

Dell Inspiron 13z-N311z

# Owner's Manual

**Regulatory Model: P17S001**

**Regulatory Type:P17S**



# 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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**Regulatory model: P17S001**  
**Regulatory type: P17S**

**2011-07 Rev. A00**

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# Before You Begin

This manual provides instructions for removing and installing components in your computer. Unless otherwise noted, each procedure assumes that the following conditions exist:


- You have performed the steps in "Turning Off Your Computer" on page 9 and "Before Working Inside Your Computer" on page 10.
- You have read the safety information that shipped with your computer.
- A component can be replaced or—if purchased separately—installed by performing the removal procedure in the reverse order.


## Recommended Tools

The procedures in this document may require the following tools:

- Phillips screwdriver
- Small flat-blade screwdriver
- Plastic scribe
- BIOS executable update program available at [support.dell.com](http://support.dell.com)


## Turning Off Your Computer


 **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 then click **Shut Down**. The computer turns off after the operating system shutdown process is complete.
- 3 Ensure that the computer is turned off. If your computer did not automatically turn off when you shut down the operating system, press and hold the power button until the computer turns off.


# Before Working Inside Your Computer


Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your own 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](http://dell.com/regulatory_compliance).

 **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

 **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).

 **CAUTION:** Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component by its edges, not by its pins.


 **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; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

 **CAUTION:** To avoid damaging the computer, perform the following steps before you begin working inside the computer.

- 1 Ensure that the work surface is flat and clean to prevent the computer cover from being scratched.
- 2 Turn off your computer and all attached devices. See "Turning Off Your Computer" on page 9.

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





- 3 Disconnect all telephone or network cables from the computer.
- 4 Press and eject any installed cards from the 8-in-1 Media Card Reader.
- 5 Disconnect your computer and all attached devices from their electrical outlets.
- 6 Disconnect all attached devices from your computer.

 **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

- 7** Remove the battery. See "Removing the Battery" on page 13.
- 8** Turn the computer top-side up, open the computer, and press the power button to ground the system board.



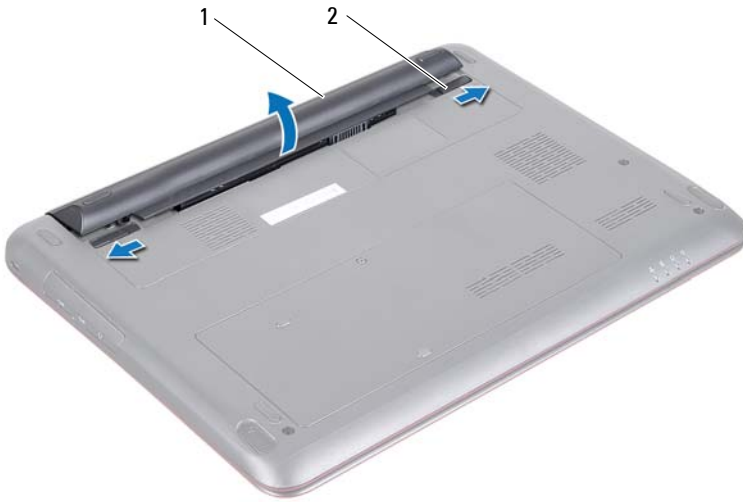
# Battery

-  **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](http://dell.com/regulatory_compliance).
-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

## Removing the Battery

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Turn off the computer and turn it over.
- 3 Slide both the battery release latches to the unlock position. The battery pops out of the battery bay.
- 4 Lift the battery out of the battery bay.

After the battery is removed, the left battery latch must be in the locked position.






1 battery

2 battery release latches (2)

## Replacing the Battery

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Place the battery in the battery bay and press down until it clicks into place.
- 3 Ensure that the two battery release latches are in locked position.

## Module Cover

-  **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](http://dell.com/regulatory_compliance).
-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).

## Removing the Module Cover

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the battery. See "Removing the Battery" on page 13.
- 3 Loosen the captive screw that secures the module cover to the computer base.
- 4 Lift the module cover off the computer base.



1 screw





2 module cover

## Replacing the Module Cover

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Align the tabs on the module cover into the slots on the computer base and gently snap the module cover into place.
- 3 Tighten the captive screw that secures the module cover to the computer base.
- 4 Replace the battery. See "Replacing the Battery" on page 14.



## Memory Module(s)

-  **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](http://dell.com/regulatory_compliance).
-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

## Upgrading System Memory


Your computer has two user-accessible SODIMM sockets, labeled DIMM A and DIMM B, that can be accessed from the bottom of the computer.

You can increase your computer memory by installing memory modules on the system board. For information on the memory supported by your computer, see the *Comprehensive Specifications* for your computer model at [support.dell.com/manuals](http://support.dell.com/manuals).

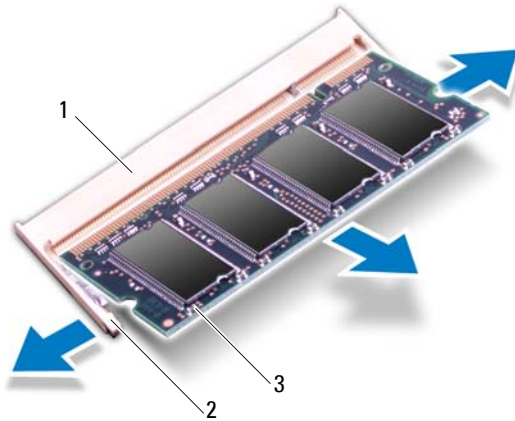


**NOTE:** Memory modules purchased from Dell are covered under your computer warranty.

## Removing the Memory Module(s)

- 1 Follow the instructions in "Before You Begin" on page 9.
  - 2 Remove the battery. See "Removing the Battery" on page 13.
  - 3 Remove the module cover. See "Removing the Module Cover" on page 15.
-  **CAUTION:** To prevent damage to the memory module connector, do not use tools to spread the memory module securing clips.
- 4 Use your fingertips to carefully spread apart the securing clips on each end of the memory module connector until the memory module pops up.

- 5 Remove the memory module from the memory-module connector.



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

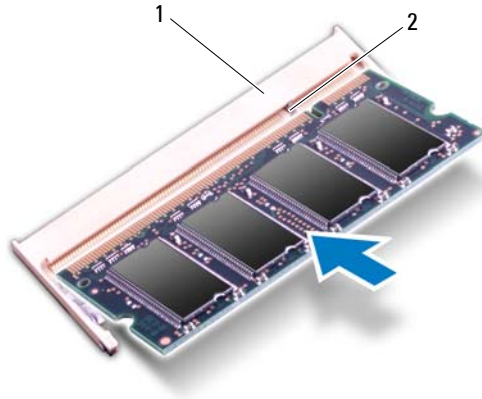
## Replacing the Memory Module(s)

**CAUTION:** If you need to install memory modules in two connectors, install a memory module in the connector labeled *DIMM A* before you install a memory module in the connector labeled *DIMM B*.

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Align the notch on the memory module with the tab in the memory module connector.
- 3 Slide the memory module firmly into the memory-module connector at a 45-degree angle, and press the memory module down on both sides 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.




1 tab

2 notch

- 4 Replace the module cover. See "Replacing the Module Cover" on page 16.
- 5 Replace the battery as per the instructions in "Replacing the Battery" on page 14 or connect the AC adapter to your computer and an electrical outlet.
- 6 Turn on the computer.










