Inspiron 3647

Owner's Manual

Computer model: Inspiron 3647
Regulatory model: D09S
Regulatory type: D09S001

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.

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Contents

Before You Begin

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

1 Save and close all open files and exit all open programs.

2 Shutdown your computer.

- Windows 8 — Move your mouse pointer to the upper-right or lower-right corner of the screen to open the Charms sidebar, and then click **Settings**→ **Power**→ **Shut down**.

- Windows 7 — Click **Start** ⊕→ **Shut down** .

    📝 **NOTE:** If you are using a different operating system, see the documentation of your operating system for shut-down instructions.

3 Disconnect your computer and all attached devices from their electrical outlets.

4 Disconnect all telephone cables, network cables, and attached devices from your computer.

5 After the computer is unplugged, press and hold the power button for 5 seconds to ground the system board.

Safety Instructions

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

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For more safety best practices, see the Regulatory Compliance home page at dell.com/regulatory_compliance.**

⚠ **WARNING: Disconnect all power sources before opening the computer cover or panels. After you finish working inside the computer, replace all covers, panels, and screws before connecting to the power source.**

△ **CAUTION: To avoid damaging the computer, make sure that the work surface is flat and clean.**

△ **CAUTION: To avoid damaging the components and cards, handle them by their edges and avoid touching pins and contacts.**

△ **CAUTION: Only a certified service technician is authorized to remove the computer cover and access any of the components inside the computer. See the safety instructions for complete information about safety precautions, working inside your computer, and protecting against electrostatic discharge.**

△ **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.**

△ **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 or thumb-screws that you must disengage before disconnecting the cable. When disconnecting cables, keep them evenly aligned to avoid bending any connector pins. When connecting cables, make sure that the connectors and ports are correctly oriented and aligned.**

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

△ **CAUTION: Press and eject any installed card from the media-card reader.**

Recommended Tools

The procedures in this document may require the following tools:

- Phillips screwdriver
- Plastic scribe

After Working Inside Your Computer

⚠ **CAUTION: Leaving stray or loose screws inside your computer may severely damage your computer.**

1 Replace all screws and make sure that no stray screws remain inside your computer.

2 Place the computer in an upright position.

3 Connect any external devices, cables, cards, and any other part(s) you removed before working on your computer.

4 Connect your computer and all attached devices to their electrical outlets.

Technical Overview

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Inside View of Your Computer
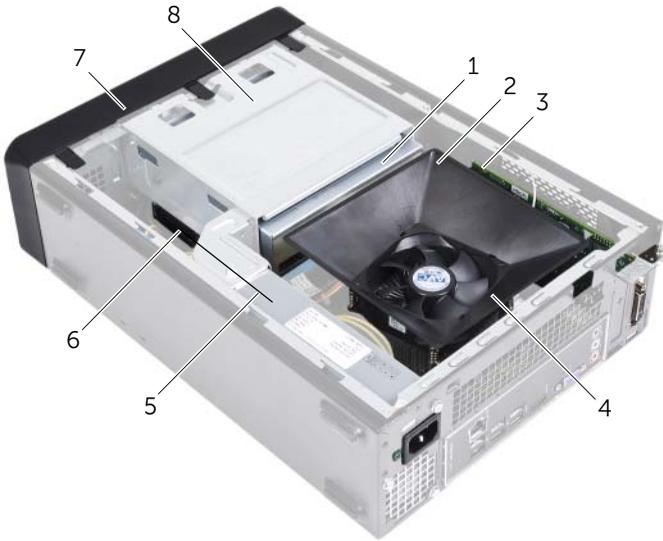
1	optical drive	2	fan shroud
3	PCI-Express x16 card	4	processor fan and heat-sink assembly
5	power supply	6	hard drive
7	front bezel	8	drive cage

System-Board Components
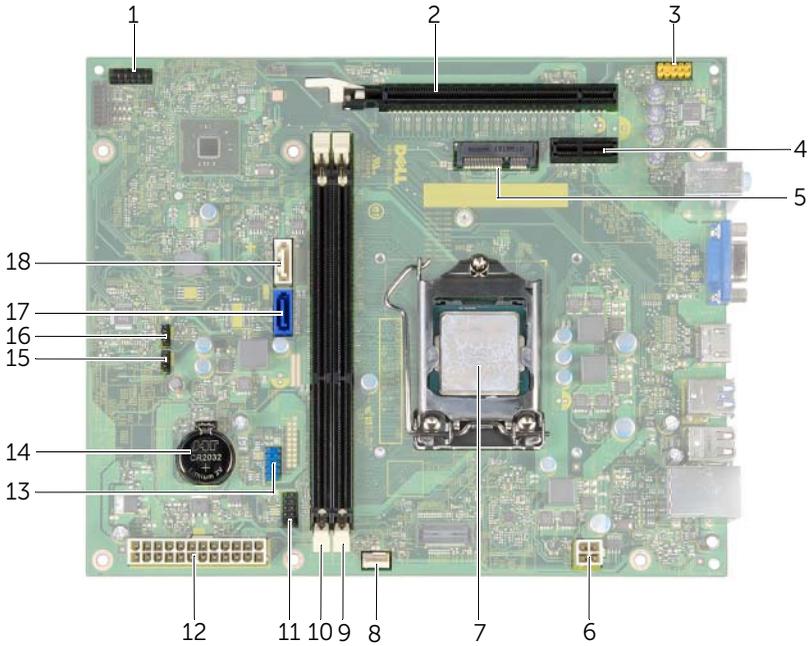
1	power button connector (LEDH1)	2	PCI-Express x16 card slot (SLOT2)
3	front-panel audio connector (AUDF1)	4	PCI-Express x1 card slot (SLOT1)
5	Mini-Card slot (MINI1)	6	power connector (ATX2)
7	processor socket	8	processor fan connector (FNCPU1)
9	memory-module connector (DIMM1)	10	memory-module connector (DIMM2)
11	front panel USB connector (USBF1)	12	main power connector (ATX1)
13	front panel USB connector (USBF2)	14	battery socket (BT1)
15	CMOS clear jumper (CMCLR1)	16	Password clear jumper (PWCLR1)
17	SATA connector (SATA 0)	18	SATA connector (SATA 1)

