Dell 14S

DS14270

Service Manual

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DELL Technologies

Notes, cautions, and warnings

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

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

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

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1

Working inside your computer

Safety instructions

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

WARNING: Before working inside your computer, read the safety information that is shipped with your computer. For more safety best practices, see Dell Regulatory Compliance Home Page.

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

WARNING: For laptops, discharge the battery completely before removing it. Disconnect the AC power adapter from the computer and operate the computer solely on battery power—the battery is fully discharged when the computer no longer turns on when the power button

CAUTION: To avoid damaging the computer, ensure that the work surface is flat, dry, and clean.

CAUTION: You should only perform troubleshooting and repairs as authorized or directed by the Dell technical support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

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

CAUTION: To avoid damaging the components and cards, handle them by their edges, and avoid touching the pins and the contacts.

CAUTION: When you disconnect a cable, pull it by its connector or its pull tab, not the cable itself. Some cables have connectors with locking tabs or thumbscrews that you must disengage before disconnecting the cable. When disconnecting cables, keep them evenly aligned to avoid bending the connector pins. When connecting cables, ensure that the connector on the cable is correctly oriented and aligned with the port.

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

CAUTION: Exercise caution when handling rechargeable Li-ion batteries in laptops. Swollen batteries should not be used and must be replaced and disposed properly.

Before working inside your computer

About this task

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

Steps

1. Save and close all open files and exit all open applications.
2. Shut down your computer. For Windows operating system, click **Start** > **Power** > **Shut down**.

   NOTE: If you are using a different operating system, see the documentation of your operating system for shut-down instructions.

3. Turn off all the attached peripherals.
4. Disconnect your computer from the electrical outlet.
5. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.

   CAUTION: To disconnect a network cable, unplug the cable from your computer.

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

Safety precautions

This section details the primary steps to be followed before disassembling any device or component.

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

- Turn off the computer and all attached peripherals.
- Disconnect the computer from AC power.
- Disconnect all network cables and peripherals from the computer.
- Use an ESD field service kit when working inside your computer to avoid electrostatic discharge (ESD) damage.
- Place the removed component on an anti-static mat after removing it from the computer.
- Press and hold the power button for 15 seconds to discharge the residual power in the system board.

Bonding

Bonding is a method for connecting two or more grounding conductors to the same electrical potential. This is done by using 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 nonmetal surface. Ensure that the wrist strap is secure and in full contact with your skin. Remove all jewelry, watches, bracelets, or rings before grounding 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 modules, and system boards. A slight charge 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.

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 module that has received a static shock and immediately generates a "No POST/No Video" symptom with a beep code that is 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 memory module receives a static shock, but the tracing is merely weakened and does not immediately produce outward symptoms that are 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, and so on.

Intermittent failures that are also called latent or "walking wounded" are difficult to detect and troubleshoot.

Perform the following steps to prevent ESD damage:

- Use a wired ESD wrist strap that is properly grounded. Wireless anti-static straps 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, use the anti-static wrist strap to discharge the static electricity from your body.

NOTE: You can protect against ESD and discharge static electricity from your body by touching a metal-grounded object before you interact with anything electronic, for example, an unpainted metal surface on your computer's I/O panel. When connecting a peripheral (including handheld digital assistants) to your computer, you should always ground

both yourself and the peripheral before connecting it to the computer. In addition, as you work inside the computer, periodically touch a metal-grounded object to remove any static charge that your body may have accumulated.

For more information about the wrist strap and ESD wrist strap tester, see Components of an ESD Field Service Kit.

- 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.

CAUTION: It is critical to keep ESD-sensitive devices away from internal parts that are insulated and often highly charged, such as plastic heat sink casings.

Working environment

Before the ESD Field Service kit is deployed, conduct an evaluation of the site to ensure proper setup and readiness. For example, deploying the kit for a server environment is different than for a desktop or laptop environment. Servers are typically installed in a rack within a data center; desktops or laptops 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 computer 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 component 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 anti-static mat, in the computer, or inside an ESD bag.

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 anti-static mat and to any bare metal on the computer being worked on. Once deployed properly, service parts can be removed from the ESD bag and placed directly on the anti-static mat. ESD-sensitive items are safe in your hand, on the anti-static mat, in the computer, or inside an ESD bag.
- **Wrist Strap and Bonding Wire** – If an anti-static mat is not being used, the wrist strap and bonding wire should be connected directly between your wrist and an exposed metal part of the hardware. If you are using an anti-static mat, connect the wrist strap and bonding wire to the anti-static mat to ensure protection for any hardware placed on the mat. The physical connection of the wrist strap and bonding wire between your skin, the anti-static mat, and the hardware is known as bonding. Use only Field Service kits with a wrist strap, anti-static mat, and bonding wire. Never use wireless wrist straps. Always be cautious 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 an ESD strap are prone to damage over time. When using an unmonitored ESD kit, it is recommended to test the wrist strap regularly—ideally before each service session, and at a minimum, once per week. The most reliable method for testing is with a wrist strap tester. To perform the test, connect the bonding wire of the wrist strap to the tester while wearing the strap. Press the test button to initiate the check. A green LED indicates a successful test, while a red LED and audible alarm signal a failure.

NOTE: It is recommended to always use the traditional wired ESD grounding wrist strap and protective anti-static mat when servicing Dell products. In addition, it is critical to keep sensitive parts separate from all insulator parts while servicing the computer.

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

About this task

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

Steps

1. Replace all screws and ensure that no stray screws remain inside your computer.
2. Connect any external devices, peripherals, or cables you removed before working on your computer.
3. Replace any media cards, discs, or any other components 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.

Information on repairability for Québec - From Dell Canada Inc. - to Quebec consumers

Dell does not guarantee the availability of replacement parts, repair services, or information necessary for maintenance or repair.

BitLocker

When updating the BIOS on a computer with BitLocker enabled, consider the following precautions.

CAUTION: If BitLocker is not suspended before updating the BIOS, the BitLocker key is not recognized the next time you reboot the computer. You will then be prompted to enter the recovery key to proceed, and the computer displays a prompt for the recovery key on each reboot. Failure to provide the recovery key can result in data loss or an operating system reinstall. For more information, refer Updating the BIOS on Dell systems with BitLocker enabled.

The installation of the following components triggers BitLocker:

- Hard disk drive or solid state drive
- System board

Recommended tools

The procedures in this document may require the following tools:

- Phillips screwdriver #0
- Plastic scribe

Screw list

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

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

NOTE: Screw color may vary depending on the configuration ordered.

Table 1. Screw list

Component	Screw type	Quantity	Screw torque strength	Screw image
Base cover	M2x4.5	4	1.8 kgf-cm to 2.2 kgf-cm	
	Captive screw **NOTE:** Screws are part of the base cover and can only be loosened.	2	1.8 kgf-cm - 2.2 kgf-cm	
Battery	M2x4	5	1.8 kgf-cm - 2.2 kgf-cm	
Fan	M2x4	3	1.8 kgf-cm - 2.2 kgf-cm	
USB Type-C bracket	M2x4	3	1.8 kgf-cm - 2.2 kgf-cm	
2230 Solid-state drive	M1.6x1.8	2	1.2 kgf-cm - 1.6 kgf-cm	
2280 Solid-state drive	M1.6x1.8	1	1.2 kgf-cm - 1.6 kgf-cm	
I/O board	M2x4	1	1.8 kgf-cm - 2.2 kgf-cm	
Display assembly	M2x5	6	1.8 kgf-cm - 2.2 kgf-cm	
WLAN antenna bracket	M2x4	1	1.2 kgf-cm - 1.6 kgf-cm	
System board	M1.6x1.8	5	1.2 kgf-cm - 1.6 kgf-cm	
Touchpad	M1.6x1.8	6	1.2 kgf-cm - 1.6 kgf-cm	
Touchpad bracket	M1.6x3.0	2	1.2 kgf-cm - 1.6 kgf-cm	

Major components of Dell 14S DS14270

The following image shows the major components of Dell 14S DS14270.

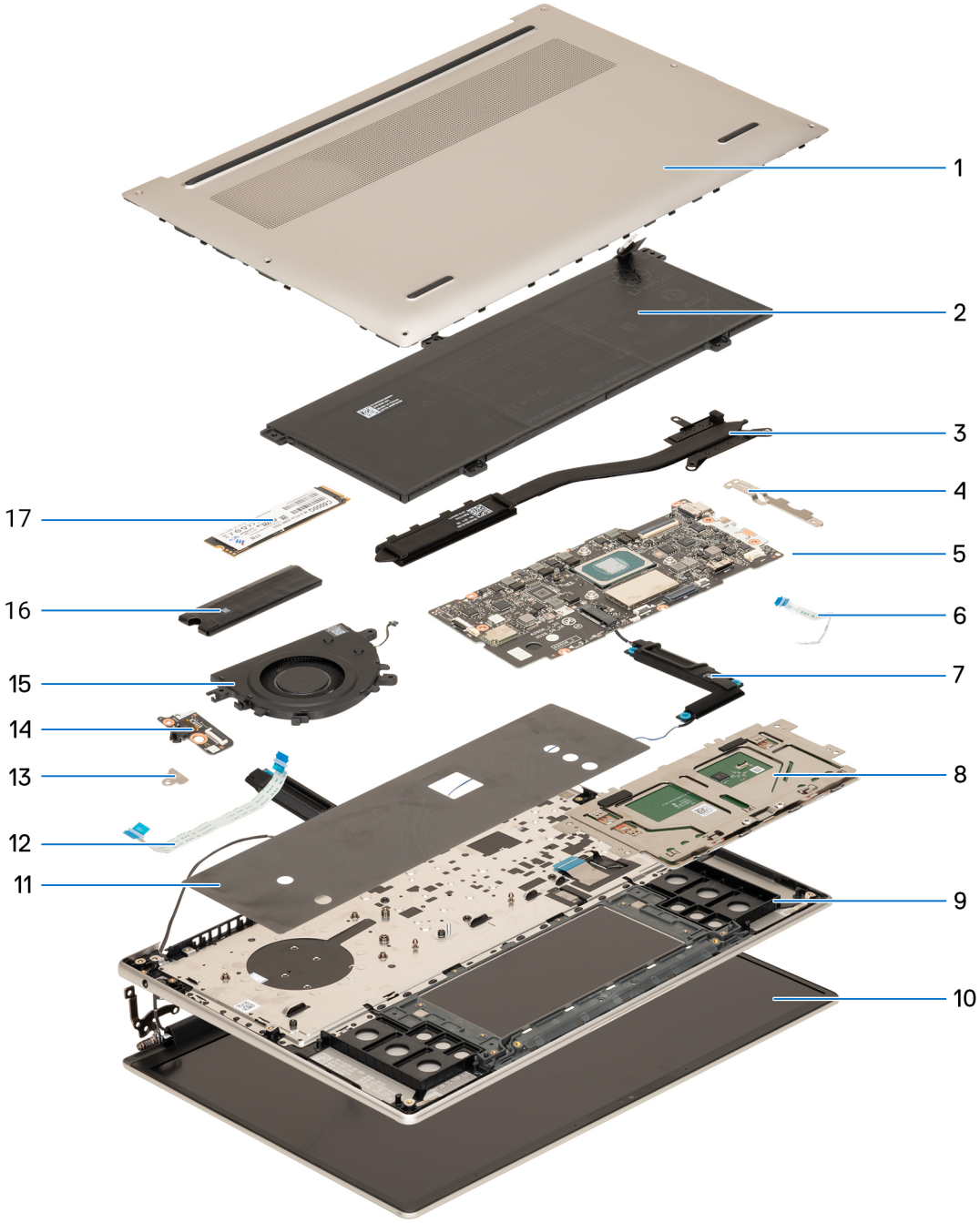


Figure 1. Major components of Dell 14S DS14270

1. Base cover
2. Battery
3. Heat sink
4. USB Type-C bracket
5. System board
6. Touchpad cable
7. Speakers
8. Touchpad
9. Palm rest and keyboard assembly
10. Display assembly
11. Mylar sheet

12. I/O-board cable
13. WLAN antenna bracket
14. I/O board
15. Fan
16. Solid state drive EMC pouch
17. M.2 2280 solid state drive

Customer Replaceable Units (CRUs) and Field Replaceable Units (FRUs) list

The replaceable components in Dell 14S DS14270 are either Customer Replaceable Units (CRUs) or Field Replaceable Units (FRUs).

CAUTION: CRUs may be replaced by the customer, following the safety precautions and replacement procedures.

CAUTION: FRUs should be replaced by an authorized service technician, who is a trained technical repair specialist.

CAUTION: Replacement of FRUs by persons other than authorized service technicians may result in damage to the computer or data loss.

NOTE: Damages resulting from improper replacement or from failure to follow instructions are not covered by your warranty. Consider having a trained technical repair specialist perform replacements of FRU components.

Table 2. CRU and FRU list

Customer Replaceable Unit (CRU)	Field Replaceable Unit (FRU)
Base cover	Solid state drive
Battery	Solid state drive EMC pouch
	WLAN card bracket
	Fan
	Heatsink
	Speakers
	Touchpad
	I/O board
	I/O-board cable
	Display assembly
	System board
	Palm rest and keyboard assembly

2

Removing and installing Customer Replaceable Units (CRUs)

The replaceable components in this chapter are Customer Replaceable Units (CRUs).

CAUTION: CRUs may be replaced by the customer, following the safety precautions and replacement procedures.

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

Base cover

Removing the base cover

Prerequisites

1. Follow the procedure in Before working inside your computer.

CAUTION: If the computer does not turn on, does not enter Service Mode, or does not support Service mode, proceed to disconnect the battery cable.

About this task

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



Figure 2. Loosen the captive screws and remove the base cover screws

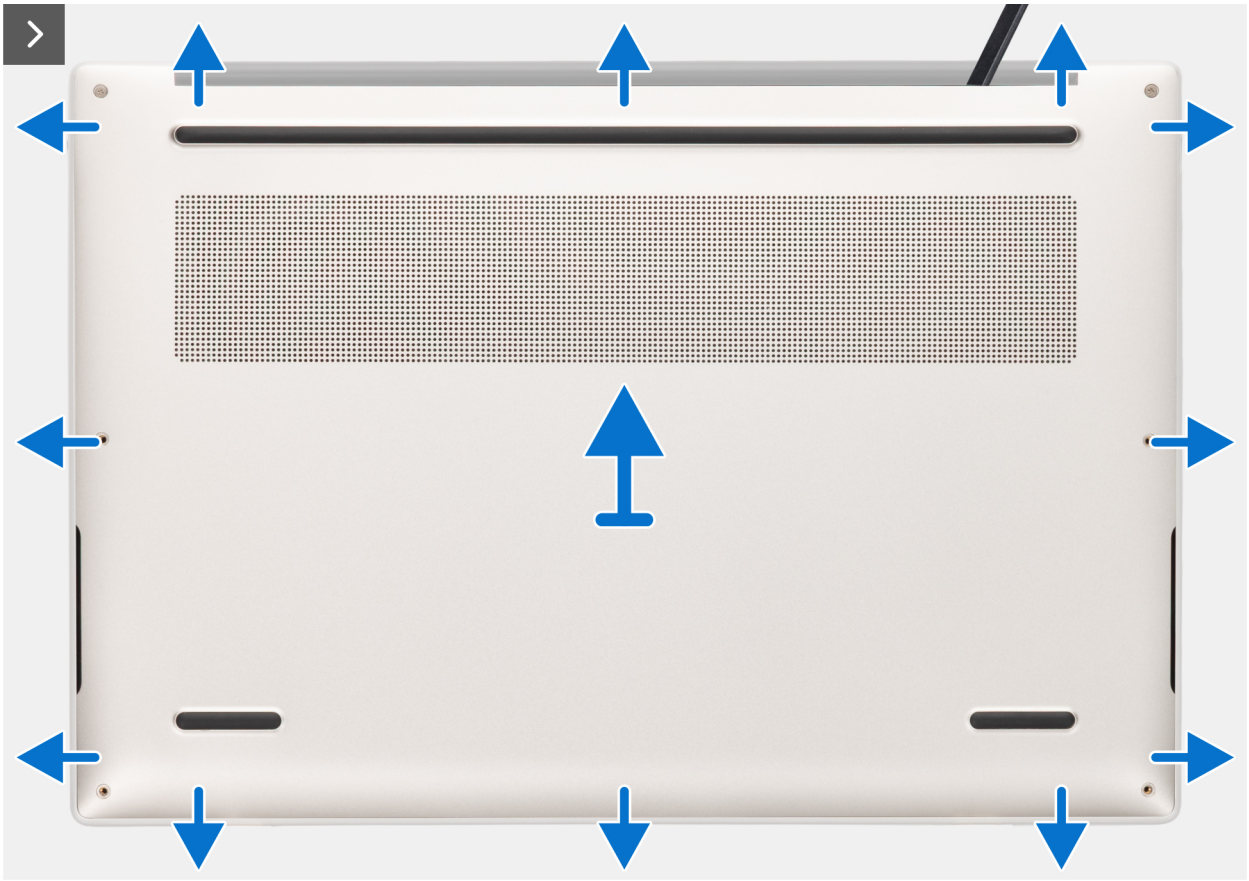


Figure 3. Remove the base cover

Steps

1. Loosen the two captive screws that secure the base cover to the palm rest and keyboard assembly.
2. Remove the four screws (M2x4.5) that secure the base cover to the palm rest and keyboard assembly.
3. Using a plastic scribe, pry open the base cover starting from the recesses, located at the top edge of the base cover, near the hinges.

   CAUTION: Do not slide the scribe along the edges of the base cover as it may damage the latches inside the base cover. Instead, insert the scribe at regular intervals and pry open the base cover.

4. Starting from the top edge, pry the base cover followed by the left, right and bottom side to release it from the palm rest and keyboard assembly.
5. Lift the base cover off the palm rest and keyboard assembly.
6. Disconnect the battery cable from the battery cable connector on the system board.

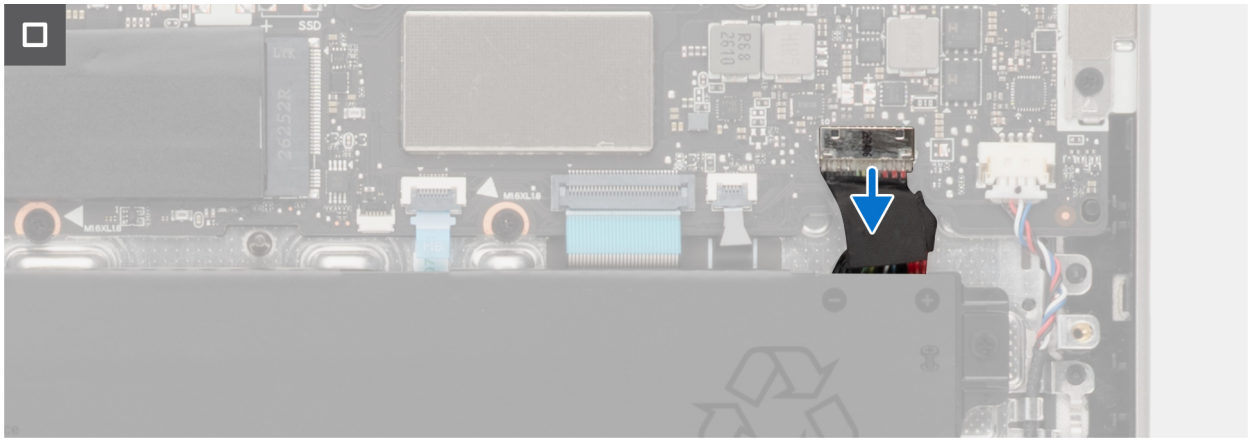


Figure 4. Disconnect the battery cable

7. Press and hold the power button for five seconds to ground the computer and drain the flea power.

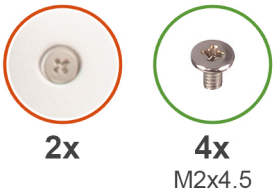
Installing the base cover

Prerequisites

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

About this task

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



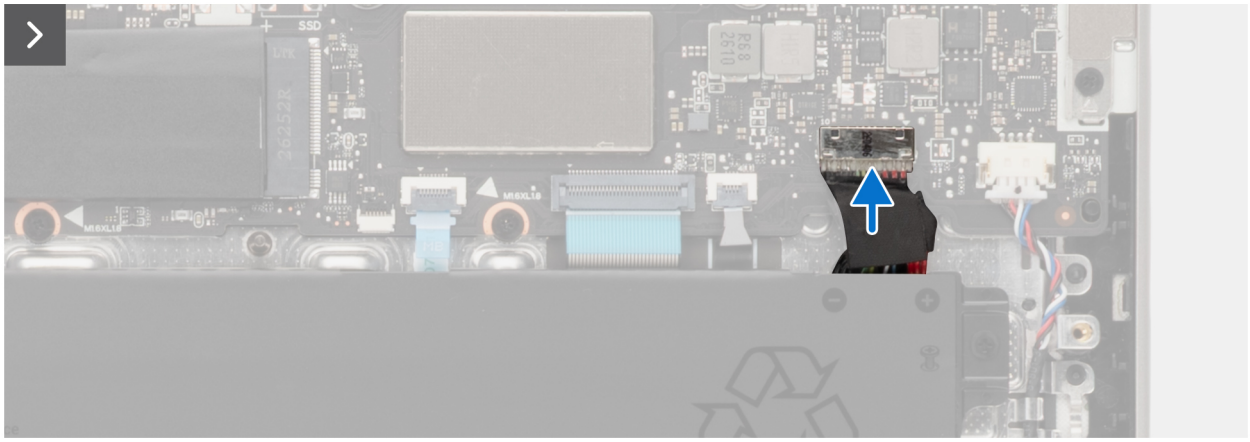


Figure 5. Connecting the battery cable

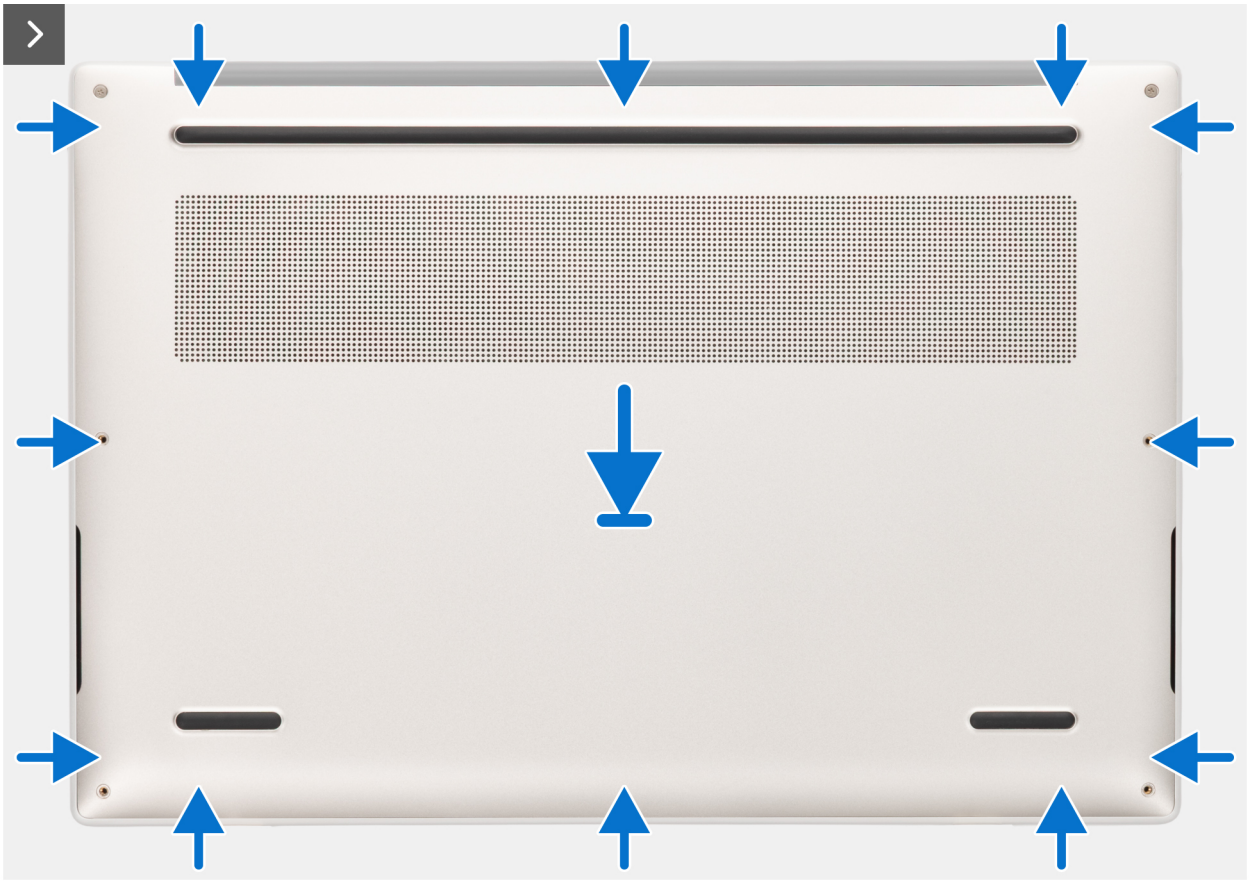


Figure 6. Installing the base cover



Figure 7. Installing the base cover

Steps

1. Connect the battery cable to the battery cable connector on the system board (if not connected earlier).
2. Place the base cover on the palm rest and keyboard assembly.
3. Align the screw holes on the base cover with the screw holes on the palm rest and keyboard assembly, and then snap the base cover into place.
4. Replace the four screws (M2x4.5) and tighten the two captive screws that secure the base cover to the palm rest and keyboard assembly.

