

XPS 13 9305

Service Manual



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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Safety instructions



Use the following safety guidelines to protect your computer from potential damage and to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that you have read the safety information that shipped with your computer.

-  **WARNING:** Before working inside your computer, read the safety information that is shipped with your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.
-  **WARNING:** Disconnect your computer from 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 your computer to an electrical outlet.
-  **CAUTION:** To avoid damaging the computer, ensure that the work surface is flat, dry, and clean.
-  **CAUTION:** To avoid damaging the components and cards, handle them by their edges, and avoid touching the pins and the 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 is 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 it by its connector or its pull tab, not the cable itself. Some cables have connectors with locking tabs or thumbscrews that you must disengage before disconnecting the cable. When disconnecting cables, keep them evenly aligned to avoid bending the connector pins. When connecting cables, ensure that the ports and the connectors are correctly oriented and aligned.
-  **CAUTION:** Press and eject any installed card from the media-card reader.
-  **CAUTION:** Exercise caution when handling Lithium-ion batteries in laptops. Swollen batteries should not be used and should be replaced and disposed properly.
-  **NOTE:** The color of your computer and certain components may appear differently than shown in this document.

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.

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 and installing components

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

Recommended tools

The procedures in this document may require the following tools:

- Phillips screwdriver #0
- Torx #5 (T5) screwdriver
- Plastic scribe

Screw list

NOTE: When removing screws from a component, it is recommended to note the screw type, the quantity of screws, and then place them in a screw storage box. This is to ensure that the correct number of screws and correct screw type is restored when the component is replaced.

NOTE: Some computers have magnetic surfaces. Ensure that the screws are not left attached to such surfaces when replacing a component.

NOTE: Screw color may vary with the configuration ordered.

Table 1. Screw list


















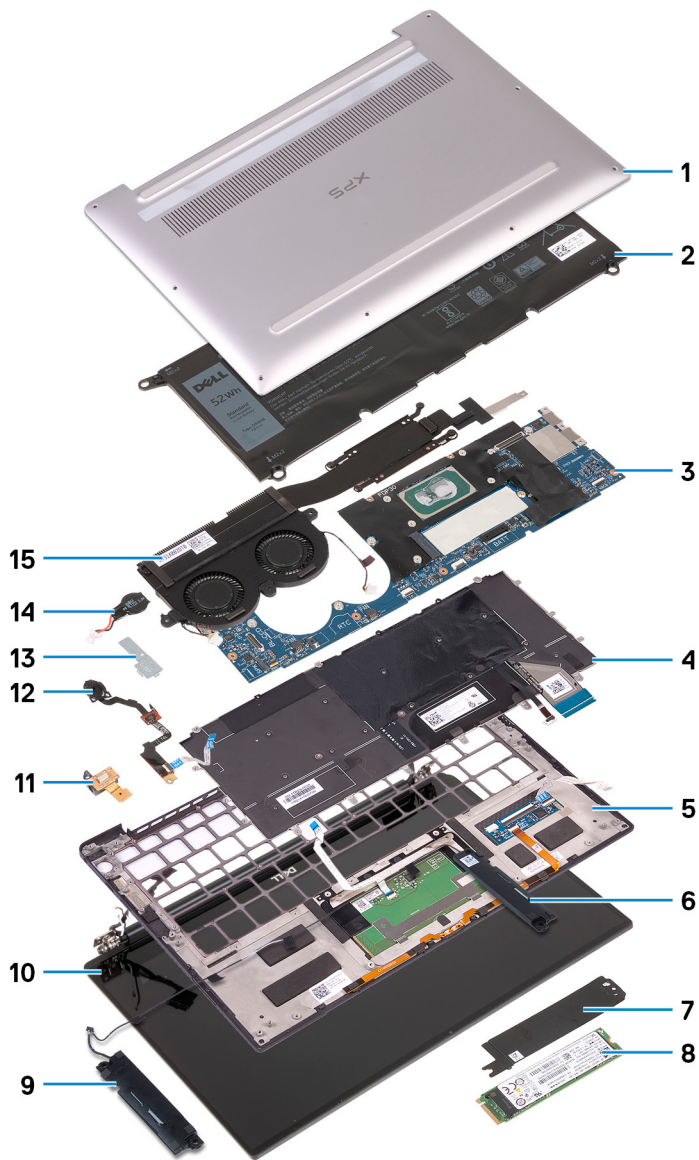
| Component | Secured to | Screw type | Quantity | Screw image |
|----------------------------|--------------------|------------|----------|---|
| Keyboard | Palm-rest assembly | M1.6x1.5 | 29 |  |
| Fingerprint-reader board | Palm-rest assembly | M1.6x1.5 | 1 |  |
| Power button | Palm-rest assembly | M1.4x1.7 | 2 |  |
| System board | Palm-rest assembly | M1.6x2.5 | 10 |  |
| Speakers | Palm-rest assembly | M2x2 | 4 |  |
| Heat sink | System board | M2x3 | 4 |  |
| Fans | System board | M1.6x3L | 2 |  |
| Heat-sink and fan assembly | System board | M2x3 | 4 |  |
| Heat-sink and fan assembly | System board | M1.6x3 | 2 |  |
| Headset port | Palm-rest assembly | M1.6x3 | 1 |  |

Table 1. Screw list (continued)

| Component | Secured to | Screw type | Quantity | Screw image |
|--|--------------------|-------------------|-----------------|---|
| Display assembly | Palm-rest assembly | M2.5x4 | 4 |  |
| Wireless antenna and camera cable bracket | System board | M1.6x3L | 1 |  |
| Display cable bracket | System board | M1.6x2.5 | 2 |  |
| Solid-state drive shield and solid-state drive | System board | M2x3L | 1 |  |
| Battery | Palm-rest assembly | M2x2 | 4 |  |
| Battery | Palm-rest assembly | M1.6x4 | 1 |  |
| Base cover | Palm-rest assembly | M2x3, Torx | 8 |  |


Major components of XPS 13 9305

The following image shows the major components of XPS 13 9305.



1. Base cover
2. Battery
3. System board
4. Keyboard
5. Palm-rest assembly
6. Right speaker
7. Solid-state drive shield
8. Solid-state drive
9. Left speaker
10. Display assembly
11. Headset port
12. Power button with fingerprint reader
13. Camera-cable bracket
14. Coin-cell battery
15. Heat-sink and fan assembly

i NOTE: Applicable to computers with Intel Core i5 and i7 processors only. The heat sink and the fans in computers with Intel Core i3 processor are separate units.

 **NOTE:** Dell provides a list of components and their part numbers for the original system configuration purchased. These parts are available according to warranty coverages purchased by the customer. Contact your Dell sales representative for purchase options.

Removing the base cover

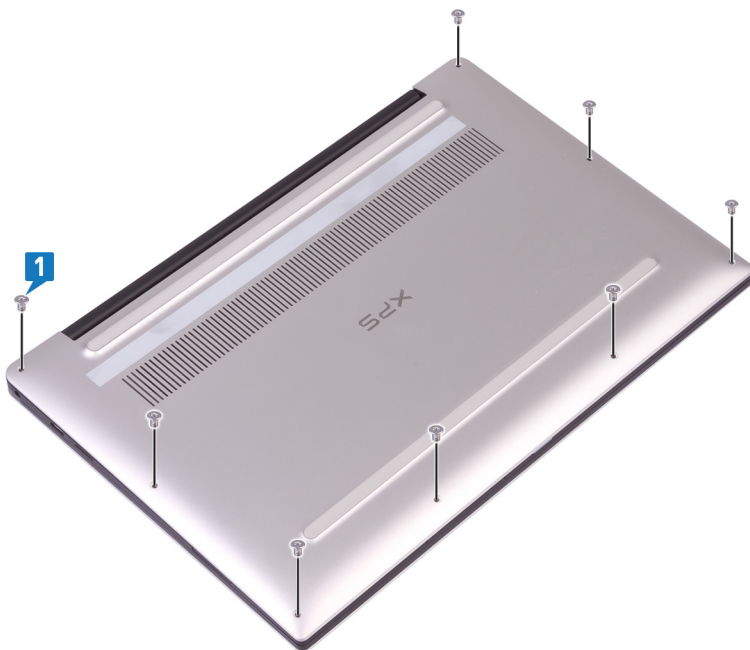
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices,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

Procedure

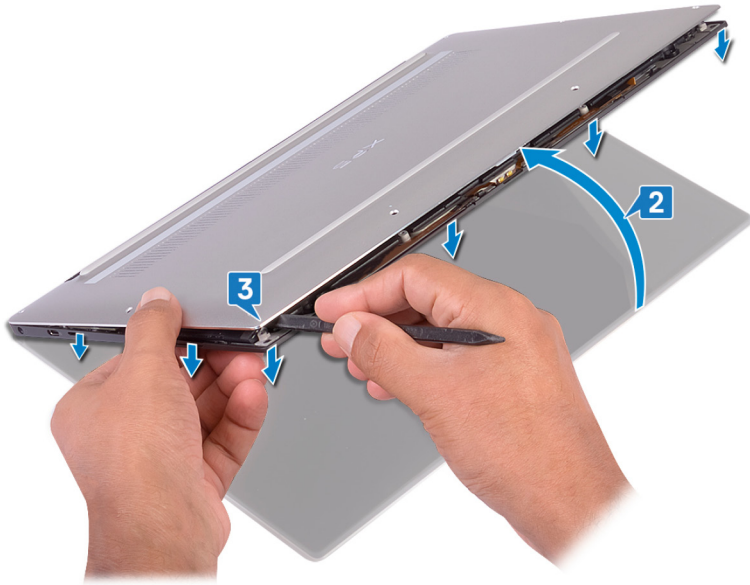
CAUTION: To avoid causing damage to the computer, do not pry the base cover from the rear near the hinges.

CAUTION: Torx T5 screws can strip easily when removed, particularly if the screws were treated with thread-locking adhesive. Ensure that the screwdriver bit is inserted firmly and seated straight into the screw head when removing the screw.

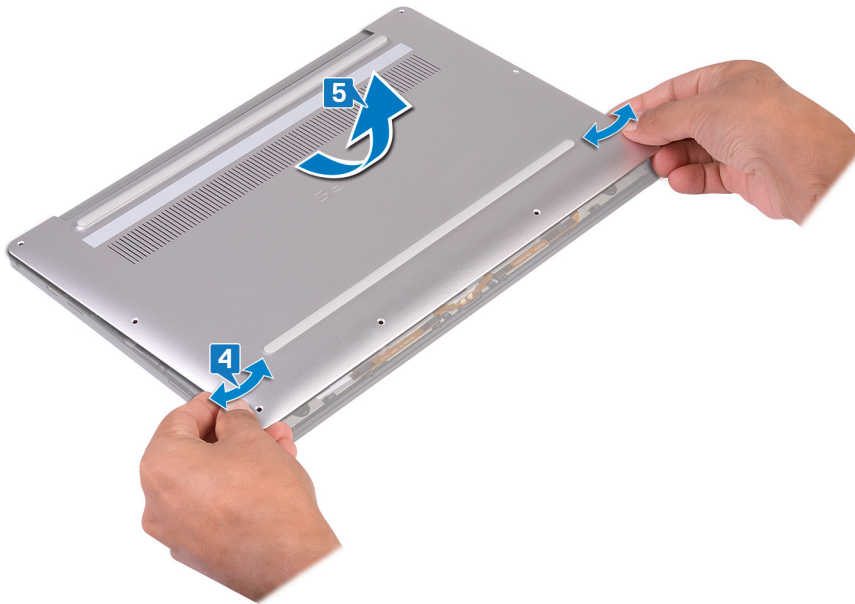
1. Remove the eight screws (M2x3, Torx T5) that secure the base cover to the palm-rest assembly.



2. With the computer face-down, open the computer at an angle.
3. Using a plastic scribe, pry the base cover from the palm-rest assembly starting from the front left and right corner.



4. Moving the base cover from left to right, release the clips securing the base cover to the palm-rest assembly.
5. Lift the base cover from the palm-rest assembly.

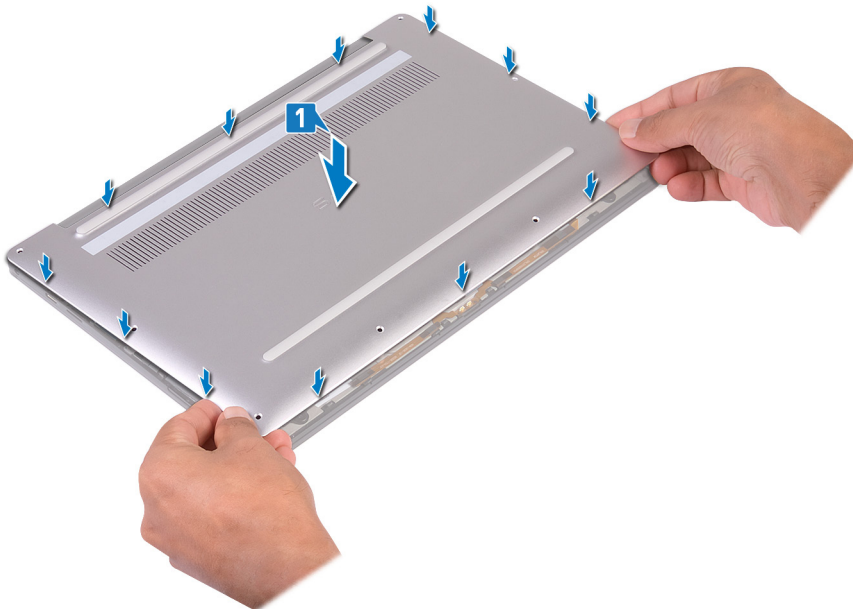


Replacing the base cover

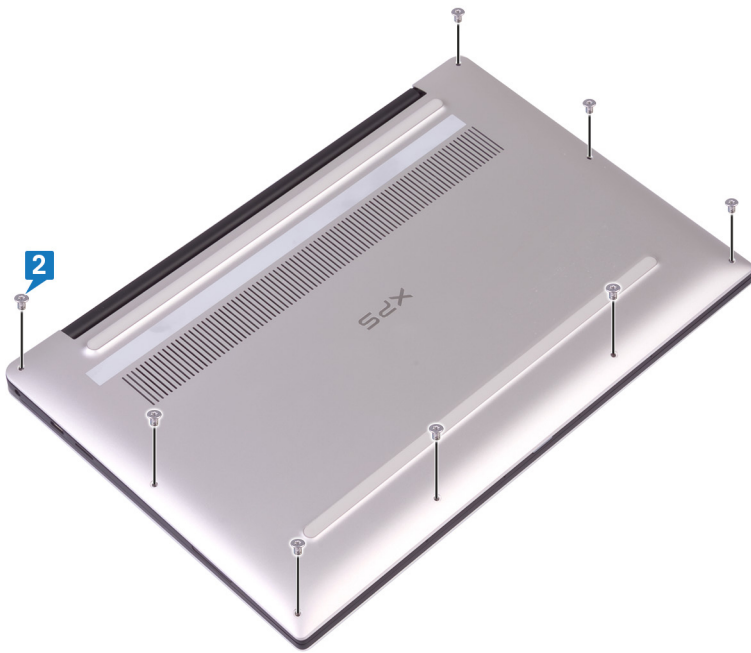
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices,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

Procedure

1. Align the screw holes on the base cover with the screw holes on the palm-rest assembly and slide in the base cover into place.



2. Replace the eight screws (M2x3, Torx) that secure the base cover to the palm-rest assembly.



Removing the battery

NOTE: 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.

Lithium-ion battery precautions

CAUTION:

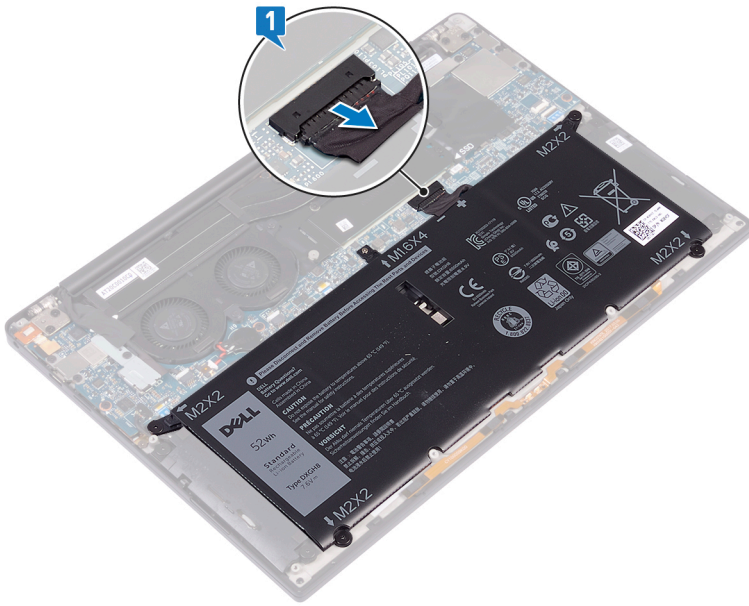
- Exercise caution when handling Lithium-ion batteries.
- Discharge the battery completely before removing it. Disconnect the AC power adapter from the system and operate the computer solely on battery power—the battery is fully discharged when the computer no longer turns on when the power button is pressed.
- Do not crush, drop, mutilate, or penetrate the battery with foreign objects.
- Do not expose the battery to high temperatures, or disassemble battery packs and cells.
- Do not apply pressure to the surface of the battery.
- Do not bend the battery.
- Do not use tools of any kind to pry on or against the battery.
- Ensure any screws during the servicing of this product are not lost or misplaced, to prevent accidental puncture or damage to the battery and other system components.
- If the battery gets stuck inside your computer as a result of swelling, do not try to release it as puncturing, bending, or crushing a lithium-ion battery can be dangerous. In such an instance, contact Dell technical support for assistance. See www.dell.com/contactdell.
- Always purchase genuine batteries from www.dell.com or authorized Dell partners and resellers.
- Swollen batteries should not be used and should be replaced and disposed properly. For guidelines on how to handle and replace swollen Lithium-ion batteries, see [Handling swollen Lithium-ion batteries](#).