As the computer boots, it detects the memory module(s) and automatically updates the system configuration information.

To confirm the amount of memory installed in the computer:

Click Start  → Control Panel → System and Security → System.



# Hard-Drive Assembly

-  **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](http://dell.com/regulatory_compliance).
-  **WARNING:** If you remove the hard drive from the computer when the drive is hot, *do not touch* the metal housing of the hard drive.
-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To prevent data loss, turn off your computer (see "Turning Off Your Computer" on page 9) before removing the hard drive. Do not remove the hard drive while the computer is On or in Sleep state.
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.
-  **CAUTION:** Hard drives are extremely fragile. Exercise care when handling the hard drive.
-  **NOTE:** Dell does not guarantee compatibility or provide support for hard drives from sources other than Dell.
-  **NOTE:** If you are installing a hard drive from a source other than Dell, you must install an operating system, drivers, and utilities on the new hard drive. See *Me and My Dell*.

## Removing the Hard-Drive Assembly

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the battery. See "Removing the Battery" on page 13.
- 3 Remove the module cover. See "Removing the Module Cover" on page 15.
- 4 Remove the screw that secures the hard-drive assembly to the computer base.

- 5 To avoid damage to the hard drive, gently slide the hard-drive bracket away from the hard-drive slot.
- 6 Lift the hard-drive assembly off the computer base.



1 screw

2 hard-drive assembly

- 7 Remove the two screws that secure the hard-drive bracket to the hard drive.
- 8 Lift the hard drive out of the hard-drive bracket.



- 1 screws (2)
- 2 hard-drive bracket
- 3 hard drive

## Replacing the Hard-Drive Assembly

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the hard drive from its packaging. Save the original packaging for storing or shipping the hard drive.
- 3 Align the screw holes on the hard-drive bracket with the screw holes on the hard drive.
- 4 Replace the two screws that secure the hard-drive bracket to the hard drive.
- 5 Place the hard-drive assembly in the computer base.
- 6 Slide the hard-drive assembly into the connector on the system board.
- 7 Replace the screw that secures the hard-drive assembly to the computer base.
- 8 Replace the module cover. See "Replacing the Module Cover" on page 16.
- 9 Replace the battery. See "Replacing the Battery" on page 14.









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

- 10** Install the operating system for your computer, as needed. See the *Restoring Your Operating System* section in the *Me and My Dell* document.
- 11** Install the drivers and utilities for your computer, as needed. For more information, see the *Me and My Dell* document.



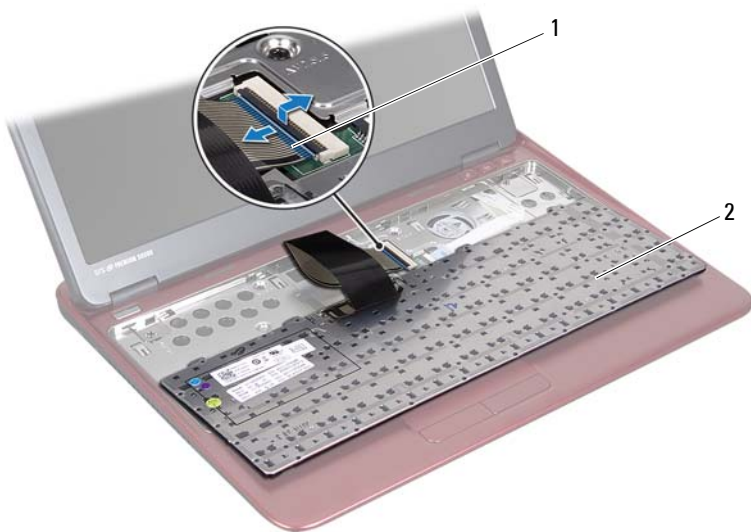
# Keyboard

-  **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](http://dell.com/regulatory_compliance).
-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.
-  **CAUTION:** The keycaps on the keyboard are fragile, easily dislodged, and time-consuming to replace. Be careful when removing and handling the keyboard.
-  **CAUTION:** Be extremely careful when removing and handling the keyboard. Failure to do so could result in scratching the display panel.

## Removing the Keyboard

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the battery. See "Removing the Battery" on page 13.
- 3 Turn the computer over and open the display as far as possible.
- 4 Gently slide a plastic scribe between the keyboard and palm-rest assembly.
- 5 Pry and lift the keyboard to disengage it from the tabs on the palm-rest assembly.





1 keyboard-cable connector





2 keyboard

## Replacing the Keyboard

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Slide the keyboard cable into the connector on the system board and press down on the connector latch to secure the keyboard cable.
- 3 Align the tabs at the bottom of the keyboard with the slots on the palm-rest assembly and lower the keyboard into place.
- 4 Gently press around the edges of the keyboard to secure the keyboard under the tabs on the palm-rest assembly.
- 5 Replace the battery. See "Replacing the Battery" on page 14.



## Palm-Rest Assembly

-  **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](http://dell.com/regulatory_compliance).
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

### Removing the Palm-Rest Assembly

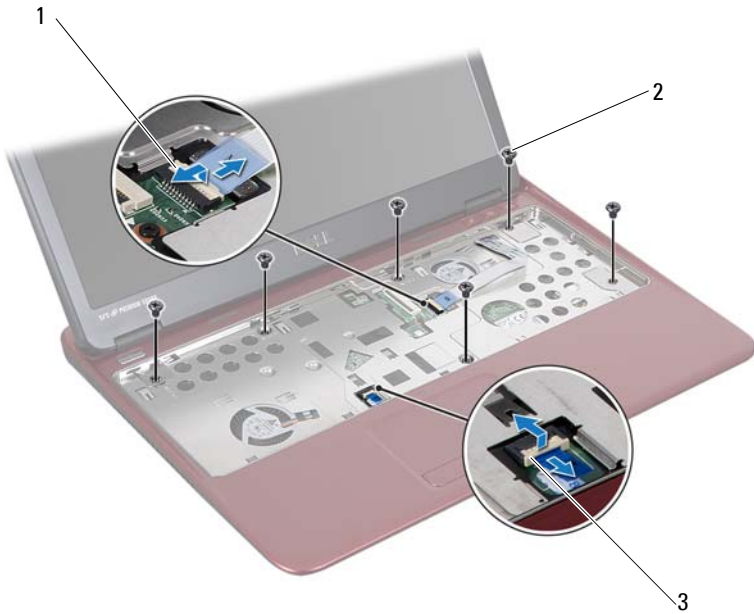
- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the battery. See "Removing the Battery" on page 13.
- 3 Remove the module cover. See "Removing the Module Cover" on page 15.
- 4 Remove the four screws that secure the palm-rest assembly to the computer base.



- 5 Remove the keyboard. See "Removing the Keyboard" on page 25.
- 6 Open the display as far as possible.
- 7 Remove the six screws that secure the palm-rest assembly to the system board.

**⚠ CAUTION: Pull on the plastic tab on top of the connectors to avoid damaging the connectors.**

- 8 Lift the connector latch and pull the pull-tab to disconnect the touch pad cable and the hot-key board cable from their connectors on the system board.



- 1 hot-key board cable connector
- 2 screws (6)
- 3 touch pad cable connector

**⚠ CAUTION: Separate the palm-rest assembly from the computer base carefully to avoid damage to the palm-rest assembly.**

- 9 Carefully lift the palm-rest assembly off the computer base.



