

# Vostro 14 3440

## Owner's Manual

## Notes, cautions, and warnings

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

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

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

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# Views of Vostro 14 3440

## Right



Figure 1. Right view

### 1. SD-card slot

Reads from and writes to the SD card. The computer supports the following card types:

- Secure Digital (SD)
- Secure Digital High Capacity (SDHC)
- Secure Digital Extended Capacity (SDXC)

### 2. Universal Audio port

Connect headphones or a headset (headphone and microphone combo).

### 3. USB 3.2 Gen 1 (5 Gbps) port

Connect devices such as external storage devices and printers. Provides data transfer speeds of up to 5 Gbps.

### 4. Network port

Connect an Ethernet (RJ45) cable from a router or a broadband modem for network or Internet access, with a transfer rate of 10/100/1000 Mbps.

### 5. Wedge-shaped lock slot

Connect a security cable to prevent unauthorized movement of your computer.

## Left



Figure 2. Left view

### 1. Power-adaptor port (primary power)

Connect a power adapter to provide power to your computer and charge the battery.

### 2. Power and battery-status light

Indicates the power state and battery state of the computer.

Solid white - Power adapter is connected and the battery is charging.

Solid amber - Battery charge is low or critical.

Off - Battery is fully charged.

**NOTE:** On certain computers, the power and battery-status light is also used for diagnostics. For more information, see the *Troubleshooting* section in the *Owner's Manual* of your computer.

### 3. HDMI 1.4 port

Connect to a TV, external display, or another HDMI-in enabled device. Provides video and audio output.

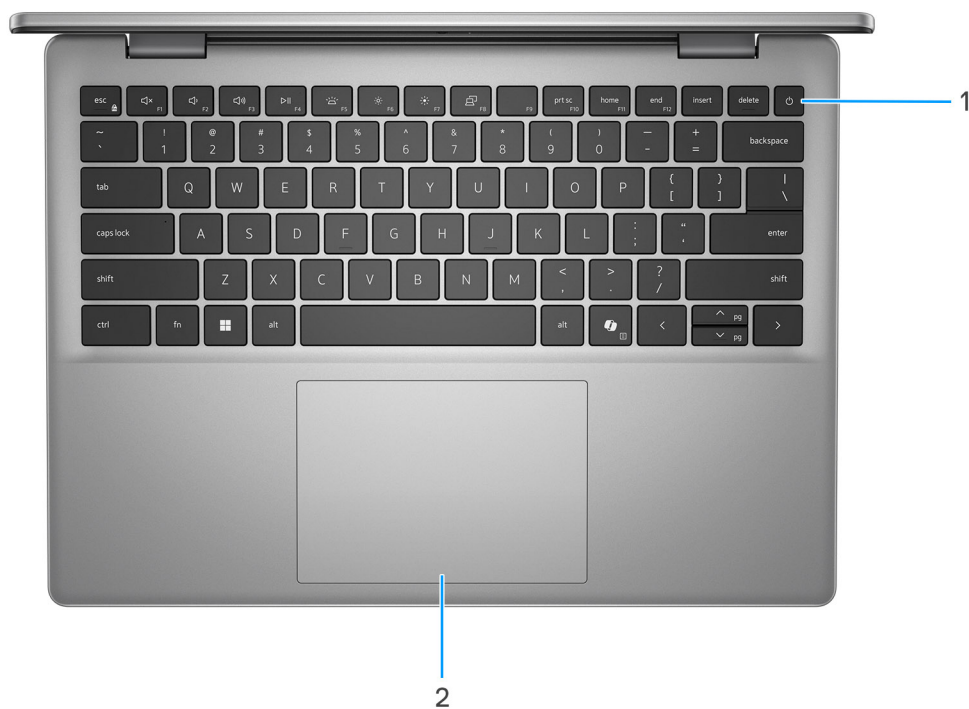
### 4. USB 3.2 Gen 1 (5 Gbps) port

Connect devices such as external storage devices and printers. Provides data transfer speeds of up to 5 Gbps.

### 5. USB 3.2 Gen 1 (5 Gbps) Type-C port (data only)

Connect devices such as external storage devices and printers. Provides data transfer speeds up to 5 Gbps.

## Top



**Figure 3. Top view**

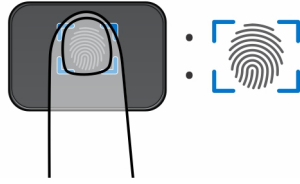
### 1. Power button with optional fingerprint reader

Press to turn on the computer if it is turned off, in sleep state, or in hibernate state.

When the computer is turned on, press the power button to put the computer into sleep state; press and hold the power button for ten seconds to force shut-down the computer.

If the power button has a fingerprint reader, place your finger on the power button to log in.





**Figure 4. Active area of the fingerprint reader**

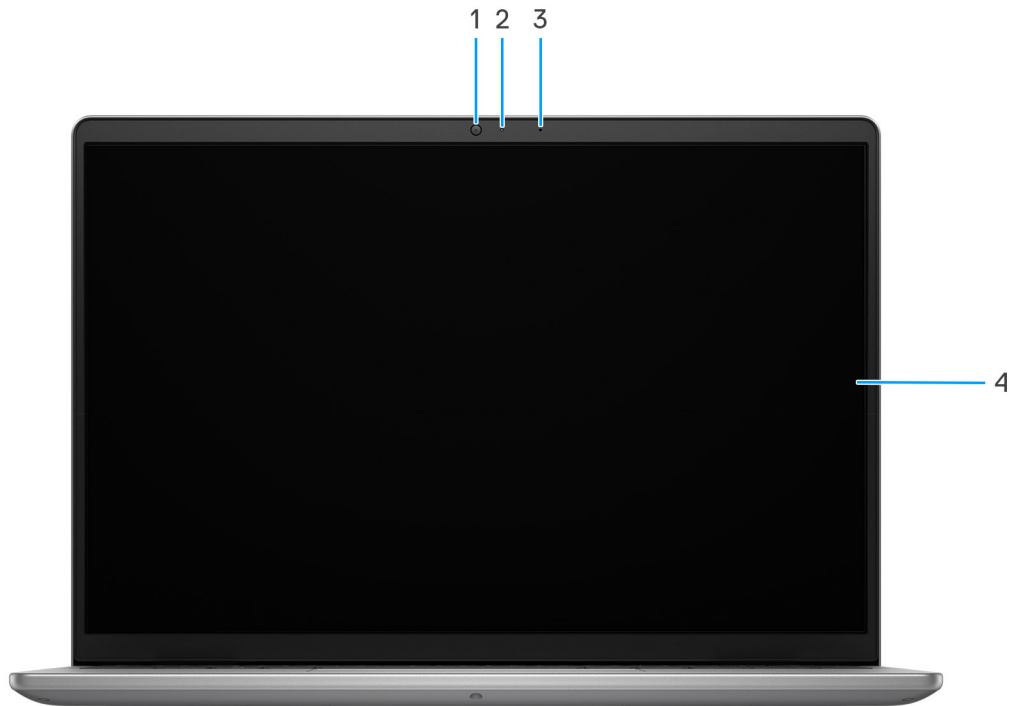
**NOTE:** The highlighted area indicates the actual active fingerprint reader area and the image is for illustration purposes only.

**NOTE:** You can customize power-button behavior in Windows. For more information, see [Manuals at Dell Support Site](#).

## 2. Precision touchpad

Move your finger on the touchpad to move the mouse pointer. Tap to left-click and two fingers tap to right-click.

# Front



**Figure 5. Front view**

### 1. Camera

Enables you to video chat, capture photos, and record videos.

### 2. Camera-status light

Turns on when the camera is in use.

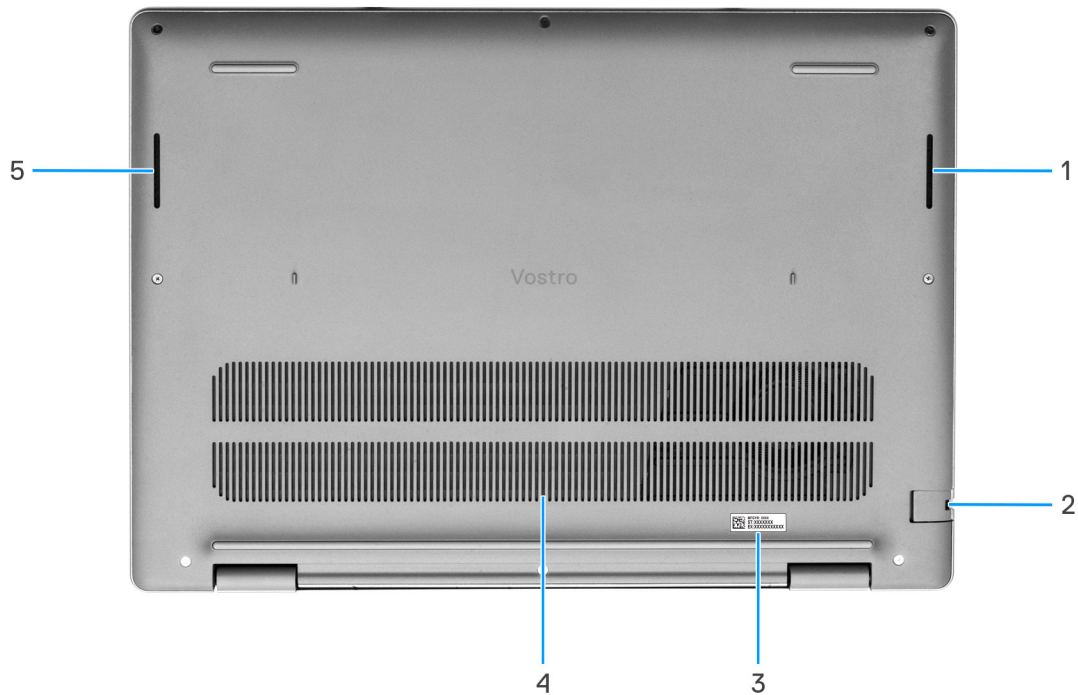
### 3. Microphone

Provides digital sound input for audio recording, voice calls, and so on.

#### 4. Display

Provides visual output.

## Bottom



**Figure 6. Bottom view**

#### 1. Right speaker

Provides audio output.

#### 2. Network port

Connect an Ethernet (RJ45) cable from a router or a broadband modem for network or Internet access, with a transfer rate of 10/100/1000 Mbps.

#### 3. Service Tag label

The Service Tag is a unique alphanumeric identifier that enables Dell service technicians to identify the hardware components in your computer and access warranty information.

#### 4. Air vents

Air vents provide ventilation for your computer. Clogged air vents can cause overheating and can affect your computer's performance and potentially cause hardware issues. Keep the air vents clear of obstructions and clean them regularly to prevent the build-up of dust and dirt. For more information about cleaning air vents, search for articles in the Knowledge Base Resource at [www.dell.com/support](http://www.dell.com/support).

#### 5. Left speaker

Provides audio output.

# Service Tag

The service tag is a unique alphanumeric identifier that allows Dell service technicians to identify the hardware components in your computer and access warranty information.



Figure 7. Service Tag

# Battery charge and status light

The following table lists the battery charge and status light behavior of your Vostro 14 3440.

Table 1. Battery charge and status light behavior

Power Source	LED Behavior	System Power State	Battery Charge Level
AC Adapter	Off	S0 - S5	Fully Charged
AC Adapter	Solid White	S0 - S5	< Fully Charged
Battery	Off	S0 - S5	11-100%
Battery	Solid Amber (590+/-3 nm)	S0 - S5	< 10%

- S0 (ON) - System is turned on.
- S4 (Hibernate) - The system consumes the least power compared to all other sleep states. The system is almost at an OFF state, except for a trickle power. The context data is written to a hard drive.
- S5 (OFF) - The system is in a shutdown state.

# Set up your Vostro 14 3440

## About this task

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

## Steps

1. Connect the power adapter and press the power button.



**Figure 8. Connect the power adapter and press the power button.**

**NOTE:** The battery may go into power-saving mode during shipment to conserve charge on the battery. Ensure that the power adapter is connected to your computer when it is turned on for the first time.

2. Finish the operating system setup.

### For Ubuntu:

Follow the on-screen instructions to complete the setup. For more information about installing and configuring Ubuntu, search in the Knowledge Base Resource at [Dell Support Site](#).

### For Windows:

Follow the on-screen instructions to complete the setup. When setting up, Dell Technologies recommends that you:

- Connect to a network for Windows updates.

**NOTE:** If connecting to a secured wireless network, enter the password for the wireless network access when prompted.






- If connected to the Internet, sign in with or create a Microsoft account. If not connected to the Internet, create an offline account.
- On the **Support and Protection** screen, enter your contact details.

3. Locate and use Dell apps from the Windows Start menu—Recommended.

**Table 2. Locate Dell apps in Windows in S-mode**

Resources	Description
	<p><b>Dell Product Registration</b></p> <p>Register your computer with Dell.</p>
	<p><b>Dell Help &amp; Support</b></p> <p>Access help and support for your computer.</p>
	<p><b>SupportAssist</b></p> <p>SupportAssist proactively and predictively identifies hardware and software issues on your computer and automates the engagement process with Dell Technical support. It addresses performance and stabilization issues, prevents security threats, monitors, and detects hardware failures. For more information, see <i>SupportAssist for Home PCs User's Guide</i> at <a href="#">SupportAssist for Home PCs</a>.</p> <p> <b>NOTE:</b> In SupportAssist, click the warranty expiry date to renew or upgrade your warranty.</p>

**Table 3. Locate Dell apps in Windows**


Resources	Description
	<p><b>My Dell</b></p> <p>MyDell is a software application that offers you a single streamlined engagement platform including account access, device information, and hardware settings. This software delivers intelligent features that automatically fine-tune your computer for the best possible audio, power, and performance. Get the most out of your Dell device with intelligent, personalized technology from MyDell. Following are the key features of MyDell:</p> <ul style="list-style-type: none"> <li>• Application</li> <li>• Audio</li> <li>• Power</li> <li>• Color and Display</li> <li>• Presence detection</li> </ul> <p>For more information about how to use MyDell, see product guides at <a href="#">Dell Support Site</a>.</p>
	<p><b>Dell Update</b></p> <p>Updates your computer with critical fixes and latest device drivers as they become available. For more information about using Dell Update, see the product guides and third-party license documents at <a href="#">Dell Support Site</a>.</p>
	<p><b>Dell Digital Delivery</b></p> <p>Download software applications, which are purchased but not preinstalled on your computer. For more information about using Dell Digital Delivery, search in the Knowledge Base Resource at <a href="#">Dell Support Site</a>.</p>
	<p><b>SupportAssist</b></p> <p>SupportAssist proactively and predictively identifies hardware and software issues on your computer and automates the engagement process with Dell Technical support. It addresses performance and stabilization issues, prevents security threats, monitors, and detects hardware failures. For more information, see <i>SupportAssist for Home PCs User's Guide</i> at <a href="#">SupportAssist for Home PCs</a>.</p> <p> <b>NOTE:</b> In SupportAssist, click the warranty expiry date to renew or upgrade your warranty.</p>

# Specifications of Vostro 14 3440

## Dimensions and weight

The following table lists the height, width, depth, and weight of your Vostro 14 3440.


**Table 4. Dimensions and weight**

Description	Values
Height	
Front height	16.90 mm (0.66 in.)
Rear height	18.07 mm (0.71 in.)
Maximum height	19.90 mm (0.78 in.)
Width	314 mm (12.36 in.)
Depth	226.15 mm (8.90 in.)
Weight  <b>NOTE:</b> The weight of your computer depends on the configuration that is ordered and manufacturing variability.	<ul style="list-style-type: none"> <li>• Minimum: 1.546 kg (3.40 lb)</li> <li>• Maximum: 1.576 kg (3.47 lb)</li> </ul>

## Processor

The following table lists the details of the processors that are supported by your Vostro 14 3440.

**Table 5. Processor**

Description	Option one	Option two	Option three
Processor type	13th Gen Intel Core i3-1305U	13th Gen Intel Core i5-1335U	13th Gen Intel Core i5-1334U
Processor wattage	15 W	15 W	15 W
Processor total core count	5	10	10
Performance-cores	1	2	2
Efficient-cores	4	8	8
 <b>NOTE:</b> Intel Hyper-Threading Technology is only available on Performance-cores.			
Processor total thread counts	6	12	12
Processor speed	Up to 4.50 GHz	Up to 4.60 GHz	Up to 4.60 GHz
Performance-cores frequency			
Processor base frequency	1.60 GHz	1.30 GHz	1.30 GHz

**Table 5. Processor (continued)**

Description		Option one	Option two	Option three
	Maximum turbo frequency	4.50 GHz	4.60 GHz	4.60 GHz
Efficient-cores frequency				
	Processor base frequency	1.60 GHz	1.30 GHz	1.30 GHz
	Maximum turbo frequency	3.30 GHz	3.40 GHz	3.40 GHz
Processor cache		10 MB	12 MB	12 MB
Integrated graphics		Intel UHD Graphics	<ul style="list-style-type: none"> <li>Intel UHD Graphics for single-channel memory installed</li> <li>Intel Iris X<sup>e</sup> Graphics for dual-channel memory installed</li> </ul>	<ul style="list-style-type: none"> <li>Intel UHD Graphics for single-channel memory installed</li> <li>Intel Iris X<sup>e</sup> Graphics for dual-channel memory installed</li> </ul>

## Chipset

The following table lists the details of the chipset that is supported for your Vostro 14 3440.

**Table 6. Chipset**

Description	Values
Chipset	Integrated with the processor
Processor	13th Gen Intel Core i3-1305U/i5-1335U/i5-1334U
DRAM bus width	64-bit
Flash EPROM	32 MB
PCIe bus	Up to Gen3

## Operating system

Your Vostro 14 3440 supports the following operating systems:

- Windows 11 Home
- Windows 11 Home (S Mode)
- Windows 11 Pro
- Windows 11 Pro National Education
- Ubuntu Linux 22.04 LTS, 64-bit

# Memory

The following table lists the memory specifications of your Vostro 14 3440.

**Table 7. Memory specifications**

Description	Values
Memory slots	Two SODIMM slots
Memory type	DDR5
Memory speed	4400 MT/s
Maximum memory configuration	32 GB
Minimum memory configuration	8 GB
Memory size per slot	8 GB or 16 GB
Memory configurations supported	<ul style="list-style-type: none"><li>• 8 GB: 1 x 8 GB, DDR5, 4400 MT/s, SODIMM, single-channel</li><li>• 16 GB: 2 x 8 GB, DDR5, 4400 MT/s, SODIMM, dual-channel</li><li>• 24 GB: 1 x 16 GB + 1 x 8 GB, DDR5, 4400 MT/s, SODIMM, dual-channel</li><li>• 32 GB: 2 x 16 GB, DDR5, 4400 MT/s, SODIMM, dual-channel</li></ul>

# External ports

The following table lists the external ports of your Vostro 14 3440.

**Table 8. External ports**

Description	Values
Network port	One RJ45 Ethernet port 10/100/1000 Mbps
USB ports	<ul style="list-style-type: none"><li>• Two USB 3.2 Gen 1 (5 Gbps) ports</li><li>• One USB 3.2 Gen 1 (5 Gbps) Type-C port (data only)</li></ul>
Audio port	One Universal Audio port
Video port	One HDMI 1.4 port
Media-card reader	One SD-card slot
Power-adaptor port	One power-adaptor port (4.50 mm standard plug)
Security-cable slot	One wedge-shaped lock slot



# Internal slots

The following table lists the internal slots of your Vostro 14 3440.

**Table 9. Internal slots**

Description	Values
M.2	<ul style="list-style-type: none"><li>One M.2 2230 slot for solid-state drive</li><li>One M.2 2230 slot for Wi-Fi and Bluetooth combo card</li></ul> <p><b>NOTE:</b> To learn more about the features of different types of M.2 cards, search in the Knowledge Base Resource at <a href="#">Dell Support Site</a>.</p>

# Ethernet

The following table lists the wired Ethernet Local Area Network (LAN) specifications of your Vostro 14 3440.

**Table 10. Ethernet specifications**

Description	Values
Model number	Integrated Realtek RTL8111H
Transfer rate	10/100/1000 Mbps

# Wireless module

The following table lists the Wireless Local Area Network (WLAN) module that is supported on your Vostro 14 3440.

**Table 11. Wireless module specifications**

Description	Values
Model number	Realtek RTL8851BE
Transfer rate	Up to 600 Mbps
Frequency bands supported	2.4 GHz/5 GHz
Wireless standards	<ul style="list-style-type: none"><li>Wi-Fi 802.11 a/b/g</li><li>Wi-Fi 4 (WiFi 802.11n)</li><li>Wi-Fi 5 (WiFi 802.11ac)</li><li>Wi-Fi 6 (WiFi 802.11ax)</li></ul>
Encryption	<ul style="list-style-type: none"><li>64-bit/128-bit WEP</li><li>AES-CCMP</li><li>TKIP</li></ul>
Bluetooth wireless card	Bluetooth 5.3
	<p><b>NOTE:</b> The version of the Bluetooth wireless card may vary depending on the operating system that is installed on your computer.</p>

## Audio

The following table lists the audio specifications of your Vostro 14 3440.

**Table 12. Audio specifications**

Description	Values
Audio controller	Realtek ALC3204
Stereo conversion	Supported with Waves MaxxAudio Pro
Internal audio interface	High Definition Audio (HDA) interface
External audio interface	One Universal Audio port
Number of speakers	Two
Internal-speaker amplifier	Supported (Audio codec integrated)
External volume controls	Keyboard shortcut controls
Speaker output:	
Average speaker output	2 W x 2 = 4 W
Peak speaker output	2.5 W x 2 = 5 W
Subwoofer output	Not supported
Microphone	Single integrated microphone

## Storage

This section lists the storage options on your Vostro 14 3440.

Your Vostro 14 3440 supports one M.2 2230 solid-state drive. The M.2 2230 solid-state drive is the primary storage drive of your computer.

**Table 13. Storage specifications**

Storage type	Interface type	Capacity
M.2 2230 solid-state drive, Class 25	Gen 3 x4 PCIe NVMe	Up to 1 TB
M.2 2230 solid-state drive, Class 35	Gen 3 x4 PCIe NVMe	Up to 1 TB

## Media-card reader

The following table lists the media cards that are supported on your Vostro 14 3440.

**Table 14. Media-card reader specifications**

Description	Values
Media-card type	One SD-card 3.0 slot
Media-cards supported	<ul style="list-style-type: none"><li>Secure Digital (SD)</li><li>Secure Digital High Capacity (SDHC)</li></ul>

**Table 14. Media-card reader specifications (continued)**

Description	Values
	<ul style="list-style-type: none"><li>Secure Digital Extended Capacity (SDXC)</li></ul>
<p><b>NOTE:</b> The maximum capacity that is supported by the media-card reader varies depending on the standard of the media card that is installed on your computer.</p>	

## Keyboard

The following table lists the keyboard specifications of your Vostro 14 3440.

**Table 15. Keyboard specifications**

Description	Values
Keyboard type	<ul style="list-style-type: none"><li>AI hotkey backlit keyboard</li><li>AI hotkey non-backlit keyboard</li></ul>
Keyboard layout	QWERTY
Number of keys	<ul style="list-style-type: none"><li>United States and Canada: 79 keys</li><li>United Kingdom: 80 keys</li><li>Brazil: 81 keys</li><li>Japan: 83 keys</li></ul>
Keyboard size	X = 19.05 mm key pitch Y = 18.05 mm key pitch
Keyboard shortcuts	<p>Some keys on your keyboard have two symbols on them. These keys can be used to type alternate characters or to perform secondary functions. To type the alternate character, press Shift and the desired key. To perform secondary functions, press Fn and the desired key.</p> <p><b>NOTE:</b> You can define the primary behavior of the function keys (F1–F12) by changing <b>Function Key Behavior</b> in BIOS setup program.</p> <p>For more information, see <a href="#">Keyboard shortcuts</a>.</p>


## Keyboard shortcuts of Vostro 14 3440

**NOTE:** Keyboard characters may differ depending on the keyboard language configuration. Keys that are used for shortcuts remain the same across all language configurations.



Some keys on your keyboard have two symbols on them. These keys can be used to type alternate characters or to perform secondary functions. The symbol that is shown on the lower part of the key refers to the character that is typed out when the key is pressed. If you press shift and the key, the symbol that is shown on the upper part of the key is typed out. For example, if you press **2**, **2** is typed out; if you press **Shift + 2**, **@** is typed out.

The keys F1-F12 at the top row of the keyboard are function keys for multimedia control, as indicated by the icon at the bottom of the key. Press the function key to invoke the task represented by the icon. For example, pressing F1 mutes the audio (refer to the table below).

However, if the function keys F1-F12 are needed for specific software applications, multimedia functionality can be disabled by pressing **fn + esc**. Subsequently, multimedia control can be invoked by pressing **fn** and the respective function key. For example, mute audio by pressing **fn + F1**.

 **NOTE:** You can also define the primary behavior of the function keys (F1–F12) by changing **Function Key Behavior** in BIOS setup program.

**Table 16. List of keyboard shortcuts**

Function key	Primary behavior
F1	Mute audio
F2	Decrease volume
F3	Increase volume
F4	Play/Pause
F5	Toggle keyboard backlight (optional).  <b>NOTE:</b> Non-backlight keyboards have the F5 function key without the backlight icon and do not support the toggle keyboard backlight function.  <b>NOTE:</b> Toggle to cycle the keyboard backlight status through off, low-backlight, and high-backlight.
F6	Decrease brightness
F7	Increase brightness
F8	Switch to external display
F10	Print screen
F11	Home
F12	End

The **fn** key is also used with selected keys on the keyboard to invoke other secondary functions.

**Table 17. Secondary behavior**

Function key	Secondary behavior
fn + Esc	Toggle fn-key lock
fn + S	Toggle scroll lock
fn + B	Pause/Break
fn + R	System request
fn + P	Privacy screen
fn + Space bar	Open the emoji menu
fn + T	Toggle ultra performance mode
fn + Left arrow	Home
fn + Right arrow	End
fn + Up arrow	Page up
fn + Down arrow	Page down
fn + Power button	Boot directly to e-Diags Diagnostics
fn + Copilot	Open the application menu
fn + En/Ko (Korean)	Hanja

# Camera

The following table lists the camera specifications of your Vostro 14 3440.

**Table 18. Camera specifications**

Description		Values
Number of cameras		One
Camera type		HD RGB camera
Camera location		Front camera
Camera sensor type		CMOS sensor technology
Camera resolution:		
	Still image	0.92 megapixel
	Video	1280 x 720 (HD) at 30 fps
Diagonal viewing angle:		75 degrees

# Touchpad

The following table lists the touchpad specifications of your Vostro 14 3440.

**Table 19. Touchpad specifications**

Description		Values
Touchpad resolution:		
	Horizontal	>= 300 dpi
	Vertical	>= 300 dpi
Touchpad dimensions:		
	Horizontal	115 mm (4.52 in.)
	Vertical	80 mm (3.14 in.)
Touchpad gestures		For more information about touchpad gestures available on Windows, see the Microsoft Knowledge Base article at <a href="#">Microsoft Support Site</a> .


# Power adapter

The following table lists the power adapter specifications of your Vostro 14 3440.

**Table 20. Power adapter specifications**

Description		Values
Type		65 W
Connector dimensions:		
	External diameter	4.50 mm (0.18 in.)

**Table 20. Power adapter specifications (continued)**

Description		Values
	Internal diameter	2.90 mm (0.11 in.)
Power-adapter dimensions:		
	Height	28 mm (1.10 in.)
	Width	108 mm (4.30 in.)
	Depth	47 mm (1.90 in.)
Power-adapter weight (maximum)		0.29 kg (0.64 lb)
Input voltage		100 VAC - 240 VAC
Input frequency		50 Hz - 60 Hz
Input current (maximum)		1.60 A/1.70 A
Output current (continuous)		3.34 A
Rated output voltage		19.50 VDC
Temperature range:		
	Operating	0°C to 40°C (32°F to 104°F)
	Storage	-40°C to 70°C (-40°F to 158°F)
 <b>CAUTION: Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.</b>		

## Battery

The following table lists the battery specifications of your Vostro 14 3440.

