Inspiron 14 5000
Service Manual

Computer Model: Inspiron 14-5468
Regulatory Model: P64G
Regulatory Type: P64G006

Notes, cautions, and warnings

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

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

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

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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.

GUID-B2521C24-A407-4ABB-8022-6D88B53F0B94

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.

GUID-71128823-CE64-4E17-9439-DEE95AF668C4

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.

GUID-DEA55279-6FE6-4A1F-A152-21F8A5572B33

Recommended tools

The procedures in this document may require the following tools:

- Phillips screwdriver

- Plastic scribe

GUID-12242442-3331-4D72-BFC5-7C7A83FD33AF

Screw list

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

Component	Secured to	Screw type	Quantity
Optical-drive assembly	Computer base	M2x5	1
Optical-drive bracket	Optical drive	M2x3	2
Base cover	Computer base	M2.5x8	2
Hard-drive assembly	Computer base	M2.5x5	4
Hard-drive bracket	Hard drive	M3x3	4
Wireless-card bracket	Wireless card	M2x3	1
Computer base	Palm-rest assembly	M2.5x5	13
Heat-sink assembly	System board	M2x3	3
I/O board	Palm-rest assembly	M2.5x5	1
System board	Palm-rest assembly	M2x3	1
Power-adapter port	Palm-rest assembly	M2x3	1
Power-button board	Palm-rest assembly	M2x2 big head	1
Display hinges	Palm-rest assembly	M2.5x5	3
Display panel	Display back-cover	M2x3	4
Display hinges	Display back-cover	M2.5x2.5 big head	6
Display hinges	Display back-cover	M2x3	6

GUID-06588814-2678-4667-9FF9-C009F4BCE185

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.

GUID-D9015C06-6CEE-42EA-9215-9D0FD7B827D5

Removing the battery

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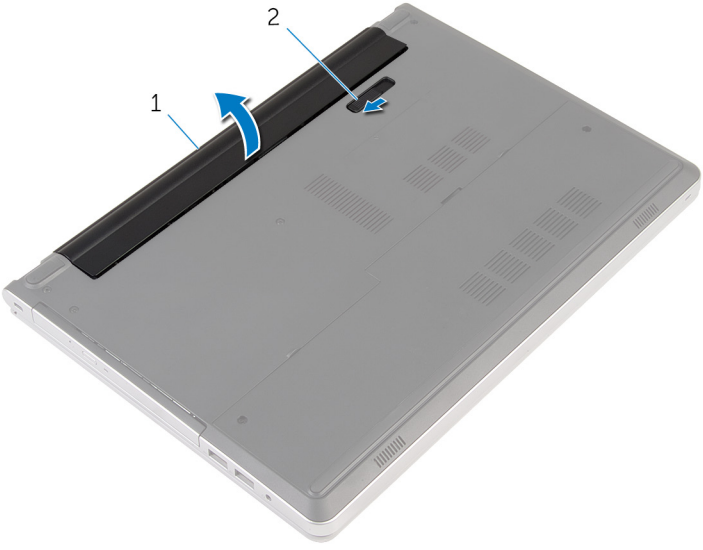
GUID-D41367B7-182E-4AEC-84C3-35058353EC72

Procedure

1. Close the display and turn the computer over.
2. Slide the battery-release latch to the unlock position.

3 Lift the battery at an angle and remove the battery from the battery bay.



1 battery 2 battery-release latch

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

GUID-E15EE482-44FD-4E71-91FC-899D4B61532E

Replacing the battery

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GUID-84D588EC-A03D-45B0-B499-2E70A47E2634

Procedure

Slide the tabs on the battery into the slots on the battery bay and snap the battery into place.

NOTE: The battery-release latch returns to the lock position if the battery is installed properly.

GUID-01750DAC-3408-4912-B936-7DAA79351AA9

Replacing the optical drive

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GUID-9CCC3876-D33F-4A82-86C5-360E01796F9E

Prerequisites

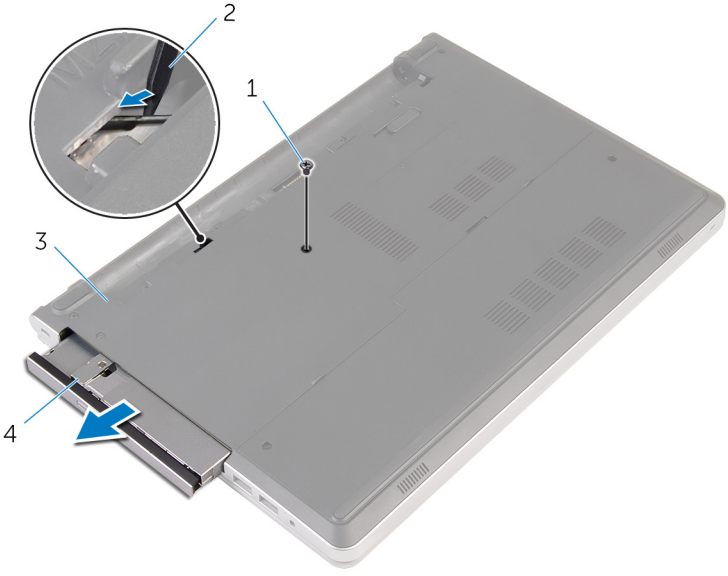
Remove the battery.

GUID-4AEF5D38-7D9C-4954-9582-6684ED22FE52

Procedure

1 Remove the screw that secures the optical-drive assembly to the computer base.

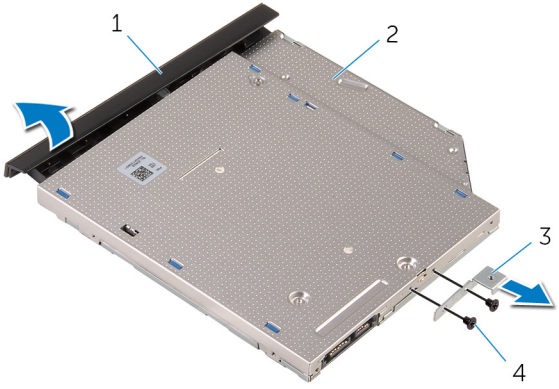
2 Using a plastic scribe, slide the optical-drive assembly out of the optical-drive bay.



1	screw	2	plastic scribe
3	computer base	4	optical-drive assembly

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

4 Remove the screws that secure the optical-drive bracket to the optical drive and remove the optical-drive bracket.



1	optical-drive bezel	2	optical drive
3	optical-drive bracket	4	screws (2)

GUID-5F25DB7E-BE9A-49D8-A32A-AAD2A7EDBB9E

Removing the optical drive

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GUID-FE2985AD-343E-42C5-847C-6069119BC668

Procedure

1. Align the screw holes on the optical-drive bracket with the screw holes on the optical drive.
2. Replace the screws that secure the optical-drive bracket to the optical drive.
3. Align the tabs on the optical-drive bezel with the slots on the optical-drive assembly and snap the optical-drive bezel into place.
4. Slide the optical-drive assembly into the optical-drive bay and align the screw hole on the optical-drive bracket with the screw hole on the computer base.
5. Replace the screw that secures the optical-drive assembly to the computer base.

GUID-EC9C783D-6E95-476D-950B-6739B063A45E

Post-requisites

Replace the battery.

GUID-5AE964CF-7958-4D31-BBA8-155C933167E8

Removing the keyboard

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GUID-04CAB8AA-16C0-4A52-824C-92928944B3F2

Prerequisites

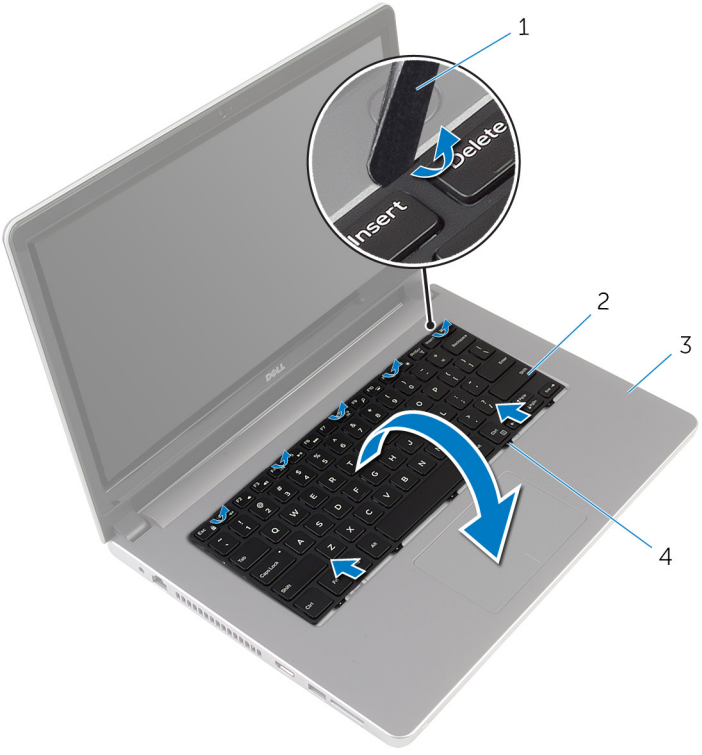
Remove the battery.

GUID-60D3DD48-AE02-4FA9-B313-FA9D6C373D7E

Procedure

1 Turn the computer over and open the display as far as possible.

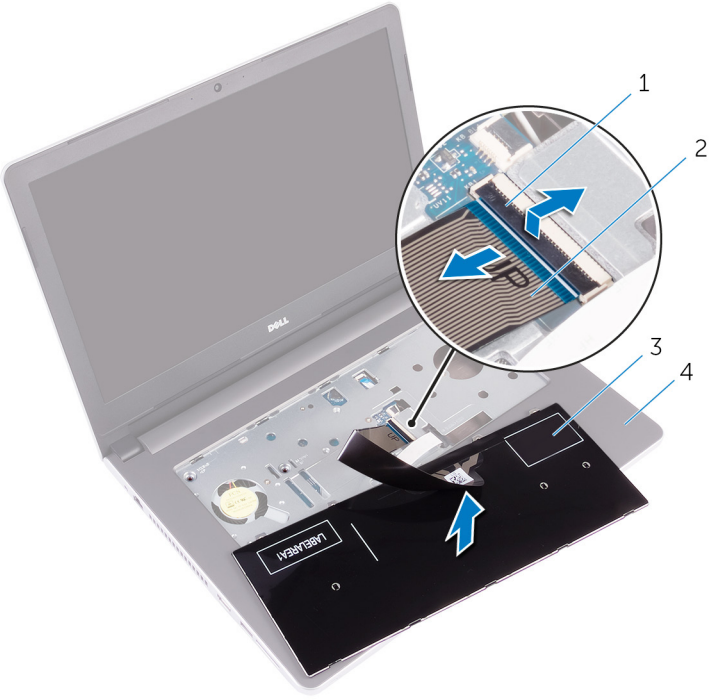
2 Insert a plastic scribe at the top of the keyboard, using it to gently release the tabs that secure the keyboard to the palm-rest assembly.



