Alienware 14

Owner's Manual

Computer model: Alienware 14
Regulatory model: P39G
Regulatory type: P39G001

ALIENWARE™

Notes, Cautions, and Warnings

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

CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.

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

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Before You Begin

Turn Off Your Computer and Connected Devices

CAUTION: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

1. Save and close all open files and exit all open programs.
2. Follow the instructions to shut down your computer based on the operating system installed on your computer.
   - *Windows 8*:

     Move your mouse pointer to the upper-right or lower-right corner of the screen to open the Charms sidebar, and then click **Settings**→ **Power**→ **Shutdown**.
   - *Windows 7*:

     Click **Start** and click **Shut down**.

     Microsoft Windows shuts down and then the computer turns off.

     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 telephone cables, network cables, and attached devices from your computer.

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 additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

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

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

CAUTION: To avoid damaging the components and cards, handle them by their edges and avoid touching pins and contacts.

CAUTION: Only a certified service technician is authorized to remove the computer cover and access any of the components inside the computer. See the safety instructions for complete information about safety precautions, working inside your computer, and protecting against electrostatic discharge.

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 connectors and ports are correctly oriented and aligned.

CAUTION: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

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
- Torx T8 screwdriver
- Plastic scribe

After Working Inside Your Computer

After you complete replacement procedures, ensure the following:

- Replace all screws and ensure that no stray screws remain inside your computer.
- Connect any external devices, cables, cards, and any other part(s) you removed before working on your computer.
- Connect your computer and all attached devices to their electrical outlets.

CAUTION: Before turning on your computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may damage your computer.

Removing the Base Cover

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Close the display, and turn the computer over.
2. Remove the screws that secure the base cover to the computer base.
3. Slide and lift the base cover off the computer base.

1	base cover	2	screws (2)

Replacing the Base Cover

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Procedure

1. Align the tabs on the base cover with the slots on the computer base and slide the base cover into place.
2. Replace the screws that secure the base cover to the computer base.
3. Turn the computer over and open the display.

Postrequisites

Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Battery

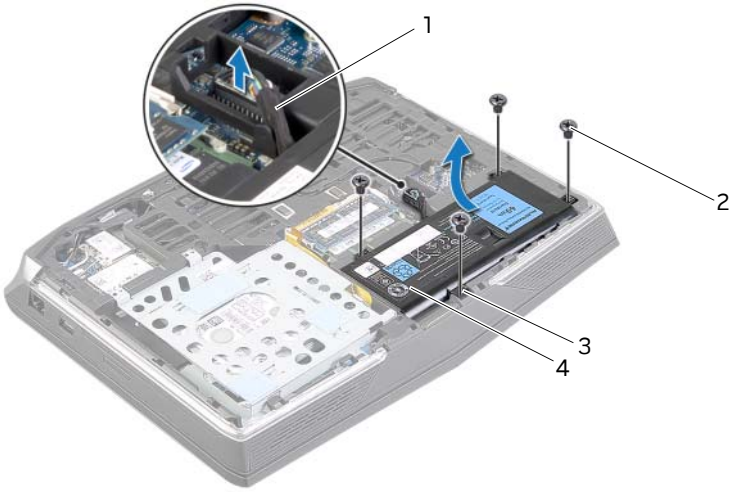
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

Remove the base cover. See "Removing the Base Cover" on page 12.

Procedure

1. Disconnect the battery cable from the system-board connector.
2. Remove the screws that secure the battery to the computer base.
3. Using the battery cable, lift the battery and release it from the tabs on the computer base.



1	battery cable	2	screws (4)
3	tabs (2)	4	battery

4. Turn the computer over and open the display as far as possible.
5. Press and hold the power button for five seconds to ground the system board.

Replacing the Battery

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Close the display and turn the computer over.
2. Align the tabs on the battery with the slots on the computer base.
3. Align the screw holes on the battery with the screw holes on the computer base.
4. Replace the screws that secure the battery to the computer base.
5. Connect the battery cable to the system-board connector.

Postrequisites

1. Replace the base cover. See "Replacing the Base Cover" on page 13.
2. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Memory Module(s)

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

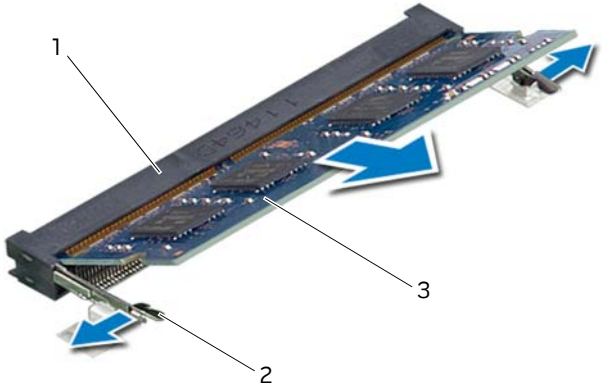
Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.

Procedure

CAUTION: To prevent damage to the memory-module connector, do not use tools to spread the memory-module securing clips.

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



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

Replacing the Memory Module(s)

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Align the notch on the memory module with the tab on the memory-module connector.
2. Slide the memory module firmly into the slot at a 45-degree angle, and press the memory module down until it clicks into place. If you do not hear the click, remove the memory module and reinstall it.

   NOTE: If the memory module is not installed properly, the computer may not boot.

Postrequisites

1. Replace the battery. See "Replacing the Battery" on page 15.
2. Replace the base cover. See "Replacing the Base Cover" on page 13.
3. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Secondary Hard-Drive (optional)

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

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

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

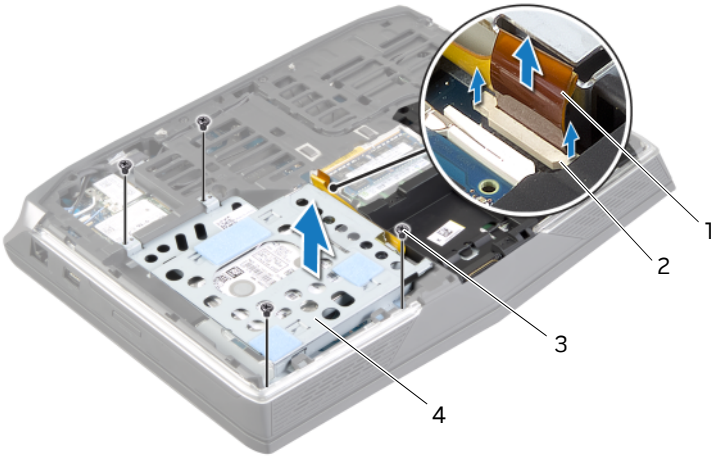
NOTE: The secondary hard-drive or solid-state drive is optional and can be installed in the optical drive bay.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.

Procedure

1. Remove the screws that secure the secondary hard-drive assembly to the computer base.
2. Carefully lift the secondary hard-drive assembly and then lift the latches to release the secondary hard-drive cable from the system-board connector.
3. Lift the secondary hard-drive assembly off the computer base.

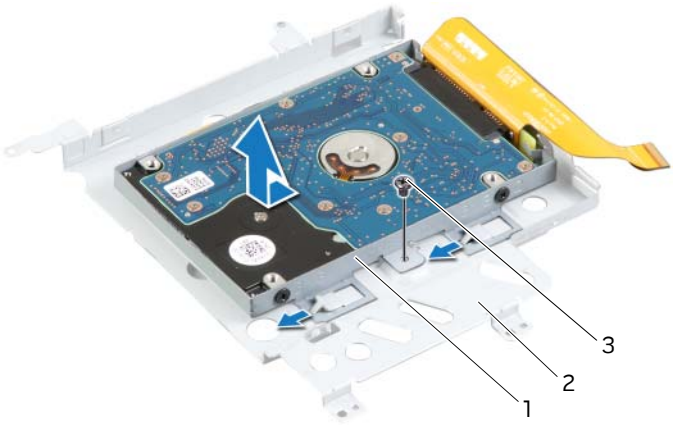


1	secondary hard-drive cable	2	connector latches (2)
3	screws (4)	4	secondary hard-drive assembly

4 Turn the secondary hard-drive assembly over.

5 Remove the screw that secures the secondary hard-drive assembly to the main bracket.

6 Slide and lift the secondary hard-drive assembly off the main bracket.

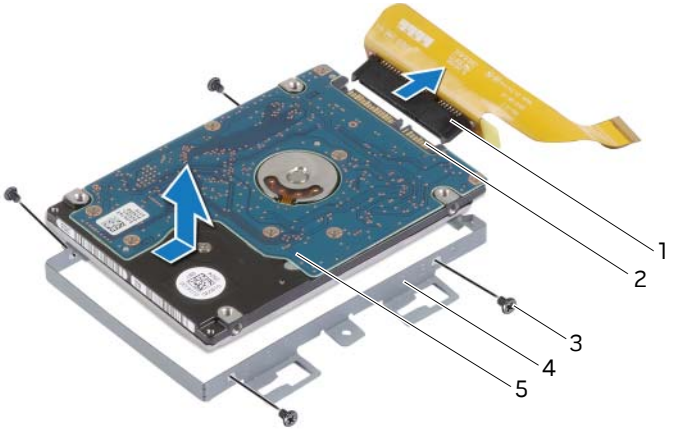


1	secondary hard-drive assembly	2	main bracket
3	screw		

7 Remove the screws that secure the secondary hard-drive to the secondary hard-drive bracket.

8 Slide and lift the secondary hard-drive off the secondary hard-drive bracket.

9 Disconnect the interposer from the secondary hard-drive connector.



1	interposer	2	secondary hard-drive connector
3	screws (4)	4	secondary hard-drive bracket
5	secondary hard-drive		

Replacing the Secondary Hard-Drive (optional)

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

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

NOTE: The secondary hard-drive or solid-state drive is optional and can be installed in the optical drive bay.

Procedure

1. Connect the interposer to the secondary hard-drive connector.
2. Place the secondary hard-drive in the secondary hard-drive bracket.
3. Align the screw holes on the secondary hard-drive with the screw holes on the secondary hard-drive bracket.
4. Replace the screws that secure the secondary hard-drive to the secondary hard-drive bracket.
5. Align the screw hole on the secondary hard-drive assembly with the screw hole on the main bracket.
6. Replace the screw that secures the secondary hard-drive assembly to the main bracket.
7. Turn the secondary hard-drive assembly over.
8. Slide the secondary hard-drive cable into the system-board connector and press down on the connector latches to secure the cable.
9. Align the screw holes on the secondary hard-drive assembly with the screw holes on the computer base.
10. Replace the screws that secure the secondary hard-drive assembly to the computer base.

