchboard	57 95 999
Portugal	Website: support.euro.dell.com	
International Access Code: 00	E-mail: support.euro.dell.com/pt/en/emaildell/	
Country Code: 351	Technical Support	707200149
	Customer Care	800 300 413
	Sales	800 300 410 or 800 300 411 or 800 300 412 or 21 422 07 10
	Fax	21 424 01 12
Puerto Rico	General Support	1-800-805-7545
St. Kitts and Nevis	General Support	toll-free: 1-877-441-4731
St. Lucia	General Support	1-800-882-1521
St. Vincent and the Grenadines	General Support	toll-free: 1-877-270-4609
Singapore (Singapore)	Website: support.ap.dell.com	
International Access Code: 005	Technical Support (Dimension, Inspiron, and Electronics and Accessories)	toll-free: 1800 394 7430
	Technical Support (OptiPlex, Latitude, and Dell Precision)	toll-free: 1800 394 7488

Country Code: 65	Technical Support (PowerApp, PowerEdge, PowerConnect, and PowerVault)	toll-free: 1800 394 7478
	Customer Service (Penang, Malaysia)	604 633 4949
	Transaction Sales	toll-free: 1 800 394 7412
	Corporate Sales	toll-free: 1 800 394 7419
Slovakia (Prague) International Access Code: 00 Country Code: 421	Website: support.euro.dell.com	
	E-mail: czech_dell@dell.com	
	Technical Support	02 5441 5727
	Customer Care	420 22537 2707
	Fax	02 5441 8328
	Tech Fax	02 5441 8328
	Switchboard (Sales)	02 5441 7585
South Africa (Johannesburg) International Access Code: 09/091 Country Code: 27 City Code: 11	Website: support.euro.dell.com	
	E-mail: dell_za_support@dell.com	
	Gold Queue	011 709 7713
	Technical Support	011 709 7710
	Customer Care	011 709 7707
	Sales	011 709 7700
	Fax	011 706 0495
	Switchboard	011 709 7700
Southeast Asian and Pacific Countries	Customer Technical Support, Customer Service, and Sales (Penang, Malaysia)	604 633 4810
Spain (Madrid) International Access Code: 00 Country Code: 34 City Code: 91	Website: support.euro.dell.com	
	E-mail: support.euro.dell.com/es/es/emaildell/	
	Home and Small Business	
	Technical Support	902 100 130
	Customer Care	902 118 540
	Sales	902 118 541
	Switchboard	902 118 541
	Fax	902 118 539
	Corporate	
	Technical Support	902 100 130
	Customer Care	902 115 236
	Switchboard	91 722 92 00
	Fax	91 722 95 83
Sweden (Upplands Vasby) International Access Code: 00 Country Code: 46 City Code: 8	Website: support.euro.dell.com	
	E-mail: http://support.euro.dell.com/se/sv/emaildell/	
	Technical Support	08 590 05 199
	Relational Customer Care	08 590 05 642
	Home/Small Business Customer Care	08 587 70 527
	Employee Purchase Program (EPP) Support	20 140 14 44
	Technical Support Fax	08 590 05 594
	Sales	08 590 05 185
Switzerland (Geneva) International Access Code: 00 Country Code: 41 City Code: 22	Website: support.euro.dell.com	
	E-mail: Tech_support_central_Europe@dell.com	
	E-mail for French-speaking HSB and Corporate Customers: support.euro.dell.com/ch/fr/emaildell/	
	Technical Support (Home and Small Business)	0844 811 411
	Technical Support (Corporate)	0844 822 844
	Customer Care (Home and Small Business)	0848 802 202
	Customer Care (Corporate)	0848 821 721
	Fax	022 799 01 90
	Switchboard	022 799 01 01
Taiwan International Access Code: 002 Country Code: 886	Website: support.ap.dell.com	
	E-mail: ap_support@dell.com	
	Technical Support (OptiPlex, Latitude, Inspiron, Dimension, and Electronics and Accessories)	toll-free: 00801 86 1011
	Technical Support (PowerApp, PowerEdge, PowerConnect, and PowerVault)	toll-free: 00801 60 1256
	Transaction Sales	toll-free: 00801 65 1228
	Corporate Sales	toll-free: 00801 651 227
Thailand	Website: support.ap.dell.com	

International Access Code: 001 Country Code: 66	Technical Support (OptiPlex, Latitude, and Dell Precision)	toll-free: 1800 0060 07
	Technical Support (PowerApp, PowerEdge, PowerConnect, and PowerVault)	toll-free: 1800 0600 09
	Customer Service (Penang, Malaysia)	604 633 4949
	Corporate Sales	toll-free: 1800 006 009
	Transaction Sales	toll-free: 1800 006 006
Trinidad/Tobago	General Support	1-800-805-8035
Turks and Caicos Islands	General Support	toll-free: 1-866-540-3355
U.K. (Bracknell)	Website: support.euro.dell.com	
International Access Code: 00	Customer Care website: support.euro.dell.com/uk/en/ECare/Form/Home.asp	
Country Code: 44	E-mail: dell_direct_support@dell.com	
City Code: 1344	Technical Support (Corporate/Preferred Accounts/PAD [1000+ employees])	0870 908 0500
	Technical Support (direct and general)	0870 908 0800
	Global Accounts Customer Care	01344 373 186
	Home and Small Business Customer Care	0870 906 0010
	Corporate Customer Care	01344 373 185
	Preferred Accounts (500–5000 employees) Customer Care	0870 906 0010
	Central Government Customer Care	01344 373 193
	Local Government & Education Customer Care	01344 373 199
	Health Customer Care	01344 373 194
	Home and Small Business Sales	0870 907 4000
	Corporate/Public Sector Sales	01344 860 456
	Home and Small Business Fax	0870 907 4006
	Uruguay	General Support
U.S.A. (Austin, Texas) International Access Code: 011 Country Code: 1	Automated Order-Status Service	toll-free: 1-800-433-9014
	AutoTech (portable and desktop computers)	toll-free: 1-800-247-9362
	Consumer (Home and Home Office)	
	Technical Support	toll-free: 1-800-624-9896
	Customer Service	toll-free: 1-800-624-9897
	DellNet™ Service and Support	toll-free: 1-877-Dellnet (1-877-335-5638)
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-695-8133
	Financial Services website: www.dellfinancialservices.com	
	Financial Services (lease/loans)	toll-free: 1-877-577-3355
	Financial Services (Dell Preferred Accounts [DPA])	toll-free: 1-800-283-2210
	Business	
	Customer Service and Technical Support	toll-free: 1-800-822-8965
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-695-8133
	Printers and Projectors Technical Support	toll-free: 1-877-459-7298
	Public (government, education, and healthcare)	
	Customer Service and Technical Support	toll-free: 1-800-456-3355
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-234-1490
	Dell Sales	toll-free: 1-800-289-3355 or toll-free: 1-800-879-3355
	Dell Outlet Store (Dell refurbished computers)	toll-free: 1-888-798-7561
	Software and Peripherals Sales	toll-free: 1-800-671-3355
	Spare Parts Sales	toll-free: 1-800-357-3355
	Extended Service and Warranty Sales	toll-free: 1-800-247-4618
	Fax	toll-free: 1-800-727-8320
Dell Services for the Deaf, Hard-of-Hearing, or Speech-Impaired	toll-free: 1-877-DELLTTY (1-877-335-5889)	
U.S. Virgin Islands	General Support	1-877-673-3355
Venezuela	General Support	8001-3605

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I/O Panel

Dell™ OptiPlex™ 170L User's Guide

• [Small Desktop Computer](#)

• [Mini-Tower Computer](#)

⚠ CAUTION: Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

🔌 NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

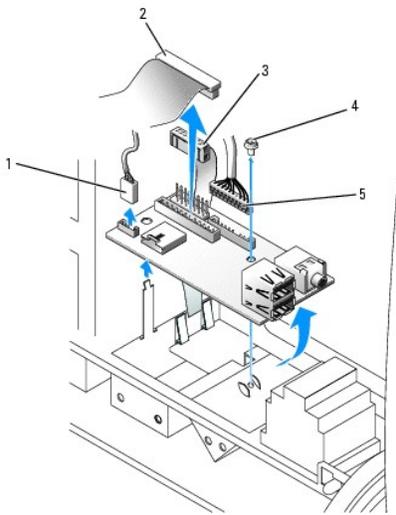
🔌 NOTICE: Before you disconnect a device from the computer or remove a component from the system board, verify that the standby power light on the system board has turned off. To locate the light, see "[System Board Components](#)."

Small Desktop Computer

Replacing the I/O Panel

1. Follow the procedures in "[Before You Begin](#)."
2. Disconnect the hard-drive data cable.
3. Disconnect all cables that are connected to the I/O panel.

Note the routing of the control panel cable as you remove it from the computer so that you can replace it correctly.



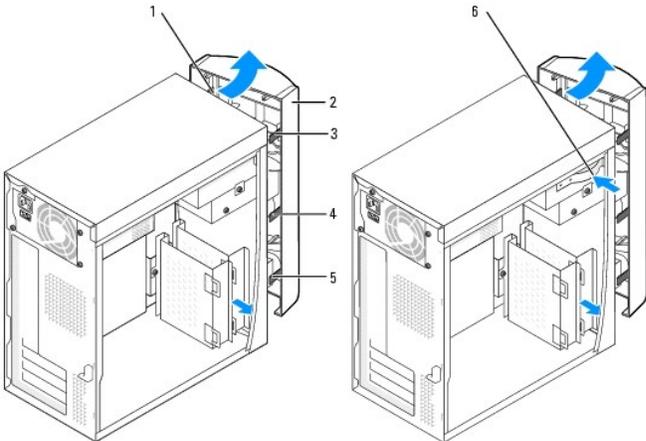
1	internal speaker cable connector	4	mounting screw
2	I/O cable connector	5	front-audio cable connector
3	control-panel cable connector		

4. From inside the computer cover, remove the mounting screw that secures the I/O panel to the computer.
5. Remove the I/O panel from the computer.
6. To replace the I/O panel, follow the removal procedures in the reverse order.

Mini-Tower Computer

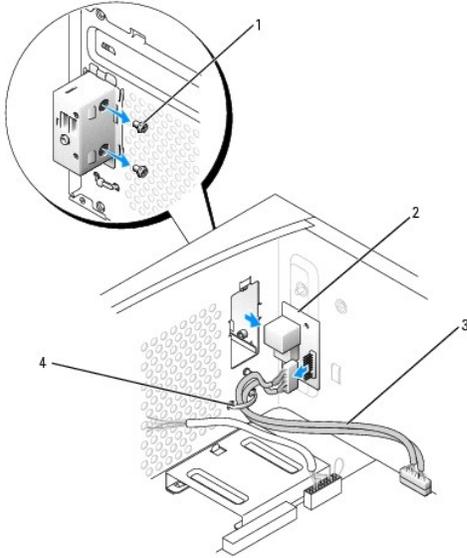
Replacing the I/O Panel

1. Follow the procedures in "[Before You Begin](#)."
2. Remove the hard drive(s).
3. Cut the tie wrap cord that secures the I/O panel cables to the computer frame.
4. Release and remove the front panel:
 - a. For computers with the release lever, push the release lever to release the top tab. See the following figure.
For computers without the release lever, reach inside the computer and push the top tab toward you to release it.
 - b. Reach inside the computer and push the bottom tab toward you to release it (the middle tab releases automatically).
 - c. Rotate the front panel to separate it from the side hinges.



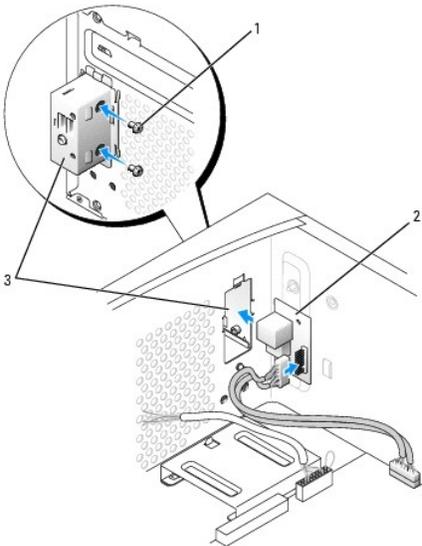
1	side hinges (3)	4	middle tab
2	front panel	5	bottom tab
3	top tab	6	release lever (not on all computers)

5. Remove the two screws that secure the I/O panel to the computer.



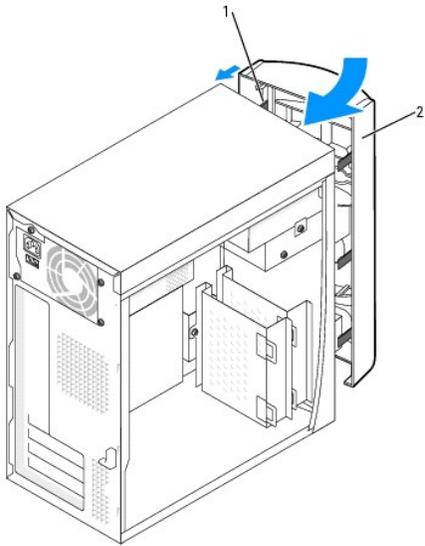
1	screws (2)
2	I/O panel
3	sound/USB cable
4	tie wrap cord

6. Remove the I/O panel and disconnect the sound/USB cable from the I/O panel.
7. Attach the sound/USB cable to the new I/O panel.
8. Insert the I/O panel into the I/O cage and replace the screws that you removed in [step 5](#).



1	screws (2)
2	I/O panel
3	I/O cage

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



1	side hinges
2	front panel

10. Reinstall the hard drive(s).
11. Replace the computer cover.

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

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

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Memory

Dell™ OptiPlex™ 170L User's Guide

- [Memory Installation Guidelines](#)
 - [Installing Memory](#)
 - [Removing Memory](#)
-

Memory Installation Guidelines

For information on the type of memory supported by your computer, look under "[Memory](#)" in the "Specifications" section.

- **NOTICE:** Before you install new memory modules, download the most recent BIOS for your computer from the Dell Support website at support.dell.com.

DDR Memory Overview

DDR memory modules should be installed in pairs of matched memory size, speed, and technology. If the DDR memory modules are not installed in matched pairs, the computer will continue to operate, but with a slight reduction in performance.

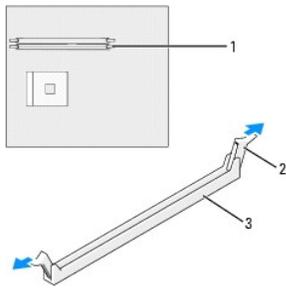
- **NOTE:** DDR400 memory runs at 333 MHz when configured with 533-MHz FSB processors.
- **NOTE:** DDR333 memory runs at 320 MHz when configured with Pentium 4 800-MHz FSB processors.



- **NOTICE:** Do not install ECC memory modules.
 1. If you install a mixed pair of PC2700 (DDR 333-MHz) and PC3200 (DDR 400-MHz) memory, the modules function at the slowest speed installed.
 1. Be sure to install a single memory module in DIMM1, the connector closest to the processor, before you install modules in the other connectors.
 1. The actual speed of the SDRAM memory channel will depend on the speed of the processor's front side bus.
 - **NOTE:** Memory purchased from Dell is covered under your computer warranty.
 - **NOTICE:** If you remove your original memory modules from the computer during a memory upgrade, keep them separate from any new modules that you may have, even if you purchased the new modules from Dell. If possible, *do not* pair an original memory module with a new memory module. Otherwise, your computer may not start properly.
-

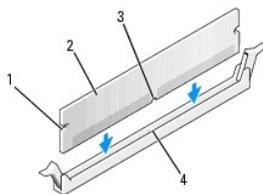
Installing Memory

- **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.
 1. Follow the procedures in "[Before You Begin](#)."
 2. Press out the securing clip at each end of the memory module connector.



1	memory connector closest to processor
2	securing clips (2)
3	connector

- Align the notch on the bottom of the module with the crossbar in the connector.

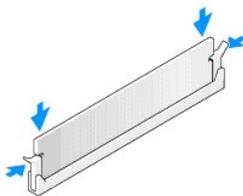


1	cutouts (2)
2	memory module
3	notch
4	crossbar

- NOTICE:** To avoid damage to the memory module, press the module straight down into the connector while you apply equal force to each end of the module.

- Insert the module into the connector until the module snaps into position.

If you insert the module correctly, the securing clips snap into the cutouts at each end of the module.



- [Replace the computer cover.](#)

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

- Connect your computer and devices to electrical outlets, and turn them on.
- The computer detects that the new memory does not match the existing configuration information and generates the following message:

The amount of system memory has changed.
Strike the F1 key to continue, F2 to run the setup utility

- Press <F2> to enter system setup and check the value for **System Memory**.

The computer should have changed the value of **System Memory** to reflect the newly installed memory. Verify the new total. If it is correct, skip to [step 10](#).

9. If the memory total is incorrect, turn off and disconnect your computer and devices from their electrical outlets. [Remove the computer cover](#) and check the installed memory modules to ensure that they are seated properly in their sockets. Then repeat steps 5 through 8.
 10. When the **System Memory** total is correct, press <Esc> to exit system setup.
 11. Run the [Dell Diagnostics](#) to verify that the memory modules are operating properly.
-

Removing Memory

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

1. Follow the procedures in "[Before You Begin](#)."
2. Press out the securing clip at each end of the memory module connector.
3. Grasp the module and pull up.

If the module is difficult to remove, gently ease the module back and forth to remove it from the connector.

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Power Supply

Dell™ OptiPlex™ 170L User's Guide

- [Mini-Tower Computer](#)
- [Small Desktop Computer](#)
- [DC Power Connectors](#)

⚠ CAUTION: Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

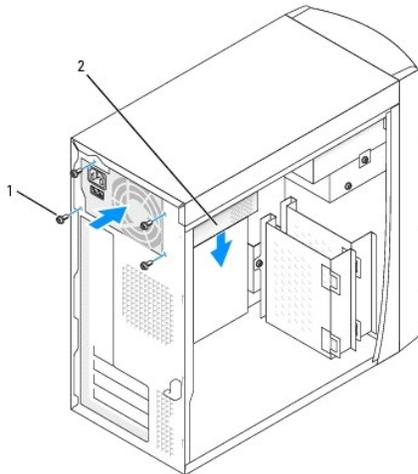
➡ NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

➡ NOTICE: Before you disconnect a device from the computer or remove a component from the system board, verify that the standby power light on the system board has turned off. To locate the light, see the mini-tower "[System Board Components](#)" or the desktop "[System Board Components](#)."

Mini-Tower Computer

Replacing the Power Supply

1. Follow the procedures in "[Before You Begin](#)."
2. Remove the fan assembly.
3. Disconnect the AC power cable from the AC power connector on the back of the power supply.
4. Unplug the DC power cables from the drives and system board.
5. Remove the four screws that secure the power supply to the back of the computer.



1	screws (4)
2	power supply

6. Remove the power supply from the computer.
7. Slide the replacement power supply into place.
8. Replace the four screws that secure the power supply to the back of the computer.
9. Reinstall the fan assembly.
10. Reconnect the DC power cables to the drives and system board.
11. Replace the computer cover.

12. Connect the AC power cable to the AC power connector on the back of the power supply.

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

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

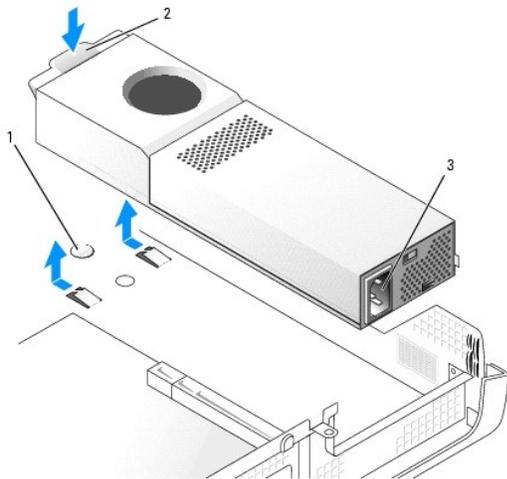
Small Desktop Computer

Replacing the Power Supply

1. Follow the procedures in "[Before You Begin](#)."
2. Disconnect the DC power cables from the system board and the drives.

Note the routing of the DC power cables underneath the tabs in the computer frame as you remove them from the system board and drives. You must route these cables properly when you replace them to prevent their being pinched or crimped.

