Dell™ Dimension™ 3100C Service Manual

Model DCNE

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 *Dell Owner's Manual.*

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

About Your Dell™ Dimension™ 3100C Computer

- Front View of Computer
- Back View of the Computer

Front View of Computer

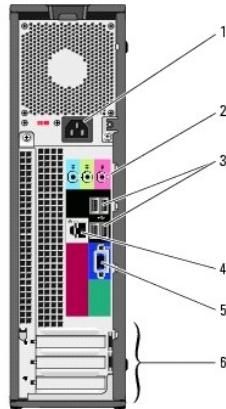| 1	cover latch release	Use this latch to remove the cover. See Removing the Computer Cover.
2	CD/DVD activity light	The drive light is on when the computer reads data from the CD or DVD drive.
3	CD/DVD eject button	Press to eject a disk from the CD or DVD drive.
4	USB 2.0 connectors (2)	Use the front USB connectors for devices that you connect occasionally, such as joysticks or cameras, or for bootable USB devices. It is recommended that you use the back USB connectors for devices that typically remain connected, such as printers and keyboards.
5	hard-drive activity light	The hard drive activity 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 a CD player is operating.
6	diagnostic lights (4)	Use the lights to help you troubleshoot a computer problem based on the diagnostic code. For more information, see Diagnostic Lights.
7	vents	For adequate cooling, do not block any of the vents. NOTICE: Ensure that there is a minimum of two inches of space between all vents and any object near these vents. NOTICE: Keep the vent area clean and dust-free to ensure that the system is adequately ventilated. Use only a dry cloth to clean the vent area to avoid water damage to the system.
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 an operating system shutdown.
9	headphone connector	Use the headphone connector to attach headphones and most kinds of speakers.
10	FlexBay drive	Can contain an optional floppy drive or optional Media Card Reader.
11	Service Tag	Use to identify your computer when you access the Dell Support website or call technical support.

Back View of the Computer

1	power connector	Insert the power cable.
2	audio connectors (3)	l Line-in connector — Use the blue line-in connector to attach a record/playback device such as a cassette player, CD player, or VCR. l Line-out connector — Use the green line-out connector to attach headphones and most speakers with integrated amplifiers. l Microphone connector — Use the pink microphone connector to attach a personal computer microphone for voice or musical input.
3	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.
4	network adapter connector	To attach your computer to a network or broadband device, connect one end of a network cable to either a network port or your network or broadband device. Connect the other end of the network cable to the network adapter connector on your computer. A click indicates that the network cable is 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.
5	VGA video connector	Plug the VGA cable from your monitor into the VGA connector on the computer.
6	card slots	Access connectors for installed PCI cards (two slots) and a x1 PCI Express card. **NOTE:** Although your computer has 4 card slot openings, it supports a maximum of 3 cards; the bottom slot cannot be used.

Advanced Troubleshooting

- Dell Diagnostics
- System Lights
- Diagnostic Lights
- Beep Codes

Dell Diagnostics

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

When to Use the Dell Diagnostics

If you experience a problem with your computer, perform the checks in this section and run the Dell Diagnostics before you contact Dell for technical assistance.

🔘 **NOTICE:** The Dell Diagnostics works only on Dell™ computers.

✏ **NOTE:** The *ResourceCD* is optional and may not ship with your computer.

Start the Dell Diagnostics from either your hard drive or from the *Dell Dimension ResourceCD*.

Starting the Dell Diagnostics From Your Hard Drive

1. Turn on (or restart) your computer.

   a. When the DELL™ logo appears, press <F12> immediately. Select Diagnostics from the boot menu and press <Enter>.

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

   b. Press and hold the <Fn> key while powering the computer on.

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

Starting the Dell Diagnostics From the *ResourceCD*

1. Insert the *ResourceCD*.

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 and try again.

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

3. When the boot device list appears, highlight **IDE CD-ROM Device** and press <Enter>.

4. Select the **Boot from CD-ROM** option from the menu that appears and press <Enter>.

5. Type 1 to start the *ResourceCD* menu and press <Enter> to proceed.

6. Select **Run the 32 Bit Dell Diagnostics** from the numbered list. If multiple versions are listed, select the version appropriate for your computer.

7. 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 1 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.

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 *ResourceCD,* 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.

System Lights

Your power button light and hard-drive light may indicate a computer problem.

Power Light	Problem Description	Suggested Resolution
Solid green	Power is on, and the computer is operating normally. On the desktop computer, a solid green light indicates a network connection.	No corrective action is required.
Blinking green	The computer is in the suspended state (Microsoft® Windows® 2000 and Windows XP).	Press the power button, move the mouse, or press a key on the keyboard to wake the computer.
Blinks green several times and then turns off	A configuration error exists.	Check the diagnostic lights to see if the specific problem is identified.
Solid yellow	The Dell Diagnostics is running a test, or a device on the system board may be faulty or incorrectly installed.	If the Dell Diagnostics is running, allow the testing to complete. Check the diagnostic lights to see if the specific problem is identified. If the computer does not boot, contact Dell for technical assistance.
Blinking yellow	A power supply or system board failure has occurred.	Check the diagnostic lights to see if the specific problem is identified.
Solid green and a beep code during POST	A problem was detected while the BIOS was executing.	See "Beep Codes" for instructions on diagnosing the beep code. Also, check the diagnostic lights to see if the specific problem is identified.
Solid green power light and no beep code and no video during POST	The monitor or the graphics card may be faulty or incorrectly installed.	Check the diagnostic lights to see if the specific problem is identified. See "Video and Monitor Problems" in your *Owner's Manual.*
Solid green power light and no beep	An integrated system board device may be faulty.	Check the diagnostic lights to see if the specific problem is

code but the computer locks up during POST		identified. If the problem is not identified, contact Dell for technical assistance.

Diagnostic Lights

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

Your computer has four lights labeled "1," "2," "3," and "4" on the front panel to help you troubleshoot problems. When the computer starts normally, the lights flash. After the computer starts, all four lights display solid green and then turn off. If the computer malfunctions, the color and sequence of the lights identify the problem

Light Pattern	Problem Description	Suggested Resolution
①②③④	The computer is in a normal "off" condition or a possible pre-BIOS failure has occurred. The diagnostic lights turn off after the system successfully boots to the operating system. **NOTE:** If all of the diagnostic lights are off and the system does not start, there may be a problem with the power supply or with the processor.	Plug the computer into a working electrical outlet
①② **3** ④	A processor failure was detected.	Contact Dell
①② **3 4**	Memory modules are detected, but a memory failure has occurred.	l If you have two or more memory modules installed, remove the modules, reinstall one module (see Installing Memory), and then restart the computer. If the computer starts normally, reinstall an additional module. Continue until you have identified a faulty module or reinstalled all modules without error. l If available, install properly working memory of the same type into your computer (see Installing Memory). l If the problem persists, contact Dell.
① **2 3 4**	A possible graphics failure has occurred.	If the problem persists, contact Dell.
① **2 3** ④	A possible floppy drive or hard drive failure has occurred.	Reseat all power and data cables and restart the computer.
① **2 3 4**	A possible USB failure has occurred.	Reinstall all USB devices, check cable connections, and then restart the computer.
1 ②③④	No memory modules are detected.	l If you have two or more memory modules installed, remove the modules, reinstall one module (see Installing Memory), and then restart the computer. If the computer starts normally, reinstall an additional module. Continue until you have identified a faulty module or reinstalled all modules without error. l If available, install properly working memory of the same type into your computer (see Installing Memory). l If the problem persists, contact Dell.
1 ② **3 4**	Memory modules are detected, but a memory configuration or compatibility error exists.	l Ensure that no special memory module/memory connector placement requirements exist (see Installing Memory). l Verify that the memory modules that you are installing are compatible with your computer (see Specifications). l If the problem persists, contact Dell.
1 ② **3** ④	A possible expansion card failure has occurred.	1. Determine whether a conflict exists by removing a card and restarting the computer (see Cards). 2. If the problem persists, reinstall the card that you removed, remove a different card, and then restart the computer. 3. Repeat this process for each card. If the computer starts normally, troubleshoot the last card removed from the computer for resource conflicts (see page 28). 4. If the problem persists, contact Dell.
1 2 ③④	Another failure has occurred.	l Ensure that the cables are properly connected to the system board from the hard drive and CD/DVD drive (see System Board Components). l If there is an error message on your screen identifying a problem with a device (such as the floppy drive or hard drive), check the device to ensure that it is functioning properly. l The operating system is attempting to boot from a device (such as the floppy drive or hard drive); check system setup (see the *Owner's Manual*) to make sure the boot sequence is correct for the devices installed on your computer. l If the problem persists, contact Dell.

