Latitude 3320

Service Manual

Regulatory Model: P146G
Regulatory Type: P146G001
April 2021
Rev. A00

Notes, cautions, and warnings

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

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

PERSPĖJIMAS: A WARNING indicates a potential for property damage, personal injury, or death.

Contents

1

Working inside your computer

Safety instructions

Prerekvizitai

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.

Apie šia užduoti

PERSPĖJIMAS: 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

ĮSPĖJIMAS: 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.

ĮSPĖJIMAS: 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.

ĮSPĖJIMAS: 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.

ĮSPĖJIMAS: 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.

PASTABA: 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.

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

Before working inside your computer

Veiksmai

1. Save and close all open files and exit all open applications.
2. Shut down your computer. Click **Start** > **Power** > **Shut down**.

   PASTABA: 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.

6. After the computer is unplugged, press and hold the power button for 5 seconds to ground the system board.

   ĮSPĖJIMAS: Place the computer on a flat, soft, and clean surface to avoid scratches on the display.

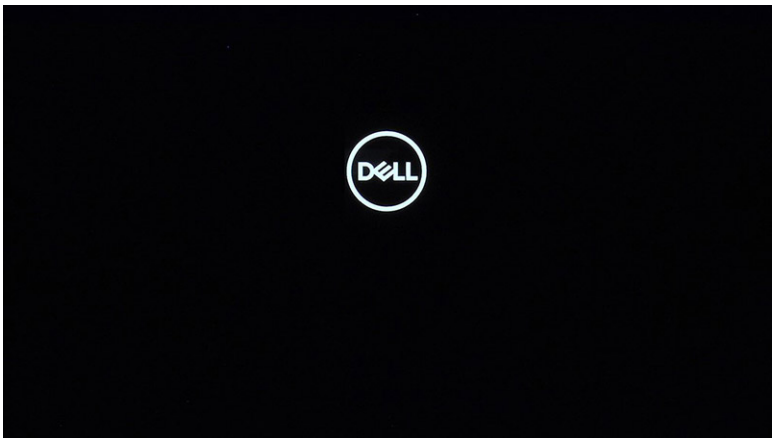
7. Place the computer face down.

Enter service mode

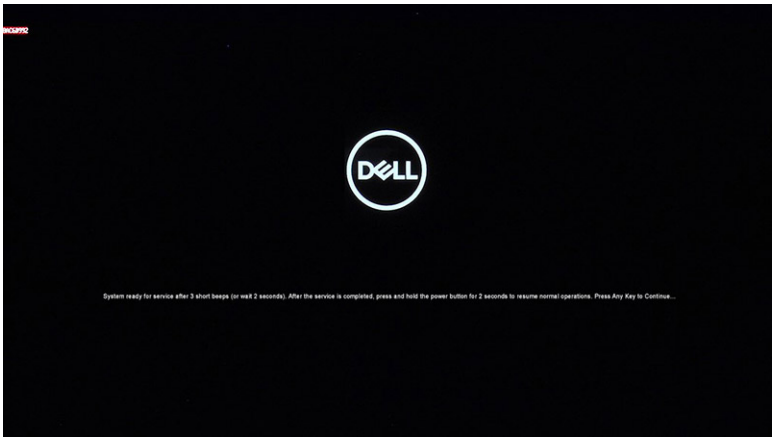
Service Mode allows you to immediately cut the power from the system without disconnecting the battery cable or removing the battery from the system.

Steps

1. Shut down the system and disconnect the AC adapter from the system.
2. Press and hold the **<B>** key on the keyboard, and then press the power button.
   The system will boot.



3. Press any key to proceed, when the **Owner Tag** information is displayed on the screen.
   The system will emit three short beeps and shut down.



4. To exit from the Service Mode, press the power button to power on the system.

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 notebook 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 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.

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.

After working inside your computer

Apie šia užduoti

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

Veiksmai

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.

2

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 require the following tools:

- Phillips #0 screwdriver
- Phillips #1 screwdriver
- Plastic scribe: Recommended for field technicians.

NOTE: The #0 screw driver is for screws 0-1 and the #1 screw driver is for screws 2-4.

Screw List

The following table shows the screw list and the image of the screws.

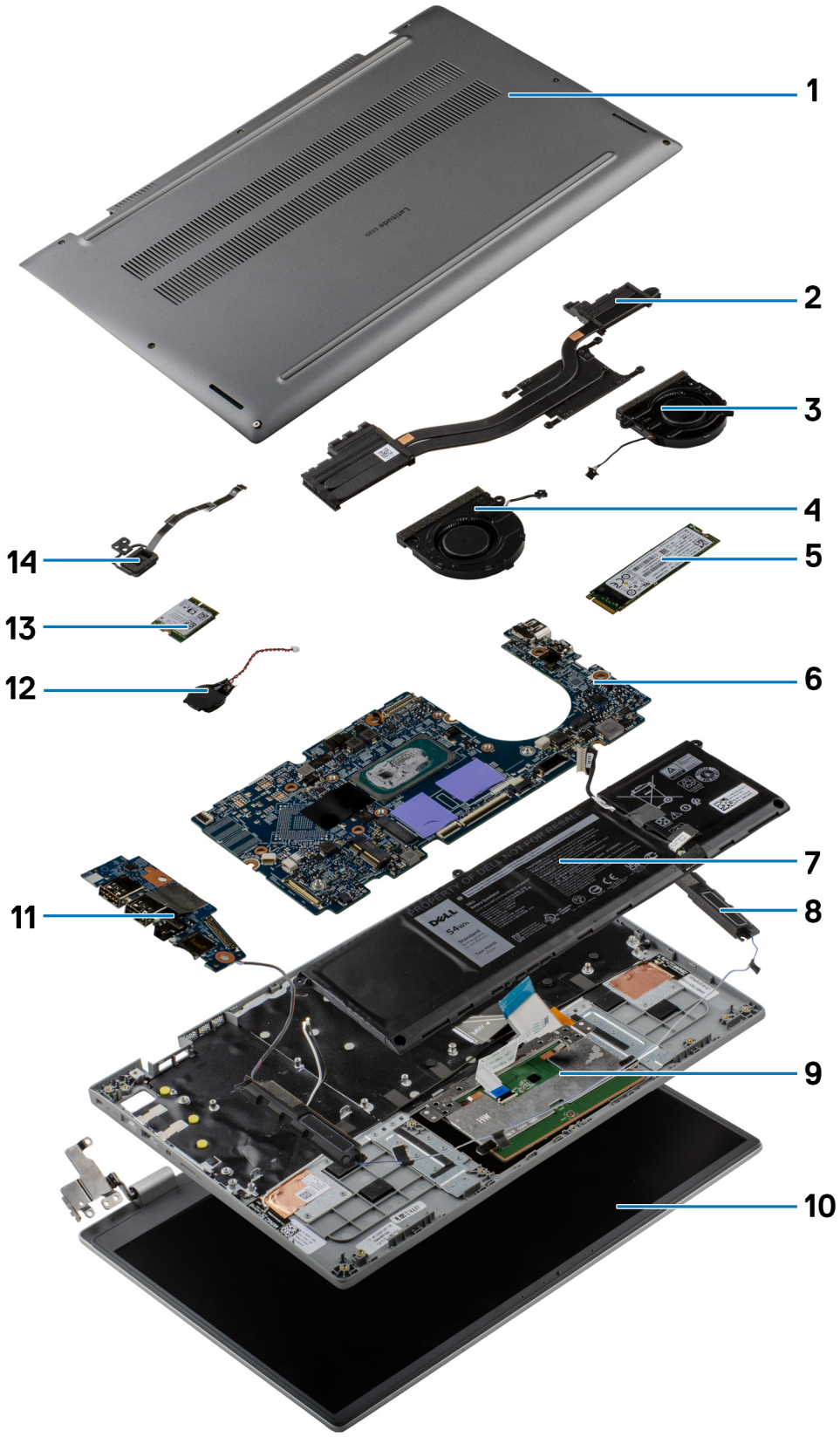
Table 1. Screw list

Component	Screw type	Quantity	Image
Base cover	Captive screws	7	
3-cell battery	M2x3	3	
4-cell battery	M2x3	5	
Solid-state drive bracket	M2x3	1	
WLAN	M2x3	1	
Left system Fan	M2x3	2	
Right system Fan	M2x3	2	
Display cable bracket	M2x2.5	1	

Table 1. Screw list

Component	Screw type	Quantity	Image
Display hinge bracket	M2x2.5 M2x3	1 4	
Input Output board	M2x2.5	1	
Heatsink assembly	Captive screws	4	
Power button with fingerprint reader	M2x3	1	
System board	M2x2.5	1	
Type-C bracket	M2x3	1	

Major components of your system



1. Base cover

2. Heatsink assembly
3. Right system fan
4. Left system fan
5. Solid-state drive
6. System board
7. Battery
8. Speaker
9. Palmrest and keyboard assembly
10. Display assembly
11. Input Output board
12. Coin-cell battery
13. WLAN card
14. Power button with fingerprint reader

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.

Base cover

Removing the base cover

Prerequisites

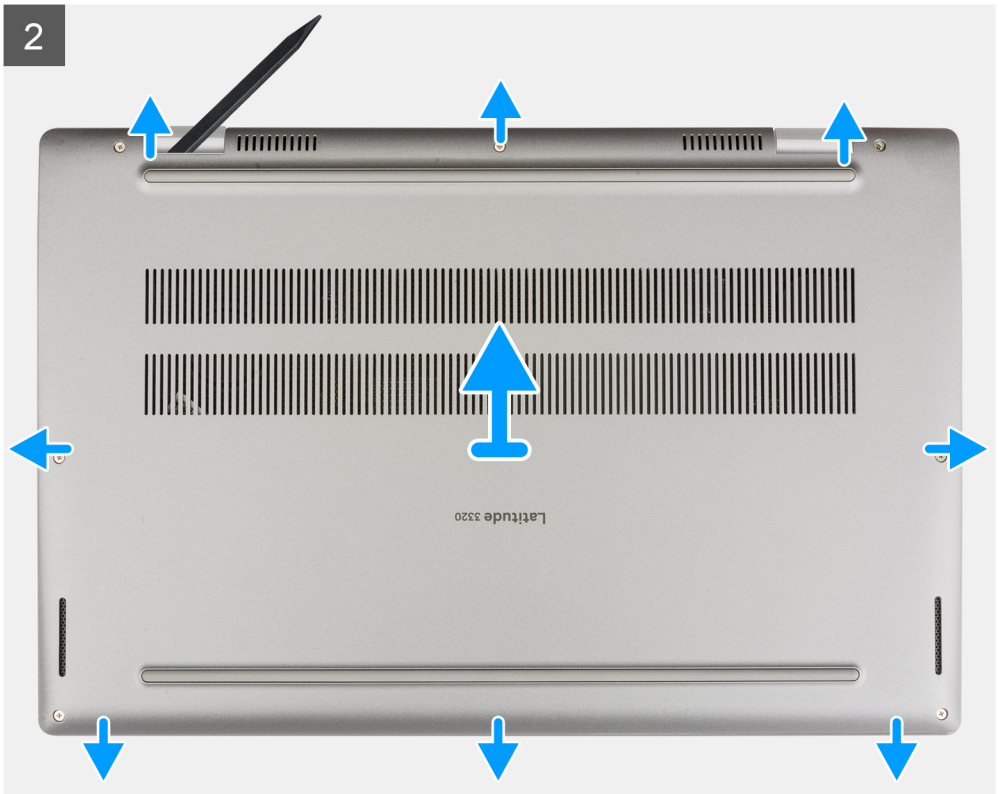
1. Follow the procedure in before working inside your computer.
2. Enter the service mode.

About this task

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


7x


1
Latitude 3320


2
Latitude 3320

Steps

1. Loosen the seven captive screws that secure the base cover to the chassis.
2. Using a plastic scribe, pry open the base cover starting from the recesses located in the U-shaped indents near the hinges at the top edge of the base cover.
3. Pry open the left, right, and bottom sides of the base cover.
4. Carefully lift and remove the base cover from the chassis.

NOTE: Be careful of the latches while removing the base cover as the latches may break.

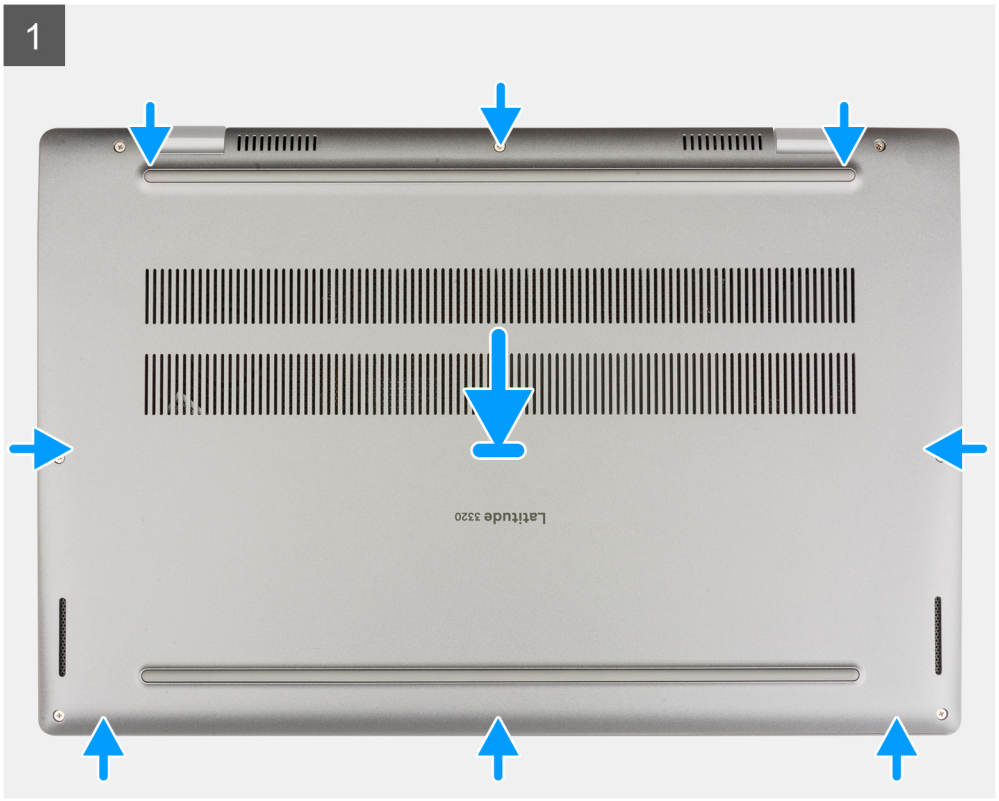
Installing the base cover

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.



Steps

1. Align and place the base cover on the chassis, and snap the base cover into place.
2. Tighten the seven captive screws to secure the base cover to the chassis.

Next steps

- Follow the procedure in after working inside your computer.

Battery

Removing the 3-cell battery

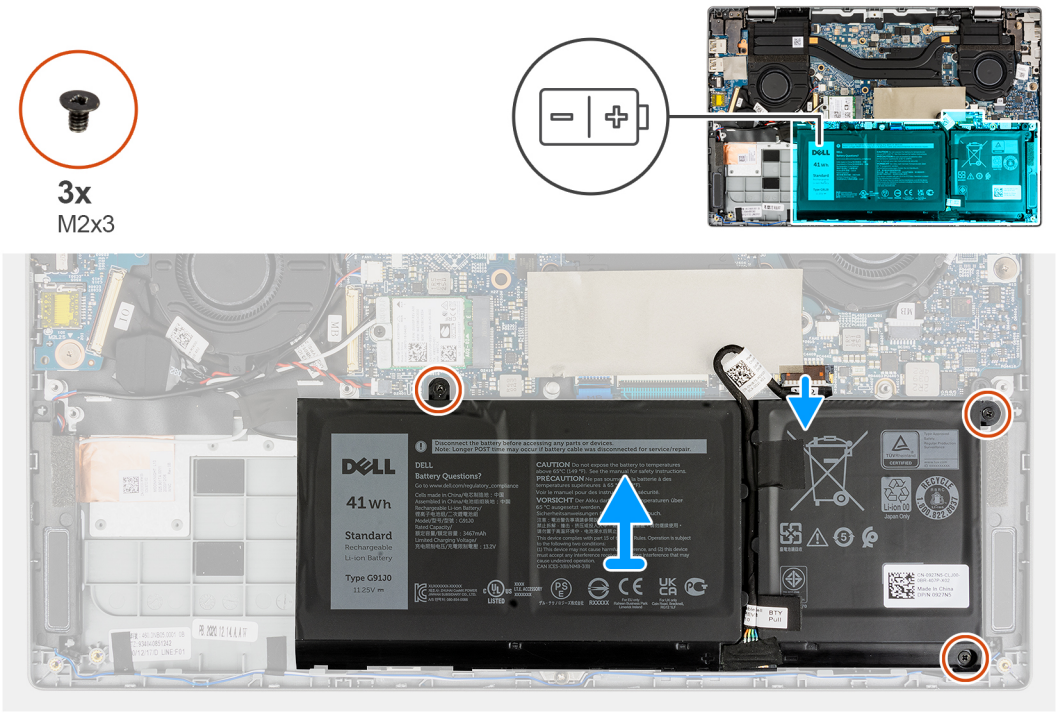
Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the base cover.

NOTE: If battery was disconnected from system board for service, there will be a delay during system boot-up as the system undergoes RTC battery reset.

About this task

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



Steps

1. Peel the adhesive tapes that secure the battery in place.
2. Peel the secure-in tape that secures the battery cable to the connector on the system board.
3. Unroute the battery cable from the routing channels between the system board and 3-cell battery.
4. Remove the three (M2x3) screws that secure the battery to the palmrest assembly.
5. Carefully lift and remove the battery from the chassis.

   NOTE: Be careful while removing the battery as the battery cable must be disconnected from the connector after the battery is removed from the system.

6. Disconnect the battery cable from the connector on the system board.

Installing the 3-cell battery

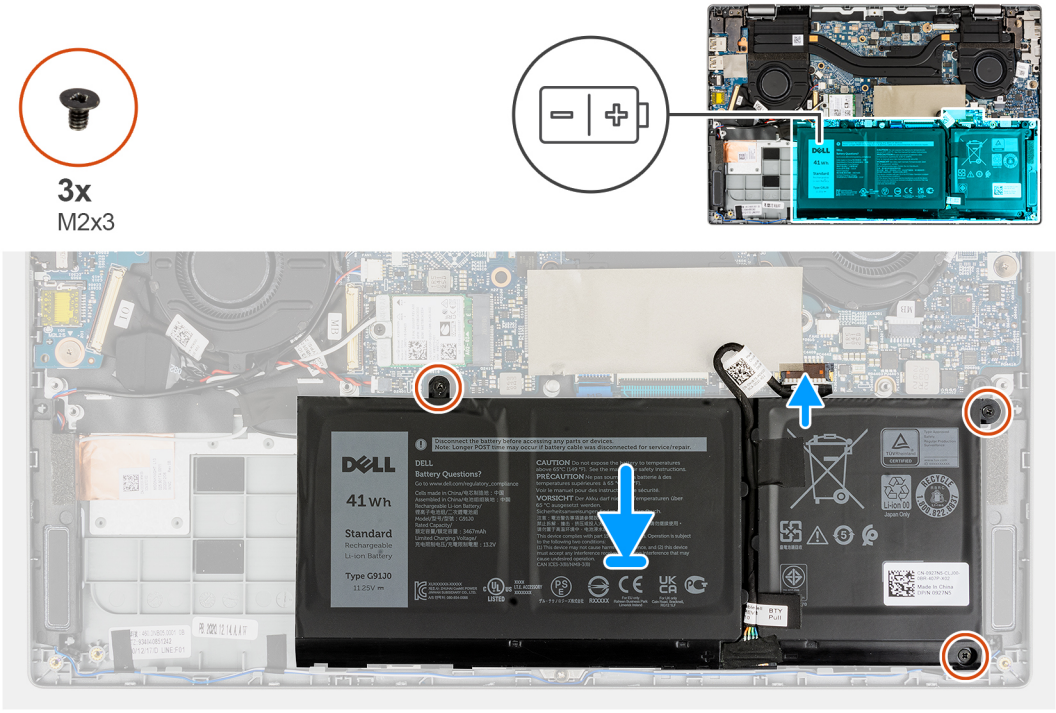
Prerequisites

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.