## Replacing the Palm-Rest Assembly

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Align the tabs on the palm-rest assembly with the slots on the computer base and gently snap the palm-rest assembly in place.
- 3 Slide the touch pad cable and the hot-key board cable into their connectors on the system board and press down on the connector latch to secure the cables.
- 4 Replace the six screws that secure the palm-rest assembly to the system board.
- 5 Replace the keyboard. See "Replacing the Keyboard" on page 27.
- 6 Turn the computer over and replace the four screws that secure the palm-rest assembly to the computer base.
- 7 Replace the module cover. See "Replacing the Module Cover" on page 16.
- 8 Replace the battery. See "Replacing the Battery" on page 14.












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



# Wireless Mini-Card

-  **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](http://dell.com/regulatory_compliance).
-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface, such as a connector on your computer.
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.
-  **CAUTION:** When the Mini-Card is not in the computer, store it in protective antistatic packaging. See "Protecting Against Electrostatic Discharge" in the safety instructions that shipped with your computer.
-  **NOTE:** Dell does not guarantee compatibility or provide support for Mini-Cards from sources other than Dell.

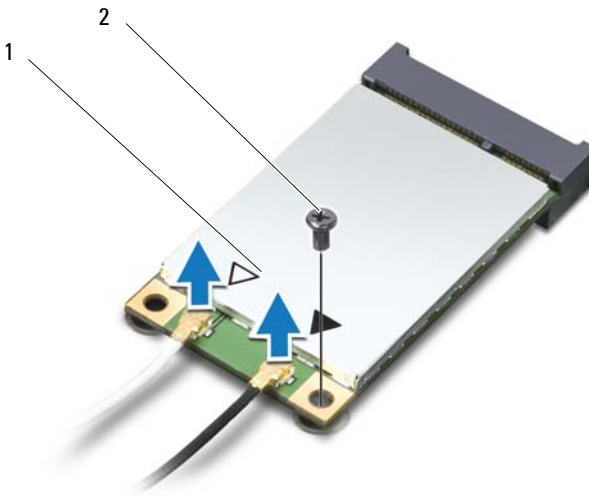
Your computer has one half Mini-Card slot that supports a Wireless Local Area Network (WLAN), or WLAN/Bluetooth combo card.

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

## Removing the Mini-Card

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the battery. See "Removing the Battery" on page 13.
- 3 Remove the module cover. See "Removing the Module Cover" on page 15.
- 4 Remove the keyboard. See "Removing the Keyboard" on page 25.
- 5 Remove the palm-rest assembly. See "Removing the Palm-Rest Assembly" on page 29.

- 6 Disconnect the wireless antenna cables from the wireless antenna connectors on the Mini-Card.
- 7 Remove the screw that secures the half Mini-Card to the system board connector.




- 1 half Mini-Card                      2 screw


- 8 Lift the Mini-Card out of the system board connector.

## Replacing the Mini-Card

- 1 Follow the instructions in "Before You Begin" on page 9.

 **NOTE:** Your computer can support either one WLAN Mini-Card or one WLAN/Bluetooth combo card at a time.

- 2 Remove the Mini-Card from its packaging.

 **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 appropriate system board connector. For example, the WLAN card connector is labeled WLAN and so on.
- 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 appropriate antenna cables to the Mini-Card you are installing. The following table provides the antenna cable color scheme for each Mini-Card supported by your computer.





Connectors on the WLAN Card	Antenna Cable Color Scheme
Main WLAN (white triangle)	white
Auxiliary WLAN (black triangle)	black

- 6 Secure the unused antenna cables in the protective mylar sleeve.
- 7 Replace the palm-rest assembly. See "Replacing the Palm-Rest Assembly" on page 32.
- 8 Replace the keyboard. See "Replacing the Keyboard" on page 27.
- 9 Replace the module cover. See "Replacing the Module Cover" on page 16.
- 10 Replace the battery. See "Replacing the Battery" on page 14.
- 11 Install the drivers and utilities for your computer, as required. For more information, see *Me and My Dell* on [support.dell.com/manuals](http://support.dell.com/manuals).

 **NOTE:** If you are installing a wireless Mini-Card from a source other than Dell, you must install the appropriate drivers and utilities.




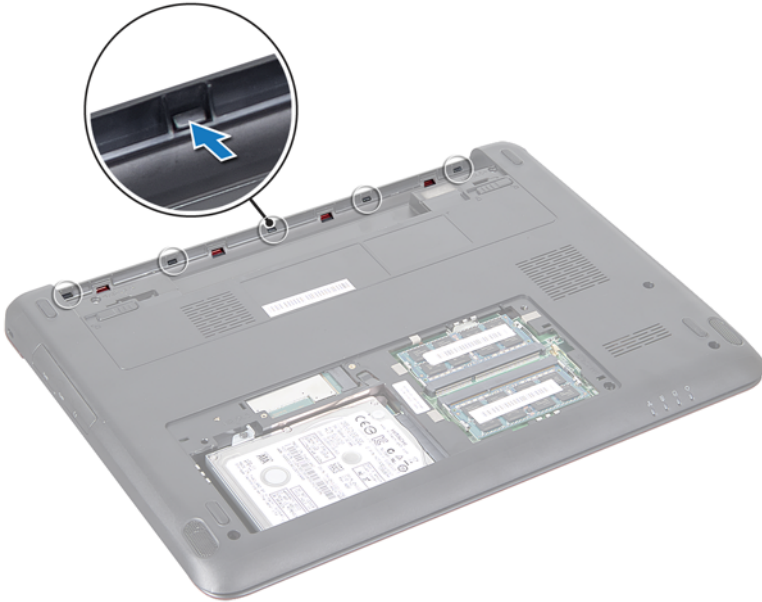
# Display

-  **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](http://dell.com/regulatory_compliance).
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-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

## Hinge Cover

### Removing the Hinge Cover

-  **CAUTION:** The hinge caps are extremely fragile. Be careful when removing the hinge caps to prevent damaging them.
- 1 Follow the instructions in "Before You Begin" on page 9.
  - 2 Remove the battery. See "Removing the Battery" on page 13.
  - 3 Remove the module cover. See "Removing the Module Cover" on page 15.
  - 4 Remove the key board. See "Removing the Keyboard" on page 25.
  - 5 Remove the palm-rest assembly. See "Removing the Palm-Rest Assembly" on page 29.
  - 6 Release the tabs on the hinge cover.



**7** Remove the hinge cover from the computer base.





- 1 hinge cover

## Replacing the Hinge Cover

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Place and snap the hinge cover over the computer base.
- 3 Replace the palm-rest assembly. See "Replacing the Palm-Rest Assembly" on page 32.
- 4 Replace the key board. See "Replacing the Keyboard" on page 27.
- 5 Replace the module cover. See "Replacing the Module Cover" on page 16.
- 6 Replace the battery. See "Replacing the Battery" on page 14.

