Inspiron 15 7000
Service Manual

Computer Model: Inspiron 15-7560
Regulatory Model: P61F
Regulatory Type: P61F001

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.

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 cables such as telephone cables and network cables, from your computer.
5. Disconnect all attached devices and peripherals, such as keyboard, mouse, and monitor, from your computer.
6. Remove any media card and optical disc from your computer, if applicable.
7. Close the display and turn the computer over.

Safety instructions

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

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

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

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

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

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

Recommended tools

The procedures in this document may require the following tools:

- Phillips screwdriver
- Plastic scribe

Screw list

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

Component	Secured to	Screw type	Quantity	Screw image
Base cover	Palm rest and keyboard assembly	M2.5x5	8	
Battery	Palm rest and keyboard assembly	M2x3	4	
Display assembly (display hinge)	Palm rest and keyboard assembly	M2.5x5	4	
Fan	Palm rest and keyboard assembly	M2x3	2	
Hard-drive bracket	Palm rest and keyboard assembly	M2x3	4	
Hard drive	Hard-drive bracket	M3x3	4	
Heat sink	System board	M2x3	3	
I/O board	Palm rest and keyboard assembly	M2x3	2	
Power-adapter port	Palm rest and keyboard assembly	M2x3	1	
Status-light board	Palm rest and keyboard assembly	M2x3	1	

Component	Secured to	Screw type	Quantity	Screw image
Solid-state drive	Palm rest and keyboard assembly	M3x3	1	
System board	Palm rest and keyboard assembly	M2x3	5	
Touch-pad bracket	Palm rest and keyboard assembly	M2x3	3	
Touch pad	Palm rest and keyboard assembly	M2x2	4	
Wireless-card bracket	Palm rest and keyboard assembly	M2x3	1	

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.

Removing the base cover

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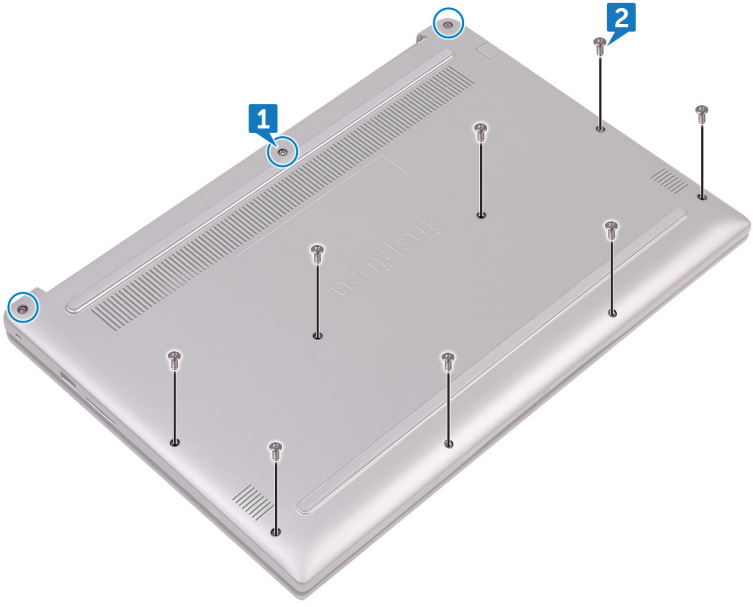
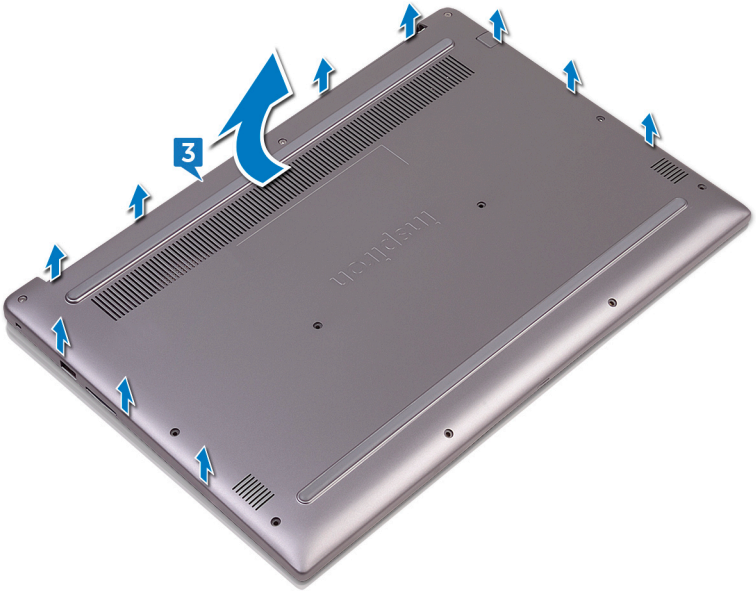
Procedure

1. Loosen the three captive screws that secure the base cover to the palm rest and keyboard assembly.
2. Remove the eight screws (M2.5x5) that secure the base cover to the palm rest and keyboard assembly.



3 Using your fingertips, pry the base cover off the palm rest and keyboard assembly.



Replacing the base cover

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Procedure

1. Align the base cover with the palm rest and keyboard assembly and snap it into place.
2. Replace the eight screws (M2.5x5) that secure the base cover to the palm rest and keyboard assembly.
3. Tighten the three captive screws that secure the base cover to the palm rest and keyboard assembly.

Removing the battery

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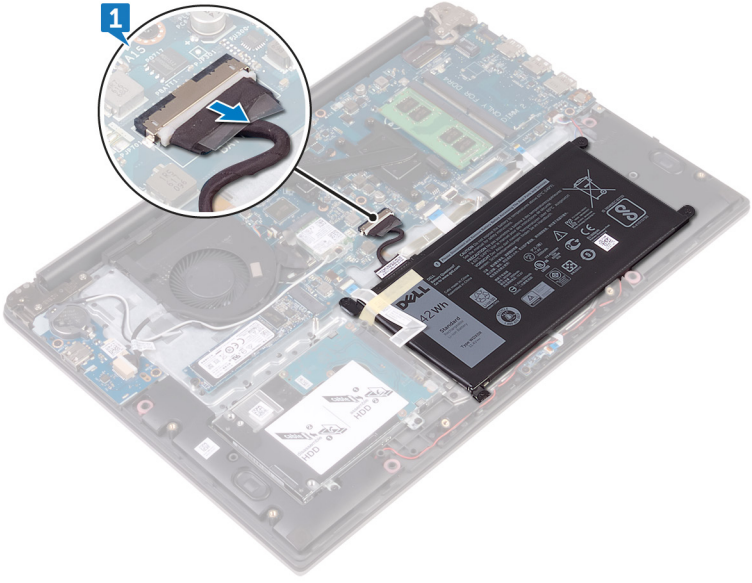
Prerequisites

Remove the base cover.

