Inspiron 15 3000

Service Manual

Regulatory Model: P63F
Regulatory Type: P63F002
February 2021
Rev. A03

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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1

Before working inside your computer

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

Before you begin

1. Save and close all open files and exit all open applications.
2. Shut down your computer. 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.

Safety instructions

Use the following safety guidelines to protect your computer from potential damage and to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that you have read the safety information that shipped with your computer.

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

WARNING: Disconnect your computer from 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 your computer to an electrical outlet.

CAUTION: To avoid damaging the computer, ensure that the work surface is flat, dry, and clean.

CAUTION: To avoid damaging the components and cards, handle them by their edges, and avoid touching the pins and the 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 is shipped with the product or at www.dell.com/regulatory_compliance.

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

CAUTION: When you disconnect a cable, pull it by its connector or its pull tab, not the cable itself. Some cables have connectors with locking tabs or thumbscrews that you must disengage before disconnecting the cable. When disconnecting cables, keep them evenly aligned to avoid bending the connector pins. When connecting cables, ensure that the ports and the connectors are correctly oriented and aligned.

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

CAUTION: Exercise caution when handling Lithium-ion batteries in laptops. Swollen batteries should not be used and should be replaced and disposed properly.

NOTE: The color of your computer and certain components may appear differently than shown in this document.

Recommended tools

The procedures in this document may require the following tools:

- Phillips screwdriver #1
- Plastic scribe

Screw list

The following table provides the list of screws that are used for securing different components to the palm-rest assembly.

Table 1. Screw list

Component	Secured to	Screw type	Quantity	Screw image
Optical-drive assembly	Base cover	M2x5	1	
Optical-drive bracket	Optical drive	M2x3	1	
Base cover	Palm-rest assembly	M2.5x8	8	
Base cover	Palm-rest assembly	M2x5	2	
Base cover	Palm-rest assembly	M2x2	3	
Base cover	Palm-rest assembly	M2x5	5	
Hard-drive assembly	Palm-rest assembly	M2x3	4	
Hard-drive bracket	Hard drive	M3x3	4	
Wireless-card bracket	System board	M2x3	1	
Display hinge	Palm-rest assembly	M2.5x8	3	
Power-button board	Palm-rest assembly	M2x2	1	
I/O board	Palm-rest assembly	M2x3	1	
Fan	System board	M2x5	2	
System board	Palm-rest assembly	M2x3	2	

Table 1. Screw list (continued)

Component	Secured to	Screw type	Quantity	Screw image
Touch-pad bracket	Touch pad	M2x3	6	
Power-adapter port	Palm-rest assembly	M2x3	1	
Display panel	Display back-cover and antenna assembly	M2x3	4	
Display hinges	Display back-cover and antenna assembly	M2.5xM2.5 big head	6	

2

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.

3

Removing the 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.

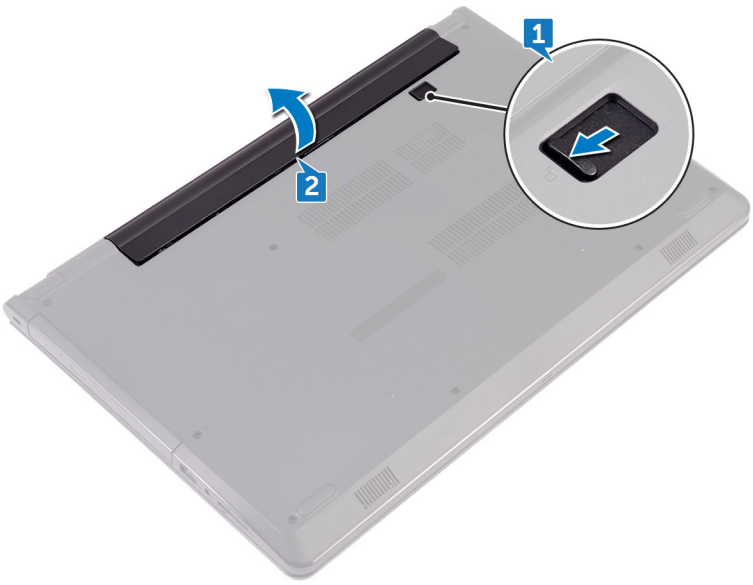
Lithium-ion battery precautions

CAUTION:

- **Exercise caution when handling Lithium-ion batteries.**
- **Discharge the battery completely before removing it. Disconnect the AC power adapter from the system and operate the computer solely on battery power—the battery is fully discharged when the computer no longer turns on when the power button is pressed.**
- **Do not crush, drop, mutilate, or penetrate the battery with foreign objects.**
- **Do not expose the battery to high temperatures, or disassemble battery packs and cells.**
- **Do not apply pressure to the surface of the battery.**
- **Do not bend the battery.**
- **Do not use tools of any kind to pry on or against the battery.**
- **Ensure any screws during the servicing of this product are not lost or misplaced, to prevent accidental puncture or damage to the battery and other system components.**
- **If the battery gets stuck inside your computer as a result of swelling, do not try to release it as puncturing, bending, or crushing a lithium-ion battery can be dangerous. In such an instance, contact Dell technical support for assistance. See www.dell.com/contactdell.**
- **Always purchase genuine batteries from www.dell.com or authorized Dell partners and resellers.**
- **Swollen batteries should not be used and should be replaced and disposed properly. For guidelines on how to handle and replace swollen Lithium-ion batteries, see Handling swollen Lithium-ion batteries.**

Procedure

1. Slide the battery-release latch to the unlocked position.
   You hear a click sound when the battery is unlocked.
2. Using your fingertips, lift the battery at an angle and remove it from the battery bay.



3. Turn the computer over, open the display, and press the power button for five seconds to ground the system board.

4

Replacing the battery

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- **Swollen batteries should not be used and should be replaced and disposed properly. For guidelines on how to handle and replace swollen Lithium-ion batteries, see Handling swollen Lithium-ion batteries.**

Procedure

1. Close the display and turn the computer over.
2. Place the battery in the battery bay and snap the battery into place.

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Removing the optical drive

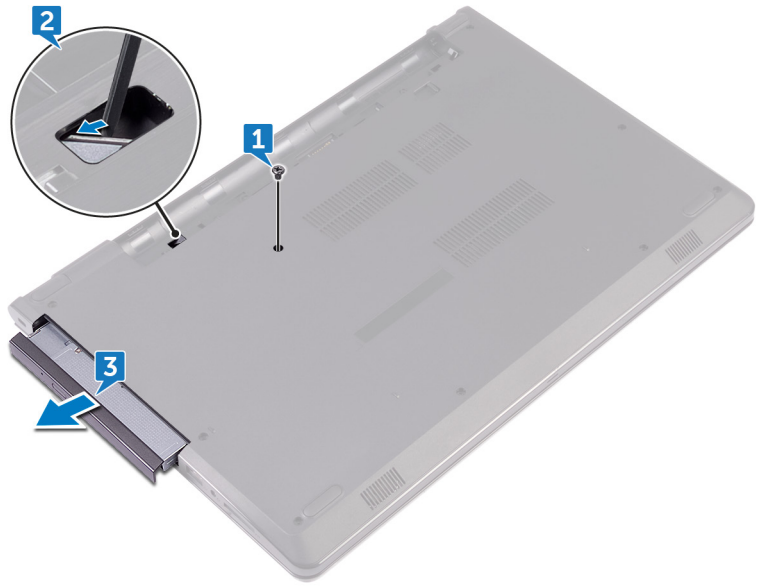
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

Remove the battery.

Procedure

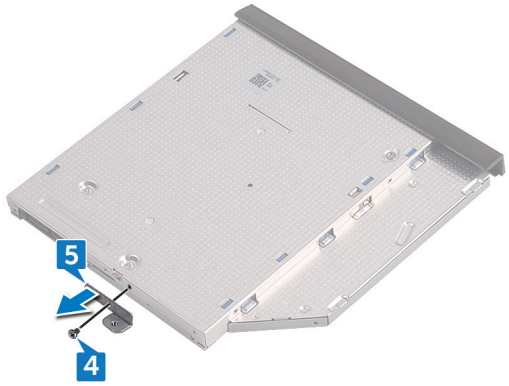
1. Remove the screw (M2x5) that secures the optical-drive assembly to the base cover.
2. Using a plastic scribe, push to release the optical-drive assembly from the optical-drive bay.
3. Pull the optical-drive assembly out of the optical-drive bay.



4. Remove the screw (M2x3) that secures the optical-drive bracket to the optical drive.

   NOTE: Note the orientation of the optical-drive bracket so that you can replace it correctly.

5. Remove the optical-drive bracket from the optical drive.



6. Carefully pull the optical-drive bezel and remove it from the optical drive.

6

Replacing the 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.

Procedure

1. Align the tabs on the optical-drive bezel with the slots on the optical drive and snap it into place.
2. Align the screw hole on the optical-drive bracket with the screw hole on the optical-drive assembly.

   NOTE: You must correctly align the optical-drive bracket to ensure that the optical drive can be properly secured to the computer. For correct orientation, see step 4 in "Removing the optical drive".

3. Replace the screw (M2x3) that secures the optical-drive bracket to the optical-drive assembly.
4. Slide the optical-drive assembly into the optical-drive bay and snap it into place.
5. Replace the screw (M2x5) that secures the optical-drive assembly to the computer base.

Post-requisites

Replace the battery.

7

Removing the keyboard

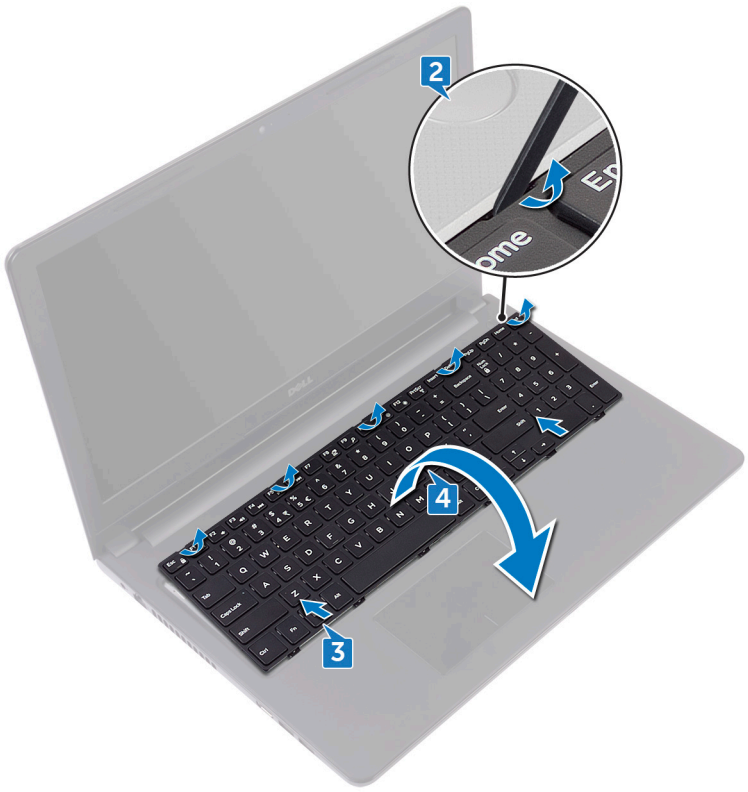
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

Remove the battery.

Procedure

1. Turn the computer over and open the display as far as possible.
2. Using a plastic scribe, gently release the tabs that secure the keyboard to the palm-rest assembly.
3. Slide the keyboard up to release it from the slots on the palm-rest assembly.
4. Carefully turn the keyboard over and place it on the palm-rest assembly.



5. Open the latch and disconnect the keyboard cable from the system board.
6. Lift the keyboard off the palm-rest assembly.

5
6

8

Replacing the keyboard

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.

Procedure

1. Slide the keyboard cable into the system-board connector and close the latch to secure the cable.
2. Turn the keyboard over, slide the tabs on the keyboard into the slots on the palm-rest assembly, and snap the keyboard into place.

