Notes, cautions, and warnings

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

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

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.
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Before working inside your computer

NOTE: The images in this document may differ from your computer depending on the configuration you ordered.

Before you begin

1. Save and close all open files and exit all open applications.
2. Shut down your computer. Click Start → Power → Shut down.
   NOTE: If you are using a different operating system, see the documentation of your operating system for shut-down instructions.
3. Disconnect your computer and all attached devices from their electrical outlets.
4. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.
5. Remove any media card and optical disc from your computer, if applicable.

Safety instructions

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

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

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

CAUTION: To avoid damaging the computer, ensure that the work surface is flat and clean.
CAUTION: To avoid damaging the components and cards, handle them by their edges, and avoid touching pins and contacts.

CAUTION: You should only perform troubleshooting and repairs as authorized or directed by the Dell technical assistance team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. See the safety instructions that shipped with the product or at www.dell.com/regulatory_compliance.

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

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

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

Recommended tools

The procedures in this document may require the following tools:

- Philips screwdriver
- Flat-head screwdriver
- Plastic scribe
# Screw list

Table 1. Screw list

<table>
<thead>
<tr>
<th>Component</th>
<th>Secured to</th>
<th>Screw type</th>
<th>Quantity</th>
<th>Screw image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base-cover assembly</td>
<td>palm-rest and keyboard assembly</td>
<td>M2.5x6</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Battery</td>
<td>palm-rest and keyboard assembly</td>
<td>M2x3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>I/O board</td>
<td>Base cover</td>
<td>M2x3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Hard-drive assembly</td>
<td>palm-rest and keyboard assembly</td>
<td>M2x3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Hard-drive bracket</td>
<td>Hard drive</td>
<td>M3x3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Power-adapter port</td>
<td>palm-rest and keyboard assembly</td>
<td>M2x3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Wireless card</td>
<td>palm-rest and keyboard assembly</td>
<td>M2x3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Display-cable bracket</td>
<td>System board</td>
<td>M2x3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Display assembly</td>
<td>palm-rest and keyboard assembly</td>
<td>M2.5x6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>System board</td>
<td>palm-rest and keyboard assembly</td>
<td>M2x2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Display hinges</td>
<td>Display back-cover and antenna</td>
<td>M2.5x2.5</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Component</td>
<td>Secured to</td>
<td>Screw type</td>
<td>Quantity</td>
<td>Screw image</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------</td>
<td>------------</td>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>Display panel</td>
<td>Display back-cover and antenna assembly</td>
<td>M1.2x2</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
After working inside your computer

⚠️ CAUTION: Leaving stray or loose screws inside your computer may severely damage your computer.

1. Replace all screws and ensure that no stray screws remain inside your computer.
2. Connect any external devices, peripherals, or cables you removed before working on your computer.
3. Replace any media cards, discs, or any other parts that you removed before working on your computer.
4. Connect your computer and all attached devices to their electrical outlets.
5. Turn on your computer.
Removing the base cover

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

Procedure

1. Close the display and turn the computer over.
2. Using a plastic scribe, remove the screw cap from the base-cover assembly.

Figure 1. Removing the screw cap

1 screw cap
2 plastic scribe
3 Remove the nine screws (M2.5x6) that secure the base-cover assembly to the palm-rest and keyboard assembly.

![Figure 2. Removing the screws](image)

**Figure 2. Removing the screws**

1 M2.5x6 screws (9)  
2 base-cover assembly

4 Using your thumb, apply pressure on the base-cover assembly.
5 From the top right corner, pry the base-cover assembly from the palm-rest and keyboard assembly.

Figure 3. Removing the base cover

1 palm-rest and keyboard assembly
2 base-cover assembly
6 Pry loose the base-cover assembly from one end of the palm-rest and keyboard assembly.

Figure 4. Removing the base cover

1 palm-rest and keyboard assembly
2 base-cover assembly
7 Lift the base-cover assembly, at an angle, from the palm-rest and keyboard assembly and release it from the HDMI port.

Figure 5. Removing the base cover

1 HDMI port
2 base-cover assembly
3 palm-rest and keyboard assembly
8 Carefully turn over the base-cover assembly.

9 Remove the I/O board.

Figure 6. Removing the base cover

1 base-cover assembly
2 palm-rest and keyboard assembly
Replacing the base cover

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

Procedure

1 Replace the I/O board.

⚠️ CAUTION: To avoid damage to the computer, ensure that the USB and HDMI port cut-outs on the base-cover assembly is correctly aligned with the USB and HDMI ports on the palm-rest and keyboard assembly.
2 Open the display.

**Figure 7. Replacing the base cover**

1 display

3 Align the HDMI slot on the base-cover assembly with the HDMI port on the palm-rest and keyboard assembly.
4 Place the palm-rest assembly on the base-cover assembly.

5 Slide the tabs on the palm-rest and keyboard assembly into the slots on the base-cover assembly and snap the base-cover assembly into place.

6 Replace the nine screws (M2.5x6) that secure the base-cover assembly to the palm-rest and keyboard assembly.

7 Replace the screw cap on the base-cover assembly.
Removing the battery

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

Prerequisites

Follow the procedure from step 1 to step 6 in “Removing the base cover”.

Procedure

1. Disconnect the battery cable from the system board.
2 Remove the three screws (M2x3) that secure the battery to the palm-rest and keyboard assembly.

![Figure 9. Disconnecting the battery](image)

1 battery cable  
2 M2x3 screws (3)  
3 battery  
4 palm-rest and keyboard assembly

3 Tilt the battery (applicable for configuration with hard drive only) to release the tab on the battery from the hard-drive bracket.
4 Lift the battery off the palm-rest and keyboard assembly.

**Figure 10. Removing the battery**

1 battery  
2 palm-rest and keyboard assembly  
3 tab  
4 hard-drive bracket

5 Follow the step 1 procedure in “Removing the I/O board”.
Turn the computer over, open the display, and press the power button for five seconds to ground the system board.

Figure 11. Removing the battery

1 display

2 power button
Replacing the battery

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

Procedure

1. Follow the step 4 procedure in “Replacing the I/O board”.
2. Slide the tab on the battery (applicable for configuration with hard drive only) under the hard-drive bracket and place the battery on the palm-rest and keyboard assembly.
3. Align the screw holes on the battery with the screw holes on the palm-rest and keyboard assembly.
4. Replace the three screws (M2x3) that secure the battery to the palm-rest and keyboard assembly.
5. Connect the battery cable to the system board.