Next steps

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

Battery

Rechargeable Li-ion battery precautions

CAUTION:

- **Exercise caution when handling rechargeable Li-ion batteries.**
- **Discharge the battery completely before removing it. Disconnect the AC power adapter from the computer and operate the computer solely on battery power—the battery is fully discharged when the computer no longer turns on when the power button is pressed.**
- **Do not crush, drop, mutilate, or penetrate the battery with foreign objects.**
- **Do not expose the battery to high temperatures, or disassemble battery packs and cells.**
- **Do not apply pressure to the surface of the battery.**

- **Do not bend the battery.**
- **Do not use tools of any kind to pry on or against the battery.**
- **To prevent accidental puncture or damage to the battery and other components, ensure that no screws are lost or misplaced during the servicing of the computer.**
- **Always purchase genuine batteries from Dell Support Site or authorized Dell partners and resellers.**
- **Swollen batteries should not be used and should be replaced and disposed properly. For guidelines on how to handle and replace swollen rechargeable Li-ion batteries, see Handling swollen rechargeable Li-ion batteries.**

Removing the battery

Prerequisites

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

About this task

CAUTION: Removing the battery resets the BIOS setup settings to default. It is recommended that you note the BIOS setup settings before removing the battery.

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

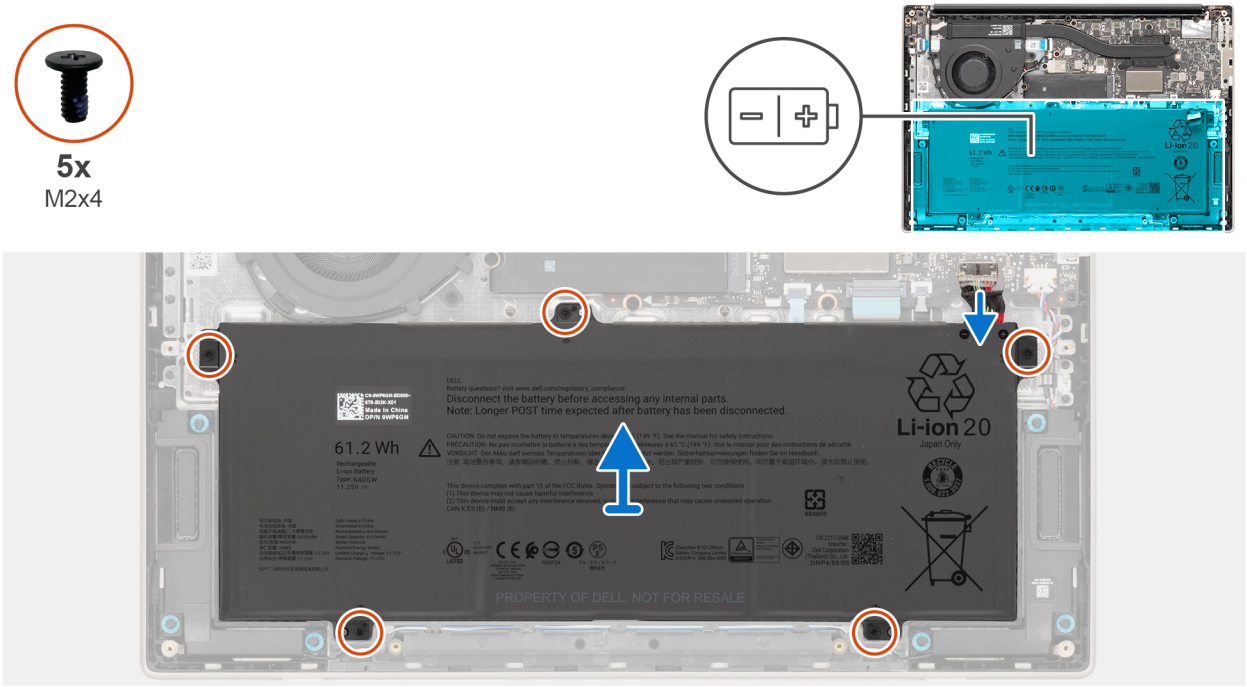


Figure 8. Removing the battery

Steps

1. Disconnect the battery cable from the battery cable connector (BATT1) on the system board (if not disconnected earlier).
2. Remove the five screws (M2x4) that secure the battery to palm rest and keyboard assembly.
3. Lift the battery, along with the cable, off the palm rest and keyboard assembly.

Installing the battery

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 battery and provide a visual representation of the installation procedure.

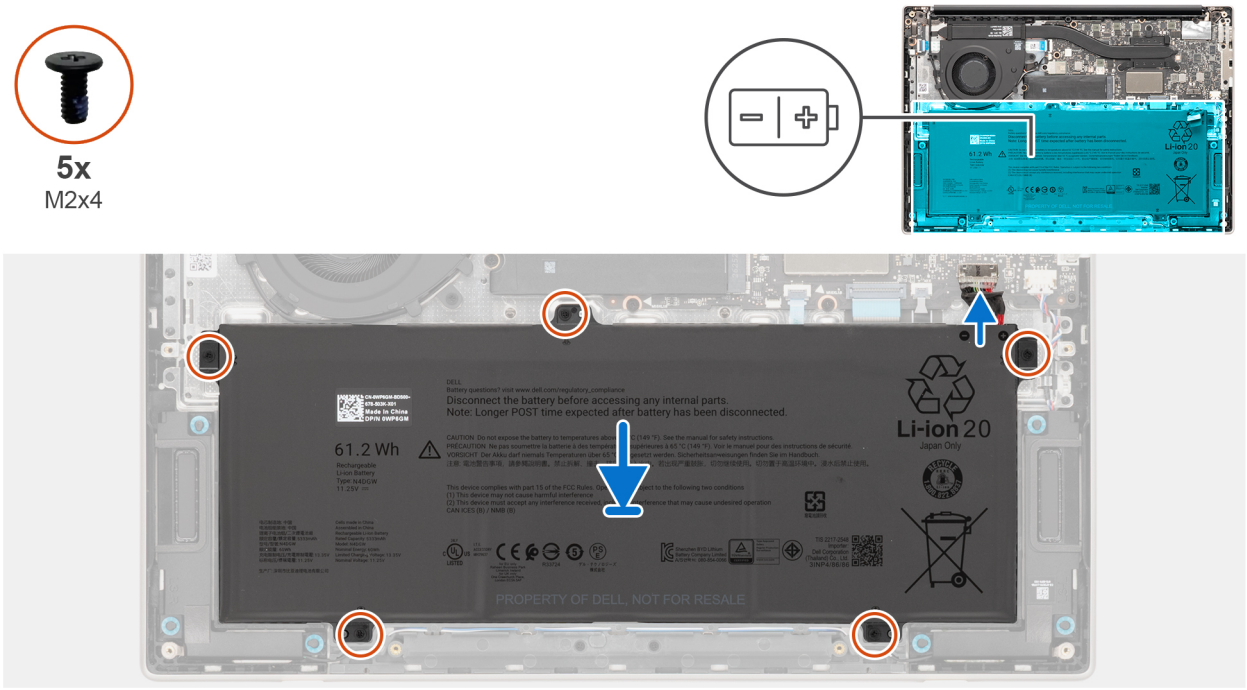


Figure 9. Installing the battery

Steps

1. Using the alignment posts, place the battery on the palm rest and keyboard assembly.
2. Align the screw holes on the battery with the screw holes on the palm rest and keyboard assembly.
3. Replace the five screws (M2x4) that secure the battery to the palm rest and keyboard assembly.
4. Connect the battery cable to the battery cable connector on the system board.

Next steps

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

3

Removing and installing Field Replaceable Units (FRUs)

The replaceable components in this chapter are Field Replaceable Units (FRUs).

CAUTION: FRUs should be replaced by an authorized service technician, who is a trained technical repair specialist.

NOTE: Damages resulting from improper replacement or from failure to follow instructions are not covered by your warranty. Consider having a trained technical repair specialist perform replacements of FRU components.

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

Solid state drive

Removing the M.2 2230 solid state drive

Prerequisites

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

About this task

The following images indicate the location of the M.2 2230 solid state drive and provide a visual representation of the removal procedure.

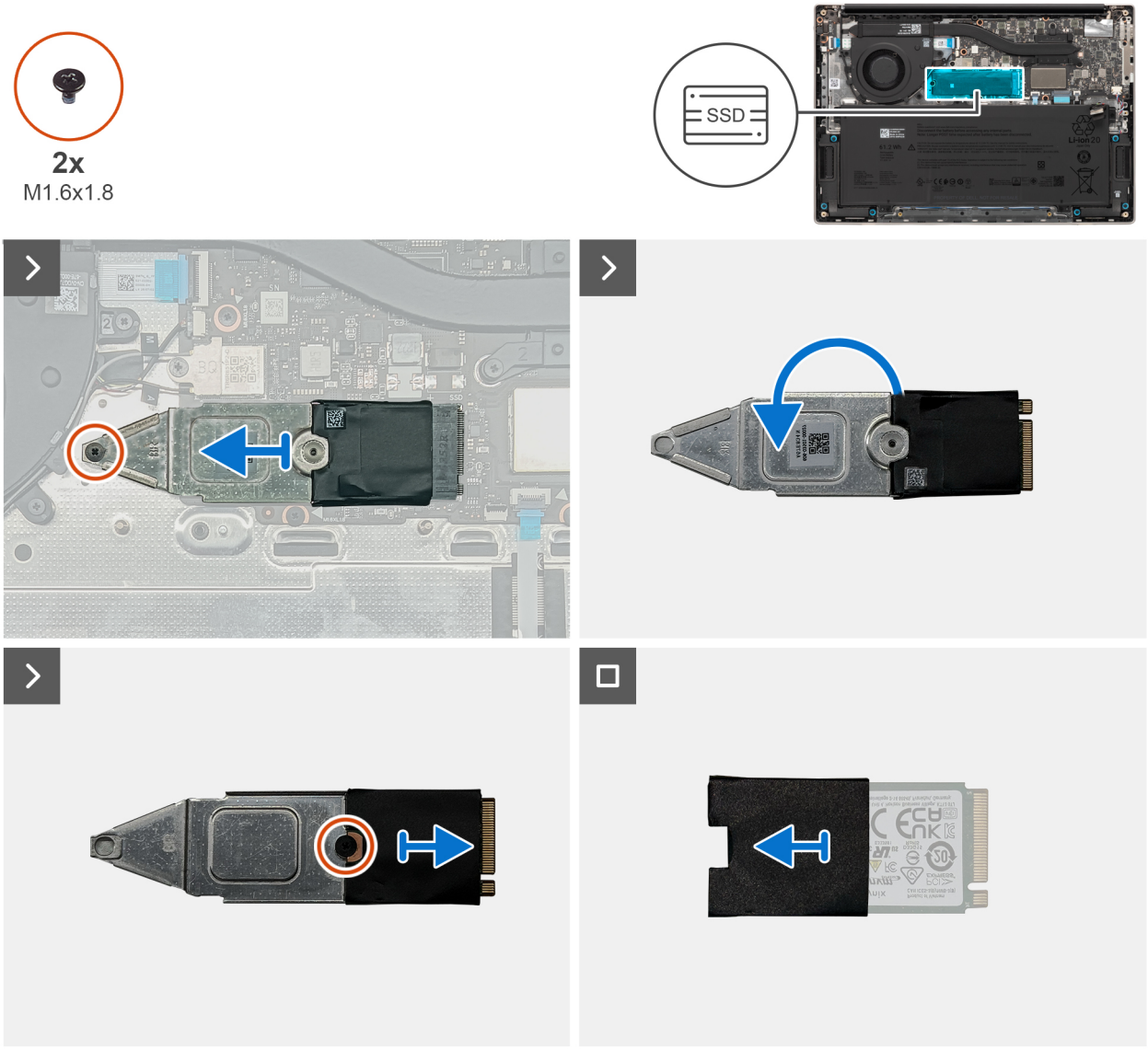


Figure 10. Removing the M.2 2230 solid state drive

Steps

1. Remove the screw (M1.6x1.8) that secures the M.2 2230 solid state drive bracket to the palm rest and keyboard assembly.
2. Turn the M.2 2230 solid state drive bracket over and place it on a clean, flat surface.
3. Remove the screw (M1.6x1.8) that secures the M.2 2230 solid state drive to the bracket.
4. Remove the EMC pouch from the solid state drive.

NOTE: The solid state drive EMC pouch may be damaged during removal and is not reusable. For more information about a replacement, contact your regional Dell Sales representative or Dell Customer Care.

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 images indicate the location of the M.2 2230 solid state drive and provide a visual representation of the installation procedure.

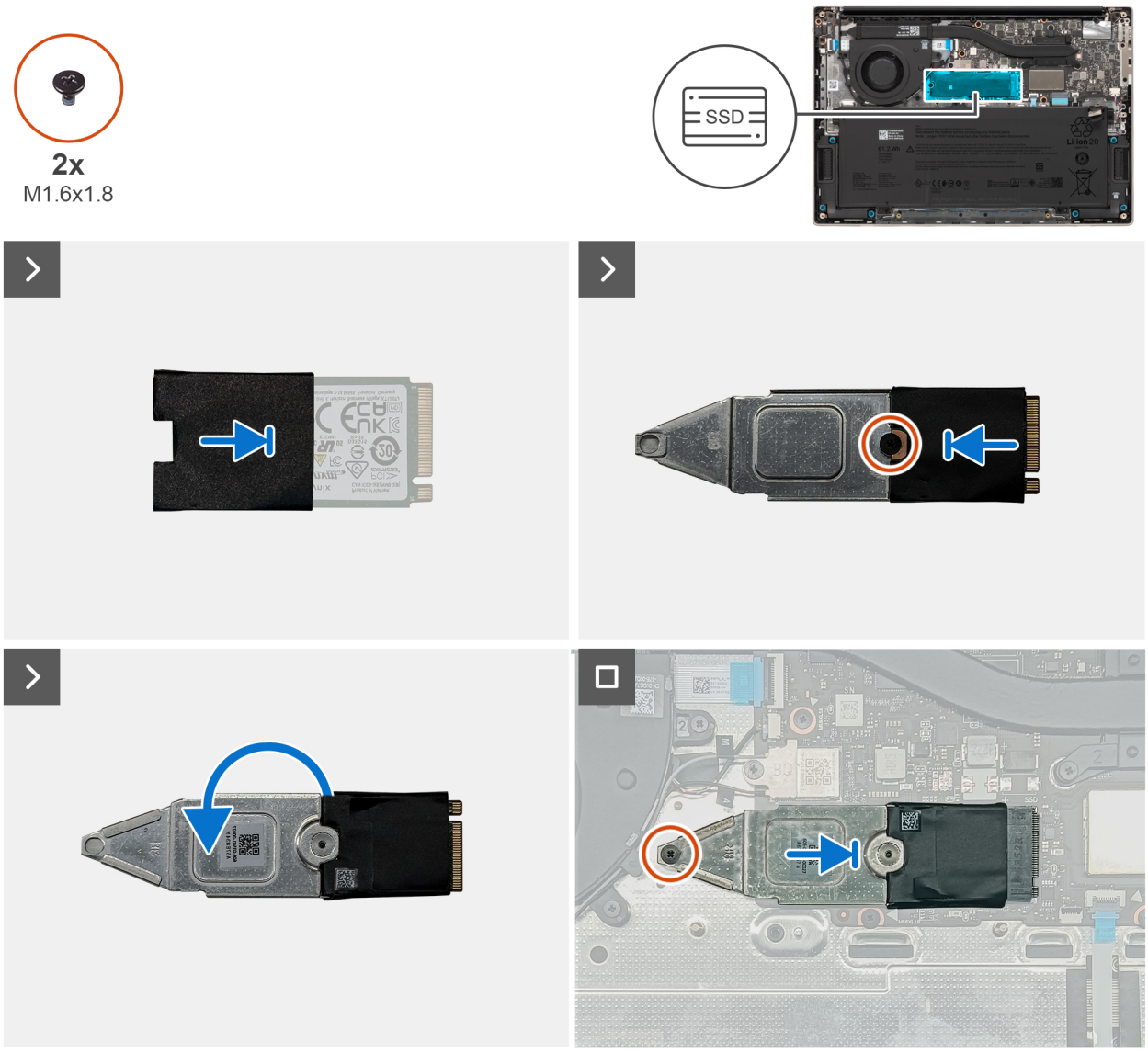


Figure 11. Installing the M.2 2230 solid state drive

Steps

1. Slide the EMC pouch onto the M.2 2230 solid state drive.

   NOTE: Handle the solid state drive by its edges. Do not touch the gold connector pins or the components on the solid-state drive.

2. Place the M.2 2230 solid state drive into the solid state drive bracket.
3. Replace the screw (M1.6x1.8) that secures the M.2 2230 solid state drive to the bracket.
4. Turn the M.2 2230 solid state drive over and align the notch on the M.2 2230 solid-state drive with the tab on the M.2 card slot on the system board.
5. Slide the solid state drive in the M.2 card slot on the system board.
6. Replace the screw (M1.6x1.8) that secures the M.2 2230 solid state drive bracket to the palm rest and keyboard assembly.

Next steps

1. Install the base cover.

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

Removing the 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 images indicate the location of the M.2 2280 solid state drive and provide a visual representation of the removal procedure.

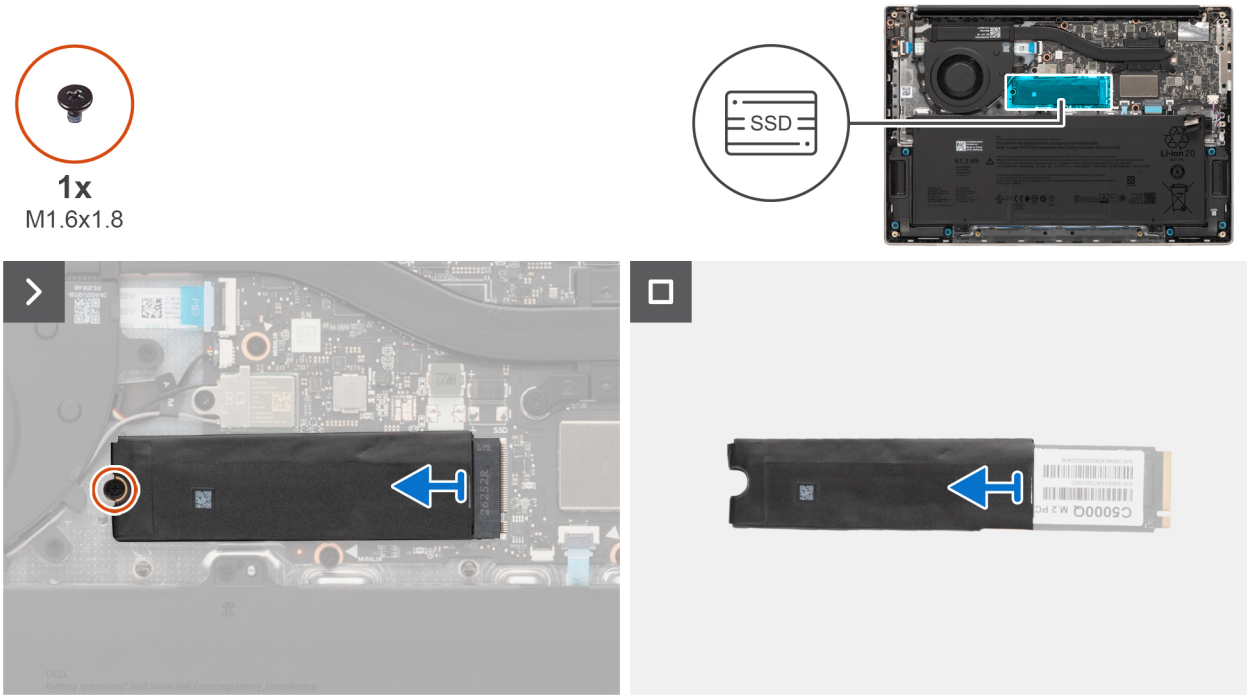


Figure 12. Removing the M.2 2280 solid state drive

Steps

1. Remove the screw (M1.6x1.8) that secures the M.2 2280 solid state drive to the palm rest and keyboard assembly.
2. Remove the M.2 2280 solid state drive from the M.2 card slot on the system board.
3. Remove the EMC pouch from the M.2 2280 solid state drive.

NOTE: The solid state drive EMC pouch may be damaged during removal and is not reusable. For more information about a replacement, contact your regional Dell Sales representative or Dell Customer Care.

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 images indicate the location of the M.2 2280 solid state drive and provide a visual representation of the installation procedure.