Post-requisites

Replace the battery.

9

Removing the base cover

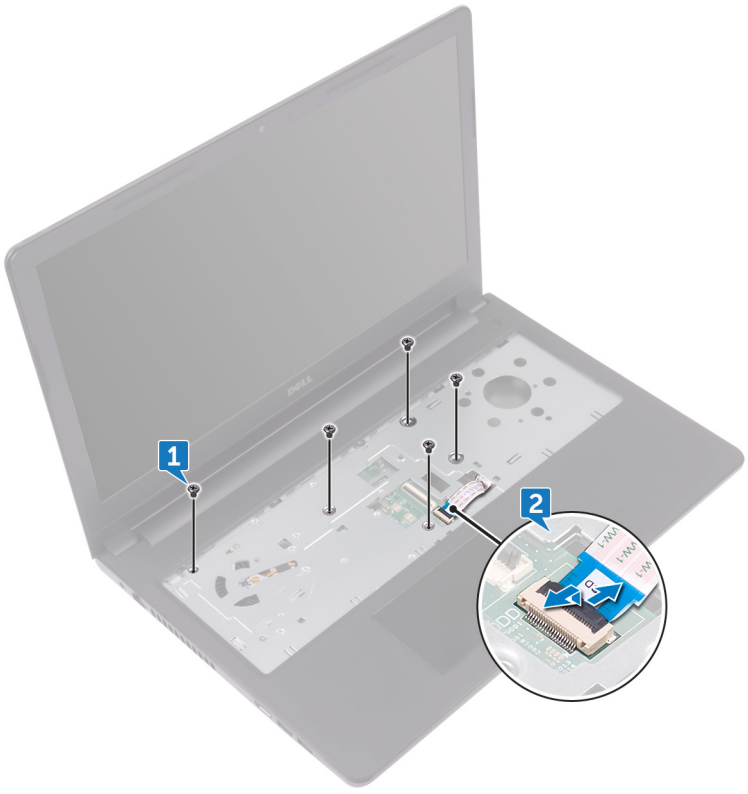
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

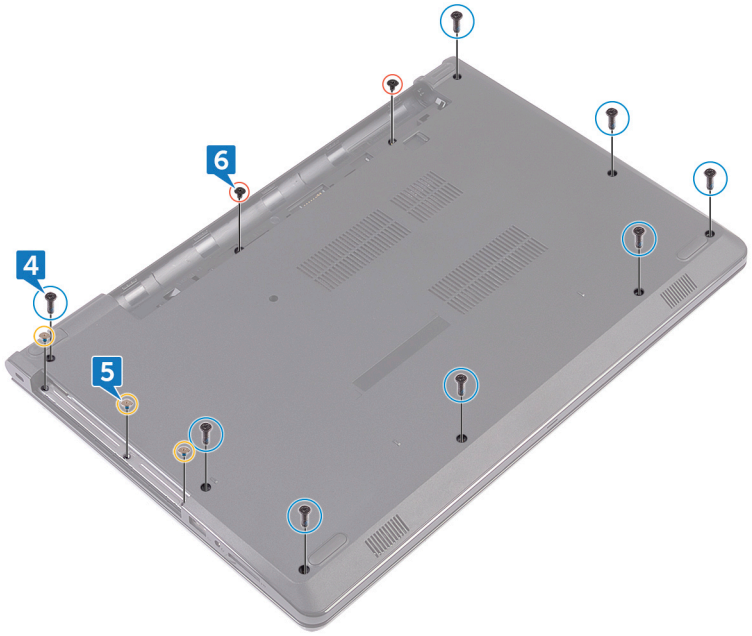
1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.

Procedure

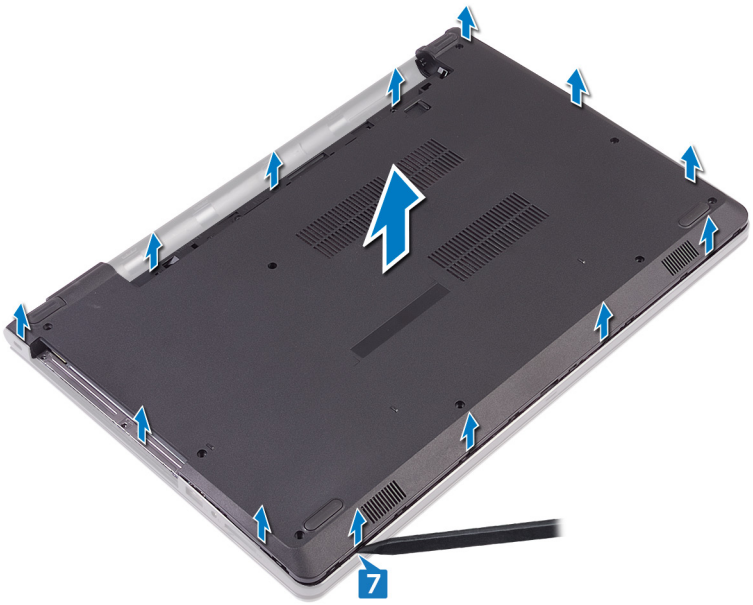
1. Remove the five screws (M2x5) that secure the base cover to the palm-rest assembly.
2. Open the latch, and disconnect the optical-drive cable from the connector on the system board.



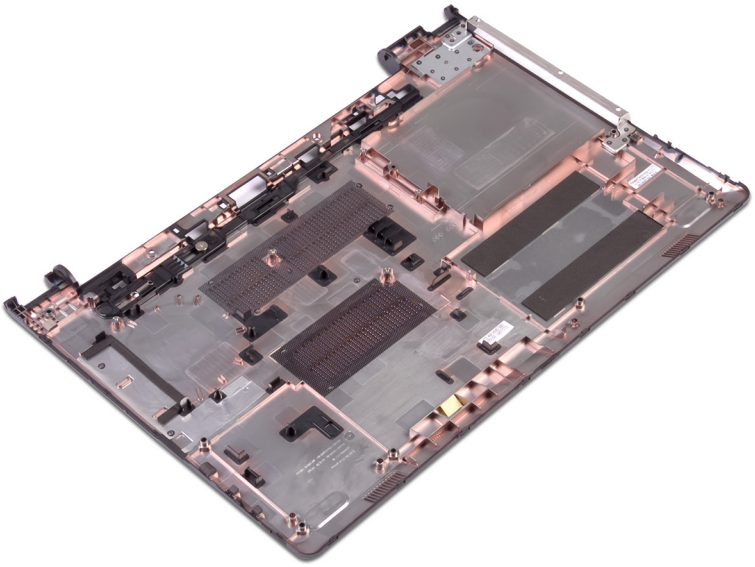
3. Close the display and the turn the computer over.
4. Remove the eight screws (M2.5x8) that secure the base cover to the palm-rest assembly.
5. Remove the three screws (M2x2) that secure the base cover to the palm-rest assembly.
6. Remove the two screws (M2x5) that secure the base cover to the palm-rest assembly.



7. Using a plastic scribe, pry the base cover off the palm-rest assembly.



8. Turn the base cover over.
9. Remove the optical-drive interposer.



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Replacing the base 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.

Procedure

1. Replace the optical-drive interposer.
2. Turn the base cover over.
3. Place the base cover on the palm-rest assembly and route the optical-drive cable through the slot on the palm-rest assembly.

4. Slide the tabs on the base cover into the slots on the palm-rest assembly and snap the base cover into place.
5. Slide the optical-drive cable into its connector on the system board and close the latch to secure the cable.
6. Replace the five screws (M2x5) that secure the palm-rest assembly to the base cover.
7. Close the display and turn the computer over.
8. Replace the three screws (M2x2) that secure the base cover to the palm-rest assembly.
9. Replace the two screws (M2x5) that secure the base cover to the palm-rest assembly.
10. Replace the eight screws (M2.5x8) that secure the base cover to the palm-rest assembly.

Post-requisites

1. Replace the keyboard.
2. Follow the procedure from step 4 to step 5 in “Replacing the optical drive”.
3. Replace the battery.

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Removing the optical-drive interposer

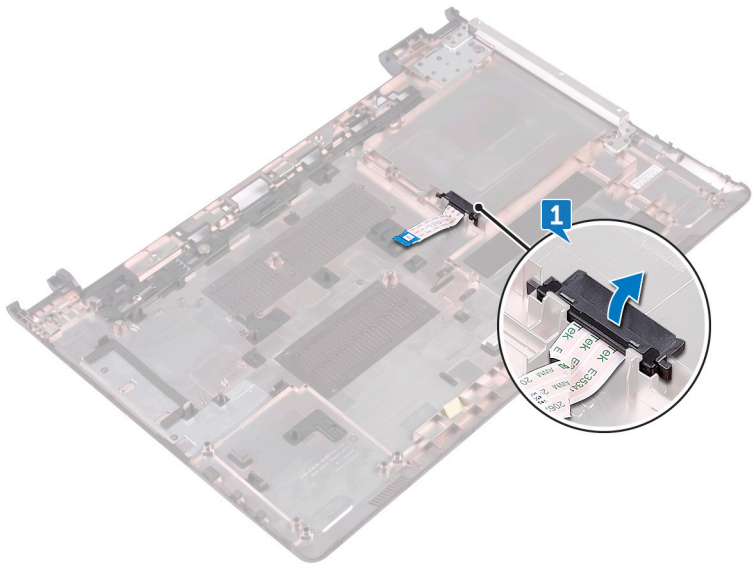
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 8 in "Removing the base cover".

Procedure

Release the optical-drive interposer from the tabs on the base cover.



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Replacing the optical-drive interposer

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.

Procedure

Align the tabs on the base cover and snap it into place.

Post-requisites

1. Follow the procedure from step 2 to step 9 in "Replacing the base cover".
2. Replace the keyboard.
3. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
4. Replace the battery.

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Removing the 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.

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

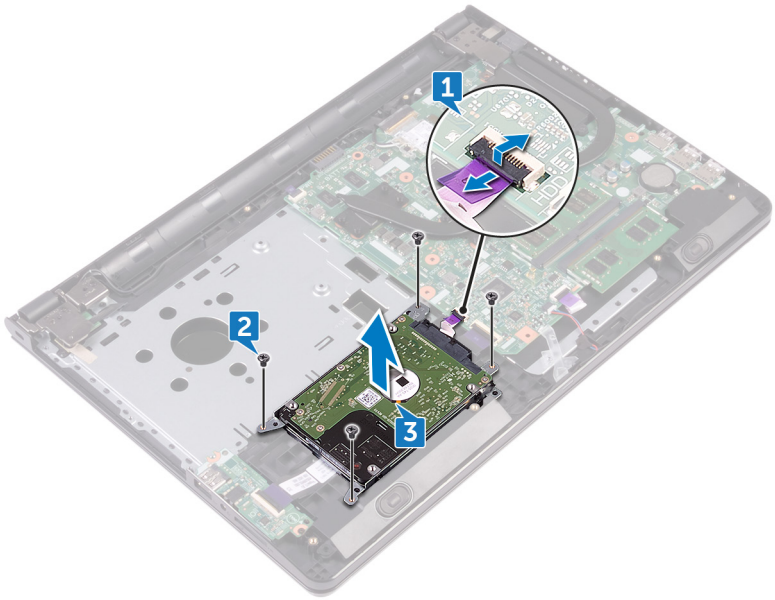
CAUTION: To avoid data loss, do not remove the hard drive while the computer is in sleep or on state.

Prerequisites

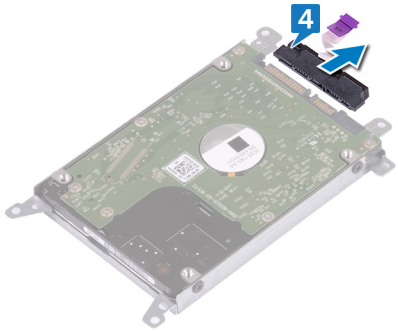
1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".