Postrequisites

1. Replace the battery. See "Replacing the Battery" on page 15.
2. Replace the base cover. See "Replacing the Base Cover" on page 13.
3. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Primary Hard-Drive

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

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

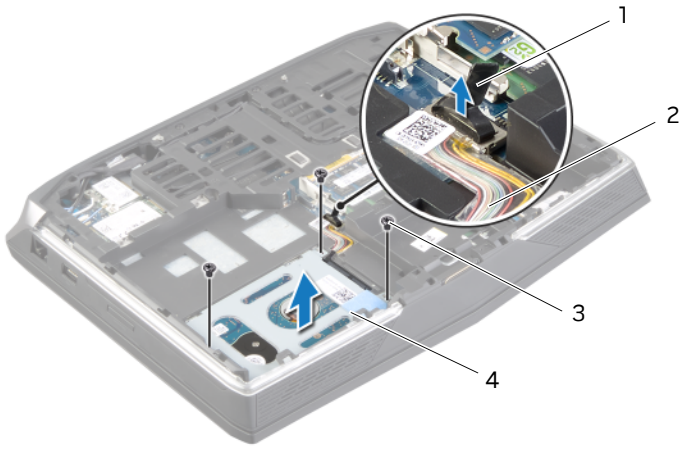
CAUTION: Hard drives are extremely fragile. Exercise care when handling the hard drive.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.

Procedure

1. Lift the pull-tab to disconnect the primary hard-drive cable from the system-board connector.
2. Remove the screws that secure the primary hard-drive assembly to the computer base.
3. Lift the primary hard-drive assembly off the computer base.

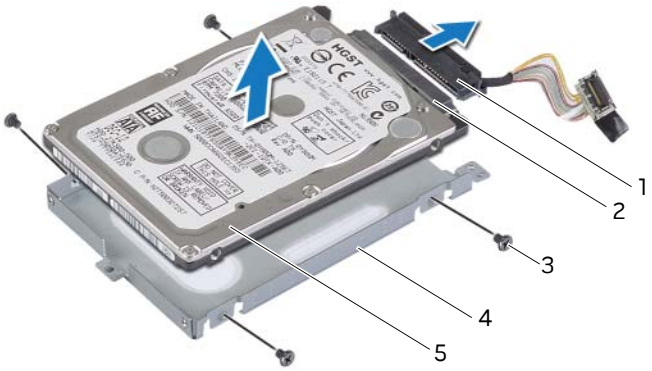


1	pull-tab	2	primary hard-drive cable
3	screws (4)	4	primary hard-drive assembly

4 Disconnect the interposer from the primary hard-drive connector.

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

6 Slide and lift the primary hard-drive off the primary hard-drive bracket.



1	interposer	2	primary hard-drive connector
3	screws (4)	4	primary hard-drive bracket
5	primary hard-drive		

Replacing the Primary Hard-Drive

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

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

Procedure

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

Postrequisites

1. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
2. Replace the battery. See "Replacing the Battery" on page 15.
3. Replace the base cover. See "Replacing the Base Cover" on page 13.
4. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Wireless Mini-Card

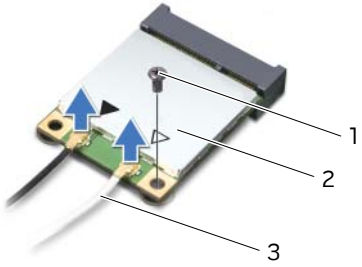
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.

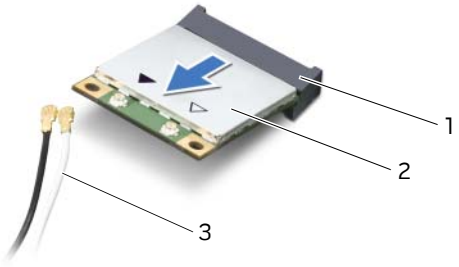
Procedure

1. Disconnect the antenna cables from the wireless mini-card.
2. Remove the screw that secures the wireless mini-card to the system board.



1	screw	2	wireless mini-card
3	antenna cables (2)		

3 Slide and remove the wireless-mini card from the system-board connector.



1	system-board connector	2	wireless mini-card
3	antenna cables (2)		

Replacing the Wireless Mini-Card

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Procedure

1. Align the notch on the wireless mini-card with the tab on the system-board connector.

CAUTION: Use firm and even pressure to slide the wireless mini-card into place.
If you use excessive force, you may damage the connector.

CAUTION: The connectors are keyed to ensure correct insertion. If you feel resistance, check the connectors on the wireless mini-card and on the system-board connector, and realign the wireless mini-card.

CAUTION: To avoid damage to the wireless mini-card, never place cables under the wireless mini-card.

2. Insert the wireless mini-card at a 45-degree angle into the system-board connector.
3. Press the other end of the wireless mini-card down into the slot on the system board and replace the screw that secures the wireless mini-card to the system board.
4. Connect the antenna cables to the connectors on the wireless mini-card.

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

Connectors on the wireless mini-card	Antenna-Cable Color Scheme
WLAN and Bluetooth (2 cables)	
Main WLAN + Bluetooth (white triangle)	white
Auxiliary WLAN + Bluetooth (black triangle)	black

Postrequisites

1. Replace the battery. See "Replacing the Battery" on page 15.
2. Replace the base cover. See "Replacing the Base Cover" on page 13.
3. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the mSATA card

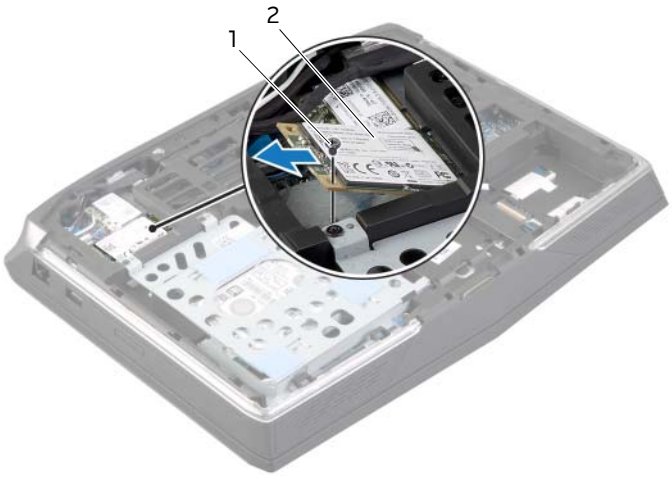
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.

Procedure

1. Remove the screw that secures the mSATA card to the system board.
2. Slide and remove the mSATA card from the system-board connector.



1	screw	2	mSATA card

Replacing the mSATA card

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Align the notch on the mSATA card with the tab on the system-board connector.

CAUTION: Use firm and even pressure to slide the mSATA card into place. If you use excessive force, you may damage the connector.

CAUTION: The connectors are keyed to ensure correct insertion. If you feel resistance, check the connectors on the mSATA card and on the system-board connector, and realign the mSATA card.

2. Insert the mSATA card at a 45-degree angle into the system-board connector.
3. Press the other end of the mSATA card down into the slot on the system board and replace the screw that secures the mSATA card to the system board.

Postrequisites

1. Replace the battery. See "Replacing the Battery" on page 15.
2. Replace the base cover. See "Replacing the Base Cover" on page 13.
3. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Palm Rest

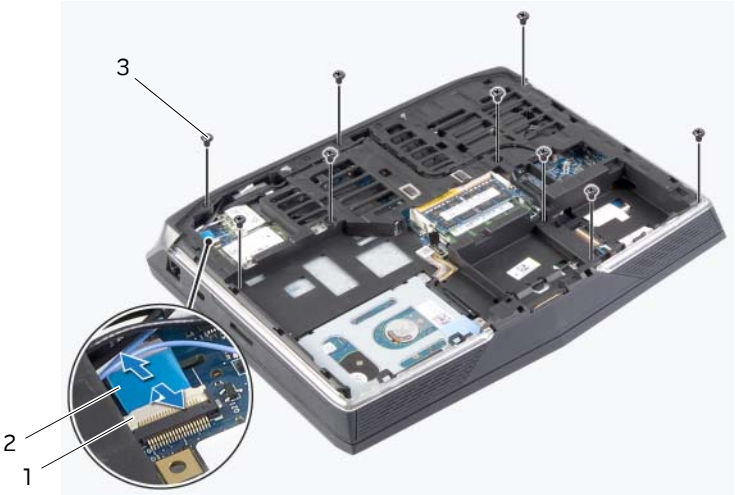
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.

Procedure

1. Lift the connector latch and pull the pull-tab to disconnect the status-light board cable from the system-board connector and slide the cable into the slot on the computer base.
2. Remove the screws that secure the palm-rest assembly to the computer base.

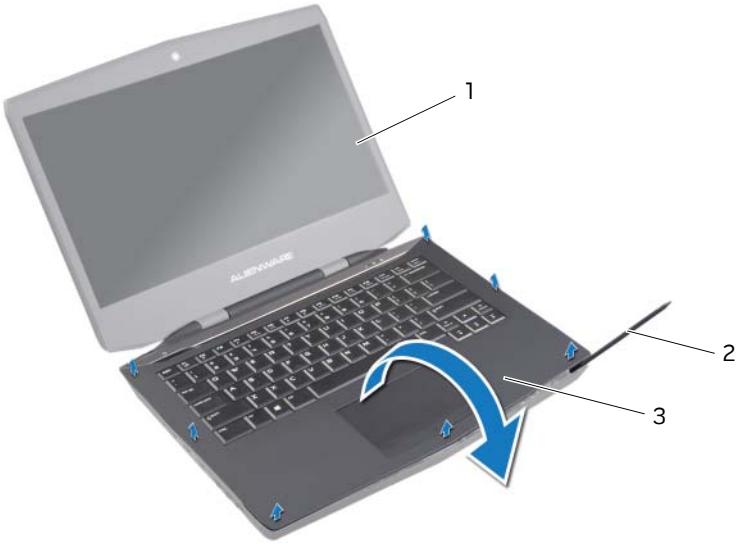


1	connector latch	2	status-light board cable
3	screws (9)		

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

4 Using a plastic scribe, pry the palm-rest assembly from the computer base.

5 Carefully lift the palm-rest assembly and turn it over.



1	display	2	plastic scribe
3	palm-rest assembly		

6 Release the connector latches to disconnect the flexi cable from the system board.

1	connector latch	2	flexi cable

7 Follow the instructions from step 1 to step 9 in "Removing the Keyboard" on page 46.

8 Follow the instructions from step 1 to step 4 in "Removing the Status-Light Board" on page 40.

9 Follow the instructions from step 1 to step 4 in "Removing the Speakers" on page 43.

10 Follow the instructions from step 1 to step 4 in "Removing the Power-Button Board" on page 37.

Replacing the Palm Rest

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Follow the instructions from step 1 to step 4 in "Replacing the Power-Button Board" on page 39.
2. Follow the instructions from step 1 to step 3 in "Replacing the Speakers" on page 45.
3. Follow the instructions from step 1 to step 4 in "Replacing the Status-Light Board" on page 42.
4. Follow the instructions from step 1 to step 8 in "Replacing the Keyboard" on page 50.
5. Connect the flexi cable to the connector on the system board.
6. Turn the palm-rest assembly over and slide the status-light board cable through the slot on the computer base.
7. Align the palm-rest assembly over the computer base and snap the palm-rest assembly into place.
8. Close the display and turn the computer over.
9. Replace the screws that secure the palm-rest assembly to the computer base.
10. Slide the status-light board cable into the system-board connector and press on the connector latch to secure the cable.