Prerequisites

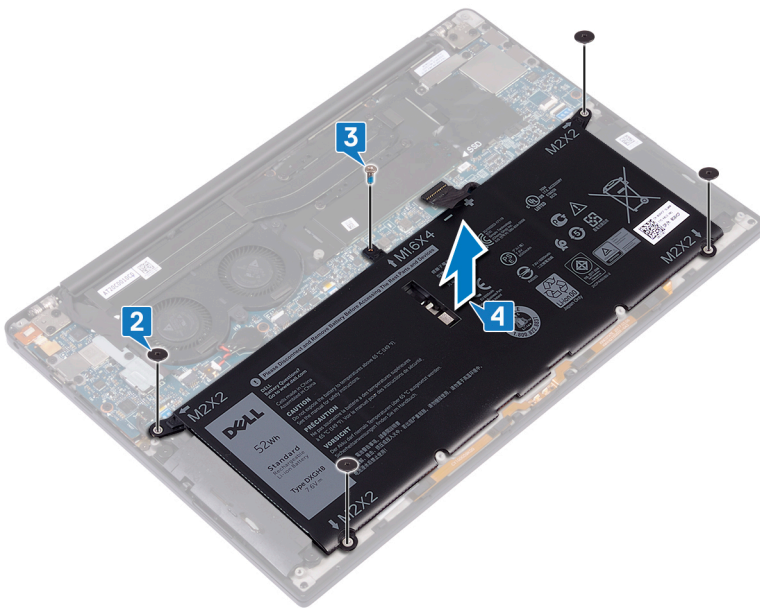
Remove the [base cover](#).

Procedure

1. Ensure that the battery cable is disconnected from the system board.



2. Remove the four screws (M2x2) that secure the battery to the palm-rest assembly.
3. Remove the screw (M1.6x4) that secures the battery to the palm-rest assembly.
4. Lift the battery off the palm-rest assembly.



5. Turn the computer over, open the display, and press the power button for about 5 seconds to ground the computer.

Replacing the battery

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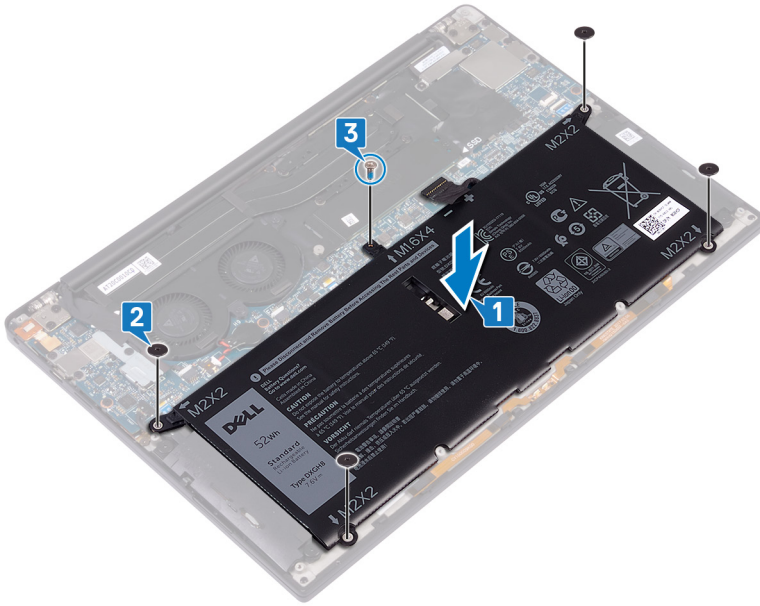
Lithium-ion battery precautions

CAUTION:

- Exercise caution when handling Lithium-ion batteries.
- Discharge the battery completely before removing it. Disconnect the AC power adapter from the system and operate the computer solely on battery power—the battery is fully discharged when the computer no longer turns on when the power button is pressed.
- Do not crush, drop, mutilate, or penetrate the battery with foreign objects.
- Do not expose the battery to high temperatures, or disassemble battery packs and cells.
- Do not apply pressure to the surface of the battery.
- Do not bend the battery.
- Do not use tools of any kind to pry on or against the battery.
- Ensure any screws during the servicing of this product are not lost or misplaced, to prevent accidental puncture or damage to the battery and other system components.
- If the battery gets stuck inside your computer as a result of swelling, do not try to release it as puncturing, bending, or crushing a lithium-ion battery can be dangerous. In such an instance, contact Dell technical support for assistance. See www.dell.com/contactdell.
- Always purchase genuine batteries from www.dell.com or authorized Dell partners and resellers.
- Swollen batteries should not be used and should be replaced and disposed properly. For guidelines on how to handle and replace swollen Lithium-ion batteries, see [Handling swollen Lithium-ion batteries](#).

Procedure

1. Align the screw holes on the battery with the screw holes on the palm-rest assembly.
2. Replace the four screws (M2x2) that secure the battery to the palm-rest assembly.
3. Replace the screw (M1.6x4) that secures the battery to the palm-rest assembly.



Post-requisites

Replace the [base cover](#).

Removing the solid-state drive

NOTE: 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: Solid-state drives are fragile. Exercise care when handling the solid-state drive.

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

Prerequisites

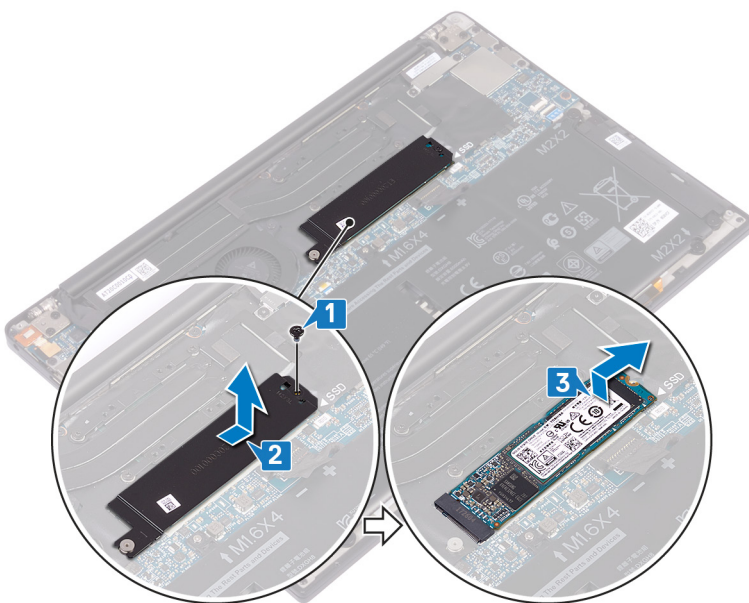
1. Remove the [base cover](#).
2. Remove the [battery](#).

Procedure to remove M.2 2280 and M.2 2230 solid-state drives

Procedure to remove M.2 2280 solid-state drive

1. Remove the screw (M2x3) that secures the solid-state drive shield and the solid-state drive to the system board.
2. Slide and remove the solid-state drive shield from the solid state drive slot.
3. Lift the solid-state drive at an angle, then slide and remove the solid-state drive from the solid-state drive slot.

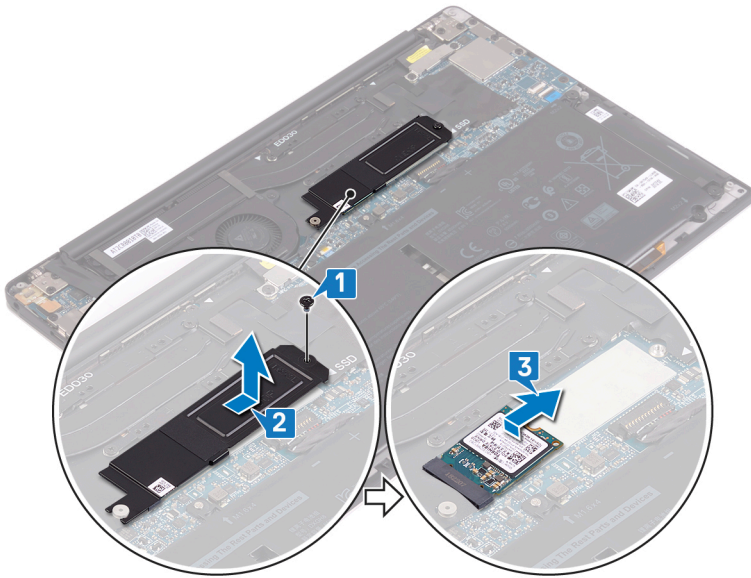
NOTE: The 2280 solid-state drive has a unique thermal plate and cannot be interchanged with the 2230 solid-state drive thermal plate.



Procedure to remove M.2 2230 solid-state drive

1. Remove the screw (M2x3) that secures the solid-state drive shield and the solid-state drive to the system board.
2. Slide and remove the solid-state drive shield from the solid state drive slot.
3. Lift the solid-state drive at an angle, then slide and remove the solid-state drive from the solid-state drive slot.

NOTE: The 2230 solid-state drive has a unique thermal plate and cannot be interchanged with the 2280 solid-state drive thermal plate.



Replacing the solid-state drive

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

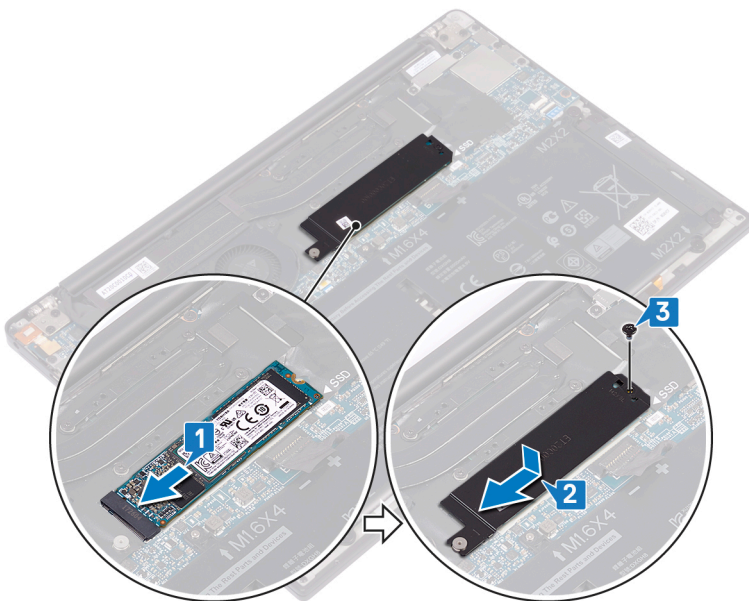
Procedure to replace M.2 2280 and M.2 2230 solid-state drives

Procedure to replace 2280 solid-state drive

1. Align the notches on the solid-state drive with the tabs in the solid-state drive slot, then slide the solid-state drive at an angle into the solid-state drive slot.
2. Slide the solid-state drive shield into the solid-state drive shield slot. Then align the screw hole on the solid-state drive shield and solid-state drive to the screw hold on the system board.

NOTE: The 2280 solid-state drive has a unique thermal plate and cannot be interchanged with the 2380 solid-state drive thermal plate.

3. Replace the screw (M2x3) that secures the solid-state drive to the system board.



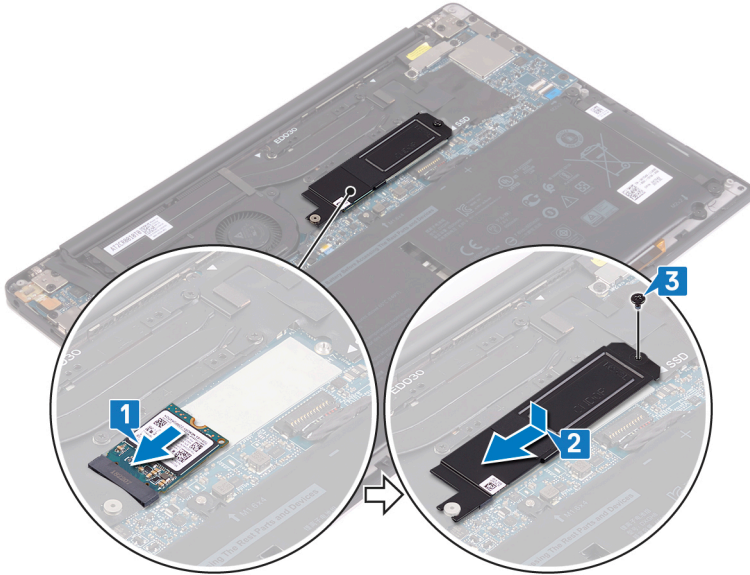
Procedure to replace 2230 solid-state drive

1. Align the notches on the solid-state drive with the tabs in the solid-state drive slot, then slide the solid-state drive at an angle into the solid-state drive slot.

- Slide the solid-state drive shield into the solid-state drive shield slot. Then align the screw hole on the solid-state drive shield and solid-state drive to the screw hold on the system board.

NOTE: The 2230 solid-state drive has a unique thermal plate and cannot be interchanged with the 2280 solid-state drive thermal plate.

- Replace the screw (M2x3) that secures the solid-state drive to the system board.



Post-requisites

- Replace the [battery](#).
- Replace the [base cover](#).

Removing the speakers

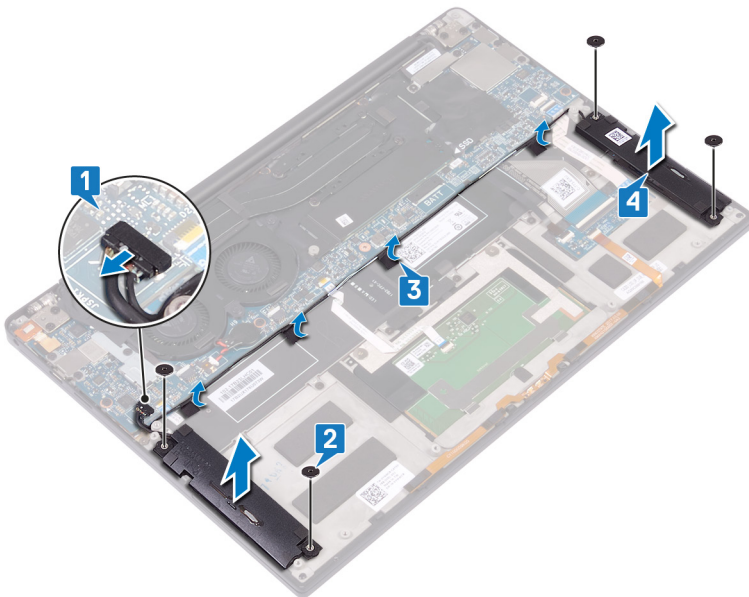
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices,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

Prerequisites

1. Remove the [base cover](#).
2. Remove the [battery](#).

Procedure

1. Disconnect the speaker cable from the system board.
2. Remove the four screws (M2x2) that secure the left and right speakers to the palm-rest assembly.
3. Note the speaker-cable routing and peel off the tapes (4) that secure the speaker cable to the keyboard.
4. Lift the left and right speakers, along with their cables, off the palm-rest assembly.