Removing the Computer Cover

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Procedure

1   Place the computer on its side with the computer cover facing up.

2   Using a screwdriver, remove the screws that secure the computer cover to the chassis.

3   Release the computer cover by sliding it away from the front of the computer.

4   Lift the cover away from the computer and set it aside.

1	computer cover	2	screw

Replacing the Computer Cover

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Procedure

1 Connect all the cables and fold the cables out of the way.

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

3 Align the tabs at the bottom of the computer cover with the slots located along the edge of the chassis.

4 Press the computer cover down and slide it towards the front of the computer.

5 Replace the screws that secure the computer cover to the chassis.

6 Place the computer in an upright position.

Postrequisites

Follow the instructions in "After Working Inside Your Computer" on page 9.

Removing the Fan Shroud

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Prerequisites

Remove the computer cover. See "Removing the Computer Cover" on page 12.

Procedure

1   Press in on the fan shroud and lift it to release the tabs that secure the fan shroud to the processor fan and heat-sink assembly.

2   Lift the fan shroud and set it aside.
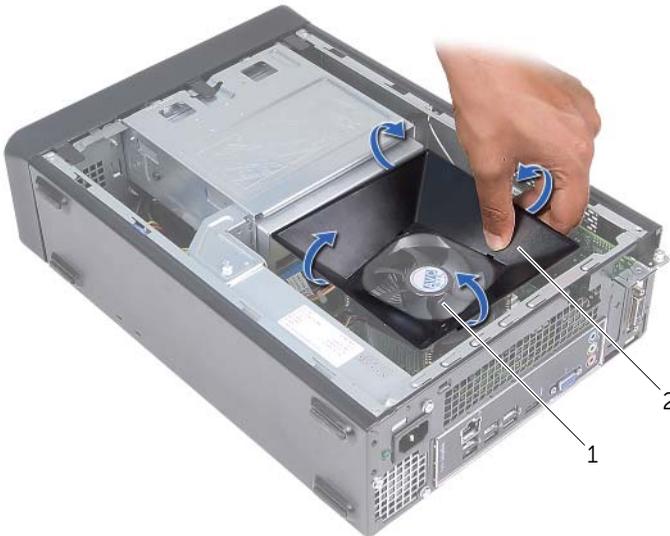
| 1 | processor fan and heat-sink assembly | 2 | fan shroud |

Replacing the Fan Shroud

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Procedure

1   Place the fan shroud over the processor fan and heat-sink assembly.
2   Gently press the fan shroud until the tabs on the fan shroud snap into place.

Postrequisites

1   Replace the computer cover. See "Replacing the Computer Cover" on page 13.
2   Follow the instructions in "After Working Inside Your Computer" on page 9.

Removing the Memory Module(s)

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Prerequisites

1 Remove the computer cover. See "Removing the Computer Cover" on page 12.
2 Remove the fan shroud. See "Removing the Fan Shroud" on page 14.

Procedure

1 Locate the memory-module connector on the system board. See "System-Board Components" on page 11.
2 Press out the securing clip at each end of the memory-module connector.
3 Grasp the memory module and pull it upward.