Postrequisites

1. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
2. Replace the battery. See "Replacing the Battery" on page 15.
3. Replace the base cover. See "Replacing the Base Cover" on page 13.
4. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Power-Button Board

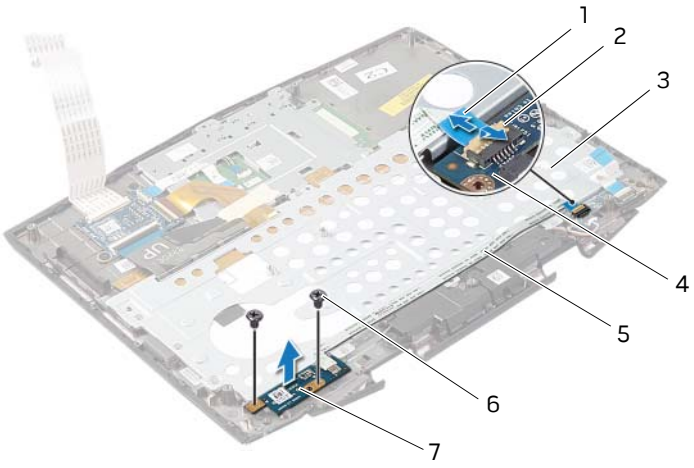
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.

Procedure

1. Lift the connector latch and disconnect the power-button board cable from the connector on the status-light board.
2. Make a note of the power-button board cable routing and peel off the power-button board cable from the keyboard bracket.
3. Remove the screws that secure the power-button board to the palm-rest assembly.
4. Lift the power-button board along with its cable off the palm-rest assembly.



1	power-button board cable	2	connector latch
3	palm-rest assembly	4	status-light board
5	power-button board cable routing	6	screws (2)
7	power-button board		

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 You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Align the screw holes on the power-button board with the screw holes on the palm-rest assembly.
2. Replace the screws that secure the power-button board to the palm-rest assembly.
3. Route the power-button board cable on the keyboard bracket and adhere the cable to the keyboard bracket.
4. Slide the power-button board cable into the status-light board connector and press down on the connector latch to secure the cable.

Postrequisites

1. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
2. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
3. Replace the battery. See "Replacing the Battery" on page 15.
4. Replace the base cover. See "Replacing the Base Cover" on page 13.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Status-Light Board

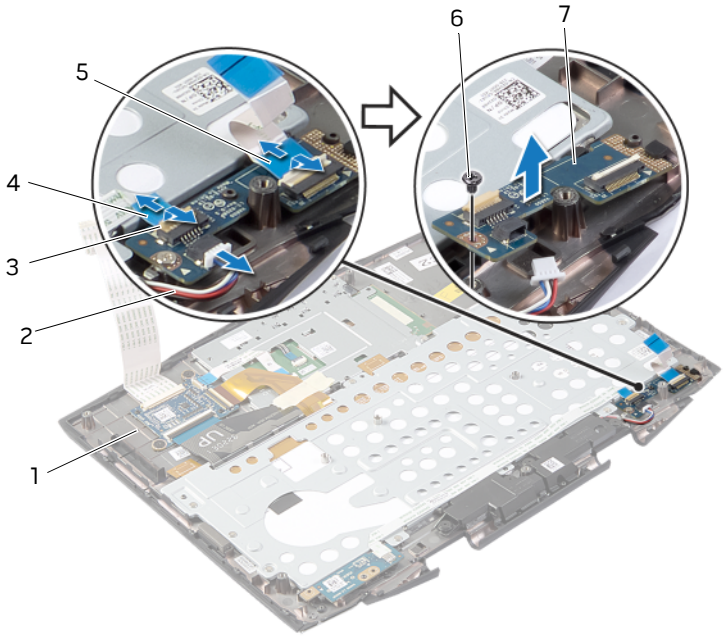
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.

Procedure

1. Lift the connector latches and remove the power-button board and status-light board cables from the status-light board connectors.
2. Disconnect the speakers cable from the status-light board connector.
3. Remove the screw that secures the status-light board to the palm-rest assembly.
4. Lift the status-light board at an angle and release it from the tab on the palm-rest assembly.



1	palm-rest assembly	2	speakers cable
3	connector latch	4	power-button board cable
5	status-light board cable	6	screw
7	status-light board		

Replacing 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 You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Slide the status-light board under the tab on the palm-rest assembly and align the screw hole on the status-light board with the screw hole on the palm-rest assembly.
2. Replace the screw that secures the status-light board to the palm-rest assembly.
3. Slide the status-light board and power-button board cables into the status-light board connectors and press down on the connector latches to secure the cables.
4. Connect the speakers cable to the status-light board connector.

Postrequisites

1. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
2. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
3. Replace the battery. See "Replacing the Battery" on page 15.
4. Replace the base cover. See "Replacing the Base Cover" on page 13.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Speakers

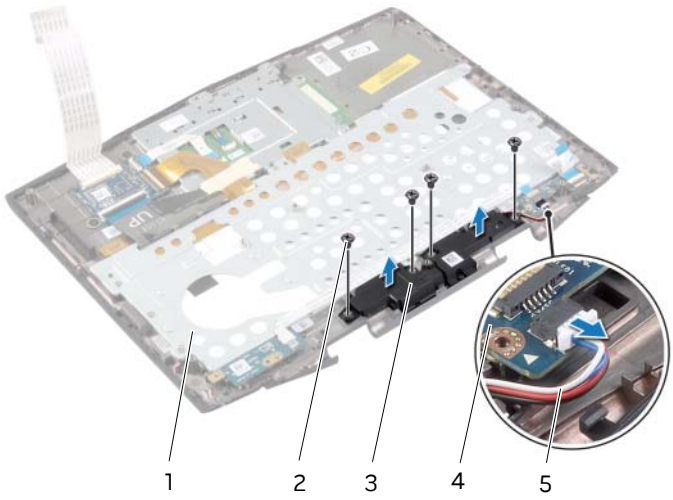
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.

Procedure

1. Remove the screws that secure the speakers to the palm-rest assembly.
2. Disconnect the speakers cable from the status-light board.
3. Note the routing of the speakers cable and remove the cable from the routing guide.
4. Lift the speakers along with the its cable off the palm-rest assembly.



1	palm-rest assembly	2	screws (4)
3	speakers (2)	4	status-light board
5	speakers cable		

Replacing the Speakers

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Align the screw holes on the speakers with the screw holes on the palm-rest assembly.
2. Replace the screws that secure the speakers to the palm-rest assembly.
3. Route the speakers cable through the routing guide on the palm-rest assembly and connect the speakers cable to the status-light board connector.

Postrequisites

1. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
2. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
3. Replace the battery. See "Replacing the Battery" on page 15.
4. Replace the base cover. See "Replacing the Base Cover" on page 13.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Keyboard

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

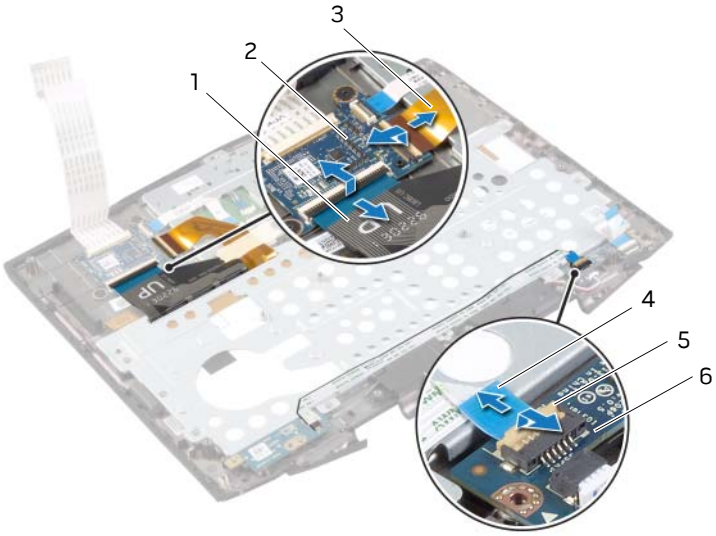
Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.

Procedure

CAUTION: The keycaps on the keyboard are fragile, easily dislodged, and time-consuming to replace. Be careful when removing and handling the keyboard.

1. Lift the connector latch and disconnect the power-button board cable from the status-light board connector.
2. Peel the power-button board cable off the keyboard bracket.
3. Lift the connector latches and disconnect the keyboard cable and keyboard-backlight cable from the keyboard-board connectors.