NOTE: If battery was disconnected from system board for service, there will be a delay during system boot-up as the system undergoes RTC battery reset.



Steps

1. Connect the battery cable to the connector on the system board.
2. Adhere the secure-in tape to secure the battery cable to the connector on the system board.
3. Route the battery cable through the routing channels between the system board and 3-cell battery.
4. Align and place the battery in the slot on the chassis.
5. Install the three (M2x3) screws to secure the battery in place.
6. Adhere the adhesive tapes to secure the battery in place.

Next steps

1. Install the base cover.
2. Follow the procedure in After working on your computer.

Removing the 4-cell battery

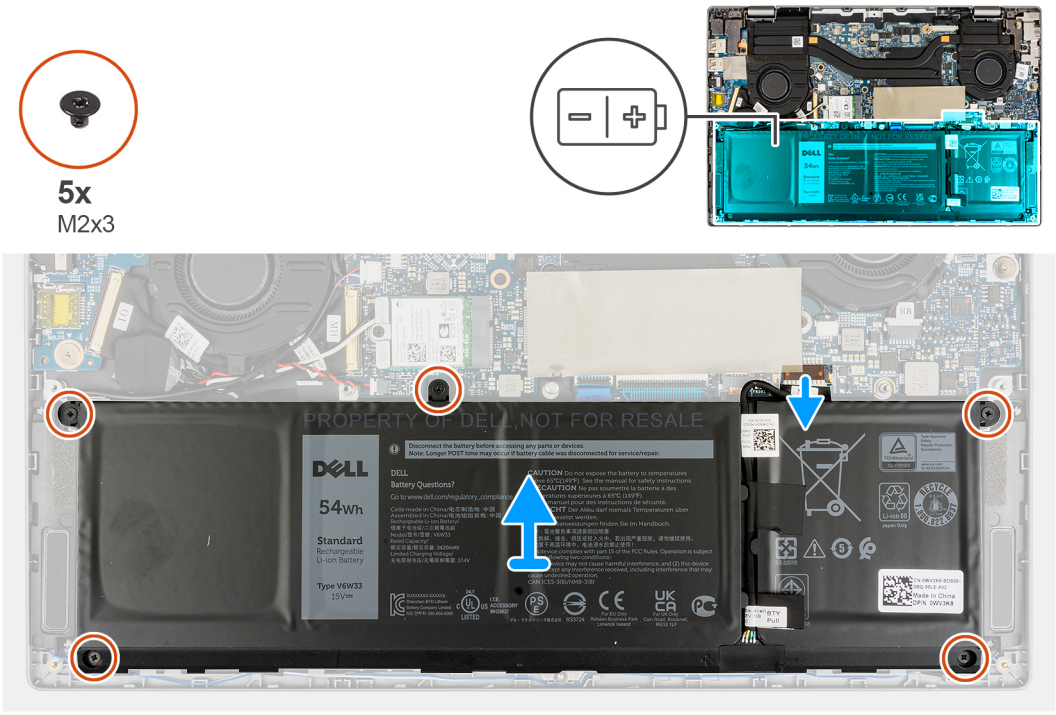
Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the base cover.

NOTE: If battery was disconnected from system board for service, there will be a delay during system boot-up as the system undergoes RTC battery reset.

About this task

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



Steps

1. Peel the adhesive tapes that secure the battery in place.
2. Peel the secure-in tape that secures the battery cable to the connector on the system board.
3. Unroute the battery cable from the routing channels between the system board and 4-cell battery.
4. Remove the five (M2x3) screws that secure the battery to the palmrest assembly.
5. Carefully lift and remove the battery from the chassis.

   NOTE: Be careful while removing the battery as the battery cable must be disconnected from the connector after the battery is removed from the system.

6. Disconnect the battery cable from the connector on the system board.

Installing the 4-cell battery

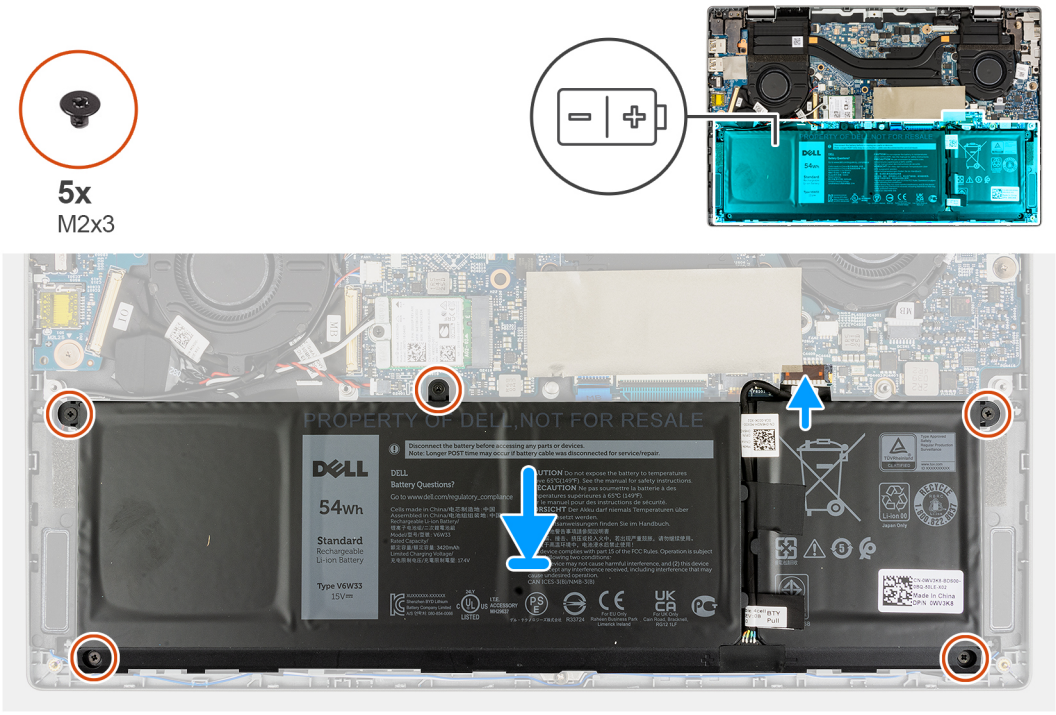
Prerequisites

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.

NOTE: If battery was disconnected from system board for service, there will be a delay during system boot-up as the system undergoes RTC battery reset.



Steps

1. Connect the battery cable to the connector on the system board.
2. Adhere the secure-in tape to secure the battery cable to the connector on the system board.
3. Route the battery cable through the routing channels between the system board and 4-cell battery.
4. Align and place the battery in the slot on the chassis.
5. Install the five (M2x3) screws to secure the battery in place.
6. Adhere the adhesive tapes to secure the battery in place.

Next steps

1. Install the base cover.
2. Follow the procedure in After working on your computer.

Speakers

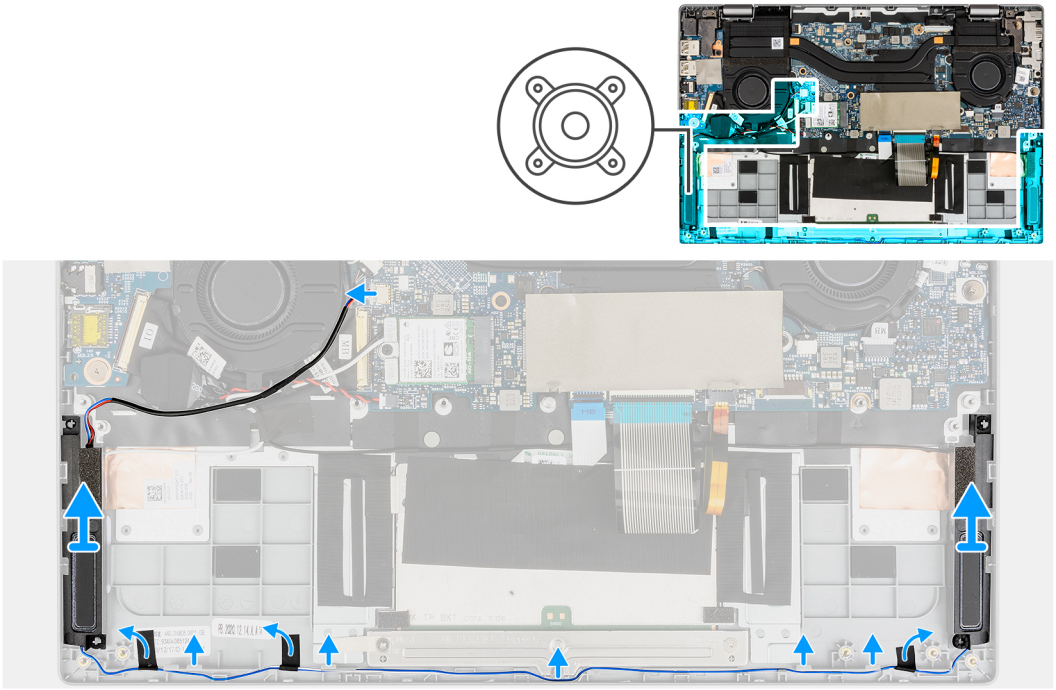
Removing the speakers

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the base cover.
3. Remove the battery.

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 connector on the system board.
2. Unroute the speaker cable from the routing guide.
3. Peel the adhesive tapes that secure the speakers in place.
4. Remove the speakers from the chassis.

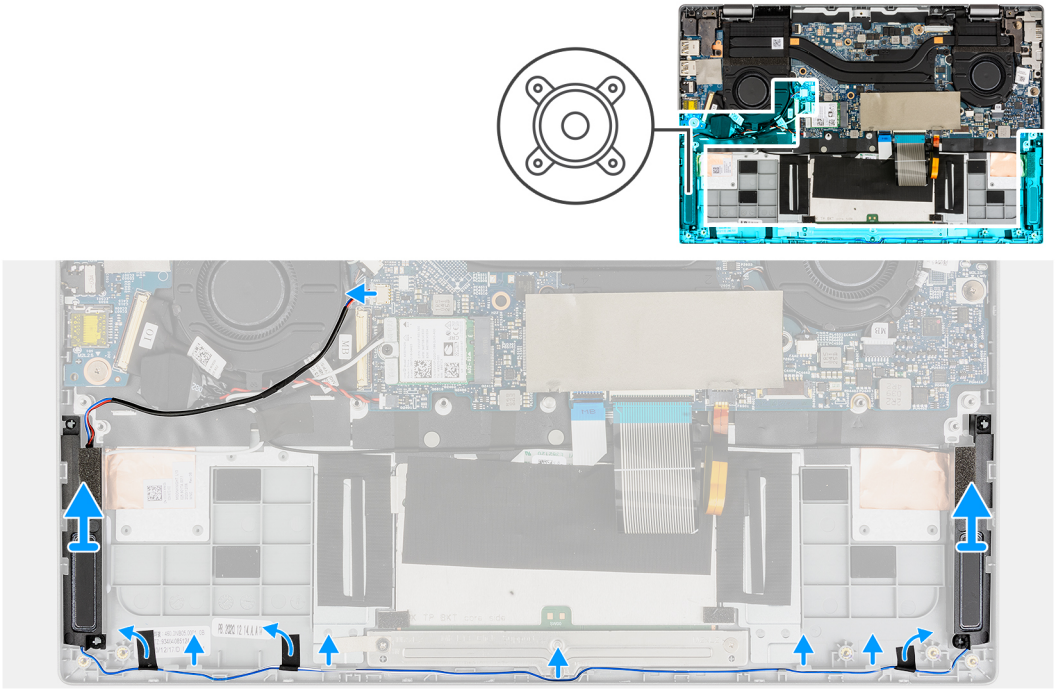
Installing the speakers

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. Align and place the speakers in the slot on the chassis.
2. Route the speaker cables through the routing guide.
3. Connect the speaker cable to the connector.
4. Adhere the adhesive tapes to secure the speakers in place.

Next steps

1. Install the battery.
2. Install the base cover.
3. Follow the procedure in after working inside your computer.

Solid-state drive

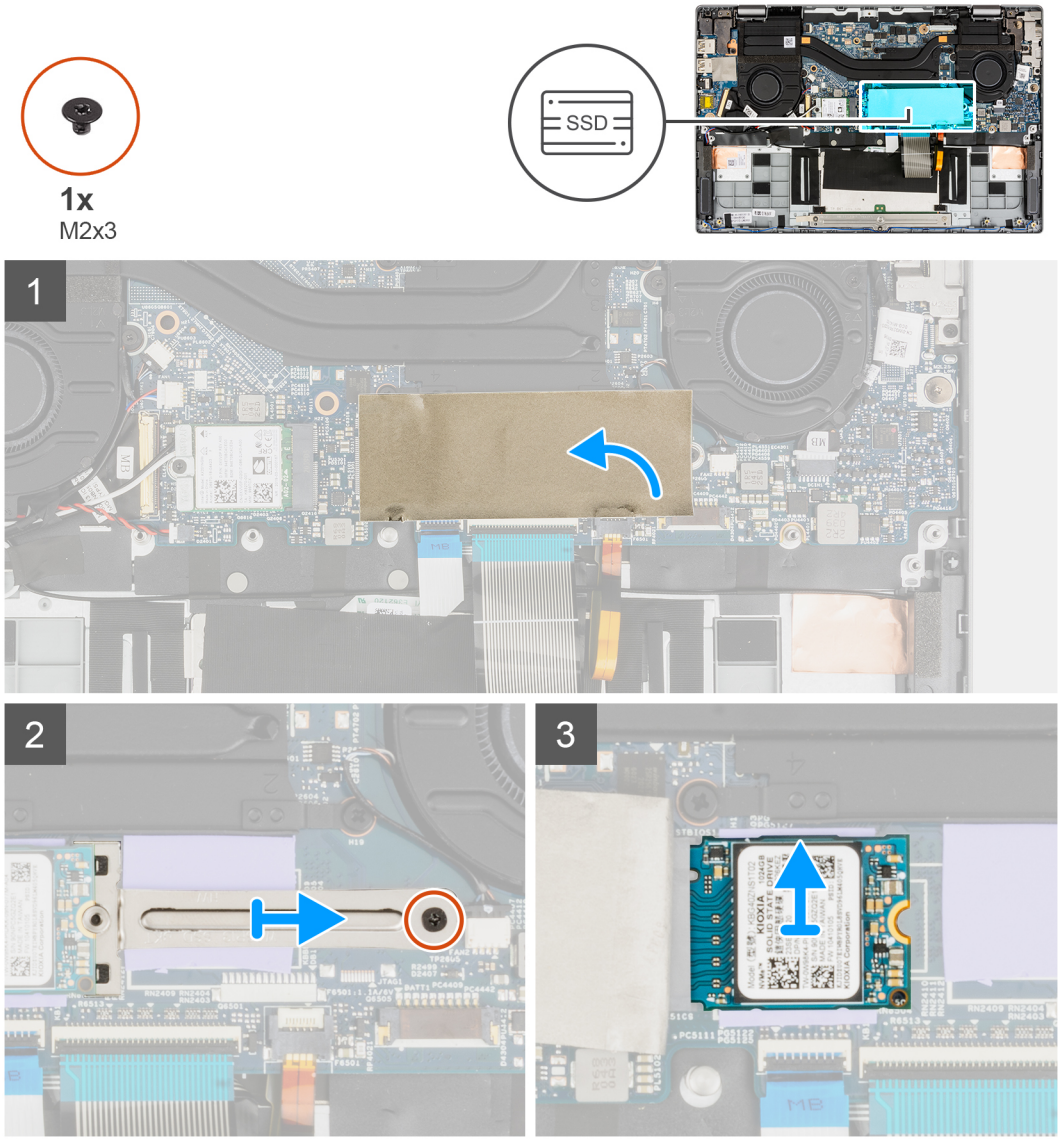
Removing the M.2 2230 solid-state drive

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Enter the service mode.
3. 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. Open the solid-state drive mylar sheet that covers the solid-state drive.

   NOTE: There is a protective mylar sheet covering the solid-state drive. This mylar sheet must be opened in order to proceed with the removal procedure.

2. Remove the screw (M2x3) that secures the solid-state drive bracket to the system board.
3. Remove the solid-state drive bracket from the system board.
4. Slide and remove the solid-state drive from the M.2 card connector on the system board.

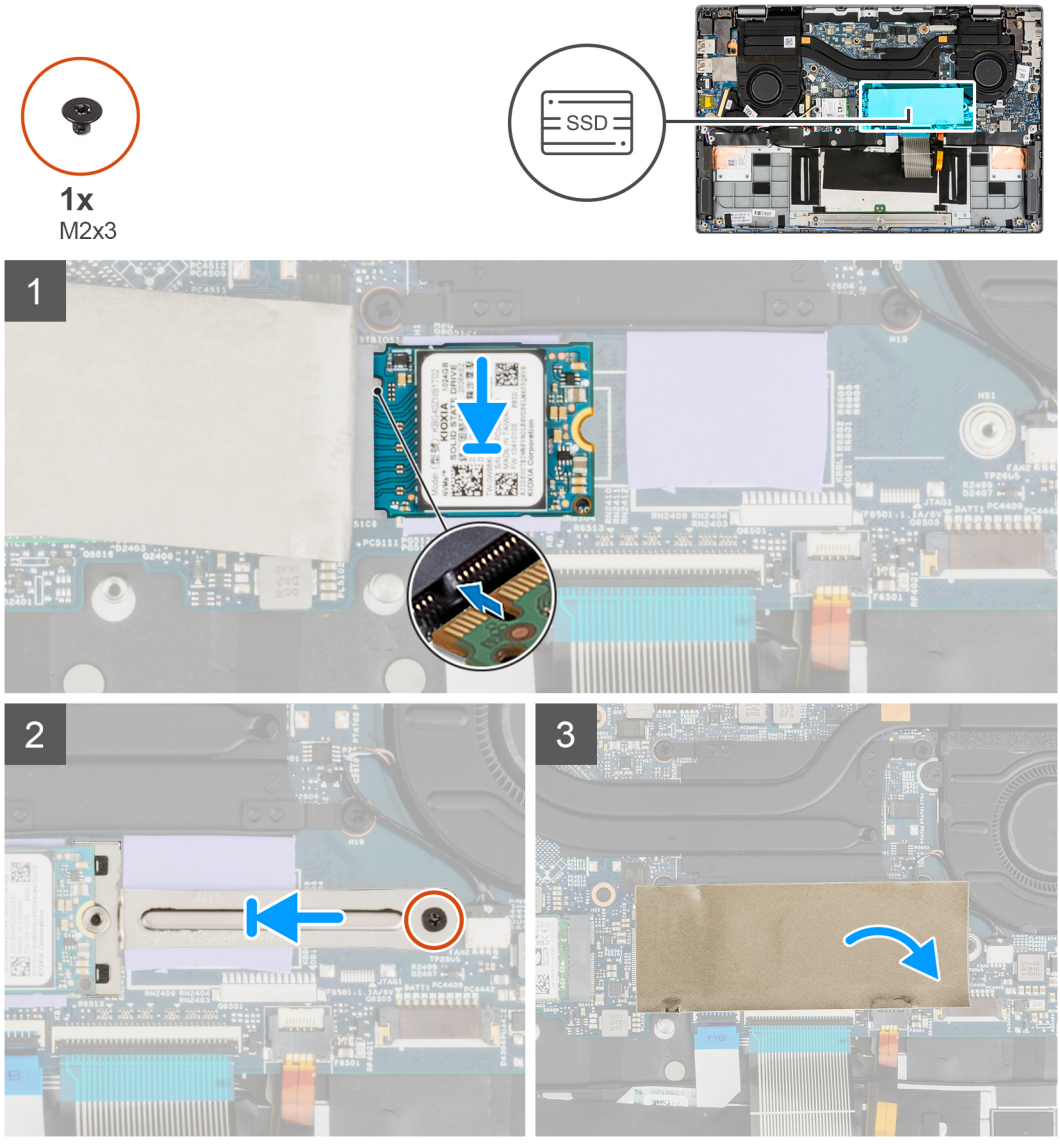
Installing the M.2 2230 solid-state drive

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 solid-state drive and provides a visual representation of the installation procedure.



Steps

1. Align the notch on the solid-state drive with the tab on the M.2 card connector.
2. Slide the solid-state drive into the M.2 card connector on the system board.
3. Align and place the solid-state drive bracket.
4. Install the screw (M2x3) that secures the solid-state drive bracket to the system board.
5. Close the solid-state drive mylar sheet to cover the solid-state drive.