**Table 21. Battery specifications**

Description		Values
Battery type		3-cell, 41 Wh, Lithium Ion Polymer, ExpressCharge, ExpressCharge Boost
Battery voltage		11.25 VDC
Battery weight (maximum)		0.17 kg (0.39 lb)
Battery dimensions:		
	Height	5.75 mm (0.22 in.)
	Width	206.40 mm (8.12 in.)
	Depth	82 mm (3.22 in.)
Temperature range:		
	Operating	<ul style="list-style-type: none"> <li>Charge: 0°C to 45°C (32°F to 113°F)</li> <li>Discharge: 0°C to 70°C (32°F to 158°F)</li> </ul>

**Table 21. Battery specifications (continued)**

Description	Values
Storage	-20°C to 60°C (-4°F to 140°F)
Battery operating time	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.
Battery charging time (approximate) <i>i</i> <b>NOTE:</b> Control the charging time, duration, start and end time, and so on, using the Dell Power Manager application. For more information about Dell Power Manager, search in the Knowledge Base Resource at <a href="#">Dell Support Site</a> .	3 hours (when the computer is off)
Coin-cell battery	Not supported
<p><b>CAUTION:</b> Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.</p> <p><b>CAUTION:</b> Dell Technologies recommends that you charge the battery regularly for optimal power consumption. If your battery charge is depleted, connect the power adapter, turn on your computer, and then restart your computer to reduce the power consumption.</p>	

## Display

The following table lists the display specifications of your Vostro 14 3440.

**Table 22. Display specifications**

Description	Option one	Option two
Display type	14" Full High Definition Plus (FHD+)	14" 2.2K with Dolby Vision
Touch options	Not supported	Not supported
Display-panel technology	Wide-viewing Angle (WVA)	Wide-viewing Angle (WVA)
Display-panel dimensions (active area):		
Height	301.59 mm (11.87 in.)	301.59 mm (11.87 in.)
Width	188.50 mm (7.42 in.)	188.50 mm (7.42 in.)
Diagonal	355.65 mm (14 in.)	355.65 mm (14 in.)
Display-panel native resolution	1920 x 1200	2240 x 1400
Luminance (typical)	250 nits	300 nits
Megapixels	2.3	3.1
Color gamut	45% NTSC	100% sRGB
Pixels Per Inch (PPI)	162	189
Contrast ratio (minimum)	600:1	1000:1
Response time (maximum)	35 ms	35 ms

**Table 22. Display specifications (continued)**

Description	Option one	Option two
Refresh rate	60 Hz	60 Hz
Horizontal view angle	<ul style="list-style-type: none"> <li>Minimum: 80 +/- degrees</li> <li>Typical: 85 +/- degrees</li> </ul>	<ul style="list-style-type: none"> <li>Minimum: 80 +/- degrees</li> <li>Typical: 85 +/- degrees</li> </ul>
Vertical view angle	<ul style="list-style-type: none"> <li>Minimum: 80 +/- degrees</li> <li>Typical: 85 +/- degrees</li> </ul>	<ul style="list-style-type: none"> <li>Minimum: 80 +/- degrees</li> <li>Typical: 85 +/- degrees</li> </ul>
Pixel pitch	0.157 x 0.157	0.1346 x 0.1346
Power consumption (maximum)	3.2 W	4.4 W
Anti-glare vs glossy finish	Anti-glare	Anti-glare

## Fingerprint reader (optional)

The following table lists the specifications of the optional fingerprint reader of your Vostro 14 3440.

**NOTE:** The fingerprint reader is located on the power button.

**Table 23. Fingerprint reader specifications**

Description	Values
Fingerprint-reader sensor technology	Trans-capacitive sensing
Fingerprint-reader sensor resolution	500 dpi
Fingerprint-reader sensor pixel size	108 x 88 pixel

## Sensor

The following table lists the sensor of your Vostro 14 3440.

**Table 24. Sensor**

Sensor support
Adaptive Thermal Performance Accelerometer

## GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Vostro 14 3440.

**Table 25. GPU—Integrated**

Controller	Memory size	Processor
Intel UHD Graphics	Shared system memory	<ul style="list-style-type: none"> <li>13th Gen Intel Core i3-1305U</li> <li>13th Gen Intel Core i5-1335U and i5-1334U processors with single-channel memory installed</li> </ul>



**Table 25. GPU—Integrated (continued)**

Controller	Memory size	Processor
Intel Iris X <sup>e</sup> Graphics	Shared system memory	13th Gen Intel Core i5-1335U and i5-1334U processors

## Multiple display support matrix

The following table lists the multiple display support matrix for your Vostro 14 3440.

**Table 26. Multiple display support matrix**

Graphics Card	Direct Graphics Controller Direct Output Mode	Supported external displays with computer internal display on	Supported external displays with computer internal display off
Intel UHD Graphics	Not supported	3	4
Intel Iris X <sup>e</sup> Graphics <i>i</i> <b>NOTE:</b> Only for Intel Core i5-1335U and i5-1334U processors with 128-bit (dual-channel) memory installed.	Not supported	3	4

## Hardware security

The following table lists the hardware security of your Vostro 14 3440.

**Table 27. Hardware security**

Hardware security
Windows Hello - Fingerprint Reader (optional)
Trusted Platform Module TPM 2.0
Wedge-shaped lock

## Operating and storage environment


This table lists the operating and storage specifications of your Vostro 14 3440.

**Airborne contaminant level:** G1 as defined by ISA-S71.04-1985

**Table 28. Computer environment**

Description	Operating	Storage
Temperature range	0°C to 40°C (32°F to 104°F)	-40°C to 65°C (-40°F to 149°F)
Relative humidity (maximum)	Maximum 90% (non-condensing)	Maximum 95% (non-condensing)
Vibration (maximum)*	0.66 GRMS	N/A
Shock (maximum)	140 G†	N/A
Altitude range	N/A	N/A

**Table 28. Computer environment (continued)**

Description	Operating	Storage
 <b>CAUTION: Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.</b>		

\* Measured using a random vibration spectrum that simulates the user environment.

† Measured using a 2 ms half-sine pulse.

## Dell support policy

For information about Dell support policy, search in the Knowledge Base Resource at [Dell Support Site](#).

## ComfortView

 **WARNING: Prolonged exposure to blue light from the display may lead to long-term effects such as eye strain, eye fatigue, or damage to the eyes.**

Blue light is a color in the light spectrum which has a short wavelength and high energy. Chronic exposure to blue light, particularly from digital sources, may disrupt sleep patterns and cause long-term effects such as eye strain, eye fatigue, or damage to the eyes.

ComfortView mode can be enabled and configured using the Dell CinemaColor application.

ComfortView mode complies with TÜV Rheinland's requirement for low blue light displays.

Low blue light: Dell ComfortView software technology reduces harmful blue light emissions to make extended screen time easy on your eyes.

To reduce the risk of eye strain, it is also recommended that you:

- Position the display at a comfortable viewing distance between 20 and 28 inches (50 cm and 70 cm) from your eyes.
- Blink frequently to moisten your eyes, wet your eyes with water, or apply suitable eye drops.
- Look away from your display, and gaze at a distant object at 20 ft (609.60 cm) away for at least 20 seconds during each break.
- Take an extended break for 20 minutes every two hours.

## ComfortView Plus

 **WARNING: Prolonged exposure to blue light from the display may lead to long-term effects such as eye strain, eye fatigue, or damage to the eyes.**

Blue light is a color in the light spectrum which has a short wavelength and high energy. Chronic exposure to blue light, particularly from digital sources, may disrupt sleep patterns and cause long-term effects such as eye strain, eye fatigue, or damage to the eyes.

The display on this computer is designed to minimize blue light and complies with TÜV Rheinland's requirement for low blue light displays.

Low blue light mode is enabled at the factory, so no further configuration is necessary.











To reduce the risk of eye strain, it is also recommended that you:

- Position the display at a comfortable viewing distance between 20 and 28 inches (50 cm and 70 cm) from your eyes.
- Blink frequently to moisten your eyes, wet your eyes with water, or apply suitable eye drops.
- Look away from your display, and gaze at a distant object at 20 ft (609.60 cm) away for at least 20 seconds during each break.
- Take an extended break for 20 minutes every two hours.

# 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.
-  **CAUTION:** To avoid damaging the computer, ensure that the work surface is flat, dry, and clean.
-  **CAUTION:** To avoid damaging the components and cards, handle them by their edges, and avoid touching the pins and the contacts.
-  **CAUTION:** You should only perform troubleshooting and repairs as authorized or directed by the Dell technical assistance team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. See the safety instructions that is shipped with the product or at [Dell Regulatory Compliance Home Page](#).
-  **CAUTION:** Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity which could harm internal components.
-  **CAUTION:** When you disconnect a cable, pull it by its connector or its pull tab, not the cable itself. Some cables have connectors with locking tabs or thumbscrews that you must disengage before disconnecting the cable. When disconnecting cables, keep them evenly aligned to avoid bending the connector pins. When connecting cables, ensure that the ports and the connectors are correctly oriented and aligned.
-  **CAUTION:** Press and eject any installed card from the media-card reader.
-  **CAUTION:** Exercise caution when handling rechargeable Li-ion batteries in laptops. Swollen batteries should not be used and should be replaced and disposed properly.
-  **NOTE:** The color of your computer and certain components may differ from what is shown in this document.

## Before working inside your computer


### 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. Disconnect your computer and all attached devices from their electrical outlets.
4. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.
5. Remove any media card and optical disk from your computer, if applicable.

6. Enter the service mode, if you can turn on your computer.


### Service Mode

Service Mode is used to cut off power, without disconnecting the battery cable from the system board prior to conducting repairs in the computer.

 **CAUTION:** If you are unable to turn on the computer to put it into Service Mode, or the computer does not support Service Mode, proceed to disconnect the battery cable. To disconnect the battery cable, follow the steps in [Removing the battery](#).

 **NOTE:** Ensure that your computer is shut down and the AC adapter is disconnected.

- a. Hold the **<B>** key on the keyboard and press the power button for 3 seconds or until the Dell logo appears on the screen.
- b. Press any key to continue.
- c. If the AC adapter is not disconnected, a message prompting you to remove the AC adapter appears on the screen. Remove the AC adapter and then press any key to continue the **Service Mode** process. The **Service Mode** process automatically skips the following step if the **Owner Tag** of the computer is not set up in advance by the user.
- d. When the **ready-to-proceed** message appears on the screen, press any key to proceed. The computer emits three short beeps and shuts down immediately.
- e. Once the computer shuts down, it has successfully entered Service Mode.

 **NOTE:** If you are unable to turn on your computer or unable to enter Service Mode, skip this process.

## Safety precautions

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

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

- Turn off the computer and all attached peripherals.
- Disconnect the computer and all attached peripherals from AC power.
- Disconnect all network cables, telephone, and telecommunications lines from the computer.
- Use an ESD field service kit when working inside any notebook to avoid electrostatic discharge (ESD) damage.
- After removing any computer component, carefully place the removed component on an anti-static mat.
- Wear shoes with non-conductive rubber soles to reduce the chance of getting electrocuted.
- Unplugging, pressing, and holding the power button for 15 seconds should discharge residual power in the system board.

## Standby power

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

## 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. The wrist strap should be secure and in full contact with your skin, and ensure that you remove all jewelry such as watches, bracelets, or rings prior to bonding yourself and the equipment.

## Electrostatic discharge—ESD protection

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

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

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

- **Catastrophic** – Catastrophic failures represent approximately 20 percent of ESD-related failures. The damage causes an immediate and complete loss of device functionality. An example of catastrophic failure is a memory DIMM that has received a static shock and immediately generates a "No POST/No Video" symptom with a beep code 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 DIMM 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.

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

Perform the following steps to prevent ESD damage:

- Use a wired ESD wrist strap that is properly grounded. 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, ensure that you discharge static electricity from your body.
- Before transporting a static-sensitive component, place it in an anti-static container or packaging.

## ESD Field Service kit

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

### Components of an ESD field service kit

The components of an ESD field service kit are:

- **Anti-Static Mat** – The anti-static mat is dissipative and parts can be placed on it during service procedures. When using an anti-static mat, your wrist strap should be snug and the bonding wire should be connected to the mat and to any bare metal on the computer being worked on. Once deployed properly, service parts can be removed from the ESD bag and placed directly on the mat. ESD-sensitive items are safe in your hand, on the ESD mat, in the computer, or inside an ESD bag.
- **Wrist Strap and Bonding Wire** – The wrist strap and bonding wire can be either directly connected between your wrist and bare metal on the hardware if the ESD mat is not required, or connected to the anti-static mat to protect hardware that is temporarily placed on the mat. The physical connection of the wrist strap and bonding wire between your skin, the ESD mat, and the hardware is known as bonding. Use only Field Service kits with a wrist strap, mat, and bonding wire. Never use wireless wrist straps. Always be aware that the internal wires of a wrist strap are prone to damage from normal wear and tear, and must be checked regularly with a wrist strap tester in order to avoid accidental ESD hardware damage. It is recommended to test the wrist strap and bonding wire at least once per week.
- **ESD Wrist Strap Tester** – The wires inside an ESD strap are prone to damage over time. When using an unmonitored kit, it is a best practice to regularly test the strap prior to each service call, and at a minimum, test once per week. A wrist strap tester is the best method for doing this test. If you do not have your own wrist strap tester, check with your regional office to find out if they have one. To perform the test, plug the bonding-wire of wrist-strap into the tester while it is strapped to your wrist and push the button to test. A green LED is lit if the test is successful; a red LED is lit and an alarm sounds if the test fails.
- **Insulator Elements** – It is critical to keep ESD sensitive devices, such as plastic heat sink casings, away from internal parts that are insulators and often highly charged.
- **Working Environment** – Before deploying the ESD Field Service kit, assess the situation at the customer location. For example, deploying the kit for a server environment is different than for a desktop or 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 part using the same ESD bag and packaging that the new part arrived in. The ESD bag should be folded over and taped shut and all the same foam packing material should be used in the original box that the new part arrived in. ESD-sensitive devices should be removed from packaging only at an ESD-protected work surface, and parts should never be placed on top of the ESD bag because only the inside of the bag is shielded. Always place parts in your hand, on the ESD mat, in the computer, or inside an anti-static bag.
- **Transporting Sensitive Components** – When transporting ESD sensitive components such as replacement parts or parts to be returned to Dell, it is critical to place these parts in anti-static bags for safe transport.

## ESD protection summary

It is recommended 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 performing service and use anti-static bags for transporting sensitive components.

## Transporting sensitive components


When transporting ESD sensitive components such as replacement parts or parts to be returned to Dell, it is critical to place these parts in anti-static bags for safe transport.

## After working inside your computer


### About this task

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

### Steps

1. Replace all screws and ensure that no stray screws remain inside your computer.
2. Connect any external devices, peripherals, or cables you removed before working on your computer.
3. Replace any media cards, discs, or any other parts that you removed before working on your computer.
4. Connect your computer and all attached devices to their electrical outlets.
  -  **NOTE:** To exit service mode, ensure to connect the AC adapter to the power-adapter port on your computer.
5. Press the power button to turn on the computer. Your computer will automatically return to normal functioning mode.

## BitLocker

 **CAUTION:** If BitLocker is not suspended before updating the BIOS, the next time you reboot the system it will not recognize the BitLocker key. You will then be prompted to enter the recovery key to progress, and the system will ask for the recovery key on each reboot. If the recovery key is not known, this can result in data loss or an unnecessary operating system reinstall. For more information about this subject, see Knowledge Article: [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 with the configuration ordered.

**Table 29. Screw list**

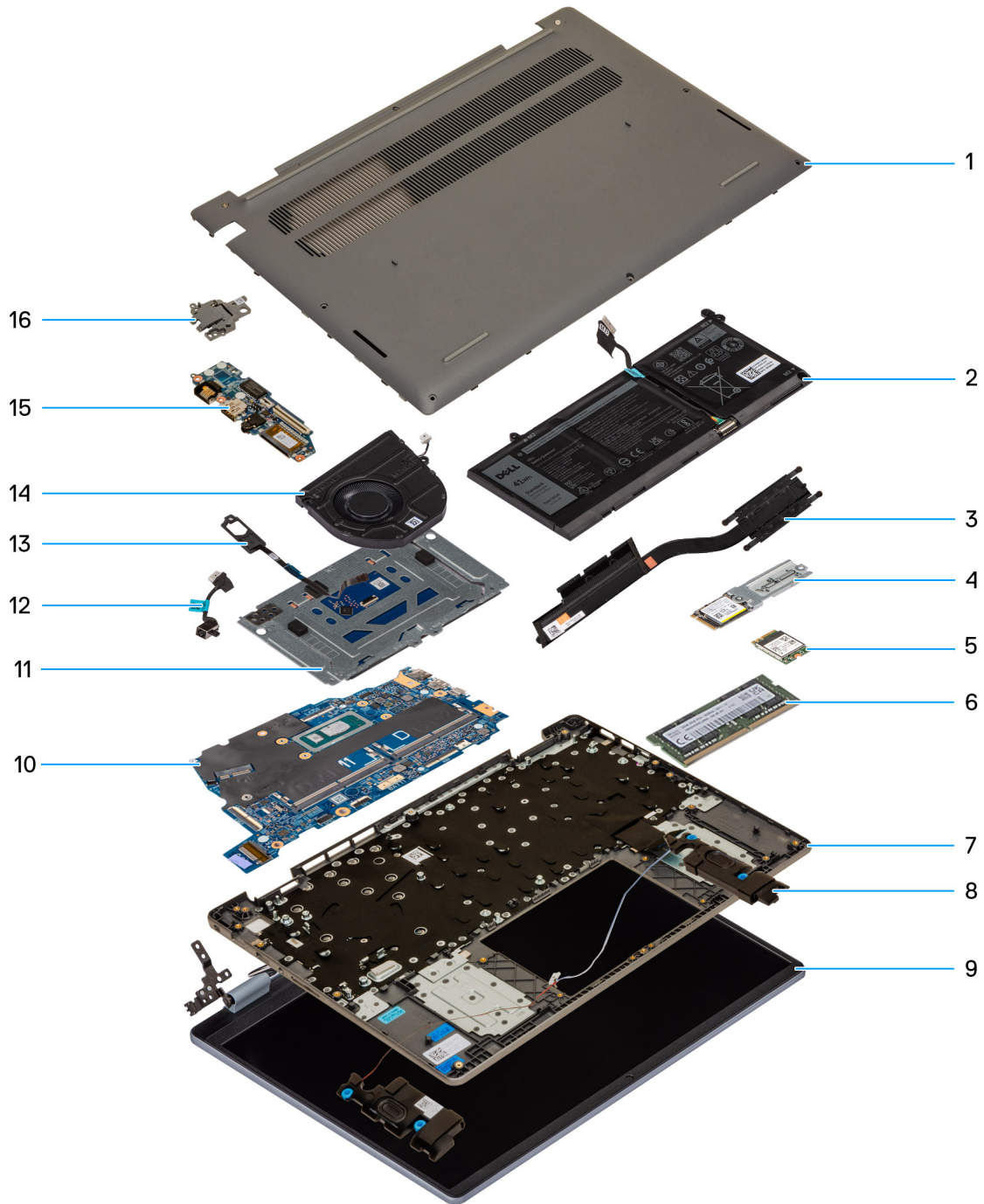
Component	Screw type	Quantity	Screw image
Base cover	M2x4	6	
	Captive screw <b>NOTE:</b> Screws are part of the base cover.	2	
Battery	M2x3	3	
Solid-state drive	M2x3	1	
	M2x2	1	
Wireless-card bracket	M2x3	1	
Fan	M2x4	2	
Heat sink	Captive screw <b>NOTE:</b> Screws are part of the heat sink.	4	
Touchpad assembly	M1.6x2.5	4	
	M2x1.8	2	
RJ45 holder	M2x4	2	
I/O board	M2x3	1	
Power button with optional fingerprint reader	M2x3	1	
Display assembly	M2.5x4	4	
Display hinges	M2.5x2.5	6	
USB Type-C bracket	M2x4	3	

**Table 29. Screw list (continued)**

Component	Screw type	Quantity	Screw image
System board	M2x2	2	

## Major components of Vostro 14 3440


The following image shows the major components of Vostro 14 3440.



**Figure 9. Major components of your Vostro 14 3440**




1. Base cover
2. Battery
3. Heat sink
4. Solid-state drive
5. Wireless card
6. Memory module
7. Palm-rest and keyboard assembly
8. Speakers
9. Display assembly
10. System board
11. Touchpad assembly
12. Power-adaptor port
13. Power button with optional fingerprint reader
14. Fan
15. I/O daughter-board
16. RJ45-port holder

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

# Removing and installing Customer Replaceable Units (CRUs)

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

 **CAUTION:** Customers can replace only the Customer Replaceable Units (CRUs) 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](#).

 **NOTE:** Ensure that your computer is in Service Mode. For more information, see step 6 in [Before working inside your computer](#).

#### About this task

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

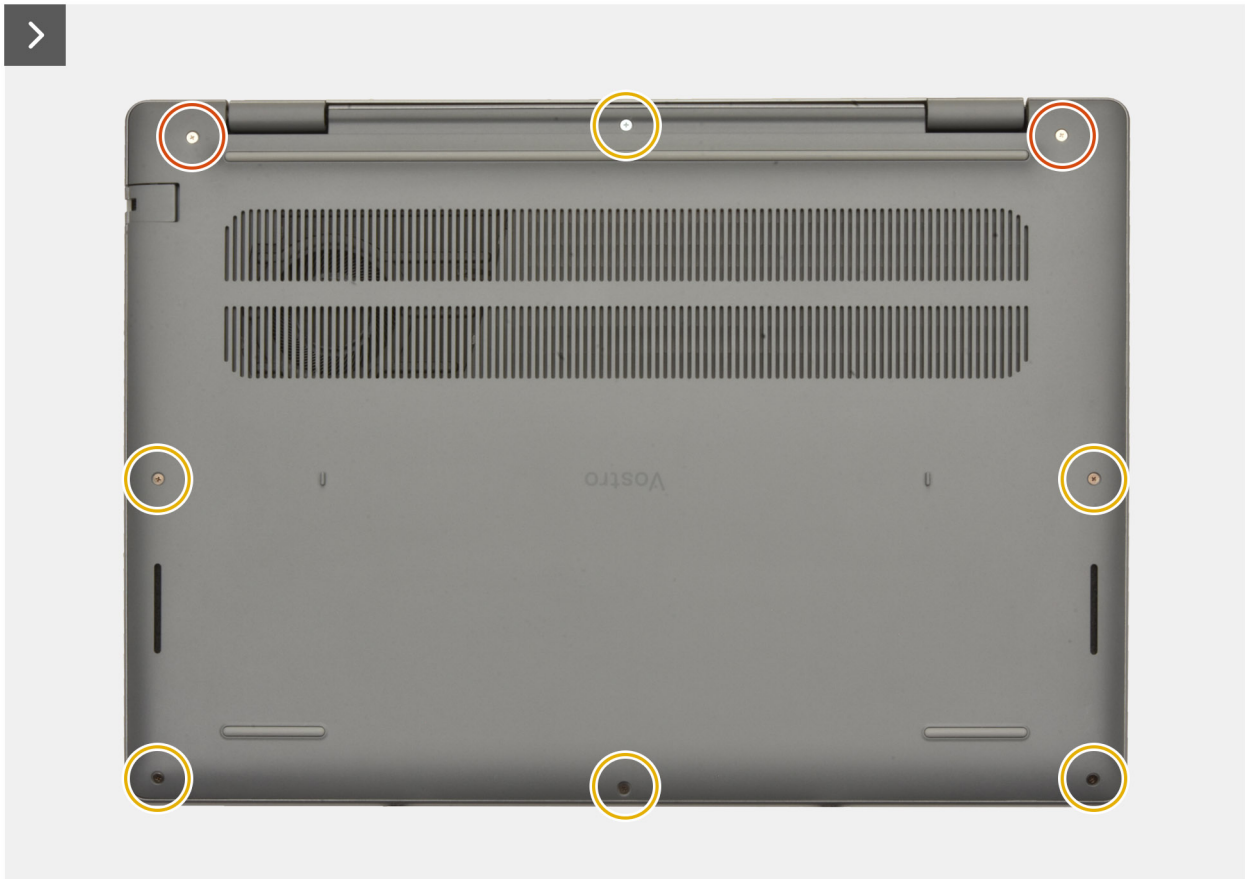
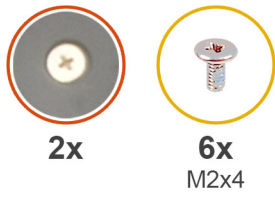
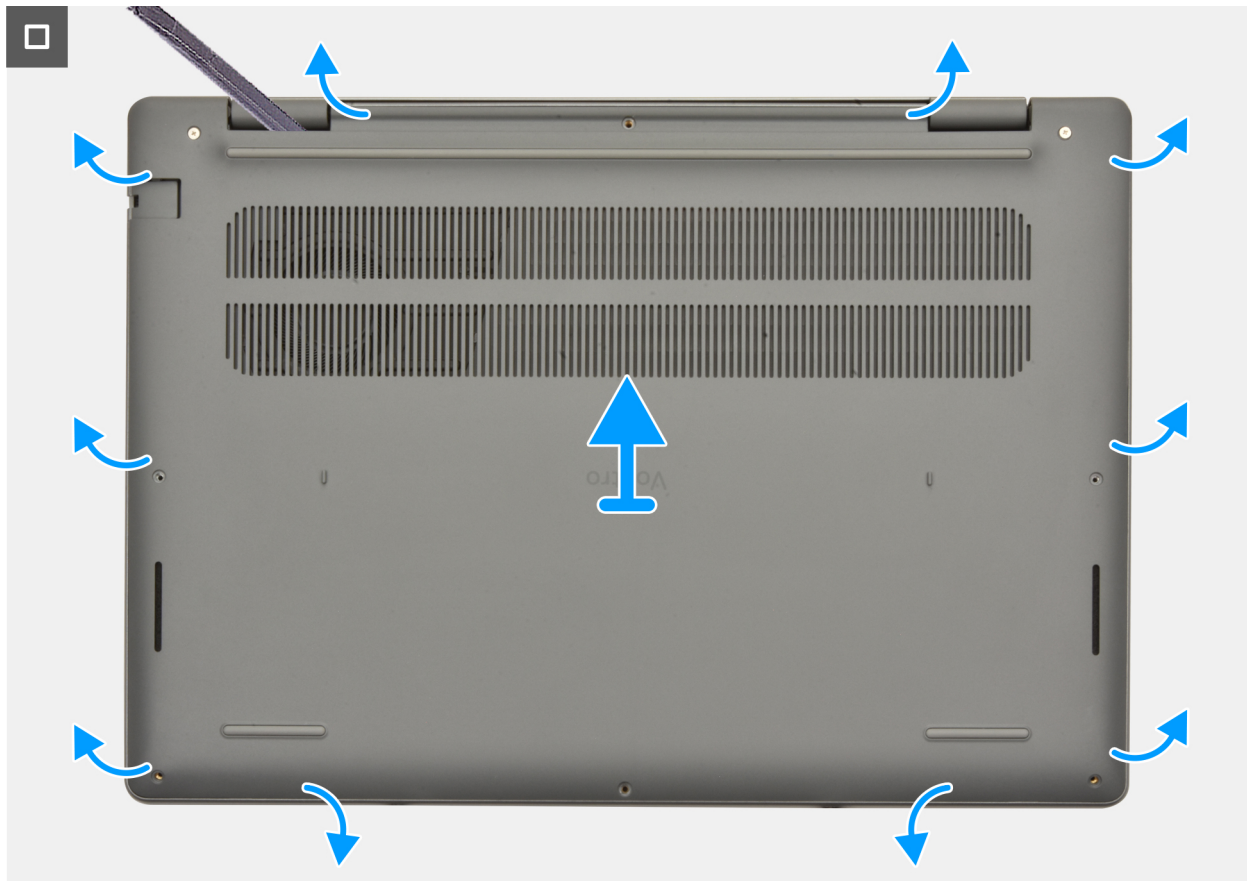


Figure 10. Removing the base cover



**Figure 11. Removing the base cover**

### Steps

1. Loosen the two captive screws and remove the six screws (M2x4) that secure the base cover to the palm-rest and keyboard assembly.
2. Using a plastic scribe, pry open the base cover starting from the recesses, which are located in the U-shaped indents at the top edge of the base cover, near the hinges.
3. Pry open the top of the base cover followed by the left, right and bottom to release the base cover.
4. Lift and remove the base cover off the palm-rest and keyboard assembly.