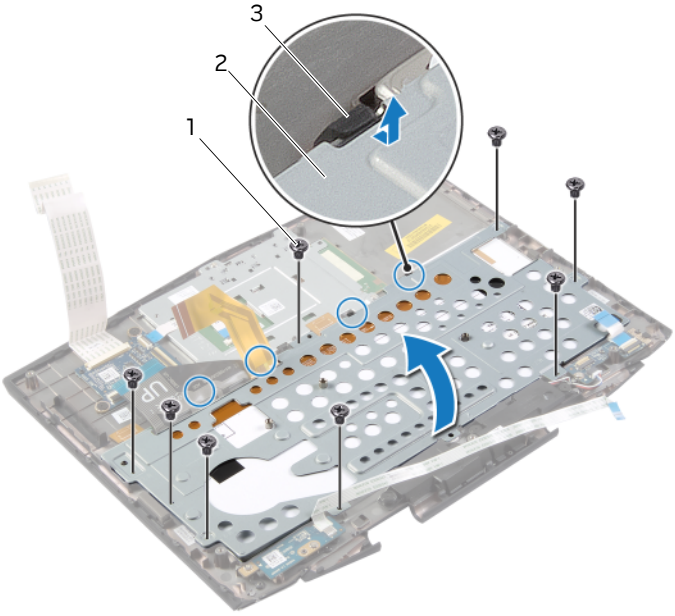
1	keyboard cable	2	keyboard board
3	keyboard-backlight cable	4	power-button board cable
5	connector latch	6	status-light board

4 Remove the screws that secure the keyboard bracket to the palm-rest assembly.

5 Lift the keyboard bracket at an angle and release it from the tabs on the palm-rest assembly.

6 Slide the keyboard cable and keyboard-backlight cable through the keyboard bracket.

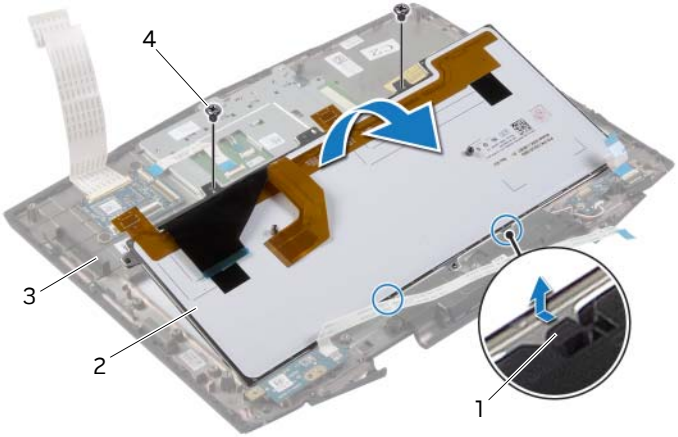
7 Lift the keyboard bracket off the keyboard.



1	screws (8)	2	keyboard bracket
3	tabs (4)		

8 Remove the screws that secure the keyboard to the palm-rest assembly.

9 Lift the keyboard and release it from the tabs on the palm-rest assembly.



1	tabs (2)	2	keyboard
3	palm-rest assembly	4	screws (2)

Replacing the Keyboard

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Slide the keyboard under the tabs of the palm-rest assembly and align the screw holes on the keyboard with the screw holes on the palm-rest assembly.
2. Replace the screws that secure the keyboard to the palm-rest assembly.
3. Slide the keyboard cable and keyboard-backlight cable through the keyboard bracket.
4. Slide the keyboard bracket under the tabs on the palm-rest assembly and align the screw holes on the keyboard bracket with the screw holes on the palm-rest assembly.
5. Replace the screws that secure the keyboard bracket to the palm-rest assembly.
6. Slide the keyboard cable and keyboard-backlight cable into the keyboard-board connectors and press down on the connector latches to secure the cables.
7. Route the power-button board cable on the keyboard bracket and adhere the cable to the keyboard bracket.
8. Slide the power-button board cable into the status-light board connector and press down on the connector latch to secure the cable.

Postrequisites

1. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
2. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
3. Replace the battery. See "Replacing the Battery" on page 15.
4. Replace the base cover. See "Replacing the Base Cover" on page 13.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Coin-Cell Battery

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

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

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.

Procedure

1. Disconnect the coin-cell-battery cable from the system-board connector.
2. Peel the coin-cell battery off the system board.
3. Lift the coin-cell battery along with its cable off the system board.

1	system board	2	coin-cell battery cable
3	coin-cell-battery		

Replacing the Coin-Cell Battery

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

WARNING: The battery may explode if installed incorrectly. Replace the battery only with the same or equivalent type. Discard used batteries according to the manufacturer's instructions.

Procedure

1. Adhere the coin-cell battery to the system board.
2. Connect the coin-cell battery cable to the system-board connector.

Postrequisites

1. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
2. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
3. Replace the battery. See "Replacing the Battery" on page 15.
4. Replace the base cover. See "Replacing the Base Cover" on page 13.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Fan

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.

Procedure

1. Peel off the tape on the fan and release the camera cable.
2. Disconnect the fan cable from the system-board connector.
3. Remove the screws that secure the fan to the computer base.
4. Lift the fan along with its cable away from the computer base.

1	fan cable	2	fan
3	tape	4	screws (3)

Replacing the Fan

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Connect the fan cable to the system-board connector.
2. Align the screw holes on the fan with the screw holes on the computer base.
3. Replace the screws that secure the fan to the computer base.
4. Route the camera cable on the fan and adhere the tape to the fan.

Postrequisites

1. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
2. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
3. Replace the battery. See "Replacing the Battery" on page 15.
4. Replace the base cover. See "Replacing the Base Cover" on page 13.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Subwoofer

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.

Procedure

1. Remove the screws that secure the subwoofer to the computer base.
2. Disconnect the subwoofer cable from the system-board connector.
3. Note the subwoofer cable routing and remove it from the routing guide.
4. Lift the subwoofer along with its cable away from the computer base.

1	subwoofer cable	2	subwoofer cable routing
3	screws (3)	4	subwoofer

Replacing the Subwoofer

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Use the alignment posts on the computer base to keep the subwoofer in place.
2. Replace the screws that secure the subwoofer to the computer base.
3. Route the subwoofer cable through the routing guide and connect the cable to the system-board connector.

Postrequisites

1. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
2. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
3. Replace the battery. See "Replacing the Battery" on page 15.
4. Replace the base cover. See "Replacing the Base Cover" on page 13.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Tron Lights

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.
5. Remove the subwoofer. See "Removing the Subwoofer" on page 57.

Procedure

1. Disconnect the tron-light cables from the system-board connectors.
2. Note the routing of the tron-light cables and remove the cables from the routing guides.
3. Disconnect the tron lights from the optical fibers.
4. Lift the tron lights along with their cables off the computer base.

1	tron-lights cables	2	tron lights (4)
3	routing guides (3)		

Replacing the Tron Lights

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Connect the tron lights to the optical fibres.
2. Route the tron-light cables through the routing guides on the computer base.
3. Connect the tron-light cables to their respective connectors on the system-board.

Postrequisites

1. Replace the subwoofer. See "Replacing the Subwoofer" on page 59.
2. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
3. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
4. Replace the battery. See "Replacing the Battery" on page 15.
5. Replace the base cover. See "Replacing the Base Cover" on page 13.
6. Follow the instructions in "After Working Inside Your Computer" on page 11.

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 You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.

Procedure

1. Disconnect the tron-light cable from the system-board connector.
2. Disconnect the tron light from the optical fibre.

1	tron light	2	tron-light cable

3 Remove the screw that secures the power-adapter port bracket to the computer base.

4 Lift the power-adapter port bracket and keep it aside.

5 Disconnect the power-adapter port cable from the system-board connector.

6 Lift the power-adapter port off the computer base.

1	power-adapter port	2	power-adapter port cable
3	power-adapter port bracket	4	screw

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 You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Align the power-adapter port with the slot on the computer base and slide the power-adapter port into place.
2. Connect the power-adapter port cable to the system-board connector.
3. Align the screw hole on the power-adapter port bracket with the screw hole on the computer base.
4. Replace the screw that secures the power-adapter port bracket to the computer base.
5. Connect the tron light to the optical fibre.
6. Connect the tron-light cable to the system-board connector.

Postrequisites

1. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
2. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
3. Replace the battery. See "Replacing the Battery" on page 15.
4. Replace the base cover. See "Replacing the Base Cover" on page 13.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Display Assembly

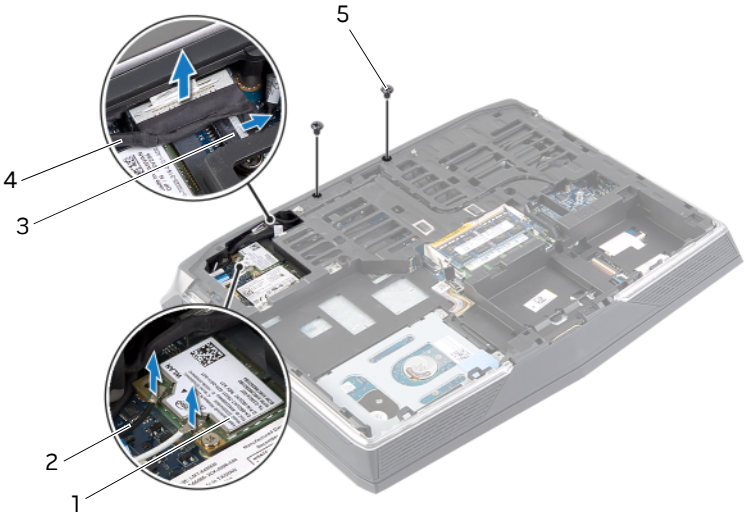
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.

Procedure

1. Close the display and turn the computer over.
2. Disconnect the display and camera cables from the system-board connectors.
3. Disconnect the antenna cables from the wireless mini-card.
4. Remove the screws that secure the display assembly to the computer base.



1	wireless mini-card	2	antenna cables (2)
3	camera cable	4	display cable
5	screws (2)		

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

6 Remove the display, camera, and antenna cables from the slots on the computer base.

7 Note the display, camera and antenna cable-routing and remove the cables from their routing guides.

8 Slide the cables through the slots on the computer base.

9 Remove the screws that secure the display assembly to the computer base.

10 Lift the display assembly off the computer base.

1	display assembly	2	screws (4)

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 You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Align the screw holes on the display assembly with the screw holes on the computer base.
2. Replace the screws that secure the display assembly to the computer base.
3. Slide the cables through the slots on the computer base.
4. Close the display and turn the computer over.
5. Route the display, camera, and antenna cables through the routing guides.
6. Replace the screws that secure the display assembly to the computer base.
7. Connect the display and camera cables to the system-board connectors.
8. Connect the antenna cables to the wireless mini-card.

