

# Inspiron 5676

## Service Manual



## Notes, cautions, and warnings

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

 **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.

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# Before working inside your computer

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

## Topics:

- [Before you begin](#)

## Before you begin

1. Save and close all open files and exit all open applications.
2. Shut down your computer. Click **Start** >  **Power** > **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 attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.
5. Remove any media card and optical disc from your computer, if applicable.
6. After the computer is unplugged, press and hold the power button for 5 seconds to ground the system board.

## 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, or cables you removed before working on your computer.
3. Replace any media cards, discs, or 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.

## Safety instructions

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

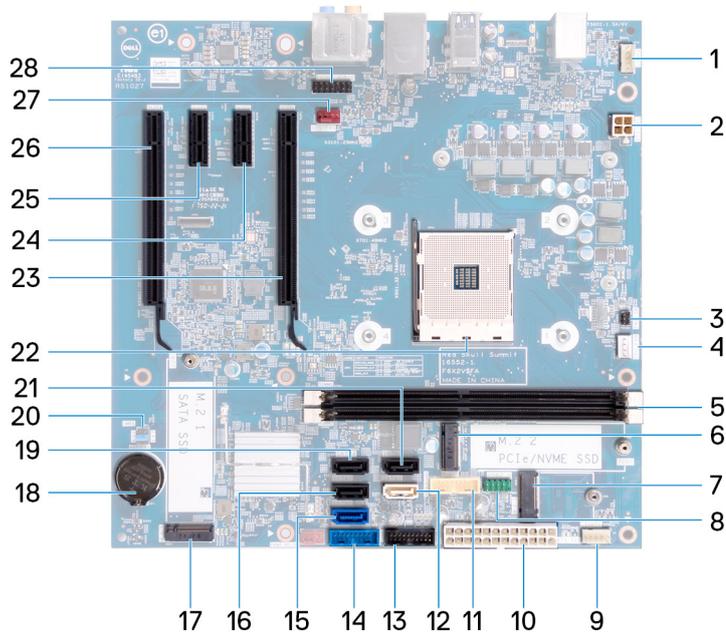
-  **NOTE:** Before working inside your computer, read the safety information that shipped with your computer. For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).
-  **NOTE:** Disconnect all power 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 electrical outlet.
-  **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](http://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 #1
- Plastic scribe

## System board components



- |                                       |                                       |
|---------------------------------------|---------------------------------------|
| 1. light-bar connector                | 2. processor-power cable connector    |
| 3. power-button board cable connector | 4. processor-fan cable connector      |
| 5. memory-module slot                 | 6. M.2 SATA connector                 |
| 7. wireless-card slot                 | 8. USB 2.0 cable connector            |
| 9. light-bar connector                | 10. power-supply unit cable connector |
| 11. USB 3.1 cable connector           | 12. SATA1 connector                   |
| 13. USB 3.1 (Type-C) cable connector  | 14. USB 3.1 cable connector           |
| 15. front chassis-fan connector       | 16. SATA0 connector                   |
| 17. M.2 SATA connector                | 18. coin-cell battery                 |
| 19. SATA4 connector                   | 20. jumper plug                       |
| 21. SATA3 connector                   | 22. processor socket                  |
| 23. graphics-card slot                | 24. PCIe slot 2                       |
| 25. PCIe slot 3                       | 26. PCIe slot 4                       |
| 27. system-fan connector              | 28. front-audio connector             |

## Screw list

The following table provides the list of screws that are used for securing different components to the computer.

**Table 1. Screw list**

Component	Secured to	Screw type	Quantity	Screw image
Right-side cover	Chassis	6-32UNCx6.3	2	
Light bar	Chassis	M3x5	1	
Solid-state drive	System board	M2x3.5	1	
Front panel light board	Chassis	M3x5	1	
Logo board	Chassis	M3x5	2	
Wireless card	System board	M2x3.5	1	
3.5" hard drive	Chassis	6-32UNCx3.6	2	
Hard-drive bracket	Hard drive	6-32UNCx3.6	4	
2.5" hard drive	Chassis	6-32UNCx3.6	1	
Hard-drive bracket	Hard drive	M3x3.5	4	
Graphics-card bracket	Chassis	6-32UNCx3.6	2	
Graphics card	Chassis	6-32UNCx3.6	1 2 (only with computers shipped with full-length graphics card)	
Fan	Chassis	6-32UNCx3.6	1	
Power-supply unit cover	Chassis	6-32UNCx6.3	2	

**Table 1. Screw list(continued)**

Component	Secured to	Screw type	Quantity	Screw image
Power-supply unit	Chassis	6-32UNCx6.3	4	
Front cover	Chassis	6-32UNCx3.6	1	
Optical drive	Chassis	M3x5	1	
Front I/O panel	Chassis	M3x5	2	
Top cover	Chassis	M3x5	1	
Front bezel	Chassis	M3x5	11	
Antenna	Chassis	M3x5	2	
Left-side cover	Chassis	M3x5	2	
Bottom cover	Chassis	M3x5	3	
Top bracket	Chassis	M3x5	2	
System board	Chassis	6-32UNCx6.3	8	

# Removing the right-side cover

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Procedure](#)

## Procedure

1. Remove the two screws (6-32UNCx6.3) that secure the cover to the chassis.
2. Release the computer cover by sliding it towards the back of the computer and lift the cover off the chassis.



# Replacing the right-side cover

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## Topics:

- [Procedure](#)

## Procedure

1. Align the tabs on the computer cover with the slots on the chassis and slide it towards the front of the computer.
2. Replace the two screws (6-32UNCx6.3) that secure the computer cover to the chassis.



# Removing the light bar

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

Remove the [right-side cover](#).

## Procedure

1. Disconnect the light bar cable from its connector on the chassis.
2. Remove the screw (M3x5) that secures the light bar to the chassis.
3. Slide and remove the light bar from the chassis.



## Replacing the light bar

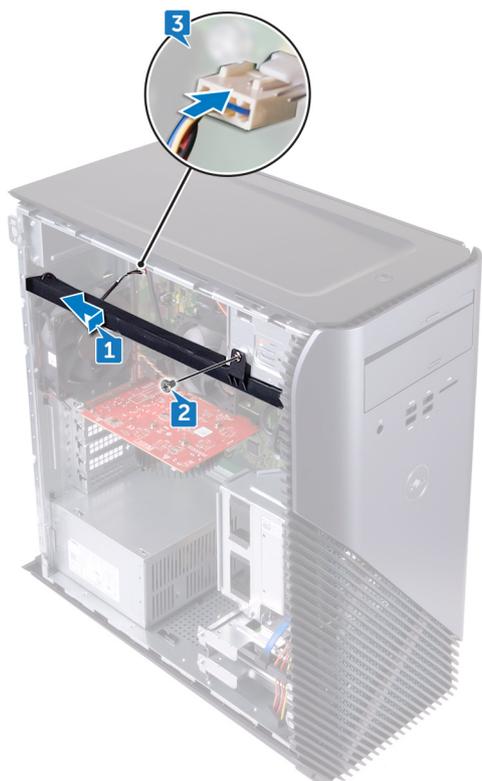
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### Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Align and slide the light bar into the slot on the chassis.
2. Replace the screw (M3x5) that secures the light bar to the chassis.
3. Connect the light bar cable to its connector on the chassis.



## Post-requisites

Replace the [right-side cover](#).

# Removing the front cover

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

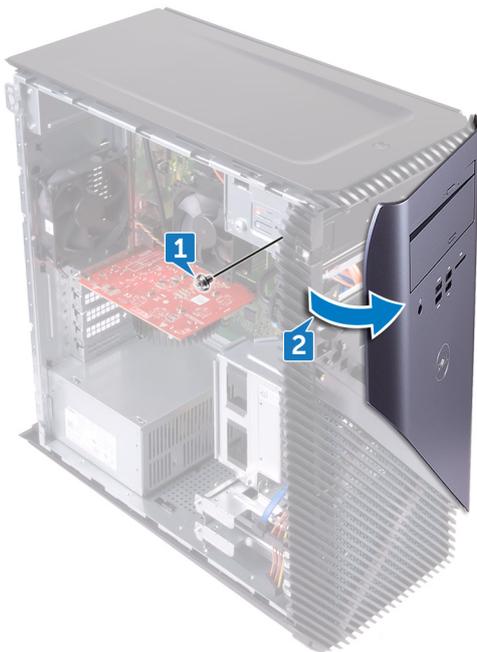
- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

Remove the [right-side cover](#).

## Procedure

1. Remove the screw (6-32UNCx3.6) that secures the front cover to the chassis.
2. Grasp and release the front cover tabs sequentially from the top, by moving them outward from the front bezel.



# Replacing the front cover

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## Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Align and insert the front-cover tabs into the front-panel slots and snap into place.
2. Replace the screw (6-32UNCx3.6) that secures the front cover to the chassis.



## Post-requisites

Replace the [right-side cover](#).

# Removing the memory module

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

Remove the [right-side cover](#).

## Procedure

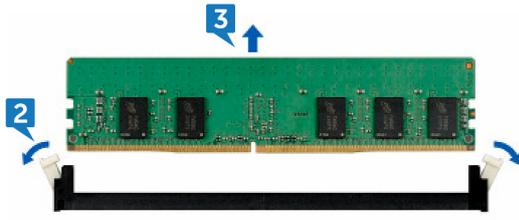
1. Lay the computer on the left side and locate the memory card slot on the system board.



2. Using your fingertips, spread apart the securing clip at each end of the memory-module slot until the memory module pops up.
3. Slide and remove the memory module from 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.

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



# Replacing the memory module

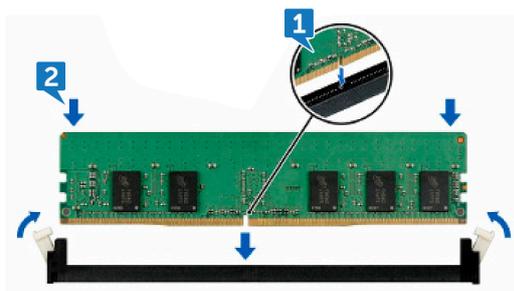
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## Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Align the notch on the memory module with the tab on the memory-module slot and insert the memory module into the memory-module slot.
2. Press the memory module down until it clicks into place.



3. Place the computer in an upright position.

## Post-requisites

Replace the [right-side cover](#).

# Removing the solid-state drive

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

**CAUTION:** Solid-state drives are fragile. Exercise care when handling the solid-state drive.

**CAUTION:** To avoid data loss, do not remove the solid-state drive while the computer is in sleep or on state.

## Topics:

- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

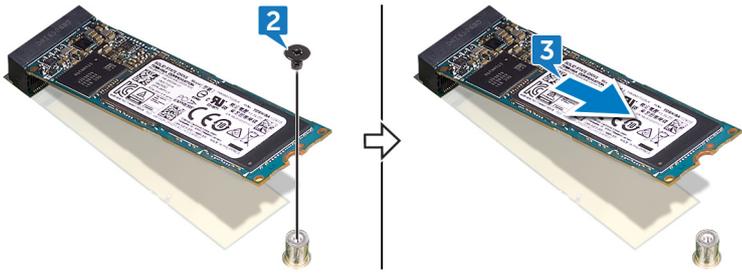
Remove the [right-side cover](#).

## Procedure

1. Lay the computer on the left side and locate the solid-state drive slot on the system board.



2. Remove the screw (M2x3.5) that secures the solid-state drive to the system board.
3. Slide and lift the solid-state drive off the system board.



# Replacing the solid-state drive

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

**CAUTION:** Solid-state drives are fragile. Exercise care when handling the solid-state drive.

## Topics:

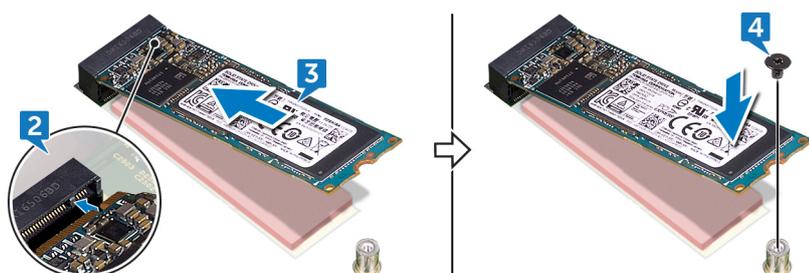
- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Adhere the thermal pad to the system board.



2. Align the notch on the solid-state drive with the tab on the solid-state drive slot.
3. Insert the solid-state drive at a 45-degree angle into the solid-state drive slot.
4. Press the other end of the solid-state drive down and replace the screw (M2x3.5) that secures the solid-state drive to the system board.



5. Place the computer in an upright position.

# Post-requisites

Replace the [right-side cover](#).

# Removing the 3.5-inch hard drive

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

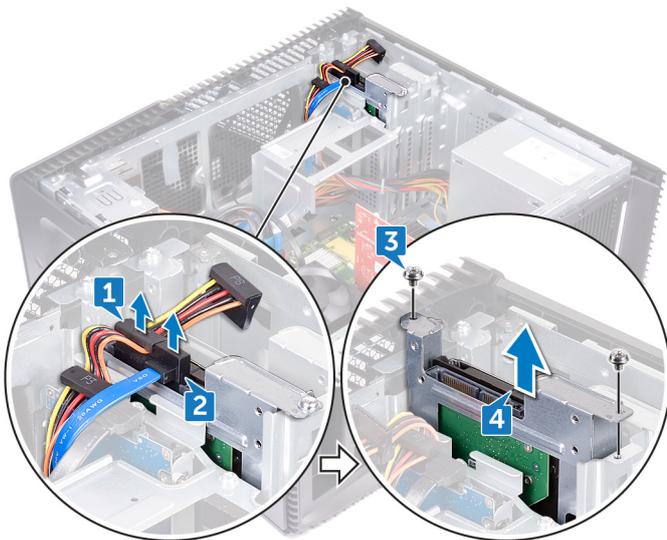
- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

Remove the [right-side cover](#).

## Procedure

1. Lay the computer on the left side and disconnect the power cable from the hard drive.
2. Disconnect the data cable from the hard drive.
3. Remove two screws (6-32UNCx3.6) that secure the hard-drive assembly to the side-chassis.
4. Lift the hard-drive assembly out of the slot on the side-chassis.



5. Remove the four screws (6-32UNCx3.6) that secure the hard-drive bracket to the hard drive.
6. Lift the hard drive off the hard-drive bracket.