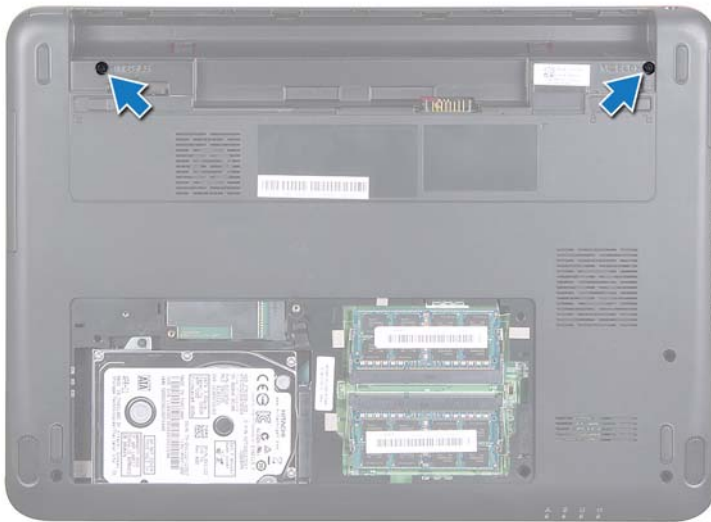


**CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

# Display Assembly

## Removing the Display Assembly

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the battery. See "Removing the Battery" on page 13.
- 3 Remove the module cover. See "Removing the Module Cover" on page 15.
- 4 Remove the key board. See "Removing the Keyboard" on page 25.
- 5 Remove the palm-rest assembly. See "Removing the Palm-Rest Assembly" on page 29.
- 6 Remove the hinge cover. See "Removing the Hinge Cover" on page 39.
- 7 Remove the two screws that secure the display panel to the chassis.



- 8 Turn the computer over and open the display as far as possible.
- 9 Disconnect the Mini-Card antenna cables and the display cable. See "Removing the Mini-Card" on page 35.
- 10 Make a note of the routing of the Mini-Card antenna cables and the display cables. Remove the cables from the routing guides.

- 11 Remove the two screws (one on each side) that secure the display assembly to the computer base.
- 12 Make a note of the cable routing and disconnect the display cable and the wireless card antenna cables from the connectors on the Mini-Card.



- |   |                          |   |                         |
|---|--------------------------|---|-------------------------|
| 1 | display assembly         | 2 | screws (2)              |
| 3 | Mini-Card antenna cables | 4 | display cable connector |

- 13 Lift and remove the display assembly off the computer base.

## Replacing the Display Assembly

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Place the display assembly in position and replace the two screws (one on each side) that secure the display assembly to the computer base.
- 3 Route the Mini-Card antenna cables and the display cable through the slot on the computer base.
- 4 Connect the display cable to the connector on the system board.
- 5 Replace the wireless card antenna cables. See "Replacing the Mini-Card" on page 36.
- 6 Replace the hinge cover. See "Replacing the Hinge Cover" on page 41.
- 7 Replace the palm-rest assembly. See "Replacing the Palm-Rest Assembly" on page 32.
- 8 Replace the keyboard. See "Replacing the Keyboard" on page 27.
- 9 Turn the computer over.
- 10 Replace the two screws that secure the display assembly to the computer base.
- 11 Replace the module cover. See "Replacing the Module Cover" on page 16.
- 12 Replace the battery. See "Replacing the Battery" on page 14.



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

## Display Bezel

### Removing the Display Bezel



**CAUTION: The display bezel is extremely fragile. Be careful when removing it to prevent damaging the bezel.**

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the display assembly. See "Removing the Display Assembly" on page 42.
- 3 Using your fingertips, carefully pry up the inside edges of the display bezel.
- 4 Remove the display bezel.



- 1 display bezel

## Replacing the Display Bezel

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Align the display bezel with the display panel, and snap the display bezel into place.
- 3 Replace the display assembly. See "Replacing the Display Assembly" on page 44.



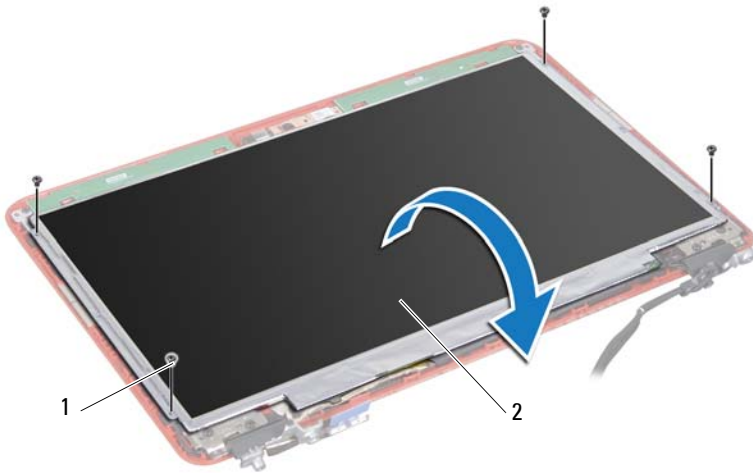
**CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

## Display Panel

### Removing the Display Panel

- 1 Follow the instructions in "Before You Begin" on page 9.

- 2 Remove the display assembly. See "Removing the Display Assembly" on page 42.
- 3 Remove the display bezel. See "Removing the Display Bezel" on page 44.
- 4 Remove the four screws that secure the display panel to the display bracket.



1 screws (4)

2 display panel

- 5 Lift the tape that secures the display cable to the display-board connector and disconnect the display cable.
- 6 Lift the display panel off the display cover.
- 7 Turn the display panel over and place it on a clean surface.



1 tape

2 display cable connector

## Replacing the Display Panel

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Replace the six screws (three on each side) that secure the display-panel brackets to the display panel.
- 3 Connect the display cable to the display-board connector on the back of the display panel and secure it with the tape.
- 4 Align the display panel on the display cover.
- 5 Replace the four screws that secure the display panel to the display cover.
- 6 Replace the display bezel. See "Replacing the Display Bezel" on page 45.
- 7 Replace the display assembly. See "Replacing the Display Assembly" on page 44.

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

## Display Brackets

### Removing the Display Brackets

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the display assembly. See "Removing the Display Assembly" on page 42.
- 3 Remove the display bezel. See "Removing the Display Bezel" on page 44.
- 4 Remove the display panel. See "Removing the Display Panel" on page 45.
- 5 Remove the six screws (three on each side) that secure the display-panel brackets to the display panel.



1 screws (6)

2 display-panel brackets (2)



## Replacing the Display Brackets





- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Replace the six screws (three on each side) that secure the display-panel brackets to the display panel.
- 3 Replace the display panel. See "Replacing the Display Panel" on page 47.
- 4 Replace the display bezel. See "Replacing the Display Bezel" on page 45.
- 5 Replace the display assembly. See "Replacing the Display Assembly" on page 44.



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

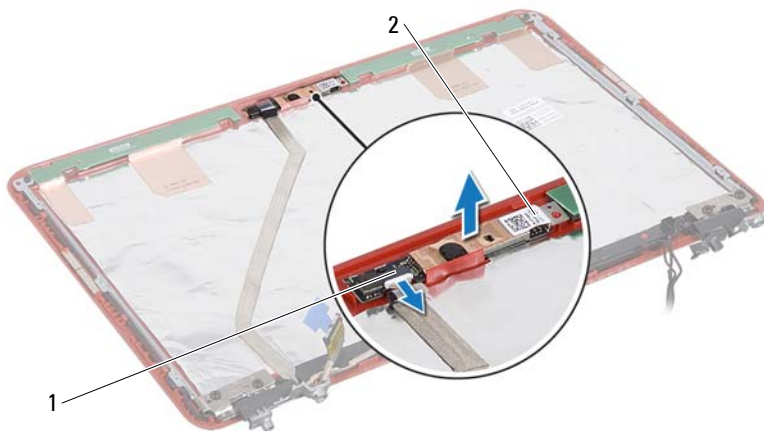


## Camera Module

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-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

## Removing the Camera Module

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Follow instructions from step 2 to step 13 in "Removing the Display Assembly" on page 42.
- 3 Remove the display bezel. See "Removing the Display Bezel" on page 44.
- 4 Remove the display panel. See "Removing the Display Panel" on page 45.
- 5 Disconnect the camera module cable from the connector on the camera module.