Postrequisites

1. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
2. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
3. Replace the battery. See "Replacing the Battery" on page 15.
4. Replace the base cover. See "Replacing the Base Cover" on page 13.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

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 You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.
5. Remove the display assembly. See "Removing the Display Assembly" on page 67.

Procedure

1. Using your fingertips, carefully pry up the inside edge of the display bezel.
2. Remove the display bezel off the display back-cover.

1	display bezel

Replacing the Display Bezel

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

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

Postrequisites

1. Replace the display assembly. See "Replacing the Display Assembly" on page 70.
2. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
3. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
4. Replace the battery. See "Replacing the Battery" on page 15.
5. Replace the base cover. See "Replacing the Base Cover" on page 13.
6. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Display Hinges

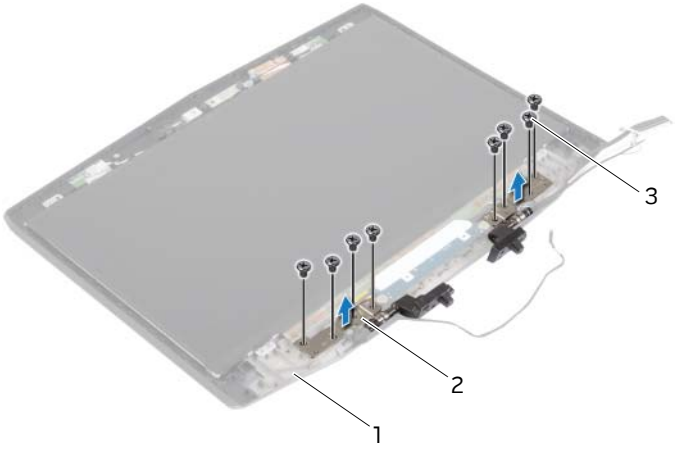
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.
5. Remove the display assembly. See "Removing the Display Assembly" on page 67.
6. Remove the display bezel. See "Removing the Display Bezel" on page 71.

Procedure

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



1	display back-cover	2	display hinges (2)
3	screws (8)		

Replacing the Display Hinges

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

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.

Postrequisites

1. Replace the display bezel. See "Replacing the Display Bezel" on page 72.
2. Replace the display assembly. See "Replacing the Display Assembly" on page 70.
3. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
4. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
5. Replace the battery. See "Replacing the Battery" on page 15.
6. Replace the base cover. See "Replacing the Base Cover" on page 13.
7. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Display Panel

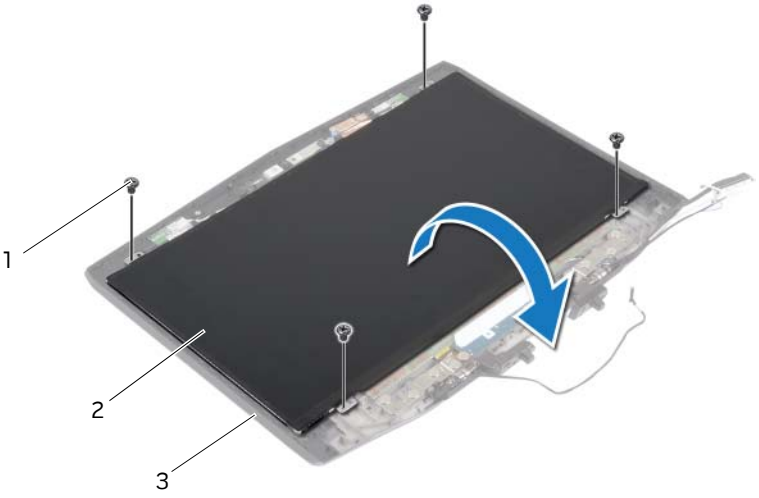
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.
5. Remove the display assembly. See "Removing the Display Assembly" on page 67.
6. Remove the display bezel. See "Removing the Display Bezel" on page 71.
7. Remove the display hinges. See "Removing the Display Hinges" on page 73.

Procedure

1. Remove the screws that secure the display panel to the display back-cover.
2. Carefully turn the display panel over and place it on the display back-cover.

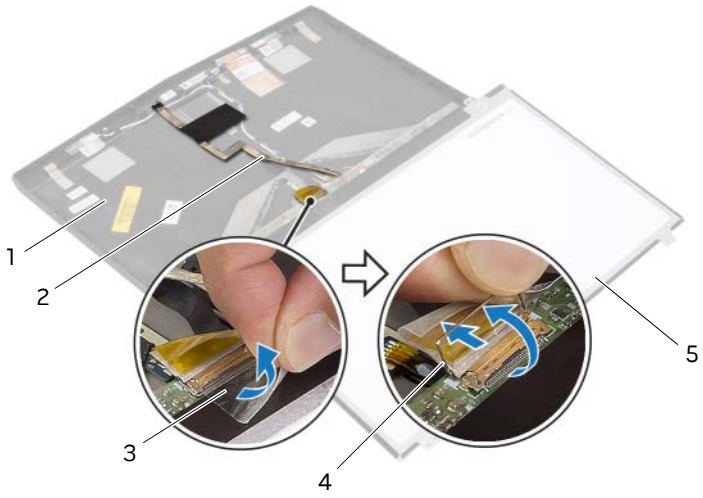


1	screws (4)	2	display panel
3	display back-cover		

3 Peel the tape that secures the display cable to the display-panel connector.

4 Lift the connector latch and disconnect the display cable from the display-panel connector.

5 Lift the display panel off the display back-cover.



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

Replacing the Display Panel

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Connect the display cable to the display-panel connector and press down on the connector latch to secure the cable.
2. Adhere the tape to secure the display cable.
3. Carefully rotate the display panel and align the screw holes on the display panel with the screw holes on the display back-cover.
4. Replace the screws that secure the display panel to the display back-cover.

Postrequisites

1. Replace the display hinges. See "Replacing the Display Hinges" on page 74.
2. Replace the display bezel. See "Replacing the Display Bezel" on page 72.
3. Replace the display assembly. See "Replacing the Display Assembly" on page 70.
4. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
5. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
6. Replace the battery. See "Replacing the Battery" on page 15.
7. Replace the base cover. See "Replacing the Base Cover" on page 13.
8. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Camera Module

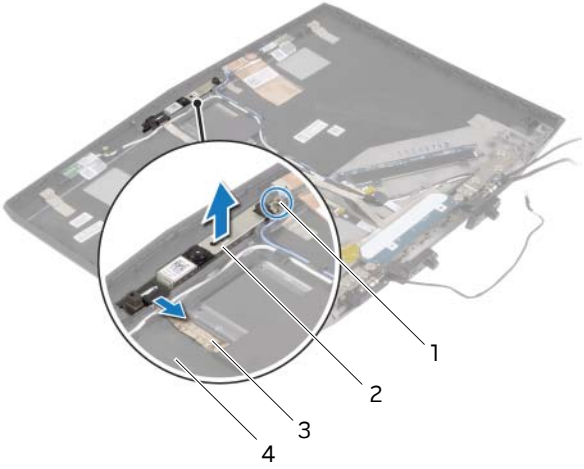
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.
5. Remove the display assembly. See "Removing the Display Assembly" on page 67.
6. Remove the display bezel. See "Removing the Display Bezel" on page 71.
7. Remove the display hinges. See "Removing the Display Hinges" on page 73.
8. Remove the display panel. See "Removing the Display Panel" on page 75.

Procedure

1. Loosen the captive screw that secures the camera module to the display back-cover.
2. Disconnect the camera cable from the camera-module connector.
3. Pry the camera module from the display back-cover.
4. Lift the camera module off the display back-cover.



1	captive screw	2	camera module
3	camera cable	4	display back-cover

Replacing the Camera Module

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Adhere the camera module to the display back-cover.
2. Connect the camera cable to the camera-module connector.
3. Tighten the captive screw that secures the camera module to the display back-cover.

Postrequisites

1. Replace the display panel. See "Replacing the Display Panel" on page 78.
2. Replace the display hinges. See "Replacing the Display Hinges" on page 74.
3. Replace the display bezel. See "Replacing the Display Bezel" on page 72.
4. Replace the display assembly. See "Replacing the Display Assembly" on page 70.
5. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
6. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
7. Replace the battery. See "Replacing the Battery" on page 15.
8. Replace the base cover. See "Replacing the Base Cover" on page 13.
9. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Logo Board

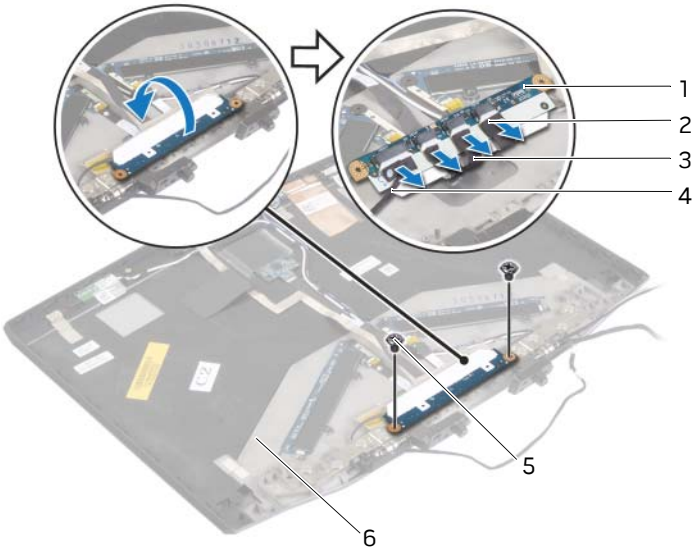
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.
5. Remove the display assembly. See "Removing the Display Assembly" on page 67.
6. Remove the display bezel. See "Removing the Display Bezel" on page 71.
7. Remove the display hinges. See "Removing the Display Hinges" on page 73.
8. Remove the display panel. See "Removing the Display Panel" on page 75.

Procedure

1. Remove the screws that secure the logo board to the display back-cover.
2. Carefully rotate the logo board over and disconnect the display-light board cables, logo-board cable and display cable from the logo-board connectors.
3. Lift the logo board off the display back-cover.



1	logo board	2	display-light board cables
3	logo-board cable	4	display cable
5	screws (2)	6	display back-cover

Replacing the Logo Board

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Connect the display-light board cables, logo-board cable and display cable to the logo-board connectors.
2. Carefully rotate the logo board over and align the screw holes on the logo board with the screw holes on the display back-cover.
3. Replace the screws that secure the logo board to the display back-cover.