3. Remove the card cage and remove the power cables from the side of the hard drive. To remove the power cables, use the cables as leverage and pull away from the clips while you pull on the metal clips with your fingers.
4. Press down on the handle, which in turn presses the release button.



1	release button
2	handle
3	AC power connector

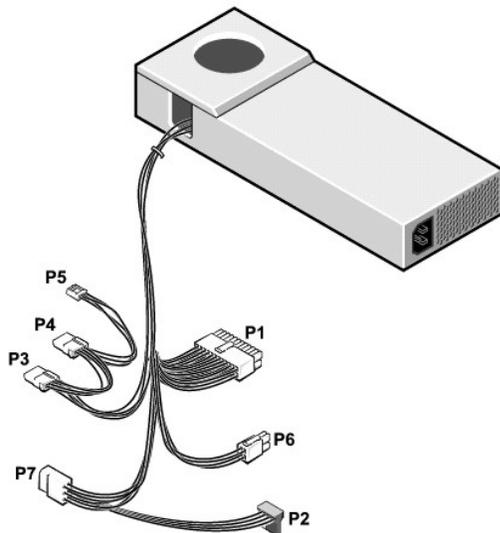
5. Slide the power supply toward the front of the computer approximately 1 inch.
6. Lift the power supply up and out of the computer.
7. Slide the replacement power supply into place.
8. Reconnect the DC power cables.
9. Connect the AC power cable to the connector.
10. Reattach the power cables to the side of the hard drive and replace the card cage.
11. Run the cables underneath the clips, and press the clips to close them over the cables.
12. Close the computer cover.
13. Attach the computer stand, if it is used.

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

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

DC Power Connectors

Small Desktop Power Supply DC Connector Pin Assignments



NOTE: Your computer's power supply may or may not have the "P7" connector.

DC Power Connector P1

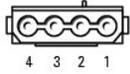
	Pin Number	Signal name	18-AWG Wire
	1	+3.3 VDC	Orange
	2	+3.3 VDC	Orange
	3	COM	Black
	4	+5 VDC	Red
	5	COM	Black
	6	+5 VDC	Red
	7	COM	Black
	8	POK*	Gray
	9	+5 VFP	Purple
	10	+12 VDC	Yellow
	11	+3.3 VDC	Orange
	12	-12 VDC*	Blue
	13	COM	Black
	14	PS ON*	Green
	15	COM	Black
	16	COM	Black
	17	COM	Black
	18	N/C	N/C
	19	+5 VDC	Red
	20	+5 VDC	Red

* Use 22-AWG wire instead of 18-AWG wire.

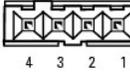
DC Power Connector P2

	Pin Number	Signal Name	18-AWG Wire
	1	+3.3 VDC	Orange
	2	COM	Black
	3	+5 VDC	Red
	4	COM	Black
	5	+12 VDC	Yellow

DC Power Connectors P3 and P4

	Pin Number	Signal Name	18-AWG Wire
	1	+12 VDC	Yellow
	2	COM	Black
	3	COM	Black
	4	+5 VDC	Red

DC Power Connector P5

	Pin Number	Signal Name	22-AWG Wire
	1	+5 VDC	Red
	2	COM	Black
	3	COM	Black
	4	+12 VDC	Yellow

DC Power Connector P6

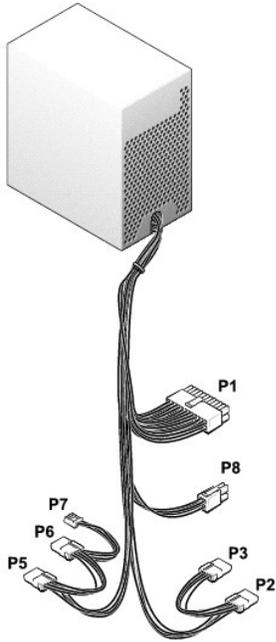
	Pin Number	Signal Name	18-AWG Wire
	1	COM	Black
	2	COM	Black
	3	+12 VDC	Yellow
	4	+12 VDC	Yellow

DC Power Connector P7

 **NOTE:** Your computer's power supply may or may not have the "P7" connector.

	Pin Number	Signal Name	18-AWG Wire
	1		N/C
	2	COM	Black
	3	COM	Black
	4	+3.3 VDC	Orange
	5	+5 VDC	Red
	6	+12 VDC	Yellow

Mini-Tower Power Supply DC Connector Pin Assignments



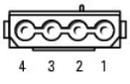
Main Power Connector

	Pin Number	Signal name	18-AWG Wire
	1	+3.3 VDC	Orange
	2	+3.3 VDC	Orange
	3	COM	Black
	4	+5 VDC	Red
	5	COM	Black
	6	+5 VDC	Red
	7	COM	Black
	8	PWR_OK	Gray
	9	+5 VSB	Purple
	10	+12 VDC	Yellow
	11	+3.3 VDC	Orange
		[+3.3 V default sense]	[Brown]
	12	-12 VDC	Blue
	13	COM	Black
	14	PS ON#	Green
	15	COM	Black
	16	COM	Black
	17	COM	Black
	18	N/C	N/C
	19	+5 VCD	Red
20	+5 VCD	Red	

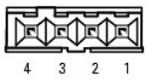
12-volt Power Connector

	Pin Number	Signal Name	18-AWG Wire
	1	COM	Black
	2	COM	Black
	3	+12 VDC	Yellow
	4	+12 VDC	Yellow

Peripheral Power Connectors

	Pin Number	Signal Name	18-AWG Wire
	1	+12 VDC	Yellow
	2	COM	Black
	3	COM	Black
	4	+5 VDC	Red

Floppy Drive Power Connector

	Pin Number	Signal Name	22-AWG Wire
	1	+5 VDC	Red
	2	COM	Black
	3	COM	Black
	4	+12 VDC	Yellow

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FCC Notices (U.S. Only)

Dell™ OptiPlex™ 170L User's Guide

- [Class A](#)
- [Class B](#)
- [FCC Identification Information](#)

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

Once you have determined your system's FCC classification, read the appropriate FCC notice. Note that FCC regulations provide that changes or modifications not expressly approved by Dell could void your authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1 This device may not cause harmful interference.
 - 1 This device must accept any interference received, including interference that may cause undesired operation.
-

Class A

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Class B

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- 1 Reorient or relocate the receiving antenna.
 - 1 Increase the separation between the equipment and the receiver.
 - 1 Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - 1 Consult the dealer or an experienced radio/television technician for help.
-

FCC Identification Information

The following information is provided on the device or devices covered in this document in compliance with FCC regulations:

- 1 Model numbers: MTC2 and DHS
- 1 Company name:

Dell Inc.
One Dell Way
Round Rock, Texas 78682 USA
512-338-4400

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System Board

Dell™ OptiPlex™ 170L User's Guide

- [Jumper Settings](#)
- [Clearing the CMOS](#)
- [Replacing the System Board](#)

 **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

Jumper Settings

-  **NOTICE:** Ensure that your computer is turned off and unplugged before you change the jumper settings. Otherwise, damage to your computer or unpredictable results can occur.
-  **NOTICE:** Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate any static electricity that could harm internal components.

To change a jumper setting, pull the plug off its pin(s) and carefully fit it down onto the pin(s) indicated.

Jumper	Setting	Description
CLEAR PASSWORD	(default) 	Password features are enabled.
		Password features are disabled.
 jumpered  unjumpered		

Clearing the CMOS

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

-  **NOTICE:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.
-  **NOTICE:** Before you disconnect a device from the computer or remove a component from the system board, verify that the standby power light on the system board has turned off. To locate the light, see "[System Board Components](#)."

- Follow the procedures in "[Before You Begin](#)."
- Reset the current CMOS settings:
 - Remove the battery for at least 2 minutes.
 - Reinstall the battery (see "[Battery](#)" for installation steps).
- Replace the computer cover.

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

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

Replacing the System Board

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

🔌 **NOTICE:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

🔌 **NOTICE:** Before you disconnect a device from the computer or remove a component from the system board, verify that the standby power light on the system board has turned off.

Small Desktop Computer

1. Follow the procedures in "[Before You Begin](#)."
2. Remove any installed cards.
3. Disconnect all cables from the system board.
4. Disconnect the fan power cable from the connector on the system board.
5. Remove the heat sink/blower assembly.

⚠️ **CAUTION:** The processor heat sink can get hot. To avoid burns, ensure that the heat sink has had sufficient time to cool before you touch it.

6. Remove the processor heat sink.
7. Remove the screw that secures the system board to the computer frame.
8. Lift the system board out of the computer.
9. Place the system board that you just removed next to the replacement system board.

Visually compare the replacement system board to the existing system board to ensure that you have the correct part.

10. Transfer components from the existing system board to the replacement system board:
 - a. Remove the memory modules and install them on the replacement board.

⚠️ **CAUTION:** The processor can get hot. To avoid burns, ensure that the processor has had sufficient time to cool before you touch it.

- b. Remove the processor from the existing system board and transfer the processor to the replacement system board.
11. Configure the settings of the replacement system board.

[Set the jumpers](#) on the replacement system board so that they are identical to the ones on the existing board.

12. Place the system board inside the computer frame, place the heat-sink base on the system board, and then replace the screw that you removed in [step 7](#).
13. Reinstall the processor heat sink.
14. Reinstall the heat sink/blower assembly.
16. Reattach the cables to the system board.
17. Reinstall any cards.
18. Replace the computer cover.

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

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

Mini-Tower Computer

1. Follow the procedures in "[Before You Begin](#)."
2. If a floppy drive is installed, remove the floppy drive.
3. Remove any installed cards.
4. Disconnect all cables from the system board.
5. Disconnect the fan power cable from the connector on the system board.
6. Remove the heat sink shroud.

⚠️ **CAUTION:** The processor heat sink can get hot. To avoid burns, ensure that the heat sink has had sufficient time to cool before you touch it.

7. Remove the processor heat sink.

8. Remove the screws that secure the system board to the computer frame.

Four of the screws that secure the system board to the computer frame also secure the heat-sink base to the system board.

9. Lift the system board out of the computer.
10. Place the system board that you just removed next to the replacement system board.

Visually compare the replacement system board to the existing system board to ensure that you have the correct part.

11. Transfer components from the existing system board to the replacement system board:
 - a. Remove the memory modules and install them on the replacement board.

 **CAUTION:** The processor can get hot. To avoid burns, ensure that the processor has had sufficient time to cool before you touch it.

- b. Remove the processor from the existing system board and transfer the processor to the replacement system board.
12. Configure the settings of the replacement system board.

[Set the jumpers](#) on the replacement system board so that they are identical to the ones on the existing board.

13. Place the system board inside the computer frame, place the heat-sink base on the system board, and then replace the screws that you removed in [step 8](#).
14. Reinstall the processor heat sink.
15. Reinstall the heat sink shroud and lower the shroud over the heat sink.
16. Reattach the cables to the system board.
17. Reinstall any cards.
18. Replace the floppy drive, if used.
19. Replace the computer cover.

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

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

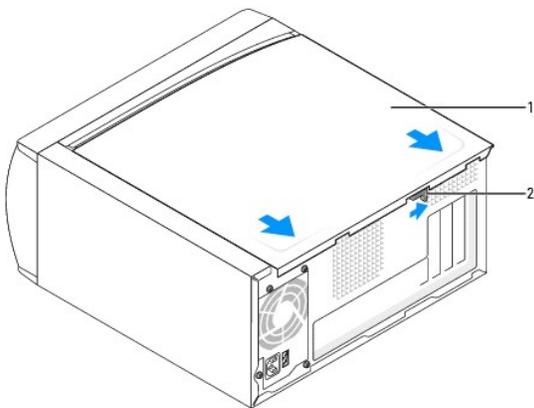
Removing the Computer Cover

Dell™ OptiPlex™ 170L User's Guide

⚠ CAUTION: Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

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

1. Follow the procedures in "[Before You Begin](#)."
2. Lay your computer on its side with the computer cover facing up.
3. While keeping the cover latch in the open position, grip the indents and slide the computer cover toward the back of the computer.
4. Place the computer cover on a level surface.

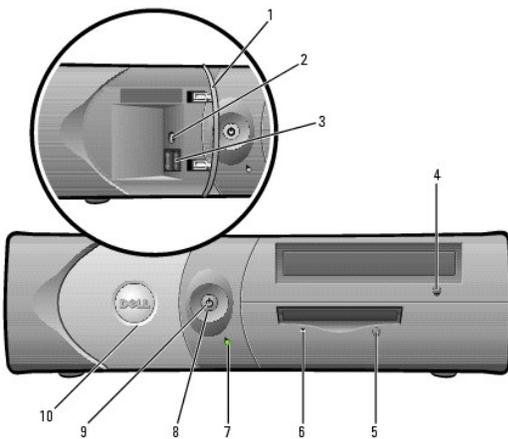


1	computer cover
2	cover latch

About Your Small Desktop Computer

- [Front View](#)
- [Back View](#)
- [Inside Your Computer](#)
- [System Board Components](#)
- [Attaching and Removing the Computer Stand](#)

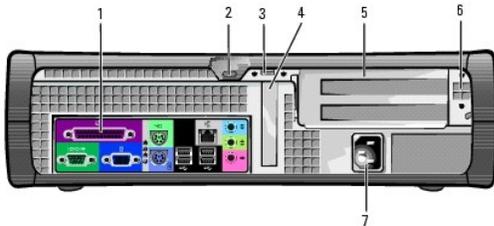
Front View



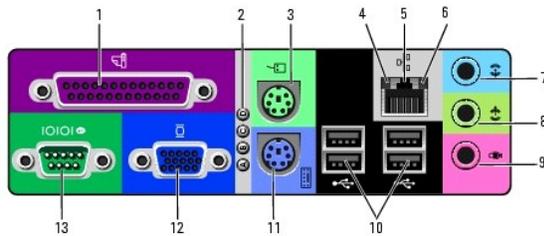
1	front-panel door	Open the door to use the front-panel connectors.
2	headphone connector	Use the headphone connector to attach headphones and most kinds of speakers.
3	USB 2.0 connectors (2)	Use the front USB connectors for devices that you connect occasionally, such as joysticks or cameras, or for bootable USB devices (see " System Setup " for more information about booting to a USB device). It is recommended that you use the back USB connectors for devices that typically remain connected, such as printers and keyboards.
4	CD/DVD drive eject button	Press to eject a CD or DVD from the drive.
5	floppy-drive eject button*	Press to eject a floppy disk from the floppy drive.
6	floppy-drive activity light*	The floppy drive light is on when the computer reads data from or writes data to the floppy drive. Wait until this light turns off before you remove the floppy disk from the drive.
7	hard-drive activity light	The hard drive light is on when the computer reads data from or writes data to the hard drive. The light might also be on when a device such as your CD player is operating.
8	power button	Press to turn on the computer. NOTICE: To avoid losing data, do not use the power button to turn off the computer. Instead, perform a Windows shutdown . NOTICE: If your operating system has ACPI enabled, when you press the power button the computer will perform an operating system shutdown.
9	power light	The power light illuminates and blinks or remains solid to indicate different states: <ul style="list-style-type: none"> 1 No light — The computer is turned off. (S4, S5, or mechanical OFF) 1 Steady green — The computer is in a normal operating state. 1 Blinking green — The computer is in a power-saving state. (S1 or S3) To exit from a power-saving state, press the power button or click or move the mouse. For more information about sleep states and exiting

		from a power-saving state, see " Power Management ."
		See " Diagnostic Lights " for a description of light codes that can help you troubleshoot problems with your computer.
10	front-panel door	Open the door to use the front-panel connectors.
*On computers with an optional floppy drive.		

Back View



1	back panel connectors	Plug serial, USB, and other devices into the appropriate connectors.
2	security cable slot	Use a security cable with the slot to help secure your computer.
3	padlock ring	Insert a padlock to lock the computer cover.
4	card slot	Access the connector for a low-profile PCI card.
5	card slots (for optional full-height cards)	Access connectors for the optional card cage, which supports 2 full-height PCI cards.
6	voltage selection switch	See the safety instructions in the <i>Product Information Guide</i> for more information. NOTE: Computers with an auto-sensing voltage circuit do not have a voltage selection switch on the back panel and automatically detect the correct operating voltage.
7	power connector	Connect the power cable.



1	parallel connector	Connect a parallel device, such as a printer, to the parallel connector. If you have a USB printer, plug it into a USB connector. NOTE: The integrated parallel connector is automatically disabled if the computer detects an installed card containing a parallel connector configured to the same address.
2	diagnostic lights	Use the lights to help you recognize a diagnostic code that can tell you how to troubleshoot a computer problem (see " Diagnostic Lights ").
3	mouse connector	Plug a standard mouse into the green mouse connector. Turn off the computer and any attached devices before you connect a mouse to the computer. If you have a USB mouse, plug it into a USB connector.
4	link integrity light	<ul style="list-style-type: none"> 1 Off — A good connection exists between a 10-Mbps network and the computer. 1 Green — A good connection exists between a 100-Mbps network and the computer.
5	network adapter connector	To attach your computer to a network or broadband device, connect one end of a network cable to either a network jack or your network or broadband device. Connect the other end of the network cable to the network adapter connector on the back panel of your computer. A click indicates that the network cable has been securely attached.

		<p>NOTE: Do not plug a telephone cable into the network connector.</p> <p>On computers with a network connector card, use the connector on the card.</p> <p>It is recommended that you use Category 5 wiring and connectors for your network. If you must use Category 3 wiring, force the network speed to 10 Mbps to ensure reliable operation.</p>
6	network activity light	Flashes a yellow light when the computer is transmitting or receiving network data. A high volume of network traffic may make this light appear to be in a steady "on" state.
7	line-in connector	Use the blue line-in connector (available on computers with integrated sound) to attach a record/playback device such as a cassette player, CD player, or VCR.
		On computers with a sound card, use the connector on the card.
8	line-out connector	Use the green line-out connector (available on computers with integrated sound) to attach headphones and most speakers with integrated amplifiers.
		On computers with a sound card, use the connector on the card.
9	microphone connector	Use the pink microphone connector (available on computers with integrated sound) to attach a personal computer microphone for voice or musical input into a sound or telephony program.
		On computers with a sound card, the microphone connector is on the card.
10	USB 2.0 connectors (4)	Use the back USB connectors for devices that typically remain connected, such as printers and keyboards.
		It is recommended that you use the front USB connectors for devices that you connect occasionally, such as joysticks or cameras, or for bootable USB devices.
11	keyboard connector	If you have a standard keyboard, plug it into the purple keyboard connector. If you have a USB keyboard, plug it into a USB connector.
12	video connector	Plug the cable from your VGA-compatible monitor into the blue connector.
		<p>NOTE: If you purchased an optional graphics card, this connector will be covered by a cap. Connect your monitor to the connector on the graphics card. Do not remove the cap.</p> <p>NOTE: If you are using a graphics card that supports dual monitors, use the y-cable that came with your computer.</p>
13	serial connector	Connect a serial device, such as a handheld device, to the serial connector.

Inside Your Computer



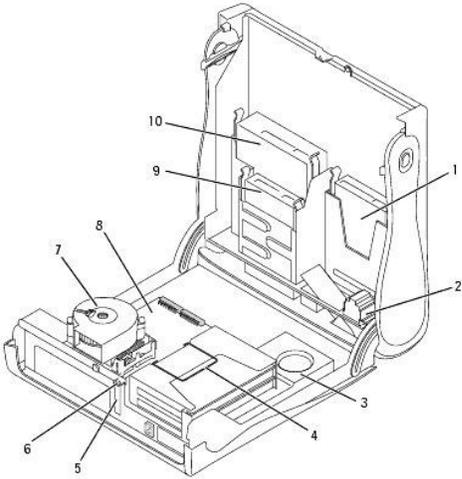
CAUTION: Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.



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

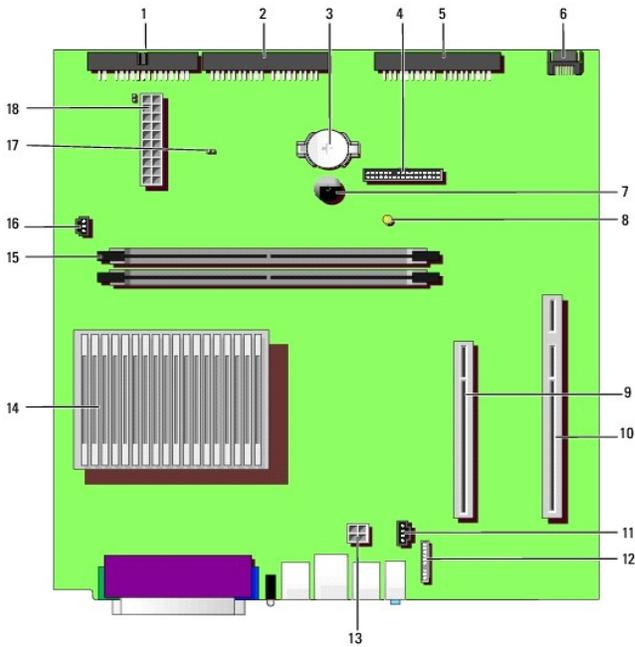


NOTICE: Be careful when opening the computer cover to ensure that you do not accidentally disconnect cables from the system board.