- 1 camera cable connector                      2 camera module





- 6 Lift the camera module off the display cover.

## Replacing the Camera Module

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Place the camera module on the display cover using the alignment posts.
- 3 Press down on the camera module to secure it to the display cover.
- 4 Connect the camera cable to the connector on the camera module.
- 5 Replace the display panel. See "Replacing the Display Panel" on page 47.
- 6 Replace the display bezel. See "Replacing the Display Bezel" on page 45.
- 7 Follow instructions from step 2 to step 6 in "Replacing the Display Assembly" on page 44.

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

## Coin-Cell Battery

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-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

### Removing the Coin-Cell Battery

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the battery. See "Removing the Battery" on page 13.
- 3 Remove the module cover. See "Removing the Module Cover" on page 15.
- 4 Remove the keyboard. See "Removing the Keyboard" on page 25.
- 5 Remove the palm-rest assembly. See "Removing the Palm-Rest Assembly" on page 29.
- 6 Use a plastic scribe and gently pry the coin-cell out of the battery socket on the system board.







## Replacing the Coin-Cell Battery

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 With the positive side facing up, snap the coin-cell battery into the battery socket on the system board.
- 3 Replace the palm-rest assembly. See "Replacing the Palm-Rest Assembly" on page 32.
- 4 Replace the keyboard. See "Replacing the Keyboard" on page 27.
- 5 Replace the module cover. See "Replacing the Module Cover" on page 16.
- 6 Replace the battery. See "Replacing the Battery" on page 14.



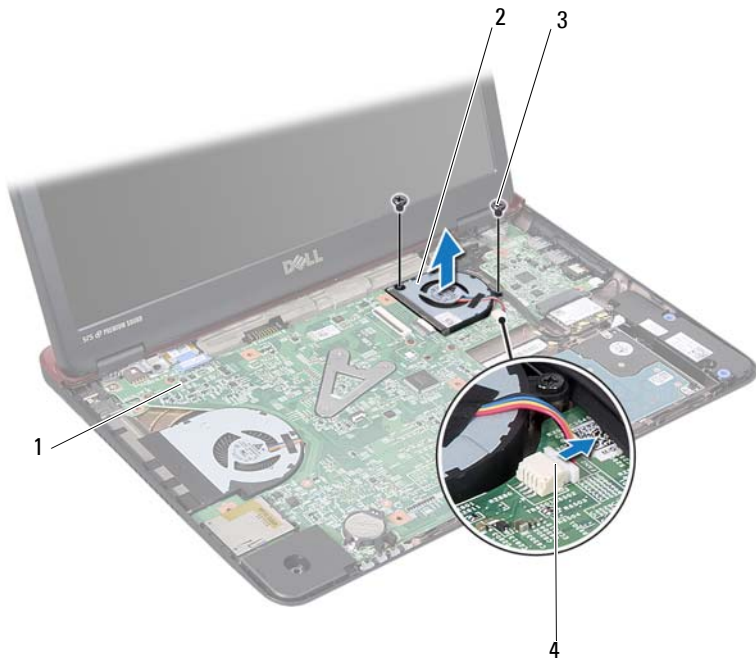
**CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

## Thermal Fan

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-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

### Removing the Thermal Fan

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the battery. See "Removing the Battery" on page 13.
- 3 Remove the module cover. See "Removing the Module Cover" on page 15.
- 4 Remove the keyboard. See "Removing the Keyboard" on page 25.
- 5 Remove the palm-rest assembly. See "Removing the Palm-Rest Assembly" on page 29.
- 6 Remove the two screws that secure the thermal fan to the computer base.
- 7 Disconnect the thermal-fan cable from the connector on the I/O board.
- 8 Lift the thermal fan off the computer base.



- |   |              |   |                        |
|---|--------------|---|------------------------|
| 1 | system board | 2 | thermal fan            |
| 3 | screws (2)   | 4 | system board connector |

## Replacing the Thermal Fan

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Place the thermal fan on the computer base.
- 3 Replace the two screws that secure the thermal fan to the computer base.
- 4 Connect the thermal-fan cable to the connector on the I/O board.
- 5 Replace the palm-rest assembly. See "Replacing the Palm-Rest Assembly" on page 32.
- 6 Replace the keyboard. See "Replacing the Keyboard" on page 27.



**7** Replace the module cover. See "Replacing the Module Cover" on page 16.





**8** Replace the battery. See "Replacing the Battery" on page 14.



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



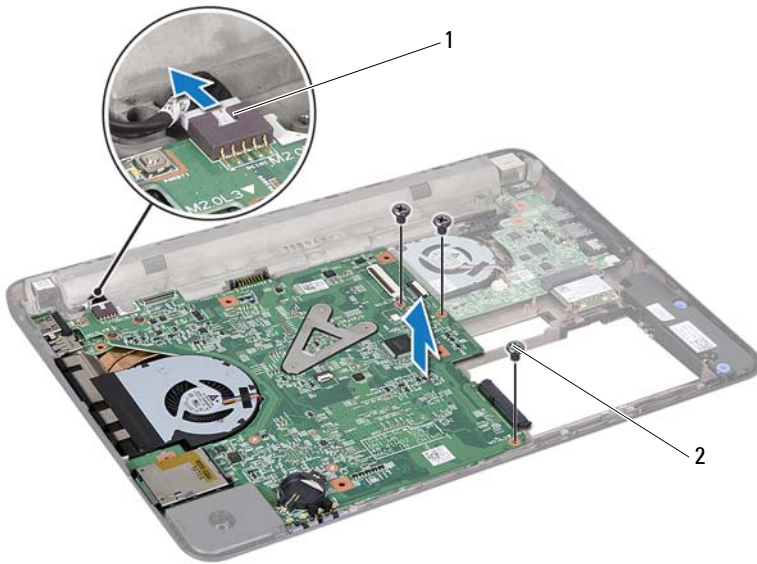
# System Board

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-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

## Removing the System Board

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Press and eject any installed cards from the 8-in-1 media card reader.
- 3 Remove the battery. See "Removing the Battery" on page 13.
- 4 Remove the module cover. See "Removing the Module Cover" on page 15.
- 5 Remove the memory module(s). See "Removing the Memory Module(s)" on page 17.
- 6 Remove the hard drive. See "Removing the Hard-Drive Assembly" on page 21.
- 7 Remove the keyboard. See "Removing the Keyboard" on page 25.
- 8 Remove the palm-rest assembly. See "Removing the Palm-Rest Assembly" on page 29.
- 9 Remove the wireless Mini-Card. See "Removing the Mini-Card" on page 35.
- 10 Remove the display assembly. See "Removing the Display Assembly" on page 42.
- 11 Remove the thermal fan. See "Removing the Thermal Fan" on page 55.

- 12 Disconnect the DC-in connector cable from the connector on the system board.