   📝 **NOTE:** If the memory module is difficult to remove, hold and gently pull it upward from one end and then on the other end until the memory module is disengaged from the connector.
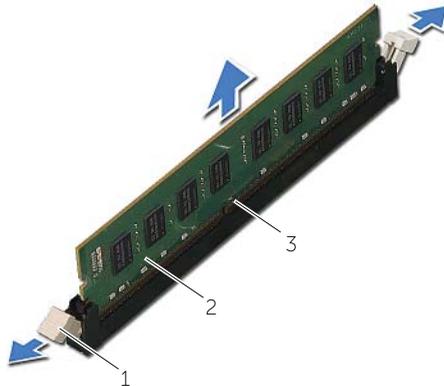
1	securing clips (2)	2	memory module
3	memory-module connector		

Replacing the Memory Module(s)

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Procedure

1 Press out the securing clip at each end of the memory-module connector.
2 Align the notch on the memory module with the tab on the memory-module connector.
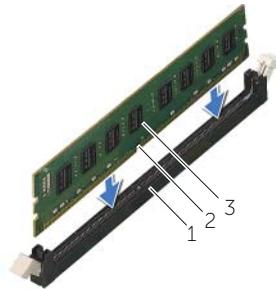
1	tab	2	notch
3	memory module		

3 Insert the memory module into the memory-module connector, and press the memory module down until it snaps into position and the securing clips lock in place.
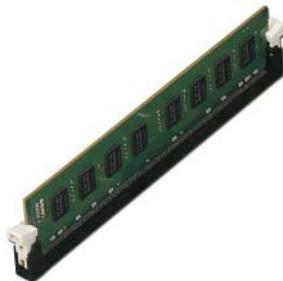
Postrequisites

1 Replace the fan shroud. See "Replacing the Fan Shroud" on page 15.

2 Replace the computer cover. See "Replacing the Computer Cover" on page 13.

3 Follow the instructions in "After Working Inside Your Computer" on page 9

Removing the Graphics Card

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Prerequisites

1 Remove the computer cover. See "Removing the Computer Cover" on page 12.
2 Remove the fan shroud. See "Removing the Fan Shroud" on page 14.

Procedure

1 Using a screwdriver, remove the screw securing the graphic card in place.
2 Push the securing tab down, grasp the card by its top corners, and then ease it out of the connector.

📝 **NOTE:** Remove any PCI-Express x1 card (if present) before you remove the graphic card.

1	screw	2	graphics card
3	securing tab		

Replacing the Graphics Card

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Procedure

1 Locate the PCI-Express x16 card slot. See "System-Board Components" on page 11.
2 Align the graphics card with the PCI-Express x16 card slot on the system board.
3 Place the card in the slot and press down firmly. Ensure that the card is firmly seated in the slot.
4 Replace the screw that secure the graphic card in place.

Postrequisites

1 Replace the fan shroud. See "Replacing the Fan Shroud" on page 15.
2 Replace the computer cover. See "Replacing the Computer Cover" on page 13.

Removing the Wireless Mini-card

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Prerequisites

1   Remove the computer cover. See "Removing the Computer Cover" on page 12.
2   Remove the fan shroud. See "Removing the Fan Shroud" on page 14.

Procedure

1   Locate the wireless mini-card.
2   Disconnect the antenna cables from the wireless mini-card.
3   Remove the screw that secures the wireless mini-card to the system board.

1	mini-card connector	2	wireless mini-card
3	antenna cables (2)	4	screw

4   Slide and remove the wireless mini-card from the mini-card connector.

Replacing the Wireless Mini-Card

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Procedure

⚠ **CAUTION: To avoid damage to the wireless mini-card, do not place any cables under it.**

1   Locate the wireless mini-card slot. See "System-Board Components" on page 11.
2   Align the notch on the wireless mini-card with the tab on the mini-card connector.
3   Slide the wireless mini-card at an angle into the system-board connector.
4   Press the other end of the wireless mini-card down and replace the screw that secures the wireless mini-card to the system board.
5   Connect the antenna cables to the wireless mini-card.

   The following table provides the antenna-cable color scheme for the wireless mini-card supported by your computer.

Connectors on the wireless card	Antenna-cable color
Main (white triangle)	White
Auxiliary (black triangle)	Black

Postrequisites

1   Replace the fan shroud. See "Replacing the Fan Shroud" on page 15.
2   Replace the computer cover. See "Replacing the Computer Cover" on page 13.

Removing the Front Bezel

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Prerequisites

Remove the computer cover. See "Removing the Computer Cover" on page 12.

Procedure

1 Place the computer in an upright position.
2 Grasp and release the front bezel tabs sequentially from the top, by moving them outward from the front panel.

3 Rotate and pull the front bezel away from the front of the computer to release the front bezel clamps from the front panel slots.

1	front bezel tabs (3)	2	front bezel clamps (3)
3	front bezel	4	front panel

Replacing the Front Bezel

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Procedure

1 Align and insert the front bezel clamps into the front panel slots.
2 Rotate the front bezel towards the computer until the front bezel tabs snap into place.

Postrequisites

Replace the computer cover. See "Replacing the Computer Cover" on page 13.

Removing the Drive Cage

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Prerequisites

1 Remove the computer cover. See "Removing the Computer Cover" on page 12.
2 Remove the fan shroud. See "Removing the Fan Shroud" on page 14.
3 Remove the front bezel. See "Removing the Front Bezel" on page 23. Place the computer on its side with the computer cover facing up.