## 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.

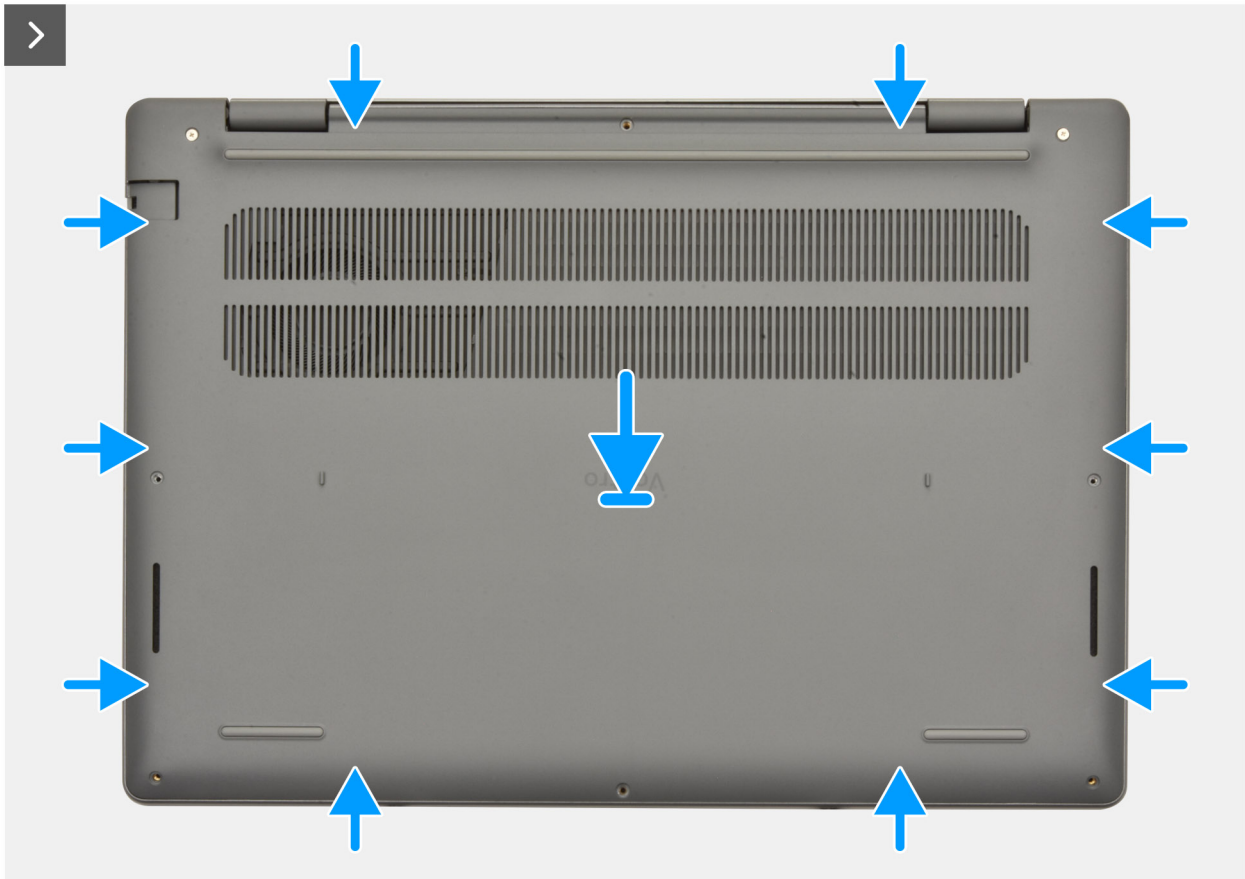
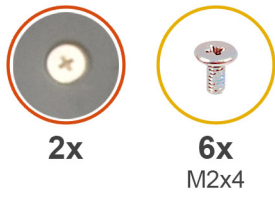


Figure 12. Installing the base cover



**Figure 13. Installing the base cover**

#### Steps

1. Place the base cover on top of the palm-rest and keyboard assembly.
2. Align the screw holes on the base cover with the screw holes on the palm-rest and keyboard assembly, and snap the base cover latches into place.
3. Tighten the two captive screws and replace the six screws (M2x4) to secure the base cover to the palm-rest and keyboard assembly.

#### Next steps

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

## Memory module

### Removing the memory module

#### 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 memory module and provide a visual representation of the removal procedure.

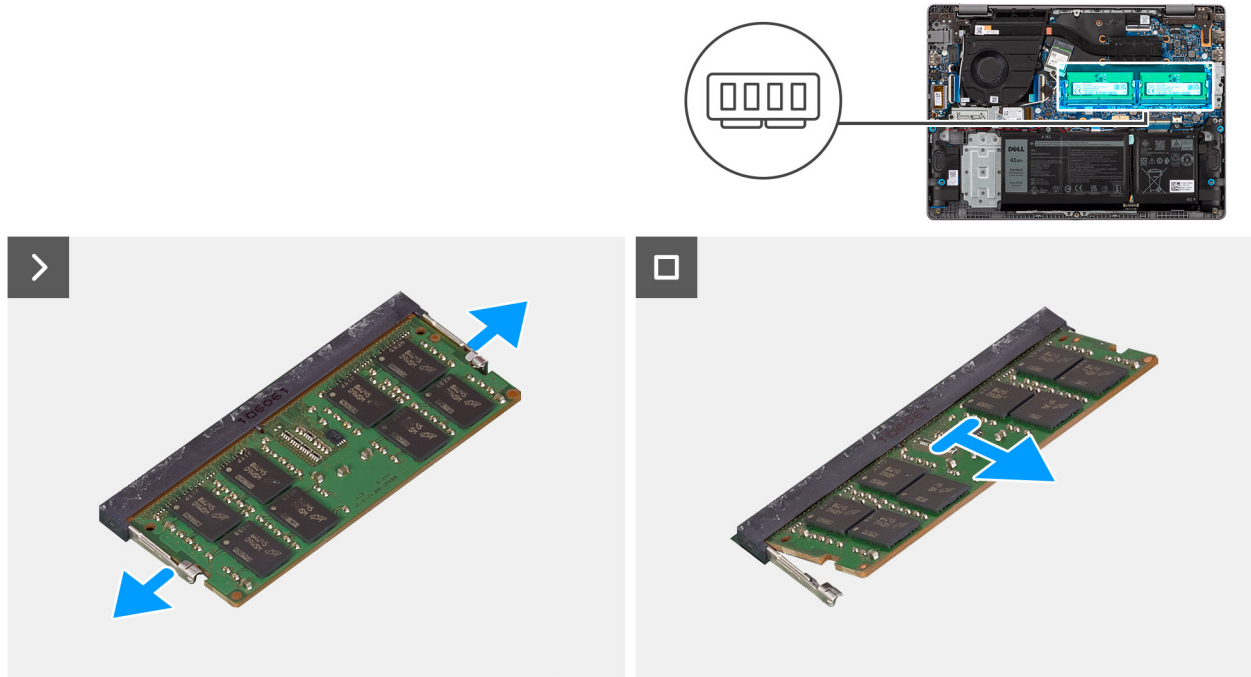


Figure 14. Removing the memory module

### Steps

1. Gently pull the memory-module retention clips away from the memory module until the memory module pops-up.
2. Hold the memory module and remove it from the memory-module slot (DIMM1 or DIMM2, whichever is applicable) on the system board.

**CAUTION:** To prevent damage to the memory module, hold the memory module by the edges. Do not touch the components or metallic contacts on the memory module as electrostatic discharge (ESD) can inflict severe damage on the components. To read more about ESD protection, see [ESD protection](#).

3. Repeat steps 1 and 2 for the second memory module, if installed.

## Installing the memory module

### 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 memory module and provide a visual representation of the installation procedure.

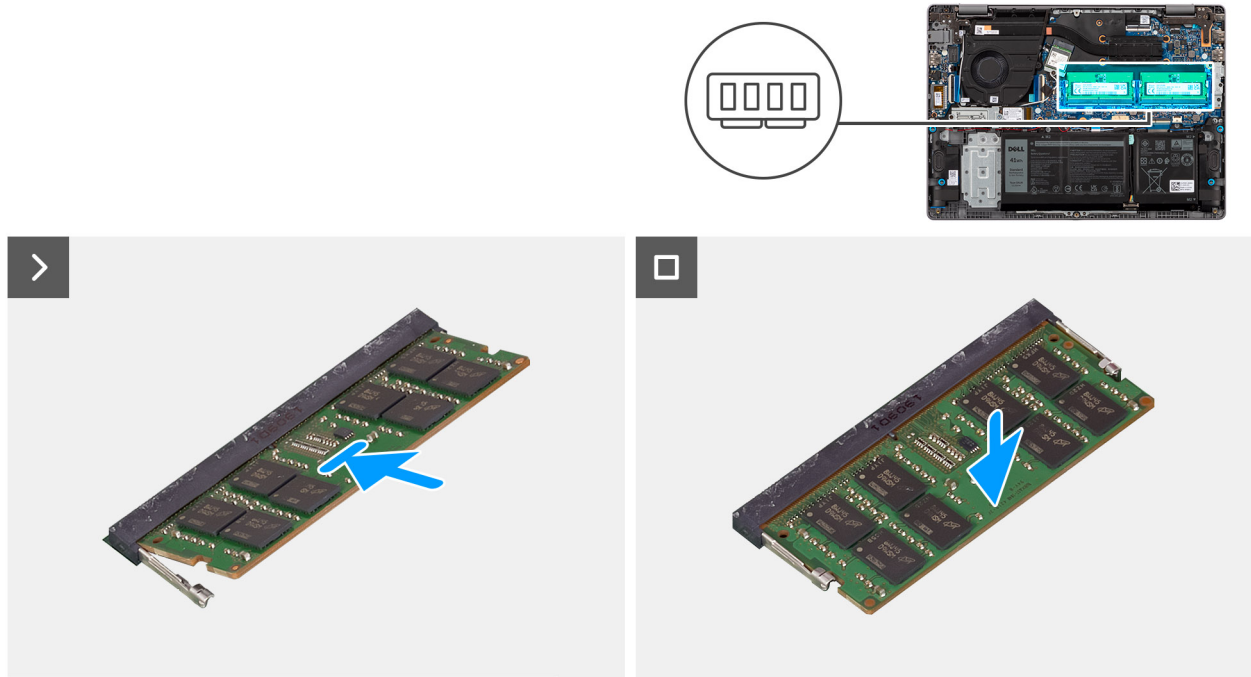


Figure 15. Installing the memory module

### Steps

1. Align the notch on the memory module with the tab on the memory-module slot (DIMM1 or DIMM2, whichever is applicable) on the system board.
2. Slide the memory module firmly into the memory-module slot at an angle.
3. Press down on the memory module until the securing clips firmly click into place.

**CAUTION:** To prevent damage to the memory module, hold the memory module by the edges. Do not touch the components or metallic contacts on the memory module as electrostatic discharge (ESD) can inflict severe damage on the components. To read more about ESD protection, see [ESD protection](#).

**NOTE:** If you do not hear the click, remove the memory module and reinstall it.

4. Repeat steps 1 to 3 to install the second memory module, if applicable.

### Next steps

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

## Solid-state drive

### Removing the solid-state drive

#### Prerequisites

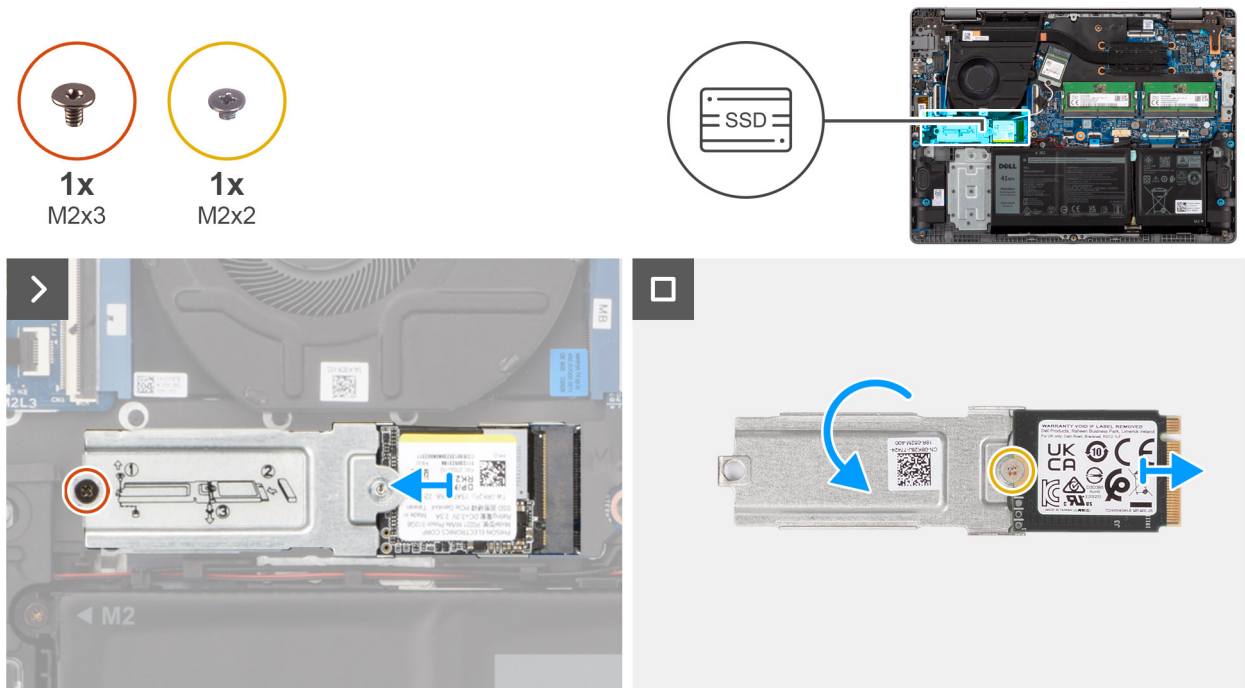
1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).

#### About this task

**NOTE:** If you are replacing the solid-state drive with a new solid-state drive, use the existing mounting bracket to install the latter.



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



**Figure 16. Removing the solid-state drive**

### Steps

1. Remove the screw (M2x3) that secures the solid-state drive bracket to the palm-rest and keyboard assembly.
2. Slide and remove the solid-state drive bracket, along with the solid-state drive, from the M.2 card slot (SSD1) on the system board.
3. Turn over the solid-state drive bracket.
4. Remove the screw (M2x2) that secures the solid-state drive to the solid-state drive bracket.
5. Lift the solid-state drive off the solid-state drive bracket.

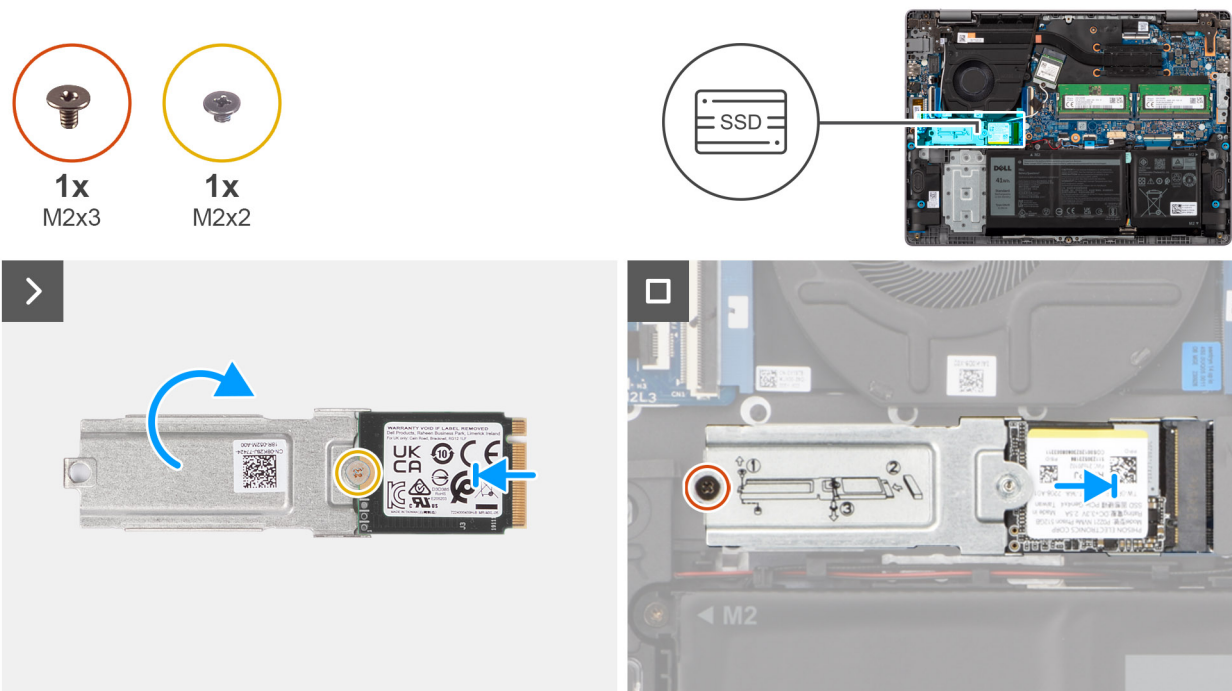
## Installing the solid-state drive

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



**Figure 17. Installing the solid-state drive**

### Steps

1. Align the round notch on the solid-state drive with the screw hole on the solid-state drive bracket.
2. Replace the screw (M2x2) to secure the solid-state drive to the solid-state drive bracket.
3. Turn over the solid-state drive bracket.
4. Align the notch on the solid-state drive with the tab on the M.2 card slot (SSD1) on the system board.
5. At an angle, slide and place the solid-state drive bracket, along with the solid-state drive, into the M.2 card slot on the system board.
6. Replace the screw (M2x3) to secure the 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](#).

## Wireless card

### Removing the wireless card

#### 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 wireless card and provide a visual representation of the removal procedure.



1x  
M2x3

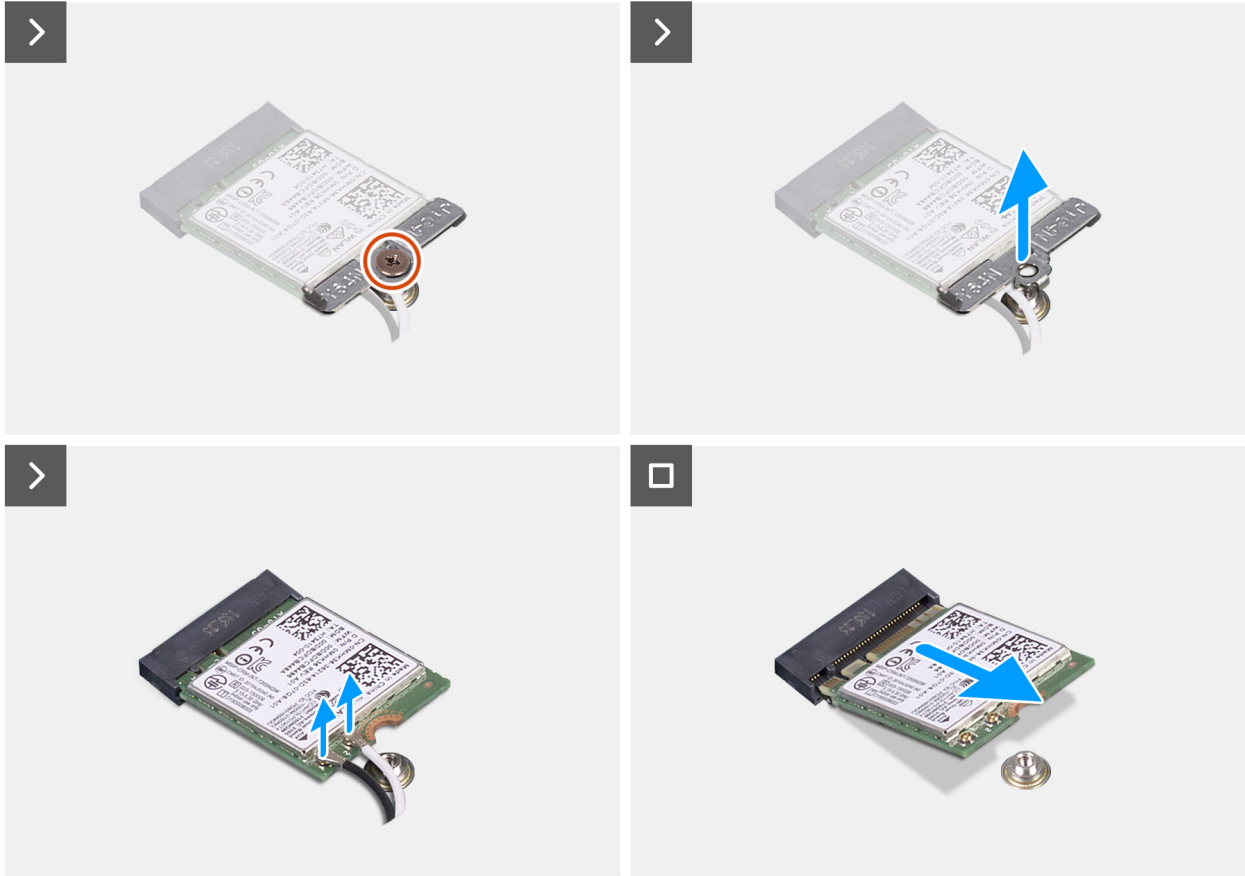
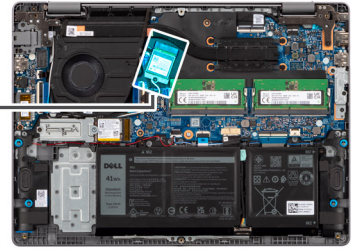


Figure 18. Removing the wireless card

### Steps

1. Remove the screw (M2x3) that secures the wireless-card bracket to the system board.
2. Lift the wireless-card bracket off the wireless card.
3. Disconnect the wireless-antenna cables from the connectors on the wireless card.
4. Slide and remove the wireless card from the wireless-card slot (WLAN1) on the system board.

## Installing the wireless card

### 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 wireless card and provide a visual representation of the installation procedure.



1x  
M2x3



Figure 19. Installing the wireless card

### Steps

1. Align the notch on the wireless card to the tab on the wireless-card slot (WLAN1) on the system board.
2. Slide the wireless card at an angle into the wireless-card slot on the system board.
3. Connect the wireless-antenna cables to the connectors on the wireless card.

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

Table 30. Antenna-cable color scheme

Connector on the wireless card	Antenna-cable color	Silkscreen marking	
Main	White	MAIN	△ (white triangle)
Auxiliary	Black	AUX	▲ (black triangle)

4. Place the wireless-card bracket on the wireless card.
5. Align the screw hole on the wireless-card bracket with the screw hole on the system board.
6. Replace the screw (M2x3) to secure the wireless-card bracket and the wireless card to the system board.

### Next steps

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

## Fan

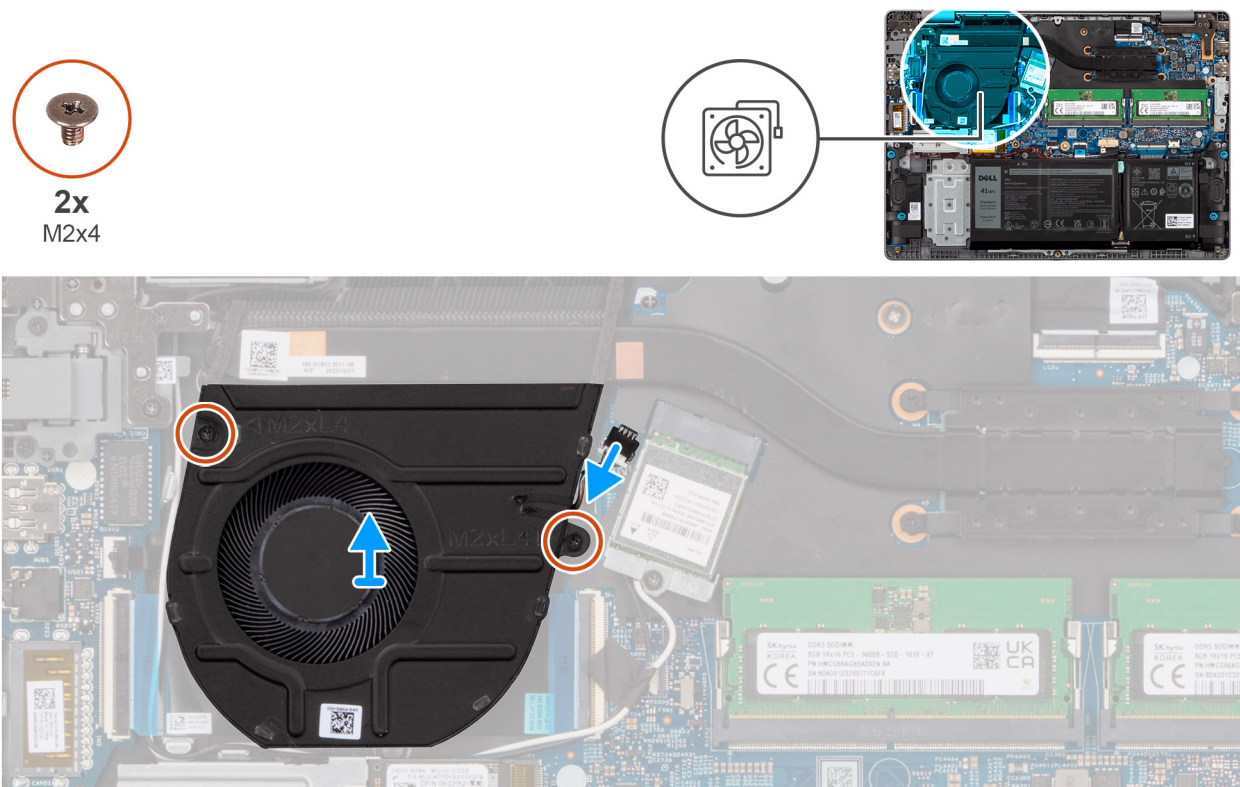
### Removing the fan

#### 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.



**Figure 20. Removing the memory module**

#### Steps

1. Disconnect the fan cable from the connector (FAN1) on the system board.
2. Remove the two screws (M2x4) that secure the fan to the palm-rest and keyboard assembly.
3. Lift the fan off the palm-rest and keyboard assembly.

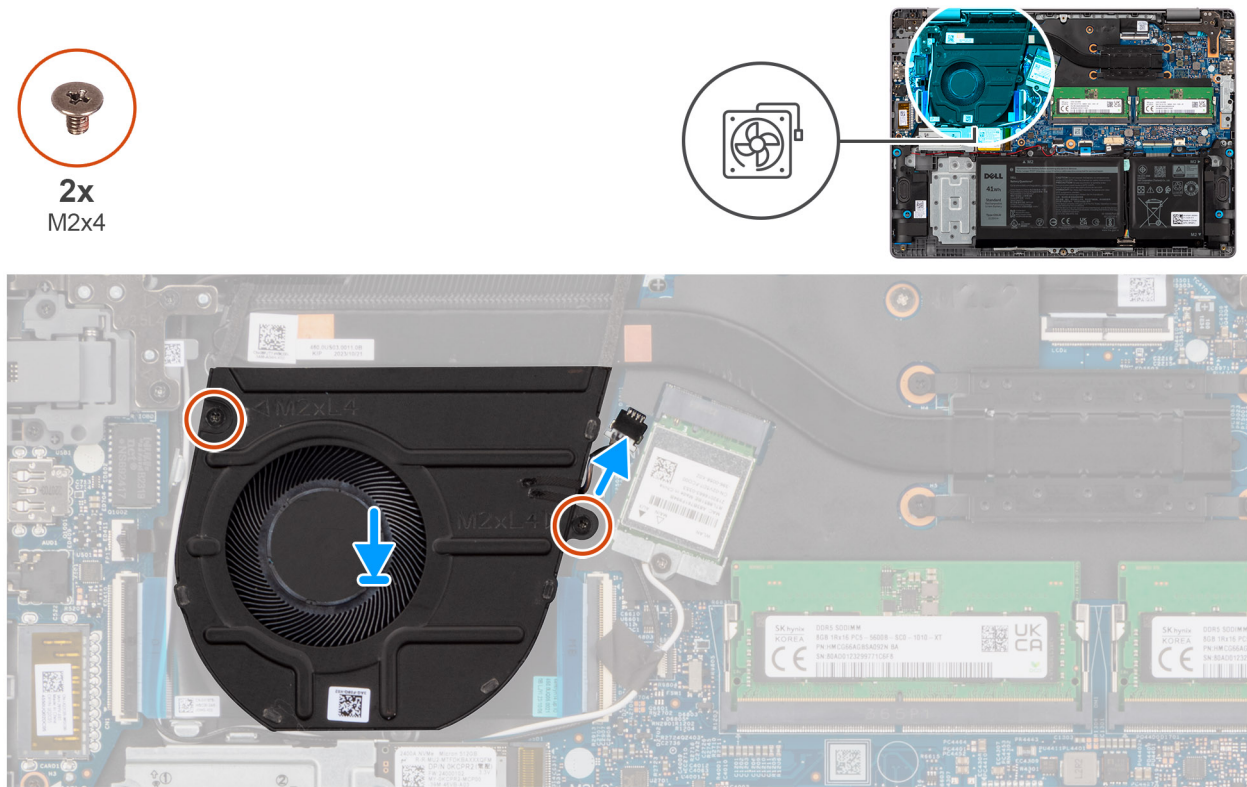
### Installing the fan

#### 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.



**Figure 21. Installing the fan**

### Steps





1. Place the fan in the slot on the palm-rest and keyboard assembly.
2. Align the screw holes on the fan with the screw holes on the palm-rest and keyboard assembly.
3. Replace the two screws (M2x4) to secure the fan to the palm-rest and keyboard assembly.
4. Connect the fan cable to the connector (FAN1) on the system board.


