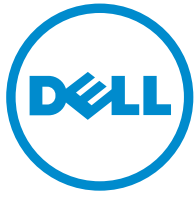
Inspiron 3650
Service Manual

Computer Model: Inspiron 3650
Regulatory Model: D19M
Regulatory Type: D19M002



Notes, cautions, and warnings

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

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

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

Copyright © 2015 Dell Inc. All rights reserved. This product is protected by U.S. and international copyright and intellectual property laws. Dell™ and the Dell logo are trademarks of Dell Inc. in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

2015 - 09

Rev. A00

Contents

Before working inside your computer....8
- Before you begin 8
- Safety instructions....8
- Recommended tools....9

After working inside your computer....11

Technical overview....12
- Inside view of your computer....12
- System board components....13

Removing the computer cover 15
- Procedure....15

Replacing the computer cover 17
- Procedure....17

Removing the front bezel 18
- Prerequisites....18
- Procedure....18

Replacing the front bezel....20
- Procedure....20
- Post-requisites....20

Removing the memory modules....21
- Prerequisites....21
- Procedure....21

Replacing the memory modules..... 24
Procedure..... 24
Post-requisites..... 25

Removing the graphics card..... 26
Prerequisites..... 26
Procedure..... 27

Replacing the graphics card..... 30
Procedure..... 30
Post-requisites..... 30

Removing the 3.5-inch hard drive..... 31
Prerequisites..... 31
Procedure..... 31

Replacing the 3.5-inch hard drive..... 35
Procedure..... 35
Post-requisites..... 35

Removing the 2.5-inch hard drives..... 36
Prerequisites..... 36
Procedure..... 37

Replacing the 2.5-inch hard drives..... 40
Procedure..... 40
Post-requisites..... 40

Removing the optical drive..... 41
Prerequisites..... 41
Procedure..... 42

Replacing the optical drive....46
Procedure....46
Post-requisites....46

Removing the coin-cell battery....47
Prerequisites....47
Procedure....48

Replacing the coin-cell battery....50
Procedure....50
Post-requisites....50

Removing the wireless card....51
Prerequisites....51
Procedure....52

Replacing the wireless card....54
Procedure....54
Post-requisites....55

Removing the antenna modules....56
Prerequisites....56
Procedure....56

Replacing the antenna modules....59
Procedure....59
Post-requisites....59

Removing the power-button module....60
Prerequisites....60
Procedure....61

Replacing the power-button module..... 63
Procedure..... 63
Post-requisites..... 63

Removing the chassis fan..... 64
Prerequisites..... 64
Procedure..... 64

Replacing the chassis fan..... 67
Procedure..... 67
Post-requisites..... 67

Removing the power-supply unit..... 68
Prerequisites..... 68
Procedure..... 69

Replacing the power-supply unit..... 72
Procedure..... 72
Post-requisites..... 72

Removing the processor fan and heat-sink assembly..... 73
Prerequisites..... 73
Procedure..... 74

Replacing the processor fan and heat-sink assembly..... 76
Procedure..... 76
Post-requisites..... 76

Removing the system board..... 77
Prerequisites..... 77
Procedure..... 77

Replacing the system board....80
Procedure....80
Post-requisites....80

BIOS setup program....81
Overview....81
Entering BIOS setup program....81
Clearing Forgotten Passwords....81
Prerequisites....82
Procedure....82
Post-requisites....83
Clearing CMOS Settings....83
Prerequisites....83
Procedure....84
Post-requisites....85

Flashing the BIOS....86

Getting help and contacting Dell....87
Self-help resources....87
Contacting Dell....88

Before working inside your computer

NOTE: The images in this document may differ from your computer depending on the configuration you ordered.

Before you begin

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

2 Shut down your computer.

- Windows 10: Click or tap **Start** → **Power** → **Shut down**.
- Windows 8.1: On the **Start** screen, click or tap the power icon → **Shut down**.
- Windows 7: Click or tap **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 cables such as telephone cables, network cables and so on, from your computer.

5 Disconnect all attached devices and peripherals, such as keyboard, mouse, monitor, and so on, from your computer.

6 Remove any media card and optical disc from your computer, if applicable.

7 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 www.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, ensure 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: You should only perform troubleshooting and repairs as authorized or directed by the Dell technical assistance team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. See the safety instructions that shipped with the product or at www.dell.com/regulatory_compliance.

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, ensure that the ports and connectors are correctly oriented and aligned.

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

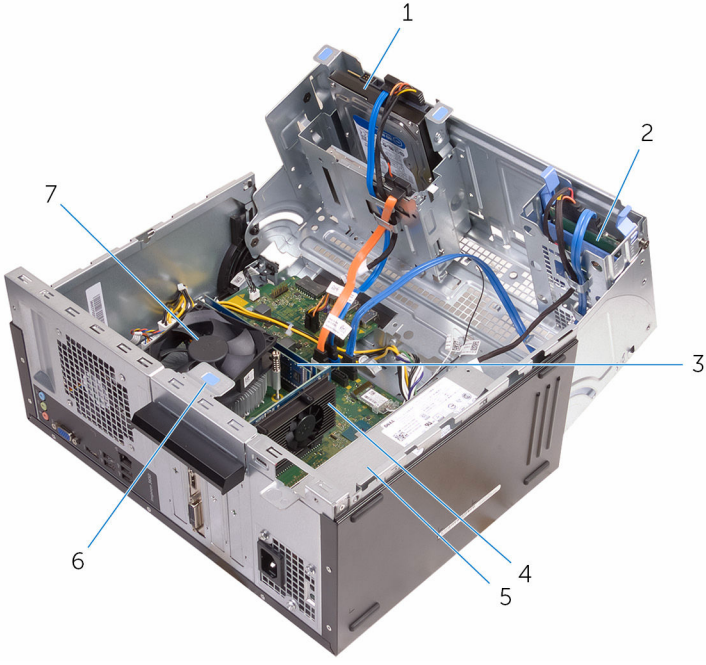
CAUTION: Leaving stray or loose screws inside your computer may severely damage your computer.

1. Replace all screws and ensure that no stray screws remain inside your computer.
2. Connect any external devices, peripherals, and cables you removed before working on your computer.
3. Replace any media cards, discs, and any other parts that you removed before working on your computer.
4. Connect your computer and all attached devices to their electrical outlets.
5. Turn on your computer.

Technical overview

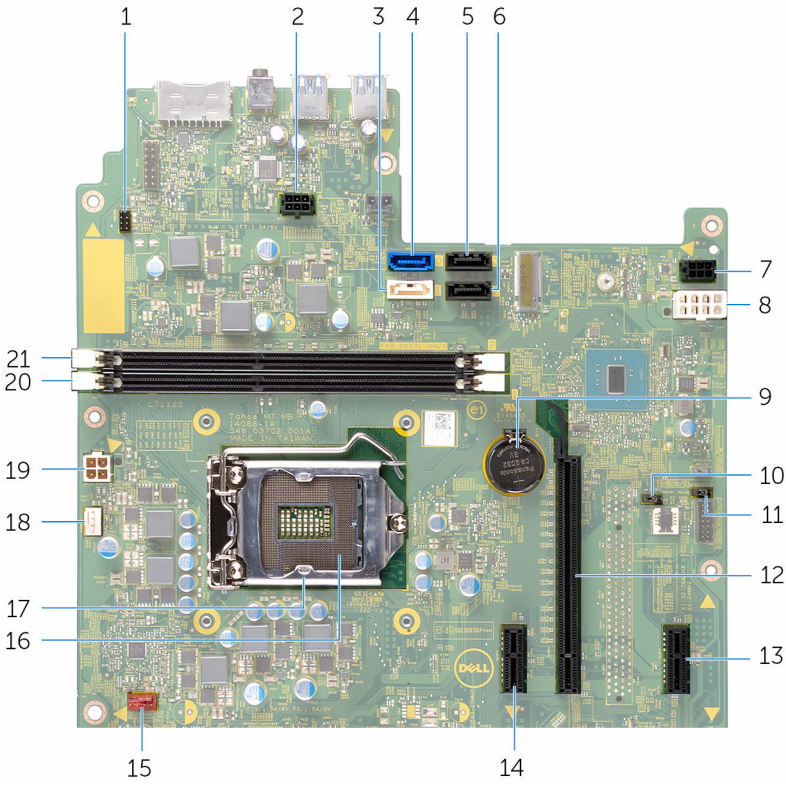
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Inside view of your computer



1	3.5-inch hard drive	2	2.5-inch hard drive
3	memory modules (2)	4	graphics card
5	power supply	6	card-retention bracket
7	processor fan and heat sink		

System board components



1	power-button cable connector (PWRSW1)	2	drive power-cable connector (SATAP1)
3	optical-drive data cable connector (HDD1)	4	primary hard-drive data cable connector (HDD0)
5	secondary hard-drive data cable connector (HDD3)	6	hard-drive data cable connector (HDD2)
7	SATA drive connector (SATAP2)	8	main-power connector (ATX1)
9	coin-cell battery (BT1)	10	CMOS jumper (CMCLR1)
11	password jumper (PWCLR1)	12	PCI-e x16 slot (SLOT2)
13	PCI-e x1 slot (SLOT4)	14	PCI-e x1 slot (SLOT1)
15	chassis-fan cable connector (FANS1)	16	processor socket

17	processor cover	18	processor-fan cable connector (FANC1)
19	power connector (ATX2)	20	memory-module slot (DIMM1)
21	memory-module slot (DIMM2)		

Removing the computer cover

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1 Remove the screws that secure the cover to the chassis.

2 Slide the cover toward the back of the computer and lift the cover off the chassis.

1 screws (2)

2 computer cover

Replacing the computer cover

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1. Align the cover over the chassis and slide it toward the front of the computer.
2. Replace the screws that secure the computer cover to the chassis.

Removing the front bezel

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

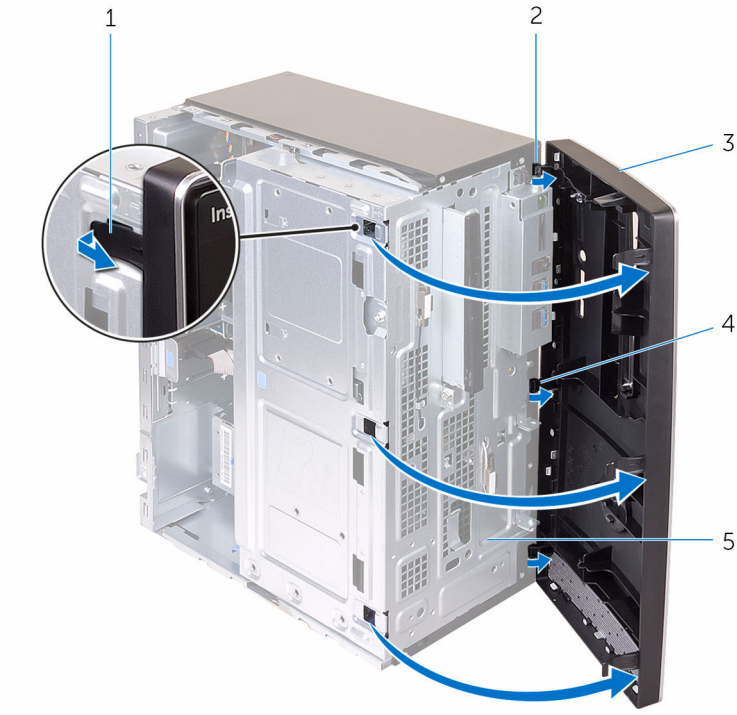
Prerequisites

Remove the computer cover.