Procedure

1 Remove the screws that secure the drive cage to the chassis.

1	screw (3)

2 Disconnect the power and data cables from the connectors on the optical drive.

3 Disconnect the power and data cables from the connectors on the hard drive.
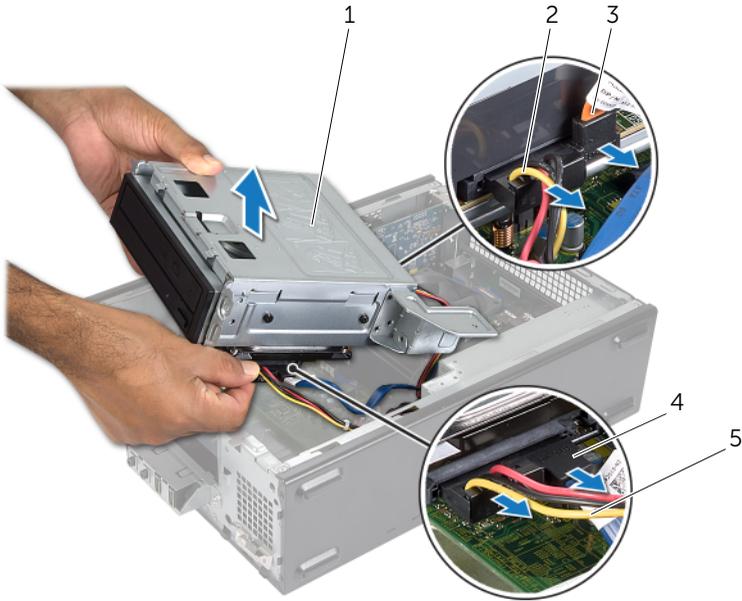
1	drive cage	2	optical-drive data cable
3	optical-drive power cable	4	hard-drive data cable
5	hard-drive power cable		

4 Lift the drive cage away from the chassis.

5 Remove the optical drive. See "Removing the Optical Drive" on page 29.

6 Remove the hard drive. See "Removing the Primary Hard-Drive" on page 31.

Replacing the Drive Cage

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Procedure

1   Replace the optical drive. See "Replacing the Optical Drive" on page 30.
2   Replace the hard drive. See "Replacing the Primary Hard-Drive" on page 32.
3   Gently slide the drive cage into the chassis.
4   Replace the screws that secure the drive cage to the chassis.
5   Connect the power and data cables to the connectors on the optical drive.
6   Connect the power and data cables to the connectors on the hard drive.

Postrequisites

1   Replace the front bezel. See "Removing the Front Bezel" on page 23.
2   Replace the fan shroud. See "Replacing the Fan Shroud" on page 15.
3   Replace the computer cover. See "Replacing the Computer Cover" on page 13.
4   Follow the instructions in "After Working Inside Your Computer" on page 9.

Removing the Optical Drive

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Prerequisites

1 Remove the computer cover. See "Removing the Computer Cover" on page 12.
2 Remove the fan shroud. See "Removing the Fan Shroud" on page 14.
3 Remove the front bezel. See "Removing the Front Bezel" on page 23.
4 Remove the drive cage. See "Removing the Drive Cage" on page 26.

Procedure

1 Remove the screws that secure the optical drive to the drive cage.
2 Slide the optical drive out of the drive cage.
3 Set aside the optical drive.

1	screws (4)	2	drive cage
3	optical drive		

Replacing the Optical Drive

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Procedure

1 Slide the optical drive into the drive cage.
2 Align the screw holes on the optical drive with the screw holes on the drive cage.
3 Replace the screws that secure the optical drive to the drive cage.

Postrequisites

1 Replace the drive cage. See "Replacing the Drive Cage" on page 28.
2 Replace the front bezel. See "Replacing the Front Bezel" on page 25.
3 Replace the fan shroud. See "Replacing the Fan Shroud" on page 15.
4 Replace the computer cover. See "Replacing the Computer Cover" on page 13.

Removing the Primary Hard-Drive

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⚠ **CAUTION: To avoid data loss, do not remove the hard drive while the computer is On or in Sleep state.**

⚠ **CAUTION: Hard drives are fragile. Exercise care when handling the hard drive.**

Prerequisites

1 Remove the computer cover. See "Removing the Computer Cover" on page 12.
2 Remove the fan shroud. See "Removing the Fan Shroud" on page 14.
3 Remove the front bezel. See "Removing the Front Bezel" on page 23.
4 Remove the drive cage. See "Removing the Drive Cage" on page 26.

Procedure

1 Remove the screws that secure the hard-drive brackets to the primary hard-drive.
2 Push and slide the primary hard-drive off the hard-drive brackets.