Procedure

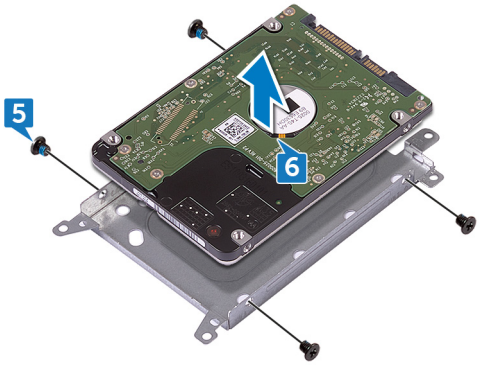
1. Open the latch and disconnect the hard-drive cable from the system board.
2. Remove the four screws (M2x3) that secure the hard-drive assembly to the palm-rest assembly.
3. Lift the hard-drive assembly off the palm-rest assembly.



4. Disconnect the interposer from the hard-drive assembly.



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



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Replacing the 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.

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

Procedure

1. Align the screw holes on the hard-drive bracket with the screw holes on the hard drive.
2. Replace the four screws (M3x3) that secure the hard-drive bracket to the hard drive.
3. Connect the interposer to the hard drive.
4. Place the hard-drive assembly in the palm-rest assembly and align the screw holes on the hard-drive assembly with the screw holes on the palm-rest assembly.
5. Replace the four screws (M2x3) that secure the hard-drive assembly to the palm-rest assembly.
6. Slide the hard-drive cable into its connector on the system board and close the latch to secure the cable.

Post-requisites

1. Follow the procedure from step 2 to step 8 in “Replacing the base cover”.
2. Replace the keyboard.
3. Follow the procedure from step 4 to step 5 in “Replacing the optical drive”.
4. Replace the battery.

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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.

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.

Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".

Procedure

1. Remove the screw (M2x3) that secures the solid-state drive to the solid-state screw mount.
2. Slide and remove the solid-state drive from the solid-state drive slot.
3. Lift the solid-state drive off the solid-state drive bracket.

16

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.

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

Procedure

1. Align the notch on the solid-state drive with the tab on the solid-state drive slot.
2. Slide the solid-state drive firmly into the solid-state drive slot at an angle.
3. Replace the screw (M2x3) that secures the solid-state drive to the solid-state screw mount.

Post-requisites

1. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
2. Replace the keyboard.
3. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
4. Replace the battery.

17

Removing the memory modules

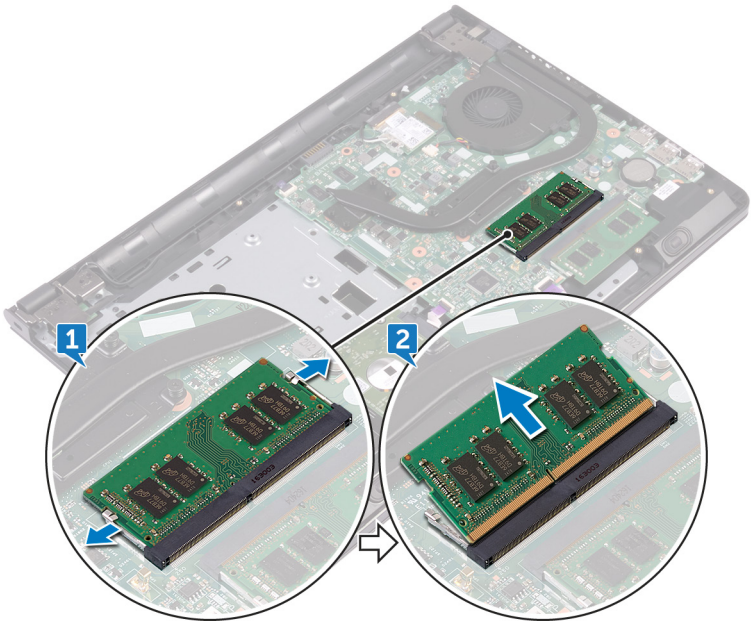
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".

Procedure

1. Using your fingertips, carefully spread apart the securing clips on each end of the memory-module slot until the memory module pops up.
2. Slide and remove the memory module from the memory-module slot.



18

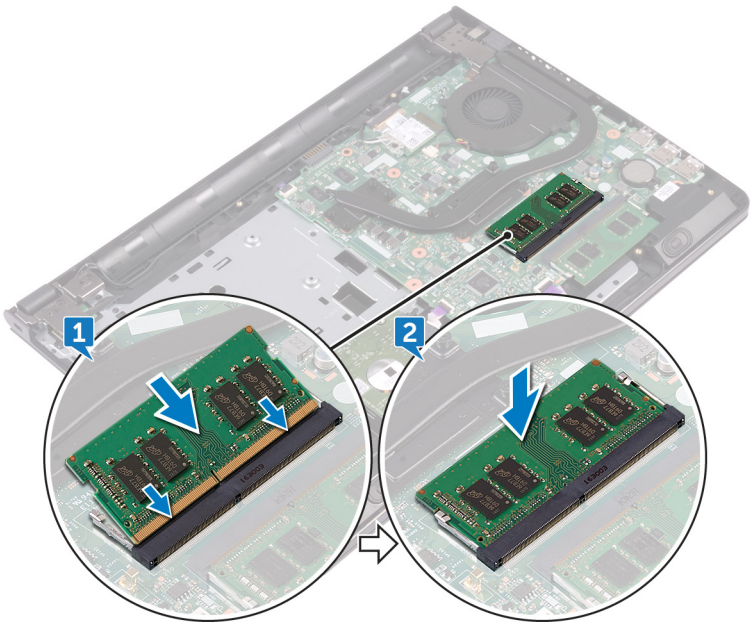
Replacing the memory modules

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.

Procedure

1. Align the notch on the memory module with the tab on the memory-module slot and slide it firmly into the slot at an angle.
2. Press the memory module down until it clicks into place.

   NOTE: If you do not hear the click, remove the memory module and reinstall it.



Post-requisites

1. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
2. Replace the keyboard.
3. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
4. Replace the battery.

19

Removing the wireless card

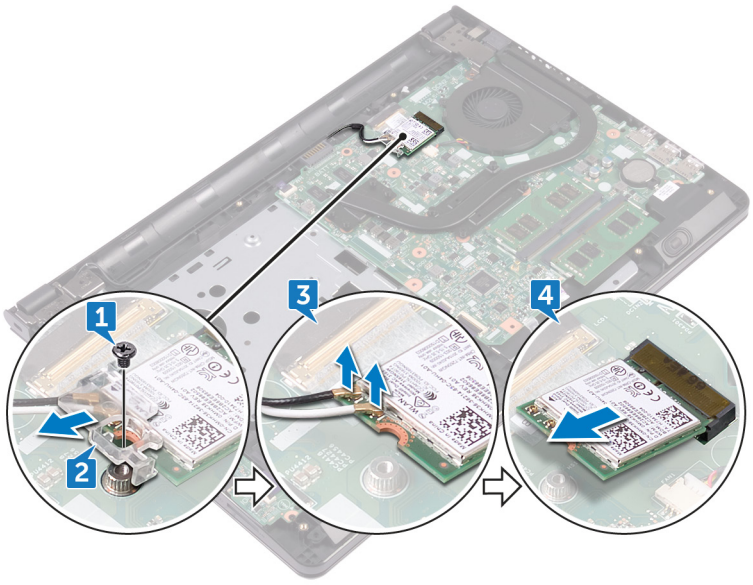
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".

Procedure

1. Remove the screw (M2x3) that secures the wireless-card bracket to the wireless card and system board.
2. Remove the wireless-card bracket from the wireless card.
3. Disconnect the antenna cables from the wireless card.
4. Slide and remove the wireless card from the wireless-card slot.



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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.

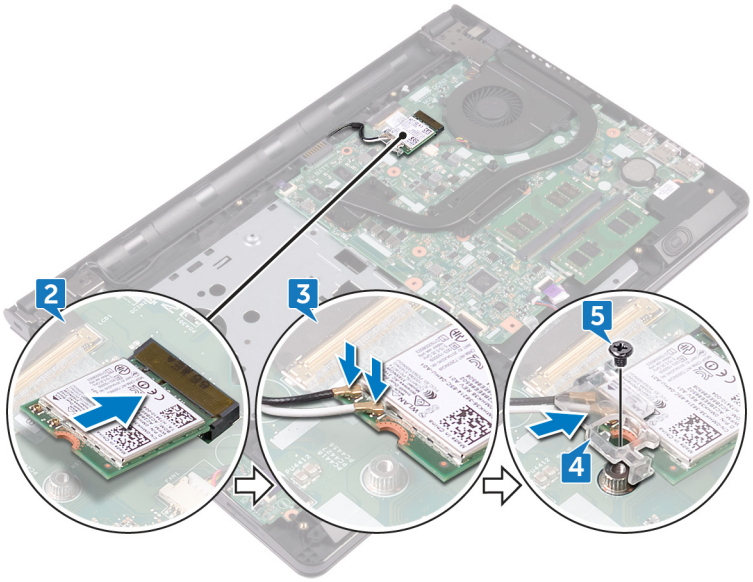
Procedure

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

1. Align the notch on the wireless card with the tab on the wireless-card slot.
2. Slide the wireless card at an angle into the wireless-card slot.
3. Connect the antenna cables to the wireless card.
   The following table provides the antenna-cable color scheme for the wireless card supported by your computer:

Table 2. Antenna-cable color scheme

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



4. Align the screw hole on the wireless-card bracket with the screw hole on the wireless card and the system board.
5. Replace the screw (M2x3) that secures the wireless-card bracket to the wireless card and system board.

Post-requisites

1. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
2. Replace the keyboard.

3. Follow the procedure from step 4 to step 5 in “Replacing the optical drive”.
4. Replace the battery.

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Removing the power-button board

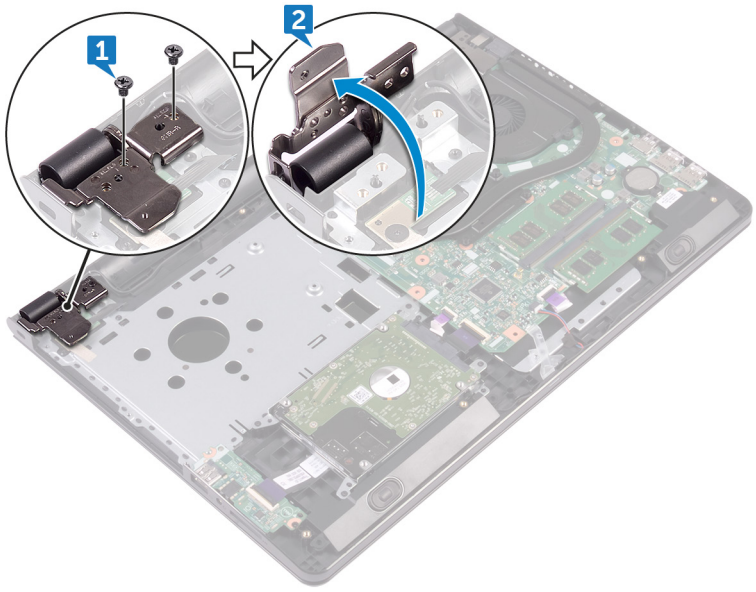
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

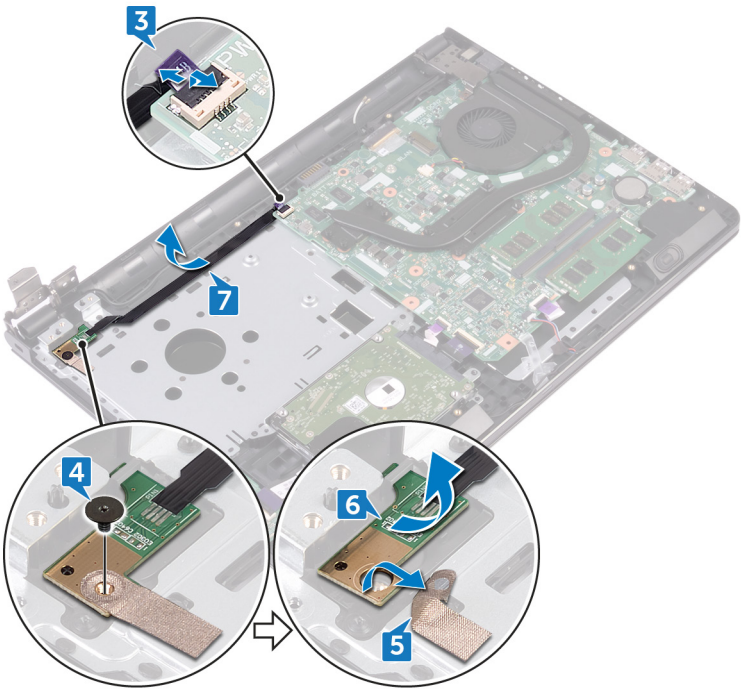
1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".