# Replacing the 3.5-inch hard drive

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

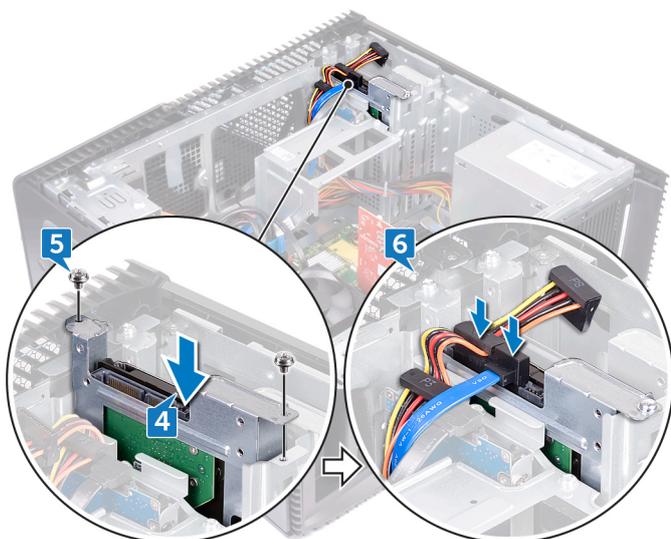
- [Procedure](#)
- [Post-requisites](#)

## 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 four screws (6-32UNCx3.6) that secure the hard-drive bracket to the hard drive.



4. Slide the hard-drive assembly into the slot on the side-chassis.
5. Replace the two screws (6-32UNCx3.6) that secure the hard-drive assembly to the side-chassis.
6. Connect the data cables and the power cables to the hard drive and place the computer in an upright position.



# Post-requisites

Replace the [right-side cover](#).

# Removing the 2.5-inch hard drive

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Prerequisites](#)
- [Procedure](#)

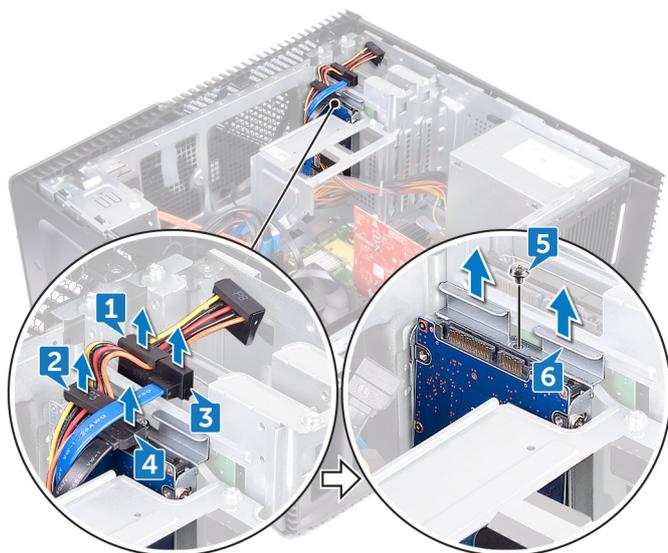
## Prerequisites

Remove the [right-side cover](#).

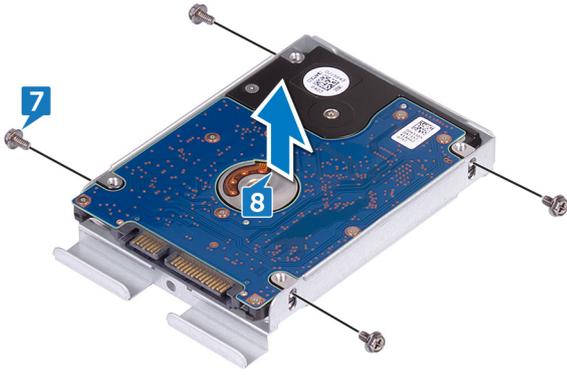
## Procedure

1. Lay the computer on the left side and disconnect the power cable from the 3.5-inch hard drive.
2. Disconnect the power cable from the 2.5-inch hard drive.
3. Disconnect the data cable from the 3.5-inch hard drive.
4. Disconnect the data cable from the 2.5-inch hard drive.
5. Remove the screw (6-32UNCx3.6) that secures the hard-drive assembly to the side-chassis.
6. Lift the hard-drive assembly from the side-chassis.

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



7. Remove the four screws (M3x3.5) that secure the hard-drive bracket to the hard drive.
8. Lift the hard drive off the hard-drive bracket.



# Replacing the 2.5-inch hard drive

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

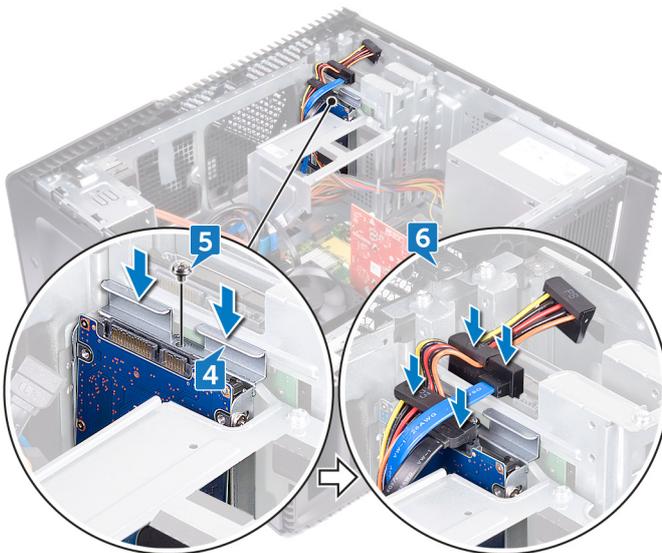
- Procedure
- Post-requisites

## 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 four screws (M3x3.5) that secure the hard-drive bracket to the hard drive.



4. Slide the hard-drive assembly into the slot on the side-chassis.
5. Replace the screw (6-32UNCx3.6) that secures the hard-drive assembly to the side-chassis.
6. Connect the data cables and the power cables to the hard drive and place the computer in an upright position.



# Post-requisites

Replace the [right-side cover](#).

# Removing the fan

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- Prerequisites
- Procedure
- Procedure

## Prerequisites

Remove the [right-side cover](#).

## Procedure

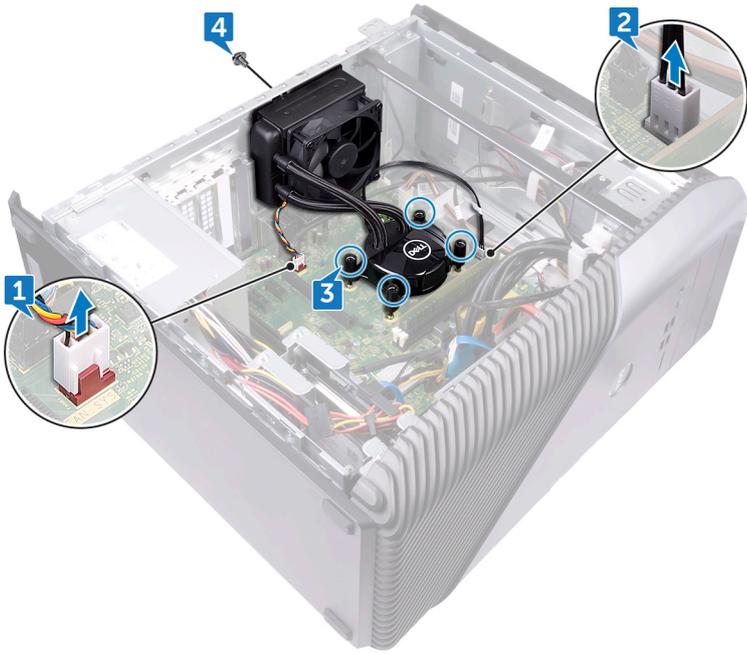
**NOTE:** Note the orientation of the fan while removing the so that you can replace it correctly.

1. Lay the computer on the left side and remove the system-fan cable from the system board.
2. Pull the system fan to release it from the rubber grommets on the chassis and remove the fan from the chassis.



## Procedure

1. Lay the computer on the left side and disconnect the fan cable from the system board.
2. Disconnect the processor-cooling assembly cable from the system board.
3. In the reverse sequential order (as indicated on the processor-cooling assembly), loosen the four captive screws that secure the processor-cooling assembly to the system board.
4. Remove the screw (6-32UNCx3.6) that secures the fan to the chassis.



5. Lift and release the fan from the chassis.
6. Lift the processor-cooling assembly along with the fan off the system board.



## Replacing the fan

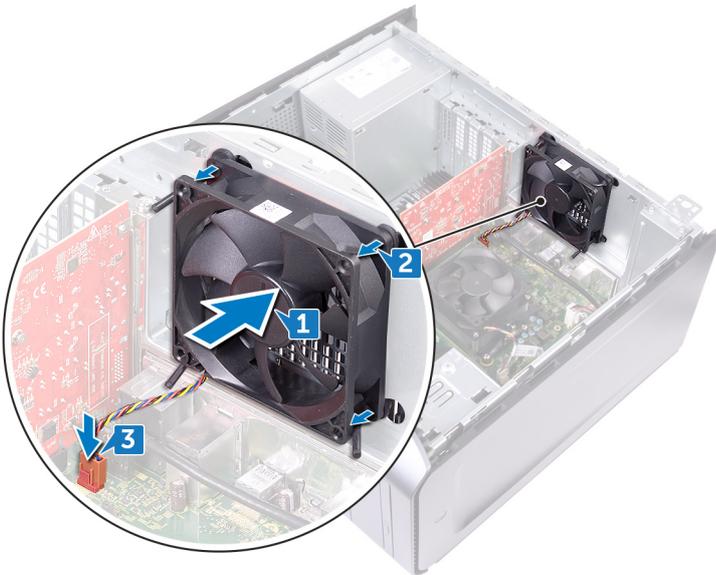
**NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

### Topics:

- Procedure
- Procedure
- Post-requisites

## Procedure

1. Align the slots on the system fan with the rubber grommets on chassis.
2. Route the rubber grommets through the slots on system fan and pull the rubber grommets until the fan snaps into position.
3. Connect the system-fan cable to the system board and place the computer in an upright position.

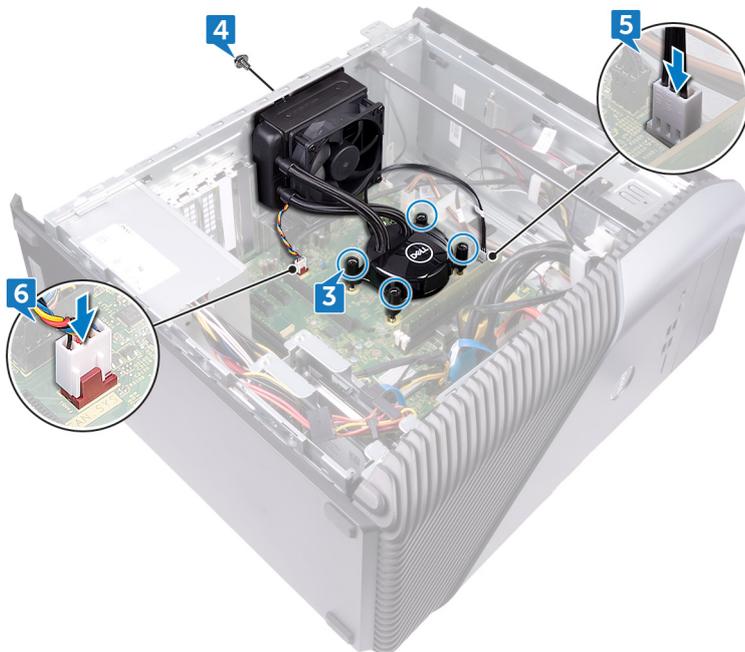


## Procedure

1. Align the four captive screws on the processor-cooling assembly with the slot on the system board.
2. Align the tabs on the fan with the slots on the chassis and place the fan in position.



3. In sequential order (as indicated on the processor-cooling assembly), tighten the captive screws that secure the processor-cooling assembly to the system board.
4. Replace the screw (6-32UNCx3.6) that secures the fan to the chassis.
5. Connect the processor-cooling assembly cable to the system board.
6. Place the computer in an upright position.
7. Connect the fan cable to the system board.



8. Place the computer in an upright position.

## Post-requisites

Replace the [right-side cover](#).

# Removing the graphics card

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

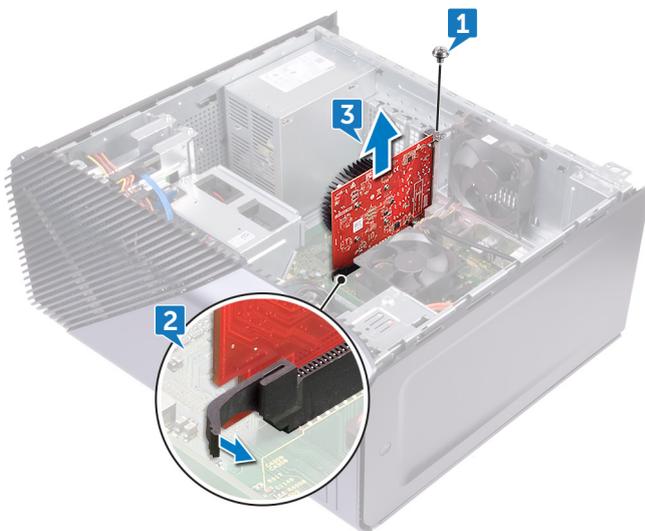
- [Prerequisites](#)
- [Procedure](#)
- [Procedure](#)

## Prerequisites

Remove the [right-side cover](#).

## Procedure

1. Lay the computer on the left side and remove the screw (6-32UNCx3.6) that secures the graphics card to the chassis.
2. Push the securing tab on the PCIe slot away from the graphics card, grasp the card by its top corner, and ease it out of the slot.
3. Lift the graphics card off the computer.



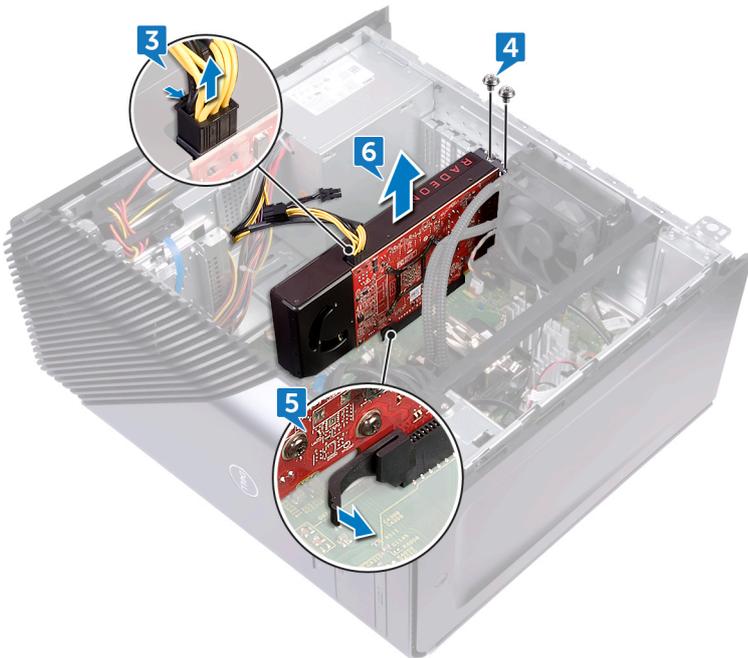
## Procedure

### Only with computers shipped with full-length graphics card

1. Lay the computer on the left side and remove the two screws (6-32UNCx3.6) that secures the graphics-card bracket to the chassis.
2. Lift the graphics-card bracket off the chassis.



