

Vostro 5301

Service Manual




Notes, cautions, and warnings

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 **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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Working on your computer


Safety instructions


Prerequisites


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 the following conditions exist:


- You have read the safety information that shipped with your computer.
- A component can be replaced or, if purchased separately, installed by performing the removal procedure in reverse order.


About this task


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

 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the [Regulatory Compliance Homepage](#)


 **CAUTION:** Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

 **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface at the same time as touching a connector on the back of the computer.

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


 **CAUTION:** When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

 **NOTE:** The color of your computer and certain components may appear differently than shown in this document.

 **CAUTION:** System will shut down if side covers are removed while the system is running. The system will not power on if the side cover is removed.

Before working inside your computer


About this task

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

Steps

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.

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

5. Remove any media card and optical disc from your computer, if applicable.

Safety precautions

The safety precautions chapter details the primary steps to be taken before performing any disassembly instructions.

Observe the following safety precautions before you perform any installation or break/fix procedures involving disassembly or reassembly:

- Turn off the system and all attached peripherals.
- Disconnect the system and all attached peripherals from AC power.
- Disconnect all network cables, telephone, and telecommunications lines from the system.
- Use an ESD field service kit when working inside any tablet/notebook/desktop to avoid electrostatic discharge (ESD) damage.
- After removing any system component, carefully place the removed component on an anti-static mat.
- Wear shoes with non-conductive rubber soles to reduce the chance of getting electrocuted.

Standby power

Dell products with standby power must be unplugged before you open the case. Systems that incorporate standby power are essentially powered while turned off. The internal power enables the system to be remotely turned on (wake on LAN) and suspended into a sleep mode and has other advanced power management features.

Unplugging, pressing and holding the power button for 15 seconds should discharge residual power in the system board. Remove the battery from tablets/notebooks.

Bonding

Bonding is a method for connecting two or more grounding conductors to the same electrical potential. This is done through the use of a field service electrostatic discharge (ESD) kit. When connecting a bonding wire, ensure that it is connected to bare metal and never to a painted or non-metal surface. The wrist strap should be secure and in full contact with your skin, and ensure that you remove all jewelry such as watches, bracelets, or rings prior to bonding yourself and the equipment.

Electrostatic discharge—ESD protection

ESD is a major concern when you handle electronic components, especially sensitive components such as expansion cards, processors, memory DIMMs, and system boards. Very slight charges can damage circuits in ways that may not be obvious, such as intermittent problems or a shortened product life span. As the industry pushes for lower power requirements and increased density, ESD protection is an increasing concern.

Due to the increased density of semiconductors used in recent Dell products, the sensitivity to static damage is now higher than in previous Dell products. For this reason, some previously approved methods of handling parts are no longer applicable.

Two recognized types of ESD damage are catastrophic and intermittent failures.

- **Catastrophic** – Catastrophic failures represent approximately 20 percent of ESD-related failures. The damage causes an immediate and complete loss of device functionality. An example of catastrophic failure is a memory DIMM that has received a static shock and immediately generates a "No POST/No Video" symptom with a beep code emitted for missing or nonfunctional memory.
- **Intermittent** – Intermittent failures represent approximately 80 percent of ESD-related failures. The high rate of intermittent failures means that most of the time when damage occurs, it is not immediately recognizable. The DIMM receives a static shock, but the tracing is merely weakened and does not immediately produce outward symptoms related to

the damage. The weakened trace may take weeks or months to melt, and in the meantime may cause degradation of memory integrity, intermittent memory errors, etc.

The more difficult type of damage to recognize and troubleshoot is the intermittent (also called latent or "walking wounded") failure.

Perform the following steps to prevent ESD damage:

- Use a wired ESD wrist strap that is properly grounded. The use of wireless anti-static straps is no longer allowed; they do not provide adequate protection. Touching the chassis before handling parts does not ensure adequate ESD protection on parts with increased sensitivity to ESD damage.
- Handle all static-sensitive components in a static-safe area. If possible, use anti-static floor pads and workbench pads.
- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the anti-static packing material until you are ready to install the component. Before unwrapping the anti-static packaging, ensure that you discharge static electricity from your body.
- Before transporting a static-sensitive component, place it in an anti-static container or packaging.

ESD field service kit

The unmonitored Field Service kit is the most commonly used service kit. Each Field Service kit includes three main components: anti-static mat, wrist strap, and bonding wire.

Components of an ESD field service kit

The components of an ESD field service kit are:

- **Anti-Static Mat** – The anti-static mat is dissipative and parts can be placed on it during service procedures. When using an anti-static mat, your wrist strap should be snug and the bonding wire should be connected to the mat and to any bare metal on the system being worked on. Once deployed properly, service parts can be removed from the ESD bag and placed directly on the mat. ESD-sensitive items are safe in your hand, on the ESD mat, in the system, or inside a bag.
- **Wrist Strap and Bonding Wire** – The wrist strap and bonding wire can be either directly connected between your wrist and bare metal on the hardware if the ESD mat is not required, or connected to the anti-static mat to protect hardware that is temporarily placed on the mat. The physical connection of the wrist strap and bonding wire between your skin, the ESD mat, and the hardware is known as bonding. Use only Field Service kits with a wrist strap, mat, and bonding wire. Never use wireless wrist straps. Always be aware that the internal wires of a wrist strap are prone to damage from normal wear and tear, and must be checked regularly with a wrist strap tester in order to avoid accidental ESD hardware damage. It is recommended to test the wrist strap and bonding wire at least once per week.
- **ESD Wrist Strap Tester** – The wires inside of an ESD strap are prone to damage over time. When using an unmonitored kit, it is a best practice to regularly test the strap prior to each service call, and at a minimum, test once per week. A wrist strap tester is the best method for doing this test. If you do not have your own wrist strap tester, check with your regional office to find out if they have one. To perform the test, plug the wrist-strap's bonding-wire into the tester while it is strapped to your wrist and push the button to test. A green LED is lit if the test is successful; a red LED is lit and an alarm sounds if the test fails.
- **Insulator Elements** – It is critical to keep ESD sensitive devices, such as plastic heat sink casings, away from internal parts that are insulators and often highly charged.
- **Working Environment** – Before deploying the ESD Field Service kit, assess the situation at the customer location. For example, deploying the kit for a server environment is different than for a desktop or portable environment. Servers are typically installed in a rack within a data center; desktops or portables are typically placed on office desks or cubicles. Always look for a large open flat work area that is free of clutter and large enough to deploy the ESD kit with additional space to accommodate the type of system that is being repaired. The workspace should also be free of insulators that can cause an ESD event. On the work area, insulators such as Styrofoam and other plastics should always be moved at least 12 inches or 30 centimeters away from sensitive parts before physically handling any hardware components.
- **ESD Packaging** – All ESD-sensitive devices must be shipped and received in static-safe packaging. Metal, static-shielded bags are preferred. However, you should always return the damaged part using the same ESD bag and packaging that the new part arrived in. The ESD bag should be folded over and taped shut and all the same foam packing material should be used in the original box that the new part arrived in. ESD-sensitive devices should be removed from packaging only at an ESD-protected work surface, and parts should never be placed on top of the ESD bag because only the inside of the bag is shielded. Always place parts in your hand, on the ESD mat, in the system, or inside an anti-static bag.
- **Transporting Sensitive Components** – When transporting ESD sensitive components such as replacement parts or parts to be returned to Dell, it is critical to place these parts in anti-static bags for safe transport.

ESD protection summary

It is recommended that all field service technicians use the traditional wired ESD grounding wrist strap and protective anti-static mat at all times when servicing Dell products. In addition, it is critical that technicians keep sensitive parts separate from all insulator parts while performing service and that they use anti-static bags for transporting sensitive components.

After working inside your computer

About this task

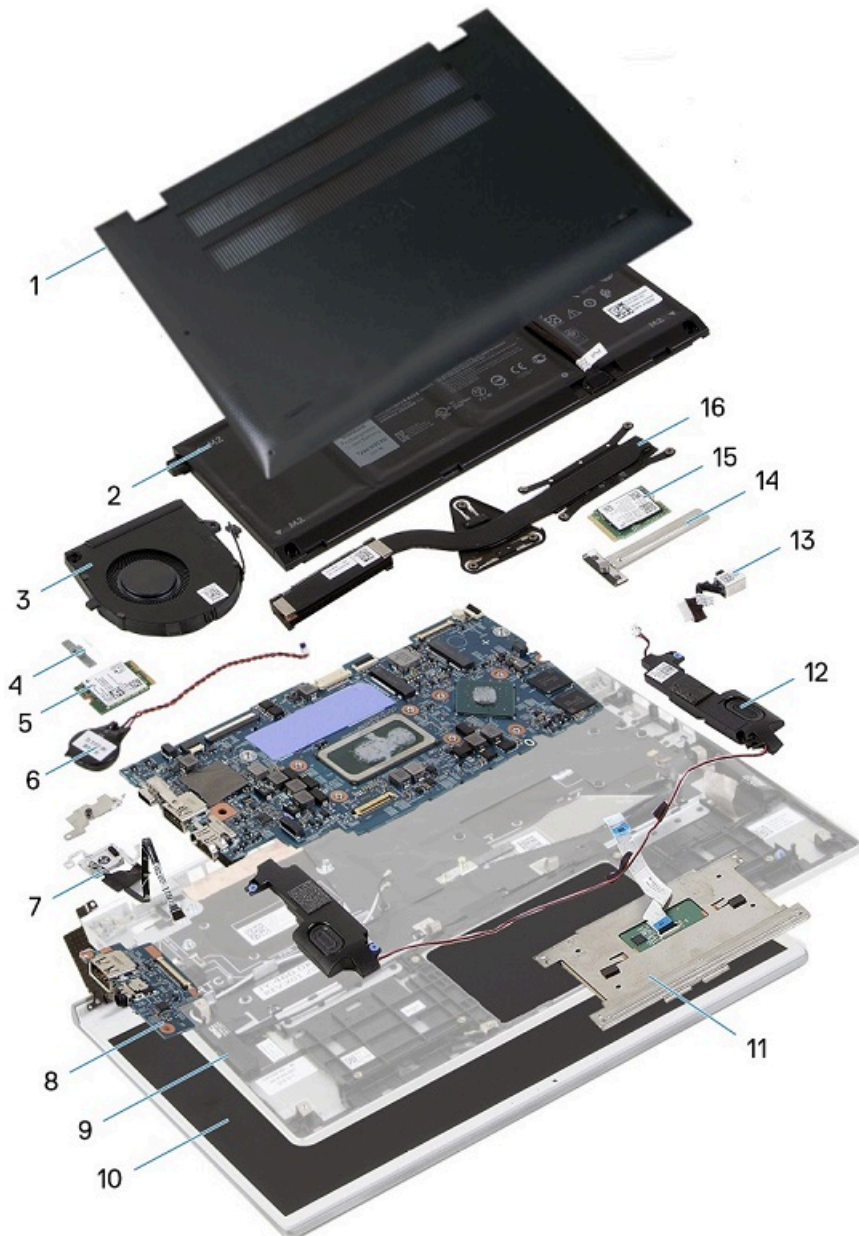
 **CAUTION:** Leaving stray or loose screws inside your computer may severely damage your computer.

Steps

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.


Major components of Vostro 5301

The following image shows the major components of Vostro 5301.



1. Base cover
2. Battery
3. Fan
4. Wireless-card bracket
5. Wireless card
6. Coin-cell battery
7. Power button with fingerprint reader
8. I/O board

9. Palm-rest and keyboard assembly
10. Display assembly
11. Touchpad
12. Speakers
13. Power-adaptor port
14. Solid-state drive shield
15. Solid-state drive
16. Heat sink

 **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.

Disassembly and reassembly

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

Base cover

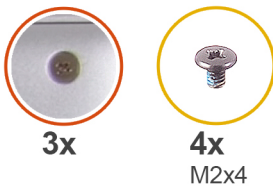
Removing the base cover

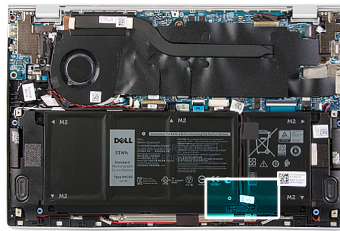
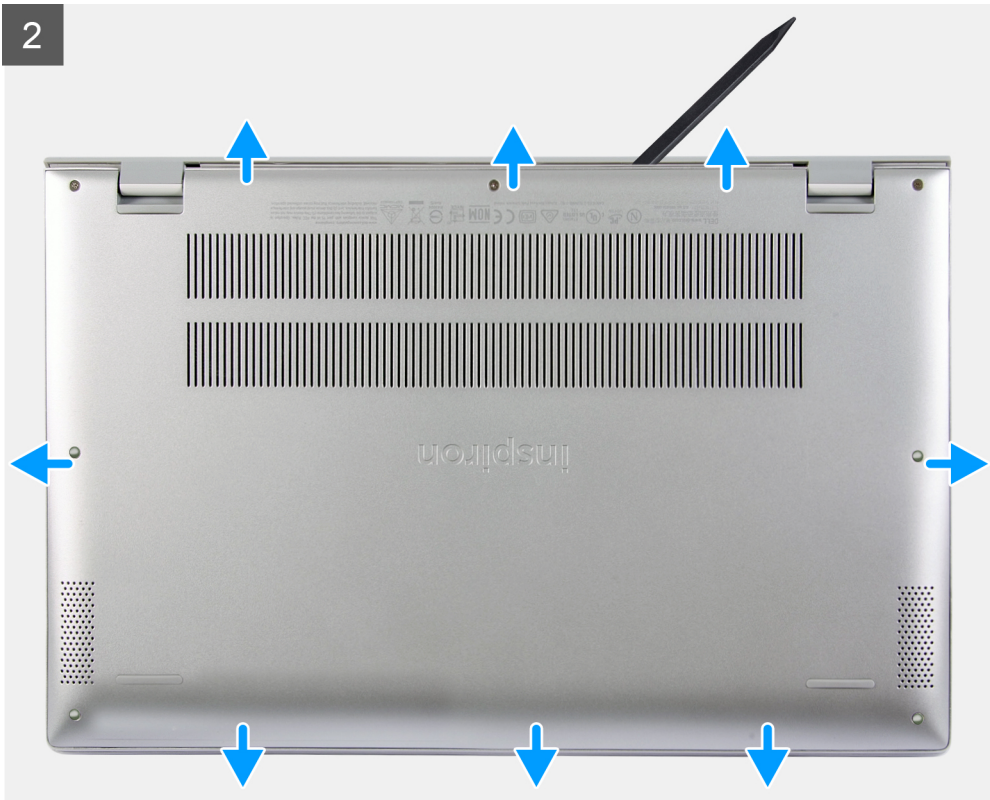
Prerequisites

1. Follow the procedure in [Before working inside your computer](#).

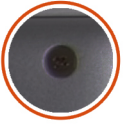
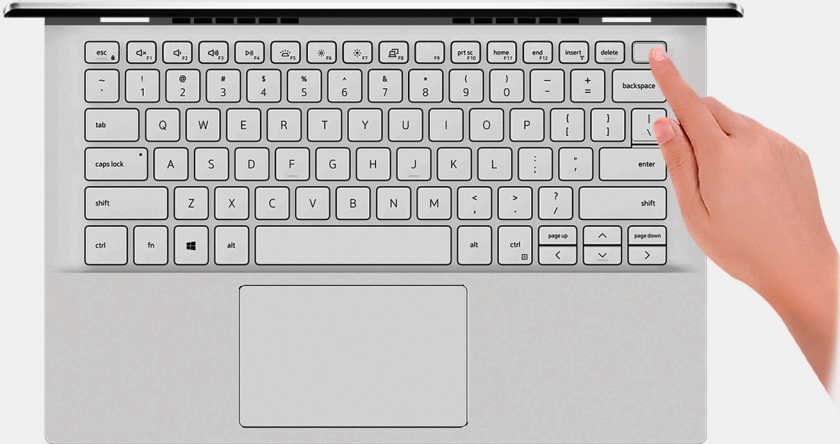
About this task

The following images indicate the location of the base cover and provide a visual representation of the removal procedure.





