

# Dell™ XPS™ 730/730X Service Manual

**Model DC00**

[www.dell.com](http://www.dell.com) | [support.dell.com](http://support.dell.com)

# Notes, Cautions, and Warnings



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



**CAUTION:** A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.



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

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

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**Model DCDO**

**November 2008**

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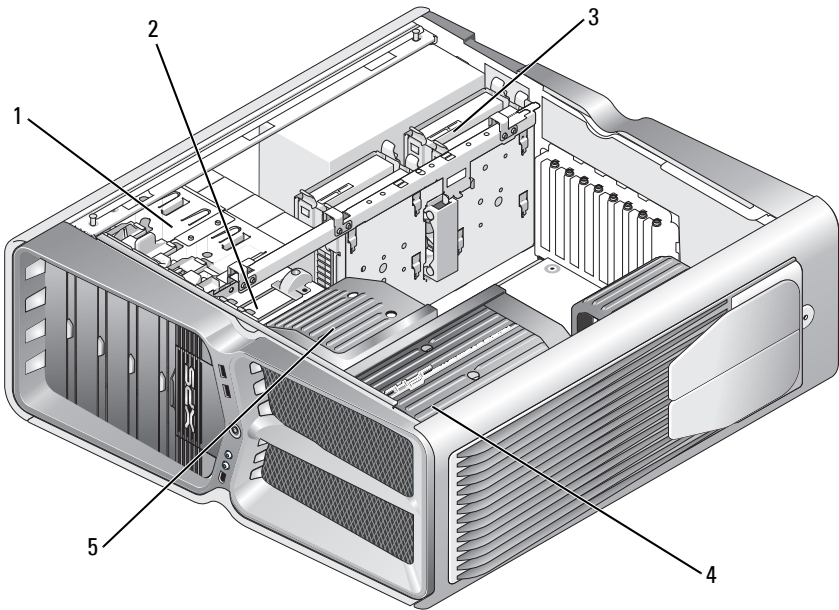
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# Technical Overview



**WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

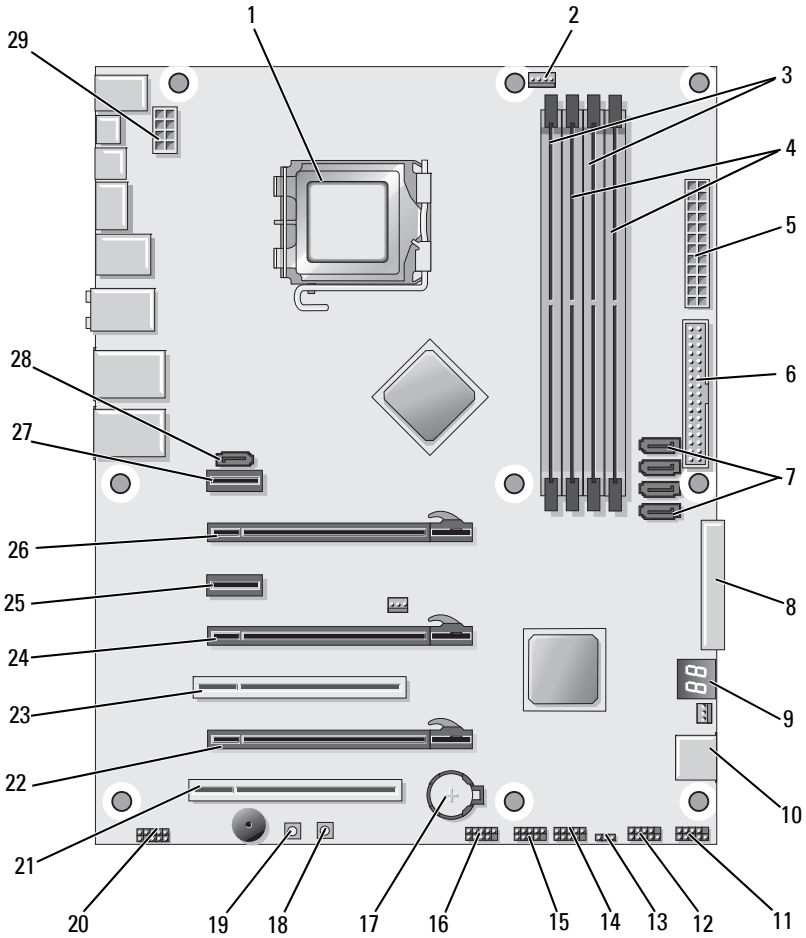
## Inside View of Your Computer



- |   |                        |   |                                                                                     |
|---|------------------------|---|-------------------------------------------------------------------------------------|
| 1 | optical drive bays (4) | 2 | floppy drive/media card reader                                                      |
| 3 | hard drive bays (4)    | 4 | processor cooling solution: liquid cooling assembly (shown) or air cooling assembly |
| 5 | card fan               |   |                                                                                     |

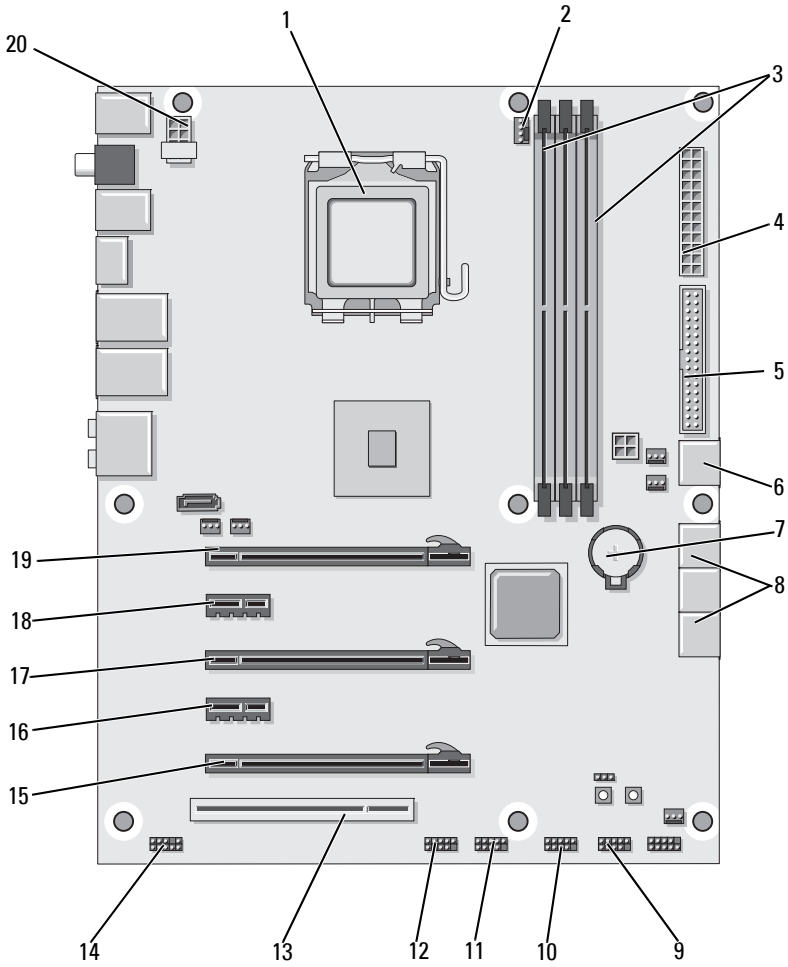
# System Board Components

## Dell™ XPS™ 730



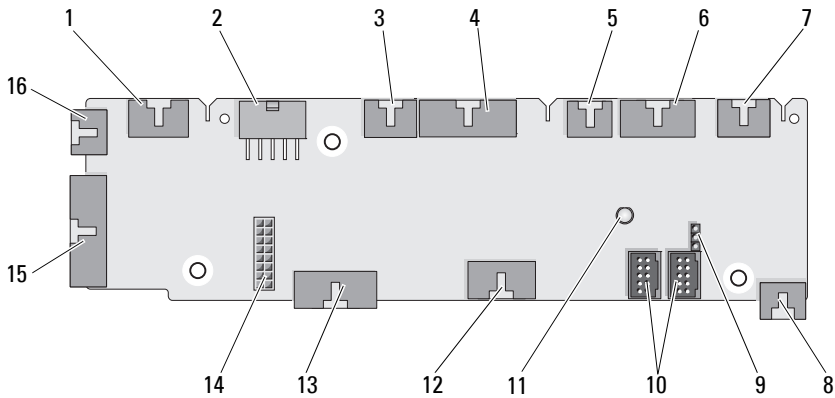
1	CPU socket	2	system board CPU fan header
3	DIMMs 0 and 1 (DIMM 0-1)	4	DIMMs 2 and 3 (DIMM 2-3)
5	ATX power connector (ATX_PWR)	6	IDE connector (IDE)
7	SATA ports 3-6 (SATA 3-6)	8	floppy header (FLOPPY)
9	BIOS debug codes (PORT 80 DECODER)	10	SATA ports 1-2 (SATA 1-2)
11	front panel connector (FRONT PNL)	12	serial port header (SERIAL PORT)-unused
13	reset CMOS jumper (RESET CMOS)	14	internal USB header 1 (USB)
15	internal USB header 2 (USB)	16	1394 header
17	battery socket	18	power button (POWER)
19	reset button (RESET)	20	front panel audio header (FP Audio)
21	PCI slot 1 (PCI SLOT 1)	22	PCIe x16 (Generation 2) slot 2 (PCIe x16_2)
23	PCI slot 2 (PCI SLOT 2)	24	PCIe x16 (Generation 1) slot 3 (PCIe x16_3)
25	PCIe x1 slot (PCIe x1)	26	PCIe x16 (Generation 2) slot 1 (PCIe x16_1)
27	PCIe x1 slot (PCIe x1)	28	internal eSATA header
29	CPU power header		

# Dell XPS 730X



1	CPU socket	2	system board CPU fan header
3	DIMMs 1, 3, and 5	4	ATX power connector (ATX_PWR)
5	IDE connector (IDE)	6	SATA port 4 (SATA 4)
7	battery socket	8	SATA ports 1-3 (SATA 1-3)
9	internal USB header 1 (USB)	10	internal USB header 2 (USB)
11	internal USB header 3 (USB)	12	1394 header
13	PCI slot 1 (PCI SLOT 1)	14	front panel audio header (FP Audio)
15	PCIe slot 5 (PCI_E5)	16	PCIe slot 4 (PCI_E4)
17	PCIe slot 3 (PCI_E3)	18	PCIe slot 2 (PCI_E2)
19	PCIe slot 1 (PCI_E1)	20	CPU power header

# Master Control Board



- |    |                                                |    |                                               |
|----|------------------------------------------------|----|-----------------------------------------------|
| 1  | internal LED header (INTERNAL_LED)             | 2  | power header (POWER)                          |
| 3  | front top LED header (FRONT_TOP_LED)           | 4  | front bottom right LED IO header (BOT_RT_LED) |
| 5  | PCI cage fan header (FAN_CAGE)                 | 6  | power button board header (CON_PWR_BTN)       |
| 7  | rear PCI LED header (REAR_PCI_LED)             | 8  | hard drive fan (FAN_HDD)                      |
| 9  | factory defaults jumper (FACTORY_DEFAULT)      | 10 | internal USB headers (USB_FLEXBAY 1-2)        |
| 11 | system AC power LED indicator                  | 12 | USB input header (USB_MB)                     |
| 13 | system board front panel IO header (MB_IO_HDR) | 14 | H2C liquid cooling header (H2C)               |
| 15 | rear IO LED connector (CONN_REAR)              | 16 | front CPU fan header (FAN_CPU_FRONT)          |







## Before You Begin

This chapter 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" on page 13 and "Safety Instructions" on page 14.
- You have read the safety information that ships with your computer.
- A component can be replaced or—if purchased separately—installed by performing the removal procedure in reverse order.

## Technical Specifications

For information on technical specifications of your computer, see the *Quick Reference Guide* that shipped with your computer or see the Dell Support website at [support.dell.com](http://support.dell.com).

## Recommended Tools

The procedures in this document may require the following tools:

- Small Phillips screwdriver
- Small flat-blade screwdriver

## Turning Off Your Computer





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


- 1 Shut down the operating system:
- 2 Ensure that the computer and all 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 about 4 seconds to turn them off.


# Safety Instructions

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

 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

 **CAUTION:** 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.


 **CAUTION:** When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors 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.

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

- 1 Ensure that the work surface is flat and clean to prevent the computer cover from being scratched.
- 2 Turn off your computer (see "Turning Off Your Computer" on page 13).

 **CAUTION:** To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

- 3 Disconnect all telephone or network cables from the computer.
- 4 Disconnect your computer and all attached devices from their electrical outlets.
- 5 Press and hold the power button while the system is unplugged to ground the system board.

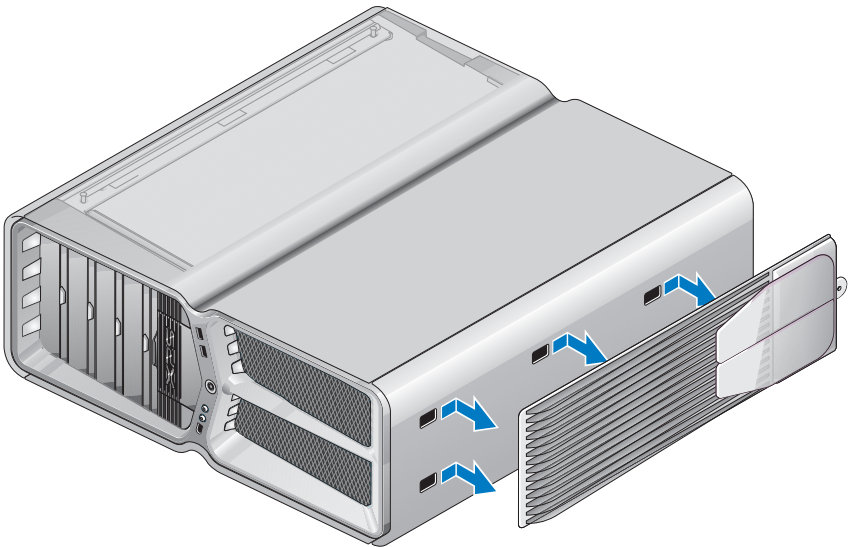
 **CAUTION:** Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity, which could harm internal components.

## Replacing the Computer Stand

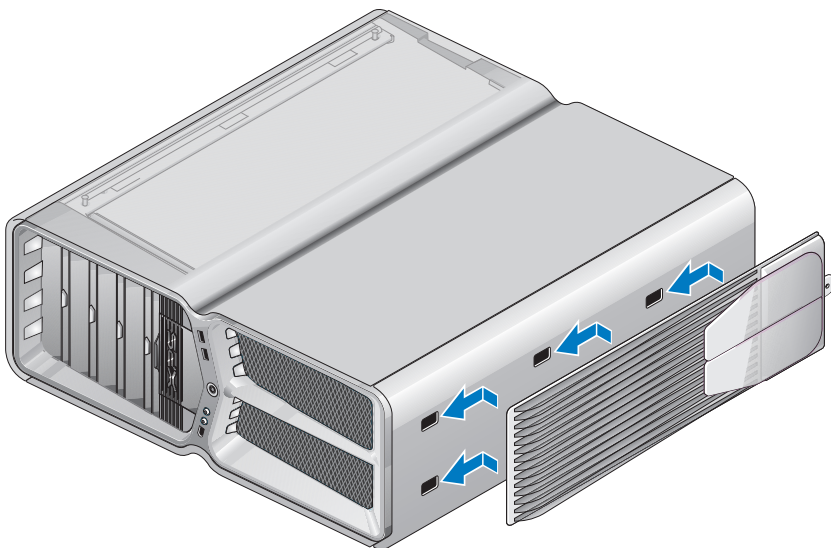
**!** **WARNING:** Your computer is heavy and can be difficult to maneuver. Seek assistance before attempting to lift, move, or tilt the computer and always lift correctly to avoid injury; avoid bending over while lifting.

**!** **WARNING:** The computer stand should be installed at all times to ensure maximum system stability. Failure to install the stand could result in the computer tipping over, potentially resulting in bodily injury or damage to the computer.


- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Loosen the captive screw securing the stand to the base of the computer.
- 3 Gently slide the stand back, towards the rear of the computer, then pull the stand away from the computer to remove it.




- 4 To replace the computer stand, perform the removal procedure in reverse order.