Post-requisites

Follow the procedure from step 2 to step 5 in “Replacing the base cover”.
Removing the I/O board

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

Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.

Procedure

1. Open the latch and disconnect the I/O-board cable from system board.
2. Remove the screw (M2x3) that secures the I/O board to the base cover.
3. Push the securing tab to release the I/O board from the base cover.
4 Slide and lift the I/O board off the base cover.

Figure 12. Removing the I/O board

1 latch
2 I/O-board cable
3 base cover
4 M2x3 screw
5 I/O board
6 securing tab
5 Open the latch and disconnect the I/O-board cable from the I/O board.

Figure 13. Removing the I/O board

1 latch
2 I/O-board cable
Replacing the I/O board

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

Procedure

1. Slide the I/O-board cable into the connector on the I/O board and close the latch to secure the cable.
2. Slide the ports on the I/O board into the slots on the base cover and snap the I/O board into place.
3. Align the screw hole on the I/O board with the screw hole on the base cover.
4. Replace the screw (M2x3) that secures the I/O board to the base cover.
5. Slide the I/O-board cable into the connector on the system board and close the latch to secure the cable.

Post-requisites

1. Replace the battery.
2. Follow the procedure from step 2 to step 5 in “Replacing the base cover”.
Removing the heat sink

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

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

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

Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.

Procedure

1. In reverse sequence, as indicated on the heat sink, loosen the captive screws that secure the heat sink to the system board.
2  Lift the heat sink off the system board

Figure 14. Removing the heat sink

1  heat sink  2  captive screws (4)
3  system board
Replacing the heat sink

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

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

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

Procedure

1. Place the heat sink on the system board and align the screw holes on the heat sink with the screw holes on the system board.

2. In sequential order (as indicated on the heat sink), tighten the captive screws that secure the heat sink to the system board.

Post-requisites

1. Replace the battery.

2. Follow the procedure from step 2 to step 5 in “Replacing the base cover”.
Removing the memory module

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

Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.
3. Remove the heat sink.

Procedure

1. Use your fingertips and lift the flap on the memory module.
2. Use your fingertips to carefully spread apart the securing-clips on each end of the memory-module slot until the memory module pops up.
3  Remove the memory module from the memory-module slot.

Figure 15. Removing the memory module

1  securing clips (2)                      2  memory module
3  flap
Replacing the memory module

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

Procedure

1. Use your fingertips and lift the flap to access the memory-module slot.
2. Align the notch on the memory module with the tab on the memory-module slot.
3. Slide the memory module firmly into the memory-module slot at an angle and press it down until it clicks into place.

⚠️ NOTE: If you do not hear the click, remove the memory module and reinstall it.
4 Close the flap.

**Figure 16. Replacing the memory module**

1 tab  
2 notch  
3 memory module  
4 flap

**Post-requisites**

1 Replace the *heat sink*.
2 Replace the *battery*.
3 Follow the procedure from step 2 to step 5 in “Replacing the base cover”.

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Removing the hard drive

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

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

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

Prerequisites

📝 NOTE: The computer is shipped with either hard-drive assembly or eMMC-card assembly depending on the configuration ordered.

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.

Procedure

📝 NOTE: Applicable only for computers shipped with hard drive.

1. Remove the three screws (M2x3) that secure the hard-drive assembly to the palm-rest and keyboard assembly.
2 Slide and lift the hard-drive assembly off the palm-rest and keyboard assembly.

Figure 17. Removing the hard disc drive module

1 M2x3 screws (3)  
2 hard-drive assembly  
3 palm-rest and keyboard assembly

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

Figure 18. Removing the hard drive

1 hard-drive bracket
2 M3x3 screws (4)
3 hard drive
Replacing the hard drive

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

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

Procedure

1. Align the screw holes on the hard drive with the screw holes on the hard-drive bracket.
2. Replace the four screws (M3x3) that secure the hard-drive bracket to the hard drive.
3. Slide and connect the hard-drive assembly to the connector on the system board.
4. Align the screw holes on the hard-drive assembly with the screw holes on the palm-rest and keyboard assembly.
5. Replace the three screws (M2x3) that secure the hard-drive assembly to the palm-rest and keyboard assembly.

Post-requisites

1. Replace the battery.
2. Follow the procedure from step 2 to step 5 in “Replacing the base cover”.

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Removing the power-adapter port

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

Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.

Procedure

1. Disconnect the power-adapter port cable from the system board.
2. Remove the screw (M2x3) that secures the power-adapter port to the palm-rest and keyboard assembly.
3 Lift the power-adapter port with its cable, off the palm-rest and keyboard assembly.

Figure 19. Removing the power-adapter port

1 M2x3 screw
2 power-adapter port cable
3 palm-rest and keyboard assembly
Replacing the power-adapter port

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

Procedure

1. Place the power-adapter port into the slot on the palm-rest and keyboard assembly.
2. Align the screw hole on the power-adapter port with the screw hole on the palm-rest and keyboard assembly.
3. Replace the screw (M2x3) that secures the power-adapter port to the palm-rest and keyboard assembly.
4. Connect the power-adapter port cable to the system board.

Post-requisites

1. Replace the battery.
2. Follow the procedure from step 2 to step 5 in “Replacing the base cover.”
Removing the wireless card

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

Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.
3. Follow the step 1 procedure in “Removing the I/O board”.

Procedure

1. Remove the screw (M2x3) that secures the wireless card to the palm-rest and keyboard assembly.
2. Lift the wireless-card bracket from the wireless card.
3. Disconnect the antenna cables from the wireless card.
4 Slide the wireless card from the wireless-card slot on the system board.

Figure 20. Removing the wireless card

1 wireless-card slot
2 wireless card
3 M2x3 screw
4 antenna cables (2)
5 wireless-card bracket
Replacing the wireless card

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

Procedure

⚠️ **CAUTION:** To avoid damage to the wireless card, do not place any cables under it.