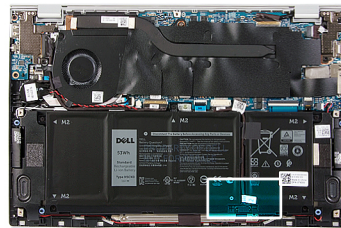
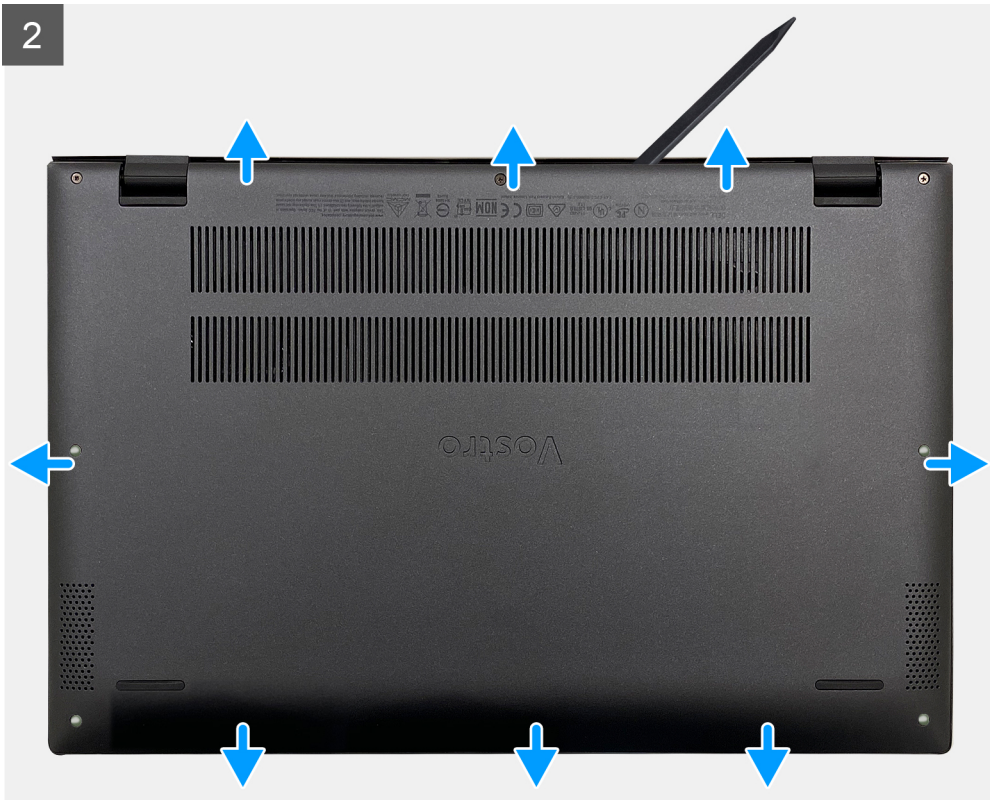
4

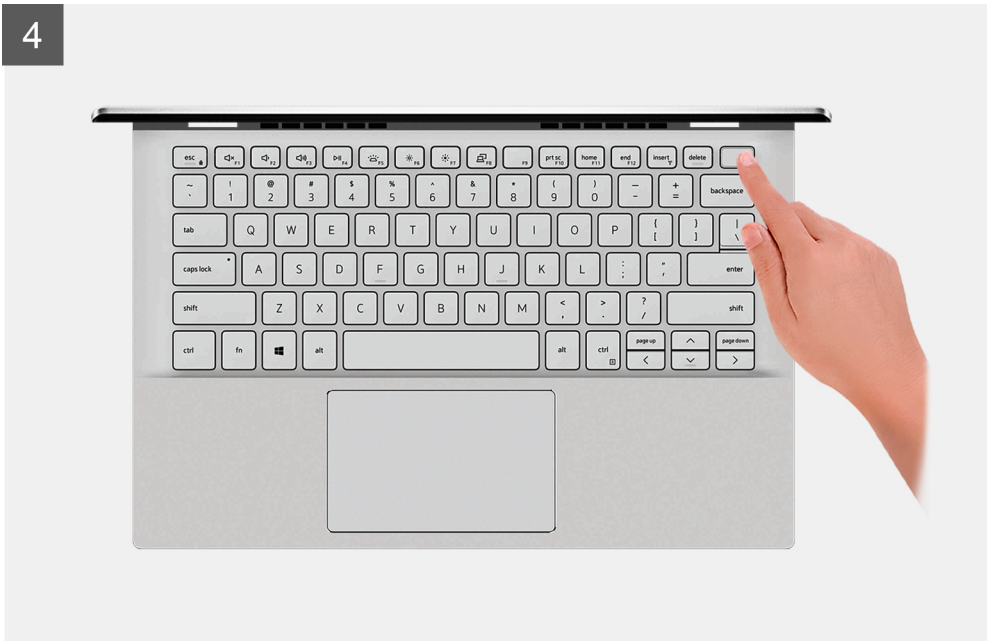


4x
M2x4

1







Steps

1. Loosen the three captive screws that secure the base cover to the palm-rest and keyboard assembly.
2. Remove the four screws (M2x4) that secure the base cover to the palm-rest and keyboard assembly.
3. Starting from the top-left corner, use a plastic scribe to pry the base cover in the direction of the arrows to release the base cover from the palm-rest and keyboard assembly.

CAUTION: Do not pull on or pry the base cover from the side where the hinges are; doing so may damage the base cover.

4. Pry the base cover and remove it from the palm-rest and keyboard assembly.

NOTE: The following steps are applicable only if you want to further remove any other component from your computer.

5. Using the pull tab, disconnect the battery cable from the battery.
6. Turn your computer over and press the power button for 15 seconds to drain the flea power.

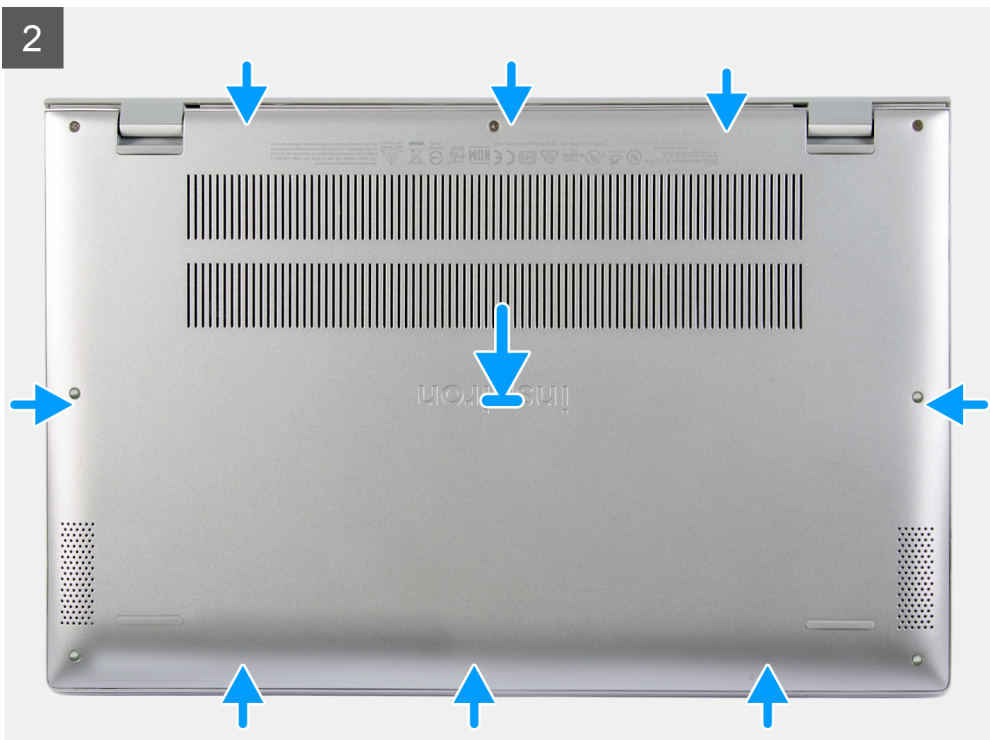
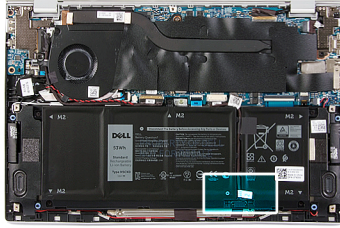
Installing the base cover

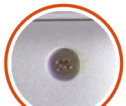
Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the base cover and provide a visual representation of the installation procedure.



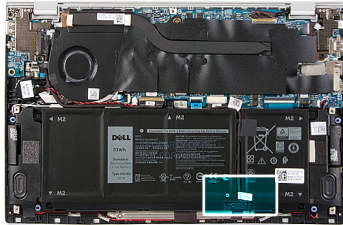


3x



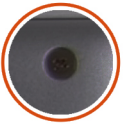
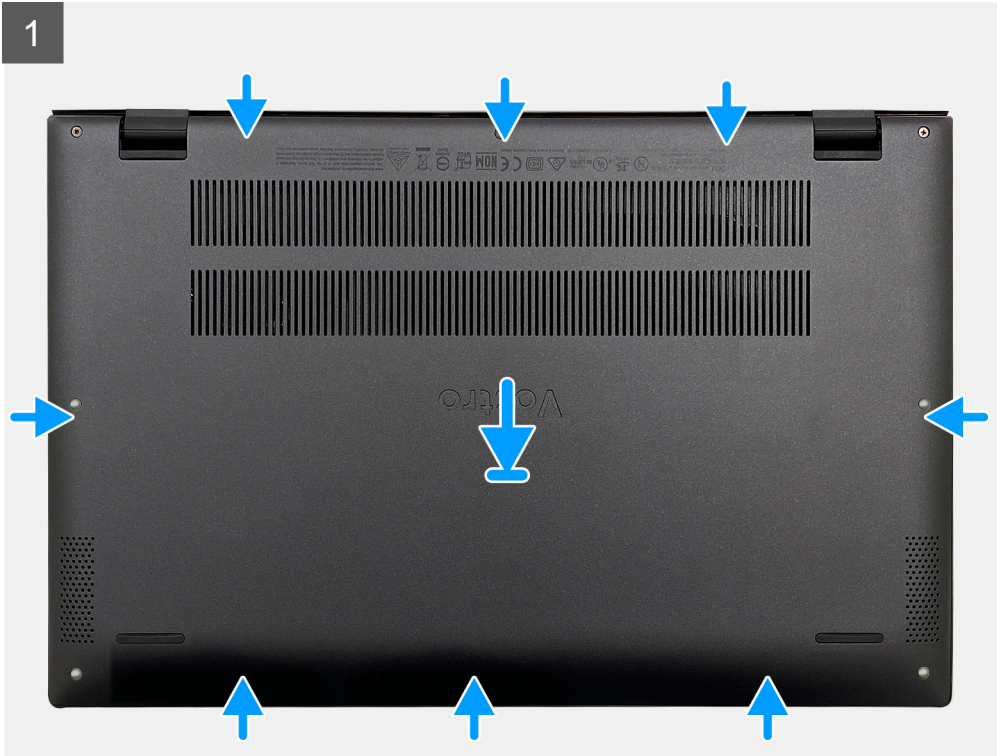
4x
M2x4

3



1





4x
M2x4



Steps

1. Connect the battery cable to the battery, if applicable.

2. Align the screw holes on the base cover with the screw holes on the palm-rest and keyboard assembly, and then snap the base cover into place.
3. Replace the four screws (M2x4) that secure the base cover to the palm-rest and keyboard assembly.
4. Tighten the three captive screws that secure the base cover to the palm-rest and keyboard assembly.

Next steps

1. Follow the procedure in [After working inside your computer](#).

Battery

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.

Removing the 3-cell battery

Prerequisites

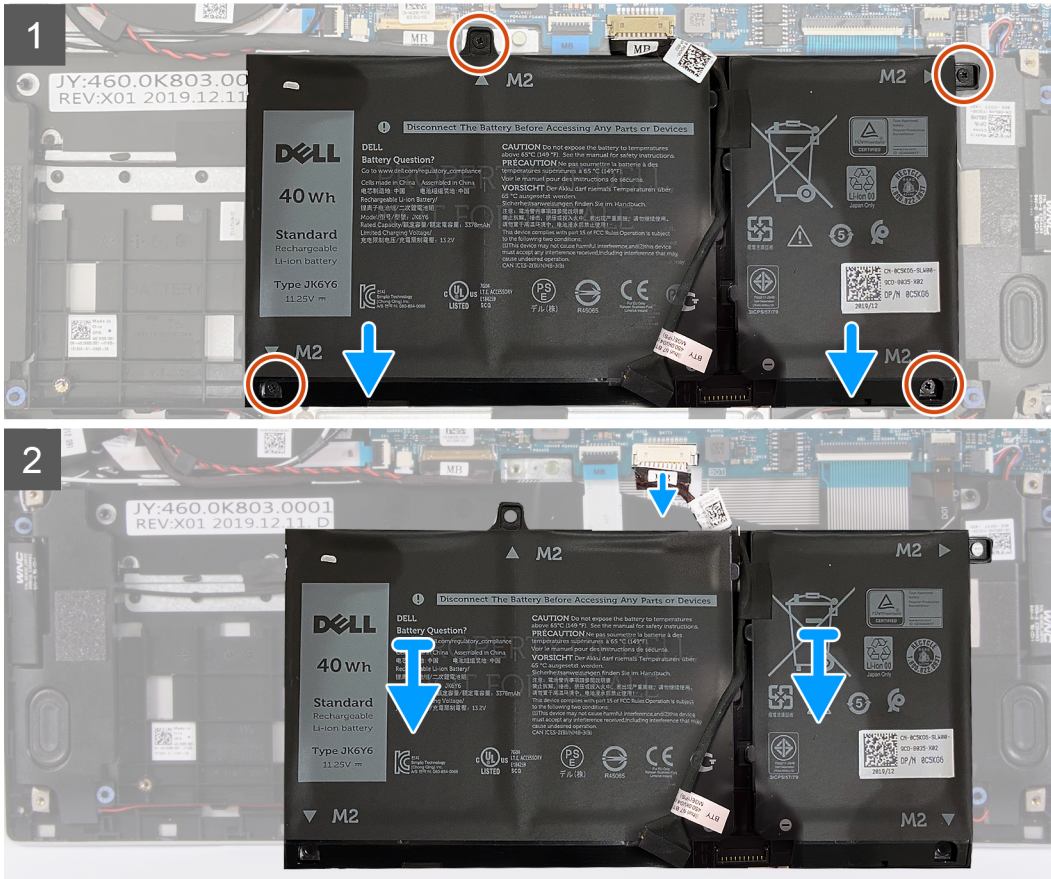
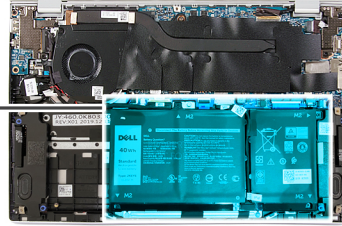
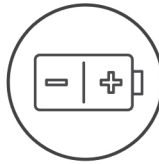
1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).

About this task

The following image indicates the location of the battery and provides a visual representation of the removal procedure.



4x
M2x5



Steps

1. Remove the four screws (M2x5) that secure the battery to the palm-rest and keyboard assembly.
2. Lift the battery off the palm-rest and keyboard assembly.
3. Disconnect the battery cable from the system board, if applicable.

Installing the 3-cell battery

Prerequisites

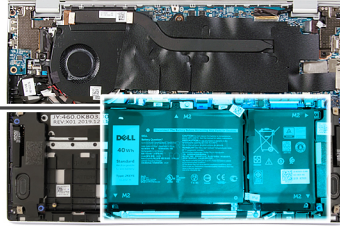
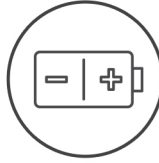
If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the battery and provides a visual representation of the installation procedure.



4x
M2x5



Steps

1. Connect the battery cable to the system board.
2. Align the screw holes on the battery with the screw holes on the palm-rest and keyboard assembly.
3. Replace the four screws (M2x5) that secure the battery to the palm-rest and keyboard assembly.

Next steps

1. Install the [base cover](#).
2. Follow the procedure in [After working inside your computer](#).

Removing the 4-cell battery

Prerequisites

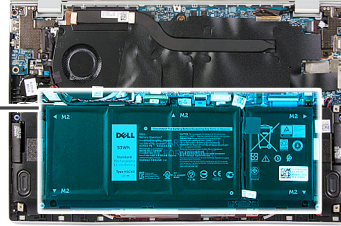
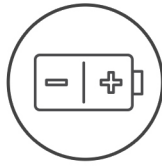
1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).

About this task

The following image indicates the location of the battery and provides a visual representation of the removal procedure.



5x
M2x5



Steps

1. Remove the five screws (M2x5) that secure the battery to the palm-rest and keyboard assembly.
2. Lift the battery off the palm-rest and keyboard assembly.
3. Disconnect the battery cable from the system board, if applicable.

Installing the 4-cell battery

Prerequisites

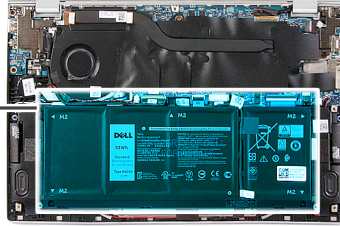
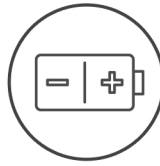
If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the battery and provides a visual representation of the installation procedure.