Light Pattern	Problem Description	Suggested Resolution
①②③④	During normal operation, all of the diagnostic lights turn on and then turn off before the system starts. **NOTE:** If all of the diagnostic lights are on and the system does not start, there may be a problem with the power supply or with the processor.	If the system does not start, plug the computer into a working electrical outlet. If there are no power problems and the system does not start, contact Dell.

Light Pattern	Problem Description	Suggested Resolution

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 codes.

2. Run the Dell Diagnostics to identify a more serious cause.

3. Contact Dell for technical assistance.

Before You Begin

- Getting Started
- Recommended Tools
- Turning Off Your Computer
- Before Working Inside Your Computer

Getting Started

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

- You have performed the steps in Turning Off Your Computer and Before Working Inside Your Computer.
- You have read the safety information in your Dell™ *Product Information Guide.*
- 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:

- Small flat-blade screwdriver
- Phillips screwdriver
- 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, press and hold the power button for 4 seconds.

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 (see Turning 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.

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

4. Remove the computer cover (see Removing 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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Replacing the Computer Cover

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

1. Ensure that all cables are connected and fold cables out of the way.

   Gently pull the power cables toward you so that they do not get caught underneath the drives.

2. Ensure that no tools or extra parts are left inside the computer.

3. Align the bottom of the cover with the tabs located along the bottom edge of the computer.
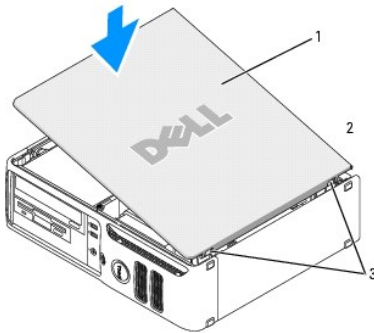
| 1 | computer cover | 2 | back of computer | 3 | bottom hinges |

4. Using the tabs as leverage, rotate the cover downward and close.

5. Snap the cover into place by pulling back on the cover latch release, and then releasing the latch release when the cover is seated.

6. Ensure that the cover is seated correctly before moving it to the upright position.

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

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

Removing the Computer Cover

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

🔘 **NOTICE:** Ensure that sufficient space exists to support the removed cover—at least 30 cm (1 ft) of desktop space.

🔘 **NOTICE:** Ensure that you are working on a level, protected surface to avoid scratching either the computer or the surface on which it is resting.
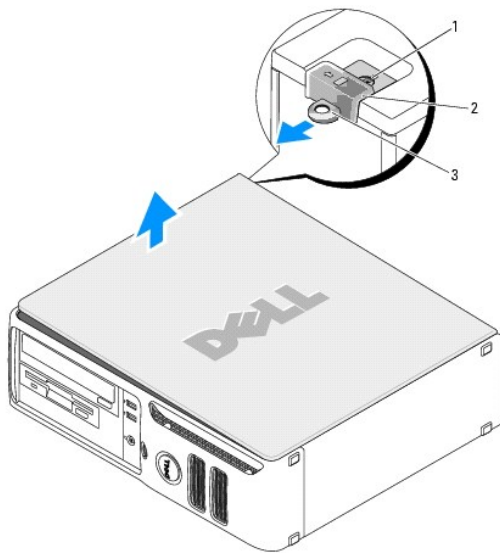
2. If you have installed a padlock through the padlock ring on the back panel, remove the padlock.

3. Lay your computer on its side with the computer cover facing up.

4. Slide the cover release latch back as you lift the cover.

5. Pivot the cover up using the hinge tabs as leverage points.

6. Remove the cover from the hinge tabs and set it aside on a soft nonabrasive surface.

1	security cable slot	2	cover release latch	3	padlock ring

Removing and Installing Parts

- Memory
- Cards
- Drives
- CD/DVD Drive
- Floppy Drive
- Media Card Reader
- Hard Drive
- Processor
- System Board
- Power Supply
- Battery

Memory

DDR2 Memory Overview

If your computer only has one memory module installed on the system board, you can increase your computer memory by installing an additional memory module.

Your computer supports DDR2 memory. For additional information on the type of memory supported by your computer, see "Specifications."

NOTE: Always install DDR2 memory modules in the order indicated on the system board.

NOTICE: Do not install ECC or buffered memory modules. Only unbuffered, non-ECC memory is supported.

l   If you install mixed pairs of DDR2 400-MHz (PC2-3200) and DDR2 533-MHz (PC2-4300) memory, the modules function at the slowest speed installed.

l   Be sure to install a single memory module in DIMM connector 1, the connector closest to the processor, before you install modules in the other connectors.

matched pair of memory modules in DIMM connectors 1 and 2
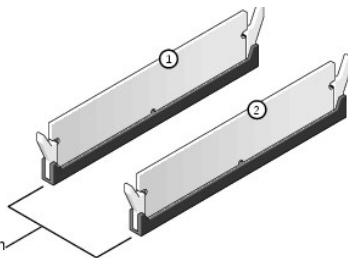
**NOTE:** Memory purchased from Dell is covered under your computer warranty.

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 any of the procedures in this section, follow the safety instructions located 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.

1. Follow the procedures in "Before You Begin."

2. Press out the securing clip at each end of the memory module connector.
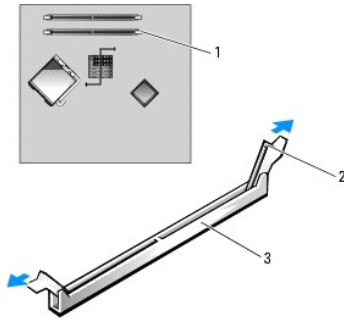
| 1 | memory connector closer to processor | 2 | securing clips (2) | 3 | connector |

3. Align the notch on the bottom of the module with the crossbar in the connector.
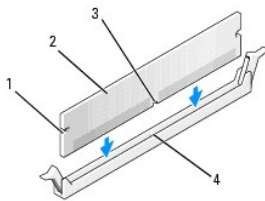
| 1 | cutouts (2) | 2 | memory module | 3 | notch |
| 4 | crossbar | | | | |

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

4. 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.
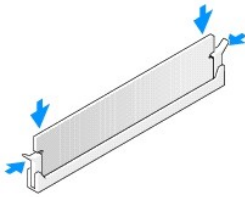
5. Replace the computer cover.

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

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

7. When a message appears stating that memory size has changed, press <F1> to continue.

8. Log on to your computer.

9. Right-click the **My Computer** icon and click **Properties**.

10. Click the **General** tab.

11. To verify that the memory is installed correctly, check the amount of memory (RAM) listed.

Removing Memory

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

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.

4. Replace the computer cover.

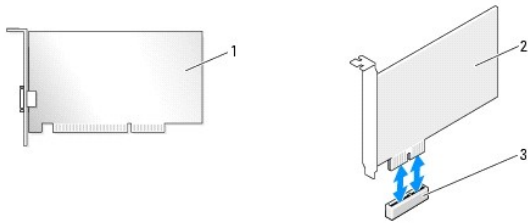
Cards

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

Your Dell™ computer provides the following slots for PCI and PCI Express cards:

- Two low-profile PCI card slots
- One low-profile PCI Express x1 card slot

1	PCI card	2	PCI Express x1 card	3	PCI Express x1 card slot

If you are installing or replacing an expansion card, follow the procedures in the next section. If you are removing but not replacing an expansion card, see Removing an Expansion Card.