1	plastic scribe	2	keyboard
3	palm-rest assembly	4	tabs (5)

3 Carefully turn the keyboard over and place it on the palm-rest assembly.

4 Open the latch and disconnect the keyboard cable from the system board.



1	latch	2	keyboard cable
3	keyboard	4	palm-rest assembly

5 Lift the keyboard, along with the cable, off the palm-rest assembly.

GUID-18204C76-DF75-4DB8-BD6F-EFA74576AAD7

Replacing the keyboard

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.

GUID-145778BA-DFBD-4DC2-8F80-BD1268D43DB5

Procedure

1. Slide the keyboard cable into the connector on the system board and close the latch to secure the cable.
2. Carefully turn the keyboard over, slide the tabs on the keyboard into the bottom slots on the palm-rest assembly, then snap the keyboard into place.
3. Close the display and turn the computer over.

GUID-422AC8F7-A740-4F6F-BF30-82E96492EF18

Post-requisites

Replace the battery.

GUID-98068FC2-1C1C-46DE-B3FA-DF9D488E9BA1

Removing the base cover

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GUID-97F13B2F-B13D-43F8-92D5-1A75EBC3DC5D

Prerequisites

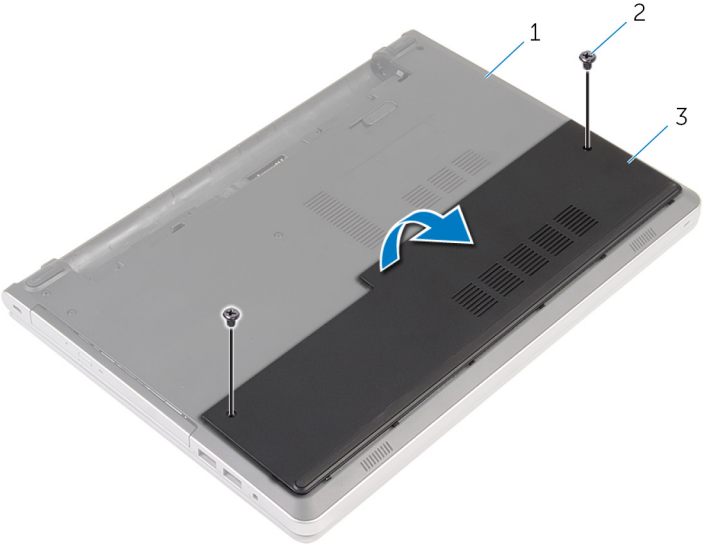
1. Remove the battery.
2. Remove the optical drive.
3. Remove the base cover.
4. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
5. Remove the wireless card.
6. Remove the keyboard.

GUID-1F05B65F-19CC-4D09-9A66-5602BBD9B8A4

Procedure

1. Remove the screws that secure the base cover to the computer base.

2 Using a plastic scribe, gently pry the base cover off the computer base.



1	computer base	2	screws (2)
3	base cover		

GUID-27446428-82D7-4881-9220-9EB090B046EA

Replacing the base cover

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GUID-75756B5F-F671-48FD-B08F-DFEA1B459161

Procedure

1. Slide the tabs on the base cover into the slots on the computer base and snap the base cover into place.
2. Replace the screws that secure the base cover to the computer base.

GUID-291486F4-CB8C-4DA0-A4EF-A47BE01213A0

Post-requisites

Replace the battery.

GUID-30EEBC49-DE3E-4C3F-8226-86CE5F32F388

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.

GUID-D23A4BFB-4596-4E50-82D2-9A56E3615608

Prerequisites

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

GUID-B5B1CDE2-B3C9-4833-ABC9-BDDC9E536F41

Procedure

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

1	plastic scribe	2	coin-cell battery
3	battery socket		

GUID-5E22F4A0-F01F-4522-8155-BE22A8CA6E5F

Replacing the coin-cell battery

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GUID-A6F2AC53-84FD-4F8E-9565-FB2C4F400108

Procedure

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

GUID-AA93F32F-2905-4E30-9ACC-A0A4782F398C

Post-requisites

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

GUID-5DE1E07B-4633-4536-ACBF-4A3067007FE0

Removing the hard drive

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

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.

GUID-DF97DC63-CE15-49CB-8F39-0E7A090F0ACE

Prerequisites

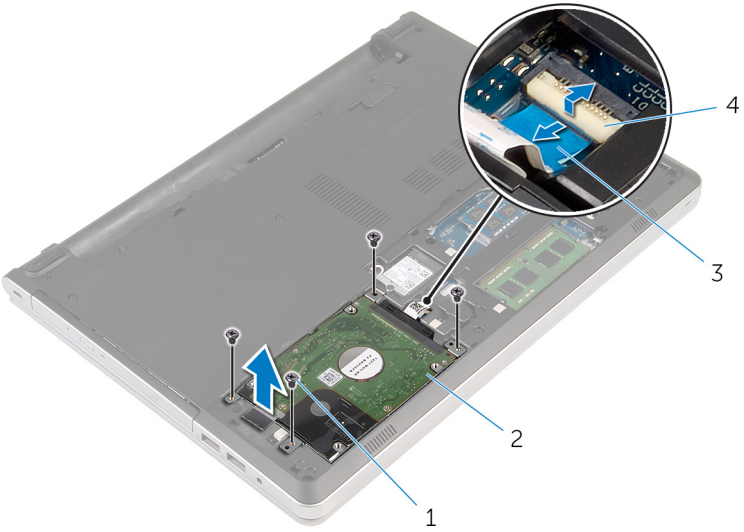
1. Remove the battery.
2. Remove the base cover.

GUID-E642A587-FB67-4B64-A448-621F01AFFDED

Procedure

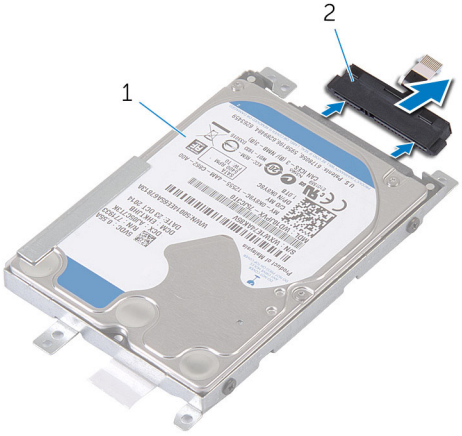
1. Open the latch and disconnect the hard-drive cable from the system board.
2. Remove the screws that secure the hard-drive assembly to the computer base.

3 Lift the hard-drive assembly off the computer base.



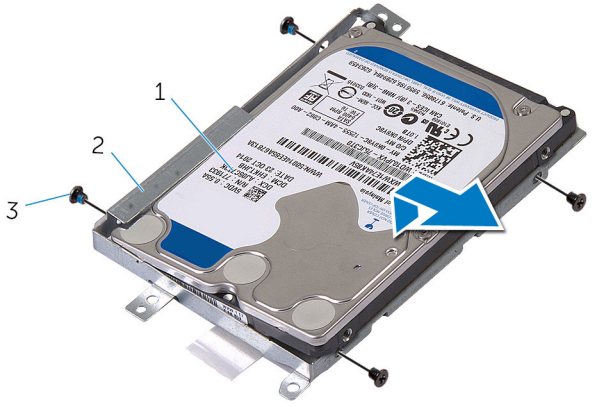
1	screws (4)	2	hard-drive assembly
3	hard-drive cable	4	latch

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



1 hard-drive assembly 2 hard-drive interposer

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



1 hard drive 2 hard-drive bracket

3 screws (4)

GUID-8D72BB77-0F8B-428E-A98E-FF7DA2CDA899

Replacing the hard drive

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

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

GUID-F6894FC1-C711-4F5E-A2EE-FC7959EA809F

Procedure

1. Place the hard drive over the hard-drive bracket.
2. Align the screw holes on the hard-drive bracket with the screw holes on the hard drive.
3. Replace the screws that secure the hard drive to the hard-drive bracket.
4. Connect the hard-drive interposer to the hard-drive assembly.
5. Slide the hard-drive assembly in the computer base and align the screw holes on the hard-drive assembly with the screw holes on the computer base.
6. Replace the screws that secure the hard-drive assembly to the computer base.
7. Connect the hard-drive cable to the system board.

GUID-F9EC967C-74AD-40CF-AFA0-41A2F13C0818

Post-requisites

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

GUID-AAC0DC5A-1680-492D-804F-52F812D409C2

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.

GUID-93527083-1E73-4E3B-A7C9-4BDD2BC84BE1

Prerequisites

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

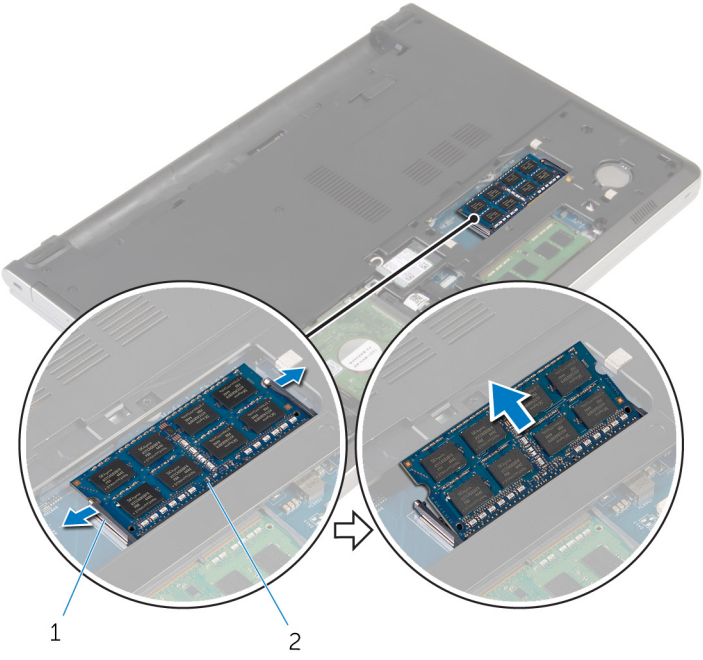
GUID-F603FF19-8194-4FD7-B2AE-57E72D19A383

Procedure

NOTE: Depending on the configuration ordered, the memory-module and number of memory-module slots may be different on your computer.