5x
M2x5



Steps

1. Connect the battery cable to the system board.
2. Align the screw holes on the battery with the screw holes on the palm-rest and keyboard assembly.
3. Replace the five screws (M2x5) that secure the battery to the palm-rest and keyboard assembly.

Next steps


1. Install the [base cover](#).
2. Follow the procedure in [After working inside your computer](#).

Solid-state drive

Removing the 2230 solid-state drive

Prerequisites

1. Follow the procedure in [Before working inside your computer](#).

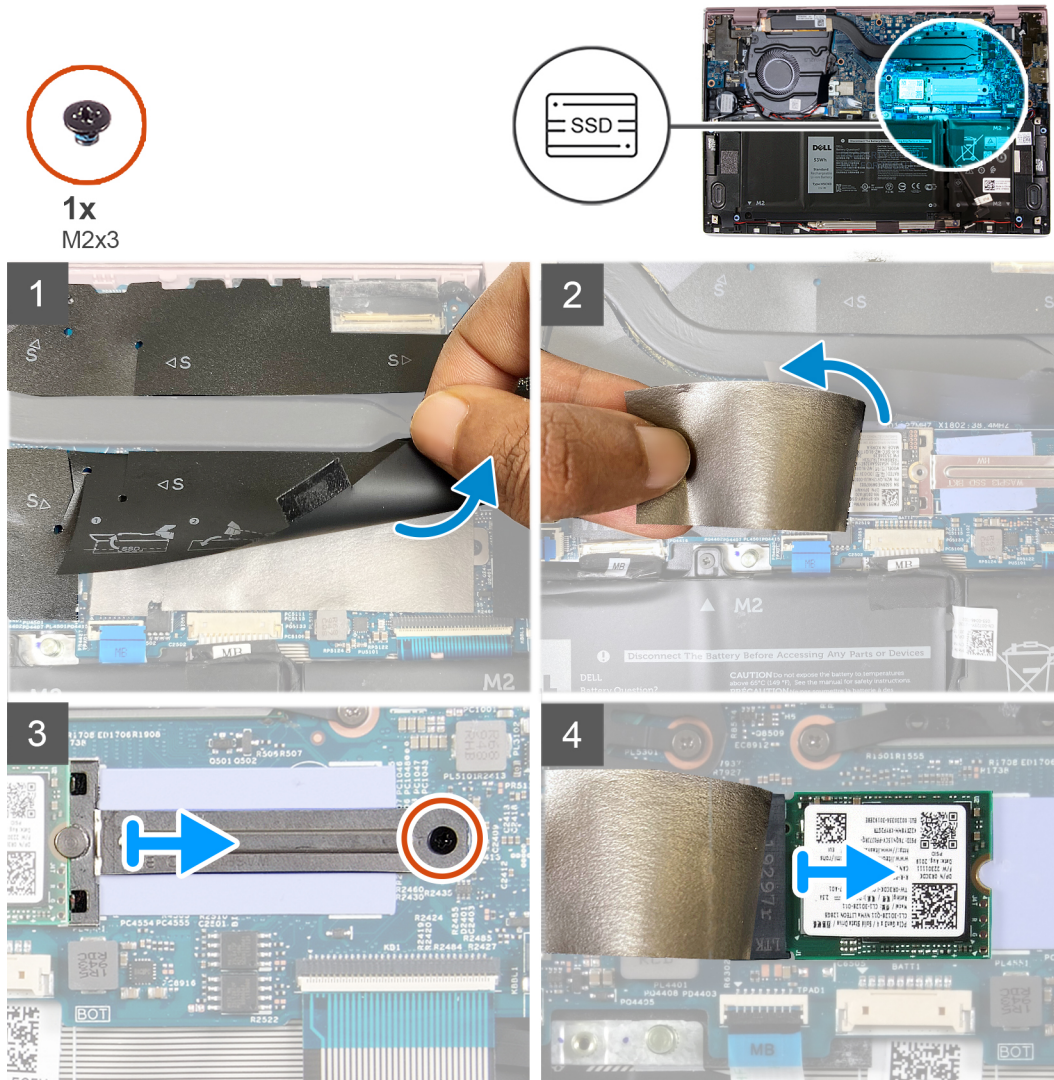
 **CAUTION:** Solid-state drives are fragile. Exercise care when handling the solid-state drive.

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

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

About this task

The following image indicates the location of the solid-state drive and provides a visual representation of the removal procedure.



Steps

1. Lift the protective tape that covers the 2230 solid-state drive slot.
2. Peel the Mylar that covers the 2230 solid-state drive.
3. Remove the screw (M2x3) that secures the 2230 solid-state drive bracket to the system board.
4. Slide and remove the solid-state drive bracket off the system board.
5. Slide and remove the 2230 solid-state drive from the solid-state drive slot.

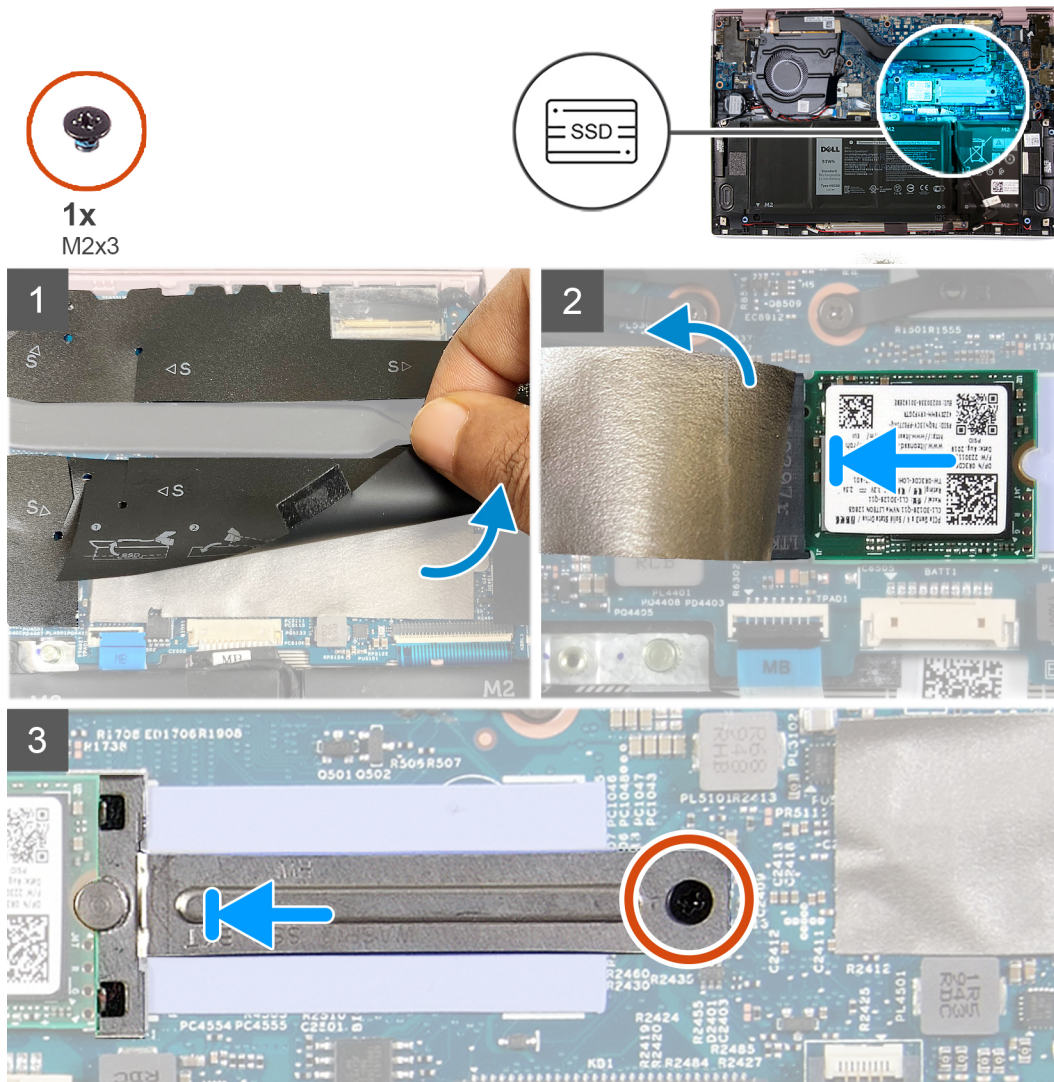
Installing the 2230 solid-state drive

Prerequisites

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

About this task

The following image indicates the location of the solid-state drive and provides a visual representation of the installation procedure.



Steps

1. Lift the protective tape and peel the Mylar that covers the 2230 solid-state drive.
2. Slide the 2230 solid-state drive into the solid-state drive slot.
3. Slide the solid-state drive bracket and align the screw hole on the solid-state drive bracket with the screw hole on the system board.
4. Replace the screw (M2x3) that secures the solid-state drive bracket to the system board.

Next steps

1. Install the [base cover](#).
2. Follow the procedure in [After working inside your computer](#).

Removing the 2280 solid-state drive

Prerequisites

1. Follow the procedure in [Before working inside your computer](#).

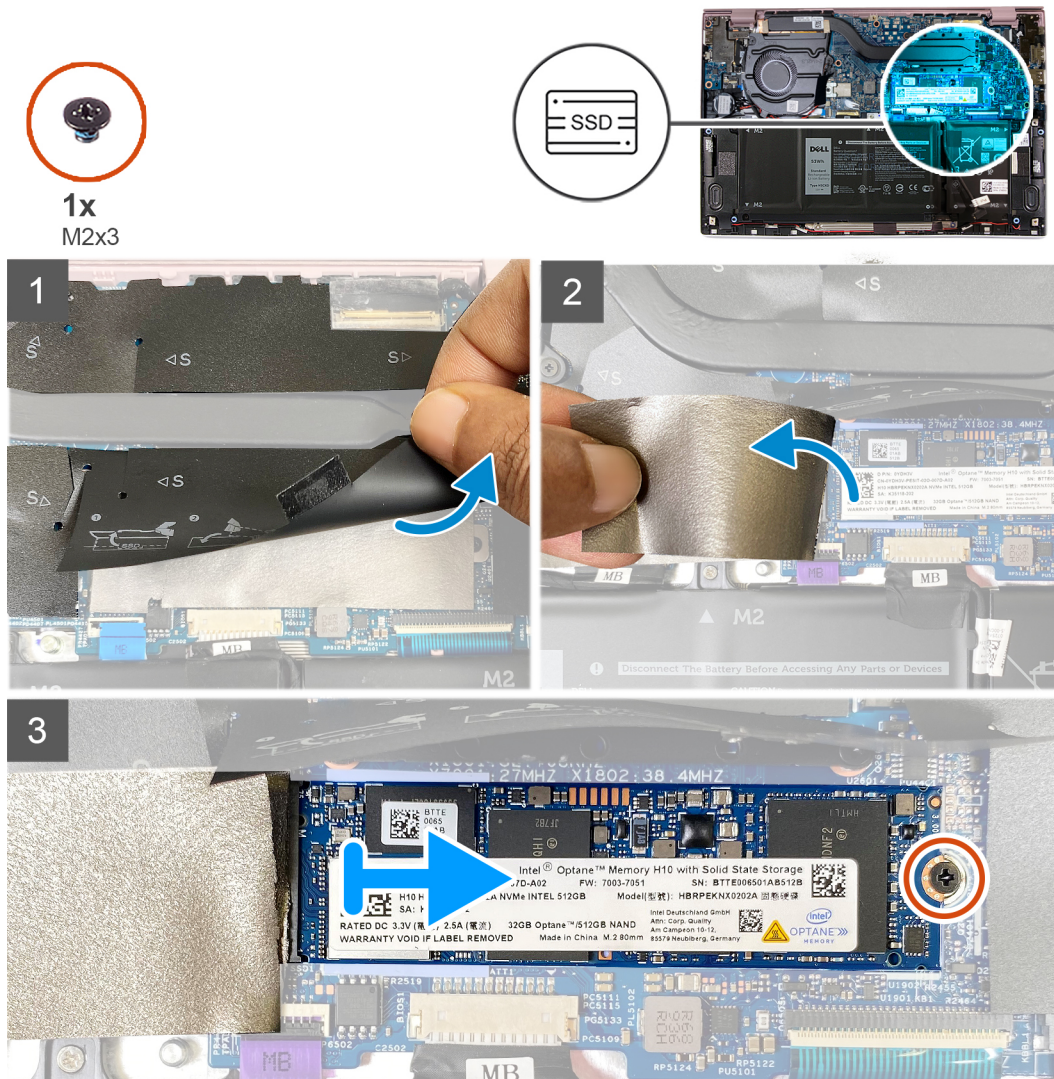
CAUTION: Solid-state drives are fragile. Exercise care when handling the solid-state drive.

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

2. Remove the base cover.

About this task

The following image indicates the location of the solid-state drive and provides a visual representation of the removal procedure.



Steps

1. Lift the protective tape that covers the 2280 solid-state drive slot.
2. Peel the Mylar that covers the 2280 solid-state drive.
3. Remove the screw (M2x3) that secures the 2280 solid-state drive to the system board.
4. Slide and remove the 2280 solid-state drive from the solid-state drive slot.

Installing the 2280 solid-state drive

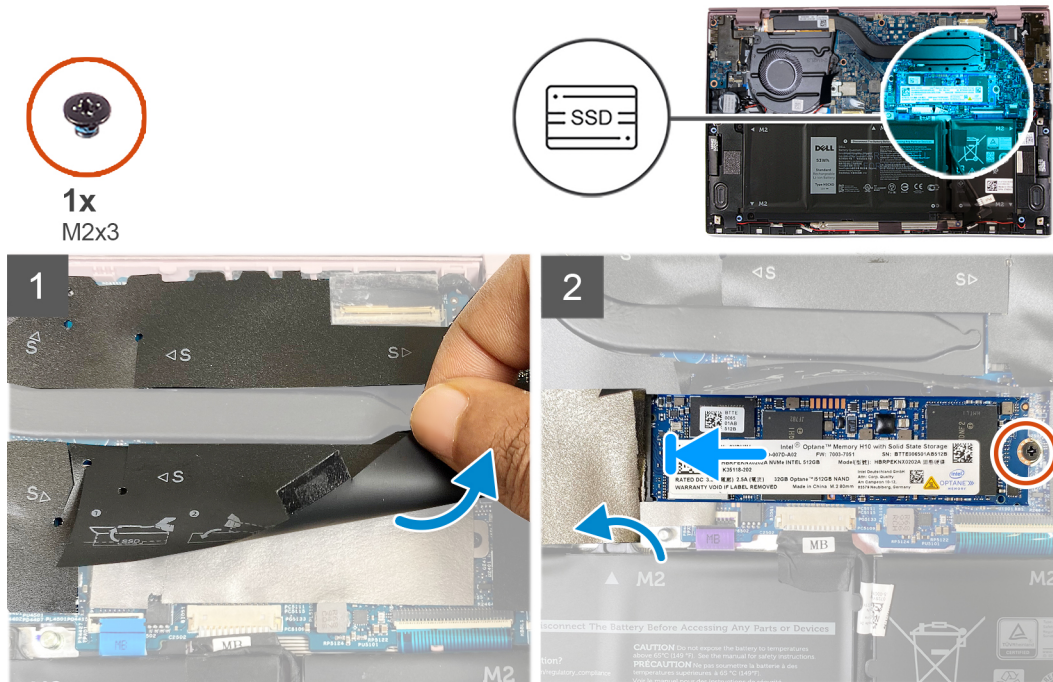
Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

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

About this task

The following image indicates the location of the solid-state drive and provides a visual representation of the installation procedure.



Steps

1. Lift the protective tape and the Mylar that covers the solid-state drive slot.
2. Slide the 2280 solid-state drive into the solid-state drive slot.
3. Replace the screw (M2x3) that secures the 2280 solid-state drive to the system board.
4. Affix the Mylar and the protective tape over the solid-state drive.