Procedure

1. Remove the two screws (M2.5x8) that secure the display hinge to the palm-rest assembly.
2. Open the hinge to an angle of 90 degrees.



3. Open the latch and disconnect the power-button board cable from the system board.
4. Remove the screw (M2x2) that secures the power-button board to the palm-rest assembly.
5. Peel the tape that secures the power-button board to the palm-rest assembly.
6. Slide and remove the power-button board from the tab on the palm-rest assembly.
7. Note the power-button board cable routing and peel it off the palm-rest assembly.


3
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22

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.

Procedure

1. Slide the power-button board under the tab on the palm-rest assembly and align the screw hole on the power-button board with the screw hole on the palm-rest assembly.
2. Replace the screw (M2x2) that secures the power-button board to the palm-rest assembly.
3. Adhere the tape that secures the power-button board to the palm-rest assembly.
4. Route the power-button board cable through the slot on the palm-rest assembly.
5. Slide the power-button board cable into its connector on the system board and close the latch to secure the cable.
6. Close the display hinges.
7. Align the screw holes on the display hinges with the screw holes on the palm-rest assembly.
8. Replace the two screws (M2.5x8) that secure the display hinges to the palm-rest assembly.

Post-requisites

1. Follow the procedure from step 2 to step 8 in “Replacing the base cover”.
2. Replace the keyboard.
3. Follow the procedure from step 4 to step 5 in “Replacing the optical drive”.
4. Replace the battery.

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Removing the speakers

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.

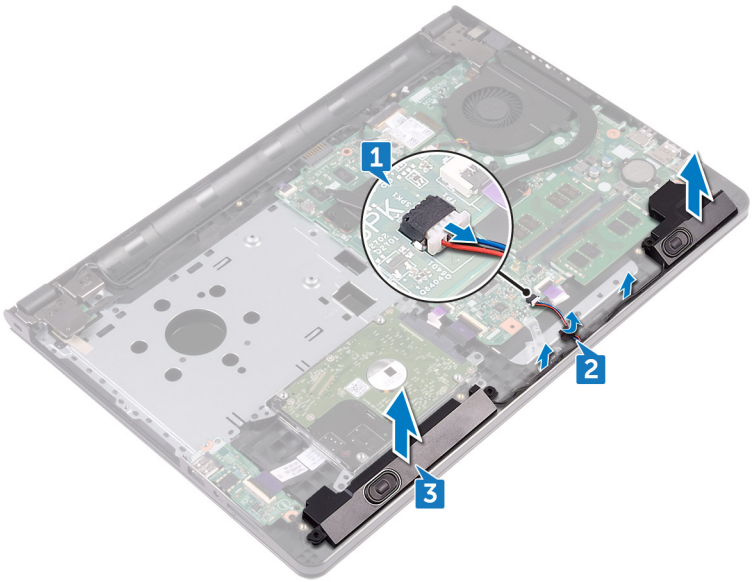
Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".

Procedure

1. Disconnect the speaker cable from the system board.
2. Peel off the tape that secures the speaker cable to the palm-rest assembly.
3. Note the speaker-cable routing and lift the speakers, along with the speaker cable, off the palm-rest assembly.

   NOTE: Note the position of the rubber grommets before lifting the speaker.



24

Replacing the speakers

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.

Procedure

NOTE: The rubber grommets may get pushed out while replacing the speaker. Ensure that the rubber grommets are in their position after placing the speaker on the system board.

1. Align the speakers using the alignment posts on the palm-rest assembly and snap the speakers into place.
2. Route the speaker cable through the routing guides on the palm-rest assembly.
3. Connect the speaker cable to the system board.
4. Adhere the tape that secures the speaker cable to the palm-rest assembly.

Post-requisites

1. Follow the procedure from step 2 to step 8 in “Replacing the base cover”.
2. Replace the keyboard.
3. Follow the procedure from step 4 to step 5 in “Replacing the optical drive”.
4. Replace the battery.

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Removing the I/O board

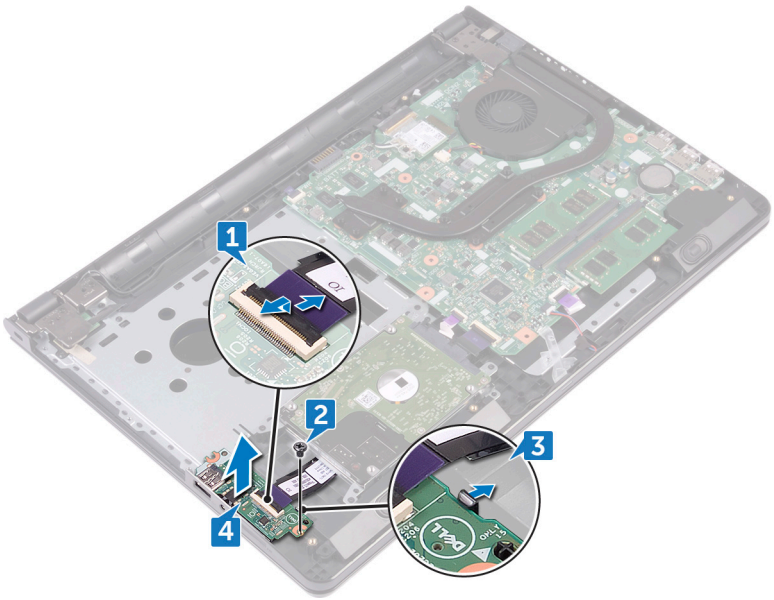
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".

Procedure

1. Open the latch and disconnect the I/O-board cable from the I/O board.
2. Remove the screw (M2x3) that secures the I/O board to the palm-rest assembly.
3. Push the securing tab to release the I/O board from the palm-rest assembly.
4. Lift the I/O board off the palm-rest assembly.



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Replacing the I/O 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.

Procedure

1. Using the alignment posts, place the I/O board on the palm-rest assembly and snap the I/O board into place.
2. Slide the I/O-board cable into its connector on the I/O board and close the latch to secure the cable.
3. Replace the screw (M2x3) that secures the I/O board to the palm-rest assembly.

Post-requisites

1. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
2. Replace the keyboard.
3. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
4. Replace the battery.

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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.

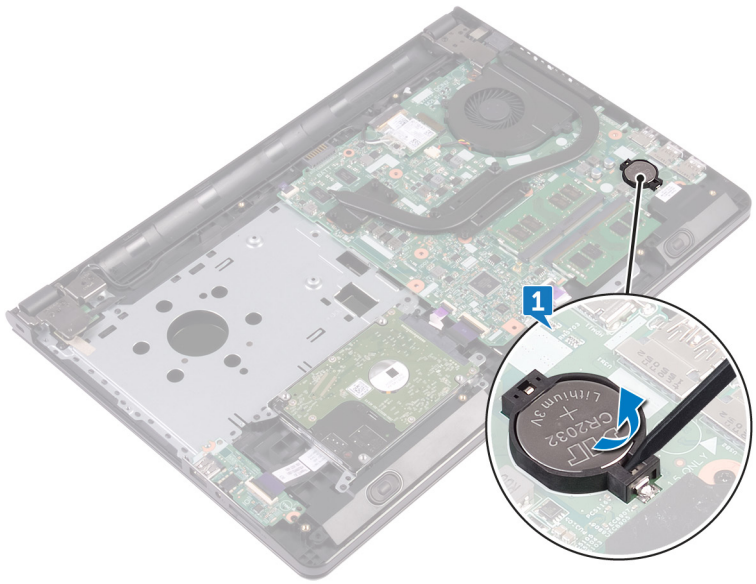
CAUTION: Removing the coin-cell battery resets the BIOS setup program's settings to default. It is recommended that you note the BIOS setup program's settings before removing the coin-cell battery.

Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".

Procedure

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



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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.

Procedure

With the positive-side facing up, snap the coin-cell battery into the battery socket.

Post-requisites

1. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
2. Replace the keyboard.
3. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
4. Replace the battery.

29

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.

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.

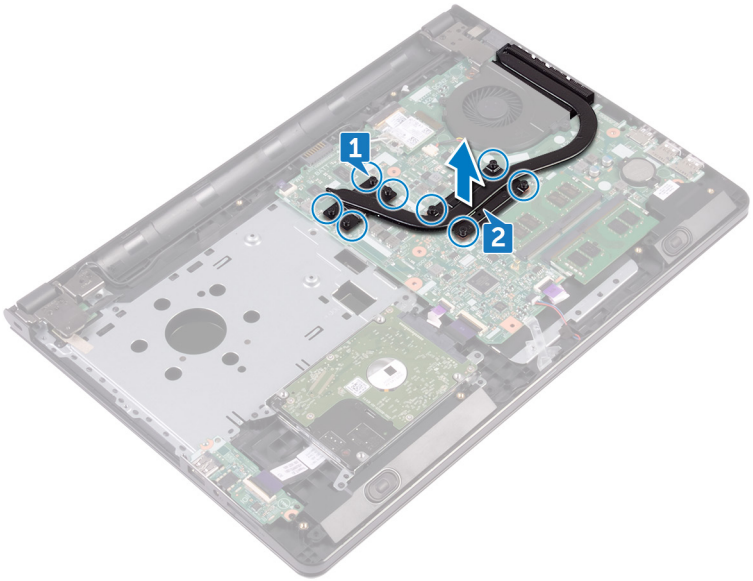
Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".

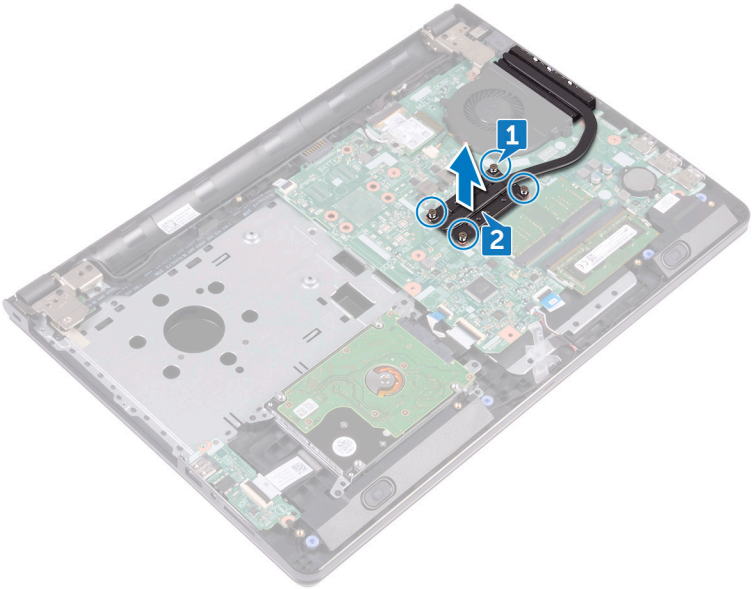
Procedure

1. Remove the captive screws that secure the heat sink to the system board.
2. Lift the heat sink off the system board.

Integrated: Eight screws



Discrete: Four screws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30

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.

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.

Procedure

1. Align the screws on the heat sink with the screw holes on the system board.
2. Replace the captive screws that secure the heat sink to the system board.