1. Align the notch on the wireless card with the tab on the wireless-card slot on the system board.
2. Slide the wireless card into the wireless-card slot on the system board.
3. Connect the antenna cables to the wireless card.
   The following table provides the antenna-cable color scheme for the wireless card supported by your computer.

   **Table 2. Antenna-cable color scheme**

<table>
<thead>
<tr>
<th>Connectors on the wireless card</th>
<th>Antenna-cable color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main (white triangle)</td>
<td>white</td>
</tr>
<tr>
<td>Auxiliary (black triangle)</td>
<td>black</td>
</tr>
</tbody>
</table>

4. Align the screw hole on the wireless card and the wireless-card bracket with the screw hole on the palm-rest and keyboard assembly.
Replace the (M2x3) screw that secures the wireless card to the palm-rest and keyboard assembly.

**Figure 21. Replacing the wireless card**

1. notch
2. wireless card
3. wireless-card slot
4. antenna cables (2)
5. wireless-card bracket
6. tab
7. M2x3 screw
Post-requisites

1. Replace the battery.
2. Follow the procedure from step 2 to step 5 in “Replacing the base cover”.
3. Follow the step 4 procedure in “Replacing the I/O board”.
Removing the coin-cell battery

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

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

Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.
3. Follow the step 1 procedure in “Removing the I/O board”.
4. Remove the wireless card.

Procedure

1. Disconnect the coin-cell battery cable from the system board.
2. Remove the coin-cell battery cable from the routing guide on the speaker.
3 Carefully peel off and lift the coin-cell battery from the palm-rest and keyboard assembly.

![Figure 22. Removing coin-cell battery](image)

1 coin-cell battery cable
2 routing guide
3 coin-cell battery
4 palm-rest and keyboard assembly
Replacing the coin-cell battery

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

Procedure

1. Adhere the coin-cell battery to the palm-rest and keyboard assembly.
2. Route the coin-cell battery cable through the routing guide on the speaker.
3. Connect the coin-cell battery cable to the system board.

Post-requisites

1. Replace the wireless card.
2. Follow the step 4 procedure in “Replacing the I/O board”.
3. Replace the battery.
4. Follow the procedure from step 2 to step 5 in “Replacing the base cover”.
Removing the speaker

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

Prerequisites

1 Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2 Remove the battery.
3 Follow the step 1 procedure in “Removing the I/O board”.

Procedure

1 Disconnect the speaker cable from the system board.
2 Remove the coin-cell battery cable from the routing guide on the speaker.
3 Release the rubber stubs on the speaker and lift the speaker from the palm-rest and keyboard assembly.

Figure 23. Removing the speaker

1 system board
2 speaker cable
3 speaker
4 coin-cell battery cable
5 routing guide
6 rubber stubs (2)
Replacing the speaker

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

Procedure

1. Insert the rubber stubs on the speaker into the slots on the palm-rest and keyboard assembly and snap the speaker into place.
2. Route the coin-cell battery cable through the routing guide on the speaker.
3. Connect the speaker cable to the system board.

Post-requisites

1. Follow the step 4 procedure in “Replacing the I/O board”.
2. Replace the battery.
3. Follow the procedure from step 2 to step 5 in “Replacing the base cover”.
Removing the display assembly

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

Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.
3. Follow the step 1 procedure in “Removing the I/O board”.
4. Remove the wireless card.

Procedure

1. Remove the screw (M2x3) that secures the display-cable bracket to the system board.
2. Slide and lift the display-cable bracket off the system board.
3. Open the latch and disconnect the display cable from the system board.

Figure 24. Removing the display cable

1. M2x3 screw
2. display-cable bracket
3. display cable
4. latch
4 Open the palm-rest and keyboard assembly at an angle.

Figure 25. Removing the display

1 palm-rest and keyboard assembly

5 Remove the two screws (M2.5x6) that secure the display assembly to the palm-rest and keyboard assembly.
Slide and lift the palm-rest and keyboard assembly off the display assembly.

**Figure 26. Removing the display**

1. palm-rest and keyboard assembly
2. M2.5x6 screws (2)
3. display hinges (2)

After performing all the steps, we are left with display assembly.
Figure 27. Display assembly

1 display assembly
Replacing the display assembly

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

Procedure

⚠️ CAUTION: Place the computer on a soft and clean surface to avoid scratching the display back-cover and antenna assembly.

1. Place the display assembly on a flat and clean surface.
2. Align the screw holes on the display hinges with the screw holes on the palm-rest and keyboard assembly.
3. Replace the two screws (M2.5x6) that secure the display assembly to the palm-rest and keyboard assembly.
4. Slide the display cable into the connector on the system board and close the latch to secure the cable.
5. Slide the display-cable bracket into the slot on the palm-rest and keyboard assembly.
6. Align the screw hole on the display-cable bracket with the screw hole on the system board.
7. Replace the screw (M2x3) that secures the display-cable bracket to the system board.

Post-requisites

1. Replace the wireless card.
2. Follow the step 4 procedure in “Replacing the I/O board”.
3. Replace the battery.
4. Follow the procedure from step 2 to step 5 in “Replacing the base cover”.

Dell
Removing the system board

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

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

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

**NOTE:** Before disconnecting the cables from the system board, note the location of the connectors so that you can reconnect the cables correctly after you replace the system board.

### Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Follow the step 1 procedure in “Removing the I/O board”.
3. Remove the **battery**.
4. Remove the **heat sink**.
5. Remove the **memory module**.
6. Remove the **wireless card**.
7. Remove the **hard drive**.

### Procedure

1. Remove the screw (M2x3) that secures the display-cable bracket to the system board and lift the display-cable bracket off the system board.
2. Open the latch and disconnect the display cable from the system board.
3. Disconnect the speaker cable from the system board.
4  Disconnect the coin-cell battery cable from the system board.

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

---

**Figure 28. Removing the system board components**

1  latch 
2  display cable 
3  display-cable bracket 
4  M2x3 screw 
5  speaker cable 
6  coin-cell battery cable
6 Open the latches and disconnect the touchpad cable and keyboard cable from the system board.

Figure 29. Removing the system board components

1 power-adapter port cable  2 touchpad cable
3 latches (2)  4 keyboard cable

7 Remove the screw (M2x2) that secures the system board to the palm-rest and keyboard assembly.
Lift the system board off the palm-rest and keyboard assembly.