Procedure

1. Place the computer in an upright position.
2. Release the front-bezel tabs by moving them outward.

3 Gently rotate and pull the front bezel away from the chassis.



1 front-bezel tabs (4)
2 front-bezel clamps (3)
3 front bezel
4 front-panel slots (3)
5 front panel

Replacing the front bezel

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1. Align and insert the tabs on the front bezel into the slots on the front panel.
2. Rotate the front bezel towards the chassis until the front-bezel tabs snap into place.

Post-requisites

Replace the computer cover.

Removing the memory modules

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

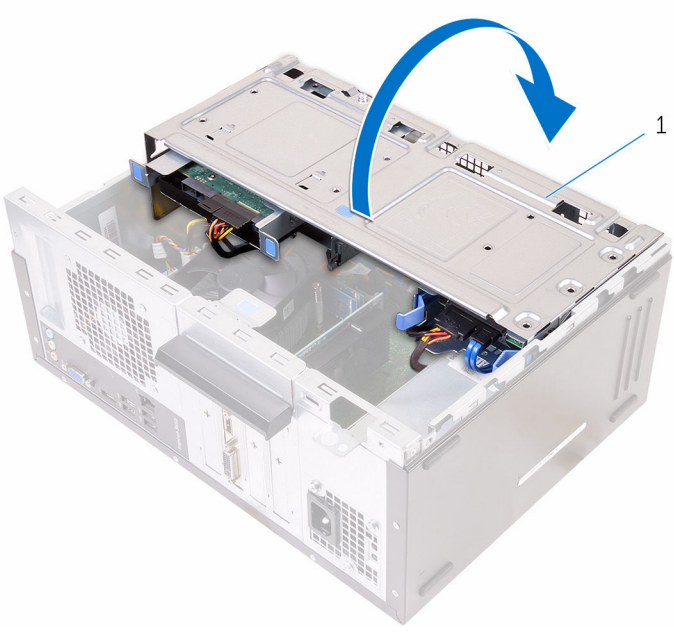
Prerequisites

1. Remove the computer cover.
2. Remove the front bezel.

Procedure

1. Lay the computer on its side with the side-chassis facing up.

2 Open the side-chassis.



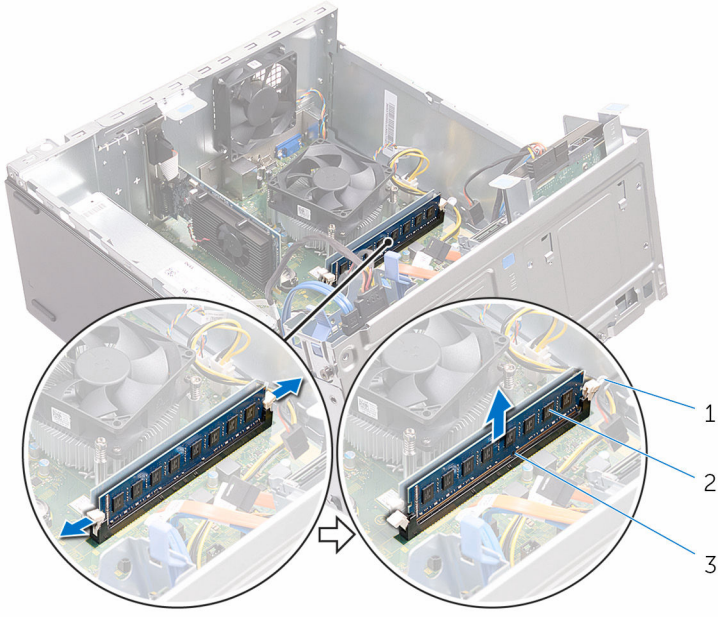
1 side-chassis

3 Using the fingertips, spread apart the securing clip at each end of the memory-module slot until the memory module pops up.

CAUTION: To prevent damage to the memory module, hold the memory module by the edges. Do not touch the components on the memory module.

4 Lift the memory module out of the memory-module slot.

NOTE: If the memory module is difficult to remove, gently ease the memory module back and forth to remove it from the slot.



1 securing clips (2)
2 memory module
3 memory-module slot

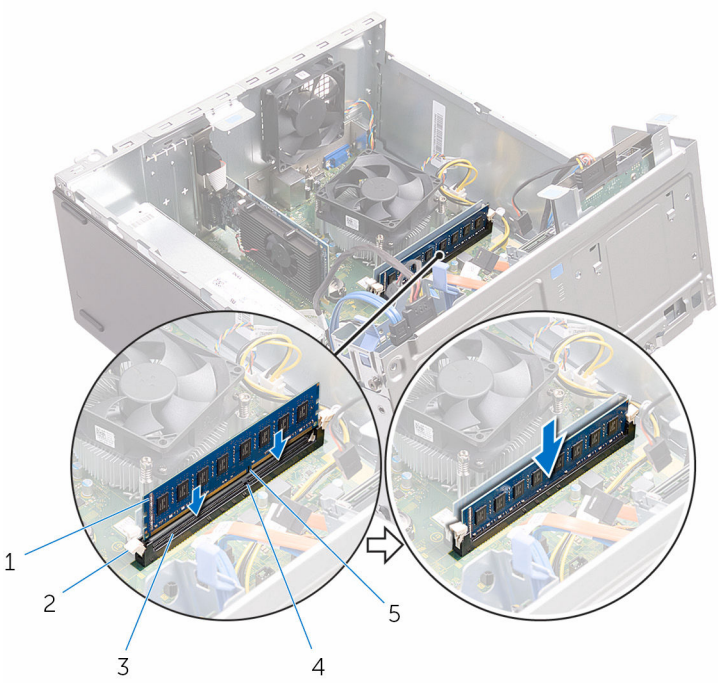
Replacing the memory modules

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1. Ensure that the securing clips are extended away from the memory-module slot.
2. Align the notch on the memory module with the tab on the memory-module slot.

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



1	memory module	2	securing clips (2)
3	memory-module slot	4	tab
5	notch		

4 Close the side-chassis.

5 Place the computer in an upright position.

Post-requisites

1 Replace the front bezel.

2 Replace the computer cover.

Removing the graphics card

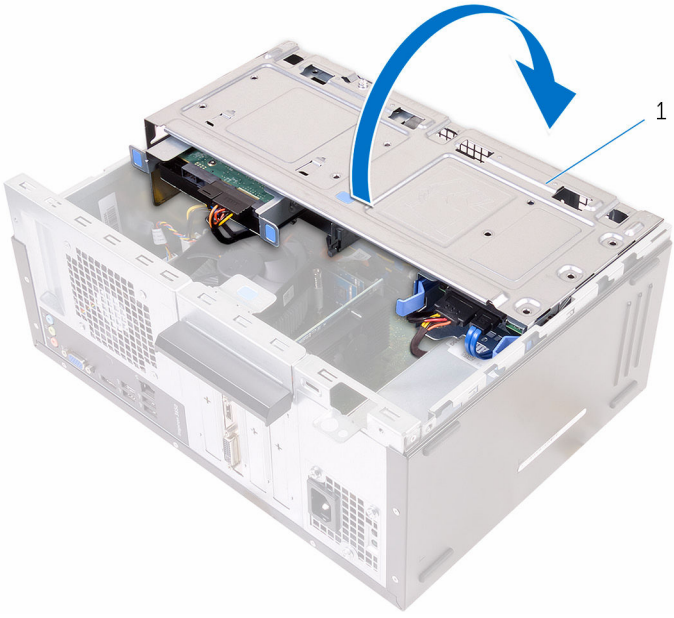
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Prerequisites

1. Remove the computer cover.
2. Remove the front bezel.

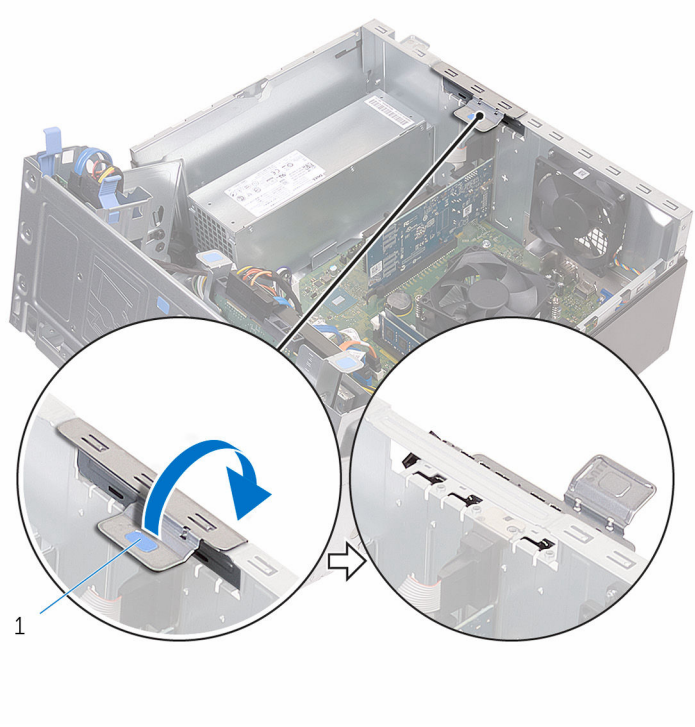
Procedure

1 Open the side-chassis.



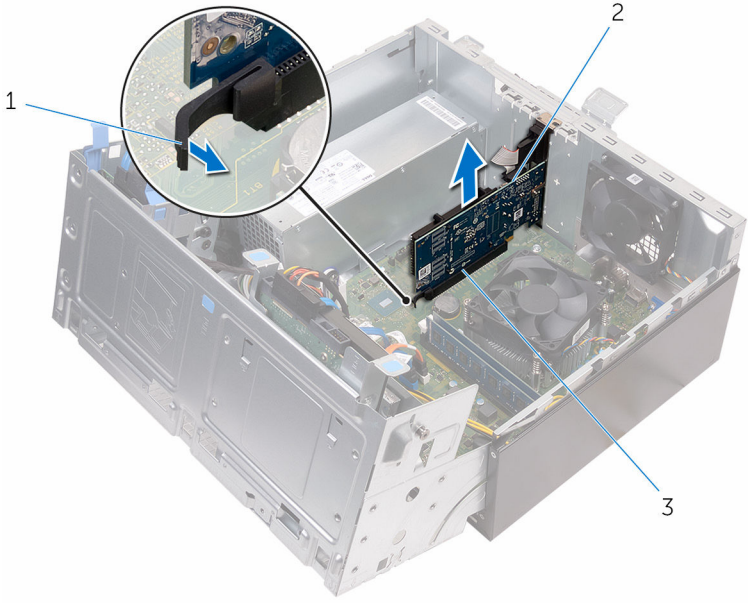
1 side-chassis

2 Open the card-retention bracket.



1 card-retention bracket

3 Push the securing tab away from the graphics card, grasp the card by its top corner, and ease it out of the slot.



1 tab
2 graphics card
3 slot

Replacing the graphics card

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1. Align the graphics card with the slot on the system board.
2. Place the card in the slot and press it down firmly until it snaps into place. Ensure that the card is firmly seated in the slot.
3. Rotate the card retention bracket towards the computer until it snaps into place.
4. Close the side-chassis.