1. Using your fingertips, 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.



1 securing clips (2) 2 memory module

GUID-1F5023F5-9868-4AAF-A9F5-BFB400CD890A

Replacing the memory modules

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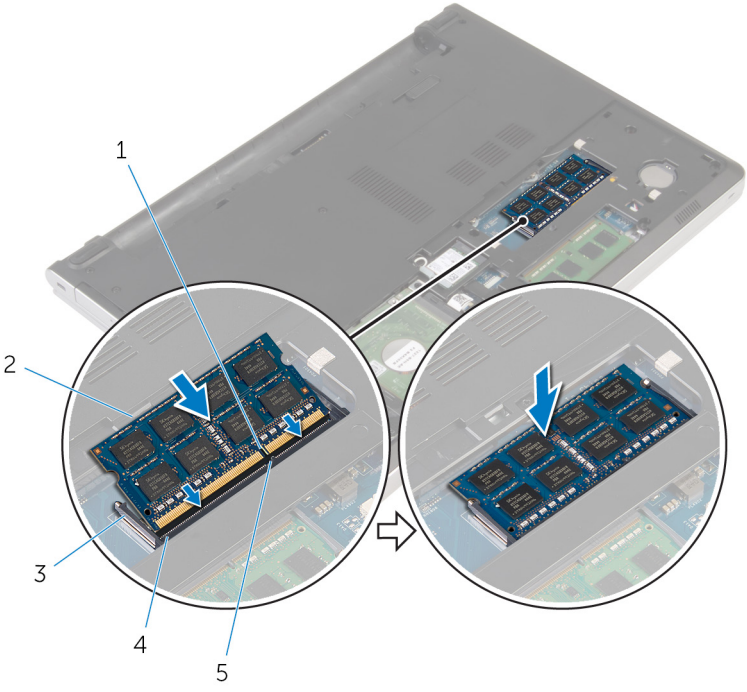
GUID-4A1CA5FA-650B-45B9-9702-581BF482454B

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 gently 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.



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

GUID-E91B0E23-1E75-4172-A675-AF4372A1510F

Post-requisites

1 Replace the base cover.

2 Replace the battery.

GUID-4AF7A7F4-79DC-43F4-A4DF-63362F890FB6

Removing the wireless card

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

GUID-258BB6C3-17C8-444C-BDF2-CE5CEE4EC19A

Prerequisites

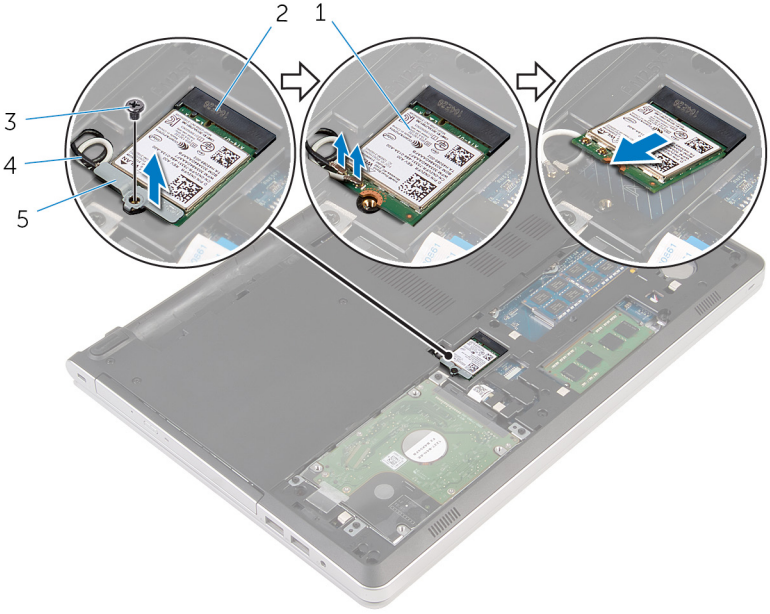
1. Remove the battery.
2. Remove the base cover.

GUID-72FE2FE3-443D-4704-8278-F900879D53B1

Procedure

1. Remove the screw that secures the wireless-card bracket to the wireless card.
2. Lift the wireless-card bracket off the wireless card.
3. Disconnect the antenna cables from the wireless card.

4 Slide and remove the wireless card out of the wireless-card slot.



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

GUID-94E88AEC-6F12-4B0E-AA6A-B28D8E200225

Replacing the wireless card

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

GUID-E8ABD410-3A04-4E5C-8CCC-721322AD74EA

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 and slide the card into the slot.
2. 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

3. Align the screw hole on the wireless-card bracket with the screw-hole on the wireless card and replace the screw that secures the wireless-card bracket to the wireless card.

GUID-F890E12D-4D22-42C9-9343-05148ABBBB64

Post-requisites

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

GUID-9688293F-8D74-48E4-A8DD-4696624BAD12

Removing the computer base

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.

GUID-97F13B2F-B13D-43F8-92D5-1A75EBC3DC5D

Prerequisites

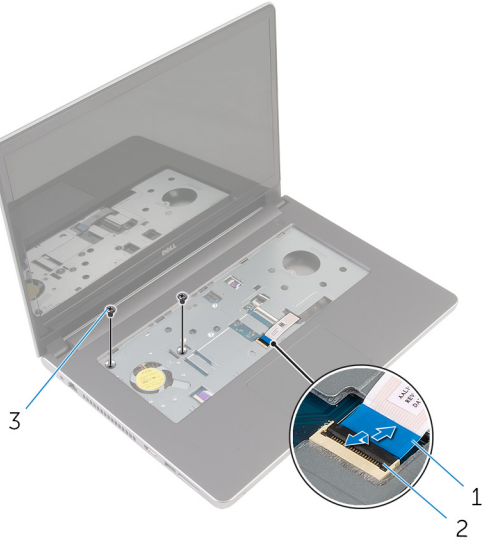
1. Remove the battery.
2. Remove the optical drive.
3. Remove the base cover.
4. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
5. Remove the wireless card.
6. Remove the keyboard.

GUID-F3A8B22A-BD0A-4D36-B927-E50F51BDB3D1

Procedure

1. Open the latch and disconnect the optical-drive cable from the system board.

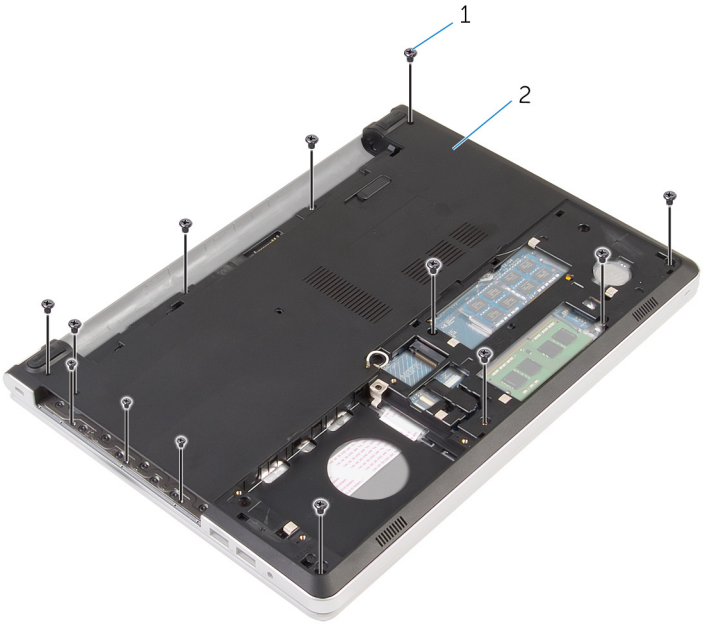
2 Remove the screws that secure the computer base to the palm-rest assembly.



1	optical-drive cable	2	latch
3	screws (2)		

3 Close the display and turn the computer over.

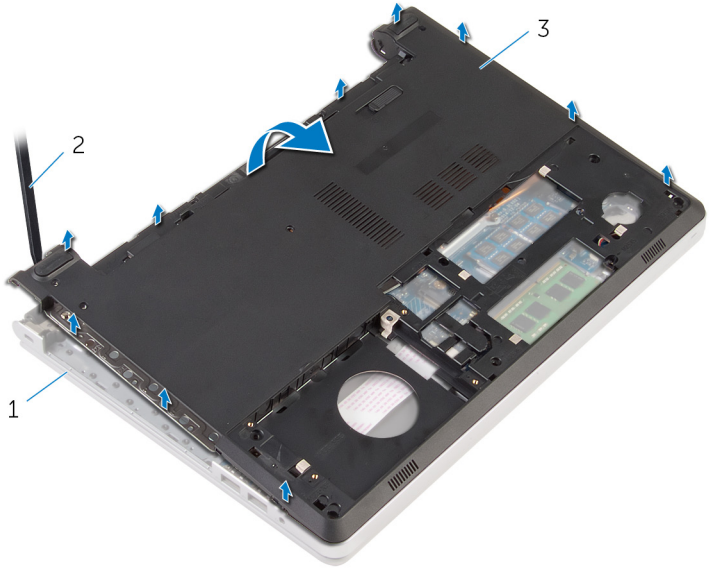
4 Remove the screws that secure the computer base to the palm-rest assembly.



1 screws (13) 2 computer base

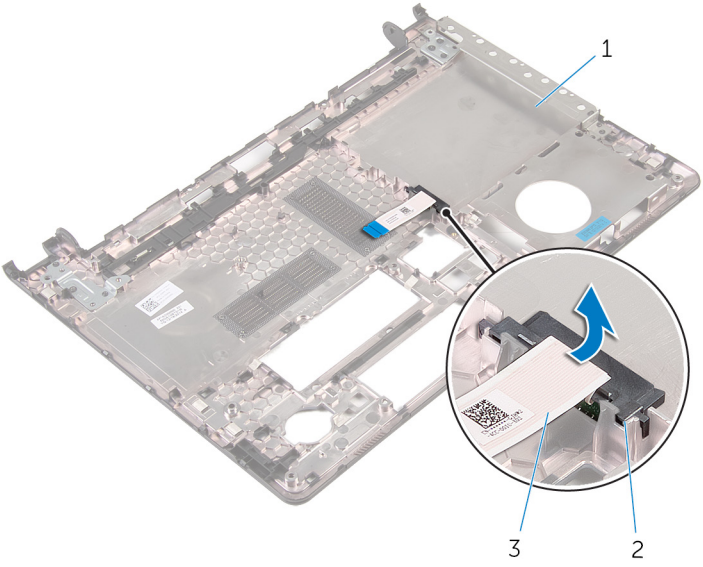
5 Using a plastic scribe, pry up the computer base from the palm-rest assembly, starting from the area around the display hinges.