**Figure 30. Removing the system board**

1. system board
2. M2x2 screw
3. palm-rest and keyboard assembly
Replacing the system board

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

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

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

Procedure

1. Align the screw holes on the system board with the screw holes on the palm-rest and keyboard assembly.
2. Replace the screw (M2x2) that secures the system board to the palm-rest and keyboard assembly.
3. Slide the touchpad cable and keyboard cable into their connectors and close the latches to secure the cables.
4. Connect the power-adapter port cable, speaker cable, and coin-cell battery cable to their connectors on the system board.
5. Slide the display cable into the connector on the system board and close the latch to secure the cable.
6. Slide the display-cable bracket into the slot on the palm-rest and keyboard assembly.
7. Align the screw hole on the display-cable bracket with the screw hole on the system board.
8. Replace the screw (M2x3) that secures the display-cable bracket to the system board.
Post-requisites

1 Replace the hard drive.
2 Replace the wireless card.
3 Replace the memory module.
4 Replace the heat sink.
5 Replace the battery.
6 Follow step 4 in “Replacing the I/O board”.
7 Follow step 2 to step 5 in “Replacing the base cover”.
Removing the palm-rest and keyboard assembly

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

Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.
3. Remove the heat sink.
4. Remove the memory module.
5. Follow the procedure from step 1 to step 2 in “Removing the hard drive”.
6. Remove the power-adapter port.
7. Remove the wireless card.
8. Remove the coin-cell battery.
9. Remove the speaker.
10. Remove the display assembly.
11. Remove the system board.

Procedure

After performing the steps in prerequisites we are left with the palm-rest and keyboard assembly.
Figure 31. Palm-rest and keyboard assembly

1   palm-rest and keyboard assembly
Replacing the palm-rest and keyboard assembly

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

Procedure

Place the palm-rest and keyboard assembly on a flat surface with the keyboard facing down.

Post-requisites

1. Replace the system board.
2. Replace the display assembly.
3. Replace the speaker.
4. Replace the coin-cell battery.
5. Replace the wireless card.
6. Replace the power-adapter port.
7. Follow the procedure from step 3 to step 5 in “Replacing the hard drive”.
8. Replace the memory module.
9. Replace the heat sink.
10. Replace the battery.
11. Follow the procedure from step 2 to step 5 in “Replacing the base cover”.


Removing the display bezel

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

Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.
3. Remove the wireless card.
4. Remove the display assembly.

Procedure

1. Press the hinge caps to release them from the display hinges.
2 Lift the hinge caps from the display hinges.

**Figure 32. Removing hinge caps**

1 hinge caps (2)  
2 display hinges (2)
3 Using your finger tips gently pry and lift the display bezel off the display back-cover and antenna assembly.

Figure 33. Removing display bezel

1 display bezel

2 display back-cover and antenna assembly
Replacing the display bezel

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

Procedure

1. Align the display bezel with the display back-cover and antenna assembly, and gently snap the display bezel into place.
2. Replace hinge caps on the display hinges and snap them into place.

Post-requisites

1. Replace the display assembly.
2. Replace the wireless card.
3. Replace the battery.
4. Follow the procedure from step 2 to step 5 in “Replacing the base cover”.
Removing the display hinges

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Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.
3. Remove the wireless card.
4. Remove the display assembly.
5. Remove the display bezel.

Procedure

1. Remove the four screws (M2.5x2.5) that secure the display hinges to the display back-cover and antenna assembly.
2 Lift the display hinges off the display back-cover and antenna assembly.

Figure 34. Removing the hinges

1 back-cover and antenna assembly
2 M2.5x2.5 screws (4)
3 display hinges (2)
Replacing the display hinges

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

Procedure

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

Post-requisites

1. Replace the display bezel.
2. Replace the display assembly.
3. Replace the wireless card.
4. Replace the battery.
5. Follow the procedure from step 2 to step 5 in “Replacing the base cover”.

Image
Removing the display panel

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

Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.
3. Remove the wireless card.
4. Remove the display assembly.
5. Remove the display bezel.

Procedure

1. Remove the four screws (M1.2x2) that secure the display panel to the display back-cover and antenna assembly.
2  Carefully turn the display panel over.

Figure 35. Removing the display cable

1  M1.2x2 screws (4)
2  display panel
3  display back-cover and antenna assembly

3  Peel off the adhesive tape from the display cable.
4  Open the latch and disconnect the display cable.
5 Lift the display panel off the display back-cover and antenna assembly.

Figure 36. Removing the display cable

1 adhesive tape  
2 display cable  
3 latch  
4 display panel
Replacing the display panel

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

Procedure

1. Slide the display cable into the connector on the display panel and close the latch to secure the cable.
2. Adhere the adhesive tape to the display cable.
3. Align the screw holes on the display panel with the screw holes on the display back-cover and antenna assembly.
4. Replace the four screws (M1.2x2) that secure the display panel to the display back-cover and antenna assembly.

Post-requisites

1. Replace the display bezel.
2. Replace the display assembly.
3. Replace the wireless card.
4. Replace the battery.
5. Follow the procedure from step 2 to step 5 in “Replacing the base cover”.

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Removing the camera

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

Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.
3. Remove the wireless card.
4. Remove the display hinges.
5. Remove the display bezel.
6. Remove the display panel.

Procedure

⚠️ CAUTION: Place the display-panel assembly on a soft and clean surface to avoid scratching the display.

1. Using a plastic scribe, gently pry the camera from the display back-cover and antenna assembly.
2 Disconnect the camera cable from the camera.

**Figure 37. Removing the camera**

1. camera cable
2. camera
3. plastic scribe
4. display back-cover and antenna assembly
3 Peel the display cable from the display back-cover and antenna assembly.

**Figure 38. Removing the display cable**

1 display back-cover and antenna assembly  
2 display cable
Replacing the camera

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

Procedure

1. Adhere the display cable to the display back-cover and antenna assembly.
2. Connect the camera cable to the camera.
3. Using the alignment post place the camera module on the display back-cover and antenna assembly.
4. Adhere the camera to the display back-cover and antenna assembly and snap the camera into place.