### Next steps

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

# Removing and installing Field Replaceable Units (FRUs)


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

-  **CAUTION:** The information in this removing and installing FRU's section is intended for authorized service technicians only.
-  **CAUTION:** To avoid any potential damage to the component or loss of data, ensure that an authorized service technician replaces the Field Replaceable Units (FRUs).
-  **CAUTION:** Dell Technologies recommends that this set of repairs, if needed, to be conducted by trained technical repair specialists.
-  **CAUTION:** As a reminder, your warranty does not cover damages that may occur during FRU repairs that are not authorized by Dell Technologies.

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

## 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.
  - Ensure any screws during the servicing of this product are not lost or misplaced, to prevent accidental puncture or damage to the battery and other computer components.
  - If the battery gets stuck inside your computer as a result of swelling, do not try to release it as puncturing, bending, or crushing a rechargeable Li-ion battery can be dangerous. In such an instance, contact Dell technical support for assistance. See [Contact Support at Dell Support Site](#).
  - Always purchase genuine batteries from [Dell 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

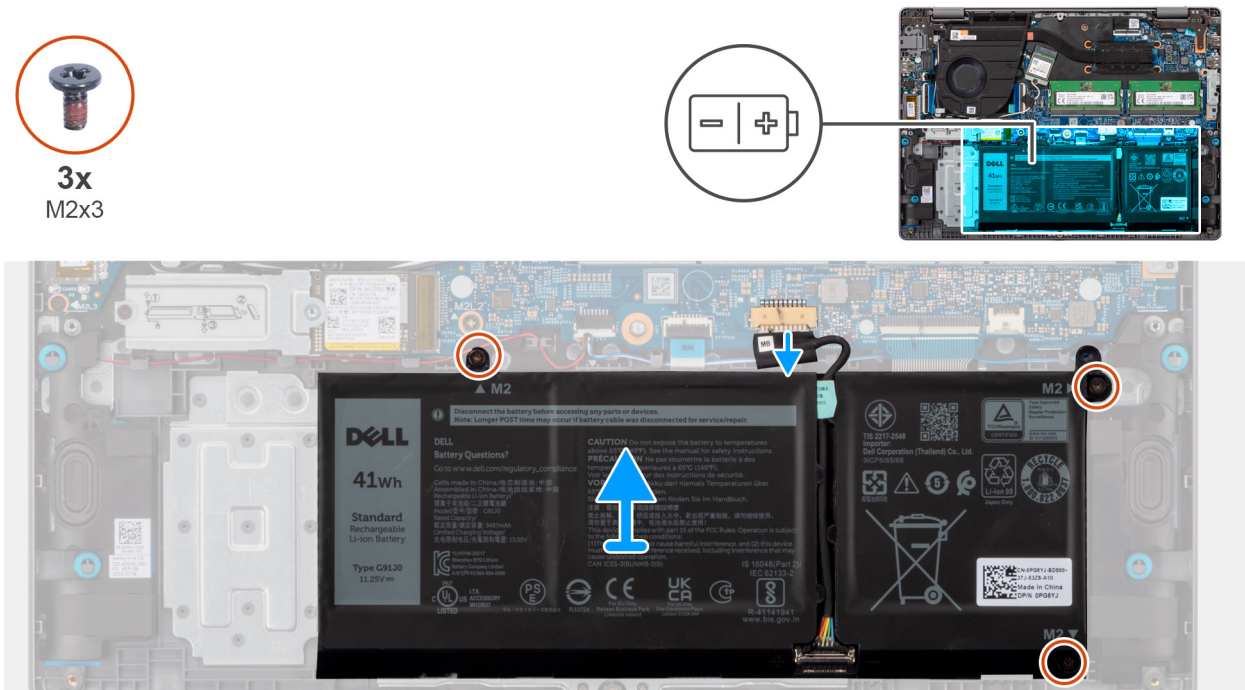
-  **CAUTION:** The information in this removal section is intended for authorized service technicians only.

### Prerequisites

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

### About this task

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



**Figure 22. Removing the battery**

### Steps

1. Using the pull tab, disconnect the battery cable from the connector (BATT1) on the system board.
2. Remove the three screws (M2x3) that secure the battery to the palm-rest and keyboard assembly.
3. Lift the battery, along with the battery cable, off the palm-rest and keyboard assembly.

**NOTE:** Ensure that the battery is lifted at an angle from the top and is free from the tabs at the bottom edge.

## Installing the battery

**CAUTION:** The information in this installation 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

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





3x  
M2x3

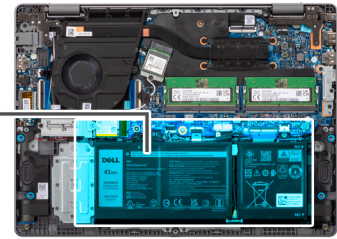
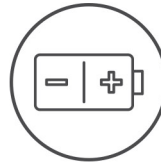


Figure 23. Installing the battery

### Steps

1. Place the battery, along with the battery cable, in the slot on the palm-rest and keyboard assembly.
  - NOTE:** Ensure that the bottom edge of the battery is placed at an angle under the tabs 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 three screws (M2x3) to secure the battery to the palm-rest and keyboard assembly.
4. Connect the battery cable to the connector (BATT1) on the system board.

### Next steps

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

## Disconnecting the battery cable

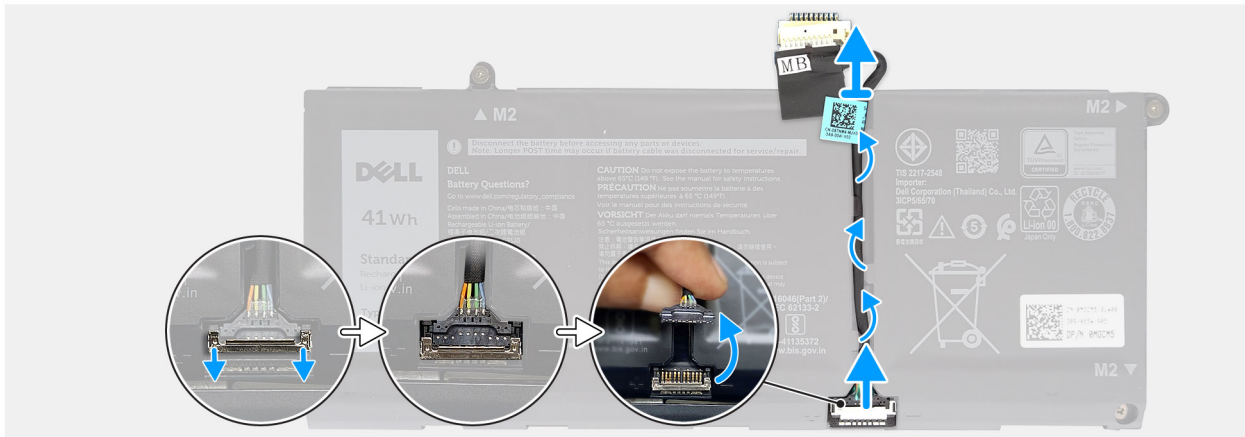
**CAUTION:** The information in this removal section is intended for authorized service technicians only.

### 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 image indicates the location of the battery cable and provides a visual representation of the removal procedure.



**Figure 24. Disconnecting the battery cable**

### Steps

1. Unroute the battery cable from the routing guides on the battery.
2. Open the latch and disconnect the battery cable from the connector on the battery.

**CAUTION:** Do not pull the battery cable to disconnect it from the battery, it may damage the battery or the battery cable.

**NOTE:** To disconnect the battery cable, first push the latch downward to release the connector, and then pull the connector upward to disconnect it from the battery.

## Connecting the battery cable

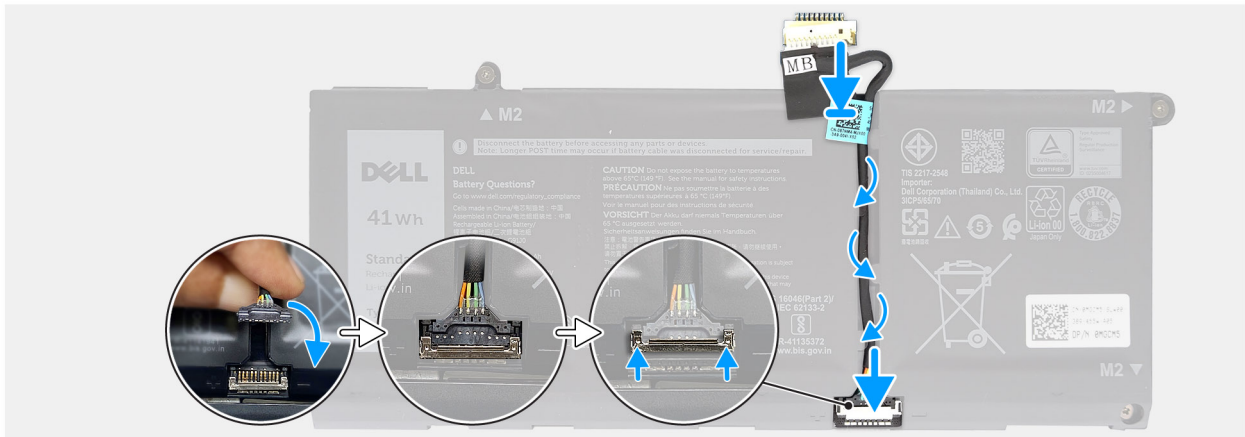
**CAUTION:** The information in this installation section is intended for authorized service technicians only.

### Prerequisites

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

### About this task

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



**Figure 25. Connecting the battery cable**

### Steps

1. Connect the battery cable to the connector on the battery and close the latch.
2. Route the battery cable through the routing guides on the battery.

### Next steps

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

## Heat sink

### Removing the heat sink

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

#### 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.



4x

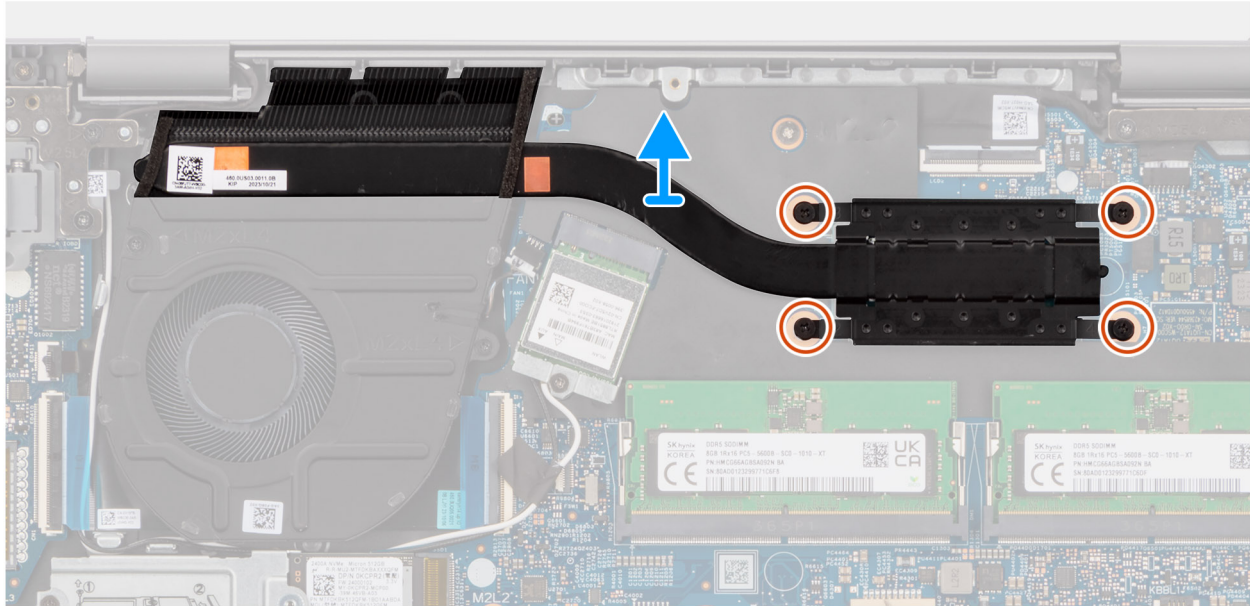
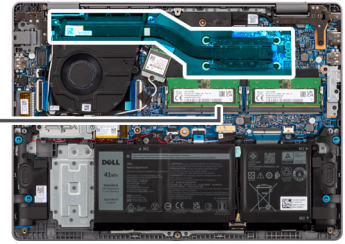


Figure 26. Removing the heat sink

### Steps

1. In reverse sequential order (4 > 3 > 2 > 1), loosen the four captive screws 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.

## Installing the heat sink

**CAUTION:** The information in this installation 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:** If either the system board or the heat sink is replaced, use the thermal grease 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.



4x

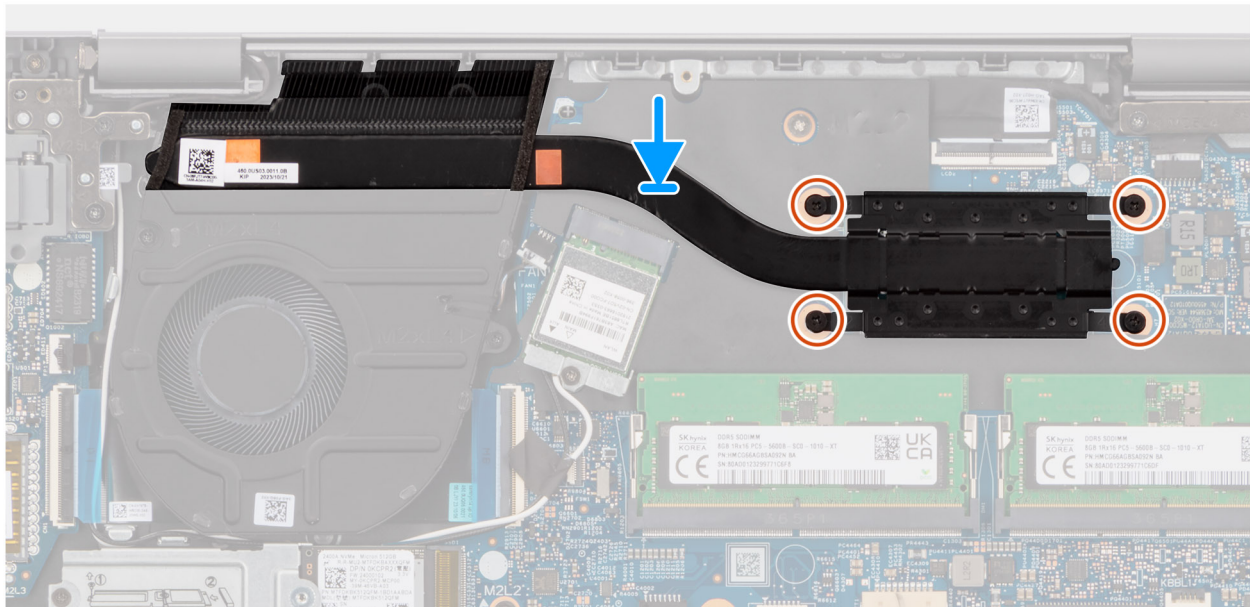
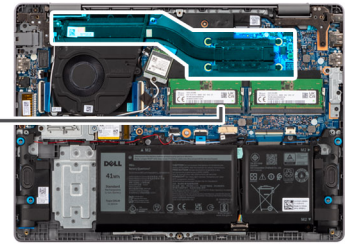


Figure 27. Installing the heat sink

### Steps

1. Place the heat sink in the slot on the system board.
2. Align the screw holes on the heat sink with the screw holes on the system board.
3. In sequential order (1 > 2 > 3 > 4), tighten the four captive screws 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](#).

## Speakers

### Removing the speakers

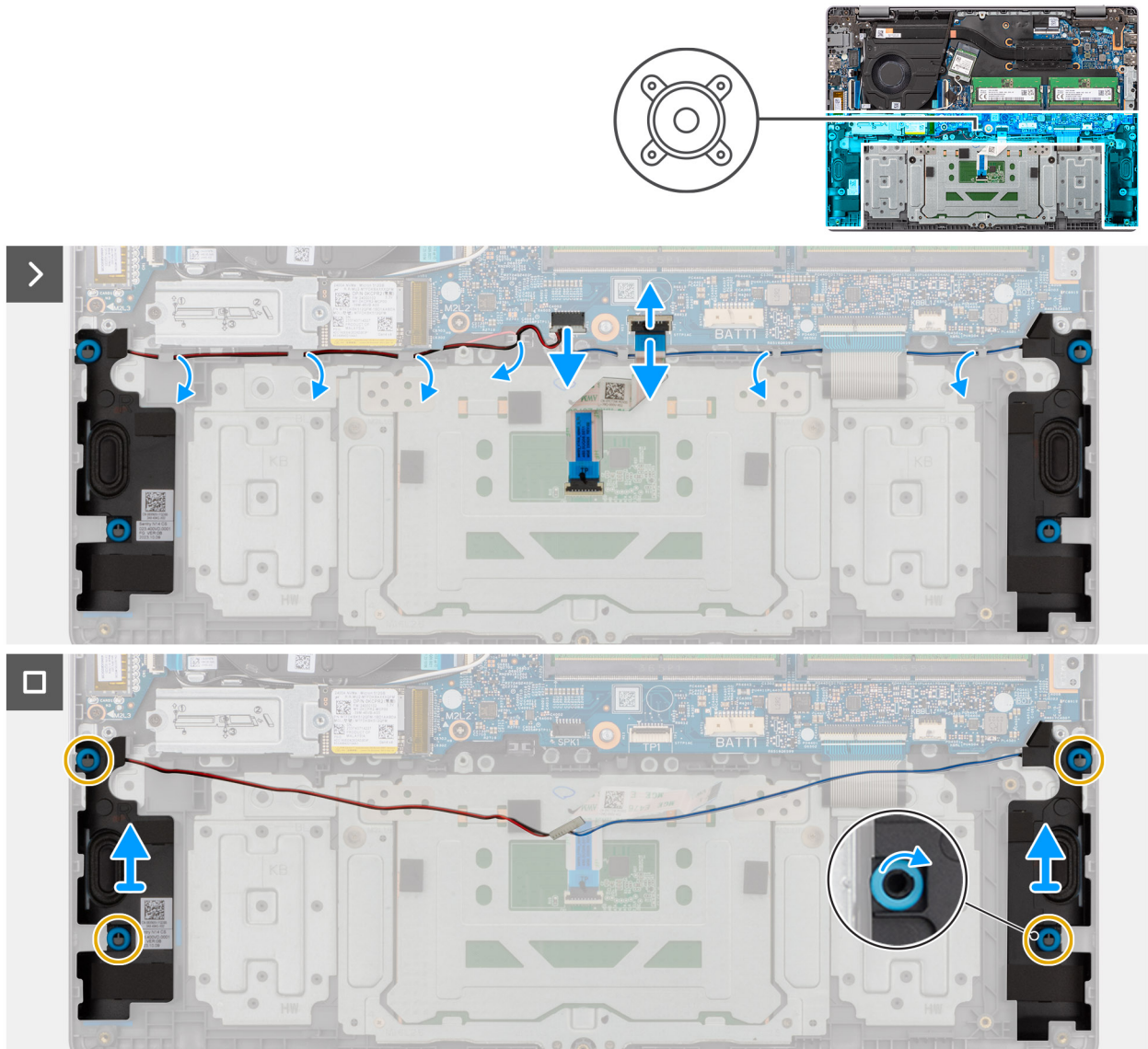
 **CAUTION:** The information in this removal section is intended for authorized service technicians only.

### 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 speakers and provide a visual representation of the removal procedure.



**Figure 28. Removing the speakers**

**Steps**

1. Open the latch and disconnect the touchpad cable from the connector (TP1) on the system board.
2. Disconnect the speaker cable from the connector (SPK1) on the system board.
3. Unroute and remove the speaker cable from the routing guides on palm-rest and keyboard assembly.
4. Lift the speakers, along with the cable, off the palm-rest and keyboard assembly.

## Installing the speakers

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

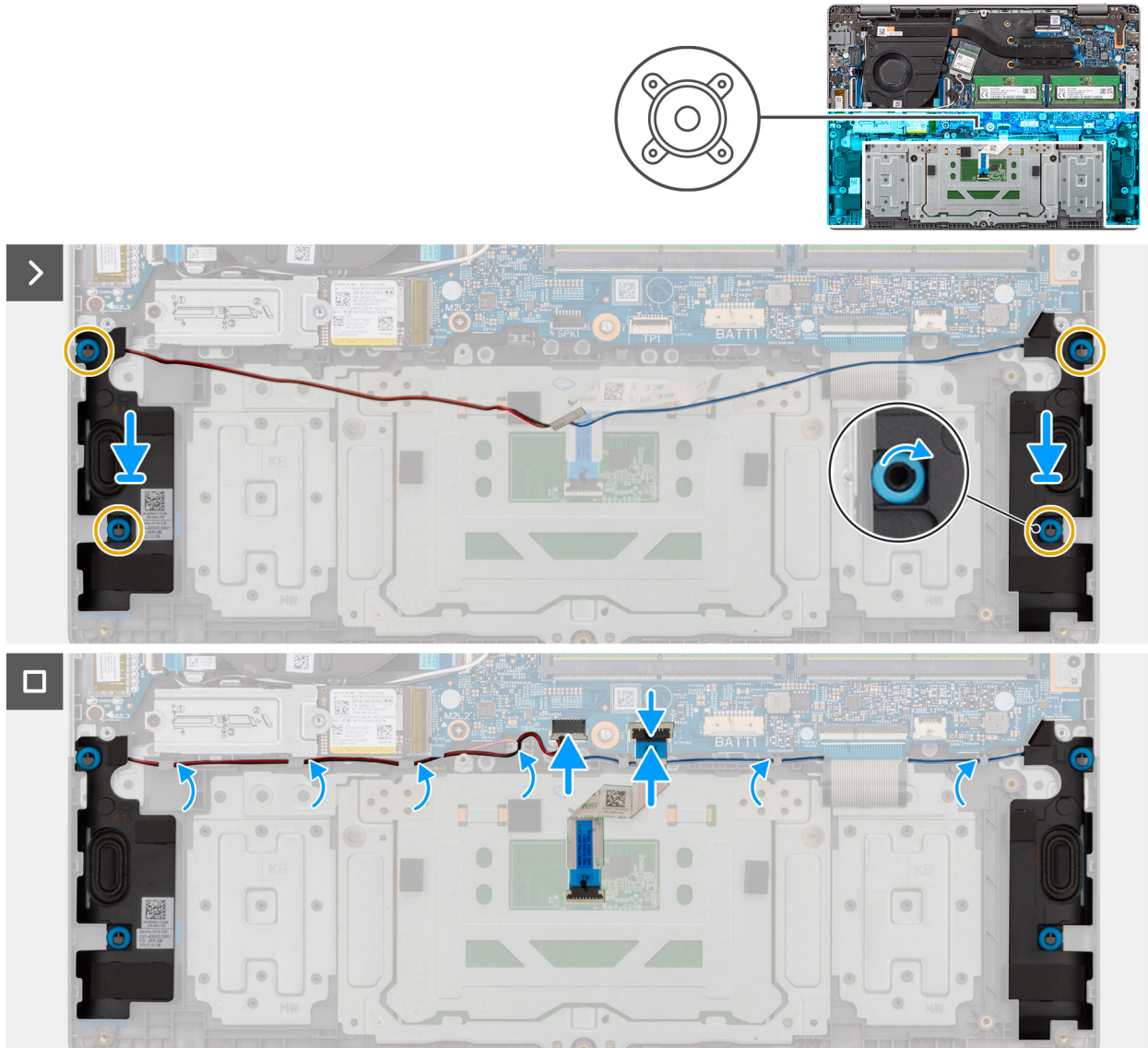
**Prerequisites**

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

**About this task**

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

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



**Figure 29. Installing the speakers**

### Steps

1. Using the alignment posts and rubber grommets, place the speakers in the slots on the palm-rest and keyboard assembly.  
**i** **NOTE:** Ensure that the rubber grommets on the speakers are threaded through the alignment posts and the four rubber grommets are seated into the slot and installed on the speakers properly.
2. Route the speaker cable through the routing guides on the palm-rest and keyboard assembly.
3. Connect the speaker cable to the connector (SPK1) on the system board.
4. Connect the touchpad cable to the connector (TP1) on the system board and close the latch.

### Next steps

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

# Touchpad

## Removing the touchpad

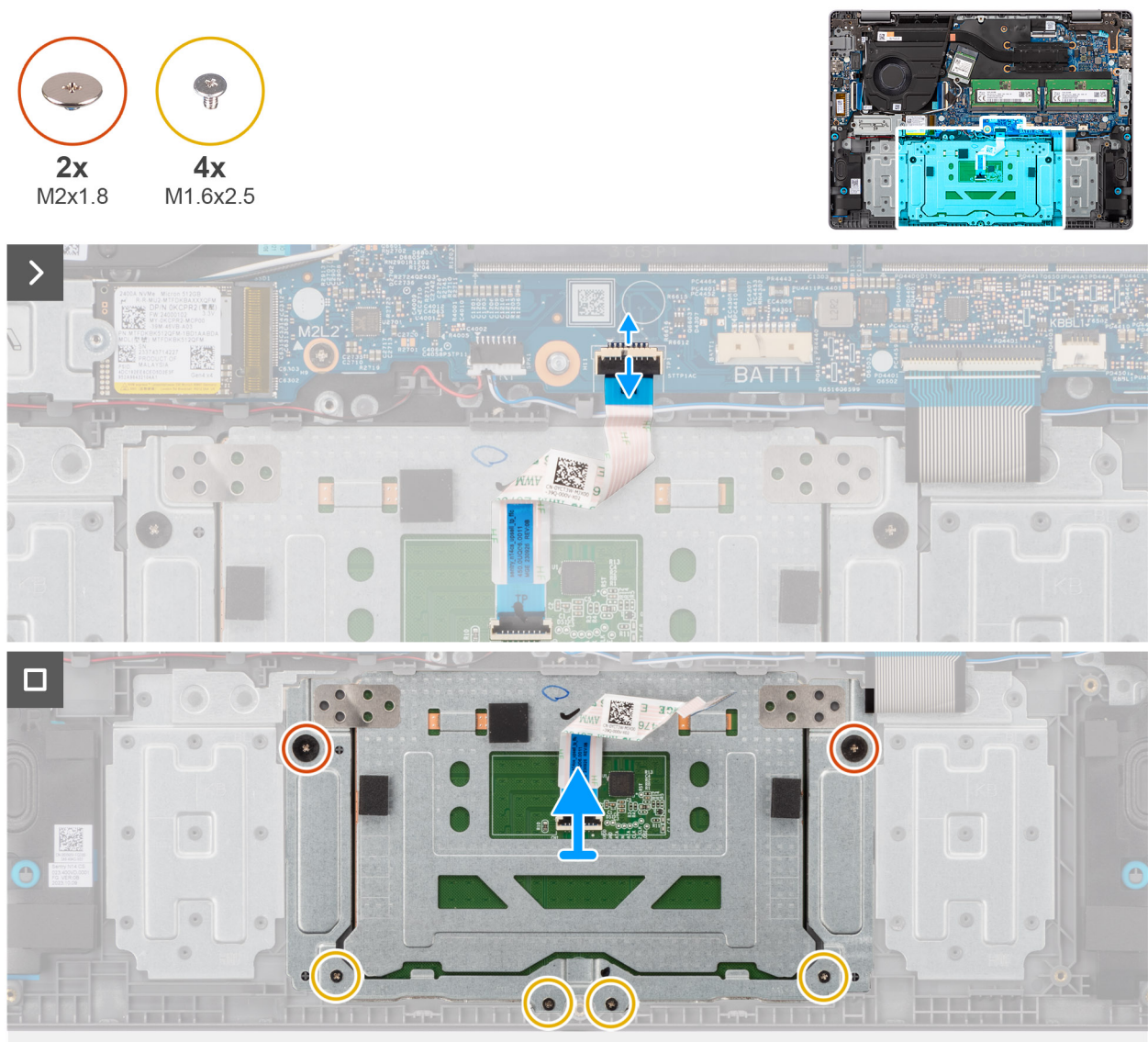
**CAUTION:** The information in this removal section is intended for authorized service technicians only.