Post-requisites

1. Replace the front bezel.
2. Replace the computer cover.

Removing the 3.5-inch hard drive

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

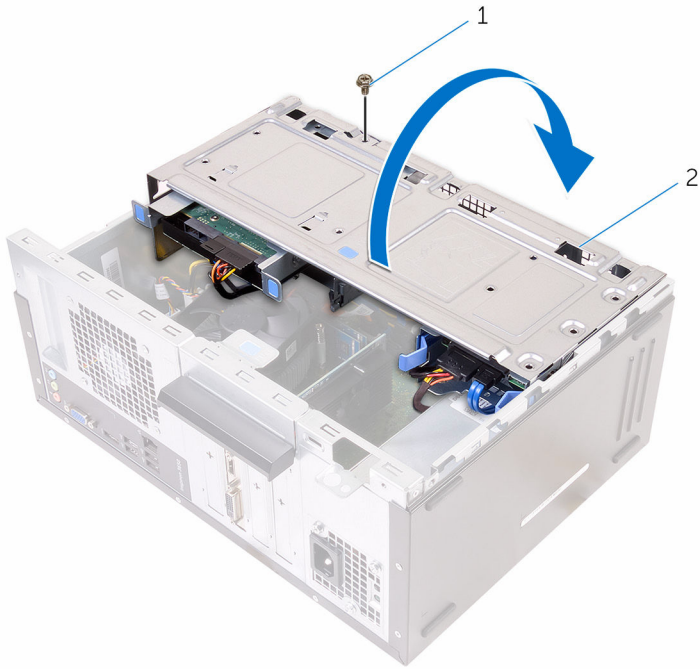
Prerequisites

1. Remove the computer cover.
2. Remove the front bezel.

Procedure

1. Remove the screw that secures the hard-drive assembly to the side-chassis.

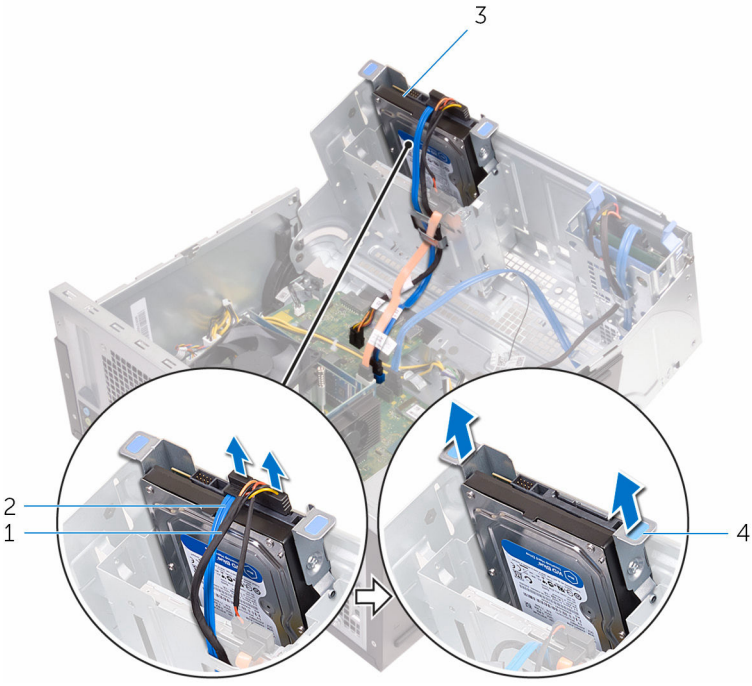
2 Open the side-chassis.



1 screw 2 side-chassis

3 Disconnect the data cable and the power cable from the hard drive.

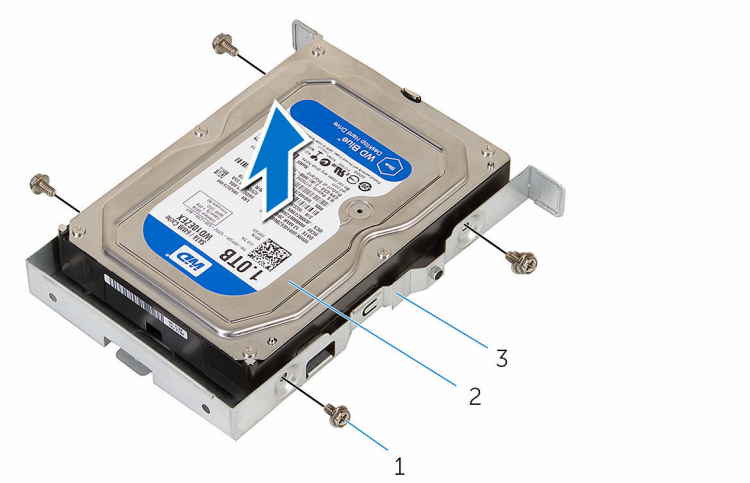
4 Slide the hard-drive assembly out of the side-chassis.



1	power cable	2	data cable
3	hard drive	4	hard-drive bracket

5 Remove the screws that secure the hard-drive bracket to the hard drive.

6 Lift the hard drive off the hard-drive bracket.



1 screws (4)
2 hard drive
3 hard-drive bracket

Replacing the 3.5-inch hard drive

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1. Place the hard drive in the hard-drive bracket.
2. Align the screw holes on the hard drive with the screw holes on the hard-drive bracket.
3. Replace the screws that secure the hard-drive bracket to the hard drive.
4. Slide the hard-drive assembly into the side-chassis.
5. Connect the data cable and the power cable to the hard drive.
6. Close the side-chassis.
7. Replace the screw that secures the hard-drive assembly to the side-chassis.

Post-requisites

1. Replace the front bezel.
2. Replace the computer cover.

Removing the 2.5-inch hard drives

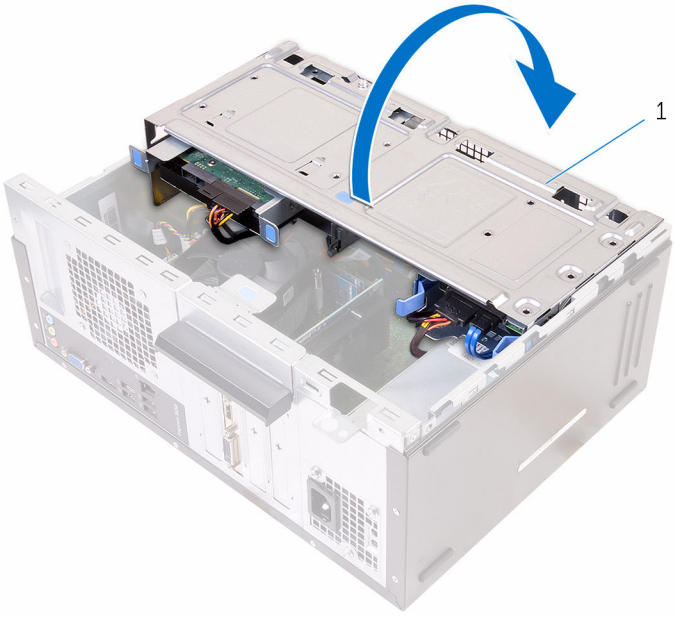
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Prerequisites

1 Remove the computer cover.
2 Remove the front bezel.

Procedure

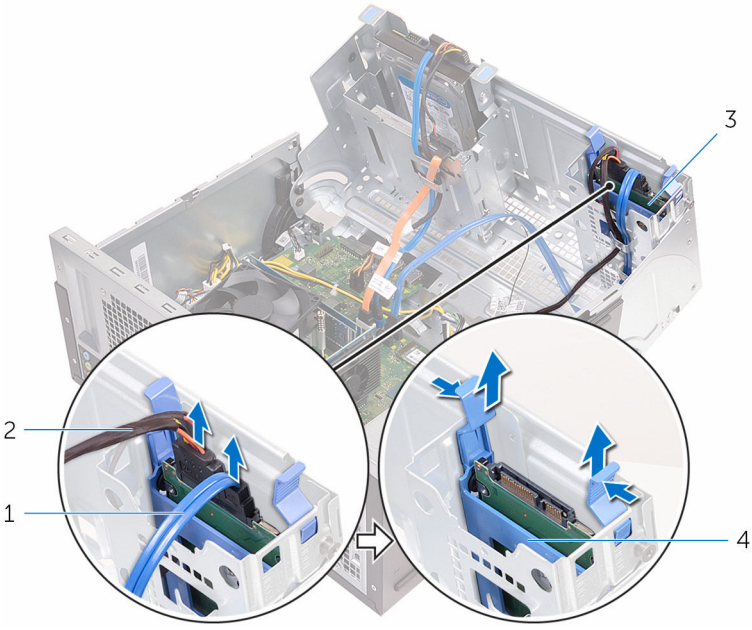
1 Open the side-chassis.



1 side-chassis

2 Disconnect the data cable and the power cable from the hard drive.

3 Press the tabs on the hard-drive assembly and slide the hard- drive assembly out of the side-chassis.

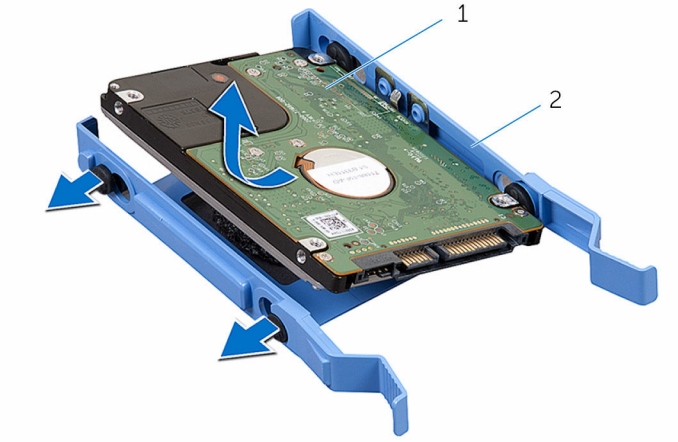


1	data cable	2	power cable
3	hard drive	4	hard-drive bracket

4 Spread apart the hard-drive bracket from one edge and lift the hard drive up.

5 Spread apart the hard-drive bracket to slide and remove the hard drive.

NOTE: Note the orientation of the hard drive so that you can replace it correctly.