6 Lift the computer base off the palm-rest assembly.



1	palm-rest assembly	2	plastic scribe
3	computer base		

7 Lift the optical-drive interposer along with the cable off the computer base.



1	computer base	2	optical-drive interposer
3	optical-drive cable		

GUID-BD8F2FF7-9861-42AD-82C7-DF6983529215

Replacing the computer base

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.

GUID-4B6D721C-5175-4555-B573-DC0D2B3CB989

Procedure

1. Align the optical-drive interposer with the slot on the computer base and snap it into place.
2. Turn the computer base over.
3. Align and place the computer base on the palm-rest assembly.
4. Press the computer base down along the edges to snap it into place.
5. Replace the screws that secure the computer base to the palm-rest assembly.
6. Turn the computer over and open the display.
7. Replace the screws that secure the computer base to the palm-rest assembly.
8. Slide the optical-drive cable into the connector on the system board and close the latch to secure the cable.

GUID-BA6E418F-D15B-4BCD-A334-7701B09BE846

Post-requisites

1. Replace the keyboard.
2. Replace the wireless card.
3. Follow the procedure from step 5 to step 7 in "Replacing the hard drive".
4. Replace the optical drive.
5. Replace the base cover.

6 Replace the battery.

GUID-B784848F-125E-46FD-9A22-A7892EC032F0

Removing the optical-drive interposer

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.

GUID-9953856D-1A75-4D18-8037-730FB5086D44

Prerequisites

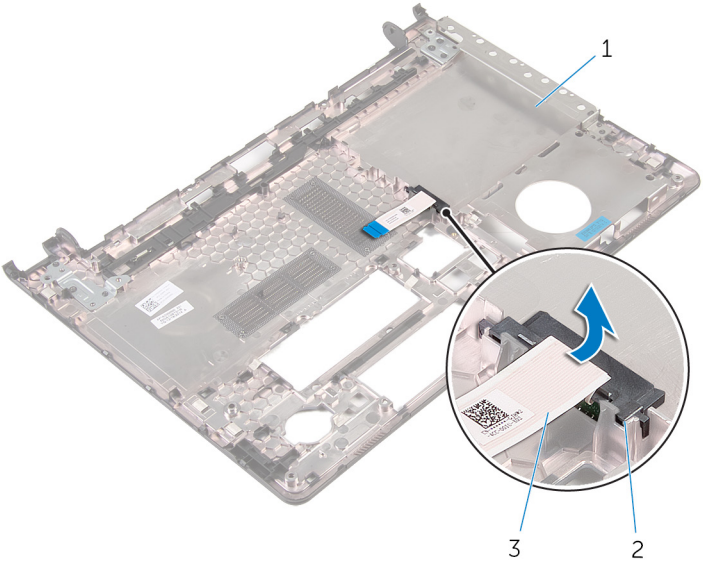
1. Remove the battery.
2. Remove the base cover.
3. Remove the optical drive.
4. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
5. Remove the wireless card.
6. Remove the keyboard.

GUID-7A2672D8-AEA1-4CF7-A9A9-93DC85348685

Procedure

1. Follow the procedure from step 1 to step 5 in "Removing the computer base".
2. Turn the computer base and place it on a flat surface.

3 Lift the optical-drive interposer along with the cable off the computer base.



1 computer base
2 optical-drive interposer
3 optical-drive cable

GUID-7D3D6B04-3ECE-4E21-8CF6-A1AFBDE2E206

Replacing the optical-drive interposer

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.

GUID-734A947E-7B54-45CD-BA9A-313C9FF23853

Procedure

1. Align the optical-drive interposer with the slot on the computer base and snap it into place.
2. Follow the procedure from step 1 to step 5 in "Replacing the computer base".

GUID-6B7886A2-FD1F-4BA3-9200-9A6D81EA1FDC

Post-requisites

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

GUID-A4C65F77-E1D1-4595-B52B-D281E90F786D

Removing the heat-sink assembly

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

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

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

GUID-2C58456A-1752-41D4-9864-67C574180A4B

Prerequisites

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

GUID-A6587A27-FDD8-49A2-8311-91AF85517DBA

Procedure

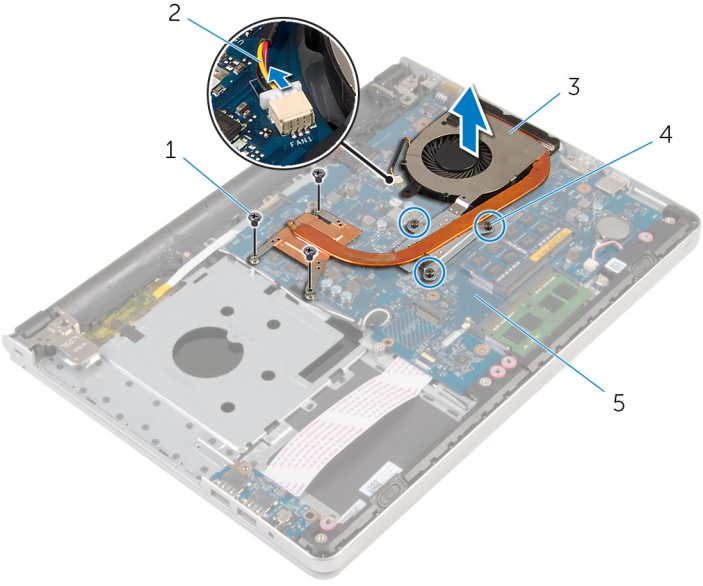
NOTE: The number of screws and the appearance of the heat-sink assembly may be different on your computer, depending on the configuration ordered.

1. Disconnect the fan cable from the system board.

2 In sequential order, as indicated on the heat-sink assembly, loosen the captive screws that secure the heat-sink assembly to the system board.

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

4 Lift the heat-sink assembly off the system board.



1	screws (3)	2	fan cable
3	heat-sink assembly	4	captive screws (3)
5	system board		

GUID-9847FD24-88EC-4F5A-BCCF-D9D9830B777A

Replacing the heat-sink assembly

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

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 fan are reinstalled together. If either the system board or the fan is replaced, use the thermal pad provided in the kit to ensure that thermal conductivity is achieved.

GUID-33C9F96A-82A7-434D-A213-EB687B0C3797

Procedure

1. Align the screw holes on the heat-sink assembly with the screw holes on the system board.
2. In sequential order, as indicated on the heat-sink assembly, tighten the captive screws that secure the heat-sink assembly to the system board.
3. Replace the screws that secure the heat-sink assembly to the system board.
4. Connect the fan cable to the system board.

GUID-C9035A20-A443-48FB-B5AE-7CD12DD5349E

Post-requisites

1. Replace the computer base.
2. Replace the keyboard.
3. Replace the wireless card.
4. Follow the procedure from step 5 to step 7 in "Replacing the hard drive".

5 Replace the memory modules.
6 Replace the optical drive.
7 Replace the base cover.
8 Replace the battery.

GUID-DC61C8F1-86D0-49DE-B8D8-229750E714D6

Removing the I/O 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.

GUID-665224D1-DB48-4C4C-9A04-EAF518114940

Prerequisites

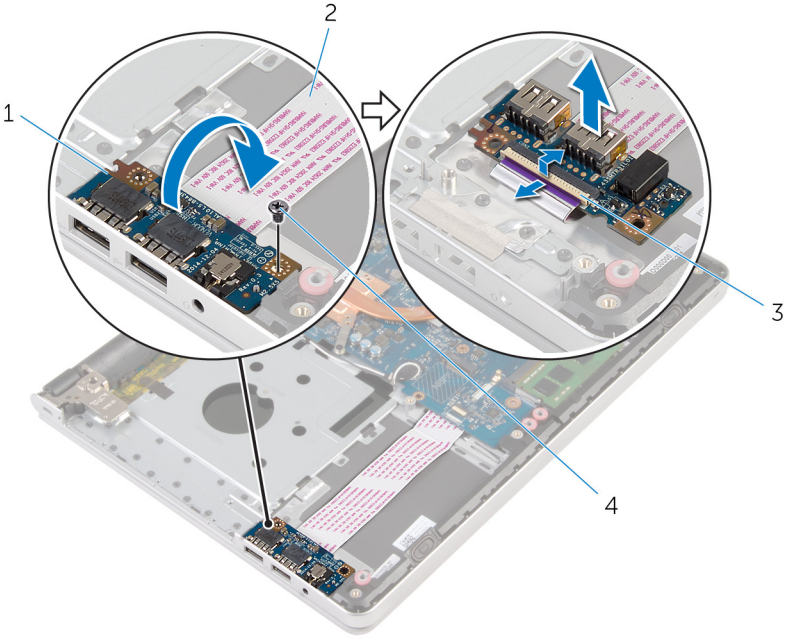
1. Remove the battery.
2. Remove the base cover.
3. Remove the optical drive.
4. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
5. Remove the wireless card.
6. Remove the keyboard.
7. Remove the computer base.

GUID-24A82D4B-190D-49C5-9F6C-C3A917235684

Procedure

1. Remove the screw that secures the I/O board to the palm-rest assembly.
2. Lift the I/O board and turn it over.
3. Open the latch and disconnect the I/O-board cable from the I/O board.

4 Lift the I/O board off the palm-rest assembly.



1	I/O board	2	I/O-board cable
3	latch	4	screw

GUID-98F27B1C-9F09-48EC-83D7-FC85C825E6A4

Replacing the I/O board

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GUID-68E6B63E-A1EE-4E2A-AC4A-4E59FABE42C4

Procedure

1. Slide the I/O-board cable into the connector on the I/O-board and close the latch to secure the cable.
2. Turn the I/O board over and align the screw hole on the I/O board with the screw hole on the palm-rest assembly.
3. Replace the screw that secures the I/O board to the palm-rest assembly.

GUID-CC32F53D-2685-4E17-82F8-3E707844DAAB

Post-requisites

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

GUID-B54497E8-5AD5-4FF9-AD4A-F32FDBEDE1E8

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.