Post-requisites

1. Replace the display panel.
2. Replace the display bezel.
3. Replace the display hinges.
4. Replace the wireless card.
5. Replace the battery.
6. Follow the procedure from step 2 to step 5 in “Replacing the base cover.”
Removing the display back-cover and antenna assembly

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

Prerequisites

1. Follow the procedure from step 1 to step 6 in “Removing the base cover”.
2. Remove the battery.
3. Remove the wireless card.
4. Remove the display hinges.
5. Remove the display bezel.
6. Remove the display panel.
7. Remove the camera.

Procedure

After performing the steps in prerequisites we are left with the display back-cover and antenna assembly.
Figure 39. Removing display back-cover and antenna assembly

1 display back-cover and antenna assembly
Replacing the display back-cover and antenna assembly

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

Procedure

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

Post-requisites

1. Replace the camera.
2. Replace the display panel.
3. Replace the display bezel.
4. Replace the display hinges.
5. Replace the wireless card.
6. Replace the battery.
7. Follow the procedure from step 2 to step 5 in “Replacing the base cover”.
Downloading drivers

Downloading the audio driver

1. Turn on your computer.
2. Go to www.dell.com/support.
3. Click Product support, enter the Service Tag of your computer, and then click Submit.

   NOTE: If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.

4. Click Drivers & downloads → Find it myself.
5. Scroll down the page, and expand Audio.
6. Click Download to download the audio driver for your computer.
7. After the download is complete, navigate to the folder where you saved the audio driver file.
8. Double-click the audio driver file icon and follow the instructions on the screen to install the driver.

   Table 3. Audio controller in device manager

<table>
<thead>
<tr>
<th>Before driver installation</th>
<th>After driver installation</th>
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<tbody>
<tr>
<td>Audio inputs and outputs</td>
<td>Audio inputs and outputs</td>
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<tr>
<td>Speakers / Headphones (Realtek Audio)</td>
<td>Microphone (Realtek Audio)</td>
</tr>
<tr>
<td></td>
<td>Speakers / Headphones (Realtek Audio)</td>
</tr>
</tbody>
</table>

Downloading the graphics driver

1. Turn on your computer.
2. Go to www.dell.com/support.
3. Click Product support enter the Service Tag of your computer, and then click Submit.

   NOTE: If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.

4. Click Drivers & downloads → Find it myself.
5 Scroll down the page, and expand Video.
6 Click Download to download the graphics driver for your computer.
7 After the download is complete, navigate to the folder where you saved the graphics driver file.
8 Double-click the graphics driver file icon, and follow the instructions on the screen.

<table>
<thead>
<tr>
<th>Table 4. Display adapter in device manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before driver installation</td>
</tr>
</tbody>
</table>

![Display adapters](image1)

Downloading the USB 3.0 driver

1 Turn on your computer.
2 Go to [www.dell.com/support](http://www.dell.com/support).
3 Click Product support enter the Service Tag of your computer, and then click Submit.

![NOTE: If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.](image2)

4 Click Drivers & downloads → Find it myself.
5 Scroll down the page and expand Chipset.
6 Click Download to download the USB 3.0 driver for your computer.
7 After the download is complete, navigate to the folder where you saved the USB 3.0 driver file.
8 Double-click the driver file icon and follow the instructions on screen.

<table>
<thead>
<tr>
<th>Table 5. Identifying USB driver in device manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before driver installation</td>
</tr>
</tbody>
</table>

![Universal Serial Bus controllers](image3)
Downloading the Wi-Fi driver

1. Turn on your computer.
2. Go to [www.dell.com/support](http://www.dell.com/support).
3. Click **Product support**, enter the Service Tag of your computer, and then click **Submit**.

   ![Network adapters]

   NOTE: If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.

4. Click **Drivers & downloads → Find it myself**.
5. Scroll down the page, and expand **Network**.
6. Click **Download** to download the Wi-Fi driver for your computer.
7. After the download is complete, navigate to the folder where you saved the Wi-Fi driver file.
8. Double-click the driver file icon and follow the on-screen instructions to install the driver.

---

Downloading the media-card reader driver

1. Turn on your computer.
2. Go to [www.dell.com/support](http://www.dell.com/support).
3. Click **Product support**, enter the Service Tag of your computer, and then click **Submit**.

   NOTE: If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.

4. Click **Drivers & downloads → Find it myself**.
5. Scroll down the page, and expand **Chipset**.
6 Click **Download** to download the media-card reader driver for your computer.
7 After the download is complete, navigate to the folder where you saved the card reader driver file.
8 Double-click the card reader driver file icon, and follow the instructions on the screen.

Table 6. Identifying media-card reader driver in device manager

<table>
<thead>
<tr>
<th>Before driver installation</th>
<th>After driver installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Serial Bus controllers</td>
<td>Universal Serial Bus controllers</td>
</tr>
<tr>
<td>AMD USB 3.0 eXtensible Host Controller - 1.10 (Microsoft)</td>
<td>AMD USB 3.10 eXtensible Host Controller - 1.10 (Microsoft)</td>
</tr>
<tr>
<td>Generic USB Hub</td>
<td>Generic USB Hub</td>
</tr>
<tr>
<td>Realktek USB 2.0 Card Reader</td>
<td>Realktek USB 2.0 Card Reader</td>
</tr>
<tr>
<td>Standard Enhanced PCI to USB Host Controller</td>
<td>USB Composite Device</td>
</tr>
<tr>
<td>USB Mass Storage Device</td>
<td>USB Mass Storage Device</td>
</tr>
<tr>
<td>USB Root Hub</td>
<td>USB Root Hub (USB 3.0)</td>
</tr>
<tr>
<td>USB Root Hub (USB 3.0)</td>
<td>USB Root Hub (USB 3.0)</td>
</tr>
</tbody>
</table>

**Downloading the chipset driver**

1 Turn on your computer.
2 Go to [www.dell.com/support](http://www.dell.com/support).
3 Click **Product support**, enter the Service Tag of your computer, and then click **Submit**.
   
   ![NOTE: If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.](image)
4 Click **Drivers & downloads → Find it myself**.
5 Scroll down the page and expand **Chipset**.
6 Click **Download** to download the chipset driver for your computer.
7 After the download is complete, navigate to the folder where you saved the chipset driver file.
8 Double-click the chipset driver file icon and follow the instructions on the screen.
**System setup**

**NOTE:** Depending on the computer and its installed devices, the items listed in this section may or may not be displayed.