# Replacing the Computer Cover

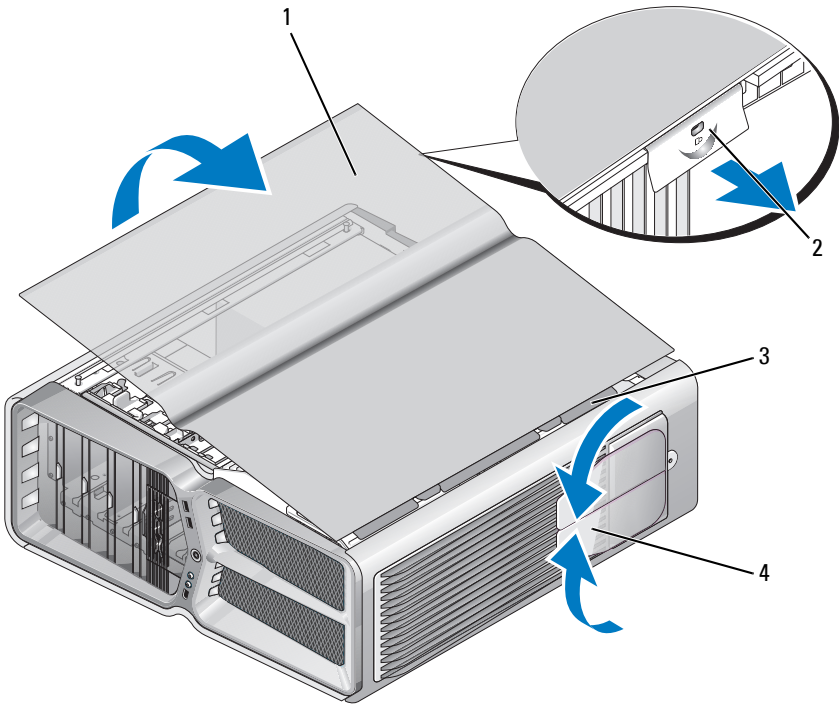
 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

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

 **WARNING:** Do not operate your equipment with any cover(s) (including computer covers, bezels, filler brackets, front-panel inserts, etc.) removed.

 **CAUTION:** Ensure that sufficient space exists to support the system with the cover removed—at least 30 cm (1 ft.) of desk top space.

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Pull back on the cover release latch.







- |   |                  |   |                           |
|---|------------------|---|---------------------------|
| 1 | computer cover   | 2 | cover release latch       |
| 3 | cover hinge tabs | 4 | stabilizing feet (closed) |


- 3 With the cover release latch pulled back, grip the sides of the cover, then pivot the top of the cover up and away from the computer.
- 4 Slide the cover forward and up to remove it from the hinge slots, then set it aside in a secure and protected location.
- 5 To replace the computer cover, perform the removal procedure in reverse order.

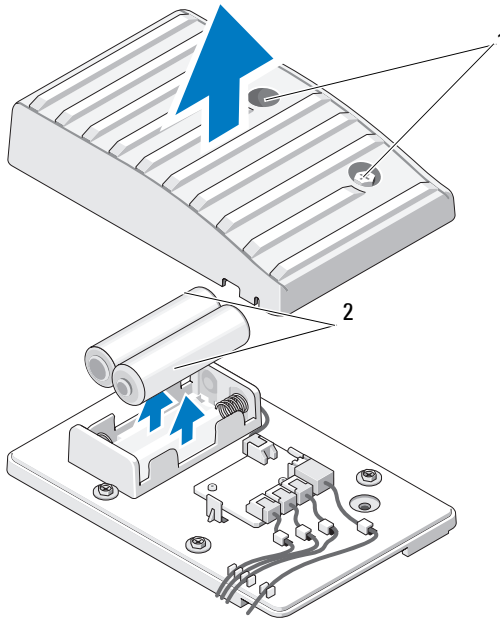


## Replacing the Theater Lighting Unit

-  **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).
-  **WARNING:** To guard against electrical shock, always unplug your computer from the electrical outlet before removing the cover.
-  **WARNING:** Do not operate your equipment with any cover(s) (including computer covers, bezels, filler brackets, front-panel inserts, etc.) removed.
-  **CAUTION:** Ensure that sufficient space exists to support the system with the cover removed—at least 30 cm (1 ft.) of desk top space.

## Replacing the Batteries

-  **WARNING:** 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.
- 1 Follow the procedures in "Before You Begin" on page 13.
  - 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).



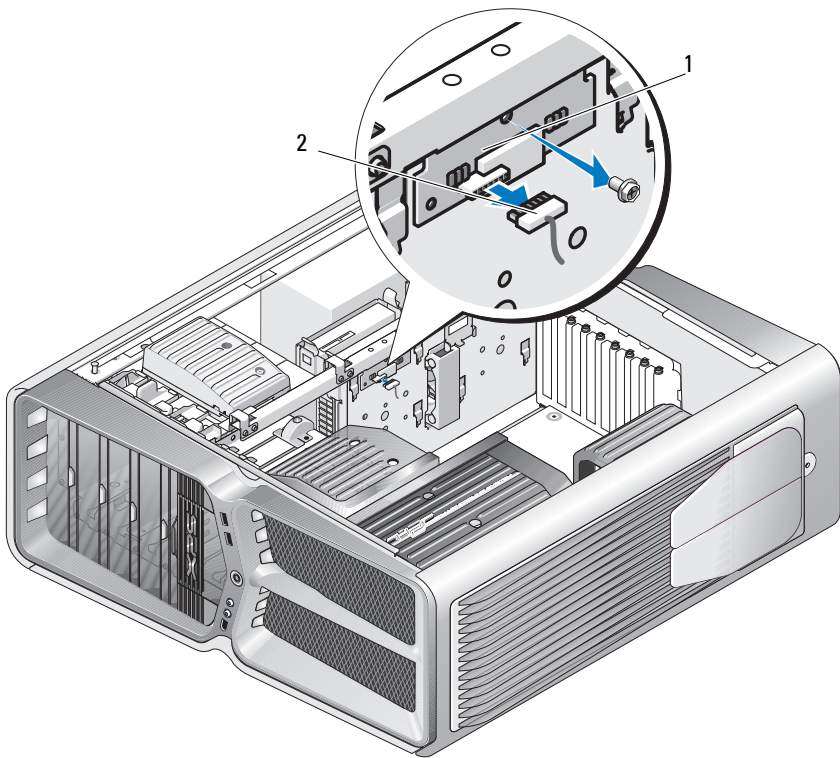
1 captive screws

2 batteries

- 3 Remove the two captive screws and lift the cover of the battery unit.
- 4 Replace the batteries with a new pair.
- 5 Replace the cover of the battery unit and ensure that the screws are secure.
- 6 Replace the computer cover (see "Replacing the Computer Cover" on page 17).
- 7 Connect your computer and devices to electrical outlets, and then turn them on.

## Replacing the Theater Lighting Card

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).



1 theater lighting card

2 theater lighting card  
connector

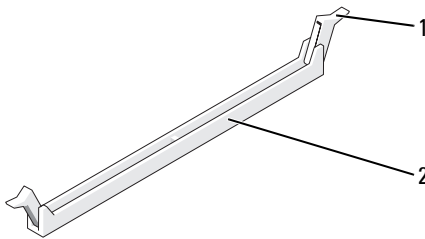
- 3 Disconnect the theater lighting card connector.
- 4 Remove the screw securing the theater lighting card to the chassis and lift the card out of the slot.
- 5 Replace the theater lighting card in its slot and tighten the screw.
- 6 Replace the computer cover (see "Replacing the Computer Cover" on page 17).

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

## Replacing Memory Module(s)

**⚠ WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Locate the memory modules on the system board (see "System Board Components" on page 8).
- 4 Press out the securing clip at each end of the memory module connector.



1 securing clip

2 memory module connector

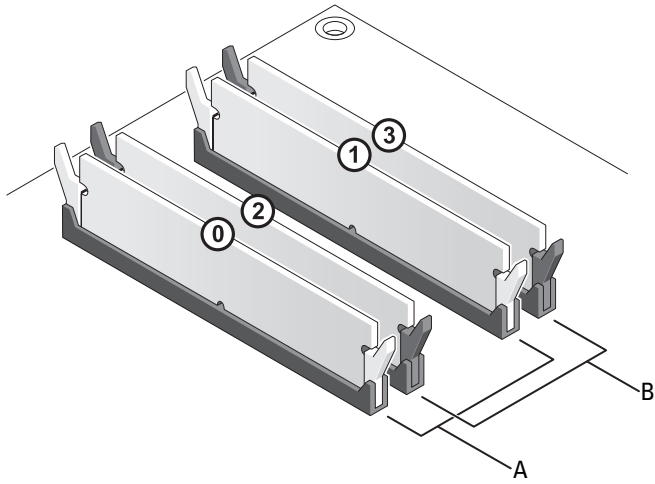
- 5 Grasp the module and pull it upwards.

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

**⚠ CAUTION:** Do not install ECC memory modules.

- 6 Ensure that you install a single memory module in DIMM connector 0, the connector closest to the processor, before you install modules in any other connector.

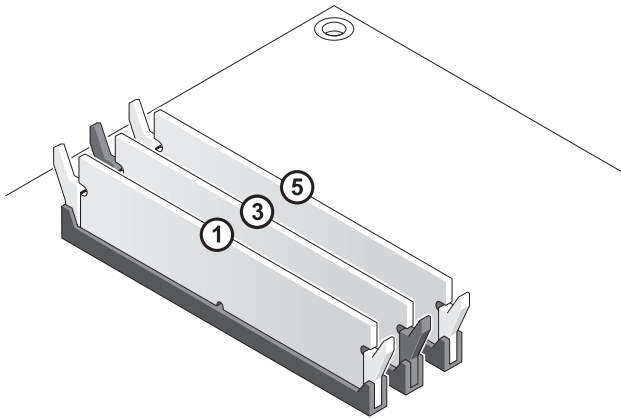
Dell™ XPS™ 730:



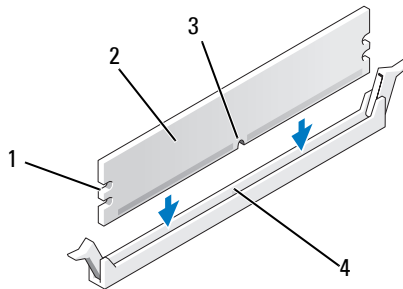
A matched pair of modules in DIMM connectors 0 and 1

B matched pair of memory modules in DIMM connectors 2 and 3

## Dell XPS 730X:



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

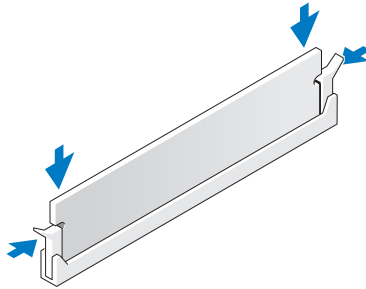


- |   |             |   |               |
|---|-------------|---|---------------|
| 1 | cutouts (2) | 2 | memory module |
| 3 | notch       | 4 | tab           |

**CAUTION:** 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.

- 8 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.



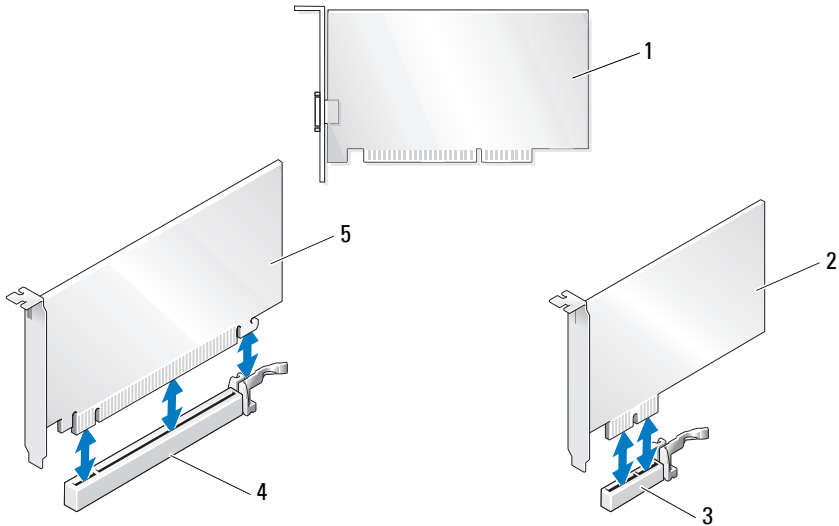
- 9** Replace the computer cover (see "Replacing the Computer Cover" on page 17).
- 10** Connect your computer and devices to electrical outlets, and then turn them on.  
If the message appears stating that memory size has changed, press <F1> to continue.
- 11** Log on to your computer.
- 12** Right-click the **My Computer** icon on your Microsoft® Windows® desktop and click **Properties**.
- 13** Click the **General** tab.
- 14** To verify that the memory is installed correctly, check the amount of memory (RAM) listed.



# Replacing a PCI/PCI Express Card

**⚠ WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

**🔧 NOTE:** If a graphics card is installed in each of the PCIe x16 card slots in the multi-graphics configuration, the PCIe x1 and one PCI card slot are not accessible for use.



1 PCI card


3 PCIe x1 card slot

5 PCIe x16 card

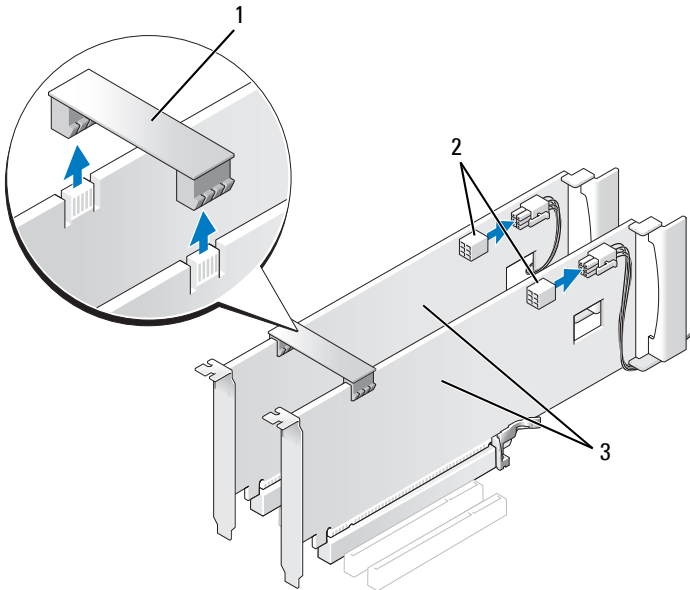
2 PCIe x1 card

4 PCIe x16 card slot

# Removing a PCI Express Graphics Card From a Multi Graphics Card Configuration

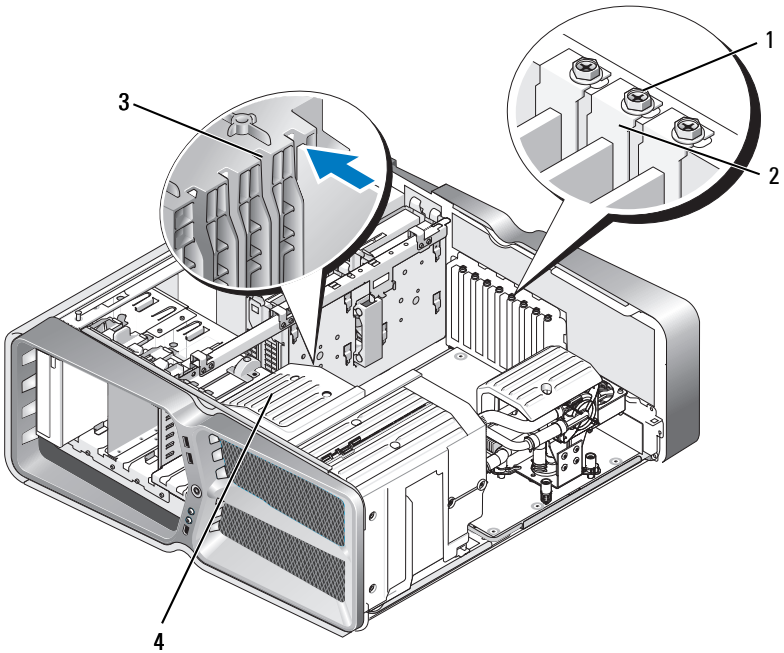
 **NOTE:** This section deals with dual and triple configurations of PCIe x16 graphics cards only. For removal of any other type of PCI or PCIe cards, see "Replacing the PCI and PCI Express Cards" on page 35.

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Gently securing both graphics cards with one hand, remove the graphics card bridge (if present) with your other hand by pulling it up and away from the computer. Set it aside.  
Repeat if removing two bridges from a triple card configuration.



- |   |                          |   |                      |
|---|--------------------------|---|----------------------|
| 1 | graphics card bridge     | 2 | power connectors (2) |
| 3 | dual-PCIe graphics cards |   |                      |

- 4 Disconnect any cables connected to the card.
- 5 Remove the captive screws on top of the PCI card fan shroud and remove the shroud.
- 6 Remove the card retention screw(s) on the top of the card retainer at the appropriate card slot and pivot the card retainer back through the chassis wall.




- 1 retention screw
- 3 alignment guide

- 2 card retainer
- 4 fan bracket



# Installing Graphics Cards for Multi Graphics Card


 **NOTE:** To upgrade to or downgrade from a dual- or triple-graphics card configuration, you may need additional parts that can be ordered from Dell.