Procedure

1 Disconnect the battery cable from the system board.

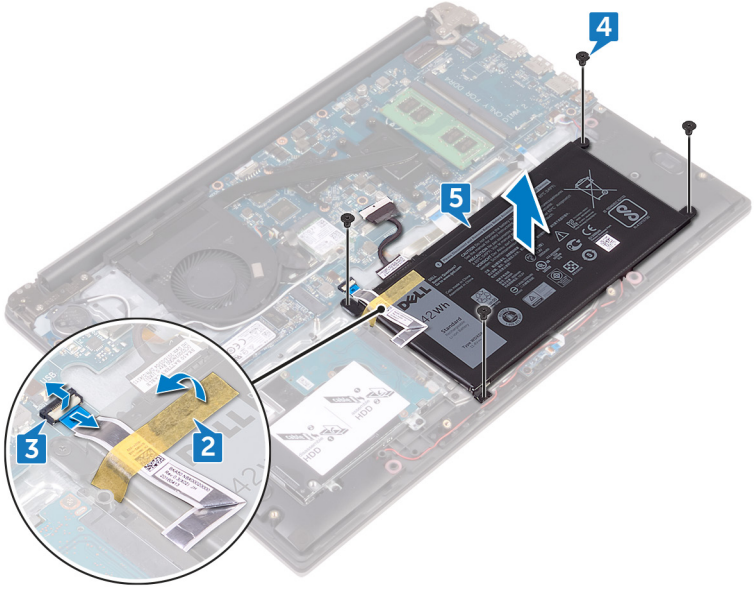


2 Peel the tape that secures the hard-drive cable to the battery.

3 Open the latch and disconnect the hard-drive cable from the system board.

4 Remove the four screws (M2x3) that secure the battery to the palm rest and keyboard assembly.

5 Lift the battery off the palm rest and keyboard assembly.



6 Press and hold the power button for five seconds to ground the system board.

Replacing the battery

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Procedure

1. Align the screw holes on the battery with the screw holes on the palm rest and keyboard assembly.
2. Replace the four screws (M2x3) that secure the battery to the palm rest and keyboard assembly.
3. Slide the hard-drive cable into the connector on the system board and close the latch to secure the cable.
4. Adhere the tape that secures the hard-drive cable to the battery.
5. Connect the battery cable to the system board.

Post-requisites

Replace the base cover.

Removing the coin-cell battery

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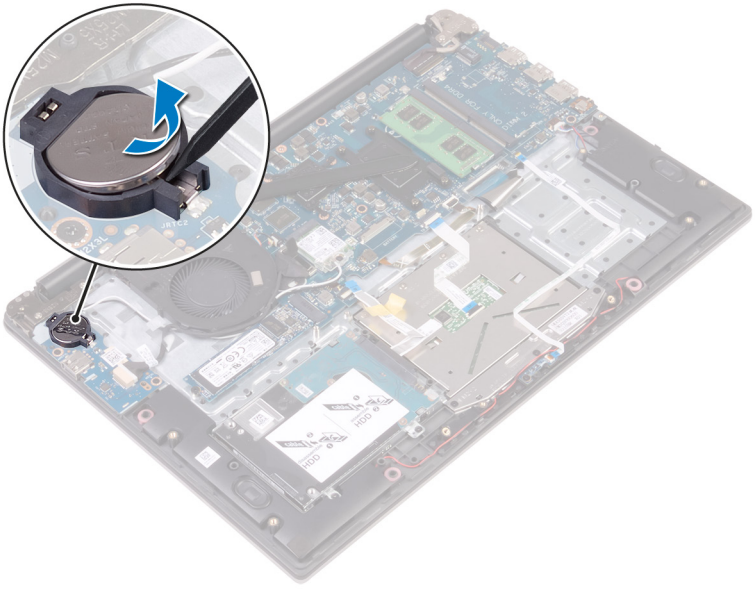
CAUTION: Removing the coin-cell battery resets the BIOS setup program's settings to default. It is recommended that you note the BIOS setup program's settings before removing the coin-cell battery.

Prerequisites

1. Remove the base cover.
2. Remove the battery.

Procedure

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



Replacing the coin-cell battery

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Procedure

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

Post-requisites

1. Replace the battery.
2. Replace the base cover.

Removing the fan

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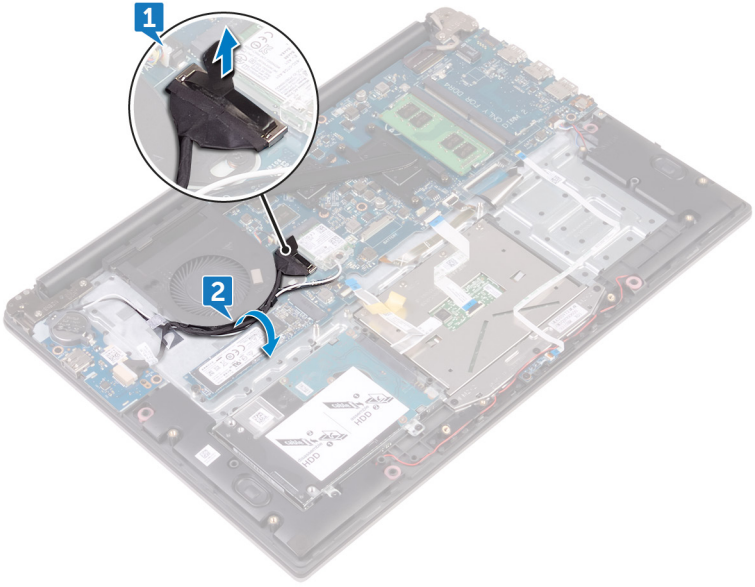
Prerequisites

1. Remove the base cover.
2. Remove the battery.

Procedure

1. Using the pull tab, disconnect the I/O-board cable from the system board.

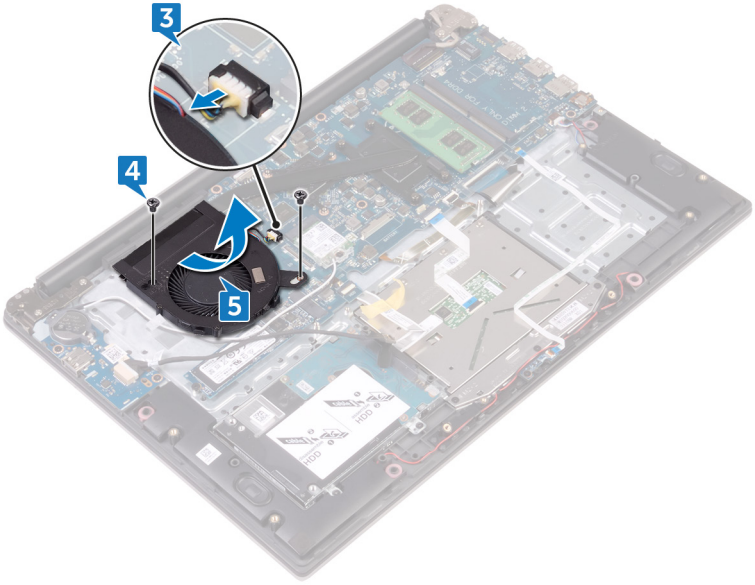
2 Note the routing and remove the I/O-board cable and the antenna cables from the routing guides on the fan.



3 Disconnect the fan cable from the system board.

4 Remove the two screws (M2x3) that secure the fan to the palm rest and keyboard assembly.

5 Slide and lift the fan off the palm rest and keyboard assembly.



Replacing the fan

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Procedure

1. Align the screw holes on the fan with the screw holes on the palm rest and keyboard assembly.
2. Replace the screws that secure the fan to the palm rest and keyboard assembly.
3. Connect the fan cable to the system board.
4. Route the I/O-board cable through the routing guides on the fan.
5. Connect the I/O-board cable to the system board.

Post-requisites

1. Replace the battery.
2. Replace the base cover.

Removing the hard drive

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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.