3. Press the tab and disconnect the graphics-card cable from the graphics card.
4. Remove the two screws (6-32UNCx3.6) that secures the graphics card to the chassis.
5. Push the securing tab on the PCIe slot away from the graphics card, grasp the card by its top corner, and ease it out of the slot.
6. Lift the graphics card off the computer.



# Replacing the graphics card

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Procedure](#)
- [Procedure](#)
- [Post-requisites](#)

## Procedure

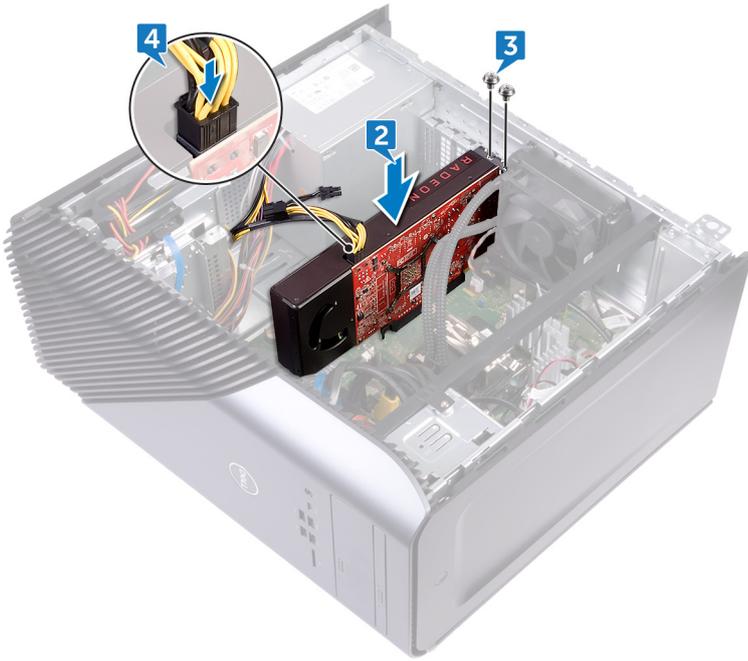
1. Align the graphics card with the slot on the chassis.
2. Align and place the graphics card into the slot on system board and press down firmly until the graphics card snaps into place.
3. Replace the screw (6-32UNCx3.6) that secures the graphics card to the chassis and place the computer in an upright position.



## Procedure

### Only with computers shipped with full-length graphics card

1. Align the graphics card with the slot on the chassis.
2. Align and place the graphics card into the slot on system board and press down firmly until the graphics card snaps into place.
3. Replace the two screws (6-32UNCx3.6) that secure the graphics card to the chassis.
4. Connect the graphics-card cable to the graphics card.



5. Align the screw holes on the graphics-card bracket to the screw holes on the chassis.
6. Replace the two screws (6-32UNCx3.6) that secures the graphics-card bracket to the chassis and place the computer in an upright position.



## Post-requisites

Replace the [right-side cover](#).

# Removing the wireless card

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

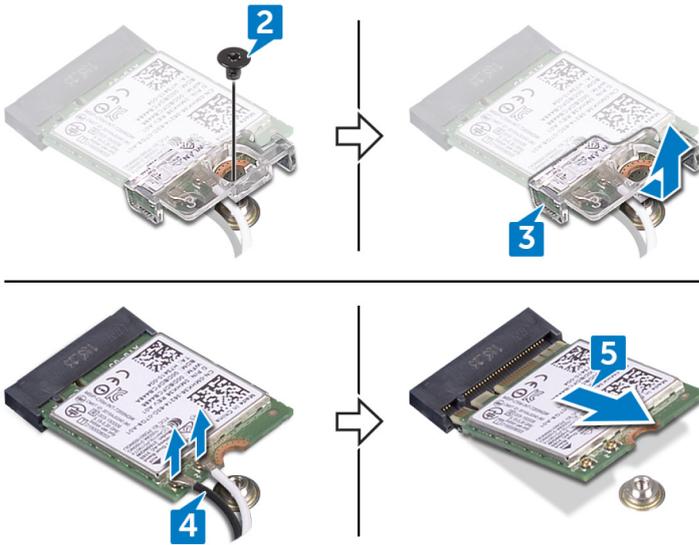
Remove the [right-side cover](#).

## Procedure

1. Lay the computer on the left side and locate the wireless card on the system board.



2. Remove the screw (M2x3.5) that secures the wireless card to the system board.
3. Lift 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.



# Replacing the wireless card

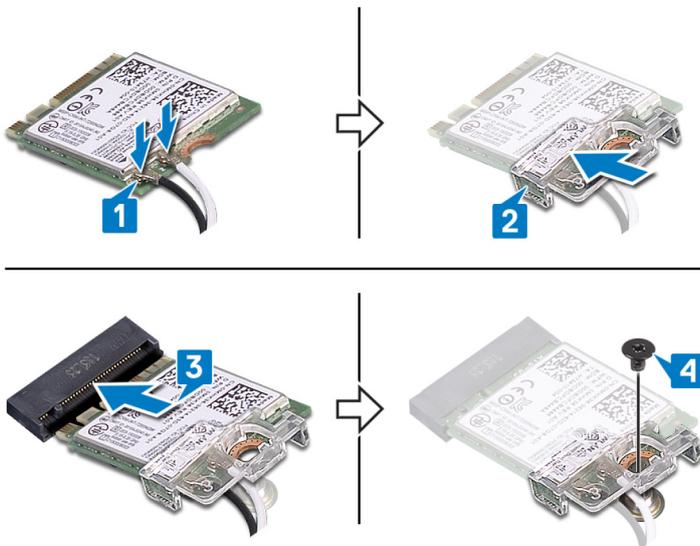
**NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

## Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Connect the antenna cables to the wireless card.
2. Place the wireless-card bracket over the wireless card.
3. Align the notch on the wireless card with the tab on the wireless-card slot and slide the wireless card at an angle into the wireless-card slot.
4. Replace the screw (M2x3.5) that secures the wireless card to the system board.



5. Place the computer in an upright position.

## Post-requisites

Replace the [right-side cover](#).

# Removing the coin-cell battery

**NOTE:** 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](http://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.

## Topics:

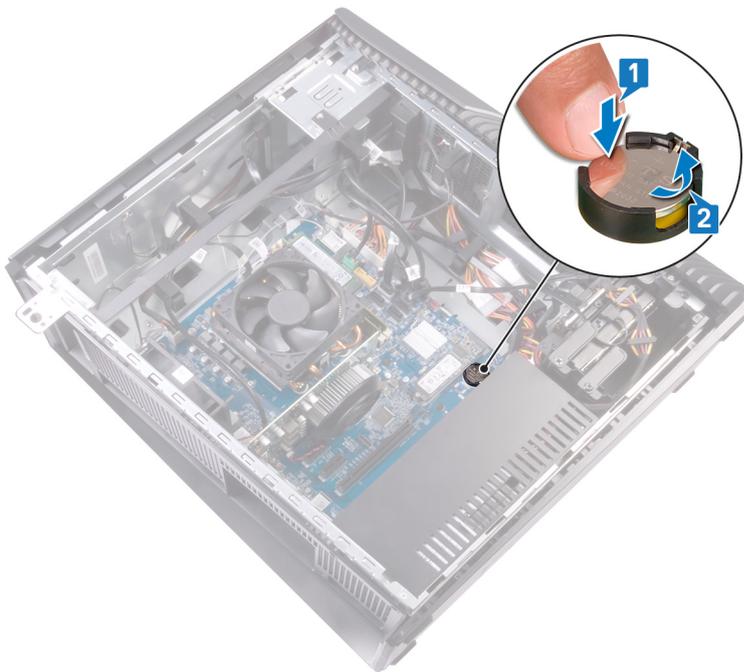
- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

Remove the [right-side cover](#).

## Procedure

1. Lay the computer on the left side and using your index finger, press the coin-cell battery.
2. Release the coin-cell battery out of its socket.



# Replacing the coin-cell battery

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Insert the coin-cell battery into the battery socket with the positive side facing up, and snap the battery into place.



2. Place the computer in an upright position.

## Post-requisites

Replace the [right-side cover](#).

# Removing the power-supply unit

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- Prerequisites
- Procedure

## Prerequisites

Remove the [right-side cover](#).

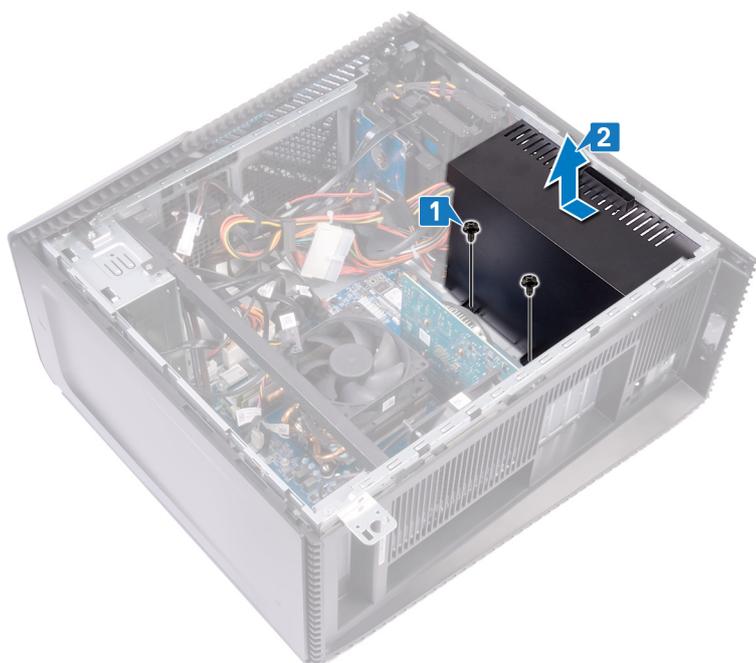
## Procedure

**NOTE:** Note the routing of the cables while removing the power-supply unit so that you can replace them correctly.

**NOTE:** Remove the cables from the routing guides on the chassis to avoid potential damage to the cables.

**NOTE:** Disconnect the power cables from their extensions.

1. Lay the computer on the left side and remove the two screws (6-32UNCx6.3) that secure the power-supply unit cover to the chassis (Only for computers shipped with clear door).
2. Slide the power-supply unit cover towards the front of the chassis and lift it off the chassis (Only for computers shipped with clear door).



3. Press the securing clip and disconnect the power-supply unit cable from the processor-power cable.
4. Press the securing clip and disconnect the power-supply unit cable from the system board cable.

5. Disconnect the power cable from the hard-disk cable.
6. Disconnect the power cable from the optical-drive cable.



7. Remove the four screws (6-32UNCx6.3) that secure the power-supply unit to the chassis.
8. Press the clamp and slide the power-supply unit towards the front of the chassis and lift the power-supply unit, along with the cables, off the chassis.



# Replacing the power-supply unit

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Procedure](#)
- [Post-requisites](#)

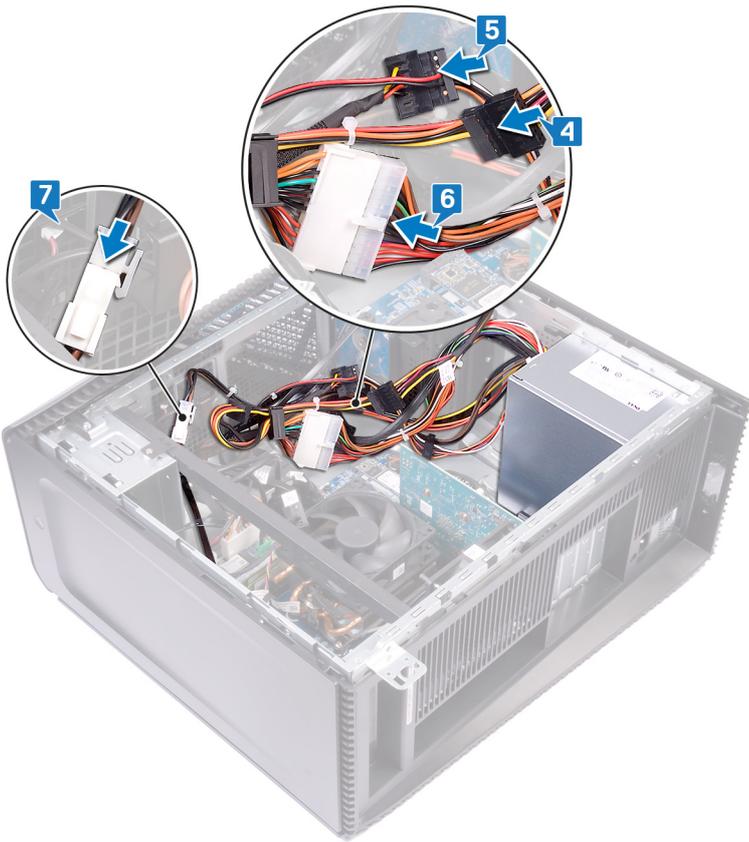
## Procedure

1. Place the power supply on the chassis and slide the power-supply unit towards the back of the chassis until it snaps into place.
2. Align the screw holes on the power-supply unit with the screw holes on the chassis.
3. Replace the four screws (6-32UNCx6.3) that secure the power-supply unit to the chassis.



4. Route the power-supply unit cables through the routing guides on the chassis.
5. Connect the power cables to their extensions.
6. Connect the processor-power cable and system-board power cable to the system board.
7. Connect the power cables to the hard drives and optical drive.

**NOTE:** For computers with graphics card, connect the power cable to the graphics card, if applicable.



8. Align the screw holes on the power-supply unit cover with the screw holes on the chassis.
9. Replace the two screws (6-32UNCx6.3) that secure the power-supply unit cover to the chassis.



10. Place the computer in an upright position.

## Post-requisites

Replace the [right-side cover](#).