NOTE: There is a protective mylar sheet covering the solid-state drive. This mylar sheet must be closed after the installation procedure.

Next steps

1. Install the base cover.
2. Follow the procedure in After working inside your computer.

Removing the M.2 2280 solid-state drive

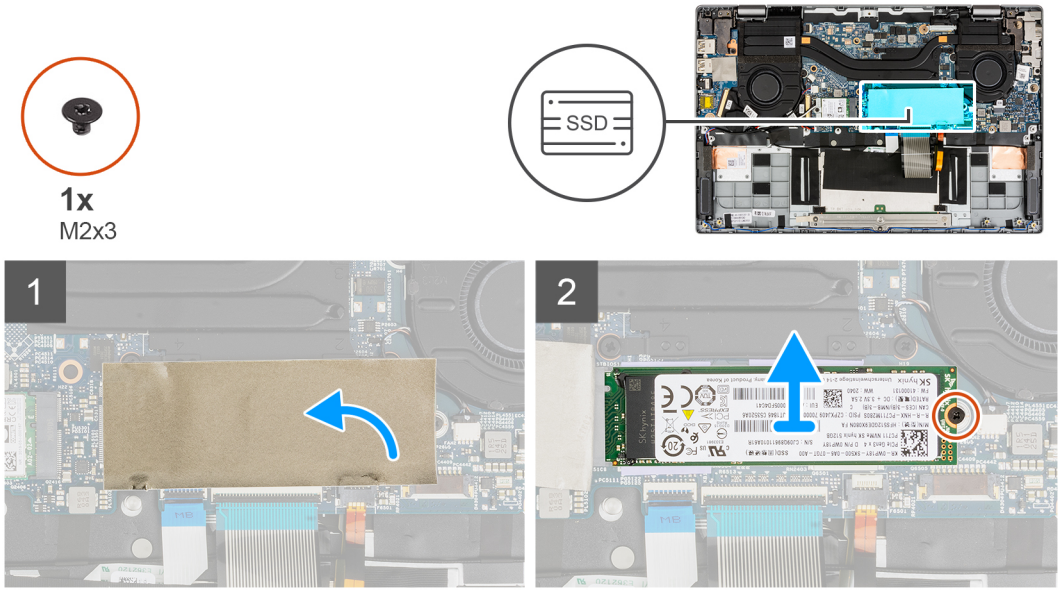
Prerequisites

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 solid-state drive and provides a visual representation of the removal procedure.



Steps

1. Open the solid-state drive mylar sheet that covers the solid-state drive.

   NOTE: There is a protective mylar sheet covering the solid-state drive. This mylar sheet must be opened in order to proceed with the removal procedure.

2. Remove the single screw (M2x3) that secures the solid-state drive to the system board.
3. Slide and remove the solid-state drive from the M.2 card connector on the system board.

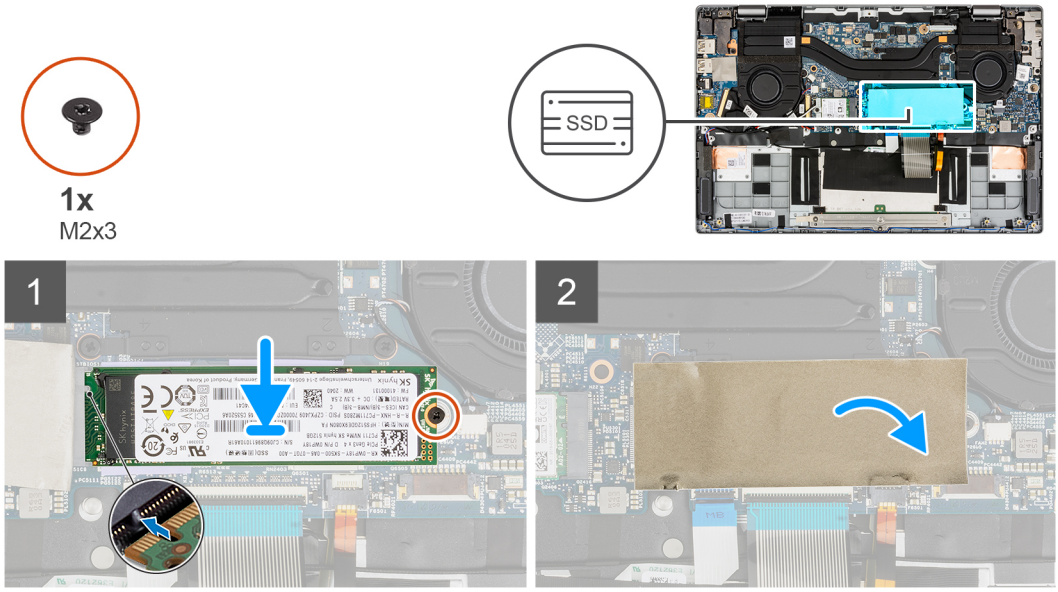
Installing the M.2 2280 solid-state drive

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 solid-state drive and provides a visual representation of the installation procedure.



Steps

1. Align the notch on the solid-state drive with the tab on the M.2 card connector.
2. Slide the solid-state drive into the M.2 card connector on the system board.
3. Replace the screw (M2x3) that secures the solid-state drive to the system board.
4. Close the solid-state drive mylar sheet to cover the solid-state drive.

NOTE: There is a protective mylar sheet covering the solid-state drive. This mylar sheet must be closed after the installation procedure.

Next steps

1. Install the base cover.
2. Follow the procedure in After working inside your computer.

WLAN card

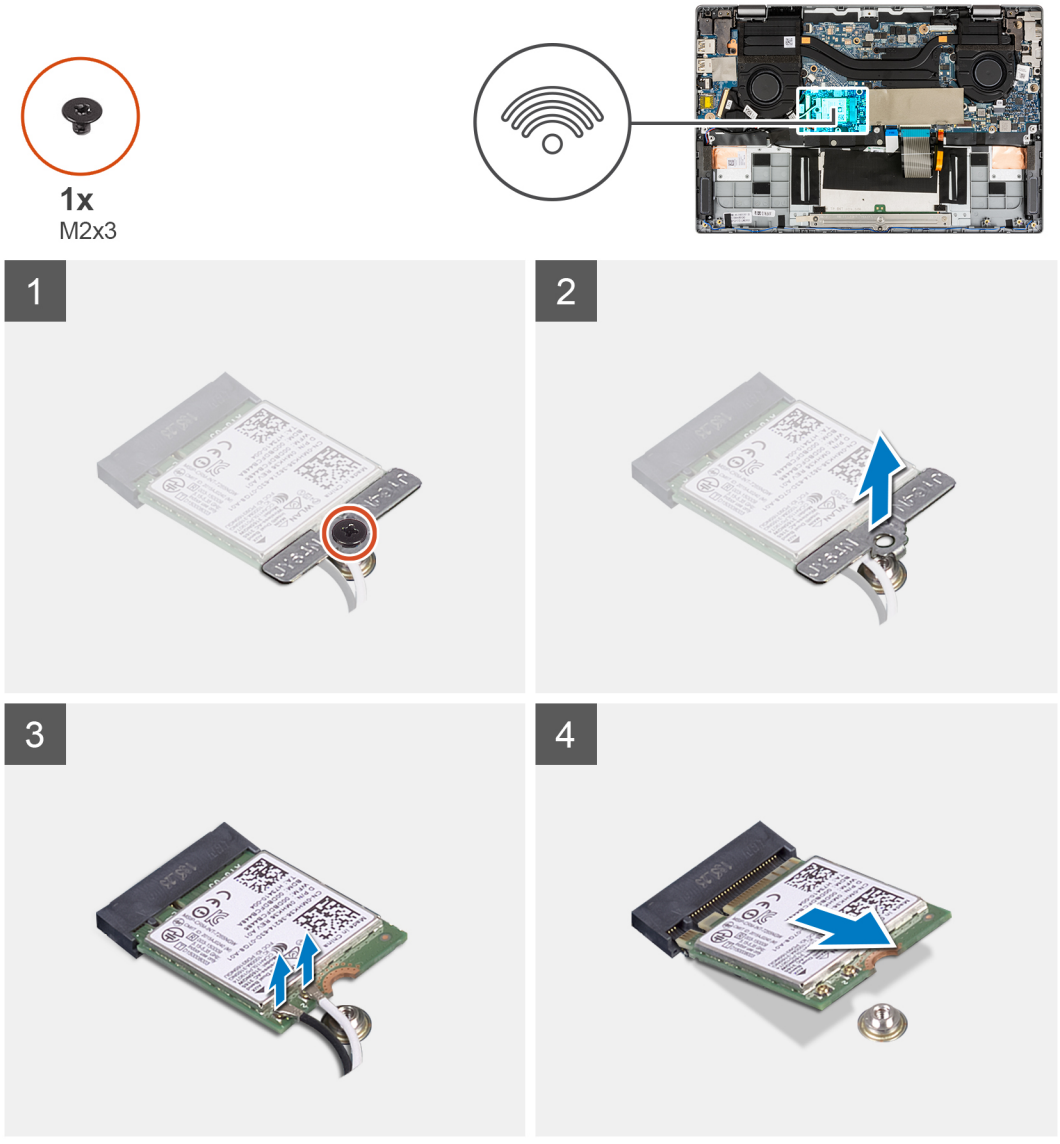
Removing the WLAN card

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Enter the service mode.
3. Remove the base cover.

About this task

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



Steps

1. Remove the screw (M2x3) that secures WLAN card bracket to the system board.
2. Lift the WLAN card bracket out of the system.
3. Disconnect the antenna cables from the connectors on the WLAN card.
4. Lift and remove the WLAN card from the WLAN card slot.

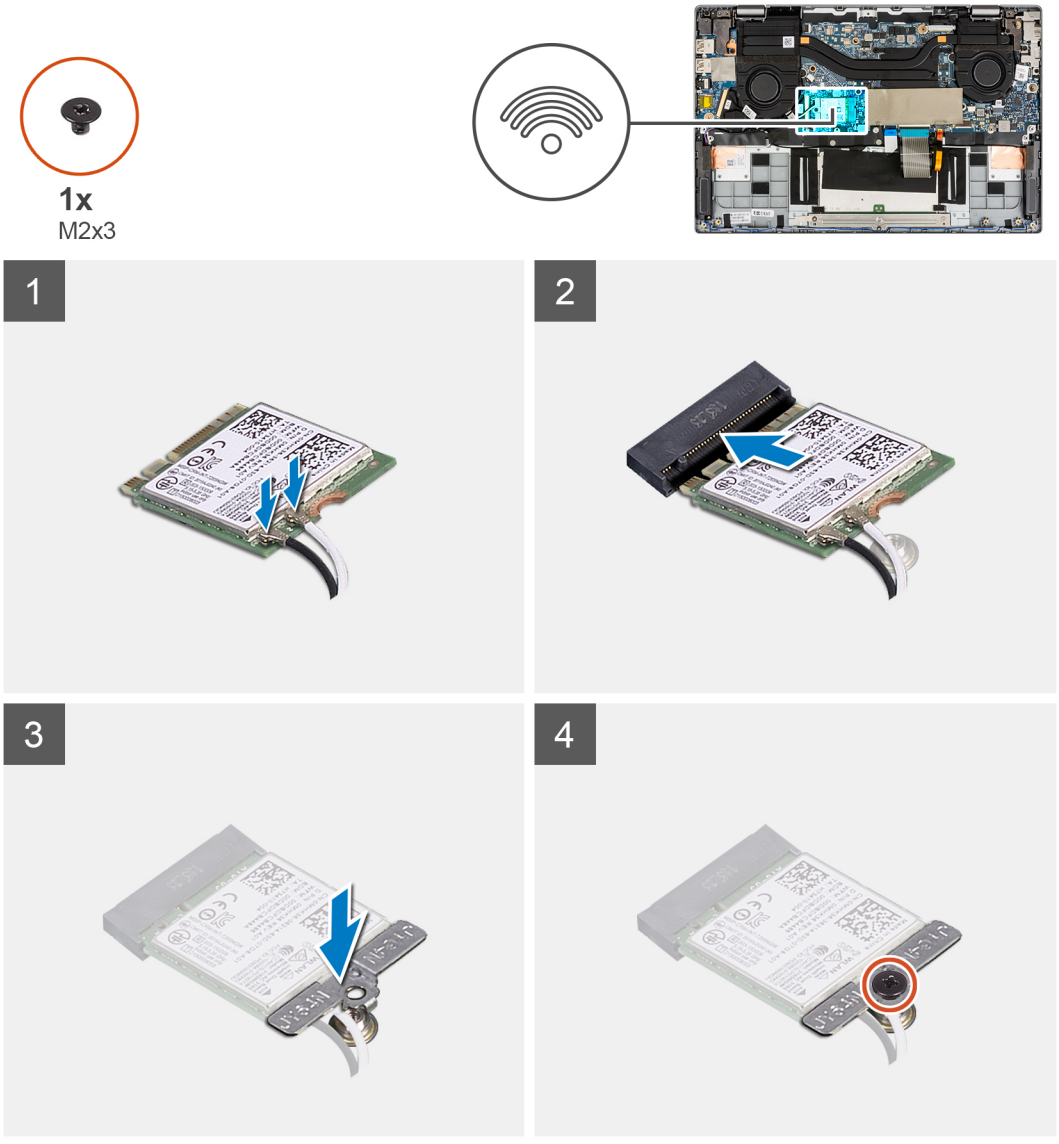
Installing the WLAN card

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 WWAN card and provides a visual representation of the installation procedure.



Steps

1. Align the notch on the WLAN card with the tab on the WLAN card slot.
2. Slide the WLAN card at an angle into the WLAN card slot.
3. Connect the antenna cables to the connectors on the WLAN card.

   NOTE: The antenna cable connectors are fragile and utmost care should be taken while replacing them.

Table 2. Antenna cable guide

Cable color	Connector
White cable (Main)	White triangle (△) on the WLAN module of the system board
Black cable (Aux)	Solid triangle (▲) on the WLAN module of the system board

4. Align and place the WLAN card bracket on the WLAN card.
5. Install the screw (M2x3) to secure the WLAN card bracket to the system board.

Next steps

1. Install the base cover.

2. Follow the procedure in After working inside your computer.

System fan

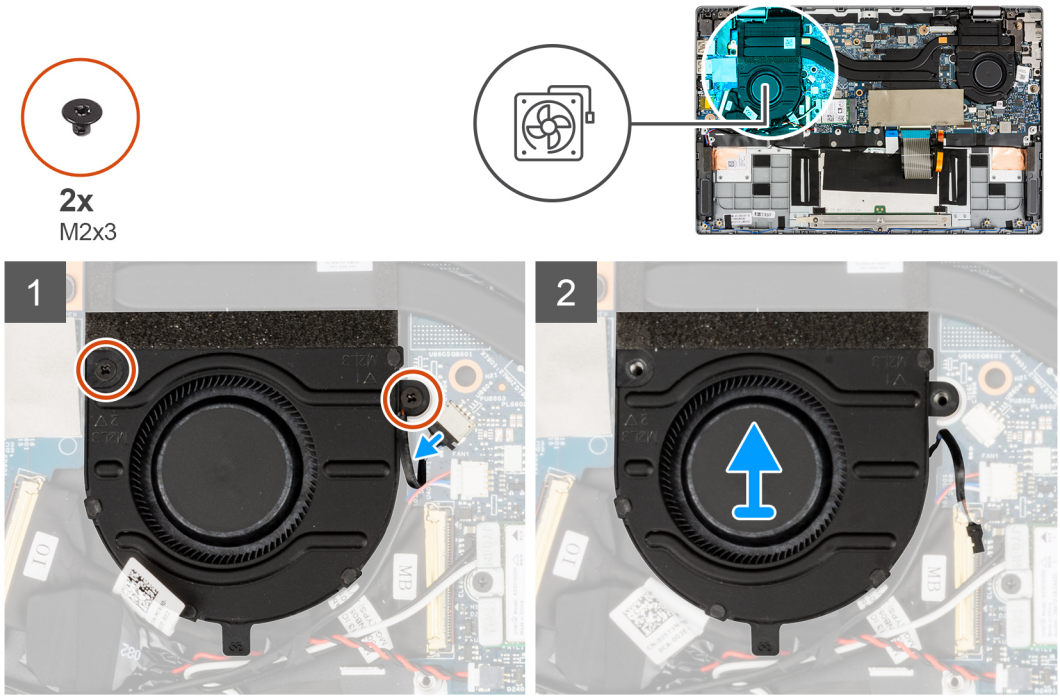
Removing the left system fan

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the base cover.
3. Remove the battery.

About this task

The following image indicates the location of the left system fan and provides a visual representation of the removal procedure.



Steps

1. Disconnect the system fan cable from the connector on the system board.
2. Remove the two (M2x3) screws that secure the system fan in place.
3. Lift the system fan off the palmrest assembly.

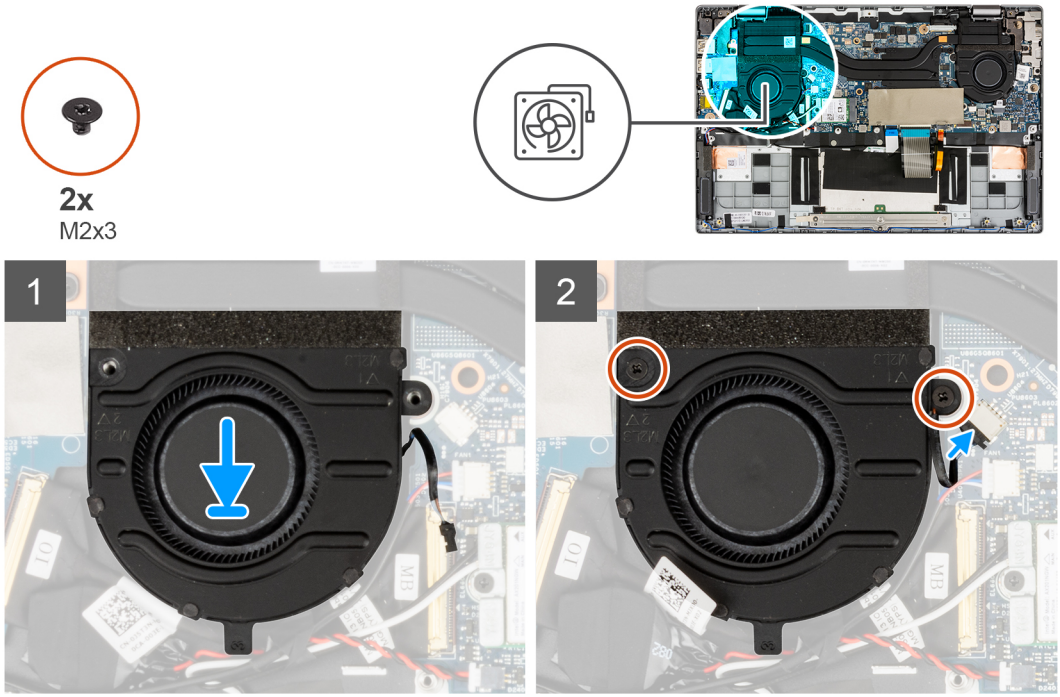
Installing the left system fan

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 left system fan and provides a visual representation of the installation procedure.



Steps

1. Align and place the system fan onto the palmrest assembly.
2. Install the two (M2x3) screws that secure the system fan in place.
3. Connect the system fan cable to the connector on the system board.