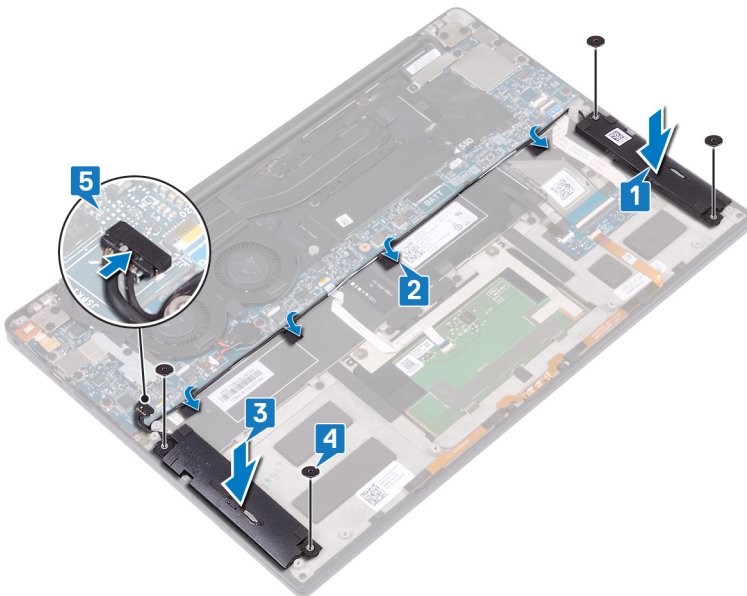


Replacing the speakers

NOTE: 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. Using the alignment posts on the palm-rest assembly, place the left speaker on the palm-rest assembly.
2. Route the speaker cable on the system board and adhere the tape to the system board.
3. Using the alignment posts on the palm-rest assembly, place the right speaker on the palm-rest assembly.
4. Replace the four screws (M2x2) that secure the speakers to the palm-rest assembly.
5. Connect the speaker cable to the system board.



Post-requisites

1. Replace the [battery](#).
2. Replace the [base cover](#).

Removing the coin-cell battery

NOTE: 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.

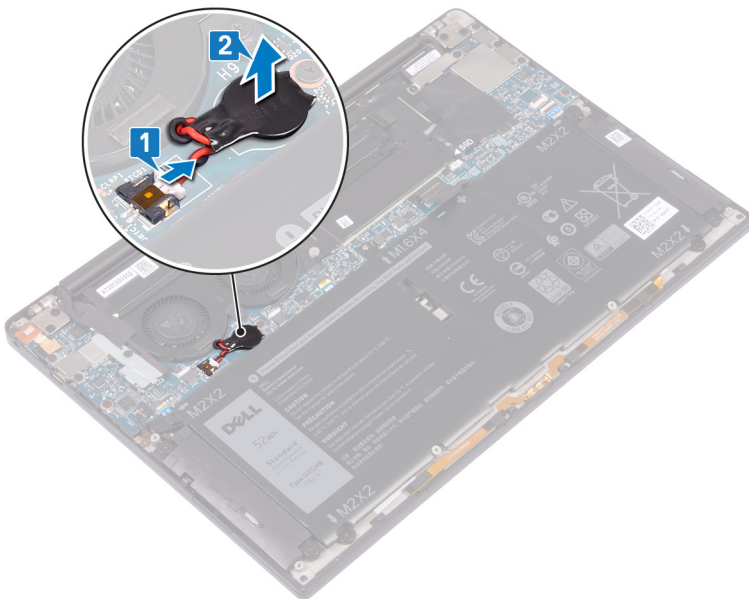
CAUTION: Removing the coin-cell battery resets the BIOS setup program's settings to default. It is recommended that you note the BIOS setup program's settings before removing the coin-cell battery.

Prerequisites

1. Remove the [base cover](#).
2. Remove the [battery](#).

Procedure

1. Disconnect the coin-cell battery cable from the system board.
2. Note the location of the coin-cell battery and pry it off the system board.

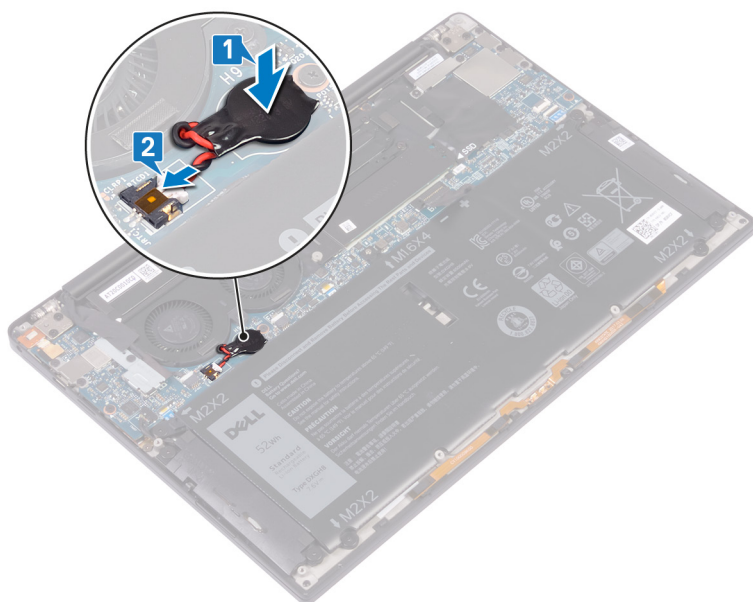


Replacing the coin-cell battery

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Procedure

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



Post-requisites

1. Replace the [battery](#).
2. Replace the [base cover](#).

Removing the heat sink - i3 processor only

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

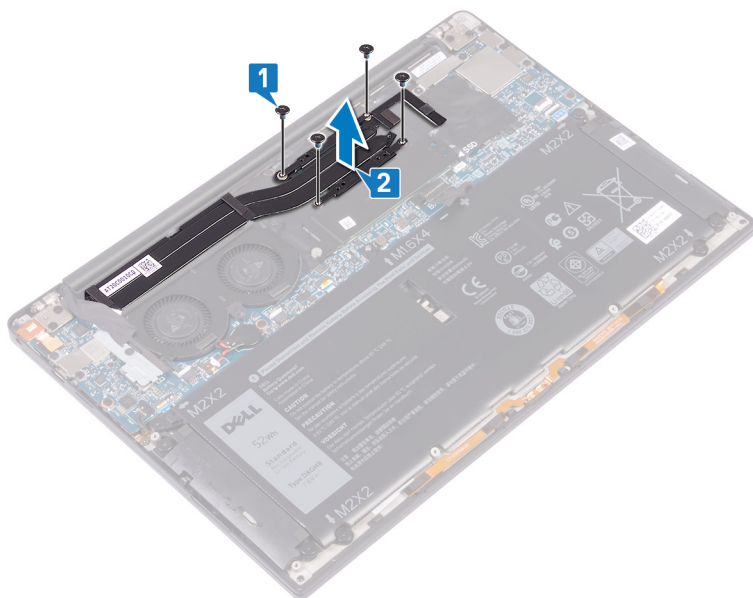
CAUTION: For maximum cooling of the processor, do not touch the heat transfer areas on the heat sink. The oils in your skin can reduce the heat transfer capability of the thermal grease.

Prerequisites

1. Remove the [base cover](#).
2. Remove the [battery](#).

Procedure

1. In reverse-sequential order (as indicated on the heat sink), remove the four screws (M2x3) that secure the heat sink to the system board.
2. Lift the heat sink off the system board.



Replacing the heat sink - i3 processor only

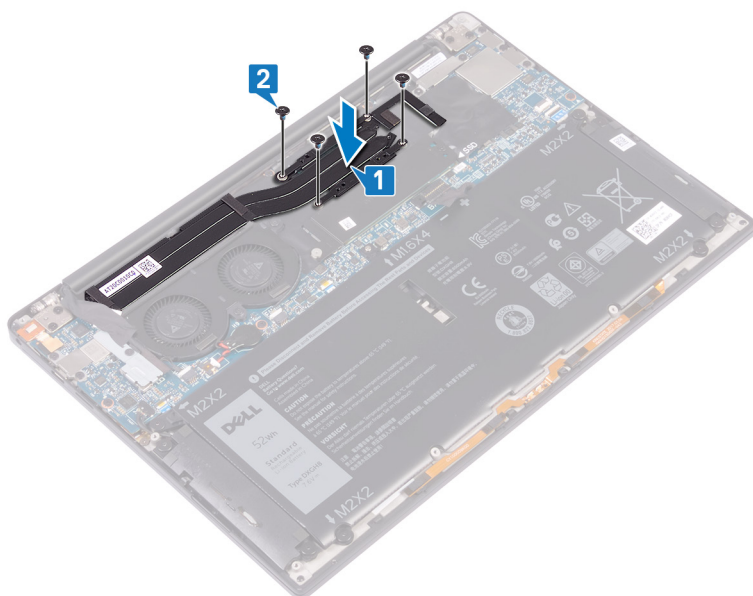
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, 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: If either the system board or the heat sink is replaced, use the thermal pad/paste provided in the kit to ensure that thermal conductivity is achieved.

Procedure

1. Align the screw holes on the heat sink with the screw holes on the system board.
2. Replace the four screws (M2x3) that secure the heat sink to the system board in sequential order (as indicated on the heat sink).



Post-requisites

1. Replace the [battery](#).
2. Replace the [base cover](#).

Removing the fans - i3 processor only

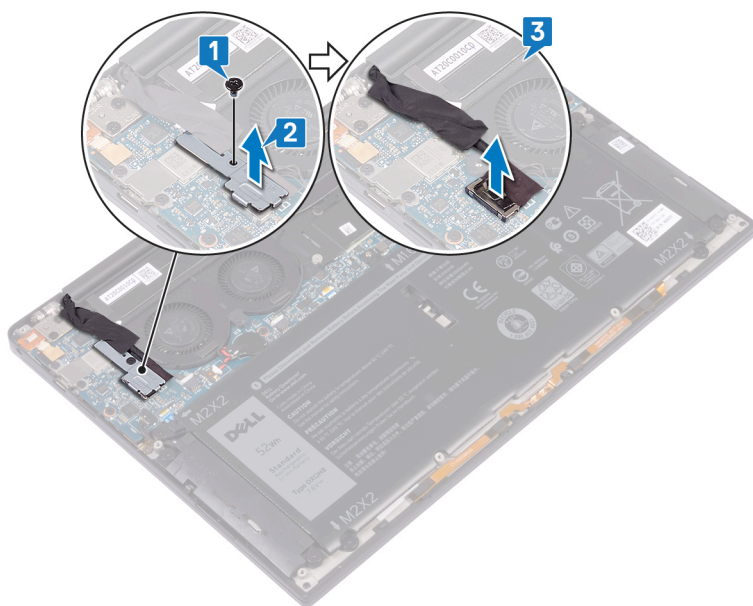
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices,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

Prerequisites

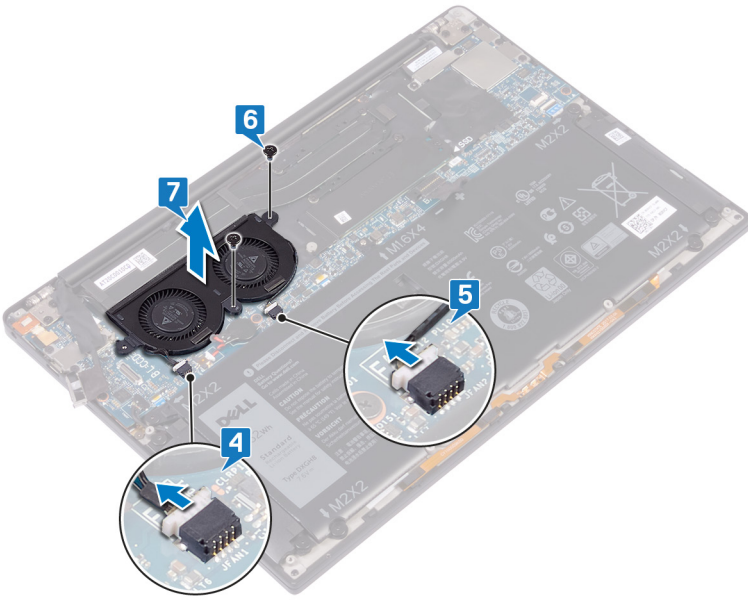
1. Remove the [base cover](#).
2. Remove the [battery](#).

Procedure

1. Remove the screw (M1.6x3) that secures the wireless antenna and camera-cable bracket to the system board.
2. Lift the wireless antenna and camera-cable bracket from the system board.
3. Disconnect and lift the camera cable from the system board, peeling off the tape securing the camera cable to the fans.



4. Disconnect the right-fan cable from the system board.
5. Disconnect the left-fan cable from the system board.
6. Remove the two screws (M1.6x3) that secure the left and the right fan to the system board.
7. Lift the left and the right fans along with their cables off the system board.

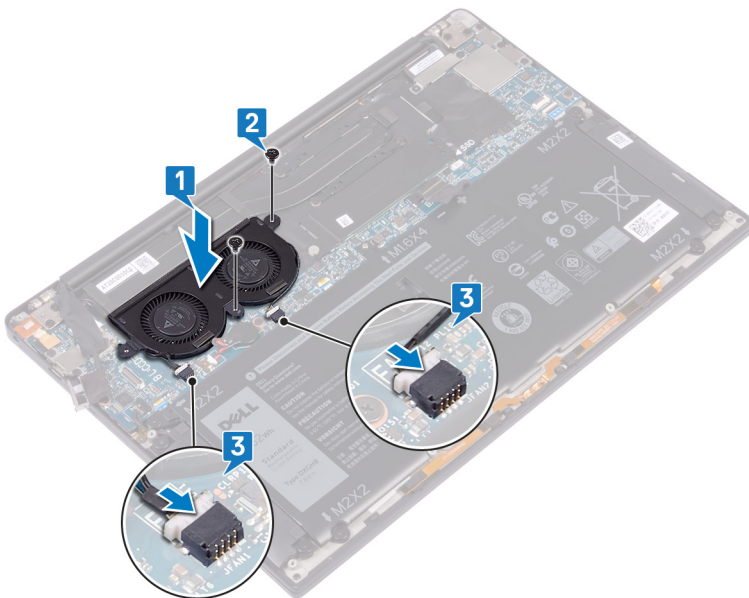


Replacing the fans - i3 processor only

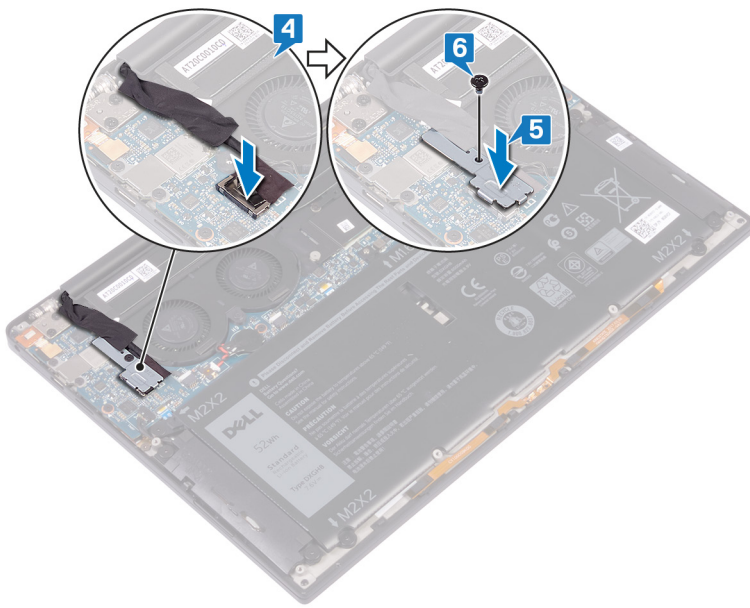
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices,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

Procedure

1. Align the screw holes on the left and the right fans with the screw holes on the system board.
2. Replace the two screws (M1.6x3) that secure the left and the right fans to the system board.
3. Connect the left- fan and the right-fan cables to the system board.



4. Connect the camera cable to the system board.
5. Align the screw hole on the wireless antenna and camera-cable bracket to the screw hole on the system board.
6. Replace the screw (M1.6x3) that secures the wireless antenna and camera-cable bracket to the system board.
7. Adhere the tape that secures the camera cable to the fans.



Post-requisites

1. Replace the [battery](#).
2. Replace the [base cover](#).

Removing the heat-sink and fan assembly - i5/i7 processor only

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

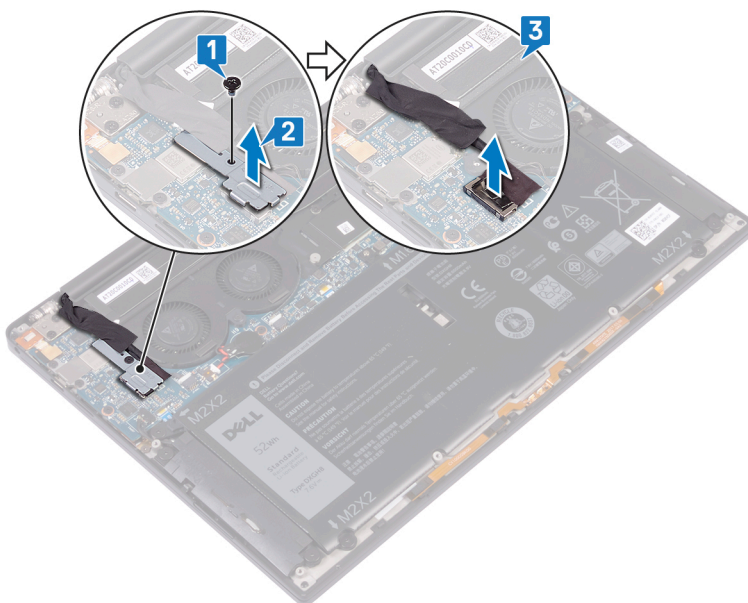
CAUTION: For maximum cooling of the processor, do not touch the heat transfer areas on the heat sink. The oils in your skin can reduce the heat transfer capability of the thermal grease.