GUID-D16C1FF8-751C-445B-8AC8-030F89C8A8A6

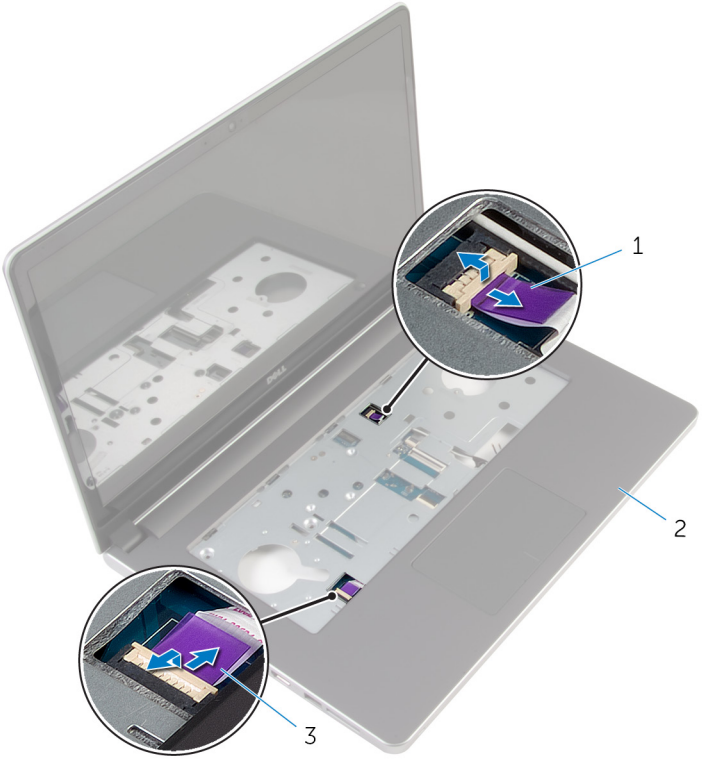
Prerequisites

1. Remove the battery.
2. Remove the base cover.
3. Remove the optical drive.
4. Remove the memory modules.
5. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
6. Remove the wireless card.
7. Remove the keyboard.
8. Remove the computer base.
9. Remove the heat-sink assembly.
10. Remove the I/O board.

GUID-7052353E-F03F-4CF3-98CA-770F717B308F

Procedure

1. Turn the computer over and open the display as far as possible.
2. Open the latches and disconnect the touch-pad cable and the power-button board cable from the system board.



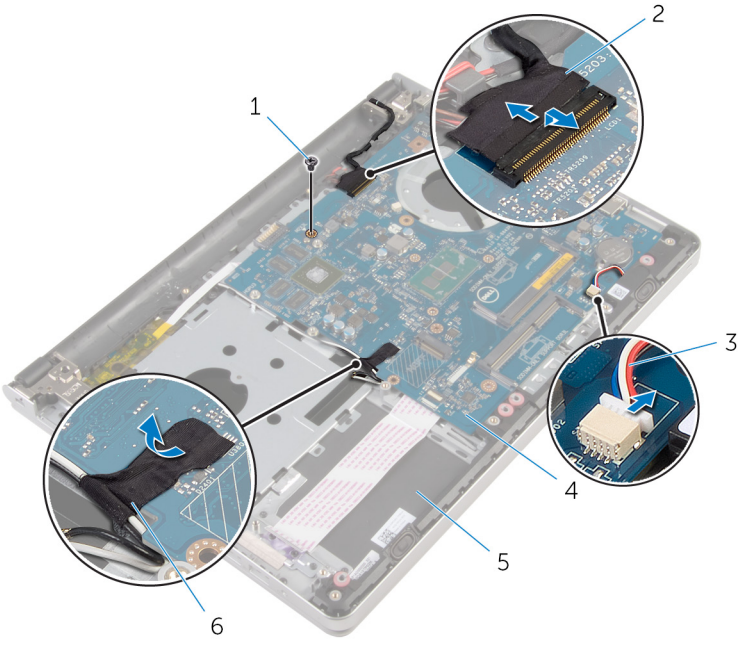
1	power-button board cable	2	palm-rest assembly
3	touch-pad cable		

3. Close the display and turn the computer over.
4. Open the latch and disconnect the display cable from the system board.

5 Disconnect the speaker cable from the system board.

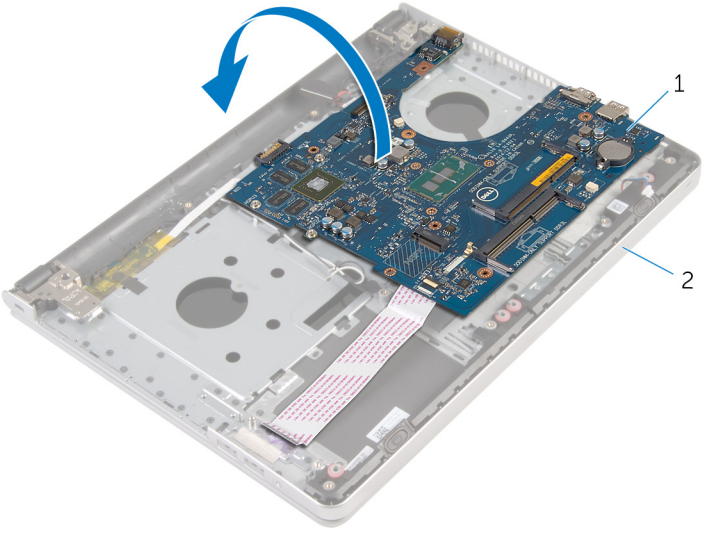
6 Peel the tape from the antenna cables.

7 Remove the screw that secures the system board to the palm-rest assembly.



1	screw	2	display cable
3	speaker cable	4	system board
5	palm-rest assembly	6	tape

8 Lift the system board off the palm-rest assembly and carefully turn the system board over.

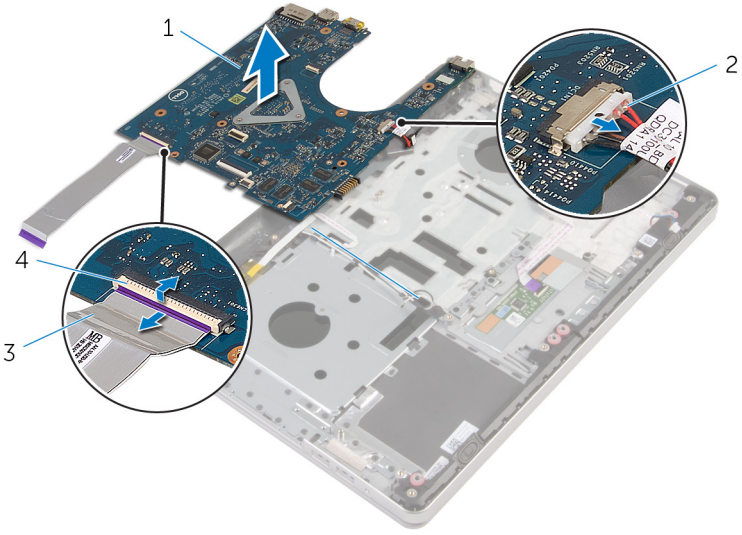


1 system board 2 palm-rest assembly

9 Disconnect the power-adapter port cable from the system board.

10 Open the latch and disconnect the I/O-board cable from the system board.

11 Lift the system board off the palm-rest assembly.



1	system board	2	power-adapter port cable
3	I/O-board cable	4	latch

GUID-67274E98-E2F1-4B7B-A903-F38BA6B62028

Replacing the system board

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

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

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

GUID-8F53B13B-4B28-4100-80CA-A63BEEF6B213

Procedure

1. Connect the power-adapter port cable to the system board.

   CAUTION: To avoid damaging the system board, ensure that no cables are placed under it.
2. Slide the I/O-board cable into its connector on the system board and close the latch to secure the cable.
3. Connect the power-adapter port cable to the system board
4. Turn the system board over.
5. Slide the ports on the system board into the slots on the palm-rest assembly and place the system board on the palm-rest assembly.
6. Align the screw hole on the system board with the screw hole on the palm-rest assembly.
7. Replace the screw that secures the system board to the palm-rest assembly.
8. Adhere the tape to the antenna cables.

9 Connect the speaker cable to the system board.

10 Slide the display cable into its connector on the system board and close the latch to secure the cable.

11 Turn the computer over and open the display as far as possible.

12 Slide the touch-pad cable and the power-button board cable into their connectors on the system board and close the latches to secure the cables.

GUID-D017B5DD-EB6A-4CF6-A80D-BDE51AB3383C

Post-requisites

1 Replace the I/O board.

2 Replace the heat-sink assembly.

3 Replace the computer base.

4 Replace the keyboard.

5 Replace the wireless card.

6 Follow the procedure from step 5 to step 7 in "Replacing the hard drive".

7 Replace the memory modules.

8 Replace the optical drive.

9 Replace the base cover.

10 Replace the battery.

GUID-35D5032D-9652-403C-9A8A-F98FFABA8776

Removing the power-adapter port

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.

GUID-3A5B5686-B6B7-42E5-BE56-E41783FEF06F

Prerequisites

1. Remove the battery.
2. Remove the base cover.
3. Remove the optical drive.
4. Remove the memory modules.
5. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
6. Remove the wireless card.
7. Remove the keyboard.
8. Remove the computer base.
9. Remove the heat-sink assembly.
10. Remove the I/O board.
11. Remove the system board.

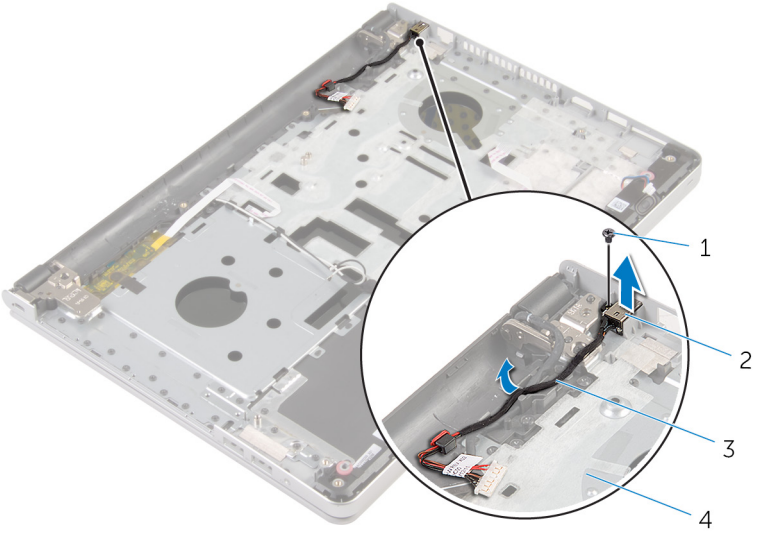
GUID-5C6F8E07-5644-4F34-84AA-0876C224407E

Procedure

1. Note the power-adapter-port cable routing and remove the cable from its routing guides on the palm-rest assembly.

2 Remove the screw that secures the power-adapter port to the palm-rest assembly.

3 Lift the power-adapter port, along with the power-adapter port cable, off the palm-rest assembly.



1	screw	2	power-adapter port
3	power-adapter port cable	4	palm-rest assembly

GUID-A99140DB-7AF3-4218-B305-532FF94DF51D

Replacing the power-adapter port

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.