1	hard drive	6	padlock ring
2	optional internal speaker	7	heat sink and blower assembly
3	power supply	8	system board
4	optional card cage	9	floppy drive
5	low-profile PCI card slot	10	CD/DVD drive

System Board Components



1	floppy-drive connector (DSKT)	11	CD drive audio cable connector (CD_IN)
2	CD/DVD drive connector (IDE2)	12	front-panel audio cable connector (FRONTAUDIO)

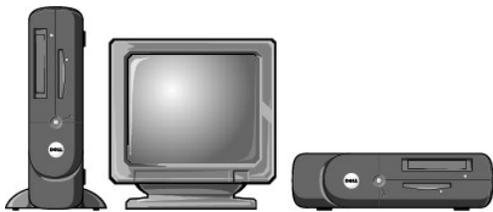
3	battery socket (BATTERY)	13	power connector (12VPOWER)
4	front-panel connector (FRONTPANEL)	14	processor and heat sink connector (CPU)
5	IDE hard-drive connector (IDE1)	15	memory module connectors (DIMMs 1 and 2)
6	serial ATA hard-drive connector (SATA1)	16	processor fan connector (FAN)
7	internal speaker (SPEAKER)	17	password jumper
8	standby power light (AUX_PWR)	18	power connector (POWER)
9	PCI card connector (PCI1)		
10	PCI riser board connector (PCI2)		

Attaching and Removing the Computer Stand

⚠ CAUTION: Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

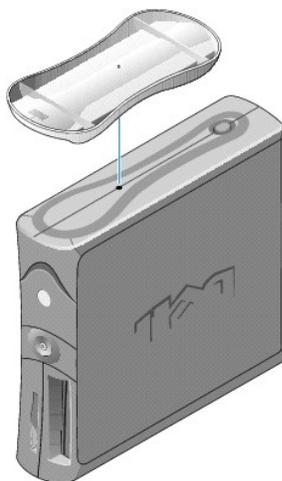
🔧 NOTE: Place your computer on a soft surface to prevent scratching the top cover.

Your computer can be used in either a vertical or horizontal position.



To use the computer in a vertical position, you must attach the computer stand:

1. Place the computer on its right side so that the drive bays are at the bottom.
2. Fit the stand onto what was the left side of the computer:
 - a. Position the stand as shown in the following illustration by aligning the large round hole in the stand with the securing button on the side of the cover and aligning the captive screw in the stand with the screw hole in the cover.
 - b. When the stand is in place, tighten the thumbscrew.
3. Rotate the computer so that the stand is at the bottom and the drives are at the top.



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Cards

Dell™ OptiPlex™ 170L User's Guide

- [Installing Cards](#)
- [Installing Cards in the Optional Card Cage](#)
- [Removing Cards](#)

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.

NOTE: Your Dell computer uses only PCI slots. ISA cards are not supported.

NOTE: If you are replacing a card, remove the current driver for the card from the operating system.

NOTE: Your Dell™ computer provides a slot for one low-profile, 32-bit, 33-MHz PCI card. Additional full-height cards may be installed on the optional card cage.

NOTE: To install full-height cards in your computer, use the optional PCI Riser Customer Kit. To order this kit, [contact Dell](#).

Installing Cards

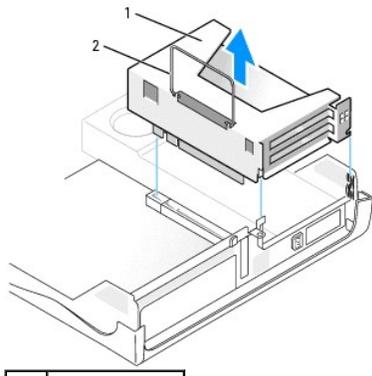
1. Follow the procedures in "[Before You Begin](#)."
2. If you are installing a low-profile card, perform the following steps. If you are installing a full-height card, go to "[Installing Cards in the Optional Card Cage](#)."
 - a. Press the lever on the retention arm on the back panel and raise the retention arm.
 - b. If you are replacing a card that is already installed in the computer, remove the card. If necessary, disconnect any cables connected to the card. Grasp the card by its top corners, and ease it out of its connector.
 - c. If you are installing a new card, remove the filler bracket on the back panel to create an empty card-slot opening.
 - d. Prepare the card for installation. See the documentation that came with the card for information on configuring the card, making internal connections, or otherwise customizing it for your computer.
 - e. Insert the card into the card connector.
 - f. Lower the retention arm and press it into place, securing the card(s) in the computer.
3. Proceed with [step 5](#) in the following procedure.

Installing Cards in the Optional Card Cage

NOTE: If your computer has an empty card cage, you will receive a new card cage with your PCI Riser Card Customer Kit. Remove the empty card cage and follow the steps below.

NOTE: If your computer does not have a card cage, remove the metal bracket and skip to [step b](#).

1. Follow the procedures in "[Before You Begin](#)."
2. Remove the card cage:
 - a. Gently pull on the handle and lift the card cage up and away from the computer.



1	card cage
2	handle

- b. If you are installing a new card, remove the filler bracket to create an empty card-slot opening.

If you are replacing a card that is already installed in the computer, remove the card. If necessary, disconnect any cables connected to the card. Grasp the card by its top corners, and ease it out of its connector.

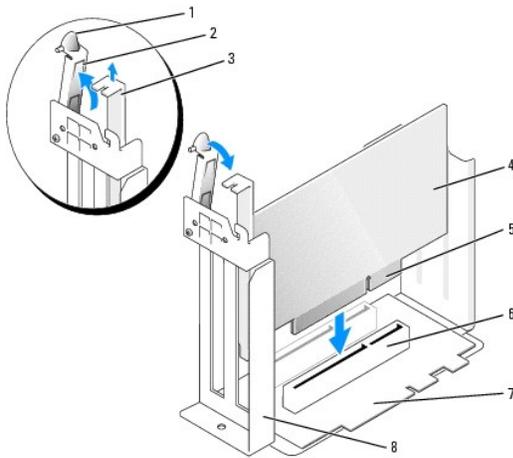
- c. Prepare the card for installation.

See the documentation that came with the card for information on configuring the card, making internal connections, or otherwise customizing it for your computer.

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

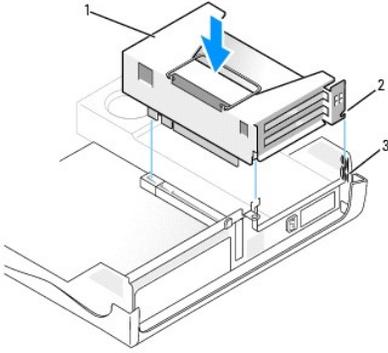
- d. Press the lever on the retention arm and raise the retention arm.
- e. Insert the card into the card connector.

If the card is full-length, insert the end of the card into the card guide bracket as you lower the card toward its connector on the system board. Insert the card firmly into the card connector on the riser board.



1	lever	5	card-edge connector
2	retention arm	6	card connector
3	filler bracket	7	riser board
4	card	8	card cage

- f. Lower the retention arm and press it into place, securing the card(s) in the computer.
3. Replace the card cage:
- a. Align the tabs in the side of the card cage with the slots on the side of the computer, and slide the card cage down into place.
 - b. Ensure that the riser board is fully seated in the connector on the system board.



1	card cage
2	tabs (2)
3	slots (2)

4. Reconnect any cables that you removed in [step 2](#).
5. Connect any cables that should be attached to the card.

See the documentation for the card for information about the card's cable connections.

➔ **NOTICE:** Do not route card cables over or behind the cards. Cables routed over the cards can prevent the computer cover from closing properly or cause damage to the equipment.

6. Close the computer cover.
7. Attach the computer stand (optional).

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

8. Connect your computer and devices to electrical outlets, and turn them on.
9. If you installed a sound card, perform the following steps:
 - a. Enter system setup, select **Audio Controller**, and change the setting to **Off**.
 - b. Connect external audio devices to the sound card's connectors. Do not connect external audio devices to the microphone, speaker/headphone, or line-in connectors on the back panel.
10. If you installed an add-in network adapter and want to turn off the integrated network adapter:
 - a. Enter system setup, select **Network Controller** and change the setting to **Off**.
 - b. Connect the network cable to the add-in network adapter's connectors. Do not connect the network cable to the integrated connector on the back panel.
11. Install any drivers required for the card as described in the card documentation.

Removing Cards

1. Follow the procedures in "[Before You Begin](#)."
2. Remove the card cage (see [step 2](#) of the previous procedure).
3. Press the lever on the retention arm and raise the retention arm.
4. If necessary, disconnect any cables connected to the card.
5. Grasp the card by its top corners, and ease it out of its connector.
6. If you are removing the card permanently, install a filler bracket in the empty card-slot opening.

If you need a filler bracket, [contact Dell](#).

🔧 **NOTE:** Installing filler brackets over empty card-slot openings is necessary to maintain FCC certification of the computer. The brackets also keep dust and dirt out of your computer.

7. Lower the retention arm and press it into place.

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

8. Replace the card cage (see [step 3](#) of the previous procedure).

9. Close the computer cover, reconnect the computer and devices to electrical outlets, and turn them on.

10. Remove the card's driver from the operating system.

11. If you removed a sound card:

a. Enter system setup, select **Audio Controller**, and change the setting to **On**.

b. Connect external audio devices to the audio connectors on the computer back panel.

12. If you removed an add-in network connector:

a. Enter system setup, select **Network Controller**, and change the setting to **On**.

b. Connect the network cable to the integrated connector on the computer back panel.

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Opening the Computer Cover

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⚠ CAUTION: Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

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

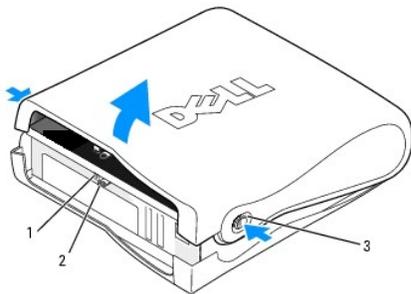
1. Follow the procedures in "[Before You Begin](#)."
2. Remove the computer stand, if it is attached.
3. If you have installed a padlock through the padlock ring on the back panel, remove the padlock.

➡ NOTICE: Ensure that there is sufficient space to support the open cover—at least 30 cm (1 ft) of desk top space.

4. Locate the *two* release buttons shown in the illustration. Then press the *two* release buttons as you lift the cover.

➡ NOTICE: Open the cover slowly to ensure that you do not damage any cables.

5. Raise the back of the cover, and pivot it toward the front of the computer.



1	security cable slot
2	padlock ring
3	release buttons (one on each side)

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Drives

Dell™ OptiPlex™ 170L User's Guide

- [General Installation Guidelines](#)
- [Hard Drive](#)
- [Front-Panel Inserts](#)
- [CD/DVD Drive](#)
- [Floppy Drive](#)

Your computer supports:

- 1 One serial ATA hard drive
- 1 One optional floppy drive
- 1 One optional CD or DVD drive

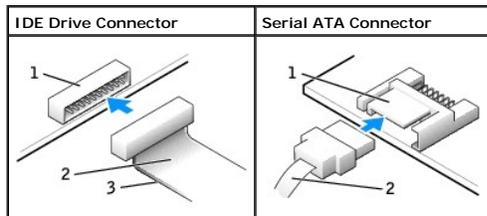
General Installation Guidelines

Connect CD/DVD drives to the connector labeled "IDE" on the system board. Serial ATA hard drives should be connected to the connector labeled "SATA0" on the system board.

Connecting Drive Cables

When you install a drive, you connect two cables—a DC power cable and a data cable—to the back of the drive and to the system board.

Drive Interface Connectors

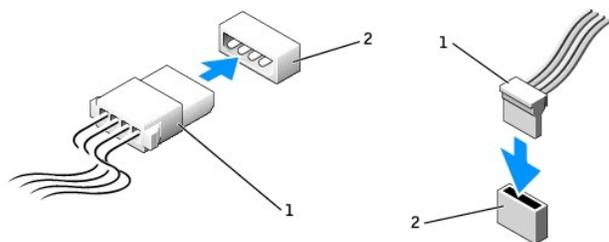


1	interface connector
2	interface cable
3	colored stripe on IDE cable

Most interface connectors are keyed for correct insertion; that is, a notch or a missing pin on one connector matches a tab or a filled-in hole on the other connector. Keyed connectors ensure that the pin-1 wire in the cable (indicated by the colored stripe along one edge of the IDE cable—serial ATA cables do not use a colored stripe) goes to the pin-1 end of the connector. The pin-1 end of a connector on a board or a card is usually indicated by a silk-screened "1" printed directly on the board or card.

- 🔔 **NOTICE:** When you connect an IDE interface cable, do not place the colored stripe away from pin 1 of the connector. Reversing the cable prevents the drive from operating and could damage the controller, the drive, or both.

Power Cable Connector



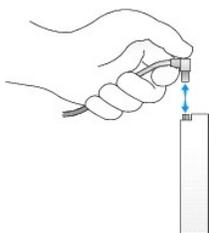
1	power cable
2	power input connector

Connecting and Disconnecting Drive Cables

When removing an IDE drive data cable, grasp the colored pull tab and pull until the connector detaches.

When connecting and disconnecting a serial ATA data cable, hold the cable by the black connector at each end.

Like IDE connectors, the serial ATA interface connectors are keyed for correct insertion; that is, a notch or a missing pin on one connector matches a tab or a filled-in hole on the other connector.



Hard Drive

⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

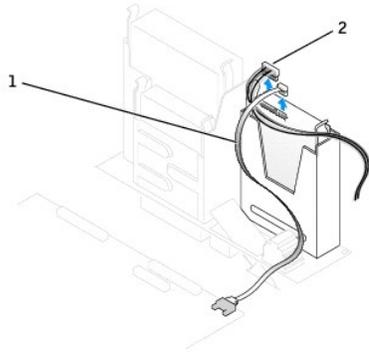
⚠ CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

🕒 NOTICE: To avoid damage to the drive, do not set it on a hard surface. Instead, set the drive on a surface, such as a foam pad, that will sufficiently cushion it.

1. If you are replacing a hard drive that contains data you want to keep, back up your files before you begin this procedure.
2. Check the documentation for the drive to verify that it is configured for your computer.
3. Follow the procedures in "[Before You Begin](#)."

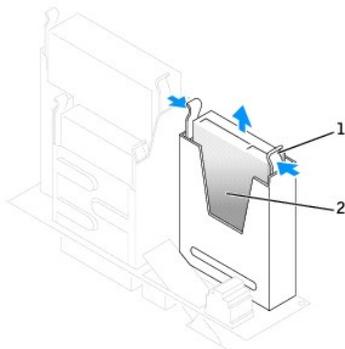
Removing a Hard Drive

1. Disconnect the power and hard-drive cables from the drive.



1	hard-drive cable
2	power cable

2. Press in on the tabs on each side of the drive and slide the drive up and remove the drive from the drive bay.



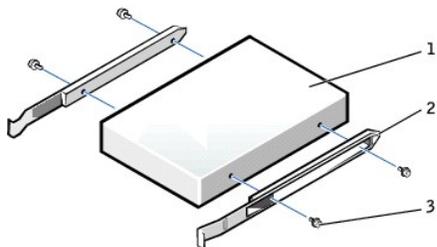
1	tabs (2)
2	hard drive

Installing a Hard Drive

1. Check the documentation for the drive to verify that it is configured for your computer.

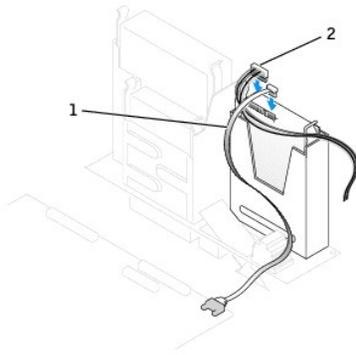
NOTICE: When you unpack the replacement drive, do not set it on a hard surface, which may damage the drive. Instead, set the drive on a soft surface, such as a foam pad, that will sufficiently cushion it.

2. Unpack the replacement hard drive.
3. If your replacement hard drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive. Attach the bracket rails to the new drive by aligning the screw holes on the drive with the screw holes on the bracket rails and then inserting and tightening all four screws (two screws on each rail).



1	drive
2	bracket rails (2)
3	screws (4)

4. Gently slide the drive into place until you hear a click or feel the drive securely installed.
5. Connect the power and hard-drive cables to the drive.



1	hard-drive cable
2	power cable

6. Check all connectors to be certain that they are properly cabled and firmly seated.
7. Close the computer cover.
8. Attach the computer stand (optional).

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

9. Connect your computer and devices to electrical outlets and turn them on.

See the documentation that came with the drive for instructions on installing any software required for drive operation.

10. If the drive you just installed is the primary drive, insert a bootable medium into your boot drive.
11. Enter system setup and update the appropriate Primary Drive option (0 or 1).
12. Exit system setup, and reboot the computer.
13. Partition and logically format your drive before you proceed to the next step.

For instructions, see the documentation that came with your operating system.

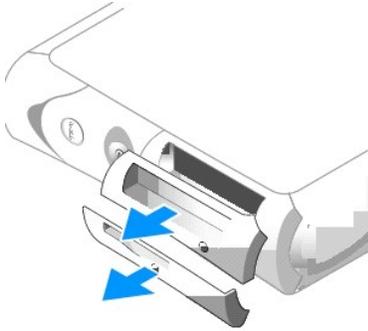
14. Test the hard drive by running the [Dell Diagnostics](#).
15. Install your operating system on the hard drive.

For instructions, see the documentation that came with your operating system.

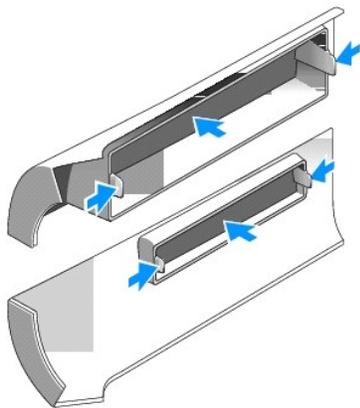
Front-Panel Inserts

If you are installing a new floppy or CD/DVD drive instead of replacing a drive, remove the front-panel inserts:

1. Facing the front of the computer, use your fingers to remove the front-panel cover.



2. Press on the inserts until they pop free of the front-panel cover.



CD/DVD Drive

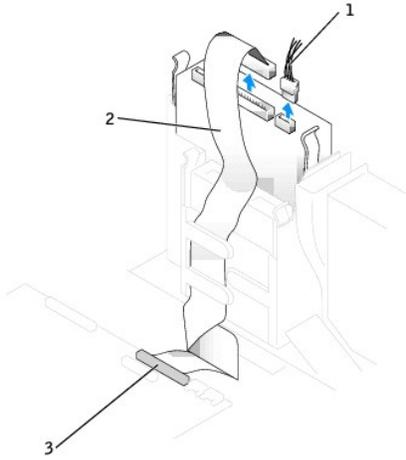
⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

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

1. Follow the procedures in ["Before You Begin."](#)
2. If you are installing a new CD/DVD drive rather than replacing a drive, [remove the front-panel inserts](#).

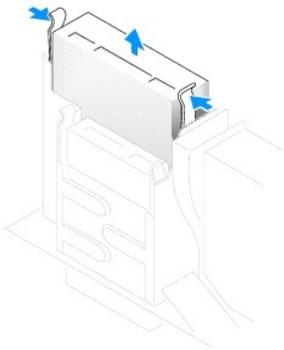
Removing a CD/DVD Drive

1. Disconnect the power and CD/DVD drive cables from the back of the drive.
2. Disconnect the other end of the CD/DVD drive cable from the IDE connector on the system board.