Prerequisites

1. Remove the [base cover](#).
2. Remove the [battery](#).

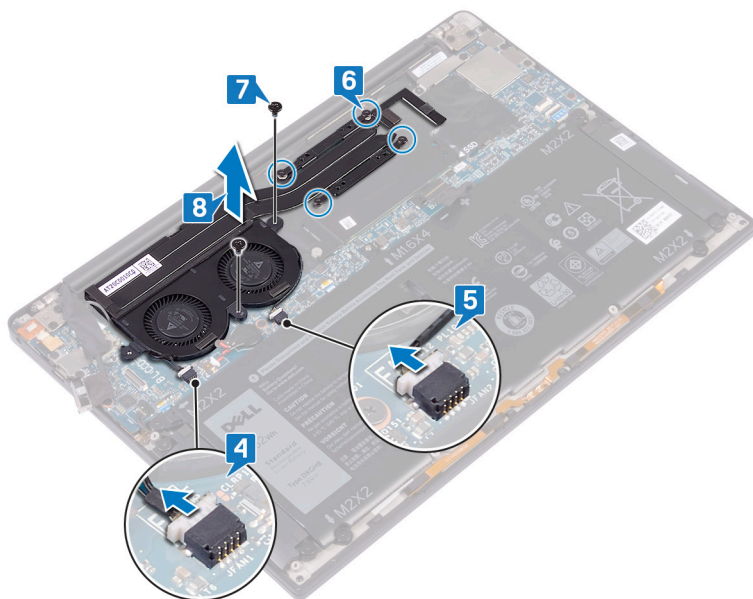
Procedure

1. Remove the screw (M1.6x3) that secures the wireless antenna and camera-cable bracket to the system board.
2. Lift the wireless antenna and camera-cable bracket from the system board.
3. Disconnect and lift the wireless antenna and camera-cable bracket from the system board, peeling off the tape securing the camera cable to the heat-sink and fan assembly.



4. Disconnect the left fan cable from the system board.
5. Disconnect the right fan cable from the system board.

6. In reverse-sequential order (as indicated on the heat sink), remove the four screws (M2x3) that secure the heat-sink and fan assembly to the system board.
7. Remove the two screws (M1.6x3) that secure the heat-sink and fan assembly to the system board.
8. Lift the heat-sink and fan assembly along with the left-fan and the right-fan cable off the system board.



Replacing the heat-sink and fan assembly - i5/i7 processor only

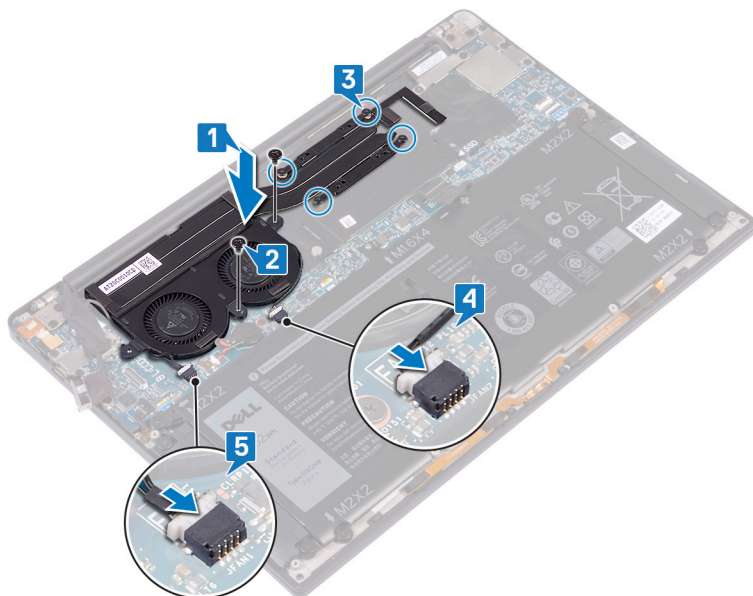
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices,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

CAUTION: Incorrect alignment of the heat-sink and fan assembly can damage the system board and processor.

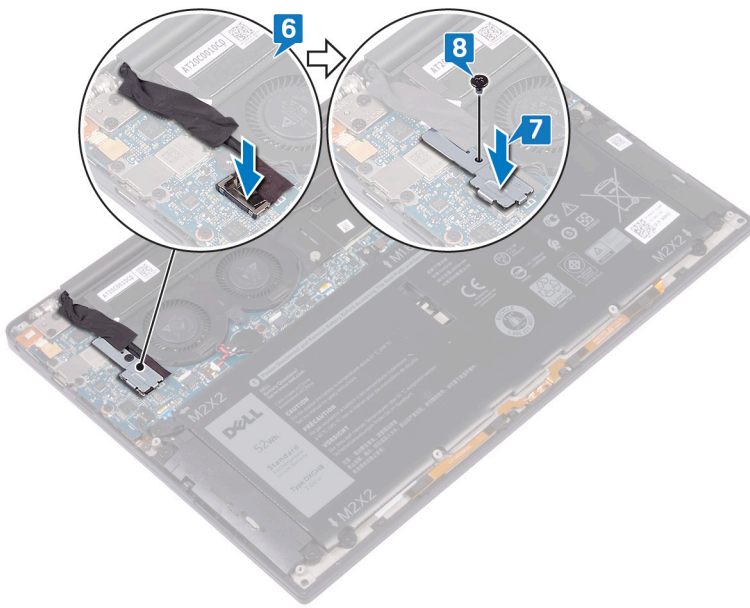
NOTE: If either the system board or the heat-sink and fan assembly is replaced, use the thermal pad/paste provided in the kit to ensure there is thermal conductivity.

Procedure

1. Align the screw holes on the heat-sink and fan assembly with the screw holes on the system board.
2. Replace the two screws (M1.6x3) that secure the heat-sink and fan assembly to the system board.
3. Replace the four screws (M2x3) that secure the heat-sink and fan assembly to the system board in sequential order (as indicated on the heat-sink and fan assembly).
4. Connect the right fan cable to the system board.
5. Connect the left fan cable to the system board.



6. Connect the camera cable to the system board.
7. Align the screw hole on the wireless antenna and camera-cable bracket to the screw hole on the system board.
8. Replace the screw (M1.6x3) that secures the wireless antenna and camera-cable bracket to the system board.



Post-requisites

1. Replace the [battery](#).
2. Replace the [base cover](#).

Removing the display assembly

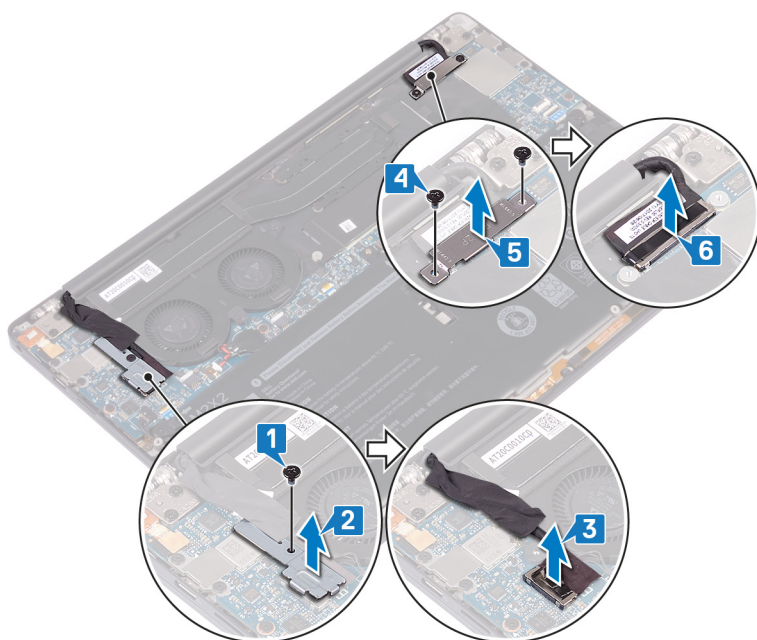
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices,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

Prerequisites

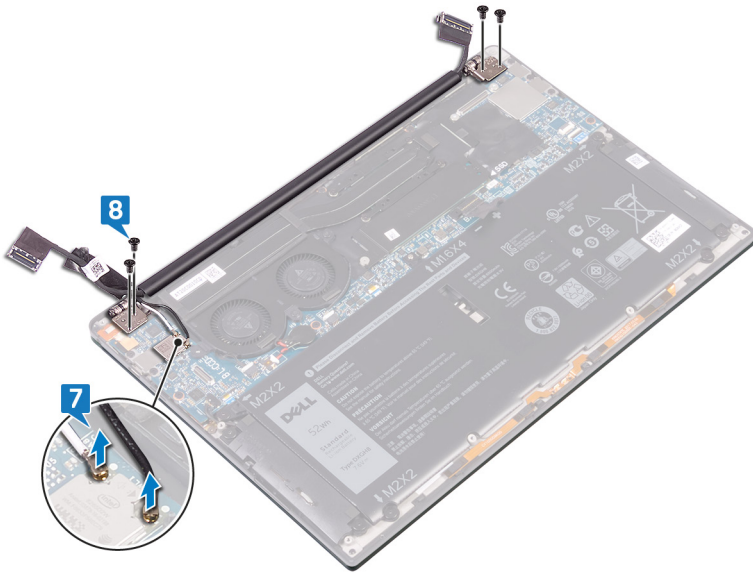
1. Remove the [base cover](#).
2. Remove the [battery](#).

Procedure

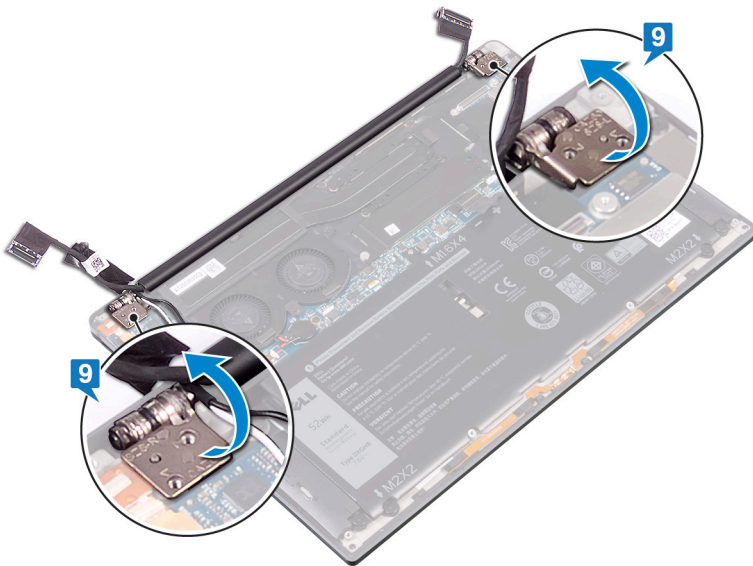
1. Remove the screw (M1.6x3) that secures the wireless antenna and camera-cable bracket to the system board.
2. Lift the wireless antenna and camera-cable bracket from the system board.
3. Disconnect and lift the camera-cable from the system board, peeling off the tape securing the camera-cable to the fans.
4. Remove the two screws (M1.6x2.5) that secure the display-cable bracket to the system board.
5. Lift the display-cable bracket from the system board.
6. Disconnect the display cable from the system board.



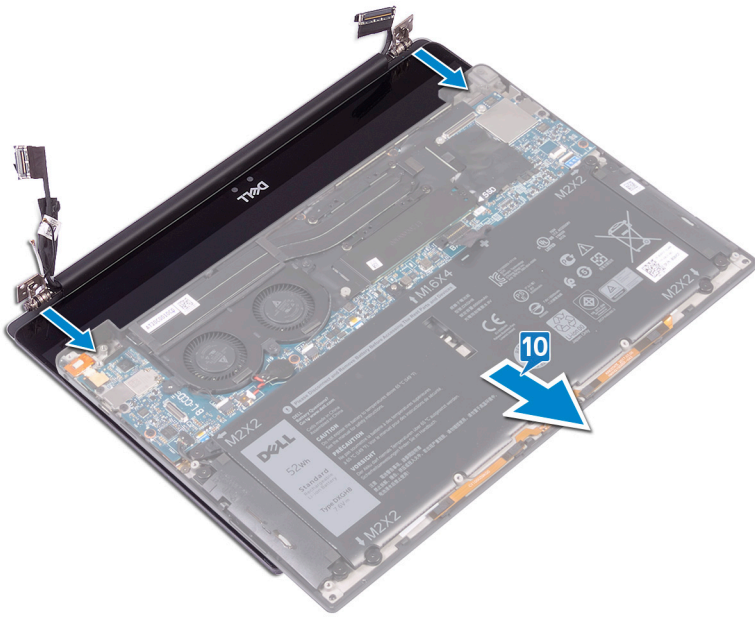
7. Disconnect the antenna cables from the system board.
8. Remove the four screws (M2.5x4) securing the display hinges to the palm-rest assembly.



9. Manually open the hinges to a 90-degree angle.



10. Gently slide and lift the display assembly from the palm-rest assembly.



Replacing the display assembly

NOTE: 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. Ensure that the hinges are open to a 90-degree angle. Slide the palm-rest assembly under the hinges of the display assembly.

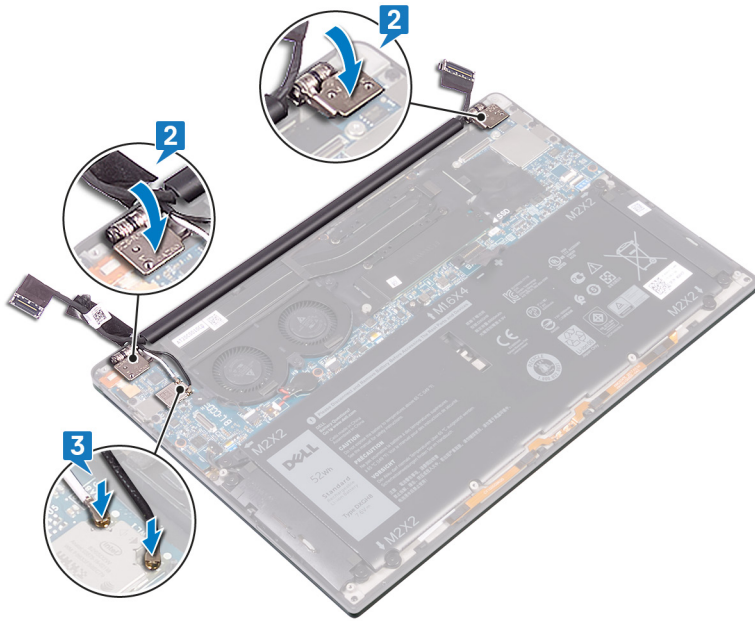


2. Using the alignment posts, press the display hinges down on the palm-rest assembly, aligning the screw holes on the display hinges with the screw holes on the palm-rest assembly.
3. Connect the antenna cables to the system board.

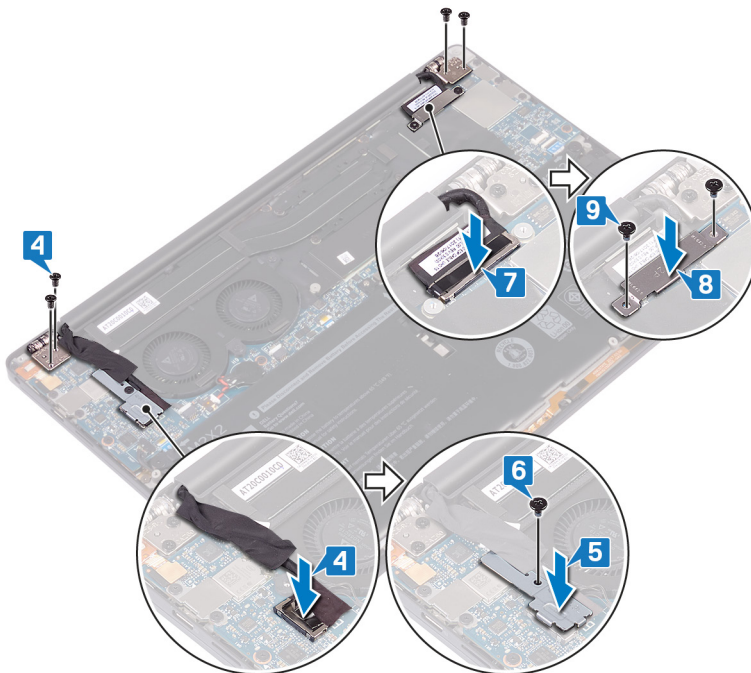
The following table provides the antenna cable color schemes for the wireless card supported by your computer.