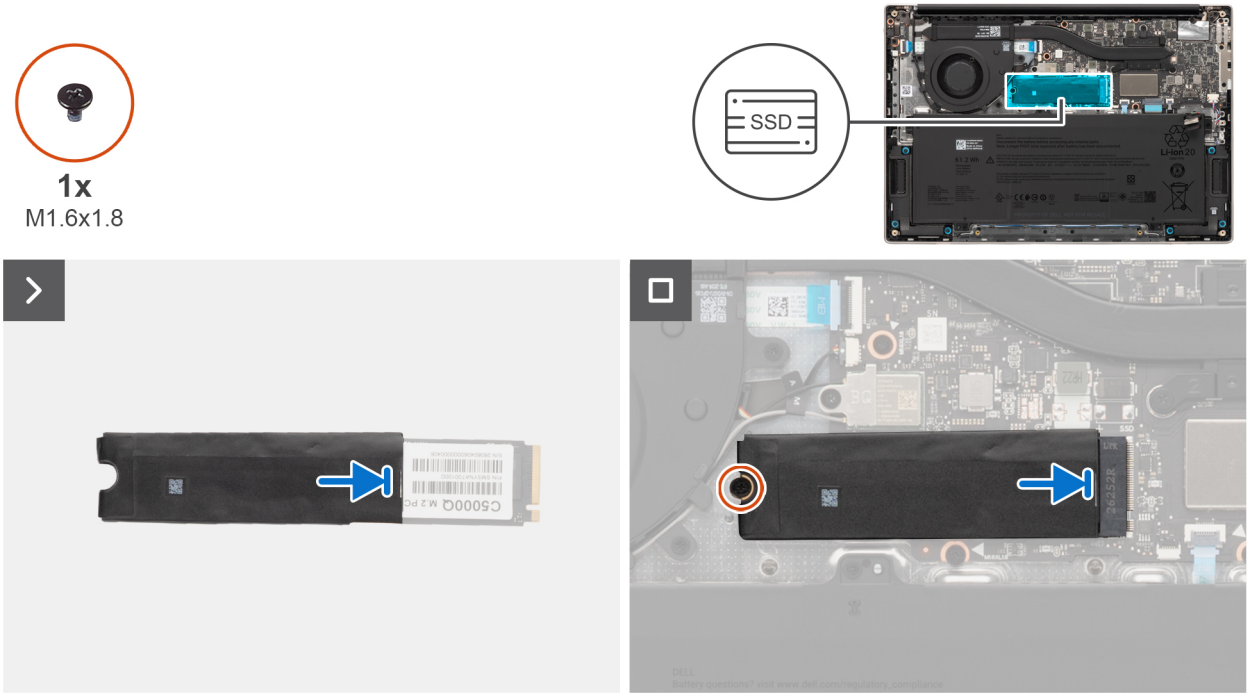


Figure 13. Installing the M.2 2280 solid state drive

Steps

1. Slide the EMC pouch onto the M.2 2280 solid state drive.

   NOTE: Handle the solid state drive by its edges. Do not touch the gold connector pins or the components on the solid state drive.

2. Align the notch on the M.2 2280 solid state drive with the tab on the M.2 card slot on the system board.
3. Slide the M.2 2280 solid state drive in the M.2 card slot on the system board.
4. Replace the screw (M1.6x1.8) that secures the M.2 2280 solid state drive to the palm rest and keyboard assembly.

Next steps

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

Fan

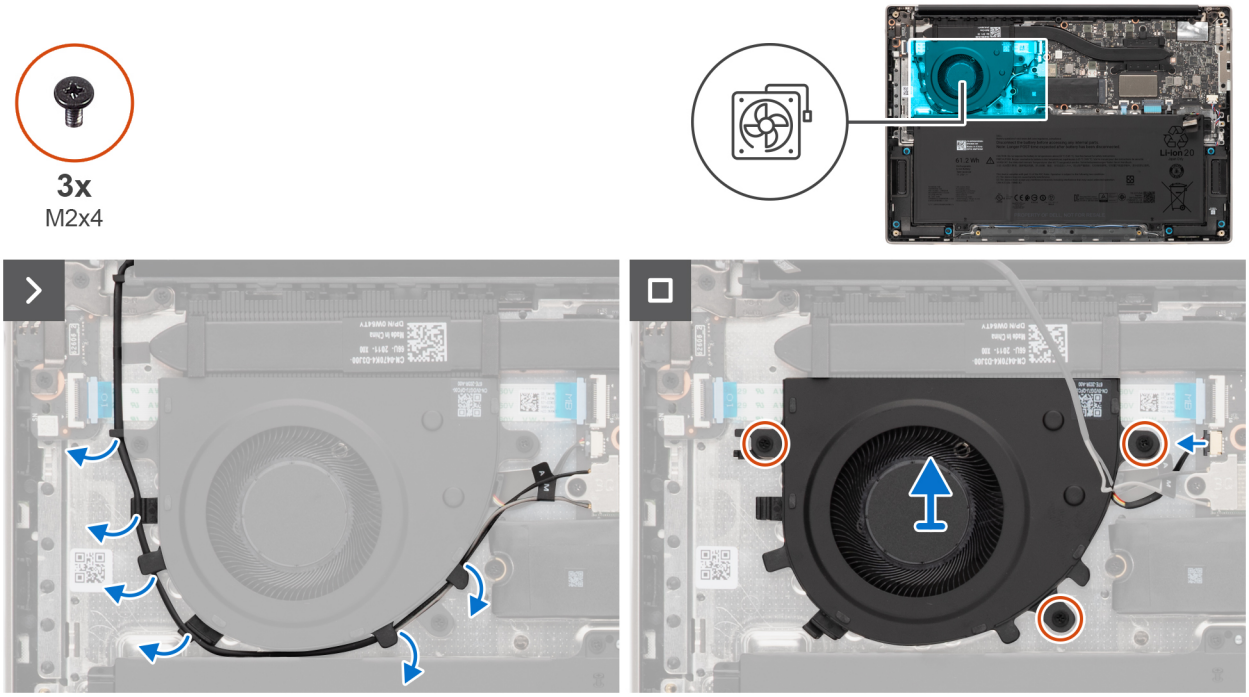
Removing the fan

Prerequisites

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

About this task

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



Steps

1. Unroute the WLAN cable from the routing guides on the fan.

   NOTE: Note the cable routing path before removal to ensure proper re-routing during installation.

2. Disconnect the fan cable from the connector on the system board.
3. Remove the three screws (M2x4) that secure the fan to the palm rest and keyboard assembly.
4. Lift the fan off the palm rest and keyboard assembly.

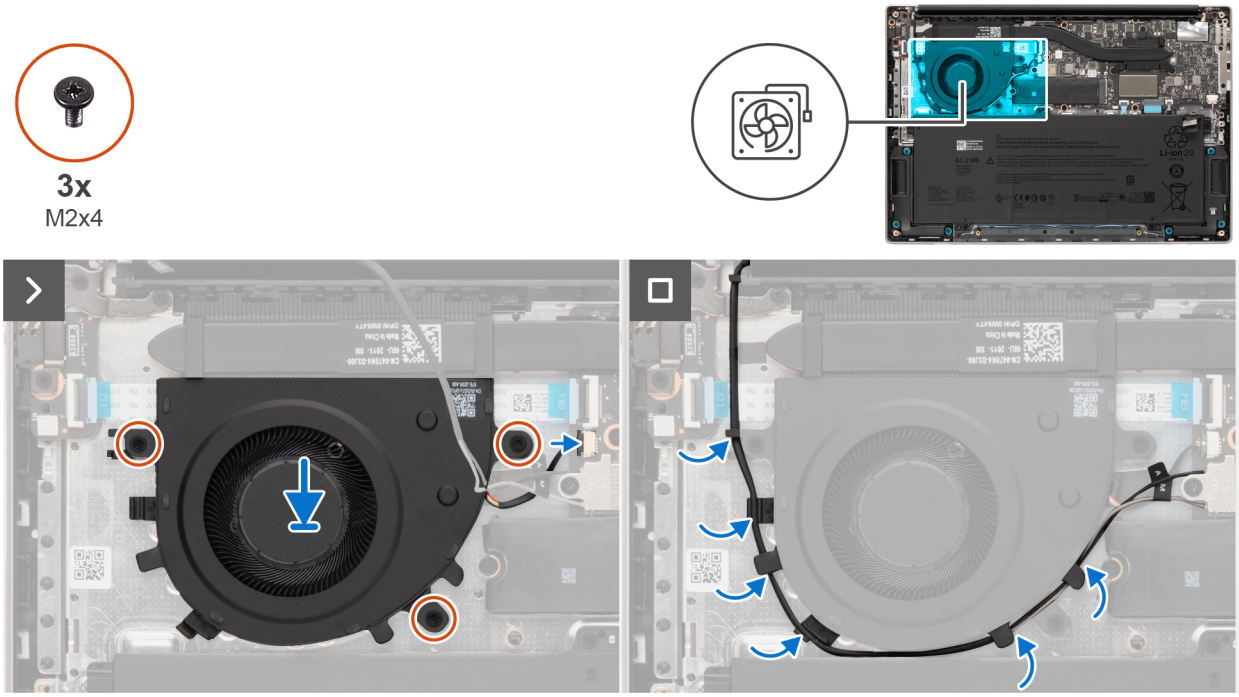
Installing the fan

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 fan and provides a visual representation of the installation procedure.



Steps

1. Place the fan on the palm rest and keyboard assembly.
2. Replace the three screws (M2x4) that secure the fan to the palm rest and keyboard assembly.
3. Connect the fan cable to the fan connector on the system board.
4. Route the WLAN cable through the routing guides on the fan.

NOTE: Ensure that the cables are correctly routed through the routing guides to prevent the cables from being pinched or damaged.

Next steps

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

Heat sink

Removing the heat sink

Prerequisites

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

About this task

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

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

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

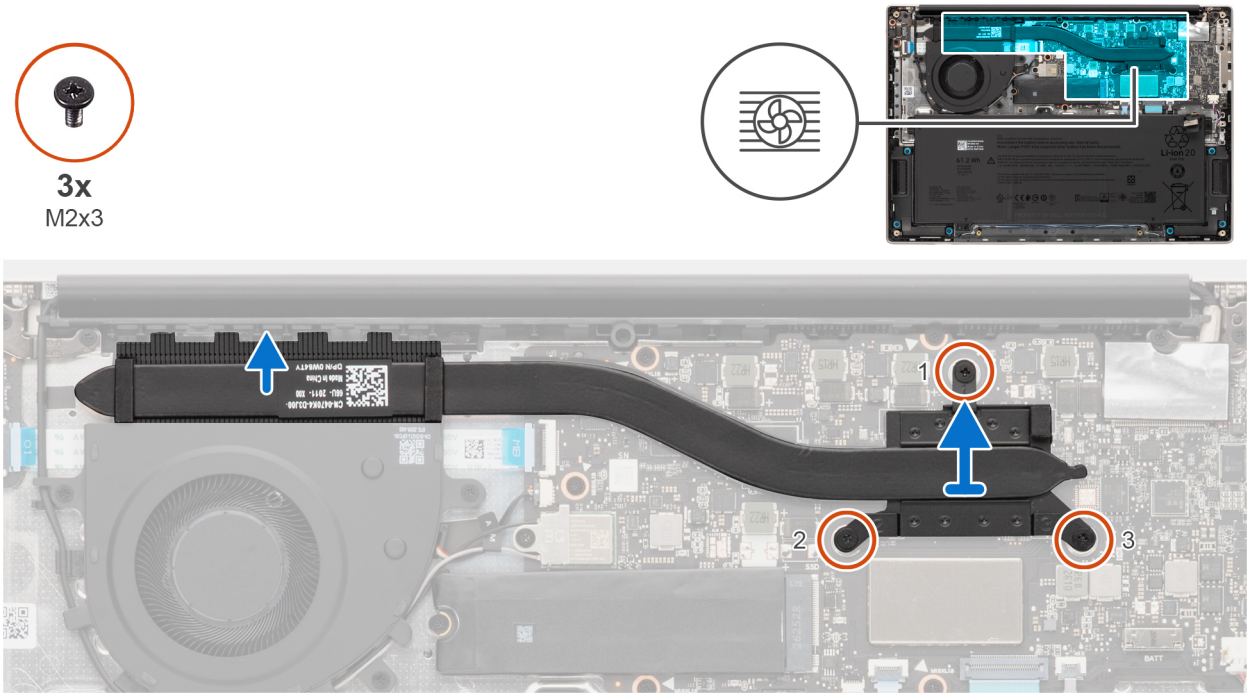


Figure 14. Removing the heat sink

Steps

1. In reverse sequential order (3 > 2 > 1), remove the three screws (M2x3) that secure the heat sink to the system board. The screw numbers are etched on the heat sink.
2. Lift the heat sink off the system board.

CAUTION: Do not bend the fin section when removing the heat sink assembly. Bending the fins may damage the heat pipe and degrade the thermal performance of the heat sink.

Installing the heat sink

Prerequisites

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

About this task

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

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

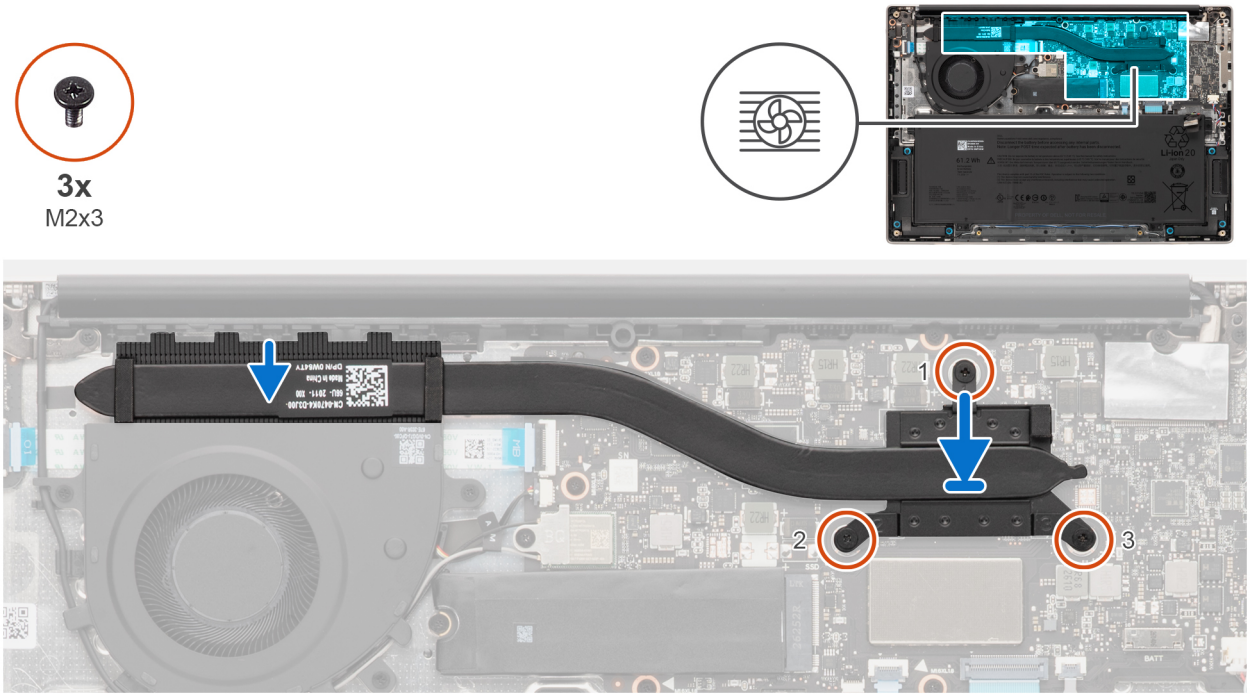


Figure 15. Installing the heat sink

Steps

1. Place the heat sink in the slot on the system board.

   CAUTION: Do not bend the fin section when installing the heat sink assembly. Bending the fins may damage the heat pipe and degrade the thermal performance of the heat sink.

2. Align the screw holes on the heat sink with the screw holes on the system board.
3. In sequential order (1 > 2 > 3), tighten the three screws (M2x3) to secure the heat sink to the system board. The screw numbers are etched on the heat sink.

Next steps

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

WLAN bracket

Removing the WLAN-antenna cable bracket

Prerequisites

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

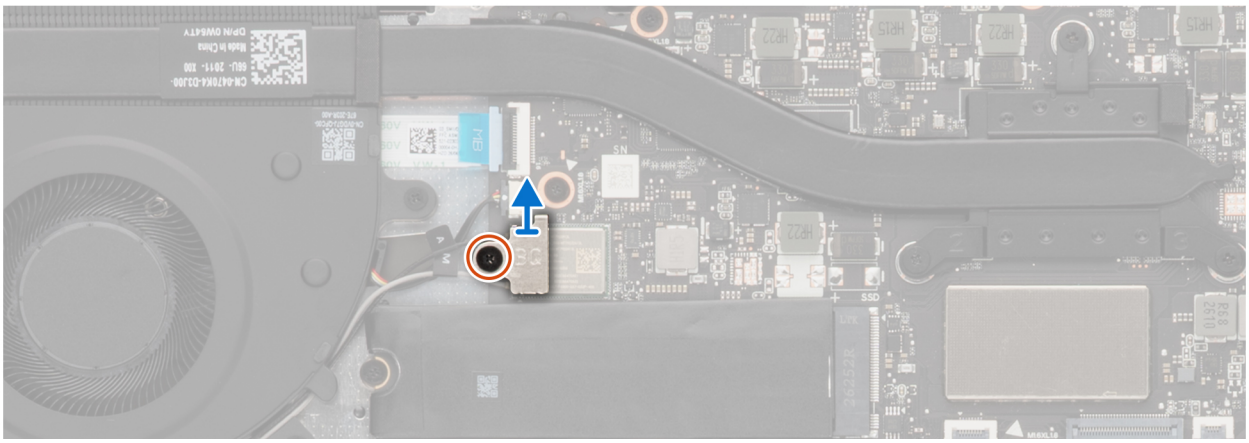
About this task

The following image indicates the location of the WLAN-antenna cable bracket and provides a visual representation of the removal procedure.



1x
M2x4





Steps

1. Remove the screw (M2x4) that secures the WLAN-antenna cable bracket to the palm rest and keyboard assembly.
2. Lift the WLAN-antenna cable bracket off the palm rest and keyboard assembly.

Installing the WLAN-antenna cable bracket

Prerequisites

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

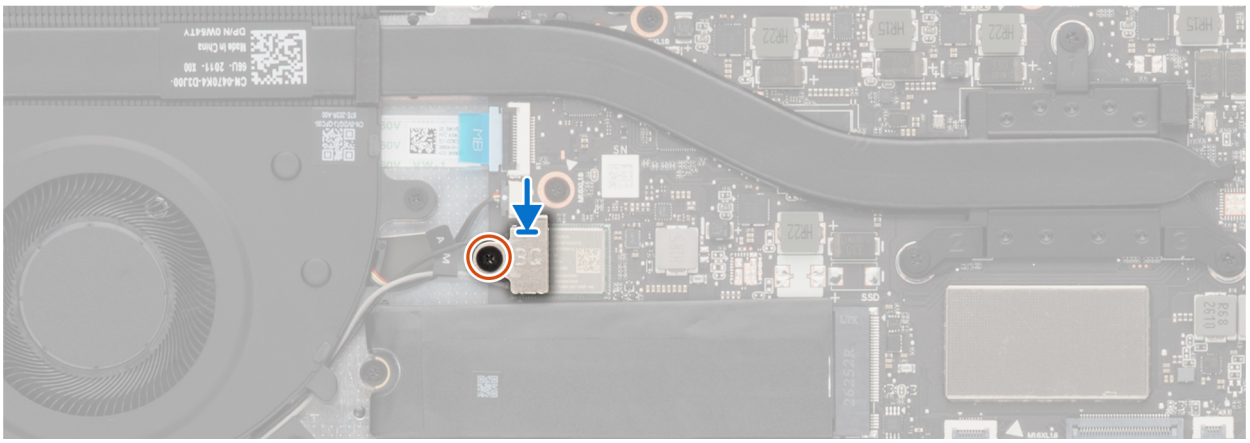
About this task

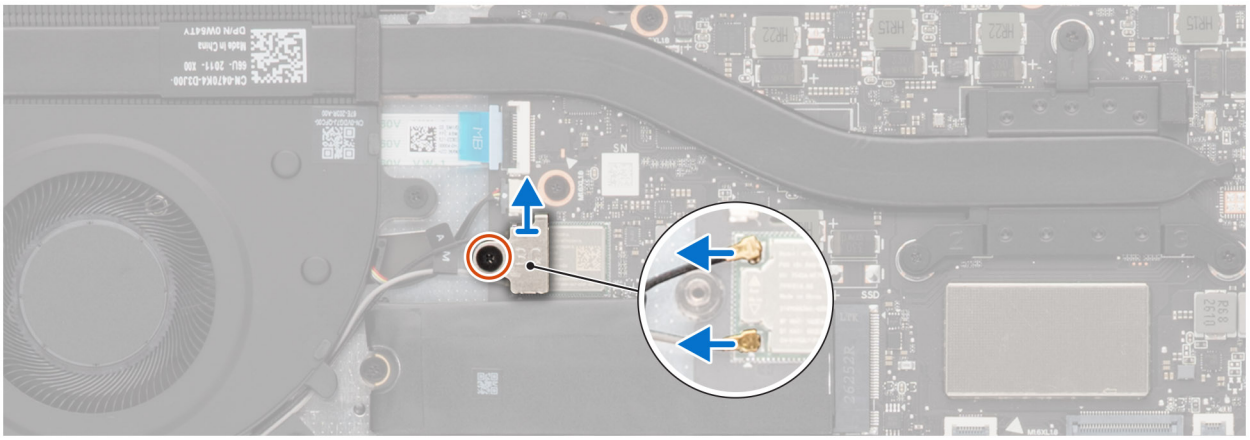
The following image indicates the location of the WLAN-antenna cable bracket and provides a visual representation of the installation procedure.



1x
M2x4







Steps

1. Place the WLAN-antenna cable bracket on the palm rest and keyboard assembly.
2. Align the screw hole on the WLAN-antenna cable bracket to the screw hole on the palm rest and keyboard assembly.
3. Replace the screw (M2x4) that secures the WLAN-antenna cable bracket to the palm rest and keyboard assembly.
4. Route the antenna cables through the routing guides on the WLAN-antenna cable bracket.