# Removing the top cover

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

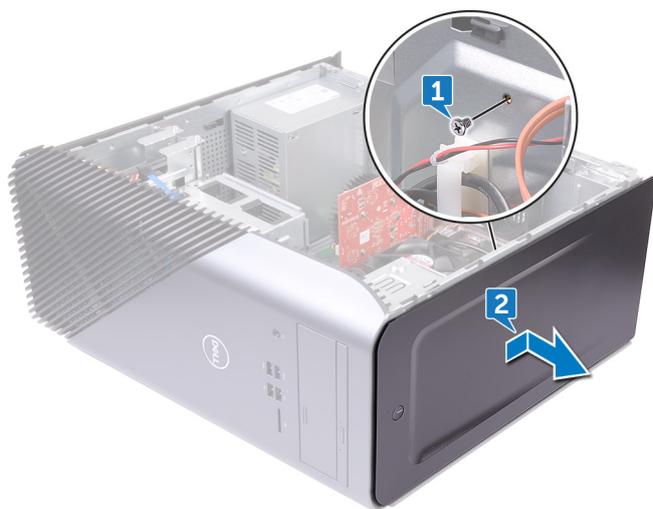
- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

Remove the [right-side cover](#).

## Procedure

1. Lay the computer on the left side and remove the screw (M3x5) that secures the top cover to the chassis.
2. Slide the top cover towards the backside of the chassis and remove the top cover from the chassis.



# Replacing the top cover

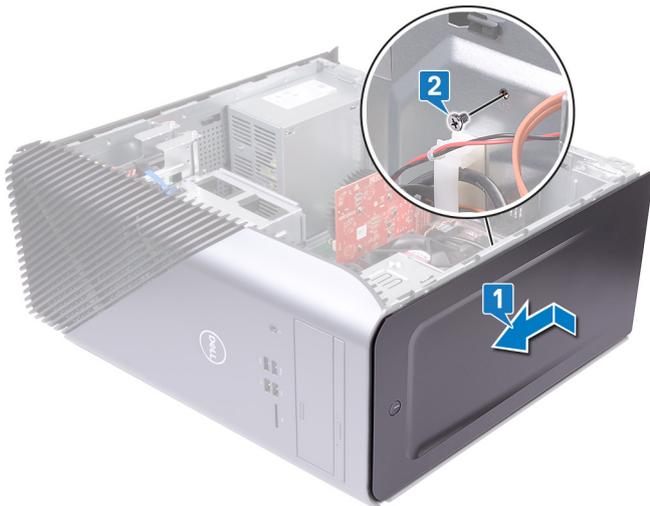
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## Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Align the tabs on the top cover with the slots on the chassis and slide the top cover towards the front of the chassis and secure the top cover in place.
2. Replace the screw (M3x5) that secures the top cover to the chassis.



3. Place the computer in an upright position.

## Post-requisites

Replace the [right-side cover](#).

# Removing the left-side cover

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

Remove the [right-side cover](#).

## Procedure

1. Lay the computer on the left side and remove the two screws (M3x5) that secure the left-side cover to the chassis.



2. Carefully turn over the computer.
3. Slide and lift the left-side cover off the chassis.



## Replacing the left-side cover

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

### Topics:

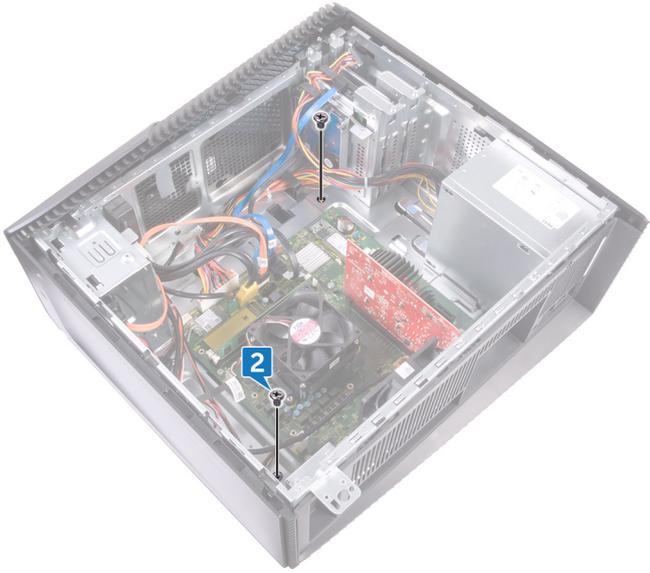
- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Align the tabs on the left-side cover with the slots on the chassis and snap the left-side cover to lock it in place.



2. Replace the two screws (M3x5) that secure the left-side cover to the chassis.



3. Place the computer in an upright position.

## Post-requisites

Replace the [right-side cover](#).

# Removing the bottom cover

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

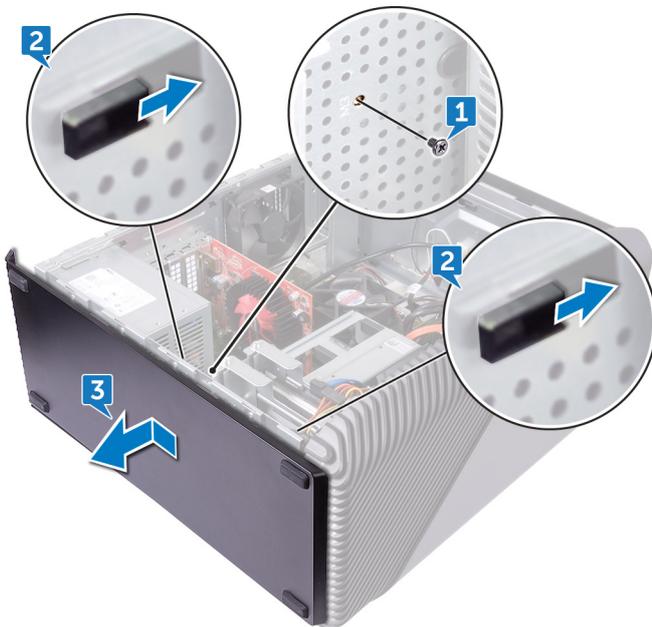
- Prerequisites
- Procedure

## Prerequisites

Remove the [right-side cover](#).

## Procedure

1. Lay the computer on the left side and remove the three screws (M3x5) that secure the bottom cover to the chassis.
2. Press the securing tabs to release the bottom cover from the slots on the chassis and slide to remove the bottom cover from the chassis.
3. Slide and remove the bottom cover from the chassis.



# Replacing the bottom cover

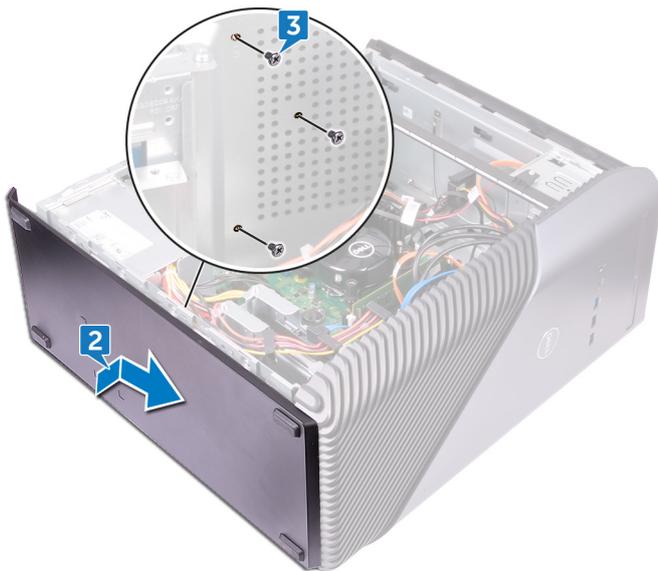
**NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

## Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Tilt the computer towards the front until the base is facing up.
2. Align the tabs on the bottom cover with the slots on the chassis and snap the bottom cover to lock it in place.
3. Replace the three screws (M3x5) that secure the bottom cover to the chassis.



4. Place the computer in an upright position.

## Post-requisites

Replace the [right-side cover](#).

# Removing the processor-cooling assembly

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

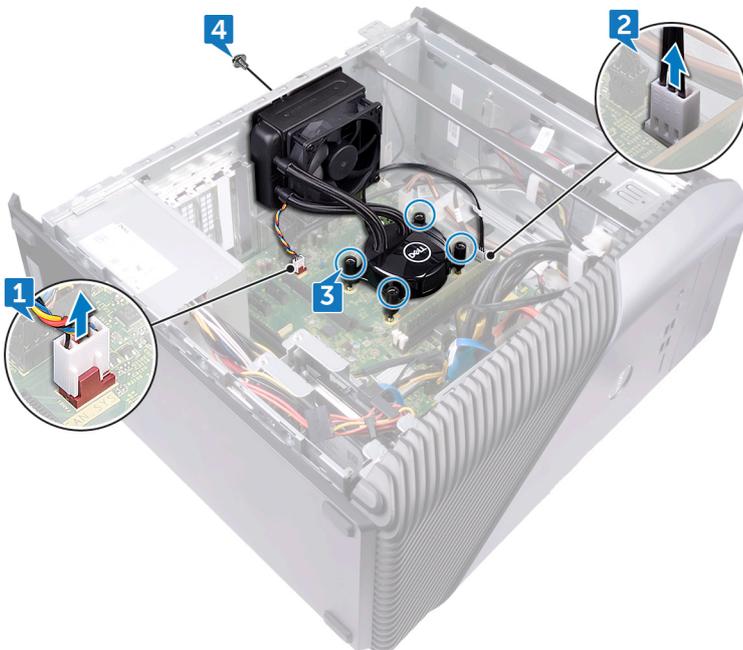
- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

Remove the [right-side cover](#).

## Procedure

1. Lay the computer on the left side and disconnect the fan cable from the system board.
2. Disconnect the processor-cooling assembly cable from the system board.
3. In the reverse sequential order (as indicated on the processor-cooling assembly), loosen the four captive screws that secure the processor-cooling assembly to the system board.
4. Remove the screw (6-32UNCx3.6) that secures the fan to the chassis.



5. Lift and release the fan from the chassis.
6. Lift the processor-cooling assembly along with the fan off the system board.



# Replacing the processor-cooling assembly

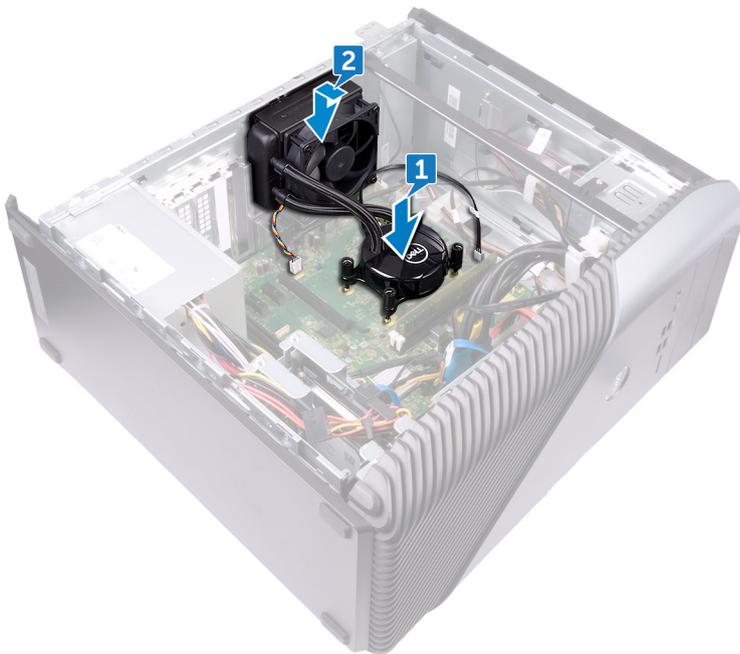
**NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

## Topics:

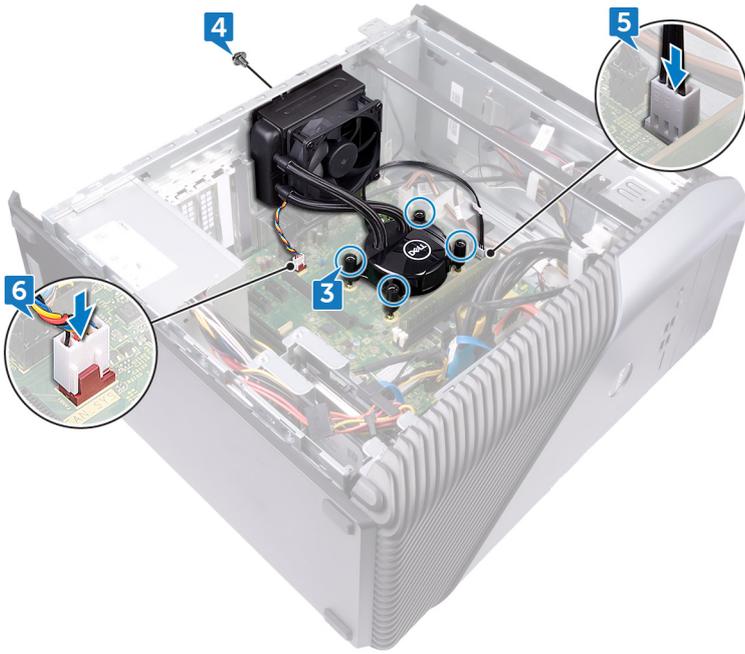
- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Align the four captive screws on the processor-cooling assembly with the slot on the system board.
2. Align the tabs on the fan with the slots on the chassis and place the fan in position.



3. In sequential order (as indicated on the processor-cooling assembly), tighten the captive screws that secure the processor-cooling assembly to the system board.
4. Replace the screw (6-32UNCx3.6) that secures the fan to the chassis.
5. Connect the processor-cooling assembly cable to the system board.
6. Place the computer in an upright position.
7. Connect the fan cable to the system board.



8. Place the computer in an upright position.

## Post-requisites

Replace the [right-side cover](#).

# Removing the processor fan

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

Remove the [right-side cover](#).