Table 2. Antenna-cable color scheme

| Connectors on the wireless card | Antenna-cable color |
|---------------------------------|---------------------|
| Main (white triangle) | White |
| Auxiliary (black triangle) | Black |



4. Replace the four screws (M2.5x4) securing the display hinges to the palm-rest assembly and connect the camera cable to the system board, adhering the tape securing the camera cable to the fans.
5. Align the screw hole on the wireless antenna and camera cable bracket to screw hole on the system board.
6. Replace the screw (M1.6x3) that secures the wireless antenna and camera cable bracket to the system board.
7. Connect the display cable to the system board.
8. Align the screw holes on the display-cable bracket with the screw holes on the system board.
9. Replace the two screws (M1.6x2.5) that secure the display-cable bracket to system board.



Post-requisites

1. Replace the [battery](#).
2. Replace the [base cover](#).

Removing the headset port

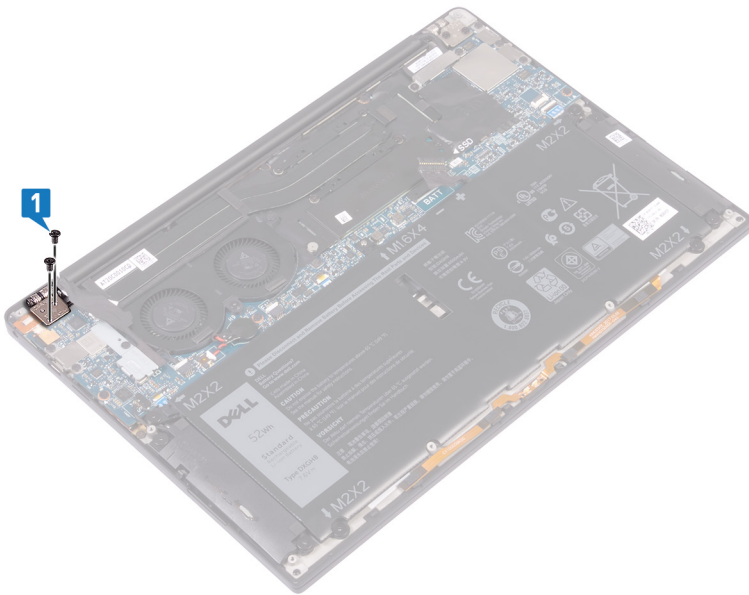
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices,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

Prerequisites

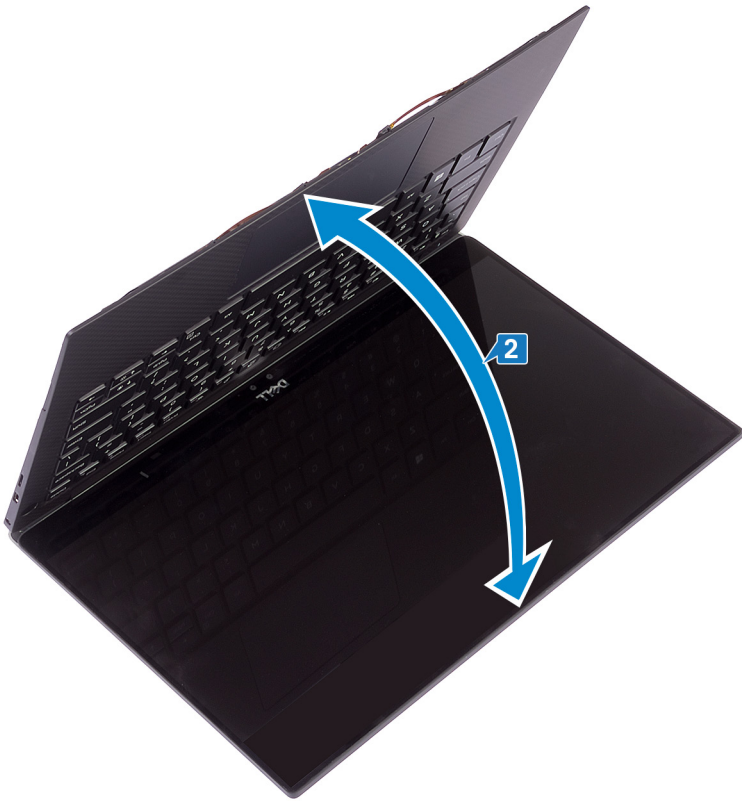
1. Remove the [base cover](#).
2. Remove the [battery](#).

Procedure

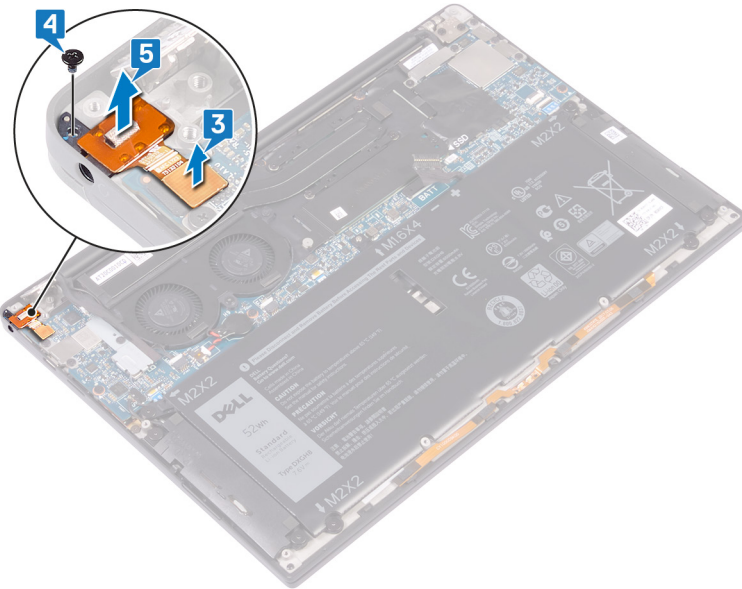
1. Remove the two screws (M2.5x4) that secure the left hinge to the palm-rest assembly.



2. Place the top surface of the computer on a flat and clean surface, then open and close the computer.



3. Disconnect the headset-port cable from the system board.
4. Remove the screw (M1.6x3) that secures the headset port to the palm-rest assembly.
5. Lift the headset port from the system board.

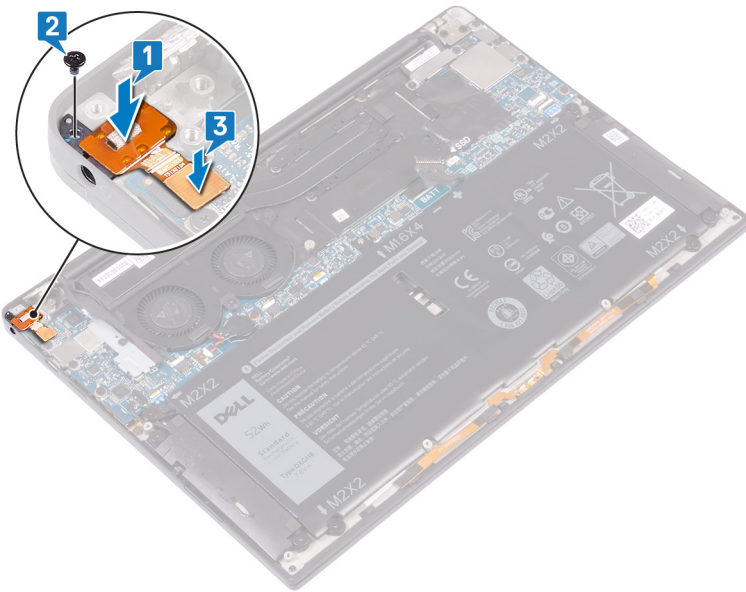


Replacing the headset port

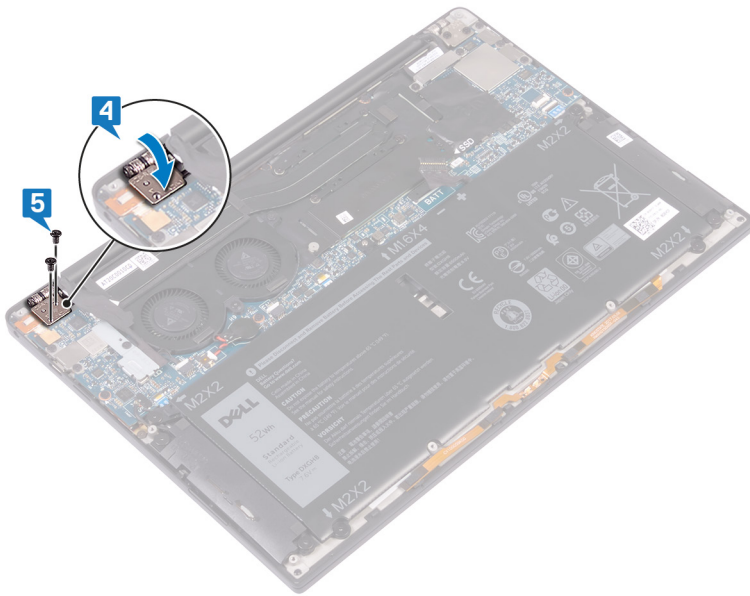
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices,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

Procedure

1. Place the headset port in its slot on the palm-rest assembly.
2. Replace the screw (M1.6x3) that secures the headset port to the palm-rest assembly
3. Reconnect the headset-port cable to the system board.



4. Using the alignment posts, press the right display hinge down to the palm-rest assembly aligning the screw holes on the display hinge to the screw holes on the palm-rest assembly.
5. Replace the two screws (M2.5x4) that secure the left hinge to the palm-rest assembly.



Post-requisites

1. Replace the [battery](#).
2. Replace the [base cover](#).

Removing the system board

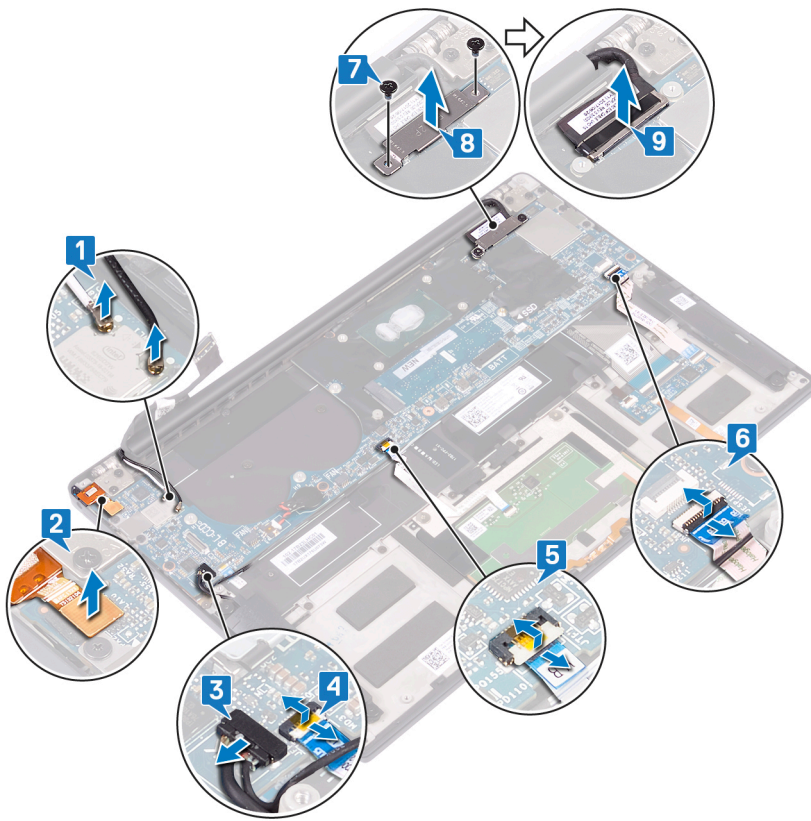
- NOTE:** Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices, 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.
- 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

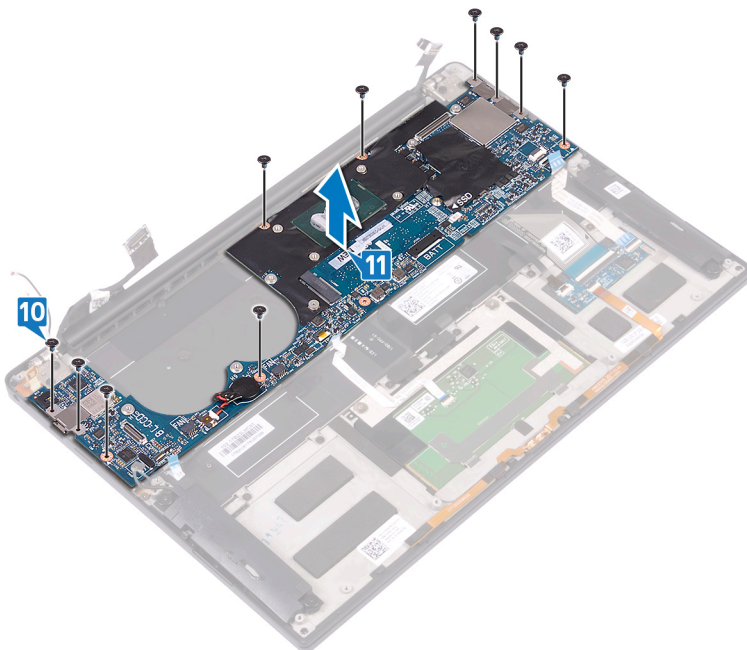
1. Remove the [base cover](#).
2. Remove the [battery](#).
3. Remove the [solid-state drive](#).
4. Remove the [fans \(i3 processor only\)](#).
5. Remove the [heat sink \(i3 processor only\)](#) or [heat-sink and fan assembly \(i5/i7 processor only\)](#).

Procedure

1. Disconnect the antenna cables from the system board.
2. Disconnect the headset-port cable from the system board.
3. Disconnect the speaker cable from the system board.
4. Open the latch and disconnect the fingerprint-reader cable from the system board. Skip this step if the power button does not have the fingerprint reader.
5. Open the latch and disconnect the touchpad cable from the system board.
6. Open the latch and disconnect the keyboard-controller cable from the system board.
7. Remove the two screws (M1.6x2.5) that secure the display-cable bracket to the system board.
8. Lift the display-cable bracket from the system board.
9. Using the pull tab, disconnect the display cable from the system board.



10. Remove the 10 screws (M1.6x2.5) securing the system board to the palm-rest assembly.
11. Lift the system board from the palm-rest assembly.

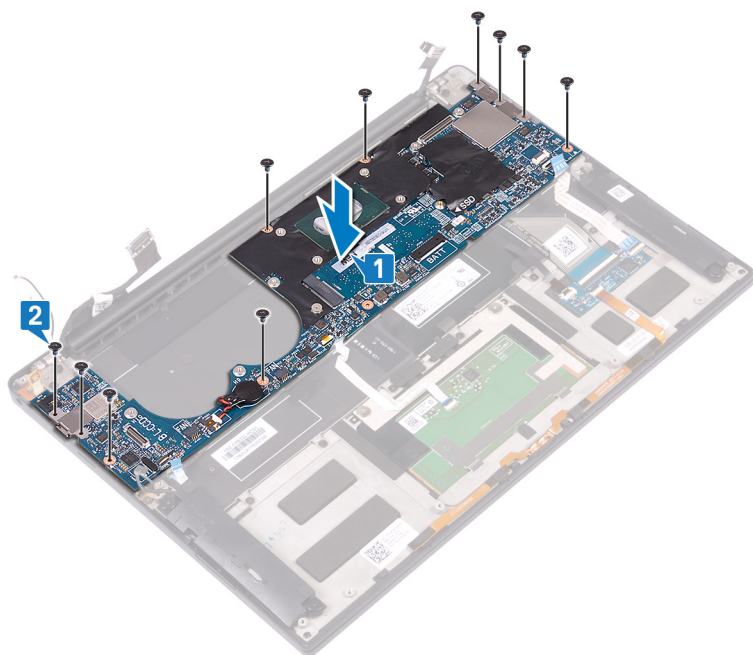


Replacing the system board

- NOTE:** 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. Using the alignment posts, place the system board on the palm-rest assembly and align the screw holes on the system board with the screw holes on the palm-rest assembly.
2. Replace the 10 screws (M1.6x2.5) that secure the system board to the palm-rest assembly.