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

Installing an Expansion Card

1. Follow the procedures in Before You Begin.
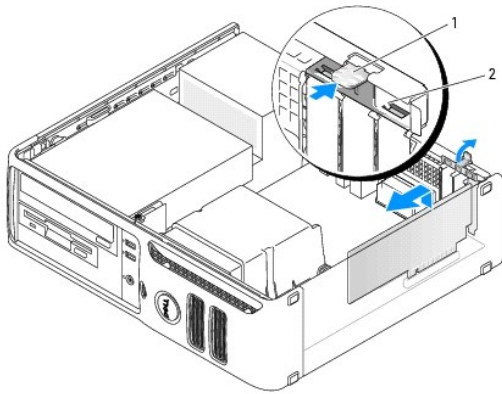
1	release tab	2	card retention door

2. Gently push the release tab on the inside of the card retention door to pivot the door open. Because the door is captive, it will remain in the open position.

3. If you are installing a new card, remove the filler bracket to create a card-slot opening. Then continue with step 5.

4. 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.

5. 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.

6. Place the card in the connector and press down firmly. Ensure that the card is fully seated in the slot.
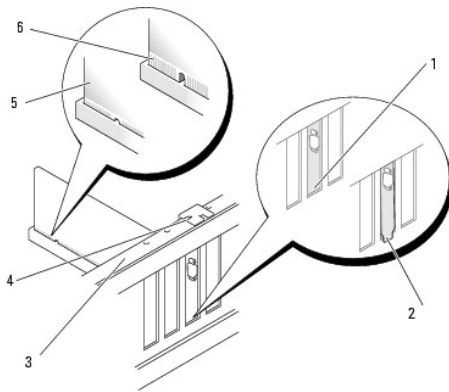
1	bracket within slot	2	bracket caught outside of slot	3	alignment bar
4	alignment guide	5	fully seated card3	6	not fully seated card

7. Before you close the card retention door, ensure that:

   l The tops of all cards and filler brackets are flush with the alignment bar.

   l The notch in the top of the card or filler bracket fits around the alignment guide.
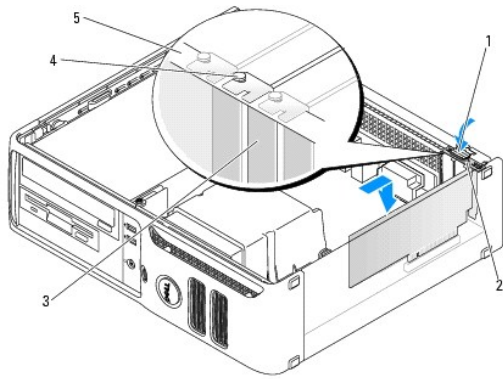
1	release tab	2	card retention door	3	filler bracket
4	alignment guide	5	alignment bar		

8. Close the card retention door by snapping it into place.

⊖ **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.

9. 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:** To connect a network cable, first plug the cable into the network port or device, and then plug it into the computer.

10. Replace the computer cover, reconnect the computer and devices to electrical outlets, and then turn them on.

11. If you installed a sound card:

    a. Enter system setup, select **Audio Controller**, and then 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.

12. If you installed an add-in network adapter and want to disable the integrated network adapter:

    a. Enter system setup, select **Network Controller,** and then 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.

13. Install any drivers required for the card as described in the card documentation.

Removing an Expansion Card

1. Follow the procedures in <u>Before You Begin</u>.

2. Gently push the release tab on the card retention door from the inside to pivot the door open. Because the door is captive, it will remain in the open position.

3. If you are removing the card permanently, install a filler bracket in the empty card-slot opening.

🖊 **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.

4. Close the card retention door by snapping it into place to secure the cards.

⊖ **NOTICE:** To connect a network cable, first plug the cable into the network port or device, and then plug it into the computer.

5. Replace the computer cover, reconnect the computer and devices to electrical outlets, and then turn them on.

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

7. If you removed a sound card:

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

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

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

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

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

Drives

Your computer supports a combination of these devices:

   l One serial ATA hard drive

   l One FlexBay drive (floppy drive or Media Card Reader)

   l One CD or DVD drive
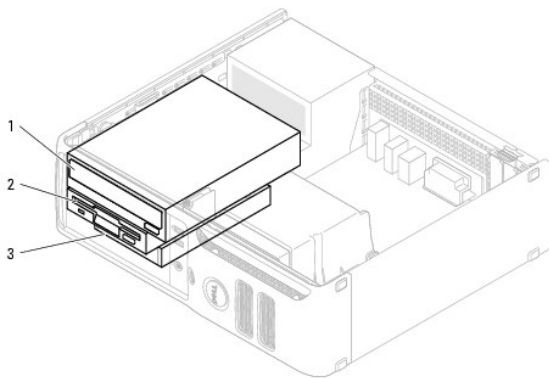
1	DVD drive	2	floppy drive	3	hard drive

Connect DVD drives to the connector labeled "IDE" on the system board. Serial ATA hard drives should be connected to the connectors labeled "SATA0" or "SATA1" on the system board.

IDE Drive Addressing

When you connect two IDE devices to a single IDE interface cable and configure them for the cable select setting, the device attached to the last connector on the interface cable is the master or boot device (drive 0), and the device attached to the middle connector on the interface cable is the slave device (drive 1). See the drive documentation in your upgrade kit for information on configuring devices for the cable select setting.
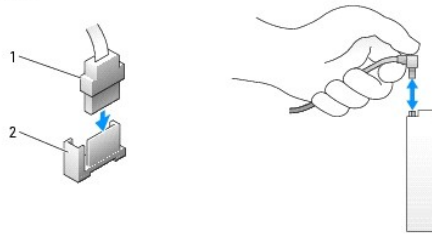
Connecting Drive Cables

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

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.
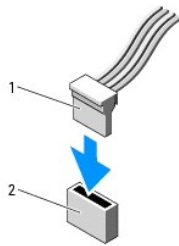
Table 4-1. Serial ATA

1	interface cable	2	interface connector

Power Cable Connector

To connect a drive using the power cable, locate the power input connector on the system board.

| 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.
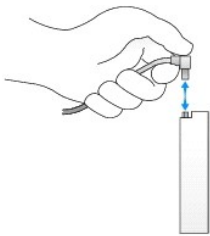
CD/DVD Drive

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

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

Removing a DVD Drive

1. Follow the procedures in Before You Begin.

⊘ **NOTICE:** Do not pull the drive out of the computer by the drive cables. Doing so may cause damage to cables and the cable connectors.

2. Pull up on the drive release latch and slide the drive towards the back of the computer. Then, lift up to remove the drive from the computer.
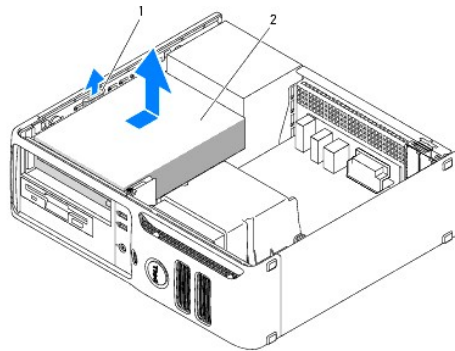
| 1 | drive release latch | 2 | CD/DVD drive |

3. Disconnect the power and DVD drive cables from the back of the drive.

Installing a 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 you are installing a new drive:

   a. Press the two snaps on the top of the drive-panel insert and rotate the insert toward the front of the computer.

   b. Remove the three shoulder screws from the drive-panel insert.

3. If you are replacing an existing drive:

   a. Press the two snaps on the top of the drive-panel insert and rotate the insert toward the front of the computer.

   b. Remove the three shoulder screws from the existing drive.

   c. Insert the three shoulder screws into the sides of the new drive and tighten them.

4. Connect the power and DVD drive cables to the drive.

5. Align the shoulder screws with the screw guides, and slide the drive into the bay until it clicks into place.

6. Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.