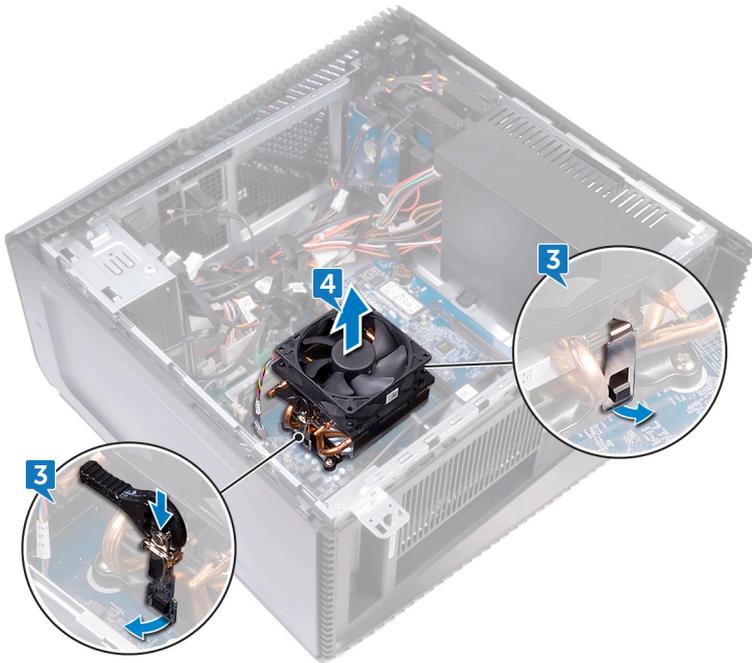
## Procedure

**NOTE:** Applicable only for computers shipped with processor fan.

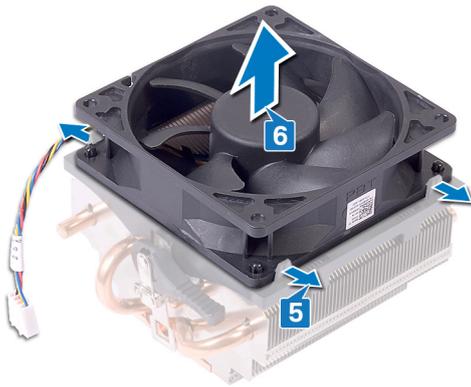
1. Lay the computer on the left side and disconnect the processor-fan cable from the system board.
2. Lift the release-lever on the heat sink.



3. Press the lever and release it from the securing tabs on both sides of the processor.
4. Lift the processor fan and heat-sink assembly off the system board.



5. Release the processor fan from the tabs on the heat sink.
6. Lift the processor fan off the heat sink.



# Replacing the processor fan

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

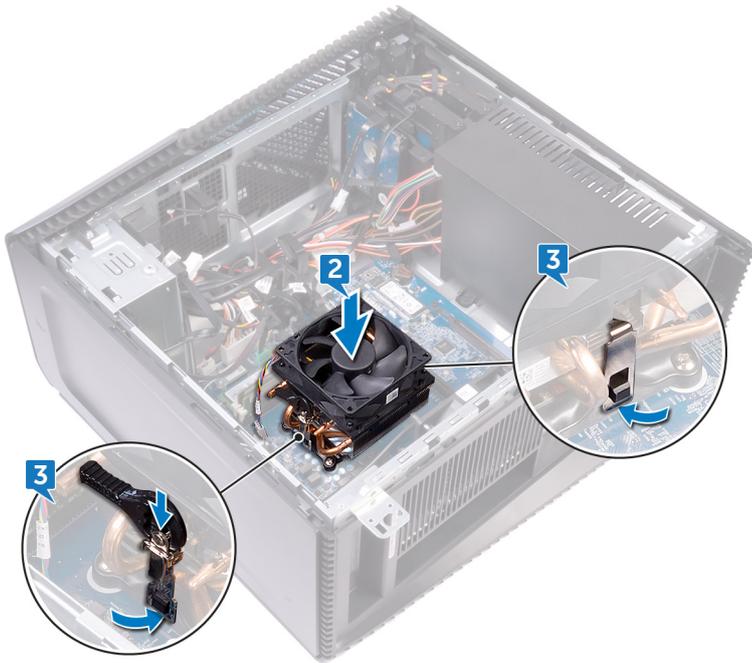
- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Align the processor fan with the tabs on the heat sink and press to secure the processor fan on the heat sink.



2. Align the processor fan and heat-sink assembly to the slot on the processor.
3. Align the slots on the release-lever with the securing tabs on both sides of the processor.
4. Pivot the release-lever backwards and secure processor fan and heat-sink assembly on the processor.



5. Connect the processor-fan cable to the system board.



6. Place the computer in an upright position.

## Post-requisites

Replace the [right-side cover](#).

# Removing the processor

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

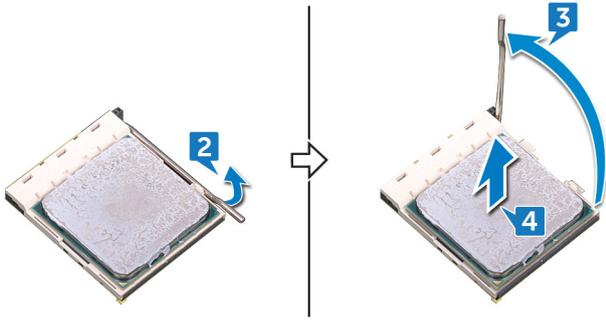
1. Remove the [right-side cover](#).
2. Remove the [processor fan](#).

## Procedure

1. Lay the computer on the left side and locate the processor on the system board.



2. Press the release lever down and then push it away from the processor to release it from the tab.
3. Extend the release lever completely and open the processor cover.
4. Lift the processor off the processor socket.



## Replacing the processor

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

**CAUTION:** If either the processor or the heat sink is replaced, use the thermal grease provided in the kit to ensure that thermal conductivity is achieved.

**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.

### Topics:

- [Procedure](#)
- [Post-requisites](#)
- [Post-requisites](#)

## Procedure

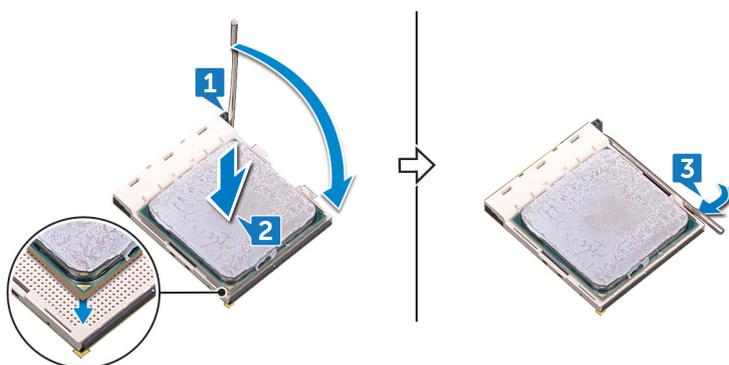
1. Ensure that the release lever on the processor socket is fully extended in the open position.

**CAUTION:** The pin-1 corner of the processor has a triangle that aligns with the triangle on the pin-1 corner on the processor socket. When the processor is properly seated, all four corners are aligned at the same height. If one or more corners of the processor are higher than the others, the processor is not seated properly.

2. Align the notches on the processor with the tabs on the processor socket and place the processor in the processor socket.

**CAUTION:** Ensure that the processor-cover notch is positioned underneath the alignment post.

3. When the processor is fully seated in the socket, pivot the release-lever down and place it under the tab on the processor cover.



4. Place the computer in an upright position.

## Post-requisites

1. Replace the [processor-cooling assembly](#) or [processor fan](#).
2. Replace the [right-side cover](#).

# Post-requisites

1. Replace the [processor fan](#).
2. Replace the [right-side cover](#).

# Removing the heat sink

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

**NOTE:** 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.

## Topics:

- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

1. Remove the [right-side cover](#).
2. Remove the [processor fan](#).

## Procedure

**NOTE:** Applicable only for computers with processor fan.

After performing all the above steps, you are left with the heat sink.



# Replacing the heat sink

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

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

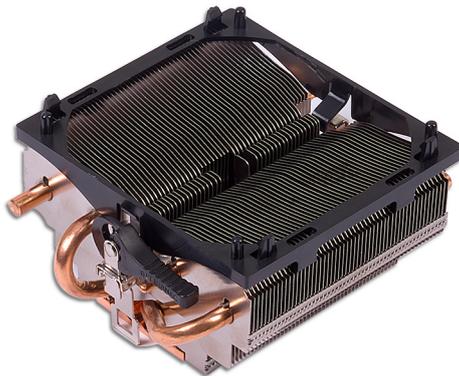
**NOTE:** If either the system board or the heat sink is replaced, use the thermal pad/paste provided in the kit to ensure that thermal conductivity is achieved.

## Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

Place the heat sink on a clean and flat surface.



## Post-requisites

1. Replace the [processor fan](#).
2. Replace the [right-side cover](#).

## Removing the antennas

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

### Topics:

- [Prerequisites](#)
- [Procedure](#)

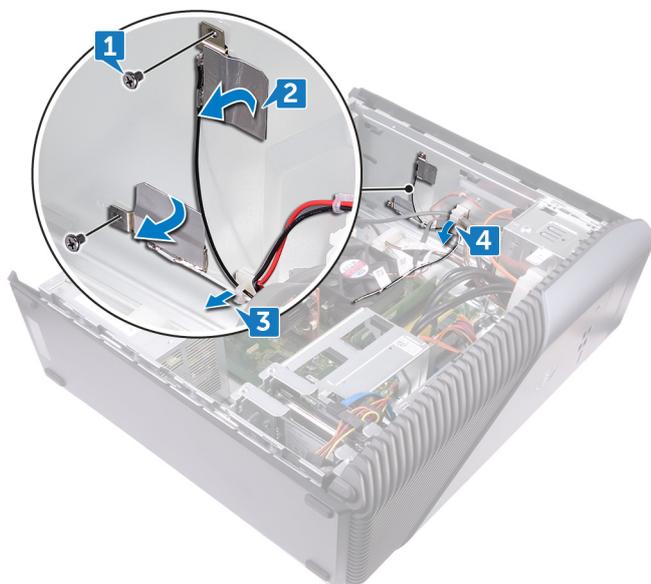
## Prerequisites

1. Remove the [right-side cover](#).
2. Remove the [wireless card](#).

## Procedure

**NOTE:** Note the routing of white antenna cable and black antenna cable on the chassis while removing them so that you can replace them correctly.

1. Lay the computer on the left side and remove the screw (M3x5) that secures the antenna cables to the chassis.
2. Peel the tape that secures the antenna cables to the chassis.
3. Remove the screw (M3x5) and the tape that secures the antenna cables to the chassis.
4. Remove the antenna cables from the routing guide on the chassis.



## Replacing the antennas

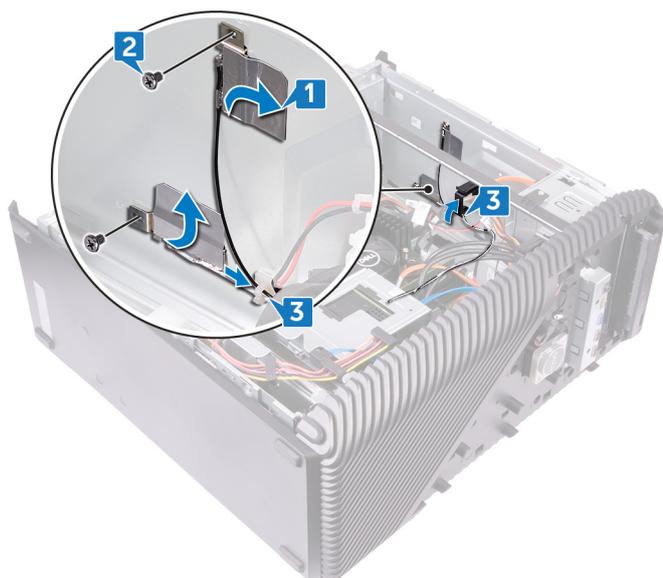
**NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

### Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Align the antenna cables to the slots on chassis and adhere the antenna cables to the chassis.
2. Replace the two screws (M3x5) that secures the antenna cables to the chassis.
3. Route the antenna cables through the routing guides on the chassis.



4. Place the computer in an upright position.

## Post-requisites

1. Replace the [wireless card](#).
2. Replace the [right-side cover](#).

# Removing the front I/O-panel

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

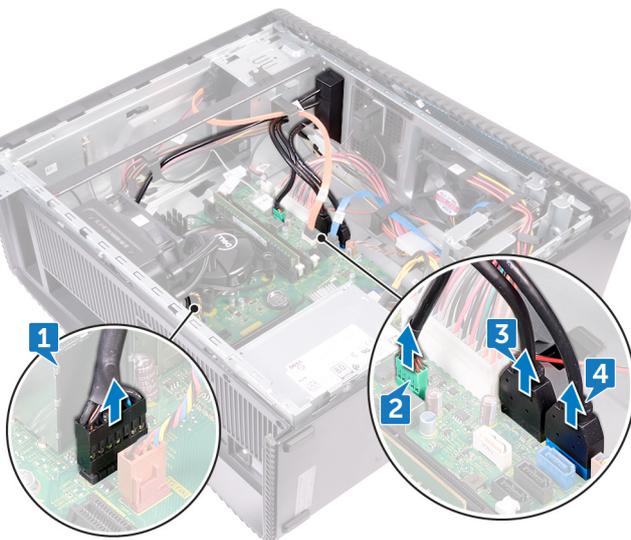
- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

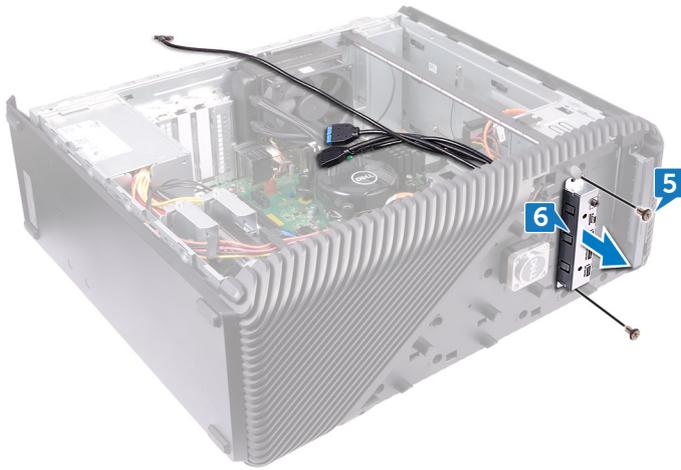
1. Remove the [right-side cover](#).
2. Remove the [front cover](#).

## Procedure

1. Lay the computer on the left side and disconnect the front-audio cable from the system board.
2. Disconnect the USB 2.0 cable from the system board.
3. Disconnect the USB 3.1 (Type-C) cable from the system board.
4. Disconnect the USB 3.0 cable from the system board.



5. Remove the two screws (M3x5) that secures the front I/O panel to the chassis.
6. Pull out the front I/O panel along with the cables, through the front of the computer.