Next steps

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

Speakers

Removing the speakers

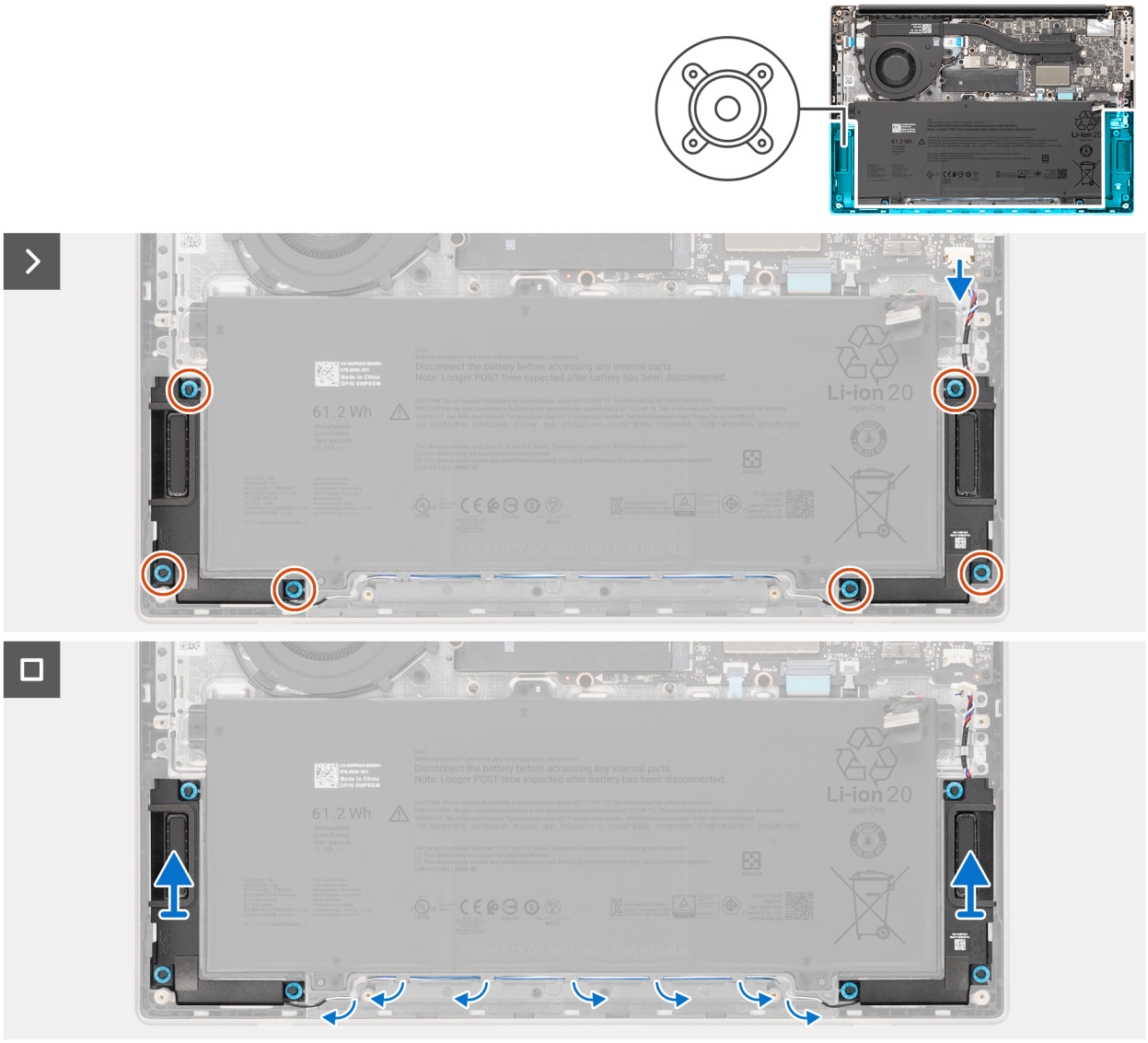
Prerequisites

1. Follow the procedure in Before working inside your computer.

2. Remove the base cover.

About this task

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



Steps

1. Disconnect the speaker cable from the connector (SPK) on the system board.
2. Unroute and remove the speaker cable from the routing guides on palm rest and keyboard assembly.
3. Lift the speakers, along with the cable, off the palm rest and keyboard assembly.

Installing the speakers

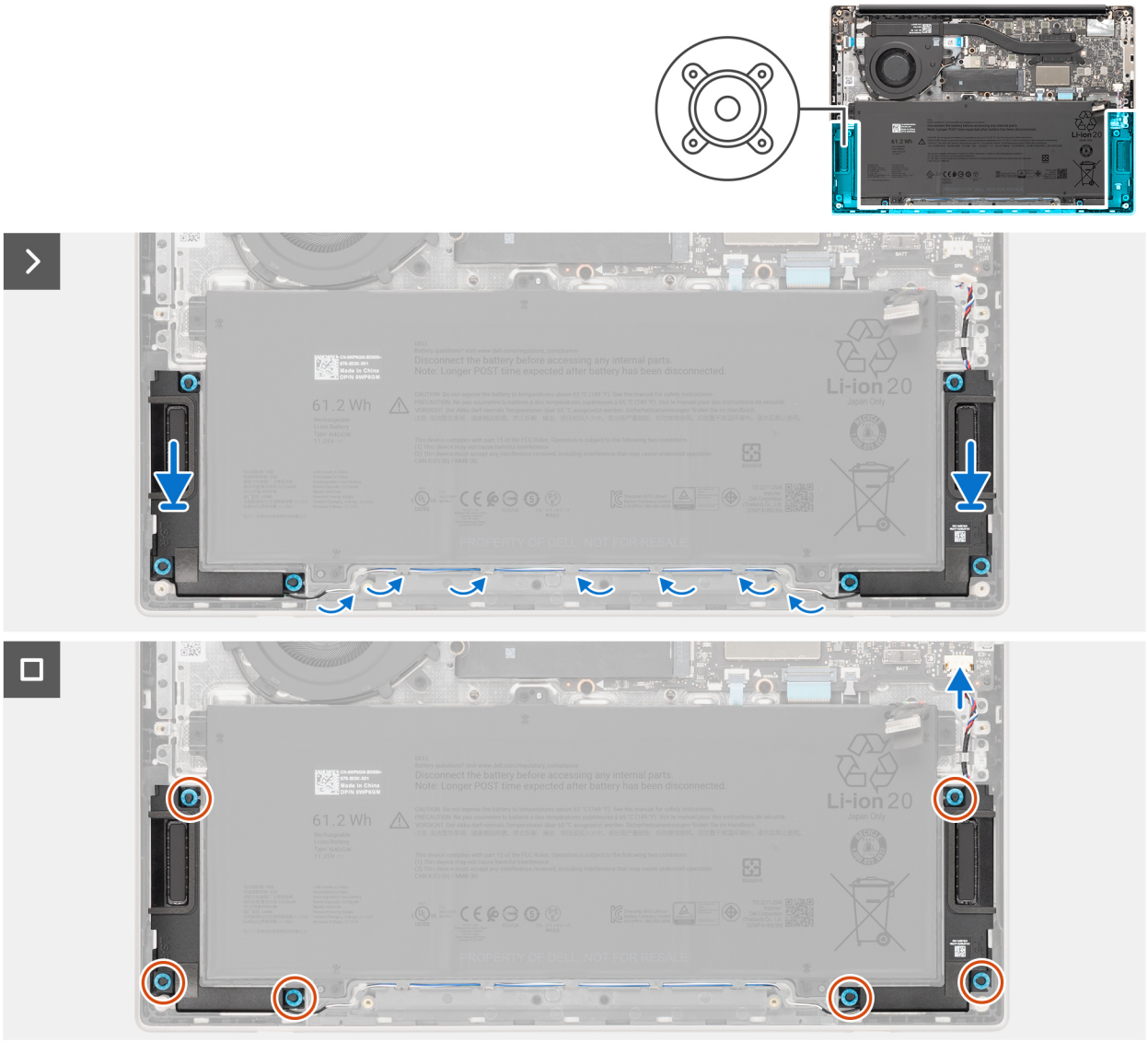
Prerequisites

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

About this task

NOTE: If the rubber grommets are pushed out when removing the speakers, push them back in before replacing the speakers.

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



Steps

1. Using the alignment posts and rubber grommets, place the speakers on the palm rest and keyboard assembly.

   NOTE: Ensure that the rubber grommets on the speakers are threaded through the alignment posts. Ensure that the four rubber grommets are seated into the slot and installed on the speakers properly.

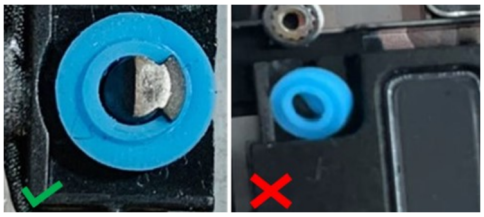


Figure 16. Installing the speakers

2. Route the speaker cable through the routing guides on the palm rest and keyboard assembly.
3. Connect the speaker cable to the connector on the system board.

Next steps

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

I/O-board cable

Removing the I/O-board cable

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the base cover.
3. Remove the fan.

About this task

The following images indicate the location of the I/O-board cable and provide a visual representation of the removal procedure.

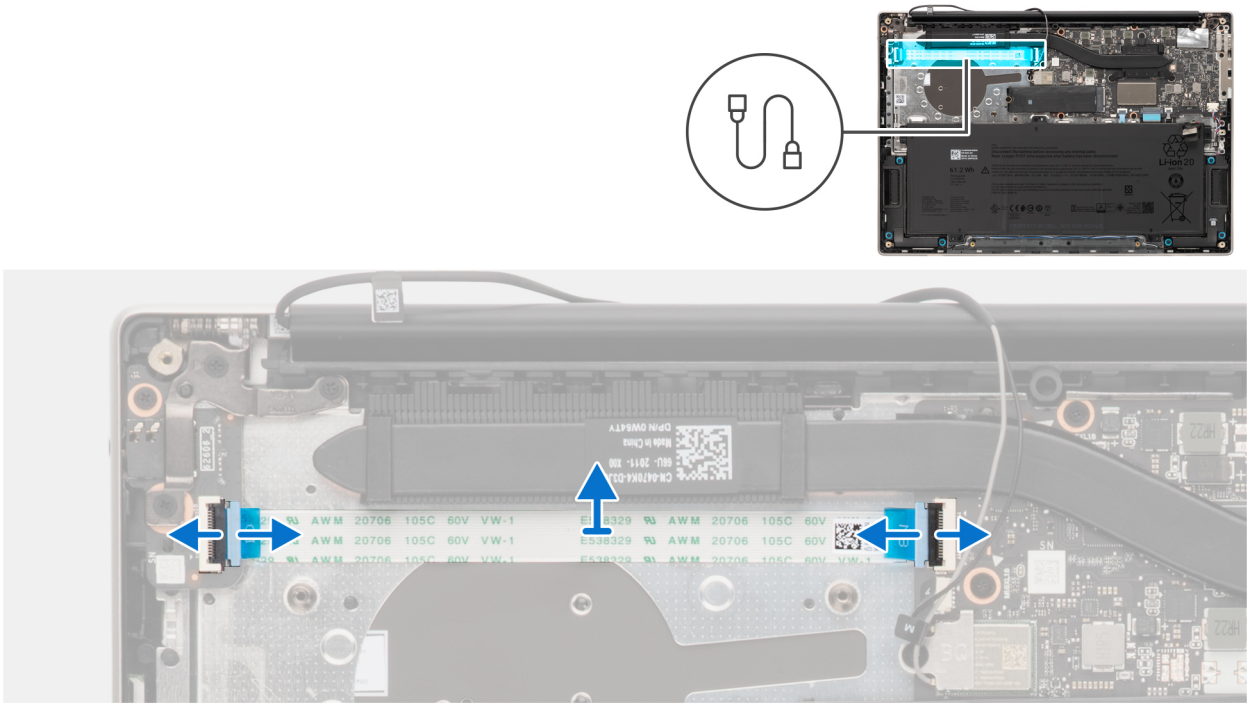


Figure 17. Removing the I/O board cable

Steps

1. Disconnect the I/O-board cable from the connectors on the I/O board and system board.
2. Gently peel and remove the I/O-board cable from the palm rest and keyboard assembly.

Installing the I/O-board cable

Prerequisites

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

About this task

The following images indicate the location of the I/O-board cable and provide a visual representation of the installation procedure.

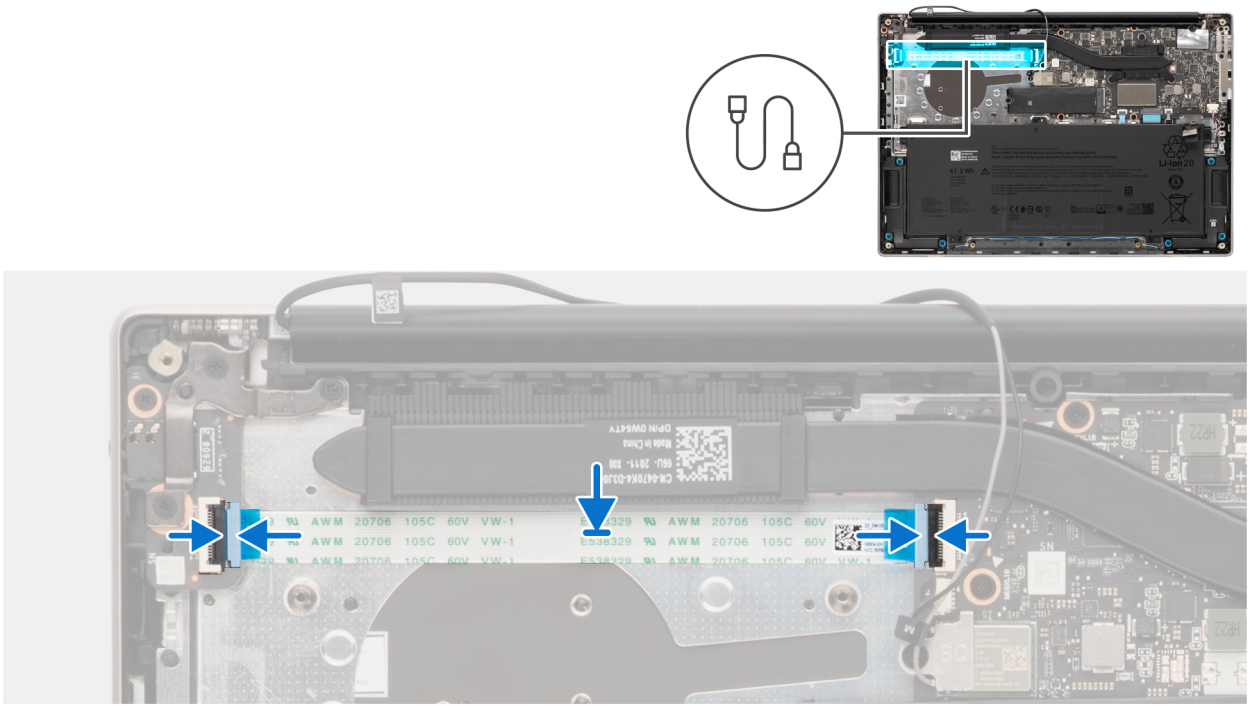


Figure 18. Installing the I/O-board cable

Steps

1. Place the I/O-board cable on the palm rest and keyboard assembly.
2. Connect the I/O-board cable to the connector on the I/O board and close the latch.
3. Connect the I/O-board cable to the connector on the system board and close the latch.

Next steps

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

I/O board

Removing the I/O board

Prerequisites

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

About this task

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

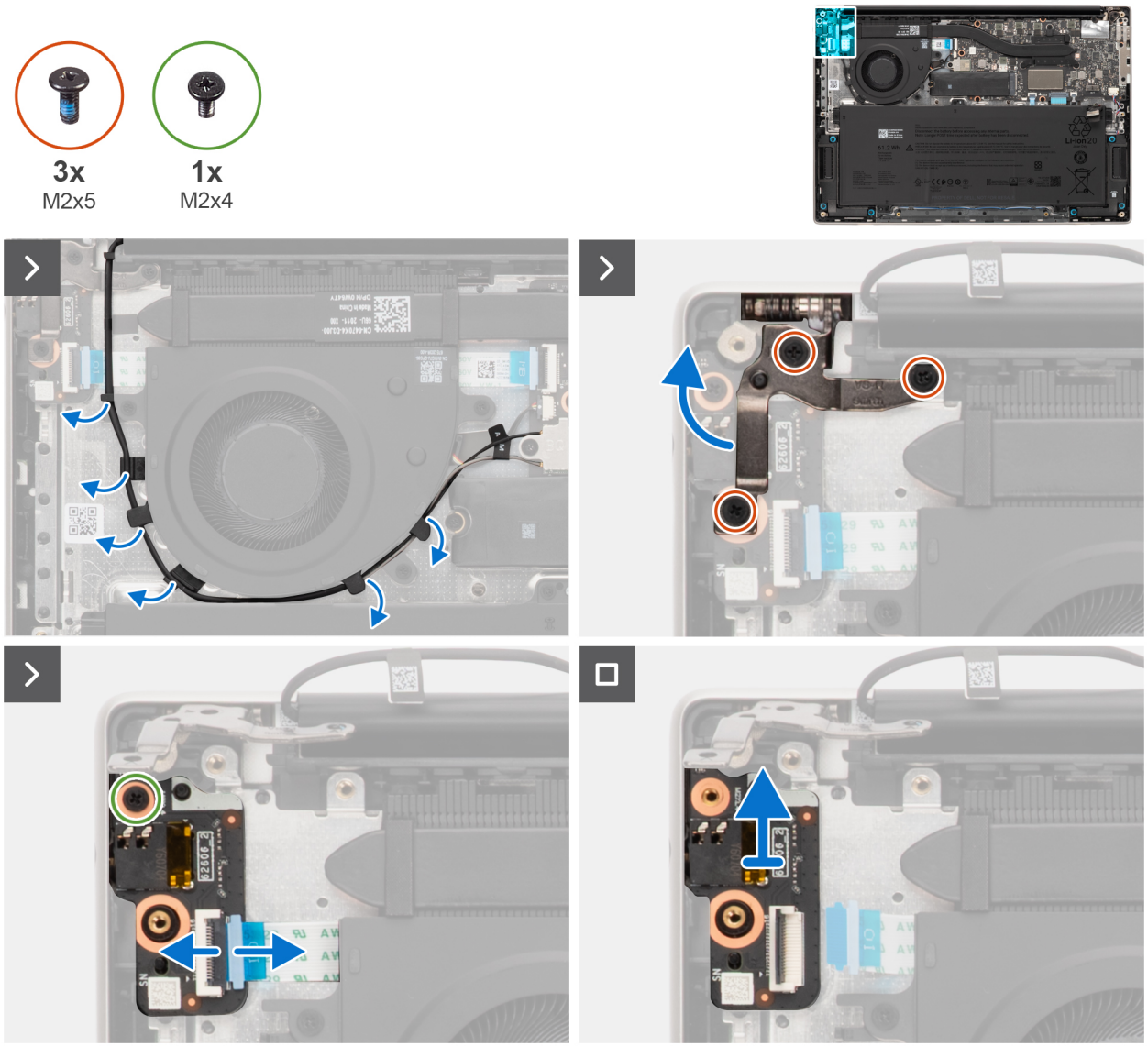


Figure 19. Removing the I/O board

Steps

1. Unroute the WLAN cable from the routing guides on the fan and move the cable away from the pI/O board.
2. Remove the three screws (M2x5) that secure the display-assembly hinge to the palm rest and keybaord assembly.
3. Open the latch and disconnect the I/O board cable from the connector on the I/O board.
4. Remove the screw (M2x4) that secures the I/O board to the palm rest and keyboard assembly.
5. Slide the I/O board to release it from the bezel and and lift it out of the palm rest and keyboard assembly.

Installing the I/O board

Prerequisites

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

About this task

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

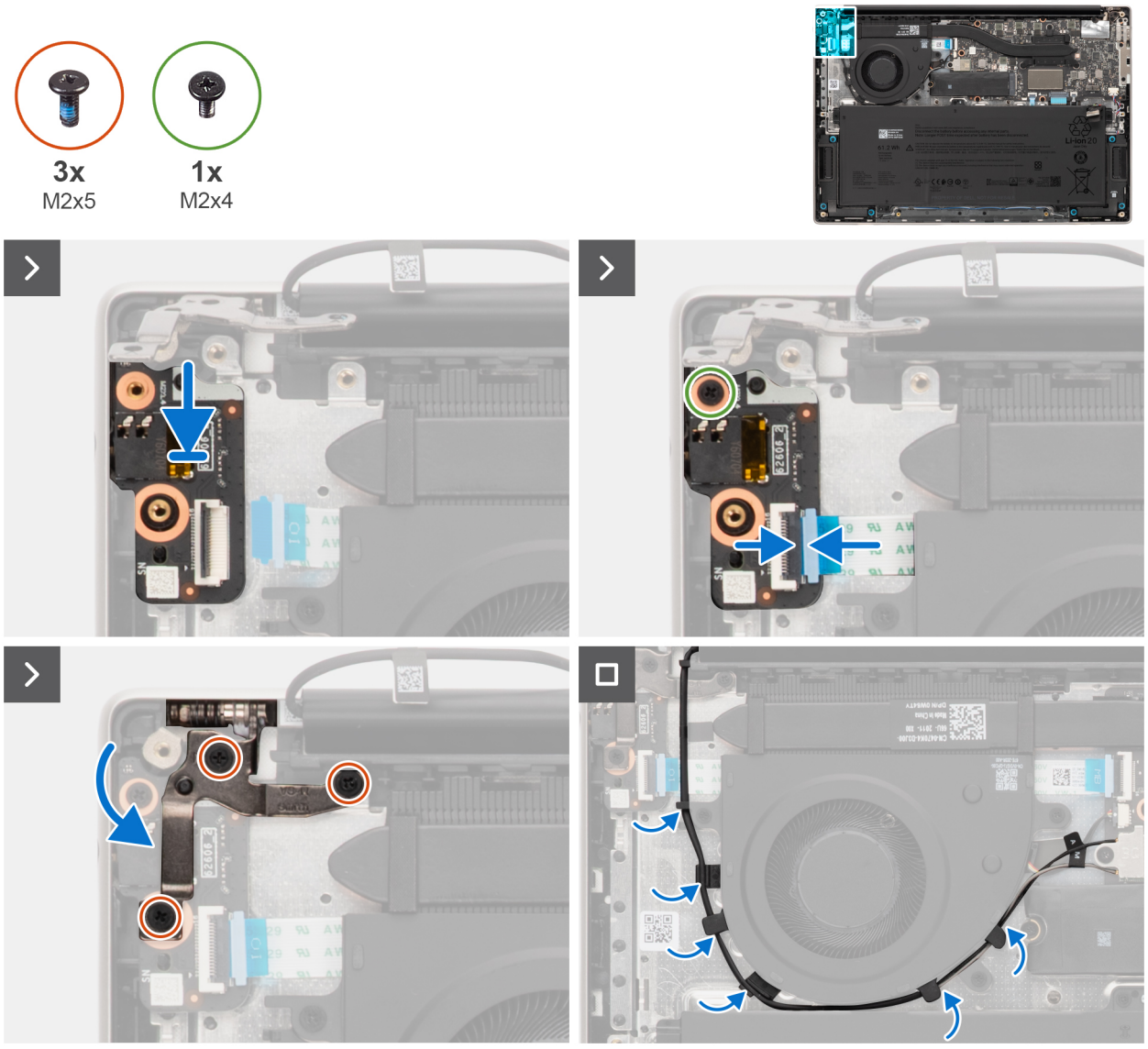


Figure 20. Installing the I/O board

Steps

1. Carefully slide the I/O board at an angle into the palm rest and keyboard assembly, aligning the I/O port with the slot on the bezel.
2. Align the screw hole on the I/O board with the screw hole on the palm rest and keyboard assembly.
3. Replace the screw (M2x4) that secures the I/O board to the palm rest and keyboard assembly.
4. Connect the I/O-board cable to the connector on the I/O board and close the latch.
5. Replace the three screws (M2x5) that secure the display-assembly hinge to the palm rest and keyboard assembly.
6. Route the WLAN cable through the routing guides on the fan.

Next steps

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

Display assembly

Removing the display assembly

CAUTION: The maximum operating angle for the display-panel hinge is 135 degrees.