### 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.



**Figure 30. Removing the touchpad**

### Steps

1. Open the latch and disconnect the touchpad cable from the connector (TP1) on the system board.



2. Remove the two screws (M2x1.8) and four screws (M1.6x2.5) that secure the touchpad assembly to the palm-rest and keyboard assembly.
3. Lift the touchpad, along with the touchpad cable, off the palm-rest and keyboard assembly.

## Installing the touchpad

**CAUTION:** The information in this installation 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.

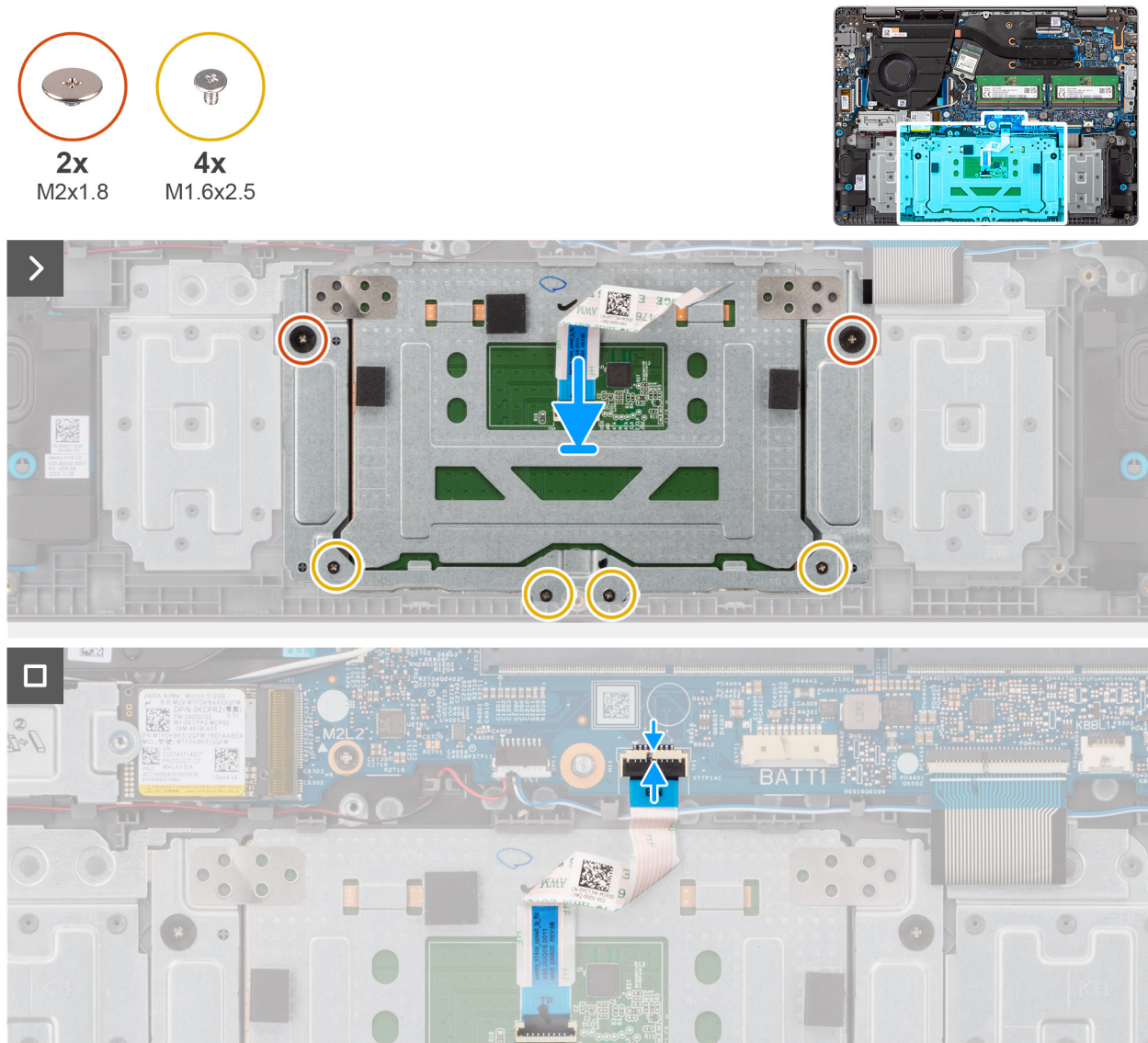


Figure 31. Installing the touchpad

## Steps


1. Align and place the touchpad, along with the touchpad FFC, in the slot on the palm-rest and keyboard assembly.
2. Replace the two screws (M2x1.8) and four screws (M1.6x2.5) to secure the touchpad assembly to the palm-rest and keyboard assembly.
3. Connect the touchpad cable to the connector (TP1) on the system board and close the latch.

## Next steps

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

# Power-adapter port

## Removing the power-adapter port

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

### 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 power-adapter port and provide a visual representation of the removal procedure.



2x  
M2.5x4

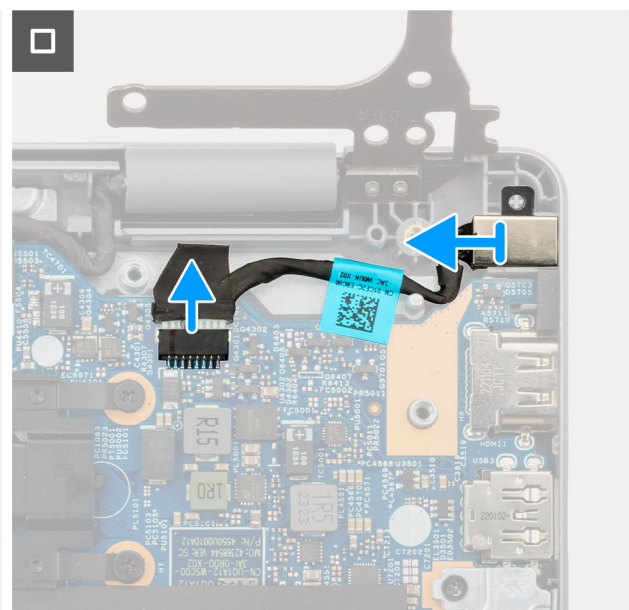
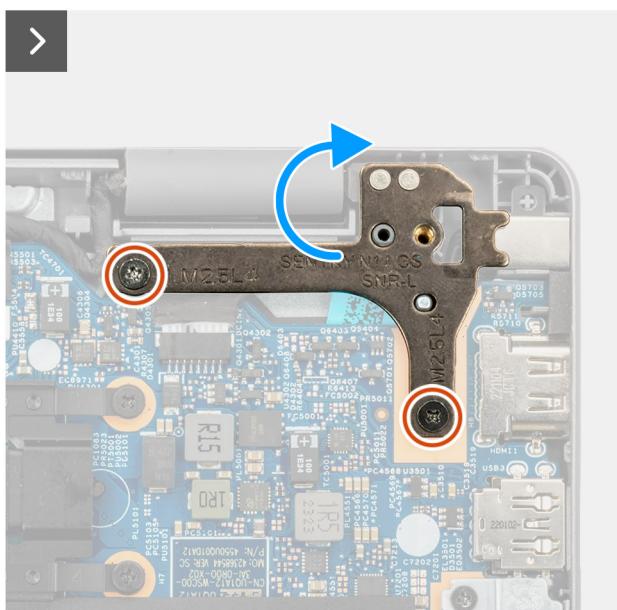
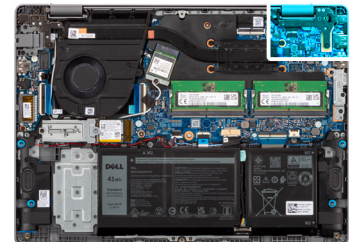


Figure 32. Removing the power-adapter port

## Steps

1. Remove the two screws (M2.5x4) that secure the right display hinge to the system board and the palm-rest and keyboard assembly.
2. Using a plastic scribe, lift the right display hinge to an angle of 90 degrees from the palm-rest and keyboard assembly to access the power-adapter port.
3. Disconnect the power-adapter port cable from the connector (DCIN1) on the system board.
4. Remove the power-adapter port from the slot on the palm-rest and keyboard assembly.

**NOTE:** The power-adapter port is secured in place by the right display hinge. There is no screw, tape, or adhesives securing the power-adapter port to the palm rest. As a result, technicians should take note of whether the power-adapter port has fallen out of the computer during subsequent removal procedures.

## Installing the power-adapter port

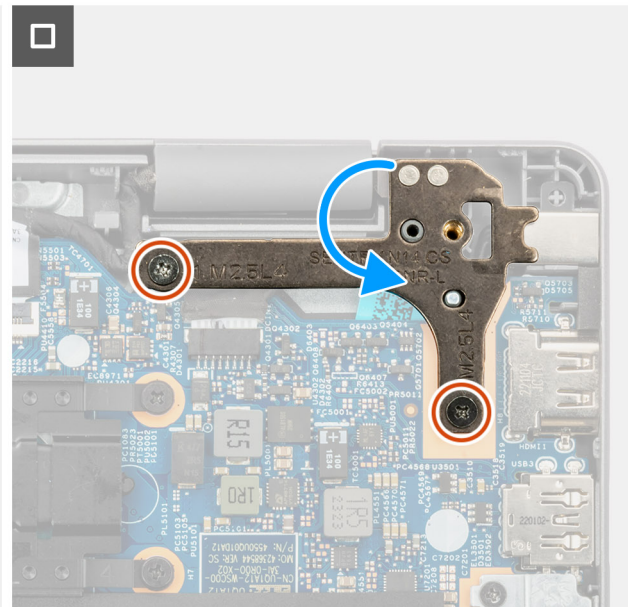
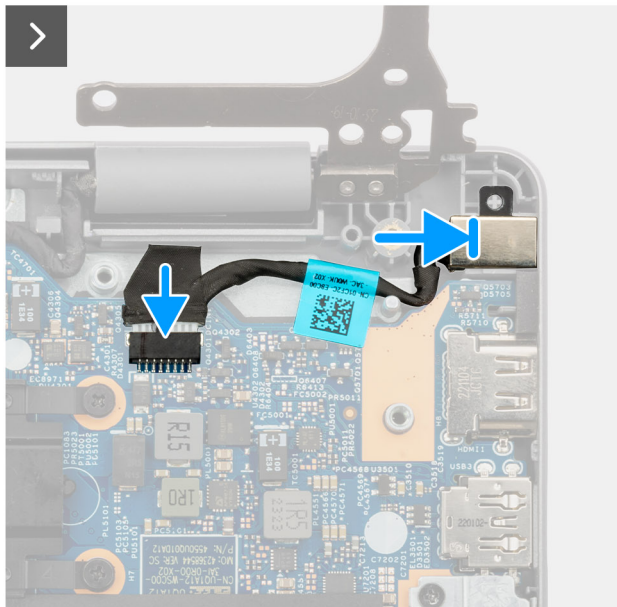
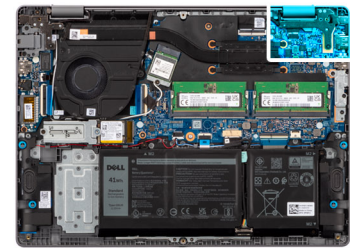
**CAUTION:** The information in this installation section is intended for authorized service technicians only.

### Prerequisites

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

### About this task

The following images indicate the location of the power-adapter port and provide a visual representation of the installation procedure.



**Figure 33. Installing the power-adapter port**

## Steps

1. Align and place the power-adapter port in the slot on the palm-rest and keyboard assembly.

**NOTE:** The power-adapter port is secured in place by the right display hinge. There is no screw, tape, or adhesives securing the power-adapter port to the palm rest. As a result, technicians should take note of whether the power-adapter port has fallen out of the computer during subsequent removal procedures.

2. Connect the power-adapter port cable to the connector (DCIN1) on the system board.
3. Close the right display hinge to align the screw holes on the right display hinge with the screw holes on the system board and the palm-rest and keyboard assembly.
4. Replace the two screws (M2.5x4) to secure the right display hinge to the system board and the palm-rest and keyboard assembly.

#### Next steps

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

## I/O-board cable

### Removing the I/O-board cable

**CAUTION:** The information in this removal 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 [fan](#).

#### About this task

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

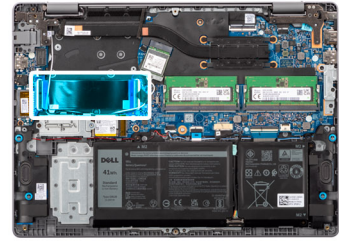


Figure 34. Removing the I/O-board cable

### Steps

1. Open the latch and disconnect the I/O-board cable from the connector (IOBD1) on the system board.
2. Open the latch and disconnect the I/O-board cable from the connector on the I/O board.
3. Remove the I/O-board cable from the palm-rest and keyboard assembly.

**NOTE:** Carefully slide the I/O-board cable underneath the wireless-antenna cables to remove the I/O daughter-board cable.

## Installing the I/O-board cable

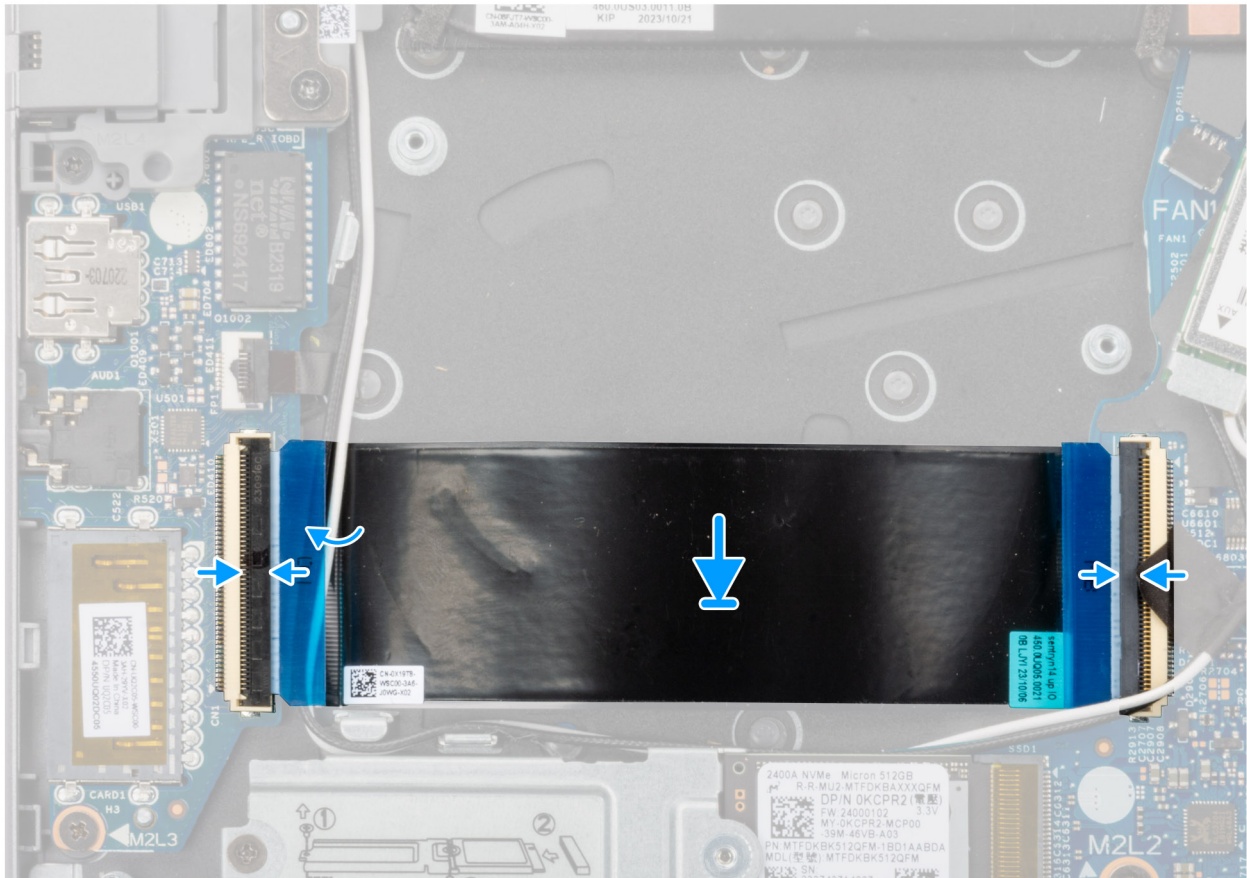
**CAUTION:** The information in this installation section is intended for authorized service technicians only.

### Prerequisites

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

## About this task

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



**Figure 35. Installing the I/O-board cable**

## Steps

1. Place the I/O-board cable on the palm-rest and keyboard assembly.

**NOTE:** Carefully slide the I/O-board cable underneath the wireless-antenna cables to 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 (IOBD1) 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

**CAUTION:** The information in this removal 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 [fan](#).

### About this task

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

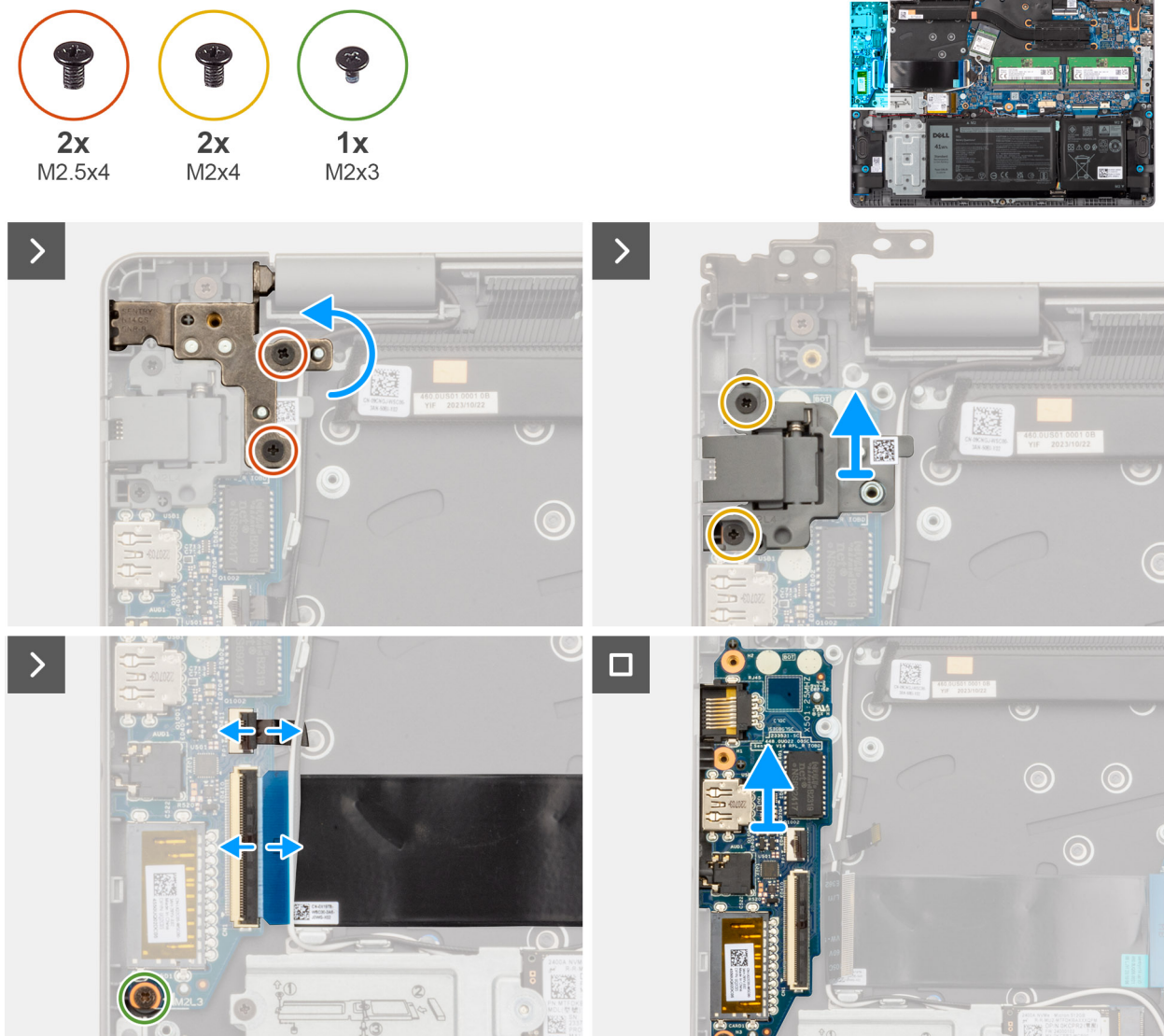



Figure 36. Removing the I/O board

### Steps

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

2. Using a plastic scribe, lift the left display hinge to an angle of 90 degrees from the palm-rest and keyboard assembly to access the I/O board.
3. Remove the two screws (M2x4) that secure the RJ45-holder to the palm-rest and keyboard assembly.
4. Open the latch and disconnect the I/O-board cable from the connector on the I/O board.
5. Open the latch and disconnect the fingerprint reader cable from the I/O board.  
 **NOTE:** This step applies only to computers shipped with a fingerprint reader installed.
6. Remove the screw (M2x3) that secures the I/O board to the palm-rest and keyboard assembly.
7. Carefully slide and remove the I/O board at angle, from the palm-rest and keyboard assembly, to clear the ports from the port slots.

## Installing the I/O board

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

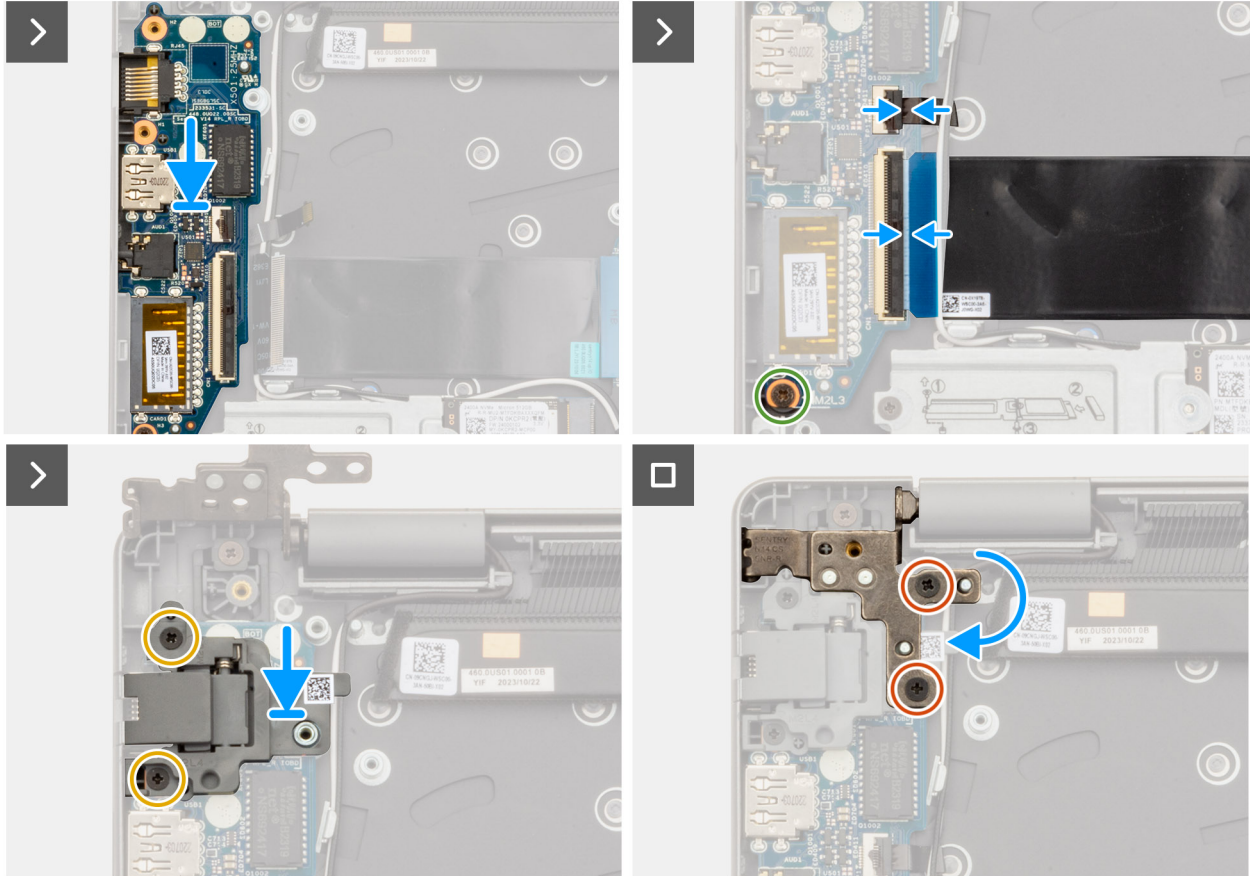
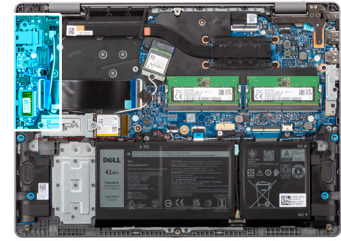
### Prerequisites

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

### About this task

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





**Figure 37. Installing the I/O board**

**Steps**

1. Align the ports on the I/O board with the port slots and place the I/O board on the palm-rest and keyboard assembly.
2. Align the screw holes on the I/O board with the screw holes on the palm-rest and keyboard assembly.
3. Replace the screw (M2x3) to secure the I/O board to the palm-rest and keyboard assembly.
4. Connect the fingerprint reader cable to the connector on the I/O board and close the latch.
  - NOTE:** This step applies only to computers shipped with a fingerprint reader installed.
5. Connect the I/O-board cable to the connector on the I/O board and close the latch.
6. Align the screw holes on the RJ45-holder with the screw holes on the palm-rest and keyboard assembly.
7. Replace the two screw (M2x4) to secure the RJ45-holder to the palm-rest and keyboard assembly.
8. Close the left display hinge to align the screw holes on the left display hinge with the screw holes on the I/O board and the palm-rest and keyboard assembly.
9. Replace the two screws (M2.5x4) to secure the left display hinge to the I/O board and the palm-rest and keyboard assembly.

