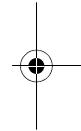
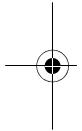


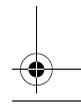
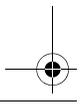
Dell XPS 13 Owner's Manual

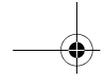


Computer model: L321x

Regulatory model: P29G

Regulatory type: P29G001





Notes, Cautions, and Warnings



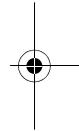
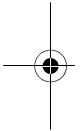
NOTE: A NOTE indicates important information that helps you make better use of your computer.



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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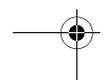
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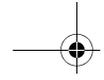
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Regulatory type: P29G001

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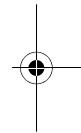
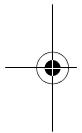
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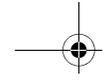




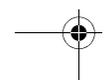
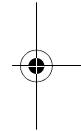
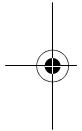
Contents

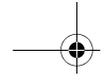
1	Before You Begin	9
	Turn Off Your Computer and Connected Devices	9
	Safety Instructions.	9
	Recommended Tools.	10
2	After Working Inside Your Computer.	11
3	Base Cover	13
	Removing the Base Cover	13
	Replacing the Base Cover	14
4	Power-Light Board	15
	Prerequisites.	15
	Removing the Power-Light Board	15
	Replacing the Power-Light Board.	16
	Postrequisites	16
5	Battery.	17
	Prerequisites.	17



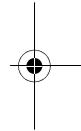
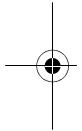


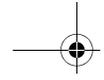
	Removing the Battery	17
	Replacing the Battery	18
	Postrequisites	18
6	Speakers	19
	Prerequisites	19
	Removing the Speakers	19
	Replacing the Speakers	21
	Postrequisites	22
7	Wireless Mini-Card	23
	Prerequisites	23
	Removing the Mini-Card	23
	Replacing the Mini-Card	25
	Postrequisites	26
8	Solid-State Drive	27
	Prerequisites	27
	Removing the Solid-State Drive	27
	Replacing the Solid-State Drive	29
	Postrequisites	29



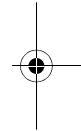
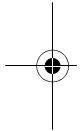


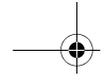
9	Heat Sink	31
	Prerequisites	31
	Removing the Heat Sink	31
	Replacing the Heat Sink	32
	Postrequisites	32
10	Fan	33
	Prerequisites	33
	Removing the Fan	33
	Replacing the Fan	35
	Postrequisites	35
11	Power-Adapter Connector	37
	Prerequisites	37
	Removing the Power-Adapter Connector	37
	Replacing the Power-Adapter Connector	39
	Postrequisites	40
12	I/O Board	41
	Prerequisites	41
	Removing the I/O Board	41
	Replacing the I/O Board	42



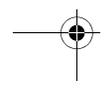
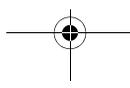
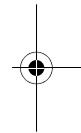
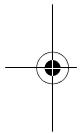
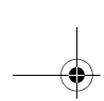


	Postrequisites	42
13 System Board		45
	Prerequisites	45
	Removing the System Board	45
	Replacing the System Board	48
	Postrequisites	48
	Entering the Service Tag in BIOS	49
14 Coin-Cell Battery		51
	Prerequisites	51
	Removing the Coin-Cell Battery	51
	Replacing the Coin-Cell Battery	52
	Postrequisites	52
15 Keyboard		53
	Prerequisites	53
	Removing the Keyboard	53
	Replacing the Keyboard	55
	Postrequisites	55





16 Display Assembly	57
Prerequisites	57
Removing the Display Assembly	57
Replacing the Display Assembly	60
Postrequisites	61
17 Palm-Rest Assembly	63
Prerequisites	63
Removing the Palm-Rest Assembly	63
Replacing the Palm-Rest Assembly	64
Postrequisites	64



1

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 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.
- 5 Press and hold the power button, while the computer is unplugged, to ground the system board.

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.

 **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.

 **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.

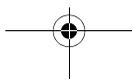


-  **CAUTION:** Only a certified service technician is authorized to remove the computer cover and access any of the components inside the computer. See the safety instructions for complete information about safety precautions, working inside your computer, and protecting against electrostatic discharge.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

Recommended Tools

The procedures in this document may require the following tools:

- Torx 5 screwdriver
- Phillips screwdriver
- Plastic scribe





2

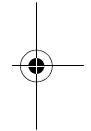
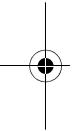
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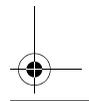
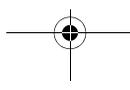
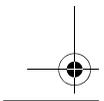
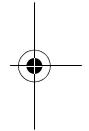
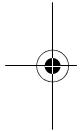
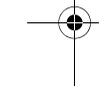
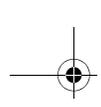
After you complete replacement procedures, ensure the following:

- 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.





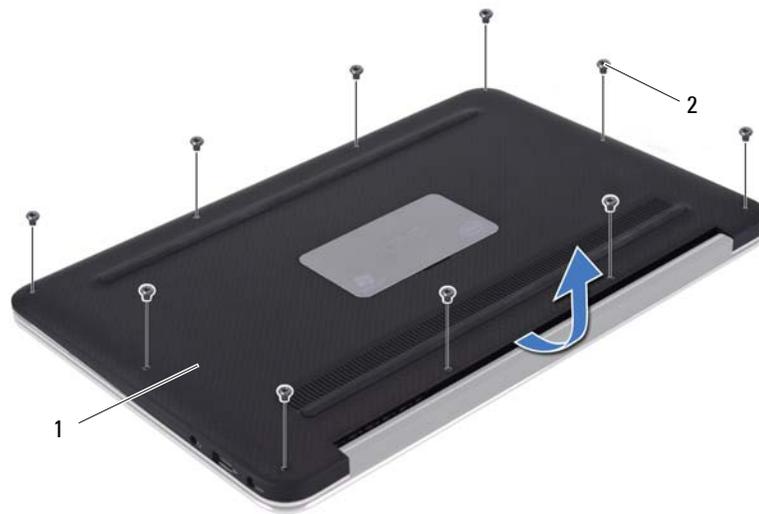
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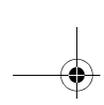
Base Cover

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

Removing the Base Cover

- 1 Close the display and turn the computer over.
- 2 Using the Torx 5 screwdriver, remove the ten screws that secure the base cover to the palm-rest assembly.
- 3 Using your fingertips, lift the base cover starting from the back of your computer.
- 4 Remove the base cover off the palm-rest assembly.

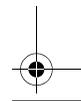
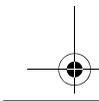
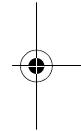
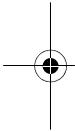




- 1 base cover
- 2 screws (10)

Replacing the Base Cover

- 1 Align the base cover with the palm-rest assembly and press the base cover in to place.
- 2 Using the Torx 5 screwdriver, replace the ten screws that secure the base cover to the palm-rest assembly.
- 3 Follow the instructions in "After Working Inside Your Computer" on page 11





4

Power-Light Board

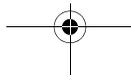
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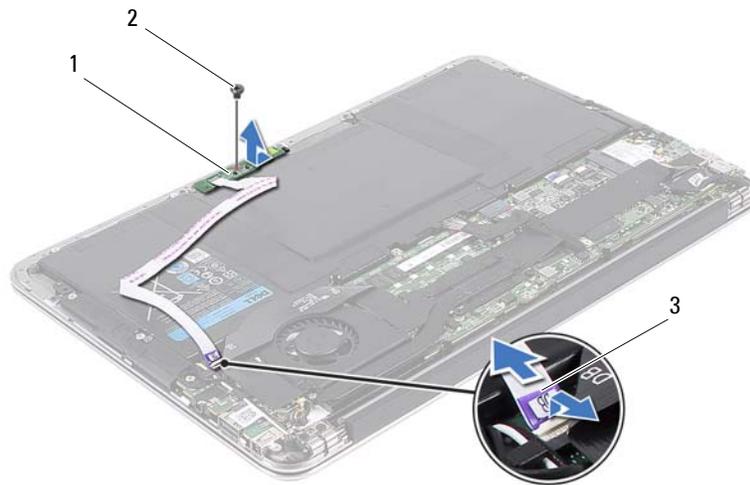
Prerequisites

- 1 Remove the base cover. See "Removing the Base Cover" on page 13

Removing the Power-Light Board

- 1 Lift the connector latch and pull the pull-tab to disconnect the power-light board cable from the connector on the I/O board.
- 2 Remove the screw that secures the power-light board to the palm-rest assembly.
- 3 Lift the power-light board off the palm-rest assembly.