1 hard drive

2 hard-drive bracket

Replacing the 2.5-inch hard drives

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

NOTE: When replacing the hard drive, follow the orientation of the hard drive when it was removed.

1. Align the holes on the hard drive to the tabs on the hard-drive bracket.
2. Snap the hard drive into the hard-drive bracket.
3. Slide the hard-drive assembly into the side-chassis.
4. Connect the data cable and power cable to the hard drive.
5. Close the side-chassis.

Post-requisites

1. Replace the front bezel.
2. Replace the computer cover.

Removing the optical drive

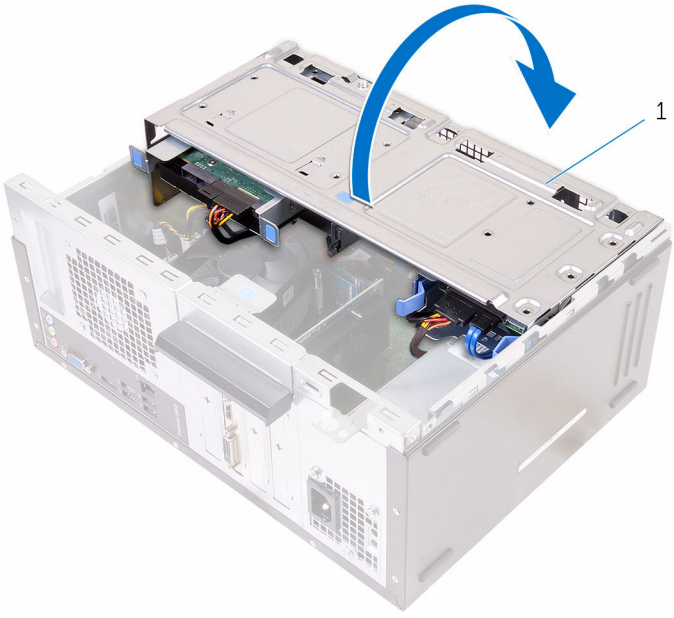
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Prerequisites

1. Remove the computer cover.
2. Remove the front bezel.

Procedure

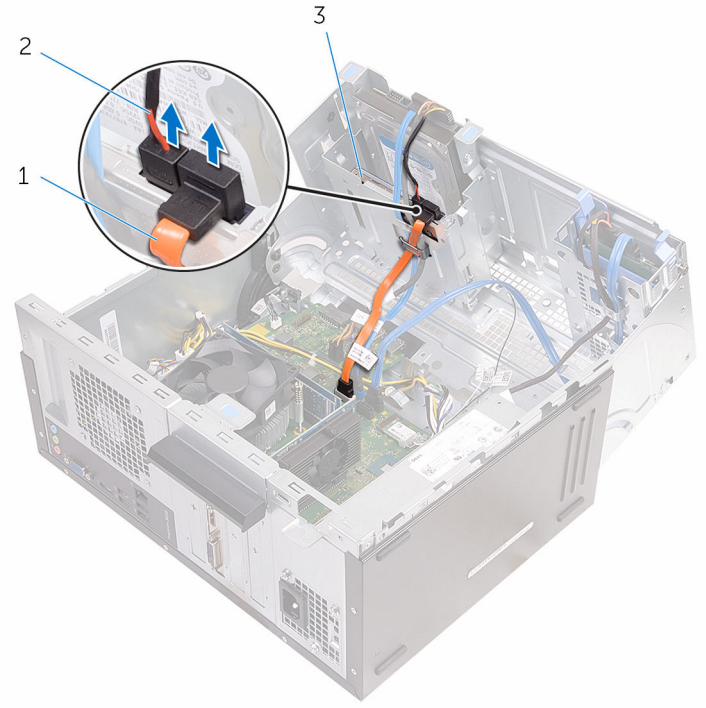
1 Open the side-chassis.



1 side-chassis

2 If a 3.5-inch hard drive is installed, disconnect the data and power cables from the drive.

3 Disconnect the data cable and the power cable from the optical drive.

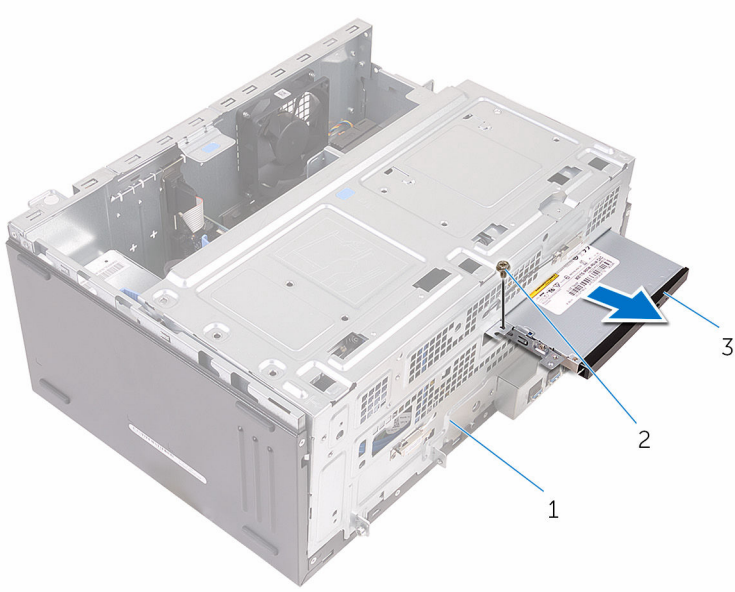


1 optical-drive data cable
2 optical-drive power cable
3 optical drive

4 Close the side-chassis.

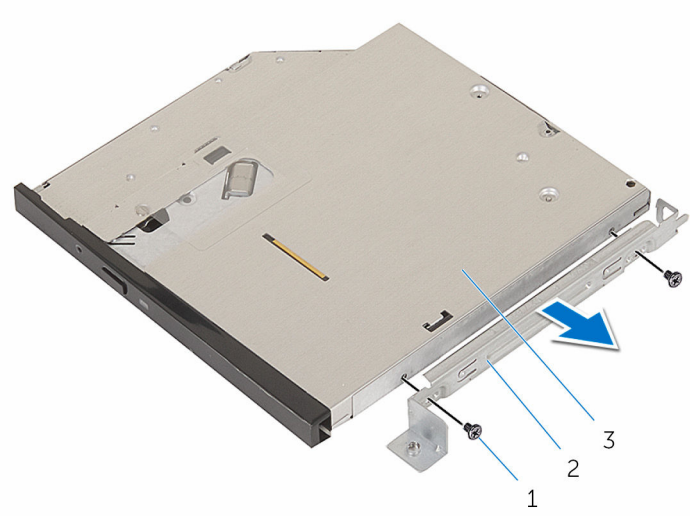
5 Remove the screw that secures the optical-drive assembly to the side-chassis.

6 Gently slide the optical-drive assembly out of the optical-drive bay through the front of the chassis.



1 chassis
2 screw
3 optical-drive assembly

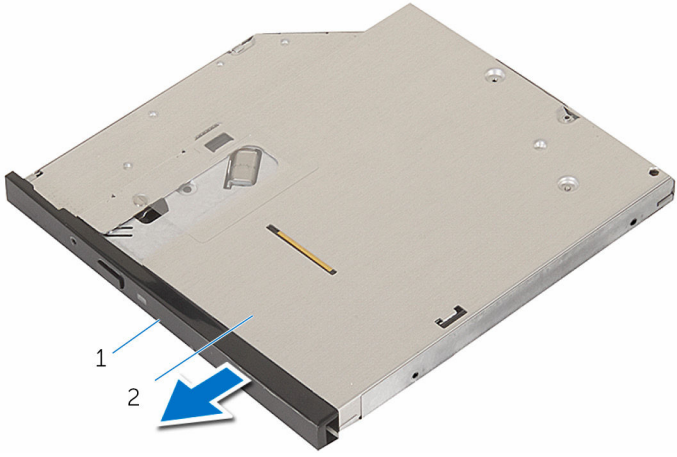
7 Remove the screws that secure the optical-drive bracket to the optical drive.



1 screws (2) 2 optical-drive bracket

3 optical drive

8 Gently pull and disconnect the optical-drive bezel from the optical drive.



1 optical-drive bezel 2 optical drive

Replacing the optical drive

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1. Align and snap the optical-drive bezel in to the optical drive.
2. Align the screw holes on the optical-drive bracket with the screw holes on the optical drive.
3. Replace the screws that secure the optical-drive bracket to the optical drive.
4. Slide the optical-drive module into the optical-drive bay through the front of the chassis.
5. Replace the screw that secures the optical-drive assembly to the chassis.
6. Open the side-chassis.
7. Connect the data cable and the power cable to the optical drive.
8. Connect the data cable and the power cable to the hard drive.
9. Close the side-chassis.

Post-requisites

1. Replace the front bezel.
2. Replace the computer cover.

Removing 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 working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

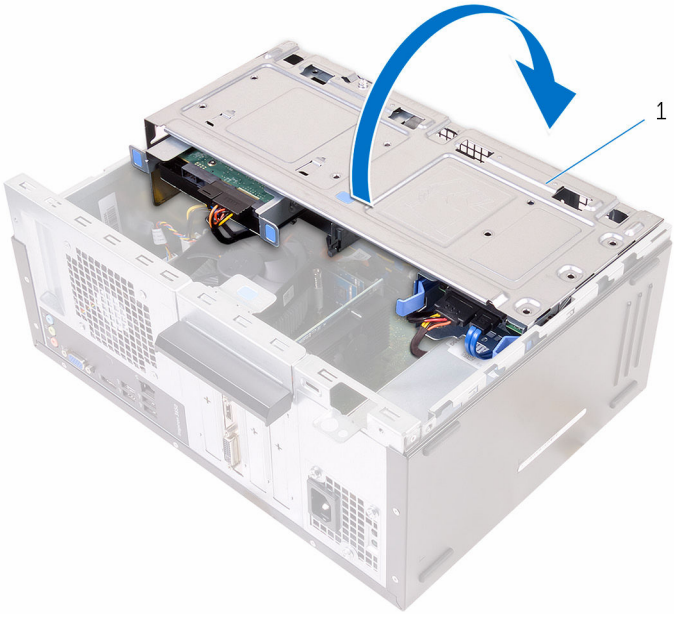
CAUTION: Removing the coin-cell battery resets the BIOS setup program's settings to default. It is recommended that you note the BIOS setup program's settings before removing the coin-cell battery.