This section pertains to using dual and triple PCIe graphics cards to take advantage of NVIDIA's SLI (Scalable Link Interface). For installation of other types of PCI or PCIe cards, see "Replacing a PCI/PCI Express Card" on page 27.

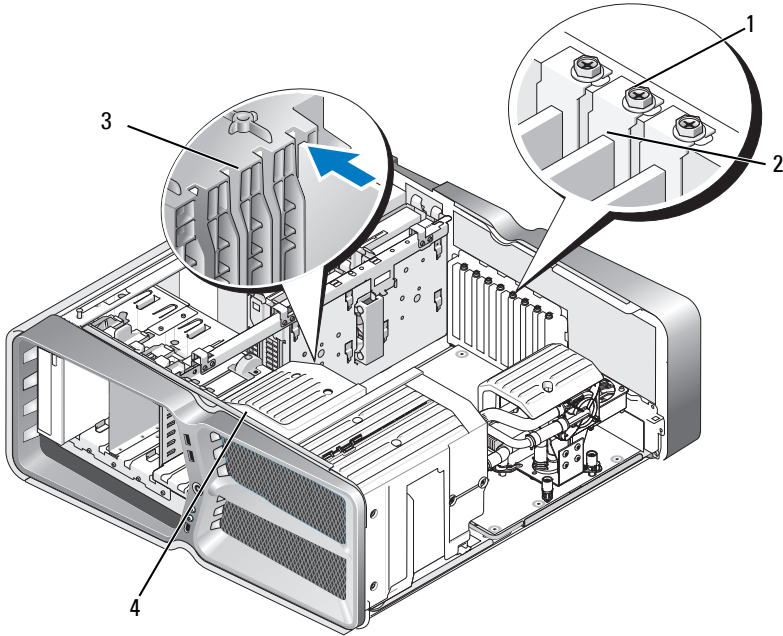
Some expansion card slots will not be available for use if a dual-slot graphics card is installed in any of the PCIe x16 card slots. If you are upgrading from a single-slot graphics card to a dual-slot graphics card, you will need to remove any card installed in these expansion slots. To remove a PCIe card, see "Replacing the PCI and PCI Express Cards" on page 35.

 **CAUTION:** For information about upgrading your system to use NVIDIA SLI (Scalable Link Interface) multi-graphics technology, see the Dell support website at [support.dell.com](http://support.dell.com).

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Remove the captive screws on top of the PCI card fan shroud and remove the shroud.
- 4 Remove the filler bracket or existing graphics card to create a card-slot opening.

 **NOTE:** If you are upgrading to a multi-graphics card configuration and have a card installed in the PCIe x1 card slot, remove the card (see "Replacing the PCI and PCI Express Cards" on page 35).

- 5 Install two SLI-ready graphics cards into the two outer PCIe x16 slots on the system board.



- |   |                 |   |               |
|---|-----------------|---|---------------|
| 1 | retention screw | 2 | card retainer |
| 3 | alignment guide | 4 | fan bracket   |

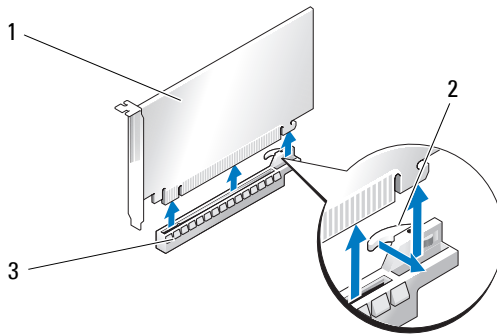
**6** Prepare the cards for installation.

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

**7** Position each card so that it is aligned with the slot and that the securing tab (if present) is aligned with the slot.



**NOTE:** If the card is full length, insert the card guide into the alignment slot on the fan bracket.



- 1 PCIe x16 card
- 2 securing tab
- 3 PCIe x16 card slot

**CAUTION:** Ensure that you release the securing tab to seat the card. If the card is not installed correctly, you may damage the system board.

Gently pull the securing tab (if present) and place the card in the connector. Press down firmly and ensure that the card is fully seated in the slot.

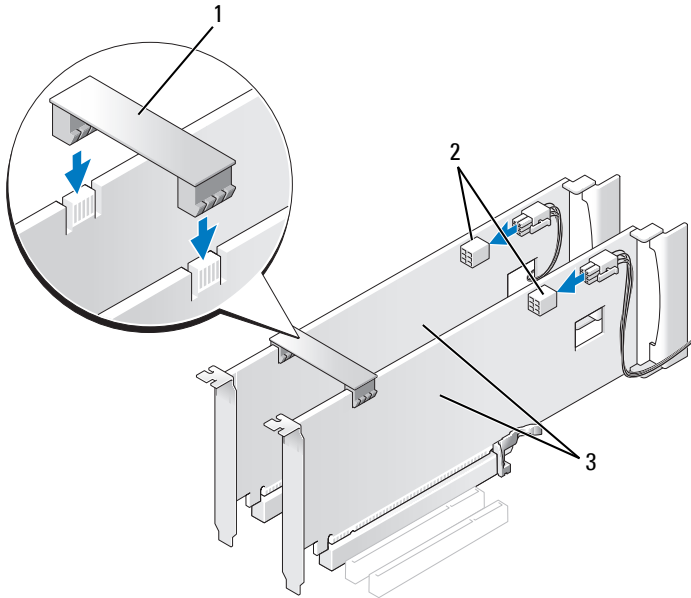
**CAUTION:** Do not route card cables over or behind the cards. Cables routed over the cards can prevent the computer cover from closing properly or cause damage to the equipment.

**CAUTION:** An incorrectly attached graphics power cable may result in degraded graphics performance.

- 8 Screw in the card retention screw(s) on the top of the card retainer at the appropriate card slot.
- 9 Repeat for additional graphics cards.

Connect the PCIe supplementary power connectors from the system power supply to each of the graphics cards. See the documentation for the card for information about the card's cable connections.

- 10 Install the NVIDIA SLI connector across the two outer graphics cards. Each SLI-ready graphics card has an SLI connector tab on its upper side. Press firmly on each connector so that it completely covers the connector tab.



1 graphics card bridge

2 power connectors (2)

3 dual-PCIe graphics cards


**11** If present, lower the graphics card bridge that lays over the installed cards and snap it into place.

**12** Replace the computer cover (see "Replacing the Computer Cover" on page 17), reconnect the computer and devices to electrical outlets, and then turn them on.

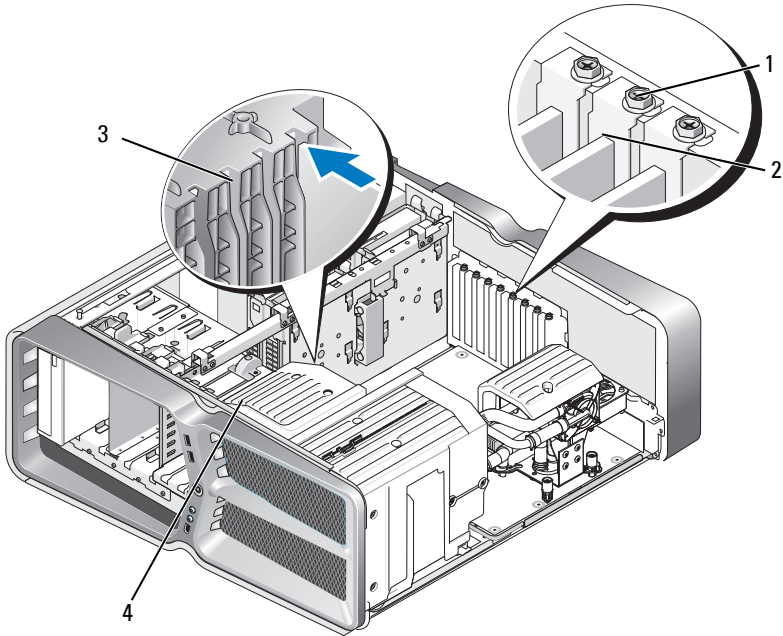


## Replacing the PCI and PCI Express Cards

 **CAUTION:** To avoid electrostatic discharge and damage to internal components, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer chassis.

 **CAUTION:** If your computer came with a PCI graphics card installed, removal of the card is not necessary when installing additional graphics cards; however, the card is required for troubleshooting purposes. If you remove the card, store it in a safe and secure location.

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Disconnect any cables connected to the card.
- 4 If the card is a full length, remove the captive screws on top of the PCI card fan shroud and remove the shroud.
- 5 Remove the card retention screw.

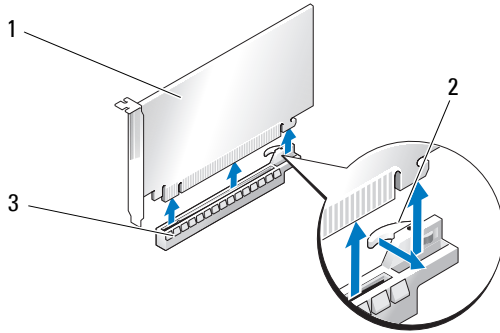


- |   |                 |   |               |
|---|-----------------|---|---------------|
| 1 | retention screw | 2 | card retainer |
| 3 | alignment guide | 4 | fan bracket   |

- 6** Press the securing tab (if present) on the system board connector as you grasp the card by its top corners, and then ease the card out of the connector.




**NOTE:** If the card is full length, press the securing tab on the end of the alignment guides on the fan bracket.




- 1 PCIe x16 card
- 2 securing tab
- 3 PCIe x16 card slot

- 7 Install a filler bracket in the empty card-slot opening. If you are replacing the card, see "Replacing a PCI/PCI Express Card" on page 27.

 **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.

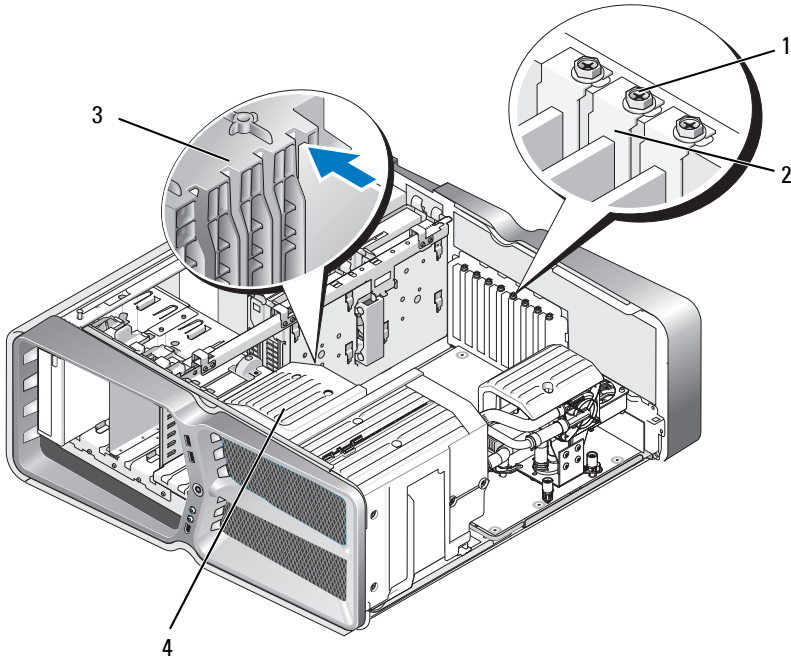
 **CAUTION:** Do not route card cables over or behind the cards. Cables routed over the cards can prevent the computer cover from closing properly or cause damage to the equipment.

- 8 Reinstall the card retention screw.
- 9 Reinstall the card slot fan shroud.
- 10 Replace the computer cover (see "Replacing the Computer Cover" on page 17), reconnect the computer and devices to electrical outlets, and then turn them on.
- 11 Uninstall the driver for the card that you removed.

 **CAUTION:** If you have or are upgrading to the optional multi-graphics configuration, see "Installing Graphics Cards for Multi Graphics Card" on page 31 to install a graphics card.

- 12 If present, press the tab on the graphics card bridge that lays over the installed cards and rotate it upwards to gain full access to the card.

- 13** Press down the tab on the top of the graphics card bridge at the appropriate card slot and pivot the graphics card bridge back through the chassis wall.




- |   |                 |   |               |
|---|-----------------|---|---------------|
| 1 | retention screw | 2 | card retainer |
| 3 | alignment guide | 4 | fan bracket   |

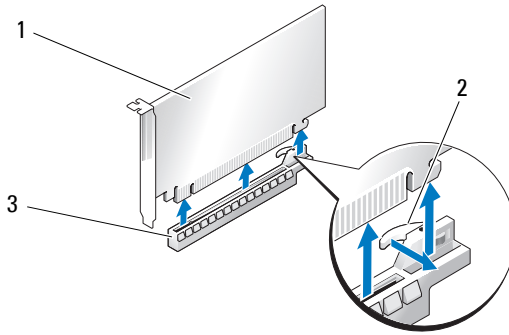
- 14** Remove the filler bracket or existing card (see "Replacing the PCI and PCI Express Cards" on page 35) to create a card-slot opening.

- 15** 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.

- 16** Position the card so that it is aligned with the slot and the securing tab (if present) is aligned with the slot.


 **NOTE:** If the card is full length, insert the card guide into the alignment slot on the fan bracket.



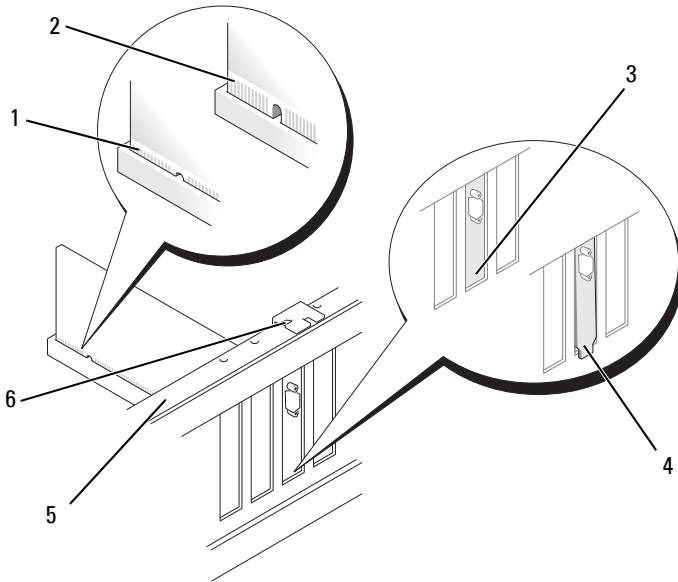
1 PCIe x16 card

2 securing tab

3 PCIe x16 card slot

 **CAUTION:** Ensure that you release the securing tab to seat the card. If the card is not installed correctly, you may damage the system board.

**17** Gently pull the securing tab (if present) and place the card in the connector. Press down firmly and ensure that the card is fully seated in the slot.



- |   |                                      |   |                                            |
|---|--------------------------------------|---|--------------------------------------------|
| 1 | card connector (seated)              | 2 | card connector (not seated)                |
| 3 | bracket properly aligned within slot | 4 | bracket improperly aligned outside of slot |
| 5 | alignment bar                        | 6 | alignment guide                            |

**CAUTION:** 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.

**CAUTION:** An incorrectly attached graphics power cable may result in degraded graphics performance.

**18** Connect any cables that should be attached to the card.

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


**CAUTION:** Before rotating the card retainer back into place, ensure that the tops of all cards and filler brackets are flush with the alignment bar and the notch in the top of each card or filler bracket fits around the alignment guide.

- 19** Rotate the graphics card bridge back into its original position; push its tip so that its tab clicks into place.
- 20** If present, lower the graphics card bridge that lays over the installed cards and snap it into place.
- 21** Replace the computer cover (see "Replacing the Computer Cover" on page 17), reconnect the computer and devices to electrical outlets, and then turn them on.
- 22** Install any drivers required for the card as described in the card documentation.







# Replacing Drives

 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

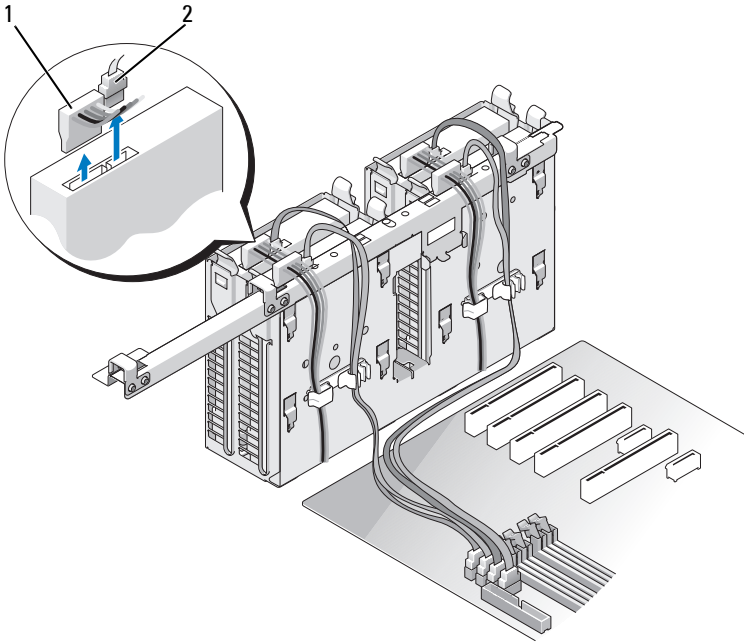
## Replacing a Hard Drive

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

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

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Disconnect the power cable and the data cable from the hard drive.