**Boot Sequence**

Boot Sequence allows you to bypass the System Setup–defined boot device order and boot directly to a specific device (for example: optical drive or hard drive). During the Power-on Self Test (POST), when the Dell logo appears, you can:

- Access System Setup by pressing F2 key
- Bring up the one-time boot menu by pressing F12 key

The one-time boot menu displays the devices that you can boot from including the diagnostic option. The boot menu options are:

- Removable Drive (if available)
- STXXXX Drive

**NOTE:** XXX denotes the SATA drive number.

- Optical Drive (if available)
- SATA Hard Drive (if available)
- Diagnostics

**NOTE:** Choosing Diagnostics, will display the ePSA diagnostics screen.

The boot sequence screen also displays the option to access the System Setup screen.

**Navigation keys**

**NOTE:** For most of the System Setup options, changes that you make are recorded but do not take effect until you restart the system.
Keys

<table>
<thead>
<tr>
<th>Key</th>
<th>Navigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up arrow</td>
<td>Moves to the previous field.</td>
</tr>
<tr>
<td>Down arrow</td>
<td>Moves to the next field.</td>
</tr>
<tr>
<td>Enter</td>
<td>Selects a value in the selected field (if applicable) or follow the link in the field.</td>
</tr>
<tr>
<td>Spacebar</td>
<td>Expands or collapses a drop-down list, if applicable.</td>
</tr>
<tr>
<td>Tab</td>
<td>Moves to the next focus area.</td>
</tr>
<tr>
<td>Esc</td>
<td>Moves to the previous page until you view the main screen. Pressing Esc in the main screen displays a message that prompts you to save any unsaved changes and restarts the system.</td>
</tr>
</tbody>
</table>

NOTE: For the standard graphics browser only.

BIOS overview

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

NOTE: Before you change BIOS Setup program, it is recommended that you write down the BIOS Setup program screen information for future reference.

Use the BIOS Setup program for the following purposes:

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

Entering BIOS setup program

1. Turn on (or restart) your computer.
2  During POST, 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 is 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 desktop. Then, turn off your computer and try again.

Identifying the hard drive in BIOS setup program

1  Turn on or restart your computer.
2  Press F2 when the Dell logo is displayed on the screen to enter the BIOS setup program.
   A list of hard drives is displayed under the Main tab.

Checking the system memory in BIOS setup program

1  Turn on or restart your computer.
2  Press F2 when the Dell logo is displayed on the screen to enter the BIOS setup program.
3  On the Main tab, see System memory.
   The memory information is displayed on the right pane.

System Setup Options

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

Table 7. System setup options

<table>
<thead>
<tr>
<th>Main</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>System Time</td>
<td>Displays the current time in hh:mm:ss format.</td>
</tr>
<tr>
<td>System Date</td>
<td>Displays the current date in mm/dd/yyyy format.</td>
</tr>
<tr>
<td>BIOS Version</td>
<td>Displays the BIOS version.</td>
</tr>
</tbody>
</table>

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### Main

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name</td>
<td>Displays the model number of your computer.</td>
</tr>
<tr>
<td>Service Tag</td>
<td>Displays the service tag of your computer.</td>
</tr>
<tr>
<td>Asset Tag</td>
<td>Displays the asset tag of your computer.</td>
</tr>
<tr>
<td>CPU Type</td>
<td>Displays the processor type.</td>
</tr>
<tr>
<td>CPU Speed</td>
<td>Displays the processor speed.</td>
</tr>
<tr>
<td>CPU ID</td>
<td>Displays the processor identification code.</td>
</tr>
<tr>
<td>CPU L1 Cache</td>
<td>Displays the processor L1 cache size.</td>
</tr>
<tr>
<td>CPU L2 Cache</td>
<td>Displays the processor L2 cache size.</td>
</tr>
<tr>
<td>First HDD</td>
<td>Displays the type of hard drive installed.</td>
</tr>
<tr>
<td>Internal eMMC</td>
<td>Displays the type of eMMC card installed.</td>
</tr>
<tr>
<td>AC adapter type</td>
<td>Displays the type of AC adapter installed.</td>
</tr>
<tr>
<td>System Memory</td>
<td>Displays the memory information of your computer.</td>
</tr>
<tr>
<td>Memory Speed</td>
<td>Displays the memory speed.</td>
</tr>
</tbody>
</table>

### Advanced

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerNow! Enable</td>
<td>Enables or disables the Intel(R) SpeedStep(tm) mode of the processor.</td>
</tr>
<tr>
<td></td>
<td>Default: Enabled</td>
</tr>
<tr>
<td>Virtualization</td>
<td>Allows you to enable or disable the Intel Virtualization technology.</td>
</tr>
<tr>
<td></td>
<td>Default: Enabled</td>
</tr>
<tr>
<td>USB Emulation</td>
<td>Allows you to enable or disable the USB emulation feature. This feature defines how the BIOS, in the absence of a USB-aware operating system, handles USB</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Advanced devices. USB emulation</td>
<td>USB emulation is always enabled during POST.</td>
</tr>
<tr>
<td><strong>NOTE:</strong></td>
<td>You cannot boot any type of USB device (floppy, hard drive, or memory key) when this option is off.</td>
</tr>
<tr>
<td>USB Wake Support</td>
<td>Allows you to enable USB devices to wake the computer from standby or to disable the USB wake support feature.</td>
</tr>
<tr>
<td><strong>NOTE:</strong></td>
<td>If USB PowerShare is enabled, a device connected to the USB PowerShare connector may not wake the computer.</td>
</tr>
<tr>
<td>SATA Operation</td>
<td>Allows you to configure the operating mode of the integrated SATA hard drive controller. Default: AHCI</td>
</tr>
<tr>
<td>Adapter Warnings</td>
<td>Allows you to choose if the computer should display warning messages when you use AC adapters that are not supported by your computer. Default: Enabled</td>
</tr>
<tr>
<td>Function Key Behavior</td>
<td>Allows you to set function key or multimedia key as the default function key behavior. Default: Function key</td>
</tr>
<tr>
<td>Battery Health</td>
<td>Displays the battery health.</td>
</tr>
<tr>
<td>Miscellaneous Devices</td>
<td>Displays the miscellaneous devices installed in your computer.</td>
</tr>
<tr>
<td>BIOS Recovery from Hard Drive</td>
<td>Enable the user to recover from certain corrupted BIOS conditions from a recovery file on the user primary hard drive</td>
</tr>
</tbody>
</table>
### Advanced