Prerequisites

1. Remove the computer cover.
2. Remove the front bezel.

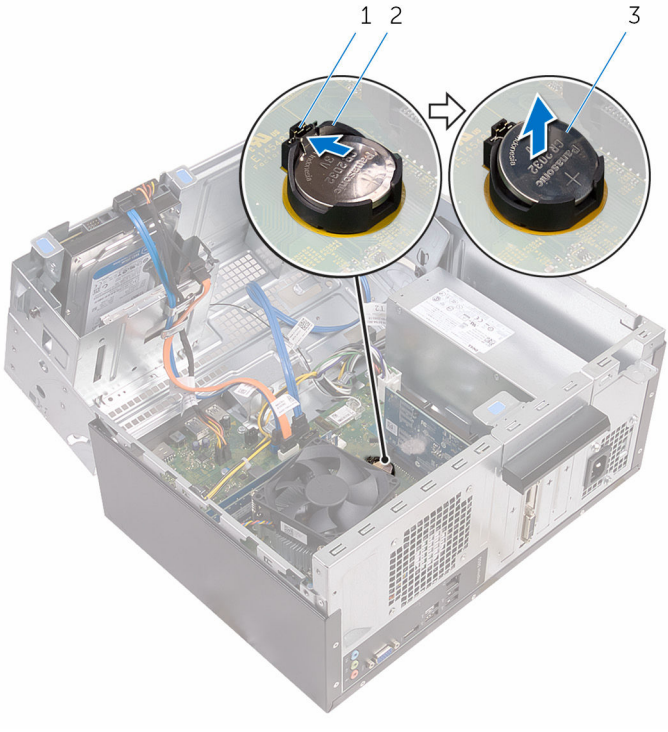
Procedure

1 Open the side-chassis.



1 side-chassis

2 Using a plastic scribe, pry the coin-cell battery out of its socket.



1 securing clip
2 coin-cell battery socket
3 coin-cell battery

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 working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1. With the positive-side facing up, insert the coin-cell battery into the coin-cell battery socket and snap the battery into place.
2. Close the side-chassis.

Post-requisites

1. Replace the front bezel.
2. Replace the computer cover.

Removing the wireless card

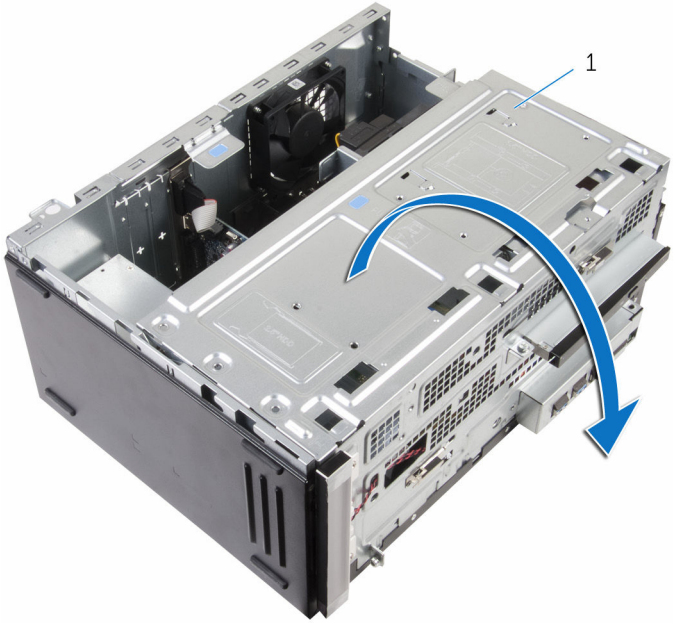
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Prerequisites

1. Remove the computer cover.
2. Remove the front bezel.

Procedure

1 Open the side-chassis.



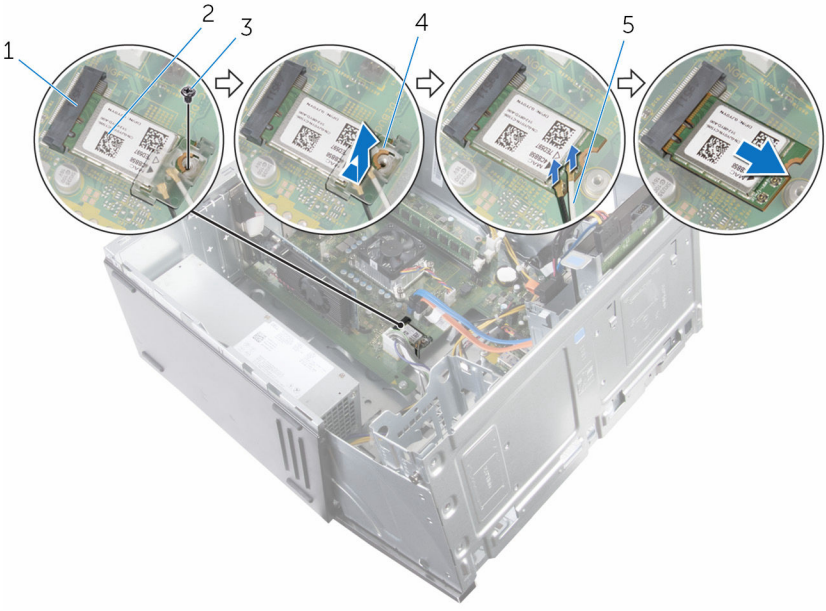
1 side-chassis

2 Remove the screw that secures the wireless card to the system board.

3 Slide the wireless-card bracket off the wireless card.

4 Disconnect the antenna cables from the wireless card.

5 Slide and remove the wireless card from the wireless-card slot.



1	wireless-card slot	2	wireless card
3	screw	4	wireless-card bracket
5	antenna cables		

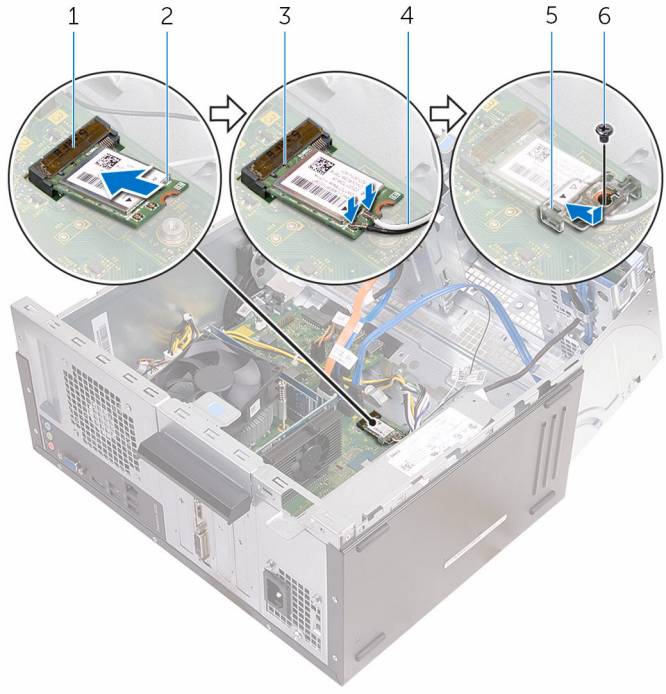
Replacing the wireless card

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1. Align the notch on the wireless card with the tab on the wireless-card slot.
2. Slide the wireless card at an angle into the wireless-card slot.
3. Connect the antenna cables to the wireless card.
4. Slide the wireless-card bracket over the wireless card.

5 Replace the screw that secures the wireless card to the system board.



1	wireless-card slot	2	wireless card
3	notch	4	antenna cables
5	wireless-card bracket	6	screw

6 Close the side-chassis.

Post-requisites

1 Replace the front bezel.
2 Replace the computer cover.

Removing the antenna modules

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Prerequisites

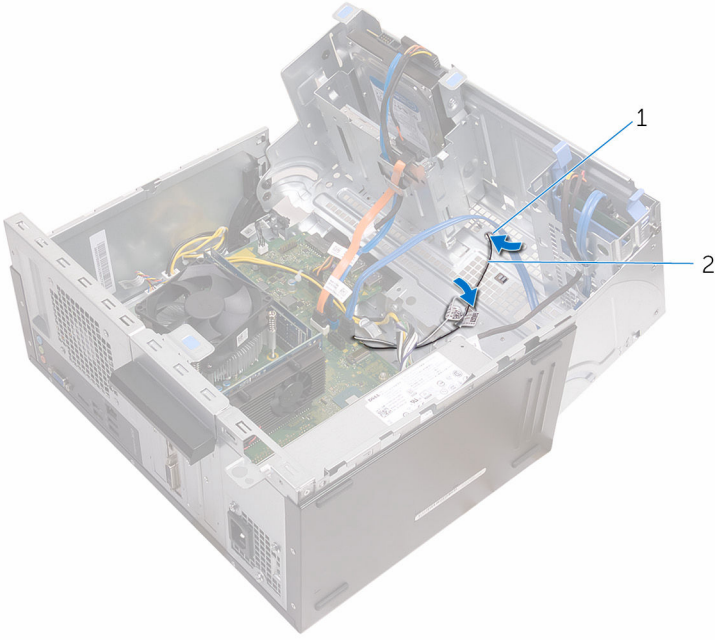
1. Remove the computer cover.
2. Remove the front bezel.
3. Remove the wireless card.

Procedure

1. Remove the antenna cables from the routing guides on the side-chassis.

2 Gently slide the antenna cables through the routing holes on the side-chassis.

Slide the white cable through the lower slot and the black cable through the upper slot.

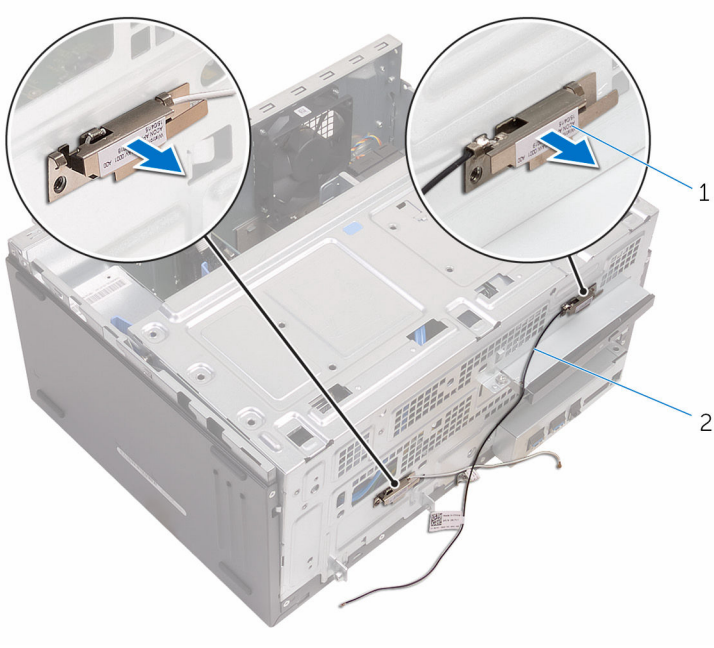


1 routing holes 2 antenna cables

3 Close the side-chassis.

4 Using a plastic scribe, gently pry the antenna modules off the side-chassis.

NOTE: Note the location of the antenna modules so that you can replace them correctly.