Next steps

1. Install the battery.
2. Install the base cover.
3. Follow the procedure in after working inside your computer.

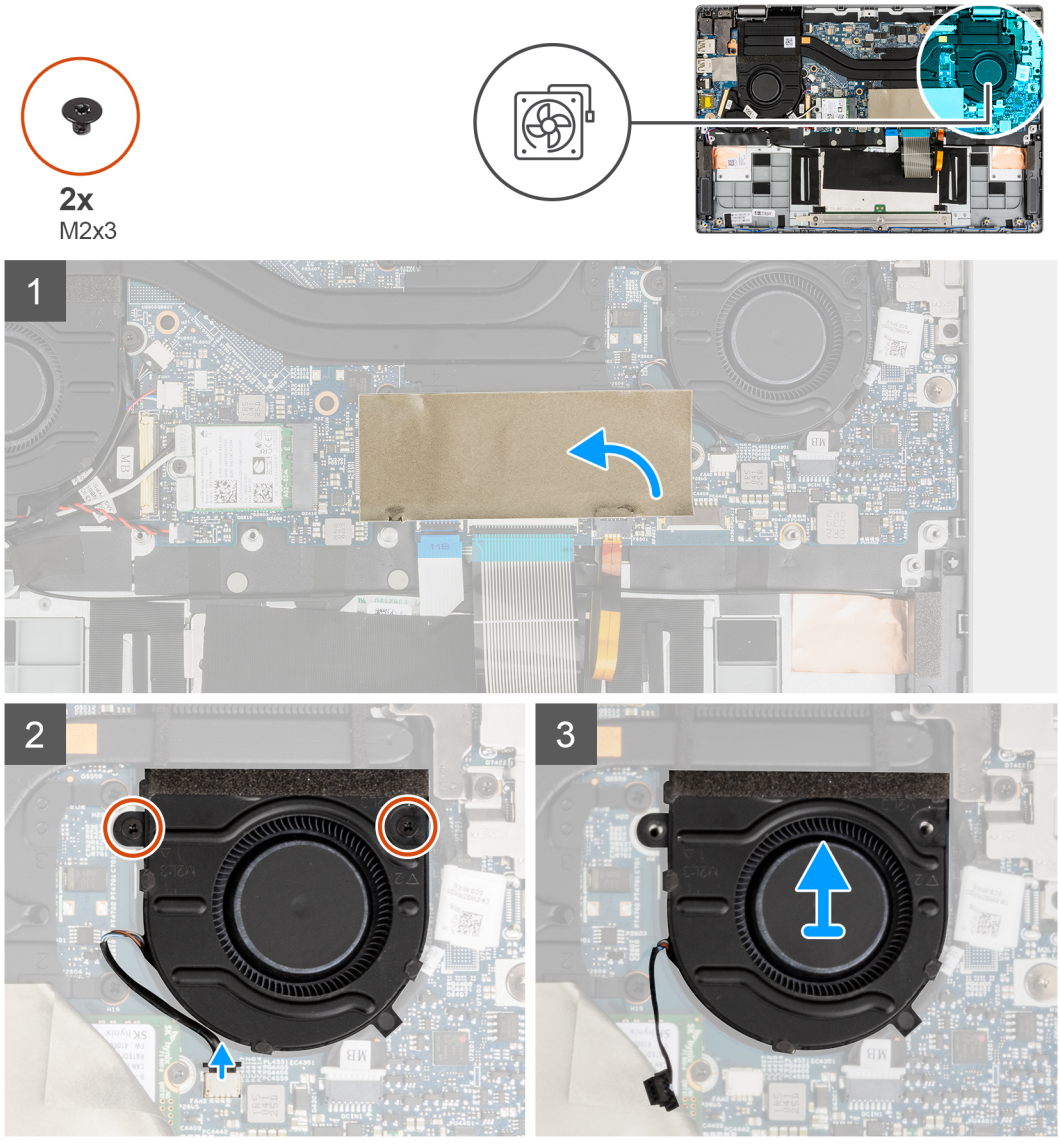
Removing the right system fan

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the base cover.
3. Remove the battery.

About this task

The following image indicates the location of the right system fan and provides a visual representation of the removal procedure.



Steps

1. For visibility, open the solid-state drive mylar sheet that covers the solid-state drive.
2. Disconnect the system fan cable from the connector on the system board.
3. Remove the two (M2x3) screws that secure the system fan in place.
4. Lift the system fan off the palmrest assembly.

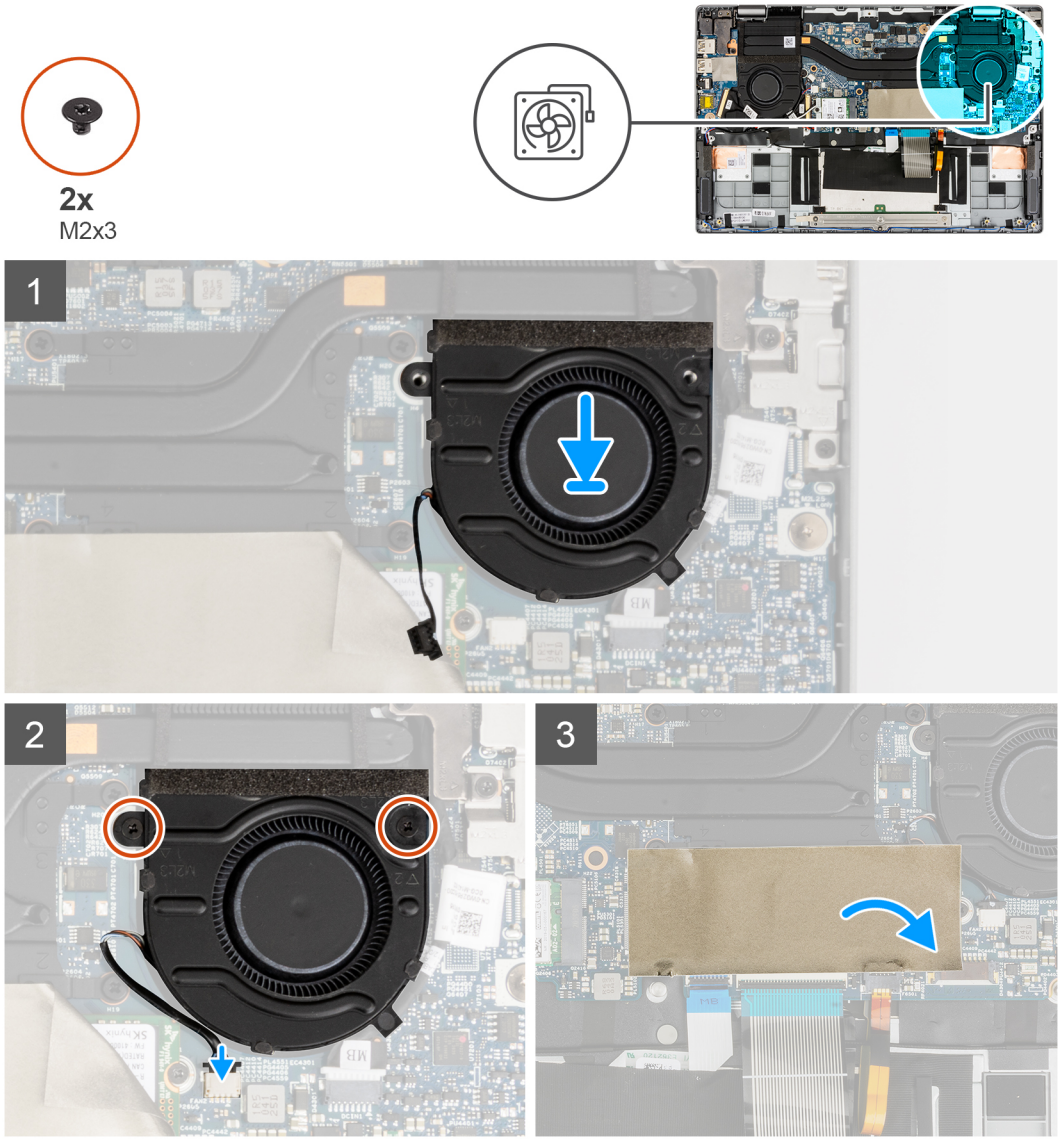
Installing the right system fan

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 right system fan and provides a visual representation of the installation procedure.



Steps

1. Align and place the system fan onto the palmrest assembly.
2. Install the two (M2x3) screws that secure the system fan in place.
3. Connect the system fan cable to the connector on the system board.
4. Close the solid-state drive mylar sheet to cover the solid-state drive.

Next steps

1. Install the battery.
2. Install the base cover.
3. Follow the procedure in after working inside your computer.

Display assembly

Removing the display assembly

Prerequisites

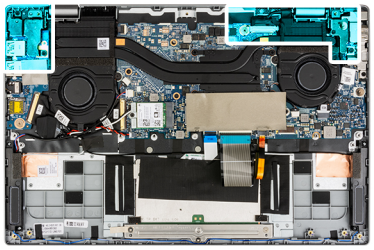
1. Follow the procedure in before working inside your computer.
2. Enter the service mode.
3. Remove the base cover.

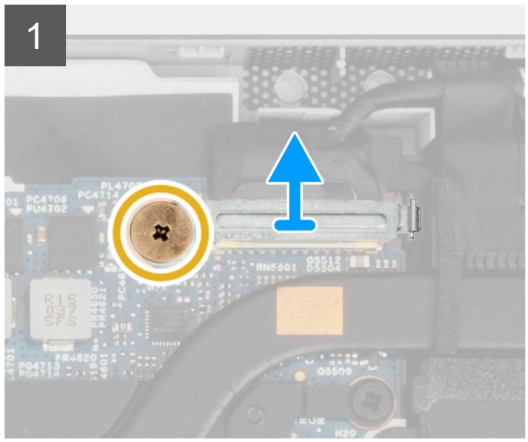
About this task

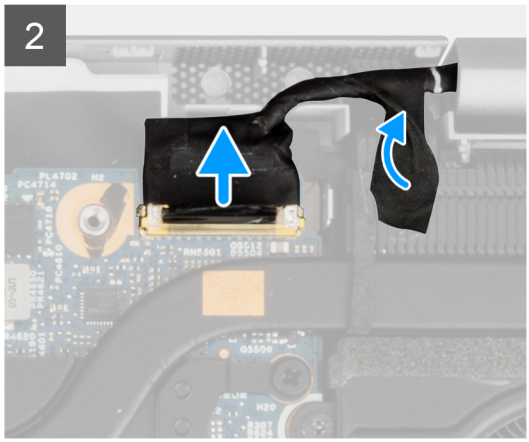
The following images indicate the location of the display assembly and provide a visual representation of the removal procedure.

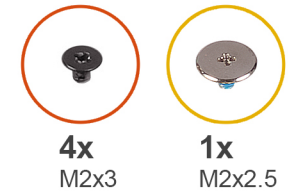
NOTE: The display assembly removal procedure is the same for both laptop and convertible chassis.

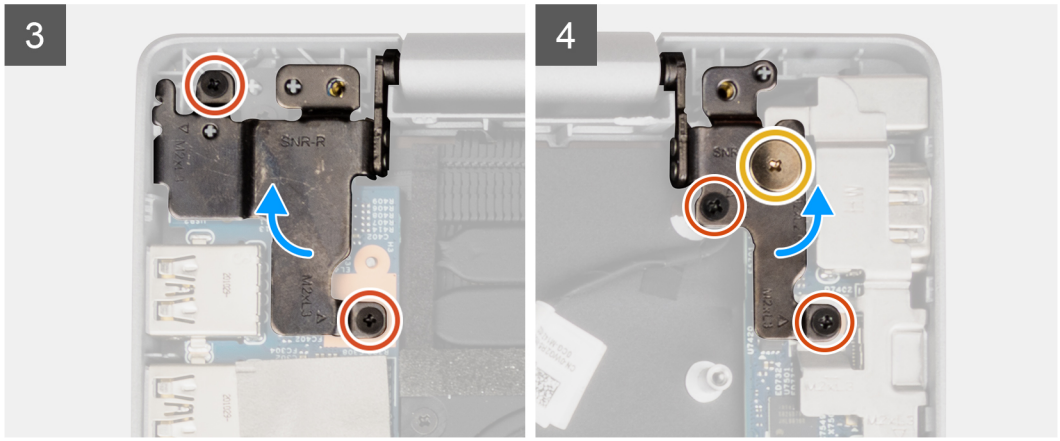
1x
M2x2.5

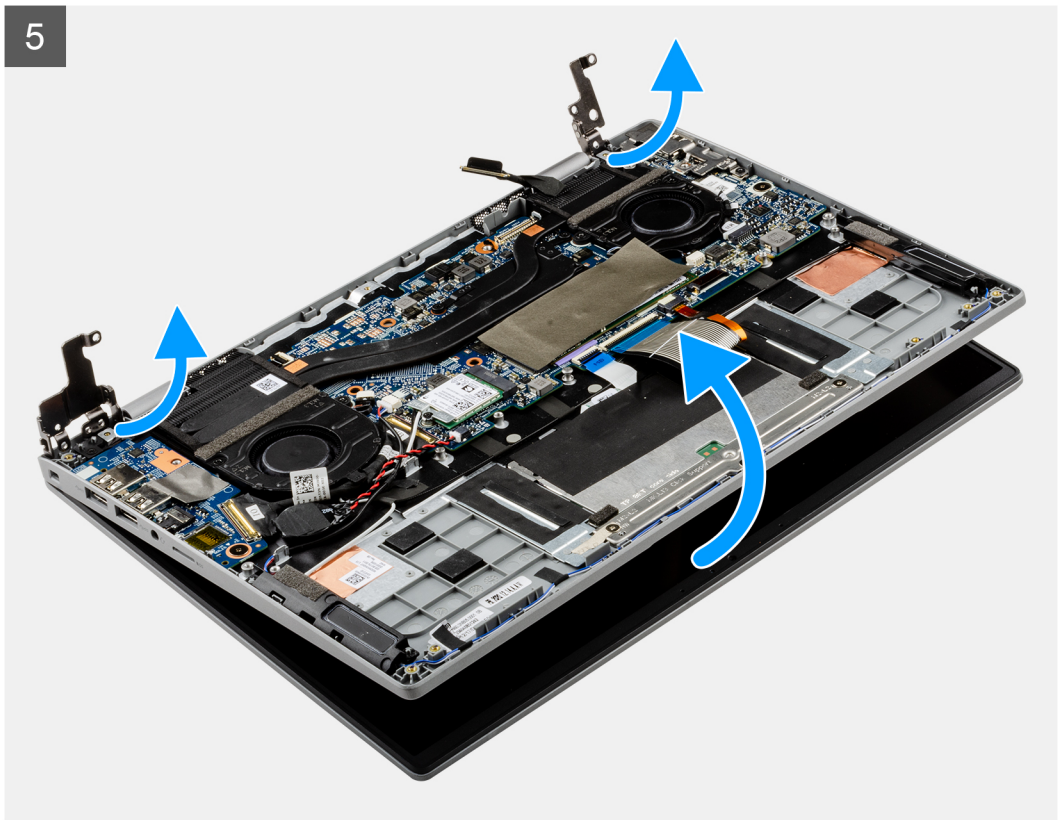












Steps

1. Remove the (M2x2.5) screw that secures the display cable bracket. Remove the display cable bracket.
2. Disconnect the display cable from the connector on the system board.
3. Peel the adhesive tape that secures the display cable.
4. Remove the (M2x2.5) screw and four (M2x3) screws that secure the display hinges to the system.
5. Lift the left and right hinges in upward direction away from the system.
6. Lift the display assembly off the system.

After performing the preceding steps, you are left with the display assembly.

Installing the display assembly

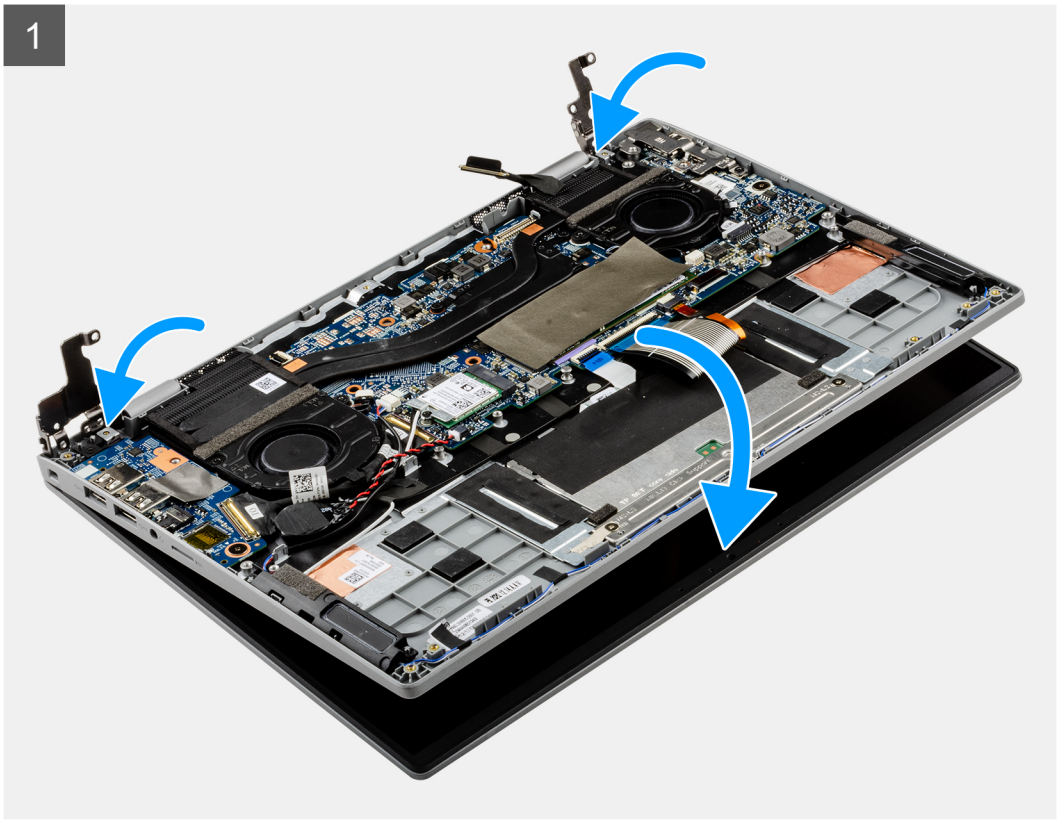
Prerequisites

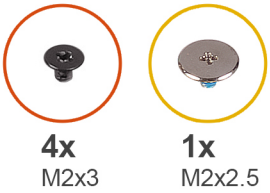
If you are replacing a component, remove the existing component before performing the installation procedure.

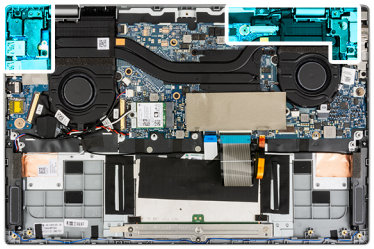
NOTE: The display assembly installation procedure is the same for both laptop and convertible chassis.

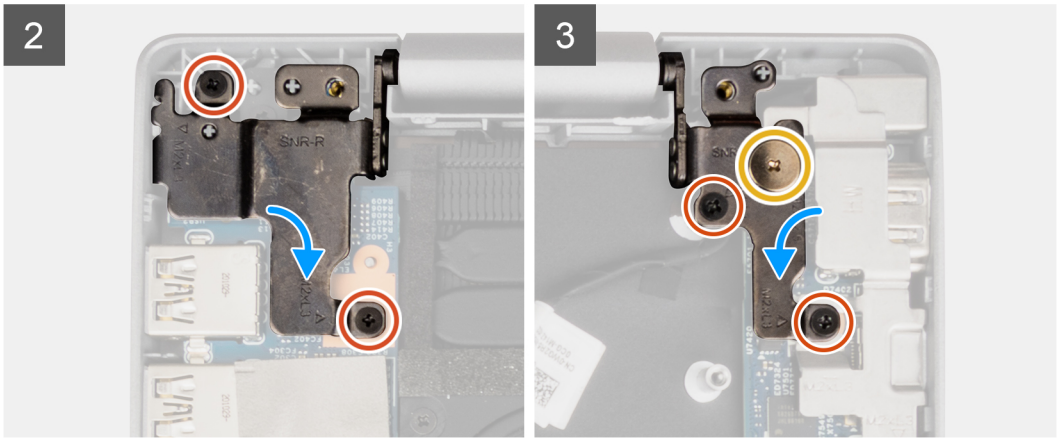
About this task

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

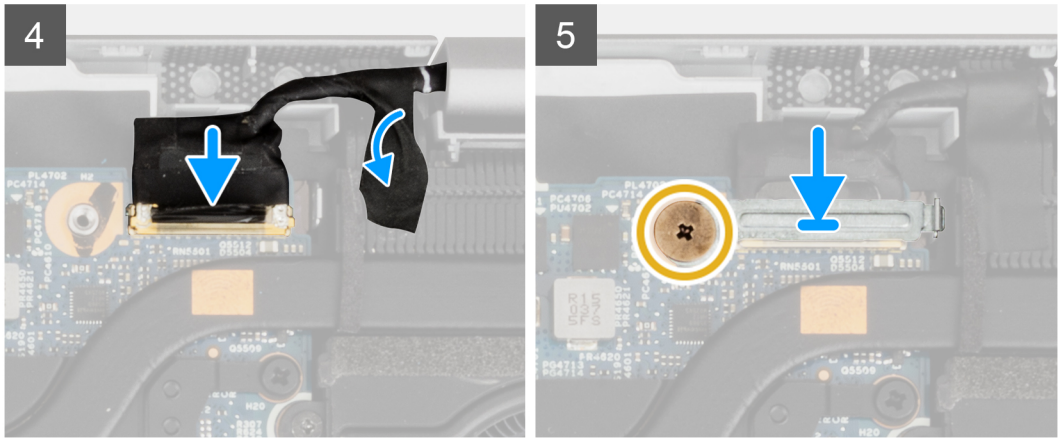

1


4x
M2x3
1x
M2x2.5




2
3

1x
M2x2.5



Steps

1. Align and place the system chassis under the hinges of the display assembly.
2. Install the (M2x2.5) screw and four (M2x3) screws that secure the display hinges to the system.
3. Connect the display cable to its connector on the system board. Adhere the adhesive tape to secure the display cable.
4. Align and place the display cable bracket in place.
5. Install the (M2x2.5) screw to secure the display cable bracket.