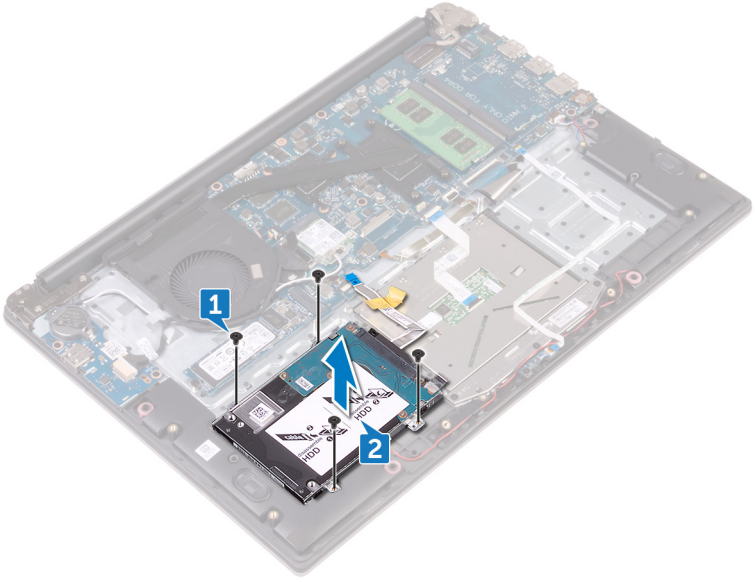
Prerequisites

1. Remove the base cover.
2. Remove the battery.

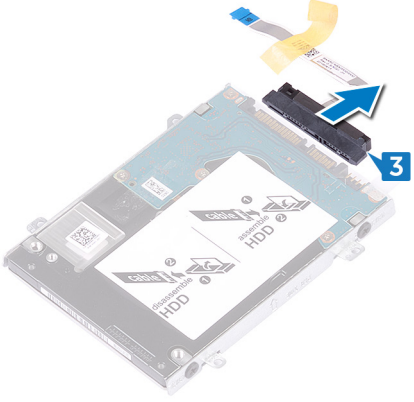
Procedure

1. Remove the four screws (M2x3) that secure the hard-drive assembly to the palm rest and keyboard assembly.

2 Lift the hard-drive assembly off the palm rest and keyboard assembly.

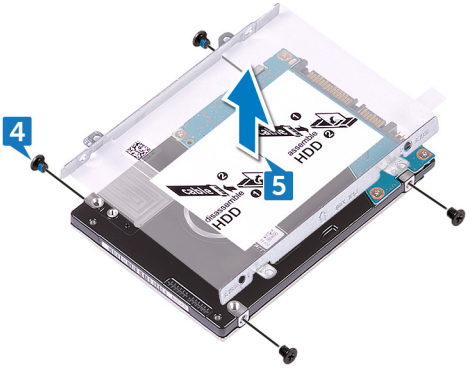


3 Disconnect the interposer from the hard-drive assembly.



4 Remove the four screws (M3x3) that secure the hard-drive bracket to the hard drive.

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



Replacing the hard drive

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

Procedure

1. Align the screw holes on the 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 assembly.
4. Align the screw holes on the hard-drive assembly with the screw holes on the palm rest and keyboard assembly.
5. Replace the four screws (M2x3) that secure the hard-drive assembly to the palm rest and keyboard assembly.

Post-requisites

1. Replace the battery.
2. Replace the base cover.

Removing the heat sink

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

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

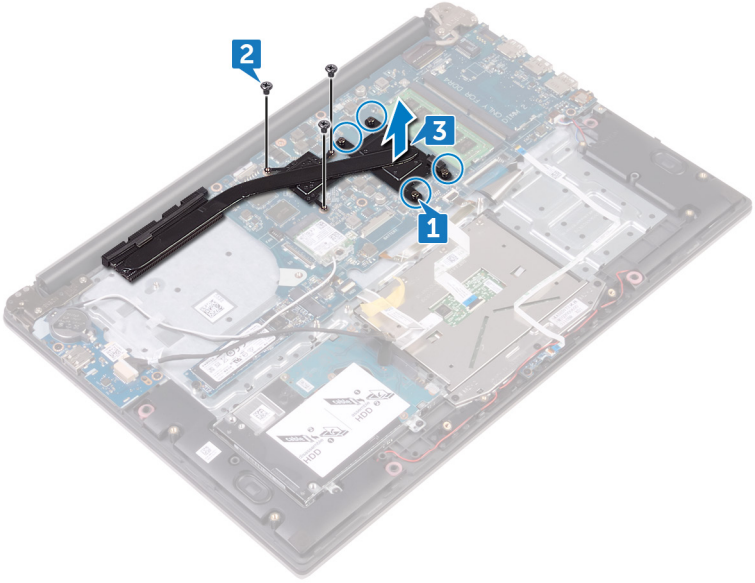
Prerequisites

1. Remove the base cover.
2. Remove the battery.

Procedure

1. In sequential order (as indicated on the heat sink), loosen the four captive screws that secure the heat sink to the system board.
2. In sequential order (as indicated on the heat sink), remove the three screws (M2x3) that secure the heat sink to the system board.

3 Lift the heat sink off the system board.



Replacing the heat sink

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

NOTE: The original thermal grease can be reused if the original system board and heat sink are reinstalled together. If either the system board or the heat sink is replaced, use the thermal pad provided in the kit to ensure that thermal conductivity is achieved.

Procedure

1. Align the screw holes on the heat sink with the screw holes on the system board.
2. In sequential order (as indicated on the heat-sink), replace the three screws (M2x3) that secure the heat-sink assembly to the system board.
3. In sequential order (indicated on the heat sink), tighten the four captive screws that secure the heat sink to the system board.

Post-requisites

1. Replace the battery.
2. Replace the base cover.

Removing the wireless card

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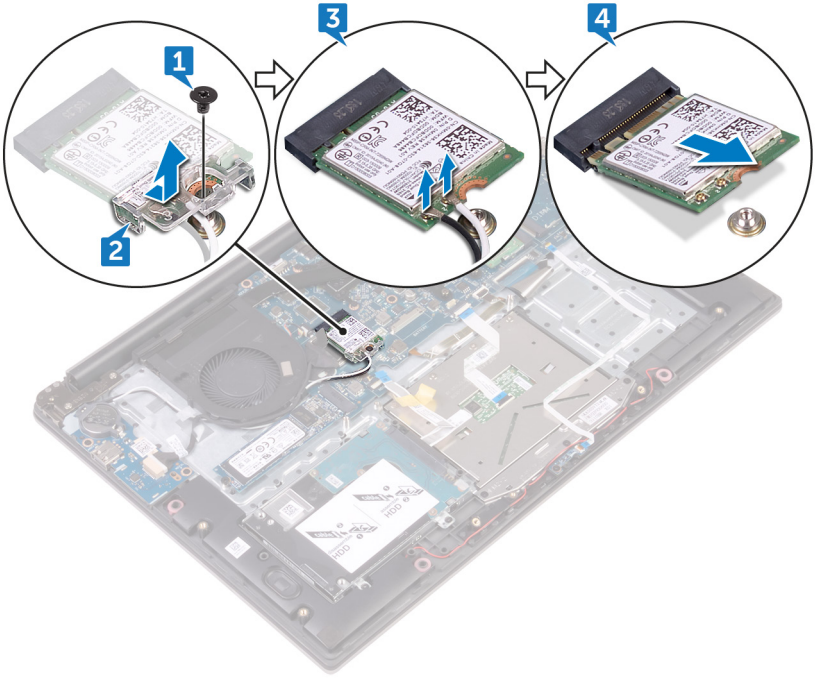
Prerequisites

1. Remove the base cover.
2. Remove the battery.

Procedure

1. Remove the screw (M2x3) that secures the wireless-card bracket to the wireless card and the 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.