Next steps

1. Install the [base cover](#).
2. Follow the procedure in [After working inside your computer](#).

Coin-cell battery

Removing the coin-cell battery

Prerequisites

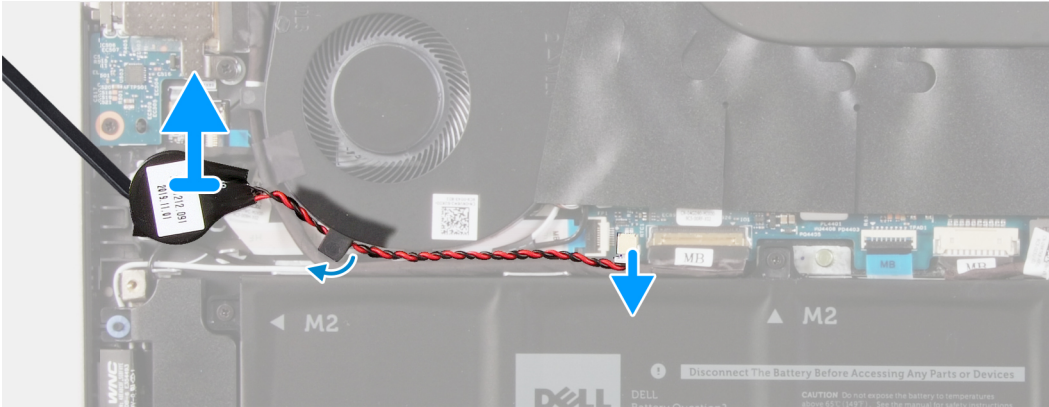
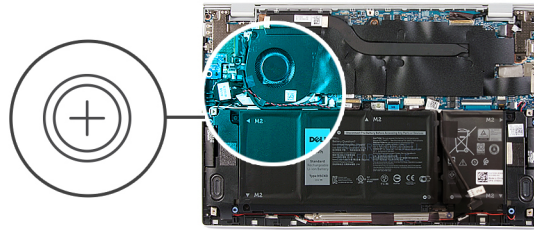
1. Follow the procedure in [Before working inside your computer](#).

CAUTION: Removing the coin-cenn 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.

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

About this task

The following image indicates the location of the coin-cell battery and provides a visual representation of the removal procedure.



Steps

1. Disconnect the coin-cell battery cable from the system board.
2. Remove the coin-cell battery cable from the routing guide.
3. Peel the coin-cell battery off the palm-rest and keyboard assembly.

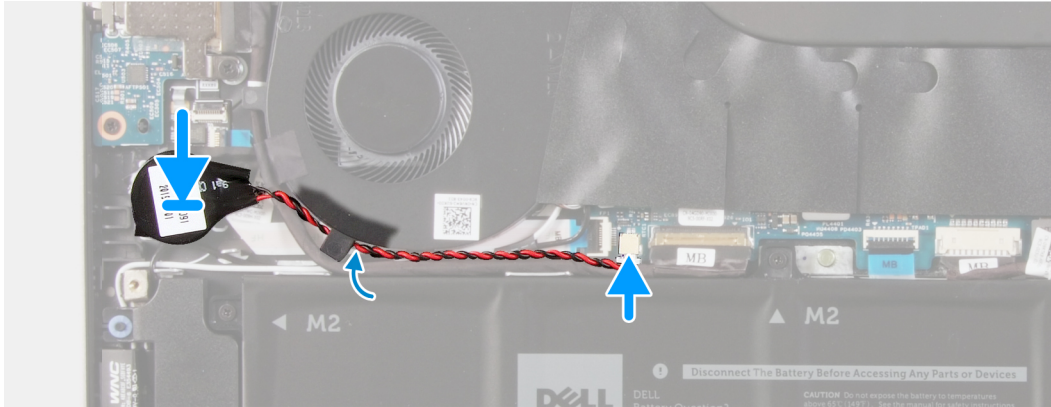
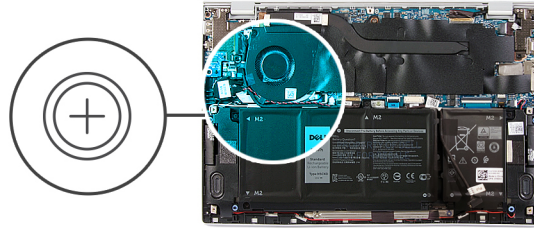
Installing the coin-cell battery

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the coin-cell battery and provides a visual representation of the installation procedure.



Steps

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

Next steps

1. Install the [4-cell battery](#).
2. Install the [3-cell battery](#).
3. Install the [base cover](#).
4. Follow the procedure in [After working inside your computer](#).

Fan

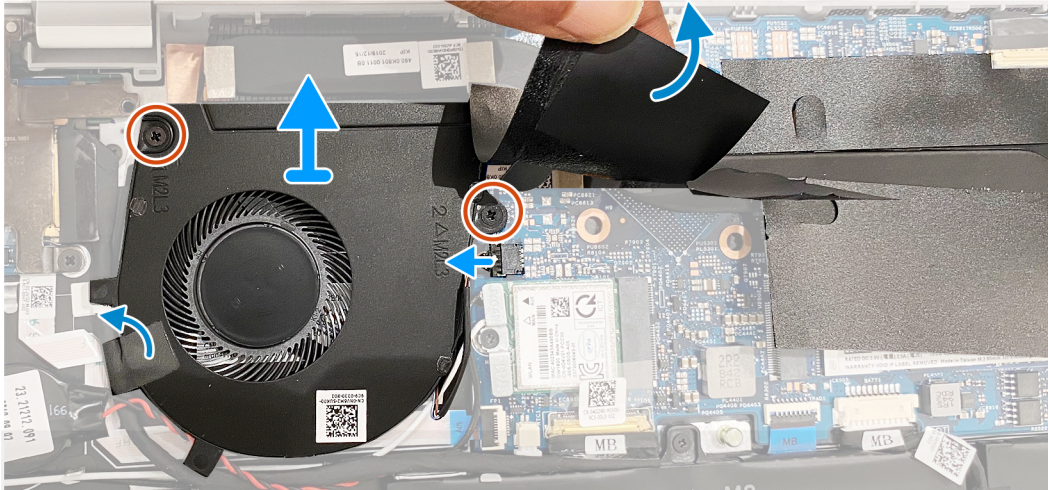
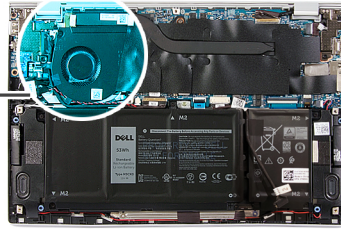
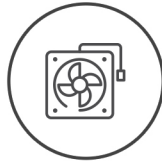
Removing the fan

Prerequisites

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).

About this task

The following images indicate the location of the fans and provide a visual representation of the removal procedure.



Steps

1. Peel off the tape that secures the I/O-board cable to the fan.
2. Lift the mylar that covers the fan screw on the system board.
3. Remove the two screws (M2x3) that secure the fan to the system board.
4. Disconnect the fan cable from the system board.
5. Lift the fan off the system board.

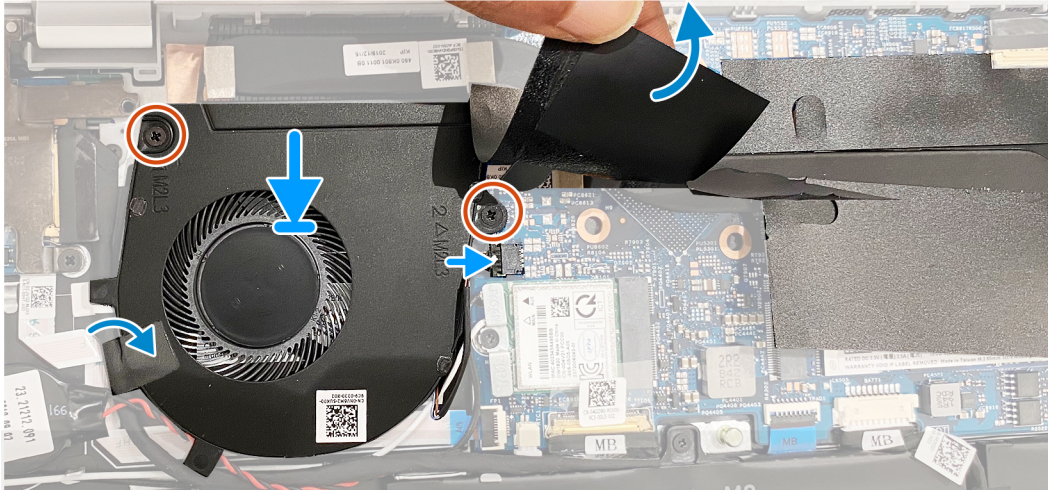
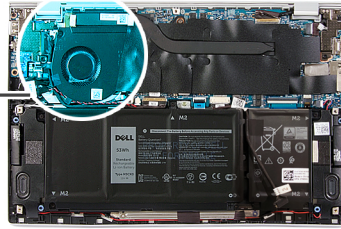
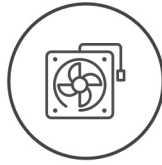
Installing the fan

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the fans and provide a visual representation of the installation procedure.



Steps

1. Lift the mylar that covers the screw hole on the fan.
2. Align the screw holes on the fan with the screw holes on the system board.
3. Replace the two screws (M2x3) that secure the fan to the system board.
4. Connect the fan cable from the system board.
5. Adhere the tape that secures the I/O-board cable to the fan.

Next steps

1. Install the [base cover](#).
2. Follow the procedure in [After working inside your computer](#).

Speakers

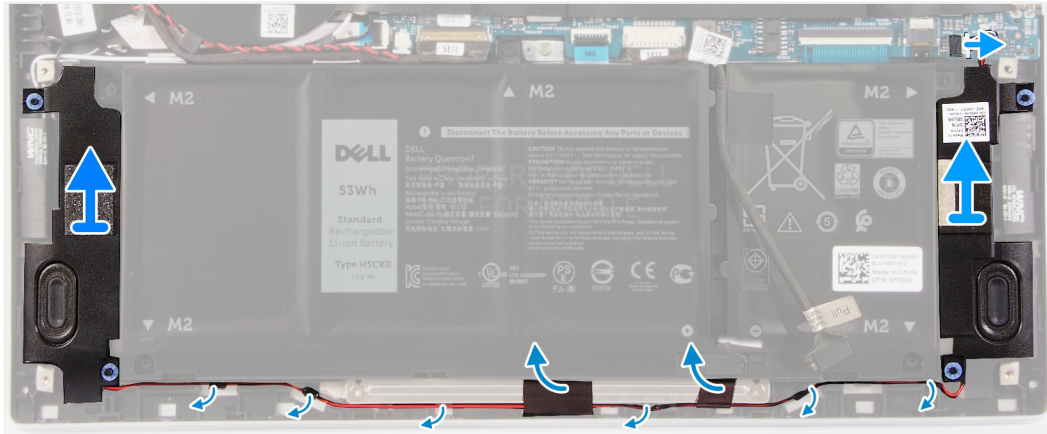
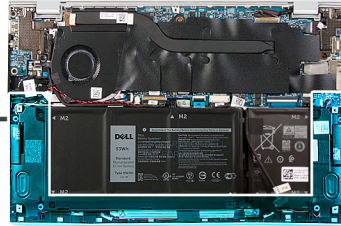
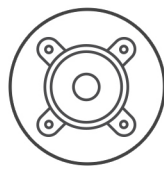
Removing the speakers

Prerequisites

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).

About this task

The following image indicates the location of the speakers and provides a visual representation of the removal procedure.



Steps

1. Disconnect the speaker cable from the system board.
2. Peel the tapes that secure the speaker cable to the battery.
3. Note the routing of the speaker cables, and remove the speaker cables from the respective routing guides on the palm-rest and keyboard assembly.
4. Pry the speakers off the palm-rest and keyboard assembly.

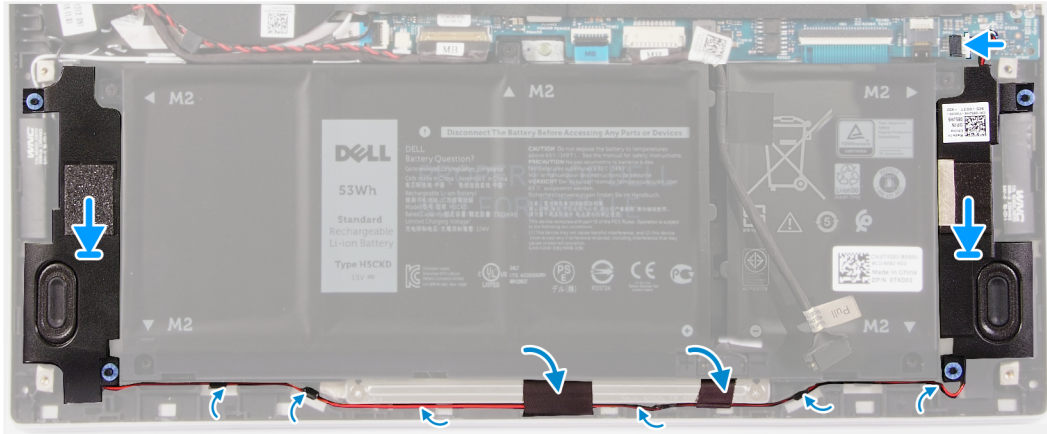
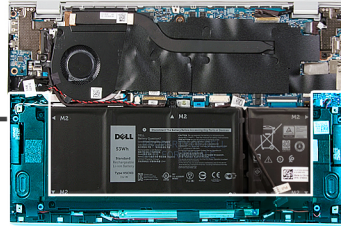
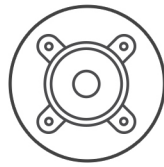
Installing the speakers

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the speakers and provides a visual representation of the installation procedure.



Steps

1. Slide the left and the right speakers into the respective slots on the palm-rest and keyboard assembly.
2. Route the speaker cables through the respective routing guides on the palm-rest and keyboard assembly.
3. Adhere the tapes that secure the speaker cable to the battery.
4. Connect the left and the right speaker cables to the respective connectors on the system board.

Next steps

1. Install the [base cover](#).
2. Follow the procedure in [After working inside your computer](#).

Display assembly

Removing the display assembly

Prerequisites

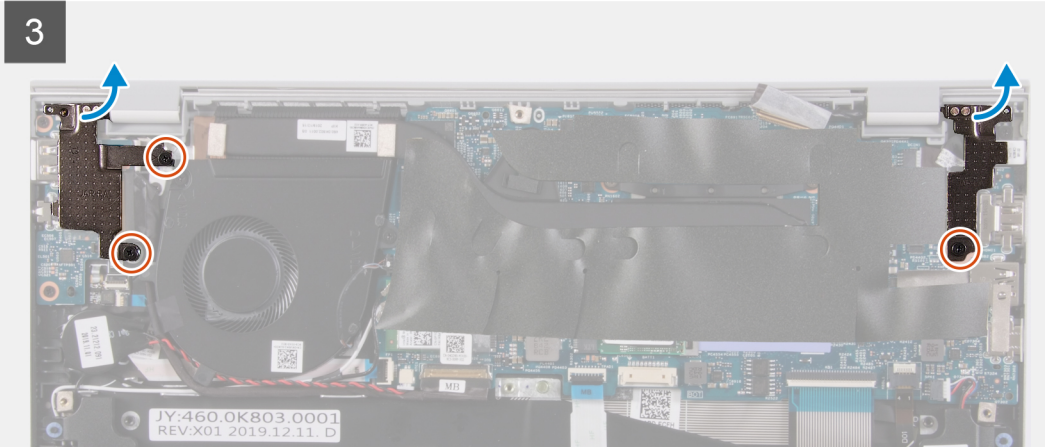
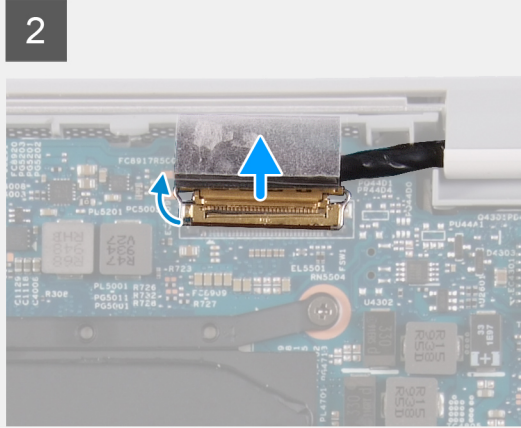
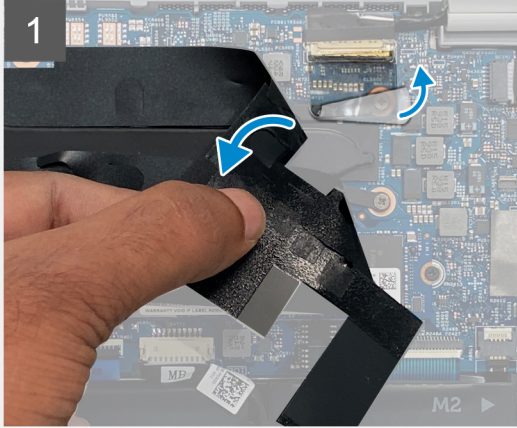
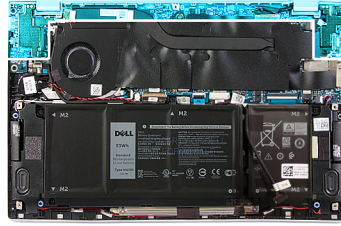
1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).