1 antenna modules (2) 2 antenna cables (2)

Replacing the antenna modules

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1. Adhere the antenna modules to the side-chassis.
2. Open the side-chassis.
3. Slide the antenna cables through the routing holes on the side-chassis.

   Slide the white cable through the lower slot and the black cable through the upper slot.
4. Route the antenna cables through the routing guides.

Post-requisites

1. Replace the wireless card.
2. Replace the front bezel.
3. Replace the computer cover.

Removing the power-button module

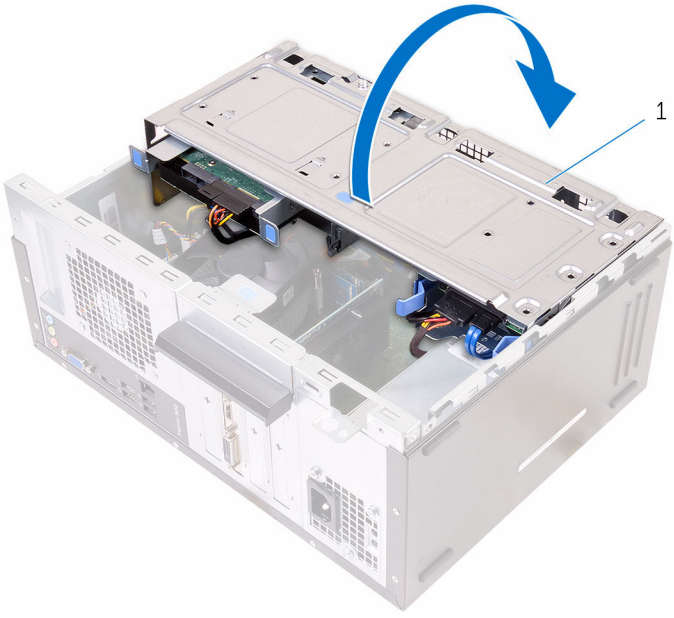
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Prerequisites

1 Remove the computer cover.
2 Remove the front bezel.

Procedure

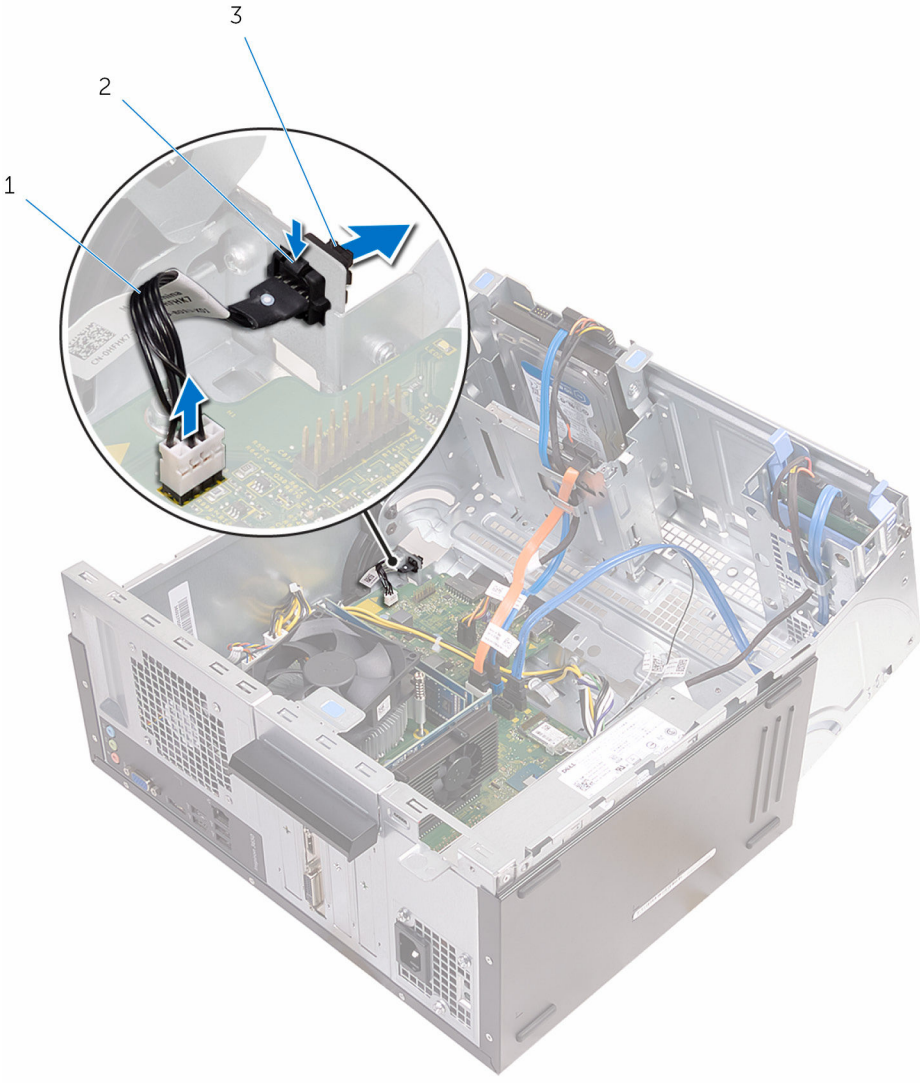
1 Open the side-chassis.



1 side-chassis

2 Disconnect the power-button cable from the system board.
For more information, see “System-board components”.

3 Press down the tab on the power button and slide it out of the chassis.



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

Replacing the power-button module

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1. Slide the power button into its socket.
2. Connect the power-button cable to the system board.
3. Close the side-chassis.

Post-requisites

1. Replace the front bezel.
2. Replace the computer cover.

Removing the chassis fan

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

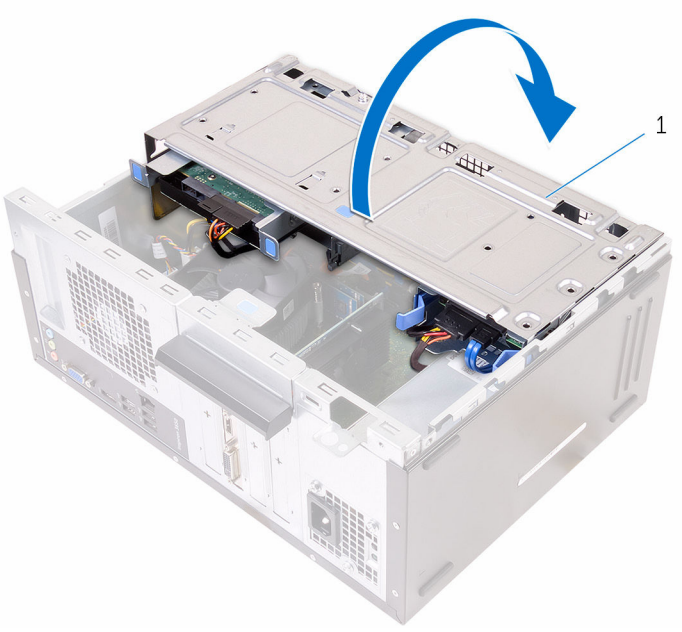
Prerequisites

Remove the computer cover.

Procedure

1 Lay the computer on its side with the side-chassis facing up.

2 Open the side-chassis.



1 side-chassis

3 Disconnect the chassis-fan cable from the system board.
For more information, see "System-board components".

4 Remove the screws that secure the chassis fan to the chassis.

1 screws (4) 2 chassis fan

3 chassis-fan cable

5 Remove the chassis fan from the chassis.

Replacing the chassis fan

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1. Align the screw holes on the chassis fan with the screw holes on the chassis.
2. Replace the screws that secure the chassis fan to the chassis.
3. Connect the chassis fan cable to the system board.
4. Close the side-chassis.
5. Place the computer in an upright position.

Post-requisites

1. Replace the front bezel.
2. Replace the computer cover.

Removing the power-supply unit

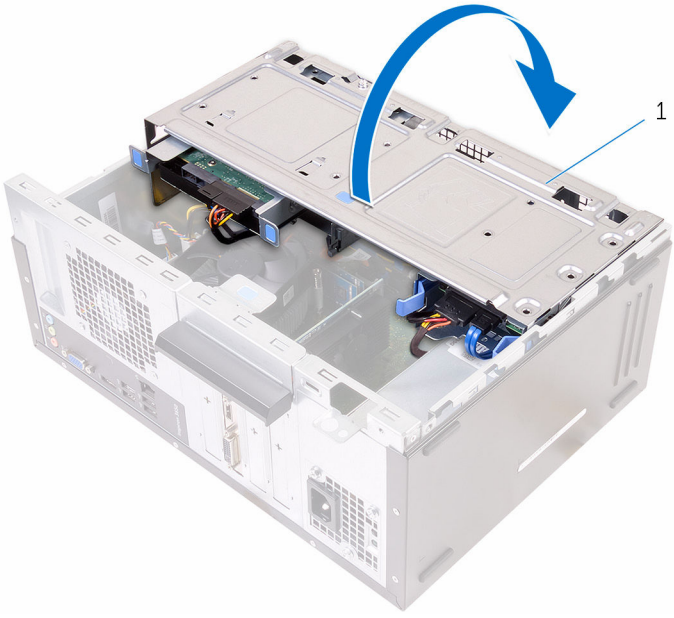
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Prerequisites

1 Remove the computer cover.
2 Remove the front bezel.

Procedure

1 Open the side-chassis.

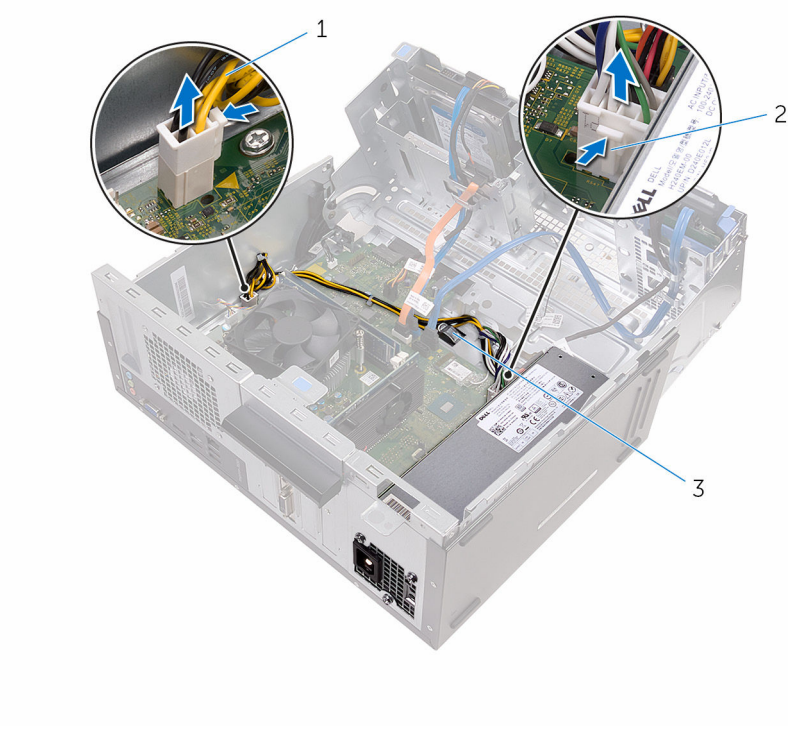


1 side-chassis

2 Press the securing clips and disconnect the power cables from the system board.

For more information, see “System-board components”.