Replacing the wireless card

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Procedure

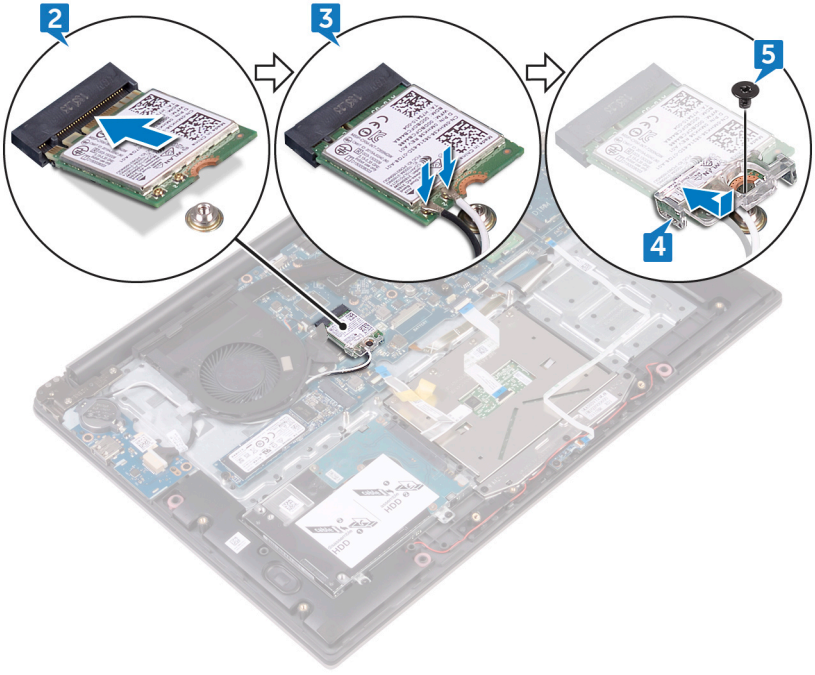
1. Align the notch on the wireless card with the tab on the wireless-card slot.
2. Slide the wireless card at an angle into the wireless-card slot.
3. Connect the antenna cables to the wireless card.

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

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

4. Align the screw hole on the wireless-card bracket with the screw hole on the wireless card and the system board.

5 Press the other end of the wireless card and replace the screw that secures the wireless-card bracket to the wireless card and the system board.



Post-requisites

1 Replace the battery.
2 Replace the base cover.

Removing the display assembly

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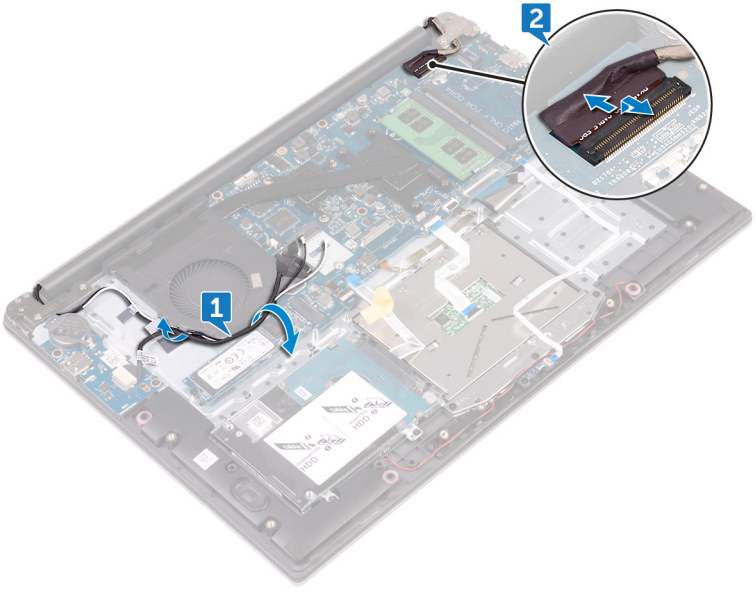
Prerequisites

1. Remove the base cover.
2. Remove the battery.
3. Remove the wireless card.

Procedure

1. Note the routing and remove the antenna cables from the routing guides on the fan.

2 Open the latch and disconnect the display cable from the system board.

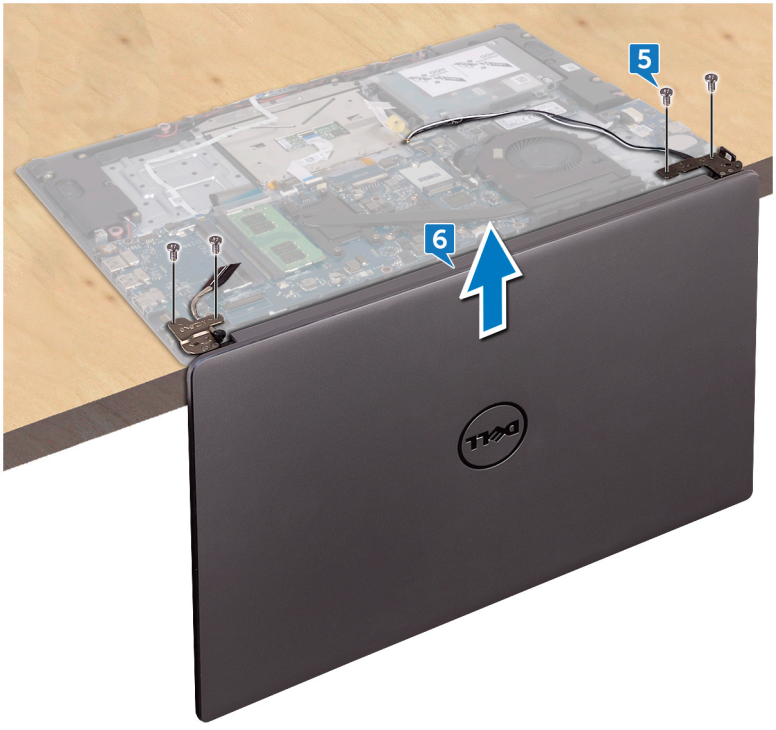


3 Open the display at an angle of 90 degrees.

4 Place the computer on the edge of a table so that the palm rest and keyboard assembly is on the table and the display assembly extends past the table edge with the display hinges facing up.

5 Remove the four screws (M2.5x5) that secure the display hinges to the palm rest and keyboard assembly.

6 Lift the display assembly off the palm rest and keyboard assembly.



Replacing the display assembly

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Procedure

1. Place the palm rest and keyboard assembly on the edge of a table with the keyboard facing down.
2. Align the screw holes on the display hinges with the screw holes on the palm rest and keyboard assembly.
3. Replace the four screws (M2.5x5) that secure the display assembly to the palm rest and keyboard assembly.
4. Close the display and turn the computer over.
5. Slide the display cable into the connector on the system board and close the latch to secure the cable.
6. Route the antenna cables through the routing guides on the fan.

Post-requisites

1. Replace the wireless card.
2. Replace the battery.
3. Replace the base cover.

Removing the I/O board

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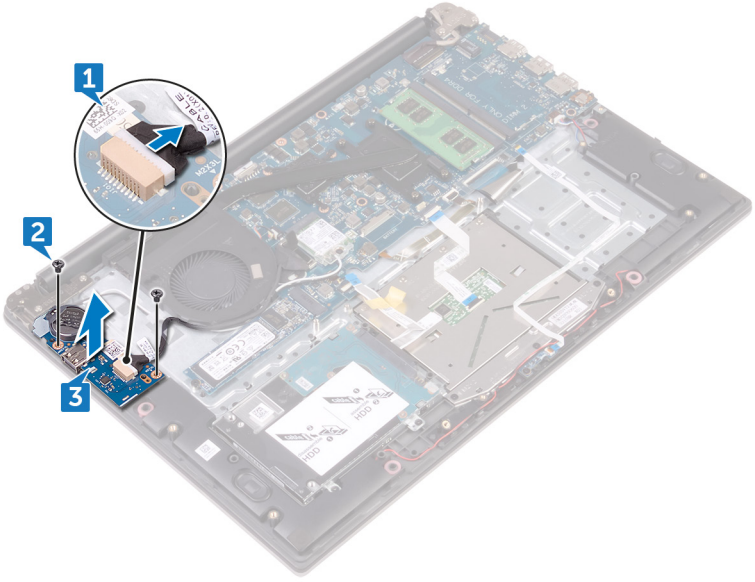
Prerequisites

1. Remove the base cover.
2. Remove the battery.

Procedure

1. Disconnect the I/O-board cable from the I/O board.
2. Remove the two screws (M2x3) that secure the I/O board to the palm rest and keyboard assembly.