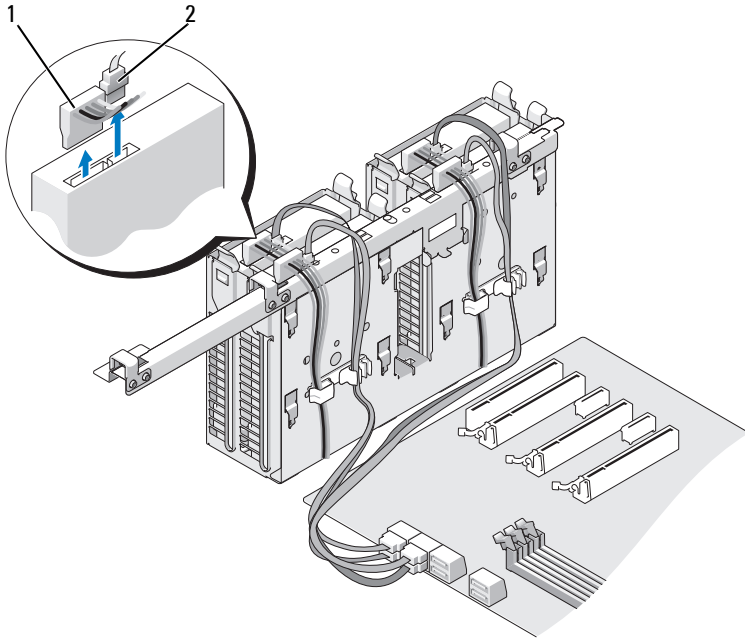
Dell™ XPS™ 730:



1 power cable

2 data cable

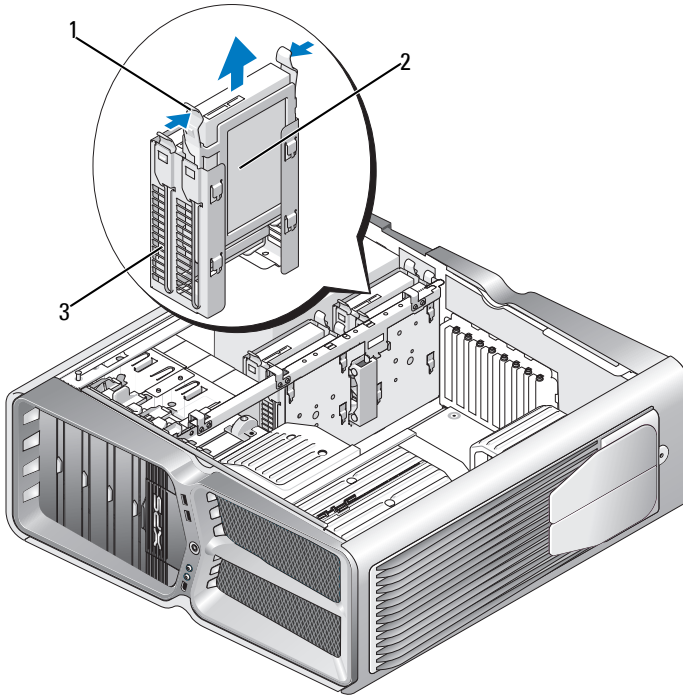
Dell XPS 730X:





1 power cable

2 data cable

- 4 Press the blue tabs on each side of the hard drive bracket toward each other and slide the drive up and out of the hard drive bay.

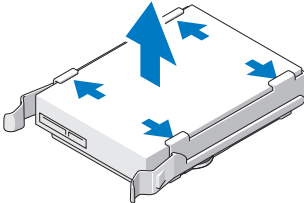


- 1 blue tabs (2)
- 2 hard drive
- 3 hard drive bay

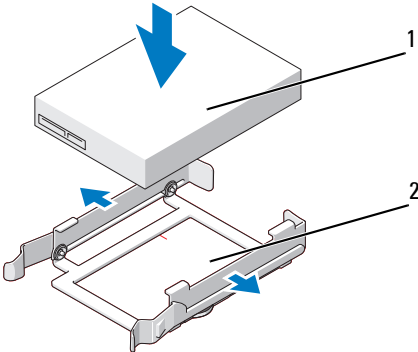
-  **NOTE:** If a hard drive bracket is installed inside the hard drive bay, remove the bracket before you install a new hard drive.
- 5 Prepare the new hard drive for installation and check the documentation for the hard drive to verify that the drive is configured for your computer.
  -  **NOTE:** If the hard drive you are installing does not have the hard drive bracket attached, use your original hard drive bracket; snap the bracket onto the new drive.

**3.5" hard drive:**

Removal:



Replacement:

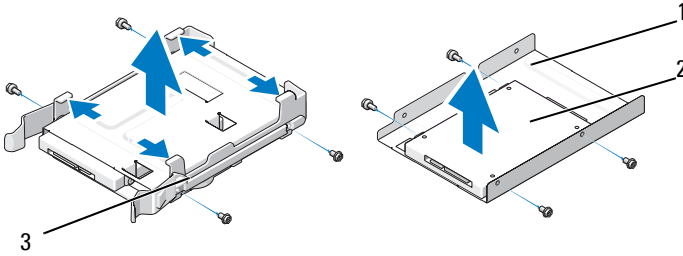


1 hard drive

2 hard drive bracket

## 2.5" hard drive:

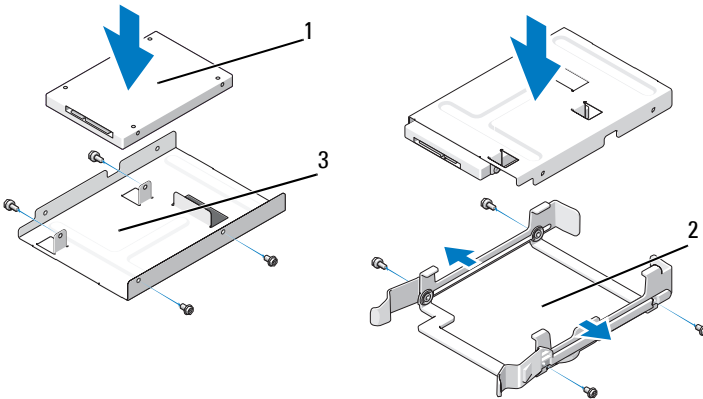
### Removal:



- 1 hard drive cage
- 3 hard drive bracket

- 2 hard drive

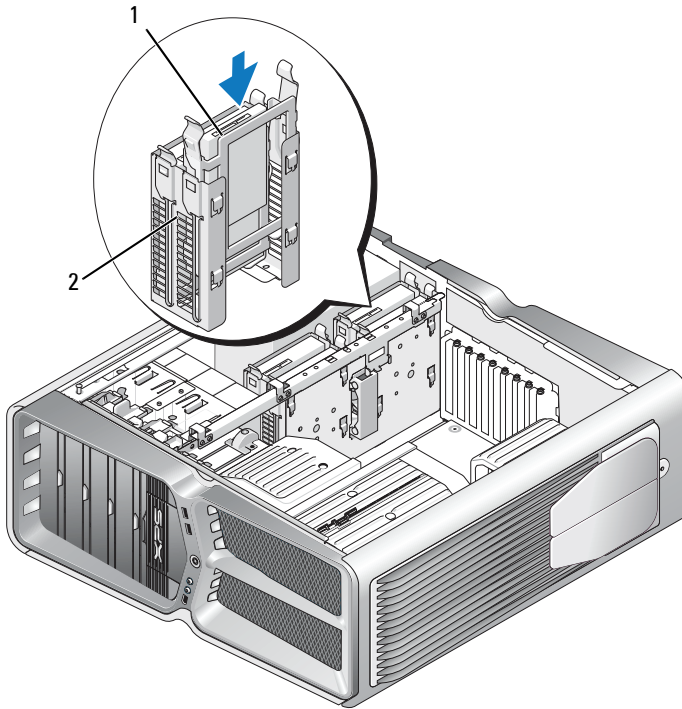
### Replacement:



- 1 hard drive
- 3 hard drive cage

- 2 hard drive bracket

- 6 Verify that the hard drive bay is empty and unobstructed.
- 7 Slide the hard drive into the hard drive bay until it clicks securely into place.



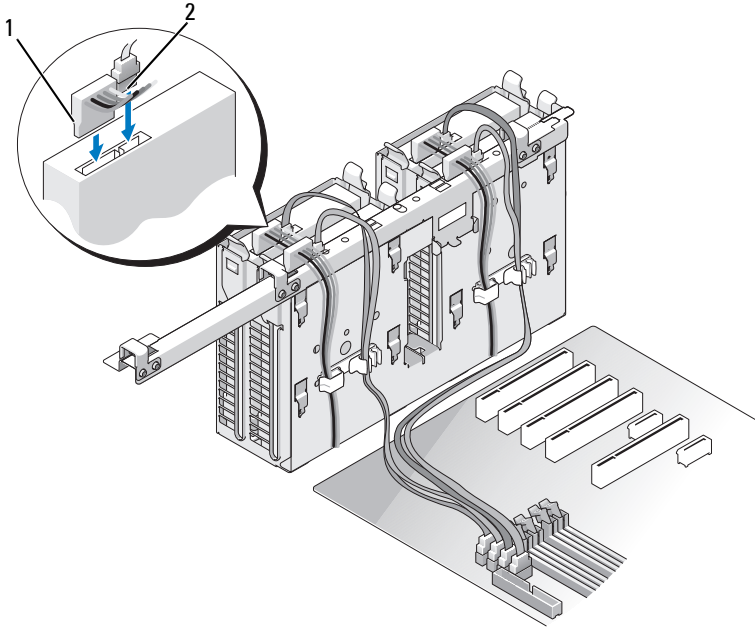
1 hard drive

2 hard drive bay

**⚠ CAUTION: Ensure that all connectors are properly cabled and firmly seated.**

- 8 Connect the power cable to the hard drive.
- 9 Connect the hard drive data cable to the hard drive.

Dell XPS 730:

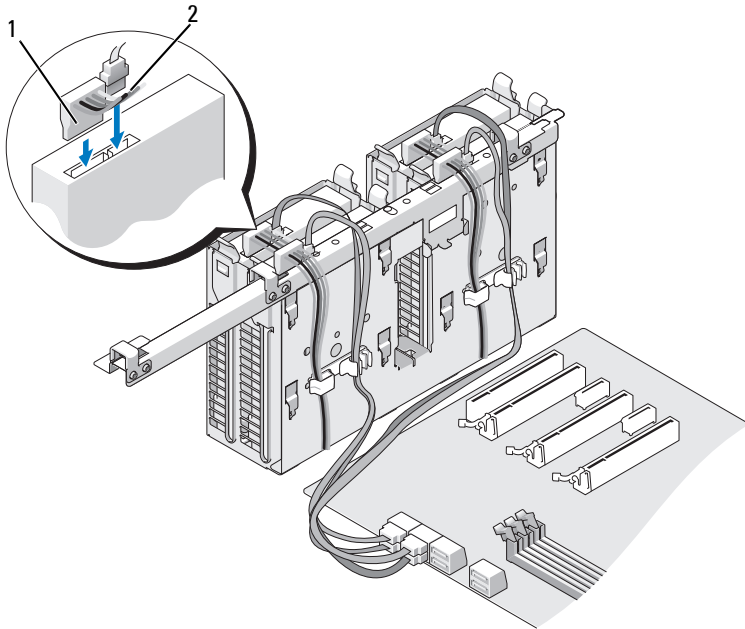


1 power cable

2 data cable



## Dell XPS 730X:



1 power cable

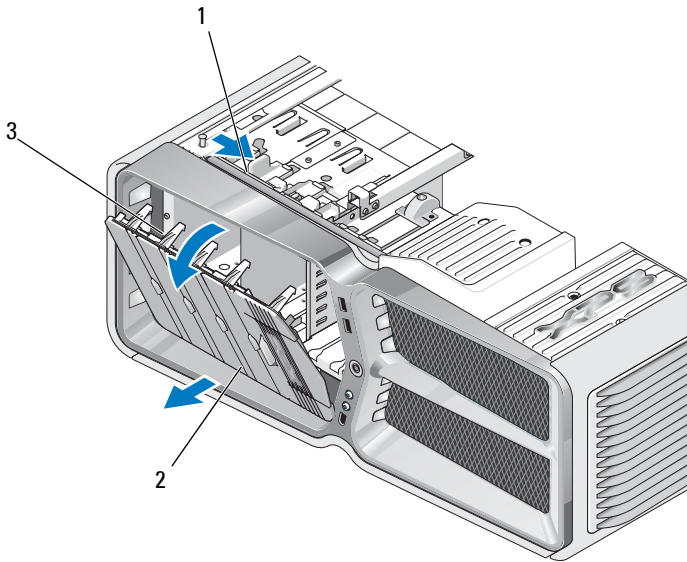
2 data cable

- 10 Replace the computer cover (see "Replacing the Computer Cover" on page 17).
- 11 Connect the 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.

## Replacing the Drive Panel

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).

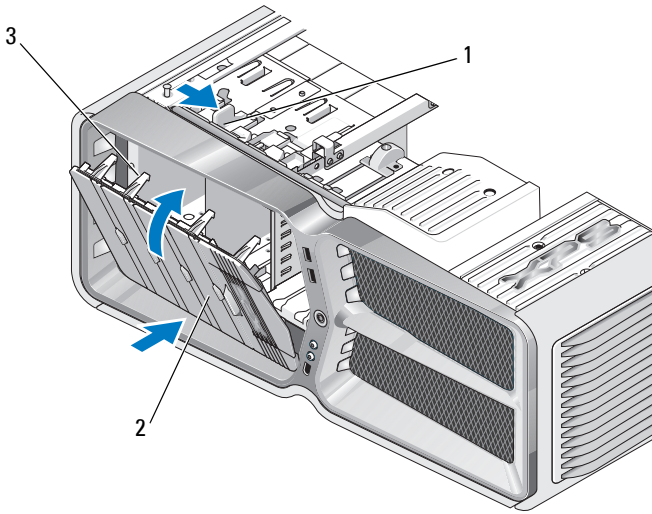
- 3 Grasp the drive release latch and slide it towards the base of the computer until the drive panel snaps open.



- 1 drive release latch
- 3 drive panel tabs

- 2 drive panel

- 4 Pivot the drive panel outward and lift it from its side hinges.
- 5 Set the drive panel aside in a secure location.
- 6 To install the new drive panel, align the drive panel tabs with the side door hinges.



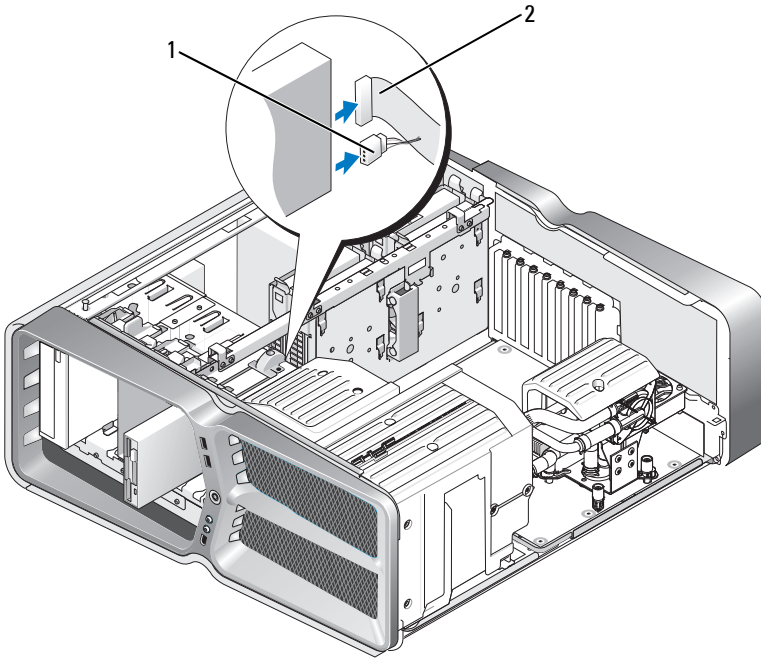
- 1 drive release latch
- 3 drive panel tabs

2 drive panel

- 7 Rotate the drive panel toward the computer until it snaps into place on the drive panel.
- 8 Replace the computer cover (see "Replacing the Computer Cover" on page 17).