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS Auto-Recovery</td>
<td>Enable the user to recover from certain corrupted BIOS conditions. Default: Disabled</td>
</tr>
<tr>
<td>Always Perform Integrity Check</td>
<td>Enable the user to perform integrity check</td>
</tr>
<tr>
<td>Battery Charge Configuration</td>
<td>Set the battery charge settings with a preselected custom charge start and stop. Default: Adaptive</td>
</tr>
<tr>
<td>Advanced Battery Charge Mode</td>
<td>Enable Advance Battery Charge Configuration from the beginning of the day to a specified work period. Default: Disabled</td>
</tr>
</tbody>
</table>

### SupportAssist System Resolution

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto OS Recovery Threshold</td>
<td>Control the automatic boot flow for SupportAssist System Resolution Console and for Dell OS Recovery tool.</td>
</tr>
<tr>
<td>SupportAssist OS Recovery</td>
<td>Enable or disable the boot flow for the SupportAssist OS Recovery tool in the even of certain system errors. Default: Disabled</td>
</tr>
</tbody>
</table>

### Security

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin Password Status</td>
<td>Displays if the administrator password is clear or set. Default: Not set</td>
</tr>
<tr>
<td>System password Status</td>
<td>Displays if the system password is clear or set. Default: Not set</td>
</tr>
<tr>
<td>HDD1 password Status</td>
<td>Displays if the HDD password is clear or set. Default: Not set</td>
</tr>
<tr>
<td>Admin Password</td>
<td>Allows you to set the administrator password. The administrator password controls access to the system setup utility.</td>
</tr>
</tbody>
</table>
### Security

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Password</td>
<td>Allows you to set the system password. The system password controls access to the computer at boot.</td>
</tr>
<tr>
<td>HDD1 password</td>
<td>Allows you to set, change or delete the hard-disk drive password.</td>
</tr>
<tr>
<td>Password Change</td>
<td>Allows you to permit or deny system password or HDD password changes.</td>
</tr>
<tr>
<td></td>
<td>Default: Permitted</td>
</tr>
<tr>
<td>Computrace</td>
<td>Enable or disable the BIOS module interface of the optional Computrace Service from Absolute Software.</td>
</tr>
<tr>
<td>Firmware TPM</td>
<td></td>
</tr>
<tr>
<td>PPI Bypass for Clear Command</td>
<td>Enable or disable the PPI Bypass for Clear Command.</td>
</tr>
<tr>
<td></td>
<td>Default: Disabled.</td>
</tr>
<tr>
<td>UEFI Capsule Firmware Updates</td>
<td>Enable or disable BIOS updates through UEFI capsule update packages.</td>
</tr>
</tbody>
</table>

### Table 10. System setup options

### Boot

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast Boot</td>
<td></td>
</tr>
<tr>
<td>Secure Boot</td>
<td>Enable or disable the secure boot feature.</td>
</tr>
<tr>
<td>Legacy Option ROMs</td>
<td>Enable or disable the Legacy Option ROMs.</td>
</tr>
<tr>
<td>Boot List Option</td>
<td>Displays the available boot options.</td>
</tr>
<tr>
<td>File Browser Add Boot Option</td>
<td>Allows to add the boot options.</td>
</tr>
<tr>
<td>File Browser Del Boot Option</td>
<td>Allows to delete the boot options</td>
</tr>
<tr>
<td>Boot Option Priorities</td>
<td>Displays the boot sequence.</td>
</tr>
<tr>
<td>Exit</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Exit Saving Changes</td>
<td>Allows you to exit system setup saving your changes.</td>
</tr>
<tr>
<td>Save Changes Without Exit</td>
<td>Allows you to save your changes without exiting system setup.</td>
</tr>
<tr>
<td>Exit Discarding Changes</td>
<td>Allows you to exit system setup without saving your changes.</td>
</tr>
<tr>
<td>Load Optimal Defaults</td>
<td>Allows you to restore default values for all system setup options.</td>
</tr>
<tr>
<td>Discard Changes</td>
<td>Allows you to load previous values for all system setup options.</td>
</tr>
</tbody>
</table>
System and setup password

You can create a system password and a setup password to secure your computer.

<table>
<thead>
<tr>
<th>Password type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>System password</td>
<td>Password that you must enter to log on to your system.</td>
</tr>
<tr>
<td>Setup password</td>
<td>Password that you must enter to access and make changes to the BIOS settings of your computer.</td>
</tr>
</tbody>
</table>

⚠️ CAUTION: The password features provide a basic level of security for the data on your computer.

⚠️ CAUTION: Anyone can access the data stored on your computer if it is not locked and left unattended.

⚠️ NOTE: System and setup password feature is disabled.

Assigning a system password and setup password

You can assign a new System Password only when the status is in Not Set. To enter the system setup, press F2 immediately after a power-on or re-boot.

1 In the System BIOS or System Setup screen, select Security and press Enter. The Security screen is displayed.

2 Select System Password and create a password in the Enter the new password field.

Use the following guidelines to assign the system password:

- A password can have up to 32 characters.
- The password can contain the numbers 0 through 9.
- Only lower case letters are valid, upper case letters are not allowed.
- Only the following special characters are allowed: space, ("), (+), (-), (.), (/), (;), ([), (]), (`).

3 Type the system password that you entered earlier in the Confirm new password field and click OK.
4 Press Esc and a message prompts you to save the changes.
5 Press Y to save the changes.
The computer reboots.

Deleting or changing an existing system and or setup password

Ensure that the Password Status is Unlocked (in the System Setup) before attempting to delete or change the existing System and/or Setup password. You cannot delete or change an existing System or Setup password, if the Password Status is Locked.

To enter the System Setup, press F2 immediately after a power-on or reboot.