1	power cable
2	CD/DVD drive cable
3	IDE connector

3. Press in on the tabs on each side of the drive, and slide the drive up and remove the drive from the drive bay.

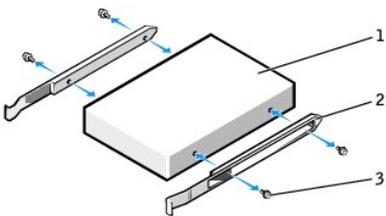


Installing a CD/DVD Drive

1. Unpack the drive and prepare it for installation.

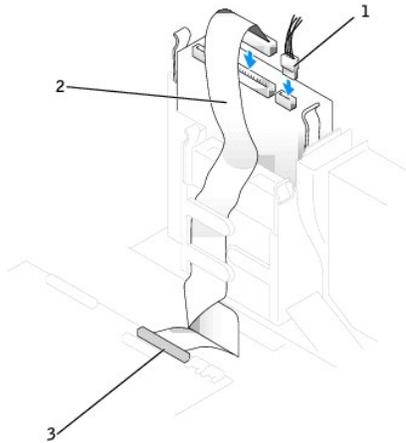
Check the documentation that accompanied the drive to verify that the drive is configured for your computer. If you are installing an IDE drive, configure the drive for the cable select setting.

2. If the replacement drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive. Attach the bracket to the new drive by aligning the screw holes on the drive with the screw holes on the bracket rails and then inserting and tightening all four screws (two screws on each rail).



1	drive
2	bracket rails (2)
3	screws (4)

3. Gently slide the drive into place until you hear a click or feel the drive securely installed.
4. Connect the power and CD/DVD drive cables to the drive.
5. Connect the other end of the CD/DVD drive cable to the IDE connector on the system board.



1	power cable
2	CD/DVD drive cable
3	IDE connector

6. If you are installing a drive that has its own controller card, install the controller card in a card slot.
7. Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.
8. Close the computer cover.
9. Attach the computer stand (optional).

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

10. Connect your computer and devices to their electrical outlets, and turn them on.

See the documentation that came with the drive for instructions on installing any software required for drive operation.

11. Update your configuration information by setting the appropriate **Drive** option (**0** or **1**) under **Drives**. See "[System Setup Options](#)" for more information.
12. Verify that your computer works correctly by running the [Dell Diagnostics](#).

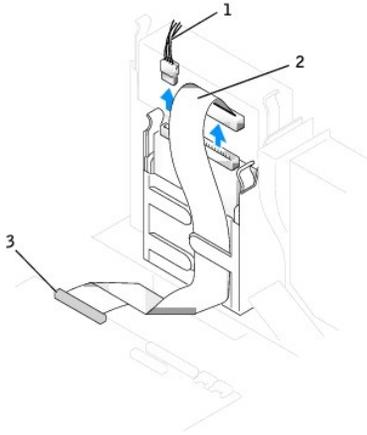
Floppy Drive

- CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.
- CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

If you are installing a new floppy drive rather than replacing a drive, [remove the front-panel inserts](#).

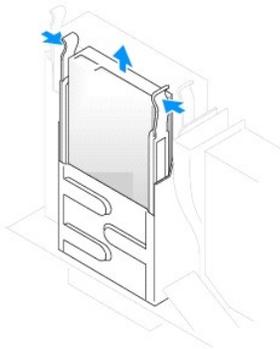
Removing a Floppy Drive

1. Follow the procedures in ["Before You Begin."](#)
2. Disconnect the data cable from the CD/DVD drive bay located above the floppy drive.
3. Disconnect the power and floppy-drive cables from the back of the floppy drive.
4. Disconnect the floppy-drive cable from the connector labeled DSKT on the system board.



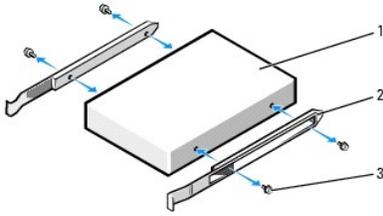
1	power cable
2	floppy-drive cable
3	floppy-drive connector (DSKT)

5. Press in on the tabs on each side of the drive, and slide the drive up and remove the drive from the drive bay.



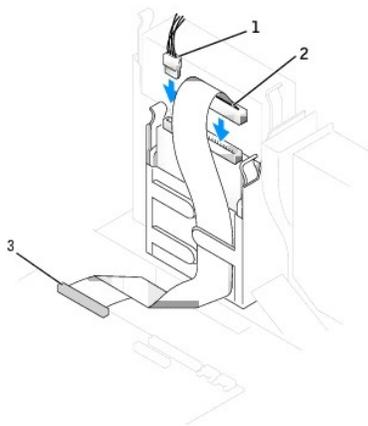
Installing a Floppy Drive

1. Follow the procedures in ["Before You Begin."](#)
2. If the replacement drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive. Attach the bracket rails to the new drive by aligning the screw holes on the drive with the screw holes on the bracket rails and then inserting and tightening all four screws (two screws on each rail).



1	drive
2	bracket rails (2)
3	screws (4)

3. Gently slide the drive into place until you hear a click or feel the drive securely installed.
4. Attach the power and floppy-drive cables to the floppy drive.
5. Connect the other end of the floppy-drive cable to the connector labeled DSKT on the system board.



1	power cable
2	floppy-drive cable
3	floppy-drive connector (DSKT)

6. Reconnect the data cable to the back of the drive installed in the CD/DVD drive bay located above the floppy drive.
7. Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.
8. Close the computer cover.
9. Attach the computer stand (optional).

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

10. Connect your computer and devices to their electrical outlets, and turn them on.

See the documentation that came with the drive for instructions on installing any software required for drive operation.

11. [Enter system setup](#) and use the **Diskette Drive** option to enable your new floppy drive.
12. Verify that your computer works correctly by running the [Dell Diagnostics](#).

Processor

Dell™ OptiPlex™ 170L User's Guide

Replacing the Processor

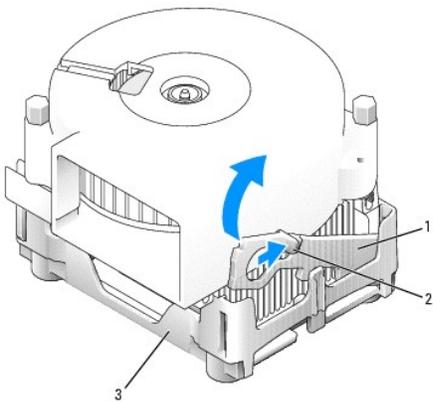
⚠ CAUTION: Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

⚠ CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.

1. Follow the procedures in "[Before You Begin](#)."
2. Disconnect the cooling fan power cable from the FAN connector on the system board (see "[System Board Components](#)").
3. Disconnect the power cable from the 12VPOWER connector on the system board.

⚠ CAUTION: The heat sink assembly can get very hot during normal operation. Be sure that the assembly has had sufficient time to cool before you touch it.

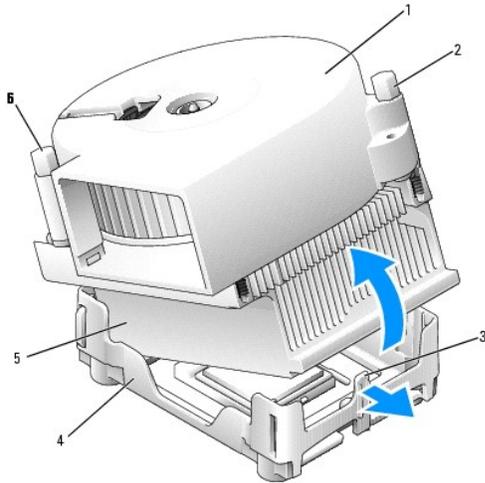
4. Remove the heat-sink/blower assembly:
 - a. Press the tab on the green securing clip to remove the clip from the retention base.



1	securing clip
2	tab
3	retention base

- b. Remove the heat-sink/blower assembly by pressing on the retention base tab while lifting one end of the heat sink.

➡ NOTICE: Lay the heat sink down with the thermal material facing upward.



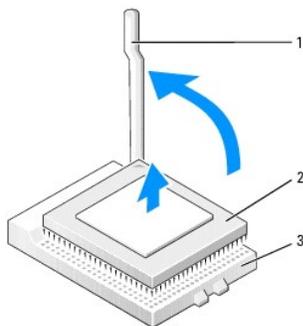
1	heat-sink/blower assembly	4	retention base
2	screw	5	heat sink
3	retention base tab	6	screw

5. Remove the two screws on the blower to remove it from the heat sink.

➔ **NOTICE:** Do not discard the blower. You will reuse it. If you are installing a processor upgrade kit from Dell, discard the original heat sink. If you are *not* installing a processor upgrade kit from Dell, reuse the original heat sink when you install your new processor.

➔ **NOTICE:** Be careful not to bend any of the pins when you remove the processor from the socket. Bending the pins can permanently damage the processor.

6. Pull the release lever straight up until the processor is released, and then remove the processor from the socket.

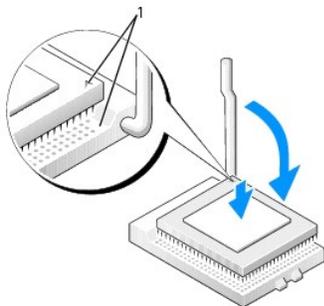


1	release lever
2	processor
3	socket

➔ **NOTICE:** Ground yourself by touching an unpainted metal surface on the back of the computer.

➔ **NOTICE:** Be careful not to bend any of the pins when you unpack the new processor. Bending the pins can permanently damage the processor. If any of the pins on the processor appears to be bent, contact Dell for instructions on obtaining technical assistance.

7. Unpack the new processor.



1 | pin-1 corners of the processor and socket aligned

➔ **NOTICE:** You must position the processor correctly in the socket to avoid permanent damage to the processor and the computer when you turn on the computer.

8. If the release lever on the socket is not fully extended, move it to that position.
9. Align the pin-1 corners of the processor and socket.

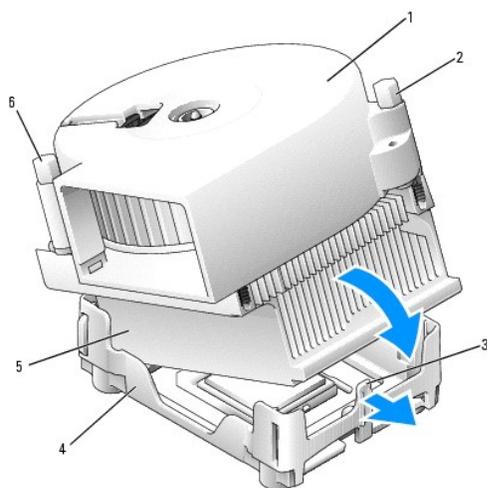
➔ **NOTICE:** When you place the processor in the socket, ensure that all of the pins fit into the corresponding holes on the socket.

10. Set the processor lightly in the socket and ensure that all pins are headed into the correct holes. Do not use force, which could bend the pins if the processor is misaligned. When the processor is positioned correctly, press it with minimal pressure to seat it.
11. When the processor is fully seated in the socket, pivot the release lever back toward the socket until it snaps into place to secure the processor.

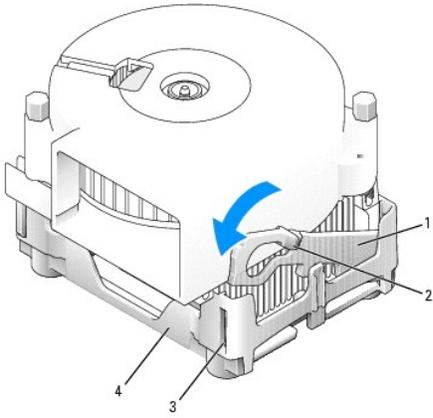
➔ **NOTICE:** If you are *not* installing a processor upgrade kit from Dell, reuse the original blower/heat sink assembly when you replace the processor.

If you are installing a processor replacement kit from Dell, return the processor to Dell in the same package in which your replacement kit was sent.

12. Reinstall the two screws that attach the blower to the heat sink.
13. Install the heat-sink/blower assembly:
 - a. Place the one end of the heat-sink assembly under the tab on one side of the retention base.
 - b. Lower the assembly until the heat sink fits securely under the tab on the retention base.
 - c. Insert the securing clip by placing the notched end of the clip opposite the tab into the slot on the retention base. Press on the securing clip tab and lower the securing clip into place. Make sure that the notched ends of the securing clip are secured in the retention base slots.



1	heat-sink/blower assembly	4	retention base
2	screw	5	heat sink
3	retention base tab	6	screw



1	securing clip
2	tab
3	slot
4	retention base

14. Plug the fan cable into the FAN connector on the system board.
15. Plug the power cable into the 12VPOWER connector on the system board.
16. Close the computer cover.
17. Attach the computer stand (optional).

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

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

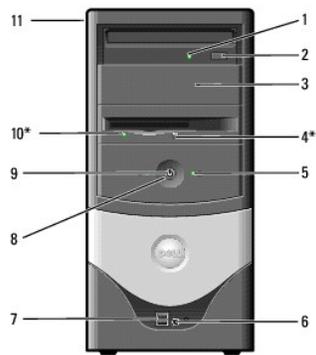
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About Your Mini-Tower Computer

Dell™ OptiPlex™ 170L User's Guide

- [Front View](#)
- [Back View](#)
- [Inside Your Computer](#)
- [System Board Components](#)

Front View

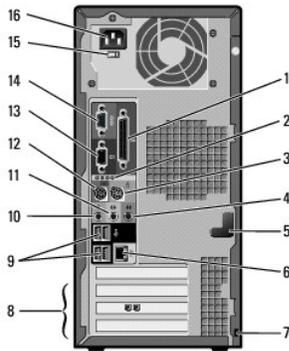


1	CD or DVD drive activity light	The drive activity light is on when the computer reads data from the CD or DVD drive.
2	CD or DVD eject button	Press this button to eject your CD from the CD or DVD drive.
3	second drive bay	This bay allows an optional second optical drive to be installed into the computer.
4	floppy drive eject button*	Press this button to eject a disk from the floppy drive.
5	hard-drive activity light	The hard-drive light is on when the computer reads data from or writes data to the hard drive. The light might also be on when devices such as your CD player are operating.
6	headphone connector	Use the headphone connector to attach headphones and most kinds of speakers.
7	USB 2.0 connectors (2)	Use the front USB connectors for devices that you connect occasionally, such as joysticks or cameras, or for bootable USB devices (see " System Setup " for more information on booting to a USB device). It is recommended that you use the back USB connectors for devices that typically remain connected, such as printers and keyboards.
8	power button	<p>Press this button to turn on the computer.</p> <p>NOTICE: To avoid losing data, do not use the power button to turn off the computer. Instead, perform a Windows shutdown.</p> <p>NOTICE: If your operating system has ACPI enabled, when you press the power button the computer will perform an operating system shutdown.</p>
9	power light	<p>The power light illuminates and blinks or remains solid to indicate different states:</p> <ul style="list-style-type: none"> 1 No light — The computer is in the off state. (S4, S5, or mechanical OFF) 1 Steady green — The computer is in a normal operating state. 1 Blinking green — The computer is in a power-saving state. (S1 or S3) <p>To exit from a power-saving state, press the power button or click or move the mouse. For more information about sleep states and exiting from a power-saving state, see "Power Management."</p> <p>See "Diagnostic Lights" for a description of light codes that can help you troubleshoot problems with your computer.</p>
10	floppy-drive light *	The floppy-drive light is on when the computer reads data from or writes data to the floppy drive. Wait until this light turns off before you remove the floppy disk from the drive.
11	service tag	This label lists your computer's service tag and your Express Service Code (if applicable). If you call Dell technical support, use your Express Service Code to route the call directly to the correct support personnel. The Dell technical support staff will ask for your service tag.

 **NOTE:** Express Service may not be available in some countries.

*On computers with an optional floppy drive.

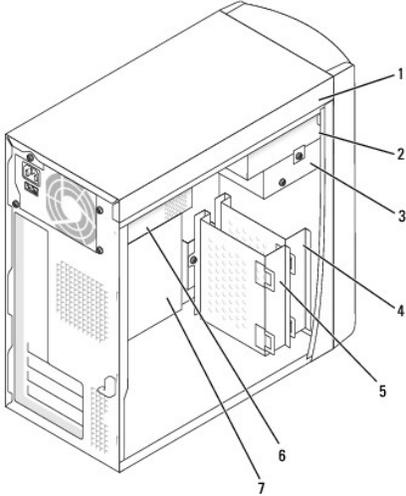
Back View



1	parallel connector	Connect a parallel device, such as a printer, to the parallel connector. If you have a USB printer, plug it into a USB connector.
2	diagnostic lights (4)	Use the lights to help you recognize a diagnostic code that can tell you how to troubleshoot a computer problem (see " Diagnostic Lights ").
3	mouse connector	Plug your computer's PS/2 mouse into the green mouse connector. Turn off the computer and any attached devices before you connect a mouse to the computer. If you have a USB mouse, plug it into a USB connector.
4	line-in connector	Use the blue line-in connector (available on computers with integrated sound) to attach a record/playback device such as a cassette player, CD player, or VCR. On computers with a sound card, use the connector on the card.
5	cover latch	Use the cover latch to keep the cover in place.
6	network adapter connector	To attach your computer to a network or broadband device, connect one end of a network cable to either a network jack or your network or broadband device. Connect the other end of the network cable to the network adapter connector on the back panel of your computer. A click indicates that the network cable has been securely attached. NOTE: Do not plug a telephone cable into the network connector. On computers with a network connector card, use the connector on the card. It is recommended that you use Category 5 wiring and connectors for your network. If you must use Category 3 wiring, force the network speed to 10 Mbps to ensure reliable operation.
7	security cable slot	Use a security cable with the slot to help secure your computer.
8	PCI card slots (3)	Use these slots for a PCI card, such as a modem.
9	USB 2.0 connectors (4)	Use the back USB connectors for devices that typically remain connected, such as printers and keyboards, and for bootable USB devices.
10	microphone connector	Use the pink microphone connector (available on computers with integrated sound) to attach a personal computer microphone for voice or musical input into a sound or telephony program. On computers with a sound card, the microphone connector is on the card.
11	line-out connector	Use the green line-out connector (available on computers with integrated sound) to attach headphones and most speakers with integrated amplifiers. On computers with a sound card, use the connector on the card.
12	keyboard connector	Plug your computer's PS/2 keyboard into the purple keyboard connector. Turn off the computer and any attached devices before you connect a keyboard to the computer. If you have a USB keyboard, plug it into a USB connector.
13	video connector	Plug the cable from your monitor into the blue connector.
14	serial connector	Connect a serial device, such as a handheld device, to the serial connector.
15	voltage selection switch	See the safety instructions in the Product Information Guide for more information.
16	power connector	Connect the power cable.

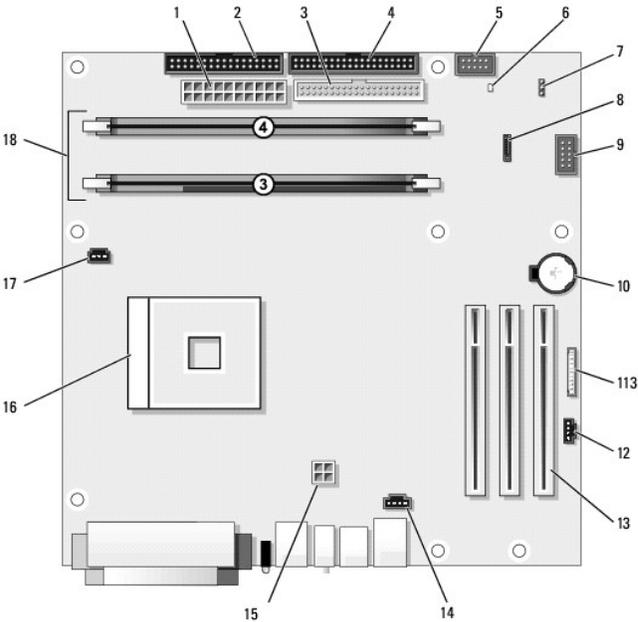
Inside Your Computer

- ⚠ CAUTION: Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.
- ⚠ CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before opening the computer cover.