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the base cover.
3. Remove the WLAN bracket.

About this task

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

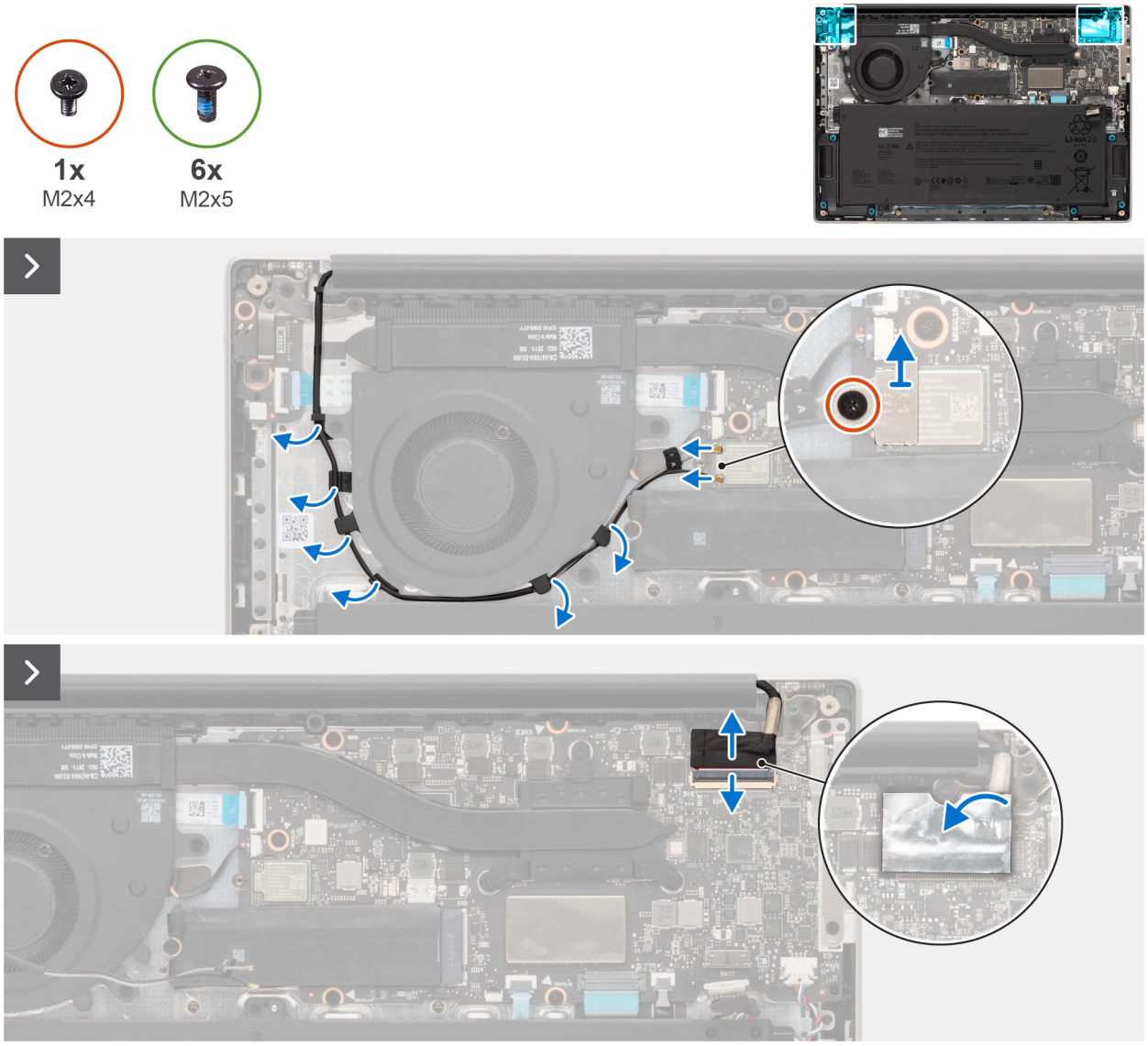


Figure 21. Removing the display assembly



Figure 22. Removing the display assembly

Steps

1. Unroute the wireless-antenna cable from the routing guides on the fan.
2. Disconnect the display cable from the connector on the system board.
3. Remove the six screws (M2x5) that secure the display hinges to the palm rest and keyboard assembly.
4. Open the display assembly to 180 degrees and place the palm rest and keyboard assembly at the edge of a flat surface.
5. Lift the left and right hinges away from the palm rest and keyboard assembly.
6. Lift the display assembly at an angle to free it from the hinges and remove it from the palm rest and keyboard assembly.

Installing the display assembly

CAUTION: The maximum operating angle for the display-panel hinge is 135 degrees.

Prerequisites

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

About this task

NOTE: Ensure that the display hinges are opened to the maximum before replacing the display assembly on the palm rest and keyboard assembly.

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

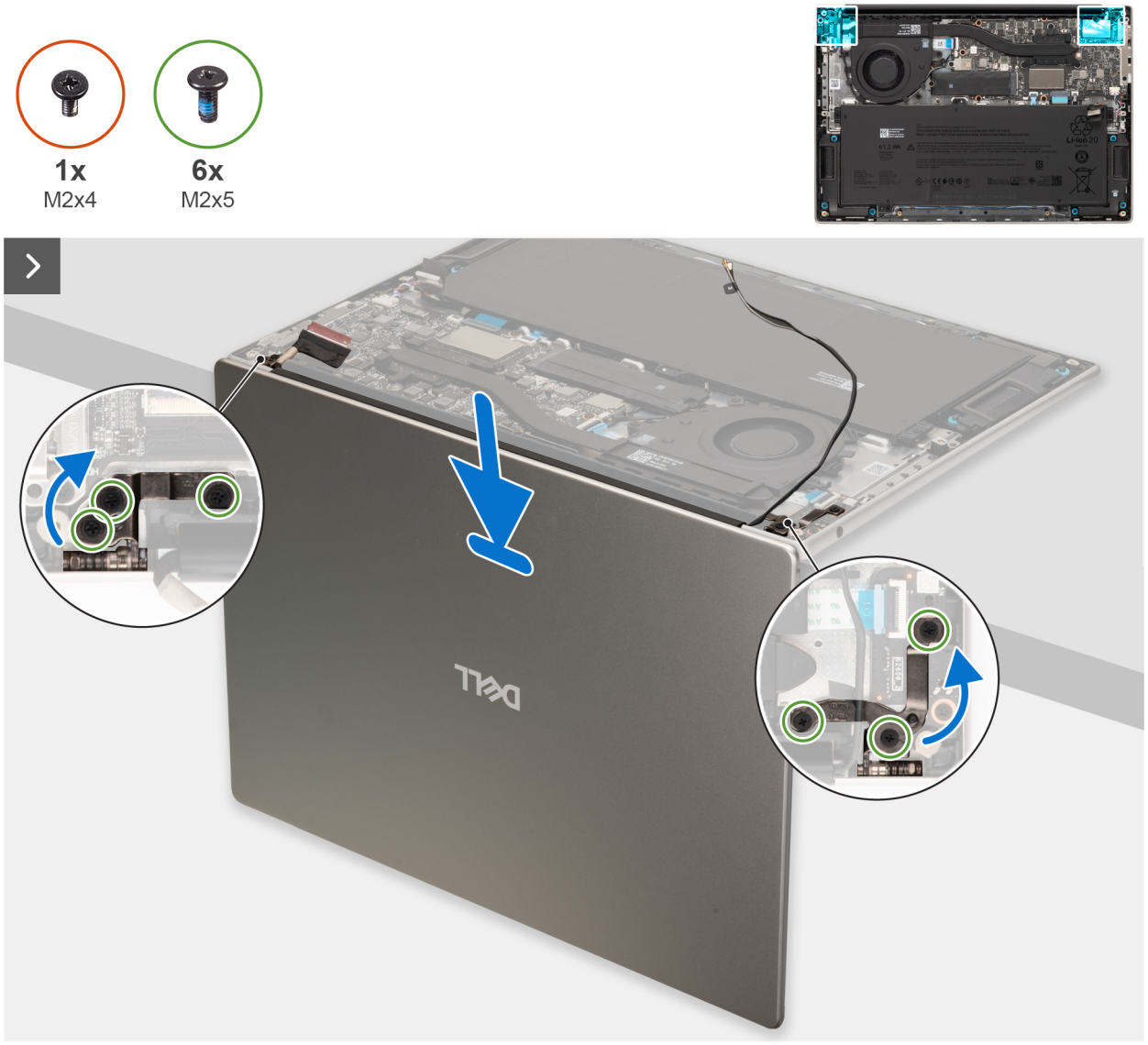


Figure 23. Installing the display assembly

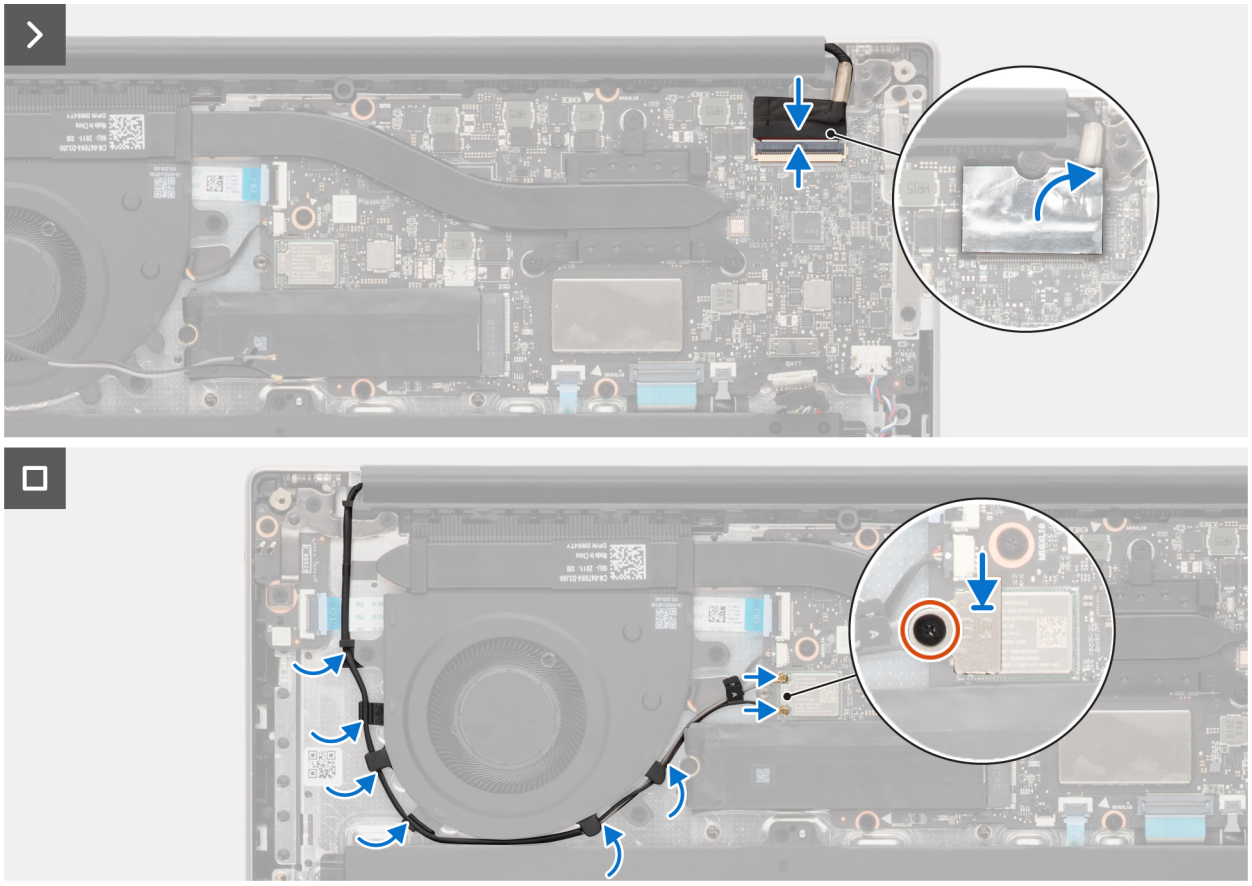


Figure 24. Installing the display assembly

CAUTION: During installation, route the display cable and antenna cables above the hinge bracket to prevent cable damage.

Steps

1. Place the palm rest and keyboard assembly at the edge of a flat surface.
2. Slide the display assembly at an angle and place the display assembly on the palm rest and keyboard assembly .
3. Gently press down on the display hinges to align the screw holes on the display hinges with the screw holes on the palm rest and keyboard assembly.
4. Replace the six screws (M2x5) to secure the display hinges to the palm rest and keyboard assembly.
5. Route the wireless-antenna cables through the routing guides on the fan.
6. Connect the display cable to the connector on the system board.

Next steps

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

System board

Removing the system board

Prerequisites

1. Follow the procedure in Before working inside your computer.

2. Remove the base cover.
3. Remove the battery.
4. Remove the M.2 2230 solid-state drive or M.2 2280 solid-state drive.
5. Remove the WLAN bracket.
6. Remove the fan.
7. Remove the heat sink .

NOTE: When accessing components that require system board removal as a prerequisite, keep the heat sink attached to the system board during removal to preserve the thermal bond.

About this task

The following image indicates the connectors on your system board.

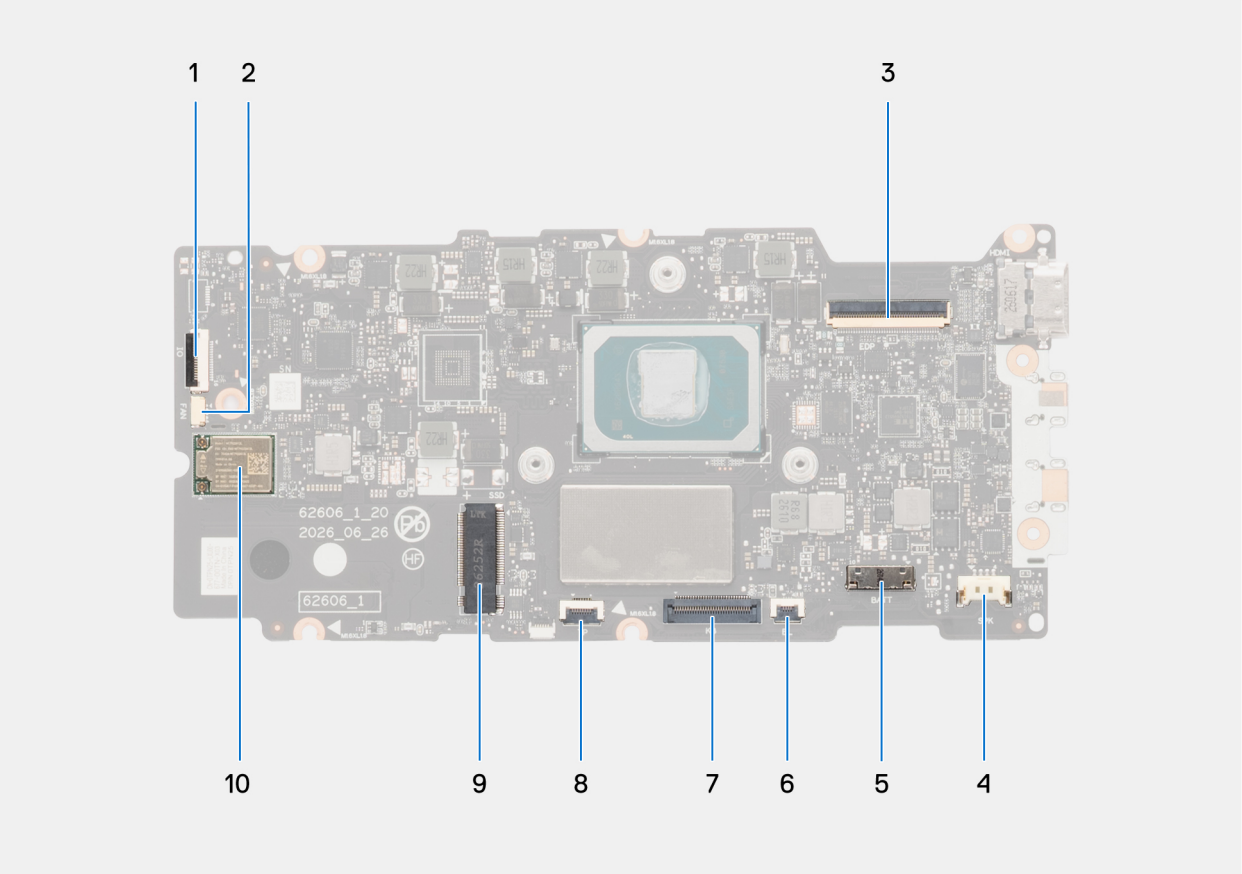


Figure 25. Image of system board connectors

1. I/O board-cable connector
2. Fan-cable connector
3. Display-cable connector
4. Speaker-cable connector
5. Battery connector
6. Keyboard backlight-cable connector
7. Keyboard-cable connector
8. Touchpad-cable connector
9. M.2 solid state drive connector
10. WLAN-antenna connector