Next steps

1. Install the base cover.
2. Follow the procedure in after working inside your computer.

Input Output board

Removing the Input Output board

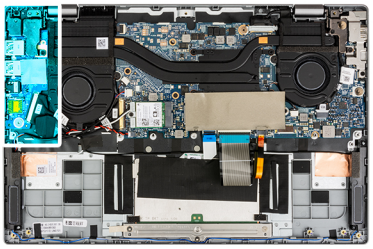
Prerequisites

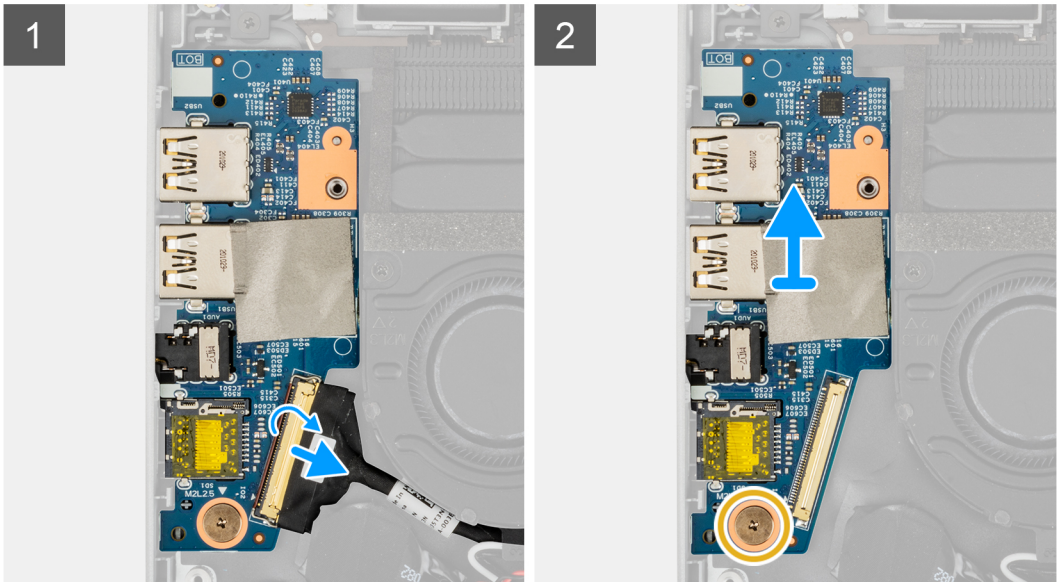
1. Follow the procedure in before working inside your computer.
2. Enter the service mode.
3. Remove the base cover.
4. Remove the left fan.
5. Remove the display assembly.

About this task

The following image indicates the location of the Input Output board and provides a visual representation of the removal procedure.

1x
M2x2.5





Steps

1. Open the latch and disconnect the Input Output board cable from the connector on the Input Output board.
2. Remove the (M2x2.5) screw that secures the Input Output board to the palmrest assembly.
3. Lift the Input Output board out of the palmrest assembly.

Installing the Input Output board

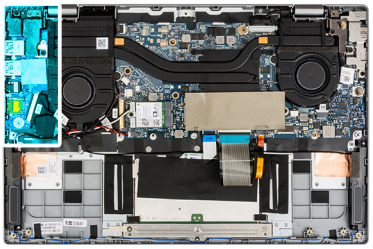
Prerequisites

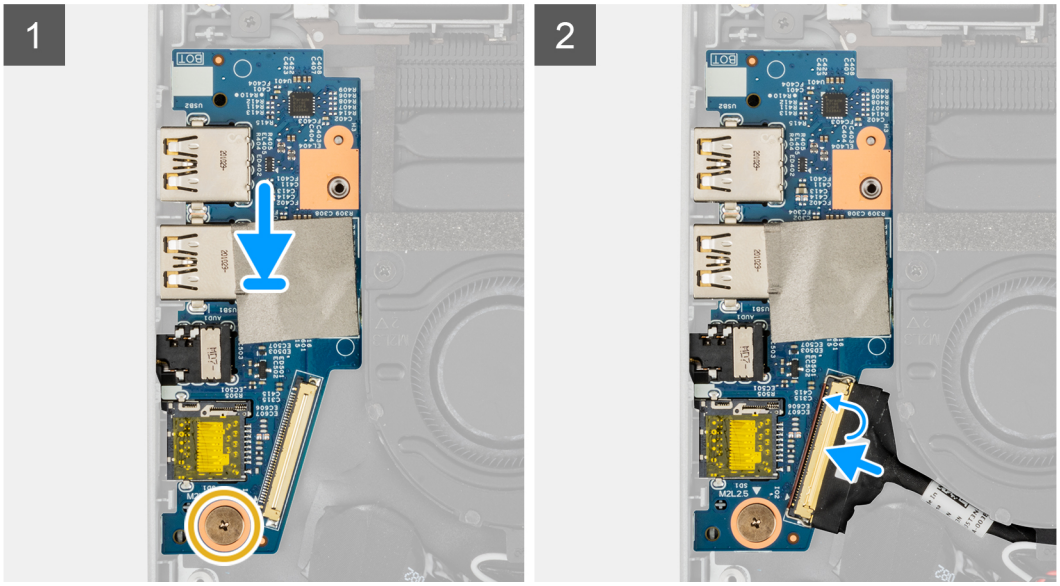
If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

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

1x
M2x2.5





Steps

1. Align and place the Input Output board on the palmrest assembly.
2. Install the (M2x2.5) screw to secure the Input Output board to the palmrest assembly.
3. Connect the Input Output board cable to the connector on the Input Output board and close its latch.

Next steps

1. Install the display assembly.
2. Install the left fan.
3. Install the base cover.
4. Follow the procedure in after working inside your computer.

Heatsink assembly

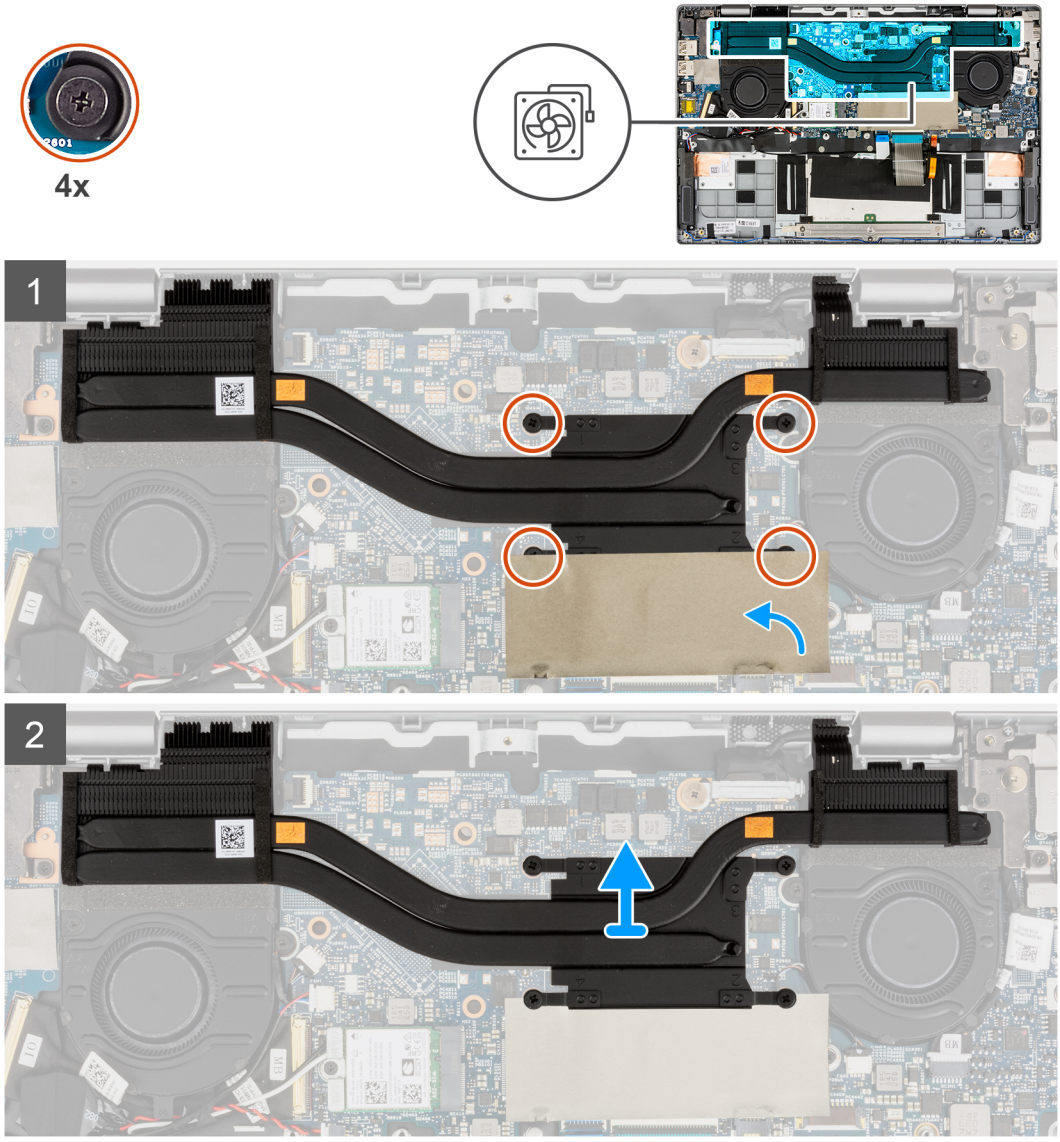
Removing the heatsink assembly

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Enter the service mode.
3. Remove the base cover.

About this task

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



Steps

1. For visibility, open the solid-state drive mylar sheet that covers the solid-state drive.
2. Loosen the four captive screws (in reverse order, 4->3->2->1) that secure the heatsink assembly to the system board.
3. Slide, lift and remove the heatsink assembly from the system board.

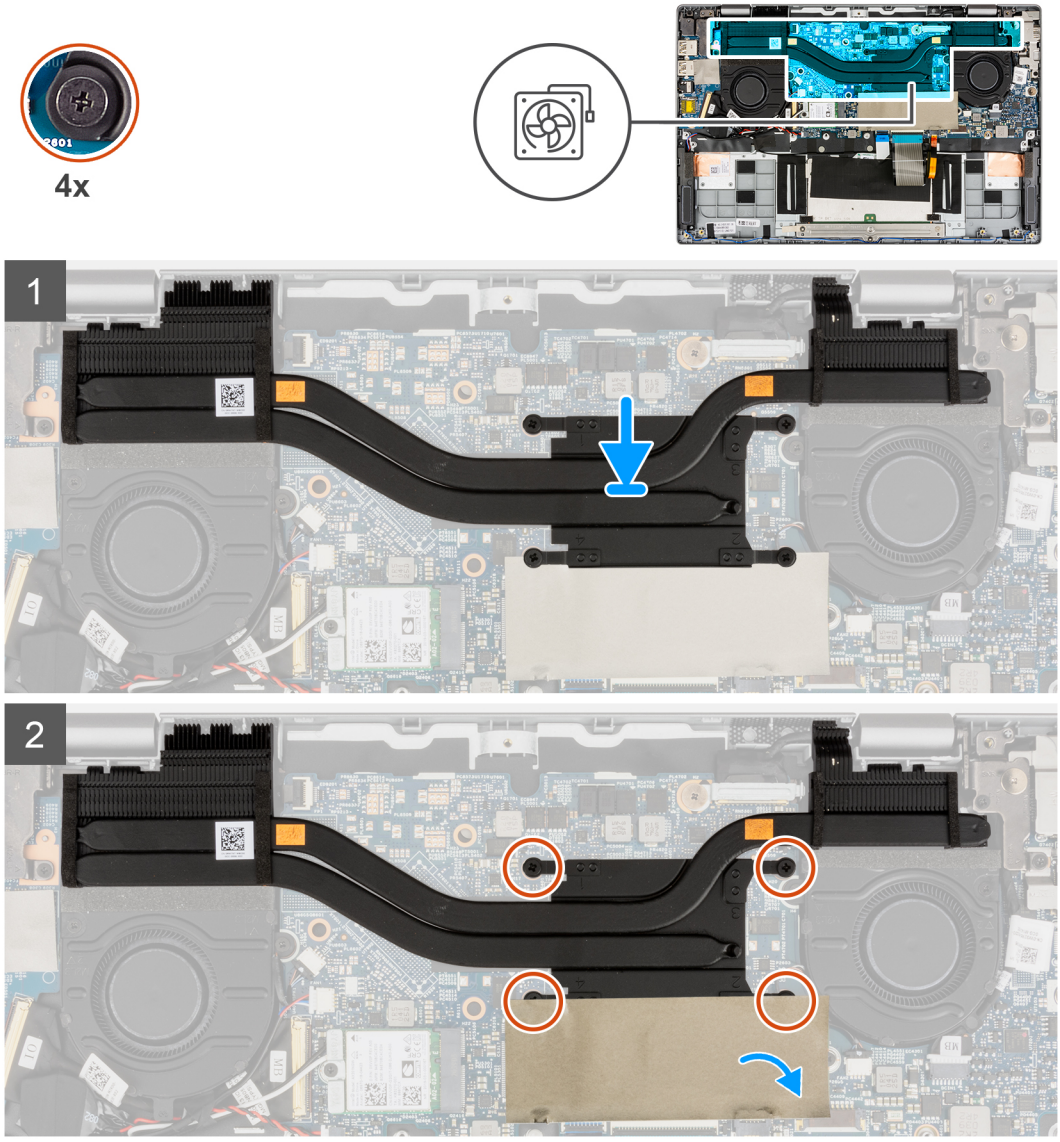
Installing the heatsink assembly

Prerequisites

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

About this task

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



Steps

1. Align and place the heatsink assembly into the slot on the system board.
2. Tighten the four captive screws to secure the heatsink assembly to the system board.
3. Close the solid-state drive mylar sheet to cover the solid-state drive.

Next steps

1. Install the base cover.
2. Follow the procedure in after working inside your computer.

Power button with fingerprint reader

Removing the power button with fingerprint reader

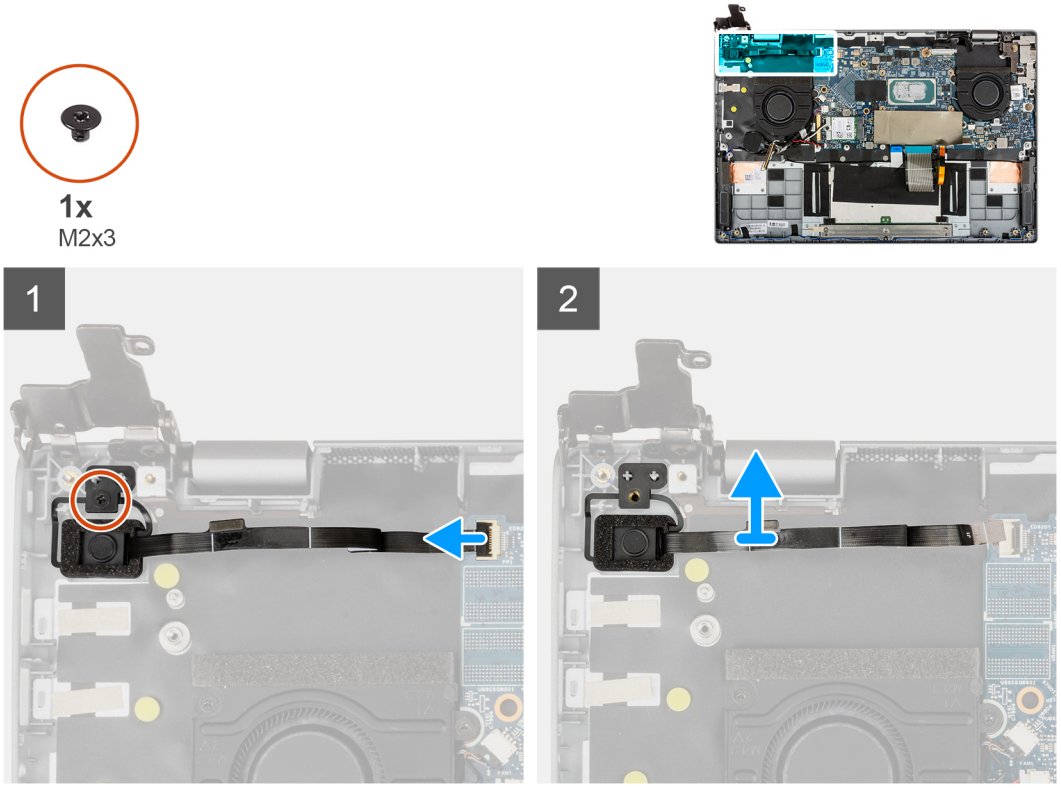
Prerequisites

1. Follow the procedure in before working inside your computer.
2. Enter the service mode.
3. Remove the base cover.

4. Remove the display assembly.
5. Remove the input output board.
6. Remove the heatsink assembly.

About this task

The following image indicates the location of the power button with fingerprint reader and provides a visual representation of the removal procedure.



Steps

1. Open the latch and disconnect the power button with fingerprint reader cable from the connector on the system board.
2. Remove the (M2x3) screw that secures the power button with fingerprint reader to the chassis.
3. Remove the power button with fingerprint reader from the chassis.

Installing the power button with fingerprint reader

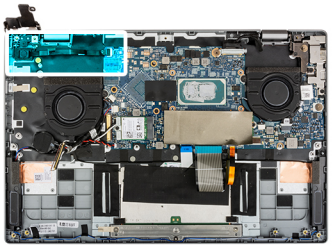
Prerequisites

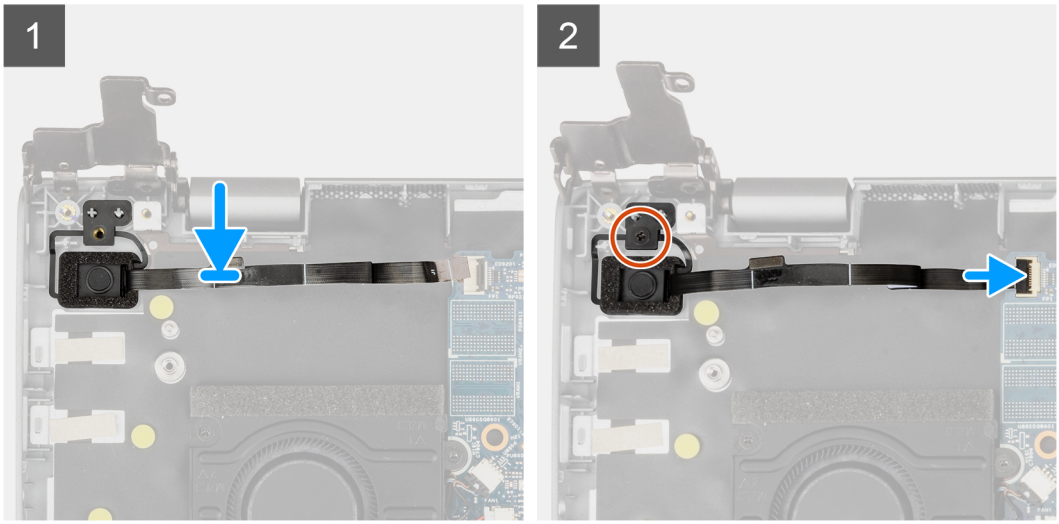
If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the power button with fingerprint reader and provides a visual representation of the installation procedure.