1	primary hard-drive	2	primary hard-drive assembly
3	screws (4)		

Replacing the Primary Hard-Drive

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⚠ **CAUTION: Hard drives are fragile. Exercise care when handling the hard drive.**

Procedure

1 Align the screw holes on the primary hard-drive with the screw holes on the hard-drive brackets.

2 Replace the screws that secure the hard-drive brackets to the primary hard-drive.

3 Slide the primary hard-drive assembly into the chassis.

4 Replace the screws that secure the primary hard-drive assembly to the chassis.

Postrequisites

1 Replace the drive cage. See "Replacing the Drive Cage" on page 28.

2 Replace the computer cover. See "Replacing the Computer Cover" on page 13.

Removing the Front I/O Panel

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Prerequisites

1   Remove the computer cover. See "Removing the Computer Cover" on page 12.

2   Remove the fan shroud. See "Removing the Fan Shroud" on page 14.

3   Remove the front bezel. See "Removing the Front Bezel" on page 23.

4   Remove the drive cage. See "Removing the Drive Cage" on page 26.

5   Remove the graphics card, if applicable. See "Removing the Graphics Card" on page 19.

Procedure

⚠ **CAUTION: Be careful when sliding the front I/O panel out of the computer to avoid damaging the connectors and the cable routing clips.**

📝 **NOTE:** Note the routing of all cables as you remove them so that you can re-route them correctly after you replace the front I/O panel.

1 Disconnect the front I/O panel cables from the system board connectors (AUDF1, USBF1, and USBF3). See "System-Board Components" on page 11.

2 Remove the screw that secures the front I/O panel to the front panel.

3 Slide the front I/O panel towards the side as shown in the illustration to release the clamps from the front panel and pull it away.
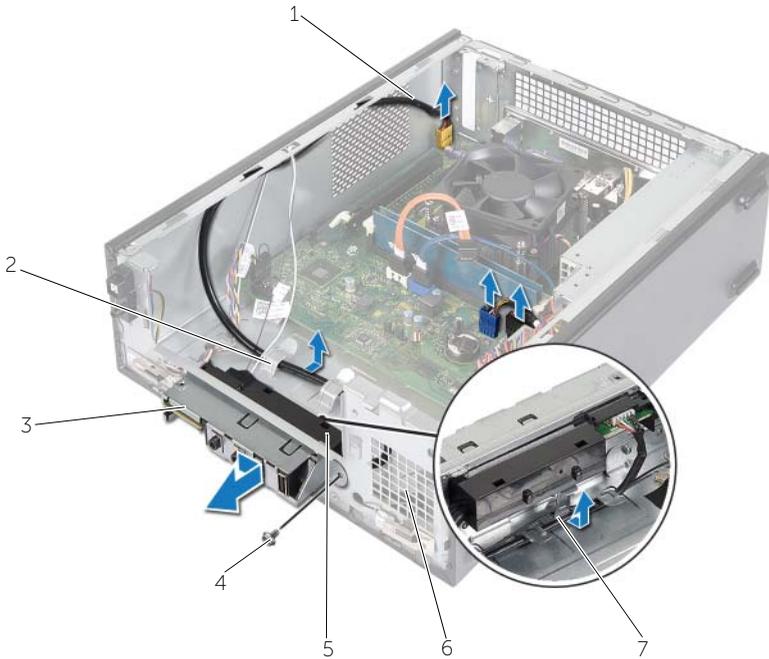
1	front I/O panel cables (3)	2	cable routing guides
3	front I/O panel	4	screw
5	front I/O panel clamps (4)	6	front panel
7	routing guides		

Replacing the Front I/O Panel

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Procedure

1 Insert the front I/O panel clamps into the slots on the front panel.

2 Slide the front I/O panel toward the side. Ensure that the screw hole on the front I/O panel aligns with the screw hole on the front panel.

3 Replace the screw that secures the front I/O panel to the front panel.

4 Route the front I/O panel cables through the routing guides on the chassis.

5 Connect the front I/O panel cables to the system-board connectors (USBF1, USBF2, and AUDF1). See "System-Board Components" on page 11.

Postrequisites

1 Replace the graphic card, if applicable. See "Removing the Graphics Card" on page 19.

2 Replace the drive cage. See "Replacing the Drive Cage" on page 28.

3 Replace the front bezel. See "Replacing the Front Bezel" on page 25.

4 Replace the fan shroud. See "Replacing the Fan Shroud" on page 15.

5 Replace the computer cover. See "Replacing the Computer Cover" on page 13.

Removing the Power-Button Module

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Prerequisites

1   Remove the computer cover. See "Removing the Computer Cover" on page 12.
2   Remove the fan shroud. See "Removing the Fan Shroud" on page 14.
3   Remove the front bezel. See "Removing the Front Bezel" on page 23.
4   Remove the drive cage. See "Removing the Drive Cage" on page 26.

Procedure

1 Disconnect the power-button module cable from the system-board connector (LEDH1). See "System-Board Components" on page 11.

2 Remove the power-button module cable from the routing guides on the chassis.

3 Press the power-button module tabs to release the power-button module from the front panel.

4 Slide the power-button module along with its cable through the slot on the front panel.

1	power-button cable	2	tabs
3	power-button module		

5 Set the power-button module aside.

6 Set aside the power-button module.

Replacing the Power-Button Module

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Procedure

1   Align and push the power-button module tabs into the slots on the front panel.
2   Align the power-button module cable on the routing guides on the chassis.
3   Connect the power button module cable to the system board connector (LEDH1). See "System-Board Components" on page 11.