   Integrated: Eight screws

   Discrete: Four screws

Post-requisites

1. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
2. Replace the keyboard.
3. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
4. Replace the battery.

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Removing the fan

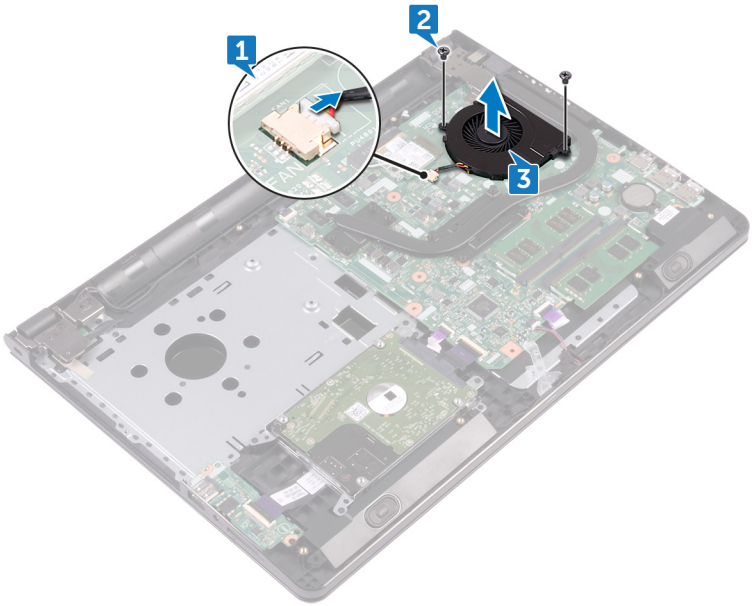
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".

Procedure

1. Disconnect the fan cable from the system board.
2. Remove the two screws (M2x5) that secure the fan to the palm-rest assembly.
3. Lift the fan off the palm-rest assembly.



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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.

Procedure

1. Place the fan on the palm-rest assembly.
2. Align the screw holes on the fan with the screw holes on the palm-rest assembly.
3. Replace the two screws (M2x5) that secure the fan to the system board.
4. Connect the fan cable to the system board.

Post-requisites

1. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
2. Replace the keyboard.
3. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
4. Replace the battery.

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Removing the status-light lens

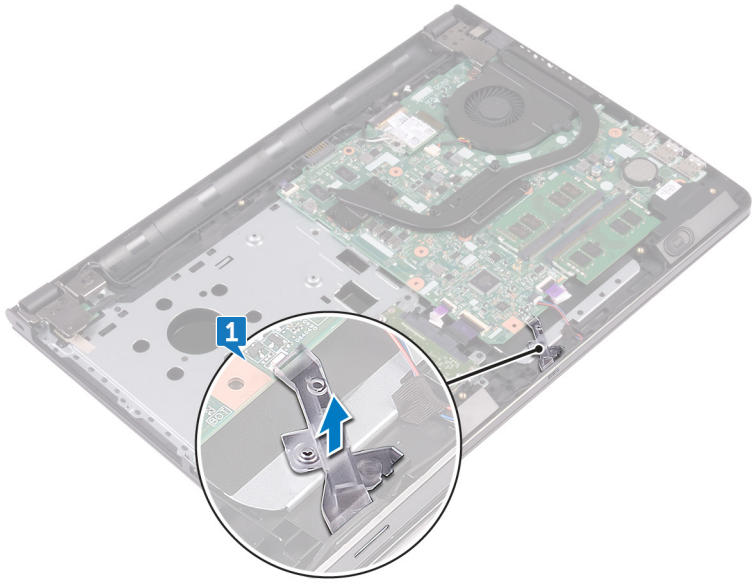
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".

Procedure

Remove the status-light lens from the guide on the palm-rest assembly.



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Replacing the status-light lens

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.

Post-requisites

1. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
2. Replace the keyboard.
3. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
4. Replace the battery.

Procedure

Align the status-light lens with the guide on the palm-rest assembly.

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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.

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.

Prerequisites

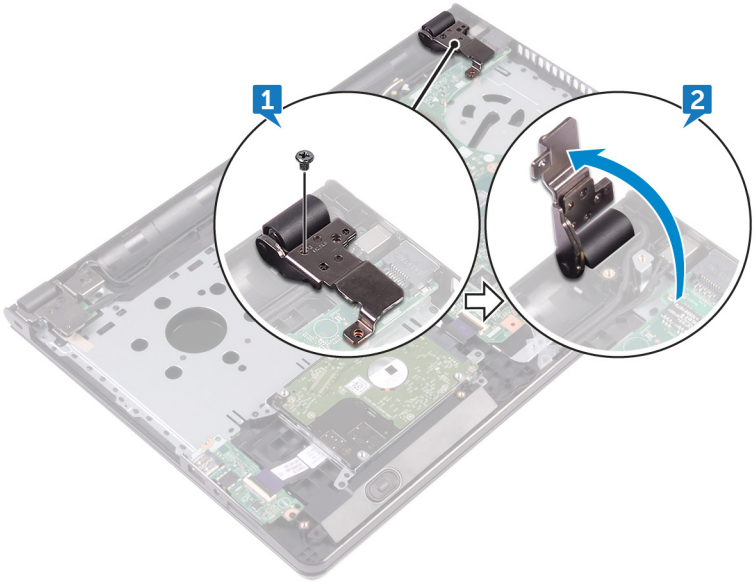
1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".
5. Remove the wireless card.
6. Remove the memory modules.
7. Remove the heat sink.
8. Remove the fan.

Procedure

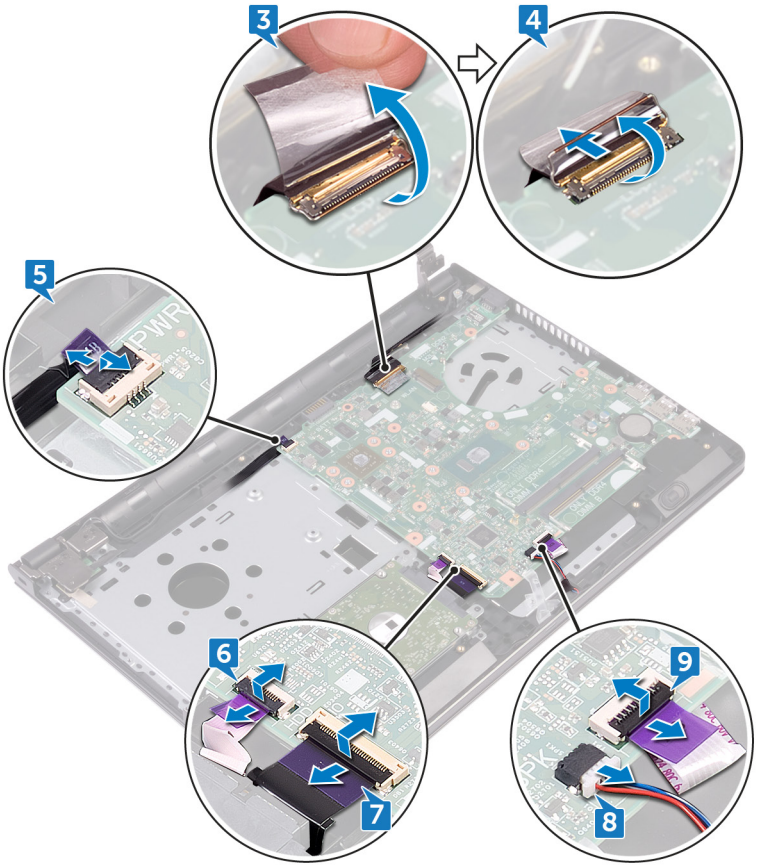
1. Remove the screw (2.5x8) that secure the display hinge to the palm-rest assembly.

   NOTE: These instructions are applicable only for laptops with a non-touch screen display.

2. Open the hinge to an angle of 90 degrees.

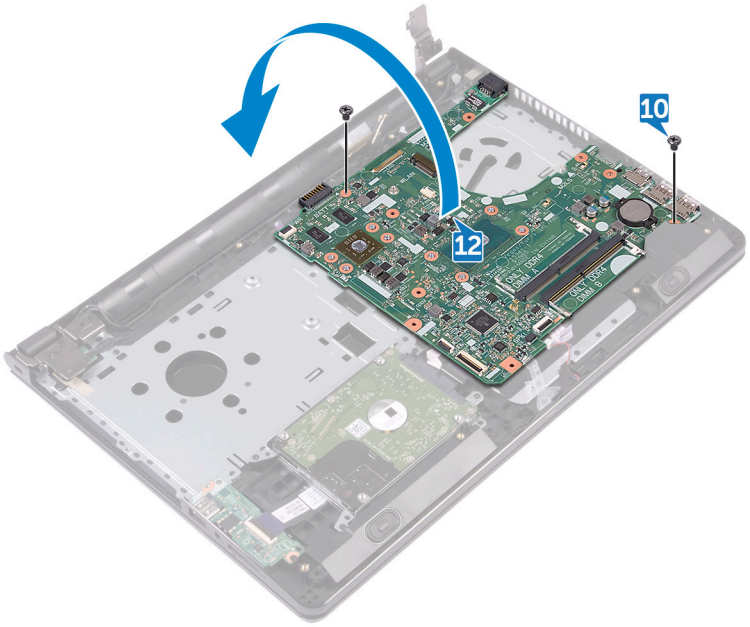


3. Peel the tape that secures the display cable to the system board.
4. Open the latch and disconnect the display cable from the system board.
5. Open the latch and disconnect the power-button board cable from the system board.
6. Open the latch and disconnect the hard-drive cable from the system board.
7. Open the latch and disconnect the I/O-board cable from the system board.
8. Disconnect the speaker cable from the system board.
9. Open the latch and disconnect the touch-pad cable from the system board.

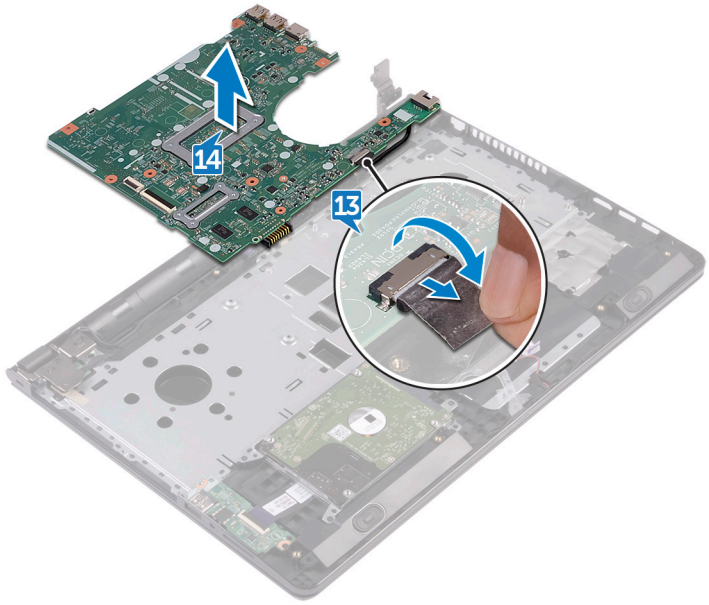


10. Remove the two screws (M2x3) that secures the system board to the palm-rest assembly.

11. Gently release the ports on the system board from the slots on the palm-rest assembly.
12. Carefully turn the system board over.



13. Peel the tape that secures the power-adapter port cable to the system board and disconnect the power-adapter port from the system board.
14. Lift the system board off the palm-rest assembly.



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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.

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.

Procedure

1. Connect the power-adapter port cable to the system board.
2. Adhere the tape that secures the power-adapter port cable to the system board.
3. Turn the system board over.
4. Align the screw holes on the system board with the screw holes on the palm-rest assembly.
5. Replace the two screws (M2x3) that secures the system board to the palm-rest assembly.
6. Connect the touch-pad cable and close the latch to secure the cable.
7. Connect the speaker cable to the system board.
8. Connect the I/O-board cable and close the latch to secure the cable.
9. Connect the hard-drive cable and close the latch to secure the cable.
10. Connect the power-button board cable and close the latch to secure the cable.
11. Connect the display cable and close the latch to secure the cable.
12. Adhere the tape that secures the display cable to the system board.
13. Close the display hinges.
14. Align the screw holes on the display hinges with the screw holes on the palm-rest assembly.