3 Lift the I/O board off the palm rest and keyboard assembly.



Replacing the I/O board

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Procedure

1. Align the screw holes on the I/O board with the screw holes on the palm rest and keyboard assembly.
2. Replace the two screws (M2x3) that secure the I/O board to the palmrest and keyboard assembly.
3. Connect the I/O-board cable to the I/O board.

Post-requisites

1. Replace the battery.
2. Replace the base cover.

Removing the memory modules

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

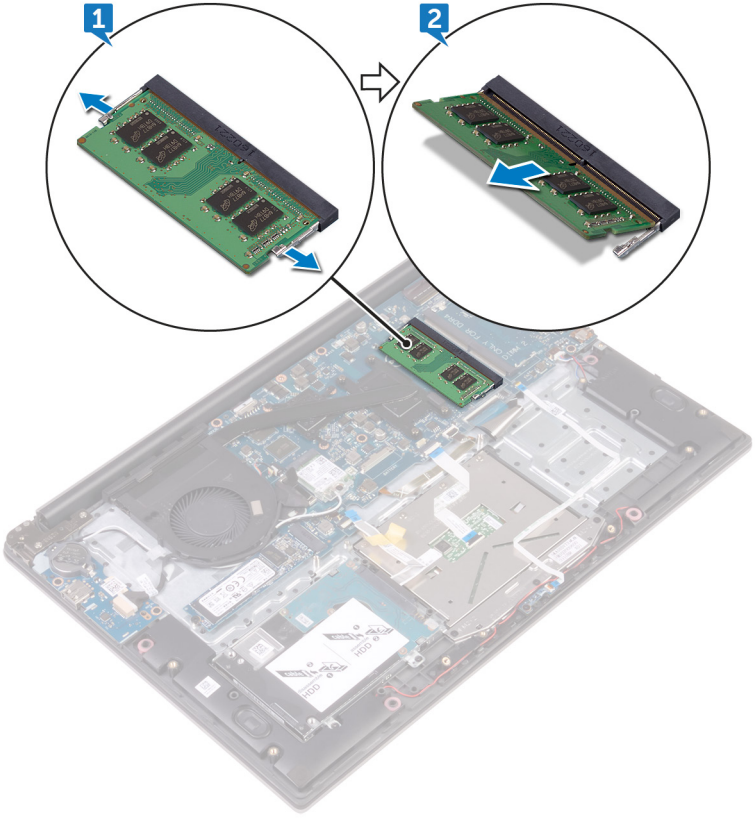
Prerequisites

1. Remove the base cover.
2. Remove the battery.

Procedure

1. Use your fingertips to carefully spread apart the securing clips on each end of the memory-module slot until the memory module pops up.

2 Remove the memory module from the memory-module slot.



Replacing the memory modules

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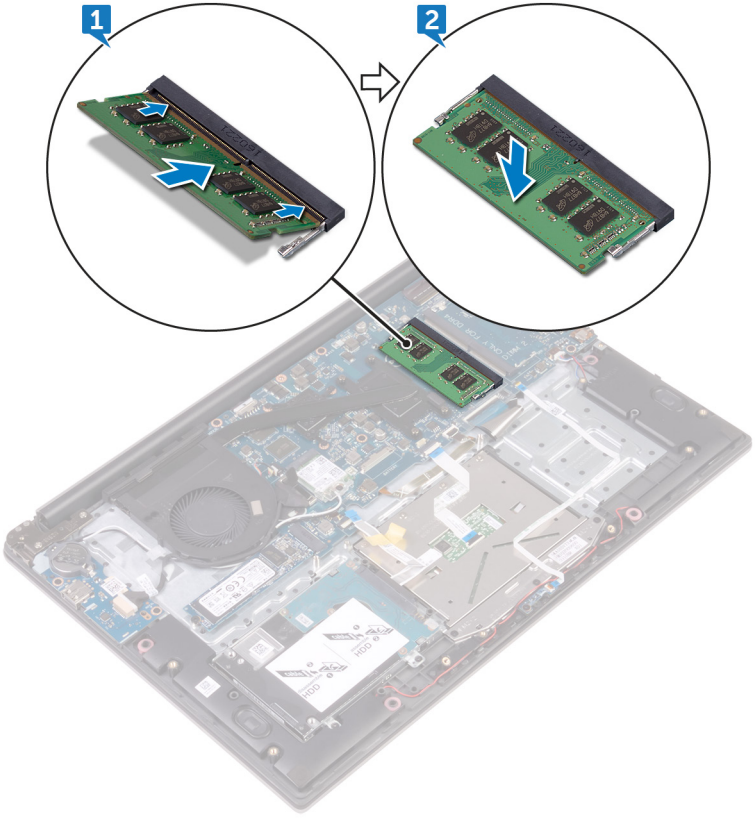
Procedure

1 Align the notch on the memory module with the tab on the memory-module slot.

2 Slide the memory module firmly into the slot at an angle and 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 Replace the battery.
2 Replace the base cover.

Removing the speakers

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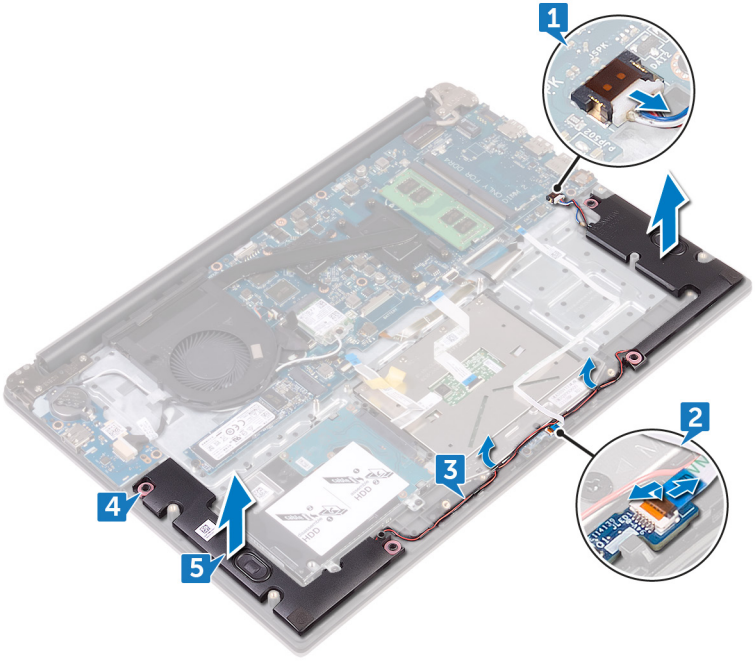
Prerequisites

1. Remove the base cover.
2. Remove the battery.

Procedure

1. Disconnect the speaker cable from the system board.
2. Open the latch and disconnect the status-light board cable from the status-light board.
3. Remove the speaker cable from the routing guides on the palm rest and keyboard assembly.
4. Note the position of the rubber grommets before lifting the speaker.

5 Remove the speakers from the alignment posts and lift the speakers off the palm rest and keyboard assembly.



Replacing the speakers

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

Procedure

NOTE: 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 palm rest and keyboard assembly.