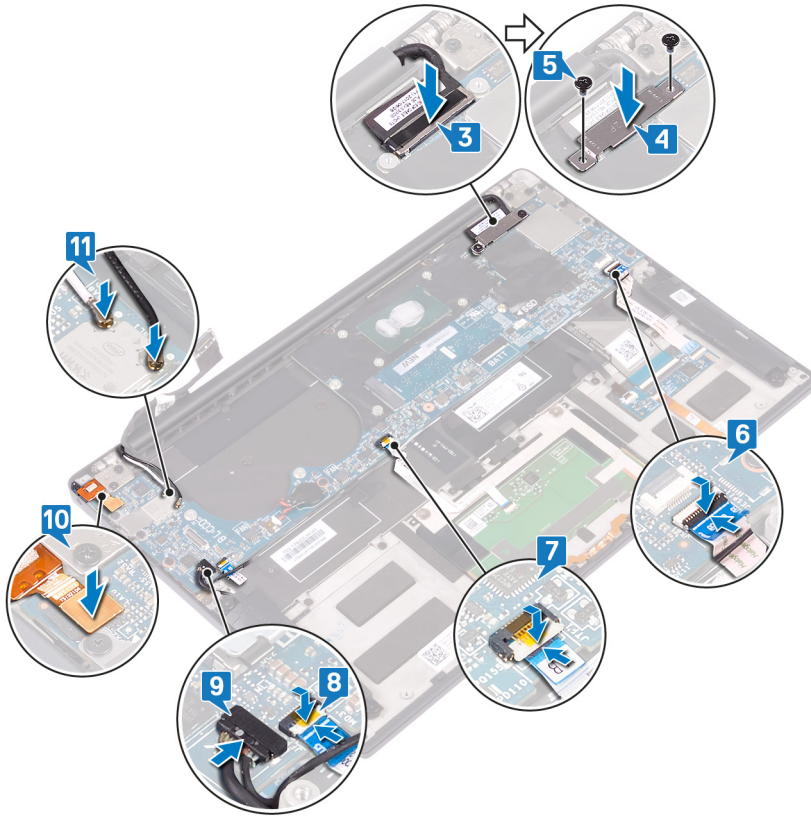
3. Connect the display cable to the system board.
4. Align and place the display cable bracket on the system board.
5. Replace the two screws (M1.6x2.5) that secure the display cable bracket to the system board.
6. Connect the keyboard-controller cable to the system board and close the latch to secure the cable.
7. Connect the touchpad cable to the system board and close the latch to secure the cable.
8. Connect the fingerprint-reader cable to the system board and close the latch to secure the cable. Skip this step if the power button does not have the fingerprint reader.
9. Connect the speaker cable to the system board.
10. Connect the headset-port cable to the system board.

11. Connect the antenna cables to the system board.

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

Table 3. Antenna-cable color scheme

| Connectors on the wireless card | Antenna-cable color |
|---------------------------------|---------------------|
| Main (white triangle) | White |
| Auxiliary (black triangle) | Black |



Post-requisites

1. Replace the [heat sink \(i3 processor only\)](#) or [heat-sink and fan assembly \(i5/i7 processor only\)](#).
2. Replace the [fans \(i3 processor only\)](#).
3. Replace the [solid-state drive](#).
4. Replace the [battery](#).
5. Replace the [base cover](#).

Entering the Service Tag in the BIOS setup program

1. Turn on or restart your computer.
2. Press F2 when the Dell logo is displayed to enter the BIOS setup program.
3. Navigate to the **Main** tab and enter the Service Tag in the **Service Tag Input** field.

NOTE: Service tag is the alphanumeric identifier located at the back side of your computer.

Removing the power button with fingerprint reader

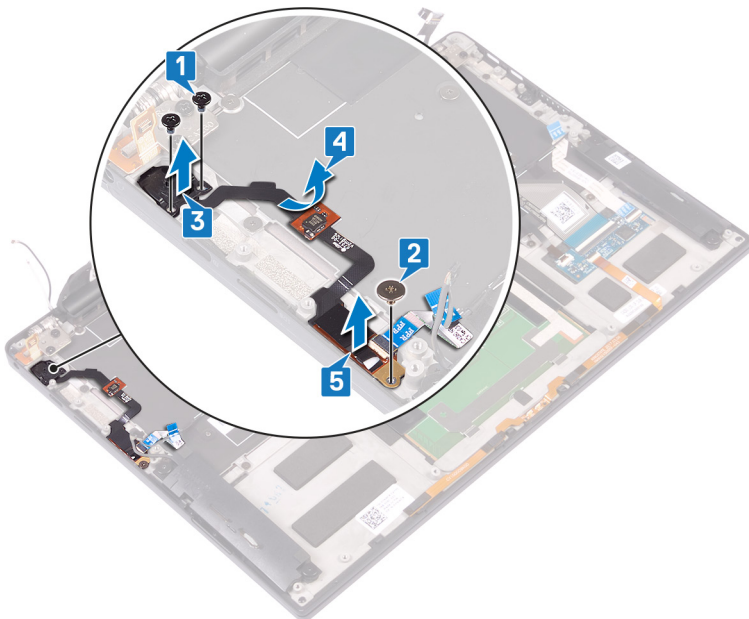
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices,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

Prerequisites

1. Remove the [base cover](#).
2. Remove the [battery](#).
3. Remove the [solid-state drive](#).
4. Remove the [fans \(i3 processor only\)](#).
5. Remove the [heat sink \(i3 processor only\)](#) or [heat-sink and fan assembly \(i5/i7 processor only\)](#).
6. Remove the [system board](#).

Procedure

1. Remove the two screws (M1.4x1.7) that secure the power button to the palm-rest assembly.
2. Remove the screw (M1.6x1.5) that secures the fingerprint-reader board to the palm-rest assembly.
3. Lift the power button from the palm-rest assembly.
4. Peel and lift the power button cable from the keyboard.
5. Lift the fingerprint-reader board from the palm-rest assembly.

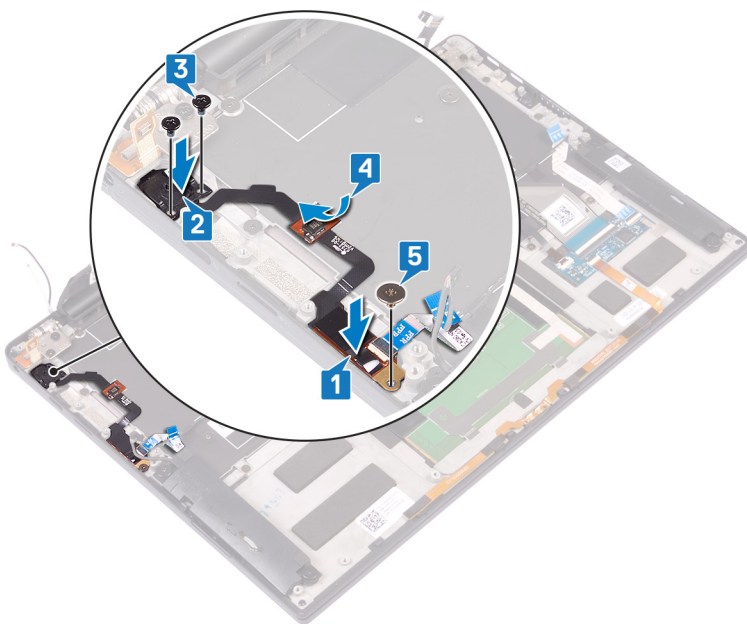


Replacing the power button with fingerprint reader

NOTE: 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 fingerprint-reader board into its slot on the palm-rest assembly.
2. Place the power button into its slot on the palm-rest assembly.
3. Pressing down on the power button, replace the two screws (M1.4x1.7) that secure the power button to the palm-rest assembly.
4. Adhere the power button cable to the keyboard.
5. Replace the screw (M1.6x1.5) that secures the fingerprint-reader board to the palm-rest assembly.



Post-requisites

1. Replace the [system board](#).
2. Replace the [heat sink \(i3 processor only\)](#) or [heat-sink and fan assembly \(i5/i7 processor only\)](#).
3. Replace the [fans \(i3 processor only\)](#).
4. Replace the [solid-state drive](#).
5. Replace the [battery](#).
6. Replace the [base cover](#).

Removing the keyboard

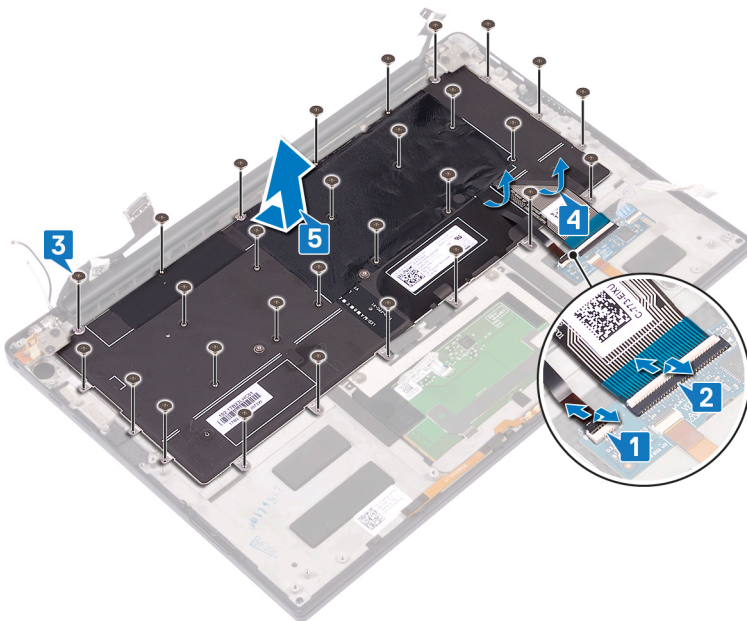
NOTE: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in [Before working inside your computer](#). After working inside your computer, follow the instructions in [After working inside your computer](#). For more safety best practices,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

Prerequisites

1. Remove the [base cover](#).
2. Remove the [battery](#).
3. Remove the [solid-state drive](#).
4. Replace the [fans \(i3 processor only\)](#).
5. Replace the [heat sink \(i3 processor only\)](#) or [heat-sink and fan assembly \(i5/i7 processor only\)](#).
6. Remove the [system board](#).
7. Remove the [power button with fingerprint reader](#).

Procedure

1. Open the latch and disconnect the keyboard-backlight cable from the keyboard-controller board.
2. Open the latch and disconnect the keyboard-controller board cable from the keyboard-controller board.
3. Remove the 29 screws (M1.6x1.5) that secure the keyboard to the palm-rest assembly.
4. Peel the keyboard-backlight cable and the keyboard-controller board cable to the keyboard.
5. Slide the keyboard out from under the hinges off the palm-rest assembly.

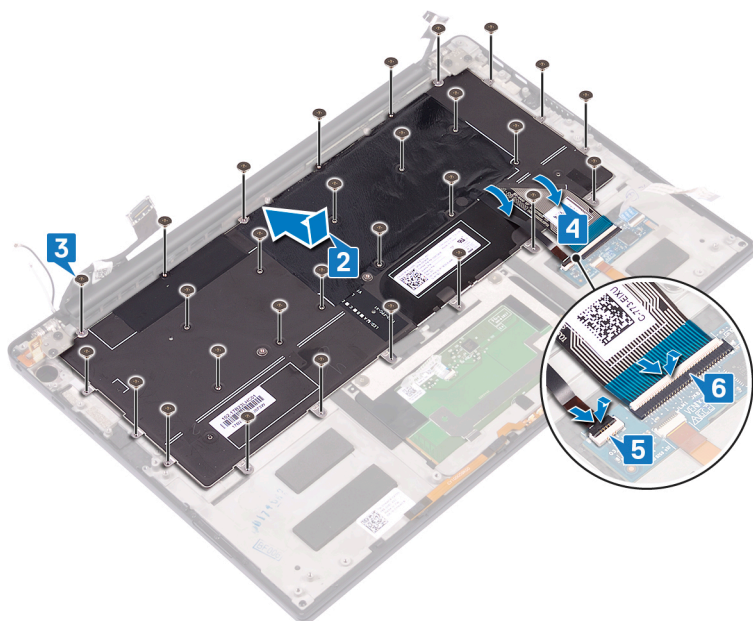


Replacing the keyboard

NOTE: 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 thermal pad and foil sticker that is shipped with the keyboard onto the replacement keyboard.
2. Align the screw holes on the keyboard with the screw holes on the palm-rest assembly and slide the keyboard under the display hinges into the palm rest assembly.
3. Replace the 29 screws (M1.6x1.5) that secure the keyboard to the palm-rest assembly.
4. Adhere the keyboard-backlight cable and the keyboard-controller board cable to the keyboard.
5. Slide the keyboard-backlight cable into the keyboard-controls board and close the latch to secure the cable.
6. Slide the keyboard-controls board cable into the keyboard-controls board and close the latch to secure the cable.



Post-requisites

1. Replace the [power button with fingerprint reader](#).
2. Replace the [system board](#).
3. Replace the [heat sink \(i3 processor only\)](#) or [heat-sink and fan assembly \(i5/i7 processor only\)](#).
4. Replace the [fans \(i3 processor only\)](#).
5. Replace the [solid-state drive](#).
6. Replace the [battery](#).
7. Replace the [base cover](#).

Removing the palm-rest assembly

NOTE: 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. Remove the [base cover](#).
2. Remove the [battery](#).
3. Remove the [speakers](#).
4. Remove the [display assembly](#).
5. Remove the [headset port](#).
6. Replace the [fans \(i3 processor only\)](#).
7. Replace the [heat sink \(i3 processor only\)](#) or [heat-sink and fan assembly \(i5/i7 processor only\)](#).
8. Remove the [system board](#).
9. Remove the [power button with fingerprint reader](#).
10. Remove the [keyboard](#).

Procedure

After performing all the pre-requisites, we are left with the palm-rest assembly.



Replacing the palm-rest assembly

NOTE: 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 assembly face down on a clean and flat surface.



Post-requisites

1. Replace the [keyboard](#).
2. Replace the [power button with fingerprint reader](#).
3. Replace the [system board](#).
4. Replace the [heat sink \(i3 processor only\)](#) or [heat-sink and fan assembly \(i5/i7 processor only\)](#).
5. Replace the [fans \(i3 processor only\)](#).
6. Replace the [headset port](#).
7. Replace the [display assembly](#).
8. Replace the [speakers](#).
9. Replace the [battery](#).
10. Replace the [base cover](#).

Drivers and downloads

When troubleshooting, downloading or installing drivers it is recommended that you read the Dell Knowledge Based article, Drivers and Downloads FAQ [000123347](#).

System setup

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

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

Turn on (or restart) your computer and press F2 immediately.

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.

Table 4. Navigation keys


| Keys | Navigation |
|------------|---|
| Up arrow | Moves to the previous field. |
| Down arrow | Moves to the next field. |
| Enter | Selects a value in the selected field (if applicable) or follow the link in the field. |
| Spacebar | Expands or collapses a drop-down list, if applicable. |
| Tab | Moves to the next focus area. NOTE: For the standard graphics browser only. |
| Esc | 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. |

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 (if available)
-  **NOTE:** XXX denotes the SATA drive number.
- Optical Drive (if available)
- SATA Hard Drive (if available)
- Diagnostics


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

One time boot menu

To enter **one time boot menu**, turn on your computer, and then press F12 immediately.

-  **NOTE:** It is recommended to shutdown the computer if it is on.