1x
M2x3





Steps

1. Align and place the power button with fingerprint reader on the chassis.
2. Install the (M2x3) screw to secure the power button with fingerprint reader to the chassis.
3. Connect the power button with fingerprint reader cable to the connector on the system board and close its latch.

Next steps

1. Install the heatsink assembly.
2. Install the input output board.
3. Install the display assembly.
4. Install the base cover.
5. 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.
2. Enter the service mode.
3. Remove the base cover.
4. Remove the speaker.
5. Remove the M.2 solid-state drive.
6. Remove the system fan.
7. Remove the display assembly.
8. Remove the input output board.
9. Remove the heatsink assembly.
10. Remove the power button with fingerprint reader.

About this task

The following image indicates the connectors on your system board.

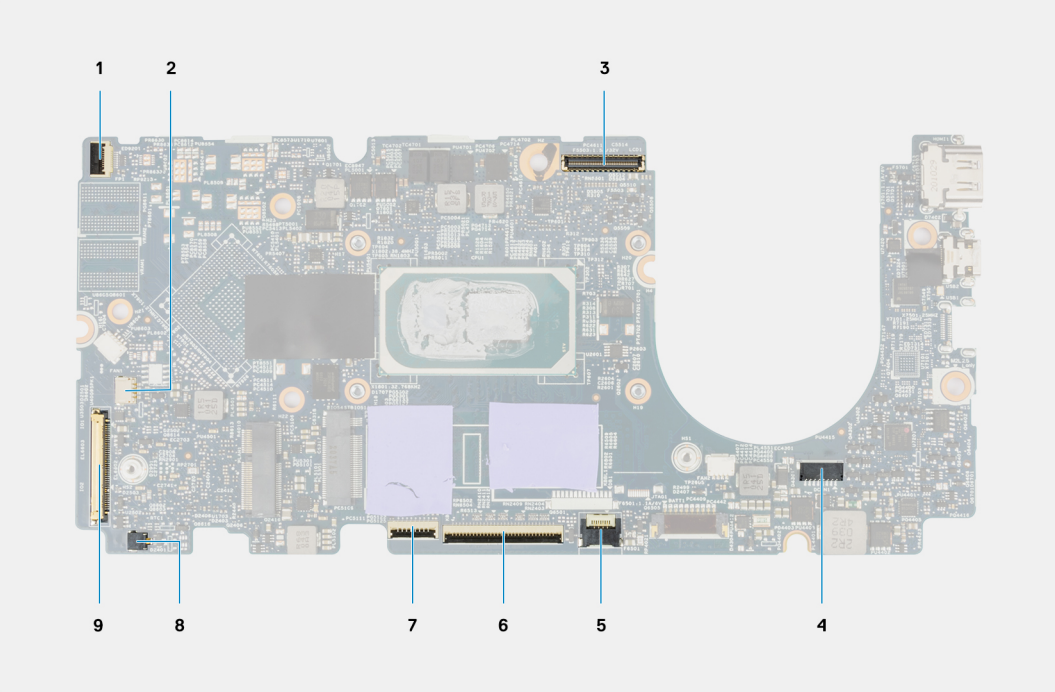
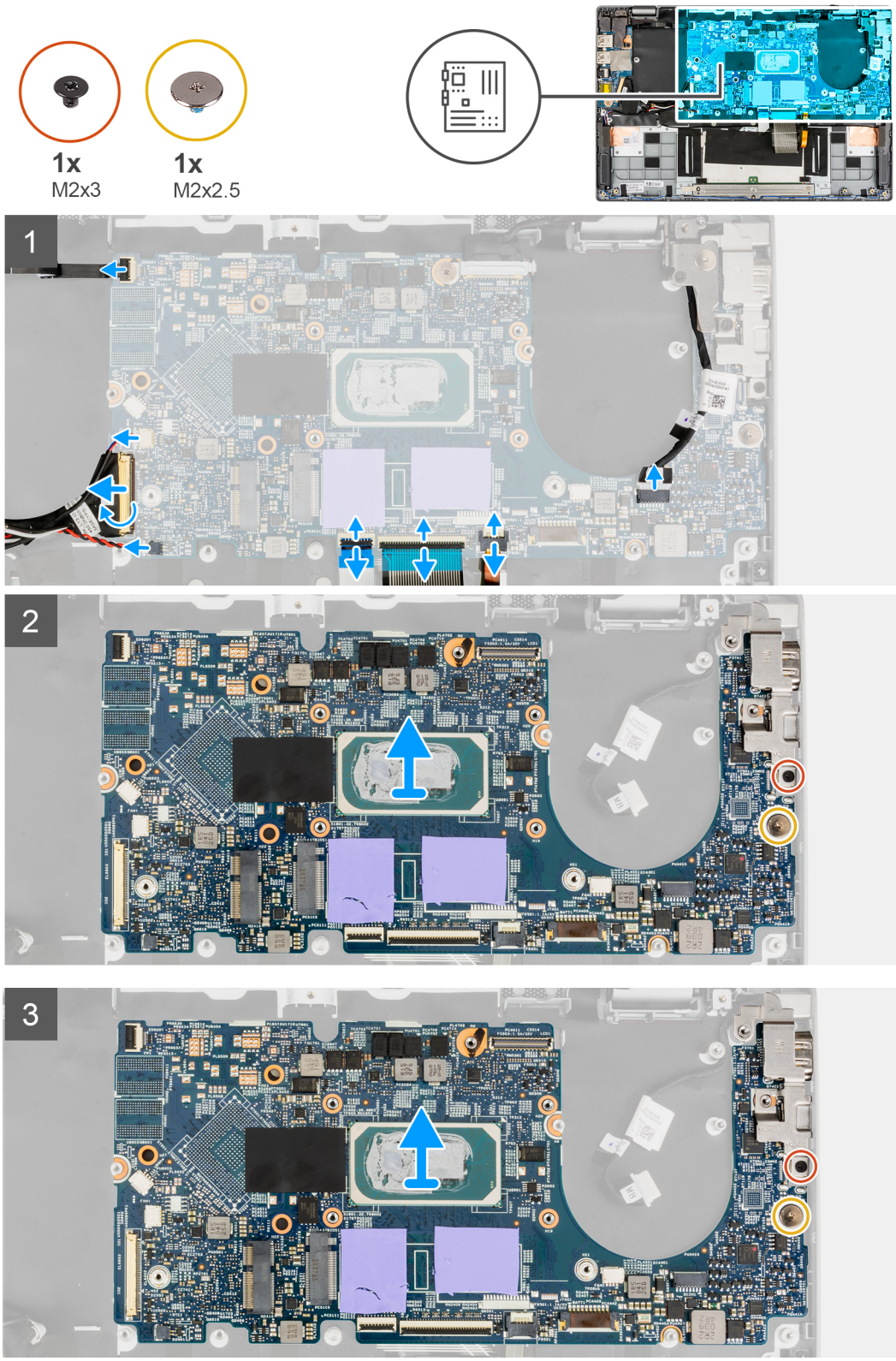


Figure 1. System-board connectors

1. Power button with fingerprint reader cable
2. Speaker cable
3. Display cable
4. Power cable
5. Backlit LED cable
6. Keyboard cable
7. Touchpad cable
8. Coin-cell battery cable
9. Input output board cable

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



Steps

1. Open the latch and disconnect the touchpad cable, keyboard cable and LED cable from the connectors on the system board.
2. Disconnect the power cable, power button with finger print reader cable, speaker cable, and coin-cell battery cable from the connectors on the system board.
3. Open the latch and pull the input output board cable from the connector on the system board.
4. Remove the (M2x2.5) screw that secures the system board in place.

5. Remove the (M2x3) screw that secures the type-c bracket in place.
6. Lift and remove the system board from the system.
7. Lift and remove the type-c bracket from the system.

Installing the system 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 connectors on your system board.

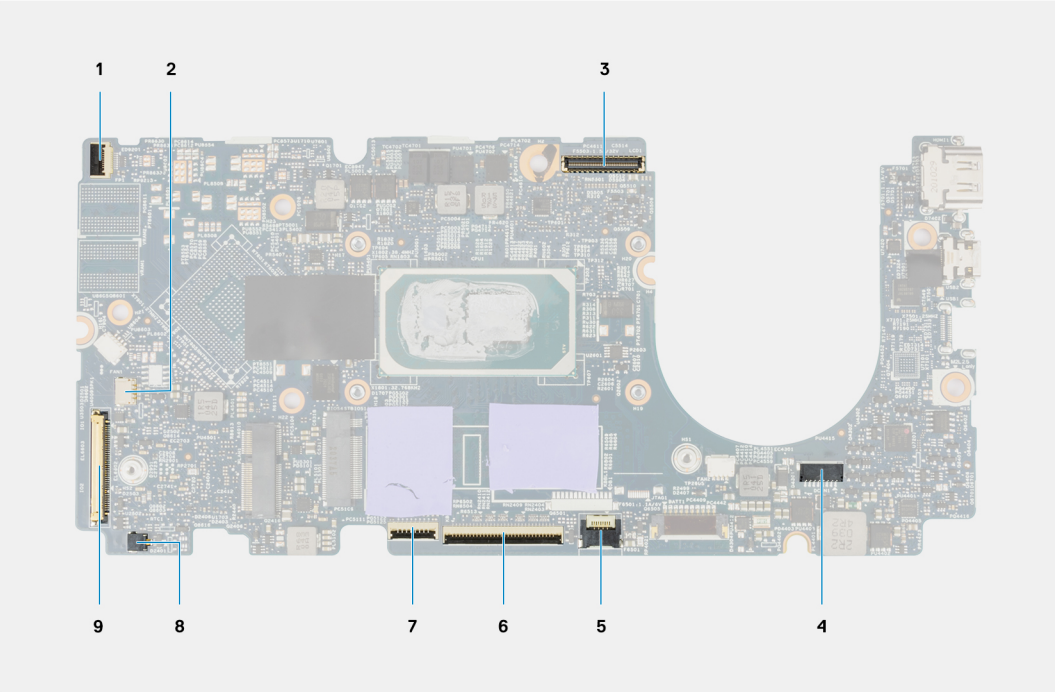
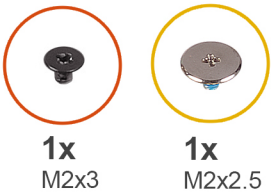
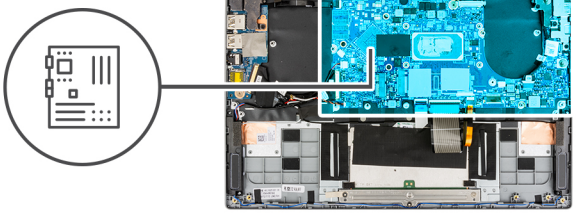


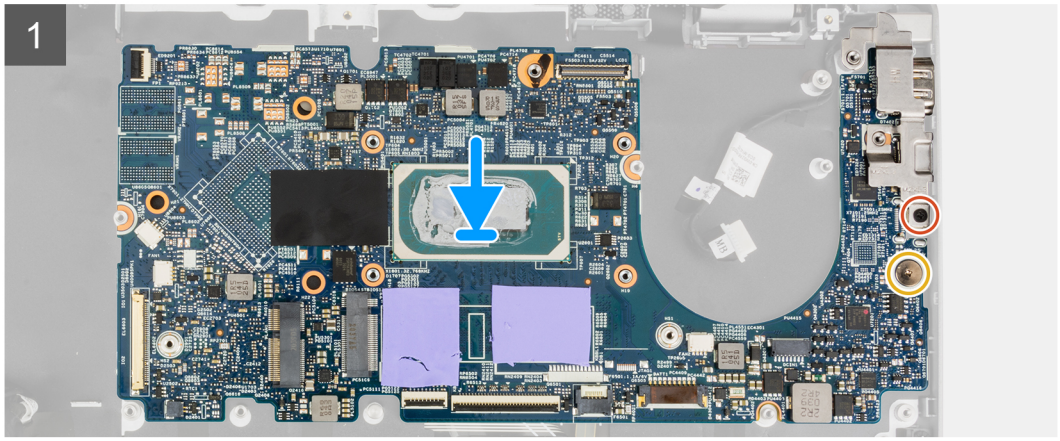
Figure 2. System-board connectors

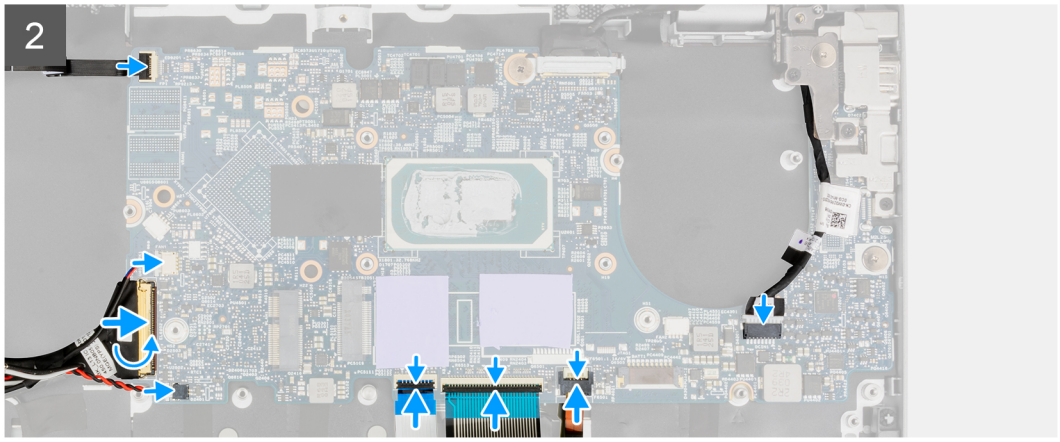
1. Power button with fingerprint reader cable
2. Speaker cable
3. Display cable
4. Power cable
5. Backlit LED cable
6. Keyboard cable
7. Touchpad cable
8. Coin-cell battery cable
9. Input output board cable

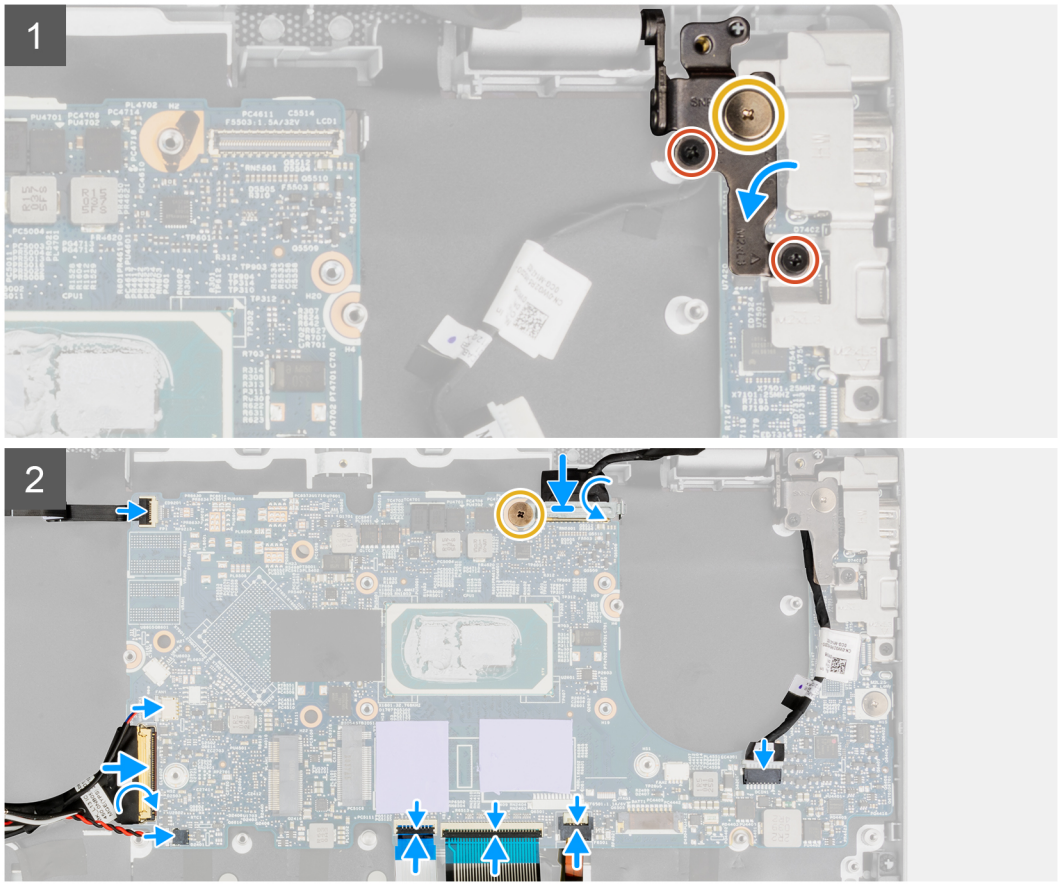
The following images indicate the location of the system board and provide a visual representation of the installation procedure.


1x
M2x3
1x
M2x2.5




1


2



Steps

1. Align and place the type-c bracket on the system board.

   NOTE: The type-c bracket must be installed on the system board before installing the system board into the palmrest assembly. Technicians cannot install the Type-c bracket once the system board is assembled into the palmrest assembly.

2. Align and place the system board on the chassis.
3. Install the (M2x3) screw to secure the type-c bracket in place.
4. Install the (M2x2.5) screw to secure the system board in place.
5. Connect the input output board cable to the connector on the system board and close the latch.
6. Connect the power cable, power button with finger print reader cable, speaker cable, and coin-cell battery cable to the connectors on the system board.
7. Connect the touchpad cable, keyboard cable, and LED cable to the connectors on the system board and close the latch.

Next steps

1. Install the power button with fingerprint reader.
2. Install the heatsink assembly.
3. Install the input output board.
4. Install the display assembly.
5. Install the system fan.
6. Install the M.2 solid-state drive.
7. Install the speakers.
8. Install the base cover.
9. Follow the procedure in after working inside your computer.

Power connector cable

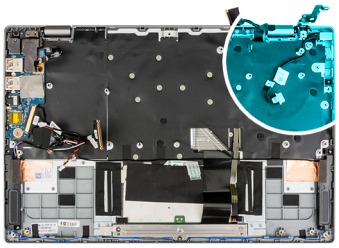
Removing the power connector cable

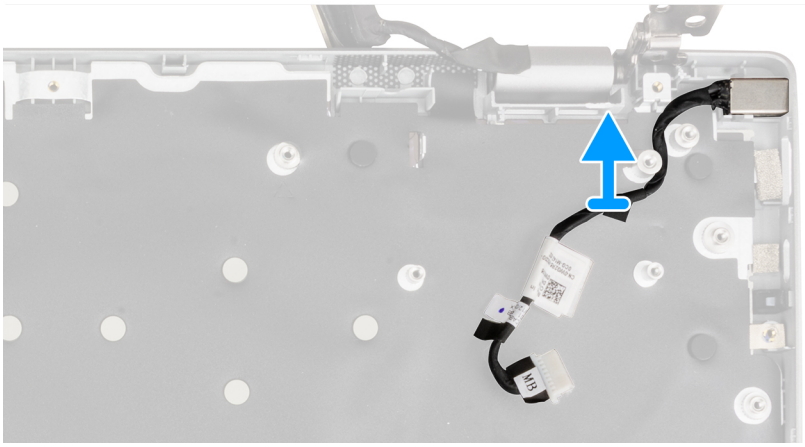
Prerequisites

1. Follow the procedure in before working inside your computer.
2. Enter the service mode.
3. Remove the base cover.
4. Remove the speaker.
5. Remove the M.2 solid-state drive.
6. Remove the system fan.
7. Remove the display assembly.
8. Remove the input output board.
9. Remove the heatsink assembly.
10. Remove the power button with fingerprint reader.
11. Remove the system board.

About this task

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





Steps

Remove the power cable connector from the chassis.