Postrequisites

1   Replace the drive cage. See "Removing the Drive Cage" on page 26.
2   Replace the front bezel. See "Replacing the Front Bezel" on page 25.
3   Replace the fan shroud. See "Removing the Fan Shroud" on page 14.
4   Replace the computer cover. See "Replacing the Computer Cover" on page 13.

Removing the Processor Fan and Heat-Sink Assembly

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Prerequisites

1. Remove the computer cover. See "Removing the Computer Cover" on page 12.
2. Remove the fan shroud. See "Removing the Fan Shroud" on page 14.

Procedure

1. Disconnect the processor fan cable from the system-board connector (FANCPU1). See "System-Board Components" on page 11.
2. Loosen the four captive screws that secure the processor fan and heat-sink assembly to the system board.

1	processor fan and heat-sink assembly	2	captive screws (4)
3	processor fan cable		

Replacing the Processor Fan and Heat-sink Assembly

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⚠ **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.**

⚠ **CAUTION: Incorrect alignment of the processor fan and heat-sink assembly can damage the system board and processor.**

✎ **NOTE:** The original thermal grease can be reused if the original processor and processor fan and heat-sink assembly are reinstalled together. If either the processor or the processor fan and heat-sink assembly is replaced, use the thermal grease provided in the kit to ensure that thermal conductivity is achieved.

Procedure

1 Apply new thermal grease to the top of the processor.

2 Place the processor fan and heat-sink assembly over the processor.

3 Align the captive screws on the processor fan and heat-sink assembly with the screw holes on the system board.

4 Tighten the captive screws that secure the processor fan and heat-sink assembly to the system board.

5 Connect the processor fan cable to the system board connector (FANCPU). See "System-Board Components" on page 11.

Postrequisites

1 Replace the fan shroud. See "Replacing the Fan Shroud" on page 15.

2 Replace the computer cover. See "Replacing the Computer Cover" on page 13.

Removing the Processor

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For more safety best practices, see the Regulatory Compliance home page at dell.com/regulatory_compliance.**

⚠️ **CAUTION: Processors are fragile. Handle the processor only by the edges and do not touch the metal pins.**

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

Prerequisites

1 Remove the computer cover. See "Removing the Computer Cover" on page 12.

2 Remove the fan shroud. See "Removing the Fan Shroud" on page 14.

3 Remove the processor fan and heat sink. See "Removing the Processor Fan and Heat-Sink Assembly" on page 39.

Procedure

1 Press down and push the release lever away from the processor to release it from the securing tab.

2 Extend the release-lever completely to open the processor cover.

3 Open the processor cover and gently lift the processor from the processor socket.

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

1	release lever	2	securing tab
3	processor		

Replacing the Processor

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Procedure

📝 **NOTE:** A new processor ships with a thermal pad in the package. In some cases, the processor may ship with the thermal pad attached to it.

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

⚠ **CAUTION: Do not touch the underside of the processor.**

⚠ **CAUTION: You must position the processor correctly in the processor socket to avoid damage to the processor.**

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

3 Orient the alignment notches on the processor with the alignment tabs on the socket.

4 Align the pin-1 corner of the processor with the pin-1 corner of the processor socket, and then place the processor in the processor socket. Set the processor lightly in the socket and ensure that the processor is positioned correctly.

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

6 Pivot the release lever.
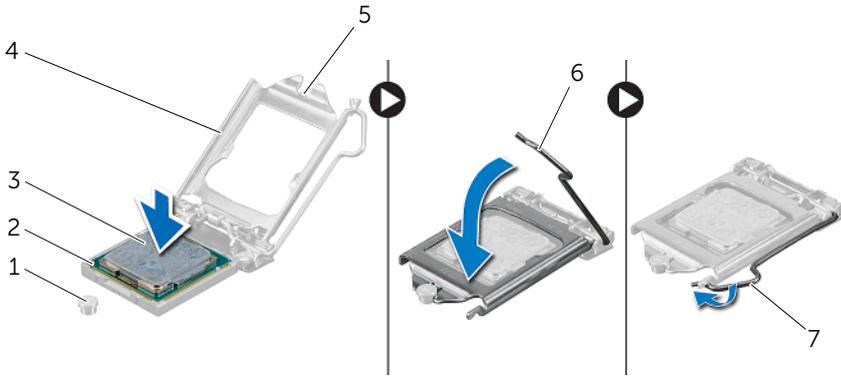
1	alignment post	2	processor pin-1 corner
3	processor	4	processor cover
5	processor-cover notch	6	release lever
7	securing tab		

Postrequisites

1 Replace the processor fan and heat sink. See "Replacing the Processor Fan and Heat-sink Assembly" on page 40.

2 Replace the fan shroud. See "Replacing the Fan Shroud" on page 15.

3 Replace the computer cover. See "Replacing the Computer Cover" on page 13.

4 Follow the instructions in "After Working Inside Your Computer" on page 9.

Removing the Coin-Cell Battery

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Prerequisites

1   Remove the computer cover. See "Removing the Computer Cover" on page 12.
2   Remove the fan shroud. See "Removing the Fan Shroud" on page 14.
3   Remove the front bezel. See "Removing the Front Bezel" on page 23.
4   Remove the drive cage. See "Removing the Drive Cage" on page 26.