- 1 power-light board
- 2 screw
- 3 power-light board cable

Replacing the Power-Light Board

- 1 Align the screw hole on the power-light board with the screw hole on the palm-rest assembly.
- 2 Replace the screw that secures the power-light board to the palm-rest assembly.
- 3 Slide the power-light board cable into the system-board connector and press down on the connector latch to secure the cable.

Postrequisites

- 1 Replace the base cover. See "Replacing the Base Cover" on page 14
- 2 Follow the instructions in "After Working Inside Your Computer" on page 11



5

Battery

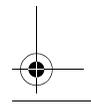
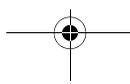
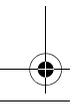
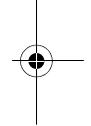
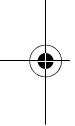
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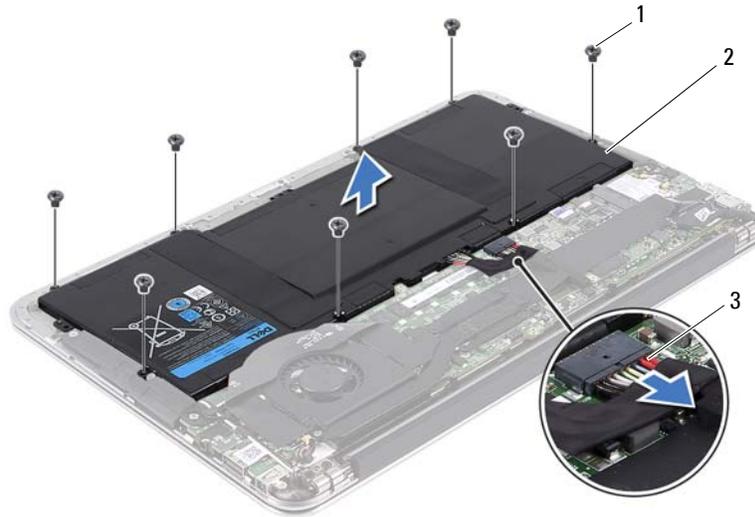
Prerequisites

- 1 Remove the base cover. See "Removing the Base Cover" on page 13
- 2 Remove the power-light board. See "Removing the Power-Light Board" on page 15

Removing the Battery

- 1 Disconnect the battery cable from the system-board connector.
- 2 Remove the eight screws that secure the battery to the palm-rest assembly.
- 3 Lift the battery off the palm-rest assembly.





- 1 screws (8)
- 2 battery
- 3 battery cable

Replacing the Battery

- 1 Align the screw holes on the battery with the screw holes on the palm-rest assembly.
- 2 Replace the eight screws that secure the battery to the palm-rest assembly.
- 3 Connect the battery cable to the system-board connector.

Postrequisites

- 1 Replace the power-light board. See "Replacing the Power-Light Board" on page 16
- 2 Replace the base cover. See "Replacing the Base Cover" on page 14
- 3 Follow the instructions in "After Working Inside Your Computer" on page 11

6

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

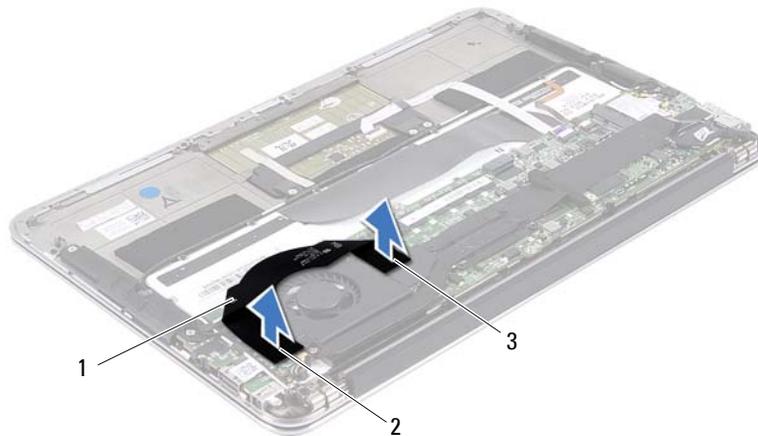
Prerequisites

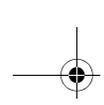
- 1 Remove the base cover. See "Removing the Base Cover" on page 13
- 2 Remove the battery. See "Removing the Battery" on page 17

Removing the Speakers

Left Speaker

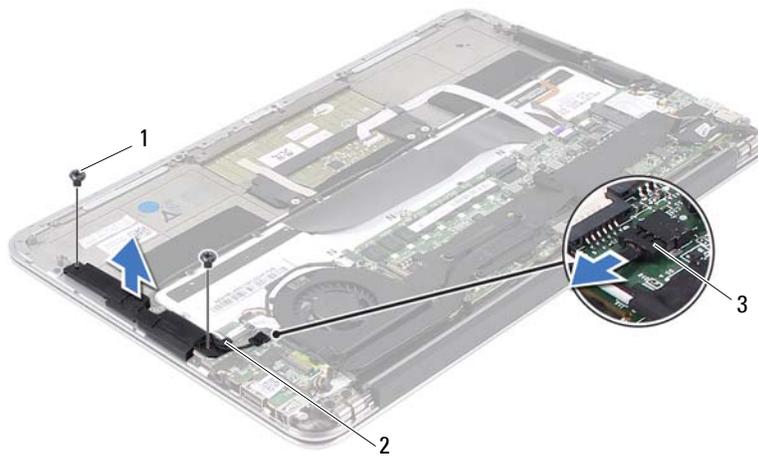
- 1 Disconnect the I/O cable from the I/O board connector and system-board connector.





- 1 I/O cable
- 2 I/O board connector
- 3 system-board connector

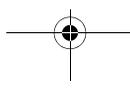
- 2 Disconnect the left-speaker cable from the system-board connector.
- 3 Release the Mini-Card cables from the routing guide on the left speaker.
- 4 Remove the two screws that secure the left speaker to the palm-rest assembly.
- 5 Lift the left speaker from the palm-rest assembly.