GUID-BF398AE8-203B-4595-87BC-1108ADEDA2CA

Procedure

1. Place the power-adapter port into the slot on the palm-rest assembly.
2. Route the power-adapter port cable through its routing guides on the palm-rest assembly.
3. Replace the screw that secures the power-adapter port to the palm-rest assembly.

GUID-71BAAC1F-AD36-426F-A833-770D230F4A54

Post-requisites

1. Replace the system board.
2. Replace the I/O board.
3. Replace the heat-sink assembly.
4. Replace the computer base.
5. Replace the keyboard.
6. Replace the wireless card.
7. Follow the procedure from step 5 to step 7 in "Replacing the hard drive".
8. Replace the memory modules.
9. Replace the optical drive.

10 Replace the base cover.

11 Replace the battery.

GUID-A35BD2D5-B3B3-4708-AF1C-D61C58B9F952

Removing the power-button 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.

GUID-052CCD12-38C9-4BF4-9311-FB3DAE121EA0

Prerequisites

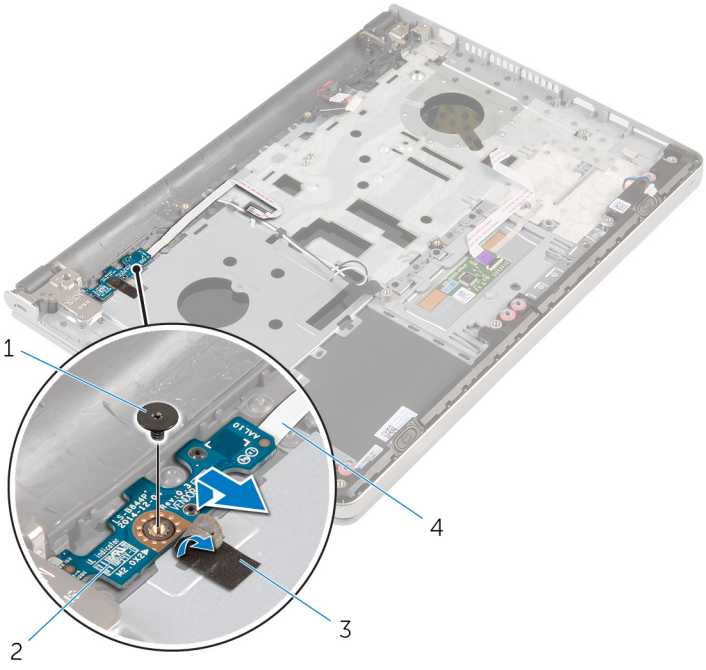
1. Remove the battery.
2. Remove the base cover.
3. Remove the optical drive.
4. Remove the memory modules.
5. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
6. Remove the wireless card.
7. Remove the keyboard.
8. Remove the computer base.
9. Remove the heat-sink assembly.
10. Remove the I/O board.
11. Remove the system board.

GUID-E969B3C4-D494-4720-A04A-32E7173BA499

Procedure

1. Remove the screw that secures the power-button board to the palm-rest assembly.
2. Peel the tape to access the power-button board.

3 Lift the power-button board, along with its cable, off the palm-rest assembly.



1	screw	2	power-button board
3	tape	4	power-button board cable

GUID-FBA68EE4-1E13-4F28-9B84-362694B97060

Replacing the power-button 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.

GUID-F760289F-174A-473F-AB01-8B9B47C80F6D

Procedure

1. Align the screw hole on the power-button board with the screw hole on the palm-rest assembly.
2. Adhere the tape on the power-button board.
3. Replace the screw that secures the power-button board to the palm-rest assembly.

GUID-415B643A-3242-49FB-ABB2-5DCF86D21855

Post-requisites

1. Replace the system board.
2. Replace the I/O board.
3. Replace the heat-sink assembly.
4. Replace the computer base.
5. Replace the keyboard.
6. Replace the wireless card.
7. Follow the procedure from step 5 to step 7 in "Replacing the hard drive".
8. Replace the memory modules.
9. Replace the optical drive.

10 Replace the base cover.

11 Replace the battery.

GUID-BF7F1ECA-BC62-4949-B1BE-EC64E351719E

Removing 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.

GUID-B1342BBB-A06E-45A4-A555-939CA3A82B08

Prerequisites

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

GUID-243BCA13-476D-4B96-B26E-919CB4516FC7

Procedure

1. Disconnect the speaker cable from the system board.

2 Lift the speakers, along with the speaker cable, off the palm-rest assembly.

1	speaker cable	2	speakers (2)
3	palm-rest assembly		

GUID-40DC76F7-B3EC-450A-848E-632D68C352E2

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.

GUID-E8CB3C57-F1C3-4CB8-9A95-1DB48AD1B926

Procedure

1. Using the alignment posts, align and place the speakers on the palm-rest assembly.
2. Connect the speaker cable to the system board.

GUID-53F0CF8B-E3E3-4F5A-AC3B-75AE491A44AC

Post-requisites

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

GUID-AB1F153B-621B-42FC-89BE-0E1105FF1786

Removing the display assembly

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

GUID-085D0E34-796C-47EE-974F-FD132BFF6357

Prerequisites

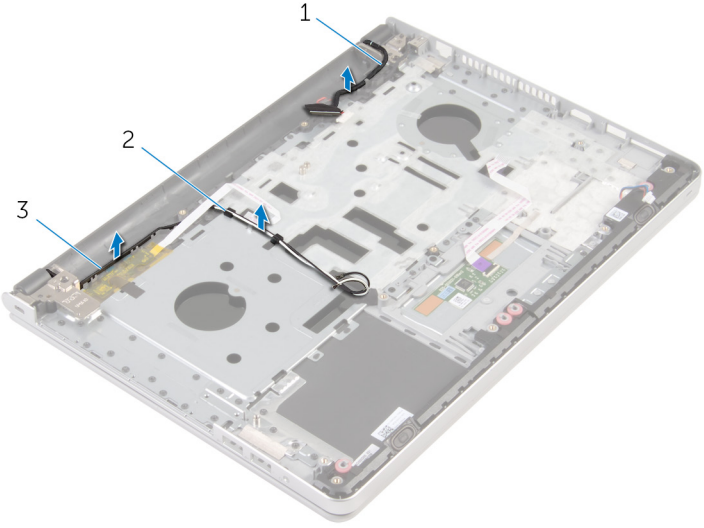
1. Remove the battery.
2. Remove the base cover.
3. Remove the optical drive.
4. Remove the memory modules.
5. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
6. Remove the wireless card.
7. Remove the keyboard.
8. Remove the computer base.
9. Remove the heat-sink assembly.
10. Remove the I/O board.
11. Remove the system board.

GUID-66B213A1-1BA9-480B-BF8D-A97E28D9133F

Procedure

1. Note the antenna-cable routing and remove the antenna cables from its routing guides on the palm-rest assembly.

2 Note the display-cable routing and remove the cable from its routing guides on the palm-rest assembly.



1	display cable	2	routing guides
3	antenna cables (2)		

3 Turn the computer over and open the display at an angle of 90 degrees.

4 Turn the computer over and place it on the edge of the table in a position that allows access to the screws on the display hinges.

5 Remove the screws that secure the display hinges to the palm-rest assembly.

6 Carefully lift the display assembly from the palm-rest assembly.

1	computer base	2	screws (3)
3	display hinges (2)	4	display assembly

7 Carefully place the display assembly on a clean, flat surface.

1 display assembly

GUID-2DF70EB1-9D26-4051-8B7C-FB14A89925D8

Replacing the display assembly

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

GUID-D58E33B9-3AEA-4FFA-99A0-8EB81E6205C7

Procedure

1. Place the palm rest at the edge of the table with the speakers facing away from the edge.
2. Align the screw holes on the palm-rest assembly with the screw holes on the display hinges.
3. Replace the screws that secure the display hinges to the palm-rest assembly.
4. Route the antenna cables through its routing guides on the palm-rest assembly.
5. Route the display cable through its routing guides on the palm-rest assembly.

GUID-1E9DC9F1-55D8-4679-9922-A95E36C45AA2

Post-requisites

1. Replace the system board.
2. Replace the I/O board.
3. Replace the heat-sink assembly.
4. Replace the computer base.
5. Replace the keyboard.
6. Replace the wireless card.
7. Follow the procedure from step 5 to step 7 in “Replacing the hard drive”.
8. Replace the memory modules.

9 Replace the optical drive.

10 Replace the base cover.

11 Replace the battery.

GUID-740BADE7-E98C-41E6-A2C7-D807C0482F9A

Removing the palm-rest assembly

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GUID-FCA6B1D8-C807-4087-AB9B-48AD48361A94

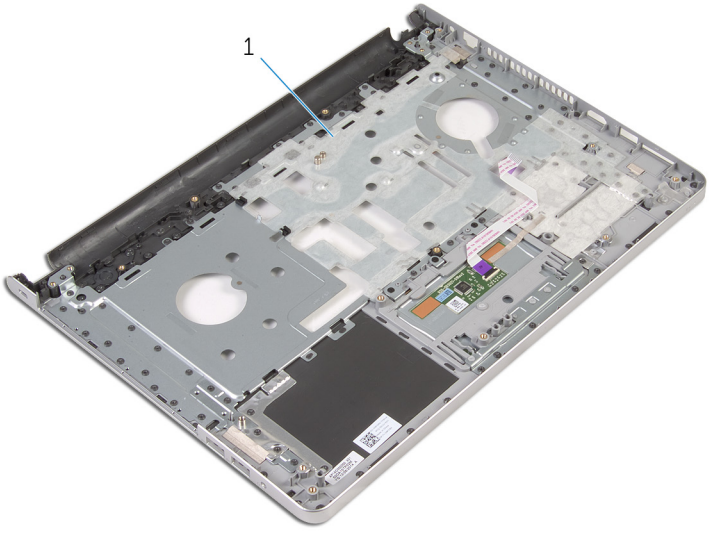
Prerequisites

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

GUID-AD41B5E5-BC9F-472C-8879-14566B1F0F77

Procedure

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



1 palm-rest assembly

GUID-C338CD8A-D6B9-47AE-9629-3FBE505948D9

Replacing the palm-rest assembly

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

GUID-6232DAED-6B4A-44F8-854F-41A75BE451EF

Procedure

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

GUID-6C4B48FD-963C-4D1C-AD0B-F156FF759B2D

Post-requisites

1. Replace the display assembly.
2. Replace the power-button board.
3. Replace the power-adapter port.
4. Replace the system board.
5. Replace the I/O board.
6. Replace the heat-sink assembly.
7. Replace the speakers.
8. Replace the computer base.
9. Replace the keyboard.
10. Replace the wireless card.
11. Follow the procedure from step 5 to step 7 in "Replacing the hard drive".
12. Replace the memory modules.