About this task

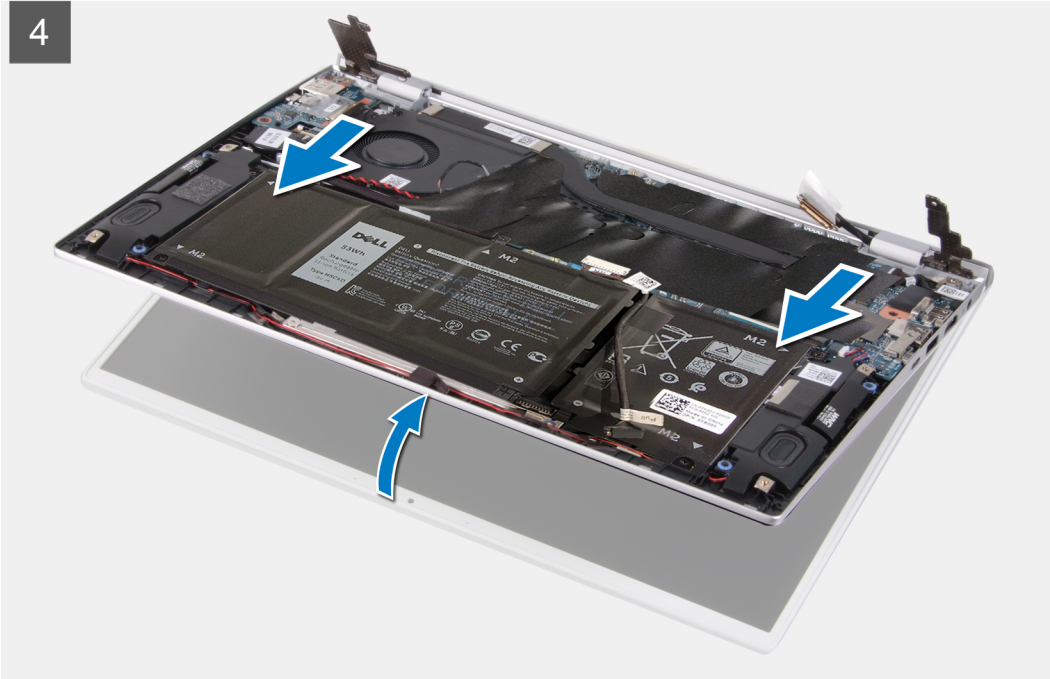
The following images indicate the location of the display assembly and provide a visual representation of the removal procedure.



3x
M2x2



4



Steps

1. Lift the mylar that covers the display cable on the system board.
2. Open the latch and disconnect the display cable from the system board.
3. Remove the two screws (M2x2) that secure the left hinge to the palm-rest and keyboard assembly.
4. Remove the screw (M2x2) that secures the right hinge to the system board and the palm-rest and keyboard assembly.
5. Open the display assembly at an angle and slide the palm-rest and keyboard assembly from the display assembly.
6. After performing all the above steps, you are left with the display assembly.



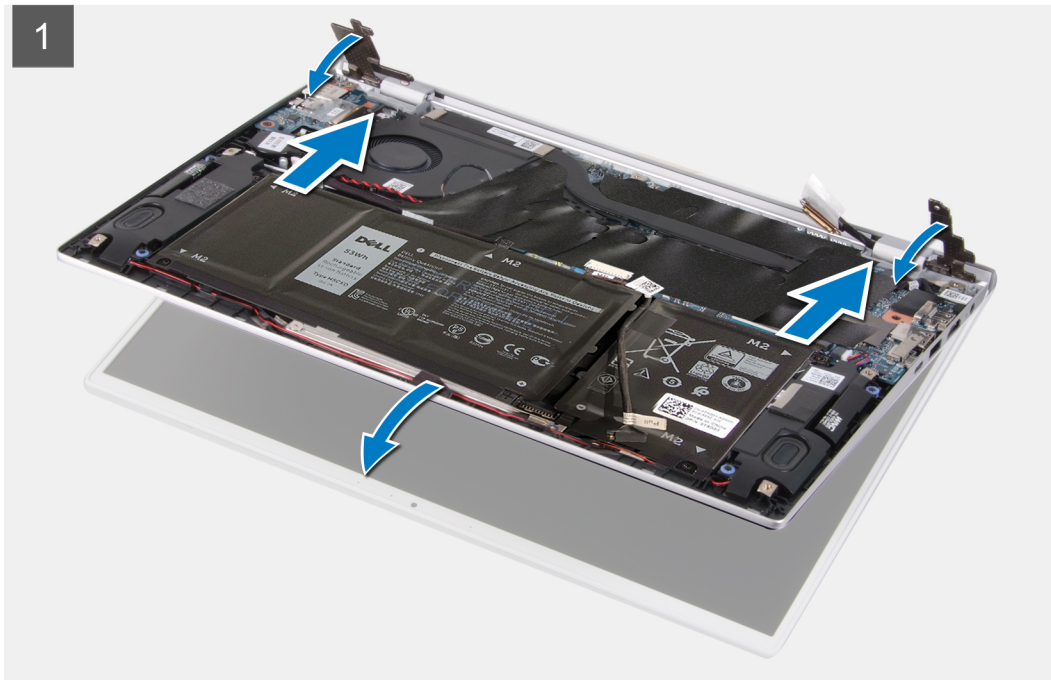
Installing the display assembly

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

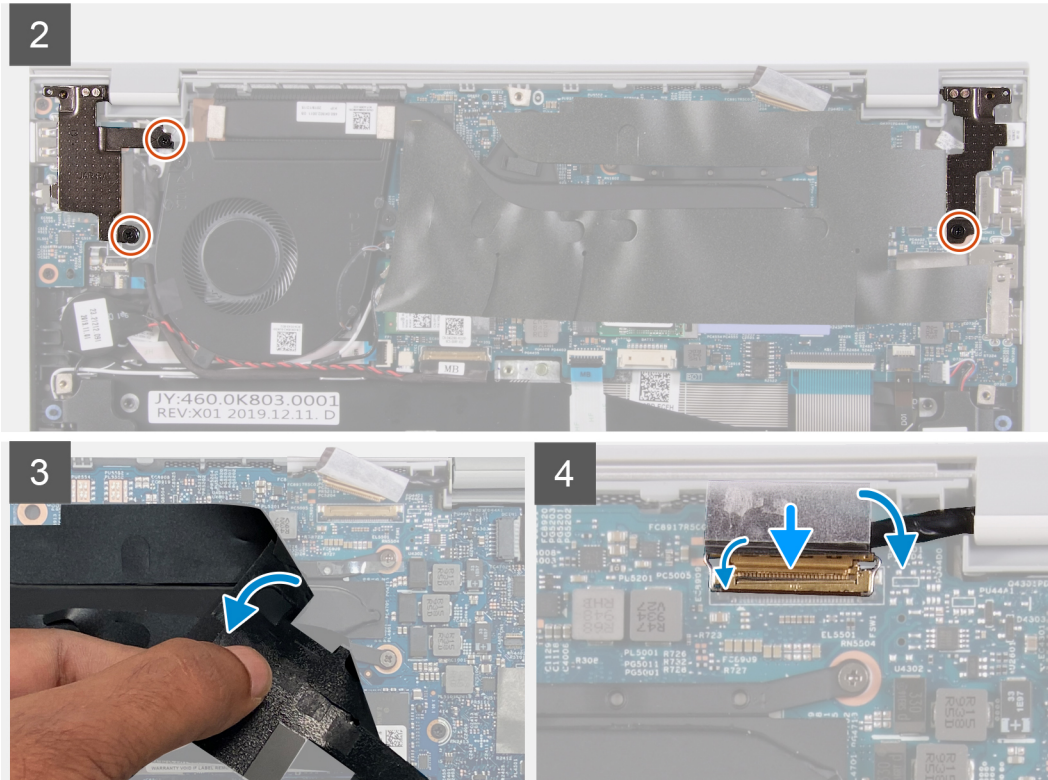
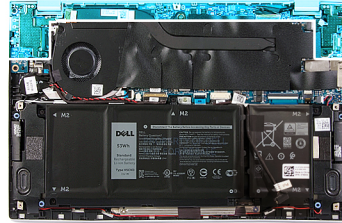
About this task

The following images indicate the location of the display assembly and provide a visual representation of the installation procedure.





3x
M2x2



Steps

1. Place the display assembly on a clean surface.
2. Align and place the palm-rest and keyboard assembly at an angle with the display assembly.
3. Align the screw holes on the display hinges with the screw holes on the palm-rest and keyboard assembly.
4. Replace the screw (M2x2) that secures the right hinge to the system board and the palm-rest and keyboard assembly.
5. Replace the two screws (M2x2) that secure the left hinge to the palm-rest and keyboard assembly.
6. Lift the mylar that covers the display-cable connector on the system board.
7. Connect the display cable to the connector on the system board.

Next steps

1. Install the [base cover](#).
2. Follow the procedure in [After working inside your computer](#).

Touchpad

Removing the touchpad

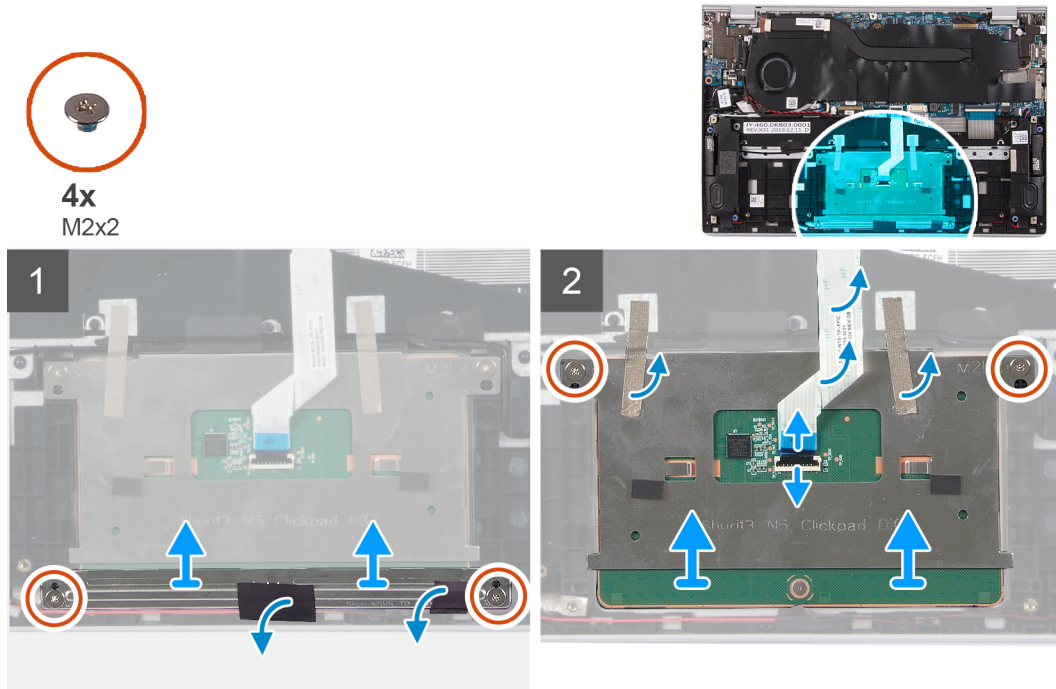
Prerequisites

1. Follow the procedure in [Before working inside your computer](#).

2. Remove the [base cover](#).
3. Remove the [4-cell battery](#) or the [3-cell battery](#).

About this task

The following image indicates the location of touchpad and provides a visual representation of the removal procedure.



Steps

1. Peel the tape that secures the speaker cables to the touchpad bracket.
2. Remove the two (M2x2) screws that secure the touchpad bracket to the palm-rest and keyboard assembly.
3. Remove the two (M2x2) screws that secure the touchpad to the palm-rest and keyboard assembly.
4. Open the latch and disconnect the touchpad cable from the system board.
5. Peel the tapes that secure the touchpad to the palm-rest and keyboard assembly.
6. Lift the touchpad, along with the cable, off the palm-rest and keyboard assembly.

Installing the touchpad

Prerequisites

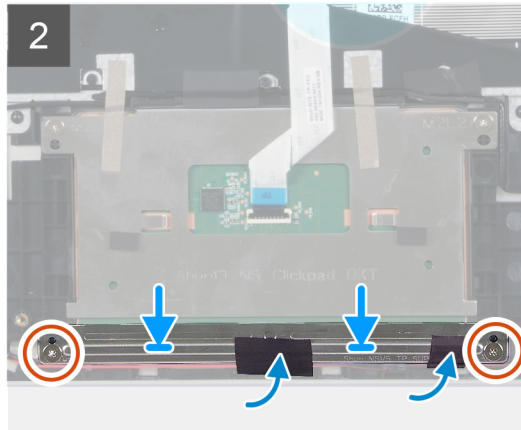
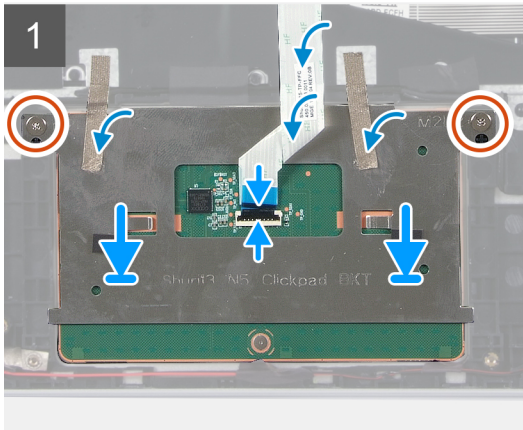
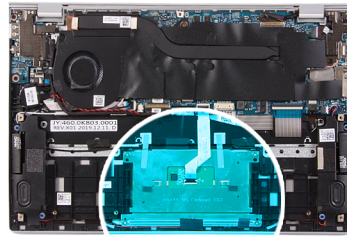
If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of touchpad and provides a visual representation of the installation procedure.



4x
M2x2



Steps

1. Align and place the touchpad into the slot on the palm-rest and keyboard assembly.
2. Replace the two (M2x2) screws that secure the touchpad to the palm-rest and keyboard assembly.
3. Adhere the tapes that secure the touchpad to the palm-rest and keyboard assembly.
4. Connect the touchpad cable and close the latch to secure the cable to the system board.
5. Align and place the touchpad bracket into the slot on the palm-rest and keyboard assembly.
6. Replace the two (M2x2) screws that secure the touchpad bracket to the palm-rest and keyboard assembly.
7. Adhere the tape that secures the speaker cables to the touchpad bracket.

Next steps

1. Install the [base cover](#).
2. Install the [4-cell battery](#) or the [3-cell battery](#).
3. Follow the procedure in [After working inside your computer](#).

Heat sink

Removing the heat sink

Prerequisites

1. Follow the procedure in [Before working inside your computer](#).

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.

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

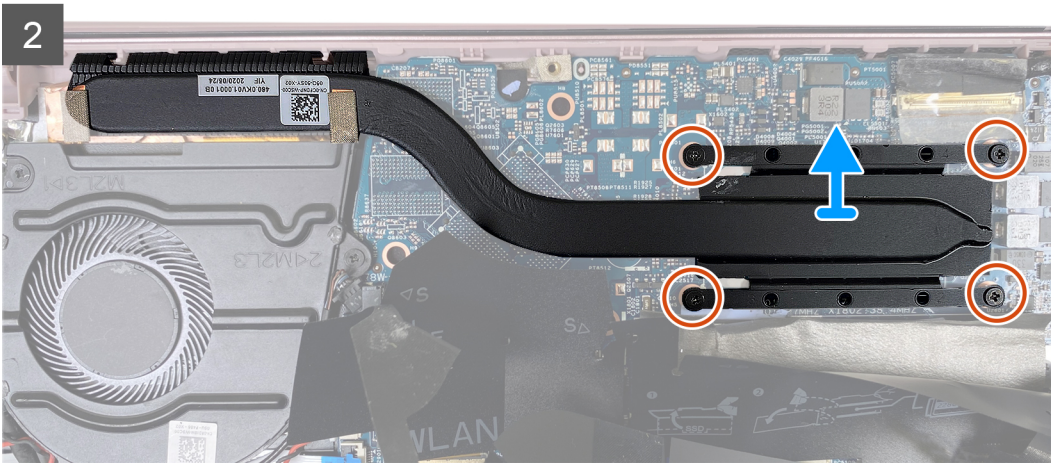
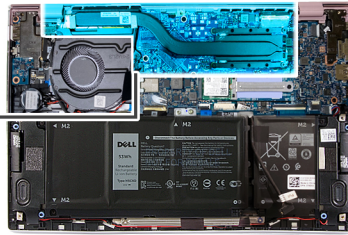
2. Remove the [base cover](#).

About this task

The following image indicates the location of the heat sink and provides a visual representation of the removal procedure.