- 1 screws (2)
- 2 routing guide
- 3 left-speaker cable

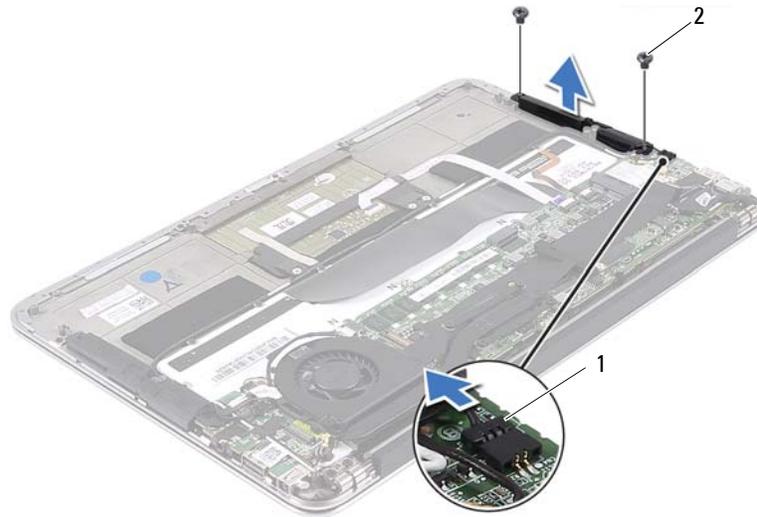
Right Speaker

- 1 Disconnect the right-speaker cable from the system-board connector.
- 2 Remove the two screws that secure the right speaker to the palm-rest assembly.

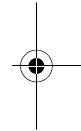
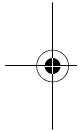




- 3 Lift the right speaker from the palm-rest assembly.



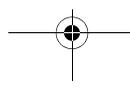
- 1 right-speaker cable 2 screws (2)

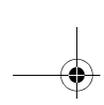


Replacing the Speakers

Left Speaker

- 1 Align the screw holes on the left-speaker with the screw holes on the palm-rest assembly.
- 2 Replace the two screws that secure the left speaker.
- 3 Route the Mini-Card cables through the routing guide on the left speaker.
- 4 Connect the left-speaker cable to the I/O board connector.
- 5 Connect the I/O cable to the I/O board connector and system-board connector.



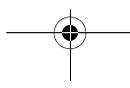
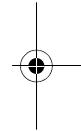
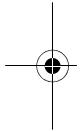


Right Speaker

- 1 Align the screw holes on the right-speaker with the screw holes on the palm-rest assembly.
- 2 Replace the two screws that secure the right speaker.
- 3 Connect the right-speaker cable to the system-board connector.

Postrequisites

- 1 Replace the battery. See "Replacing the Battery" on page 18
- 2 Replace the base cover. See "Replacing the Base Cover" on page 14
- 3 Follow the instructions in "After Working Inside Your Computer" on page 11





7

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

 **NOTE:** Dell does not guarantee compatibility or provide support for Mini-Cards from sources other than Dell.

If you ordered a wireless Mini-Card with your computer, the card is already installed.

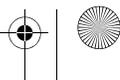
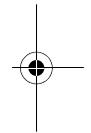
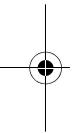
Your computer has one half Mini-Card slot which supports a Wireless Local Area Network (WLAN) + Bluetooth combo card.

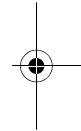
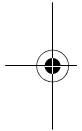
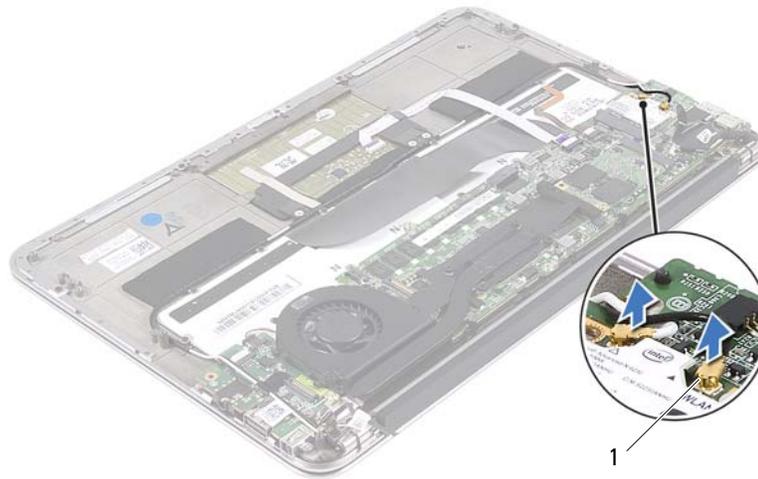
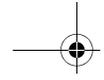
Prerequisites

- 1 Remove the base cover. See "Removing the Base Cover" on page 13
- 2 Remove the battery. See "Removing the Battery" on page 17

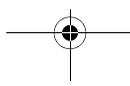
Removing the Mini-Card

- 1 Disconnect the Mini-Card cables from the connectors on the Mini-Card.





- 1 Mini-Card cables (2)
- 2 Remove the screw that secures the Mini-Card to the system board.
- 3 Slide and remove the Mini-Card out of the system-board connector.



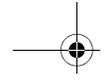


- 1 screw
- 2 Mini-Card
- 3 system-board connector

CAUTION: When the Mini-Card is not in the computer, store it in protective antistatic packaging. For more information, see "Protecting Against Electrostatic Discharge" in the safety information that shipped with your computer.

Replacing the Mini-Card

- 1 Remove the new Mini-Card from its packaging.
 - 2 Align the notch on the Mini-Card with the tab in the system-board connector.
- CAUTION:** Use firm and even pressure to slide the 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 Mini-Card and on the system board, and realign the Mini-Card.
- CAUTION:** To avoid damage to the Mini-Card, never place cables under the Mini-Card.



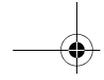
- 3** Insert the Mini-Card connector at a 45-degree angle into the system-board connector.
- 4** Press the other end of the Mini-Card down into the slot on the system board and replace the screw that secures the Mini-Card to the system board.
- 5** Connect the Mini-Card cables to the Mini-Card connectors you are installing.

Connectors on the Mini-Card	Mini-Card Cable Color Scheme
WLAN + 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 18
- 2** Replace the base cover. See "Replacing the Base Cover" on page 14
- 3** Follow the instructions in "After Working Inside Your Computer" on page 11.





8

Solid-State 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. 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 solid-state drive while the computer is On or in Sleep state.

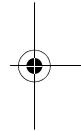
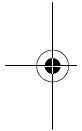
 **CAUTION:** Solid-state drives are extremely fragile. Exercise care when handling the solid-state drive.

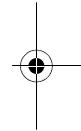
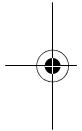
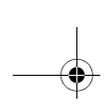
Prerequisites

- 1 Remove the base cover. See "Removing the Base Cover" on page 13
- 2 Remove the battery. See "Removing the Battery" on page 17

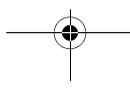
Removing the Solid-State Drive

- 1 Peel the tape that is adhered over the solid-state drive.





- 1 tape
- 2 Remove the screw that secures the solid-state drive to the system board.
- 3 Slide and remove the solid-state drive out of the system-board connector.





- 1 screw
- 2 system-board connector
- 3 solid-state drive

Replacing the Solid-State Drive

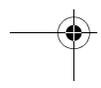
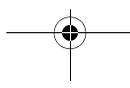
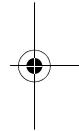
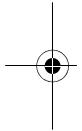
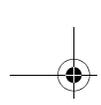
- 1 Align the notch on the solid-state drive with the tab in the system-board connector.

CAUTION: Use firm and even pressure to slide the solid-state drive into place. If you use excessive force, you may damage the connector.

- 2 Insert the solid-state drive connector at a 45-degree angle into the system-board connector.
- 3 Replace the screw that secure the solid-state drive to the system board.
- 4 Adhere the tape over the solid-state drive.

Postrequisites

- 1 Replace the battery. See "Replacing the Battery" on page 18
- 2 Replace the base cover. See "Replacing the Base Cover" on page 14
- 3 Follow the instructions in "After Working Inside Your Computer" on page 11.