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

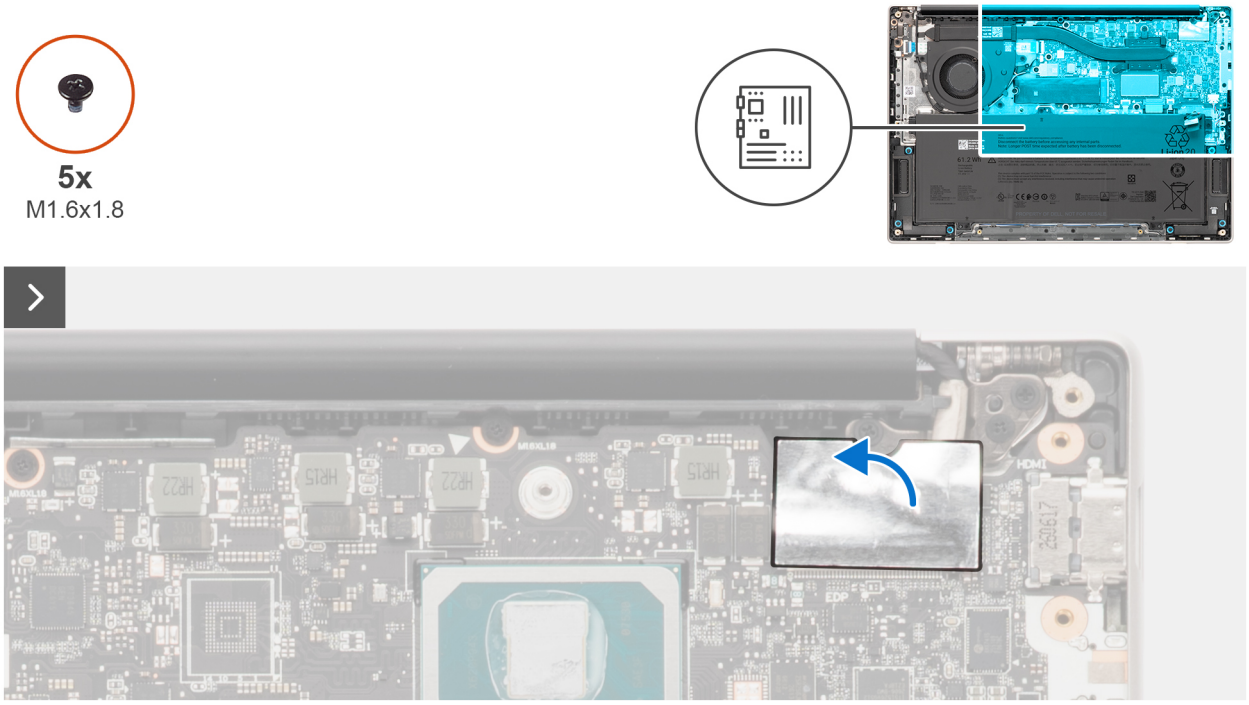


Figure 26. Removing the display cable cover

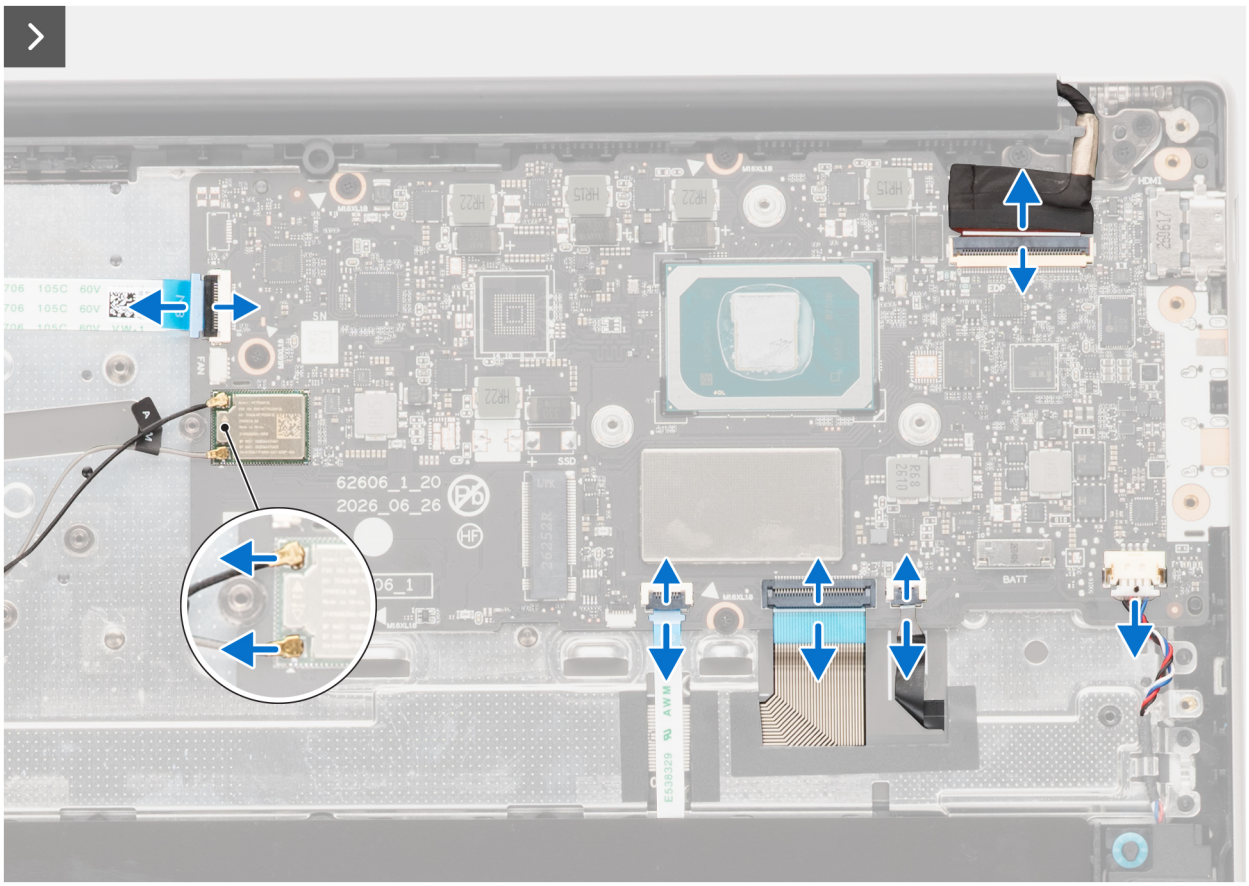


Figure 27. Disconnecting the cables

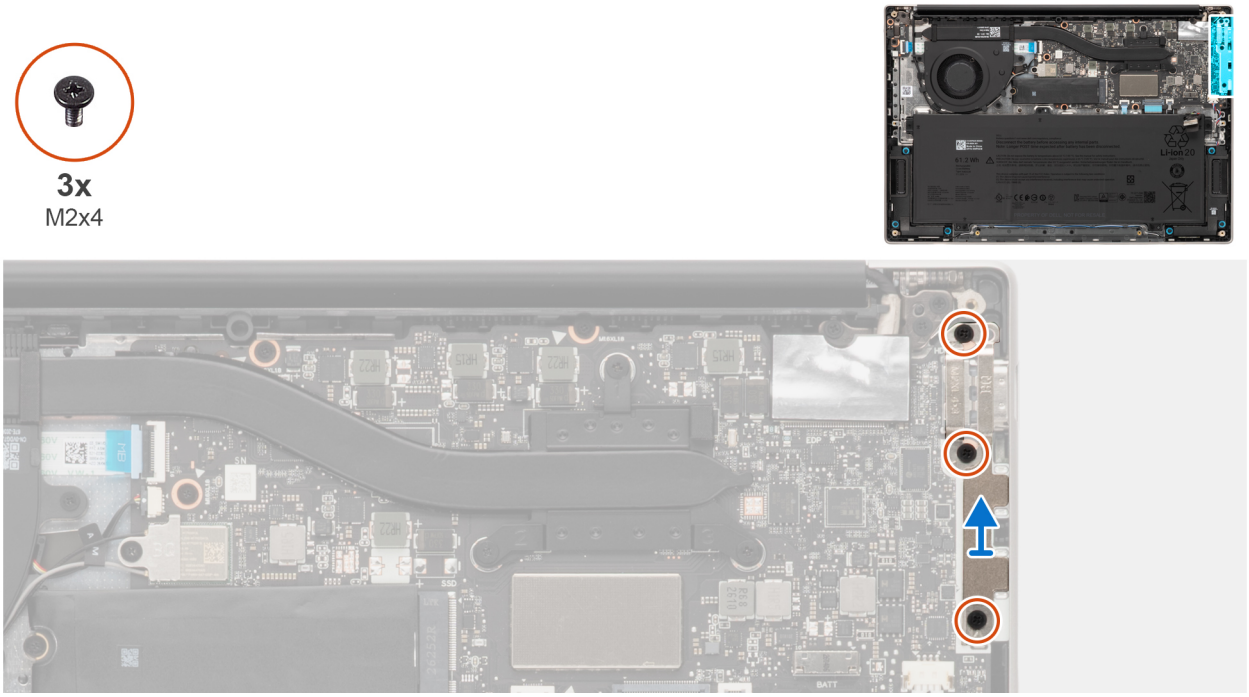


Figure 28. Removing the USB Type-C bracket

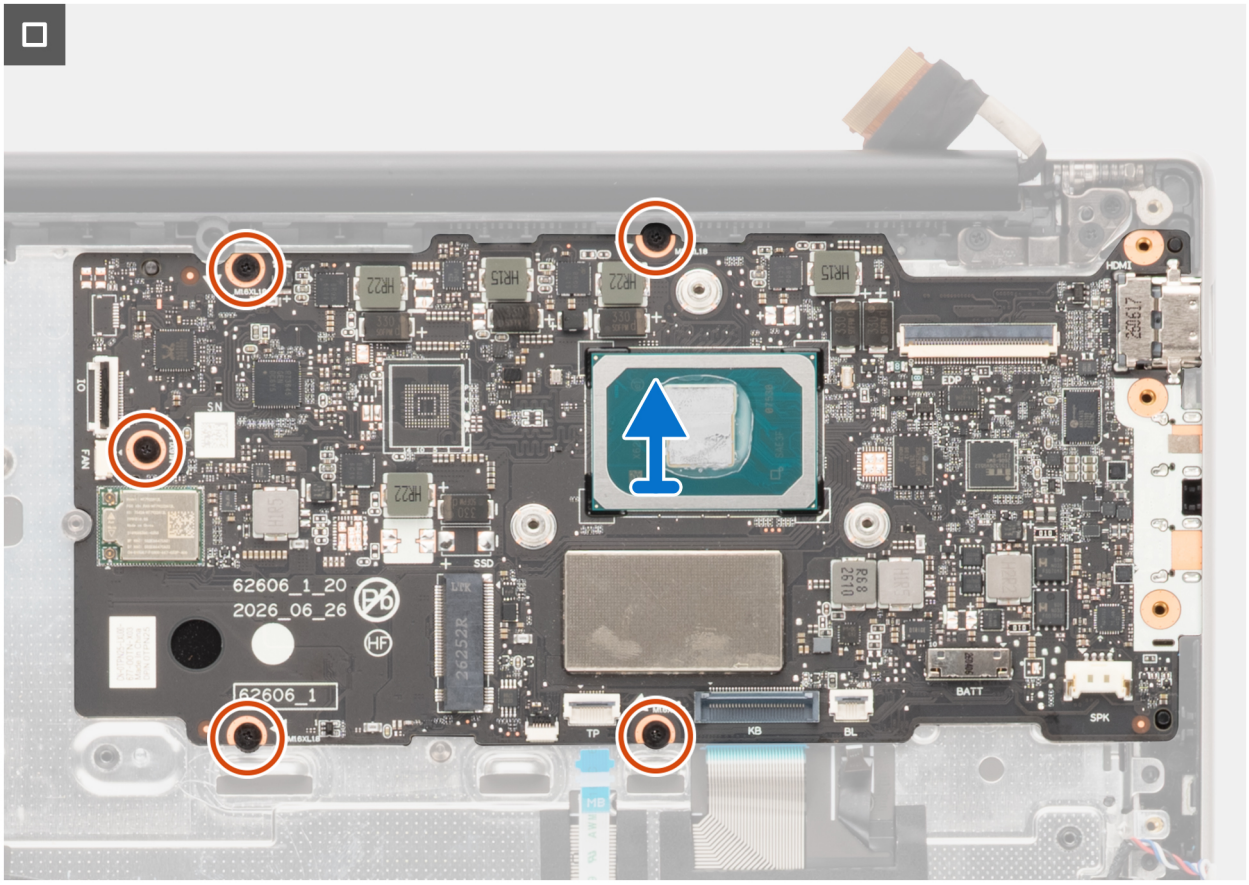


Figure 29. Removing the system board

Steps

1. Disconnect the following cables from the system board:

- Display cable
- WLAN-antenna cables
- Keyboard cable
- Keyboard-backlight cable

  NOTE: This step applies only to computers shipped with a keyboard backlight configuration.

- Touchpad cable
- Speaker cable
- I/O-board cable

2. Remove the three screws (M2x4) that secure the USB Type-C bracket to the palm rest and keyboard assembly.
3. Remove the five screws (M1.6x1.8) that secure the system board to the palm rest and keyboard assembly.
4. Remove the system board from the palm rest and keyboard assembly.

Installing the system board

Prerequisites

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

About this task

NOTE: When installing the system board to replace/access other parts, the system board can be installed with the heat sink attached to it in order to simplify the procedure and preserve the thermal bond between the system board and heat sink.

The following image indicates the connectors on your system board.

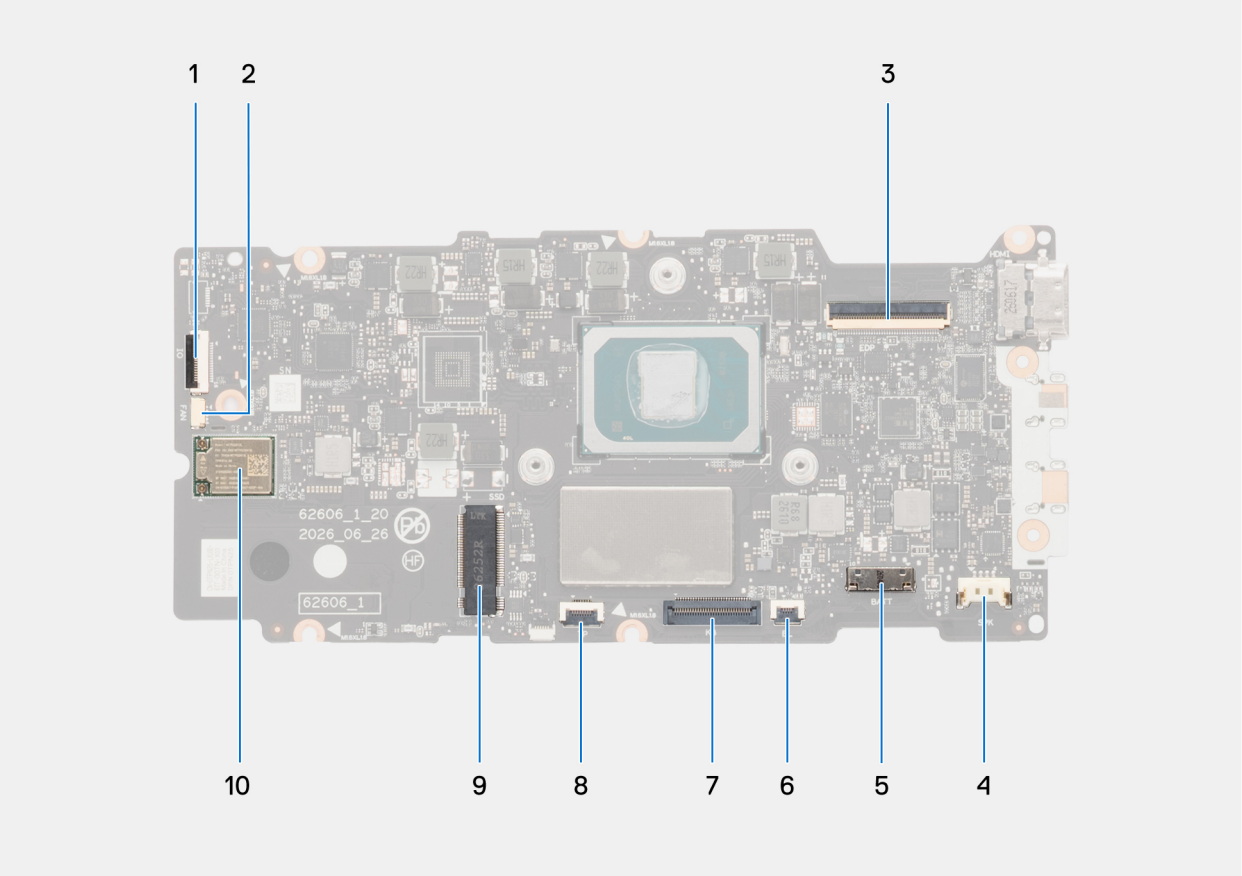


Figure 30. Image of system board connectors

1. I/O-board cable connector
2. Fan cable connector
3. Display cable connector
4. Speaker cable connector
5. Battery connector
6. Keyboard-backlight cable connector
7. Keyboard cable connector
8. Touchpad cable connector
9. M.2 solid state drive connector
10. WLAN-antenna connector

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

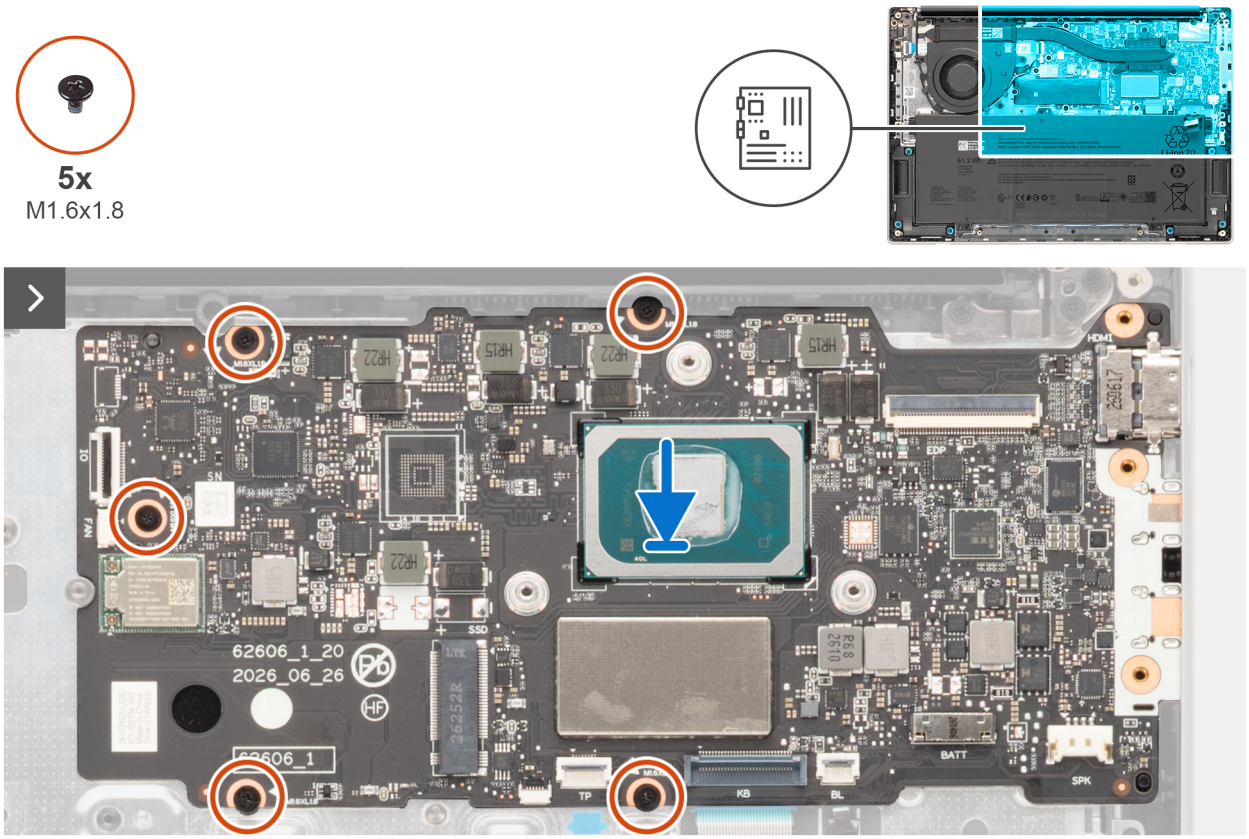


Figure 31. Installing the system board

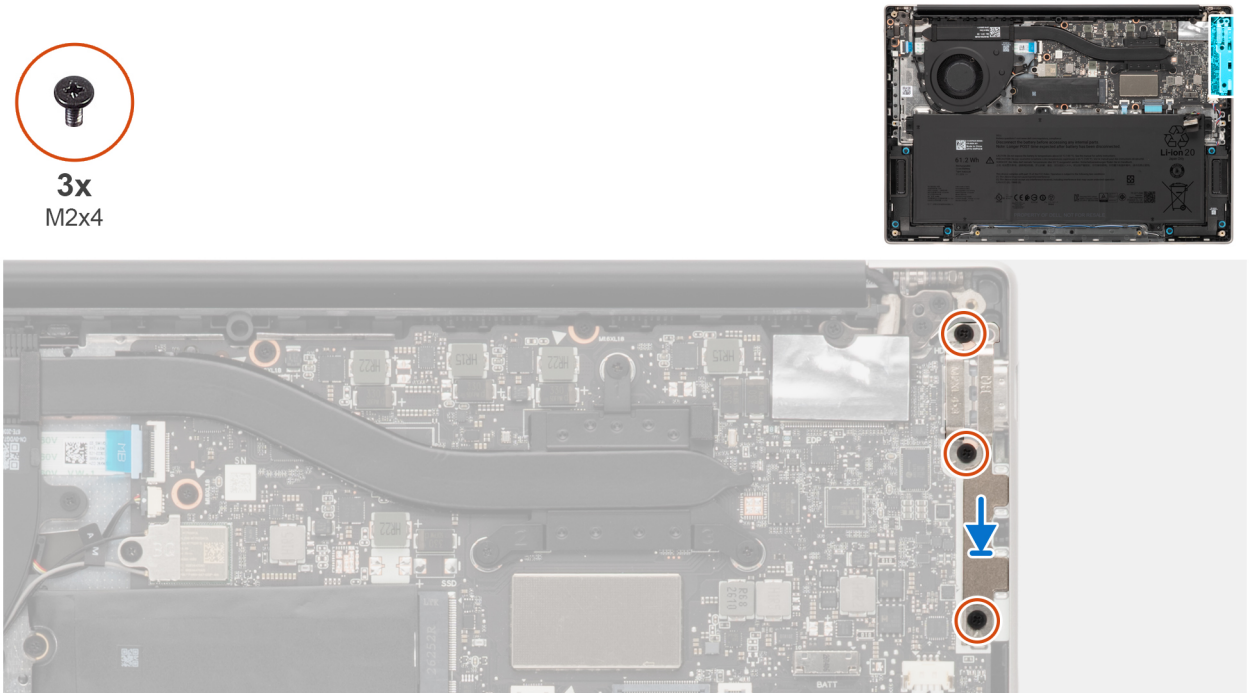


Figure 32. Installing the I/O board bracket

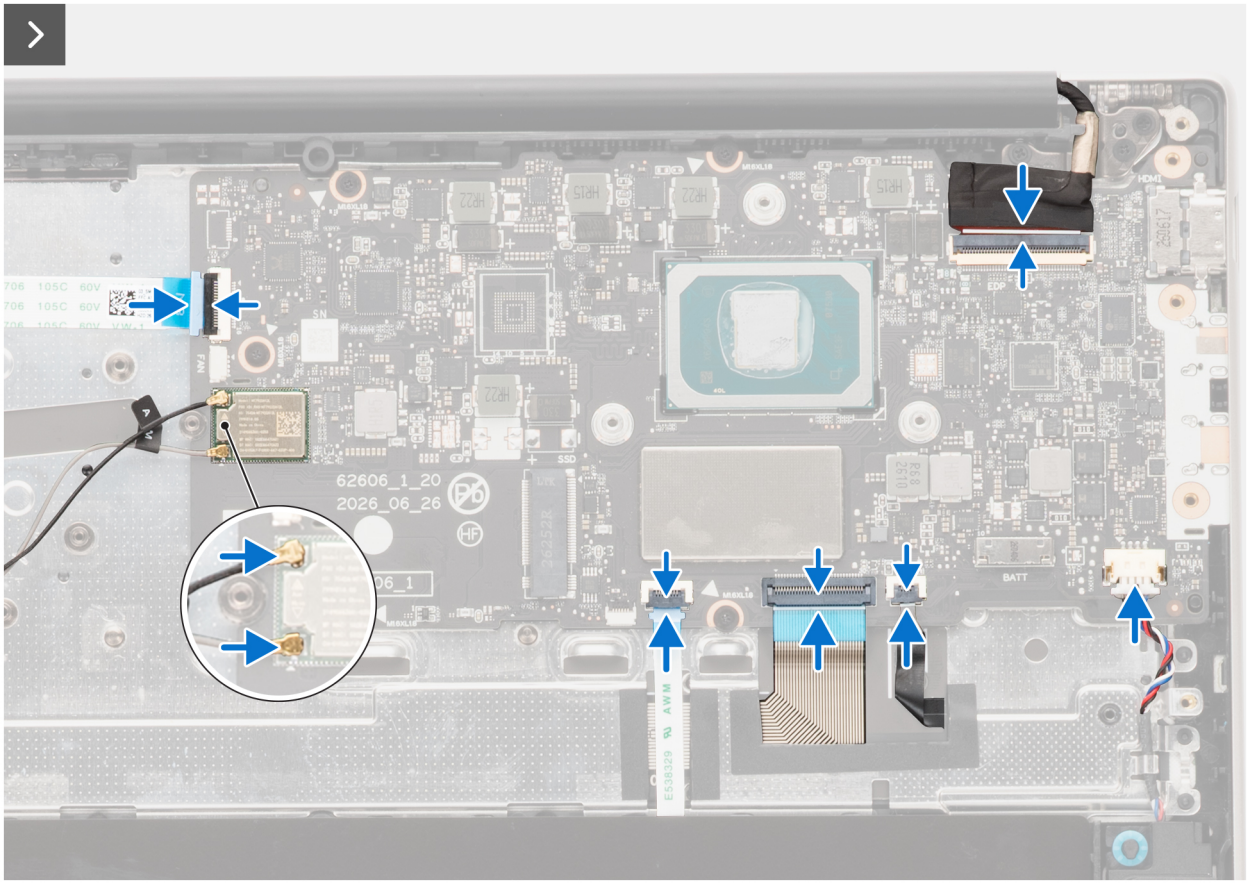


Figure 33. Installing the system board

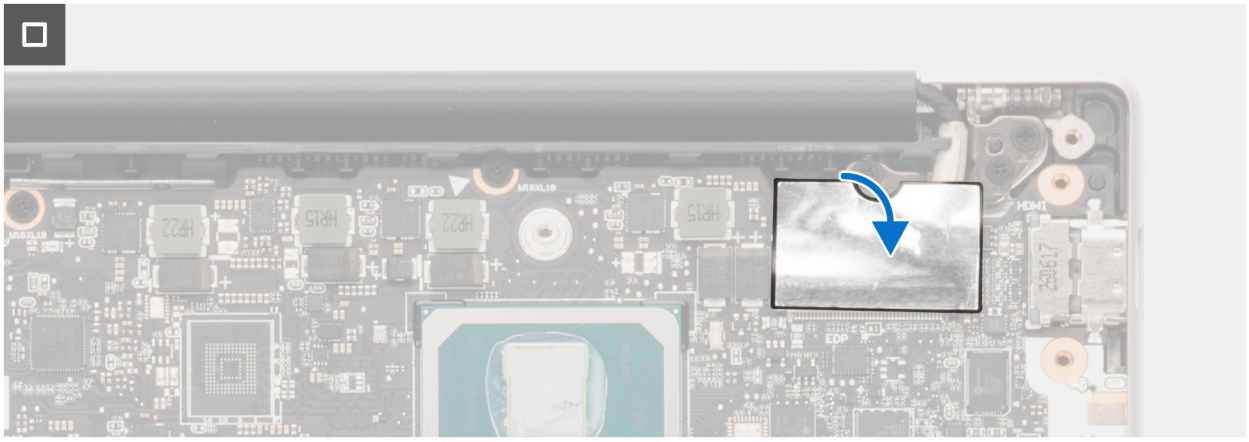


Figure 34. Installing the system board

Steps

1. Align the screw holes on the system board with the screw holes on the palm rest and keyboard assembly.
2. Replace the five screws (M1.6x1.8) that secure the system board to the palm rest and keyboard assembly.
3. Replace the three screws (M2x4) that secure the USB Type-C bracket to the palm rest and keyboard assembly.
4. Connect the following cables to the system board:
   - Display cable
   - WLAN-antenna cables
   - Keyboard cable
   - Keyboard-backlight cable

     NOTE: This step applies only to computers shipped with a keyboard backlight configuration.