# Replacing the front I/O-panel

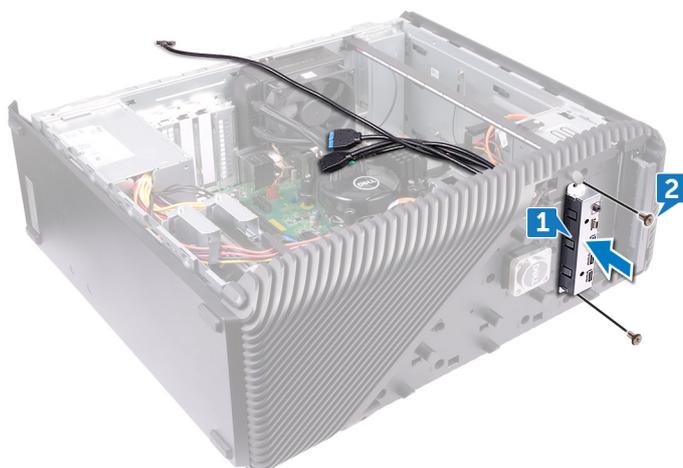
**NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

## Topics:

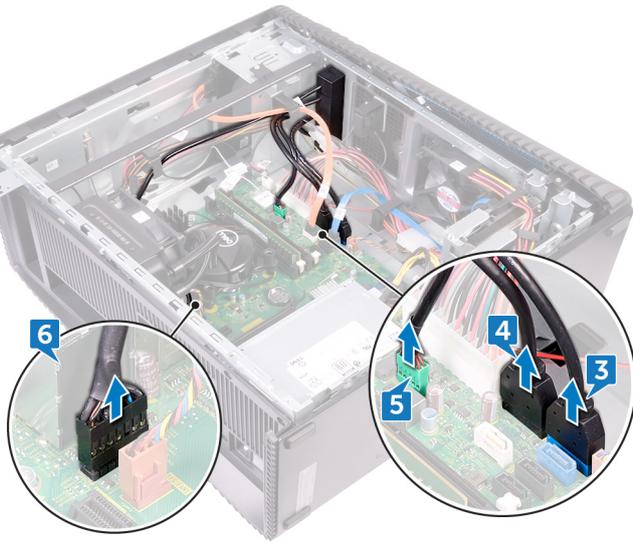
- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Slide the front I/O panel into the front I/O panel bay through the front of the computer.



2. Replace the two screws (M3x5) that secures the front I/O panel to the chassis.
3. Connect the USB 3.1 (Type-C) cable to the system board
4. Connect the USB 3.0 cable to the system board
5. Connect the USB 2.0 cable to the system board
6. Connect the front-audio cable to the system board



7. Place the computer in an upright position.

## Post-requisites

1. Replace the [front cover](#).
2. Replace the [right-side cover](#).

# Removing the front-panel light board

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

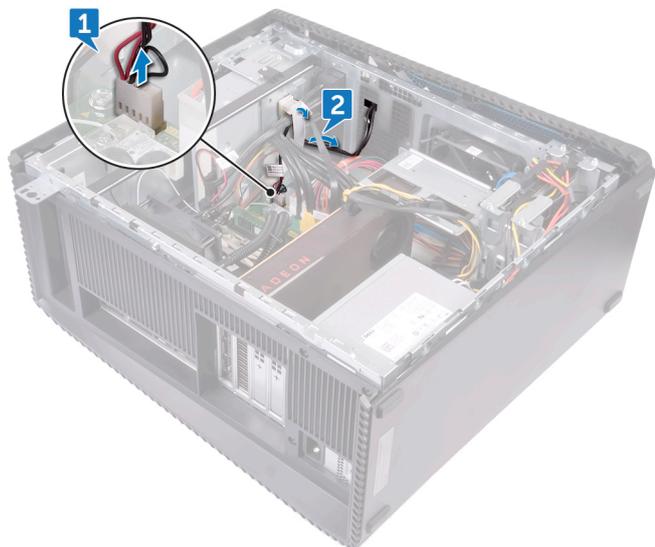
- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

1. Remove the [right-side cover](#).
2. Remove the [front cover](#).

## Procedure

1. Lay the computer on the left side and disconnect the front panel light-board cable from the system board.
2. Remove the front panel light-board cable from the routing guides on the chassis.



3. Press the tab and release it from the routing guide on the chassis and disconnect the front light bar cable from the logo board.
4. Remove the screw (M3x5) that secures the front panel light-board to the chassis.
5. Remove the front panel light-board from the chassis.



# Replacing the front-panel light board

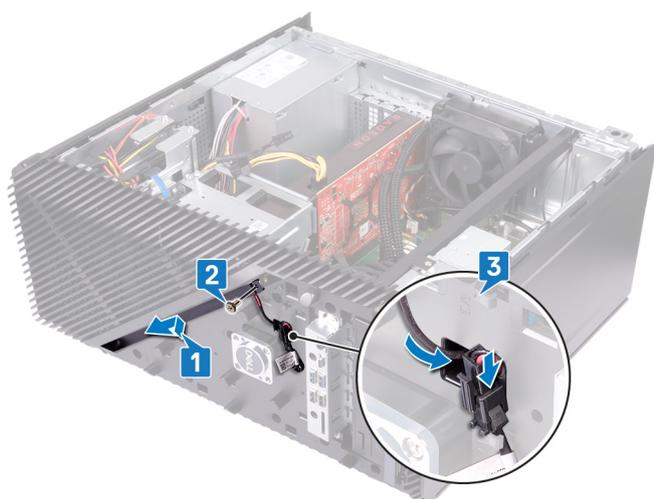
**NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

## Topics:

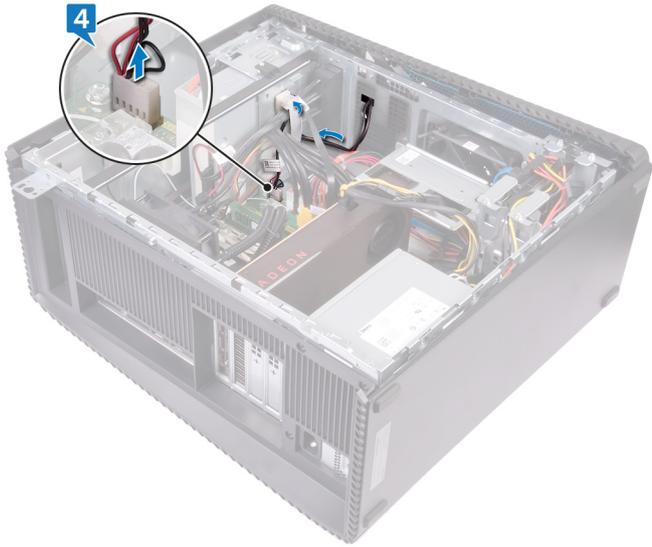
- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Align the front panel light-board cable to the slot on the chassis.
2. Replace the screw (M3x5) that secures the front panel light-board to the chassis.
3. Connect the front panel light-board cable to the logo board.



4. Route the cables through the routing guides on the chassis and connect the front panel light-board cable to the system board.



5. Place the computer in an upright position.

## Post-requisites

1. Replace the [front cover](#).
2. Replace the [right-side cover](#).

# Removing the logo board

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

1. Remove the [right-side cover](#).
2. Remove the [front cover](#).

## Procedure

1. Disconnect the logo-board cable from the logo board.
2. Disconnect the two screws (M3x5) that secures the logo board to the chassis.
3. Remove the logo board from the chassis.



# Replacing the logo board

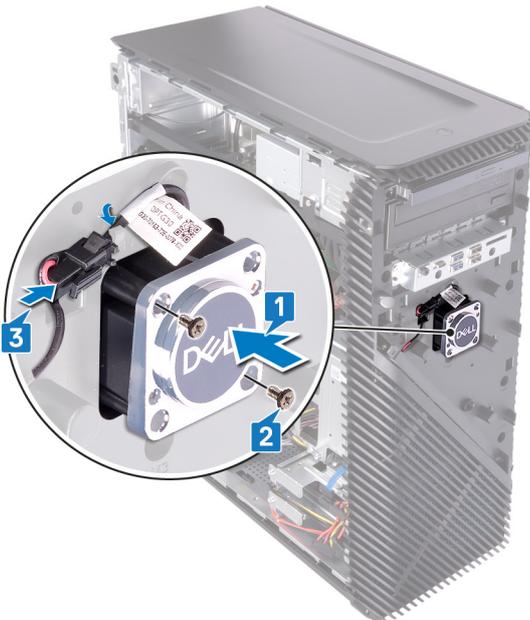
**NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

## Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Align the logo board with the slot on the chassis.
2. Replace the two screws (M3x5) that secures the logo board to the chassis.
3. Connect the logo-board cable to the logo board.



## Post-requisites

1. Replace the [front cover](#).
2. Replace the [right-side cover](#).

# Removing the slim optical drive

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

1. Remove the [right-side cover](#).
2. Remove the [front cover](#).

## Procedure

1. Disconnect the power cable from the optical drive.
2. Disconnect the data cable from the optical drive.
3. Pull to slide the slim optical-drive assembly out through the front of the computer.



4. Using your finger tips, pry the slim optical-drive bracket from the optical drive.
5. Lift the slim optical-drive assembly off the slim optical-drive bracket.



6. Remove the slim optical-drive bezel from the optical drive.



# Replacing the slim optical drive

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- Procedure
- Post-requisites

## Procedure

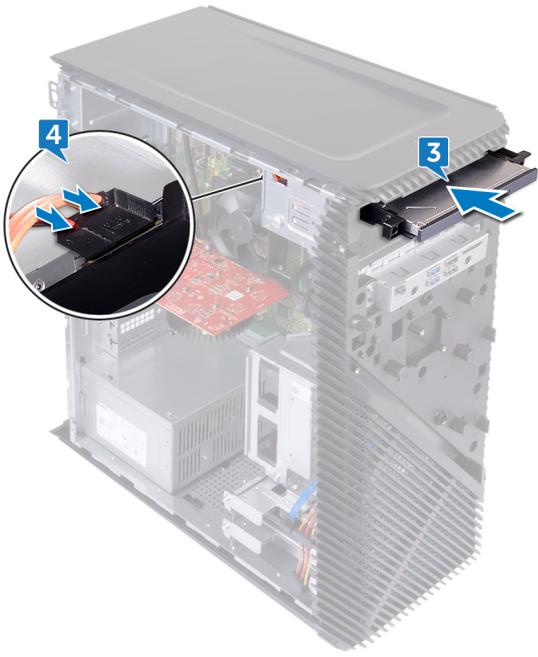
1. Align and snap the slim optical-drive bezel to the optical drive.



2. Place the slim optical-drive assembly on the slim optical-drive bracket and snap the slim optical-drive assembly in place.



3. Slide the slim optical-drive assembly into the slim optical-drive bay through the front of the computer.
4. Connect the data cable and power cable to the optical drive.



5. Place the computer in an upright position.

## Post-requisites

1. Replace the [front cover](#).
2. Replace the [right-side cover](#).

# Removing the power-button board

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

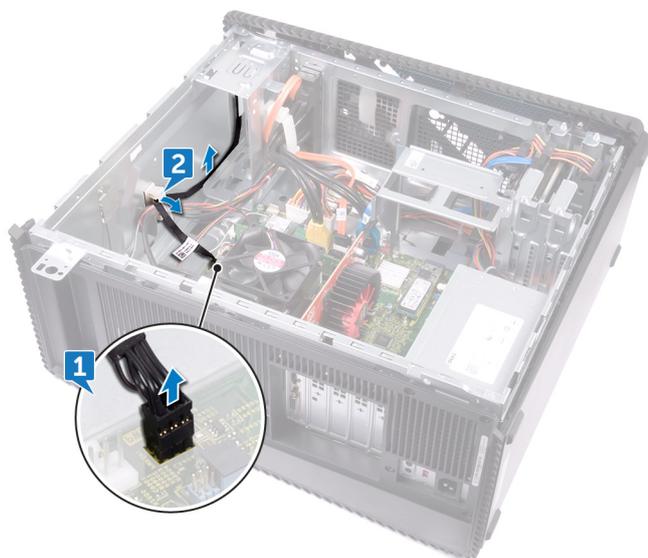
- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

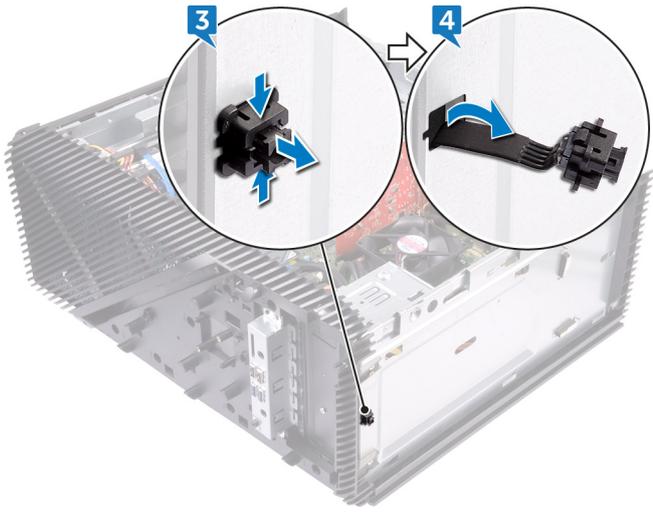
1. Remove the [right-side cover](#).
2. Remove the [front cover](#).
3. Remove the [slim optical drive](#)
4. Remove the [top cover](#).

## Procedure

1. Lay the computer on the left side and disconnect the power-button cable from the system board.
2. Remove the power-button cable from the routing guides on the chassis.



3. Press the tab on the power-button board to release the module from the top panel.
4. Remove the power-button board along with its cable through the slot on the top panel.



# Replacing the power-button board

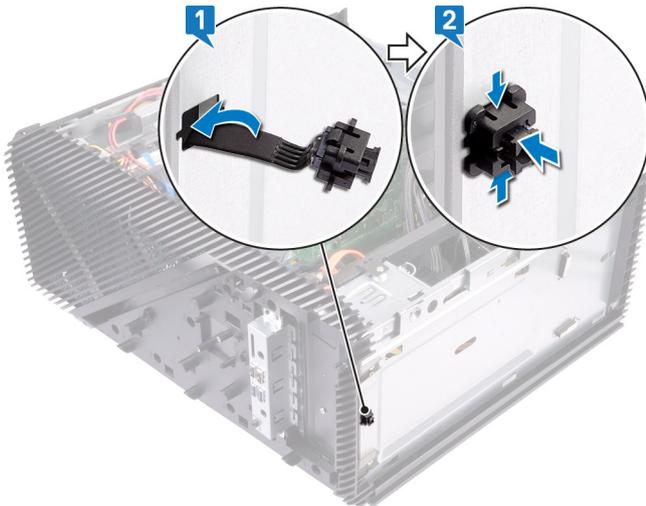
**NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

## Topics:

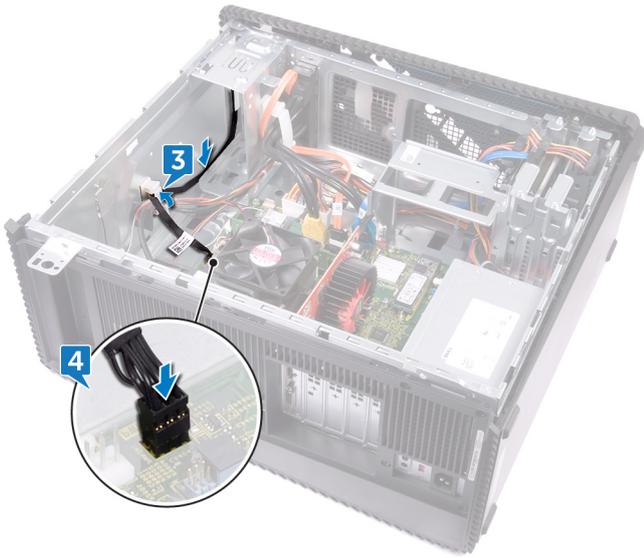
- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Route the power-button board cable through the slot on the top panel.
2. Align and snap the power-button module into the slot on the top panel.