9

Heat Sink

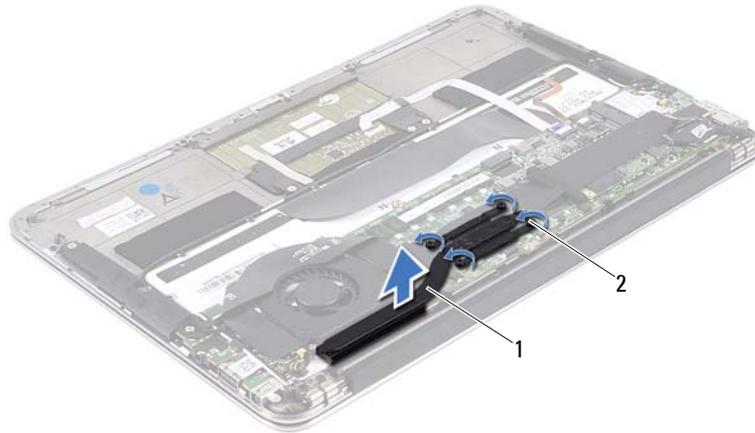
⚠ WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

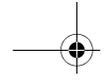
Prerequisites

- 1 Remove the base cover. See "Removing the Base Cover" on page 13
- 2 Remove the battery. See "Removing the Battery" on page 17

Removing the Heat Sink

- 1 In sequential order (indicated on the heat sink), remove the four screws that secure the heat sink to the system board.
- 2 Lift the heat sink away from the system board.





- 1 heat sink
- 2 screws (4)

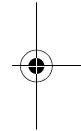
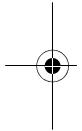
Replacing the Heat Sink

 **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 Clean the thermal grease from the bottom of the heat sink and reapply it.
- 2 Align the screw holes on the heat sink with the screw holes on the system board.
- 3 In sequential order (indicated on the heat sink), replace the four screws that secure the heat sink to the system board.

Postrequisites

- 1 Replace the battery. See "Replacing the Battery" on page 18
- 2 Replace the base cover. See "Replacing the Base Cover" on page 14
- 3 Follow the instructions in "After Working Inside Your Computer" on page 11.



10

Fan

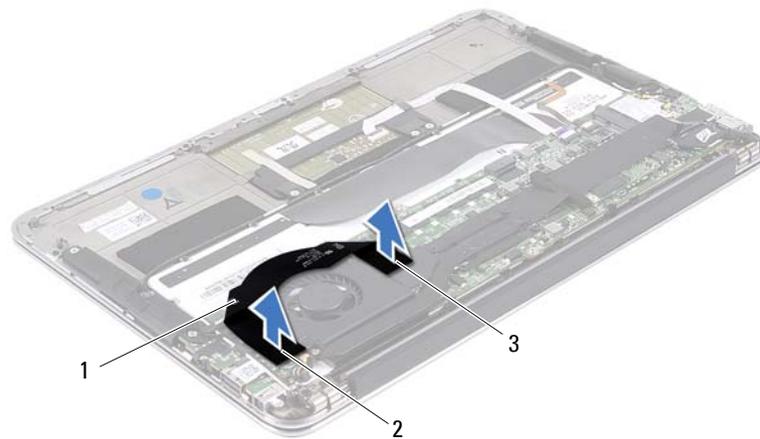
⚠ WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

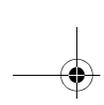
Prerequisites

- 1 Remove the base cover. See "Removing the Base Cover" on page 13
- 2 Remove the battery. See "Removing the Battery" on page 17

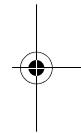
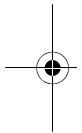
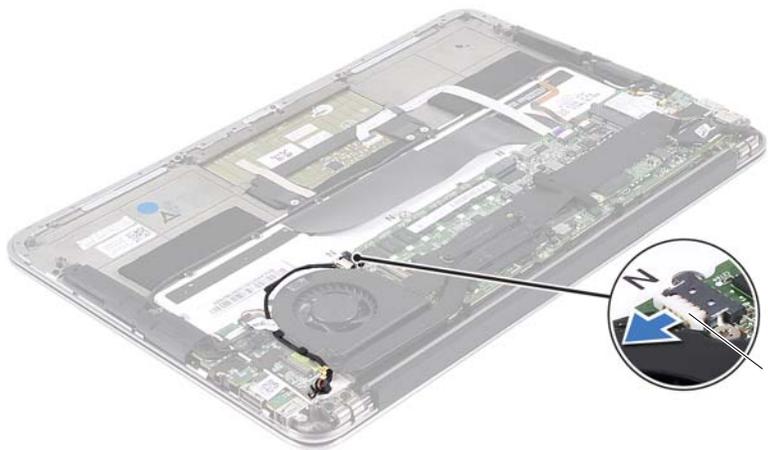
Removing the Fan

- 1 Disconnect the I/O cable from the I/O board connector and system-board connector.

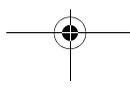


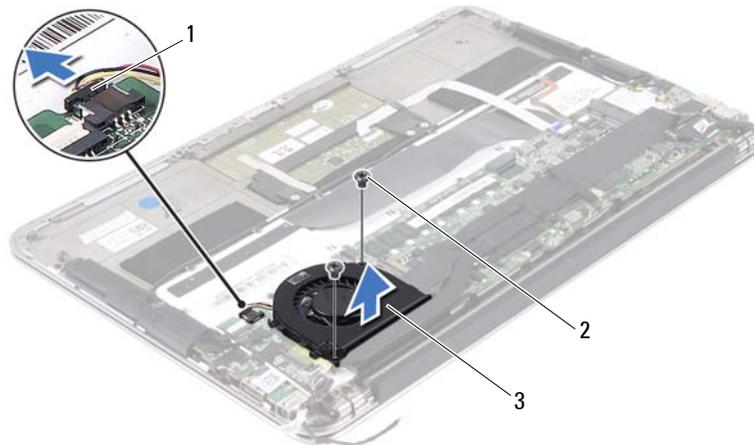
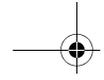


- 1 I/O cable
 - 2 I/O board connector
 - 3 system-board connector
- 2 Disconnect the power-adaptor connector cable from the system-board connector.

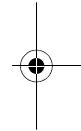
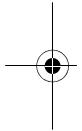


- 1 power-adaptor connector
- 3 Disconnect the fan cable from the I/O board connector.
- 4 Remove the two screws that secure the fan to the palm-rest assembly.
- 5 Lift the fan away from the palm-rest assembly.





- 1 fan cable
- 2 screws (2)
- 3 fan



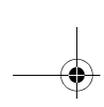
Replacing the Fan

- 1 Align the screw holes on the fan with the screw holes on the palm-rest assembly.
- 2 Replace the two screws that secure the fan to palm-rest assembly.
- 3 Connect the fan cable to the I/O board connector.
- 4 Connect the power-adaptor connector cable to the system-board connector.
- 5 Connect the I/O cable to the I/O board connector and system-board connector.