Procedure

1   Locate the battery socket (BT1). See "System-Board Components" on page 11.
2   Press the battery-release lever away from the coin-cell battery until the coin-cell battery pops up.
3   Lift the coin-cell battery out of its socket.
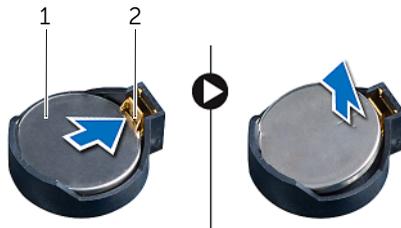
| 1 | coin-cell battery | 2 | securing clip |

Replacing the Coin-Cell Battery

⚠️ **WARNING:** **Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Procedure

Insert a new coin-cell battery (CR2032) into the battery socket with the positive side facing up, and press the battery into place.

Postrequisites

1 Replace the drive cage. See "Replacing the Drive Cage" on page 28.
2 Replace the front bezel. See "Replacing the Front Bezel" on page 25.
3 Replace the fan shroud. See "Replacing the Fan Shroud" on page 15.
4 Replace the computer cover. See "Replacing the Computer Cover" on page 13.
5 Follow the instructions in "After Working Inside Your Computer" on page 9.

Removing the System Board

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For more safety best practices, see the Regulatory Compliance home page at dell.com/regulatory_compliance.**

📝 **NOTE:** Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the BIOS after you replace the system board.

📝 **NOTE:** Before disconnecting the cables from the system board, note the location of the connectors so that you can reconnect them correctly after you replace the system board.

Prerequisites

1 Remove the computer cover. See "Removing the Computer Cover" on page 12.

2 Remove the fan shroud. See "Removing the Fan Shroud" on page 14.

3 Remove the front bezel. See "Removing the Front Bezel" on page 23.

4 Remove the drive cage. See "Removing the Drive Cage" on page 26.

5 Remove the memory module(s). See "Removing the Memory Module(s)" on page 16.

> 📝 **NOTE:** Record which memory module is removed from each DIMM slot so that the memory modules can be installed in the same slot after the system board is replaced.

6 Remove the Mini-Card, if applicable. See "Removing the Wireless Mini-card" on page 21.

7 Remove the any graphic cards, if applicable. See "Removing the Graphics Card" on page 19.

8 Remove the processor fan and heat-sink assembly. See "Removing the Processor Fan and Heat-Sink Assembly" on page 39.

9 Remove the processor. See "Removing the Processor" on page 41.

Procedure

1 Disconnect all cables connected to the system board. See "System-Board Components" on page 11.

2 Make note of the cable routing and remove the cables from the routing guides.

3 Remove the screws that secure the system board to the chassis.

4 Lift the system board out of the chassis.
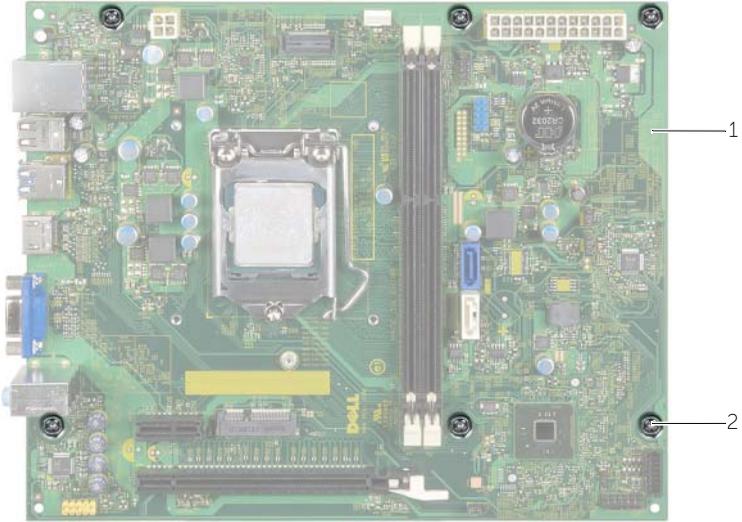
1	system board	2	screws (6)

Replacing the System Board

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📝 **NOTE:** Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the system setup after you replace the system board.

Procedure

1 Gently place the system board into the chassis and slide it towards the back of the computer.
2 Replace the screws that secure the system board to the chassis.
3 Route and connect the cables that you disconnected from the system board.

Postrequisites

1 Replace the memory modules. See "Replacing the Memory Module(s)" on page 17.
2 Replace the processor. "Replacing the Processor" on page 42.
3 Replace the processor fan and heat sink. See "Replacing the Processor Fan and Heat-sink Assembly" on page 40.
4 Replace the graphics card. See "Replacing the Graphics Card" on page 20.
5 Replace the coin-cell battery. See "Replacing the Coin-Cell Battery" on page 45.
6 Replace the wireless mini-card. See "Replacing the Wireless Mini-Card" on page 22.
7 Replace the computer cover. See "Replacing the Computer Cover" on page 13.