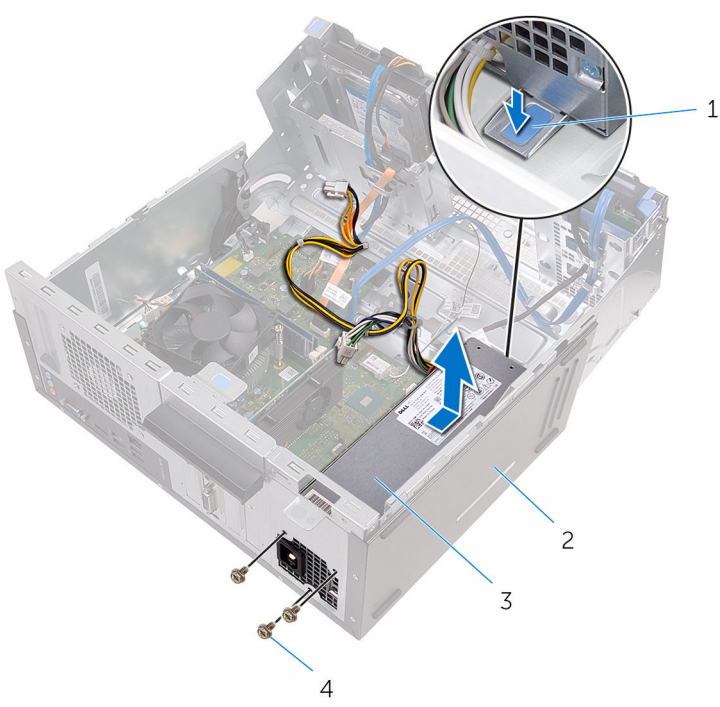
3 Note the routing and remove the power cables from the routing guides.



1 power cables (2)
2 securing clips (2)
3 routing guides (2)

4 Remove the screws that secure the power-supply unit to the chassis.
5 Press the clamp and release the power-supply unit from the chassis.

6 Slide and lift the power-supply unit off the chassis.



1	clamp	2	chassis
3	power-supply unit	4	screws (3)

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 working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.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. Route the power cables through the routing guide and connect the power cables to the system board.
5. Close the side-chassis.

Post-requisites

1. Replace the front bezel.
2. Replace the computer cover.

Removing the processor fan and heat-sink assembly

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

WARNING: The heat sink may become hot during normal operation. Allow sufficient time for the heat sink to cool before you touch it.

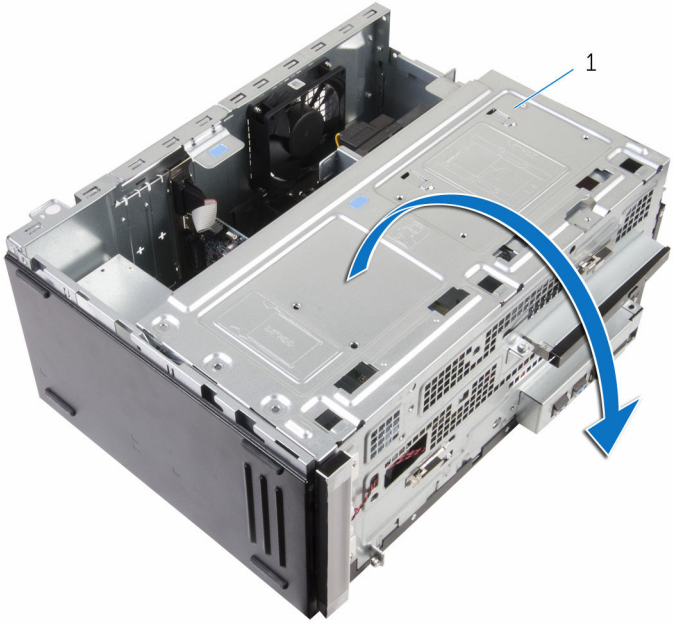
CAUTION: For maximum cooling of the processor, do not touch the heat transfer areas on the heat sink. The oils in your skin can reduce the heat transfer capability of the thermal grease.

Prerequisites

1 Remove the computer cover.
2 Remove the front bezel.

Procedure

1 Open the side-chassis.



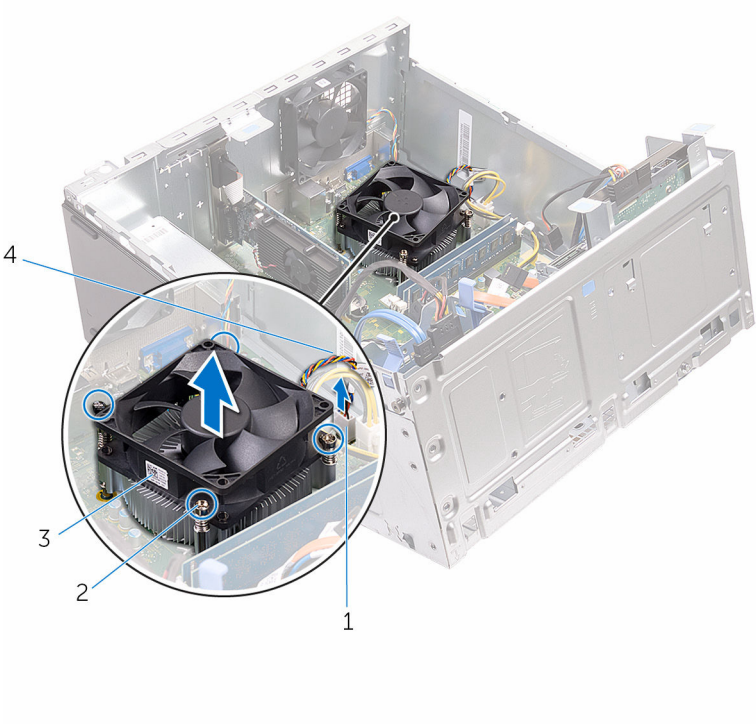
1 side-chassis

2 Disconnect the processor-fan cable from the system board.

For more information, see "System-board components".

3 Remove the screws that secure the processor fan and heat-sink assembly to the system board.

4 Lift the processor fan and heat-sink assembly off the computer.



1	processor-fan cable connector	2	captive screws (4)
3	processor fan	4	processor-fan cable

Replacing the processor fan and heat-sink assembly

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Procedure

1. Place the processor fan and heat-sink assembly over the processor.
2. Replace the screws that secure the processor fan and heat-sink assembly with the screw holes on the system board.
3. Connect the processor-fan cable to the system board.
4. Close the side-chassis.

Post-requisites

1. Replace the front bezel.
2. Replace the computer cover.

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 working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.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 setup program after you replace the system board.

NOTE: Replacing the system board removes any changes you have made to the BIOS using the BIOS setup program. You must make the desired changes again 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 the cables correctly after you replace the system board.

Prerequisites

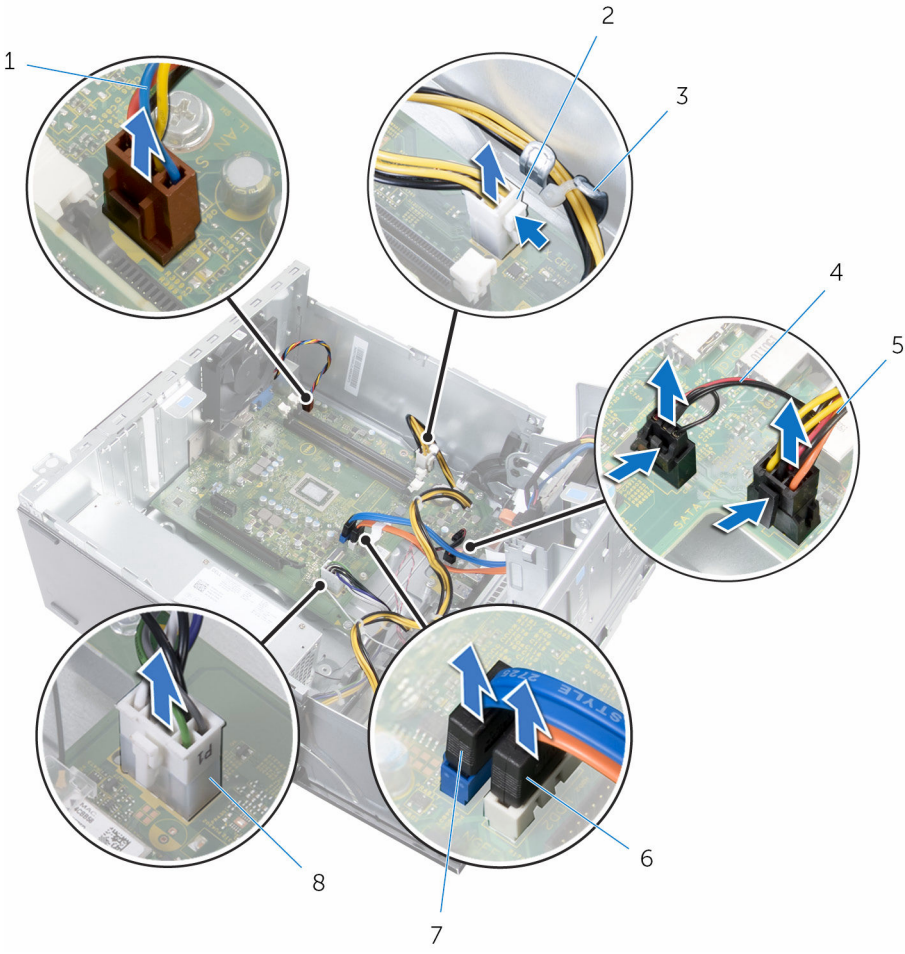
1. Remove the computer cover.
2. Remove the front bezel.
3. Remove the memory modules.
4. Remove the wireless card.
5. Remove the processor fan and heat-sink assembly.
6. Remove the power-supply unit.