   - Touchpad cable
   - Speaker cable
   - I/O-board cable

Next steps

1. Install the heat sink .
2. Install the fan.
3. Install the M.2 2230 solid-state drive or M.2 2280 solid-state drive .
4. Install the WLAN bracket.
5. Install the battery.
6. Install the base cover.
7. Follow the procedure in After working inside your computer.

Touchpad

Removing the touchpad

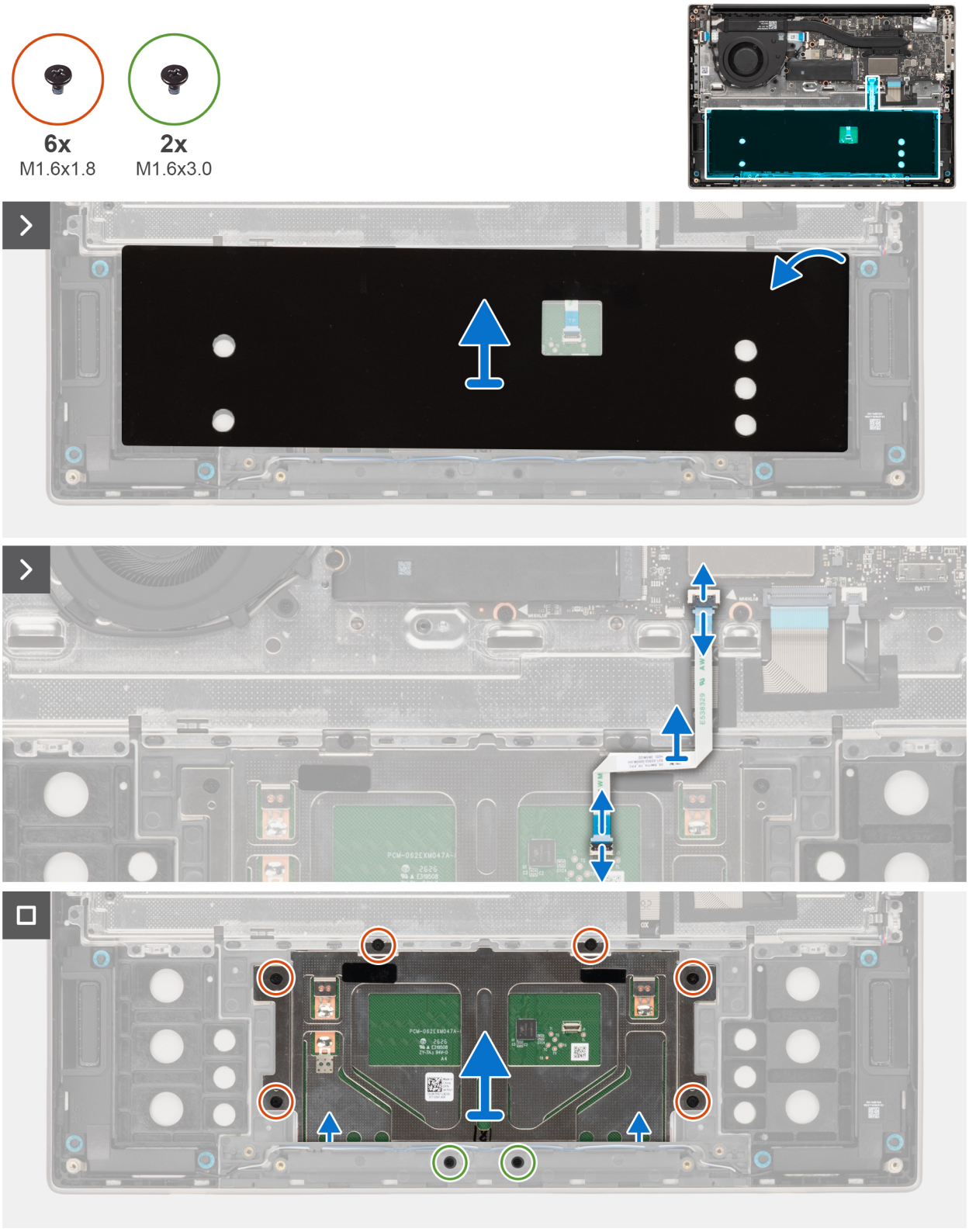
CAUTION: The information in this section is intended for authorized service technicians only.

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 images indicate the location of the touchpad and provide a visual representation of the removal procedure.



Steps

1. Peel and remove the mylar sheet securing the touchpad to the palm rest and keyboard assembly.
2. Open the latch and disconnect the touchpad cable from the connector on the system board.

3. Remove the six screws (M1.6x1.8) that secure the touchpad to the palm rest and keyboard assembly.
4. Remove the two screws (M1.6x3.0) that secure the touchpad to the palm rest and keyboard assembly.
5. Lift the touchpad, along with the touchpad cable, off the palm rest and keyboard assembly.

Installing the touchpad

CAUTION: The information in this section is intended for authorized service technicians only.

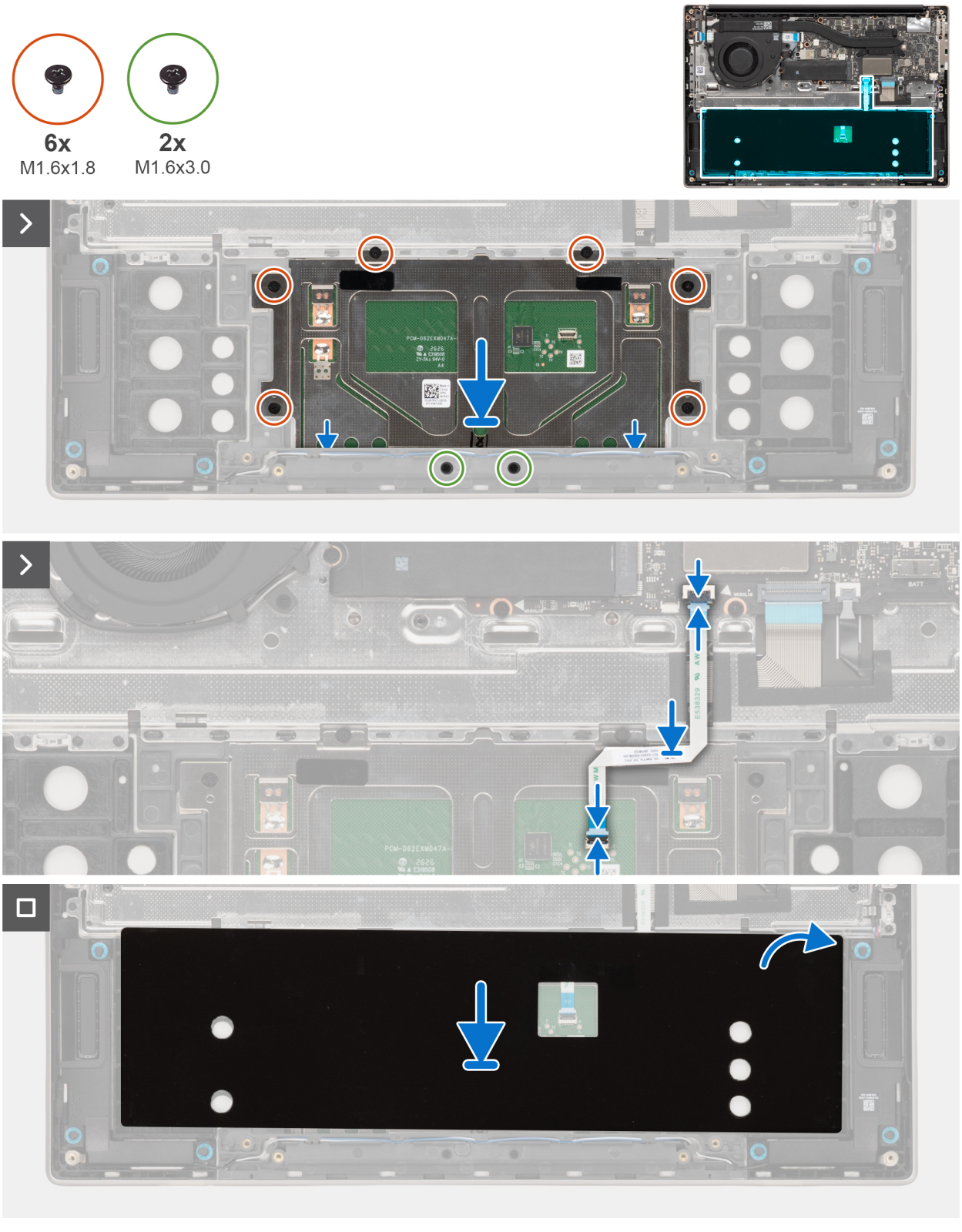
Prerequisites

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

About this task

NOTE: Ensure that the touchpad is aligned with the guides available on the palm rest and keyboard assembly, and the gap on either sides of the touchpad is equal.

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



Steps

1. Place the touchpad, along with the touchpad cable, on the palm rest and keyboard assembly.
2. Align the screw holes on the touchpad with the screw holes on the palm rest and keyboard assembly.
3. Replace the two screws (M1.6x3.0) that secure the touchpad to the palm rest and keyboard assembly.
4. Replace the six screws (M1.6x1.8) that secure the touchpad to the palm rest and keyboard assembly.
5. Connect the touchpad cable to the connector on the system board and close the latch to secure the cable.

NOTE: Ensure that the latch is fully closed to secure the touchpad cable to the connector on the system board.

6. Adhere the mylar sheet to secure the touchpad to the palm rest and keyboard assembly.

Next steps

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

Palm rest and keyboard assembly

Removing the palm rest and keyboard assembly

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the base cover.
3. Remove the M.2 2230 solid-state drive or M.2 2280 solid-state drive.
4. Remove the WLAN bracket.
5. Remove the speakers.
6. Remove the fan.
7. Remove the heat sink .
8. Remove the battery.
9. Remove the touchpad.
10. Remove the I/O-board cable.
11. Remove the I/O board.
12. Remove the display assembly.
13. Remove the system board.

NOTE: Remove the system board along with the heat sink to preserve the thermal bond.

About this task

NOTE: The palm rest and keyboard assembly cannot be further disassembled once all the pre-removal parts procedures are completed. If the keyboard is malfunctioning and is required to be replaced, replace the entire palm rest and keyboard assembly.

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

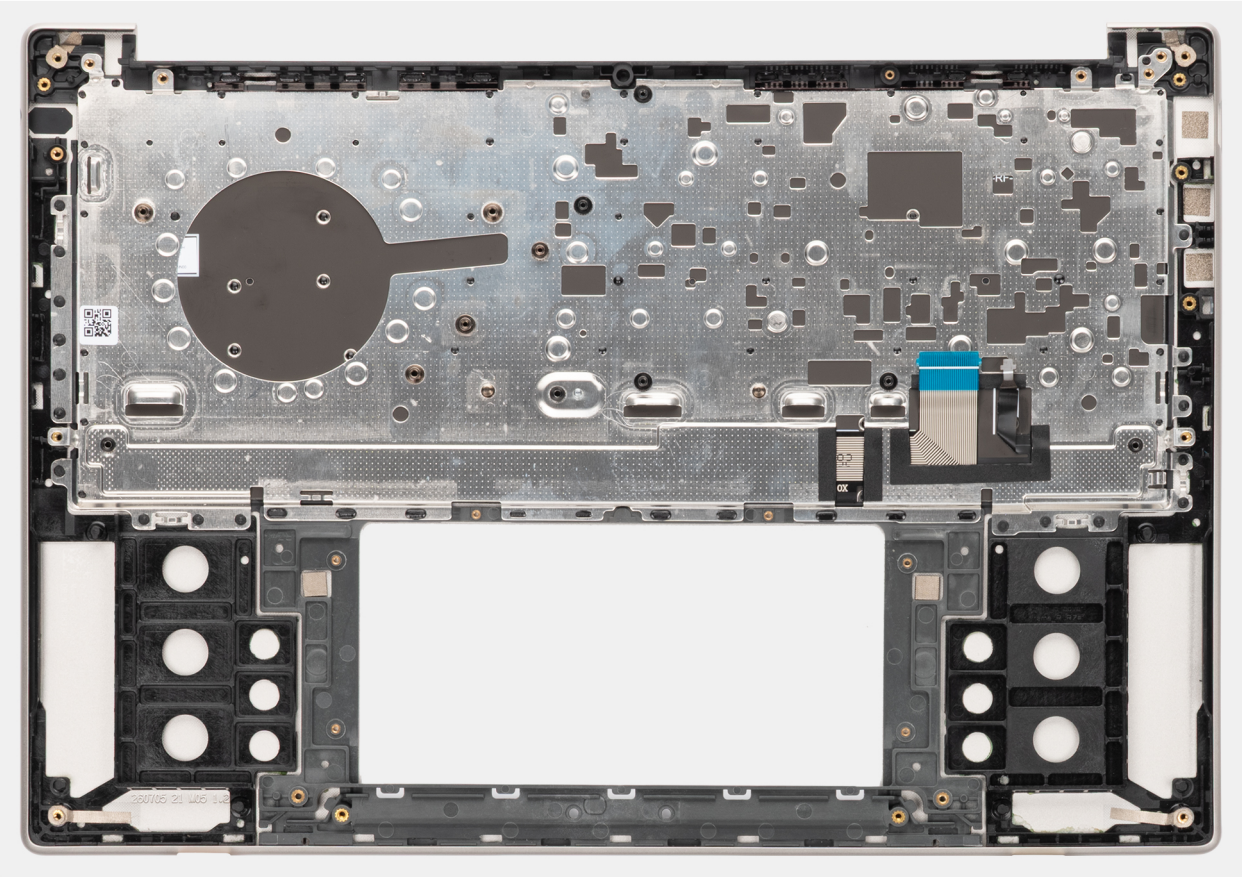


Figure 35. Removing the palm rest and keyboard assembly

Steps

Remove all the components mentioned in the pre-requisites to get the palm rest and keyboard assembly.

Installing the palm rest and keyboard assembly

Prerequisites

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

About this task

The following image indicates the palm rest and keyboard assembly.

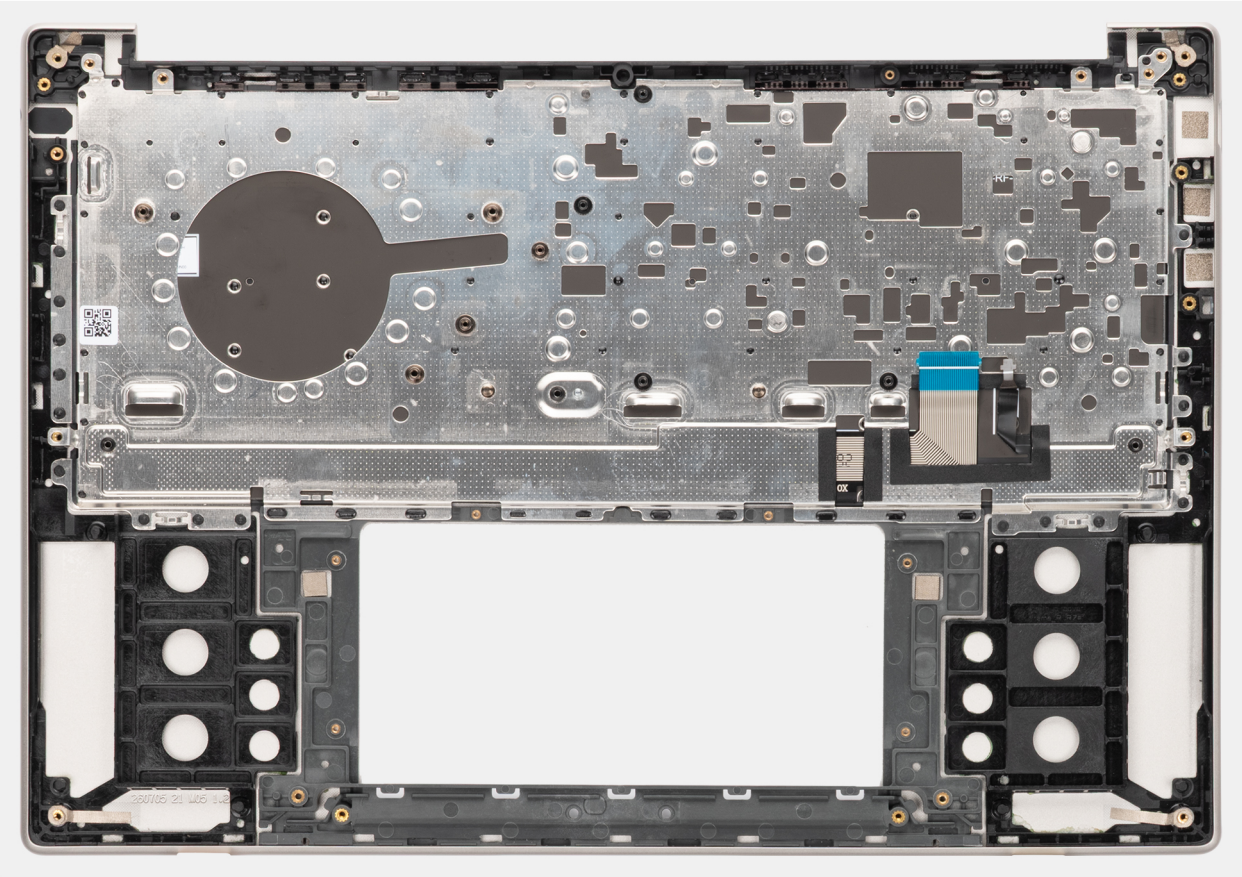


Figure 36. Installing the palm rest and keyboard assembly

Steps

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

Next steps

1. Install the system board.

   NOTE: Remove the system board along with the heat sink to preserve the thermal bond.

2. Install the display assembly.
3. Install the I/O board.
4. Install the I/O-board cable.
5. Install the touchpad.
6. Install the battery.
7. Install the heat sink .
8. Install the fan.
9. Install the speakers.
10. Install the WLAN bracket.
11. Install the M.2 2230 solid state drive or M.2 2280 solid state drive.
12. Install the base cover.
13. Follow the procedure in After working inside your computer.

4

Software

This chapter details the supported operating systems along with instructions on how to install the drivers.

Operating system

Your Dell 14S DS14270 supports the following operating systems:

- Windows 11 Home (64-bit)
- Windows 11 Professional (64-bit)

Drivers and downloads

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

5

BIOS Setup

CAUTION: Certain changes can make your computer work incorrectly. Before you change the settings in BIOS Setup, it is recommended that you note down the original settings for future reference.

NOTE: Depending on the computer and the installed devices, the options that are listed in below may differ.

Use BIOS Setup for the following purposes:

- Get information about the hardware installed in your computer, such as the amount of RAM and the capacity of the storage device.
- Change the system configuration information.
- Set or change user-selectable options such as the user password, enabling or disabling base devices, and configuring hard drive settings.

Entering BIOS Setup program

Turn on or restart your computer and press F2 immediately.

Navigation keys

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

Table 3. Navigation keys

Keys	Navigation
Up arrow	Moves to the previous field.
Down arrow	Moves to the next field.
Enter	Selects a value in the selected field (if applicable) or follows 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 restart the computer.

F12 One Time Boot menu

To enter the One Time Boot menu, turn on or restart your computer, and then press F12 immediately.

NOTE: If you are unable to enter the One Time Boot menu, repeat the above action.

The One Time Boot menu displays the devices that you can boot from and also display the options to start diagnostics. The boot menu options are:

- Removable Drive (if available)
- Diagnostics

The One Time Boot menu screen also displays the option to access BIOS Setup.

View Advanced Setup options

About this task

Some BIOS Setup options are only visible by enabling **Advanced Setup** mode, which is disabled by default.

NOTE: BIOS Setup options, including **Advanced Setup** options, are described in the **System setup options** option.

To enable Advanced Setup:

Steps

1. Enter BIOS Setup.
   The Overview menu appears.
2. Click the **Advanced Setup** option to move it to the **ON** mode.
   Advanced BIOS Setup options are displayed.

BIOS Setup options

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

NOTE: Depending on your computer and its installed devices, the items that are listed in this section may differ.

Table 4. BIOS Setup options—Main menu

Main	Description
System Time	Displays the current time in HH:MM:SS format.
System Date	Displays the current date in MM/DD/YYYY format.
BIOS Version	Displays the BIOS version number.
Product Name	Displays the model number of the computer.
Service Tag	Displays the Service Tag of the computer.
Asset Tag	Displays the Asset Tag of the computer.
CPU Type	Displays the processor type.
CPU Speed	Displays the processor speed.
CPU ID	Displays the processor ID.
CPU Cache	
L1 Cache	Displays the processor L1 cache size.
L2 Cache	Displays the processor L2 cache size.
L3 Cache	Displays the processor L3 cache size.
M.2 PCIe SSD	Displays the information of onboard drives.
AC Adapter Type	Displays whether an AC adapter is connected. If connected, displays the type of AC adapter that is connected.
System Memory	Displays the total memory that is installed on the computer.
Memory Speed	Displays the memory speed.
Keyboard Type	Displays the type of keyboard that is installed on the computer.

Table 5. BIOS Setup options—Advanced menu

Advanced	Description
Intel SpeedStep	Enables or disables the Intel SpeedStep Technology. Default: Enabled
Intel Speed Shift Technology	Enables or disables the Intel Speed Shift Technology. Default: Enabled
Multi-Cores Support	Specifies the number of enabled cores per processor. Default: Enabled
Virtualization	Enables or disables the Virtualization. Default: Enabled
VT for Direct I/O	Enables or disables the VT for Direct I/O. Default: Enabled
Trusted Execution	Enables or disables the Intel Trusted Execution Technology. Default: Enabled
USB Emulation	Enables or disables the USB emulation feature. This feature defines how the BIOS, in the absence of a USB-aware operating system, handles USB devices. USB emulation is always enabled during POST. **NOTE:** You cannot boot to a USB device (floppy, hard drive, or memory key) when this option is disabled. By default, the **USB Emulation** option is enabled.
USB Powershare	Enables or disables the USB PowerShare feature. This feature allows the USB PowerShare port to charge external devices when the computer is in sleep or off state. By default, the **USB Powershare** option is enabled.
SATA/NVMe Operations mode	Sets the operating mode of the integrated SATA hard drive controller By default, the **AHCI/NVMe** option is selected. The storage device is configured for AHCI/NVMe mode.
Adapter Warnings	Enables the warning messages during boot when the adapters with less power capacity are detected. By default, the **Enable Adapter Warning** option is enabled.
Function Key Behavior	Allows the user to set the default key behavior of the function key. By default, the **Multimedia Key** option is selected.
Keyboard Illumination	Configures the operating mode of the keyboard illumination feature. By default, the **Bright** option is selected. Enables the keyboard illumination feature at 100% brightness level.
Keyboard Backlight with AC	Sets the timeout value for the keyboard backlight when an AC adapter is connected to the computer. By default, the **1 minute** option is selected.
Keyboard Backlight with Battery	Sets the timeout value for the keyboard backlight when the computer is running only on the battery power. The keyboard backlight timeout value is only effective when the backlight is enabled. By default, the **1 minute** option is selected.