4x



Steps

1. Peel off the Mylar that covers the heat sink on the system board.
2. In reverse sequential order (as indicated on the heat sink), loosen the four captive screws that secure the heat sink to the system board.
3. Lift the heat sink off the system board.

Installing the heat sink

Prerequisites

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

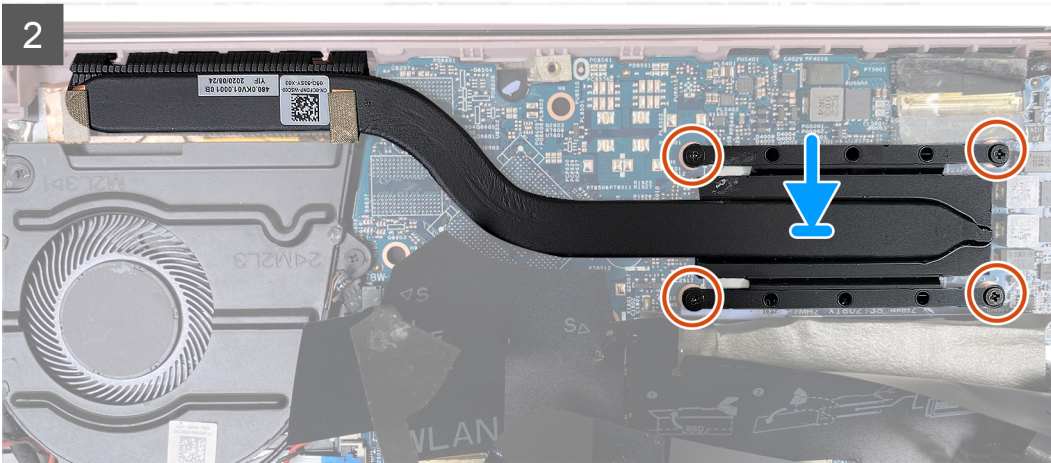
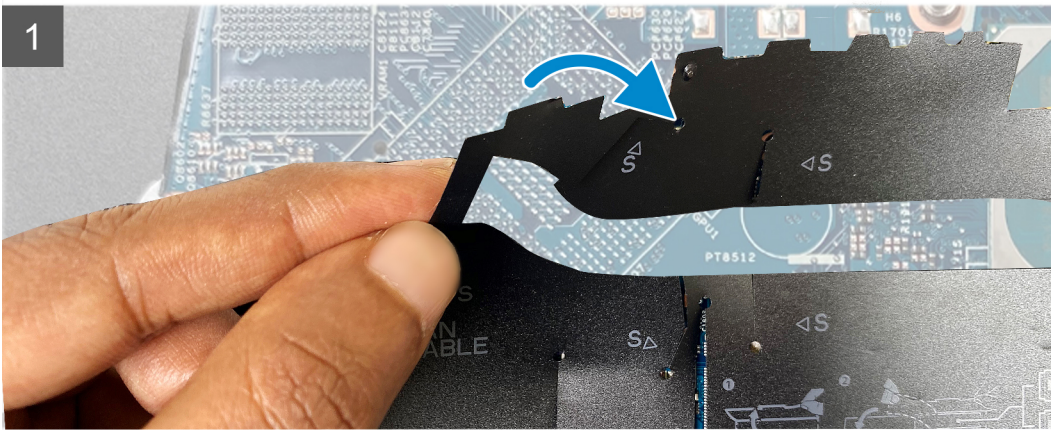
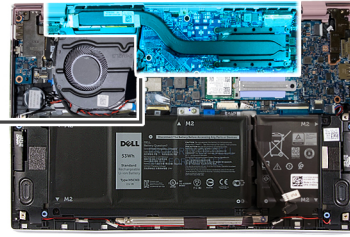
i NOTE: If either the system board or the heat sink is replaced, use the thermal pad/paste provided in the kit to ensure that thermal conductivity is achieved.

About this task

The following image indicates the location of the heat sink and provides a visual representation of the installation procedure.



4x



Steps

1. Align the screw holes on the heat sink with the screw holes on the system board.
2. In sequential order (as indicated on the heat sink), tighten the four captive screws that secure the heat sink to the system board.
3. Adhere the Mylar that covers the heat sink on the system board.

Next steps

1. Install the [base cover](#).
2. Follow the procedure in [After working inside your computer](#).

Power-adapter port

Removing the power-adapter port

Prerequisites

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).

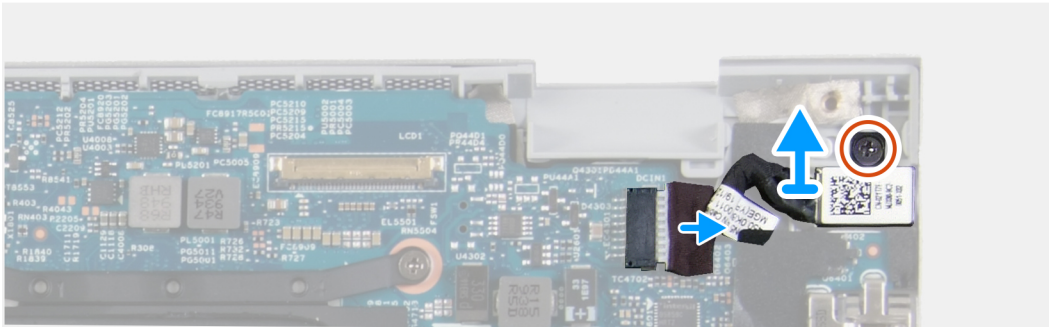
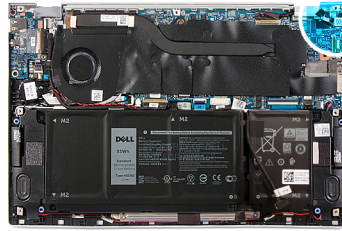
3. Remove the [display assembly](#).

About this task

The following image indicates the location of power-adapter port and provides a visual representation of the removal procedure.



1x
M2x3



Steps

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

Installing the power-adapter port

Prerequisites

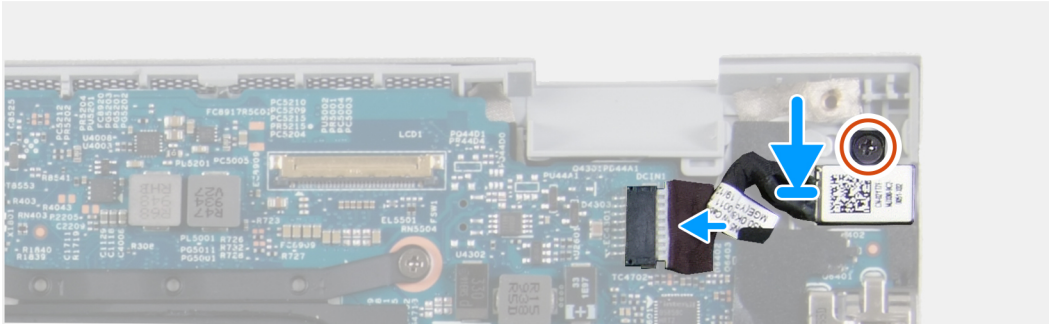
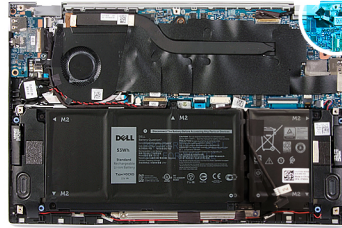
If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of power-adapter port and provides a visual representation of the installation procedure.



1x
M2x3



Steps

1. Connect the power-adapter port cable to the system board.
2. Replace the screw (M2x3) that secures the power-adapter port to the palm-rest and keyboard assembly.

Next steps

1. Install the [base cover](#).
2. Follow the procedure in [After working inside your computer](#).

I/O board

Removing the I/O board

Prerequisites

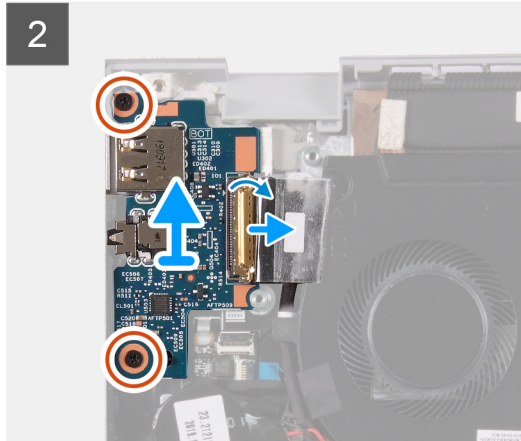
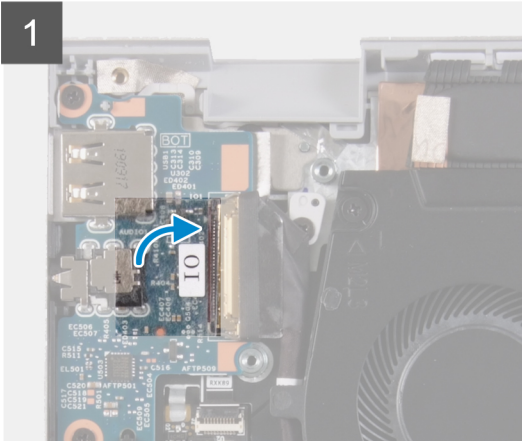
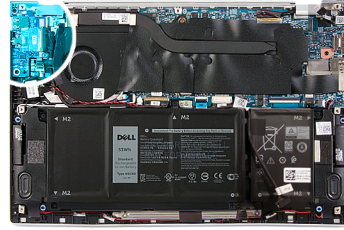
1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).
3. Remove the [display assembly](#).

About this task

The following image indicates the location of I/O board and provides a visual representation of the removal procedure.



2x
M2x3



Steps

1. Peel the tape that secures the I/O-board cable to the I/O board.
2. Open the latch and disconnect the I/O-board cable from the I/O board.
3. Peel the tape that secures the I/O-board cable to the fan.
4. Remove the two screws (M2x3) that secure the I/O board to the palm-rest and keyboard assembly.
5. Lift the I/O board off the palm-rest and keyboard assembly.

Installing the I/O board

Prerequisites

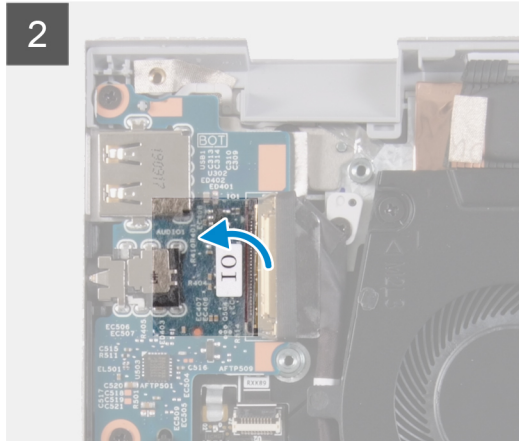
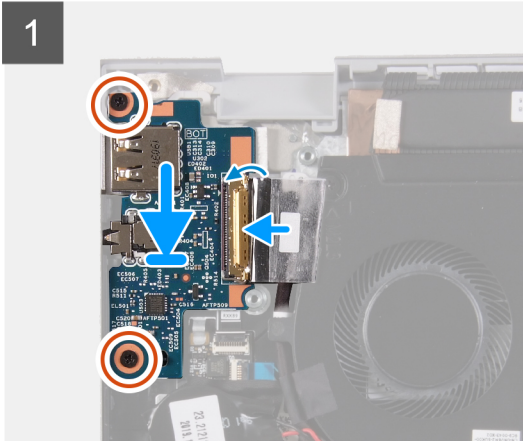
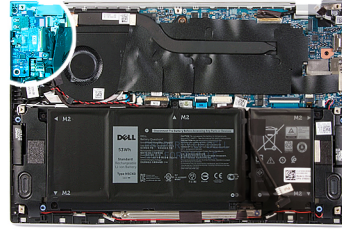
If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of I/O board and provides a visual representation of the installation procedure.



2x
M2x3



Steps

1. Align and place the I/O board on the palm-rest and keyboard assembly.
2. Replace the two screws (M2x3) that secure the I/O board to the palm-rest and keyboard assembly.
3. Connect the I/O-board cable and close the latch to secure the cable to the I/O board.
4. Adhere the tape that secures the I/O-board cable to the fan.
5. Adhere the tape that secures the I/O-board cable to the I/O board.

Next steps

1. Install the [fan](#).
2. Install the [base cover](#).
3. Follow the procedure in [After working inside your computer](#).

System board

Removing the system board

Prerequisites

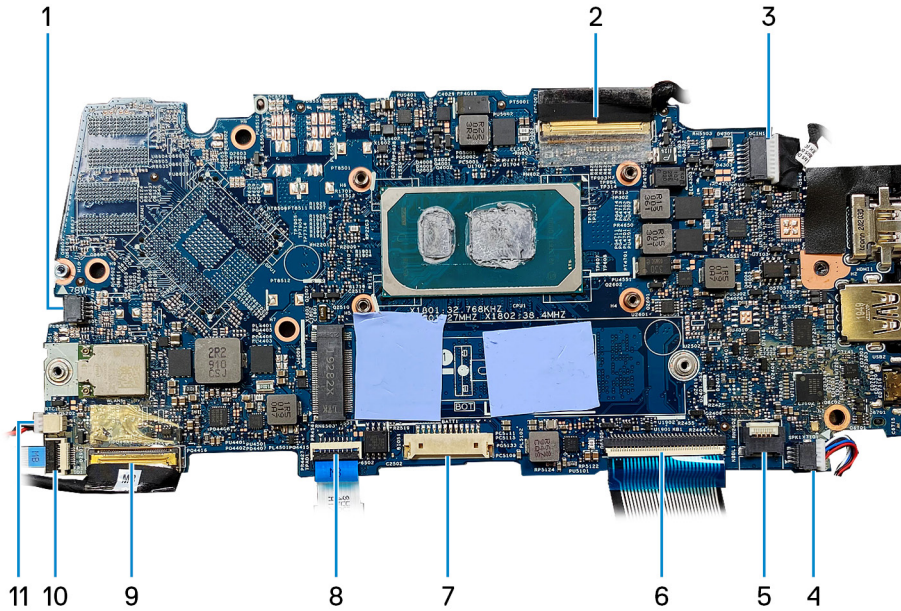
1. Follow the procedure in [Before working inside your computer](#).
 - NOTE:** Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the BIOS setup program after you replace the system board.
 - NOTE:** Replacing the system board removes any changes you have made 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.
2. Remove the [base cover](#).
3. Remove the [4-cell battery](#) or the [2-cell battery](#).
4. Remove the [fan](#).
5. Remove the [heat sink](#).

NOTE: The system board can be removed with the heat sink attached.

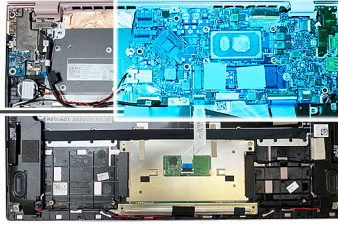
6. Remove the [solid state drive](#).
7. Remove the [display assembly](#).

About this task

The following images indicate the location of the system board and provide a visual representation of the removal procedure.