    NOTE: These instructions are applicable only for laptops with a non-touch screen display.

15. Replace the screw (2.5x8) that secure the display hinges to the palm-rest assembly.

Post-requisites

1. Replace the fan.
2. Replace the heat sink.
3. Replace the memory modules.
4. Replace the wireless card.
5. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
6. Replace the keyboard.
7. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
8. Replace the battery.

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Removing the touchpad

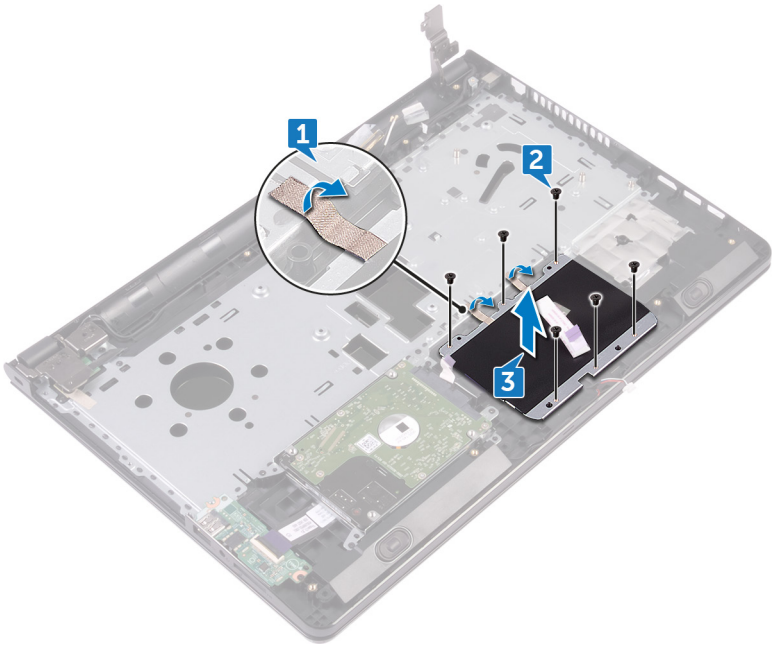
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

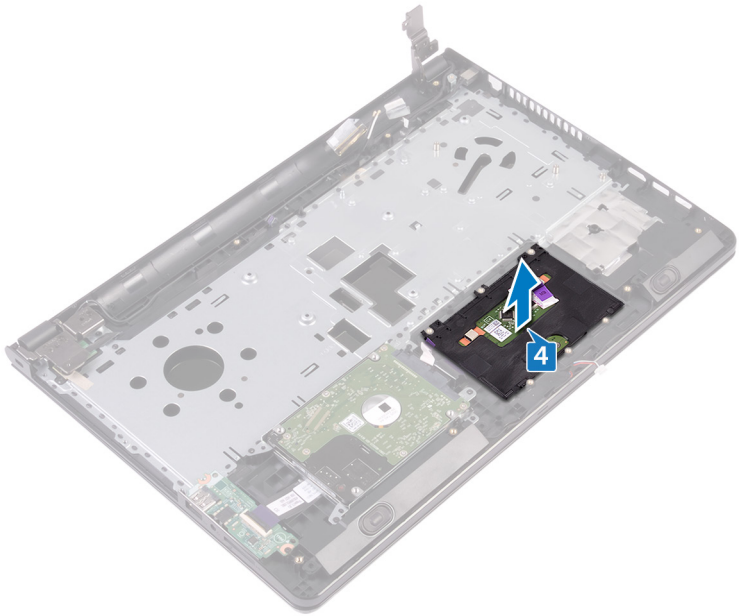
1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".
5. Remove the memory modules.
6. Remove the wireless card.
7. Remove the heat sink.
8. Remove the fan.
9. Remove the system board.

Procedure

1. Peel the tape that secures the touch-pad bracket to the palm-rest assembly.
2. Remove the six screws (M2x3) that secure the touch-pad bracket to the touch pad.
3. Lift the touch-pad bracket off the palm-rest assembly.



4. Lift the touch pad off the palm-rest assembly.


4

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Replacing the touchpad

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.

Procedure

1. Place the touch pad on the palm-rest assembly.
2. Align the screw holes on the touch-pad bracket with the screw holes on the palm-rest assembly.
3. Replace the six screws (M2x3) that secure the touch-pad bracket to the touch pad.
4. Adhere the tape that secures the touch-pad bracket to the palm-rest assembly.

Post-requisites

1. Replace the system board.
2. Replace the fan.
3. Replace the heat sink.
4. Replace the wireless card.
5. Replace the memory modules.
6. Follow the procedure from step 2 to step 8 in “Replacing the base cover”.
7. Replace the keyboard.
8. Follow the procedure from step 4 to step 5 in “Replacing the optical drive”.
9. Replace the battery.

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Removing the power-adapter port

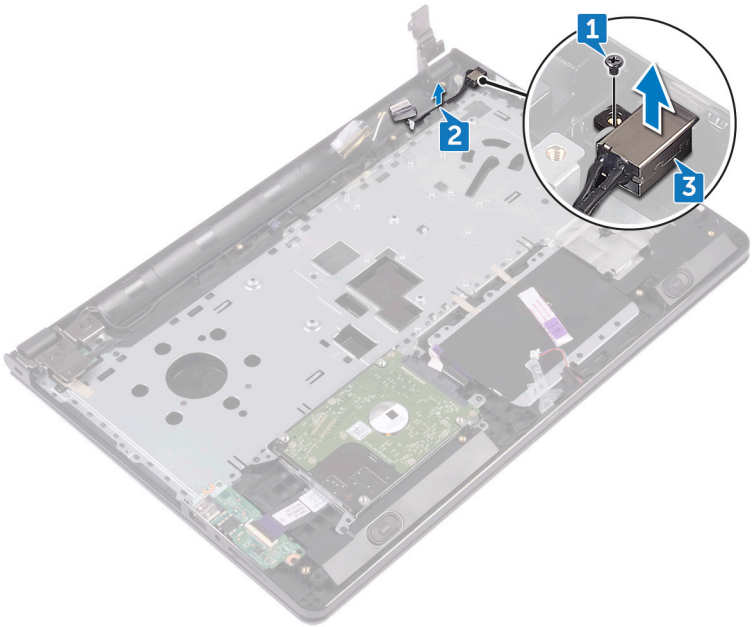
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".
5. Remove the coin-cell battery.
6. Remove the memory modules.
7. Remove the wireless card.
8. Remove the heat sink.
9. Remove the fan.
10. Remove the system board.

Procedure

1. Remove the screw (M2x3) that secures the power-adapter port to the palm-rest assembly.
2. Note the power-adapter port cable routing and remove the cable from its routing guides.
3. Lift the power-adapter port off the palm-rest assembly.



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Replacing the power-adapter port

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.

Procedure

1. Slide the power-adapter port into the slot on the palm-rest assembly.
2. Replace the screw (M2x3) that secures the power-adapter port to the palm-rest assembly.
3. Route the power-adapter port cable along its routing guides on the palm-rest assembly.

Post-requisites

1. Replace the system board.
2. Replace the fan.
3. Replace the heat sink.
4. Replace the wireless card.
5. Replace the memory modules.
6. Replace the coin-cell battery.
7. Follow the procedure from step 2 to step 8 in “Replacing the base cover”.
8. Replace the keyboard.
9. Follow the procedure from step 4 to step 5 in “Replacing the optical drive”.
10. Replace the battery.

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Removing the display assembly

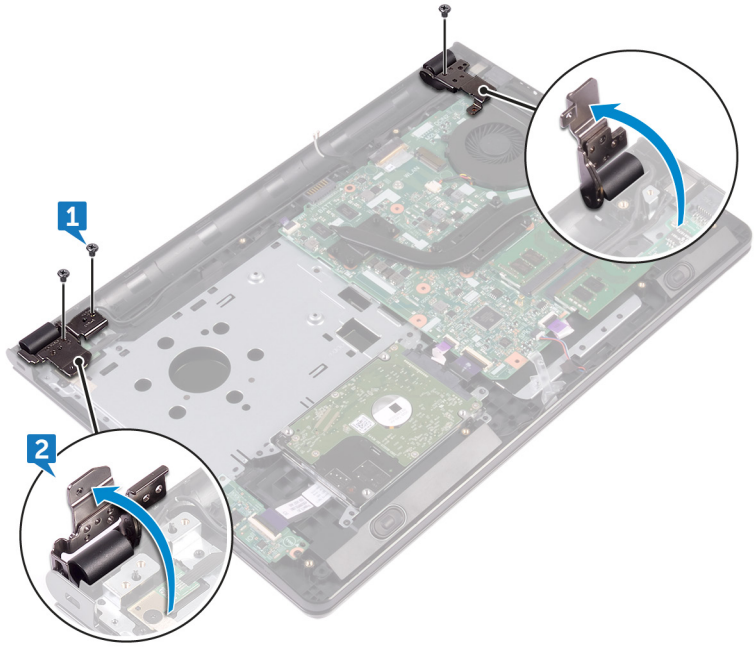
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the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

Prerequisites

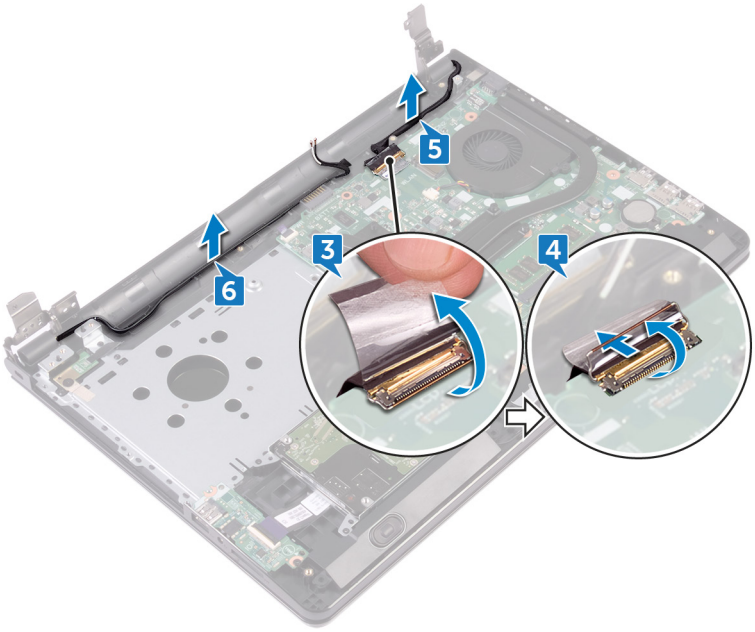
1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".
5. Remove the wireless card.

Procedure

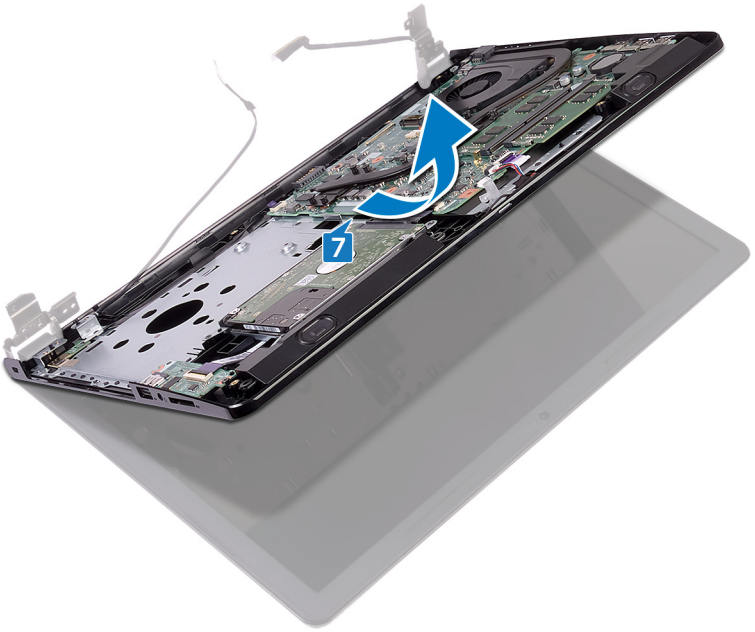
1. Remove the three screws (2.5x8) that secure the display hinges to the palm-rest assembly.
2. Open the display hinges to an angle of 90 degrees.