3. Route the power-button board cable through the routing guides on the chassis.
4. Connect the power-button board cable to the system board.



5. Place the computer in an upright position.

## Post-requisites

1. Replace the [top cover](#).
2. Replace the [slim optical drive](#).
3. Replace the [front cover](#).
4. Replace the [right-side cover](#).

# Removing the front bezel

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

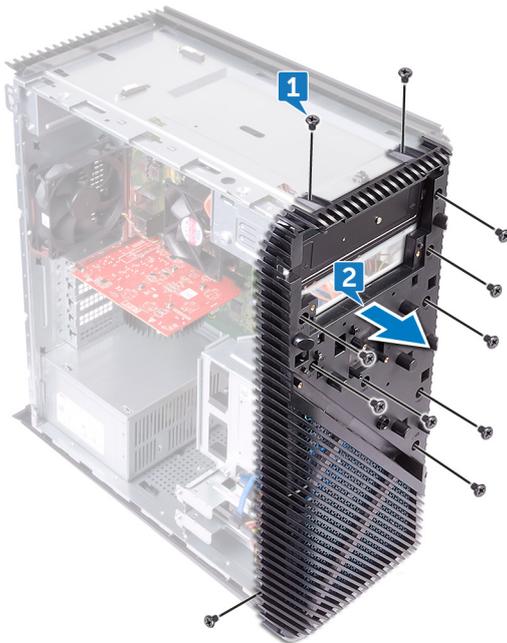
- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

1. Remove the [right-side cover](#).
2. Remove the [front cover](#).
3. Remove the [slim optical drive](#).
4. Remove the [front I/O panel](#).
5. Remove the [logo board](#).
6. Remove the [front-panel light board](#).
7. Remove the [light bar](#).
8. Remove the [top cover](#).

## Procedure

1. Place the computer in the standing position and remove the 11 screws (M3x5) that secure the front bezel to the chassis.
2. Remove the front bezel from the chassis.



# Replacing the front bezel

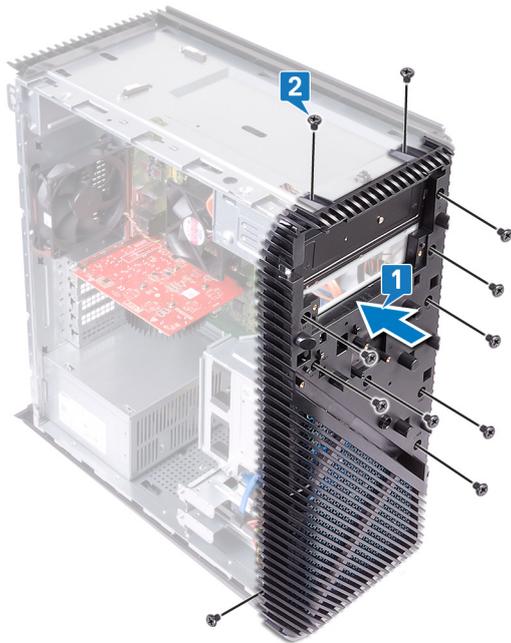
**NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

## Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Align the front bezel to the slots on the chassis.
2. Replace the 11 screws (M3x5) that secure the front bezel to the chassis and place the computer with the side-chassis facing up.



## Post-requisites

1. Replace the [top cover](#).
2. Replace the [light bar](#).
3. Replace the [front-panel light board](#).
4. Replace the [logo board](#).
5. Replace the [front I/O panel](#).
6. Replace the [slim optical drive](#).
7. Replace the [front cover](#).
8. Replace the [right-side cover](#).

## Removing the rear cover

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

### Topics:

- [Prerequisites](#)
- [Procedure](#)

## Prerequisites

1. Remove the [right-side cover](#).
2. Remove the [power-supply unit](#).
3. Remove the [top cover](#).
4. Remove the [left-side cover](#).
5. Remove the [bottom cover](#).

## Procedure

1. Remove the two screws (M3x5) that secures the top bracket to the chassis.
2. Lift the top bracket off the chassis.



3. Place the computer with the left side-chassis facing up and release the slots on the rear cover from the tabs on the chassis and remove the rear cover from the chassis.



# Replacing the rear cover

**NOTE:** 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](http://www.dell.com/regulatory_compliance).

## Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

1. Align the slots on the rear cover with the tabs on the chassis and snap the cover in place.
2. Align the screw holes on the top bracket with the screw holes on the chassis.
3. Replace the two screw (M3x5) that secures the top bracket to the chassis.



4. Place the computer in an upright position.

## Post-requisites

1. Replace the [bottom cover](#).
2. Replace the [left-side cover](#).
3. Replace the [top cover](#).
4. Replace the [power-supply unit](#).
5. Replace the [right-side cover](#).

# Removing the system board

- NOTE:** 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](http://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 appropriate 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.

## Topics:

- [Prerequisites](#)
- [Procedure](#)

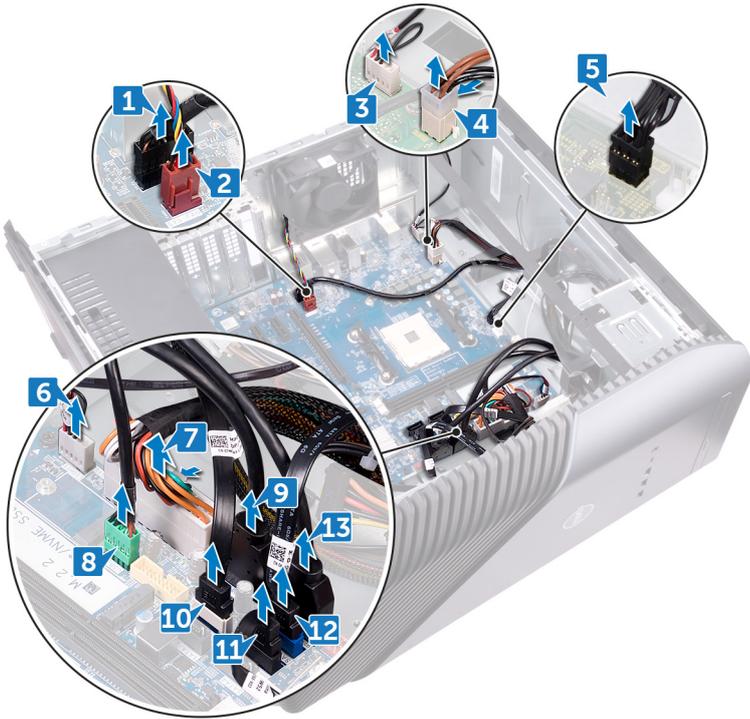
## Prerequisites

1. Remove the [right-side cover](#).
2. Remove the [memory module](#).
3. Remove the [solid-state drive](#).
4. Remove the [wireless card](#).
5. Remove the [graphics card](#).
6. Remove the [processor-cooling assembly](#) or [processor fan](#).
7. Remove the [processor](#).

## Procedure

- NOTE:** Note the routing of all cables while removing the system board so that you can replace them correctly.

1. Lay the computer on the left side and disconnect the front-audio cable from the system board.
2. Disconnect the fan cable from the system board.
3. Disconnect the light-bar cable from the system board.
4. Disconnect the processor-power cable from the system board.
5. Press the securing clip and disconnect the power-button board cable from the system board.
6. Disconnect the light-bar cable from the system board.
7. Press the securing clip and disconnect the power-supply unit cable from the system board.
8. Disconnect the USB 2.0 cable from the system board.
9. Disconnect the USB 3.1 (Type-C) cable from the system board.
10. Disconnect the optical-drive power cable from the system board.
11. Disconnect the 3.5-inch hard-drive data cable from the system board.
12. Disconnect the 2.5-inch hard-drive cable from the system board.
13. Disconnect the USB 3.1 Type-C port cable from the system board.



- 14. Remove the eight screws (6-32UNCx6.3) that secure the system board to the chassis.
- 15. Lift the system board and remove it from the chassis.



# Replacing the system board

- NOTE:** 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](http://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 appropriate changes again after you replace the system board.

## Topics:

- [Procedure](#)
- [Post-requisites](#)

## Procedure

- NOTE:** For computers shipped with fan cooling, your computer may show an ePSA fan error (Error code #2000-0511) on replacing the system board . This error is due to incorrect jumper setting. Remove the jumper plug from fan-jumper pin to fix the ePSA fan error. Replacement system board is shipped with the default jumper setting, with the jumper plug on the fan-jumper pin, which is applicable only for computers shipped with liquid-cooling assembly.

To locate fan-jumper pin in your computer, go to [System board components](#).

1. Align the system board with the slots on the chassis and place the system board in position.
2. Replace the eight screws (6-32UNCx6.3) that secure the system board to the chassis.



3. Connect the USB 3.1 Type-C port cable to the system board.
4. Connect the 2.5-inch hard-drive cable to the system board.
5. Connect the 3.5-inch hard-drive data cable to the system board.

6. Connect the optical-drive power cable to the system board.
7. Connect the USB 3.1 (Type-C) cable to the system board.
8. Connect the USB 2.0 cable to the system board.
9. Press the securing clip and disconnect the power-supply unit cable from the system board.
10. Connect the light-bar cable to the system board.
11. Press the securing clip and disconnect the power-button board cable from the system board.
12. Connect the processor-power cable to the system board.
13. Connect the light-bar cable to the system board
14. Connect the fan cable to the system board.
15. Connect the front-audio cable to the system board.



16. Place the computer in an upright position.

## Post-requisites

1. Replace the [processor](#).
2. Replace the [processor-cooling assembly](#) or [processor fan](#).
3. Replace the [graphics card](#).
4. Replace the [wireless card](#).
5. Replace the [solid-state drive](#).
6. Replace the [memory module](#).
7. Replace the [right-side cover](#).

# System setup

**NOTE:** Depending on the computer and its installed devices, the items listed in this section may or may not be displayed.

## Topics:

- [Boot Sequence](#)
- [Navigation keys](#)
- [BIOS overview](#)
- [Entering BIOS setup program](#)
- [System Setup Options](#)
- [Clearing Forgotten Passwords](#)
- [Clearing CMOS Settings](#)
- [Flashing the BIOS](#)

## Boot Sequence

Boot Sequence allows you to bypass the System Setup–defined boot device order and boot directly to a specific device (for example: optical drive or hard drive). During the Power-on Self Test (POST), when the Dell logo appears, you can:

- Access System Setup by pressing F2 key
- Bring up the one-time boot menu by pressing F12 key

The one-time boot menu displays the devices that you can boot from including the diagnostic option. The boot menu options are:

- Removable Drive (if available)
- STXXXX Drive

**NOTE:** XXX denotes the SATA drive number.

- Optical Drive (if available)
- SATA Hard Drive (if available)
- Diagnostics

**NOTE:** Choosing Diagnostics, will display the ePSA diagnostics screen.

The boot sequence screen also displays the option to access the System Setup screen.

## Navigation keys

**NOTE:** For most of the System Setup options, changes that you make are recorded but do not take effect until you restart the system.

Keys	Navigation
<b>Up arrow</b>	Moves to the previous field.
<b>Down arrow</b>	Moves to the next field.
<b>Enter</b>	Selects a value in the selected field (if applicable) or follow the link in the field.
<b>Spacebar</b>	Expands or collapses a drop-down list, if applicable.
<b>Tab</b>	Moves to the next focus area. <b>NOTE:</b> For the standard graphics browser only.
<b>Esc</b>	Moves to the previous page until you view the main screen. Pressing Esc in the main screen displays a message that prompts you to save any unsaved changes and restarts the system.

# BIOS 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 the BIOS Setup program for the following purposes:

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

## 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 is 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 desktop. Then, turn off your computer and try again.

## System Setup Options

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

Table 2. System setup options—Main menu

Main	
System Time	Displays the current time in hh:mm:ss format.
System Date	Displays the current date in mm/dd/yyyy format.
BIOS Version	Displays the BIOS version number.
Product Name	Displays the product name.
Service Tag	Allows you to enter the service tag of your computer.
Asset Tag	Displays the asset tag of your computer.
CPU Type	Displays the CPU type.
CPU Speed	Displays the speed of the CPU.
CPU ID	Displays the CPU identification code.
Cache L1	Displays the processor L1 cache size.
Cache L2	Displays the processor L2 cache size.
Cache L3	Displays the processor L3 cache size.
First HDD	Displays the primary hard disk.
SATA ODD	Displays the optical-drive disk.
Second HDD	Displays the secondary hard disk.
Third HDD	Displays the third hard disk.
Fourth HDD	Displays the fourth hard disk.
System Memory	Displays the total computer memory installed.
Memory Speed	Displays the memory speed.

**Table 3. System setup options—Advanced menu**

<b>Advanced</b>	
<b>Advanced BIOS Features</b>	
PowerNow! Enable	Allows you to enable or disable the Power now Technology feature for the processor. Default: Enabled
Virtualization	Allows you to enable or disable Intel Virtualization Technology feature for the processor.
Integrated NIC	Allows you to enable or disable the on-board LAN controller. Default: Enabled
SATA Option	This option configures the operating mode of the integrated SATA hard drive controller. Default: AHCI
BIOS Recovery from Hard Drive	Allows you to enable or disable BIOS Recovery from hard drive.
BIOS Auto-Recovery	Allows you to enable or disable BIOS Auto-Recovery
Integrity Check	When enabled, BIOS checks the BIOS image integrity on every boot. When Disabled, BIOS checks the image integrity only if the previous boot did not complete. Default :Disabled
<b>USB Configuration</b>	
Front USB Ports	Allows you to enable or disable the front USB ports.
Rear USB Ports	Allows you to enable or disable the rear USB ports.
USB Debug	Allows you to enable or disable USB debug port. Default: Disabled
<b>Power Options</b>	
Wake Up by Integrated LAN/WLAN	Allow the computer to be powered on by special LAN signals.
AC Recovery	Sets what action the computer takes when power is restored.
Deep Sleep Control	Allows you to control the Deep Sleep mode support.
USB Powershare in S4/S5 state	Allows you to charge USB devices in S4/S5 state.
USB Powershare in Sleep state	Allows you to charge USB devices in sleep state
Auto Power On	This option sets the time of day when you would like the system to turn on automatically.
Auto Power On Mode	Auto power on date/time.
Numlock Key	Allows you to set the status of the Numlock key during boot to On or Off.
<b>SupportAssist System Resolution</b>	
SupportAssist OS Recovery	The SupportAssist OS Recovery option will enable or disable the boot flow for SupportAssist OS Recovery tool in the event of certain system errors. If the SupportAssist OS Recovery setup option is set to disabled then all automatic boot flow for SupportAssist OS Recovery tool will be disabled. Default: Disabled
Auto OS Recovery Threshold	Control the automatic boot flow for SupportAssist System Resolution Console and for Dell OS Recovery tool.