- 1 DC-in connector cable                      2 screws (3)

- 13 Remove the three screws that secure the system board to the computer base.
- 14 Carefully ease the connectors on the system board out of the slots in the computer, and lift the system board out of the computer.
- 15 Turn the system-board assembly over.
- 16 Remove the heat-sink assembly. See "Removing the Heat-Sink Assembly" on page 63.

## Replacing the System Board






- 1 Follow the instructions in "Before You Begin" on page 9.

- 2 Replace the heat-sink assembly. See "Replacing the Heat-Sink Assembly" on page 64.
  - 3 Turn the system-board assembly over.
  - 4 Align the connectors on the system board with the slots on the computer base, and align the computer base on the system board.
  - 5 Replace the three screws that secure the system board to the computer base.
  - 6 Connect the DC-in connector cable to their respective connector on the system board.
  - 7 Replace the thermal fan. See "Replacing the Thermal Fan" on page 56.
  - 8 Replace the display assembly. See "Replacing the Display Assembly" on page 44.
  - 9 Replace the wireless Mini-Card. See "Replacing the Mini-Card" on page 36.
  - 10 Replace the palm-rest assembly. See "Replacing the Palm-Rest Assembly" on page 32.
  - 11 Replace the keyboard. See "Replacing the Keyboard" on page 27.
  - 12 Replace the hard drive. See "Replacing the Hard-Drive Assembly" on page 23.
  - 13 Replace the memory module(s). See "Replacing the Memory Module(s)" on page 18.
  - 14 Replace the module cover. See "Replacing the Module Cover" on page 16.
  - 15 Replace the battery. See "Replacing the Battery" on page 14.
-  **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**
- 16 Turn on the computer.
-  **NOTE:** After you have replaced the system board, enter the computer's Service Tag into the BIOS of the replacement system board.
- 17 Enter the service tag. See "Entering the Service Tag in the BIOS" on page 62.

## Entering the Service Tag in the BIOS

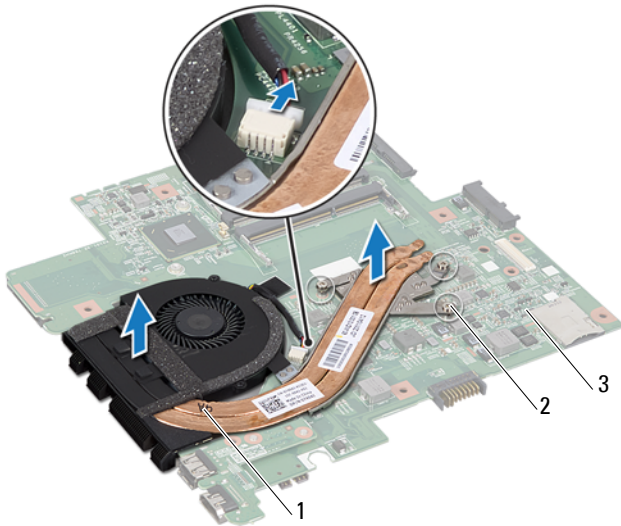
- 1 Ensure that the AC adapter is plugged in and that the main battery is installed properly.
- 2 Turn on the computer.
- 3 Press <F2> during POST to enter the system setup program.
- 4 Navigate to the **Security** tab and enter the service tag in the **Set Service Tag** field.

## Heat-Sink Assembly

-  **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](http://dell.com/regulatory_compliance).
-  **WARNING:** If you remove the heat-sink assembly from the computer when the heat sink is hot, *do not touch* the metal housing of the heat-sink assembly.
-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

## Removing the Heat-Sink Assembly


- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Follow the instructions from step 3 to step 15 in "Removing the System Board" on page 59.
- 3 Loosen the three captive screws that secure the heat-sink assembly to the system board in the sequential order indicated on the processor heat sink.
- 4 Remove the heat-sink cable from the connector on the system board.




- 1 heat-sink assembly
- 2 captive screws (3)
- 3 system board

5 Remove the heat-sink assembly from the system board.

## Replacing the Heat-Sink Assembly

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

 **NOTE:** This procedure assumes that you have already removed the heat-sink assembly and are ready to replace it.

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Align the three captive screws on the heat-sink assembly with the screw holes on the system board and tighten the screws in sequential order as indicated on the processor heat sink.







- 3 Follow the instructions from step 3 to step 15 in "Replacing the System Board" on page 60.



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

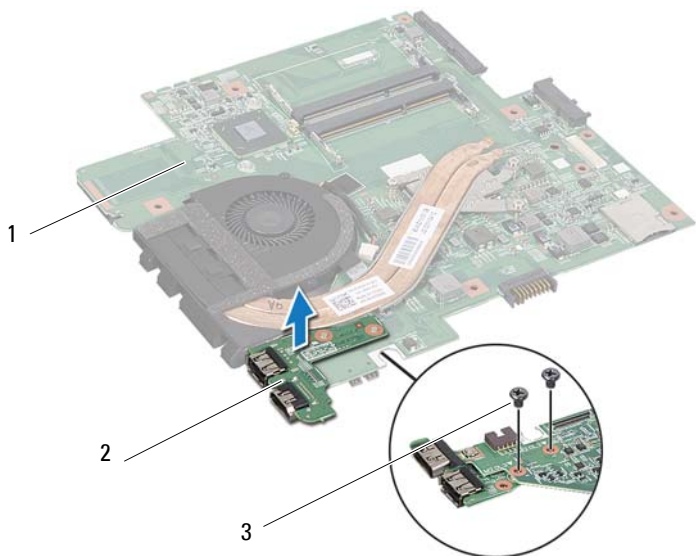


## HDMI Board

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-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

### Removing the HDMI Board

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the battery. See "Removing the Battery" on page 13.
- 3 Remove the module cover. See "Removing the Module Cover" on page 15.
- 4 Remove the keyboard. See "Removing the Keyboard" on page 25.
- 5 Remove the palm-rest assembly. See "Removing the Palm-Rest Assembly" on page 29.
- 6 Remove the system board. See "Removing the System Board" on page 59.
- 7 Remove the two screws that secure the HDMI board to the system board.



1 system board  
3 screws (2)

2 HDMI board

## Replacing the HDMI Board





- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Align the screw hole on the HDMI board with the screw hole on the system board.
- 3 Replace the two screws that secures the HDMI board to the system board.
- 4 Replace the system board. See "Replacing the System Board" on page 60.
- 5 Replace the palm-rest assembly. See "Replacing the Palm-Rest Assembly" on page 32.
- 6 Replace the keyboard. See "Replacing the Keyboard" on page 27.
- 7 Replace the module cover. See "Replacing the Module Cover" on page 16.
- 8 Replace the battery. See "Replacing the Battery" on page 14.