7. Replace the computer cover (see Replacing the Computer Cover).

Floppy Drive

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

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

✍ NOTE: If you are adding a floppy drive, see Installing a Floppy Drive.
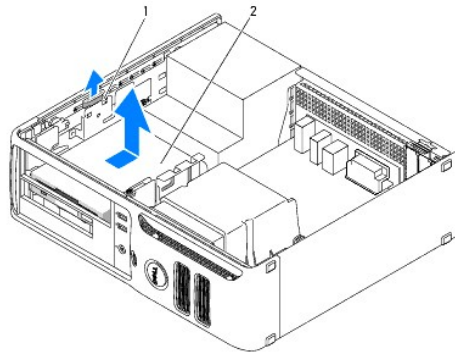
Removing a Floppy Drive

1. Follow the procedures in Before You Begin.

✍ NOTE: Since the following steps do not require the complete removal of the DVD drive, it is not necessary to disconnect the cables connecting the DVD drive.

2. Remove the DVD drive (see CD/DVD Drive) and carefully set it aside.

NOTICE: Do not pull the drive out of the computer by the drive cables. Doing so may cause damage to cables and the cable connectors.

3. Pull up on the drive release latch and slide the floppy drive towards the back of the computer. Then, lift up to remove the drive from the computer.


| 1	drive release latch	2	floppy drive

4. Disconnect the power and floppy-drive cables from the back of the floppy drive.

Installing a Floppy Drive

1. If you are installing a new drive:

    a. Use a small flat-edge screw driver on the back side of the drive-panel insert to gently pop off the insert.

    b. Remove the four shoulder screws from the drive-panel insert.

2. If you are replacing an existing drive:

    a. Remove the four shoulder screws from the existing drive.

    b. Insert the four shoulder screws into the sides of the new floppy drive and tighten them.
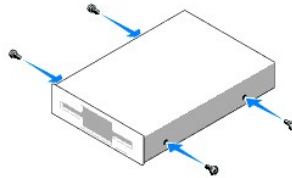
3. Attach the power and floppy-drive cables to the floppy drive.

4. Align the shoulder screws with the screw guides, and slide the drive into the bay until it clicks into place.

5. Replace the DVD drive.
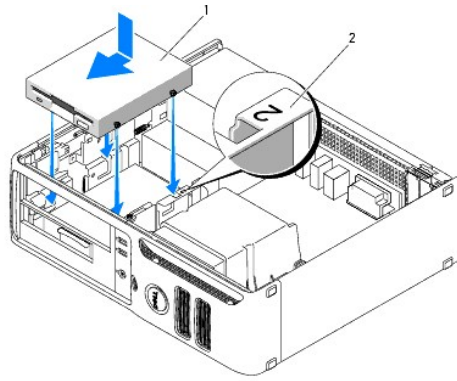
| 1 | power cable | 2 | slot verification number |

6. Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.

7. Replace the computer cover.

Media Card Reader

Removing a Media Card Reader

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

1. Follow the procedures in Before You Begin.

📝 **NOTE:** Since the following steps do not require the complete removal of the DVD drive, it is not necessary to disconnect the cables connecting the DVD drive.

2. Remove the DVD drive (see CD/DVD Drive) and carefully set it aside.

⊘ **NOTICE:** Do not pull the drive out of the computer by the drive cables. Doing so may cause damage to cables and the cable connectors.

3. Disconnect the USB cable on the back of the Media Card Reader from the FlexBay USB connector on the system board (see page 25) and route the cable through the clip on the shroud.
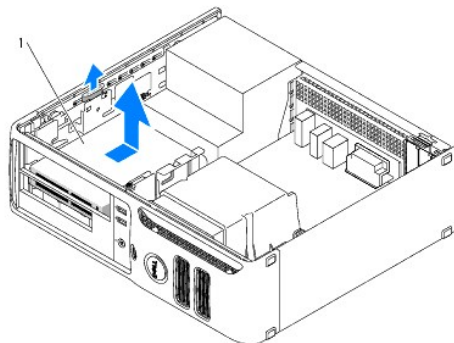
| 1 | Media Card Reader |

4. Grasp the sliding plate lever and push it towards the base of the computer; then, hold it in place while you slide the drive from the computer.
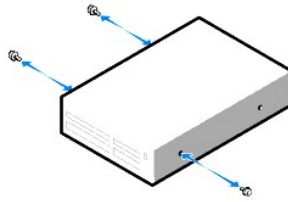
5. Replace the computer cover (see Replacing the Computer Cover).

Installing a Media Card Reader

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

1. Follow the procedures in Before You Begin.

2. Remove the Media Card Reader and bracket from its packaging.

3. Insert three shoulder screws into the sides of the Media Card Reader and tighten them.

4. Gently slide the Media Card Reader (which should not yet be connected to the FlexBay cable) into place until you hear a click or feel the drive securely installed.

5. Connect the USB cable on the back of the Media Card Reader to the front panel USB connector on the system board (see System Board Components).

6. Connect the FlexBay USB cable to the back of the Media Card Reader.

7. Replace the computer cover (see Replacing the Computer Cover).

Hard Drive

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

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

⬛ **NOTICE:** If you are replacing a hard drive that contains data you want to keep, back up your files before you begin this procedure.

Check the documentation for the drive to verify that it is configured for your computer.
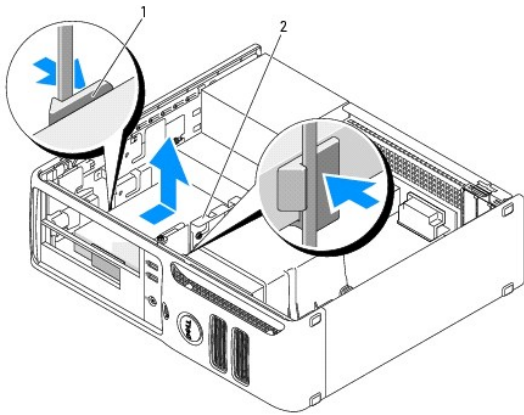
Removing a Hard Drive

1. Follow the procedures in Before You Begin.

📝 **NOTE:** Since the following steps do not require the complete removal of the DVD drive and the floppy drive, it is not necessary to disconnect the cables connecting the two drives.

2. Remove the DVD drive from the bay and carefully set it aside.

3. Remove the floppy drive from the bay and carefully set it aside.

4. Press in on the two plastic securing clips on each side of the drive and slide the drive towards the back of the computer.

⬛ **NOTICE:** Do not pull the drive out of the computer by the drive cables. Doing so may cause damage to cables and the cable connectors.

5. Lift the drive out of the computer and disconnect the power and hard-drive cables from the drive.

| 1	securing clips (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: 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.

2. Unpack the replacement hard drive, and prepare it for installation.

3. If your replacement hard drive does not have the plastic hard-drive bracket attached, remove the bracket from the existing drive by unsnapping it from the drive.
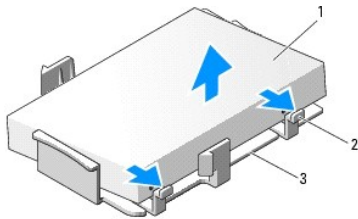
| 1	hard drive	2	release tabs (2)	3	plastic hard-drive bracket

4. Place the replacement hard drive in the bracket and press it in until it clicks into place.
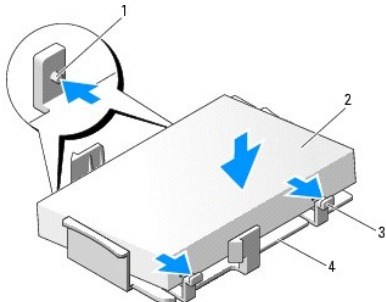
1	securing tabs (2)	2	drive	3	release tabs (2)
4	plastic hard-drive bracket				