13 Replace the optical drive.

14 Replace the base cover.

15 Replace the battery.

GUID-5C27B5F7-0EC4-42CD-AB68-CFC88E655D56

Removing the display bezel

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

GUID-619F7DFA-44FF-4A4B-AC92-1E2A0895892E

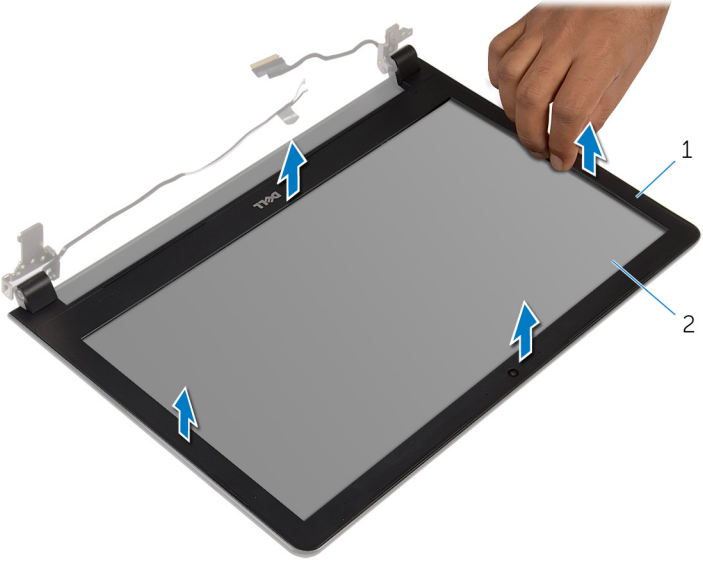
Prerequisites

1. Remove the battery.
2. Remove the base cover.
3. Remove the optical drive.
4. Remove the memory modules.
5. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
6. Remove the wireless card.
7. Remove the keyboard.
8. Remove the computer base.
9. Remove the heat-sink assembly.
10. Remove the I/O board.
11. Remove the system board.
12. Remove the display assembly.

GUID-6FEB5E6C-BA6F-4D61-9801-5CCC4AE67115

Procedure

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



1 display bezel 2 display panel

2 Lift the display bezel off the display assembly.

GUID-619F529E-294B-4F0D-BB9D-9B71EB448811

Replacing the display bezel

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GUID-2F2F1AA9-582D-4A40-8378-6A5B001C5640

Procedure

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

GUID-E26201CA-1B8B-4DB7-913F-CA85289E3B6C

Post-requisites

1. Replace the display assembly.
2. Replace the system board.
3. Replace the I/O board.
4. Replace the heat-sink assembly.
5. Replace the computer base.
6. Replace the keyboard.
7. Replace the wireless card.
8. Follow the procedure from step 5 to step 7 in "Replacing the hard drive".
9. Replace the memory modules.
10. Replace the optical drive.
11. Replace the base cover.
12. Replace the battery.

GUID-1FB16E7C-AF0C-4FA0-8736-EAD91D8969A8

Removing the camera

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.

GUID-173A4BBC-1988-42AF-BD63-CD0857B8BE3D

Prerequisites

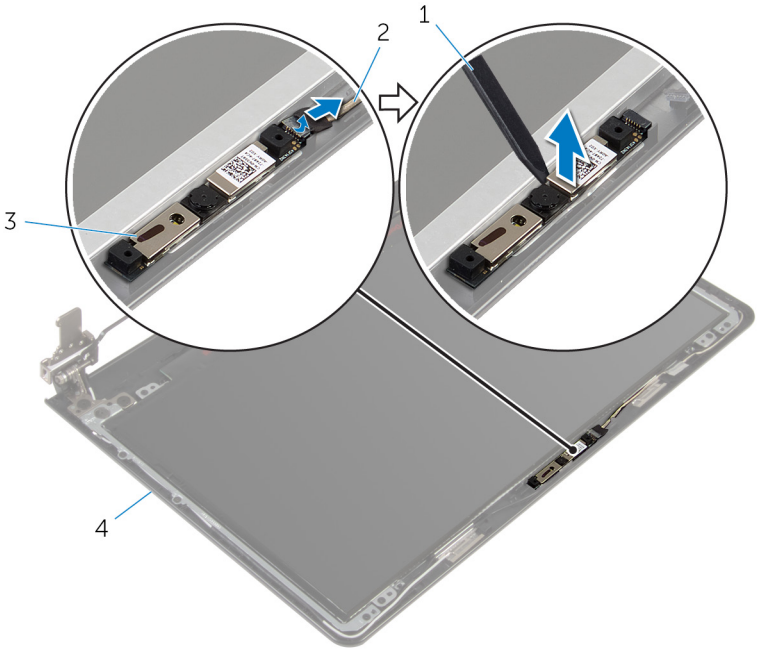
1. Remove the battery.
2. Remove the base cover.
3. Remove the optical drive.
4. Remove the memory modules.
5. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
6. Remove the wireless card.
7. Remove the keyboard.
8. Remove the computer base.
9. Remove the heat-sink assembly.
10. Remove the I/O board.
11. Remove the system board.
12. Remove the display assembly.
13. Remove the display bezel.

GUID-DB4D3A49-E9B3-42CA-95FE-A0696ABAA4FE

Procedure

1. Disconnect the camera cable from the camera.

2 Using a plastic scribe, gently pry the camera off the display back-cover.



1	plastic scribe	2	camera cable
3	camera	4	display back-cover

GUID-690FF12D-2581-4326-8270-C4B813388FD3

Replacing the camera

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.

GUID-5C0CEC57-CE59-47A8-8B91-F60577ECC0C9

Procedure

1. Align the camera to the slot on the display back-cover and adhere the camera in place.
2. Connect the camera cable to the camera.

GUID-CB0B4DC7-6509-4B96-9A3D-BF4A688DD310

Post-requisites

1. Replace the display bezel.
2. Replace the display assembly.
3. Replace the system board.
4. Replace the I/O board.
5. Replace the heat-sink assembly.
6. Replace the computer base.
7. Replace the keyboard.
8. Replace the wireless card.
9. Follow the procedure from step 5 to step 7 in "Replacing the hard drive".
10. Replace the memory modules.
11. Replace the optical drive.
12. Replace the base cover.

13 Replace the battery.

GUID-7D2CEA1B-1FC0-4606-86EB-F51C5DFB6E52

Removing the display panel

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GUID-20967EA2-1E13-4690-9519-BE1BB8AEB83A

Prerequisites

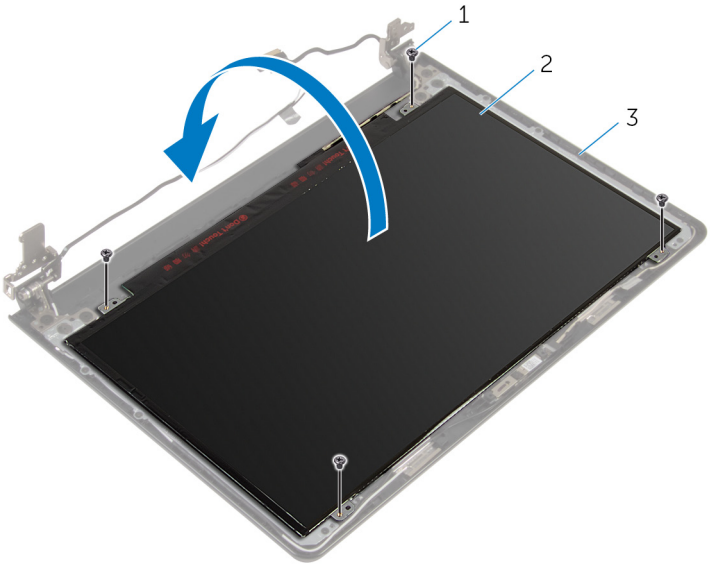
1. Remove the battery.
2. Remove the base cover.
3. Remove the optical drive.
4. Remove the memory modules.
5. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
6. Remove the wireless card.
7. Remove the keyboard.
8. Remove the computer base.
9. Remove the heat-sink assembly.
10. Remove the I/O board.
11. Remove the system board.
12. Remove the display assembly.
13. Remove the display bezel.

GUID-DBED1851-D24E-46ED-87C4-9468349EE200

Procedure

1. Remove the screws that secure the display panel to the display back-cover.

2 Turn the display panel over.

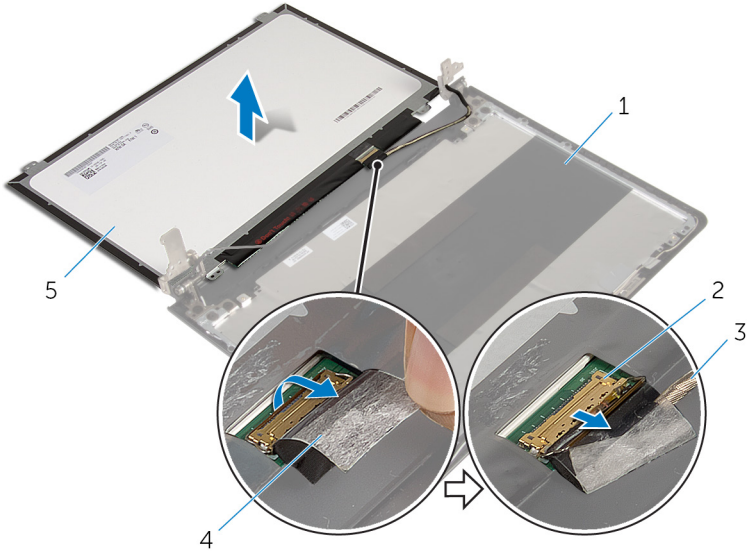


1	screws (4)	2	display panel
3	display-back cover		

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.



1	display back-cover	2	latch
3	display cable	4	tape
5	display panel		

GUID-6FD32244-34F4-4843-983D-B6C14903EFC9

Replacing the display panel

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GUID-0F67AC5E-B129-4E59-B41A-BC8B0CC78970

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.
4. Align the screw holes on the display panel with the screw holes on the display back-cover.
5. Replace the screws that secure the display panel to the display back-cover.