**Next steps**

1. Install the fan.

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

## Power button

### Removing the power button

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

#### Prerequisites

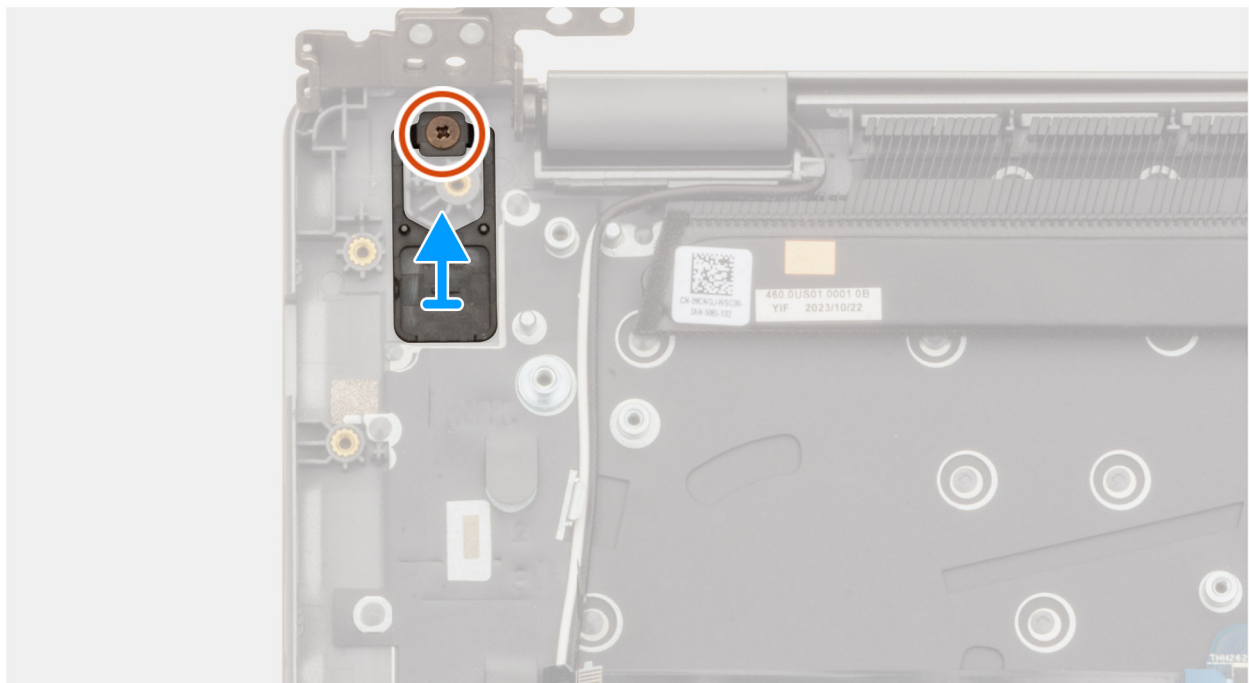
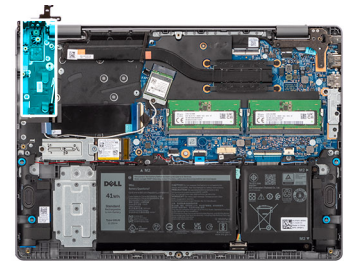
1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).
3. Remove the [fan](#).
4. Remove the [I/O board](#).

#### About this task

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



**1x**  
M2x3



**Figure 38. Removing the power button**

#### Steps

1. Remove the screw (M2x3) that secures the power button to the palm-rest and keyboard assembly.
2. Lift the power button off the palm-rest and keyboard assembly.

# Installing the power button

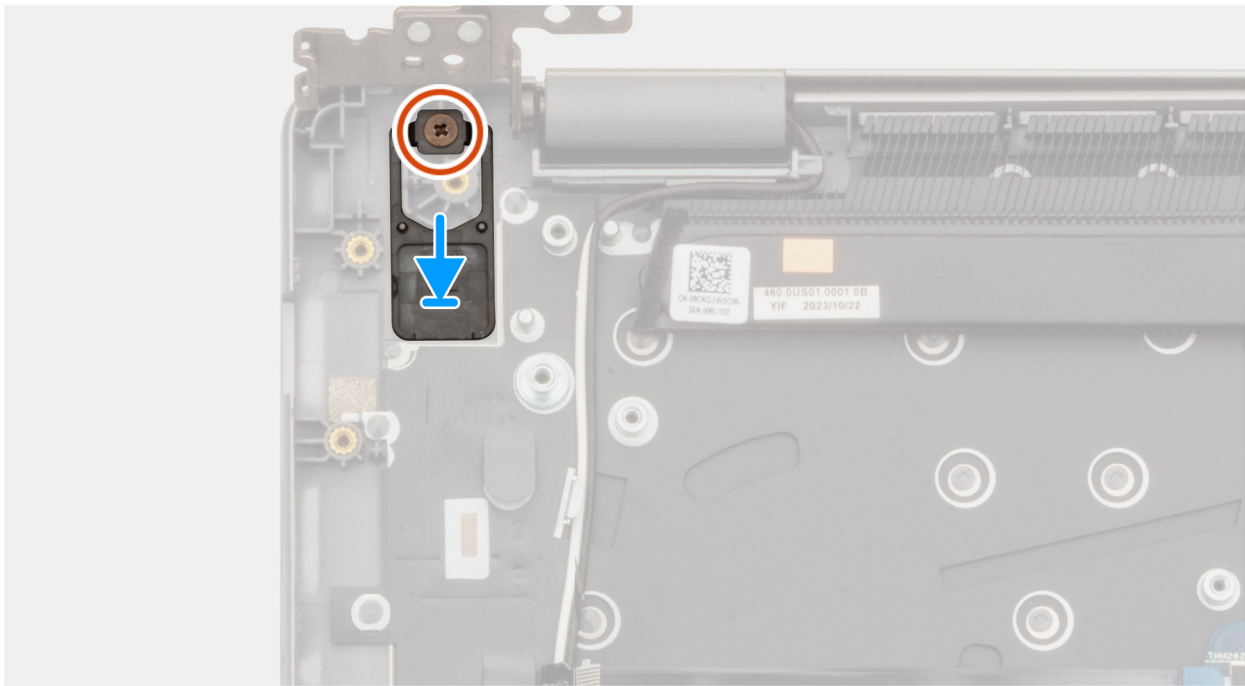
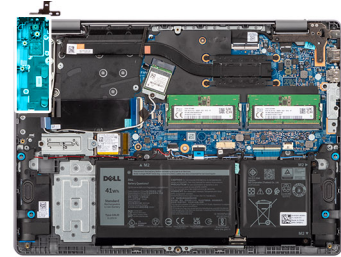
**CAUTION:** The information in this installation section is intended for authorized service technicians only.

## Prerequisites

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

## About this task

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



**Figure 39. Installing the power button**

## Steps

1. Place the power button in the slot on the palm-rest and keyboard assembly.
2. Align the screw hole on the power button with the screw hole on the palm-rest and keyboard assembly.
3. Replace the screw (M2x3) to secure the power button to the palm-rest and keyboard assembly.

## Next steps

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

# Power button with optional fingerprint reader

## Removing the power button with optional fingerprint reader

**CAUTION:** The information in this removal 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 [fan](#).
4. Remove the [I/O board](#).

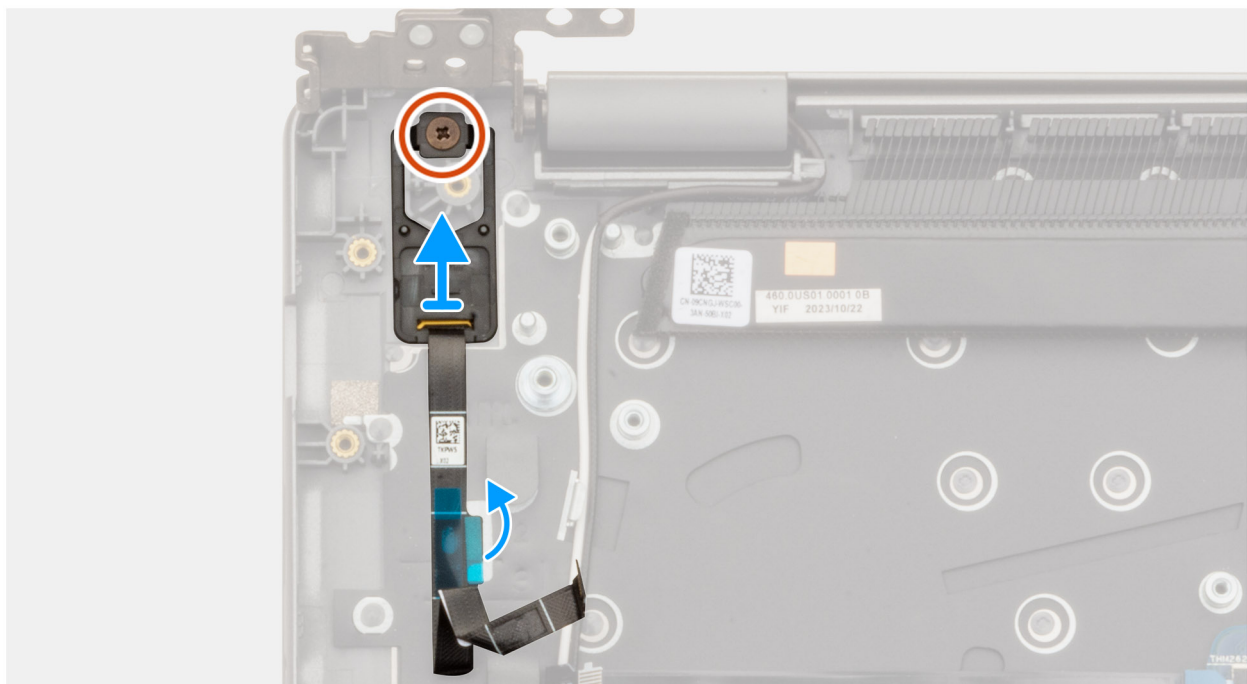
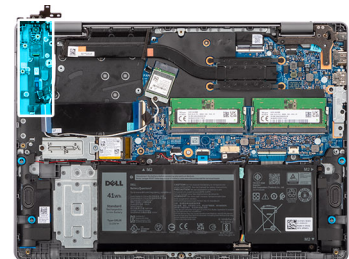
### About this task

**NOTE:** This procedure applies only to computers shipped with a power button with optional fingerprint reader installed.

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



1x  
M2x3



**Figure 40. Removing the power button with optional fingerprint reader**

### Steps

1. Peel back the tape that secures the optional fingerprint-reader cable to the palm-rest and keyboard assembly.
2. Remove the screw (M2x3) that secures the power button with optional fingerprint reader to the palm-rest and keyboard assembly.

3. Lift the power button with optional fingerprint reader off the slot on the palm-rest and keyboard assembly.

## Installing the power button with optional fingerprint reader

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

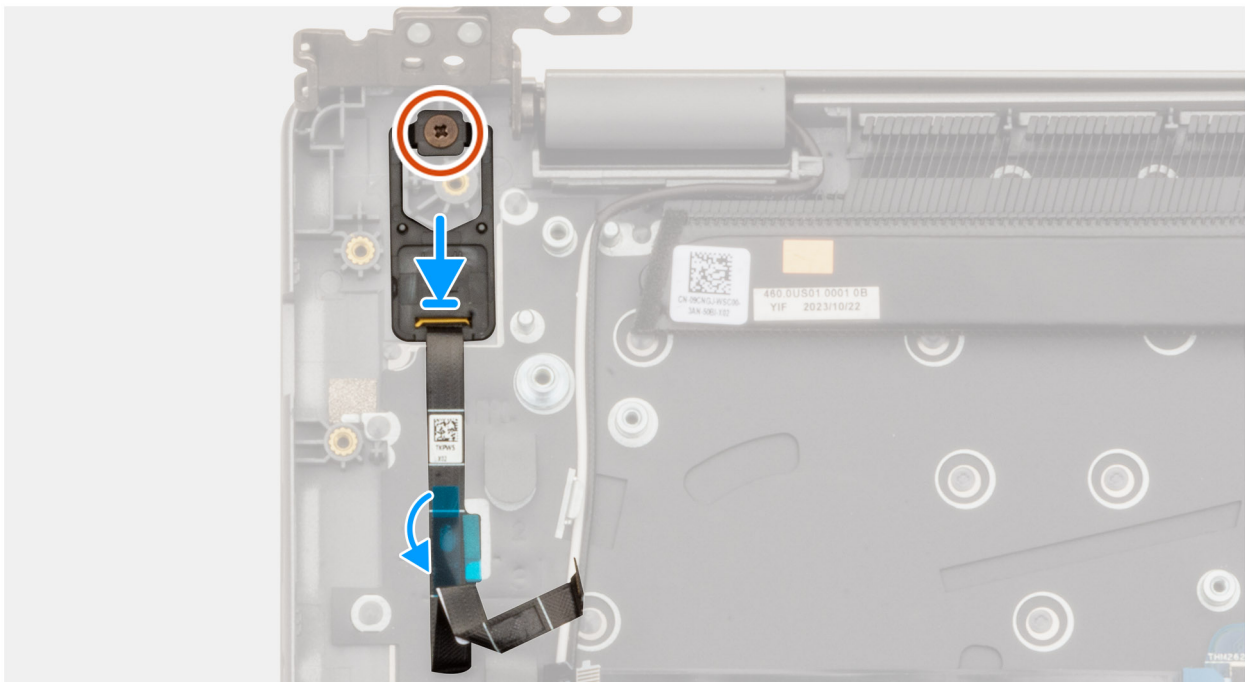
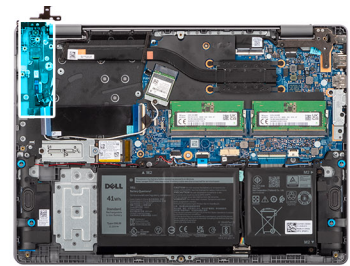
### Prerequisites

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

### About this task

**NOTE:** This procedure applies only to computers shipped with a power button with optional fingerprint reader installed.

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



**Figure 41. Installing the power button with optional fingerprint reader**

### Steps

1. Place the power button with optional fingerprint reader in the slot on the palm-rest and keyboard assembly.
2. Align the screw hole on the power button with optional fingerprint reader with the screw hole on the palm-rest and keyboard assembly.
3. Replace the screw (M2x3) to secure the power button with optional fingerprint reader to the palm-rest and keyboard assembly.
4. Adhere the tape to secure the optional fingerprint-reader cable to the palm-rest and keyboard assembly.

### Next steps

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

## Display assembly

### Removing the display assembly

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

 **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 [solid-state drive](#).
4. Remove the [wireless card](#).

### About this task

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



**4x**  
M2.5x4

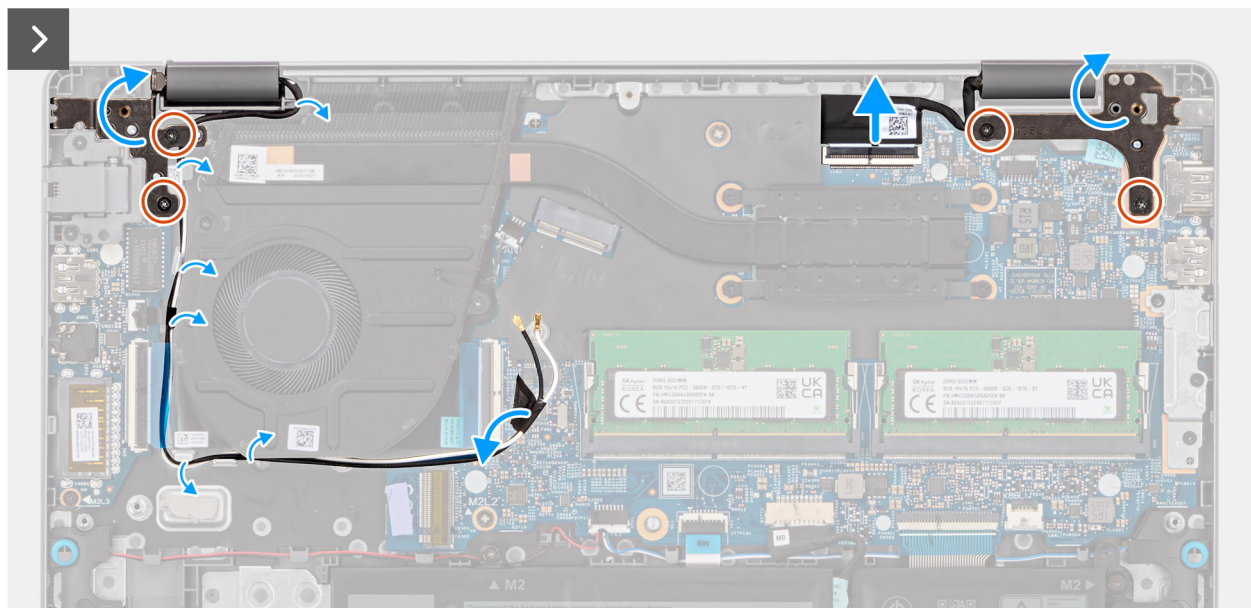
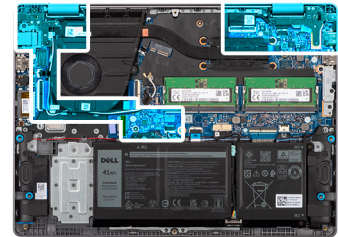


Figure 42. Removing the display assembly



Figure 43. Removing the display assembly



**Figure 44. Display assembly**

### Steps

1. Disconnect the display cable from the connector (LCD) on the system board.
2. Remove the four screws (M2.5x4) that secure the display hinges to the palm-rest and keyboard assembly.
3. Using a plastic scribe, lift the left and right hinges to an angle of 90 degrees from the palm-rest and keyboard assembly.
4. Peel back the tape that secures the wireless-antenna cables to the system board.
5. Unroute the wireless-antenna cables from the routing guides on the palm-rest and keyboard assembly.
6. Lift the palm-rest and keyboard assembly at an angle to free it from the hinges and remove it from the display assembly.

**i NOTE:** The power-adaptor port is secured in place by the right display hinge. There is no screw, tape, or adhesives securing the power-adaptor port to the palm-rest. As a result, technicians should take note of whether the power-adaptor port has fallen out of the computer during subsequent removal procedures.

## Installing the display assembly

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

**⚠ 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.



**4x**  
M2.5x4

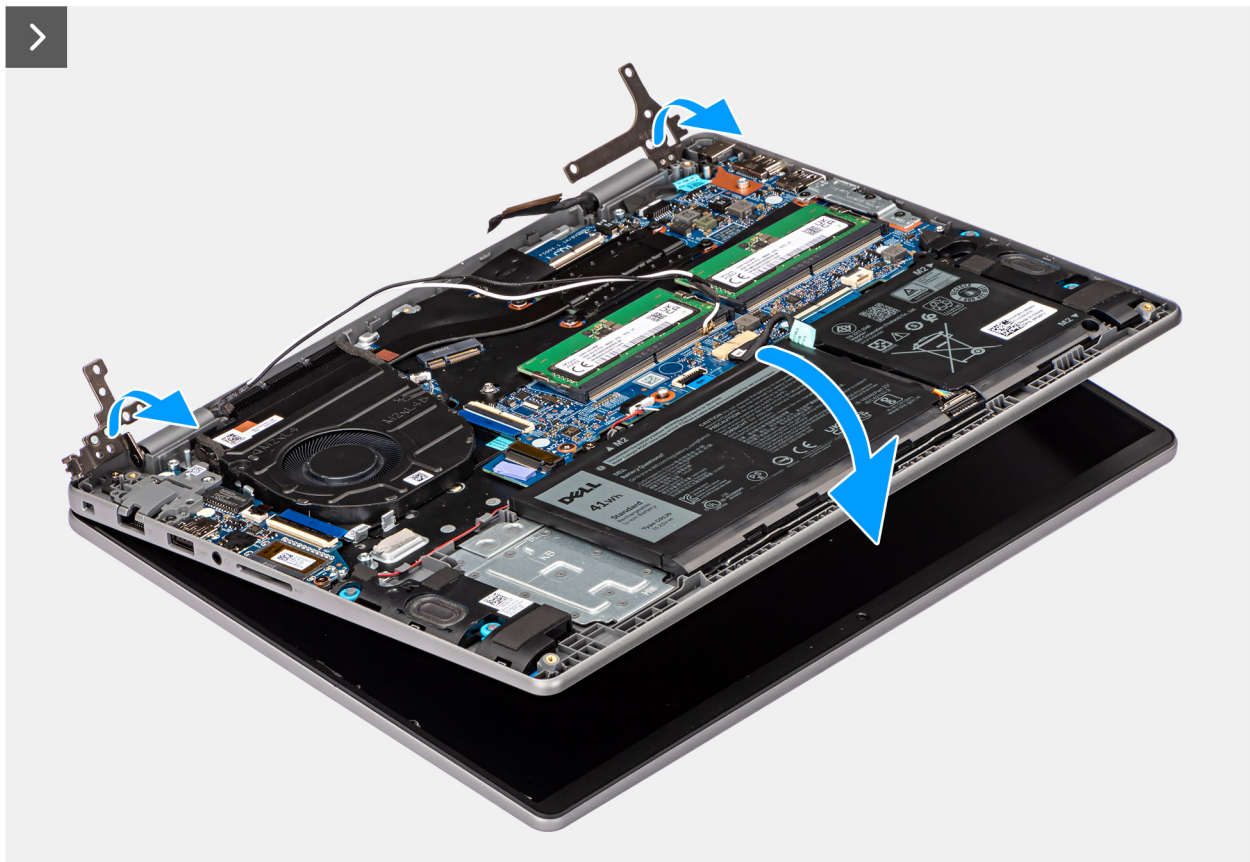
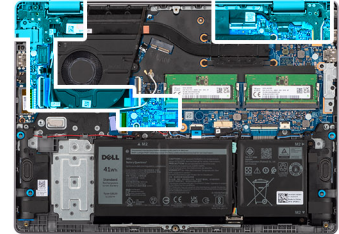
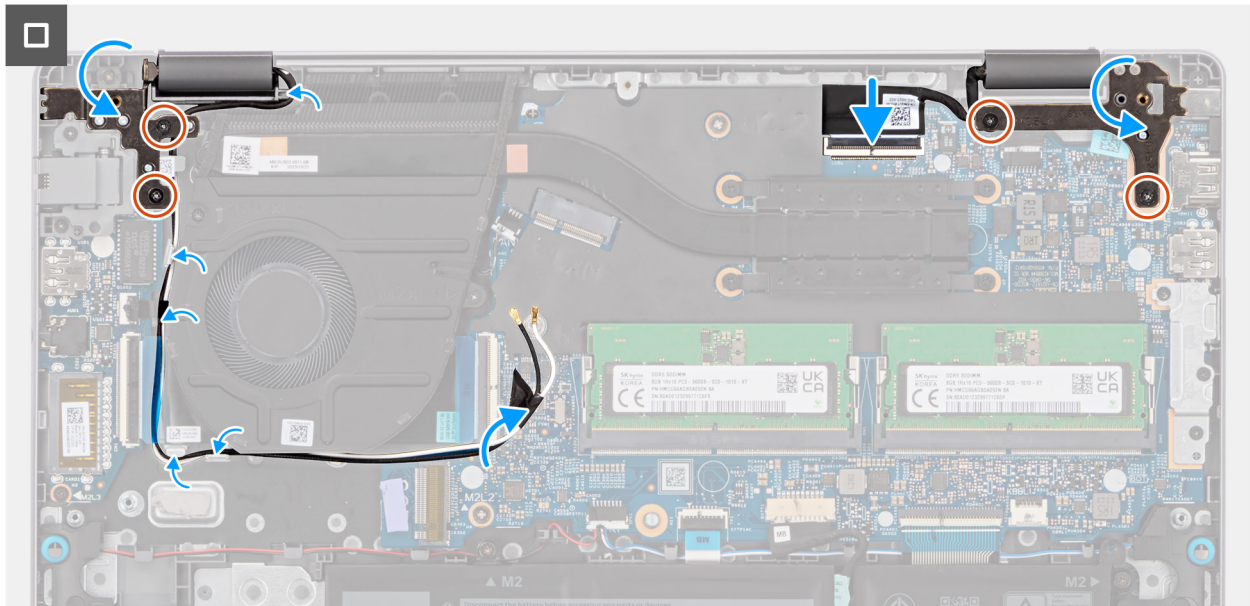


Figure 45. Installing the display assembly



**Figure 46. Installing the display assembly**

**Steps**

1. Place the display assembly on a clean and flat surface.
2. Hold the palm-rest and keyboard assembly at an angle and slide the palm-rest and keyboard assembly under the display hinges.

**CAUTION:** To avoid damaging the display, do not slide the palm-rest and keyboard assembly over the display assembly.

**NOTE:** The power-adaptor port is secured in place by the right display hinge. There is no screw, tape, or adhesives securing the power-adaptor port to the palm-rest. As a result, technicians should take note of whether the power-adaptor port has fallen out of the computer during subsequent removal procedures.

3. Route the wireless-antenna cables through the routing guides on the palm-rest and keyboard assembly.
4. Adhere the tape to secure the wireless-antenna cables to the system board.
5. Close the display hinges to align the screw holes on the display hinges with the screw holes on the palm-rest and keyboard assembly.
6. Replace the four screws (M2.5x4) to secure the display hinges to the palm-rest and keyboard assembly.
7. Connect the display cable to the connector (LCD) on the system board.

**Next steps**

1. Install the [wireless card](#).
2. Install the [solid-state drive](#).
3. Install the [base cover](#).
4. Follow the procedure in [After working inside your computer](#).

## Display bezel

### Removing the display bezel

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

**Prerequisites**

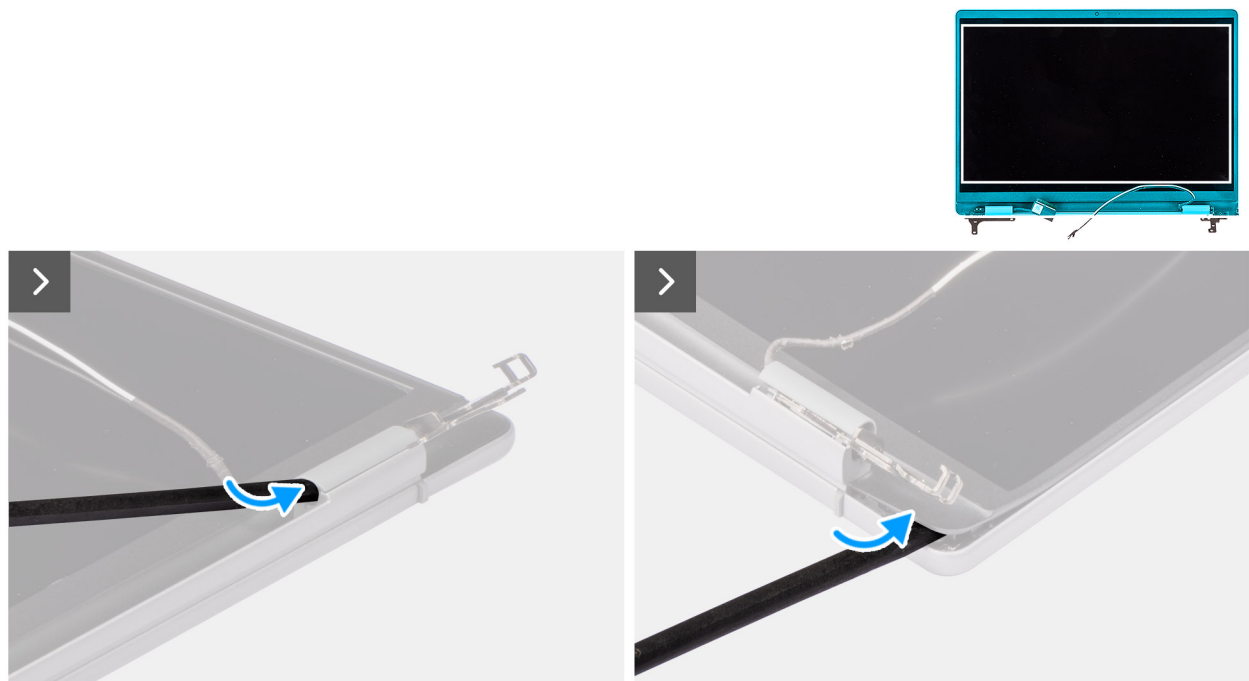
1. Follow the procedure in [Before working inside your computer](#).

2. Remove the [base cover](#).
3. Remove the [solid-state drive](#).
4. Remove the [wireless card](#).
5. Remove the [display assembly](#).