5. Connect the power and hard-drive cables to the drive.

6. Locate the correct slot for the drive, and slide the drive into the bay until it clicks into place.
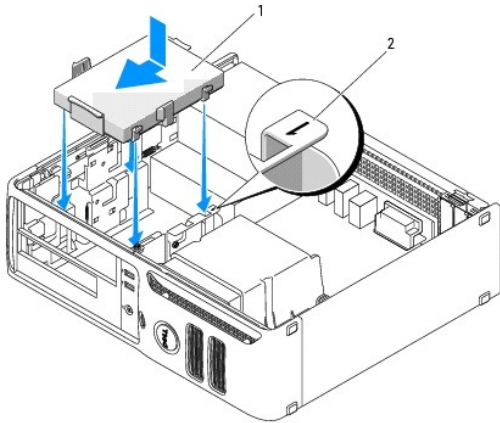
1	hard drive	2	slot verification number

7. Replace the floppy drive and DVD drive.

8. Check all connectors to be certain that they are properly cabled and firmly seated.

9. Replace the computer cover.

10. If the drive you just installed is the primary drive, insert a bootable medium into your boot drive.

11. Turn on the computer.

12. Enter system setup and update the appropriate **Primary Drive** option (**0** or **2**).

13. Exit system setup, and reboot the computer.

14. Partition and logically format your drive before you proceed to the next step.

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

15. Test the hard drive by running the Dell Diagnostics.

16. Install your operating system on the hard drive. For instructions, see the documentation that came with your operating system

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Processor

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

Removing the Processor

1. Follow the procedures in "Before You Begin."

✎ **NOTE:** To loosen the two captive screws on each side of the heat sink and fan shroud assembly, you need a long Phillips screwdriver.

2. Loosen the two captive screws on each side of the heat sink assembly.

⚠ **CAUTION: Despite having a plastic shield, the heat sink assembly may be very hot during normal operation. Be sure that it has had sufficient time to cool before you touch it.**

3. Rotate the heat sink and fan shroud assembly upward, and remove it from the computer.
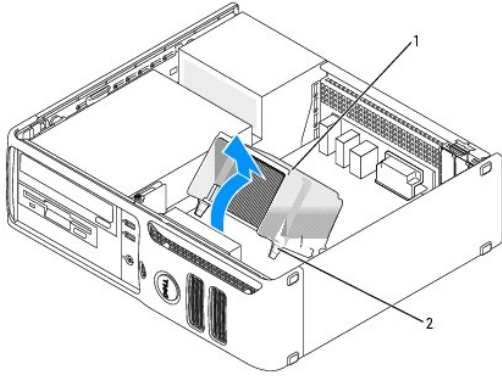
1	heat sink and fan shroud assembly	2	captive screw housings (2)

🛇 **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.

4. Open the processor cover by sliding the release lever out from beneath the center cover latch on the socket. Then, pull the lever back to release the processor.
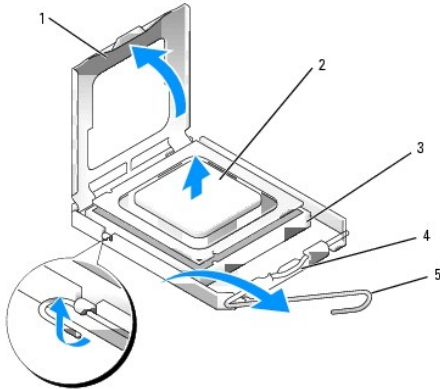
1	processor cover	2	processor	3	socket
4	center cover latch	5	release lever		

🛇 **NOTICE:** When replacing the processor, do not touch any of the pins inside the socket or allow any objects to fall on the pins in the socket.

5. Gently remove the processor from the socket.

   Leave the release lever extended in the release position so that the socket is ready for the new processor.

Installing the Processor

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

🛇 **NOTICE:** When replacing the processor, do not touch any of the pins inside the socket or allow any objects to fall on the pins in the socket.

1. Unpack the new processor, being careful not to touch the underside of the processor.

🛇 **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.

2. If the release lever on the socket is not fully extended, move it to that position.

3. Orient the front and rear alignment notches on the processor with the front and rear alignment notches on the socket.

4. Align the pin-1 corners of the processor and socket.
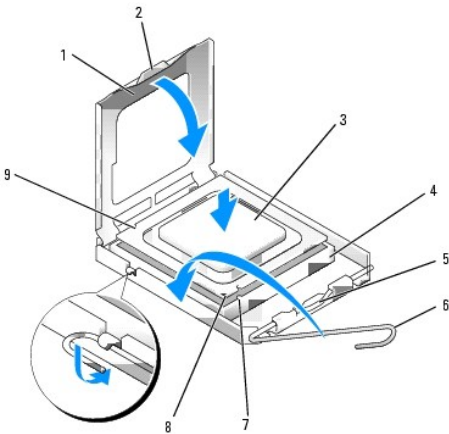
1	processor cover	2	tab	3	processor
4	processor socket	5	center cover latch	6	release lever
7	front alignment notch	8	socket and processor pin-1 indicator	9	rear alignment notch

NOTICE: To avoid damage, ensure that the processor aligns properly with the socket, and do not use excessive force when you install the processor.

5. Set the processor lightly in the socket and ensure that the processor is positioned correctly.

6. When the processor is fully seated in the socket, close the processor cover.

   Ensure that the tab on the processor cover is positioned underneath the center cover latch on the socket.

7. Pivot the socket release lever back toward the socket and snap it into place to secure the processor.

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

If you installed a processor replacement kit from Dell, return the original heat sink assembly and processor to Dell in the same package in which your replacement kit was sent.

8. Install the heat sink and fan shroud assembly:

   a. Place the heat sink and fan shroud assembly back onto the heat sink assembly bracket.

   b. Rotate the heat sink and fan shroud assembly down towards the computer base and tighten the two capture screws.

NOTICE: Ensure that the heat sink is correctly seated and secure.
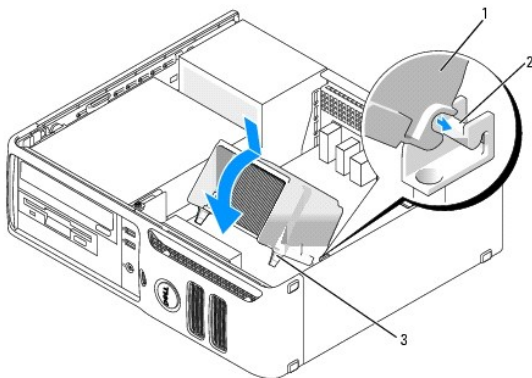
1	heat sink and fan shroud assembly	2	heat sink assembly bracket	3	captive screw housings (2)

9. 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.

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

System Board

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

Removing the System Board

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

1. Follow the procedures in "[Before You Begin](#)."

2. Remove any components that restrict access to the system board (optical drives, floppy drive, hard drive).

3. Remove the [processor](#).

4. Disconnect all cables from the [system board](#).

5. Remove the 10 screws that attach the system board to your computer.
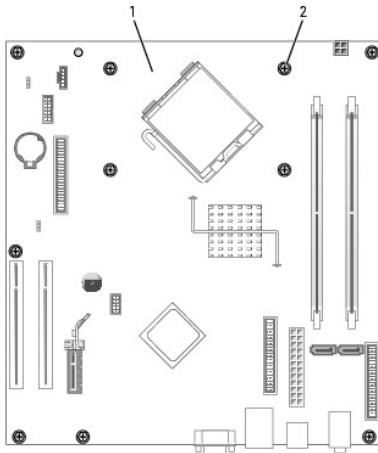
captive screw housings (2)

1	system board	2	screws (10)

6. Slide the system board assembly toward the front of the computer, and then lift the board up and away.

7. Place the system board assembly that you just removed next to the replacement system board to ensure it is identical.

Replacing the System Board

1. Gently align the board and slide it toward the back of the computer.

2. Replace the screws attaching the system board.

3. Replace any components and cables that you removed from the system board.

4. Reconnect all cables to their connectors at the back of the computer.

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.
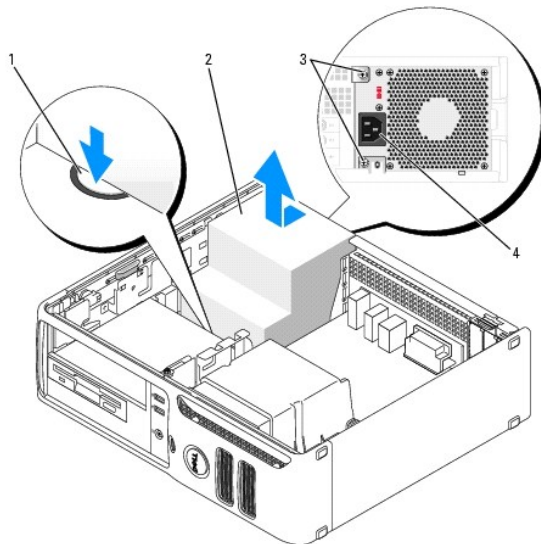

Power Supply

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

Removing 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 chassis 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 two screws that attach the power supply to the back of the computer chassis.