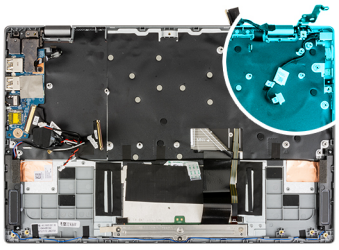
Installing the power connector cable

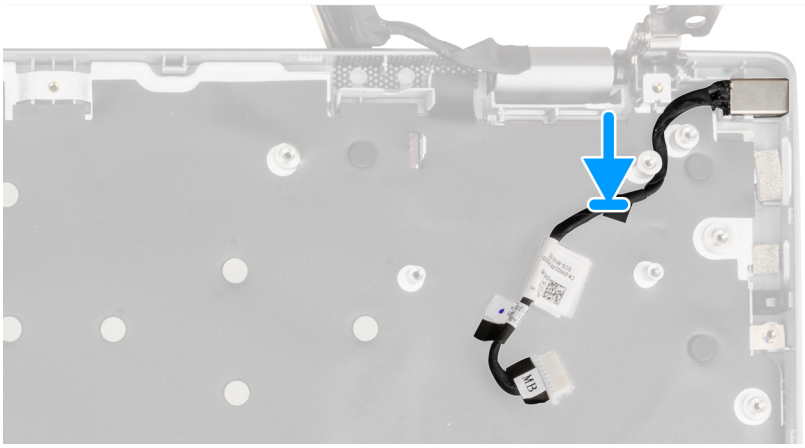
Prerequisites

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 power connector and provides a visual representation of the installation procedure.





Steps

Align and place the power cable connector on the chassis.

Next steps

1. Install the system board.
2. Install the power button with fingerprint reader.
3. Install the heatsink assembly.
4. Install the input output board.
5. Install the display assembly.
6. Install the system fan.
7. Install the M.2 solid-state drive.
8. Install the speakers.
9. Install the base cover.
10. Follow the procedure in after working inside your computer.

Palmrest assembly

Removing the palmrest assembly

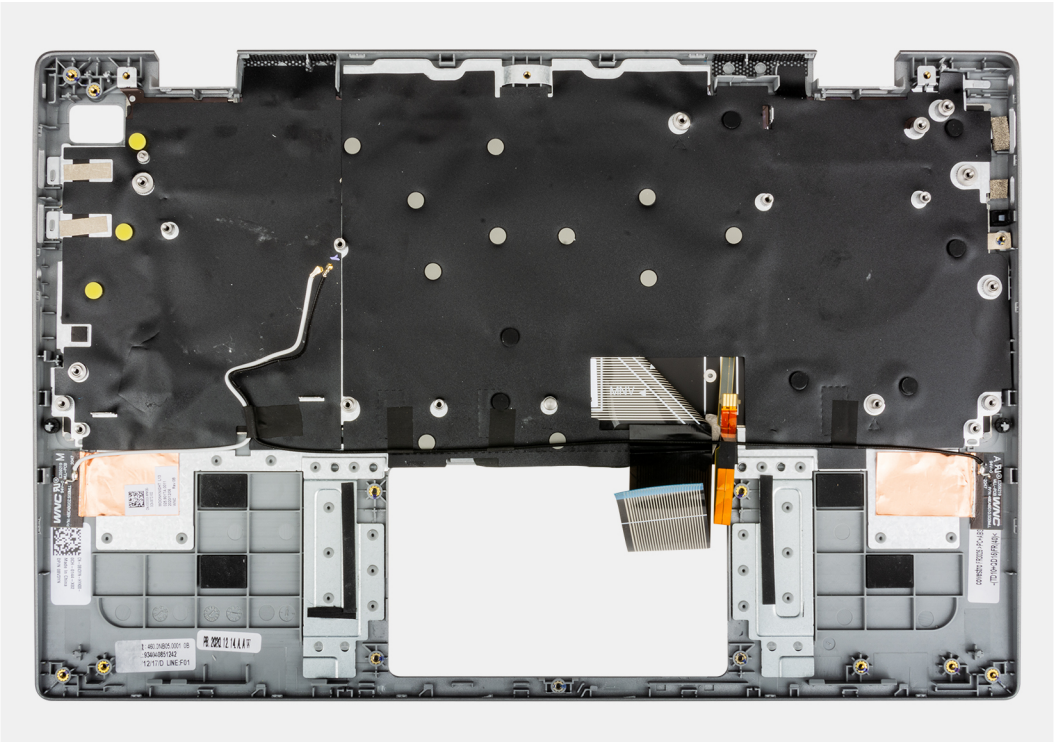
Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the base cover.
3. Remove the battery.
4. Remove the speaker.
5. Remove the M.2 solid-state drive.
6. Remove the system fan.
7. Remove the display assembly.

8. Remove the input output board.
9. Remove the heatsink assembly.
10. Remove the power button with fingerprint reader.
11. Remove the system board.

About this task

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



Steps

After performing the preceding steps, you are left with the palmrest assembly.

Next steps

1. Install the system board.
2. Install the power button with fingerprint reader.
3. Install the heatsink assembly.
4. Install the input output board.
5. Install the display assembly.
6. Install the system fan.
7. Install the M.2 solid-state drive.
8. Install the speakers.
9. Install the battery.
10. Install the base cover.
11. Follow the procedure in after working inside your computer.

3

Drivers and downloads

When troubleshooting, downloading or installing drivers it is recommended that you read the Dell Knowledge Based article, Drivers and Downloads FAQ SLN128938.

4

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: 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.

Boot menu

To initiate a one-time boot menu with a list of the valid boot devices for the system, press <F12> when the Dell logo is displayed. Diagnostics and BIOS Setup options are also in this menu. The devices that are listed on the boot menu depend on the bootable devices in the system. This menu is useful when you are attempting to boot to a particular device or to bring up the diagnostics for the system. Using the boot menu, do not change the boot order that is stored in the BIOS.

The options are:

- Legacy External Device Boot
  - Onboard NIC
- UEFI Boot:
  - UEFI: TOSHIBA MQ01ACF050
- Other Options:
  - BIOS Setup
  - Device Configuration
  - BIOS Flash Update
  - Diagnostics
  - Intel (R) Management Engine BIOS Extension (MEBx)
  - Change Boot Mode Settings

Boot Sequence

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

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

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

- Removable Drive (if available)
- STXXXX Drive

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

  NOTE: Choosing **Diagnostics**, displays the **SupportAssist** screen.

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

Navigation keys

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

Keys	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.
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.

System setup options

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

Table 3. System setup options—System information menu

Overview	
Lattitude 3320	
BIOS Version	Displays the BIOS version number.
Service Tag	Displays the Service Tag of the system.
Asset Tag	Displays the Asset Tag of the system.
Manufacture Date	Displays the manufacture date of the system.
Ownership Date	Displays the ownership date of the system.
Express Service Code	Displays the express service code of the system.
Ownership Tag	Displays the Ownership Tag of the system.
Signed Firmware Update	Displays whether the Signed Firmware Update is enabled on your system.
Battery Information	
Primary	Displays that battery is primary.
Battery Level	Displays the battery level of the system.
Battery State	Displays the battery state of the system.
Health	Displays the battery health of the system.
AC Adapter	Displays whether the AC adapter is connected or not.
Processor Information	
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.

Table 3. System setup options—System information menu

Overview	
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 Information	
Memory Installed	Displays the total system memory installed.
Memory Available	Displays the total system 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 Information	
Panel Type	Displays the Panel Type of the system.
Video Controller	Displays the video controller type of the system.
Video Memory	Displays the video memory information of the system.
Wi-Fi Device	Displays the wireless device information of the system.
Native Resolution	Displays the native resolution of the system.
Video BIOS Version	Displays the video BIOS version of the system.
Audio Controller	Displays the audio controller information of the system.
Bluetooth Device	Displays the Bluetooth device information of the system.

Table 4. System setup options—Boot Configuration menu

Boot Configuration	
Boot Sequence	
Boot mode	Displays the boot mode.
Boot Sequence	Displays the boot sequence.
Secure Digital (SD) Card Boot	Enable or disable the SD card read-only boot. By default, the **Secure Digital (SD) Card Boot** option is not enabled.
Secure Boot	
Enable Secure Boot	Enable or disable the secure boot feature. By default, the option is not enabled.
Secure Boot Mode	Enable or disable to change the secure boot mode options. By default, the **Deployed Mode** is enabled.
Expert Key Management	
Enable Custom Mode	Enable or disable custom mode. By default, the **custom mode** option is not enabled.
Custom Mode Key Management	Select the custom values for expert key management.

Table 5. System setup options—Integrated Devices menu

Table 5. System setup options—Integrated Devices menu

Integrated Devices	
Date/Time	Displays the current date in MM/DD/YYYY format and current time in HH:MM:SS AM/PM format.
Camera	Enables or disable the camera. By default, the **Enable Camera** option is selected
Audio	
Enable Audio	Enable or disable the integrated audio controller. By default, all the options are enabled.
USB Configuration	• Enable or disable booting from USB mass storage devices that are connected to external USB ports. By default, the **Enable External USB Ports** option is enabled. • Enable or disable booting from USB mass storage devices such as external hard drive, optical drive, and USB drive. By default, the **Enable USB Boot Support** option is enabled.
Disable USB4 PCIE Tunneling	Disable the USB4 PCIE Tunneling option. By default, the option is disabled.
Video/Power only on Type-C Ports	Enable or disable the Type-C port functionality to video or power only. By default, the **Video/Power only on Type-C Ports** option is disabled.

Table 6. System setup options—Storage menu

Storage	
SATA/NVMe Operation	
SATA/NVMe Operation	Set the operating mode of the integrated storage device controller. By default, the **RAID On** option is enabled.
Storage interface	
Port Enablement	This page allows you to enable the onboard drives. By default, the **M.2 PCIe SSD** option is enabled.
SMART Reporting	
Enable SMART Reporting	Enable or disable Self-Monitoring, Analysis, and Reporting Technology (SMART) during system startup. By default, the **Enable SMART Reporting** option is not enabled.
Drive Information	
M.2 PCIe SSD	
Type	Displays the M.2 PCIe SSD type information of the system.
Device	Displays the M.2 PCIe SSD device information of the system.
Enable MediaCard	
Secure Digital (SD) Card	Enable or disable the SD card. By default, the **Secure Digital (SD) Card** option is enabled.
Secure Digital (SD) Card Read-Only Mode	Enable or disable the SD card read-only mode. By default, the **Secure Digital (SD) Card Read-Only Mode** option is not enabled.

Table 7. System setup options—Display menu

Display	
Display Brightness	
Brightness on battery power	Enable to set screen brightness when the system is running on battery power.
Brightness on AC power	Enable to set screen brightness when the system is running on AC power.
EcoPower	Enable or disable EcoPower Feature in your panel. EcoPower can increase the battery life of your system by reducing the display brightness when appropriate. By default, **Enable EcoPower** option is enabled.
Full Screen Logo	Enable or disable full screen logo. By default, the option is not enabled.

Table 8. System setup options—Connection menu

Connection	
Wireless Device Enable	
WLAN	Enable or disable the internal WLAN device. By default, the option enabled.
Bluetooth	Enable or disable the internal Bluetooth device By default, the option enabled.
Enable UEFI Network Stack	Enable or disable UEFI Network Stack and controls the on-board LAN Controller. By default, the **Enable UEFI Network Stack** option is enabled.
HTTPs Boot Feature	
HTTPs Boot	Enable or disable the HTTPs Boot feature. By default, the **HTTPs Boot** option is disabled.

Table 9. System setup options—Power menu (continued)

Power	
Battery configuration	Enables the system to run on battery during peak power usage hours. Use the table **Custom Charge Start** and **Custom Charge Stop**, to prevent AC power usage between certain times of each day. By default, the **Adaptive** option is enabled.
Advanced Configuration	
Enable Advanced Battery Charge Configuration	Enable or disable the advanced battery charge configuration. By default, the **Enable Advanced Battery Charge Configuration** option is disabled.
Peak Shift	Enables the system to run on battery during peak power usage hours.
Enable Peak Shift	By default, the **Enable Peak Shift** option is disabled.
Thermal Management	Enables to cool the fan and processor heat management to adjust the system performance, noise, and temperature. By default, the **Optimized** option is enabled.
USB Wake Support	
Enable USB Wake Support	When enabled, the USB devices like a mouse or keyboard can be used to wake the system from Standby, Hibernate, and Power Off.

Table 9. System setup options—Power menu

Power	
	NOTE: This feature requires Deep Sleep Control to be disabled. **NOTE:** This feature is only functional when the AC power adapter is connected. If the AC power adapter is removed before Standby, the BIOS will remove power from all of the USB ports to conserve battery power. By default, the **Enable USB Wake Support** option is disabled.
Wake on Dell USB-C Dock	When enabled, connecting a Dell USB-C Dock will wake the system from Standby, Hibernate, and Power Off. By default, the **Wake on Dell USB-C Dock** option is enabled.
Block Sleep	Enables to block entering sleep (S3) mode in the operating system. By default, the **Block Sleep** option is disabled.
Lid Switch	
Enabled Lid Switch	Enable or disable the lid switch. By default, the **Enable Lid Switch** option is enabled.
Power On Lid Open	When enabled, allows the system to power up from the off state whenever the lid is opened. By default, the **Power On Lid Open** option is enabled.
Intel Speed Shift Technology	Enable or disable the Intel speed shift technology support. By default, the **Intel Speed Shift Technology** option is enabled.

Table 10. System setup options—Security menu

Security	
TPM 2.0 Security	
TPM 2.0 Security On	Allows you to enable or disable TPM visibility to operating system. By default, the **TPM 2.0 Security On** option is enabled.
Attestation Enable	Enables to control whether the Trusted Platform Module (TPM) Endorsement Hierarchy is available to the operating system. By default, the **Attestation Enable** option is enabled.
Key Storage Enable	Enables to control whether the Trusted Platform Module (TPM) Storage Hierarchy is available to the operating system. By default, the **Key Storage Enable** option is enabled.
SHA-256	When enabled, the BIOS and TPM will use the SHA-256 hash algorithm to extend measurements into the TPM PCRs during BIOS boot. By default, the **SHA-256** option is enabled.
Clear	Enables to clear the TPM owner information and returns the TPM to the default state. By default, the **Clear** option is disabled.
PPI Bypass for Clear Commands	Controls the TPM Physical Presence Interface (PPI). By default, the **PPI ByPass for clear Commands** option is disabled.
SMM Security Mitigation	Enable or disable additional UEFI SMM Security Mitigation protections. By default, the option is enabled.
Data Wipe on Next Boot	

Table 10. System setup options—Security menu

Security	
Start Data Wipe	Enable or disable the data wipe on next boot. By default, the **Start Data Wipe** option is disabled.
Absolute	Enable or disable or permanently disable the BIOS module interface of the optional Absolute Persistence Module service from Absolute software. By default, the option is enabled. **WARNING: The 'Permanently Disabled' option can only be selected once. When 'Permanently Disabled' is selected, Absolute Persistence cannot be re-enabled. No further changes to the Enable/Disable states are allowed.** **NOTE:** The Enable/Disable options will be unavailable while Computrace is in the activated state.
UEFI Boot Path Security	Controls whether the system will prompt the user to enter the admin password (if set) when booting to a UEFI boot path device from the F12 boot menu. By default, the **Always Except Internal HDD** option is enabled.

Table 11. System setup options—Passwords menu

Passwords	
Admin Password	Set, change, or delete the administrator password.
System Password	Set, change, or delete the system password.
NVMe SSD0	Set, change, or delete the NVMe SSD0 password.
Password Configuration	
Upper Case Letter	Reinforces password must have at least one upper case letter. By default, the option is disabled.
Lower Case Letter	Reinforces password must have at least one lower case letter. By default, the option is disabled.
Digit	Reinforces password must have at least one digit number. By default, the option is disabled.
Special Character	Reinforces password must have at least one special character. By default, the option is disabled.
Minimum Characters	Set the minimum characters allowed for password.
Password Bypass	When enabled, this always prompts for system and internal hard drive passwords when powered on from the off state. By default, the **Disabled** option is selected.
Password Changes	
Enable Non-Admin Password Changes	Enable or disable to change system and hard drive password without the need for admin password. By default, the option is enabled.
Admin Setup Lockout	
Enable Admin Setup Lockout	Enables administrators control over how their users can or cannot access BIOS setup. By default, the option is disabled.

Table 11. System setup options—Passwords menu

Passwords	
Master Password Lockout	
Enable Master Password Lockout	When enabled, this disables the master password support. By default, the option is disabled.
Allow Non-Admin PSID Revert	
Enable Allow Non-Admin PSID Revert	Controls access to the Physical Security ID (PSID) revert of NVMe hard-drives from the Dell Security Manager prompt. By default, the option is disabled.

Table 12. System setup options—Update, Recovery menu

Update, Recovery	
UEFI Capsule Firmware Updates	Enable or disable BIOS updates through UEFI capsule update packages. **NOTE:** Disabling this option will block BIOS updates from services such as Microsoft Windows Update and Linux Vendor Firmware Service (LVFS). By default, the option is enabled.
BIOS Recovery from Hard Drive	Enables the user to recover from certain corrupted BIOS conditions from a recovery file on the user primary hard drive or an external USB key. By default, the option is enabled. **NOTE:** BIOS Recovery from Hard Drive is not available for self-encrypting drives (SED).
BIOS Downgrade	
Allow BIOS Downgrade	This field controls the flashing of the system firmware to previous revisions. By default, the option is enabled.
SupportAssist OS Recovery	Enable or disable the boot flow for SupportAssist OS Recovery tool in the event of certain system errors. By default, the option is enabled.
BIOSConnect	Enable or disable cloud Service operating system recovery if the main operating system fails to boot with the number of failures equal to or greater than the value specified by the Auto operating system Recovery Threshold setup option and local Service operating system does not boot or is not installed. By default, the option is enabled.
Dell Auto operating system Recovery Threshold	Controls the automatic boot flow for SupportAssist System Resolution Console and for Dell operating system Recovery Tool. By default, the threshold value is set to 2.

Table 13. System setup options—System Management menu

System Management	
Service Tag	Displays the Service Tag of the system.
Asset Tag	Create a system Asset Tag.
AC Behavior	
Wake on AC	Enable or disable the wake on AC option. By default, the option is disabled.

Table 13. System setup options—System Management menu

System Management	
Auto on Time	Enable to set the system to turn on automatically every day or on a preselected date and time. This option can be configured only if the Auto On Time is set to Everyday, Weekdays, or Selected Days. By default, the option is disabled.

Table 14. System setup options—Keyboard menu

Keyboard	
Numlock Enable	Allows you to enable or disable the Numlock function when the system boots. By default, the option **Fn Lock Options** is enabled.
Fn Lock Options	By default, the Fn lock option is enabled.
Lock Mode	By default, the **Lock Mode Secondary** option is enabled. With this option, the F1-F2 keys scan the code for their secondary functions.

Table 15. System setup options—Pre-boot Behavior menu

Pre-boot Behavior	
Adapter Warnings	
Enable Adapter Warnings	Enable or disable the warning messages during boot when the adapters with less power capacity are detected. By default, the option is enabled.
Warning and Errors	Enable or disable the action to be done when a warning or error is encountered. By default, the **Prompt on Warnings and Errors** option is enabled.
USB-C Warnings	
Enable Dock Warning Messages	By default, the option is enabled.
Fastboot	Allows you to configure the speed of the UEFI boot process. By default, the **Minimal** option is enabled.
Extend BIOS POST Time	Set the BIOS POST load time. By default, the **0 seconds** option is enabled.

Table 16. System setup options—Virtualization menu (continued)

Virtualization	
Intel Virtualization Technology	
Enable Intel Virtualization Technology (VT)	When enabled, the system will be able to run a Virtual Machine Monitor (VMM). By default, the option is enabled.
VT for Direct I/O	When enabled, the system will be able to perform Virtualization Technology for Direct I/O (VT-d). By default, the option is enabled.
Intel Trusted Execution Technology (TXT)	
Enable Intel Trusted Execution Technology (TXT)	Specifies whether a measured Virtual Machine Monitor (MVMM) can use the additional hardware capabilities that are provided by Intel Trusted Execution Technology. The following must be enabled in order to enable Intel TXT. ● Trusted Platform Module (TPM)

Table 16. System setup options—Virtualization menu

Virtualization	
	• Intel Hyper-Threading • All CPU cores (Multi-Core Support) • Intel Virtualization Technology • Intel VT for Direct I/O By default, the option is disabled.