1. Using the alignment posts, align and place the speakers on the palm rest and keyboard assembly.
2. Route the speaker cable through the routing guides on the palm rest and keyboard assembly.
3. Slide the status-light board cable into the connector on the status-light board and close the latch to secure the cable.
4. Connect the speaker cable to the system board.

Post-requisites

1. Replace the battery.
2. Replace the base cover.

Removing the status-light board

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

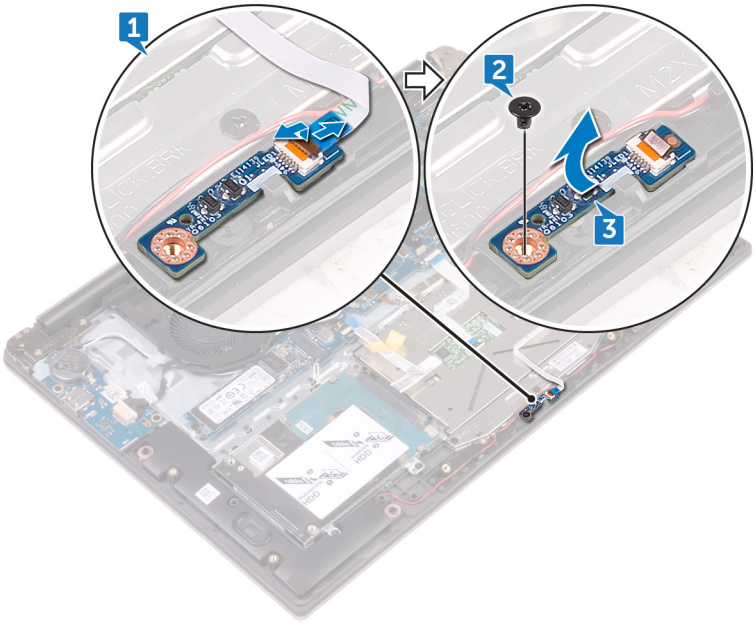
Prerequisites

1. Remove the base cover.
2. Remove the battery.

Procedure

1. Open the latch and disconnect the status-light board cable from the status-light board.
2. Remove the screw (M2x3) that secures the status-light board to the palm rest and keyboard assembly.

3 Lift the status-light board off the palm rest and keyboard assembly.



Replacing the status-light board

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Procedure

1. Align the screw hole on the status-light board with the screw hole on the palm rest and keyboard assembly.
2. Replace the screw (M2x3) that secures the status-light board to the palm rest and keyboard assembly.
3. Slide the status-light board cable into the connector on the status-light board and close the latch to secure the cable.

Post-requisites

1. Replace the battery.
2. Replace the base cover.

Removing the solid-state drive

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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

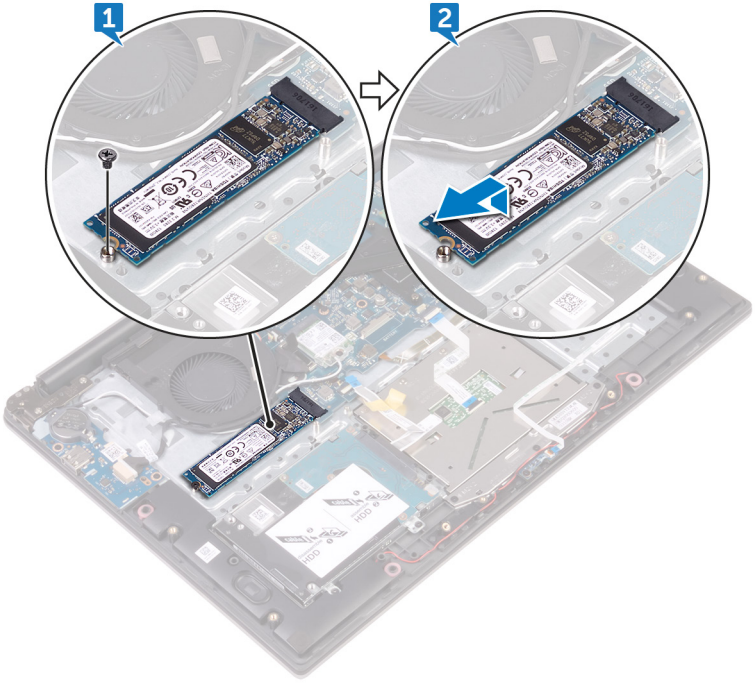
1. Remove the base cover.
2. Remove the battery.

Procedure

NOTE: Remove the solid-state drive bracket, if applicable.

1. Remove the screw (M3x3) that secures the solid-state drive to the palm rest and keyboard assembly.

2 Slide and remove the solid-state drive from the solid-state drive slot.



Replacing the solid-state drive

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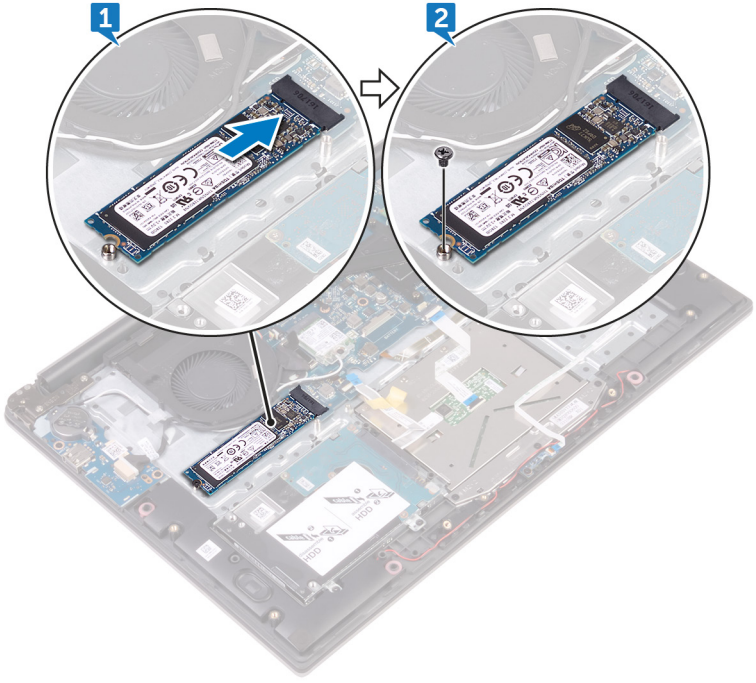
CAUTION: Solid-state drives are fragile. Exercise care when handling the solid-state drive.

Procedure

1 Slide the solid-state drive firmly into the solid-state drive slot at an angle and gently press the solid-state drive down until it snaps into position.

NOTE: Ensure that the solid-state drive is firmly seated.

2 Replace the screw (M3x3) that secures the solid-state drive to the palm rest and keyboard assembly.



NOTE: Align the screw holes on the solid-state drive bracket to the screw holes on the solid-state drive, if applicable.