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 (if available)
-  **NOTE:** XXX denotes the SATA drive number.
- Optical Drive (if available)
- SATA Hard Drive (if available)
- Diagnostics

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

System setup options


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

Table 5. System setup options—Overview menu

| Overview | |
|------------------------|---|
| XPS 13 9305 | |
| BIOS Version | Displays the BIOS version number. |
| Service Tag | Displays the Service Tag of the computer. |
| Asset Tag | Displays the Asset Tag of the computer. |
| Manufacture Date | Displays the manufacture date of the computer. |
| Ownership Date | Displays the ownership date of the computer. |
| Express Service Code | Displays the express service code of the computer. |
| Ownership Tag | Displays the ownership tag of the computer. |
| Signed Firmware Update | Displays whether the signed firmware update is enabled. Default: Enabled |
| BATTERY | |
| Primary | Displays the primary battery. |
| Battery Level | Displays the battery level. |
| Battery State | Displays the battery state. |

Table 5. System setup options—Overview menu (continued)

| Overview | |
|-------------------------------|---|
| Health | Displays the battery health. |
| AC Adapter | Displays whether an AC adapter is connected. If connected, the AC adapter type. |
| PROCESSOR | |
| Processor Type | Displays the processor type. |
| Maximum Clock Speed | Displays the maximum processor clock speed. |
| Minimum Clock Speed | Displays the minimum processor clock speed. |
| Current Clock Speed | Displays the current processor clock speed. |
| Core Count | Displays the number of cores on the processor. |
| Processor ID | Displays the processor identification code. |
| Processor L2 Cache | Displays the processor L2 Cache size. |
| Processor L3 Cache | Displays the processor L3 Cache size. |
| Microcode Version | Displays the microcode version. |
| Intel Hyper-Threading Capable | Displays whether the processor is Hyper-Threading (HT) capable. |
| 64-Bit Technology | Displays whether 64-bit technology is used. |
| MEMORY | |
| Memory Installed | Displays the total computer memory installed. |
| Memory Available | Displays the total computer memory available. |
| Memory Speed | Displays the memory speed. |
| Memory Channel Mode | Displays single or dual channel mode. |
| Memory Technology | Displays the technology that is used for the memory. |
| DEVICES | |
| Panel Type | Displays the Panel Type of the computer. |
| Video Controller | Displays the integrate graphics information of the computer. |
| Video Memory | Displays the video memory information of the computer. |
| Wi-Fi Device | Displays the Wi-Fi device installed in the computer. |
| Native Resolution | Displays the native resolution of the computer. |
| Video BIOS Version | Displays the video BIOS version of the computer. |
| Audio Controller | Displays the audio controller information of the computer. |
| Bluetooth Device | Displays whether a Bluetooth device is installed in the computer. |
| Pass Through MAC Address | Displays the MAC address of the video pass-through. |

Table 6. System setup options—Boot Configuration menu

| Boot Configuration | |
|--------------------------------------|---|
| Boot Mode: UEFI only | Displays the boot mode of this computer. |
| Boot Sequence | Displays the boot sequence. |
| Secure Digital (SD) Card Boot | Enables or disables boot from Secure Digital card. By default, Enable Secure Digital (SD) Card Boot is selected. |
| Secure Boot | |

Table 6. System setup options—Boot Configuration menu (continued)

| Boot Configuration | |
|------------------------------|--|
| Enable Secure Boot | Enables or disables the computer to boot using only validated boot software. Default: OFF i NOTE: For Secure Boot to be enabled, the computer needs to be in UEFI boot mode and the Enable Legacy Option ROMs option needs to be turned off. |
| Secure Boot Mode | Selects the Secure Boot operation mode. Default: Deployed Mode i NOTE: Deployed Mode should be selected for normal operation of Secure Boot. |
| Expert Key Management | |
| Enable Custom Mode | Enables or disables the keys in the PK, KEK, db, and dbx security key databases to be modified. Default: OFF |
| Custom Mode Key Management | Selects the custom values for expert key management. Default: PK |

Table 7. System setup options—Integrated Devices menu

| Integrated Devices | |
|---|--|
| Date/Time | |
| Date | Sets the computer date in MM/DD/YYYY format. Changes to the date take effect immediately. |
| Time | Sets the computer time in HH/MM/SS 24-hour format. You can switch between 12-hour and 24-hour clock. Changes to the time take effect immediately. |
| Thunderbolt Adapter Configuration | |
| | Enables or disables booting from USB mass storage devices such as external hard drive, optical drive, and USB drive. By default, Enable External USB Ports is selected. By default, Enable USB Boot Support is selected. |
| Enable Thunderbolt Boot Support | Enables or disables Thunderbolt Boot Support. Default: OFF |
| Enable Thunderbolt (and PCIe behind TBT) pre-boot modules | Enables or disables to allow or disallow PCIe devices to be connected through a Thunderbolt adapter during pre-boot. Default: OFF |
| Camera | |
| Enable Camera | Enables or disables the camera. By default, Enable Camera is selected. |
| Audio | |
| Enable Audio | Enables or disables all integrated audio controller. Default: ON |
| Enable Microphone | Enables or disables microphone. By default, Enable Microphone is selected. |

Table 7. System setup options—Integrated Devices menu (continued)

| Integrated Devices | |
|---------------------------|--|
| Enable Internal Speaker | Enables or disables internal speaker. By default, Enable Internal Speaker is selected. |
| USB configuration | |
| Enable USB Boot Support | Enable or disable booting from USB mass storage devices such as external hard drive, optical drive, and USB drive. |
| Enable External USB Ports | Enable or disable booting from USB mass storage devices connected to external USB port. |

Table 8. System setup options—Storage menu

| Storage | |
|--------------------------|--|
| SATA/ | |
| SATA | Configure operating mode of the integrated SATA hard drive controller. Default: Disabled |
| Storage Interface | |
| M.2 PCIe SSD | Enables or disables the M.2 PCIe SSD. Default: ON |
| Drive Information | |
| M.2 PCIe SSD | Enables or disables the M.2 PCIe SSD. Default: ON |
| Enable MediaCard | |
| | Enables to switch all media cards On/Off or set the media card to read-only state. By default, Enable Secure Digital (SD) Card is selected. |

Table 9. System setup options—Display menu

| Display | |
|-----------------------------|--|
| Display Brightness | |
| Brightness on battery power | Sets the screen brightness when the computer is running on battery power. Default: 50 |
| Brightness on AC power | Sets the screen brightness when the computer is running on AC power. Default: 100 |
| Touchscreen | |
| Touchscreen | Enables or disables the touchscreen. Default: ON |
| Full Screen Logo | |
| Full Screen Logo | Enabled or disabled the computer to display full screen logo if the image match screen resolution. Default: OFF |

Table 10. System setup options—Connection menu

| | |
|----------------------------------|---|
| Connection | |
| Wireless Device Enable | Enable or disable internal WLAN/Bluetooth devices. By default, WLAN is selected. By default, Bluetooth is selected. |
| Enable UEFI Network Stack | |
| Enable UEFI Network Stack | Enables or disables UEFI Network Stack. Default: ON |

Table 11. System setup options—Power menu

| | |
|--|--|
| Power | |
| Battery Configuration | |
| Battery Configuration | Enables the computer to run on battery during power usage hours. Use the below options to prevent AC power usage between certain times of each day. Default: Adaptive. Battery settings are adaptively optimized based on your typical battery usage pattern. |
| Advanced Configuration | |
| Enable Advanced Battery Charge Configuration | Enables Advanced Battery Charge Configuration from the beginning of the day to a specified work period. Advanced Battery Charged maximizes battery health while still supporting heavy use during the work day. Default: OFF |
| Peak Shift | |
| Enable Peak Shift | Enables the computer to run on battery during peak power usage hours. Default: OFF |
| Thermal Management | |
| Thermal Management | Adjusts system performance, noise, and temperature. Default: Optimized. Standard setting for balance of performance, noise, and temperature. |
| USB Wake Support | |
| Wake on Dell USB-C Dock | Enables connecting a Dell USB-C Dock to wake the computer from Standby. Default: ON |
| Block Sleep | |
| Block Sleep | Blocks the computer from entering Sleep (S3) mode in the operating system. Default: OFF i NOTE: If enabled, the computer will not go to sleep, Intel Rapid Start will be disabled automatically, and the operating system power option will be blank if it was set to Sleep. |
| Lid Switch | |
| Enable Lid Switch | Enables or disables the lid switch. |
| Power On Lid Open | Enables the computer to power up from the off state whenever the lid is opened. Default: ON |

Table 11. System setup options—Power menu (continued)

| Power | |
|-------------------------------------|---|
| Intel Speed Shift Technology | Enables or disables the Intel Speed Shift Technology support. Setting this option to enable allows the operating system to select the appropriate processor performance automatically. Default: ON |

Table 12. System setup options—Security menu


| Security | |
|---------------------------------|--|
| TPM 2.0 Security On | |
| PPI Bypass for Enable Commands | Enables or disables the OS to skip BIOS Physical Presence Interface (PPI) user prompts when issuing TPM PPI enabled and activate commands. Default: OFF |
| PPI Bypass for Disable Commands | Enables or disables The OS to skip BIOS PPI user prompts when issuing TPM PPI Disable and Deactivate commands. Default: OFF |
| TPM 2.0 Security On | Select whether or not the Trusted Platform Model (TPM) is visible to the OS. Default: ON |
| Attestation Enable | Enables to control whether the TPM Endorsement Hierarchy is available to the OS. Disabling this setting restricts the ability to use the TPM for signature operations. Default: ON |
| Key Storage Enable | Enables to control whether the TPM Endorsement Hierarchy is available to the OS. Disabling this setting restricts the ability to use the TPM for storing owner data. Default: ON |
| SHA-256 | Enables or disables the BIOS and the TPM to use the SHA-256 hash algorithm to extend measurements into the TPM PCRs during BIOS boot. Default: ON |
| Clear | Enables or disables the computer to clear the PTT owner information, and returns the PTT to the default state. Default: OFF |
| PPI Bypass for Clear Commands | Enables or disables the operating system to skip BIOS Physical Presence Interface (PPI) user prompts when issuing the Clear command. Default: OFF |
| TPM State | Enables or disables the TPM. This is the normal operating state for the TPM when you want to use its complete array of capabilities. Default: Enabled |
| SMM Security Mitigation | |
| SMM Security Mitigation | Enables or disables additional UEFI SMM Security Mitigation protections. Default: OFF  NOTE: This feature may cause compatibility issues or loss of functionality with some legacy tools and applications. |
| Data Wipe on Next Boot | |

Table 12. System setup options—Security menu (continued)


| Security | |
|--------------------------------|---|
| Start Data Wipe | <p> CAUTION: This Secure Wipe Operation deletes information in a way that it cannot be reconstructed.</p> <p>If enabled, the BIOS will queue up a data wipe cycle for storage devices that are connected to the motherboard on the next reboot.</p> <p>Default: OFF</p> |
| Absolute | |
| Absolute | <p>Enables, disables or permanently disable the BIOS module interface of the optional Absolute Persistence Module service from Absolute Software.</p> <p>Default: Enabled</p> |
| UEFI Boot Path Security | |
| UEFI Boot Path Security | <p>Enables or disables the system to prompt the user to enter the Admin password when booting a UEFI boot path from the F12 boot menu.</p> <p>Default: Always Except Internal HDD</p> |

Table 13. System setup options—Passwords menu

| Passwords | |
|-----------------------------------|--|
| Admin Password | Sets, Changes, or deletes the administrator (admin) password (sometimes called the "setup" password). |
| System Password | Sets, Changes, or deletes the system password. |
| Password Configuration | |
| Upper Case Letter | <p>Enables or disables the requirement for at least one upper case letter.</p> <p>Default: OFF</p> |
| Lower Case Letter | <p>Enables or disables the requirement for at least one lower case letter.</p> <p>Default: OFF</p> |
| Digit | <p>Enables or disables the requirement for at least one digit number.</p> <p>Default: OFF</p> |
| Special Character | <p>Enables or disables the requirement for at least one special character.</p> <p>Default: OFF</p> |
| Minimum Characters | <p>Specify the minimum number of characters allowed for the password.</p> <p>Default: 4</p> |
| Password Bypass | |
| Password Bypass | <p>Bypass the System (Boot) Password and the internal hard drive password prompts during a system restart.</p> <p>Default: Disabled</p> |
| Password Changes | |
| Enable Non-Admin Password Changes | <p>Enables or disables the user to change the system and hard drive password without the need for admin password.</p> <p>Default: ON</p> |
| Admin Setup Lockout | |

Table 13. System setup options—Passwords menu (continued)

| Passwords | |
|--------------------------------|--|
| Enable Admin Setup Lockout | Enables or disables the user from entering BIOS Setup when an Admin Password is set. Default: OFF |
| Master Password Lockout | |
| Enable Master Password Lockout | Enables or disables the master password support. Default: OFF |

Table 14. System setup options—Update, Recovery menu

| Update, Recovery | |
|--|---|
| UEFI Capsule Firmware Updates | |
| Enable UEFI Capsule Firmware Updates | Enables or disables BIOS updates through UEFI capsule update packages. Default: ON |
| BIOS Recovery from Hard Drive | |
| BIOS Recovery from Hard Drive | Enables the computer to recover from a bad BIOS image, as long as the Boot Block portion is intact and functioning. Default: ON i NOTE: BIOS recovery is designed to fix the main BIOS block and cannot work if the Boot Block is damaged. In addition, this feature cannot work in the event of EC corruption, ME corruption, or a hardware issue. The recovery image must exist on an unencrypted partition on the drive. |
| BIOS Downgrade | |
| Allow BIOS Downgrade | Controls flashing of the system firmware to previous revisions. Default: ON |
| SupportAssist OS Recovery | |
| SupportAssist OS Recovery | Enables or disables the boot flow for SupportAssist OS Recovery tool in the event of certain system errors. Default: ON |
| BIOSConnect | |
| BIOSConnect | Enables or disables cloud Service OS recover if the main operating system fails to boot with the number of failures equal to or greater than the value specified by the Auto OS Recovery Threshold setup option. Default: ON |
| Dell Auto OS Recovery Threshold | |
| Dell Auto OS Recovery Threshold | Controls the automatic boot flow for SupportAssist System Resolution Console and for Dell operating system Recovery tool. Default: 2 |

Table 15. System setup options—System Management menu

| System Management | |
|--------------------------|---|
| Service Tag | |
| Service Tag | Displays the Service Tag of the computer. |
| Asset Tag | |

Table 15. System setup options—System Management menu (continued)

| | |
|--------------------------|---|
| System Management | |
| Asset Tag | Creates a system Asset Tag that can be used by an IT administrator to uniquely identify a particular system. Once set in BIOS, the Asset Tag cannot be changed. |
| AC Behavior | |
| Wake on AC | Enables the computer to turn on and go to boot when AC power is supplied to the computer. Default: OFF |
| Wake on LAN | |
| Wake on LAN | Enables or disables the computer to turn on by a special LAN signal. Default: Disabled |
| Auto On Time | |
| Auto On Time | Enables the computer to automatically power on for defined days and times. Default: Disabled. The system will not automatically power up. |

Table 16. System setup options—Keyboard menu

| | |
|--|--|
| Keyboard | |
| Fn Lock Options | |
| Fn Lock Options | Enables or disables the Fn lock mode. Default: ON |
| Lock Mode | Default: Lock Mode Secondary. Lock Mode Secondary = If this option is selected, the F1-F12 keys scan the code for their secondary functions. |
| Keyboard Illumination | |
| Keyboard Illumination | Configures the operating mode of the keyboard illumination feature. Default: Bright. Enable the keyboard illumination feature at 100% brightness level. |
| Keyboard Backlight Timeout on AC | |
| Keyboard Backlight Timeout on AC | Configures the timeout value for the keyboard when an AC adapter is connected to the computer. The keyboard backlight timeout value is only effect when the backlight is enabled. Default: 10 seconds |
| Keyboard Backlight Timeout on Battery | |
| Keyboard Backlight Timeout on Battery | Configures the timeout value for the keyboard when the computer is running on battery. The keyboard backlight timeout value is only effect when the backlight is enabled. Default: 10 seconds |

Table 17. System setup options—Pre-boot Behavior menu

| | |
|------------------------------|---|
| Pre-boot Behavior | |
| Adapter Warnings | |
| Enable Dock Warning Messages | Enables or disables dock warning messages. Default: ON |
| Warnings and Errors | |
| Warnings and Errors | Selects an action on encountering a warning or error during boot. |

Table 17. System setup options—Pre-boot Behavior menu (continued)


| | |
|---------------------------------|--|
| Pre-boot Behavior | |
| | <p>Default: Prompt on Warnings and Errors. Stop, prompt, and wait for user input when warnings or errors are detected.</p> <p> NOTE: Errors deemed critical to the operation of the computer hardware will always halt the computer.</p> |
| USB-C Warnings | |
| Enable Dock Warning Messages | <p>Enables or disables dock warning messages.</p> <p>Default: ON</p> |
| Fastboot | |
| Fastboot | <p>Configures the speed of the UEFI boot process.</p> <p>Default: Thorough. Performs complete hardware and configuration initialization during boot.</p> |
| Extend BIOS POST Time | |
| Extend BIOS POST Time | <p>Configures the BIOS POST (Power-On Self-Test) load time.</p> <p>Default: 0 seconds</p> |
| MAC Address Pass-Through | |
| MAC Address Pass-Through | <p>Replaces the external NIC MAC address (in a supported dock or dongle) with the selected MAC address from the computer.</p> <p>Default: System Unique MAC Address.</p> |
| Mouse/Touchpad | |
| Mouse/Touchpad | <p>Defines how the computer handles mouse and touchpad input.</p> <p>Default: Touchpad and PS/2 Mouse. Leave the integrated touchpad enabled when an external PS/2 mouse is present.</p> |

Table 18. System setup options—Virtualization menu

| | |
|---|---|
| Virtualization | |
| Intel Virtualization Technology | |
| Enable Intel Virtualization Technology (VT) | <p>Enables the computer to run a virtual machine monitor (VMM).</p> <p>Default: ON</p> |
| VT for Direct I/O | |
| Enable Intel VT for Direct I/O | <p>Enables the computer to perform Virtualization Technology for Direct I/O (VT-d). VT-d is an Intel method that provides virtualization for memory map I/O.</p> <p>Default: ON</p> |

Table 19. System setup options—Performance menu

| | |
|---------------------------|--|
| Performance | |
| Multi-Core Support | |
| Active Cores | <p>Changes the number of CPU cores available to the operating system. The default value is set to the maximum number of cores.</p> <p>Default: All Cores</p> |
| Intel SpeedStep | |

Table 19. System setup options—Performance menu (continued)

| Performance | |
|---|---|
| Enable Intel SpeedStep Technology | Enables or disables the Intel SpeedStep Technology to dynamically adjust processor voltage and core frequency, decreasing average power consumption and heat production. Default: ON |
| Enable C-State Control | Enables or disables the CPU's ability to enter and exit low-power states. Default: ON |
| Intel Turbo Boost Technology | |
| Enable Intel Turbo Boost Technology | Enabled or disabled the Intel TurboBoost mode of the processor. If enabled, the Intel TurboBoost driver increases the performance of the CPU or graphics processor. Default: ON |
| Intel Hyper-Threading Technology | |
| Enable Intel Hyper-Threading Technology | Enabled or disabled the Intel Hyper-Threading mode of the processor. If enabled, the Intel Hyper-Threading increases the efficiency of the processor resources when multiple threads run on each core. Default: ON |

Table 20. System setup options—System Logs menu

| System Logs | |
|--------------------------|---|
| BIOS Event Log | |
| Clear Bios Event Log | Select keep or clear BIOS events. Default: Keep |
| Thermal Event Log | |
| Clear Thermal Event Log | Select keep or clear Thermal events. Default: Keep |
| Power Event Log | |
| Clear POWER Event Log | Select keep or clear Power events. Default: Keep |

System and setup password

Table 21. System and setup password

| Password type | Description |
|----------------------|--|
| System password | Password that you must enter to log in to your system. |
| Setup password | Password that you must enter to access and make changes to the BIOS settings of your computer. |

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

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

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

 **NOTE:** System and setup password feature is disabled.

Assigning a system setup password

You can assign a new **System or Admin Password** only when the status is in **Not Set**.