3. Peel the tape that secures the display cable to the palm-rest assembly.
4. Open the latch and disconnect the display cable.
5. Note the display cable routing and remove the display cable from the routing guides on the palm-rest assembly.
6. Note the antenna cable routing and remove the cable from its routing guides on the palm-rest assembly.



7. Open the palm-rest assembly at an angle and slide it off the display assembly.



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Replacing the display 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.

Procedure

1. Place the display assembly on a clean, flat surface.
2. Place the palm-rest assembly on the display assembly.
3. Close the display hinges and align the screw holes on the display hinges with the screw holes on the palm-rest assembly.
4. Replace the three screws (2.5x8) that secure the display hinges to the palm-rest assembly.
5. Route the antenna cables through the routing guides on the palm-rest assembly.
6. Connect the display cable and close the latch to secure the cable.
7. Route the display cable through the routing guides on the palm-rest assembly.
8. Adhere the tape that secures the display cable to the palm-rest assembly.
9. Close the display and turn the computer over.

Post-requisites

1. Replace the wireless card.
2. Follow the procedure from step 2 to step 8 in “Replacing the base cover”.
3. Replace the keyboard.
4. Follow the procedure from step 4 to step 5 in “Replacing the optical drive”.
5. Replace the battery.

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Removing the display 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.

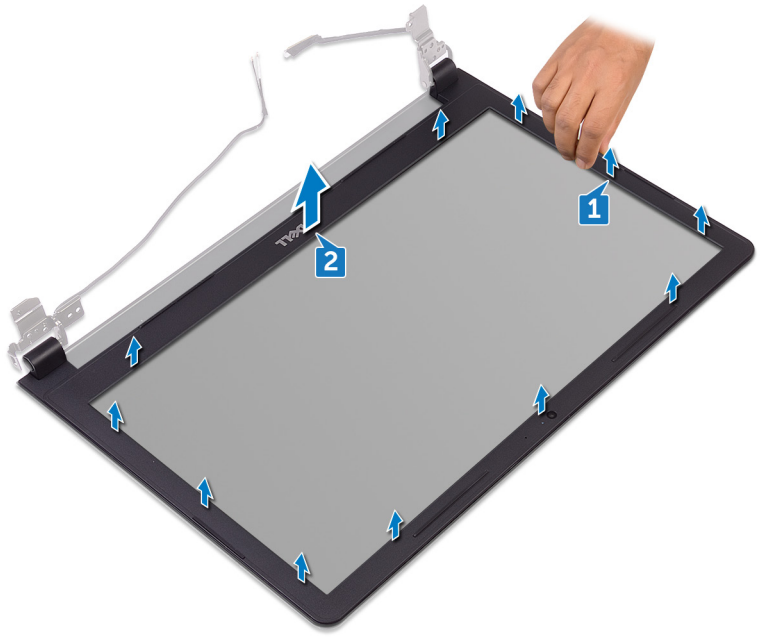
Prerequisites

NOTE: These instructions are applicable only for laptops with a non-touch screen display.

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".
5. Remove the wireless card.
6. Remove the display assembly.

Procedure

1. Using your fingertips, carefully pry up the inner edges of the display bezel.



2. Remove the display bezel off the display back-cover and antenna assembly.

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Replacing the display 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.

Procedure

Align the display bezel with the display back-cover and gently snap the display bezel into place.

Post-requisites

1. Replace the display assembly.
2. Replace the wireless card.
3. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
4. Replace the keyboard.
5. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
6. Replace the battery.

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Removing the display 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.

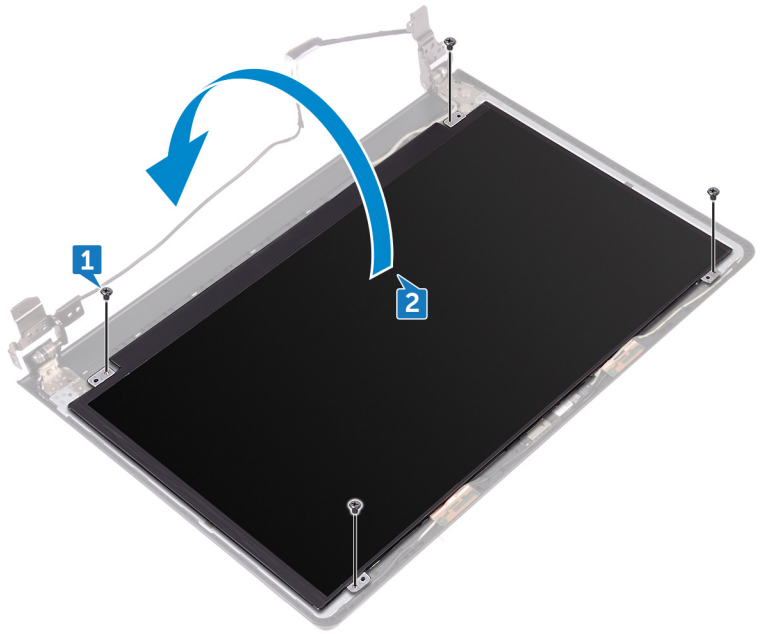
Prerequisites

NOTE: These instructions are applicable only for laptops with a non-touch screen display.

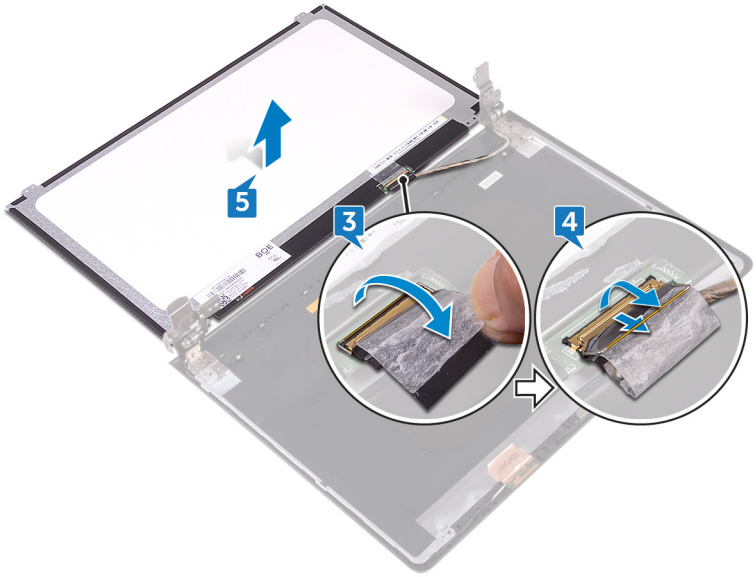
1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".
5. Remove the wireless card.
6. Remove the display assembly.
7. Remove the display bezel.

Procedure

1. Remove the four screws (M2x3) that secure the display panel to the display back-cover and antenna assembly.
2. Lift the display panel and turn it over.



3. Peel the tape that secures the display cable to the display panel.
4. Open the latch and disconnect the display cable from the display panel.
5. Lift the display panel off the display back-cover and antenna assembly.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Replacing the display 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.

Post-requisites

1. Replace the display bezel.
2. Replace the display assembly.
3. Replace the wireless card.
4. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
5. Replace the keyboard.
6. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
7. Replace the battery.

Procedure

1. Slide the display cable into the connector on the display panel and close the latch to secure the cable.
2. Adhere the tape that secures the display cable to the display panel.
3. Turn the display panel over and place it on the display back-cover and antenna assembly.
4. Align the screw holes on the display panel with the screw holes on the display back-cover and antenna assembly.
5. Replace the four screws (M2x3) that secure the display panel to the display back-cover and antenna assembly.

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Removing the camera

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.

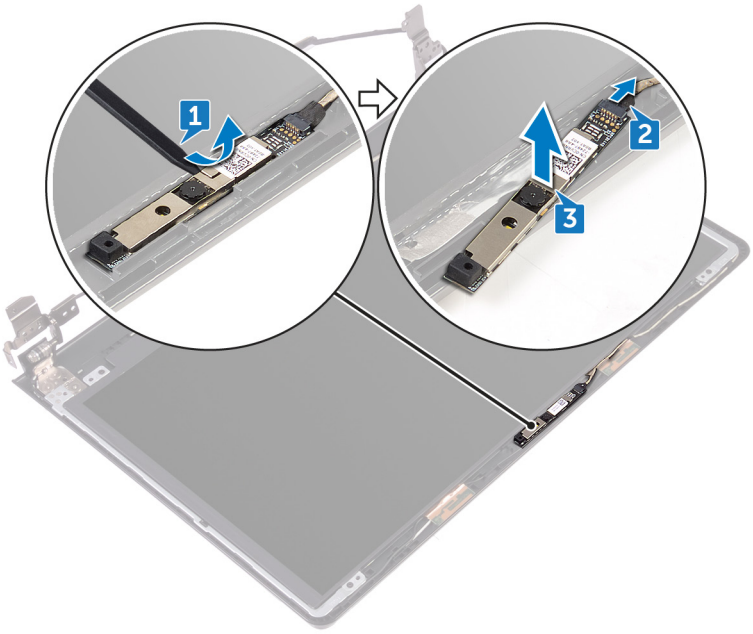
Prerequisites

NOTE: These instructions are applicable only for laptops with a non-touchscreen display.

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".
5. Remove the wireless card.
6. Remove the display assembly.
7. Remove the display bezel.

Procedure

1. Using a plastic scribe, gently pry the camera and lift it at an angle.
2. Disconnect the camera cable from the camera.
3. Lift the camera off the display back-cover and antenna assembly.



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Replacing the camera

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.

Procedure

1. Using the alignment post, adhere the camera on the display back-cover and antenna assembly.
2. Connect the camera cable to the camera.

Post-requisites

1. Replace the display bezel.
2. Replace the display assembly.
3. Replace the wireless card.
4. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
5. Replace the keyboard.
6. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
7. Replace the battery.

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Removing the display hinges

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.

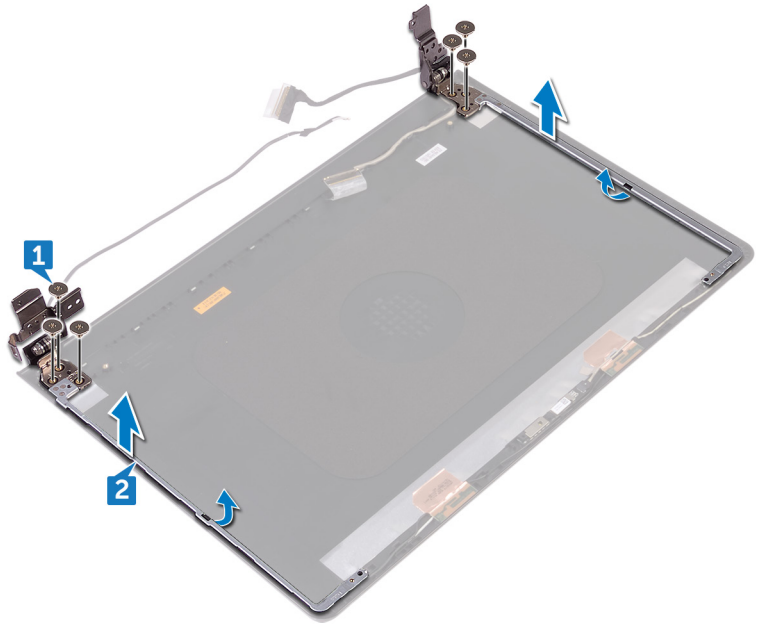
Prerequisites

NOTE: These instructions are applicable only for laptops with a non-touchscreen display.