Post-requisites

1 Replace the battery.
2 Replace the base cover.

Removing the touch pad

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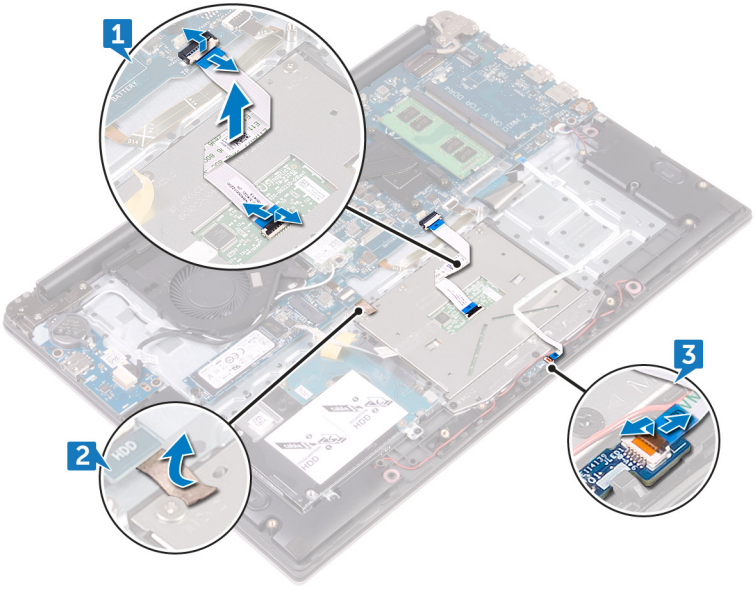
Prerequisites

1. Remove the base cover.
2. Remove the battery.

Procedure

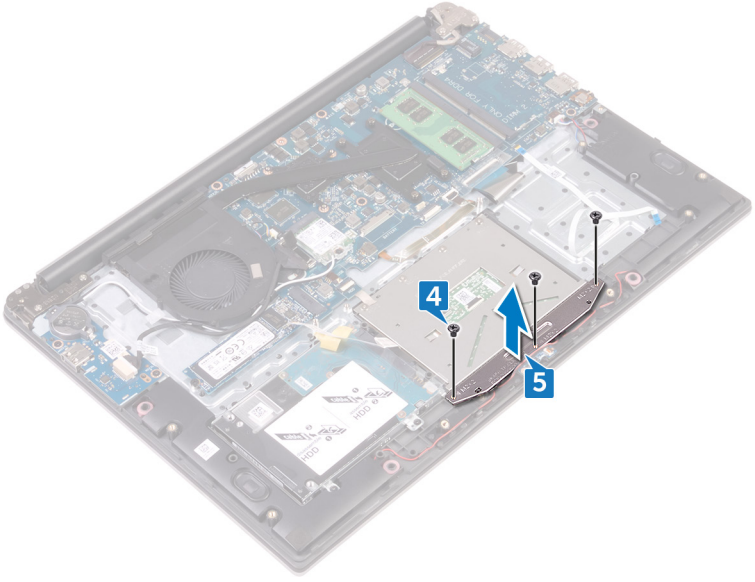
1. Open the latches and disconnect the touch-pad cable from the touch-pad and the system board.
2. Peel off the tape that secures the touch pad to the palm rest and keyboard assembly.

3 Open the latch and disconnect the status-light board cable from the status-light board.



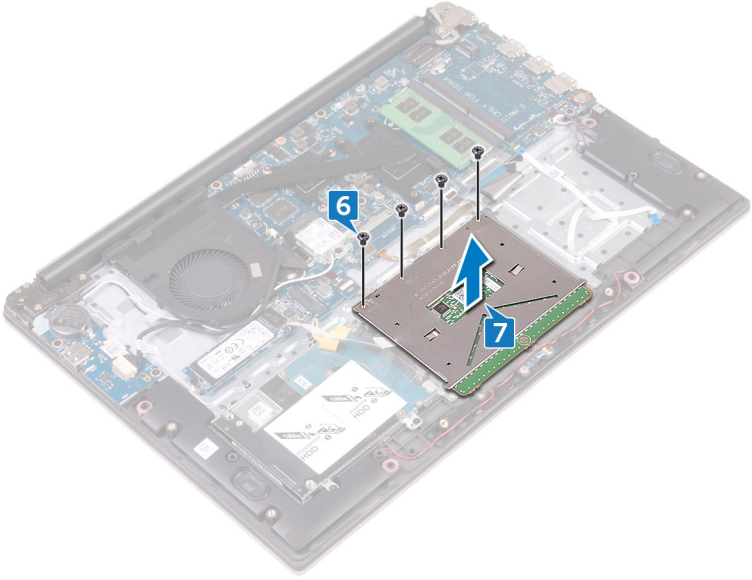
4 Remove the three screws (M2x3) that secure the touch-pad bracket to the palm rest and keyboard assembly.

5 Lift the touch-pad bracket off the palm rest and keyboard assembly.



6 Remove the four screws (M2x2) that secure the touch pad to the palm rest and keyboard assembly.

7 Lift the touch pad off the palm rest and keyboard assembly.



Replacing the touch pad

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

Procedure

1. Align the screw holes on the touch pad with the screw holes on the palm rest and keyboard assembly.
2. Replace the four screws (M2x2) that secure the touch pad to the palm rest and keyboard assembly.
3. Align the screw holes on the touch-pad bracket with the screw holes on the palm rest and keyboard assembly.
4. Replace the three screws (M2x3) that secure the touch-pad bracket to the palm rest and keyboard assembly.
5. Slide the status-light board cable into the connector on the system board and close the latch to secure the cable.
6. Adhere the tape that secures the touch pad to the palm rest and keyboard assembly.
7. Slide both ends of the touch-pad cable into their respective connectors on the touch-pad assembly and system board and close the latches to secure the cable.

Post-requisites

1. Replace the battery.
2. Replace the base cover.

Removing the system board

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NOTE: Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the 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 base cover.
2. Remove the battery.
3. Remove the memory modules.
4. Remove the wireless card.
5. Remove the fan.
6. Remove the heat sink.
7. Remove the solid-state drive.
8. Follow the procedure from step 1 to step 2 in "Removing the hard drive".

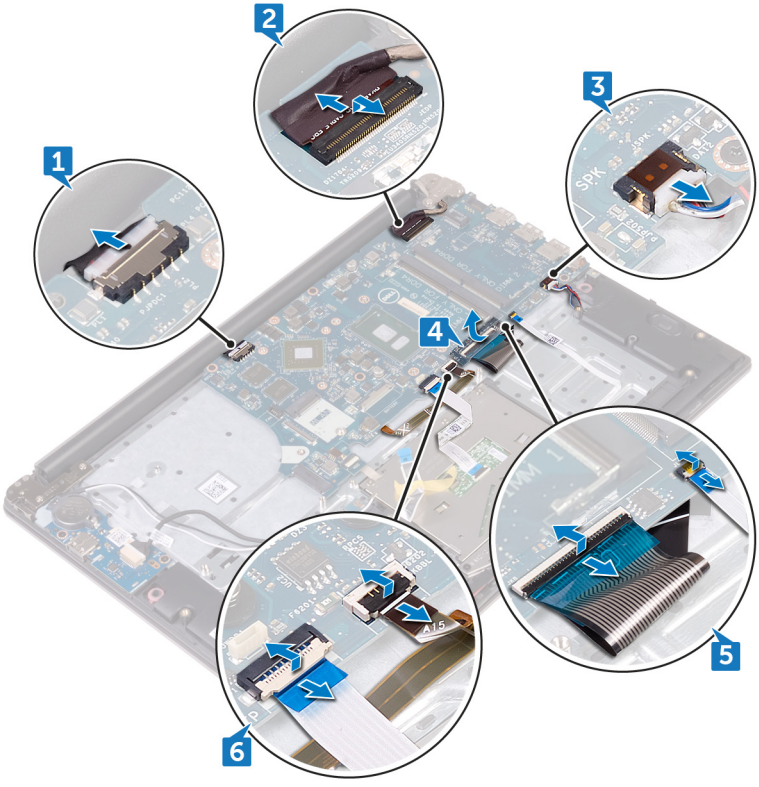
Procedure

1. Disconnect the power-adapter port cable from the system board.
2. Open the latch and disconnect the display cable from the system board.
3. Disconnect the speaker cable from the system board.