1	CD drive	5	primary hard drive
2	secondary CD drive	6	power supply
3	optional floppy drive	7	system board
4	secondary hard drive		

System Board Components



1	power connector (J3J1)	10	battery socket (XBT9E1)
2	floppy drive connector (J4J1)	11	front-panel audio connector (J9C2)
3	CD/DVD drive connector (J6J1)	12	CD/DVD audio connector (J9C1)
4	hard-drive connector (J6J2)	13	PCI card slots (3) (PCI1, PCI2, PCI3)
5	control panel connector (J7J2)	14	modem telephony/internal chassis speaker connector
6	standby power light (AUX_PWR)	15	processor power connector (J5B1)
7	password jumper (CLEAR PASSWORD)	16	processor connector (J2E1)
8	serial ATA connector (J8G1)	17	fan connector (J1F1)
9	front-panel connector (J9G1)	18	memory module connectors (DIMMs 1 and 2)

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Cards

Dell™ OptiPlex™ 170L User's Guide

• [Installing Cards](#)

• [Removing Cards](#)

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

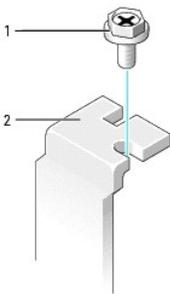
NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.

NOTE: Your Dell computer uses only PCI slots. ISA cards are not supported.

NOTE: If you are replacing a card, remove the current driver for the card from the operating system.

Installing Cards

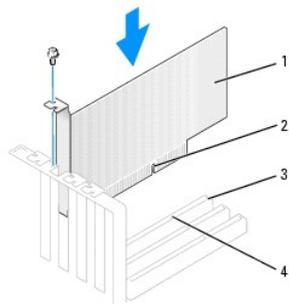
1. Follow the procedures in "[Before You Begin](#)."
2. Lay the computer on its side so that the system board is on the bottom of the inside of the computer.
3. Unscrew and remove the filler bracket for the card slot you want to use.



1	securing screw
2	filler bracket

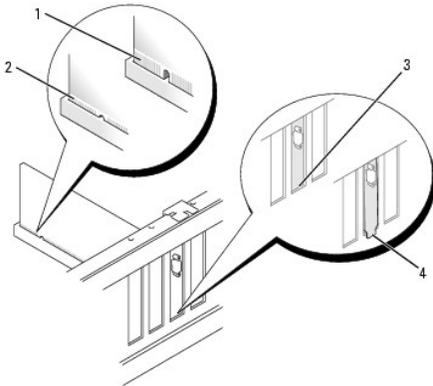
CAUTION: Some network adapters automatically start the computer when they are connected to a network. To guard against electrical shock, be sure to unplug your computer from its electrical outlet before installing any cards.

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



1	card
2	card cutout
3	card connector on system board
4	crossbar

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



1	not fully seated card
2	fully seated card
3	bracket within slot
4	bracket caught outside of slot

6. Secure the card bracket with the screw removed in [step 3](#).
7. Connect any cables that should be attached to the card.

See the documentation for the card for information about the card's cable connections.

➡ **NOTICE:** Do not route card cables over or behind the cards. Cables routed over the cards can cause damage to the equipment.

8. Replace the computer cover.

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

9. Connect your computer and devices to electrical outlets, and turn them on.
10. If you installed a sound card, perform the following steps:
 - a. Enter system setup, select **Audio Controller**, and change the setting to **Off**.
 - b. Connect external audio devices to the sound card's connectors. Do not connect external audio devices to the microphone, speaker/headphone, or line-in connectors on the back panel.
11. If you installed an add-in network adapter and want to turn off the integrated network adapter:
 - a. Enter system setup, select **Network Controller** and change the setting to **Off**.
 - b. Connect the network cable to the add-in network adapter's connectors. Do not connect the network cable to the integrated connector on the back panel.
12. Install any drivers required for the card as described in the card documentation.

Removing Cards

1. Follow the procedures in "[Before You Begin](#)."
2. Press the lever on the card retention arm and raise the retention arm.

3. If necessary, disconnect any cables connected to the card.
4. Grasp the card by its top corners, and ease it out of its connector.
5. If you are removing the card permanently, install a filler bracket in the empty card-slot opening.

If you need a filler bracket, [contact Dell](#).

 **NOTE:** Installing filler brackets over empty card-slot openings is necessary to maintain FCC certification of the computer. The brackets also keep dust and dirt out of your computer.

6. Lower the retention arm and press it into place, securing the card(s) in the computer.

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

7. Replace the computer cover, reconnect the computer and devices to electrical outlets, and turn them on.
8. Remove the card's driver from the operating system.
9. If you removed a sound card:
 - a. Enter system setup, select **Integrated Devices**, and change the setting for **Sound** to **On**.
 - b. Connect external audio devices to the audio connectors on the computer back panel.
10. If you removed an add-in network connector:
 - a. Enter system setup, select **Integrated Devices**, and change the setting for **Network Interface Card** to **On**.
 - b. Connect the network cable to the integrated connector on the computer back panel.

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Control Panel

Dell™ OptiPlex™ 170L User's Guide

• [Removing the Control Panel](#)

• [Replacing the Control Panel](#)

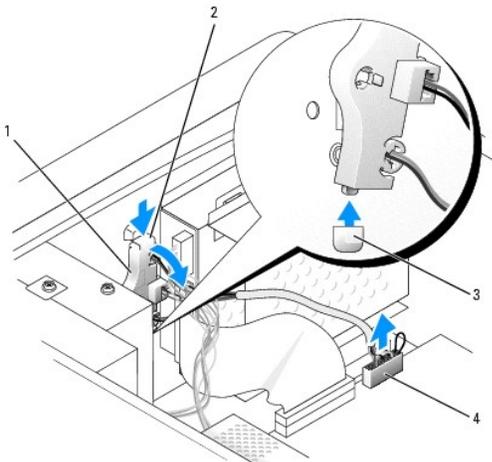
⚠ CAUTION: Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

🔄 NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

🔄 NOTICE: Before you disconnect a device from the computer or remove a component from the system board, verify that the standby power light on the system board has turned off. To locate the light, see "[System Board Components](#)."

Removing the Control Panel

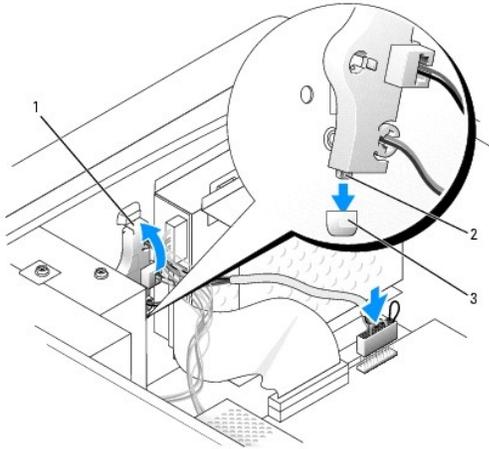
1. Follow the procedures in "[Before You Begin](#)."
2. Disconnect the control panel cable from the connector on the system board.
3. Press the control panel lever to release the panel from the notch on the computer.



1	control panel
2	control panel lever
3	notch
4	system board connector

Replacing the Control Panel

1. Follow the procedures in "[Before You Begin](#)."
2. Insert the control panel tab into the notch on the chassis.
3. Ensure that the control panel lever is secured by the tab on the chassis.
4. Connect the control panel cable to the connector on the system board.



1	control panel lever
2	control panel tab
3	notch

5. Replace the computer cover.

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

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

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Drives

Dell™ OptiPlex™ 170L User's Guide

- [General Installation Guidelines](#)
- [Hard Drive](#)
- [Adding or Replacing a Second Hard Drive](#)
- [CD/DVD Drive](#)
- [Floppy Drive](#)

Your mini-tower computer supports:

- 1 One serial ATA hard drive
- 1 One IDE hard drive
- 1 Two hard drives: 2 IDE drives, or 1 SATA and 1 IDE drive
- 1 One optional floppy drive
- 1 Two optional CD or DVD drives

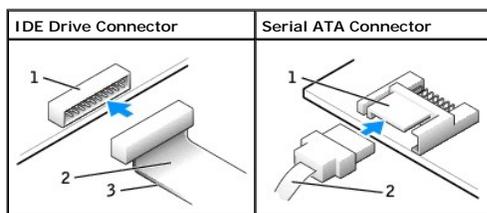
General Installation Guidelines

Connect CD/DVD drives to the connector labeled "IDE" on the system board. Serial ATA hard drives should be connected to the connector labeled "SATA0" on the system board.

Connecting Drive Cables

When you install a drive, you connect two cables—a DC power cable and a data cable—to the back of the drive and to the system board.

Drive Interface Connectors

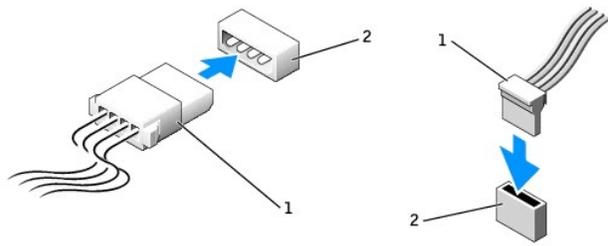


1	interface connector
2	interface cable
3	colored stripe on IDE cable

Most interface connectors are keyed for correct insertion: that is, a notch or a missing pin on one connector matches a tab or a filled-in hole on the other connector. Keyed connectors ensure that the pin-1 wire in the cable (indicated by the colored stripe along one edge of the IDE cable—serial ATA cables do not use a colored stripe) goes to the pin-1 end of the connector. The pin-1 end of a connector on a board or a card is usually indicated by a silk-screened "1" printed directly on the board or card.

- ⚠ **NOTICE:** When you connect an IDE interface cable, do not place the colored stripe away from pin 1 of the connector. Reversing the cable prevents the drive from operating and could damage the controller, the drive, or both.

Power Cable Connector



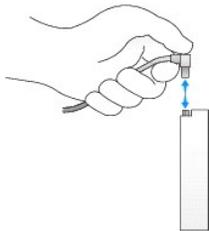
1	power cable
2	power input connector

Connecting and Disconnecting Drive Cables

When removing an IDE drive data cable, grasp the colored pull tab and pull until the connector detaches.

When connecting and disconnecting a serial ATA data cable, hold the cable by the black connector at each end.

Like IDE connectors, the serial ATA interface connectors are keyed for correct insertion; that is, a notch or a missing pin on one connector matches a tab or a filled-in hole on the other connector.



Hard Drive

⚠ CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

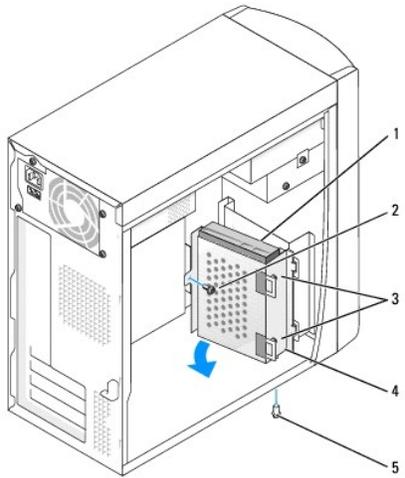
⚠ CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

👉 NOTICE: To avoid damage to the drive, do not set it on a hard surface. Instead, set the drive on a surface, such as a foam pad, that will sufficiently cushion it.

1. If you are replacing a hard drive that contains data you want to keep, back up your files before you begin this procedure.
2. Check the documentation for the drive to verify that it is configured for your computer.
3. Follow the procedures in "[Before You Begin](#)."

Removing a Hard Drive

1. Disconnect the power and hard-drive cables from the drive.
2. Remove the two bracket-securing screws, and then remove the drive bracket from the computer.
3. Remove the three hard drive-securing screws, and then remove the hard drive from the bracket.



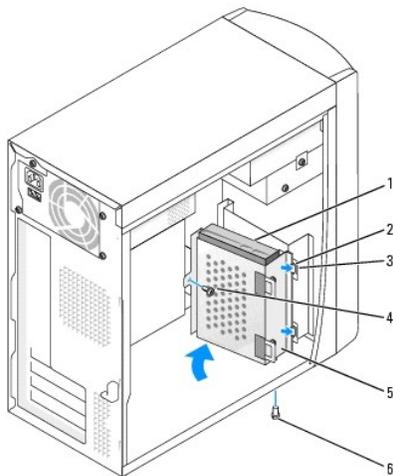
1	hard drive
2	bracket securing screw
3	hard drive securing screws (3)
4	drive bracket
5	bracket securing screw

Installing a Hard Drive

1. Check the documentation for the drive to verify that it is configured for your computer.

NOTICE: When you unpack the replacement drive, do not set it on a hard surface, which may damage the drive. Instead, set the drive on a soft surface, such as a foam pad, that will sufficiently cushion it.

2. Unpack the replacement hard drive.
3. Install the hard drive:
 - a. Place the hard drive in the bracket so that all three screw-hole tabs insert into the three screw holes on the hard drive.
 - b. Secure the drive to the bracket with the screws that you removed in [step 3](#) in the previous procedure.
 - c. Install the drive bracket by inserting the two bracket tabs into the two drive slots and then rotating the drive into position.
 - d. Attach the two bracket securing screws that you removed in [step 2](#) of the previous procedure.



1	hard drive	4	bracket securing screw
2	bracket tabs (2)	5	drive bracket
3	drive slots (2)	6	bracket securing screw

4. Connect the power and data cables to the back of the replacement drive.
5. Check all connectors to be certain that they are properly cabled and firmly seated.
6. [Replace the computer cover.](#)

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

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

See the documentation that came with the drive for instructions on installing any software required for drive operation.

8. If the drive you just installed is the primary drive, insert a bootable medium into your boot drive.
9. Enter system setup and update the appropriate Primary Drive option (0 or 1).
10. Exit system setup, and reboot the computer.
11. Partition and logically format your drive before you proceed to the next step.

For instructions, see the documentation that came with your operating system.

12. Test the hard drive by running the Dell Diagnostics.
13. Install your operating system on the hard drive.

For instructions, see the documentation that came with your operating system.

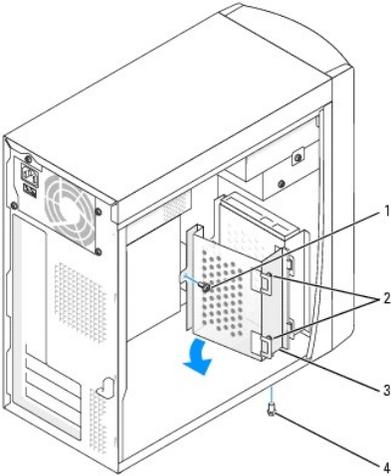
Adding or Replacing a Second Hard Drive

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

 **CAUTION:** To avoid damage to the drive, do not set it on a hard surface. Instead, set the drive on a soft surface, such as a foam pad, that will sufficiently cushion it.

 **NOTE:** You may install either an IDE or Serial ATA hard drive in the second drive bay.

1. Follow the procedures in "[Before You Begin](#)."
2. [Remove the primary hard drive and bracket.](#) The primary hard drive and bracket must be moved to the forward position (see "[Installing a Hard Drive](#)").
3. Remove the secondary hard drive bracket from the computer:
 - a. Remove the two bracket-securing screws on the bracket for the second drive.
 - b. Remove the bracket for the secondary drive from the computer.
4. If you are replacing a secondary hard drive, disconnect the power and hard-drive cables from the drive and then remove the drive from the bracket:
 - a. Remove the three hard drive-securing screws.
 - b. Remove the hard drive from the bracket.



1	bracket securing screw
2	hard drive-securing screws (3)
3	drive bracket
4	bracket securing screw

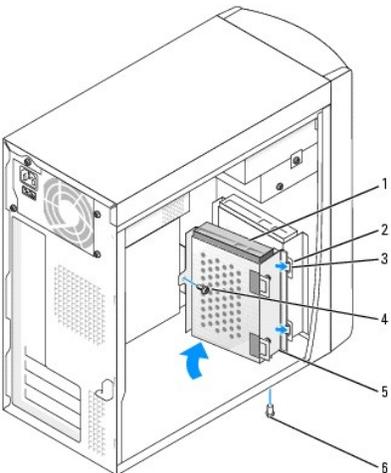
➔ **NOTICE:** Ground yourself by touching an unpainted metal surface on the back of the computer.

➔ **NOTICE:** When you unpack the drive, do not set it on a hard surface, which may damage the drive. Instead, set the drive on a soft surface, such as a foam pad, that will sufficiently cushion it.

5. Unpack the secondary hard drive.
6. If you are installing an IDE drive, check the jumper setting on the back of the second drive.

Ensure that the jumper setting on the new device is set for "cable select" (see the documentation that came with the drive for information).

7. Install the secondary hard drive:
 - a. Place the drive into the bracket so that all three screw-hole tabs insert into the three screw holes on the hard drive.
 - b. Secure the drive to the bracket with three screws.
 - c. Install the drive bracket by inserting the two bracket tabs into the two drive slots and then rotating the drive into position.
 - d. Replace the two bracket securing screws.



1	secondary hard drive	4	bracket securing screw
2	drive slots (2)	5	drive bracket
3	bracket tabs (2)	6	bracket securing screw

8. Connect the power and data cables to both drives.

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

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

See the documentation that came with the drive for instructions on installing any software required for drive operation.

CD/DVD Drive

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

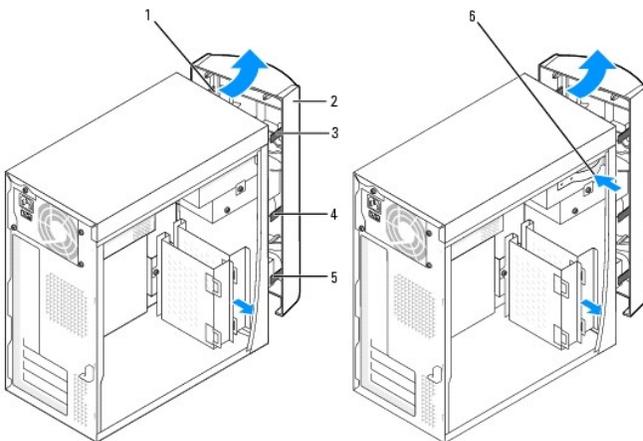
CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

Installing a CD/DVD Drive

1. Follow the procedures in "[Before You Begin](#)."
2. Release and remove the front panel:
 - a. For systems with the release lever, push the release lever to release the top tab (see the following figure).

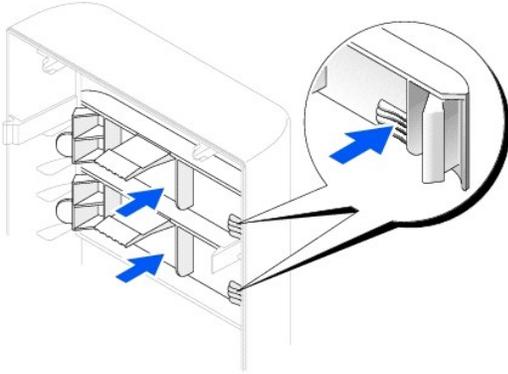
For systems without the release lever, reach inside the computer and push the top tab towards you to release it.

- b. Reach inside the computer and push the bottom tab towards you to release it (the middle tab releases automatically).
- c. Rotate the front panel to separate it from the side hinges.

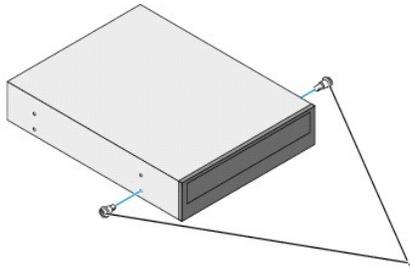


1	side hinges (3)	4	middle tab
2	front panel	5	bottom tab
3	top tab	6	release lever (not on all computers)

3. Remove the middle and bottom front-panel inserts by pushing on the back of the inserts.



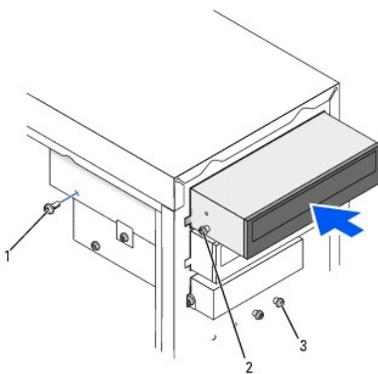
4. Ensure that the jumper setting on the new drive is set for "cable select" (see the documentation that came with the drive for information).
5. Remove the two extra alignment screws from the front of the computer and insert them into the drive.



1	drive alignment screws (2)
---	----------------------------

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

6. Gently slide the drive into place.



1	securing screw
2	drive alignment screws (2)
3	extra alignment screws (2 or 4)

7. Once the drive is in place, gently apply pressure to ensure that the drive is fully seated.
8. Use the securing screw that came with the drive to attach the drive to the computer.