Entering the Service Tag in the BIOS

1 Turn on the computer.
2 Press <F2> when the DELL logo is displayed to enter System Setup.
3 Navigate to the main tab and enter the Service Tag in the **Service Tag Input** field.

Removing the Power-Supply Unit

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Prerequisites

1   Remove the computer cover. See "Removing the Computer Cover" on page 12.

2   Remove the fan shroud. See "Removing the Fan Shroud" on page 14.

3   Remove the drive cage. See "Removing the Drive Cage" on page 26.

4   Remove the memory module(s). See "Removing the Memory Module(s)" on page 16.

   📝 **NOTE:** Record which memory module is removed from each DIMM slot so that the memory modules can be installed in the same slot after the power-supply unit is replaced.

5   Remove the Mini-Card, if applicable. See "Removing the Wireless Mini-card" on page 21.

6   Remove any graphic cards, if applicable. See "Removing the Graphics Card" on page 19.

7   Remove the processor fan and heat-sink assembly. See "Removing the Processor Fan and Heat-Sink Assembly" on page 39.

8   Remove the processor. See "Removing the Processor" on page 41.

9   Remove the system board. See "System-Board Components" on page 11.

Procedure

1 Remove the screws that secure the power-supply unit to the chassis.

2 Slide and remove the power-supply unit away from the chassis.
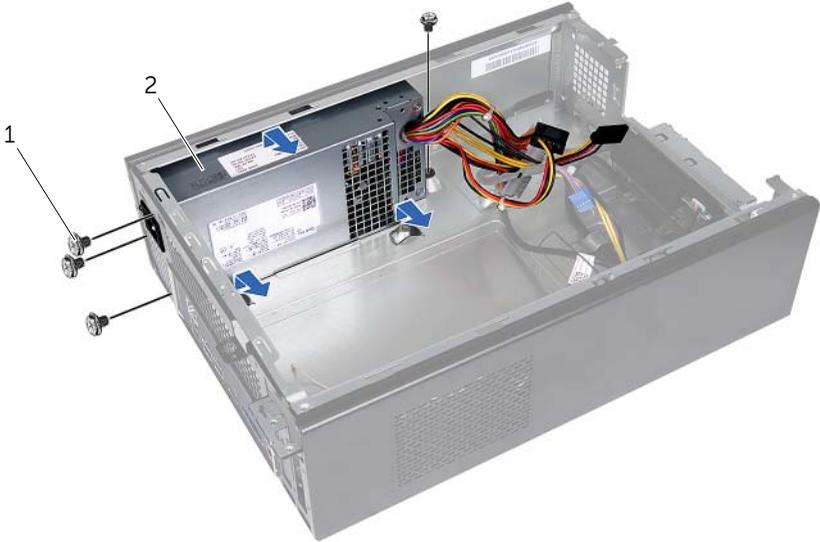
| 1 | screws (4) | 2 | power-supply unit |

Replacing the Power-Supply Unit

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Procedure

1 Slide the power supply towards the back of the chassis.
2 Align the screw holes on the power-supply unit with the screw holes on the chassis.
3 Replace the screws that secure the power-supply unit to the chassis.
4 Connect the DC power cables to the system board and the drives.

   See "System-Board Components" on page 11.

Postrequisites

1 Replace the system board. See "Replacing the System Board" on page 48.
2 Replace the processor. See "Replacing the Processor" on page 42.
3 Replace the processor fan and heat-sink assembly. See "Replacing the Processor Fan and Heat-sink Assembly" on page 40.
4 Replace any graphic cards, if applicable. See "Replacing the Graphics Card" on page 20.
5 Replace the Mini-Card, if applicable. See "Replacing the Wireless Mini-Card" on page 22.
6 Replace the memory module(s). See "Replacing the Memory Module(s)" on page 17.
7 Replace the drive cage. See "Replacing the Drive Cage" on page 28.
8 Replace the fan shroud. See "Replacing the Fan Shroud" on page 15.
9 Replace the computer cover. See "Replacing the Computer Cover" on page 13.

Flashing the BIOS

You may need to flash (update) the BIOS when an update is available or when you replace the system board. To flash the BIOS:

1 Turn on the computer.

2 Go to **dell.com/support**.

3 If you have your computer's Service Tag, type your computer's Service Tag and click **Submit**.

If you do not have your computer's Service Tag, click **Detect Service Tag** to allow automatic detection of the Service Tag.

> **NOTE:** If the Service Tag cannot be detected automatically, select your product under the product categories.

4 Click **Drivers and Downloads**.

5 In the **Operating System** drop-down, select the operating system installed on your computer.

6 Click **BIOS**.

7 Click **Download File** to download the latest version of the BIOS for your computer.

8 On the next page, select **Single-file download** and click **Continue**.

9 Save the file and once the download is complete, navigate to the folder where you saved the BIOS update file.

10 Double-click the BIOS update file icon and follow the instructions on the screen.