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

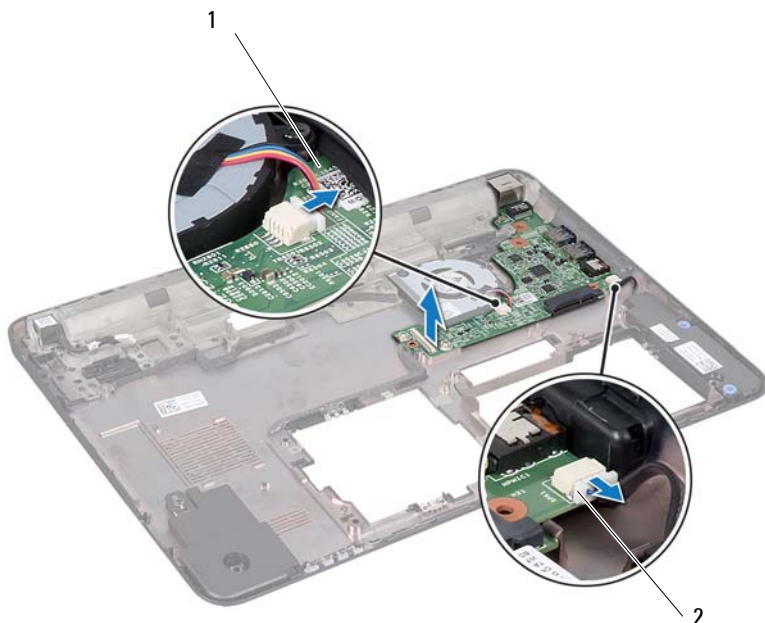


## I/O Board

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-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

## Removing the I/O Card

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the battery. See "Removing the Battery" on page 13.
- 3 Remove the module cover. See "Removing the Module Cover" on page 15.
- 4 Remove the memory modules. See "Removing the Memory Module(s)" on page 17.
- 5 Remove the hard drive assembly. See "Removing the Hard-Drive Assembly" on page 21.
- 6 Remove the keyboard. See "Removing the Keyboard" on page 25.
- 7 Remove the wireless Mini-Card. See "Removing the Mini-Card" on page 35.
- 8 Remove the system board. See "Removing the System Board" on page 59.
- 9 Disconnect the speaker cable and the thermal-fan cable from the I/O board.



1 I/O board

2 Speaker cable

**10** Lift the I/O board from the computer base.

## Replacing the I/O Card

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Align the I/O board with the I/O slots on the computer base and place the I/O board on the computer base.
- 3 Connect the speaker cable and the thermal-fan cable to the connectors on the I/O board.
- 4 Replace the system board. See "Replacing the System Board" on page 60.
- 5 Replace the wireless Mini-Card. See "Replacing the Mini-Card" on page 36.







- 6** Replace the palm rest assembly. See "Replacing the Palm-Rest Assembly" on page 32.
- 7** Replace the keyboard. See "Replacing the Keyboard" on page 27.
- 8** Replace the hard drive assembly. See "Replacing the Hard-Drive Assembly" on page 23.
- 9** Replace the memory modules. See "Replacing the Memory Module(s)" on page 18.
- 10** Replace the module cover. See "Replacing the Module Cover" on page 16.
- 11** Replace the battery. See "Replacing the Battery" on page 14.



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

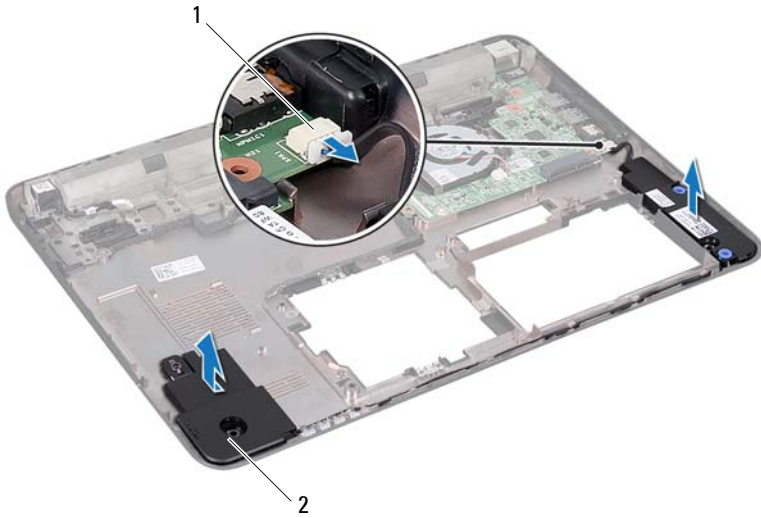


# Speakers

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-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

## Removing the Speakers

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the battery. See "Removing the Battery" on page 13.
- 3 Remove the module cover. See "Removing the Module Cover" on page 15.
- 4 Remove the keyboard. See "Removing the Keyboard" on page 25.
- 5 Remove the palm-rest assembly. See "Removing the Palm-Rest Assembly" on page 29.
- 6 Remove the Mini-Card. See "Removing the Mini-Card" on page 35.
- 7 Remove the system board. See "Removing the System Board" on page 59.
- 8 Disconnect the speaker cable from the I/O board.
- 9 Release the speaker modules from the latches.



- 1 speaker cable connector
- 2 speakers (2)

**10** Remove the speaker modules from the computer base.

## Replacing the Speakers

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Route the speaker cable on the computer base.
- 3 Align the speaker modules using the alignment post on the computer base.
- 4 Connect the speaker cable to the connector on the I/O board.
- 5 Replace the system board. See "Replacing the System Board" on page 60.
- 6 Replace the wireless Mini-Card. See "Replacing the Mini-Card" on page 36.
- 7 Replace the palm-rest assembly. See "Replacing the Palm-Rest Assembly" on page 32.
- 8 Replace the keyboard. See "Replacing the Keyboard" on page 27.

**9** Replace the module cover. See "Replacing the Module Cover" on page 16.





**10** Replace the battery. See "Replacing the Battery" on page 14.



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

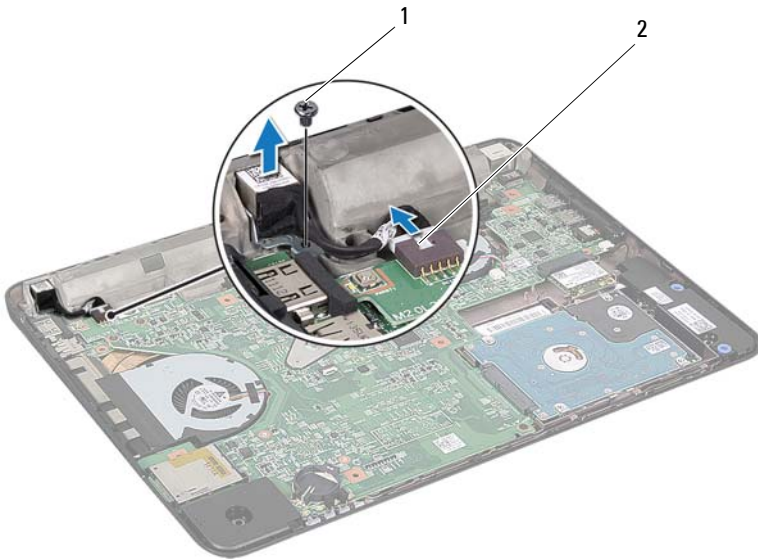


## DC-in Cable

-  **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](http://dell.com/regulatory_compliance).
-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.

### Removing the DC-in Cable

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Remove the battery. See "Removing the Battery" on page 13.
- 3 Remove the module cover. See "Removing the Module Cover" on page 15.
- 4 Remove the keyboard. See "Removing the Keyboard" on page 25.
- 5 Remove the palm-rest assembly. See "Removing the Palm-Rest Assembly" on page 29.
- 6 Remove the display assembly. See "Removing the Display Assembly" on page 42.
- 7 Remove the screw that secures the DC-in assembly to the computer base.