9. Connect the power cable to the system board.

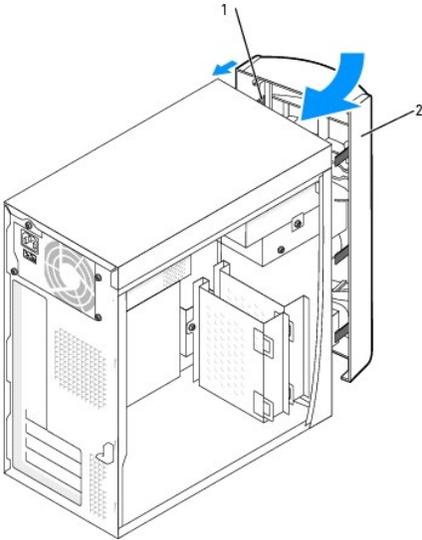
➔ **NOTICE:** When attaching the drive data cable, match the colored strip on the cable with pin 1 on the drive (pin 1 is marked as "1").

10. Connect the power, audio, and drive cables to the drive.

11. Check all cable connections, and then fold the cables out of the way to provide airflow for the fan and cooling vents.

12. Reattach the bottom insert that you removed in [step 3](#).

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



1	side hinges (3)
2	front panel

14. [Replace the computer cover.](#)

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

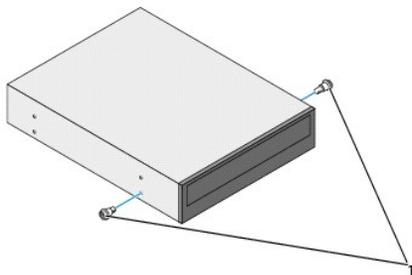
15. Connect your computer and devices to electrical outlets, and then turn them on.

See the documentation that came with the drive for instructions on installing any software required for drive operation.

Adding a Second CD or DVD Drive

⚠ **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

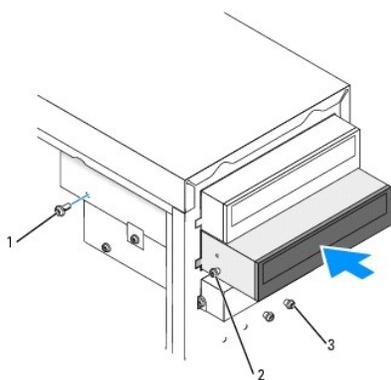
1. Follow the procedures in ["Before You Begin."](#)
2. [Release and remove the front panel.](#)
3. Remove the bottom front-panel insert by pushing on the back of the insert.
4. Ensure that the jumper setting on the new drive is set for "cable select" (see the documentation that came with the drive for information).
5. Remove two extra alignment screws from the front of the computer, beneath the floppy drive, and insert them into the drive.



1	drive alignment screws (2)
---	----------------------------

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

- Gently slide the drive into place.

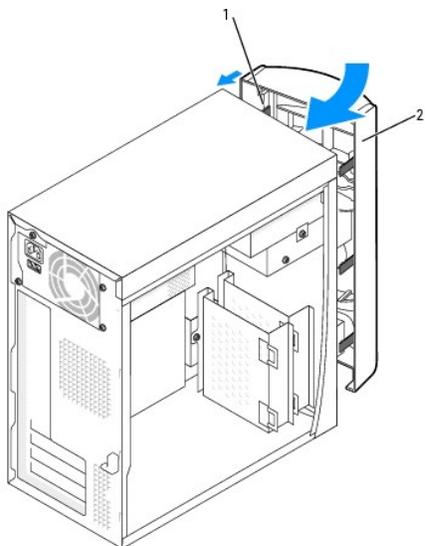


1	securing screw
2	alignment screws (2)
3	extra alignment screws (two on certain computers)

- Once the drive is in place, apply pressure to ensure that the drive is fully seated.
- Use the securing screw that came with the drive to attach the drive to the computer.
- Connect the power cable to the system board.

NOTE: When attaching the drive data cable, match the colored strip on the cable with pin 1 on the drive (pin 1 is marked as "1").

- Locate the data cable from the CD or DVD drive in the upper drive bay and connect its middle data connector to the new drive.
- Connect the power and audio cables to the drive.
- Check all cable connections, and then fold the cables out of the way to provide airflow for the fan and cooling vents.
- Reattach the front panel to the side hinges, and then rotate it until it snaps onto the front of the computer.



1	side hinges
2	front panel

14. Replace the computer cover.

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

15. Connect your computer and devices to electrical outlets, and then turn them on.

See the documentation that came with the drive for instructions on installing any software required for drive operation.

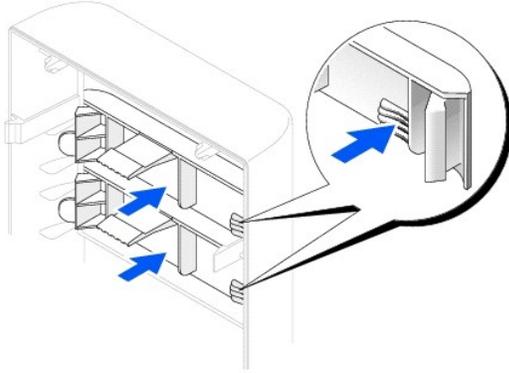
Floppy Drive

⚠️ **CAUTION:** Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

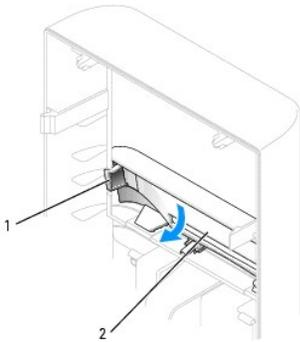
⚠️ **CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

Installing a Floppy Drive

1. Follow the procedures in ["Before You Begin."](#)
2. [Release and remove the front panel.](#)
3. Remove the middle and bottom front-panel inserts by pushing the back of the inserts. If a secondary CD drive is installed, then you will only remove the bottom panel insert.



4. Remove the floppy drive insert by pressing on the two tabs.



1	tabs (2)
2	insert

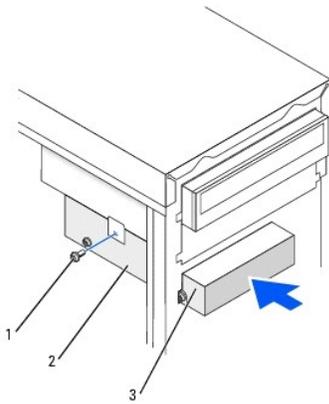
5. Position the top of the floppy drive bracket so that it is completely flush with the bottom of the upper drive bay, and then slide the floppy drive bracket into place.

NOTE: The top of the floppy drive bracket has two slots that fit into two clips on the bottom of the upper drive bay. When the floppy drive bracket is properly mounted, it remains in place without support.

6. Connect the floppy-drive power cable to the back of the drive.

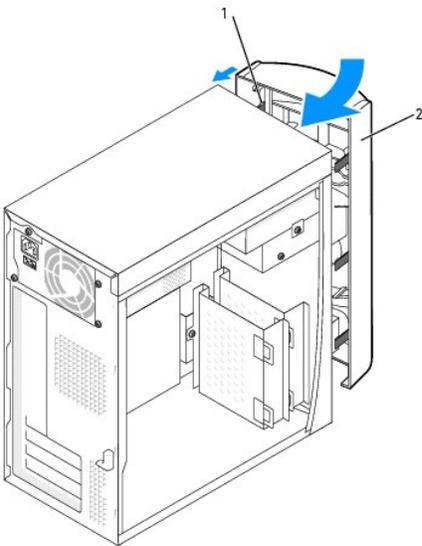
NOTICE: When attaching the drive data cable, match the colored strip on the cable with pin 1 on the drive (pin 1 is marked as "1").

7. Connect the data cable to the back of the drive and to the floppy drive connector on the system board.



1	top bracket screw
2	drive bracket
3	floppy drive

8. Secure the floppy drive bracket with the top bracket screw that came with your drive.
9. Reattach the front panel to the side hinges, and then rotate it until it snaps onto the front of the computer.



1	side hinges (3)
2	front panel

10. Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.
11. [Replace the computer cover.](#)

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

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

See the documentation that came with the drive for instructions on installing any software required for drive operation.

13. [Enter system setup](#) and update the appropriate Diskette Drive A option to reflect the size and capacity of your new floppy drive.
14. Verify that your computer works correctly by running the [Dell Diagnostics](#).

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Processor

Dell™ OptiPlex™ 170L User's Guide

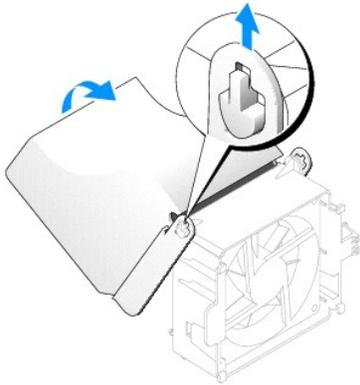
Replacing the Processor

⚠ CAUTION: Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

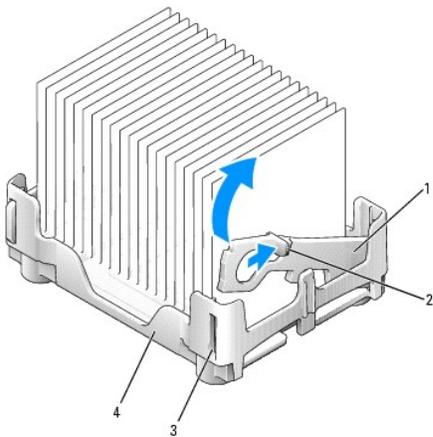
1. Follow the procedures in "[Before You Begin](#)."
2. Disconnect the cooling fan power cable from the FAN connector on the system board (see "[System Board Components](#)").
3. Disconnect the power cable from the 12VPOWER connector on the system board.

⚠ CAUTION: The heat sink can get very hot during normal operation. Be sure that the heat sink has had sufficient time to cool before you touch it.

4. Pull up and rotate the airflow shroud.



5. Remove the heat sink:
 - a. Press the tab on the green securing clip to remove the clip from the retention base.

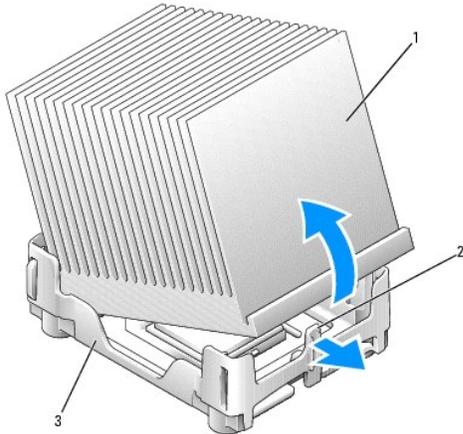


1	securing clip
2	tab

3	slot
4	retention base

- b. Remove the heat sink by pressing the retention base tab while lifting one end of the heat sink.

➔ **NOTICE:** Lay the heat sink down with the thermal material facing upward.

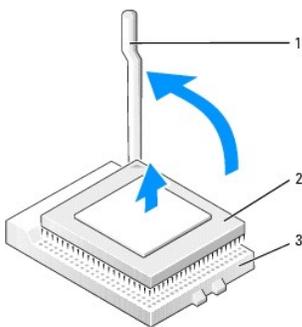


1	heat sink
2	retention base tab
3	retention base

➔ **NOTICE:** If you are installing a processor upgrade kit from Dell, discard the original heat sink. If you are *not* installing a processor upgrade kit from Dell, reuse the original heat sink when you install your new processor.

➔ **NOTICE:** Be careful not to bend any of the pins when you remove the processor from the socket. Bending the pins can permanently damage the processor.

6. Pull the release lever straight up until the processor is released, and then remove the processor from the socket.

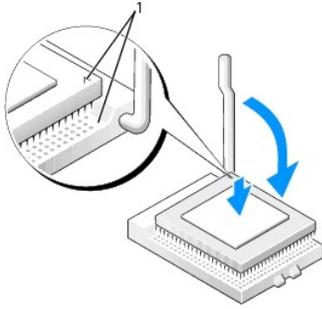


1	release lever
2	processor
3	socket

➔ **NOTICE:** Ground yourself by touching an unpainted metal surface on the back of the computer.

➡ **NOTICE:** Be careful not to bend any of the pins when you unpack the processor. Bending the pins can permanently damage the processor. If any of the pins on the processor appear to be bent, contact Dell for instructions on obtaining technical assistance.

7. Unpack the new processor.



1 pin-1 corners of the processor and socket aligned

➡ **NOTICE:** You must position the processor correctly in the socket to avoid permanent damage to the processor and the computer when you turn on the computer.

8. If the release lever on the socket is not fully extended, move it to that position.
9. Align the pin-1 corners of the processor and socket.

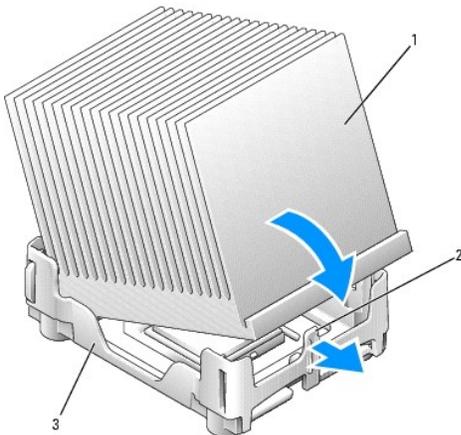
➡ **NOTICE:** When you place the processor in the socket, ensure that all of the pins fit into the corresponding holes on the socket.

10. Set the processor lightly in the socket and ensure that all pins are headed into the correct holes. Do not use force, which could bend the pins if the processor is misaligned. When the processor is positioned correctly, press it with minimal pressure to seat it.
11. When the processor is fully seated in the socket, pivot the release lever back toward the socket until it snaps into place to secure the processor.

➡ **NOTICE:** If you are *not* installing a processor upgrade kit from Dell, reuse the original heat sink when you replace the processor.

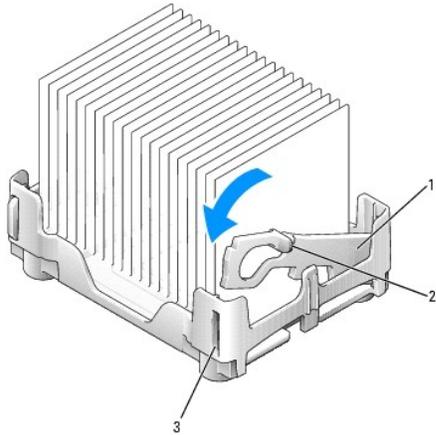
If you installed a processor replacement kit from Dell, return the original heat sink and processor to Dell in the same package in which your replacement kit was sent.

12. Install the heat sink:
 - a. Place one end of the heat sink under the tab on one side of the retention base.
 - b. Lower the heat sink until the heat sink fits securely under the tab on the retention base.



1	heat sink
2	retention base tab
3	retention base

- c. Insert the securing clip by placing the notched end of the clip opposite the tab into the slot on the retention base. Press the securing clip tab and lower the securing clip into place. Make sure that the notched ends of the securing clip are secured in the retention base slots.



1	securing clip
2	tab
3	slot

13. Lower the airflow shroud over the heat sink.
14. Reconnect the cooling fan power cable to the FAN connector on the system board.
15. Reconnect the power cable to the 12VPOWER connector on the system board.
16. [Replace the computer cover.](#)

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

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

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Solving Problems

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- [Diagnostic Lights](#)
- [Beep Codes](#)
- [Battery Problems](#)
- [Card Problems](#)
- [Clearing NVRAM and Restoring Default Settings](#)
- [Drive Problems](#)
- [Dropped or Damaged Computer](#)
- [Error Messages](#)
- [General Problems](#)
- [Keyboard Problems](#)
- [Memory Problems](#)
- [Mouse Problems](#)
- [Network Problems](#)
- [Power Problems](#)
- [Printer Problems](#)
- [Serial or Parallel Device Problems](#)
- [Sound and Speaker Problems](#)
- [System Board Problems](#)
- [Video and Monitor Problems](#)

Diagnostic Lights

To help you troubleshoot a problem, your computer has four lights labeled "A," "B," "C," and "D" on the back panel. The lights can be yellow or green. When the computer starts normally, the patterns or codes on the lights change as the boot process completes. If the POST portion of system boot completes successfully, all four lights display solid green. If the computer malfunctions during the POST process, the pattern displayed on the LEDs may help identify where in the process the computer halted.

⚠ CAUTION: Before you perform any of the procedures below, follow the safety instructions in the *Product Information Guide*.

Light Pattern		Problem Description	Suggested Resolution
	off off off off	The computer is in a normal off condition or a possible pre-BIOS failure has occurred.	<ol style="list-style-type: none"> 1 Verify that the computer is plugged into a working electrical outlet and that you have pressed the power button.
	yellow green yellow yellow	A possible processor failure has occurred.	<ol style="list-style-type: none"> 1 Reinstall the processor and restart the computer.
	green green yellow yellow	Memory modules are detected, but a memory failure has occurred.	<ol style="list-style-type: none"> 1 If you have one memory module installed, reinstall it and restart the computer. 1 If you have two memory modules installed, remove the modules, reinstall one module, and then restart the computer. If the computer starts normally, reinstall the second module. 1 If available, install properly working memory of the same type into your computer. 1 If the problem persists, contact Dell.
	yellow yellow green yellow	A possible PCI expansion card failure has occurred.	<ol style="list-style-type: none"> 1 Determine if a conflict exists by removing a card (not the video card) and then restarting the computer. 1 If the problem persists, reinstall the card that you removed, remove a different card, and then restart the computer. 1 Repeat this process for each card. If the computer starts normally, troubleshoot the last card removed from the computer for resource conflicts (see "Resolving Software and Hardware Incompatibilities"). 1 Move each card one at a time to a different PCI slot and restart the computer after each move. 1 If the problem persists, contact Dell.
	yellow green green yellow	A possible IDE drive failure has occurred.	<ol style="list-style-type: none"> 1 Reseat all IDE drive power and data cables and restart the computer.

	<p>green green green yellow</p>	<p>A possible USB failure has occurred.</p>	<ol style="list-style-type: none"> 1 Reinstall all USB devices, check cable connections, and then restart the computer.
	<p>yellow yellow yellow green</p>	<p>No memory modules are detected.</p>	<ol style="list-style-type: none"> 1 Reinstall all memory modules and restart the computer. 1 To eliminate the possibility of a faulty memory connector, remove all memory modules, reinstall one memory module (if the computer supports a single module), and then restart the computer. If the computer starts normally, move the memory module to a different connector and restart the computer. Continue until you have identified a faulty connector or reinstalled all modules without error.
	<p>yellow green yellow green</p>	<p>Memory modules are detected, but a memory configuration or compatibility error exists.</p>	<ol style="list-style-type: none"> 1 Ensure that no special memory module/memory connector placement requirements exist (see "Memory" for more information). 1 Verify that the memory modules that you are installing are compatible with your computer. 1 If the problem persists, contact Dell.
	<p>yellow green green green</p>	<p>Another failure has occurred.</p>	<ol style="list-style-type: none"> 1 Ensure that the cables are properly connected to the system board from all installed hard drives. 1 Check the computer message that appears on your monitor screen. 1 If the problem persists, contact Dell.
	<p>green green green green</p>	<p>The computer is in a normal operating condition after POST.</p>	<ol style="list-style-type: none"> 1 None.

Beep Codes

Your computer might emit a series of beeps during start-up if the monitor cannot display errors or problems. This series of beeps, called a beep code, identifies a problem. One possible beep code (code 1-3-1) consists of one beep, a burst of three beeps, and then one beep. This beep code tells you that the computer encountered a memory problem.

If your computer beeps during start-up:

1. Write down the beep code on the [Diagnostics Checklist](#).
2. Run the [Dell Diagnostics](#) to identify a more serious cause.
3. [Contact Dell](#) for technical assistance.