1 In the System BIOS or System Setup screen, select System Security and press Enter.
   The System Security screen is displayed.
2 In the System Security screen, verify that Password Status is Unlocked.
3 Select System Password, alter or delete the existing system password and press Enter or Tab.
4 Select Setup Password, alter or delete the existing setup password and press Enter or Tab.

   NOTE: If you change the System and/or Setup password, re-enter the new password when promoted. If you delete the System and/or Setup password, confirm the deletion when promoted.
5 Press Esc and a message prompts you to save the changes.
6 Press Y to save the changes and exit from System Setup.
The computer reboots.

Clearing forgotten passwords

Contact Dell technical support to clear the forgotten passwords, see www.dell.com/contactdell.
Clearing CMOS settings

⚠️ CAUTION: Clearing CMOS settings will reset the BIOS settings on your computer.

1. Remove the base cover.
2. Remove the battery.
3. Disconnect the coin-cell battery.
4. Wait for one minute.
5. Connect the coin-cell battery.
6. Replace the battery.
7. Replace the base cover.
Troubleshooting

Flashing the BIOS

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

Follow these steps to flash the BIOS:

1. Turn on your computer.
2. Go to www.dell.com/support.
3. Click Product support, enter the Service Tag of your computer, and then click Submit.

   NOTE: If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.

4. Click Drivers & downloads → Find it myself.
5. Select the operating system installed on your computer.
6. Scroll down the page and expand BIOS.
7. Click Download to download the latest version of the BIOS for your computer.
8. After the download is complete, navigate to the folder where you saved the BIOS update file.
9. Double-click the BIOS update file icon and follow the instructions on the screen.

Flea power release

Flea power is the residual static electricity that remains on the computer even after it has been powered off and the battery has been removed. The following procedure provides the instructions on how to conduct flea power release:

1. Turn off your computer.
2. Remove the base cover.
3. Press and hold the power button for 15 seconds to drain the flea power.
4. Replace the base cover.
5. Turn on your computer.
Flashing BIOS (USB key)

1. Follow the procedure from step 1 to step 7 in "Flashing the BIOS" to download the latest BIOS setup program file.
2. Create a bootable USB drive. For more information see the knowledge base article SLN143196 at www.dell.com/support.
3. Copy the BIOS setup program file to the bootable USB drive.
4. Connect the bootable USB drive to the computer that needs the BIOS update.
5. Restart the computer and press F12 when the Dell logo is displayed on the screen.
6. Boot to the USB drive from the One Time Boot Menu.
7. Type the BIOS setup program filename and press Enter.
8. The BIOS Update Utility appears. Follow the instructions on the screen to complete the BIOS update.

Enhanced Pre-Boot System Assessment (ePSA) diagnostics

⚠️ CAUTION: Use the ePSA diagnostics to test only your computer. Using this program with other computers may cause invalid results or error messages.

The ePSA diagnostics (also known as system diagnostics) performs a complete check of your hardware. The ePSA is embedded with the BIOS and is launched by the BIOS internally. The embedded system diagnostics provides a set of options for particular devices or device groups allowing you to:

- Run tests automatically or in an interactive mode
- Repeat tests
- Display or save test results
- Run thorough tests to introduce additional test options to provide extra information about the failed device(s)
- View status messages that inform you if tests are completed successfully
- View error messages that inform you of problems encountered during testing

NOTE: Some tests for specific devices require user interaction. Always ensure that you are present at the computer terminal when the diagnostic tests are performed.
Running the ePSA diagnostics

1. Turn on your computer.
2. As the computer boots, press the F12 key as the Dell logo appears.
3. On the boot menu screen, select the Diagnostics option.
4. Click the arrow at the bottom left corner.
   Diagnostics front page is displayed.
5. Click the arrow in the lower-right corner to go to the page listing.
   The items detected are listed.
6. To run a diagnostic test on a specific device, press Esc and click Yes to stop the diagnostic test.
7. Select the device from the left pane and click Run Tests.
8. If there are any issues, error codes are displayed.
   Note the error code and validation number and contact Dell.

Wi-Fi power cycle

If your computer is unable to access the internet due to Wi-Fi connectivity issues a Wi-Fi power cycle procedure may be performed. The following procedure provides the instructions on how to conduct a Wi-Fi power cycle:

- **NOTE:** Some ISPs (Internet Service Providers) provide a modem/router combo device.

1. Turn off your computer.
2. Turn off the modem.
3. Turn off the wireless router.
4. Wait for 30 seconds.
5. Turn on the wireless router.
6. Turn on the modem.
7. Turn on your computer.
Getting help and contacting Dell

Self-help resources

You can get information and help on Dell products and services using these self-help resources:

<table>
<thead>
<tr>
<th>Table 12. Self-help resources</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Information about Dell products and services</td>
<td><a href="http://www.dell.com">www.dell.com</a></td>
</tr>
<tr>
<td>Dell Help &amp; Support app</td>
<td></td>
</tr>
<tr>
<td>Tips</td>
<td></td>
</tr>
<tr>
<td>Contact Support</td>
<td>In Windows search, type <strong>Contact Support</strong>, and press Enter.</td>
</tr>
</tbody>
</table>
| Online help for operating system                                   | [www.dell.com/support/windows](http://www.dell.com/support/windows)  
|                                                                     | [www.dell.com/support/linux](http://www.dell.com/support/linux)     |
| Troubleshooting information, user manuals, setup instructions, product specifications, technical help blogs, drivers, software updates, and so on. | [www.dell.com/support](http://www.dell.com/support) |
| Dell knowledge base articles for a variety of computer concerns.   | 1 Go to [www.dell.com/support](http://www.dell.com/support). |
|                                                                   | 2 Type the subject or keyword in the **Search** box. |
|                                                                   | 3 Click **Search** to retrieve the related articles. |

Learn and know the following information about your product:  
- Product specifications  
- Operating system  

See **Me and My Dell** at [www.dell.com/support/manuals](http://www.dell.com/support/manuals).
• Setting up and using your product
• Data backup
• Troubleshooting and diagnostics
• Factory and system restore
• BIOS information

To locate the Me and My Dell relevant to your product, identify your product through one of the following:

• Select Detect Product.
• Locate your product through the drop-down menu under View Products.
• Enter the Service Tag number or Product ID in the search bar.

Contacting Dell

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

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

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