To enter the system setup, press F12 immediately after a power-on or reboot.

1. In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.
The **Security** screen is displayed.
2. Select **System/Admin Password** and create a password in the **Enter the new password** field.
Use the following guidelines to assign the system password:
 - At least one special character: ! " # \$ % & ' () * + , - . / : ; < = > ? @ [\] ^ _ ` { | }
 - Numbers 0 through 9.
 - Upper case letters from A to Z.
 - Lower case letters from a to z.
3. Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
4. Press Esc and save the changes as prompted by the pop-up message.
5. Press Y to save the changes.
The computer restarts.

Deleting or changing an existing system 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 F12 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**, update, or delete the existing system password, and press Enter or Tab.
4. Select **Setup Password**, update, or delete the existing setup password, and press Enter or Tab.
 **NOTE:** If you change the System and/or Setup password, reenter the new password when prompted. If you delete the System and/or Setup password, confirm the deletion when prompted.
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 restarts.


Clearing CMOS settings

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

1. Remove the [base cover](#).
2. Disconnect the battery cable from the system board.
3. Remove the [coin-cell battery](#).
4. Wait for one minute.
5. Replace the [coin-cell battery](#).
6. Connect the battery cable to the system board.
7. Replace the [base cover](#).


Clearing BIOS (System Setup) and System passwords

To clear the system or BIOS passwords, contact Dell technical support as described at www.dell.com/contactdell.

 **NOTE:** For information on how to reset Windows or application passwords, refer to the documentation accompanying Windows or your application.

Updating the BIOS

Updating the BIOS in Windows

1. Go to www.dell.com/support.
2. Click **Product support**. In the **Search support** box, enter the Service Tag of your computer, and then click **Search**.
 **NOTE:** If you do not have the Service Tag, use the SupportAssist feature to automatically identify your computer. You can also use the product ID or manually browse for your computer model.
3. Click **Drivers & Downloads**. Expand **Find drivers**.
4. Select the operating system installed on your computer.
5. In the **Category** drop-down list, select **BIOS**.
6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
7. After the download is complete, browse the folder where you saved the BIOS update file.
8. Double-click the BIOS update file icon and follow the on-screen instructions.
For more information, see knowledge base article [000124211](http://www.dell.com/support) at www.dell.com/support.

Updating the BIOS using the USB drive in Windows

1. Follow the procedure from step 1 to step 6 in [Updating the BIOS in Windows](#) to download the latest BIOS setup program file.
2. Create a bootable USB drive. For more information, see the knowledge base article [000145519](http://www.dell.com/support) 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**.
6. Select the USB drive from the **One Time Boot Menu**.
7. Type the BIOS setup program filename and press **Enter**.
The **BIOS Update Utility** appears.
8. Follow the on-screen instructions to complete the BIOS update.


Updating the BIOS from the F12 One-Time boot menu

Update your computer BIOS using the BIOS update.exe file that is copied to a FAT32 USB drive and booting from the F12 One-Time boot menu.

BIOS Update

You can run the BIOS update file from Windows using a bootable USB drive or you can also update the BIOS from the F12 One-Time boot menu on the computer.

Most of the Dell computers built after 2012 have this capability, and you can confirm by booting your computer to the F12 One-Time Boot Menu to see if BIOS FLASH UPDATE is listed as a boot option for your computer. If the option is listed, then the BIOS supports this BIOS update option.

 **NOTE:** Only computers with BIOS Flash Update option in the F12 One-Time boot menu can use this function.


Updating from the One-Time boot menu

To update your BIOS from the F12 One-Time boot menu, you need the following:

- USB drive formatted to the FAT32 file system (key does not have to be bootable)

- BIOS executable file that you downloaded from the Dell Support website and copied to the root of the USB drive
- AC power adapter that is connected to the computer
- Functional computer battery to flash the BIOS

Perform the following steps to perform the BIOS update flash process from the F12 menu:

 **CAUTION: Do not turn off the computer during the BIOS update process. The computer may not boot if you turn off your computer.**

1. From a turn off state, insert the USB drive where you copied the flash into a USB port of the computer.
2. Turn on the computer and press F12 to access the One-Time Boot Menu, select BIOS Update using the mouse or arrow keys then press Enter.
The flash BIOS menu is displayed.
3. Click **Flash from file**.
4. Select external USB device.
5. Select the file and double-click the flash target file, and then click **Submit**.
6. Click **Update BIOS**. The computer restarts to flash the BIOS.
7. The computer will restart after the BIOS update is completed.

Troubleshooting

Handling swollen Lithium-ion batteries

Like most laptops, Dell laptops use lithium-ion batteries. One type of lithium-ion battery is the lithium-ion polymer battery. Lithium-ion polymer batteries have increased in popularity in recent years and have become standard in the electronics industry due to customer preferences for a slim form factor (especially with newer ultra-thin laptops) and long battery life. Inherent to lithium-ion polymer battery technology is the potential for swelling of the battery cells.

Swollen battery may impact the performance of the laptop. To prevent possible further damage to the device enclosure or internal components leading to malfunction, discontinue the use of the laptop and discharge it by disconnecting the AC adapter and letting the battery drain.

Swollen batteries should not be used and should be replaced and disposed of properly. We recommend contacting Dell product support for options to replace a swollen battery under the terms of the applicable warranty or service contract, including options for replacement by a Dell authorized service technician.

The guidelines for handling and replacing Lithium-ion batteries are as follows:

- Exercise caution when handling Lithium-ion batteries.
- Discharge the battery before removing it from the system. To discharge the battery, unplug the AC adapter from the system and operate the system only on battery power. When the system will no longer power on when the power button is pressed, the battery is fully discharged.
- Do not crush, drop, mutilate, or penetrate the battery with foreign objects.
- Do not expose the battery to high temperatures, or disassemble battery packs and cells.
- Do not apply pressure to the surface of the battery.
- Do not bend the battery.
- Do not use tools of any type to pry on or against the battery.
- If a battery gets stuck in a device as a result of swelling, do not try to free it as puncturing, bending, or crushing a battery can be dangerous.
- Do not attempt to reassemble a damaged or swollen battery into a laptop.
- Swollen batteries that are covered under warranty should be returned to Dell in an approved shipping container (provided by Dell)—this is to comply with transportation regulations. Swollen batteries that are not covered under warranty should be disposed of at an approved recycling center. Contact Dell product support at <https://www.dell.com/support> for assistance and further instructions.
- Using a non-Dell or incompatible battery may increase the risk of fire or explosion. Replace the battery only with a compatible battery purchased from Dell that is designed to work with your Dell computer. Do not use a battery from other computers with your computer. Always purchase genuine batteries from <https://www.dell.com> or otherwise directly from Dell.

Lithium-ion batteries can swell for various reasons such as age, number of charge cycles, or exposure to high heat. For more information on how to improve the performance and lifespan of the laptop battery and to minimize the possibility of occurrence of the issue, see [Dell Laptop Battery - Frequently Asked Questions](#).

Locate the Service Tag or Express Service Code of your Dell computer

Your Dell computer is uniquely identified by a Service Tag or Express Service Code. To view relevant support resources for your Dell computer, we recommend entering the Service Tag or Express Service Code at www.dell.com/support.

For more information on how to find the Service Tag for your computer, see [Locate the Service Tag for your Dell Laptop](#).

System-diagnostic lights

Power and battery-status light

The power and battery status light indicates the power and battery status of the computer. These are the power states:

Solid white:Power adapter is connected and the battery has more than 5% charge.

Amber:Computer is running on battery and the battery has less than 5% charge.

Off:

- Power adapter is connected, and the battery is fully charged.
- Computer is running on battery, and the battery has more than 5% charge.
- Computer is in sleep state, hibernation, or turned off.

The power and battery-status light may blink amber or white according to pre-defined "beep codes" indicating various failures.

For example, the power and battery-status light blinks amber two times followed by a pause, and then blinks white three times followed by a pause. This 2,3 pattern continues until the computer is turned off, indicating no memory or RAM is detected.

The following table shows different power and battery-status light patterns and associated problems.

i NOTE: The following diagnostic light codes and recommended solutions are intended for Dell service technicians to troubleshoot problems. 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.

Table 22. Diagnostic-light LED codes

| Diagnostic light codes (Amber,White) | Problem description |
|--------------------------------------|--|
| 2,1 | Processor failure |
| 2,2 | System board: BIOS or ROM (Read-Only Memory) failure |
| 2,3 | No memory or RAM (Random-Access Memory) detected |
| 2,4 | Memory or RAM (Random-Access Memory) failure |
| 2,5 | Invalid memory installed |
| 2,6 | System-board or chipset error |
| 2,7 | Display failure - SBIOS message |
| 3,1 | Coin-cell battery failure |
| 3,2 | PCI, video card/chip failure |
| 3,3 | Recovery image not found |
| 3,4 | Recovery image found but invalid |
| 3,5 | Power-rail failure |
| 3,6 | System BIOS Flash incomplete |
| 3,7 | Management Engine (ME) error |

SupportAssist diagnostics

The SupportAssist diagnostics (previously known as ePSA diagnostics) performs a complete check of your hardware. The SupportAssist diagnostics is embedded in the BIOS and is launched by it internally. The SupportAssist diagnostics provides a set of options for particular devices or device groups. It allows 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 and provide extra information about the failed device(s)
- View status messages that indicate if the tests are completed successfully
- View error messages that indicate if problems were encountered during the test

NOTE: Some tests are meant for specific devices and require user interaction. Ensure that you are present in front of the computer when the diagnostic tests are performed.

For more information, see [SupportAssist Pre-Boot System Performance Check](#).

Built-in self-test (BIST)

M-BIST

M-BIST (Built In Self-Test) is the system board's built-in self-test diagnostics tool that improves the diagnostics accuracy of system board embedded controller (EC) failures.

NOTE: M-BIST can be manually initiated before POST (Power On Self Test).

How to run M-BIST

NOTE: M-BIST must be initiated on the system from a power-off state either connected to AC power or with battery only.

1. Press and hold both the **M** key on the keyboard and the **power button** to initiate M-BIST.
2. With both the **M** key and the **power button** held down, the battery indicator LED may exhibit two states:
 - a. OFF: No fault detected with the system board
 - b. AMBER: Indicates a problem with the system board
3. If there is a failure with the system board, the battery status LED will flash one of the following error codes for 30 seconds:

Table 23. LED error codes

| Blinking Pattern | | Possible Problem |
|------------------|-------|---------------------------|
| Amber | White | |
| 2 | 1 | CPU Failure |
| 2 | 8 | LCD Power Rail Failure |
| 1 | 1 | TPM Detection Failure |
| 2 | 4 | Unrecoverable SPI Failure |

4. If there is no failure with the system board, the LCD will cycle through the solid color screens described in the LCD-BIST section for 30 seconds and then power off.

LCD Built-in Self Test (BIST)


Dell laptops have a built-in diagnostic tool that helps you determine if the screen abnormality you are experiencing is an inherent problem with the LCD (screen) of the Dell laptop or with the video card (GPU) and PC settings.

When you notice screen abnormalities like flickering, distortion, clarity issues, fuzzy or blurry image, horizontal or vertical lines, color fade etc., it is always a good practice to isolate the LCD (screen) by running the Built-In Self Test (BIST).

How to invoke LCD BIST Test

1. Power off the Dell laptop.
2. Disconnect any peripherals that are connected to the laptop. Connect only the AC adapter (charger) to the laptop.
3. Ensure that the LCD (screen) is clean (no dust particles on the surface of the screen).
4. Press and hold **D** key and **Power on** the laptop to enter LCD built-in self test (BIST) mode. Continue to hold the D key, until the system boots up.

5. The screen will display solid colors and change colors on the entire screen to white, black, red, green, and blue twice.
6. Then it will display the colors white, black and red.
7. Carefully inspect the screen for abnormalities (any lines, fuzzy color or distortion on the screen).
8. At the end of the last solid color (red), the system will shut down.

 **NOTE:** Dell SupportAssist Pre-boot diagnostics upon launch, initiates an LCD BIST first, expecting a user intervention confirm functionality of the LCD.

Recovering the operating system

When your computer is unable to boot to the operating system even after repeated attempts, it automatically starts Dell SupportAssist OS Recovery.

Dell SupportAssist OS Recovery is a standalone tool that is preinstalled in all Dell computers installed with Windows operating system. It consists of tools to diagnose and troubleshoot issues that may occur before your computer boots to the operating system. It enables you to diagnose hardware issues, repair your computer, back up your files, or restore your computer to its factory state.

You can also download it from the Dell Support website to troubleshoot and fix your computer when it fails to boot into their primary operating system due to software or hardware failures.

For more information about the Dell SupportAssist OS Recovery, see *Dell SupportAssist OS Recovery User's Guide* at www.dell.com/serviceabilitytools. Click **SupportAssist** and then, click **SupportAssist OS Recovery**.

WiFi power cycle

If your computer is unable to access the Internet due to WiFi connectivity issues, a WiFi power cycle procedure may be performed. The following procedure provides the instructions on how to conduct a WiFi 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.

Backup media and recovery options

It is recommended to create a recovery drive to troubleshoot and fix problems that may occur with Windows. Dell proposes multiple options for recovering Windows operating system on your Dell PC. For more information, see [Dell Windows Backup Media and Recovery Options](#).

Drain residual flea power (perform hard reset)

Flea power is the residual static electricity that remains in the computer even after it has been powered off and the battery is removed.


For your safety, and to protect the sensitive electronic components in your computer, you are requested to drain residual flea power before removing or replacing any components in your computer.

Draining residual flea power, also known as a performing a "hard reset", is also a common troubleshooting step if your computer does not power on or boot into the operating system.

To drain residual flea power (perform a hard reset)


1. Turn off your computer.
2. Disconnect the power adapter from your computer.

3. Remove the base cover.
4. Remove the battery.
5. Press and hold the power button for 20 seconds to drain the flea power.
6. Install the battery.
7. Install the base cover.
8. Connect the power adapter to your computer.
9. Turn on your computer.

 **NOTE:** For more information about performing a hard reset, see the knowledge base article [000130881](https://www.dell.com/support) at www.dell.com/support.


Real Time Clock—RTC reset

The Real Time Clock (RTC) reset function allows you or the service technician to recover the recently launched model Dell Latitude and Precision systems from **No POST/No Boot/No Power** situations. You can initiate the RTC reset on the system from a power-off state only if it is connected to AC power. Press and hold the power button for 25 seconds. The system RTC reset occurs after you release the power button.

 **NOTE:** If AC power is disconnected from the system during the process or the power button is held longer than 40 seconds, the RTC reset process gets aborted.

The RTC reset will reset the BIOS to Defaults, un-provision Intel vPro and reset the system date and time. The following items are unaffected by the RTC reset:

- Service Tag
- Asset Tag
- Ownership Tag
- Admin Password
- System Password
- HDD Password
- Key Databases
- System Logs

 **NOTE:** The IT administrator's vPro account and password on the system will be un-provisioned. The system needs to go through the setup and configuration process again to reconnect it to the vPro server.

The below items may or may not reset based on your custom BIOS setting selections:



- Boot List
- Enable Legacy Option ROMs
- Secure Boot Enable
- Allow BIOS Downgrade

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 24. Self-help resources

| Self-help resources | Resource location |
|---|--|
| Information about Dell products and services | www.dell.com |
| My Dell app |  |
| Tips |  |
| Contact Support | In Windows search, type <code>Contact Support</code> , and press Enter. |
| Online help for operating system | www.dell.com/support/windows |
| Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals and documents. | Your Dell computer is uniquely identified by a Service Tag or Express Service Code. To view relevant support resources for your Dell computer, enter the Service Tag or Express Service Code at www.dell.com/support . For more information on how to find the Service Tag for your computer, see Locate the Service Tag on your computer . |
| Dell knowledge base articles for a variety of computer concerns | <ol style="list-style-type: none"> 1. Go to www.dell.com/support. 2. On the menu bar at the top of the Support page, select Support > Knowledge Base. 3. In the Search field on the Knowledge Base page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles. |

Contacting Dell

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

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

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