Postrequisites

1. Replace the display panel. See "Replacing the Display Panel" on page 78.
2. Replace the display hinges. See "Replacing the Display Hinges" on page 74.
3. Replace the display bezel. See "Replacing the Display Bezel" on page 72.
4. Replace the display assembly. See "Replacing the Display Assembly" on page 70.
5. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
6. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
7. Replace the battery. See "Replacing the Battery" on page 15.
8. Replace the base cover. See "Replacing the Base Cover" on page 13.
9. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Display Light Boards

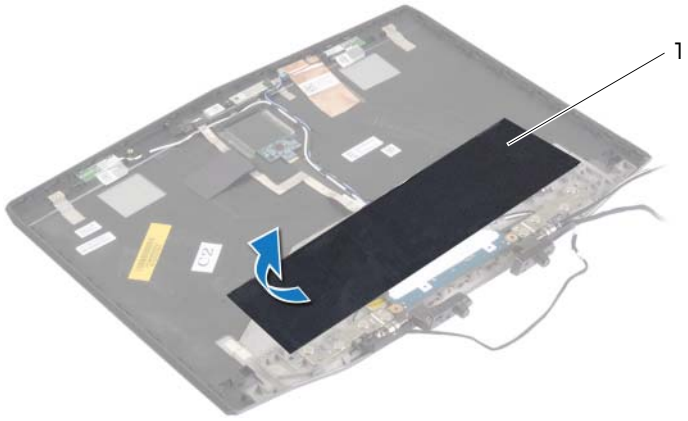
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
4. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.
5. Remove the display assembly. See "Removing the Display Assembly" on page 67.
6. Remove the display bezel. See "Removing the Display Bezel" on page 71.
7. Remove the display hinges. See "Removing the Display Hinges" on page 73.
8. Remove the display panel. See "Removing the Display Panel" on page 75.
9. Remove the logo board. See "Removing the Logo Board" on page 82.

Procedure

1. Peel off the Mylar to uncover the display light boards.



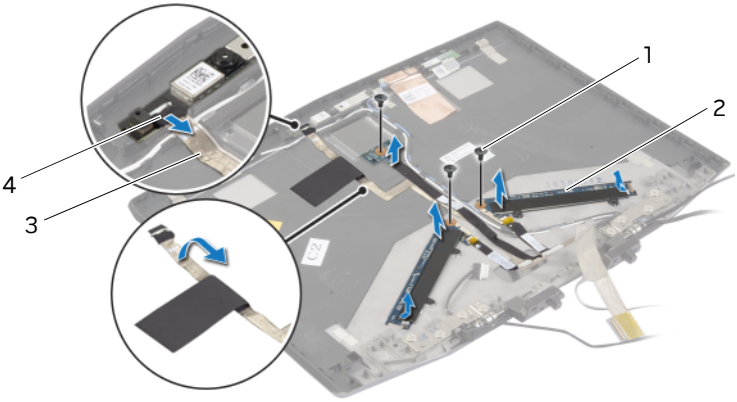
1	Mylar

2 Disconnect the camera cable from the camera-module connector.

3 Note the routing of the camera cable and peel off the cable from the display back-cover.

4 Remove the screws that secure the display light boards to the display back-cover.

5 Lift the display light boards off the display back-cover.



1	screws (3)	2	display light boards (3)
3	camera cable	4	camera-module connector

Replacing the Display Light Boards

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Align the screw holes on the display light boards with the screw holes on the display back-cover.
2. Replace the screws that secure the display light boards to the display back-cover.
3. Route the camera cable on the display back-cover and adhere the cable into place.
4. Connect the camera cable to the camera-module connector.
5. Adhere the Mylar on the display light boards.

Postrequisites

1. Replace the logo board. See "Replacing the Logo Board" on page 84.
2. Replace the display panel. See "Replacing the Display Panel" on page 78.
3. Replace the display hinges. See "Replacing the Display Hinges" on page 74.
4. Replace the display bezel. See "Replacing the Display Bezel" on page 72.
5. Replace the display assembly. See "Replacing the Display Assembly" on page 70.
6. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
7. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
8. Replace the battery. See "Replacing the Battery" on page 15.
9. Replace the base cover. See "Replacing the Base Cover" on page 13.
10. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the System Board

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

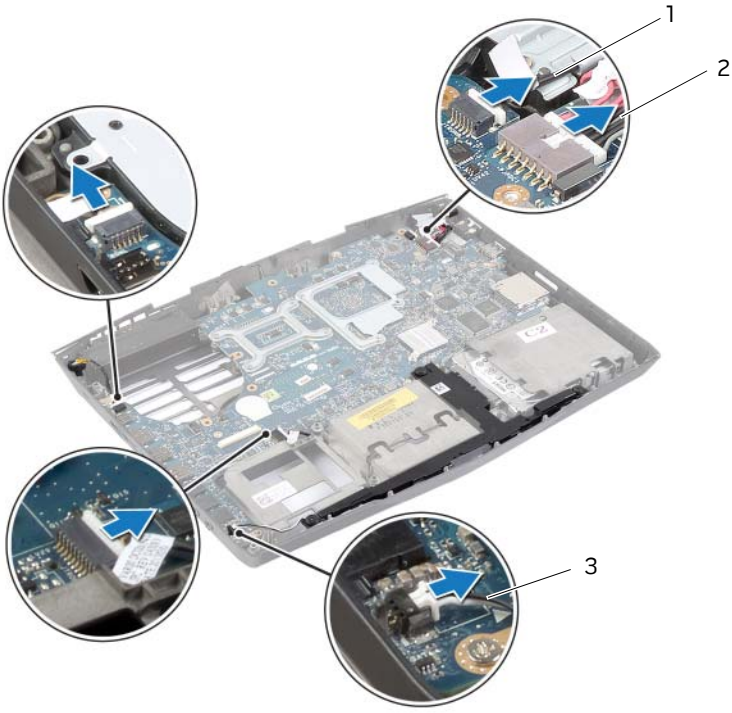
1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Remove the memory module(s). See "Removing the Memory Module(s)" on page 16.
4. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
5. Remove the wireless mini-card. See "Removing the Wireless Mini-Card" on page 27.
6. Remove the mSATA card. See "Removing the mSATA card" on page 30.
7. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.
8. Remove the coin-cell battery. See "Removing the Coin-Cell Battery" on page 51.
9. Remove the fan. See "Removing the Fan" on page 54.

Procedure

NOTE: Your computer's Service Tag is located under the system badge. You must enter the Service Tag in the BIOS 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 them correctly after you replace the system board.

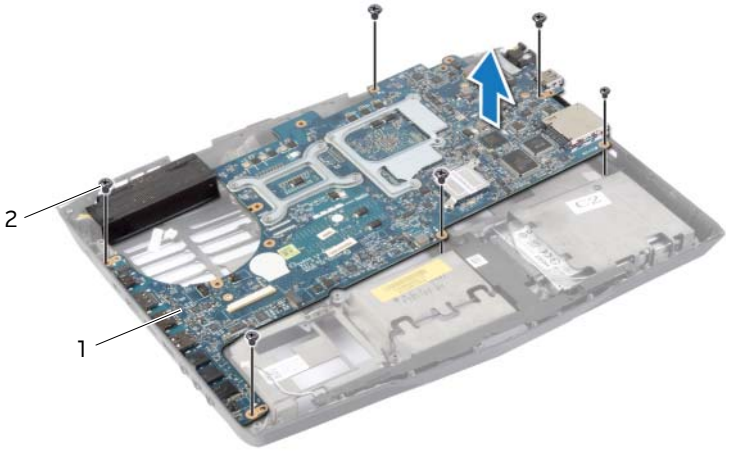
1 Disconnect the tron-light cables, power-adapter port cable, and subwoofer cable from the system-board connectors.



1	tron-light cable (3)	2	power-adapter port cable
3	subwoofer cable		

2 Remove the screws that secure the system board to the computer base.

3 Lift the system board at an angle and remove the ports on the system board from the slots on the computer base.



1	system board	2	screws (6)

4 Turn the system board over and keep it on a clean surface.

5 Follow the instructions from step 1 to step 2 in "Removing the Processor Heat-Sink" on page 92.

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 You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Follow the instructions from step 1 to step 2 in "Replacing the Processor Heat-Sink" on page 94.
2. Turn the system board over and slide the system-board ports into the slots on the computer base.
3. Align the screw holes on the system board with the screw holes on the computer base.
4. Replace the screws that secure the system board to the computer base.
5. Connect the tron-light cables, power-adapter port cable, and subwoofer cable to the system-board connectors.

Postrequisites

1. Replace the fan. See "Replacing the Fan" on page 56.
2. Replace the coin-cell battery. See "Replacing the Coin-Cell Battery" on page 53.
3. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
4. Replace the mSATA card. See "Replacing the mSATA card" on page 31.
5. Replace the wireless mini-card. See "Replacing the Wireless Mini-Card" on page 29.
6. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
7. Replace the memory module(s). See "Replacing the Memory Module(s)" on page 17.
8. Replace the battery. See "Replacing the Battery" on page 15.
9. Replace the base cover. See "Replacing the Base Cover" on page 13.
10. Follow the instructions in "After Working Inside Your Computer" on page 11.

Entering the Service Tag in the BIOS

1. Turn on the computer.
2. Press <F2> during POST to enter the system setup program.
3. Navigate to the main tab and enter the Service Tag in the **Service Tag** field.

Removing the Processor Heat-Sink

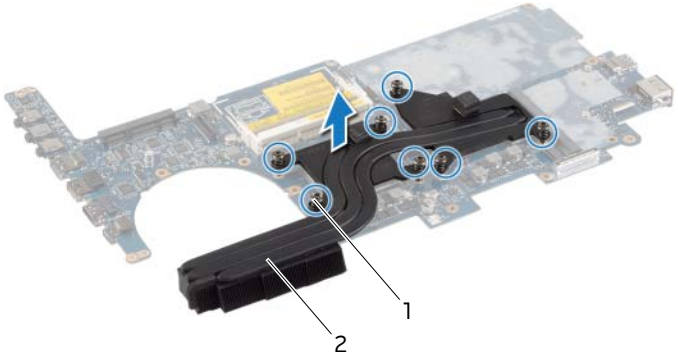
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Remove the memory module(s). See "Removing the Memory Module(s)" on page 16.
4. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
5. Remove the wireless mini-card. See "Removing the Wireless Mini-Card" on page 27.
6. Remove the mSATA card. See "Removing the mSATA card" on page 30.
7. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.
8. Remove the coin-cell battery. See "Removing the Coin-Cell Battery" on page 51.
9. Remove the fan. See "Removing the Fan" on page 54.
10. Follow the instructions from step 1 to step 4 in "Removing the System Board" on page 88.