GUID-C6D12905-531B-47C5-A4C8-D2F02D2643C1

Post-requisites

1. Replace the display bezel.
2. Replace the display assembly.
3. Replace the system board.
4. Replace the I/O board.
5. Replace the heat-sink assembly.
6. Replace the computer base.
7. Replace the keyboard.
8. Replace the wireless card.

9 Follow the procedure from step 5 to step 7 in “Replacing the hard drive”.

10 Replace the memory modules.

11 Replace the optical drive.

12 Replace the base cover.

13 Replace the battery.

GUID-6C4E9746-B780-409D-B703-9A43273C227D

Removing the display hinges

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.

GUID-52973351-A544-4FDD-819D-9C0A4914C5A6

Prerequisites

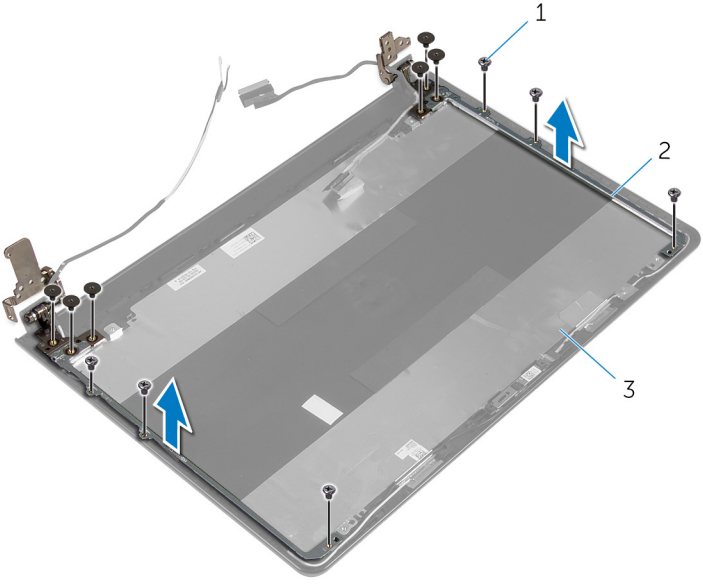
1. Remove the battery.
2. Remove the base cover.
3. Remove the optical drive.
4. Remove the memory modules.
5. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
6. Remove the wireless card.
7. Remove the keyboard.
8. Remove the computer base.
9. Remove the heat-sink assembly.
10. Remove the I/O board.
11. Remove the system board.
12. Remove the display assembly.
13. Remove the display bezel.
14. Remove the display panel.

GUID-F6C7F4D1-3CD2-42D9-8945-AC744462F17A

Procedure

1. Remove the screws that secure the display hinges to the display back-cover.

2 Carefully lift the display hinges off the display back-cover.



1 screws (12)

2 display hinges (2)

3 display back-cover

GUID-E3D5A4DB-BAB5-4F6F-B7B6-8BC4EF0CC57D

Replacing the display hinges

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GUID-44BC3AFC-CB75-421C-B1E8-2BE321BFF408

Procedure

1. Align the screw holes on the display hinges with the screw holes on the display back-cover.
2. Replace the screws that secure the display hinges to the display back-cover.

GUID-7C8D73E1-451B-43F8-8160-276E630EF867

Post-requisites

1. Replace the display panel.
2. Replace the display bezel.
3. Replace the display assembly.
4. Replace the system board.
5. Replace the I/O board.
6. Replace the heat-sink assembly.
7. Replace the computer base.
8. Replace the keyboard.
9. Replace the wireless card.
10. Follow the procedure from step 5 to step 7 in "Replacing the hard drive".
11. Replace the memory modules.
12. Replace the optical drive.

13 Replace the base cover.

14 Replace the battery.

GUID-166DA787-661F-4E60-8975-5E84EDB0868D

Removing the display cable

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.

GUID-BACE68EF-ED07-4B1F-AAAC-91BA7D74E582

Prerequisites

1. Remove the battery.
2. Remove the base cover.
3. Remove the optical drive.
4. Remove the memory modules.
5. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
6. Remove the wireless card.
7. Remove the keyboard.
8. Remove the computer base.
9. Remove the heat-sink assembly.
10. Remove the I/O board.
11. Remove the system board.
12. Remove the display assembly.
13. Remove the display bezel.
14. Remove the display panel.

GUID-229E6A7A-285E-40DE-9635-964758A7A9AA

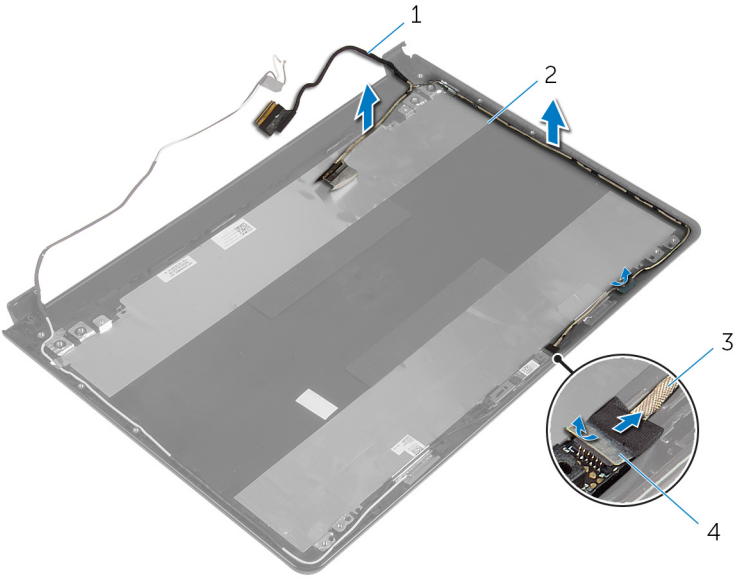
Procedure

1. Peel off the tape that secures the camera cable to the display back-cover.

2 Disconnect the camera cable from the camera.

3 Note the display cable routing and remove the display cable from the routing guides on the display back-cover.

4 Note the camera cable routing and remove the camera cable from the display back-cover.



1	display cable	2	display back-cover
3	camera cable	4	tape

GUID-57172914-AB24-4DCE-BD70-0967C1E82776

Replacing the display cable

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.

GUID-FC223948-30F8-4084-8B04-F600AC7A77ED

Procedure

1. Route the display cable through the routing guides on the display back-cover.
2. Connect the camera cable to the camera.
3. Adhere the tape that secures the camera cable to the display back-cover.

GUID-46309FD5-5AE7-4EB5-94E1-972CCB251104

Post-requisites

1. Replace the display hinges.
2. Replace the display panel.
3. Replace the display bezel.
4. Replace the display assembly.
5. Replace the system board.
6. Replace the I/O board.
7. Replace the heat-sink assembly.
8. Replace the computer base.
9. Replace the keyboard.
10. Replace the wireless card.
11. Follow the procedure from step 5 to step 7 in “Replacing the hard drive”.
12. Replace the memory modules.

13 Replace the optical drive.

14 Replace the base cover.

15 Replace the battery.

GUID-2850CA15-9CEF-415A-ADAA-1614E65C491B

Removing the display back-cover and antenna assembly

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GUID-DE42C8B9-87C3-4326-83F7-8E25CD12799E

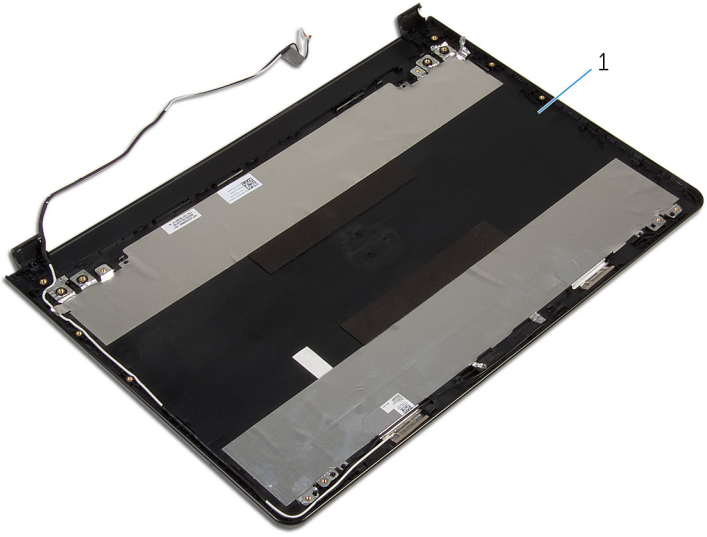
Prerequisites

1. Remove the battery.
2. Remove the base cover.
3. Remove the optical drive.
4. Remove the memory modules.
5. Follow the procedure from step 1 to step 3 in "Removing the hard drive".
6. Remove the wireless card.
7. Remove the keyboard.
8. Remove the computer base.
9. Remove the heat-sink assembly.
10. Remove the I/O board.
11. Remove the system board.
12. Remove the display assembly.
13. Remove the display bezel.
14. Remove the camera.
15. Remove the display panel.
16. Remove the display cable.

GUID-28E5E521-7E1B-424A-917F-D4F24F35AD16

Procedure

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



1 display back-cover and antenna assembly.

GUID-2EF50600-2483-40F4-A773-07DC95179CB6

Replacing the display back-cover and antenna assembly

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

GUID-3A8D5B1E-3EF4-4DF0-BB5E-776AE7F5EA0C

Procedure

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

GUID-66270DF7-91D0-4A83-82A8-87B363F9A715

Post-requisites

1. Replace the display cable.
2. Replace the display hinges.
3. Replace the display panel.
4. Replace the camera.
5. Replace the display bezel.
6. Replace the display assembly.
7. Replace the system board.
8. Replace the I/O board.
9. Replace the heat-sink assembly.
10. Replace the computer base.
11. Replace the keyboard.
12. Replace the wireless card.

13 Follow the procedure from step 5 to step 7 in “Replacing the hard drive”.

14 Replace the memory modules.

15 Replace the optical drive.

16 Replace the base cover.

17 Replace the battery.

GUID-F5899359-C2E1-41C0-9663-4C79969506EB

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.

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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 and what they indicate.

Light Pattern	Problem description
2,1	CPU failure
2,2	System board: BIOS and ROM failure
2,3	No memory or RAM detected

Light Pattern	Problem description
2,4	Memory or RAM failure
2,5	Invalid memory installed
2,6	System board or chipset error
2,7	LCD failure
3,1	CMOS battery failure
3,2	PCI/video card 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.

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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:

Information about Dell products and services	www.dell.com
Dell Help & Support app	
Get started 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
Learn about your operating system, setting up and using your computer, data backup, diagnostics, and so on.	See *Me and My Dell* at www.dell.com/support/manuals.

Contacting Dell

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

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

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