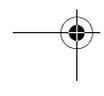
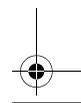
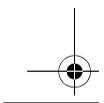
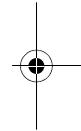
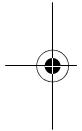
Postrequisites

- 1 Replace the battery. See "Replacing the Battery" on page 18
- 2 Replace the base cover. See "Replacing the Base Cover" on page 14





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



11

Power-Adapter Connector

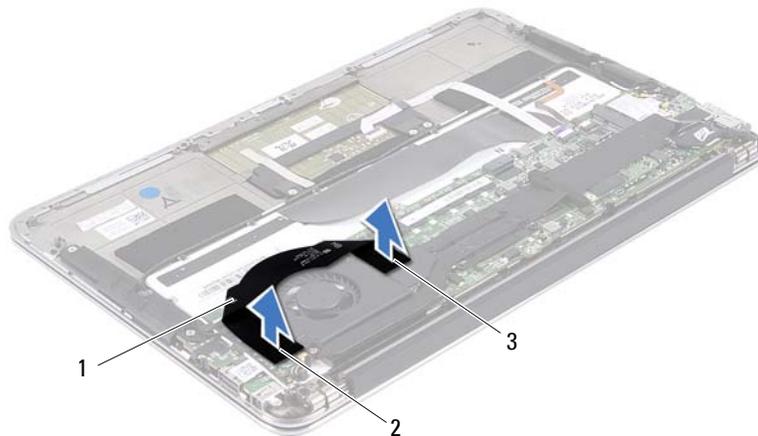
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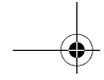
Prerequisites

- 1 Remove the base cover. See "Removing the Base Cover" on page 13
- 2 Remove the battery. See "Removing the Battery" on page 17
- 3 Remove the left speaker. See "Removing the Speakers" on page 19

Removing the Power-Adapter Connector

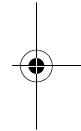
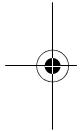
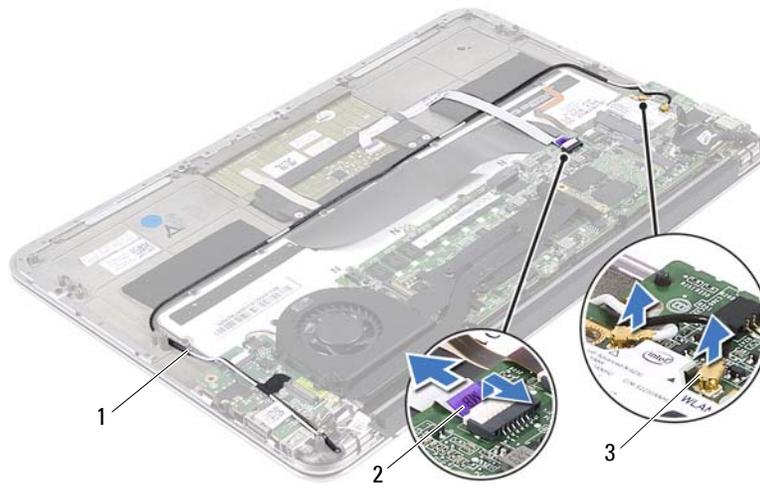
- 1 Disconnect the I/O cable from the I/O board connector and system-board connector.





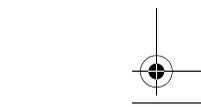
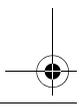
- 1 I/O cable
- 2 I/O board connector
- 3 system-board connector

- 2 Disconnect the Mini-Card cables from the connectors on the Mini-Card.
- 3 Lift the connector latch and pull the pull-tab to disconnect the touchpad cable from the connector on the system board.
- 4 Release the Mini-Card cables from the routing guides.



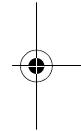
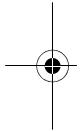
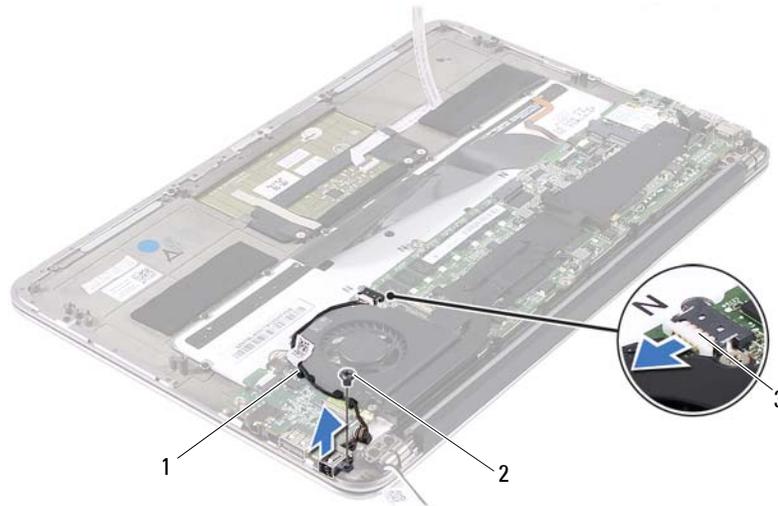
- 1 routing guides
- 2 touchpad cable
- 3 Mini-Card cables (2)

- 5 Disconnect the power-adaptor connector cable from the system-board connector.
- 6 Release the power-adaptor connector cable from the routing guides.





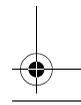
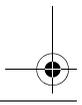
- 7** Remove the screw that secures the power-adapter connector to the palm-rest assembly.
- 8** Lift the power-adapter connector away from the palm-rest assembly.

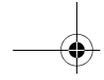


- 1 routing guides 2 screw
3 power-cord connector

Replacing the Power-Adapter Connector

- 1** Route the Mini-Card cables through the routing guides.
- 2** Slide the touchpad cable into the system-board connector and press down on the connector latch to secure the keyboard cable.
- 3** Connect the Mini-Card cables to the connectors on the Mini-Card.





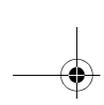
Connectors on the Mini-Card	Mini-Card Cable Color Scheme
WLAN + Bluetooth (2 cables)	
Main WLAN + Bluetooth (white triangle)	white
Auxiliary WLAN + Bluetooth (black triangle)	black

- 4 Align the screw hole on the power-adapter connector with the screw hole on the palm-rest assembly.
- 5 Route the power-adapter connector cable through the routing guides.
- 6 Connect the power-adapter connector cable to the system-board connector.
- 7 Replace the screw that secures the power-adapter connector to the palm-rest assembly.

Postrequisites

- 1 Replace the right speaker. See "Replacing the Speakers" on page 21
- 2 Replace the battery. See "Replacing the Battery" on page 18
- 3 Replace the base cover. See "Replacing the Base Cover" on page 14
- 4 Follow the instructions in "After Working Inside Your Computer" on page 11.





12

I/O Board

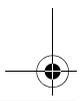
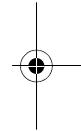
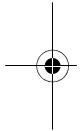
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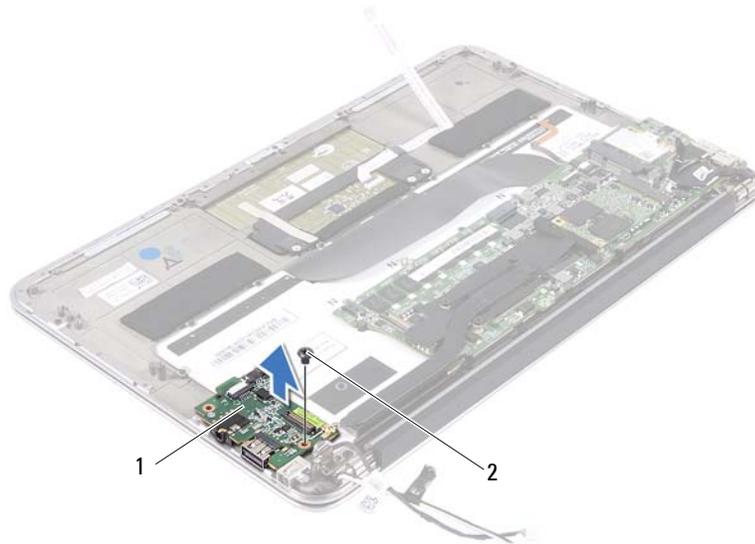
Prerequisites

- 1 Remove the base cover. See "Removing the Base Cover" on page 13
- 2 Remove the battery. See "Removing the Battery" on page 17
- 3 Remove the right speaker. See "Removing the Speakers" on page 19
- 4 Remove the fan. See "Removing the Fan" on page 33
- 5 Remove the power-adaptor connector. See "Removing the Power-Adapter Connector" on page 37

Removing the I/O Board

- 1 Remove the screw that secures the I/O board to the palm-rest assembly.
- 2 Lift the I/O board away from the palm-rest assembly.