Procedure

1. In sequential order (indicated on the processor heat-sink), loosen the captive screws that secure the processor heat-sink to the system board.
2. Lift the processor heat-sink off the system board.



1	captive screws (7)	2	processor heat-sink

Replacing the Processor Heat-Sink

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

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.

1. Align the captive screws on the processor heat-sink with the screw holes on the system board.
2. In sequential order (indicated on the processor heat-sink), tighten the captive screws that secure the processor heat-sink to the system board.

Postrequisites

1. Follow the instructions from step 2 to step 5 in "Replacing the System Board" on page 91.
2. Replace the fan. See "Replacing the Fan" on page 56.
3. Replace the coin-cell battery. See "Replacing the Coin-Cell Battery" on page 53.
4. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
5. Replace the mSATA card. See "Replacing the mSATA card" on page 31.
6. Replace the mini-card. See "Replacing the Wireless Mini-Card" on page 29.
7. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
8. Replace the memory module(s). See "Replacing the Memory Module(s)" on page 17.
9. Replace the battery. See "Replacing the Battery" on page 15.
10. Replace the base cover. See "Replacing the Base Cover" on page 13.
11. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Processor Module

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

CAUTION: To prevent intermittent contact between the ZIF-socket cam screw and the processor module when removing the processor, press to apply slight pressure to the center of the processor module while turning the cam screw.

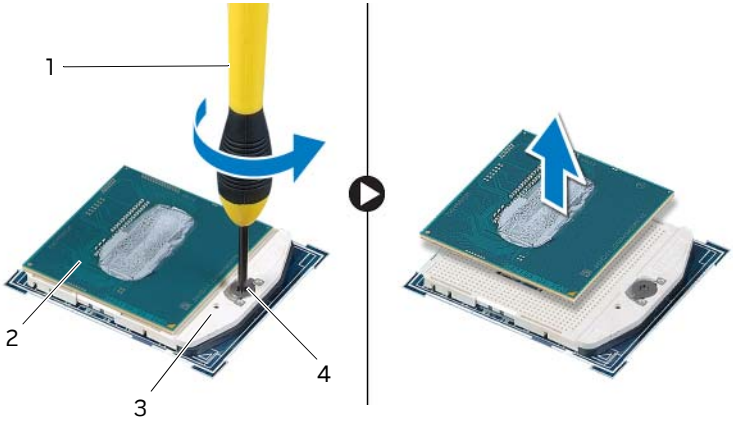
CAUTION: To avoid damage to the processor module, hold the screwdriver so that it is perpendicular to the processor module when turning the cam screw.

Prerequisites

1. Remove the base cover. See "Removing the Base Cover" on page 12.
2. Remove the battery. See "Removing the Battery" on page 14.
3. Remove the memory module(s). See "Removing the Memory Module(s)" on page 16.
4. Follow the instructions from step 1 to step 3 in "Removing the Secondary Hard-Drive (optional)" on page 18.
5. Remove the mini-card. See "Removing the Wireless Mini-Card" on page 27.
6. Remove the mSATA card. See "Removing the mSATA card" on page 30.
7. Follow the instructions from step 1 to step 6 in "Removing the Palm Rest" on page 32.
8. Remove the coin-cell battery. See "Removing the Coin-Cell Battery" on page 51.
9. Remove the fan. See "Removing the Fan" on page 54.
10. Follow the instructions from step 1 to step 4 in "Removing the System Board" on page 88.
11. Remove the processor heat-sink. See "Removing the Processor Heat-Sink" on page 92.

Procedure

1. To loosen the ZIF socket, use a small Torx T8 screwdriver and rotate the ZIF-socket cam screw counterclockwise until it comes to the cam stop.
2. Lift the processor module off the ZIF socket.



1	Torx T8 screwdriver	2	processor module
3	ZIF-socket	4	ZIF-socket cam screw

Replacing the Processor Module

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

NOTE: If a new processor module is installed, you will receive a new thermal-cooling assembly, which will include an affixed thermal pad, or you will receive a new thermal pad along with documentation to illustrate proper installation.

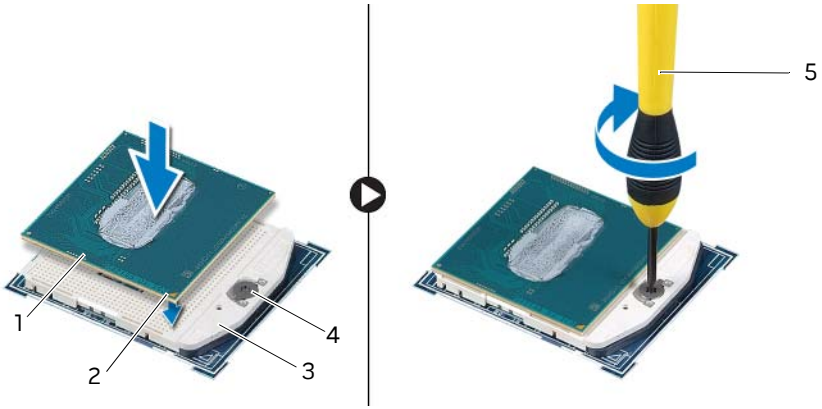
1. Align the pin-1 corner of the processor module with the pin-1 corner of the ZIF socket, then place the processor module.

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

CAUTION: To prevent intermittent contact between the ZIF-socket cam screw and the processor module when replacing the processor, press to apply slight pressure to the center of the processor module while turning the cam screw.

CAUTION: To avoid damage to the processor module, hold the screwdriver perpendicular to the processor module when turning the cam screw.

2. Tighten the ZIF socket by turning the cam screw clockwise to secure the processor module to the ZIF socket.



1	processor module	2	pin1- corner
3	ZIF-socket	4	ZIF-socket cam screw
5	Torx T8 screwdriver		

Postrequisites

1. Replace the processor heat-sink. See "Replacing the Processor Heat-Sink" on page 94.
2. Follow the instructions from step 2 to step 5 in "Replacing the System Board" on page 91.
3. Replace the fan. See "Replacing the Fan" on page 56.
4. Replace the coin-cell battery. See "Replacing the Coin-Cell Battery" on page 53.
5. Follow the instructions from step 5 to step 10 in "Replacing the Palm Rest" on page 36.
6. Replace the mSATA card. See "Replacing the mSATA card" on page 31.
7. Replace the mini-card. See "Replacing the Wireless Mini-Card" on page 29.
8. Follow the instructions from step 8 to step 10 in "Replacing the Secondary Hard-Drive (optional)" on page 22.
9. Replace the memory module(s). See "Replacing the Memory Module(s)" on page 17.
10. Replace the battery. See "Replacing the Battery" on page 15.
11. Replace the base cover. See "Replacing the Base Cover" on page 13.
12. Follow the instructions in "After Working Inside Your Computer" on page 11.

System Setup

Overview

Use system setup to:

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

Entering System Setup

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

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

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

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

System Setup Screens

The system setup screen displays current or changeable configuration information for your computer. Information on the screen is divided into three areas: the **setup item**, active **help screen**, and **key functions**.

Setup Item — This field appears on the left side of the system setup window. This field is a scrollable list containing features that define the configuration of your computer, including installed hardware, power conservation, and security features. Scroll up and down the list with the up- and down-arrow keys. As an option is highlighted, the **Help Screen** displays more information about that option and available settings.	**Help Screen** — This field appears on the right side of the system setup window and contains information about each option listed in the **Setup Item**. In this field you can view information about your computer and make changes to your current settings. Press the up- and down-arrow keys to highlight an option. Press <Enter> to make that selection active and return to the **Setup Item**. **NOTE:** Not all settings listed in the **Setup Item** are changeable.
Key Functions — This field appears below the **Help Screen** and lists keys and their functions within the active system setup field.	

System Setup Options

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

Main Menu	
System Time (hh:mm:ss)	Displays the system time.
System Date (mm/dd/yyyy)	Displays the system date.
BIOS Version	Displays the BIOS version.
Product Name	Displays the model number of your computer.
Service Tag	Displays the service tag of your computer.
Asset Tag	Displays the Asset Tag of your computer.
CPU Type	Displays the type of processor installed.
CPU Speed	Displays the speed of the processor.
CPU ID	Displays the processor identification value.

Main Menu	
CPU Cache	
L1 Cache	Displays the processor's L1 cache size.
L2 Cache	Displays the processor's L2 cache size.
L3 Cache	Displays the processor's L3 cache size.
Integrated Graphics	Displays the integrated graphics.
Discrete Graphics 1	Displays the first discrete graphics installed on your computer.
Fixed HDD	Displays the type of hard drive installed.
SATA ODD	Displays the type of optical drive installed.
Second HDD	Displays the type of secondary hard-drive installed.
eSATA Device	Displays the type of eSATA device installed.
mSATA Device	Displays the type of mSATA device installed.
AC Adapter Type	Displays the type of AC adapter connected to your computer.
Total Memory	Displays the total memory available in your computer.
Memory Bank 0	Displays the memory size installed in DIMM 0.
Memory Bank 1	Displays the memory size installed in DIMM 1.

Advanced Menu	
Intel(R) SpeedStep	Allows you to enable or disable the Intel SpeedStep technology. Disabling this feature may improve performance, but will greatly reduce battery life.
Virtualization	Allows you to enable or disable the Intel Virtualization technology.
Integrated NIC	Allows you to enable or disable the on-board LAN controller. ▪ Disabled: Internal LAN is disabled and is not visible to the operating system. ▪ Enabled: Internal LAN is enabled.