4 Peel off the tape that secures the keyboard cable to the system board.

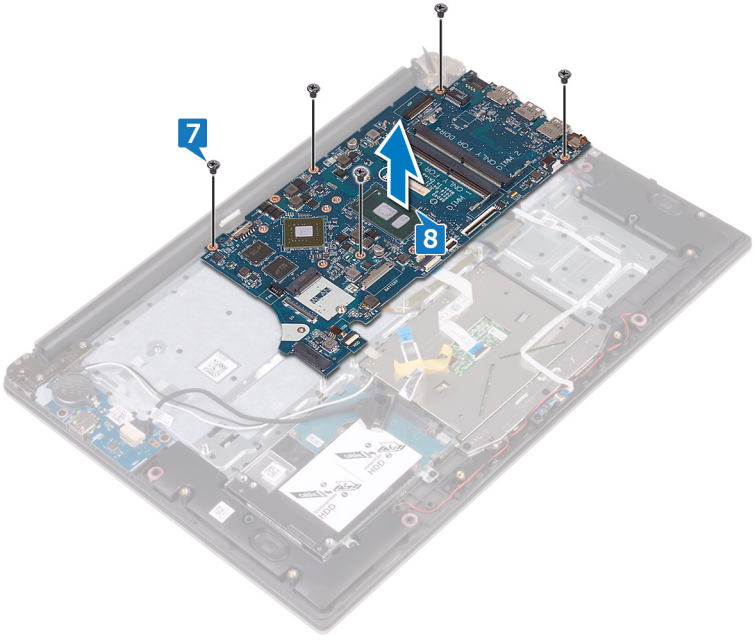
5 Open the latches and disconnect the keyboard cable and the status-light board cable from the system board.

6 Open the latch and disconnect the touch-pad cable and the keyboard-backlit cable from the system board.



7 Remove the five screws (M2x3) that secure the system board to the palm rest and keyboard assembly.

8 Lift the system board off the palm rest and keyboard assembly.



Replacing the system board

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NOTE: Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the 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

CAUTION: To avoid damaging the system board, ensure that no cables are placed under it.

1. Align the screw holes on the system board with the screw holes on the palm rest and keyboard assembly.
2. Replace the five screws (M2x3) that secure the system board to the palm rest and keyboard assembly.
3. Slide the touch-pad cable and the keyboard-backlit cable into the connectors on the system board and close the latches to secure the cables.
4. Slide the keyboard cable and the status-light board cable into the connectors on the system board and close the latches to secure the cables.
5. Adhere the tape that secures the keyboard cable to the system board.
6. Connect the speaker cable to the system board.
7. Slide the display cable into the connector on the system board and close the latch to secure the cable.
8. Connect the power-adapter port cable to the system board.

Post-requisites

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

Removing the power-adapter port

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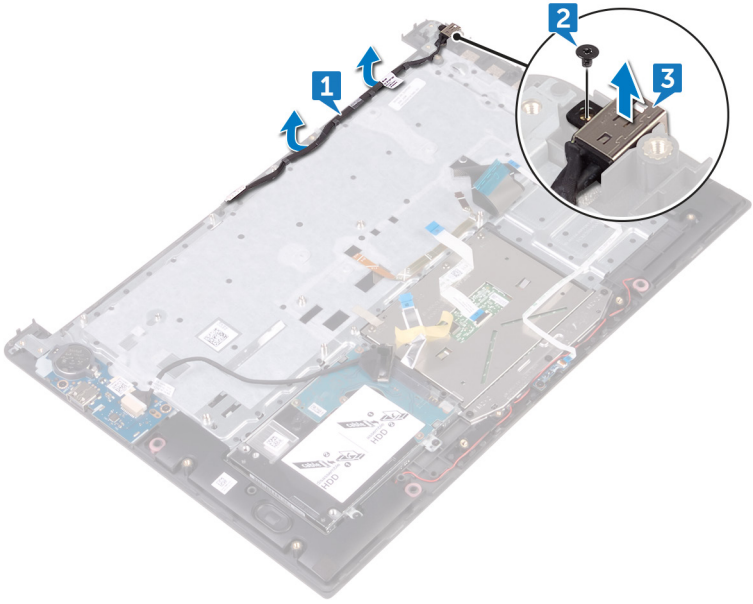
Prerequisites

1. Remove the base cover.
2. Remove the battery.
3. Remove the memory modules.
4. Remove the wireless card.
5. Remove the fan.
6. Remove the heat sink.
7. Remove the solid-state drive.
8. Follow the procedure from step 1 to step 2 in "Removing the hard drive".
9. Remove the system board.
10. Remove the display assembly.

Procedure

1. Note the power-adapter port cable routing and remove it from the routing guides on the palm rest and keyboard assembly.
2. Remove the screw (M2x3) that secures the power-adapter port to the palm rest and keyboard assembly.

3 Lift the power-adapter port off the palm rest and keyboard assembly.



Replacing the power-adapter port

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Procedure

1. Align the screw hole on the power-adapter port with the screw hole on the palm rest and keyboard assembly and snap it into place.
2. Replace the (M2x3) screw that secures the power-adapter port to the palm rest and keyboard assembly.
3. Route the power-adapter port cable through the routing guides on the palm rest and keyboard assembly.

Post-requisites

1. Replace the display assembly.
2. Replace the system board.
3. Follow the procedure from step 4 to step 5 in "Replacing the hard drive".
4. Replace the solid-state drive.
5. Replace the heat sink.
6. Replace the fan.
7. Replace the wireless card.
8. Replace the memory modules.
9. Replace the battery.
10. Replace the base cover.

Removing the palm rest and keyboard assembly

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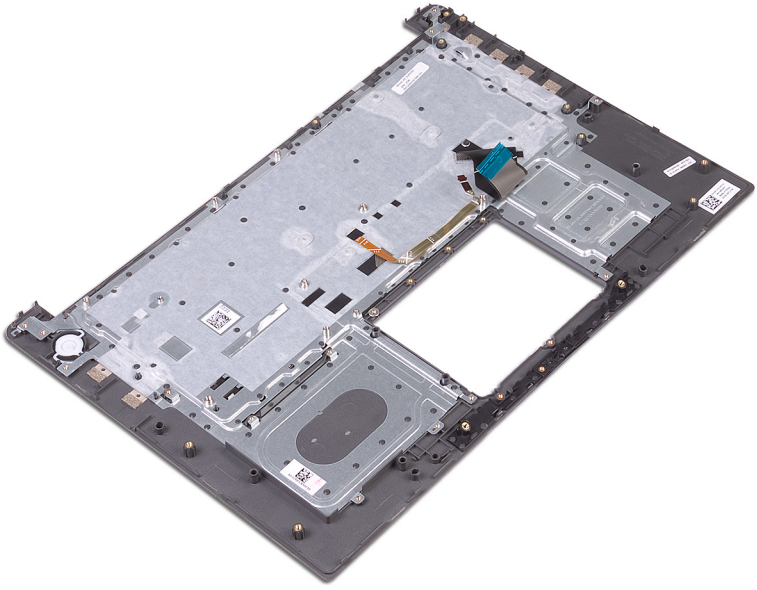
Procedure

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

Procedure

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



Replacing the palm rest and keyboard assembly

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Procedure

Place the palm rest and keyboard assembly on a clean and flat surface.

Post-requisites

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

Flashing the BIOS

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

1. Turn on your computer.
2. Go to 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.

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 different light patterns, what they indicate, and the suggested solutions.

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

Light Pattern	Problem description
2,5	Invalid memory installed
2,6	System board or chipset error
2,7	LCD failure
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

The computer may emit a series of beeps during start-up if the errors or problems cannot be displayed. The repetitive beep codes help the user troubleshoot problems with the computer.

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.

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 1. Self-help resources

Information about Dell products and services	www.dell.com
Dell Help & Support app	
Accessing help	In Windows search, type `Help and 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 www.dell.com/support. 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	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**.

- Factory and system restore
- BIOS information

- 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.