**About this task**

**NOTE:** The display-hinge caps are a part of the display bezel.

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



**Figure 47. Removing the display bezel**

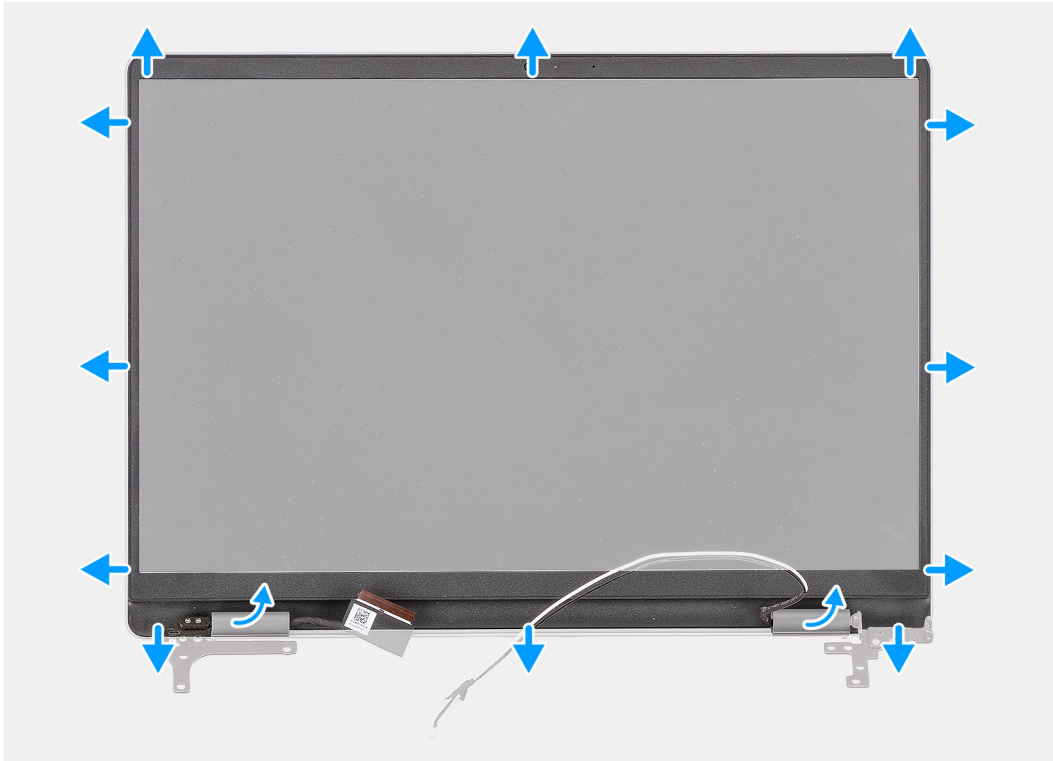


Figure 48. Removing the display bezel



Figure 49. Removing the display bezel

**Steps**

1. Place the display assembly on a clean, flat surface and gently open the display hinges to at least 90 degrees.
2. Using a plastic scribe, pry open the left display-hinge cap from its right side and pry open the right display-hinge cap from its left side.

3. Using a plastic scribe, carefully pry open the outer edge at the base of the display bezel.
4. Using a plastic scribe, gently pry open the outside edge of the left, right, and top sides of the display bezel.
5. Using your fingers, gently work your way around the display bezel and lift the display bezel off the display assembly.

**CAUTION:** Do not use a plastic scribe or any other objects to pry up the display bezel in the manner shown below, as the pressure applied on the display panel by the scribe may damage the display panel.

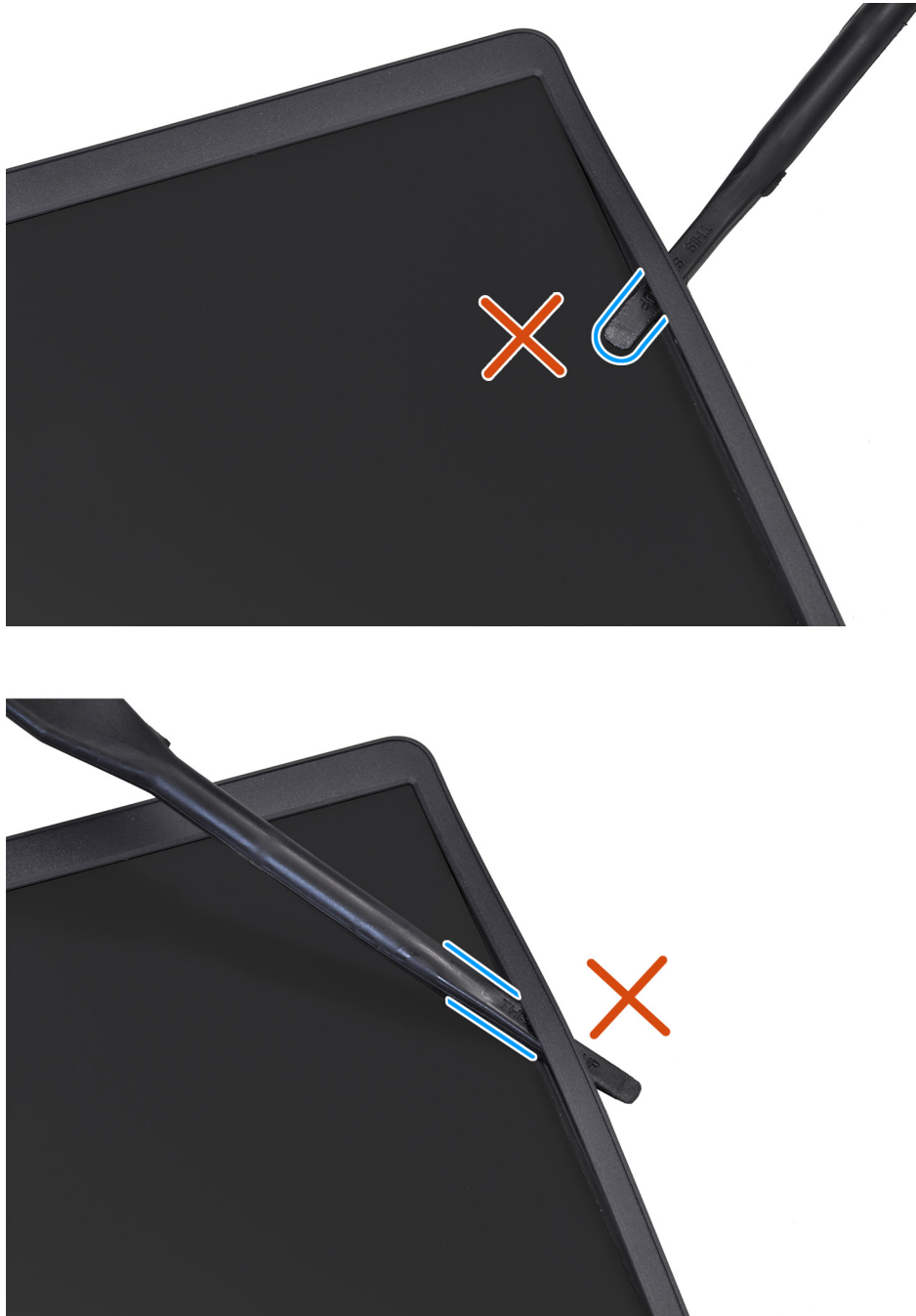


Figure 50. Removing the display bezel

## Installing the display bezel

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

## Prerequisites

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

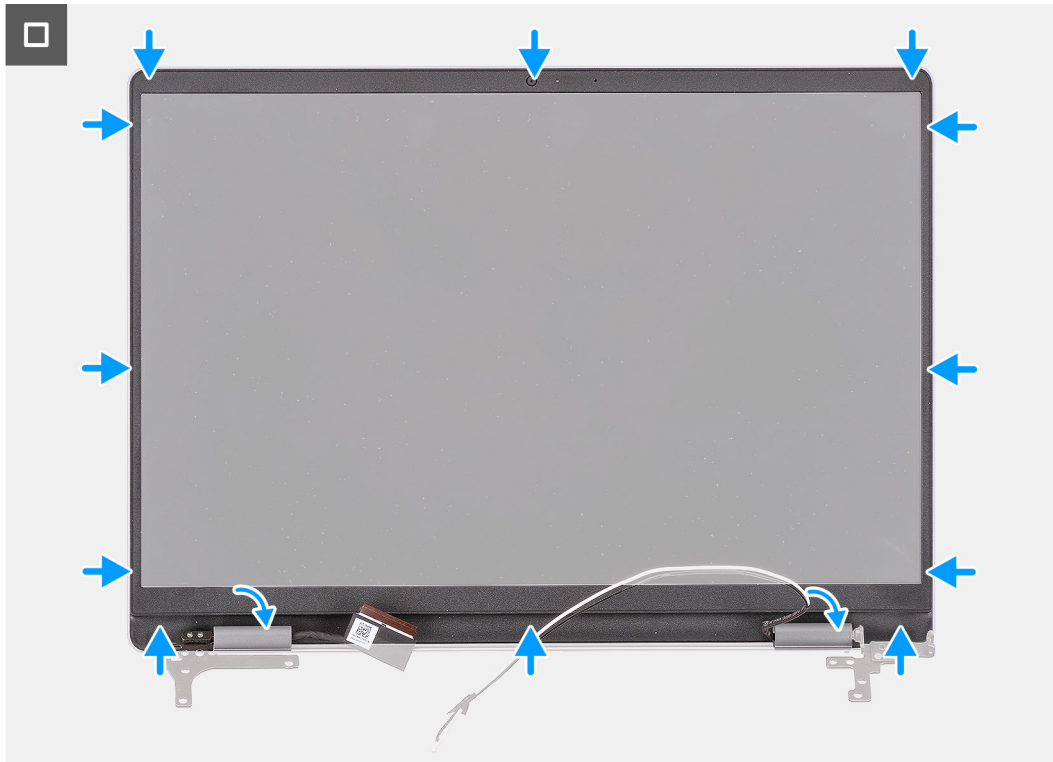
## About this task

**NOTE:** The display-hinge caps are a part of the display bezel.

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



**Figure 51. Installing the display bezel**



**Figure 52. Installing the display bezel**

#### Steps

1. Place the display assembly on a clean and flat surface.
2. Align and place the display bezel on the display assembly.
3. Press the display-hinge caps down on the display hinges, until they click in place.
4. Starting from the bottom corner, press the display bezel and work around the entire bezel until it snaps onto the display assembly.

#### Next steps

1. Install the [display assembly](#).
2. Install the [wireless card](#).
3. Install the [solid-state drive](#).
4. Install the [base cover](#).
5. Follow the procedure in [After working inside your computer](#).

## Display panel

### Removing the display panel

**CAUTION:** The information in this removal 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 [solid-state drive](#).
4. Remove the [wireless card](#).
5. Remove the [display assembly](#).
6. Remove the [display bezel](#).

**About this task**

**NOTE:** The display panel is assembled with the display brackets and display hinges as a single service part.

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



**Figure 53. Removing the display panel**



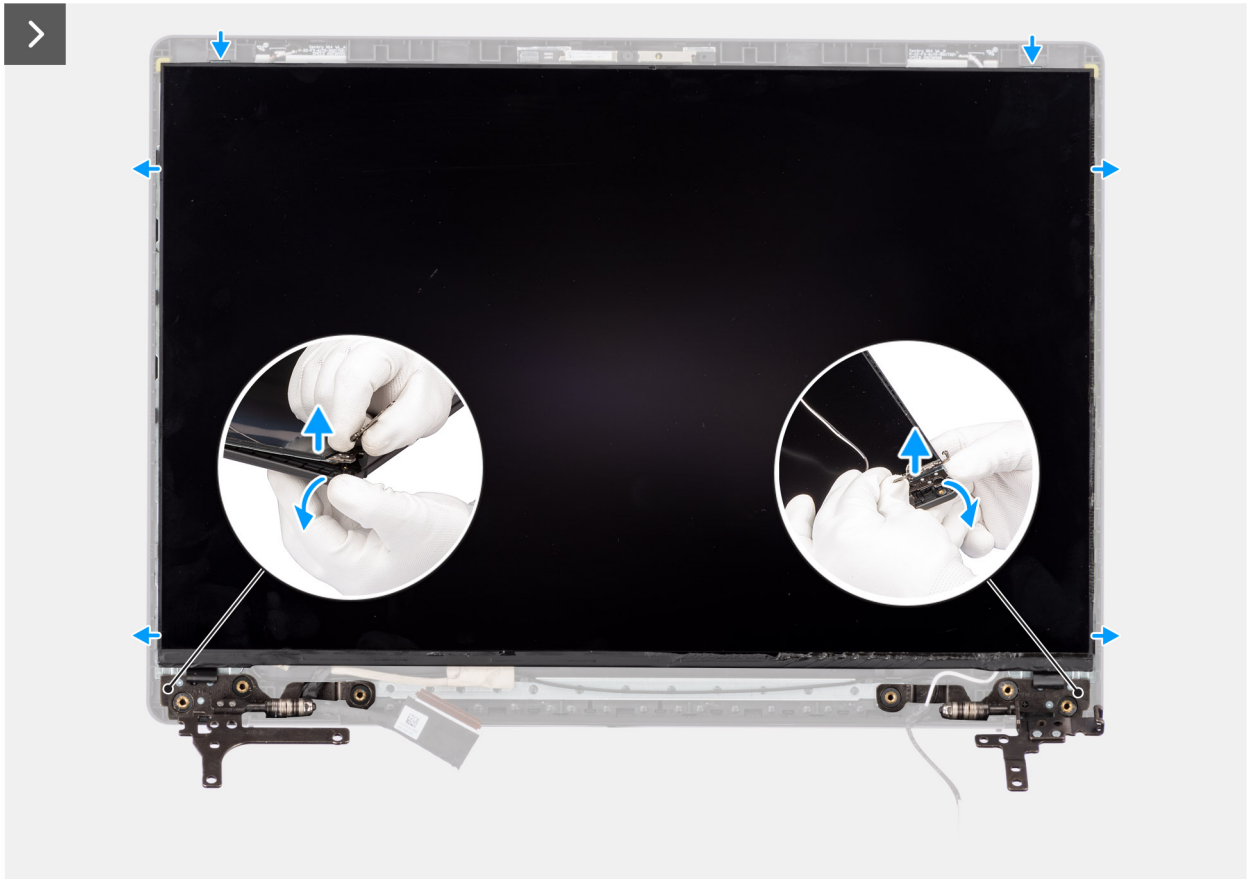


Figure 54. Removing the display panel

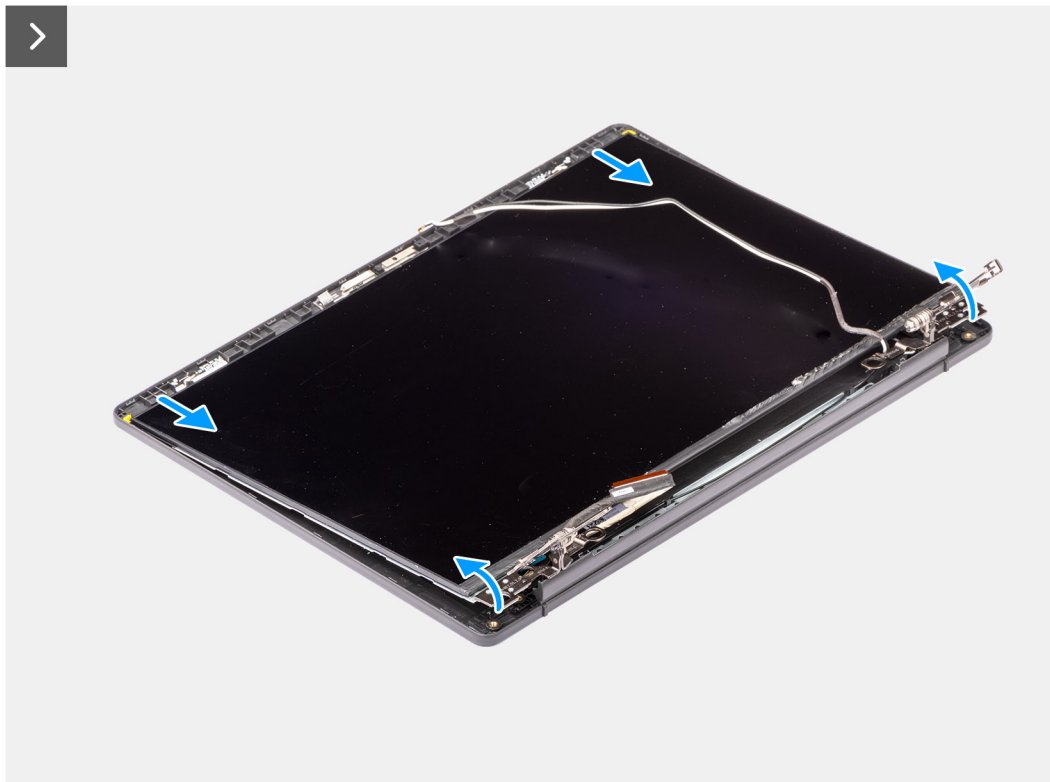
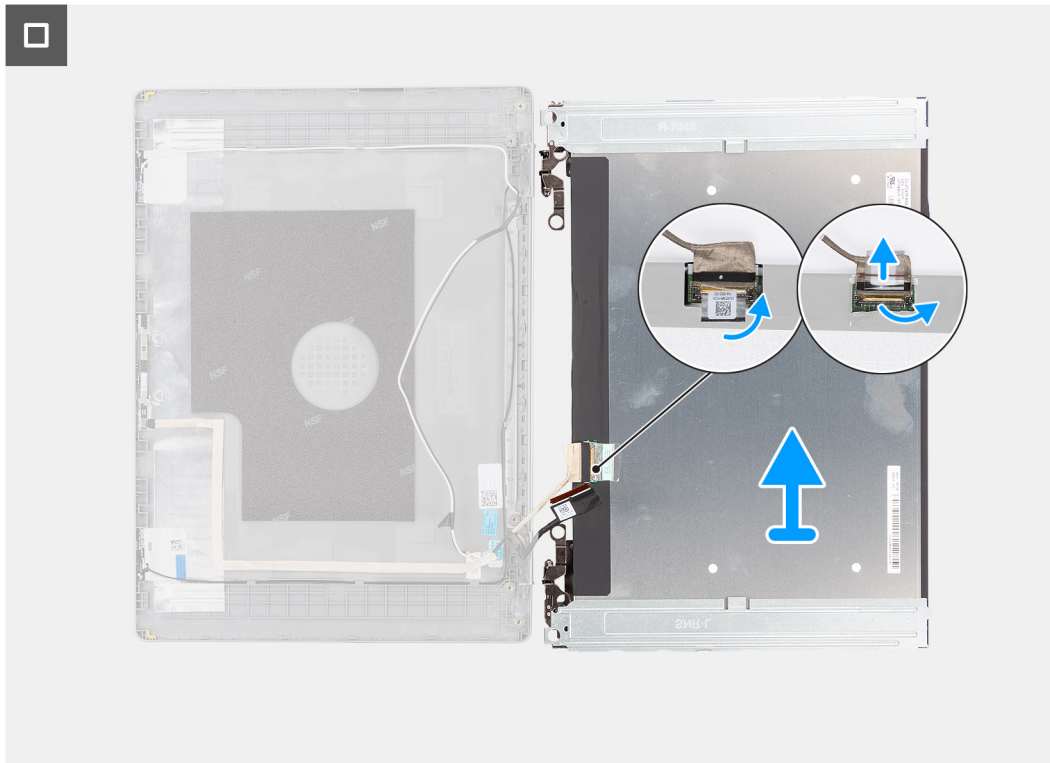


Figure 55. Removing the display panel



**Figure 56. Removing the display panel**

**Steps**

1. Remove the six screws (M2.5x2.5) that secure the display hinges to the display back-cover and antenna assembly.
2. Using a plastic scribe, pry the display hinges from the corners to release them from the display back-cover and antenna assembly.
3. Holding the right display hinge, gently bend the bottom corner of the display back-cover and antenna assembly to release the right display hinge.
4. Repeat step 3 to release the left display hinge from the display back-cover and antenna assembly.
5. Holding the display hinges, slide the display panel down to release it from the securing tabs on the top of the display back-cover and antenna assembly.
6. Gently flip the display panel assembly forward, peel back the tape that secures the display cable to the connector on the rear of the display panel.

**i** **NOTE:** Ensure that the panel has a clean and smooth surface to rest on, to prevent damage.

7. Disconnect the display cable from the connector on the display panel and remove the display panel.

**⚠ CAUTION:** The display panel is assembled with the display brackets and display hinges as a single service part. Do not pull the two pieces of elastic tape and separate the brackets from the panel.



Figure 57. Removing the display panel

## Installing the display panel

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

### Prerequisites

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

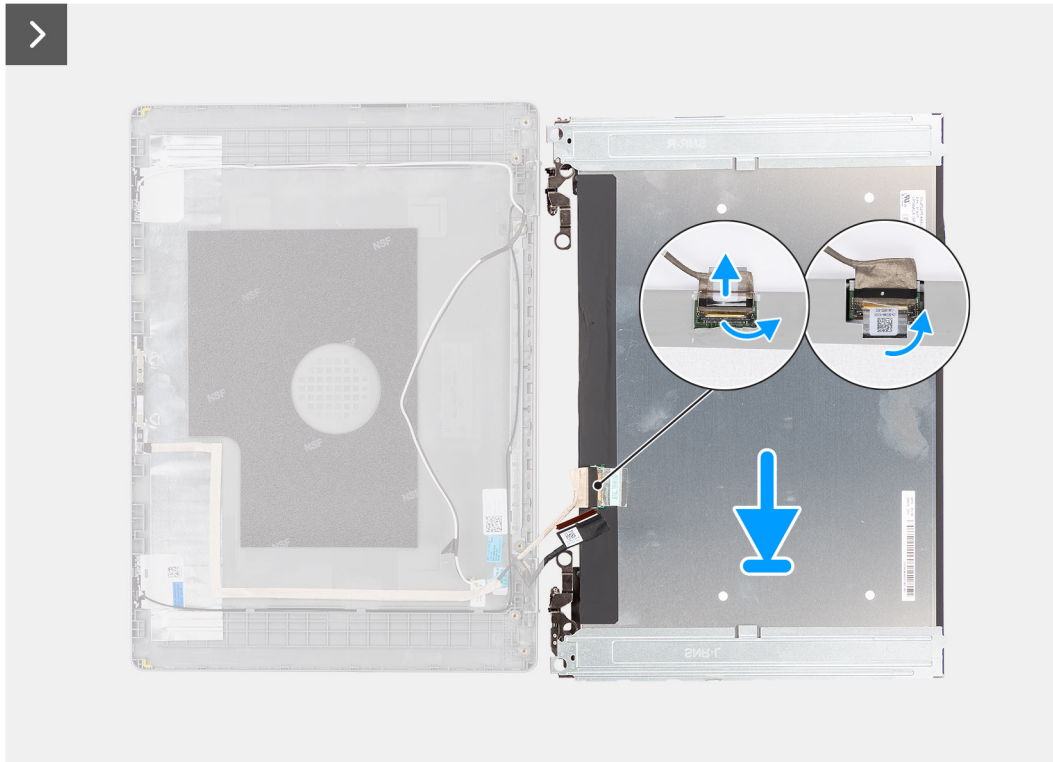
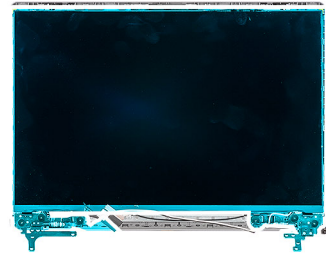
### About this task

**NOTE:** The display panel is assembled with the display brackets and display hinges as a single service part.

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



**6x**  
M2.5x2.5



**Figure 58. Installing the display panel**



Figure 59. Installing the display panel

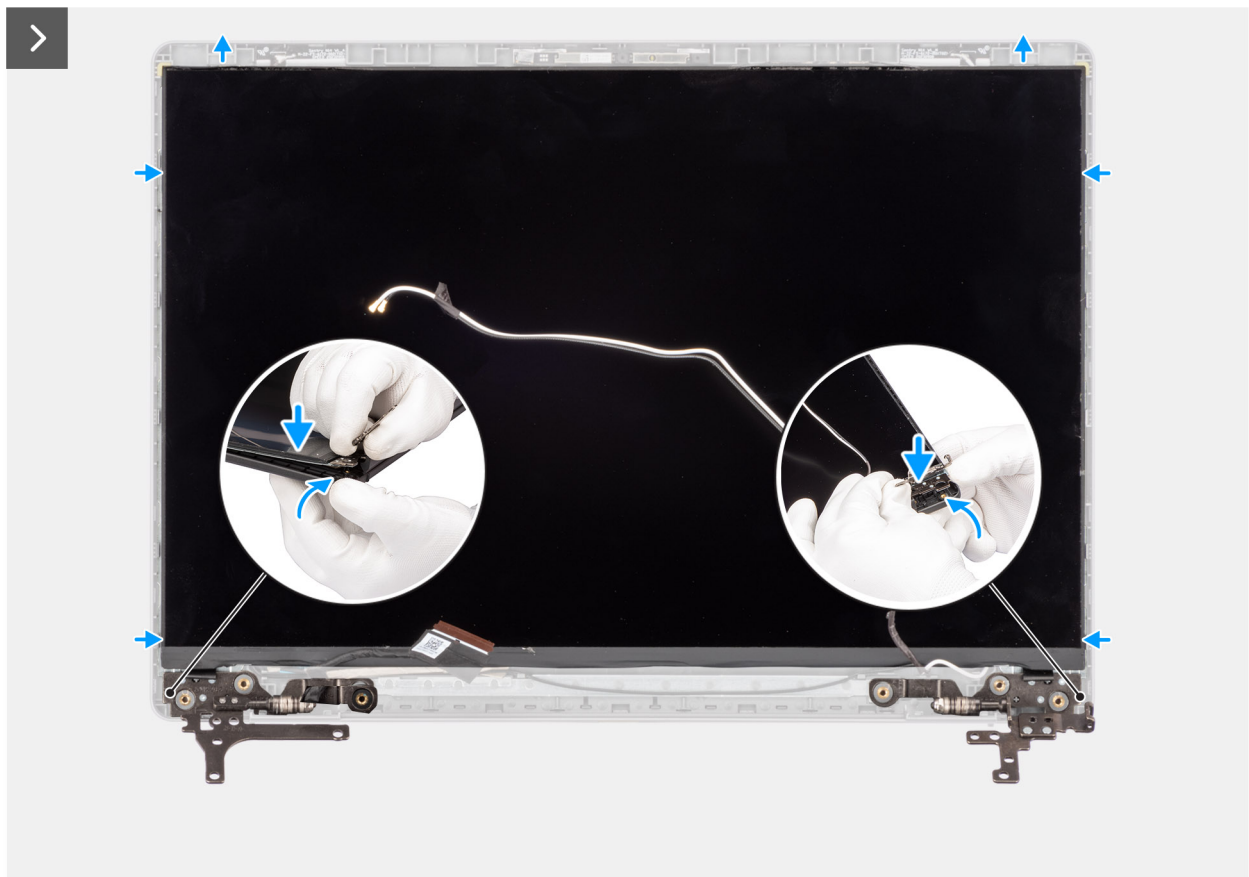
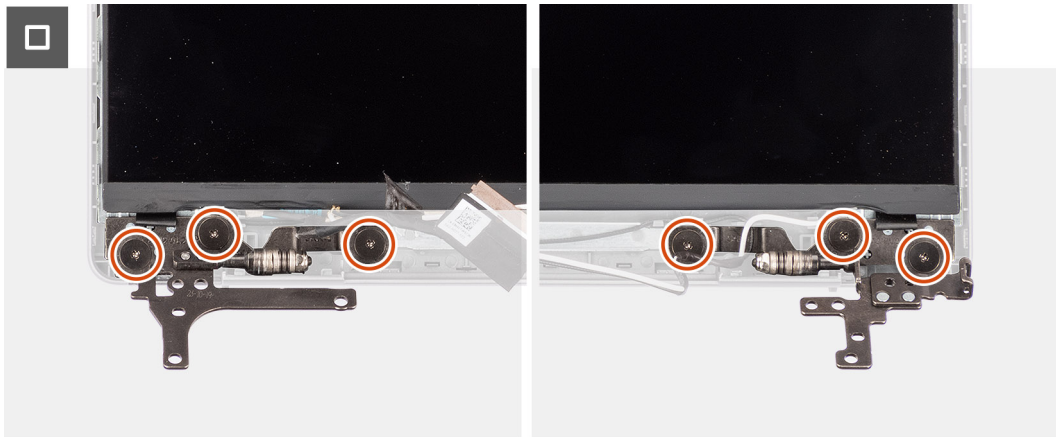


Figure 60. Installing the display panel



**Figure 61. Installing the display panel**

### Steps

1. Place the display panel and display assembly on a clean and flat surface.
2. Connect the display cable to the connector on the display panel and close the latch.
3. Adhere the tape to secure the display cable to the connector on the display panel.
4. Gently turn the display panel over and place the display panel on the display back-cover.
5. Holding the display hinges, lift the display panel and slide the metal-bracket extensions into the slots at the top edge of the display back-cover and antenna assembly.
6. Gently bend the bottom corner of the display back-cover and antenna assembly and gently push down on the right display hinges until it is secured in place on the display back-cover and antenna assembly.
7. Repeat step 6 to secure left display hinge in place on the display back-cover and antenna assembly.
8. Replace the six screws (M2.5x2.5) to secure the display hinges to the display back-cover and antenna assembly.