**Table 4. System setup options—Security menu**

Security	
Admin Password Status	Displays whether the admin password is set.
System Password Status	Displays whether the system password is set.
HDD Password Status	Displays if the hard drive password is set.
Admin Password	Allows you to set the admin password.
System Password	Allows you to set the system password.
HDD Password	Allows you to set the hard drive password.
Firmware TPM	Allows you to enable or disable the firmware TPM function.
UEFI Firmware Capsule Updates	Allows you to enable or disable the UEFI Firmware Capsule Updates function. Default: Enabled

**Table 5. System setup options—Boot menu**

Boot	
Fast Boot	Allows you to enable or disable the fast boot control.
Legacy Boot	Lists the Legacy boot options when the Boot list option is Legacy.
UEFI Boot	Lists UEFI boot options when the Boot list option is UEFI.
Secure Boot	Allows you to enable or disable the secure boot control. Default: Disabled
Legacy option ROMs	Enable or disable the Legacy Option ROMs.
Boot List Option	Allows you to select system boot from Legacy or UEFI.
Attempt Legacy Boot	Allows the system to immediately boot the Legacy Boot List if system fails to boot the UEFI Boot List.

**Table 6. System setup options—Exit menu**

Exit	
Exit Saving Changes	Allows you to exit system setup and save your changes.
Save Change without exit	Allows you to save your changes.
Exit Discard Changes	Allows you to exit your changes.
Load Optional Defaults	Allows you to load default values for all system setup options.
Discard Changes	Allows you to discard your changes.

## Clearing Forgotten Passwords

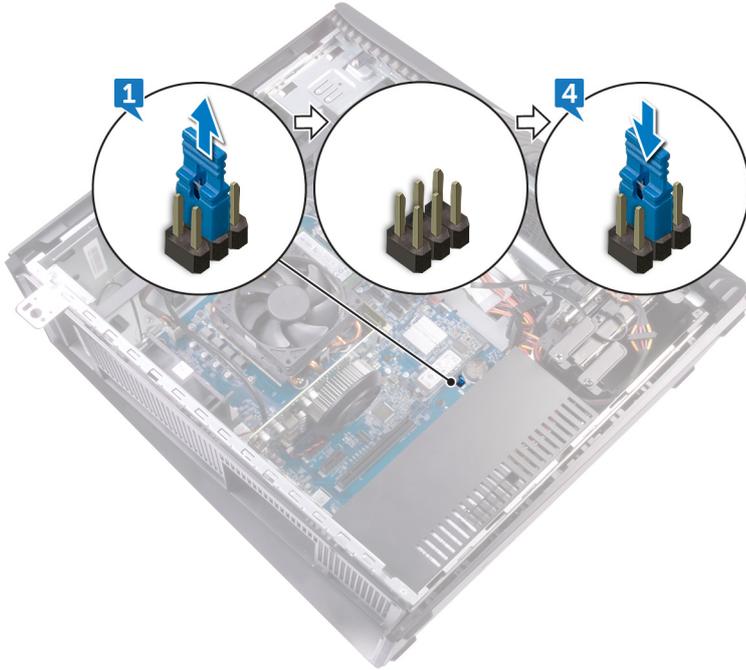
**NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

## Prerequisites

Remove the [right-side cover](#).

## Procedure

1. Remove the jumper plug from the password jumper-pins.
2. Turn on your computer and wait until the operating system is completely loaded.
3. Shut down your computer.
4. Replace the jumper plug in its original location.



## Post-requisites

Replace the [right-side cover](#).

## Clearing CMOS Settings

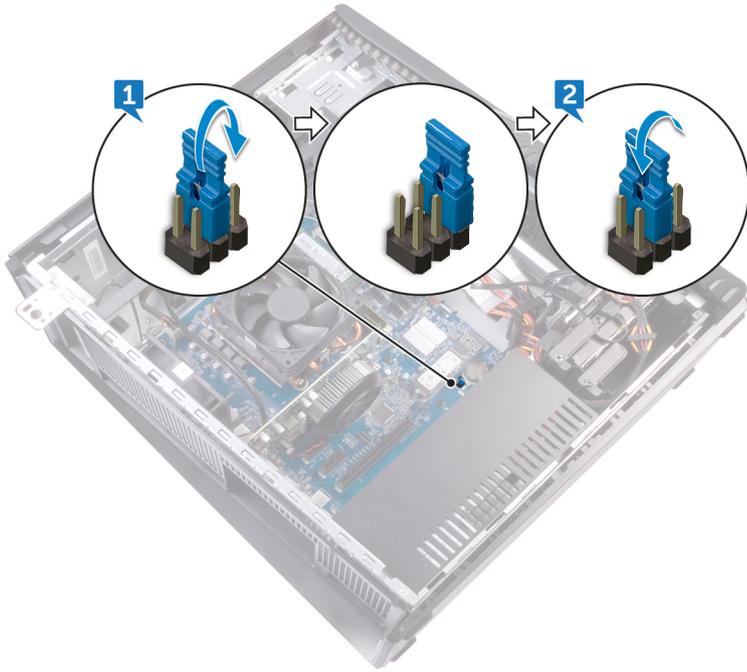
**NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, see the Regulatory Compliance home page at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance).

## Prerequisites

Remove the [right-side cover](#).

## Procedure

1. Remove the jumper plug from the password jumper-pins (PSWD) and connect it to the CMOS jumper-pins.
2. Wait for 5 seconds and then replace the jumper plug to its original location.



## Post-requisites

Replace the [right-side cover](#).

## Flashing the BIOS

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

Follow these steps to flash the BIOS:

1. Turn on your computer.
2. Go to [www.dell.com/support](http://www.dell.com/support).
3. Click **Product support**, enter the Service Tag of your computer, and then 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 > Find it myself**.
5. Select the operating system installed on your computer.
6. Scroll down the page and expand **BIOS**.
7. Click **Download** to download the latest version of the BIOS for your computer.
8. After 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.

## Troubleshooting

### Flashing the BIOS

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

Follow these steps to flash the BIOS:

1. Turn on your computer.
2. Go to [www.dell.com/support](http://www.dell.com/support).
3. Click **Product support**, enter the Service Tag of your computer, and then 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 > Find it myself**.
5. Select the operating system installed on your computer.
6. Scroll down the page and expand **BIOS**.
7. Click **Download** to download the latest version of the BIOS for your computer.
8. After 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.

### Reinstall Windows using a USB recovery drive

 **CAUTION:** This process formats the hard drive and removes all data on your computer. Ensure that you back up data on your computer before beginning this task.

 **NOTE:** Before reinstalling Windows, ensure your computer has more than 2 GB of memory and more than 32 GB of storage space.

 **NOTE:** This process may take up to an hour to complete and your computer will restart during the recovery process.

1. Connect the USB recovery drive to your computer.
2. Restart your computer.
3. Press F12 after the Dell logo is displayed on the screen to access the boot menu. A **Preparing one-time boot menu** message appears.
4. After the boot menu loads, select the USB recovery device under **UEFI BOOT**. The system reboots and a screen to **Choose the keyboard layout** is displayed.
5. Choose your keyboard layout.
6. In the **Choose an option** screen, click **Troubleshoot**.
7. Click **Recover from a drive**.
8. Choose one of the following options:
  - **Just remove my files** to do a quick format.
  - **Fully clean the drive** to do a complete format.
9. Click **Recover** to start the recovery process.

### Enhanced Pre-Boot System Assessment (ePSA) diagnostics

 **CAUTION:** Use the ePSA diagnostics to test only your computer. Using this program with other computers may cause invalid results or error messages.

The ePSA diagnostics (also known as system diagnostics) performs a complete check of your hardware. The ePSA is embedded with the BIOS and is launched by the BIOS internally. The embedded system diagnostics provides a set of options for particular devices or device groups allowing you to:

- Run tests automatically or in an interactive mode
- Repeat tests
- Display or save test results
- Run thorough tests to introduce additional test options to provide extra information about the failed device(s)
- View status messages that inform you if tests are completed successfully
- View error messages that inform you of problems encountered during testing

**NOTE:** Some tests for specific devices require user interaction. Always ensure that you are present at the computer terminal when the diagnostic tests are performed.

For more information, see [Dell EPSA Diagnostic 3.0](#).

## Running the ePSA Diagnostics

1. Invoke diagnostics boot by either of the methods suggested above
2. Once on one time boot menu use up/down arrow key to navigate to ePSA or diagnostics and press <return> key to launch  
Fn+PWR will flash diagnostics boot selected on screen and launch ePSA/diagnostics directly.
3. On the boot menu screen, select the **Diagnostics** option.
4. Press the arrow in the lower-right corner to go to the page listing.  
The items detected are listed and will be tested
5. If there are any issues, error codes are displayed.  
Note the error code and validation number and contact Dell.

## To run a diagnostic test on a specific device

1. Press Esc and click **Yes** to stop the diagnostic test.
2. Select the device from the left pane and click **Run Tests**.
3. If there are any issues, error codes are displayed.  
Note the error code and validation number and contact Dell.

## Diagnostics

The following table provides the different LED states and what they indicate.

**Table 7. LED states**

Power LED state	Description
<b>Off</b>	<ul style="list-style-type: none"> <li>• Hibernate or suspend to disk (S4)</li> <li>• Power is off (S5)</li> </ul>
<b>Solid Amber</b>	Boot failure: This is a system fault error condition, including the power supply. Only the +5VSB rail on the power supply is working correctly.
<b>Blinking Amber</b>	Boot Failure: The computer is receiving electrical power, and power supplied by the power supply is normal. A device might be malfunctioning or incorrectly installed. Refer to the table below for <b>Amber Blinking Pattern</b> diagnostics suggestion and possible failures.
<b>Solid White</b>	System is in S0 state, the normal power state of a functioning machine.
<b>Blinking White</b>	System is in a low power state, either S1 or S3. This does not indicate a fault condition.

The computer POST (Power On Self Test) ensures that it meets the basic computer requirements and the hardware is working appropriately before the boot process begins. If the computer passes the POST, the computer continues to start in a normal mode. However, if the computer fails the POST, the computer emits a series of LED codes during the start-up. The system LED is integrated on the Power button.

The following table lists diagnostic light codes and describes what they mean.

**Table 8. LED codes**

Diagnostic light codes	Description
1	System board—system setup program (BIOS) is corrupted or Read-only Memory (ROM) has failed
2	No memory or Random-Access Memory (RAM) has been detected
3	System board—chipset has failed
4	Memory or Random-Access Memory (RAM) has failed
5	CMOS battery has failed
6	Video card or Graphics Processing Unit (GPU) has failed
7	Processor or Central Processing Unit (CPU) has failed
3,6	BIOS recovery image is not found
3,7	BIOS recovery image is found, but it is not valid

The following table lists the functions of jumper (JMP1) and indicates how to change the settings for each function.

**Table 9. Jumper settings**

Jumper	Function	Operation
JMP1	Service mode	1 - 2 Short: Disable
		1 - 2 Open: Default
	Password	3 - 4 Short: Default
		3 - 4 Open: Clear
	CMOS	5 - 6 Short: Clear
		5 - 6 open: Default

## Wi-Fi power cycle

If your computer is unable to access the Internet due to Wi-Fi connectivity issues a Wi-Fi power cycle procedure may be performed. The following procedure provides the instructions on how to conduct a Wi-Fi power cycle:

 **NOTE: Some ISPs (Internet Service Providers) provide a modem/router combo device.**

1. Turn off your computer.
2. Turn off the modem.
3. Turn off the wireless router.
4. Wait for 30 seconds.
5. Turn on the wireless router.
6. Turn on the modem.
7. Turn on your computer.

## Flea power release

Flea power is the residual static electricity that remains on the computer even after it has been powered off and the battery has been removed. The following procedure provides the instructions on how to conduct flea power release:

1. Turn off your computer.

2. Disconnect the power adapter from your computer.
3. Press and hold the power button for 15 seconds to drain the flea power.
4. Connect the power adapter to your computer.
5. Turn on your computer.

# Getting help and contacting Dell

## Self-help resources

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

**Table 10. Self-help resources**

Self-help resources	Resource location
Information about Dell products and services	<a href="http://www.dell.com">www.dell.com</a>
My Dell	
Tips	
Contact Support	In Windows search, type <code>Contact Support</code> , and press Enter.
Online help for operating system	<a href="http://www.dell.com/support/windows">www.dell.com/support/windows</a> <a href="http://www.dell.com/support/linux">www.dell.com/support/linux</a>
Troubleshooting information, user manuals, setup instructions, product specifications, technical help blogs, drivers, software updates, and so on.	<a href="http://www.dell.com/support">www.dell.com/support</a>
Dell knowledge base articles for a variety of computer concerns.	<ol style="list-style-type: none"> <li>1. Go to <a href="https://www.dell.com/support/home/?app=knowledgebase">https://www.dell.com/support/home/?app=knowledgebase</a>.</li> <li>2. Type the subject or keyword in the <b>Search</b> box.</li> <li>3. Click <b>Search</b> to retrieve the related articles.</li> </ol>
Learn and know the following information about your product: <ul style="list-style-type: none"> <li>· Product specifications</li> <li>· Operating system</li> <li>· Setting up and using your product</li> <li>· Data backup</li> <li>· Troubleshooting and diagnostics</li> <li>· Factory and system restore</li> <li>· BIOS information</li> </ul>	See <i>Me and My Dell</i> at <a href="http://www.dell.com/support/manuals">www.dell.com/support/manuals</a> . To locate the <i>Me and My Dell</i> relevant to your product, identify your product through one of the following: <ul style="list-style-type: none"> <li>· Select <b>Detect Product</b>.</li> <li>· Locate your product through the drop-down menu under <b>View Products</b>.</li> <li>· Enter the <b>Service Tag number</b> or <b>Product ID</b> in the search bar.</li> </ul>

## Contacting Dell

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