4. Remove the CD/DVD drive and carefully set it aside.

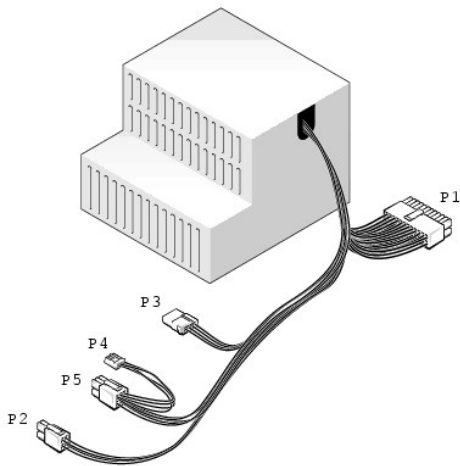5. Press the release button located on the floor of the computer chassis.

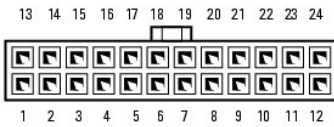| 1	release button	2	power supply	3	screws (2)
4	AC power connector				

6. Slide the power supply toward the front of the computer by approximately 1 inch.

7. Lift the power supply up and out of the computer.

8. Slide the replacement power supply into place.

9. Replace the screws that secure the power supply to the back of the computer chassis.

10. Reconnect the DC power cables.

11. <u>Replace the CD/DVD drive</u>.

12. Connect the AC power cable to the connector.

13. Replace the computer cover.

DC Power Connectors

DC Power Connector P1

Pin Number	Signal name	18-AWG Wire
1	+3.3 VDC	Orange
2	+3.3 VDC	Orange
3	GND	Black
4	+5 VDC	Red
5	GND	Black
6	+5 VDC	Red
7	GND	Black
8	PS_PWROK*	Gray
9	P5AUX	Purple
10	+12 VDC	White
11	+12 VDC	White
12	+3.3 VDC	Orange
13	+3.3 VDC	Orange
14	-12 VDC*	Blue
15	GND	Black
16	PWR_PS_ON*	Green
17	GND	Black
18	GND	Black
19	GND	Black
20	NC	N/C

21	+5 VDC	Red
22	+5 VDC	Red
23	+5 VDC	Red
24	GND	Black
*Uses 22-AWG wire instead of 18-AWG wire.		

DC Power Connector P2

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

DC Power Connector P3

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

DC Power Connector P4
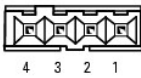
Pin Number	Signal Name	22-AWG Wire
1	+5 VCD	Red
2	GND	Black
3	GND	Black
4	+12 VDC	Yellow

DC Power Connector P5

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

Replacing the Power Supply

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

1. Slide the power supply into place.

2. Replace the screws that secure the power supply to the back of the computer frame.

3. Reconnect the DC power cables.

4. Connect the AC power cable to the connector.

5. Run the cables underneath the clips, and press the clips to close them over the cables.

6. 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.

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

Battery

Replacing the Battery

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

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

If you have to repeatedly reset time and date information after turning on the computer, replace the battery.

⚠ **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. Record all the screens in system setup so that you can restore the correct settings in step 8.

2. Follow the procedures in "Before You Begin."

3. Locate the battery socket.

⬤ **NOTICE:** If you pry the battery out of its socket with a blunt object, be careful not to touch the system board with the object. Ensure that the object is inserted between the battery and the socket before you attempt to pry out the battery. Otherwise, you may damage the system board by prying off the socket or by breaking circuit traces on the system board.

4. Remove the battery by carefully prying it out of its socket with your fingers or with a blunt, nonconducting object such as a plastic screwdriver.

5. Insert the new battery into the socket with the side labeled "+" facing up, and snap the battery into place.
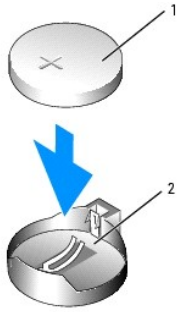
1	battery
2	battery socket

6. Replace the computer cover.

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

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

8. Enter system setup and restore the settings you recorded in step 1.

9. Properly dispose of the old battery. See the *Product Information Guide* for battery disposal information.

Specifications

Processor	
Processor type	Intel® Pentium® or Celeron® processors
Level 1 (L1) cache	16 KB
Level 2 (L2) cache	256K, 1 MB, or 2 MB (dependent upon your computer configuration) pipelined-burst, eight-way set associative, write-back SRAM

Memory	
Type	400- and 533-MHz DDR2 unbuffered SDRAM
Memory connectors	two
Memory capacities	256 MB, 512 MB, or 1 GB non-ECC
Maximum memory	2 GB
BIOS address	F0000h

Computer Information	
Chipset	Intel 915GV
DMA channels	eight
Interrupt levels	24
BIOS chip (NVRAM)	4 Mb
NIC	Integrated network interface capable of 10/100 communication
System clock	800-MHz data rate

Video	
Type	Integrated

Audio	
Type	HDA

Expansion Bus	
Bus type	PCI 2.3 PCI Express x1
Bus speed	PCI: 33 MHz PCI Express: 500 MB/s bidirectional speed
PCI	
connectors	two
connector size	120 pins
connector data width (maximum)	32 bits
PCI Express	
connector	one x1
connector size	36 pins
connector data width (maximum)	1 PCI Express lane

Drives	
Externally accessible:	

	one 3.5-inch drive bay (FlexBay)
	one 5.25-inch drive bay
Available devices	Serial ATA drive (1), floppy drive, USB memory devices, DVD±RW drive, and media reader
Internally accessible	one bay for a single 1-inch high hard drive

Connectors	
External connectors:	
Video	15-hole connector
Network adapter	RJ45 connector
USB	two front-panel and four back-panel USB 2.0-compliant connectors
Audio	three 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
Serial ATA	one 7-pin connector
FlexBay Drive	USB 10-pin header for optional floppy drive or optional Media Card Reader (3.5-inch bay devices)
Fan	one 5-pin connector
PCI 2.3	two 120-pin connectors
PCI Express x1	36-pin connector

Controls and Lights	
Power control	push button
Power light	green light — Blinking green in sleep state; solid green for power-on state. amber light — Blinking amber indicates a problem with the power supply inside the computer. If the system cannot boot and there is a solid amber light, this indicates a problem with the system board (see System Lights).
Hard-drive access light	green
Link integrity light (on integrated network adapter)	green light — A good connection exists between a 10-Mbps network and the computer. orange light — A good connection exists between a 100-Mbps network and the computer. off (no light) — The computer is not detecting a physical connection to the network.
Activity light (on integrated network adapter)	yellow blinking light
Diagnostic lights	four lights on the front panel (see Diagnostic Lights.)
Standby power light	AUX_PWR on the system board

Power	
DC power supply:	
Wattage	220 W
Heat dissipation	434.6 BTU/hr
Voltage (see the safety instructions located in the *Product Information Guide* for important voltage setting information)	100 to 240V
Backup battery	3-V CR2032 lithium coin cell

Physical	
Height	36.1 cm (14.2 inches)
Width	11.4 cm (4.5 inches)
Depth	39.9 cm (15.7 inches)
Weight	9.07 kg (20 lb.)