- 1 I/O board 2 screw

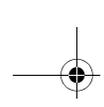
Replacing the I/O Board

- 1 Align the screw holes on the I/O board with the screw holes on the palm-rest assembly.
- 2 Replace the screw that secure the I/O board to the palm-rest assembly.

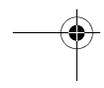
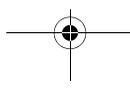
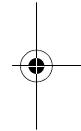
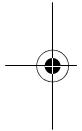
Postrequisites

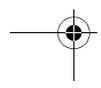
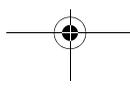
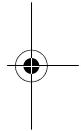
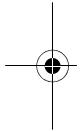
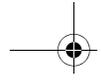
- 1 Replace the power-adaptor connector. See "Replacing the Power-Adapter Connector" on page 39
- 2 Replace the fan. See "Replacing the Fan" on page 35
- 3 Replace the right speaker. See "Replacing the Speakers" on page 21
- 4 Replace the battery. See "Replacing the Battery" on page 18
- 5 Replace the base cover. See "Replacing the Base Cover" on page 14





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





13

System Board

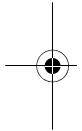
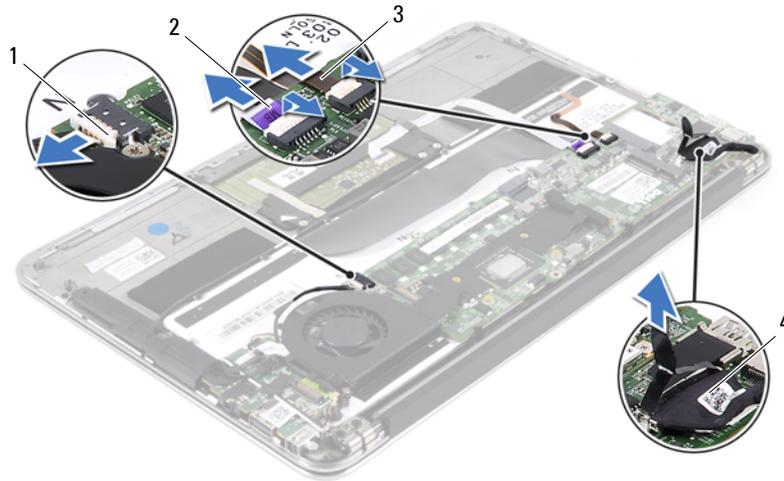
 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

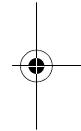
- 1 Remove the base cover. See "Removing the Base Cover" on page 13
- 2 Remove the battery. See "Removing the Battery" on page 17
- 3 Remove the right speaker. See "Removing the Speakers" on page 19
- 4 Remove the Mini-Card. See "Removing the Mini-Card" on page 23
- 5 Remove the hard drive. See "Removing the Solid-State Drive" on page 27
- 6 Remove the heat sink. See "Removing the Heat Sink" on page 31
- 7 Remove the fan. See "Removing the Fan" on page 33

Removing the System Board

-  **NOTE:** Your computer's service tag is stored in the system board. You must enter the service tag in the BIOS after you replace the system-board assembly.
-  **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 assembly.
- 1 Disconnect the power adapter connector cable and display cable from the connectors on the system board.
 - 2 Lift the connector latch and pull the pull-tab to disconnect the touchpad cable and keyboard backlight cable from the connectors on the system board.

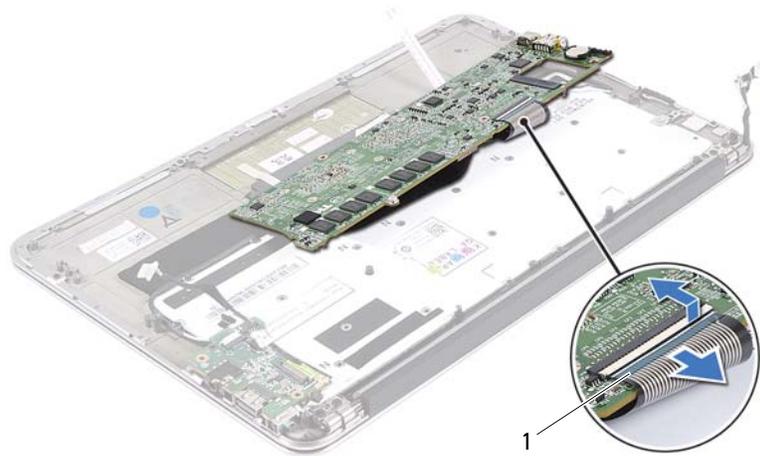


- | | | | |
|---|----------------------------------|---|----------------|
| 1 | power-adapter
connector cable | 2 | touchpad cable |
| 3 | keyboard backlight
cable | 4 | display cable |



3 Remove the four screws that secure the system board to the palm-rest assembly.





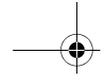
- 1 keyboard cable

Replacing the System Board

- 1 Slide the keyboard cable into the system-board connector and press down on the connector latch to secure the keyboard cable to the system-board connector.
- 2 Align the screw holes on the system board with the screw holes on the palm-rest assembly.
- 3 Replace the four screws that secure the system board to the palm-rest assembly.
- 4 Connect the display cable and the power-adaptor connector cable to the system board connectors.
- 5 Slide the touchpad cable and keyboard backlight cable into the system-board connectors and press down on the release latch to secure the cables.

Postrequisites

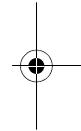
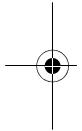
- 1 Replace the fan. See "Replacing the Fan" on page 35

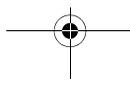
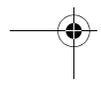
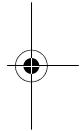
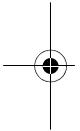
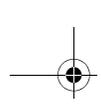


- 2 Replace the heat sink. See "Replacing the Heat Sink" on page 32
- 3 Replace the hard drive. See "Replacing the Solid-State Drive" on page 29
- 4 Replace the Mini-Card. See "Replacing the Mini-Card" on page 25)
- 5 Replace the right speaker. See "Replacing the Speakers" on page 21
- 6 Replace the battery. See "Replacing the Battery" on page 18
- 7 Replace the base cover. See "Replacing the Base Cover" on page 14
- 8 Follow the instructions in "After Working Inside Your Computer" on page 11.

Entering the Service Tag in 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 Setting** field.







14

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. 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.