Procedure

1. Disconnect the chassis-fan cable, power cable, drive-power cable, optical-drive data cable, and hard-drive data cable from the system board.

   For more information, see "System-board components".

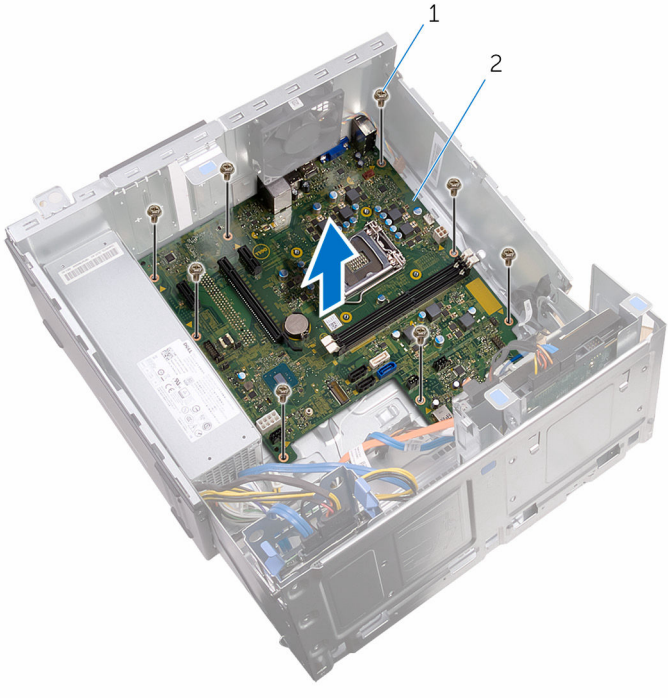
2 Note the routing and move the cables away from the system board.



1	chassis-fan cable	2	power cable
3	routing guide	4	lighting cable
5	drive-power cable	6	optical-drive data cable
7	hard-drive data cable	8	power cable

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

4 Lift the system board at an angle and remove it from the computer.



1 screws (8) 2 system board

Replacing the system board

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.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 setup program after you replace the system board.

NOTE: Replacing the system board removes any changes you have made to the BIOS using the BIOS setup program. You must make the desired changes again after you replace the system board.

Procedure

1. Align the screw holes on the system board with the screw holes on the chassis.
2. Gently place the system board onto the chassis.
3. Replace the screws that secure the system board to the chassis.
4. Route the cables through their routing guides and connect the cables to their respective connectors on the system board.

Post-requisites

1. Replace the processor fan and heat-sink assembly.
2. Replace the wireless card.
3. Replace the memory modules.
4. Replace the front bezel.
5. Replace the computer cover.

BIOS setup program

Overview

CAUTION: Unless you are an expert computer user, do not change the settings in the BIOS setup program. Certain changes can make your computer work incorrectly.

NOTE: Before you change BIOS setup program, it is recommended that you write down the BIOS setup program screen information for future reference.

Use BIOS setup program to:

- Get information about the hardware installed in your computer, such as the amount of RAM, the size of the hard drive, and so on.
- Change the system configuration information.
- Set or change a user-selectable option, such as the user password, type of hard drive installed, enabling or disabling base devices, and so on.

Entering BIOS setup program

1. Turn on (or restart) your computer.
2. During POST, when the DELL logo is displayed, watch for the F2 prompt to appear and then press F2 immediately.

   NOTE: The F2 prompt indicates that the keyboard has initialized. This prompt can appear very quickly, so you must watch for it, and then press F2. If you press F2 before the F2 prompt, this keystroke is lost. If you wait too long and the operating system logo appears, continue to wait until you see the operating system's desktop. Then, turn off your computer and try again.

Clearing Forgotten Passwords

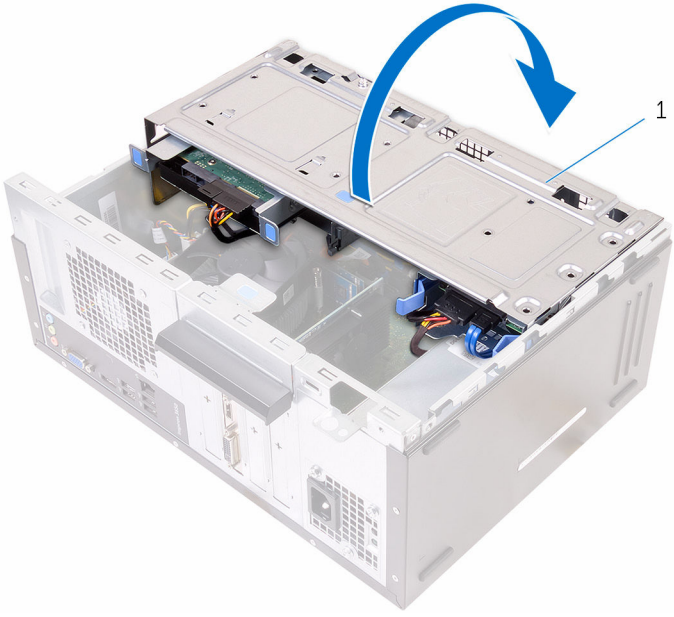
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Prerequisites

1 Remove the computer cover.
2 Remove the front bezel.

Procedure

1 Open the side-chassis.

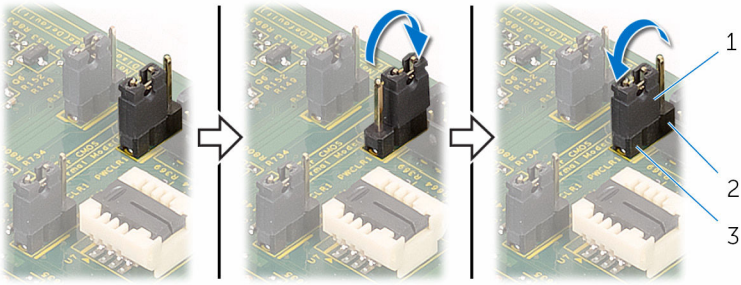


1 side-chassis

2 Remove the jumper plug from the default jumper-pins and connect it to the password jumper-pins.

NOTE: For more information on the location of the jumper-pins, see "System-board components".

3 Wait for 5 seconds and then replace the jumper plug in its original location.



1 jumper plug
2 password jumper-pins
3 default jumper-pins

4 Close the side-chassis.

Post-requisites

1 Replace the front bezel.
2 Replace the computer cover.

Clearing CMOS Settings

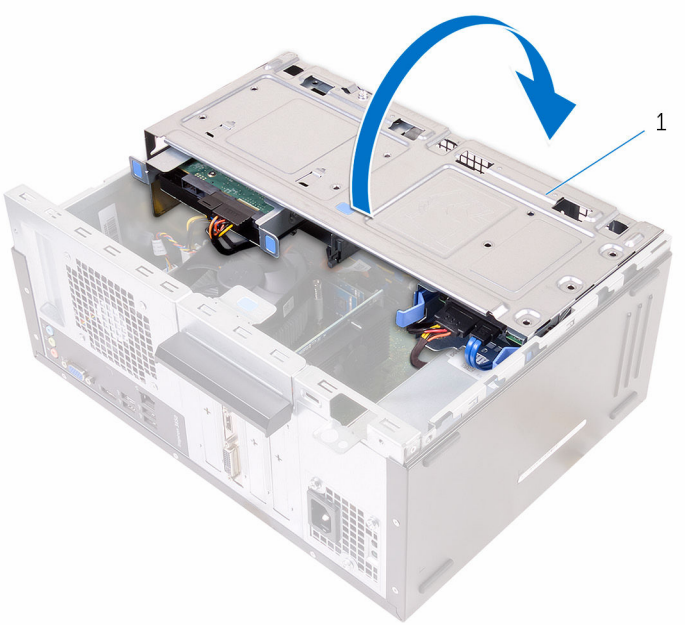
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

Prerequisites

1 Remove the computer cover.
2 Remove the front bezel.

Procedure

1 Open the side-chassis.

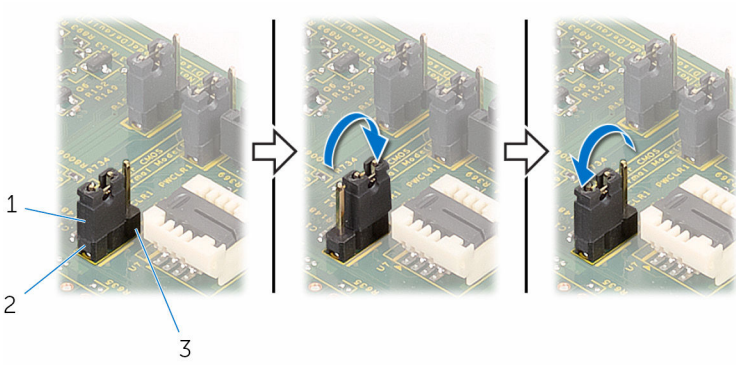


1 side-chassis

2 Remove the jumper plug from the default jumper-pins and connect it to the CMOS jumper-pins.

NOTE: For more information on the location of the jumper-pins, see "System-board components".

3 Wait for 5 seconds and then replace the jumper plug in its original location.



1 jumper plug
2 default jumper-pins
3 CMOS jumper-pins

4 Close the side-chassis.

Post-requisites

1 Replace the front bezel.
2 Replace the computer cover.

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 **www.dell.com/support**.
3. Click **Product Support**, enter the Service Tag of your computer and click **Submit**.

   NOTE: If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.
4. Click **Drivers & downloads**.
5. Select the operating system installed on your computer.
6. Scroll down the page and expand **BIOS**.
7. Click **Download File** to download the latest version of the BIOS for your computer.
8. Save the file and, once the download is complete, navigate to the folder where you saved the BIOS update file.
9. Double-click the BIOS update file icon and follow the instructions on the screen.

Getting help and contacting Dell

Self-help resources

You can get information and help on Dell products and services using these self-help resources:

Information about Dell products and services	**www.dell.com**
Windows 8.1 and Windows 10	Dell Help & Support app
Windows 10	Get started app
Windows 8.1	Help + Tips app
Accessing help in Windows 8, Windows 8.1, and Windows 10	In Windows search, type **Help and Support**, and press **Enter**.
Accessing help in Windows 7	Click **Start** → **Help and Support**.
Online help for operating system	**www.dell.com/support/windows** **www.dell.com/support/linux**
Troubleshooting information, user manuals, setup instructions, product specifications, technical help blogs, drivers, software updates, and so on	**www.dell.com/support**
Learn about your operating system, setting up and using your computer, data backup, diagnostics, and so on.	See *Me and My Dell* at **www.dell.com/support/manuals**.

Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see **www.dell.com/contactdell**.

NOTE: Availability varies by country and product, and some services may not be available in your country.

NOTE: If you do not have an active internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.