## Replacing a Floppy Drive (XPS 730 Only)

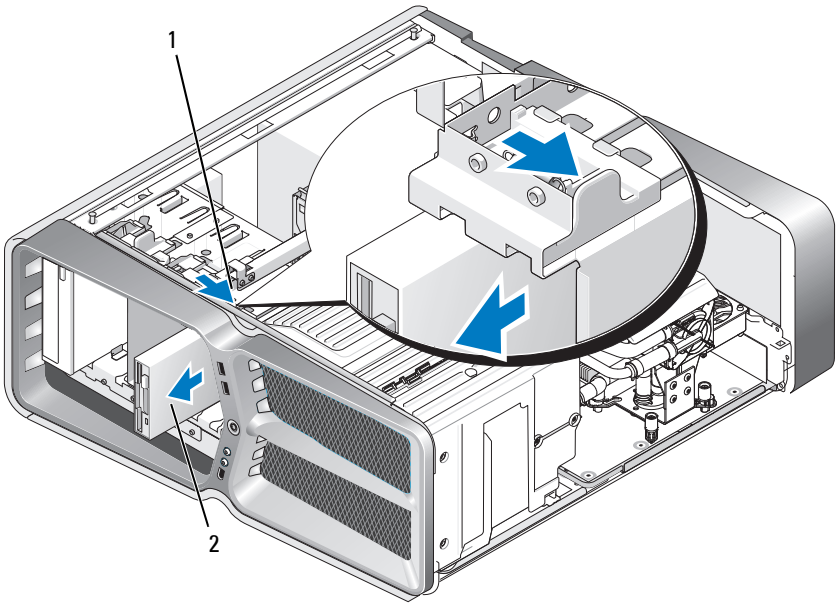
- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Remove the drive panel (see "Replacing the Drive Panel" on page 51).
- 4 Disconnect the power and data cables from the back of the floppy drive.



1 power cable

2 floppy drive data cable

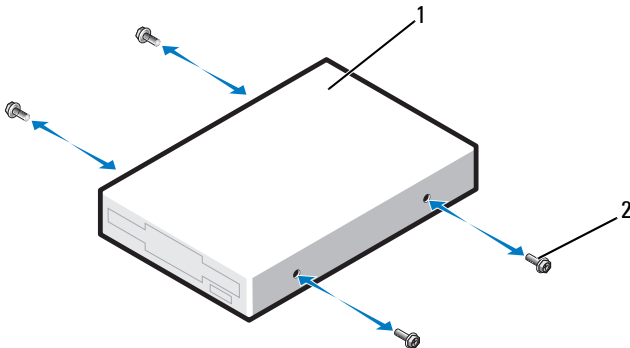
- 5 Slide the drive release latch towards the base of the computer to release the shoulder screw, and then slide the drive out of the drive bay.



1 drive release latch

2 floppy drive

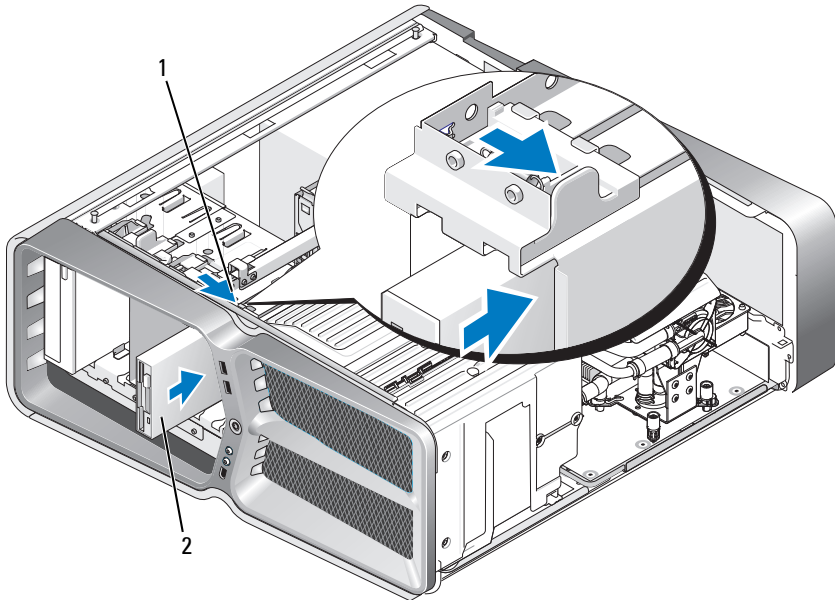
- 6** If no screws are attached to the new floppy drive, check the inside of the drive panel for shoulder screws. If screws are present, attach the screws to the new drive.



1 floppy drive

2 shoulder screws (4)

7 Slide the floppy drive into the drive bay until it clicks into place.



1 drive release latch

2 floppy drive

8 Connect the power and data cables to the back of the floppy drive.

9 Check all cable connections and fold cables out of the way to avoid blocking airflow between the fan and cooling vents.

10 Replace the drive panel (see "Replacing the Drive Panel" on page 51).

11 Replace the computer cover (see "Replacing the Computer Cover" on page 17).

12 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.

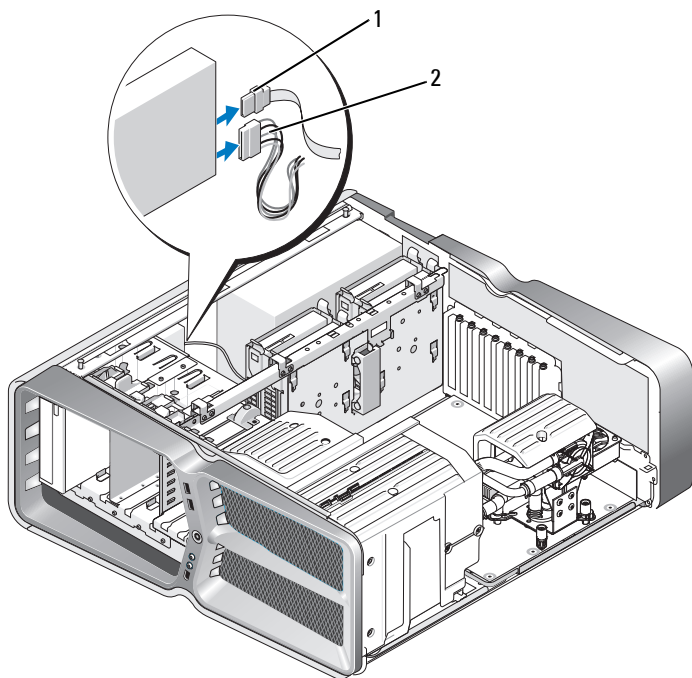
- 13 Enter system setup (see "System Setup" on page 97), and select the appropriate **Diskette Drive** option.

## Replacing an Optical Drive

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Remove the drive panel (see "Replacing the Drive Panel" on page 51).
- 4 Disconnect the power and data cables from the back of the drive.



**NOTE:** If you are uninstalling your only optical drive and will not replace it at this time, disconnect the data cable from the system board and set it aside.

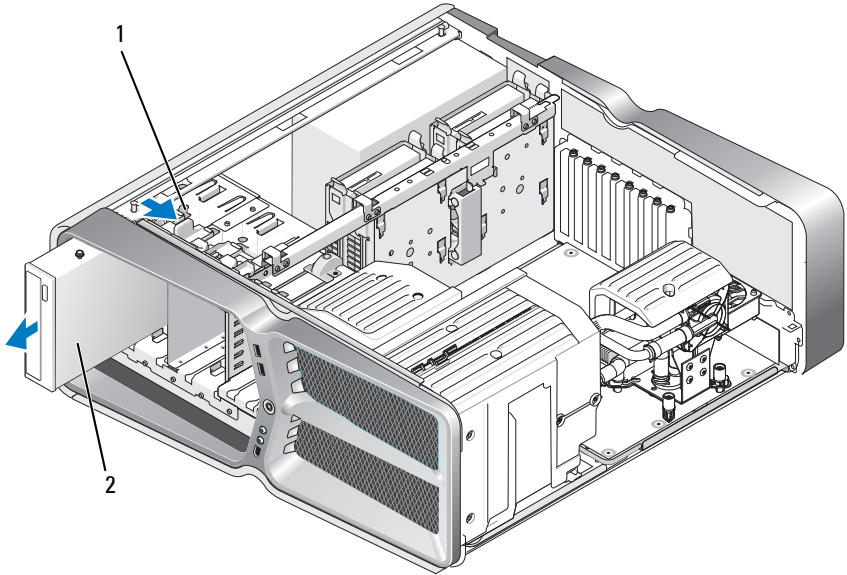


1 data cable

2 power cable

- 5 Slide the drive release latch towards the base of the computer to release the shoulder screw, and then slide the optical drive out of the drive bay.






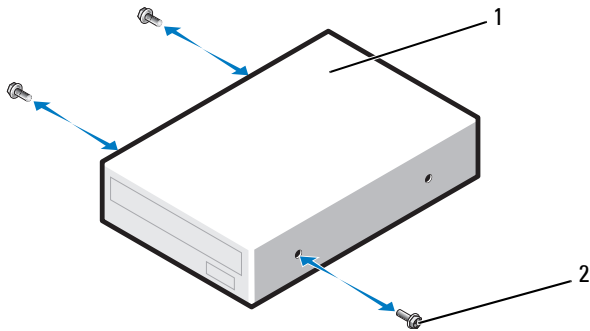
1 drive release latch

2 optical drive

- 6 To replace the optical drive, prepare the drive for installation and check the documentation that accompanied the drive to verify that the drive is configured for your computer.

 **NOTE:** If you are installing an IDE drive, configure the drive for the cable select setting.

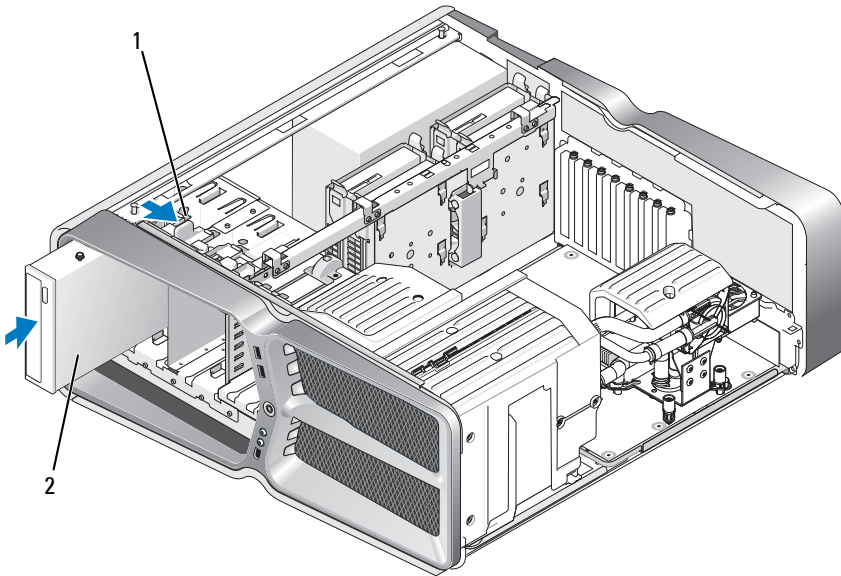
- 7 If no screws are attached to the drive, check the inside of the drive panel for screws and, if screws are present, attach the screws to the new drive.



1 optical drive

2 shoulder screws (3)

- 8** Gently slide the drive into the drive bay until you hear a click or feel the drive securely installed.

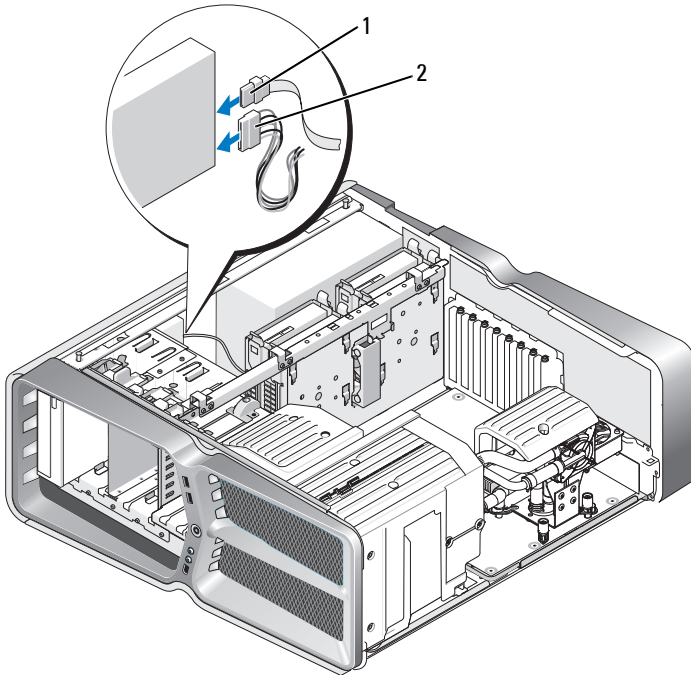


1 drive release latch

2 optical drive

- 9** Attach the power and data cables to the optical drive.

To locate the system board connector, see "System Board Components" on page 8.



**1** power cable

**2** data cable

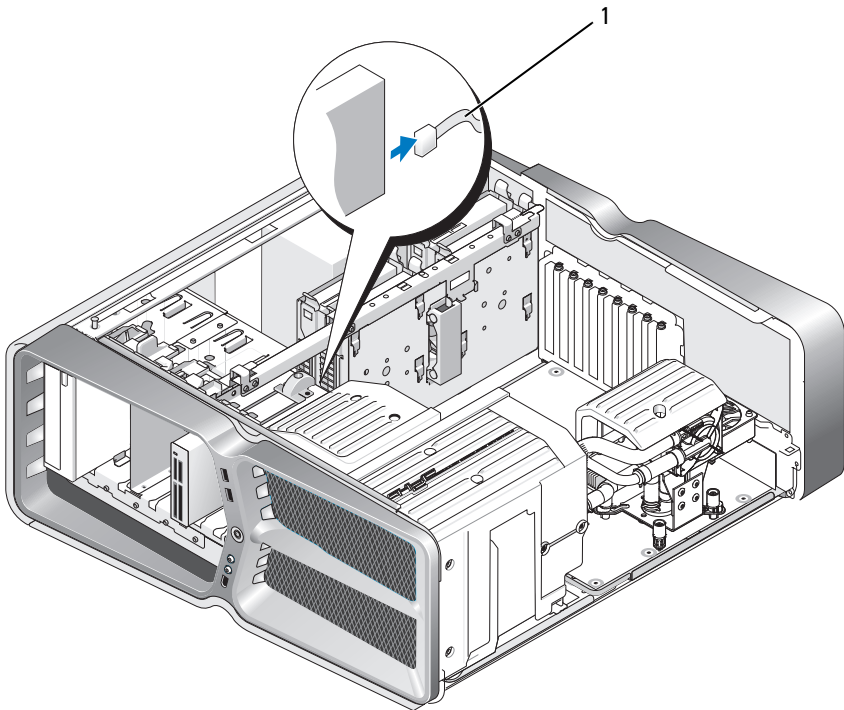
- 10** Check all cable connections and fold cables out of the way to avoid blocking airflow between the fan and cooling vents.
- 11** Replace the drive panel (see "Replacing the Drive Panel" on page 51).
- 12** Replace the computer cover (see "Replacing the Computer Cover" on page 17).
- 13** Connect 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.

- 14 Enter system setup (see "System Setup" on page 97) and select the appropriate Drive option.

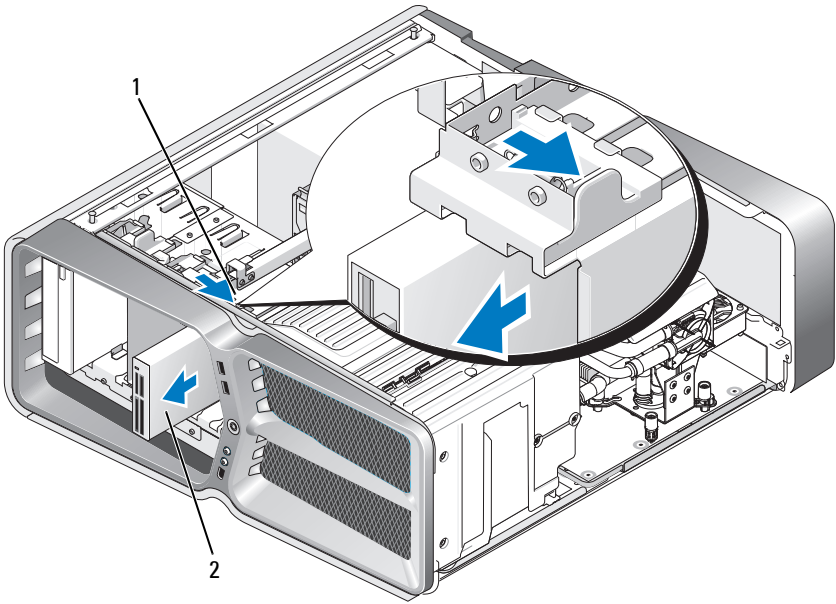
## Replacing a Media Card Reader

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Remove the drive panel (see "Replacing the Drive Panel" on page 51).
- 4 Disconnect the cable from the back of the Media Card Reader.