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".
5. Remove the wireless card.
6. Remove the display assembly.
7. Remove the display bezel.
8. Remove the display panel.

Procedure

1. Remove the six screws (M2.5x2.5 big head) that secure the display hinges to the display back-cover and antenna assembly.
2. Carefully lift the display hinges off the display back-cover and antenna assembly.



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Replacing the display hinges

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.

Post-requisites

1. Replace the display panel.
2. Replace the display bezel.
3. Replace the display assembly.
4. Replace the wireless card.
5. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
6. Replace the keyboard.
7. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
8. Replace the battery.

Procedure

1. Align the screw holes on the display hinges with the screw holes on the display back-cover and antenna assembly.
2. Replace the six screws (M2.5x2.5 big head) that secure the display hinges to the display back-cover and antenna assembly.

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Removing the display back-cover and antenna 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.

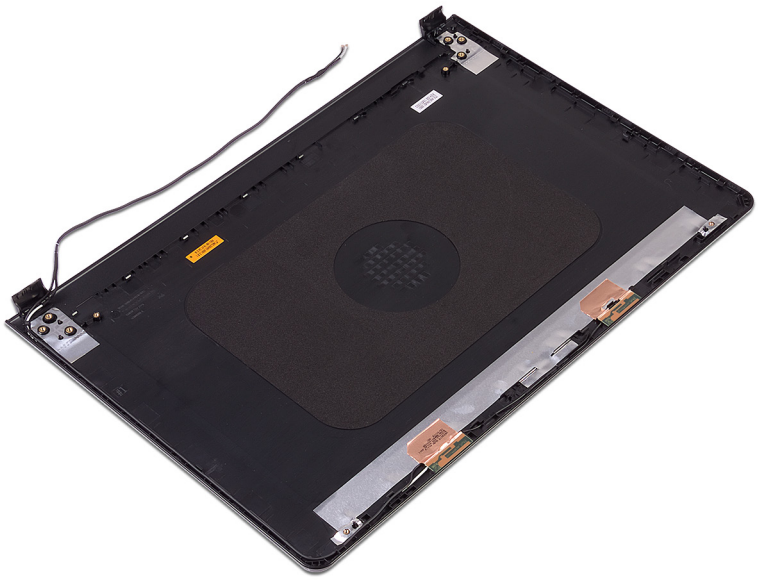
Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in Removing the optical drive
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".
5. Remove the wireless card.
6. Remove the display assembly.
7. Remove the display bezel.
8. Remove the display panel.
9. Remove the display hinges.
10. Remove the camera.

Procedure

NOTE: These instructions are applicable only for laptops with a non-touch screen display.

After performing the steps mentioned in the prerequisites, we are left with the display back-cover and antenna assembly.



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Replacing the display back-cover and antenna 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.

Procedure

Place the display back-cover and antenna assembly on a clean, flat surface.

Post-requisites

1. Replace the camera.
2. Replace the display hinges.
3. Replace the display panel.
4. Replace the display bezel.
5. Replace the display assembly.
6. Replace the wireless card.
7. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
8. Replace the keyboard.
9. Follow the procedure from step 4 to step 5 in "Replacing the optical drive.
10. Replace the battery.

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Removing the palm rest

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.

Prerequisites

1. Remove the battery.
2. Follow the procedure from step 1 to step 3 in "Removing the optical drive".
3. Remove the keyboard.
4. Follow the procedure from step 1 to step 7 in "Removing the base cover".
5. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
6. Remove the memory modules.
7. Remove the wireless card.
8. Remove the power-button board.
9. Remove the speakers.
10. Remove the I/O board.
11. Remove the heat sink.
12. Remove the fan.
13. Remove the status-light lens.
14. Remove the system board.
15. Remove the touch pad.
16. Remove the power-adapter port.
17. Remove the display assembly.

Procedure

After performing the steps in the prerequisites we are left with the palm rest.

HDD

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Replacing the palm rest

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.

Post-requisites

1. Replace the display assembly.
2. Replace the power-adapter port.
3. Replace the touch pad.
4. Replace the system board.
5. Replace the status-light lens.
6. Replace the fan.
7. Replace the heat sink.
8. Replace the I/O board.
9. Replace the speakers.
10. Replace the power-button board.
11. Replace the wireless card.
12. Replace the memory modules.
13. Follow the procedure from step 4 to step 6 in "Replacing the hard drive".
14. Follow the procedure from step 2 to step 8 in "Replacing the base cover".
15. Replace the keyboard.
16. Follow the procedure from step 4 to step 5 in "Replacing the optical drive".
17. Replace the battery.

Procedure

Place the palm rest on a clean and flat surface.

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Troubleshooting

Dell Enhanced Pre-Boot System Assessment (ePSA) diagnostic 3.0

For more details, see Dell EPSA Diagnostic 3.0.

Diagnostics

Power and battery-status light/hard-drive activity light

Indicates the battery-charge status or the hard-drive activity.

NOTE: Press Fn+H to toggle this light between power and battery-status light and hard-drive activity light.

Hard-drive activity light

Turns on when the computer reads from or writes to the hard drive.

Power and battery-status light

Indicates the power and battery-charge status.

Solid white — Power adapter is connected and the battery has more than 5 percent charge.

Amber — Computer is running on battery and the battery has less than 5 percent charge.

Off

- Power adapter is connected and the battery is fully charged.
- Computer is running on battery and the battery has more than 5 percent charge.
- Computer is in sleep state, hibernation, or turned off.

The power and battery-status light blinks amber along with beep codes indicating failures.

For example, the power and battery-status light blinks amber two times followed by a pause, and then blinks white three times followed by a pause. This 2,3 pattern continues until the computer is turned off indicating no memory or RAM is detected.

The following table shows the different power and battery-status light patterns and the problems that each light pattern indicates.

Table 3. Light patterns

Light pattern	Problem description
2,1	CPU failure
2,2	System board: BIOS and ROM failure
2,3	No memory or RAM detected
2,4	Memory or RAM failure
2,5	Invalid memory installed
2,6	System board or chipset error
2,7	LCD failure - SBIOS message
2,8	LCD failure - EC detection of power rail failure

Table 3. Light patterns (continued)

Light pattern	Problem description
3,1	CMOS battery failure
3,2	PCI or video card or chip failure
3,3	Recovery image not found
3,4	Recovery image found but invalid
3,5	Power rail failure
3,6	Flash corruption detected by SBIOS
3,7	Timeout waiting on ME to reply to HECI message

Camera status light: Indicates whether the camera is in use.

- Solid white — Camera is in use.
- Off — Camera is not in use.

Caps Lock status light: Indicates whether Caps Lock is enabled or disabled.

- Solid white — Caps Lock enabled.
- Off — Caps Lock disabled.

Drain residual flea power (perform hard reset)

Flea power is the residual static electricity that remains in the computer even after it has been powered off and the battery is removed.

For your safety, and to protect the sensitive electronic components in your computer, you are requested to drain residual flea power before removing or replacing any components in your computer.

Draining residual flea power, also known as a performing a "hard reset", is also a common troubleshooting step if your computer does not power on or boot into the operating system.

To drain residual flea power (perform a hard reset)

1. Turn off your computer.
2. Disconnect the power adapter from your computer.
3. Remove the base cover.
4. Remove the battery.
5. Press and hold the power button for 20 seconds to drain the flea power.
6. Install the battery.
7. Install the base cover.
8. Connect the power adapter to your computer.
9. Turn on your computer.

NOTE: For more information about performing a hard reset, see the knowledge base article SLN85632 at www.dell.com/support.

WiFi power cycle

If your computer is unable to access the internet due to WiFi connectivity issues a WiFi power cycle procedure may be performed. The following procedure provides the instructions on how to conduct a WiFi 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.

Updating the BIOS in Windows

1. Go to www.dell.com/support.
2. Click **Product support**. In the **Search support** box, enter the Service Tag of your computer, and then click **Search**.

   NOTE: If you do not have the Service Tag, use the SupportAssist feature to automatically identify your computer. You can also use the product ID or manually browse for your computer model.

3. Click **Drivers & Downloads**. Expand **Find drivers**.
4. Select the operating system installed on your computer.
5. In the **Category** drop-down list, select **BIOS**.
6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
7. After the download is complete, browse the folder where you saved the BIOS update file.
8. Double-click the BIOS update file icon and follow the on-screen instructions.

   For more information, see knowledge base article 000124211 at www.dell.com/support.

Handling swollen Lithium-ion batteries

Like most laptops, Dell laptops use lithium-ion batteries. One type of lithium-ion battery is the lithium-ion polymer battery. Lithium-ion polymer batteries have increased in popularity in recent years and have become standard in the electronics industry due to customer preferences for a slim form factor (especially with newer ultra-thin laptops) and long battery life. Inherent to lithium-ion polymer battery technology is the potential for swelling of the battery cells.

Swollen battery may impact the performance of the laptop. To prevent possible further damage to the device enclosure or internal components leading to malfunction, discontinue the use of the laptop and discharge it by disconnecting the AC adapter and letting the battery drain.

Swollen batteries should not be used and should be replaced and disposed of properly. We recommend contacting Dell product support for options to replace a swollen battery under the terms of the applicable warranty or service contract, including options for replacement by a Dell authorized service technician.

The guidelines for handling and replacing Lithium-ion batteries are as follows:

- Exercise caution when handling Lithium-ion batteries.
- Discharge the battery before removing it from the system. To discharge the battery, unplug the AC adapter from the system and operate the system only on battery power. When the system will no longer power on when the power button is pressed, the battery is fully discharged.
- Do not crush, drop, mutilate, or penetrate the battery with foreign objects.
- Do not expose the battery to high temperatures, or disassemble battery packs and cells.
- Do not apply pressure to the surface of the battery.
- Do not bend the battery.
- Do not use tools of any type to pry on or against the battery.
- If a battery gets stuck in a device as a result of swelling, do not try to free it as puncturing, bending, or crushing a battery can be dangerous.
- Do not attempt to reassemble a damaged or swollen battery into a laptop.
- Swollen batteries that are covered under warranty should be returned to Dell in an approved shipping container (provided by Dell)—this is to comply with transportation regulations. Swollen batteries that are not covered under warranty should be disposed of at an approved recycling center. Contact Dell product support at https://www.dell.com/support for assistance and further instructions.
- Using a non-Dell or incompatible battery may increase the risk of fire or explosion. Replace the battery only with a compatible battery purchased from Dell that is designed to work with your Dell computer. Do not use a battery from other computers with your computer. Always purchase genuine batteries from https://www.dell.com or otherwise directly from Dell.

Lithium-ion batteries can swell for various reasons such as age, number of charge cycles, or exposure to high heat. For more information on how to improve the performance and lifespan of the laptop battery and to minimize the possibility of occurrence of the issue, see Dell Laptop Battery - Frequently Asked Questions.

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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 4. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	www.dell.com
My Dell	
Tips	
Contact Support	In Windows search, type `Contact Support`, and press Enter.
Online help for operating system	www.dell.com/support/windows www.dell.com/support/linux
Troubleshooting information, user manuals, setup instructions, product specifications, technical help blogs, drivers, software updates, and so on.	www.dell.com/support
Dell knowledge base articles for a variety of computer concerns.	1. Go to https://www.dell.com/support/home/?app=knowledgebase. 2. Type the subject or keyword in the **Search** box. 3. Click **Search** to retrieve the related articles.
Learn and know the following information about your product: • Product specifications • Operating system • Setting up and using your product • Data backup • Troubleshooting and diagnostics • Factory and system restore • BIOS information	See *Me and My Dell* at www.dell.com/support/manuals. To locate the *Me and My Dell* relevant to your product, identify your product through one of the following: • Select **Detect Product**. • Locate your product through the drop-down menu under **View Products**. • Enter the **Service Tag number** or **Product ID** in the search bar.

Contacting Dell

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

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

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