Environmental	
Temperature:	
Operating	10° to 35°C (50° to 95°F)
Storage	–40° to 65°C (–40° to 149°F)
Relative humidity:	
Operating	20% to 80% (noncondensing)
Storage	5% to 95% (noncondensing)
Maximum vibration:	
Operating	0.25 G at 3 to 200 Hz at 0.5 octave/min
Storage	0.5 G at 3 to 200 Hz at 1 octave/min
Maximum shock:	
Operating	bottom half-sine pulse with a change in velocity of 20 inches/sec (50.8 cm/sec)
Storage	27-G faired square wave with a velocity change of 200 inches/sec (508 cm/sec)
Altitude:	
Operating	–15.2 to 3048 m (–50 to 10,000 ft)
Storage	–15.2 to 10668 m (–50 to 35,000 ft)

System Setup

- Clearing Forgotten Passwords
- Clearing CMOS Settings

Overview

Use system setup as follows:

- To change the system configuration information after you add, change, or remove any hardware in your computer

- To set or change a user-selectable option such as the user password

- To read the current amount of memory or set the type of hard drive installed

Before you use system setup, it is recommended that you write down the system setup screen information for future reference.

⊘ NOTICE: Unless you are an expert computer user, do not change the settings for this program. Certain changes can make your computer work incorrectly.

Entering System Setup

1. Turn on (or restart) your computer.

2. When the blue DELL™ logo is displayed, you must watch for the F2 prompt to appear.

3. Once this F2 prompt appears, press <F2> immediately.

NOTE: The F2 prompt indicates that the keyboard has initialized. This prompt can appear very quickly, so you must watch for it to display, and then press <F2>. If you press <F2> before you are prompted, this keystroke will be lost.

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

System Setup Screens

The system setup screen displays current or changeable configuration information for your computer. Information on the screen is divided into three areas: the options list, active options field, and key functions.

Options List — This field appears on the left side of the system setup window. The field is a scrollable list containing features that define the configuration of your computer, including installed hardware, power conservation, and security features. Scroll up and down the list with the up- and down-arrow keys. As an option is highlighted, the **Option Field** displays more information about that option and the option's current and available settings. By pressing <Enter> or the left and right arrow keys, you can toggle between a primary topic (collapsed) and subtopics (expanded).	**Option Field** — This field contains information about each option. In this field you can view your current settings and make changes to your settings. Use the right and left arrow keys to highlight an option. Press <Enter> to make that selection active.
	Key Functions — This field appears below the **Option Field** and lists keys and their functions within the active system setup field.

System Setup Options

System	
System Info	Lists system information such as the computer name, the BIOS version number and date, system tags, and other system-specific information. **NOTE:** The system name listed in the BIOS may not appear exactly as the name that appears on the computer or in the computer's documentation.
Processor Info	Identifies whether the computer's processor supports Hyper-Threading and lists the processor bus speed, processor ID, clock speed, and L2 cache.
Memory Info	Indicates amount of installed memory, memory speed, channel mode (dual or single), and type of memory installed.
Date/Time	Displays current date and time settings.
Boot Sequence	The computer attempts to boot from the sequence of devices specified in this list. **NOTE:** If you insert a boot device and restart the computer, this option appears in the system setup menu. To boot from a USB memory device, select the USB device and move it so it becomes the first device in the list.
Drives	
Diskette Drive	Identifies and defines the floppy drive attached to the FLOPPY connector on the system board as **Off**, **USB**, **Internal**, or **Read Only**.
Drives 2 through 1	Identifies the drives attached to the drives connectors (one SATA and one PATA) on the system board, and lists the capacity for hard drives.
Drives 0 through 3	Enables or disables an ATA device (such as a CD or DVD drive).
Onboard Devices	
Integrated NIC Controller	You can set the NIC to **On** (default), **Off**, or **On w/ PXE**. When the **On w/ PXE setting is active** (available only for the future boot process), the computer prompts you to press <Ctrl><Alt><b>. 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 computer attempts to boot from the next device in the boot sequence list.
Integrated Audio Controller	Enables or disables the onboard audio controller.
USB Controller	Set to **On** (default) so that USB devices will be detected and supported in the operating system.
Card Reader	This field enables and disables the Media Card Reader. **Off** = Media Card Reader is disabled. **On** = Media Card Reader is enabled. The factory default setting is **On**. This option appears only if a Media Card Reader is installed.
Video	
Primary Video	This setting specifies which video controller is primary when two video controllers are present on the computer.
Video Memory Size	Offering selectable options of 1MB and 8MB, this field configures the system memory allocation reserved for the integrated video controller.
Performance	
HyperThreading	If your computer's processor supports Hyper-Threading, this option appears in the Options List.
HDD Acoustic Mode	○ **Bypass (default)** — Your computer does not test or change the current acoustics mode setting. ○ **Quiet** — The hard drive operates at its most quiet setting. ○ **Suggested** — The hard drive operates at the level suggested by the drive manufacturer. ○ **Performance** — The hard drive operates at its maximum speed. **NOTE:** Switching to performance mode will cause the drive heads to move faster, causing the hard drive to be noisier. However, some drives may not see an increase in data transfer rates. **NOTE:** Changing the acoustics setting does not alter your hard drive image.
Security	This section displays available system security options.
Admin Password	This option provides restricted access to the computer's system setup program in the same way that access to the system can be restricted with the **System Password** option.
System Password	Displays the current status of the system's password security feature and allows a new system password to be assigned and verified.
Password Status	This option locks the system password field with the setup password. When the field is locked, you can no longer disable password security by pressing <Ctrl><Enter> when the computer starts.
Execute Disable	This field specifies whether Execute Disable Memory Protection Technology will be on or off.
Power Management	
AC Recovery	Determines what happens when AC power is restored to the computer.
	Sets the computer to automatically turn on. Choices are **every day** or every **Monday through Friday**.

Auto Power On	The default setting is **Off**. This feature does not work if you turn off your computer using a power strip or surge protector.
Auto Power Time	Sets time to automatically turn on the computer. Time is kept in the standard 12-hour format (*hours:minutes*). Change the startup time by pressing the right- or left-arrow key 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.
Suspend Mode	The options are **S1**, a suspend state where the computer is running in a low-power mode, and **S3**, a standby state where the power is reduced or turned off for most components, however, system memory remains active.
Maintenance	
SERR DMI Message	This field controls the SERR DMI message mechanism. Some graphics cards require that the SERR DMI message mechanism be disabled.
Asset Tag	The Asset Tag is used for customer information.
Owner Tag	The Owner Tag is used for Owner information.
Load Defaults	This option allows you to reset every option back to the way it was when the system left the factory.
Event Log	Displays the system event log.
POST Behavior	
Fastboot	When set to **On** (default), your computer starts more quickly because it skips certain configurations and tests.
Numlock Key	This option involves the rightmost bank of keys on your keyboard. When set to **On** (default), this option activates the numeric and mathematical features shown at the top of each key. When set to **Off**, this option activates the cursor-control functions labeled on the bottom of each key.
POST Hotkeys	This option allows you to specify the function keys to display on the screen when the computer starts.
Keyboard Errors	This option disables or enables keyboard error reporting when the computer starts.

Boot Sequence

This feature allows you to change the boot sequence for devices.

Option Settings

- **Diskette Drive —** The computer attempts to boot from the floppy drive. If the floppy disk in the drive is not bootable, if no floppy disk is in the drive, or if there is no floppy drive installed in the computer, the computer generates an error message.

- **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.

- **CD/ DVD Drive —** The computer attempts to boot from the CD/DVD drive. If no disc is in the drive, or if the disc has no operating system, the computer generates an error message.

- **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 that your device is bootable, check the device documentation.

Changing Boot Sequence for the Current Boot

You can use this feature, for example, to restart your computer to a USB device such as a floppy drive, memory key, or exterma; CD-RW drive.

NOTE: If you are booting to a USB floppy drive, you must first set the floppy drive to OFF in system setup (see "System Setup").