- 1 media card reader cable

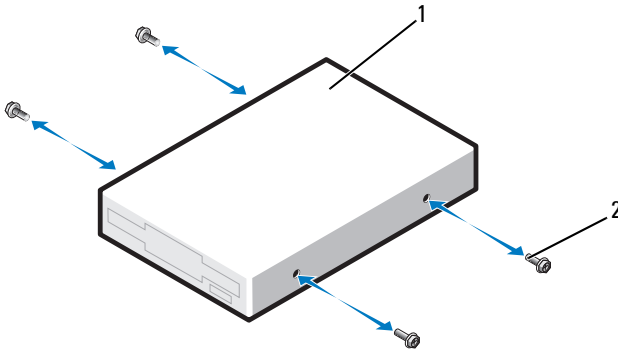
- 5 Slide the drive release latch towards the base of the computer to release the shoulder screw, and then slide the media card reader out of the drive bay.



1 drive release latch

2 media card reader

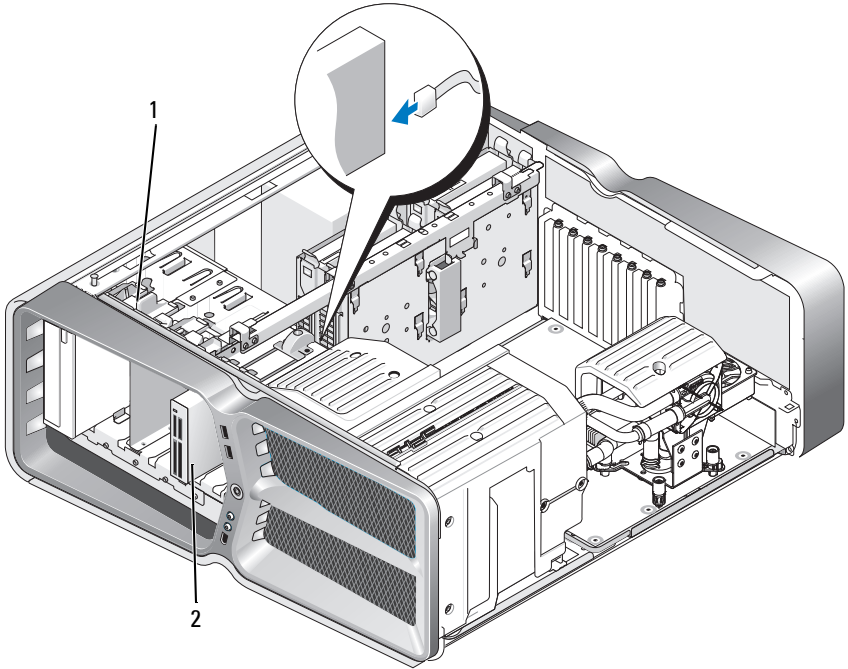
- 6** If no screws are attached to the new Media Card Reader, check the inside of the drive panel for shoulder screws. If screws are present, attach the screws to the new card reader.



1 media card reader

2 shoulder screws (4)

- 7** Slide the Media Card Reader into the drive bay until it clicks into place.



1 drive release latch

2 media card reader


- 8 Attach the cable to the back of the Media Card Reader.
- 9 Check all cable connections and fold cables out of the way to avoid blocking airflow between the fan and cooling vents.
- 10 Replace the drive panel (see "Replacing the Drive Panel" on page 51).
- 11 Replace the computer cover (see "Replacing the Computer Cover" on page 17).
- 12 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.

- 13** Enter system setup (see "System Setup" on page 97) and select the appropriate **USB for FlexBay** option.



## Replacing the Heat Sink Assembly


 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

 **CAUTION:** Do not perform the following steps unless you are familiar with hardware removal and replacement. Performing these steps incorrectly could damage your system board. For technical service, see the *Setup Guide*.

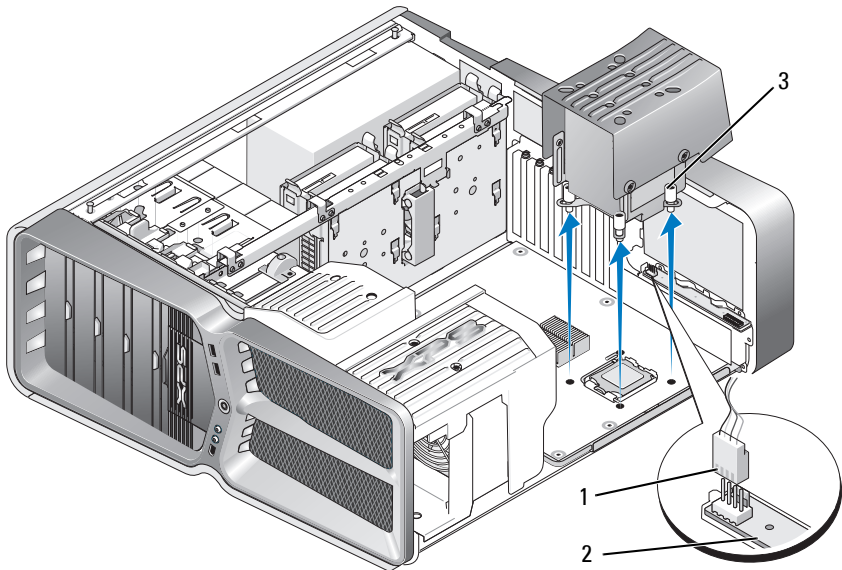
Your computer uses one of the following types of processor cooling solutions, air-cooling or H2Ceramic (also called H2C or Hot-to-Cold) liquid-cooling system.

### Replacing the Air Cooled Heat Sink Assembly

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).

 **WARNING:** The processor 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.

- 3 Loosen the four captive screws that secure the heatsink to the chassis.
- 4 Gently lift the heat sink assembly out of the chassis. You may have to gently twist the heat sink to fully disengage the heat sink assembly.
- 5 Disconnect the fan cable from the rear fan connector on the LED circuit board at the back of the chassis.




- 1 fan power connector
- 2 LED circuit board
- 3 captive screws (4)

**CAUTION:** The processor heat sink is attached to the processor fan shroud. When you remove the processor fan shroud, lay it upside down or on its side to avoid damaging the heat sink thermal interface.


**CAUTION:** Ensure that adequate thermal grease is applied to the top of the processor. Thermal grease is critical for ensuring adequate thermal bonding, which is a requirement for optimal processor operation.

- 6 To replace the air cooled heat sing assembly, apply thermal grease to the top of the processor as needed.
- 7 Align the screw holes on the heat sink assembly with the holes on the base of the computer, then tighten the four screws to secure the assembly.
- 8 Connect the fan cable to the rear fan connector on the LED circuit board.
- 9 Replace the computer cover (see "Replacing the Computer Cover" on page 17).

# Replacing the Liquid Cooling Heat Sink Assembly

 **WARNING:** The liquid cooling assembly is responsible for cooling the system board chipset in addition to the CPU. If the liquid cooling assembly is replaced with an assembly other than the original, a cooling solution must be installed to avoid overheating the chipset. Failure to install a cooling solution, either third-party or Dell provided, may result in damage to your system and render the system inoperable.

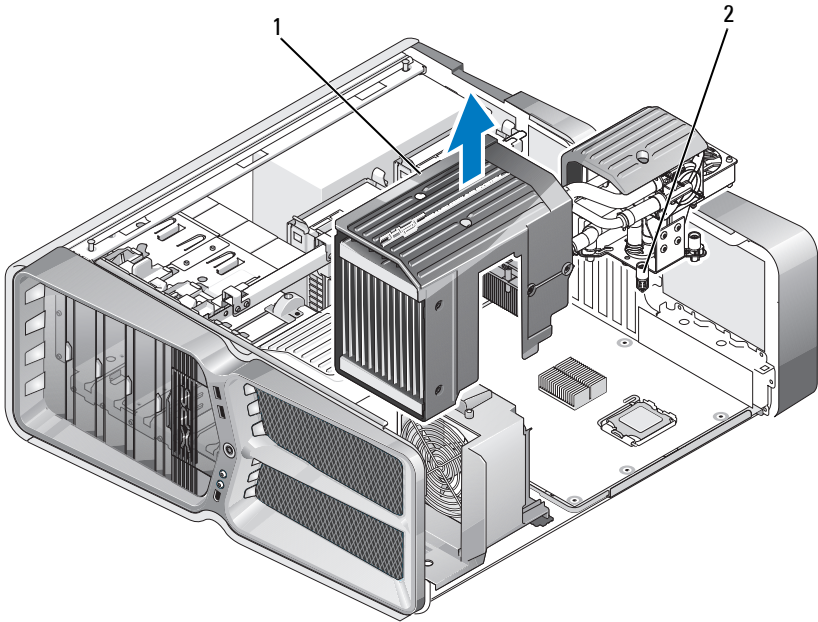
- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).

 **WARNING:** The processor 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.

- 3 Observe the following cautions when working with the liquid cooling assembly.
  - The liquid cooling assembly is not user serviceable or upgradeable. All required service should be done by qualified service personnel only.
  - The liquid cooling assembly in your system contains a non-refillable coolant. In the event of a coolant leak, shut down your system immediately. Unplug your system from the power outlet and contact Dell Technical Support.
  - In the event of skin contact with the coolant, wash your skin with soap and water. Seek medical attention if irritation develops.
  - In the event of eye contact with the coolant, rinse your eyes immediately with water, with your eyelids open, for 15 minutes. Seek medical attention if irritation persists.
- 4 Disconnect the liquid cooling cable from the H2C connector on the Master Control Board (see "Master Control Board" on page 12).

 **CAUTION:** The processor heat sink is attached to the liquid cooling assembly. When you remove the liquid cooling assembly, lay it upside down or on its side to avoid damaging the heatsink thermal interface.

- 5 Loosen the screws on the liquid cooling assembly, then lift the assembly out of the computer and set it aside.



1 liquid cooling assembly

2 captive screws


**△ CAUTION: Ensure that adequate thermal grease is applied to the top of the processor. Thermal grease is critical for ensuring adequate thermal bonding, which is a requirement for optimal processor operation.**

- 6 To install the liquid cooling heat sink assembly, apply thermal grease to the top of the processor as needed.
- 7 Align the screw holes on the liquid cooling assembly with the holes on the base of the computer, then tighten the six screws to secure the assembly.
- 8 Connect the liquid cooling cable to the H2C connector on the Master Control Board (see "Master Control Board" on page 12).
- 9 Close the computer cover (see "Replacing the Computer Cover" on page 17).
- 10 Connect your computer and devices to electrical outlets, and turn them on.






## Replacing the Processor


 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

 **CAUTION:** Do not perform the following steps unless you are familiar with hardware removal and replacement. Performing these steps incorrectly could damage your system board. For technical service, see the *Setup Guide*.

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).

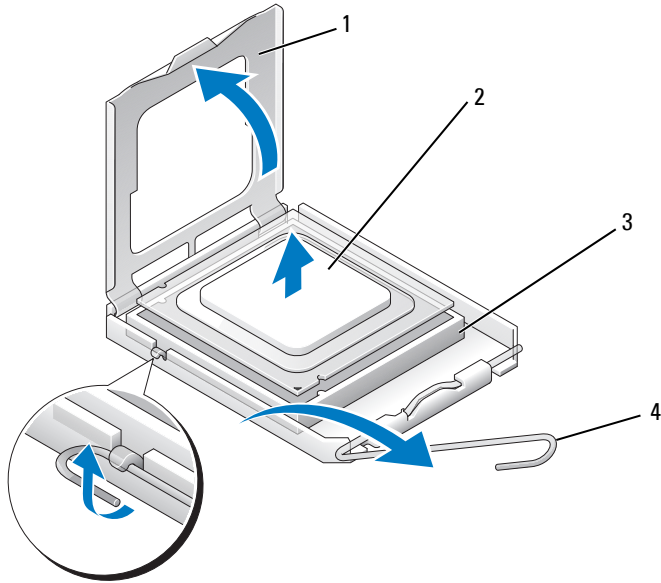
 **WARNING:** Despite having a plastic shield, the heat sink assembly may be very hot during normal operation. Be sure that it has had sufficient time to cool before you touch it.

- 3 Disconnect the power cables from the ATX\_POWER and ATX\_CPU connectors (see "System Board Components" on page 8) on the system board.
- 4 Remove the processor fan and heat sink assembly from the computer (see "Replacing the Processor Fan Assembly" on page 79).

 **NOTE:** Unless a new heat sink is required for the new processor, reuse the original heat sink assembly when you replace the processor.

- 5 Press and push the release lever down and out to release it from the tab that secures it.
- 6 Open the processor cover, if applicable.

## Removing the Processor



- |   |                 |   |               |
|---|-----------------|---|---------------|
| 1 | processor cover | 2 | processor     |
| 3 | socket          | 4 | release lever |

**CAUTION:** When removing or replacing the processor, do not touch any of the pins inside the socket or allow any object to fall on the pins in the socket.

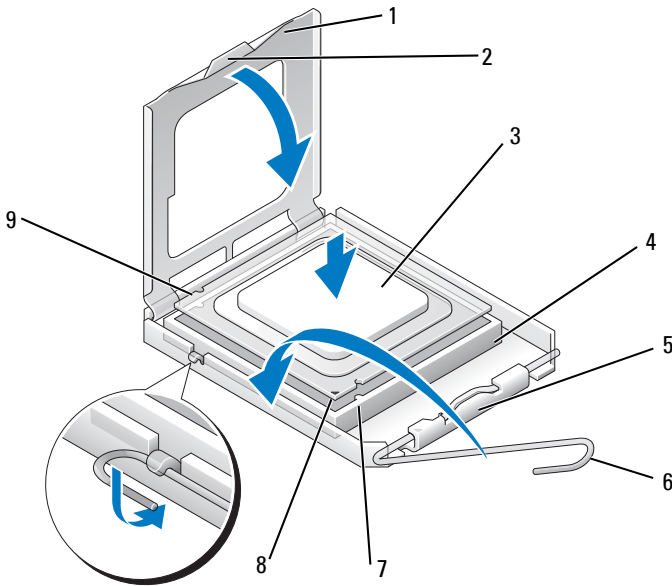
- 7 Lift the processor to remove it from the socket, place it aside in a safe and secure place.

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

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



# Installing the Processor



- |   |                       |   |                           |
|---|-----------------------|---|---------------------------|
| 1 | processor cover       | 2 | tab                       |
| 3 | processor             | 4 | socket                    |
| 5 | center cover latch    | 6 | release lever             |
| 7 | front alignment-notch | 8 | processor pin-1 indicator |
| 9 | rear alignment notch  |   |                           |

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

**△ CAUTION: Socket pins are delicate. To avoid damage, ensure that the processor is aligned properly with the socket, and do not use excessive force when you install the processor. Be careful not to touch or bend the pins on the system board.**

**10** Orient the front and rear alignment-notches on the processor with the front and rear alignment-notches on the socket.

**11** Align the pin-1 corners of the processor and socket.

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

- 12** Set the processor lightly in the socket and ensure that the processor is positioned correctly.
- 13** When the processor is fully seated in the socket, close the processor cover, if applicable.

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

- 14** Pivot the socket release lever back towards the socket, and snap it into place to secure the processor.

- 15** Clean the thermal grease from the bottom of the heat sink.


**△ CAUTION: Ensure that you apply new thermal grease. New thermal grease is critical for ensuring adequate thermal bonding, which is a requirement for optimal processor operation.**

- 16** Apply the new thermal grease to the top of the processor.
- 17** Install the processor fan and heat sink assembly (see "Replacing the Heat Sink Assembly" on page 67).

**△ CAUTION: Ensure that the processor fan and heat sink assembly is correctly seated and secure.**

- 18** Replace the computer cover (see "Replacing the Computer Cover" on page 17).
- 19** Connect your computer and devices to electrical outlets, and then turn them on.