Code	Cause
1-1-2	Processor register failure
1-1-3	NVRAM
1-1-4	ROM BIOS checksum failure
1-2-1	Programmable interval timer failure
1-2-2	DMA initialization failure
1-2-3	DMA page register read/write failure
1-3-1 through 2-4-4	Memory not being properly identified or used
3-1-1	Slave DMA register failure
3-1-2	Master DMA register failure
3-1-3	Master interrupt mask register failure
3-1-4	Slave interrupt mask register failure

3-2-2	Interrupt vector loading failure
3-2-4	Keyboard Controller Test failure
3-3-1	NVRAM power loss
3-3-2	NVRAM configuration
3-3-4	Video Memory Test failure
3-4-1	Screen initialization failure
3-4-2	Screen retrace failure
3-4-3	Search for video ROM failure
4-2-1	No timer tick
4-2-2	Shutdown failure
4-2-3	Gate A20 failure
4-2-4	Unexpected interrupt in protected mode
4-3-1	Memory failure above address 0FFFFh
4-3-3	Timer-chip counter 2 failure
4-3-4	Time-of-day clock stopped
4-4-1	Serial or parallel port test failure
4-4-2	Failure to decompress code to shadowed memory
4-4-3	Math-coprocessor test failure
4-4-4	Cache test failure

Battery Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

⚠ CAUTION: There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

⚠ CAUTION: Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

Replace the battery — If you have to repeatedly reset time and date information after turning on the computer, or if an incorrect time or date displays during start-up, replace the battery. If the battery still does not work properly, [contact Dell](#).

Card Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

⚠ CAUTION: Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

Check the card seating and cable —

1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and then remove the computer cover.
2. Ensure that each card is firmly seated in its connector. Reseat any loose cards.
3. Ensure that all cables are firmly connected to their corresponding connectors on the cards. If any cables appear loose, reconnect them.

For instructions on which cables should be attached to specific connectors on a card, see the card's documentation.

4. Replace the computer cover, reconnect the computer and devices to electrical outlets, and then turn them on.

Test the cards —

1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and then remove the computer cover.
2. Reinstall one of the cards that you removed previously.
3. Replace the computer cover, reconnect the computer and devices to electrical outlets, and then turn them on.
4. Run the [Dell Diagnostics](#).

If any of the tests fail, the card you just reinstalled is faulty and needs to be replaced.

5. Repeat this process until you have reinstalled all cards.

If you have reinstalled all of the cards and the problem is not resolved, [contact Dell](#).

Clearing NVRAM and Restoring Default Settings

To clear the computer's non-volatile random access memory (NVRAM) and restore the computer's system settings to their default values:

1. Turn on or restart your computer.
2. When Press <F2> to Enter Setup appears in the upper-right corner of the screen, press <F2> immediately.

If you wait too long and the Microsoft® Windows® logo appears, continue to wait until you see the Windows desktop. Then shut down your computer through the Start menu and try again.

3. Toggle the <Caps Lock>, <Scroll Lock>, and <Num Lock> keys, ensuring that the status lights for all three functions are lit.

NOTE: The <Num Lock> key is often on by default, so toggling that key may turn the Num Lock feature off. Before clearing the NVRAM, ensure that the Num Lock function is on and that the keyboard light displays.

4. Simultaneously press <Alt> and <e>.

The system emits a beep tone to indicate that the NVRAM has been cleared.

5. Simultaneously press <Alt> and <f> to restore the computer's original default settings.

NOTE: After restoring the computer's factory settings, ensure that all IDE devices are present and properly enabled. Also, check or reset the date and time.

6. Press <Esc>, and then press <Enter> to save the changes and restart the computer.

Drive Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

Floppy drive problems

Test the drive —

1. Insert another disk to eliminate the possibility that the original floppy disk is defective.
1. Insert a bootable floppy disk and reboot the computer.

Ensure that the disk is not full or write-protected — Ensure that the disk has available space and that it is not write-protected (locked).

Test the floppy drive light —

MS-DOS®

Insert a floppy disk, type `dir a:` at the DOS prompt, and then press <Enter>.

Microsoft® Windows® operating systems

Insert a floppy disk, click the **Start** button, click **My Computer**, and then double-click the floppy drive icon.

Run the [Dell Diagnostics](#) — If any of the tests fail, [contact Dell](#).

➡ **NOTICE:** Do not attempt to clean drive heads with a swab. You may accidentally misalign the heads, which can render the drive inoperable.

Clean the drive — Use a commercially available cleaning kit.

⚠ **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

Remove and reinstall the floppy drive — See "[Floppy Drive](#)" for information on performing this procedure.

If the computer displays a drive error message, see "[Error Messages](#)" for an explanation.

CD drive problems

Adjust the Windows volume control — Click the speaker icon in the lower-right corner of your screen.

1. Ensure that the volume is turned up by clicking the sidebar and dragging it to the right.
1. Ensure that the sound is not muted by clicking any boxes that are checked.

Test the drive with another CD — Insert another CD to eliminate the possibility that the original CD is defective.

Check the speakers and subwoofer — See "[Sound and Speaker Problems](#)."

Ensure that Windows recognizes the drive — Click the **Start** button and click **My Computer**. If the CD drive is not listed, perform a full scan with your antivirus software to check for and remove viruses. Viruses can sometimes prevent Windows from recognizing the drive.

Clean the disc — Use a commercially available cleaning kit.

Problems writing to a CD-RW drive

Close other programs — The CD-RW drive must receive a steady stream of data when writing. If the stream is interrupted, an error occurs. Try closing all programs before writing to the CD-RW.

DVD drive problems

 **NOTE:** Because of different regions worldwide and different disc formats, not all DVD titles work in all DVD drives.

Test the drive with another DVD — Insert another DVD to eliminate the possibility that the original DVD is defective.

Ensure that Windows recognizes the drive — Click the **Start** button and click **My Computer**. If the DVD drive is not listed, perform a full scan with your antivirus software to check for and remove viruses. Viruses can sometimes prevent Windows from recognizing the drive.

Clean the disc — Use a commercially available cleaning kit.

Check for interrupt request conflicts — See "[Resolving Software and Hardware Incompatibilities](#)."

Hard drive problems

Test the hard drive —

Windows XP and Windows 2000 — Run the Check Disk utility:

1. For Windows XP, click the **Start** button and click **My Computer**. For Windows 2000, double-click **My Computer** on the Windows desktop.
2. Click the **Tools** tab.
3. Under **Error-checking**, click **Check Now**.
4. Click **Scan for and attempt recovery of bad sectors**.
5. Click **Start**.

MS-DOS

Type `scandisk x:` at an MS-DOS prompt, where *x* is the hard drive letter, and then press <Enter>.

Run the [Dell Diagnostics](#) — If the tests indicate a faulty drive or drive controller, [contact Dell](#).

Check the cable connections —

1. Ensure that the DC power cables from the power supply are firmly connected to the connectors on each drive.
2. Verify that the interface cable for each drive is firmly connected to the drive and to the system board.
3. Ensure that the control panel cable is firmly connected to the system board.

If the hard drive activity light does not blink during the boot routine, [contact Dell](#).

If a drive error message displays, see "[Error Messages](#)" for an explanation.

If the primary hard drive that contains the operating system does not boot, files in the operating system might be corrupt. For more information, see your operating system documentation.

Dropped or Damaged Computer

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

Check the card and cable connections —

1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and then remove the computer cover.
2. Check all card connections in the computer, and reseal any loose cards.
3. Ensure that all cables are properly connected and that all components are properly seated in their connectors and sockets.
4. Replace the computer cover, reconnect the computer and devices to electrical outlets, and then turn them on.
5. Run the [Dell Diagnostics](#).

If any of the tests fail, [contact Dell](#).

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.

A filename cannot contain any of the following characters: \ / : * ? " < > | — Do not use these characters in filenames.

A required .DLL file was not found — The program that you are trying to open is missing an essential file. To remove and then reinstall the program:

1. Click the **Start** button, click **Control Panel**, and click **Add or Remove Programs**.
2. Select the program you want to remove.
3. Click the **Change or Remove Program** icon.
4. See the program documentation for installation instructions.

Alert! Previous attempts at booting this system have failed at checkpoint [nnnn]. For help in resolving this problem, please note this checkpoint and contact Dell Technical Support — The computer failed to complete the boot routine three consecutive times for the same error. Contact Dell and report the checkpoint code (nnnn) to the support technician.

Attachment failed to respond — The floppy or hard drive controller cannot send data to the associated drive. See "[Floppy drive problems](#)" or "[Hard drive problems](#)" for troubleshooting suggestions.

Bad command or file name — Ensure that you have spelled the command correctly, have put spaces in the proper place, and have used the correct pathname.

Bad error-correction code (ECC) on disk read — The floppy or hard drive controller detected an uncorrectable read error. See "[Floppy drive problems](#)" or "[Hard drive problems](#)" for troubleshooting suggestions.

Controller has failed — The hard drive or the associated controller is defective. See "[Drive Problems](#)" for troubleshooting suggestions.

Data error — The floppy or hard drive cannot read the data.

- 1 For the Microsoft® Windows® operating system, run the chkdsk utility to check the file structure of the floppy or hard drive.
- 1 For another operating system, run the appropriate corresponding utility.

See your operating system documentation for information on running these utilities.

Decreasing available memory — One or more memory modules might be faulty or improperly seated.

- 1 Reinstall the memory modules and, if necessary, replace them.
- 1 See "[Memory Problems](#)" for additional troubleshooting suggestions.

Diskette drive 0 seek failure — A cable might be loose or the computer configuration information may not match the hardware configuration. See "[Floppy drive problems](#)" for troubleshooting suggestions.

Diskette read failure — The floppy disk may be defective or a cable might be loose.

- 1 If the drive access light turns on, try a different disk.
- 1 See "[Floppy drive problems](#)" for troubleshooting suggestions.

Diskette subsystem reset failed — The floppy drive controller might be faulty. Run the [Dell Diagnostics](#).

Diskette write protected — The floppy disk is write-protected. Slide the write-protect notch to the open position.

Drive not ready — No floppy disk is in the drive. Put a floppy disk in the drive.

Gate A20 failure — One or more memory modules might be faulty or improperly seated.

- 1 Reinstall the memory modules and, if necessary, replace them.
- 1 See "[Memory Problems](#)" for additional troubleshooting suggestions.

General failure — The operating system is unable to carry out the command. This message is usually followed by specific information—for example, `Printer out of paper`. Take the appropriate action to resolve the problem.

Hard-disk configuration error —

Hard-disk controller failure —

Hard-disk drive failure —

Hard-disk drive failure — The hard drive failed initialization.

- 1 Run the [Dell Diagnostics](#).
- 1 See "[Hard drive problems](#)" for troubleshooting suggestions.

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

Invalid configuration information - please run SETUP program — The computer configuration information does not match the hardware

configuration. Enter system setup and correct the computer configuration information.
Keyboard failure — A cable or connector might be loose, or the keyboard or keyboard/mouse controller might be faulty. See " Keyboard Problems ."
Memory address line failure at address, read value expecting value — A memory module might be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them. See " Memory Problems " for additional troubleshooting suggestions.
Memory allocation error — The software you are attempting to run is conflicting with the operating system, another program, or a utility. <ol style="list-style-type: none">1. Turn off the computer, wait 30 seconds, and then restart the computer.2. Try to run the program again.3. If the error message appears again, see the software documentation for additional troubleshooting suggestions.
Memory data line failure at address, read value expecting value — Memory double word logic failure at address, read value expecting value — Memory odd/even logic failure at address, read value expecting value — Memory write/read failure at address, read value expecting value — A memory module might be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them. See " Memory Problems " for additional troubleshooting suggestions.
Memory size in CMOS invalid — The amount of memory recorded in the computer configuration information does not match the memory installed in the computer. Restart the computer. If the error message appears again, contact Dell . See " Memory Problems " for additional troubleshooting suggestions.
Memory tests terminated by keystroke — A keystroke interrupted the memory test. Restart the computer to rerun the test.
No boot device available — The computer cannot find the floppy disk or hard drive. <ol style="list-style-type: none">1. If the floppy drive is your boot device, ensure that a bootable floppy disk is in the drive.1. If the hard drive is your boot device, ensure that the drive is installed, properly seated, and partitioned as a boot device.1. Enter system setup and ensure that the boot sequence information is correct.
No boot sector on hard-disk drive — The computer configuration information in system setup might be incorrect. Enter system setup and ensure that the computer configuration information for the hard drive is correct. The operating system might have been corrupted. Reinstall the operating system. See your operating system documentation for reinstallation information.
No timer tick interrupt — A chip on the system board might be malfunctioning. Run the Dell Diagnostics .
Non-system disk or disk error — The floppy disk in drive A does not have a bootable operating system installed on it. Either replace the floppy disk with one that has a bootable operating system, or remove the floppy disk from drive A and restart the computer.
Not a boot diskette — The operating system is trying to boot to a floppy disk that does not have a bootable operating system installed on it. Insert a bootable floppy disk.
Not enough memory or resources. Close some programs and try again — You have too many programs open. Close all windows and open the program that you want to use. In some cases, you might have to restart your computer to restore computer resources. If so, run the program that you want to use first.
Operating system not found — Contact Dell .
Plug and Play Configuration Error — The computer encountered a problem while trying to configure one or more cards. <ol style="list-style-type: none">1. Turn your computer off, unplug it from the electrical outlet, and then remove all but one of the cards.2. Plug in your computer and reboot it.3. If the message reappears, the installed card might be malfunctioning. If the message does not reappear, turn off the computer and reinsert one of the other cards.4. Repeat this process until you identify which card is malfunctioning.
Read fault — The operating system cannot read from the floppy or hard drive, the computer could not find a particular sector on the disk, or the requested sector is defective. See " Floppy drive problems " or " Hard drive problems " for troubleshooting suggestions.
Requested sector not found — The operating system cannot read from the floppy or hard drive, the computer could not find a particular sector on the disk, or the requested sector is defective. See " Floppy drive problems " or " Hard drive problems " for troubleshooting suggestions.
Reset failed — The disk reset operation failed. See " Floppy drive problems " or " Hard drive problems " for troubleshooting suggestions.
Sector not found — The operating system cannot locate a sector on the floppy or hard drive. <ol style="list-style-type: none">1. Run the Windows error-checking utility to check the file structure on the floppy disk or hard drive. See Windows Help for instructions.1. If a large number of sectors are defective, back up the data (if possible), and then reformat the floppy disk or hard drive.
Seek error — The operating system cannot find a specific track on the floppy disk or hard drive. See " Floppy drive problems " or " Hard drive problems " for troubleshooting suggestions.
Shutdown failure — A chip on the system board might be malfunctioning. Run the Dell Diagnostics .
The file being copied is too large for the destination drive — The file that you are trying to copy is too large to fit on the disk. Try copying the file to a blank disk or using a larger-capacity disk.
Time-of-day clock stopped — The battery might be dead. Enter system setup and correct the date or time. If the problem persists, contact Dell . See " Battery Problems " for additional troubleshooting suggestions.
Time-of-day not set—please run the System Setup program — The time or date stored in system setup does not match the computer clock. Enter system setup and correct the Date and Time options.
Timer chip counter 2 failed — A chip on the system board might be malfunctioning. Run the Dell Diagnostics .
Unexpected interrupt in protected mode — The keyboard controller might be malfunctioning, or a memory module might be loose. Run the Dell Diagnostics .
WARNING: Dell's Disk Monitoring System has detected that drive [0/1] on the [primary/secondary] EIDE controller is operating outside of normal specifications. It is advisable to immediately back up your data and replace your hard drive by calling your support desk or Dell — During initial start-up, the drive detected possible error conditions.

- 1 When your computer finishes booting, immediately back up your data and replace your hard drive.
- 1 If no replacement drive is immediately available and the drive is not the only bootable drive, [enter system setup](#) and change the appropriate drive setting to **None**. Then remove the drive from the computer.

Write fault — The operating system cannot write to the floppy or hard drive. See "[Floppy drive problems](#)" or "[Hard drive problems](#)" for troubleshooting suggestions.

Write fault on selected drive — The operating system cannot write to the floppy or hard drive. See "[Floppy drive problems](#)" or "[Hard drive problems](#)" for troubleshooting suggestions.

a:\ is not accessible. The device is not ready — The floppy drive cannot read the disk. Insert a floppy disk into the drive and try again.

General Problems

The computer stops responding

Turn the computer off — If your computer locks up and you are unable to get a response by pressing a key on your keyboard or moving your mouse, press and hold the power button for at least 8 to 10 seconds until the computer turns off. Then press the power button again to turn on the computer. You might lose data if you are unable to perform an operating system shutdown.

A program stops responding

End the program —

Windows® XP and Windows 2000

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

A program crashes repeatedly

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

Check the software documentation — Many software manufacturers maintain websites with information that may help you solve the problem. Ensure that you properly installed and configured the program. If necessary, uninstall and then reinstall the program.

A solid blue screen appears

Turn the computer off — If the computer does not respond to a keystroke or a proper shutdown, press the power button for at least 8 to 10 seconds until the computer turns off. Press the power button again to restart the computer. The chkdsk program automatically runs during the start-up process. Follow the instructions on the screen.

Other software problems

Check the software documentation or contact the software manufacturer for troubleshooting information

Back up your files immediately — If your computer has a CD-RW drive or a zip drive installed, see the drive's documentation for instructions.

Ensure that you have not made an error while entering data — See the program documentation to ensure that the values or characters you are entering are valid.

Check for viruses — Use a virus-scanning program to check the hard drive, floppy disks, or CDs.

Restart the computer — Save and close any open files, exit any open programs, and then shut down your computer through the **Start** menu instead of by pressing the power button. Otherwise, you may lose data.

Check for compatibility —

- 1 Ensure that the program is compatible with the operating system installed on your computer and that your computer meets the minimum hardware requirements needed to run the software. See the software documentation for information.
- 1 If necessary, uninstall and then reinstall the program.

Ensure that you properly installed and configured the program — See the software documentation for information. If necessary, uninstall and then reinstall the program.

Run the [Dell Diagnostics](#) —

If all tests run successfully, the error condition is related to a software problem.

Check for device driver conflicts —

- 1 Verify that the program's device drivers do not conflict with certain programs.
- 1 Call the software manufacturer for technical assistance.

Other technical problems

Go to the [Dell Support website](#) —

Go to support.dell.com for help with general usage, installation, and troubleshooting questions. The support website offers several different tools to help you, such as Dell Forum—a chat room where you can communicate with other Dell customers about their computers and gain access to technical support through e-mail.

Call Dell — If you cannot solve your problem using the Dell Support website or e-mail service, call Dell for technical assistance. See "[Technical Support Service](#)" for a description of the hardware and software support provided by Dell.

General hardware problems

If your computer exhibits one or more of the following symptoms, a device conflict may exist:

- 1 Your computer locks up, particularly while using a specific device.
- 1 A recently added device does not work.
- 1 Memory parity errors occur on parity-enabled computers.
- 1 A sound card emits noise or demonstrates other problems.
- 1 Unintelligible characters print from the printer.
- 1 The mouse pointer does not move or "stutters" when it moves.
- 1 Messages appear stating that the computer is not operating at maximum performance.
- 1 Errors occur and programs crash for no apparent reason.
- 1 Nothing displays on the monitor.

Remove any recently added hardware to see if it resolves the conflict — If removing the hardware resolves the conflict, see the hardware documentation for configuration and troubleshooting instructions. If the problem persists, contact the hardware manufacturer for technical assistance.

Check your operating system documentation for additional troubleshooting information

Check for interrupt request conflicts — See "[Resolving Software and Hardware Incompatibilities](#)."

Keyboard Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

Restart the computer —

- 1 If the mouse is functioning, shut down the computer through the **Start** menu. After the computer shuts down, press the power button to restart the computer.
- 1 If the computer does not respond to a keystroke or the mouse, press the power button for at least 8 to 10 seconds until the computer turns off. Press the power button again to restart the computer.

Check the keyboard cable —

- 1 Ensure that the keyboard cable is firmly connected to the computer.
- 1 Check the cable connector for bent or broken pins and for damaged or frayed cables. Straighten bent pins.
- 1 Remove keyboard extension cables and connect the keyboard directly to the computer.

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

Check the keyboard switch setting — Switch settings are on the bottom of the keyboard, sometimes behind a panel. Ensure that the switch

is set to **PS/2**, **Enhanced XT/AT**, or **PC/AT**. See the keyboard documentation for recommended settings.

Run the [Dell Diagnostics](#) — If any of the tests fail, [contact Dell](#).

Check for interrupt request conflicts — See "[Resolving Software and Hardware Incompatibilities](#)."

Memory Problems

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

If you receive an insufficient memory message —

1. Save and close any open files and exit any open programs you are not using to see if that resolves the problem.
1. Confirm that the computer has sufficient memory to run your programs. See the software documentation for minimum memory requirements. If necessary, install additional memory.
1. Reseat the memory modules to ensure that your computer is successfully communicating with the memory.
1. Restart the computer.
1. Run the [Dell Diagnostics](#). If any of the diagnostics tests fail, [contact Dell](#).