Table 5. BIOS Setup options—Advanced menu (continued)

Advanced	Description
Thermal Fan Mode Switch	Allows the user to configure the thermal fan operating mode. By default, the **Optimized** option is selected.
Battery Health	Displays the battery health of the computer.
External USB Ports	Enables or disables the external USB ports. By default, the **External USB Ports** option is enabled.
Enable Audio	Enables all integrated audio controller. By default, the **Enable Audio** option is enabled.
Microphone	Enables or disables the microphone. By default, the **Microphone** option is enabled.
Camera	Enables or disables the camera. By default, the **Camera** option is enabled.
Battery Charge Configuration	Allows the user to set the battery charge settings, with a preselected custom charge start and stop time. By default, the **Adaptive** option is selected.
Advance Battery Charge Configuration	Enables or disables the advanced battery charging feature. By default, the **Advance Battery Charge Configuration** option is disabled.
IPv4 HTTP Support	Enables or disables the IPv4 HTTP support. By default, the **IPv4 HTTP Support** option is disabled.
IPv6 HTTP Support	Enables or disables the IPv6 HTTP support. By default, the **IPv6 HTTP Support** option is disabled.
Power Option	
Power on LID open	Enables or disables the ability to power on the computer when the lid is opened. By default, the **Power on LID open** option is enabled.
Maintenance	
Data Wipe on next boot	Enables or disables data wipe on the next boot. Data Wipe is a secure wipe operation that deletes information from a storage device. **CAUTION: The secure Data Wipe operation deletes information in a way that it cannot be reconstructed.** Commands such as delete and format in the operating system may remove files from showing up in the file system. However, they can be reconstructed through forensic means as they are still represented on the physical media. Data Wipe prevents this reconstruction and is not recoverable. When enabled, the data wipe option will prompt to wipe any storage devices that are connected to the computer on the next boot. By default, the **Data Wipe on next boot** option is disabled.
BIOS Recovery from Hard drive	Allows the user to recover certain corrupted BIOS conditions from a recovery file on the user's primary hard drive or an external USB drive. By default, the **BIOS Recovery from Hard drive** option is enabled.
BIOS Auto-Recovery	Allows the user to automatically recover the BIOS without user actions.

Table 5. BIOS Setup options—Advanced menu (continued)

Advanced	Description
	By default, the **BIOS Auto-Recovery** option is disabled.
SupportAssist System Resolution	
Auto OS Recovery Threshold	Allows the user to set the automatic OS recovery threshold for the computer. Controls the automatic boot flow for SupportAssist System Resolution Console and for the Dell OS Recovery tool. By default, the **Auto OS Recovery Threshold** is set to 2.
SupportAssist OS Recovery	Enables or disables the boot flow for SupportAssist OS Recovery tool when certain system errors occur. By default, the **SupportAssist OS Recovery** option is enabled.

Table 6. System setup options - Security menu

Security	Description
Admin Password	Displays if the administrator password is clear or set. By default, the **Admin Password** is not set.
System Password	Displays if the system password is clear or set. By default, the **System Password** is not set.
Asset Tag	Allows the user to create a computer Asset Tag that can be used by an IT administrator to uniquely identify a particular computer. **NOTE:** Once set in the BIOS, the Asset Tag cannot be changed.
Admin Password	Allows the user to set the administrator password. The Administrator Password prevents unauthorized access to the BIOS Setup options. Once the administrator password is set, the BIOS setup options can only be modified after providing the correct password. The following rules and dependencies apply to the Administrator Password - • The administrator password cannot be set if computer and/or internal hard drive passwords are previously set. • The administrator password can be used in place of the computer and/or internal hard drive passwords. • When set, the administrator password must be provided during a firmware update. • Clearing the administrator password also clears the computer password (if set). Dell Technologies recommends using an administrator password to prevent unauthorized changes to BIOS setup options.
System Password	Allows the user to set the system password. The System Password prevents the computer from booting to an operating system without entering the correct password. The following rules and dependencies apply when the System Password is used - • The computer shuts down when idle for approximately 10 minutes at the computer password prompt. • The computer shuts down after three incorrect attempts to enter the computer password. • The computer shuts down when the **Esc** key is pressed at the System Password prompt. • The computer password is not prompted when the computer resumes from standby mode.

Table 6. System setup options - Security menu (continued)

Security	Description
	Dell Technologies recommends using the computer password in situations where it is likely that a computer may be lost or stolen.
Password Change	Allows the user to permit or deny system password or hard disk drive password changes. By default, the **Permitted** option is selected.
Absolute	Absolute Software provides various cyber security solutions, some requiring software preloaded on Dell computers and integrated into the BIOS. To use these features, you must enable the Absolute BIOS setting and contact Absolute for configuration and activation. By default, the **Absolute** option is disabled. For additional security, Dell Technologies recommends keeping the **Absolute** option enabled. **NOTE:** When the Absolute features are activated, the Absolute integration cannot be disabled from the BIOS setup screen.
Absolute Status	Allows the user to activate or deactivate the Absolute Status feature. Displays if the system password is clear or set. By default, the **Absolute Status** is activate.
WINDOWS SMM SECURITY MITIGATIONS TABLE (WSMT)	Enables or disables configuration of platform features on Dell Client Systems with WSMT-enabled BIOS. By default, the **WINDOWS SMM SECURITY MITIGATIONS TABLE (WSMT)** option is enabled.
Firmware TPM	Enables or disables the firmware TPM. By default, the **Firmware TPM** option is enabled.
PPI Bypass for Clear Command	Allows the user to control the TPM Physical Presence Interface (PPI). When enabled, this setting allows the operating system to skip BIOS PPI user prompts when issuing the Clear command. Changes to this setting take effect immediately. By default, the **PPI Bypass for Clear Commands** option is disabled. For additional security, Dell Technologies recommends keeping the **PPI Bypass for Clear Commands** option disabled.
Enable Master Password Lockout	When enabled, this disables the master password support. By default, the **Enable Master Password Lockout** option is disabled.
Pluton Security Processor	Enables or disables the Microsoft Pluton Security Processor. By default, the **Pluton Security Processor** option is enabled.
Enable Pre-Boot DMA Support	Allows the user to control the Pre-Boot DMA protection for both internal and external ports. This option does not directly enable DMA protection in the operating system. **NOTE:** This option is not available when the virtualization setting for IOMMU is disabled (VT-d/AMD Vi). By default, the **Enable Pre-Boot DMA Support** option is enabled. **NOTE:** This option is provided only for compatibility purposes, as certain older hardware may not be DMA compliant.
Enable OS Kernel DMA Support	Allows you to control the Kernel DMA protection for both internal and external ports. This option does not directly enable DMA protection in the operating

Table 6. System setup options - Security menu (continued)

Security	Description
	system. For operating systems that support DMA protection, this setting indicates to the operating system that the BIOS supports the feature. **NOTE:** This option is not available when the virtualization setting for IOMMU is disabled (VT-d/AMD Vi). By default, the **Enable OS Kernel DMA Support** option is enabled. **NOTE:** This option is provided only for compatibility purposes, as certain older hardware may not be DMA compliant.
Internal Port DMA Compatibility Mode	Allows you to control the boot compatibility for integrated PCIe peripherals by disabling PCIe DMA protection on internal PCIe ports. When enabled, BIOS will notify the operating system that the internal ports are not DMA capable. This option is to help with devices that have operating system DMA compatibility issues. This option does not directly enable DMA protection in the operating system. **NOTE:** This option is not available when the virtualization setting for IOMMU is disabled (VT-d/AMD Vi). By default, the **Internal Port DMA Compatibility Mode** option is disabled. **NOTE:** This option is provided only for compatibility purposes, as certain older hardware may not be DMA compliant.
UEFI Firmware Capsule Updates	Enables or disables the ability to update the system BIOS through UEFI firmware capsule update packages. By default, the **UEFI Firmware Capsule Updates** option is enabled.
Secure Boot	Secure Boot is a method of guaranteeing the integrity of the boot path by performing additional validation of the operating system and PCI add-in cards. The computer stops booting to the operating system when a component is not authenticated during the boot process. Secure Boot can be enabled in BIOS setup or using management interfaces like Dell Command | Configure, but can only be disabled from BIOS setup.
Secure Boot	Enables or disables the computer to boot using only validated boot software. By default, the **Enable Secure Boot** option is enabled. For additional security, Dell Technologies recommends keeping the **Secure Boot** option enabled to ensure that the UEFI firmware validates the operating system during the boot process. **NOTE:** For Secure Boot to be enabled, the computer is required to be in UEFI boot mode and the Enable Legacy Option ROMs option is required to be turned off.
Select Secure Boot	Allows the user to select the Secure Boot operation mode. By default, the **Audit Mode** option is selected. **NOTE:** **Audit Mode** should be selected for normal operation of Secure Boot.

Table 7. System setup options - Boot menu

Exit	Description
File Browser Add Boot Option	Allows the user to add boot options.
File Browser Del Boot Option	Allows the user to delete boot options.
UEFI Boot	Displays the boot sequence.

Table 8. System setup options - Exit menu

Exit	Description
Exit Saving Changes	Allows the user to save the changes and exit the BIOS setup.
Save Change Without Exit	Allows the user to save the changes without exiting the BIOS setup.
Exit Discarding Changes	Allows the user to exit the BIOS setup without saving the changes.
Load Optimal Defaults	Allows the user to restore default values for all BIOS setup options.
Discard Changes	Allows the user to load previous values for all BIOS setup options.

Updating the BIOS

Updating the BIOS in Windows

About this task

CAUTION: If BitLocker is not suspended before updating the BIOS, the BitLocker key is not recognized the next time you reboot the computer. You will then be prompted to enter the recovery key to proceed, and the computer displays a prompt for the recovery key on each reboot. Failure to provide the recovery key can result in data loss or an operating system reinstall. For more information, refer Updating the BIOS on Dell systems with BitLocker enabled.

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

Steps

1. Go to Dell Support Site.
2. Go to **Identify your product or ask support**. In the box, enter the product identifier, model, service request or describe what you are looking for, and then click **Search**.

   NOTE: If you do not have the Service Tag, click **Detect This PC**. The site automatically detects your device, and you can then click **Explore Product Support** to go to the support page for your device. You can also use the product ID or manually browse for your computer model.

3. Click **Drivers & Downloads**.
4. Select the operating system installed on your computer.
5. In the **Category** drop-down list, select **BIOS**.
6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
7. After the download is complete, navigate to the folder where the BIOS update file has been saved.
8. Double-click the BIOS update file and follow the on-screen instructions.

   For more information, search Dell Support Site.

Updating the BIOS using the USB drive in Windows

About this task

CAUTION: If BitLocker is not suspended before updating the BIOS, the BitLocker key is not recognized the next time you reboot the computer. You will then be prompted to enter the recovery key to proceed, and the computer displays a prompt for the recovery key on each reboot. Failure to provide the recovery key can result in data loss or an operating system reinstall. For more information, refer Updating the BIOS on Dell systems with BitLocker enabled.

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

Steps

1. Go to Dell Support Site.
2. Go to **Identify your product or ask support**. In the box, enter the product identifier, model, service request or describe what you are looking for, and then click **Search**.

   NOTE: If you do not have the Service Tag, click **Detect This PC**. The site automatically detects your device, and you can then click **Explore Product Support** to go to the support page for your device. You can also use the product ID or manually browse for your computer model.

3. Click **Drivers & Downloads**.
4. Select the operating system installed on your computer.
5. In the **Category** drop-down list, select **BIOS**.
6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
7. Create a bootable USB drive. For more information, search Dell Support Site.
8. Copy the BIOS setup program file to the bootable USB drive.
9. Connect the bootable USB drive to the computer that needs the BIOS update.
10. Restart the computer and press **F12**.
11. Select the USB drive from the **One Time Boot Menu**.
12. Type the BIOS setup program filename and press **Enter**.
    The **BIOS Update Utility** appears.
13. Follow the on-screen instructions to complete the BIOS update.

Updating the BIOS from the One-Time boot menu

To update the BIOS from the One-Time boot menu, see Updating the BIOS from the One Time Boot Menu at Dell Support Site.

System and setup password

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

CAUTION: Ensure that your computer is locked when it is not in use. Anyone can access the data that is stored on your computer, when left unattended.

Table 9. System and setup password

Password type	Description
System password	Password that you must enter to boot to your operating system.
Setup password	Password that you must enter to access and change the BIOS settings of your computer.

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

NOTE: The System and setup password feature is disabled by default.

Assigning a System Setup password

Prerequisites

You can assign a new System or Admin Password only when the status is set to **Not Set**. To enter BIOS System Setup, press F2 immediately after a power-on or reboot.

Steps

1. To enter the **System Setup**, press **F2** immediately after a power-on or reboot.
2. In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.
   The **Security** screen is displayed.
3. Select **System/Admin Password** and create a password in the **Enter the new password** field.
   Use the following guidelines to create the system password:
   - Password can be up to 32 characters.
   - Password must contain at least one special character: "(! " # $ % & ' * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | })"
   - The password can contain numbers from 0 to 9.
   - The password can contain alphabets A to Z and a to z.
4. Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
5. Press Y to save the changes.
   The computer restarts.

Deleting or changing an existing system password or setup password

Prerequisites

Ensure that the **Password Status** is Unlocked in the System Setup before attempting to delete or change the existing system password and/or setup password. You cannot delete or change an existing system password or setup password if the **Password Status** is Locked. To enter the System Setup, press F2 immediately after a power-on or reboot.

Steps

1. To enter the **System Setup**, press **F2** immediately after a power-on or reboot.
2. In the **System BIOS** or **System Setup** screen, select **System Security** and press Enter.
   The **System Security** screen is displayed.
3. In the **System Security** screen, verify that the **Password Status** is Unlocked.
4. Select **System Password**. Update or delete the existing system password, and press Enter or Tab.
5. Select **Setup Password**. Update or delete the existing setup password, and press Enter or Tab.

   NOTE: If you change the system password and/or setup password, reenter the new password when prompted. If you delete the system password and/or setup password, confirm the deletion when prompted.

6. Press Esc. A message prompts you to save the changes.
7. Press Y to save the changes and exit from **System Setup**.
   The computer restarts.

Clearing system and setup passwords

About this task

To clear the system or setup passwords, contact Dell technical support as described at Contact Support.

NOTE: For information about how to reset Windows or application passwords, see the documentation accompanying Windows or your application.

6

Troubleshooting

Handling swollen rechargeable Li-ion batteries

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

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

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

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

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

Rechargeable Li-ion batteries can swell for various reasons such as age, number of charge cycles, or exposure to high heat. For more information about how to improve the performance and lifespan of the laptop battery and to minimize the possibility of occurrence of the issue, search Dell laptop battery at Dell Support Site.

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 within the BIOS and launched by the BIOS internally. The embedded system diagnostics provides options for particular devices or device groups allowing you to:

- Run tests automatically or in an interactive mode.
- Repeat the tests.
- Display or save test results.
- Run thorough tests to add more options and obtain details about any failed devices.

- View status messages that inform you when the 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 when the diagnostic tests are performed.

For more information, see How to Run Dell Preboot Diagnostics and Hardware Tests on Your Dell Computer.

Running the SupportAssist Pre-Boot System Performance Check

Steps

1. Turn on your computer.
2. As the computer boots, press the F12 key.
3. On the boot menu screen, select **Diagnostics**.
   The quick diagnostic test begins.
   NOTE: For more information about running the SupportAssist Pre-Boot System Performance Check on a specific device, see Dell Support Site.
4. If there are any issues, error codes are displayed.
   Note the error code and validation number and contact Dell.

Built-in self-test (BIST)

Motherboard Built-In Self-Test (M-BIST)

M-BIST is the system board onboard self-test diagnostics tool that improves the diagnostics accuracy of system board Embedded Controller (EC) failures.

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

How to run M-BIST

NOTE: Before initiating M-BIST, ensure that the computer is in a power-off state.

1. Press and hold both the **M** key and the power button to initiate M-BIST.
2. The battery-status light may exhibit two states:
   - Off: No fault was detected.
   - Amber and White: Indicates a problem with the system board.
3. If there is a failure with the system board, the battery-status light flashes one of the following error codes for 30 seconds:

Table 10. LED error codes

Blinking Pattern		Possible Problem
Amber	**White**	
2	1	Processor Failure
2	8	LCD Power rail failure
1	1	TPM detection failure
2	4	Memory/RAM failure

4. If there is no failure with the system board, the LCD cycles through the solid color screens (that are described in the LCD-BIST) for 30 seconds and then turn off.

LCD Built-in Self-Test (LCD-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 computer settings.

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

How to invoke the LCD-BIST

1. Turn off your computer.
2. Disconnect any peripherals that are connected to the computer. Connect only the AC adapter (charger) to the computer.
3. Ensure that the LCD (screen) is clean (no dust particles on the surface of the screen).
4. Press and hold the **D** key and press the power button to enter LCD-BIST mode. Continue to hold the **D** key until the computer boots up.
5. The screen displays solid colors and changes colors on the entire screen to white, black, red, green, and blue twice.
6. Then it displays the colors white, black, and red.
7. Carefully inspect the screen for abnormalities (any lines, fuzzy color, or distortion on the screen).
8. At the end of the last solid color (red), the computer shuts down.

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

Logic Built-in Self-test (L-BIST)

L-BIST is an enhancement to the single LED error code diagnostics and is automatically initiated during POST. L-BIST will check the LCD power rail. If there is no power being supplied to the LCD (that is if the L-BIST circuit fails), the battery status LED flashes either an error code [2,8] or an error code [2,7].

NOTE: If L-BIST fails, LCD-BIST cannot function as no power will be supplied to the LCD.

How to invoke the L-BIST

1. Turn on your computer.
2. If the computer does not start up look at the battery status LED:
   - If the battery status LED flashes an error code [2,7], the display cable may not be connected properly.
   - If the battery status LED flashes an error code [2,8], there is a failure on the LCD power rail of the system board, hence there is no power that is supplied to the LCD.
3. For cases, when a [2,7] error code is shown, check to see if the display cable is properly connected.
4. For cases when a [2,8] error code is shown, replace the system board.

System-diagnostic lights

This section lists the system-diagnostic lights of your Dell 14S DS14270.

The following table shows different Service LED blinking patterns and associated problems. The diagnostic light codes consist of a two-digit number, and the digits are separated by a comma. The number stands for a blinking pattern; the first digit shows the number of blinks in amber color, and the second digit shows the number of blinks in white color. The Service LED blinks in the following manner:

- The Service LED blinks the number of times equal to the value of the first digit and turns off with a short pause.
- After that, the Service LED blinks the number of times equal to the value of the second digit.
- The Service LED turns off again with a longer pause.
- After the second pause, the blinking pattern will be repeated.

Table 11. Diagnostic light codes

Diagnostic light codes (Amber, White)	Problem description
1,1	TPM Detection Failure
1,2	Unrecoverable SPI Flash Failure
1,3	The camera-cable overcurrent protection (OCP1) was triggered. The camera module along with its cable may be damaged.
1,4	The hinge-cable overcurrent protection (OCP) was triggered. The hinge cable may be damaged.
1,5	EC unable to program i-Fuse
1,6	Generic catch-all for ungraceful EC code flow errors
1,7	Non-RPMC Flash on Boot Guard fused system
1,8	Chipset “Catastrophic Error” signal has tripped
2,1	CPU configuration or CPU failure
2,2	System board: BIOS or Read-Only Memory (ROM) failure
2,3	No memory, or Random-Access Memory (RAM) detected
2,4	Memory, or Random-Access Memory (RAM) failure
2,5	Invalid memory module
2,6	System board/Chipset Error
2,7	LCD failure SBIOS message
2,8	Display power-rail failure on the system board
3,1	CMOS battery failure
3,2	PCI of Video card/chip failure
3,3	Recovery image not found
3,4	Recovery image found but invalid
3,5	EC power-rail error
3,6	Flash corruption detected by SBIOS
3,7	Timeout waiting on ME to reply to HECI message
4,1	Memory DIMM power rail failure
4,2	CPU Power cable connection issue
4,3	LCD panel failure
4,4	Cable and power-rail failure
4,5	LCD power rail, cable and LCD panel failure
4,6	LCD cable failure
5,2	EC detects an invalid platform ID
6,1	The power adapter is not detected, and the battery-charge level is at 2% or less
6,2	The Dell power adapter is underpowered and unable to turn on the computer
6,3	The non-Dell power adapter is underpowered and is unable to turn on the computer

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 on Dell computers running the Windows operating system. It consists of tools to diagnose and troubleshoot issues that may occur before your computer boots to the operating system. It enables you to diagnose hardware issues, repair your computer, back up your files, and 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 the 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 Serviceability Tools at the Dell Support Site. Click **SupportAssist** and then click **SupportAssist OS Recovery**.

NOTE: Windows 11 IoT Enterprise LTSC 2024 and Dell ThinOS 10 do not support Dell SupportAssist. For more information about recovering ThinOS 10, see Recovery mode using R-Key.

Real-Time Clock (RTC Reset)

The Real-Time Clock (RTC) reset function enables you or the service technician to recover Dell computers from No POST/No Power/No Boot situations.

Start the RTC reset with the computer powered off and connected to AC power. Press and hold the power button for twenty-five seconds. The computer RTC Reset occurs after you release the power button.

Backup media and recovery options

It is recommended to create a recovery drive to troubleshoot and fix problems that may occur with Windows. Dell provides multiple options for recovering the Windows operating system on your Dell computer. For more information, see Dell Windows Backup Media and Recovery Options.

Network power cycle

About this task

If your computer is unable to access the Internet due to network connectivity issues, reset your network devices by performing the following steps:

Steps

1. Turn off the computer.
2. Turn off the modem.
   NOTE: Some Internet service providers (ISPs) provide a modem and router combo device.
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 the computer.

Drain flea power (perform hard reset)

About this task

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

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

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

Perform the following steps to drain the flea power:

Steps

1. Turn off the computer.
2. Disconnect the power adapter from the computer.
3. Remove the base cover.
4. Remove the battery.

   CAUTION: If the battery is a Field Replaceable Unit (FRU), the removal and installation procedures are intended for authorized service technicians only.

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

   NOTE: For more information about performing a hard reset, go to Dell Support Site. On the menu bar at the top of the Support page, select Support > Support Library. In the Search field on the Support Library page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles.

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Getting help and contacting Dell Technologies

Self-help resources

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

Table 12. Self-help resources

Self-help resources	Resource location
Information about Dell Technologies products and services	Dell Site
Contact Support	In Windows search, type `Contact Support`, and press Enter.
Online help for operating system	Windows Support Site
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals, and documents.	Your Dell Technologies computer is uniquely identified using a Service Tag or Express Service Code. To view relevant support resources for your Dell Technologies computer, enter the Service Tag or Express Service Code at Dell Support Site. For more information about how to find the Service Tag for your computer, see Instructions on how to find your Service Tag or Serial Number.
Dell Technologies knowledge base articles	1. Go to Dell Support Site. 2. On the menu bar at the top of the Support page, select **Support** > **Support Library**. 3. In the Search field on the Support Library page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles.

Contacting Dell Technologies

To contact Dell Technologies for sales, technical support, or customer service issues, see Contact Support at Dell Support Site.

NOTE: Availability of the services may vary depending on the country or region, and product.

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

8

Revision history

Tracks all updates that are made to the document. It typically includes the date of change, version number, and a brief description of the modification. This log helps maintain transparency, accountability, and a clear timeline of progress.

Table 13. Revision history

Revision	Date	Description
A00	September 2026	Original publish date.