# Replacing Fans

 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

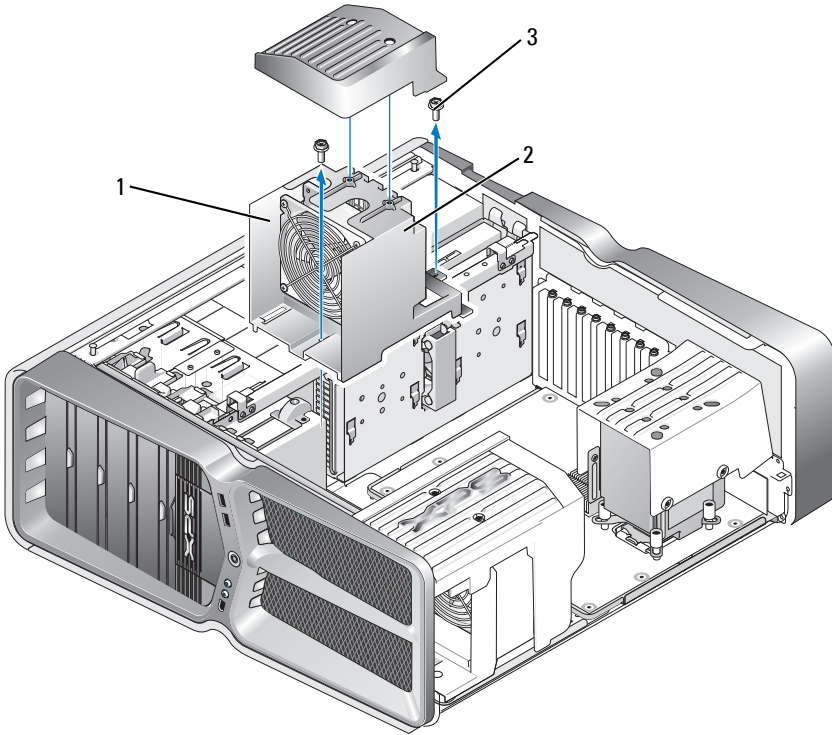
 **WARNING:** To guard against likelihood of electric shock, laceration by moving fan blades or other unexpected injuries, always unplug your computer from the electrical outlet before removing the cover.

## Removing the Card Slot and Processor Fan Shrouds

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Remove the captive screws on top of the shroud you are removing and lift the shroud out of the chassis.

## Replacing the Card Slot Fan Assembly

- 1 Remove the card slot fan shroud (see "Removing the Card Slot and Processor Fan Shrouds" on page 77).
- 2 Remove any full-length expansion cards (see "Replacing the PCI and PCI Express Cards" on page 35).
- 3 Disconnect the fan cable from the FAN\_CAGE connector on the system board.
- 4 Remove the front and back screws on the base of the fan cage.
- 5 Pull the fan cage to towards the rear of the chassis to disengage the cage tabs.
- 6 Lift the cage off the chassis.



**1** cage housing

**2** fan cage

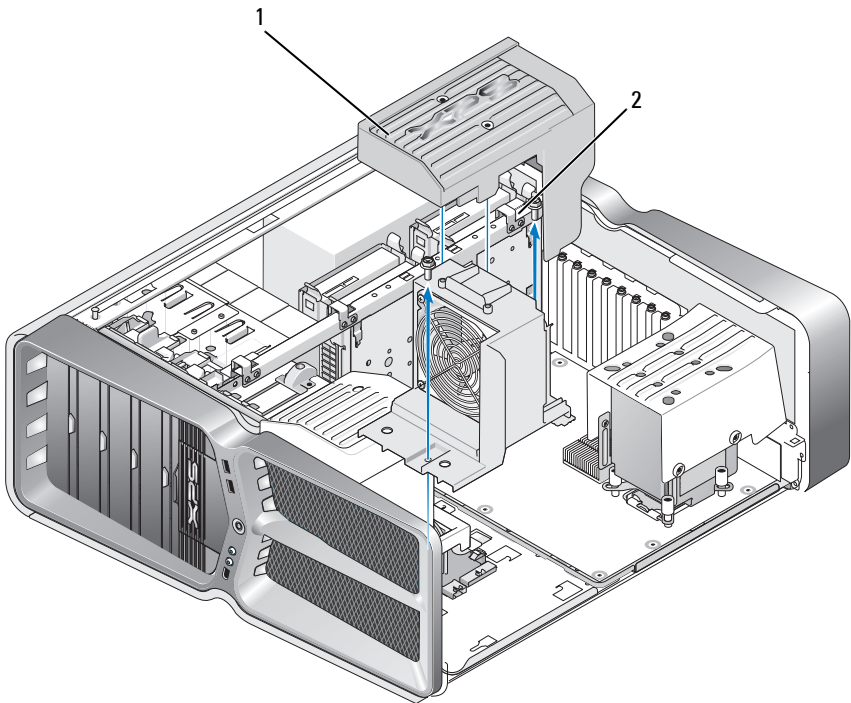
**3** screws (2)

- 7** To install the card slot fan assembly, connect the fan cable to the FAN\_CAGE connector on the system board (see "Master Control Board" on page 12).
- 8** Align the fan cage tabs with the slots in the chassis. Insert the tabs and push the cage towards the front of the chassis.
- 9** Screw in the fan retention screws on the front and back of the fan cage.
- 10** Replace any expansion cards that you removed (see "Replacing a PCI/PCI Express Card" on page 27).
- 11** Replace the PCI card fan shroud and captive screws on top of it.

- 12 Replace the computer cover (see "Replacing the Computer Cover" on page 17).
- 13 Connect your computer and devices to electrical outlets, and then turn them on.

### Replacing the Processor Fan Assembly

- 1 Remove the card slot fan shroud (see "Removing the Card Slot and Processor Fan Shrouds" on page 77).



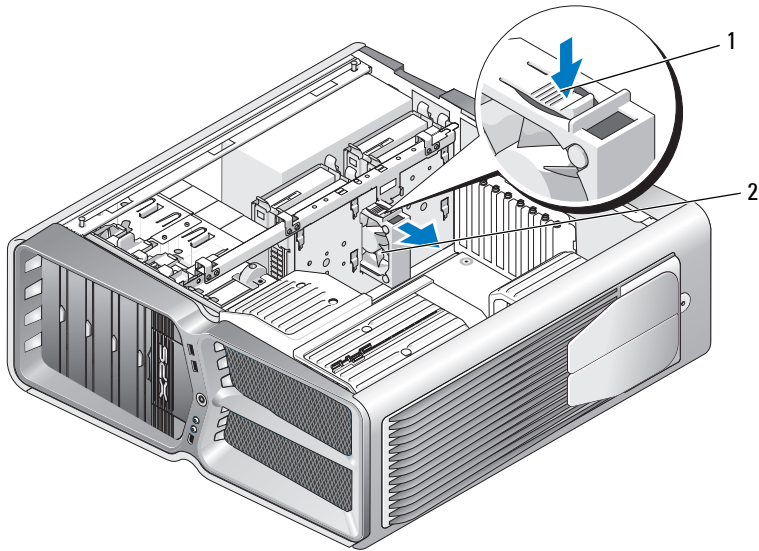
1 processor fan shroud

2 captive screws (2)

- 2 Remove the processor fan shroud (see "Removing the Card Slot and Processor Fan Shrouds" on page 77)
- 3 Disconnect the fan cable from the FAN\_CPU\_FRONT connector on the Master Control Board (see "Master Control Board" on page 12).
- 4 Loosen the captive screws securing the processor fan shroud to the chassis, then rotate the shroud back.
- 5 To install the processor fan assembly, align the hinge slots on the processor fan shroud with the hinge guides on the chassis.
- 6 Gently rotate the processor fan shroud towards the fan, and then tighten the two captive screws.
- 7 Connect the fan cable to the rear fan connector on the LED circuit board at the back of the chassis.
- 8 Replace the processor fan shroud on top of the processor fan assembly, and then tighten the two captive screws.
- 9 Replace the computer cover (see "Replacing the Computer Cover" on page 17).
- 10 Connect your computer and devices to electrical outlets, and turn them on.

## **Replacing the Hard Drive Fan**

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Remove all installed memory modules (see "Replacing Memory Module(s)" on page 23).
- 4 Disconnect the fan cable from the FAN\_CPU\_FRONT connector on the Master Control Board (see "Master Control Board" on page 12).
- 5 Press the release latch on the hard drive fan and slide it away from the hard drive bays and lift to remove from the computer.



1 hard-drive fan release latch

2 hard drive fan

- 6 To install the hard drive fan, slide the fan between the hard drive bays until it snaps into place.
- 7 Connect the fan cable to the FAN\_HDD connector on the Master Control Board (see "Master Control Board" on page 12).
- 8 Replace the computer cover (see "Replacing the Computer Cover" on page 17).
- 9 Connect your computer and devices to electrical outlets, and then turn them on.



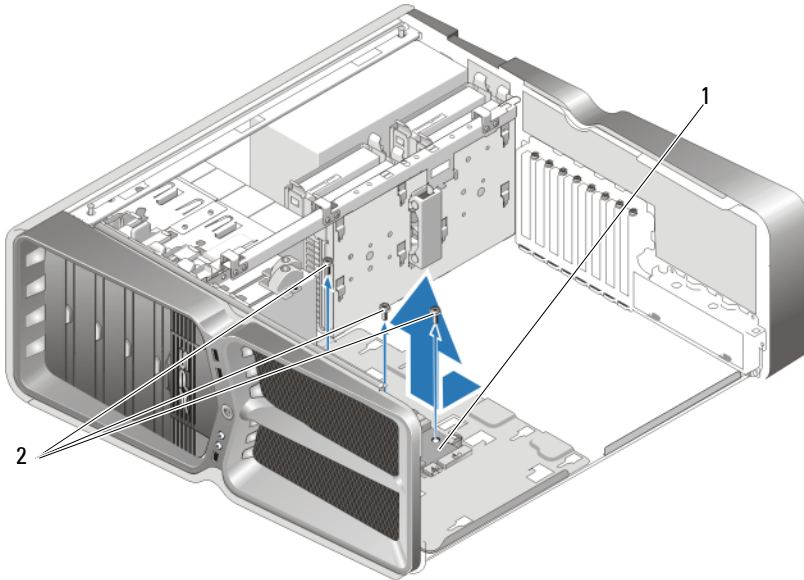


# Replacing the Master Control Board

 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the **Regulatory Compliance Homepage** at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance)

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Remove the fan shrouds (see "Removing the Card Slot and Processor Fan Shrouds" on page 77).
- 4 Remove the card slot assembly (see "Replacing the Card Slot Fan Assembly" on page 77).
- 5 Remove the processor fan assembly (see "Replacing the Processor Fan Assembly" on page 79).
- 6 Disconnect all cables from the master control board.
- 7 Remove three screws that secure the master control panel to the metal tray.

**8** Lift the master control board out.



**1** master control board


**2** Screws (3)

- 9** To replace the master control board, Orient the board on the metal tray.
- 10** Replace the three screws to secure the master control board assembly to the metal tray.
- 11** Reconnect all cables to the master control board.
- 12** Replace the processor fan assembly (see "Replacing the Processor Fan Assembly" on page 79).
- 13** Replace the card slot fan assembly (see "Replacing the Card Slot Fan Assembly" on page 77).
- 14** Replace the fan shrouds.
- 15** Replace the computer cover (see "Replacing the Computer Cover" on page 17).

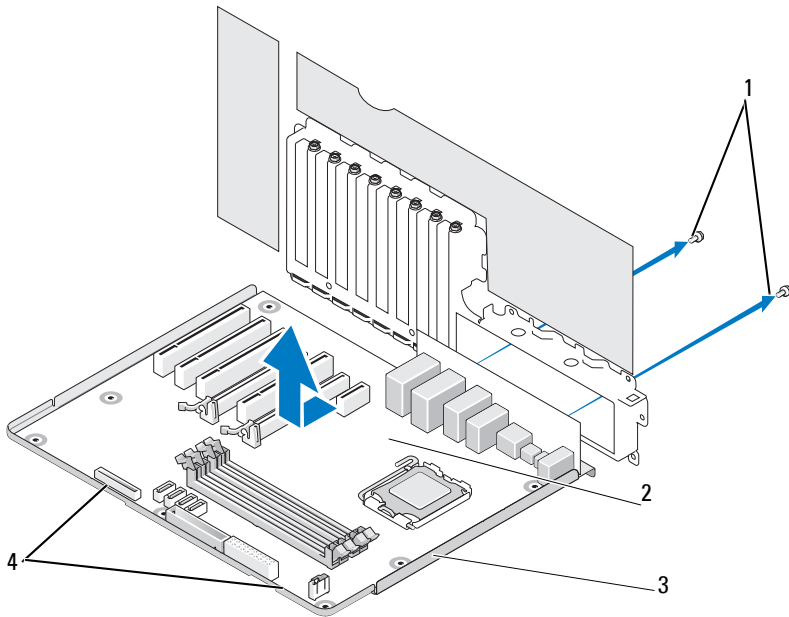
# Replacing the System Board

 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the **Regulatory Compliance Homepage** at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance)

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Remove any full-length expansion cards (see "Replacing the PCI and PCI Express Cards" on page 35).
- 4 Remove any additional components that may restrict access to the system board.
- 5 Disconnect all cables from the system board.

 **CAUTION:** If you are replacing the system board, visually compare the replacement system board to the existing system board to make sure that you have the correct part.

- 6 Remove the two screws securing the system board assembly to the chassis, then pull on the two tabs to slide the system board assembly towards the front of the computer.



- |   |            |   |              |
|---|------------|---|--------------|
| 1 | screws (2) | 2 | system board |
| 3 | metal tray | 4 | tabs         |

**CAUTION:** The system board and metal tray are connected and are removed as one piece.

**7** Carefully, lift the system board assembly up and out of the computer.

**CAUTION:** If you are replacing the system board, visually compare the replacement system board to the existing system board to make sure that you have the correct part.

**NOTE:** Some components and connectors on replacement system boards may be in different locations than corresponding connectors on the existing system board.

**NOTE:** Jumper settings on replacement system boards are preset by the factory.

**8** Transfer components from the existing system board to the replacement system board, if applicable.


- 9 Orient the system board assembly by aligning the notches on the bottom of the assembly with the tabs on the computer.
- 10 Slide the system board assembly toward the back of the computer until the assembly clicks into place.
- 11 Replace the two screws to secure the system board assembly to the chassis.
- 12 Replace any expansion cards that you removed (see "Replacing a PCI/PCI Express Card" on page 27).
- 13 Replace any additional components that you removed from the system board.
- 14 Reconnect all cables to the system board.
- 15 Replace the computer cover (see "Replacing the Computer Cover" on page 17).
- 16 Connect your computer and devices to electrical outlets, and then turn them on.
- 17 Flash the system BIOS, as needed.




**NOTE:** For information on flashing the system BIOS, see [support.dell.com](http://support.dell.com).

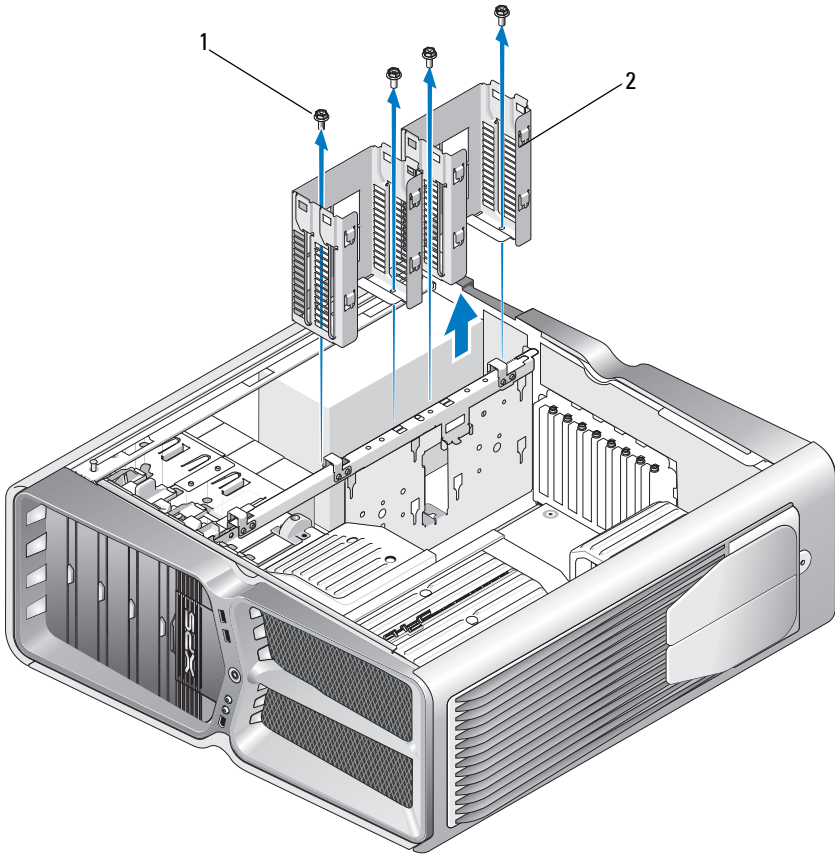


# Replacing the Power Supply

 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on [www.dell.com](http://www.dell.com) at the following location: [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

 **WARNING:** 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" on page 13.
- 2 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 3 Remove all hard drives installed in the interior hard drive bays (see "Replacing a Hard Drive" on page 43).
- 4 Remove the hard drive fan, if applicable (see "Replacing the Hard Drive Fan" on page 80).
- 5 Remove the two screws that attach the forward hard drive bay to the chassis.
- 6 Remove the forward hard drive bay from the chassis.