If you experience other memory problems —

1. Reseat the memory modules to ensure that your computer is successfully communicating with the memory.
1. Restart the computer.
1. Run the [Dell Diagnostics](#). If any of the diagnostics tests fail, [contact Dell](#).

Mouse Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

Restart the computer —

1. Simultaneously press <Ctrl><Esc> to display the **Start** menu.
2. Type **u**, press the keyboard arrow keys to highlight **Shut down** or **Turn Off**, and then press <Enter>.
3. After the computer turns off, press the power button to restart the computer.

Check the mouse cable —

1. Check the cable connector for bent or broken pins and for damaged or frayed cables. Straighten bent pins.
1. Ensure that the cable is firmly connected to the computer.

Test the mouse — Connect a properly working mouse to the computer, and try using the mouse. If the new mouse works, the original mouse was faulty.

Check the mouse settings —

Windows® XP

1. Click the **Start** button, click **Control Panel**, and then click **Printers and Other Hardware**.
2. Click **Mouse**.
3. Try adjusting the settings.

Windows 2000

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Mouse** icon.
3. Try adjusting the settings.

If you are using a PS/2 mouse

1. [Enter system setup](#) and ensure that **Mouse Port** under the **Integrated Devices** option is set to **On**.
2. Exit system setup and restart the computer.

Reinstall the mouse driver — See "[Drivers](#)."

Run the [Dell Diagnostics](#) — If any of the tests fail, [contact Dell](#).

Check for interrupt request conflicts — See "[Resolving Software and Hardware Incompatibilities](#)."

Network Problems

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 jack.
Check the network lights on the back of the computer — A steady green link integrity light and blinking amber network activity light indicates a 100-Mb connection; no link integrity light and a blinking amber network activity light indicates a 10-Mb connection. If neither light is illuminated, no network communication exists and you should replace the network cable.
Restart the computer and try to log on to the network again
Check your network settings — Contact your network administrator or the person who set up your network to verify that your network settings are correct and that the network is functioning.
Check for interrupt request conflicts — See " Resolving Software and Hardware Incompatibilities ."

Power Problems

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

Fill out the [Diagnostics Checklist](#) as you complete these checks.

Adjust the Power Properties — Your computer may be in standby or hibernate mode. For information on power conservation modes, see your operating system documentation.
If the power light is green and the computer is not responding — See " System Board Problems ."
If the power light is blinking green — The computer is in standby mode. Press a key on the keyboard or move the mouse to resume normal operation.
<p>If the power light is off — The computer is either turned off or is not receiving power.</p> <ul style="list-style-type: none"> 1 Reseat the power cable into both the power connector on the back of the computer and the electrical outlet. 1 If the computer is plugged into a power strip, ensure that the power strip is plugged into an electrical outlet and that the power strip is turned on. 1 Ensure that the electrical outlet is working by testing it with another device, such as a lamp. 1 Bypass power protection devices, power strips, and power extension cables to verify that the computer turns on. 1 Ensure that the main power cable is securely connected to the system board. 1 Ensure that the front panel cable is securely connected to the system board. 1 If the problem persists, contact Dell.
<p>Eliminate interference — Electrical appliances on the same circuit or operating near the computer can cause interference. Other causes of interference are:</p> <ul style="list-style-type: none"> 1 Power extension cables 1 Keyboard and mouse extension cables 1 Too many devices on a power strip 1 Multiple power strips connected to the same electrical outlet

Printer Problems

 **NOTE:** Dell does not cover the printer's warranty. If you need technical assistance for your printer, call the printer's manufacturer. See the printer documentation for the correct phone number.

Check the printer documentation — See the printer documentation for setup and troubleshooting information.
Ensure that the printer is turned on — See the printer documentation for power button information.
<p>Verify the printer cable connections —</p> <ul style="list-style-type: none"> 1 See the printer documentation for cable connection information. 1 Ensure that the printer cables are securely connected to the printer and the computer.
Test the electrical outlet — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
<p>Verify that the printer is recognized by Windows® —</p> <p><i>Windows XP</i></p> <ol style="list-style-type: none"> 1. Click the Start button, click Control Panel, and then click Printers and Other Hardware. 2. Click View installed printers or fax printers. <p>If the printer is listed, right-click the printer icon.</p> <ol style="list-style-type: none"> 3. Click Properties, and then select the Ports tab. For a parallel printer, ensure that the Print to the following port(s): setting is LPT1 (Printer Port). For a USB printer, ensure that the Print to the following port(s): setting is USB. <p><i>Windows 2000</i></p> <ol style="list-style-type: none"> 1. Click the Start button, point to Settings, and then click Printers.

If the printer is listed, right-click the printer icon.

2. Click **Properties**, and then select the Ports tab. For a parallel printer, ensure that the **Print to the following port(s)**: setting is **LPT1 (Printer Port)**. For a USB printer, ensure that the **Print to the following port(s)**: setting is **USB**.

Reinstall the printer driver — See "[Reinstalling Drivers and Utilities](#)."

Serial or Parallel Device Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

 **NOTE:** If you are having a problem with a printer, see "[Printer Problems](#)."

Check the documentation for the device — See the device's documentation for troubleshooting procedures.

Ensure that the device is turned on — Firmly press the device's power button.

Check the device cable connections — Check the connector for bent or broken pins. (It is normal for most device cable connectors to have missing pins.) Ensure that the device cable is firmly connected to the computer.

Test the device cable — Swap the device's cable with a cable that works properly.

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

Eliminate interference — Relocate any electrical appliances on the same circuit or operating near the computer that might cause interference. Remove these other possible causes of interference:

- 1 Power extension cables
- 1 Keyboard and mouse extension cables
- 1 Too many devices on a power strip
- 1 Multiple power strips connected to the same electrical outlet

Check the option setting — See the device's documentation for the recommended settings. Then [enter system setup](#) and go to the **Integrated Devices** option settings. Ensure that the **Serial Port** setting (for a serial device) or the **Parallel Port** setting (for a parallel device) matches the recommended settings.

Check the software documentation — If the problem occurs with particular software, see the software documentation for the recommended serial or parallel port settings. Ensure that the port settings match the recommended settings.

Run the Dell Diagnostics — If the tests do not complete, [contact Dell](#).

Test the device — Swap the device with a comparable device that works properly.

Sound and Speaker Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

No sound from speakers

 **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.

Check the speaker cable connections — Ensure that the speakers are connected as shown on the setup diagram supplied with the speakers. If you purchased a sound card, ensure that the speakers are connected to the card.

Ensure that the subwoofer and the speakers are turned on — See the setup diagram supplied with the speakers. If your speakers have volume controls, adjust the volume, bass, or treble to eliminate distortion.

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

Disconnect headphones from the headphone connector — Sound from the speakers is automatically disabled when headphones are connected to the computer's front-panel headphone connector.

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

Eliminate possible interference — Turn off nearby fans, fluorescent lights, or halogen lamps to check for interference.

Run the speaker diagnostics — Some speaker systems have self-diagnostics. See the speaker documentation for diagnostics instructions.

Reinstall the audio (sound) driver — See "[Reinstalling Drivers and Utilities](#)."

Check the device option setting — [Enter system setup](#) and ensure that **Sound** under the **Integrated Devices** option is set to **On**. Exit system setup and reboot the computer.

Run the Dell Diagnostics —

1. If the tests complete successfully, the controller is functioning properly.
1. If the problem persists, or if the tests do not complete successfully, [contact Dell](#).

Check for interrupt request conflicts — See "[Resolving Software and Hardware Incompatibilities](#)."

No sound from headphones

Check the headphone cable connection — Ensure that the headphone cable is securely 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.

System Board Problems

Fill out the [Diagnostics Checklist](#) as you complete the following checks.

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

Check the power supply cable connections —

1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and then remove the computer cover.
2. Ensure that the power cables from the power supply are firmly connected to the connectors on the system board.
3. Replace the computer cover, reconnect the computer and devices to electrical outlets, and then turn them on.

Perform all checks in "[Card Problems](#)"

Perform all checks in "[Keyboard Problems](#)"

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

Reinstall the battery

1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and then remove the computer cover.
2. Remove the battery, wait 5 minutes, and then reinstall the battery.
3. Replace the computer cover, reconnect the computer and devices to electrical outlets, and then turn them on.

If the problem still exists, [contact Dell](#).

 **CAUTION:** Before you begin this procedure, follow the safety instructions in the *Product Information Guide*.

Replace the Memory Modules —

1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and then remove the computer cover.
2. Replace the memory module(s).
3. Replace the computer cover, reconnect the computer and devices to electrical outlets, and then turn them on.
4. If the RAM count displayed does not correctly match the actual amount of memory installed in the computer, [contact Dell](#).

Video and Monitor Problems

Fill out the [Diagnostics Checklist](#) as you complete these checks.

If the screen is blank

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

Check the monitor power light — If the power light is off, firmly press the button to ensure that the monitor is turned on. If the power light is lit or blinking, the monitor has power. If the power light is blinking, press a key on the keyboard or move the mouse.
Check the monitor cable connection — Check the connector for bent or broken pins. (It is normal for monitor cable connectors to have missing pins.)
Test the electrical outlet — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
Swap the power cables — Swap the computer and monitor power cables to determine if the power cable is defective.
Test the video extension cable (if used) — If you are using a video extension cable and removing the cable solves the problem, the cable is defective.
Test another monitor — If another monitor is available, connect it to the computer.
Check the diagnostic lights — See " Diagnostic Lights ."

If the screen is difficult to read

Check the monitor settings — See the monitor documentation for instructions on adjusting the contrast and brightness, demagnetizing (degaussing) the monitor, and running the monitor self-test.
Move the subwoofer away from the monitor — If your speaker system includes a subwoofer, ensure that the subwoofer is at least 60 cm (2 ft.) away from the monitor.
Move the monitor away from external power sources — Fans, fluorescent lights, halogen lamps, and other electrical devices can cause the screen image to appear "shaky." Turn off nearby devices to check for interference.
Adjust the Windows® display settings — <i>Windows XP</i> <ol style="list-style-type: none">1. Click the Start button, click Control Panel, and then click Appearance and Themes.2. Click Display and click the Settings tab.3. Try different settings for Screen resolution and Color quality. <i>Windows 2000</i> <ol style="list-style-type: none">1. Click the Start button, point to Settings, and then click Control Panel.2. Double-click the Display icon and click the Settings tab.3. Try different settings for Screen area or Desktop area.
Run the Dell Diagnostics — If any of the tests fail, contact Dell .

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Specifications

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Processor	
Processor type	Intel® Pentium® 4 and Intel Celeron®; design provides for future Dell-supported upgrades.
Level 1 (L1) cache	8 KB or 16 KB, depending on your computer configuration
Level 2 (L2) cache	128-KB, 256-KB, 512-KB, or 1-MB (depending on your computer configuration) pipelined-burst, eight-way set associative, write-back SRAM

Memory	
Type	333-MHz or 400-MHz DDR SDRAM NOTE: DDR400 memory runs at 333 MHz when configured with 533-MHz FSB processors NOTE: DDR333 memory runs at 320 MHz when configured with Pentium 4 800-MHz FSB processors
Memory Architecture	dual-channel DDR SDRAM
Memory connectors	2
Memory capacities	128-, 256-, 512-MB, or 1-GB non-ECC
Minimum memory	128 MB, single-channel mode; 256 MB dual-channel mode NOTE: Between 1 and 64 MB of system memory may be allocated to support graphics, depending on system memory size and other factors.
Maximum memory	2 GB
BIOS address	F0000h

Computer Information	
Chip set	Intel 865-GV
Data bus width	64 bits
Address bus width	32 bits
DMA channels	7
Interrupt levels	24
BIOS chip	4 MB
System Clock	800-, 533-, or 400-MHz quad-data rate; 200-, 133-, or 100-MHz

Network	
Network controller	integrated 10/100 Ethernet

Video	
Type	integrated Intel Extreme2 Graphics

Audio	
Type	integrated AC97
Stereo conversion	16-bit analog-to-digital; 20-bit digital-to-analog

Expansion Bus	
Bus type	PCI

Bus speed	33 MHz
Small desktop computer	one low-profile card (card size = 6.35 cm [2.5 inches] high by 16.76 cm [6.6 inches] long) connector on the system board optional: two full-height PCI card (card size = 10.67 cm [4.2 inches] high by 17.65 cm [6.95 inches] long) connectors on the riser card
PCI connectors	up to 3, depending on computer configuration (one on the system board and 2 on the optional card cage)
connector size	120 pins
connector data width (maximum)	32 bits
Mini-tower computer	
PCI connectors	3
connector size	120 pins
connector data width (maximum)	32 bits

Drives	
Internally accessible drives	
Small desktop computer	one bay for a 1-inch-high hard drive (IDE or SATA)
Mini-tower computer	two bays for 1-inch-high IDE hard drives or one IDE hard drive and one SATA hard drive.
Externally accessible drives	
Small desktop computer	one 3.5-inch bay one 5.25-inch bay
Mini-tower computer	one 3.5-inch bay two 5.25-inch bays

Connectors	
External connectors:	
Serial	9-pin connector: 16550C-compatible
Parallel	25-hole connector (bidirectional)
Video	15-hole connector
Network adapter	RJ45 connector
PS/2 (keyboard and mouse)	6-pin mini-DIN
USB	two front-panel and four back-panel USB 2.0-compliant connectors
Audio	three back panel connectors for line-in, line-out, and microphone; one front-panel connector for headphones
System board connectors:	
Primary IDE drive	40-pin connector on PCI local bus
Secondary IDE drive (only on the mini-tower computer)	40-pin connector on PCI local bus
Serial ATA	one 7-pin serial ATA connector
Floppy drive	34-pin connector
Fan	3-pin connector

Key Combinations	
<F2> or <Ctrl><Alt><Enter>	starts embedded system setup (during start-up only)
<F3>	automatically starts the computer from the network environment specified by the remote boot environment (PXE) rather than from one of the devices in the system setup Boot Sequence option (during start-up only)
<F12> or <Ctrl><Alt><F8>	displays a one-time boot menu that lets the user enter a device for a single boot (during start-up only)
<Ctrl><Alt><F10>	launches the utility partition (if installed) during computer start-up
<Ctrl><Alt><D>	launches the hard-drive diagnostics utility during computer start-up
<Ctrl><Enter>	disables computer password at start-up (after

	correct password is entered)
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Controls and Lights	
Power control	push button
Hard-drive access light	green
Link integrity light (on integrated network adapter)	no light for 10-Mb operation; green light for 100-Mb operation
Activity light (on integrated network adapter)	yellow blinking light
Diagnostic lights	four lights on the back panel

Power	
DC power supply:	
Wattage	small desktop computer: 210 W mini-tower computer: 250 W
Heat dissipation	small desktop computer: 717 BTU/hr mini-tower computer: 853 BTU/hr
Voltage	small desktop computer: fixed-voltage power supply—110 V at 50/60 Hz manual selection and auto-sensing power supplies— 90 to 135 V at 50/60 Hz; 180 to 265 V at 50/60 Hz; 100 V at 50/60 Hz for Japanese computers mini-tower computer: fixed-voltage power supply—100 to 120V at 60 Hz; 200 to 240V at 50Hz
Backup battery	3-V CR2032 lithium coin cell

Physical	
Height x Width x Depth	small desktop computer: 0.6 cm (4.2 inches) x 38.9 cm (15.3 inches) x 43.2 cm (17 inches) mini-tower computer: 36.8 x 18.4 x 42.6 cm (14.5 x 7.25 x 16.75 inches)
Weight	small desktop computer: 9.9 kg (22 lbs) mini-tower computer: 10.4 kg (23 lbs)

Environmental	
Temperature:	
Operating	10° to 30°C (50° to 86°F) NOTE: At 30°C (86°F), the maximum operating altitude is 914 m (3000 ft).
Storage	-40° to 65°C (-40° to 149°F)
Relative humidity	20% to 80% (noncondensing)
Maximum vibration:	
Operating	0.25 G at 3 to 200 Hz
Storage	2.20 Grms at 10 to 500 Hz
Maximum shock:	
Nonoperating (half-sine pulse)	105 G, 2 ms
Nonoperating (faired-square wave)	32 G with a velocity change of 596.9 cm/sec (235 inches/sec)
Altitude:	
Operating	-15.2 to 3048 m (-50 to 10,000 ft) NOTE: At 35°C (95°F), the maximum operating altitude is 914 m (3000 ft).
Storage	-15.2 to 10,668 m (-50 to 35,000 ft)

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Warranty

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Dell Inc. ("Dell") manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry-standard practices. For information about the Dell warranty for your computer, see the *Product Information Guide* or separate paper warranty document that shipped with your computer.

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Microsoft® Windows® XP Features

Dell™ OptiPlex™ 170L User's Guide

- [Transferring Information to a New Computer](#)
 - [User Accounts and Fast User Switching](#)
 - [Setting Up a Home and Office Network](#)
-

Transferring Information to a New Computer

The Microsoft® Windows® XP operating system provides a Files and Settings Transfer wizard to move data from the source computer to the new computer. You can move data such as:

- 1 E-mails
- 1 Toolbar settings
- 1 Window sizes
- 1 Internet bookmarks

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

To prepare the new computer for the file transfer:

1. Click the **Start** button, point to **All Programs**→**Accessories**→**System Tools**, and then click **Files and Settings Transfer Wizard**.
2. When the **Files and Settings Transfer Wizard** welcome screen appears, click **Next**.
3. On the **Which computer is this?** screen, click **New Computer** and click **Next**.
4. On the **Do you have a Windows XP CD?** screen, click **I will use the wizard from the Windows XP CD** and click **Next**.
5. When the **Now go to your old computer** screen appears, go to your old or source computer. *Do not* click **Next** at this time.

To copy data from the old computer:

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

After the information has been copied, the **Completing the Collection Phase** screen appears.

8. Click **Finish**.

To transfer data to the new computer:

1. On the **Now go to your old computer** screen on the new computer, click **Next**.
2. On the **Where are the files and settings?** screen, select the method you chose for transferring your settings and files and click **Next**.

The wizard reads the collected files and settings and applies them to your new computer.

When all of the settings and files have been applied, the **Finished** screen appears.

3. Click **Finished** and restart the new computer.
-

User Accounts and Fast User Switching

Adding User Accounts

After the Microsoft® Windows® XP operating system is installed, the administrator or a user with administrator rights can create additional user accounts.

1. Click the **Start** button and click **Control Panel**.
2. In the **Control Panel** window, click **User Accounts**.
3. Under **Pick a task**, click **Create a new account**.
4. Under **Name the new account**, type the name of the new user and click **Next**.
5. Under **Pick an account type**, click one of the following options:
 1. **Computer administrator** — You can change all computer settings.
 1. **Limited** — You can change only your own personal settings, such as your password. You cannot install programs or use the Internet.

 **NOTE:** Additional options may be available, depending on whether you are using Windows XP Home Edition or Windows XP Professional. Also, options available in Windows XP Professional vary depending on whether your computer is connected to a domain.

6. Click **Create Account**.

Fast User Switching

 **NOTE:** Fast User Switching is unavailable if your computer is running Windows XP Professional and is a member of a computer domain, or if your computer has less than 128 MB of memory.

Fast User Switching allows multiple users to access one computer without requiring the previous user to log off.

1. Click the **Start** button and click **Log Off**.
2. In the **Log Off Windows** window, click **Switch User**.

When you use Fast User Switching, programs that previous users were using remain running in the background, which might decrease your computer's response time. Also, multimedia programs, such as games and DVD software, might not work with Fast User Switching. For more information, see the Windows Help and Support Center.

Setting Up a Home and Office Network

Connecting to a Network Adapter

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

To connect a network cable, perform the following step.

 **NOTE:** Insert the cable until it clicks into place, and then gently pull it to ensure that it is secure.

1. Connect the network cable to the network adapter connector on the back of your computer.

 **NOTE:** Do not use a network cable with a telephone wall jack.

2. Connect the other end of the network cable to a network connection device, such as a network wall jack.

Network Setup Wizard

The Microsoft® Windows® XP operating system provides a Network Setup Wizard to guide you through the process of sharing files, printers, or an Internet connection between computers in a home or small office.

1. Click the **Start** button, point to **All Programs**→ **Accessories**→ **Communications**, and then click **Network Setup Wizard**.
2. On the welcome screen, click **Next**.
3. Click **Checklist for creating a network**.



NOTE: Selecting the connection method **This computer connects directly to the Internet** enables the integrated firewall provided with Windows XP.

4. Complete the checklist and required preparations.
5. Return to the Network Setup Wizard and follow the instructions on the screen.

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