1 screw

2 DC-in connector cable


- 8 Disconnect the DC-in connector cable from the connector on the system board.
- 9 Note the routing of the DC-in connector cable and lift the DC-in connector off the computer base.

## Replacing the DC-in Cable

- 1 Follow the instructions in "Before You Begin" on page 9.
- 2 Route the DC-in connector cable and place the DC-in connector on the computer base.
- 3 Connect the DC-in connector cable to the connector on the system board.
- 4 Replace the screw that secures the DC-in connector assembly.



- 5 Replace the display assembly. See "Replacing the Display Assembly" on page 44.
- 6 Replace the palm-rest assembly. See "Replacing the Palm-Rest Assembly" on page 32.
- 7 Replace the keyboard. See "Replacing the Keyboard" on page 27.
- 8 Replace the module cover. See "Replacing the Module Cover" on page 16.
- 9 Replace the battery. See "Replacing the Battery" on page 14.

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



# System Setup

Use the system setup to:

- Change the system configuration information after you add, change, or remove any hardware in your computer
- Set or change a user-selectable option such as the user password
- Read the current amount of memory or set the type of hard drive installed



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

## Entering System Setup

- 1 Turn on (or restart) your computer.
- 2 When the DELL 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 Microsoft Windows desktop. Then, shut down your computer. See "Turning Off Your Computer" on page 9 and try again.

### 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**.

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

## 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.

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<b>Main</b>	
System Time	Displays the current time in hh:mm:ss format
System Date	Displays the current date in mm/dd/yyyy format
BIOS Version	Displays the BIOS version number
Product Name	Displays the product name
Service Tag	Displays the service tag of the computer
Asset Tag	Displays the asset tag of the computer when the asset tag is present
<b>Processor Information</b>	
CPU Type	Displays the CPU type

CPU Speed	Displays the CPU speed
CPU ID	Displays the CPU ID
<b>CPU Cache</b>	
L1 Cache size	Displays the L1 cache size
L2 Cache size	Displays the L2 cache size
L3 Cache size	Displays the L3 cache size
Fixed HDD	Displays the hard drive information
AC Adapter Type	Displays AC adapter type
System Memory	Indicates the amount of memory installed in MB
Extended Memory	Indicates the amount of extended memory
Memory Speed	Indicates the memory speed in MHz
<hr/>	
<b>Advanced</b>	
<hr/>	
Intel SpeedStep	Enables or disables the Intel SpeedSetp feature
Virtualization	Enables or disables virtualization
Integrated NIC	Enables or disables the on-board network controller
USB Emulation	Enables or disables USB emulation
USB Powershare	Enables or disables charging USB devices when the computer is off
USB Wake Support	Enables or disables USB devices to wake the computer from standby <b>NOTE:</b> This feature is only functional when the AC power adapter is connected. If the AC power adapter is removed during standby, the BIOS will remove power from all of the USB ports to conserve battery power.
SATA Operation	Sets the SATA operation mode to: AHCI Mode ATA Mode
Adapter Warnings	Enables or disables warning messages when you connect an incorrect power adapter
Function Key Behavior	Allows you to configure function key behavior

Charger Behavior	Enables or disables charger behavior
Miscellaneous Devices	Enable or disables external USB ports

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### Security

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Unlock Setup Status	Displays the setup lock or unlock status
Admin Password Status	Displays whether the admin password has been set
System Password Status	Displays whether the system password has been set
HDD Password Status	Displays whether the hard drive password has been set
Set Service Tag	Sets the service tag of your computer
Set Admin Password	Allows you to set, change, or delete the administrator password <b>NOTE:</b> Deleting administrator password deletes the system password. You must set the administrator password before setting the system password.
Set System Password	Allows you to set, change, or delete the system password
Set HDD Password	Allows you to set, change, or delete the hard drive password
Password on Boot	Enables or disables Password on Boot
Computrace	The Absolute Anti-Theft solution Is Activated and Enabled by default. You cannot change the setting

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### Boot

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1st Boot Priority	Specifies the boot sequence from the available devices  Diskette Drive; Hard Drive; USB Storage Device; CD/DVD/CD-RW Drive; Network; Disabled (Hard Drive by default)
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2nd Boot Priority	Specifies the boot sequence from the available devices Diskette Drive; Hard Drive; USB Storage Device; CD/DVD/CD-RW Drive; Network; Disabled (CD/DVD/CD-RW Drive by default)
3rd Boot Priority	Specifies the boot sequence from the available devices Diskette Drive; Hard Drive; USB Storage Device; CD/DVD/CD-RW Drive; Network; Disabled (Diskette Drive by default)
4th Boot Priority	Specifies the boot sequence from the available devices Diskette Drive; Hard Drive; USB Storage Device; CD/DVD/CD-RW Drive; Network; Disabled (Network by default)
5th Boot Priority	Specifies the boot sequence from the available devices Diskette Drive; Hard Drive; USB Storage Device; CD/DVD/CD-RW Drive; Network; Disabled (USB Storage Device by default)

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## Exit

Exit Options	Provides options to <b>Save Changes and Reset</b> , <b>Discard Changes and Reset</b> , <b>Restore Defaults</b> , <b>Discard Changes</b> , and <b>Save Changes</b>
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## Boot Sequence

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

### Boot Options

- **Diskette Drive** — The computer attempts to boot from the floppy disk 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.

- **CD/DVD/CD-RW Drive** — The computer attempts to boot from the CD/DVD/CD-RW drive. If no CD/DVD/CD-RW is in the drive, or if the CD/DVD/CD-RW has no operating system, the computer generates an error message.
- **USB Storage Device** — Insert the memory device into a USB connector and restart the computer. When **F12 Boot Options** appears in the lower-right corner of the screen, press <F12>. The BIOS detects the device and adds the USB flash option to the boot menu.



**NOTE:** To boot to a USB device, the device must be bootable. To ensure that your device is bootable, check the device documentation.

- **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. If you are booting from a USB device, connect the USB device to a USB connector.

- 1 Turn on (or restart) your computer.
- 2 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.

- 3 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>.



**NOTE:** To boot to a USB device, the device must be bootable. To ensure your device is bootable, check the device documentation.

## Changing Boot Sequence for Future Boots

- 1 Enter system setup. See "Entering System Setup" on page 83.
- 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 move through the list of devices.
- 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 [support.dell.com/support/downloads](http://support.dell.com/support/downloads).
- 3 Locate the BIOS update file for your computer.



**NOTE:** The Service Tag for your computer is located on a label at the top of your computer.

If you have your computer's Service Tag:

- a Click **Enter a Tag**.
- b Enter your computer's Service Tag in the **Enter a service tag** field, click **Go**, and proceed to step 4.

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

- a Click **Select Model**.
- b Select the type of product in the **Select Your Product Family** list.
- c Select the product brand in the **Select Your Product Line** list.
- d Select the product model number in the **Select Your Product Model** list.



**NOTE:** If you have selected a different model and want to start over again, click **Start Over** on the top right of the menu.

- e Click **Confirm**.
- 4 A list of results appears on the screen. Click **BIOS**.
- 5 Click **Download Now** to download the latest BIOS file. The **File Download** window appears.
- 6 Click **Save** to save the file on your desktop. The file downloads to your desktop.
- 7 Click **Close** if the **Download Complete** window appears. The file icon appears on your desktop and is titled the same as the downloaded BIOS update file.

- 8 Double-click the file icon on the desktop and follow the instructions that appear on the screen.