Advanced Menu	
USB Emulation	Allows you to enable or disable the USB emulation feature. This feature defines how the BIOS, in the absence of a USB-aware operating system, handles USB devices. USB emulation is always enabled during POST. **NOTE:** You cannot boot any type of USB device (floppy, hard drive, or memory key) when this option is off.
USB PowerShare	Allows you to charge USB devices when the computer is turned off or in standby mode. ▪ AC Only: Charge USB devices when connected to AC adapter only. ▪ AC and Battery: Charge USB devices when connected to AC adapter and when the computer is running on battery. ▪ Disabled: Disables USB PowerShare.
USB Wake Support	Allows you to enable USB devices to wake the computer from standby or to disable the USB wake support feature. **NOTE:** If USB PowerShare is enabled, a device connected to the USB PowerShare connector may not wake the computer.
SATA Operation	Allows you to configure the operating mode of the integrated SATA hard drive controller. ▪ AHCI: SATA is configured for AHCI mode. ▪ RAID: SATA is configured for RAID mode.
Adapter Warnings	Allows you to choose if the computer should display warning messages when you use AC adapters that are not supported by your computer. Enabled: BIOS will detect unsupported AC adapters and display an error on the screen.
Function Key Behavior	Allows you to set function key or multimedia key as the default function key behavior.
Express Charge	Allows you to charge your computer battery using Standard Charge or Express Charge mode.
Touchpad Backlight	Allows you to set the touchpad backlight to be on or in auto mode.
Battery Health	Displays the battery health.

Advanced Menu	
USB debug	Allows you to enable or disable this port for Windows debugging.
External USB Ports	Allows you to disable or enable the external USB ports.

Advanced Menu—Performance Options	
CPU Turbo Mode	Allows you to disable or enable the processor turbo mode.
Overclocking Feature	Allows you to disable or enable the global overclocking feature. ▪ Disabled: The overclocking feature is disabled. ▪ Enabled: Displays additional overclocking options.
Non-Turbo Flex Support	Allows you to enable or disable non-turbo flex support.
Flex Ratio Override	Allows you to set the flex ratio override value.
Extreme Edition	Allows you to disable or choose BIOS or cTDP.
Extreme Edition Core Ratio Limits	Allows you to set the extreme edition core ratio limit.
Override Turbo Settings	Allows you to enable or disable the override turbo settings.
Long Duration PWR Limit	Allows you to set the turbo mode long duration power limit.
Long Duration Time Window	Allows you to set the turbo mode time 1 value in seconds.
Set Short Duration PWR Limit	Allows you to enable or disable short duration power limit.
Set Short Duration PWR Limit Options	Allows you to set the turbo mode power limit value in watts.
Bus Clock	
Current Frequency	Displays the current bus clock frequency.
New Frequency in 10KHz increments	Allows you to set the bus clock frequency in increments of 10KHz.

Advanced Menu—Performance Options	
Apply New Bus Clock Frequency	Applies the new bus clock frequency immediately, temporarily, or permanently.
GT Overclocking Frequency	Allows you to set the GT Overclocking frequency.
Memory Frequency	Allows you to set memory frequency.
DIMM Profile (XMP)	Allows you to configure different XMP options.

Wireless Menu	
Bluetooth	Allows you to enable or disable the internal Bluetooth device. ▪ Disabled: The internal Bluetooth device is disabled and is not visible to the operating system. ▪ Enabled: The internal Bluetooth device is enabled.
Wireless Network	Allows you to enable or disable the internal wireless device. ▪ Disabled: The internal wireless device is disabled and is not visible to the operating system. ▪ Enabled: The internal wireless device is enabled.
DMC	Allows you to enable or disable the internal DMC device.
Wireless Switch/Hotkey	Allows you to disable all internal wireless devices.

Security Menu	
Admin Password	Displays if the administrator password is clear or set.
System Password	Displays if the system password is clear or set.
Service Tag	Displays the service tag of the computer when the service tag is present. Displays a field to input the service tag manually when the service tag is absent.

Security Menu	
Admin Password	Allows you to set the administrator password. The administrator password controls access to the system setup utility.
System Password	Allows you to set the system password. The system password controls access to the computer at boot.
Computrace	Allows you to disable, activate, or deactivate Computrace security feature.

Boot Menu	
NOTE: UEFI BOOT is set to the default boot mode. See "Changing Boot Mode for Future Boots" on page 108 to set the default boot mode to LEGACY BOOT.	
Secure Boot	Allows you to enable or disable secure boot.
Load Legacy Option Rom	Allows you to enable or disable the option to load a legacy Rom. **NOTE:** This option is disabled when Secure Boot option is enabled.
Boot List Option	Allows you to set the boot sequence order—UEFI or Legacy. **NOTE:** This option is disabled when Secure Boot option is enabled.
Secure Boot Mode	Allows you to set Custom or Standard secure boot mode. **NOTE:** This option is disabled when Secure Boot option is disabled.
Restore Factory Defaults	Allows you to restore your computer to factory default settings. **NOTE:** This option is disabled when Secure Boot Mode option is set to Standard.
Delete all Security Boot Keys	Allows you to delete all security boot keys.
Add Boot Option	Allows you to add a new boot option.
Delete a Boot Option	Allows you to delete an added boot option.
View Boot Option Properties	Allows you to view the properties of an added boot option.

Boot Menu	
Boot Menu—LEGACY BOOT	
Diskette Drive (or Removable Drive)	The computer attempts to boot from the floppy disk drive or an external drive. If no operating system is on the drive, the computer generates an error message.
Hard Drive	The computer attempts to boot from the primary hard-drive. If no operating system is on the drive, the computer generates an error message.
USB Storage Device	The computer attempts to boot from the USB device. If no operating system is on the drive, the computer generates an error message.
CD/DVD/CD-RW Drive	The computer attempts to boot from the optical drive. If no disc is in the drive, or if the disc is not bootable, the computer generates an error message.
Second Hard Drive	The computer attempts to boot from the secondary hard-drive. If no operating system is on the drive, the computer generates an error message.
eSATA	The computer attempts to boot from the device connected to your computer eSATA port. If no operating system is on the drive, the computer generates an error message.
Network	The computer attempts to boot from the network. If no operating system is found on the network, the computer generates an error message.
Boot Menu—UEFI BOOT	
Windows Boot Manager	Allows you to boot from the operating system.
UEFI Onboard LAN IPv4	Allows you to boot from onboard LAN through Internet Protocol version 4 (IPv4).
UEFI Onboard LAN IPv6	Allows you to boot from onboard LAN through Internet Protocol version 6 (IPv46).

Exit Menu	
Exit Saving Changes	Allows you to exit System Setup and save your changes to CMOS.
Save Change Without Exit	Allows you to remain in System Setup and save your changes to CMOS.
Exit Discarding Changes	Allows you to exit System Setup and load previous values from CMOS for all Setup items.
Load Optimal Defaults	Allows you to load default values for all Setup items.
Discard Changes	Allows you to load previous values from CMOS for all Setup items.

Boot Sequence

This feature allows you to change the boot sequence for devices.

Boot Options

- **Diskette Drive (or Removable Drive)** — The computer attempts to boot from the floppy drive or an external drive. If no operating system is on the drive, the computer generates an error message.
- **Hard Drive** — The computer attempts to boot from the primary hard drive. If no operating system is on the drive, the computer generates an error message.
- **USB Storage Device** — The computer attempts to boot from the USB device. If no operating system is on the drive—or if the drive is not bootable—the computer generates an error message.
- **CD/DVD/CD-RW Drive** — The computer attempts to boot from the optical drive. If no disc is in the drive, or if the disc is not bootable, the computer generates an error message.
- **Second Hard Drive** — The computer attempts to boot from the secondary hard-drive. If no operating system is on the drive, the computer generates an error message.
- **eSATA** — The computer attempts to boot from the device connected to your computer eSATA port. If no operating system is on the drive, the computer generates an error message.
- **Network** — The computer attempts to boot from the network. If no operating system is found on the network, the computer generates an error message.

Changing Boot Sequence for the Current Boot

You can use this feature to change the current boot sequence, for example, to boot from the optical drive to run Dell Diagnostics from the *Drivers and Utilities* disc. The previous boot sequence is restored at the next boot.

1. If you are booting from a USB device, connect the USB device to a USB port.
2. Turn on (or restart) your computer.
3. When `F2 Setup, F12 Boot Options` appears in the lower-right corner of the screen, press <F12>.

   NOTE: If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft Windows desktop. Then shut down your computer and try again.

   The **Boot Device Menu** appears, listing all available boot devices.
4. On the Boot Device Menu choose the device you want to boot from.

   For example, if you are booting to a USB memory key, highlight **USB Storage Device** and press <Enter>.

Changing Boot Mode for Future Boots

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

   NOTE: The F2 prompt indicates that the keyboard has initialized. This prompt can appear very quickly, so you must watch for it, and then press <F2>. If you press <F2> before the F2 prompt, this keystroke is lost. If you wait too long and the operating system logo appears, continue to wait until you see the operating system's desktop. Then, turn off your computer and try again.
3. Use the arrow keys to highlight **Change boot mode setting** menu option and press <Enter> to access the menu.
4. Use the arrow keys to select legacy boot mode or UEFI boot mode and press <Enter>.

Changing Boot Sequence for Future Boots

1. Enter system setup. See "Entering System Setup" on page 99.
2. Use the arrow keys to highlight the **Boot** menu option and press <Enter> to access the menu.

   NOTE: Write down your current boot sequence in case you want to restore it.
3. Press the up- and down-arrow keys to select **LEGACY BOOT** or **UEFI BOOT**.
4. Press plus (+) or minus (–) to change the boot priority of the device.

Flashing the BIOS

The BIOS may require flashing when an update is available or when replacing the system board. To flash the BIOS:

1. Turn on the computer.
2. Go to **dell.com/support**
3. Locate the BIOS update file for your computer:

   NOTE: The Service Tag for your computer is located on a label beneath the system badge at the back of your computer. For more information on locating the Service Tag, see the *Quick Start Guide* that shipped with your computer.

   If you have your computer's Service Tag or Express Service Code:

   a. Enter your computer's Service Tag or Express Service Code in the **Service Tag or Express Service Code** field.

   b. Click **Submit** and proceed to step 4.

   If you do not have your computer's Service Tag or Express Service Code:

   a. Select one of the following options:
      - **Automatically detect my Service Tag for me**
      - **Choose from My Products and Services List**
      - **Choose from a list of all Dell products**

   b. Click **Continue** and follow the instructions on the screen.
4. A list of results appears on the screen. Click **BIOS**.
5. Click **Download File** next to the latest version to download the latest BIOS file.
6. In the **Please select your download method below** window, click For Single File Download via Browser, and then click **Download Now**.
7. In the **Save As** window, select an appropriate location to download the file on your computer.
8. If the **Download Complete** window appears, click **Close**.
9. Navigate to the folder where you downloaded the BIOS update file.
10. Double-click the BIOS update file icon and follow the instructions that appear on the screen.