1. If you are booting to a USB device, connect the USB device to a USB connector.

2. Turn on (or restart) your computer.

3. When F2 = Setup, F12 = Boot Menu appears in the upper-right corner of the screen, press <F12>.

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

   The **Boot Device Menu** appears, listing all available boot devices. Each device has a number next to it.

4. At the bottom of the menu, enter the number of the device that is to be used for the current boot only.

   For example, if you are booting to a USB memory key, highlight **USB Flash Device** and press <Enter>.

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 Future Boots

1. Enter system setup.

2. Use the arrow keys to highlight the **Boot Sequence** menu option and press <Enter> to access the 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 plus (+) or minus (–) to move a selected device up or down the list.

Clearing Forgotten Passwords

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

1. Follow the procedures in "Before You Begin."
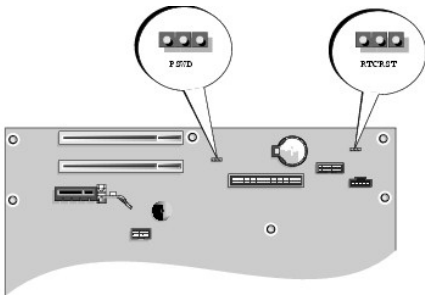
2. Locate the 3-pin password jumper (PSWD) on the system board, and attach the jumper plug to pins 2 and 3 to clear the password.

   NOTE: When you receive your computer, the jumper plug is attached to pin 1.

3. Replace the computer cover.

4. Connect your computer and monitor to electrical outlets, and turn them on.

5. After the Microsoft® Windows® desktop appears on your computer, shut down the computer.

6. Turn off the monitor and disconnect it from the electrical outlet.

7. Disconnect the computer power cable from the electrical outlet, and press the power button to ground the system board.

8. Open the computer cover.

9. Locate the 3-pin password jumper (PSWD) on the system board and attach the jumper to pins 1 and 2 to reenable the password feature.

10. Replace the computer cover.

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

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

Clearing CMOS Settings

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

1. Follow the procedures in "Before You Begin."

2. Reset the current CMOS settings:

   a. Locate the 3-pin CMOS jumper (RTCRST) on the system board.

   b. Remove the jumper plug from pins 2 and 3.

   c. Place the jumper plug on pins 1 and 2 and wait approximately five seconds.

   d. Replace the jumper plug on pins 2 and 3.

3. 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.

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

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Technical Overview

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Inside View of Your Computer
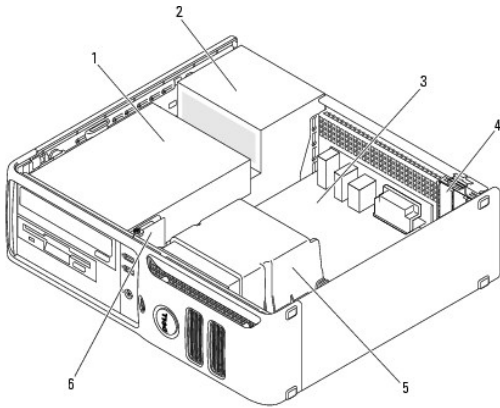
1	drives bay (CD/DVD, floppy, and hard drive)	2	power supply	3	system board
4	card slots	5	heat sink assembly	6	front I/O panel

System Board Components
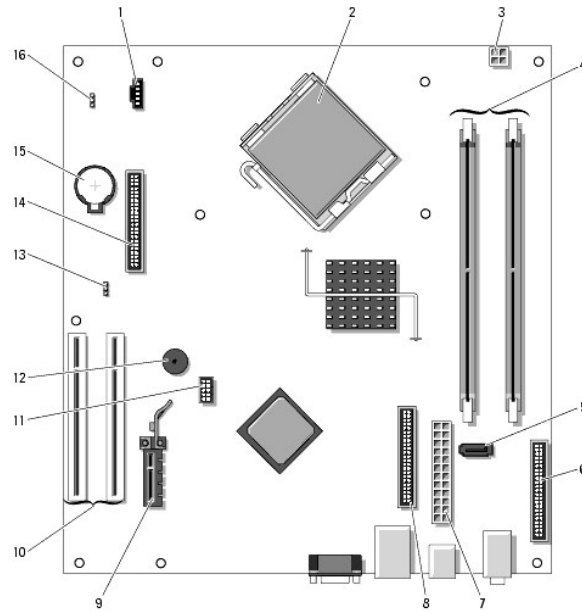
1	fan connector (FAN)	2	processor connector (CPU)	3	power connector (12VPOWER)
4	memory module connectors	5	serial ATA drive	6	front-panel connector

	(DIMM_1, DIMM_2)		connector (SATA0)		(FNT_PANEL)
7	power connector (POWER)	8	CD/DVD drive connector (IDE)	9	PCI Express x1 card connector
10	PCI card connector (2)	11	FlexBay USB connector	12	piezo buzzer
13	password jumper (PSWD)	14	floppy drive connector (DSKT)	15	battery socket (BATT)
16	RTC reset jumper (RTCRST)				

Jumper Settings

The jumper locations are shown below.

Jumper	Setting	Description
PSWD 1 2 3		Password features are enabled (default).
		Password features are disabled.
RTCRST 3 2 1		The real-time clock is in normal operating mode.
		The real-time clock is being reset (jumpered temporarily).
jumpered *unjumpered*		

Power Supply DC Connector Pin Assignments

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 chassis 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 two screws that attach the power supply to the back of the computer chassis.

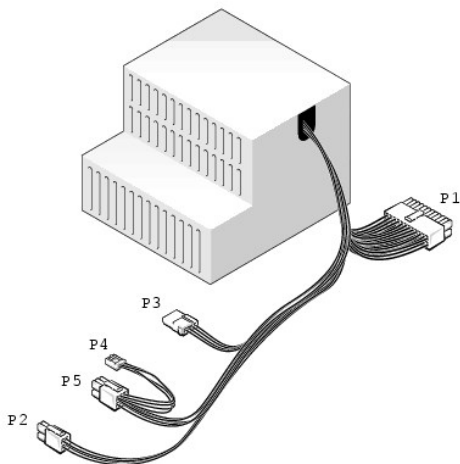4. Remove the CD/DVD drive and carefully set it aside.

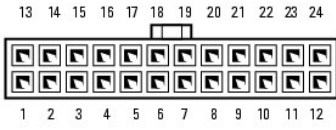5. Press the release button located on the floor of the computer chassis.

1	release button
2	power supply
3	screws (2)
4	AC power connector

6. Slide the power supply toward the front of the computer by approximately 1 inch.

7. Lift the power supply up and out of the computer.

8. Slide the replacement power supply into place.

9. Replace the screws that secure the power supply to the back of the computer chassis.

10. Reconnect the DC power cables.

11. Replace the CD/DVD drive.

12. Connect the AC power cable to the connector.

13. Replace the computer cover.

DC Power Connectors

DC Power Connector P1

13 14 15 16 17 18 19 20 21 22 23 24

1 2 3 4 5 6 7 8 9 10 11 12

Pin Number	Signal name	18-AWG Wire
1	+3.3 VDC	Orange
2	+3.3 VDC	Orange
3	GND	Black
4	+5 VDC	Red
5	GND	Black
6	+5 VDC	Red
7	GND	Black
8	PS_PWROK*	Gray
9	P5AUX	Purple
10	+12 VDC	White
11	+12 VDC	White
12	+3.3 VDC	Orange
13	+3.3 VDC	Orange
14	-12 VDC*	Blue
15	GND	Black
16	PWR_PS_ON*	Green
17	GND	Black
18	GND	Black
19	GND	Black
20	NC	N/C
21	+5 VDC	Red
22	+5 VDC	Red
23	+5 VDC	Red
24	GND	Black
*Uses 22-AWG wire instead of 18-AWG wire.		

DC Power Connector P2

3   4
1   2

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

DC Power Connector P3

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

DC Power Connector P4

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

DC Power Connector P5

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

Dell™ Dimension™ 3100C Service Manual

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.**

For a complete list of abbreviations and acronyms, see the *Dell Owner's Manual*.

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