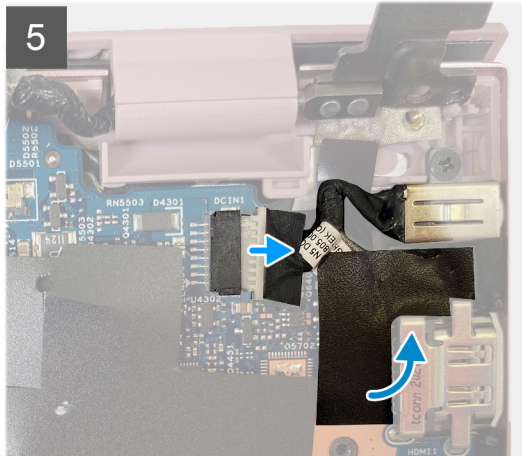
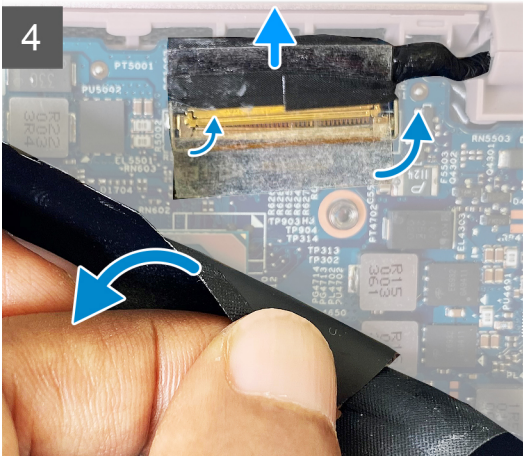
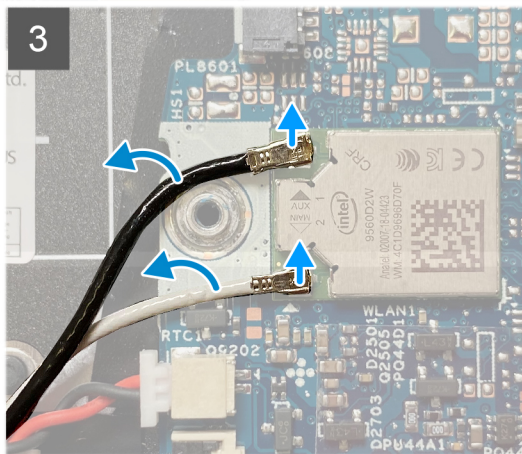
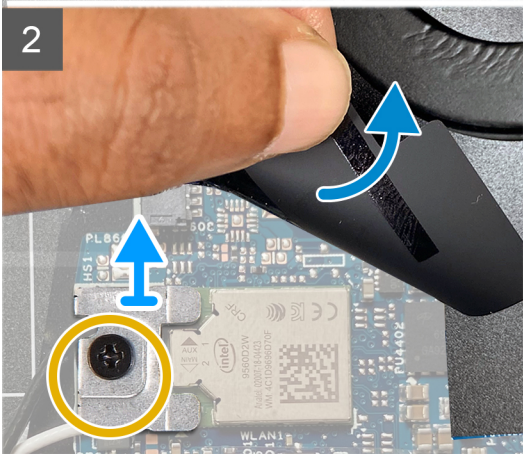
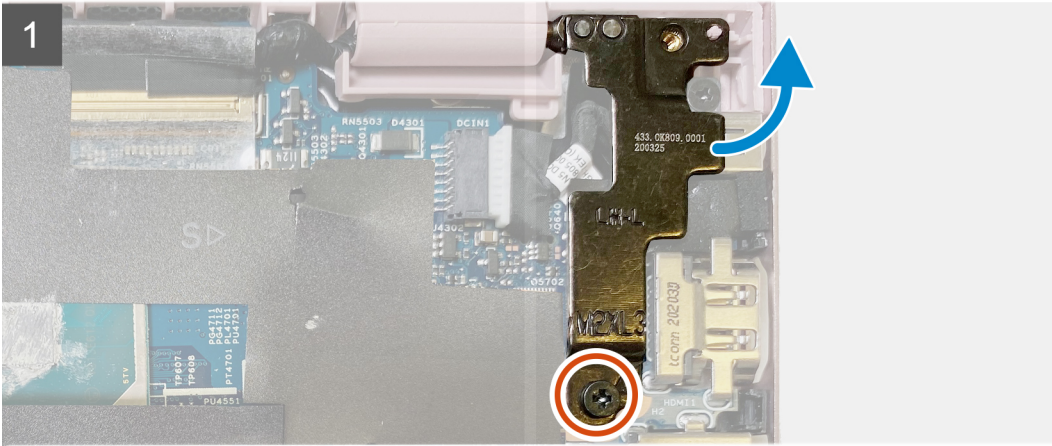


- | | |
|-----------------------------|------------------------------|
| 1. fan cable | 2. display cable |
| 3. power-adaptor port cable | 4. speaker cable |
| 5. keyboard backlight cable | 6. keyboard cable |
| 7. battery cable | 8. touchpad cable |
| 9. I/O-board cable | 10. fingerprint-reader cable |
| 11. coin-cell battery cable | |



1x
M2x3

1x
M2x2.5



Steps

1. Remove the single (M2x3) screw that secures the left display hinge to the system board and lift it up.
2. Lift the protective tape and remove the single (M2x2.5) screw that secures the wireless-card bracket to the system board.
3. Disconnect the wireless-card antennas from the wireless-card.
4. Lift the protective tape and disconnect the EDP cable.
5. Disconnect the DC-IN cable.
6. Disconnect the coin-cell battery cable, fingerprint-reader cable, I/O-board cable, touchpad cable, keyboard cable and keyboard-backlit cable, speaker cable from the system board.
7. Lift the system board off the palm-rest and keyboard assembly.

Installing the system board

Prerequisites

- 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.

About this task

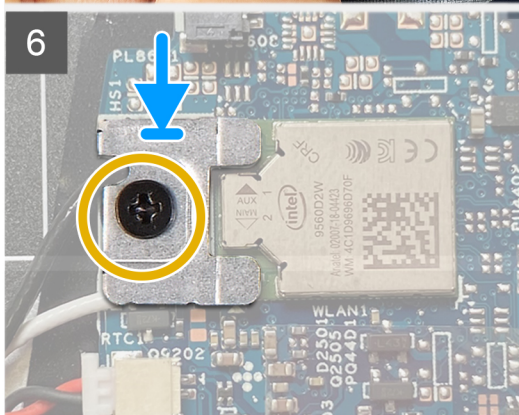
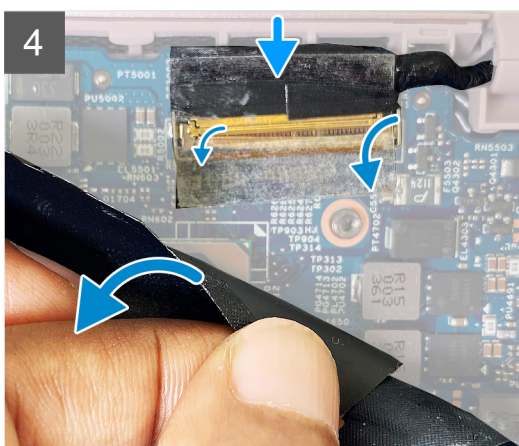
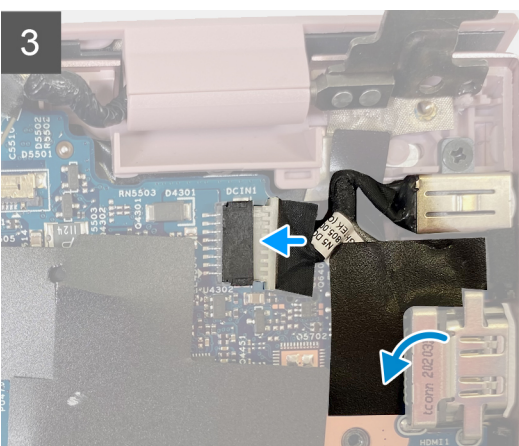
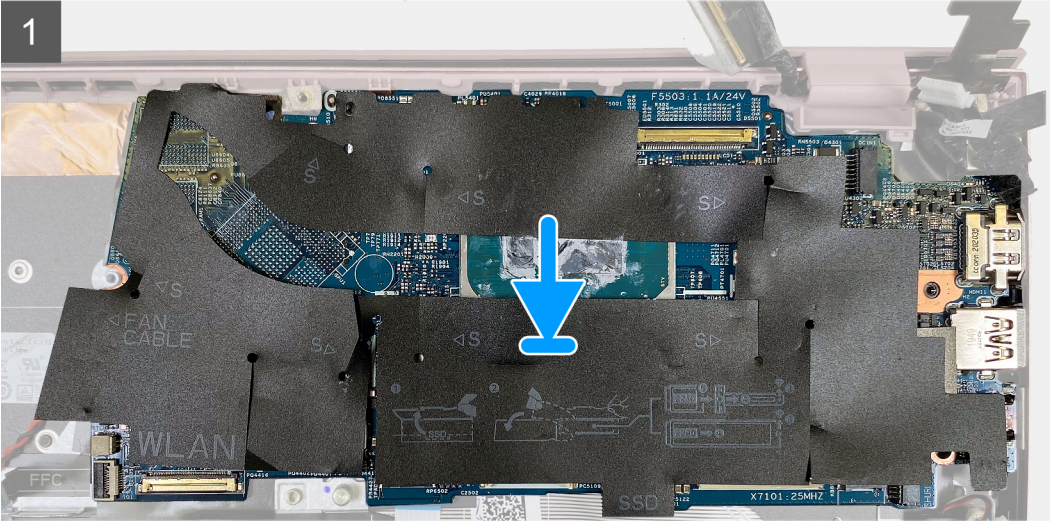
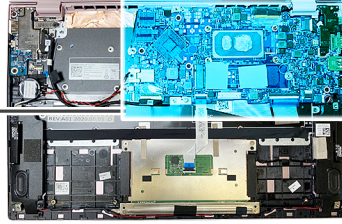
The following images indicate the location of the system board and provide a visual representation of the installation procedure.



1x
M2x3



1x
M2x2.5



50 C ELEC. Co., Ltd.
China
Disassembly and Assembly
E164844
ID: CEM3D
956002W
956002W
K-944 020718-4420
WM ACTD9684D70F

Steps

1. Align the system board on the palm-rest and keyboard assembly.
i **NOTE:** There is a screw hole on the system board that is marked "Inspiron 7300", only install a screw into this location when installing system board for Inspiron 7300.
2. Connect the coin-cell battery cable, fingerprint-reader cable, I/O-board cable, touchpad cable, keyboard cable and keyboard-backlit cable, speaker cable from the system board.
3. Connect the DC-IN cable.
4. Lift the protective tape and connect the EDP cable.
5. Lift the protective tape and Connect the wireless-card antennas from the wireless-card.
6. Place the wireless-card bracket on the wireless-card and replace the single (M2x2.5) screw to secure the wireless-card bracket to the system board.
7. Push the display hinge down and replace the single (M2x3) screw to secure the left display hinge to the system board.

Next steps

1. Install the [display assembly](#).
2. Install the [solid state drive](#).
3. Install the [heat sink](#).
4. Install the [fan](#).
5. Install the [4-cell battery](#) or the [2-cell battery](#).
6. Install the [base cover](#).
7. Follow the procedure in [After working inside your computer](#).

Palm-rest and keyboard assembly

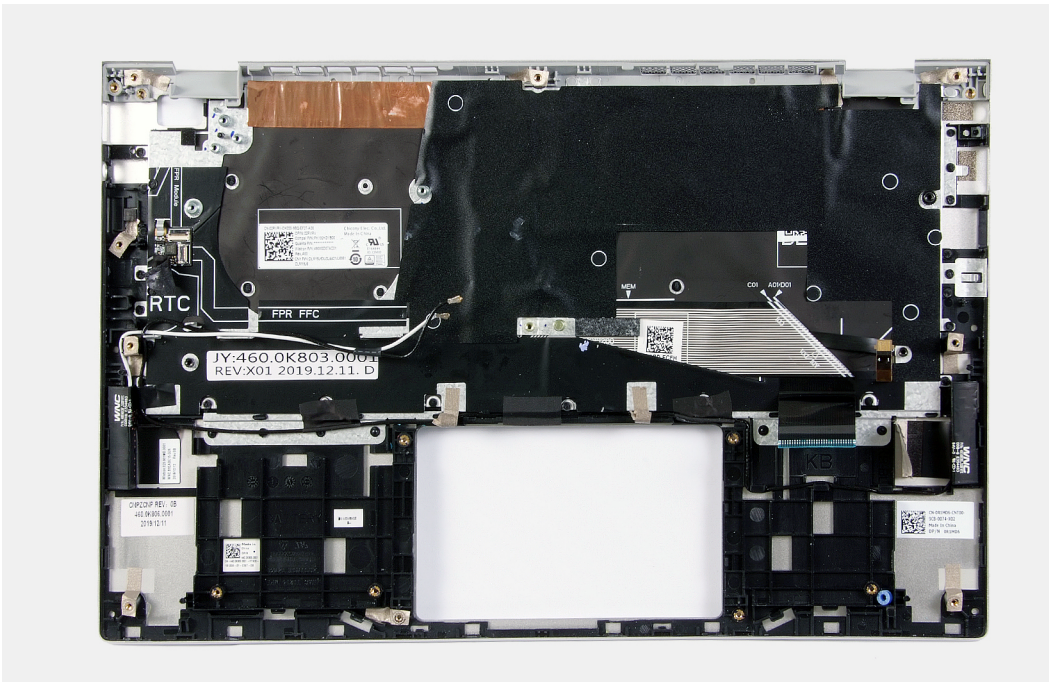
Removing the palm-rest and keyboard assembly

Prerequisites

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).
3. Remove the [4-cell battery](#) or the [3-cell battery](#).
4. Remove the [speakers](#).
5. Remove the [system board](#).
i **NOTE:** The system board can be removed with the heat sink attached.
6. Remove the [display assembly](#).
7. Remove the [power-adapter port](#).
8. Remove the [touchpad](#).

About this task

The following image indicates the palm-rest and keyboard assembly and provides a visual representation of the removal procedure.



Steps

After performing the steps in the pre-requisites, we are left with the palm-rest and keyboard assembly.

NOTE: System board can be removed with heatsink attached.

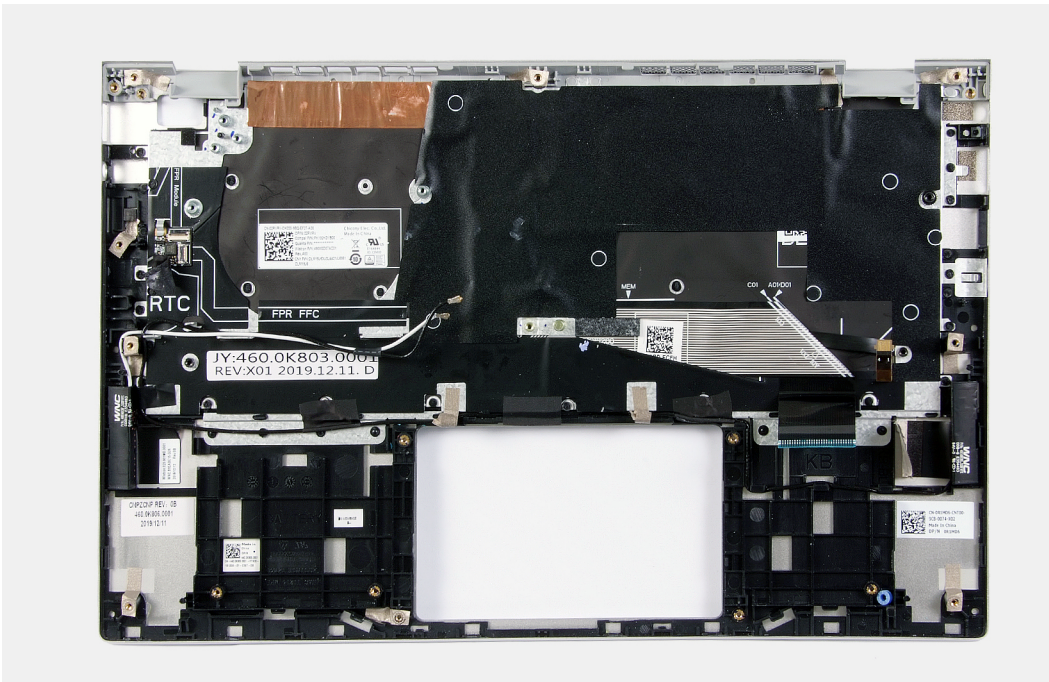
Installing the palm-rest and keyboard assembly

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the palm-rest and keyboard assembly and provides a visual representation of the installation procedure.



Steps

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

Next steps

1. Install the [touchpad](#).
2. Install the [power-adapter port](#).
3. Install the [display assembly](#).
4. Install the [system board](#).
5. Install the [speakers](#).
6. Install the [4-cell battery](#) or the [3-cell battery](#).
7. Install the [base cover](#).
8. Follow the procedure in [After working inside your computer](#).

Power button with fingerprint reader

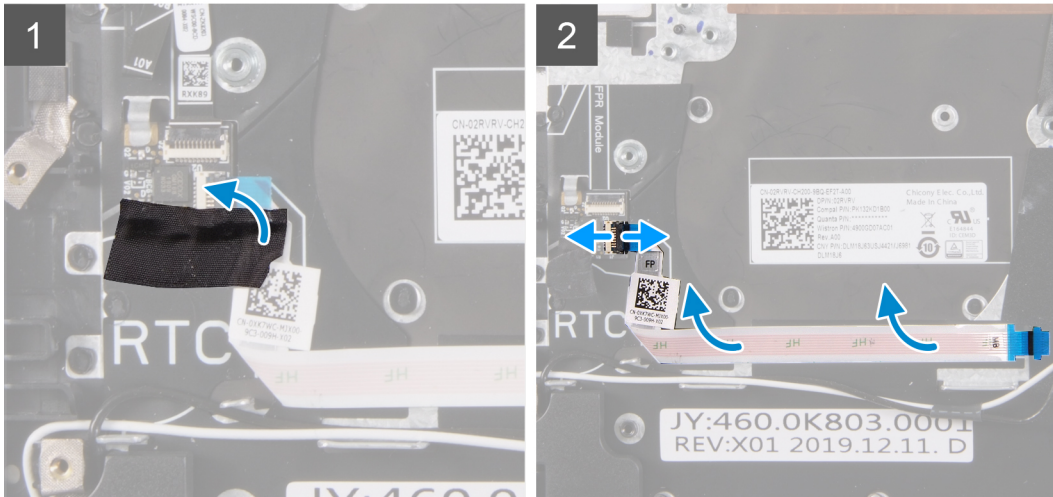
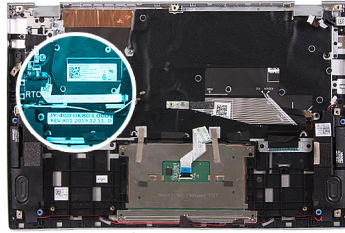
Removing the power button with fingerprint reader

Prerequisites

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).
3. Remove the [4-cell battery](#) or the [3-cell battery](#).
4. Remove the [speakers](#).
5. Remove the [system board](#).
i **NOTE:** The system board can be removed with the heat sink attached.
6. Remove the [display assembly](#).
7. Remove the [power-adapter port](#).