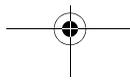
Prerequisites

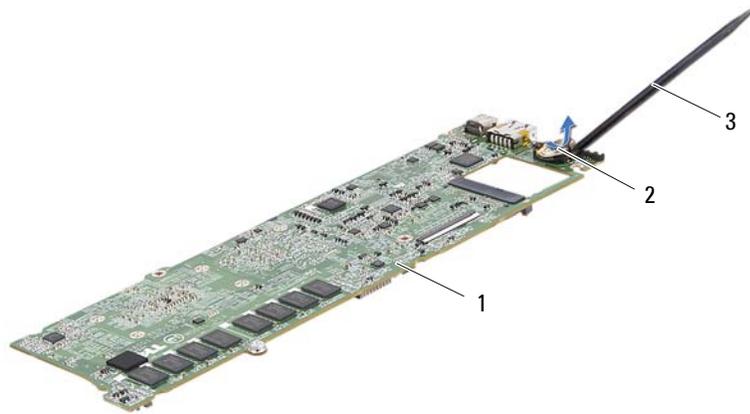
- 1 Remove the base cover. See "Removing the Base Cover" on page 13.
- 2 Remove the battery. See "Removing the Battery" on page 17.
- 3 Remove the Mini-Card. See "Removing the Mini-Card" on page 23.
- 4 Remove the hard drive. See "Removing the Solid-State Drive" on page 27.
- 5 Remove the heat sink. See "Removing the Heat Sink" on page 31.
- 6 Remove the fan. See "Removing the Fan" on page 33.
- 7 Remove the system board. See "Removing the System Board" on page 45.

Removing the Coin-Cell Battery

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

 **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.





- 1 system board
- 2 coin-cell battery
- 3 plastic scribe

Replacing the Coin-Cell Battery

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

Postrequisites

- 1 Replace the system board. See "Replacing the System Board" on page 48
- 2 Replace the fan. See "Replacing the Fan" on page 35
- 3 Replace the heat sink. See "Replacing the Heat Sink" on page 32
- 4 Replace the hard drive. See "Replacing the Solid-State Drive" on page 29
- 5 Replace the Mini-Card. See "Replacing the Mini-Card" on page 25
- 6 Replace the battery. See "Replacing the Battery" on page 18
- 7 Replace the base cover. See "Replacing the Base Cover" on page 14
- 8 Follow the instructions in "After Working Inside Your Computer" on page 11.

15

Keyboard

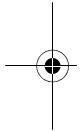
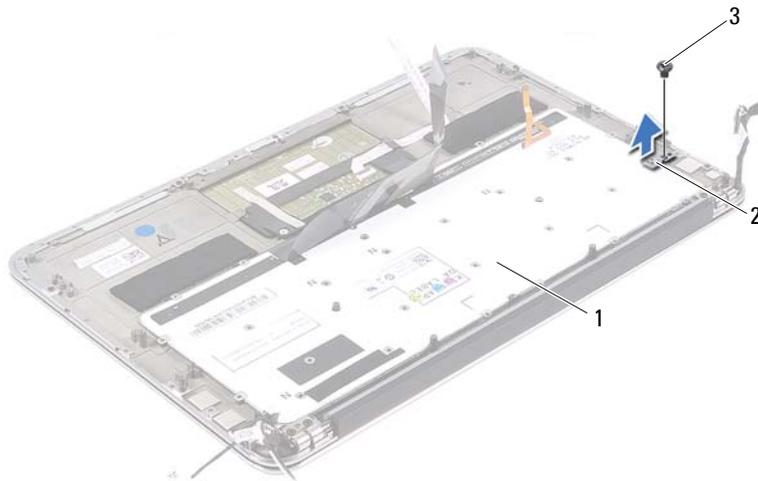
 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

- 1 Remove the base cover. See "Removing the Base Cover" on page 13
- 2 Remove the battery. See "Removing the Battery" on page 17
- 3 Remove the speakers. See "Removing the Speakers" on page 19
- 4 Remove the Mini-Card. See "Removing the Mini-Card" on page 23
- 5 Remove the solid-state drive. See "Removing the Solid-State Drive" on page 27
- 6 Remove the heat sink. See "Removing the Heat Sink" on page 31
- 7 Remove the fan. See "Removing the Fan" on page 33
- 8 Remove the power-adaptor connector. See "Removing the Power-Adapter Connector" on page 37
- 9 Remove the I/O board. See "Removing the I/O Board" on page 41
- 10 Remove the system board. See "Removing the System Board" on page 45

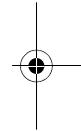
Removing the Keyboard

- 1 Remove the screw that secures the Mini-Card clamp.
- 2 Remove the Mini-Card clamp off the palm-rest assembly.

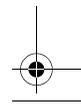
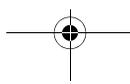
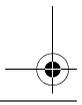


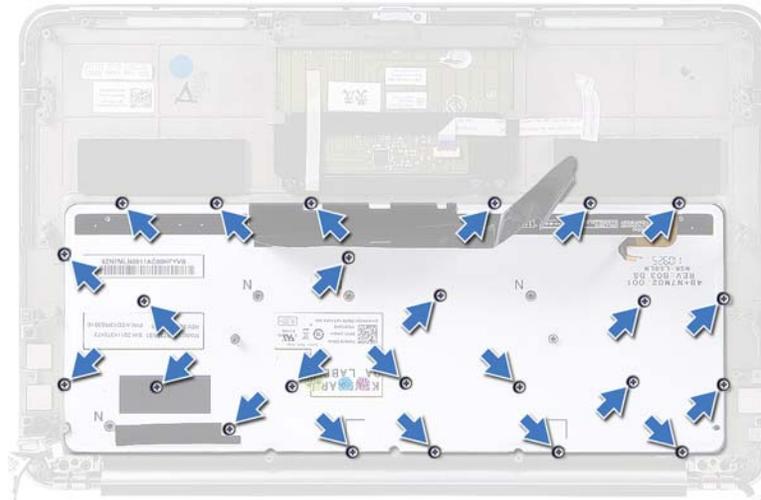
1 keyboard
3 screw

2 Mini-Card clamp



- 3 Remove the 24 screws that secure the keyboard to the palm-rest assembly.
- 4 Lift the keyboard away from the palm-rest assembly.



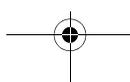
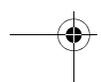
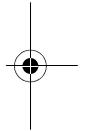
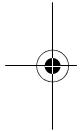
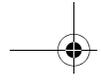


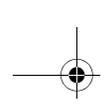
Replacing the Keyboard

- 1 Align the screw holes on the keyboard with the screw holes on the palm-rest assembly.
- 2 Replace the 24 screws that secure the keyboard bracket to the palm-rest assembly.
- 3 Align the screw hole on the Mini-Card clamp with the screw hole on the palm-rest assembly.
- 4 Replace the screw that secures the Mini-Card clamp to the palm-rest assembly.

Postrequisites

- 1 Replace the system board. See "Replacing the System Board" on page 48
- 2 Follow the instructions in "After Working Inside Your Computer" on page 11.





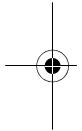
16

Display Assembly

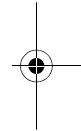
 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

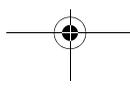
- 1 Remove the base cover. See "Removing the Base Cover" on page 13
- 2 Remove the battery. See "Removing the Battery" on page 17
- 3 Remove the speakers. See "Removing the Speakers" on page 19
- 4 Remove the power-adaptor connector. See "Removing the Power-Adapter Connector" on page 37

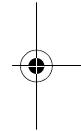
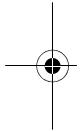
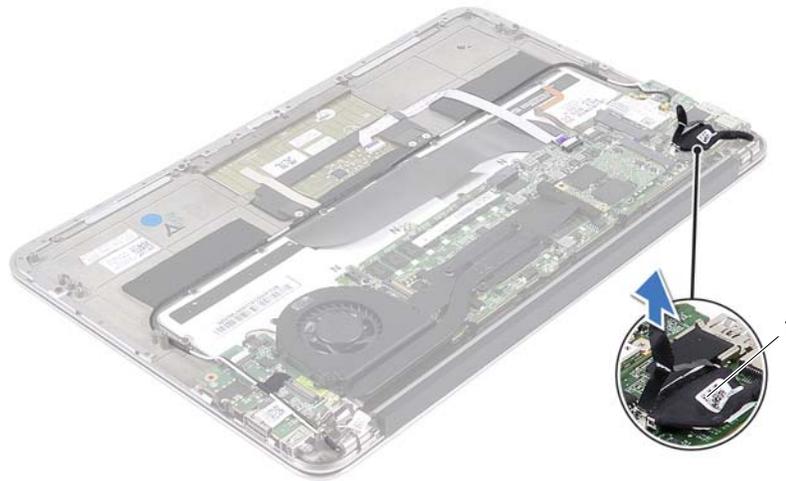
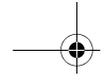


Removing the Display Assembly



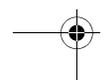
- 1 Disconnect the display cable from the system-board connector.