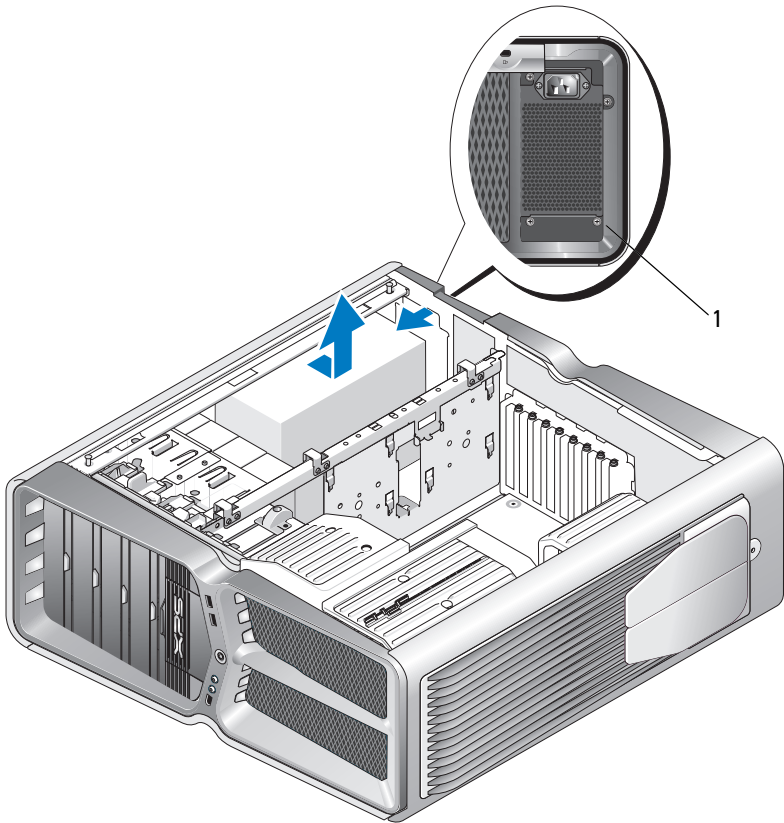


1 screws (4)

2 hard drive bays

- 7 Remove the four screws that attach the power supply to the back of the computer chassis.
- 8 Disconnect the power supply harness from the power supply by depressing the two tabs and pulling the harness away from the power supply.





- 1 power supply screws (4)
- 9 Slide the power supply towards the front of the computer to free it from the securing tabs on the computer chassis.
- 10 Slide the power supply toward the hard drive bay area, so that it will clear the protruding lip of the chassis and lift the power supply from the computer.
- 11 To replace the power supply, slide the new power supply into place, ensuring that the tabs on the rear wall of the computer chassis latch into place.

- 12** Replace the four screws that secure the power supply to the back of the computer chassis.
- 13** Reconnect the power supply harness to the power supply.
- 14** Replace the two hard drive bays.
- 15** Replace all hard drives installed in the interior hard drive bays (see "Replacing a Hard Drive" on page 43).
- 16** Replace the hard drive fan, if applicable (see "Replacing the Hard Drive Fan" on page 80).
- 17** Reconnect each of the DC power cables that were previously connected, carefully rerouting them as you found them.
- 18** Replace the computer cover (see "Replacing the Computer Cover" on page 17).
- 19** Connect your computer and devices to electrical outlets, and then turn them on.

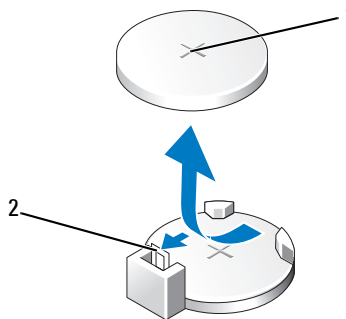
## Replacing the Battery

**⚠ WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

**⚠ WARNING:** 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.

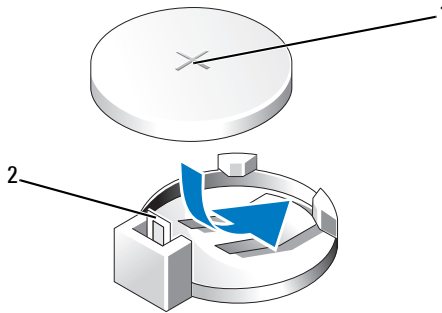
- 1 Record all the screens in system setup (see "System Setup" on page 97) so that you can restore the correct settings in step 10.
- 2 Follow the procedures in "Before You Begin" on page 13.
- 3 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 4 Locate the battery socket (see "System Board Components" on page 8).

**⚠ CAUTION:** 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.



1 battery (positive side)    2 battery release lever

- 5** Carefully press the battery release lever away from the battery and the battery will pop out.
- 6** Remove the battery from the system and properly dispose of the battery.
- 7** Insert the new battery into the socket with the side labeled "+" facing up, then snap the battery into place.



1 battery (positive side)    2 battery release lever

- 8** Replace the computer cover (see "Replacing the Computer Cover" on page 17).
- 9** Connect your computer and devices to electrical outlets, and then turn them on.
- 10** Enter system setup (see "System Setup" on page 97) and restore the settings you recorded in step 1.

# System Setup

## Overview

Use System Setup to:

- change the system configuration information after you add, change, or remove any hardware in your computer.
- set or change a user-selectable option such as the user password.
- 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.



**CAUTION: Do not change the settings in system setup unless you are an expert computer user. Certain changes can cause your computer to work incorrectly.**

## Entering System Setup


- 1 Turn on (or restart) your computer.
- 2 When the DELL logo appears, press <F2> immediately.



**NOTE:** Keyboard failure may result when a key on the keyboard is held down for extended periods of time. To avoid possible keyboard failure, press and release <F2> in even intervals until the system setup screen appears.

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 Options—Dell™ XPS™ 730

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

## Main

System Date	Displays the current date in the mm:dd:yy format.
System Time	Displays the time in the hh:mm:ss format.
SATA 0	Displays the SATA 0 drive integrated in the system.
SATA 1	Displays the SATA 1 drive integrated in the system.
System Info	Displays the BIOS version number and date, system model name and the service tag of the computer.
Memory Info	Indicates amount of installed memory, usable memory, memory speed, memory channel mode (dual or single), and the type of memory technology used.

## Advanced

CPU Type	Displays the processor type.
CPU Speed	Displays the processor speed.
Cache L2	Displays the processor L2 cache size.
Advanced Chipset Features	Displays the video memory size.
Integrated Peripherals	Allows you to enable or disable these integrated devices: <b>HD Audio</b> , <b>Onboard LAN connector</b> , <b>Onboard LAN Boot ROM</b> , and <b>Side logo</b> . <b>Serial ATA Configuration</b> can be set to IDE or AHCI mode.
CPU Configuration	Allows you to enable or disable the CPU features that enhance the performance of the system.
USB Configuration	Allows you to enable or disable the USB controller.

## Power

ACPI Suspend Type	Specifies the ACPI suspend type. The default is S3.
Auto Power On	Allows you to enable or disable an alarm to turn on the computer automatically.
AC Recovery	Specifies the behaviour of the system after recovering from a power loss. <ul style="list-style-type: none"><li>• Power on — The computer turns on after it recovers from a power failure.</li><li>• Power off — The computer remains powered off.</li><li>• Last state— The computer returns the power state it was in before the power failure.</li></ul>
HDD Acoustic Mode	Determines the acoustic mode at which the hard drive operates. <p>Bypass — Do nothing (needed for older drives).</p> <p>Quiet — The hard drive operates at its most quiet setting.</p> <p>Performance — The hard drive operates at its maximum speed.</p> <p><b>NOTE:</b> Switching to performance mode may cause an increase in noise produced by the drive, but does not affect the drive's performance.</p>

## Boot

Boot Device Priority	Sets the boot priority among the available devices.
Hard Disk Boot Priority	Sets the hard drive boot priority. The items displayed are dynamically updated according to the hard drives detected.
CD/DVD Boot Priority	Sets the optical drive boot priority. The items displayed are dynamically updated according to the optical drives detected.
Boot Settings Configuration	Allows the BIOS to skip certain tests while booting. This decreases the time needed to boot the system.
Security	Allows you to set or change the supervisor password.

## Exit

Exit Options Provides options to Save Changes and Exit, Discard Changes and Exit, Load Optimal Defaults, and Discard Changes.

# System Setup Options—Dell XPS 730X

## System Information

Product Name	XPS 730X.
BIOS Version	Displays the BIOS version number and date information.
Input Service tag	Allows you to input the service tag.
Service Tag	Displays the service tag of the computer.
Asset Tag	Displays the Asset tag of the computer.
Memory Installed	Indicates amount of memory installed.
Memory Available	Indicates the amount of usable memory.
Memory Techonology	Indicates the type of memory technology used.
Memory Speed	Indicates the memory speed.
CPU ID/ u Code ID	Displays the processor type.
CPU Speed	Displays the processor speed.
Current QuickPath Interconnect (QPI) speed	Displays the QPI Speed.
Cache L2	Displays the processor L2 cache size.

## Standard CMOS Features



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System Time (hh:mm:ss)	Displays the current time.
System Date (mm:dd:yy)	Displays the current date.
SATA 1	Displays the SATA 1 drive integrated in the system.
SATA 2	Displays the SATA 2 drive integrated in the system.
SATA 3	Displays the SATA 3 drive integrated in the system.
SATA 4	Displays the SATA 4 drive integrated in the system.
SATA 5	Displays the SATA 5 drive integrated in the system.
SATA 6	Displays the SATA 6 drive integrated in the system.
SATA 7	Displays the SATA 7 drive integrated in the system.
SATA 8	Displays the SATA 8 drive integrated in the system.
IDE Master	Displays the IDE Master installed in the system.
IDE Slave	Displays the IDE Slave installed in the system.

### Advanced BIOS Features

Boot up	Select power-on state for num-lock.
NumLock Status	
ACPI APIC support	Include ACPI APIC table pointer to RSDT pointer list.

### Boot Configuration Features

1st Boot Device	Displays the first boot device.
2nd Boot Device	Displays the second boot device.
Hard Disk Drives	Sets the hard drive boot priority. The items displayed are dynamically updated according to the hard drives detected.
CD/DVD Drives	Sets the CD/DVD drive boot priority. The items displayed are dynamically updated according to the hard drives detected.

## CPU Configuration

XD Bit Capability	Enable XD Bit Capability to allow the processor to distinguish between the bits of code that should be executed and the ones that cannot be executed.
C1E Support	The Enhanced Halt State (C1E) reduces the processor speed down to its lowest multiplier when the load on the processor is reduced.
Max CPUID Value Limit	Limits the max value the processor standard CPUID function will support.
Intel(R) Speedstep (tm) tech	If enabled, the processor clock speed and core voltage are adjusted dynamically based on the processor load.

## Integrated Devices

USB Functions	Allows you to enable or disable the integrated USB controller.
HD Audio Controller	Allows you to enable or disable the integrated audio controller.
Onboard IEEE1394 Controller	Allows you to enable or disable the onboard IEEE1394 controller.
LAN1 BCM5784 Device	Allows you to enable or disable the onboard network controller.
LAN1 Option ROM	Allows you to enable or disable the network controllers boot option.
LAN2 BCM5784 Device	Allows you to enable or disable the onboard network controller.
LAN2 Option ROM	Allows you to enable or disable the network controllers boot option.
Configure SATA#1-6 as	Allows you to configure the operating mode of the integrated hard drive controller.
AHCI CD/DVD Boot Time out	Allows you to set the wait time for SATA CD/DVD in AHCI mode.

### **Power Management Setup**

Suspend Mode	This option sets the energy-saving mode of the ACPI function.
AC Recovery	This option sets what action the PC takes when power is restored.
Remote Wakeup	This option sets the system to wake up from an onboard LAN, PCIE-X1 LAN card, or a PCI LAN card.
Auto Power On	This option allows the computer to start up at a certain time.

### **Frequency/Voltage Control**

QPI Links Speed	Allows you to change the QuickPath Interconnect (QPI) Links to full-speed or slow-mode.
QPI Frequency	Allows you to change the (QPI) frequency.
Memory Frequency	Allows you to force a DDR3 frequency slower than the detected frequency.
Uncore Ratio	Allows you to adjust the Uncore Ratio.
CPU Core (Non-Turbo)Ratio	Sets the ratio between CPU Core Clock and the FSB Frequency.

### **BIOS Security Features**

Change Supervisor Password	Allows you to change the supervisor password.
Change User Password	Allows you to change the user password. You cannot use the user password to enter the BIOS setup, during POST.

### **Exit**

Exit Options	Provides options to <b>Save Changes and Exit</b> , <b>Discard Changes and Exit</b> , <b>Load Optimal Defaults</b> , and <b>Discard Changes</b> .
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# Boot Sequence

This feature allows you to change the boot sequence for the bootable devices installed on your computer.

## Option Settings

- **Hard Drive** — The computer attempts to boot from the primary hard drive. If no operating system is on the drive, the computer attempts to boot from the next bootable device in the boot sequence.
- **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 attempts to boot from the next bootable device in the boot sequence.
- **USB Flash Device** — The computer attempts to boot from the USB drive. If no USB is in the drive the computer attempts to boot from the next bootable device in the boot sequence.



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



**NOTE:** An error message is generated only after the computer attempts to boot from every device in the boot sequence and no operating system is found.

## Changing Boot Sequence for the Current Boot

For example, you can use this feature to boot your computer from the CD drive so that you can run the Dell Diagnostics from the *Driver and Utilities* media and then from the hard drive when the diagnostic tests are complete. You can also use this feature to boot your computer to a USB device such as a memory key, or CD-RW drive.

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




**NOTE:** Keyboard failure may result when a key on the keyboard is held down for an extended period of time. To avoid possible keyboard failure, press and release <F12> in even intervals until the **Boot Device Menu** appears.

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.


- 4 At the **Boot Device Menu**, use the up- and down- arrow keys or press the appropriate number on the keyboard to highlight the device that is to be used for the current boot only, and then press <Enter>.

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 ensure that your device is bootable, check the device documentation.


## Changing Boot Sequence for Future Boots

- 1 Enter system setup (see "Entering System Setup" on page 97).
- 2 Use the arrow keys to highlight the **Boot Sequence** menu option and press <Enter> to access the menu.

 **NOTE:** Make a note of your current boot sequence in case you want to restore it.

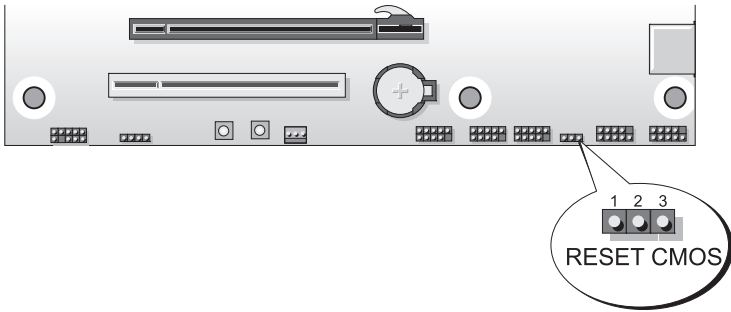
- 3 Press the up- and down-arrow keys to move through the list of devices.
- 4 Press the spacebar to enable or disable a device.
- 5 Press plus (+) or minus (-) to move a selected device up or down the list.

## Clearing CMOS Settings

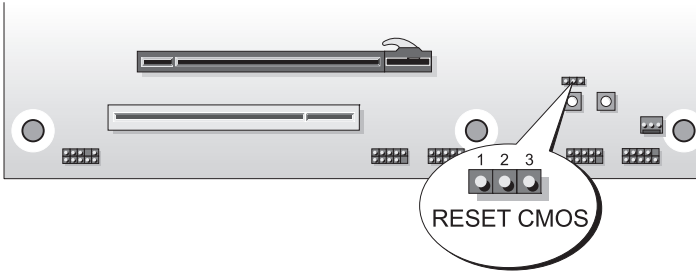
 **NOTE:** This procedure does not clear or reset system and setup passwords.

- 1 Follow the procedures in "Before You Begin" on page 13.
- 2 Power down the computer and remove the power cord.
- 3 Power off all external peripherals.
- 4 Remove the computer cover (see "Replacing the Computer Cover" on page 17).
- 5 Locate the Reset CMOS jumpers on the system board (see "System Board Components" on page 8).
- 6 Remove jumper from pins 2 and 3.

## Dell™ XPS™ 730



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- 7 Place the jumper on pins 1 and 2 and wait for 5 seconds.
- 8 Move the jumper back onto pins 2 and 3.
- 9 Close the computer cover (see "Replacing the Computer Cover" on page 17).
- 10 Connect your computer and devices to electrical outlets, and then turn them on.