About this task

The following image indicates the location of power-adapter port and provides a visual representation of the removal procedure.



Steps

1. Peel off the mylar tape that secures the power button with fingerprint reader cable connection.
2. Disconnect the power button with fingerprint reader cable from the connector on the palm-rest and keyboard assembly.
3. Lift the power button with fingerprint reader off the palm-rest and keyboard assembly.

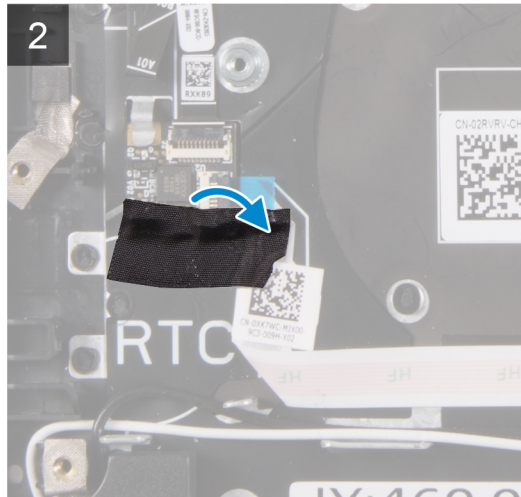
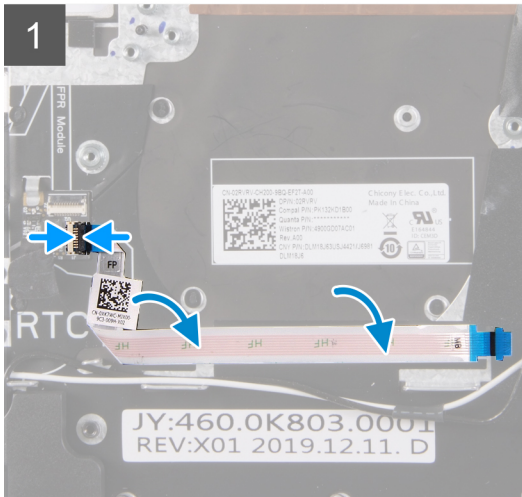
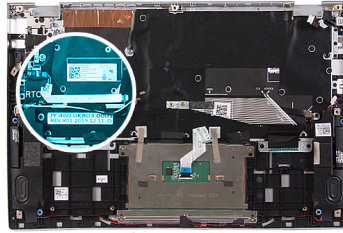
Installing the power button with fingerprint reader

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of power-adaptor port and provides a visual representation of the installation procedure.



Steps

1. Align the power button with fingerprint reader on the palm-rest and keyboard assembly.
2. Connect the power button with fingerprint reader cable to the connector on the palm-rest and keyboard assembly.
3. Adhere the mylar tape that secures the power button with fingerprint reader cable connection.

Next steps

1. Install the [power-adapter port](#).
2. Install the [display assembly](#).
3. Install the [system board](#).
4. Install the [speakers](#).
5. Install the [4-cell battery](#) or the [3-cell battery](#).
6. Install the [base cover](#).
7. Follow the procedure in [After working inside your computer](#).


Troubleshooting

Dell SupportAssist Pre-boot System Performance Check diagnostics

About this task

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

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

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

For more information, see [Resolve Hardware Issues With Built-in and Online Diagnostics \(SupportAssist ePSA, ePSA or PSA Error Codes\)](#).

Running the SupportAssist Pre-Boot System Performance Check

Steps

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

Validation Tools

This section contains information on how to validate the SupportAssist ePSA, ePSA or PSA error codes.

Error code verification can be done using below two methods :

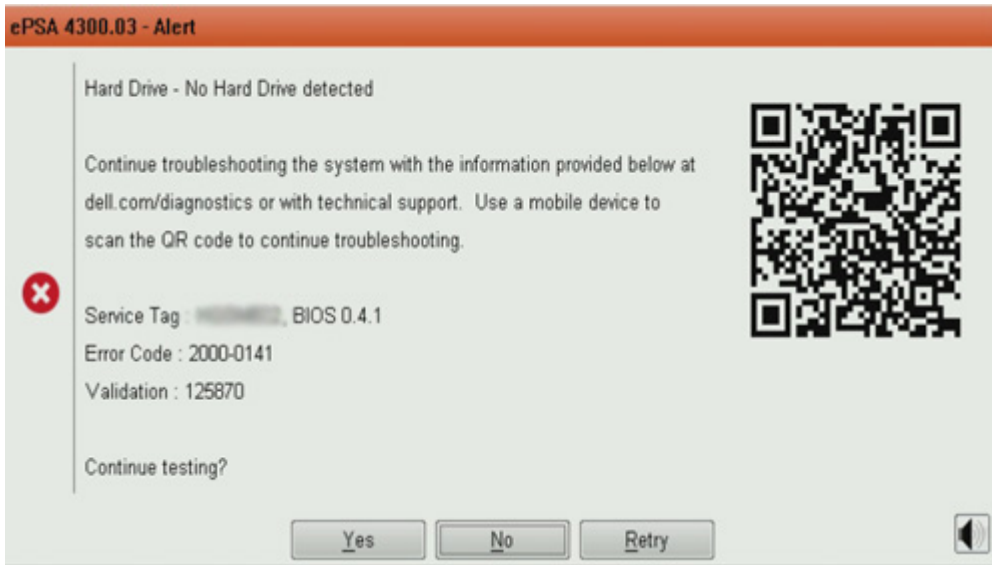
- [Online Enhanced Preboot System Assessment Validation Tool](#).
- [QR scanning using QR APP on Smart Phone](#).

Online SupportAssist On-board Diagnostics, ePSA or PSA Error Codes Validation Tool

Usage Guide

Steps

1. User to obtain information from SupportAssist error windows.



2. Navigate to <https://www.dell.com/support/diagnose/Pre-boot-Analysis>.
3. Enter error code, validation code, and service tag. Part serial number is optional.

Error Code (without 2000-prefix) *	<input type="text" value="Error Code (without 2000-prefix)"/>
Validation Code *	<input type="text" value="Validation Code"/>
Service Tag ⓘ *	<input type="text" value="Service Tag"/>
Part Serial # (optional)	<input type="text" value="Part Serial # (optional)"/>
<input type="button" value="Submit"/>	


[View System Requirements and Privacy And Legal Information](#)

ⓘ **NOTE:** For error code, use only the last 3 or 4 digits of the code. (user can enter 0142 or 142 instead of 2000-0142.)

4. Click on **Submit** once all the necessary information is entered.

Error Code (without 2000-prefix) *

Validation Code *

Service Tag  *


Part Serial # (optional)

Submit

[View System Requirements and Privacy And Legal Information](#)

Results

Valid Error Code Example



19.5"

Vostro 20 All-in-One 3055
 Service Tag: [XXXXXXXXXX](#) | Express Service Code: [38627466-410](#)
[Add to My Products List](#)
[View a different product](#)

Manuals
Warranty
System configuration


Diagnostics

Support topics & articles

Drivers & downloads


General maintenance

Parts & accessories

 Your system is currently Out of Warranty. Please contact Dell Technical Support for further assistance.

Result: Issues Found.

Your result requires attention. Review the affected hardware below and follow the instructions to troubleshoot problems or you may be presented with a request to replace parts. [Clear results](#)

 **Needs Attention: System maintenance** —


Needs Attention

A potential error has been found. [Click here](#) to view a list of steps that can help resolve your issue.

See full scan results.

Diagnostics Completed —

Hardware


Diagnostic Name	Error Code	Serial #	Result
EP5A	141		 Failed

After entering the correct information, the online tools will direct the user to the above screen which contains information on :

- Confirmation of the error code and result outcome
- Suggested Part Replacement
- If customer is still covered under Dell Warranty
- Case reference number if there is an open case under the service tag

Invalid Error Code Example

Error Code (without 2000-prefix) *	<input type="text" value="0141"/>
Validation Code *	<input type="text" value="123456"/>
Service Tag ⓘ *	<input type="text" value="N0294832"/>
Part Serial # (optional)	<input type="text" value="Part Serial # (optional)"/>

 You have entered an invalid ePSA request, please check your details and try again.

Submit

QR APP Validation Tool

About this task

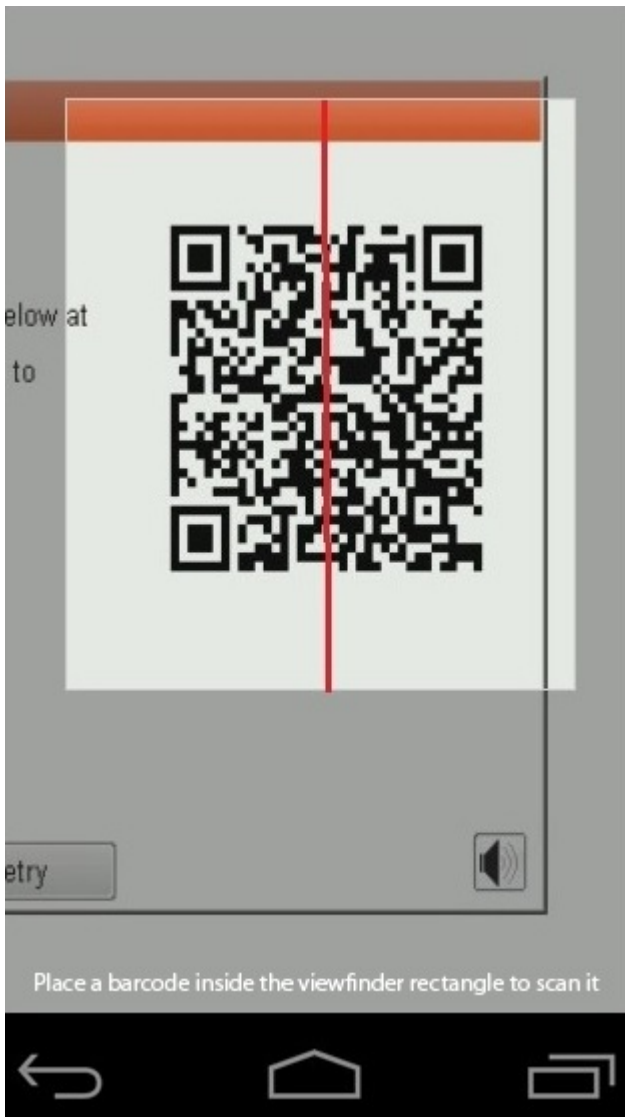
Besides using the online tool, customers can also validate the error code by scanning the QR code with a QR APP on a smartphone.

Steps

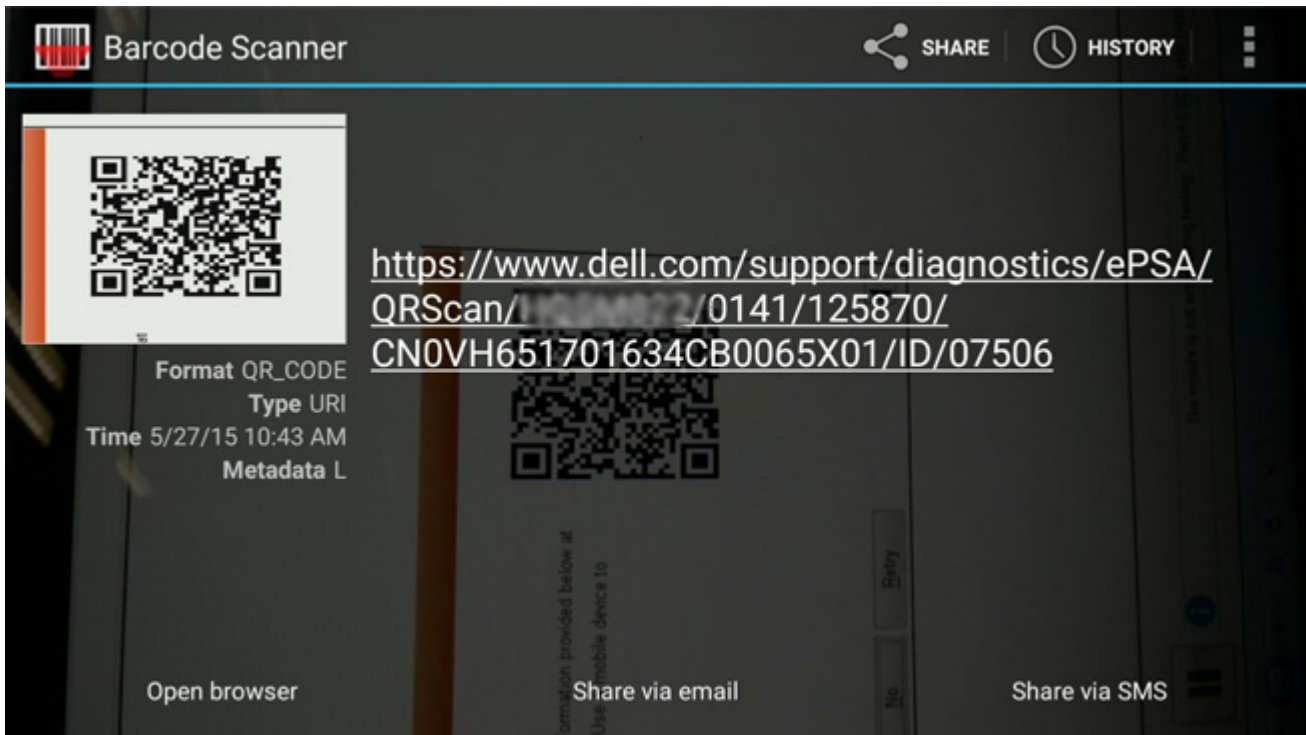
1. User to obtain the QR code from SupportAssist On-board Diagnostics error screen.



2. User can use any QR code scanner application through the smartphone to scan the QR code.



3. The QR code scanner application will scan the code and automatically generate a link. Click the link to proceed.



Results

The link generated will take the customer to the Dell Support website which contains information on:

- Confirmation of the error code and result outcome
- Suggested Part Replacement
- If customer is still covered under Dell Warranty
- Case reference number if there is an open case under the service tag

Vostro 20 All-in-One 3055
 Service Tag: **XXXXXXXXXX** | Express Service Code: **XXXXXXXXXX**
 Add to My Products List
 View a different product

Manuals | Warranty | System configuration

Diagnostics

- Support topics & articles
- Drivers & downloads
- General maintenance
- Parts & accessories

Warning: Your system is currently Out of Warranty. Please contact Dell Technical Support for further assistance.

Result: Issues Found.

Your result requires attention. Review the affected hardware below and follow the instructions to troubleshoot problems or you may be presented with a request to replace parts.

[Clear results](#)

Needs Attention: System maintenance

Needs Attention
 A potential error has been found. [Click here](#) to view a list of steps that can help resolve your issue.

[See full scan results.](#)

Diagnostics Completed

Hardware			
Diagnostic Name	Error Code	Serial #	Result
EP5A	141		● Failed

System diagnostic lights

Battery-status light

Indicates the power and battery-charge status.

Solid white — Power adapter is connected and the battery has more than 5 percent charge.

Amber — Computer is running on battery and the battery has less than 5 percent charge.

Off

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

The power and battery-status light blinks amber along with beep codes indicating 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.

Table 1. LED codes

Diagnostic light codes	Problem description
2,1	Processor failure
2,2	System board: BIOS or ROM (Read-Only Memory) failure

Table 1. LED codes (continued)

Diagnostic light codes	Problem description
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
2,8	LCD power rail failure. Replace system board
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

Camera status light: Indicates whether the camera is in use.

- Solid white — Camera is in use.
- Off — Camera is not in use.


Caps Lock status light: Indicates whether Caps Lock is enabled or disabled.

- Solid white — Caps Lock enabled.
- Off — Caps Lock disabled.

WiFi power cycle

About this task

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.


Steps

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

Getting help

Contacting Dell

Prerequisites

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

About this task

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

Steps

1. Go to **Dell.com/support**.
2. Select your support category.
3. Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
4. Select the appropriate service or support link based on your need.