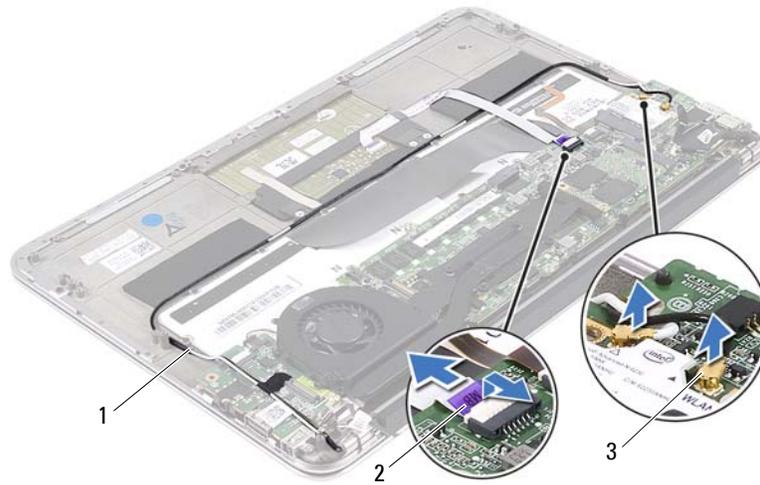




1 display cable

- 2 Disconnect the Mini-Card cables from the connectors on the Mini-Card.
- 3 Lift the connector latch and pull the pull-tab to disconnect the touchpad cable from the connector on the system board.
- 4 Release the Mini-Card cables from the routing guides.

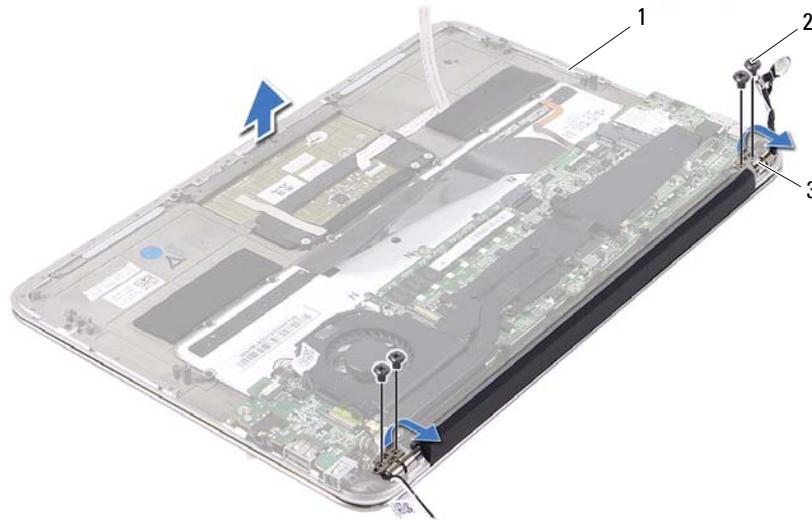




- 1 routing guides
- 2 touchpad cable
- 3 Mini-Card cables (2)

- 5 Remove the four screws (two on each side) that secure the display assembly to the palm-rest assembly.
- 6 Gently lift the palm-rest assembly at a 90-degree angle and then release the palm-rest assembly off the display assembly.





- 1 palm-rest assembly
- 2 screws (4)
- 3 display hinges (2)

Replacing the Display Assembly

- 1 Slide and place the palm-rest assembly over the display assembly.
- 2 Press down on the display hinges and ensure that the screw holes on the display hinges align with the screw holes on the palm-rest assembly.
- 3 Replace the four screws that secure the display assembly to the palm-rest assembly.
- 4 Route the Mini-Card cables through the routing guides.
- 5 Slide the touchpad cable into the system-board connector and press down on the connector latch to secure the keyboard cable.
- 6 Connect the Mini-Card cables to the connectors on the Mini-Card.



Connectors on the Mini-Card	Mini-Card Cable Color Scheme
-----------------------------	------------------------------

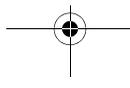
WLAN + Bluetooth (2 cables)

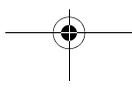
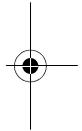
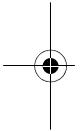
Main WLAN + Bluetooth (white triangle) white

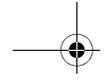
Auxiliary WLAN + Bluetooth (black triangle) black

Postrequisites

- 1 Replace the power-adaptor connector. See "Replacing the Power-Light Board" on page 16
- 2 Replace the speakers. See "Disconnect the right-speaker cable from the system-board connector." on page 20
- 3 Replace the battery. See "Replacing the Battery" on page 18
- 4 Replace the base cover. See "Replacing the Base Cover" on page 14
- 5 Follow the instructions in "After Working Inside Your Computer" on page 11.







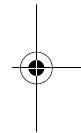
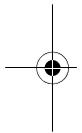
17

Palm-Rest 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. 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 13
- 2 Remove the battery. See "Removing the Battery" on page 17
- 3 Remove the speakers. See "Removing the Speakers" on page 19
- 4 Remove the fan. See "Removing the Fan" on page 33
- 5 Remove the power-adaptor connector. See "Removing the Power-Adapter Connector" on page 37
- 6 Remove the system board. See "Removing the System Board" on page 45
- 7 Remove the I/O board. See "Removing the I/O Board" on page 41
- 8 Remove the keyboard. See "Removing the Keyboard" on page 53



Removing the Palm-Rest Assembly

- 1 Remove the four screws (two on each side) that secure the display assembly to the palm-rest assembly.
- 2 Gently lift the palm-rest assembly (as shown in the image) and then release the palm-rest assembly off the display assembly.

 **CAUTION:** Carefully separate the palm-rest assembly from the display assembly to avoid damage to the display assembly.





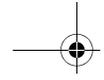
- 1 palm-rest assembly
- 2 screws (4)
- 3 display hinges (2)

Replacing the Palm-Rest Assembly

- 1 Slide and place the palm-rest assembly over the display assembly.
- 2 Press down on the display hinges and ensure the screw holes in the display hinges align with the screw holes on the palm-rest assembly
- 3 Replace the four screws (two on each side) that secure the palm-rest assembly to the display assembly.

Postrequisites

- 1 Replace the keyboard. See "Replacing the Keyboard" on page 55
- 2 Replace the system board. See "Replacing the System Board" on page 48
- 3 Replace I/O board. See "Replacing the I/O Board" on page 42
- 4 Replace the power-adaptor connector. See "Replacing the Power-Adapter Connector" on page 39



- 5** Replace the fan. See "Replacing the Fan" on page 35
- 6** Replace the speakers. See "Disconnect the right-speaker cable from the system-board connector." on page 20
- 7** Replace the battery. See "Replacing the Battery" on page 18
- 8** Replace the base cover. See "Replacing the Base Cover" on page 14
- 9** Follow the instructions in "After Working Inside Your Computer" on page 11.