Table 17. System setup options—Performance menu

Performance	
Multi Core Support	
Active Cores	Enables to change the number of CPU cores available to the operating system. By default, the **All Cores** option is enabled.
Intel SpeedStep	
Enable Intel SpeedStep Technology	Enables the system to dynamically adjust processor voltage and core frequency, decreasing average power consumption and heat production. By default, the option is enabled.
C-States Control	
Enable C-State Control	Enable the ability of the CPU to enter and exit low power state. When disabled, it disabled all C-states. When enabled, it enabled all C-states that the chipset or platform allows. By default, the option is enabled.
Intel Turbo Boost Technology	
Enable Intel Turbo Boost Technology	Enable or disable the Intel TurboBoost mode of the processor. By default, the option is enabled.
Intel Hyper-Threading Technology	
Enable Intel Hyper-Threading Technology	Enable or disable Hyper-Threading in the processor. By default, the option is enabled.
Dynamic Tuning:Machine Learning	
Enable Dynamic Tuning:Machine Learning	Enables the operating system capability to enhance dynamic power tuning capabilities based on detected workloads. By default, the option is disabled.

Table 18. System setup options—System Logs menu

System Logs	
BIOS Event Log	
Clear Bios Event Log	Displays BIOS events. By default, the **Keep Log** option is enabled.
Thermal Event Log	
Clear Thermal Event Log	Displays Thermal events. By default, the **Keep Log** option is enabled.
Power Event Log	
Clear Power Event Log	Displays power events. By default, the **Keep Log** option is enabled.

Table 18. System setup options—System Logs menu

System Logs	
License Information	Displays the license information of the system.

Updating the BIOS in Windows

Prerequisites

It is recommended to update your BIOS (System Setup), when you replace the system board or if an update is available. For laptops, ensure that your computer battery is fully charged and connected to a power outlet.

About this task

NOTE: If BitLocker is enabled, it must be suspended before updating the system BIOS, and then re-enabled after the BIOS update is completed.

Steps

1. Restart the computer.
2. Go to www.dell.com/support.
   - Enter the **Service Tag** or **Express Service Code** and click **Search**.
   - Click **Drivers & Downloads**.
   - Click **Detect Drivers** and follow the on-screen instructions.
3. If you are unable to detect or find the Service Tag, click **Browse all products**.
4. Choose the appropriate category to reach the product page.
5. Select your computer model, followed by its model number.
   NOTE: The **Product Support** page of your computer appears.
6. Click **Drivers & Downloads**.
   NOTE: The Drivers & Downloads section is displayed.
7. Click **Category**, and select **BIOS** from the drop-down list.
8. Click the toggle button **Show downloads for only THIS PC XXXXXXX**.
   NOTE: XXXXXXX denotes the Service Tag.
9. Select the latest BIOS file and click **Download**.
10. After the download is complete, browse to the folder where you saved the system BIOS executable file.
11. Double-click the system BIOS executable file.
    NOTE: Follow the on-screen instructions.

Updating BIOS on systems with BitLocker enabled

CAUTION: If BitLocker is not suspended before updating the BIOS, the next time you reboot the system it will not recognize the BitLocker key. You will then be prompted to enter the recovery key to progress and the system will ask for this on each reboot. If the recovery key is not known this can result in data loss or an unnecessary operating system re-install. For more information on this subject, see Knowledge Article: https://www.dell.com/support/article/sln153694

Updating your system BIOS using a USB flash drive

About this task

If the computer cannot load into Windows but there is still a need to update the BIOS, download the BIOS file using another computer and save it to a bootable USB flash drive.

NOTE: You must use a bootable USB flash drive. For more information, see the knowledge base article SLN143196.

Steps

1. Download the BIOS update .exe file to another computer.
2. Copy the .exe file onto the bootable USB flash drive.
3. Insert the USB flash drive into the computer that requires the BIOS update.
4. Restart the computer and press F12 when the Dell logo appears to display the One Time Boot Menu.
5. Using arrow keys, select **USB Storage Device** and press Enter.
6. The computer restarts to a Diag C:\> prompt.
7. Run the file by typing the complete filename and press Enter.
8. The BIOS Update Utility is displayed. Follow the on-screen instructions.

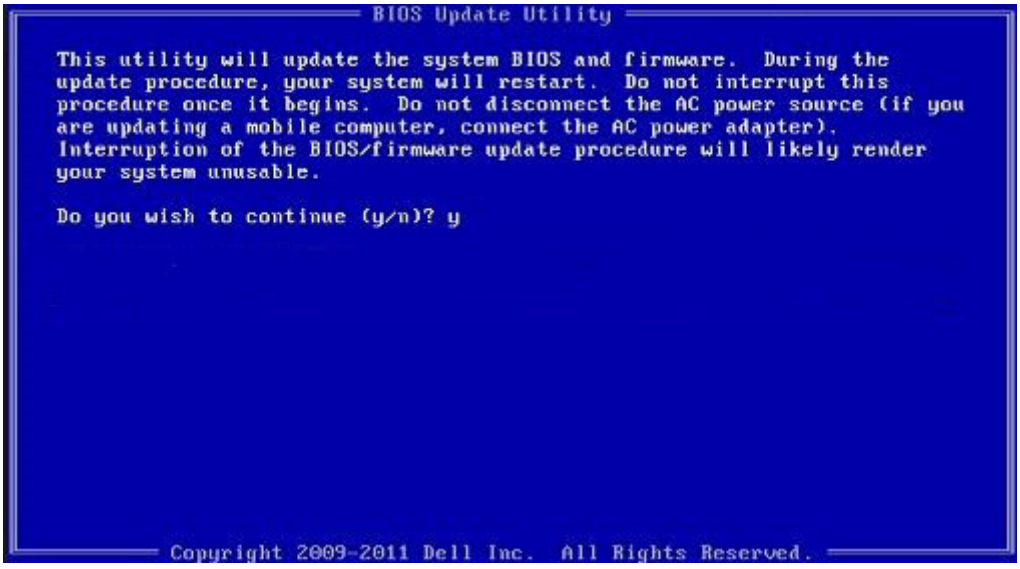


Figure 3. DOS BIOS Update Screen

System and setup password

Table 19. System and setup password

Password type	Description
System password	Password that you must enter to log on 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 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

Prerequisites

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

About this task

To enter the system setup, press F2 immediately after a power-on or reboot.

Steps

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:
   - A password can have up to 32 characters.
   - The password can contain the numbers 0 through 9.
   - Only lower case letters are valid, upper case letters are not allowed.
   - Only the following special characters are allowed: space, (”), (+), (,), (-), (.), (/), (;), ([), (\), (]), (`).
3. Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
4. Press **Esc** and a message prompts you to save the changes.
5. Press **Y** to save the changes.
   The computer reboots.

Deleting or changing an existing system setup password

Prerequisites

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

About this task

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

Steps

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

   NOTE: If you change the System and/or Setup password, re enter the new password when prompted. If you delete the System and 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.

5

Troubleshooting

Built-in self-test (BIST)

About this task

There are three different types of BIST to check the performance of display, power rail, and system board. These tests are important to evaluate if an LCD or system board needs a replacement.

1. M-BIST: M-BIST is the system board built-in self-test diagnostics tool that improves the diagnostics accuracy of system board embedded controller (EC) failures. M-BIST must be manually initiated before POST and can also run on a dead system .
2. L-BIST: L-BIST is an enhancement to the single LED error code diagnostics and is automatically initiated during POST.
3. LCD-BIST: LCD BIST is an enhanced diagnostic test that is introduced through Preboot System Assessment (PSA) on legacy systems.

Table 20. Functions

	M-BIST	L-BIST
Purpose	Evaluates the health condition of the system board.	Checks if the system board is supplying power to the LCD by performing an LCD Power Rail test.
Trigger	Press the <M> key and the power button.	Integrated into the single LED error code diagnostics. Automatically initiated during POST.
Indicator of fault	Battery LED light with **Solid Amber**	Battery LED error code of [2,8] blinks Amber x2, then pause, then blinks White x8.
Repair instruction	Indicates a problem with the system board.	Indicates a problem with the system board.

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 you see color bars on the LCD (screen).
5. The screen will display multiple color bars and change colors on the entire screen to red, green, and blue.
6. Carefully inspect the screen for abnormalities.
7. Press **Esc** key to exit.

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

Dell SupportAssist Pre-boot System Performance Check diagnostics

About this task

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.

Diagnostic LED behavior

Table 21. Diagnostic LED behavior

Blinking pattern		Problem description	Suggested resolution
Amber	White		
1	1	TPM detection failure	Replace the system board.
1	2	Unrecoverable SPI Flash Failure	Replace the system board.
1	5	EC unable to program i-Fuse	Replace the system board.

Table 21. Diagnostic LED behavior

Blinking pattern		Problem description	Suggested resolution
Amber	**White**		
1	6	Generic catch-all for ungraceful EC code flow errors	Disconnect all power source (AC, battery, coin cell) and drain flea power by pressing & holding down power button.
2	1	CPU failure	• Run the Dell Support Assist/Dell Diagnostics tool. • If problem persists, replace the system board.
2	2	System board failure (included BIOS corruption or ROM error)	• Flash latest BIOS version • If problem persists, replace the system board.
2	3	No memory/RAM detected	• Confirm that the memory module is installed properly. • If problem persists, replace the memory module.
2	4	Memory/RAM failure	• Reset and swap memory modules amongst the slots. • If problem persists, replace the memory module.
2	5	Invalid memory installed	• Reset and swap memory modules amongst the slots. • If problem persists, replace the memory module.
2	6	System board/Chipset Error	Replace the system board.
2	7	LCD failure (SBIOS message)	Replace the LCD module.
2	8	LCD failure (EC detection of power rail failure)	Replace the system board.
3	1	CMOS battery failure	• Reset the CMOS battery connection. • If problem persists, replace the RTS battery.
3	2	PCI or Video card/chip failure	Replace the system board.
3	3	BIOS Recovery image not found	• Flash latest BIOS version • If problem persists, replace the system board.
3	4	BIOS Recovery image found but invalid	• Flash latest BIOS version • If problem persists, replace the system board.
3	5	Power rail failure	Replace the system board.

Table 21. Diagnostic LED behavior

Blinking pattern		Problem description	Suggested resolution
Amber	White		
3	6	Flash corruption detected by SBIOS.	Replace the system board.
3	7	Timeout waiting on ME to reply to HECI message.	Replace the system board.

NOTE: Blinking 3-3-3 LEDs on Lock LED (Caps-Lock or Nums-Lock), Power button LED (without Fingerprint reader), and Diagnostic LED indicates failure to provide input during LCD panel test on Dell SupportAssist Pre-boot System Performance Check diagnostics.

Diagnostic error messages

Table 22. Diagnostic error messages (continued)

Error messages	Description
AUXILIARY DEVICE FAILURE	The touchpad or external mouse may be faulty. For an external mouse, check the cable connection. Enable the **Pointing Device** option in the System Setup program.
BAD COMMAND OR FILE NAME	Ensure that you have spelled the command correctly, put spaces in the proper place, and used the correct path name.
CACHE DISABLED DUE TO FAILURE	The primary cache internal to the microprocessor has failed. **Contact Dell**
CD DRIVE CONTROLLER FAILURE	The optical drive does not respond to commands from the computer.
DATA ERROR	The hard drive cannot read the data.
DECREASING AVAILABLE MEMORY	One or more memory modules may be faulty or improperly seated. Reinstall the memory modules or, if necessary, replace them.
DISK C: FAILED INITIALIZATION	The hard drive failed initialization. Run the hard drive tests in **Dell Diagnostics**.
DRIVE NOT READY	The operation requires a hard drive in the bay before it can continue. Install a hard drive in the hard drive bay.
ERROR READING PCMCIA CARD	The computer cannot identify the ExpressCard. Reinsert the card or try another card.
EXTENDED MEMORY SIZE HAS CHANGED	The amount of memory recorded in non-volatile memory (NVRAM) does not match the memory module installed in the computer. Restart the computer. If the error appears again, **Contact Dell**
THE FILE BEING COPIED IS TOO LARGE FOR THE DESTINATION DRIVE	The file that you are trying to copy is too large to fit on the disk, or the disk is full. Try copying the file to a different disk or use a larger capacity disk.
A FILENAME CANNOT CONTAIN ANY OF THE FOLLOWING CHARACTERS: \ / : * ? " < > | -	Do not use these characters in filenames.
GATE A20 FAILURE	A memory module may be loose. Reinstall the memory module or, if necessary, replace it.
GENERAL FAILURE	The operating system is unable to carry out the command. The message is usually followed by specific information.

Table 22. Diagnostic error messages (continued)

Error messages	Description
	For example, `Printer out of paper. Take the appropriate action.`
HARD-DISK DRIVE CONFIGURATION ERROR	The computer cannot identify the drive type. Shut down the computer, remove the hard drive, and boot the computer from an optical drive. Then, shut down the computer, reinstall the hard drive, and restart the computer. Run the **Hard Disk Drive** tests in **Dell Diagnostics**.
HARD-DISK DRIVE CONTROLLER FAILURE 0	The hard drive does not respond to commands from the computer. Shut down the computer, remove the hard drive, and boot the computer from an optical drive. Then, shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the **Hard Disk Drive** tests in **Dell Diagnostics**.
HARD-DISK DRIVE FAILURE	The hard drive does not respond to commands from the computer. Shut down the computer, remove the hard drive, and boot the computer from an optical drive. Then, shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the **Hard Disk Drive** tests in **Dell Diagnostics**.
HARD-DISK DRIVE READ FAILURE	The hard drive may be defective. Shut down the computer, remove the hard drive, and boot the computer from an optical. Then, shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the **Hard Disk Drive** tests in **Dell Diagnostics**.
INSERT BOOTABLE MEDIA	The operating system is trying to boot to non-bootable media, such as an optical drive. Insert bootable media.
INVALID CONFIGURATION INFORMATION-PLEASE RUN SYSTEM SETUP PROGRAM	The system configuration information does not match the hardware configuration. The message is most likely to occur after a memory module is installed. Correct the appropriate options in the system setup program.
KEYBOARD CLOCK LINE FAILURE	For external keyboards, check the cable connection. Run the **Keyboard Controller** test in **Dell Diagnostics**.
KEYBOARD CONTROLLER FAILURE	For external keyboards, check the cable connection. Restart the computer, and avoid touching the keyboard or the mouse during the boot routine. Run the **Keyboard Controller** test in **Dell Diagnostics**.
KEYBOARD DATA LINE FAILURE	For external keyboards, check the cable connection. Run the **Keyboard Controller** test in **Dell Diagnostics**.
KEYBOARD STUCK KEY FAILURE	For external keyboards or keypads, check the cable connection. Restart the computer, and avoid touching the keyboard or keys during the boot routine. Run the **Stuck Key** test in **Dell Diagnostics**.
LICENSED CONTENT IS NOT ACCESSIBLE IN MEDIADIRECT	Dell MediaDirect cannot verify the Digital Rights Management (DRM) restrictions on the file, so the file cannot be played.
MEMORY ADDRESS LINE FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory module or, if necessary, replace it.
MEMORY ALLOCATION ERROR	The software you are attempting to run is conflicting with the operating system, another program, or a utility. Shut down the computer, wait for 30 seconds, and then restart it. Run the program again. If the error message still appears, see the software documentation.

Table 22. Diagnostic error messages

Error messages	Description
MEMORY DOUBLE WORD LOGIC FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory module or, if necessary, replace it.
MEMORY ODD/EVEN LOGIC FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory module or, if necessary, replace it.
MEMORY WRITE/READ FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory module or, if necessary, replace it.
NO BOOT DEVICE AVAILABLE	The computer cannot find the hard drive. If the hard drive is your boot device, ensure that the drive is installed, properly seated, and partitioned as a boot device.
NO BOOT SECTOR ON HARD DRIVE	The operating system may be corrupted, **Contact Dell**.
NO TIMER TICK INTERRUPT	A chip on the system board may be malfunctioning. Run the **System Set** tests in **Dell Diagnostics**.
NOT ENOUGH MEMORY OR RESOURCES. EXIT SOME PROGRAMS AND TRY AGAIN	You have too many programs open. Close all windows and open the program that you want to use.
OPERATING SYSTEM NOT FOUND	Reinstall the operating system. If the problem persists, **Contact Dell**.
OPTIONAL ROM BAD CHECKSUM	The optional ROM has failed. **Contact Dell**.
SECTOR NOT FOUND	The operating system cannot locate a sector on the hard drive. You may have a defective sector or corrupted File Allocation Table (FAT) on the hard drive. Run the Windows error-checking utility to check the file structure on the hard drive. See **Windows Help and Support** for instructions (click **Start** > **Help and Support**). If a large number of sectors are defective, back up the data (if possible), and then format the hard drive.
SEEK ERROR	The operating system cannot find a specific track on the hard drive.
SHUTDOWN FAILURE	A chip on the system board may be malfunctioning. Run the **System Set** tests in **Dell Diagnostics**. If the message reappears, **Contact Dell**.
TIME-OF-DAY CLOCK LOST POWER	System configuration settings are corrupted. Connect your computer to an electrical outlet to charge the battery. If the problem persists, try to restore the data by entering the System Setup program, then immediately exit the program. If the message reappears, **Contact Dell**.
TIME-OF-DAY CLOCK STOPPED	The reserve battery that supports the system configuration settings may require recharging. Connect your computer to an electrical outlet to charge the battery. If the problem persists, **Contact Dell**.
TIME-OF-DAY NOT SET-PLEASE RUN THE SYSTEM SETUP PROGRAM	The time or date stored in the system setup program does not match the system clock. Correct the settings for the **Date and Time** options.
TIMER CHIP COUNTER 2 FAILED	A chip on the system board may be malfunctioning. Run the **System Set** tests in **Dell Diagnostics**.
UNEXPECTED INTERRUPT IN PROTECTED MODE	The keyboard controller may be malfunctioning, or a memory module may be loose. Run the **System Memory** tests and the **Keyboard Controller** test in **Dell Diagnostics** or **Contact Dell**.
X:\ IS NOT ACCESSIBLE. THE DEVICE IS NOT READY	Insert a disk into the drive and try again.

System error messages

Lentelė 23. System error messages

System message	Description
`Alert! Previous attempts at booting this system have failed at checkpoint [nnnn]. For help in resolving this problem, please note this checkpoint and contact Dell Technical Support`	The computer failed to complete the boot routine three consecutive times for the same error.
`CMOS checksum error`	RTC is reset, **BIOS Setup** default has been loaded.
`CPU fan failure`	CPU fan has failed.
`System fan failure`	System fan has failed.
`Hard-disk drive failure`	Possible hard disk drive failure during POST.
`Keyboard failure`	Keyboard failure or loose cable. If reseating the cable does not solve the problem, replace the keyboard.
`No boot device available`	No bootable partition on hard disk drive, the hard disk drive cable is loose, or no bootable device exists. • If the hard drive is your boot device, ensure that the cables are connected and that the drive is installed properly and partitioned as a boot device. • Enter system setup and ensure that the boot sequence information is correct.
`No timer tick interrupt`	A chip on the system board might be malfunctioning or motherboard failure.
`NOTICE - Hard Drive SELF MONITORING SYSTEM has reported that a parameter has exceeded its normal operating range. Dell recommends that you back up your data regularly. A parameter out of range may or may not indicate a potential hard drive problem`	S.M.A.R.T error, possible hard disk drive failure.

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 10 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/support.

Real-Time Clock (RTC Reset)

The Real Time Clock (RTC) reset function allows you or the service technician to recover Dell Inspiron, systems from No POST/No Power/No Boot situations. The legacy jumper enabled RTC reset has been retired on these models.

Start the RTC reset with the system powered off and connected to AC power. Press and hold the power button for thirty (30) seconds. The system RTC Reset occurs after you release the power button.

Flashing the BIOS

About this task

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

Follow these steps to flash the BIOS:

Steps

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

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

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

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.

WiFi power cycle

Apie šia užduoti

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:

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

Veiksmai

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.

Flea power release

About this task

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

Steps

1. Turn off your computer.
2. Disconnect the power adapter from your computer.
3. Press and hold the power button for 15 seconds to drain the flea power.
4. Connect the power adapter to your computer.
5. Turn on your computer.

6

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 `Contact Support`, 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	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.