### Next steps

1. Install the [display bezel](#).
2. Install the [display assembly](#).
3. Install the [wireless card](#).
4. Install the [solid-state drive](#).
5. Install the [base cover](#).
6. Follow the procedure in [After working inside your computer](#).

## Display cable

### Removing the display cable

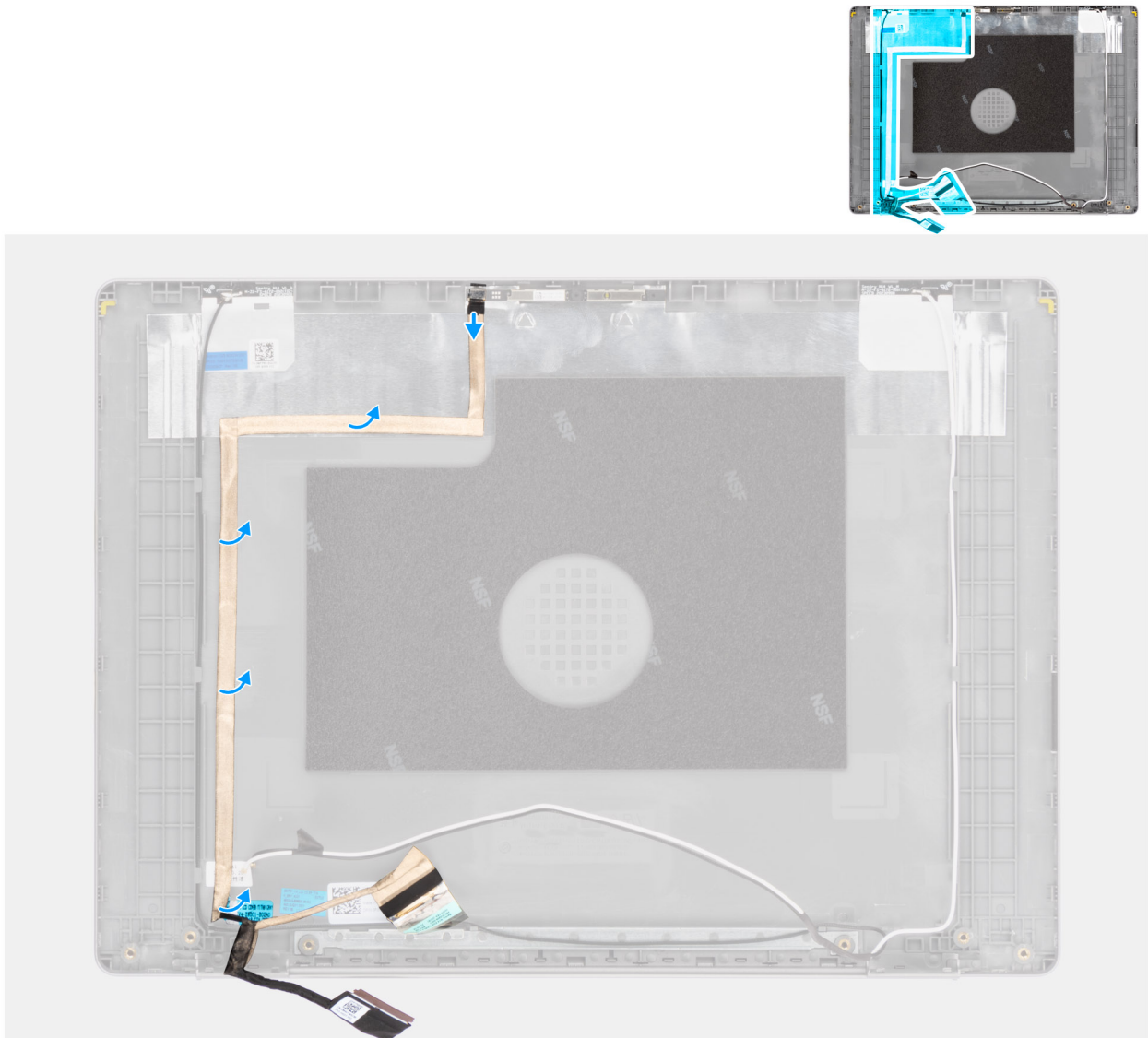
 **CAUTION:** The information in this removal section is intended for authorized service technicians only.

### Prerequisites

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).
3. Remove the [solid-state drive](#).
4. Remove the [wireless card](#).
5. Remove the [display assembly](#).
6. Remove the [display bezel](#).
7. Remove the [display panel](#).

### About this task

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



**Figure 62. Removing the display cable**

### Steps

1. Disconnect the display eDP cable from the connector on the camera module.
2. Carefully peel back and remove the display eDP cable from the display back-cover and antenna assembly.

## Installing the display cable

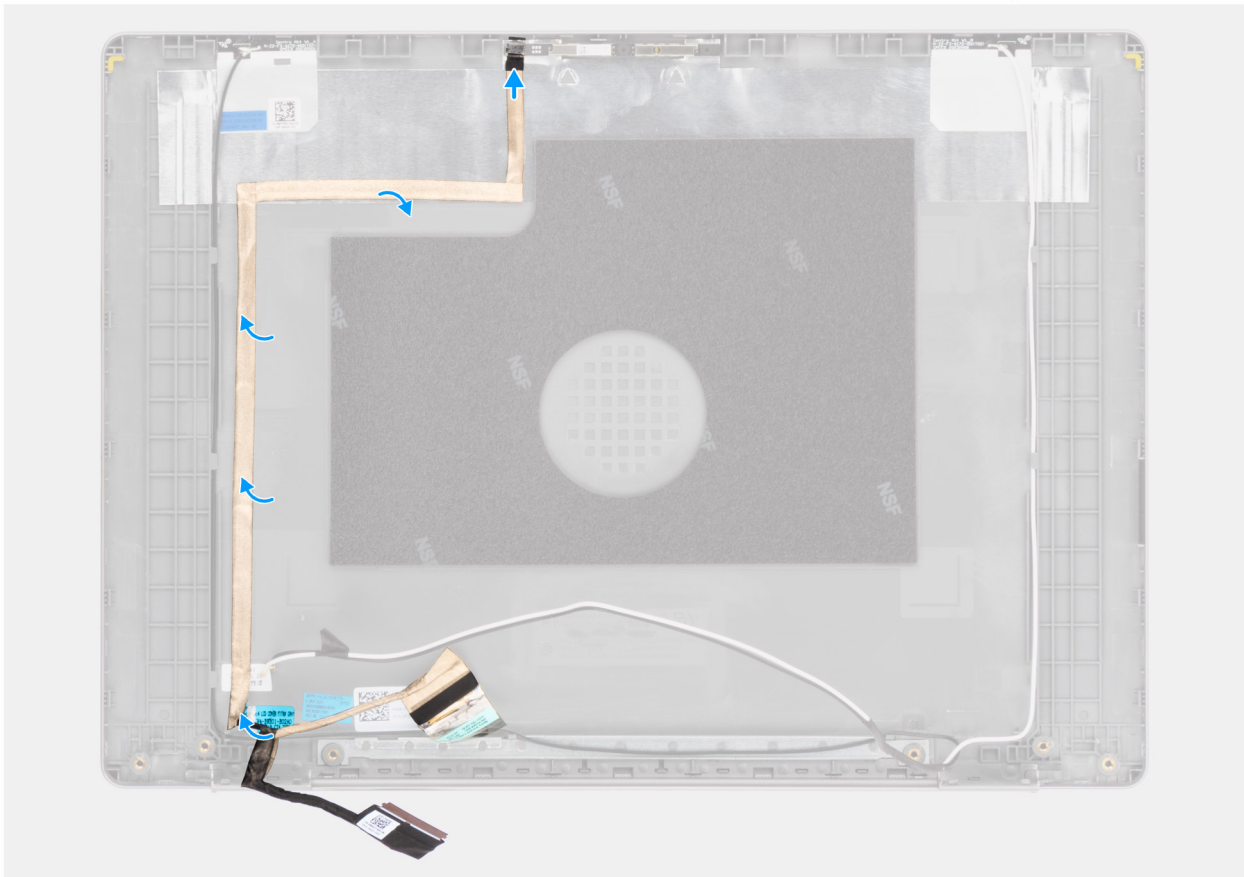
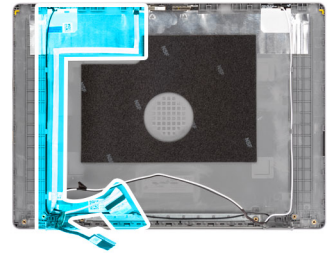
**CAUTION:** The information in this installation section is intended for authorized service technicians only.

### Prerequisites

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

### About this task

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



**Figure 63. Installing the display cable**

### Steps

1. Adhere the display eDP cable to the display back-cover and antenna assembly.
2. Connect the display eDP cable to the connector on the camera module.

### Next steps

1. Install the [display panel](#).
2. Install the [display bezel](#).
3. Install the [display assembly](#).
4. Install the [wireless card](#).
5. Install the [solid-state drive](#).
6. Install the [base cover](#).
7. Follow the procedure in [After working inside your computer](#).



# Camera

## Removing the camera

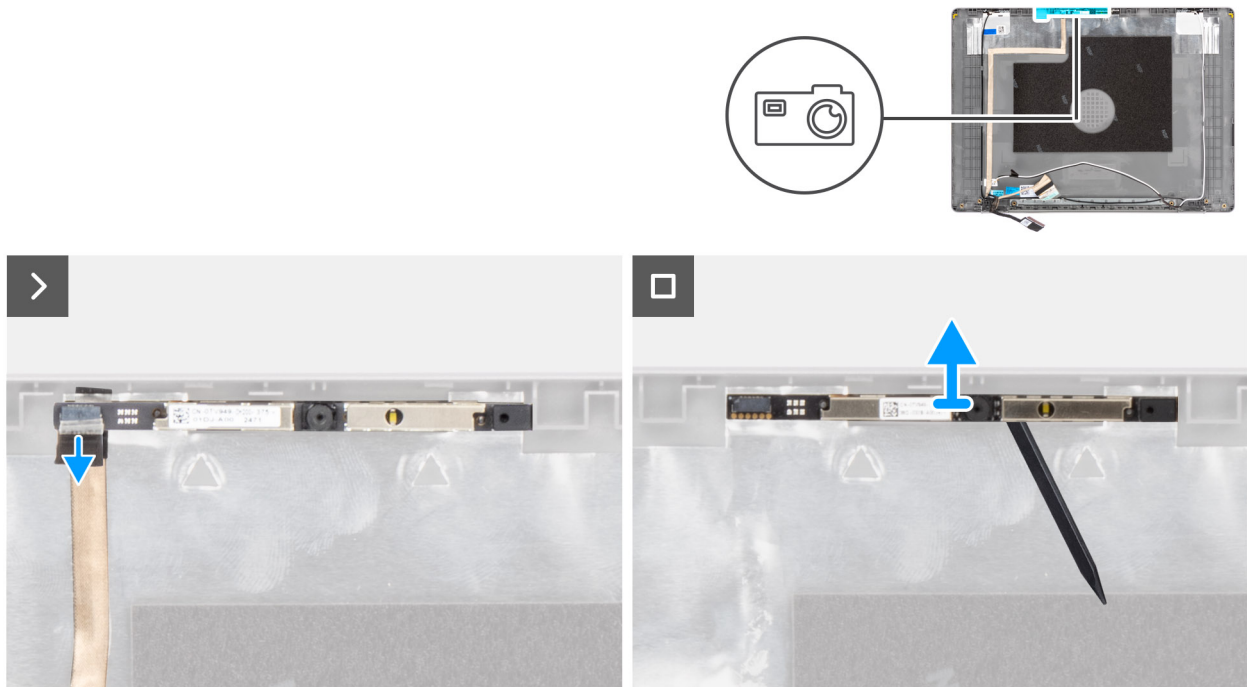
**CAUTION:** The information in this removal section is intended for authorized service technicians only.

### Prerequisites

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).
3. Remove the [solid-state drive](#).
4. Remove the [wireless card](#).
5. Remove the [display assembly](#).
6. Remove the [display bezel](#).
7. Remove the [display panel](#).

### About this task

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



**Figure 64. Removing the camera**

### Steps

1. Disconnect the display eDP cable from the connector on the camera module.
2. Using a plastic scribe, gently pry the camera off the display back-cover and antenna assembly.
3. Remove the camera module from the display assembly.

## Installing the camera

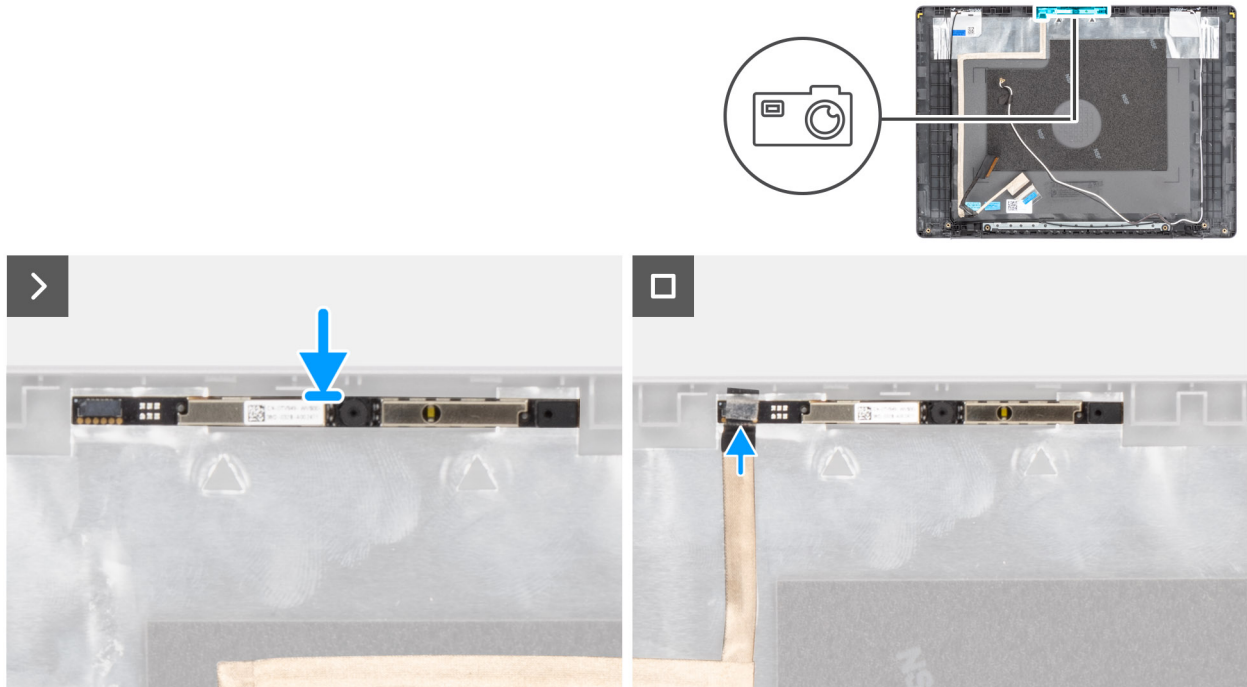
**CAUTION:** The information in this installation section is intended for authorized service technicians only.

## Prerequisites

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

## About this task

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



**Figure 65. Installing the camera**

## Steps

1. Using the alignment post, adhere the camera module on the display back-cover and antenna assembly.
2. Connect the display eDP cable to the connector on the camera module.

## Next steps

1. Install the [display panel](#).
2. Install the [display bezel](#).
3. Install the [display assembly](#).
4. Install the [wireless card](#).
5. Install the [solid-state drive](#).
6. Install the [base cover](#).
7. Follow the procedure in [After working inside your computer](#).

# Display back-cover and antenna assembly

## Removing the display back-cover and antenna assembly

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

## Prerequisites

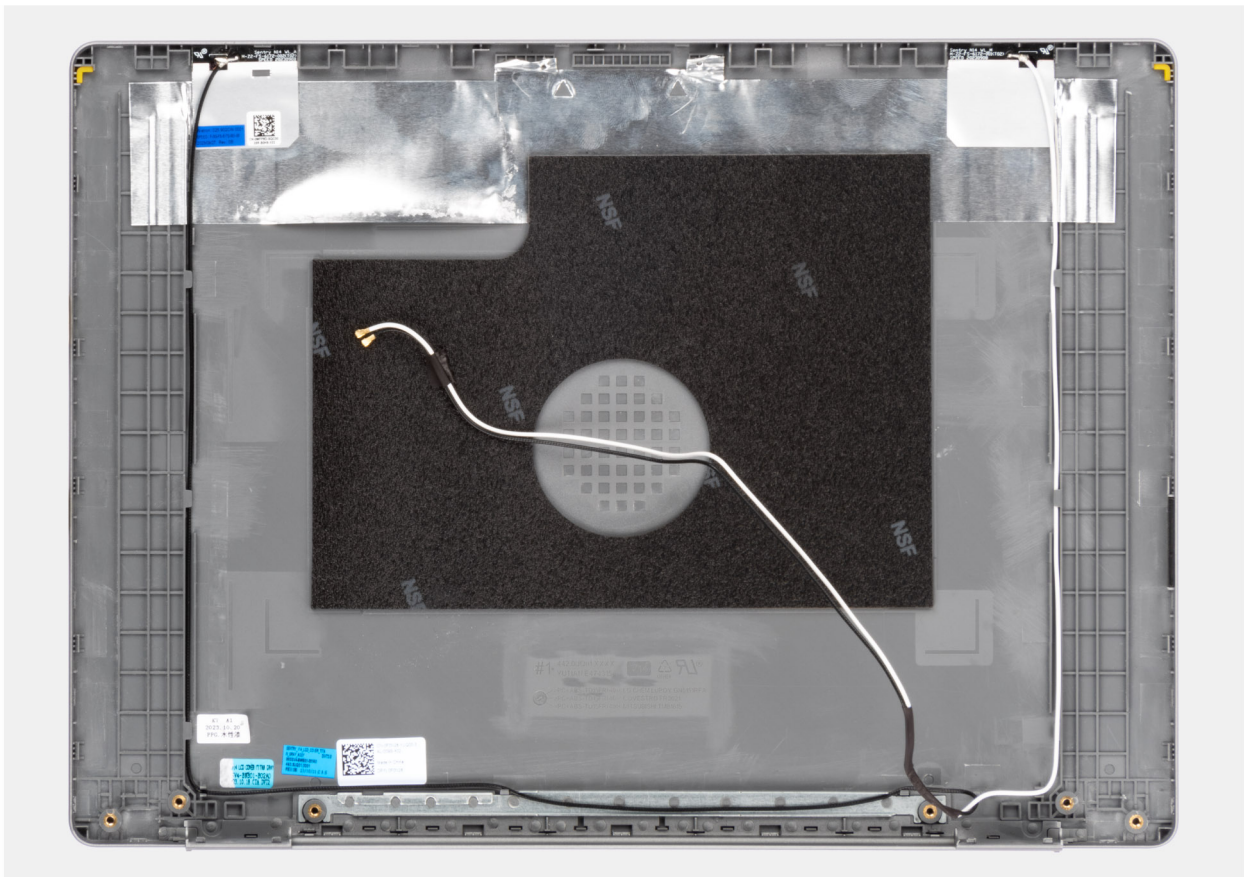
1. Follow the procedure in [Before working inside your computer](#).

2. Remove the [base cover](#).
3. Remove the [solid-state drive](#).
4. Remove the [wireless card](#).
5. Remove the [display assembly](#).
6. Remove the [display bezel](#).
7. Remove the [display panel](#).
8. Remove the [display cable](#).
9. Remove the [camera](#).

#### About this task

**NOTE:** The display back-cover and antenna assembly cannot be further disassembled once all the **Prerequisites** are completed. If the wireless antennas are malfunctioning and are required to be replaced, replace the entire display back-cover and antenna assembly.

The image below shows the display back-cover and antenna assembly after the **Prerequisites** have been performed.



**Figure 66. Display back-cover and antenna assembly**

#### Steps

After performing the **Prerequisites**, you are left with the display back-cover and antenna assembly.

## Installing the display back-cover and antenna assembly

**CAUTION:** The information in this installation 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

The following image indicates the location of the display back-cover and antenna assembly and provides a visual representation of the installation procedure.

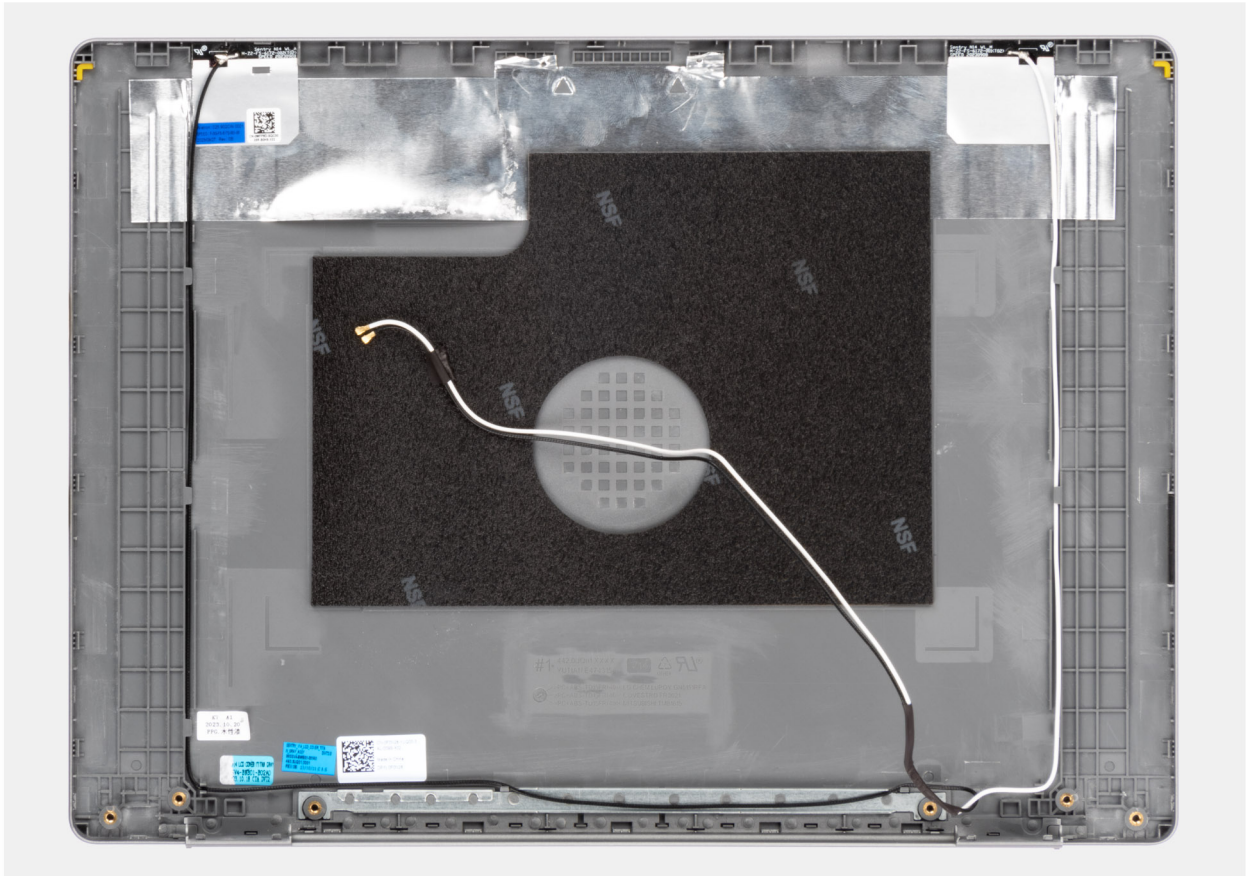


Figure 67. Display back-cover and antenna assembly

## Steps

Place the display back-cover and antenna assembly on a flat surface and perform the **Next steps** to install the display back-cover and antenna assembly.

## Next steps

1. Install the [camera](#).
2. Install the [display cable](#).
3. Install the [display panel](#).
4. Install the [display bezel](#).
5. Install the [display assembly](#).
6. Install the [wireless card](#).
7. Install the [solid-state drive](#).
8. Install the [base cover](#).
9. Follow the procedure in [After working inside your computer](#).

# System board

## Removing the system board

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

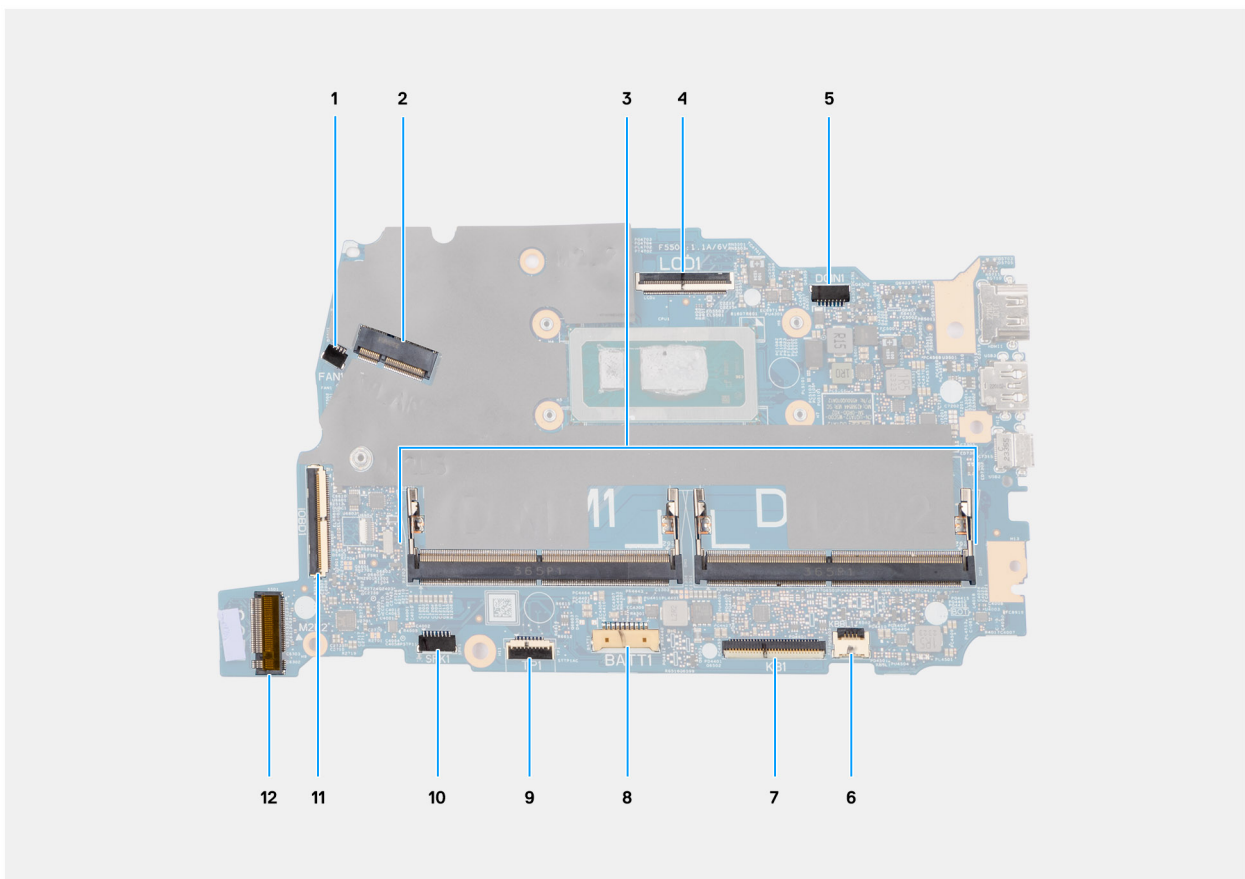
## Prerequisites

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).
3. Remove the [memory module](#).
4. Remove the [solid-state drive](#).
5. Remove the [wireless card](#).
6. Remove the [fan](#).
7. Remove the [battery](#).
8. Remove the [heat sink](#).

**NOTE:** When removing the system board to replace/access other parts, the system board can be removed 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.

## About this task

The following image indicates the connectors on your system board.

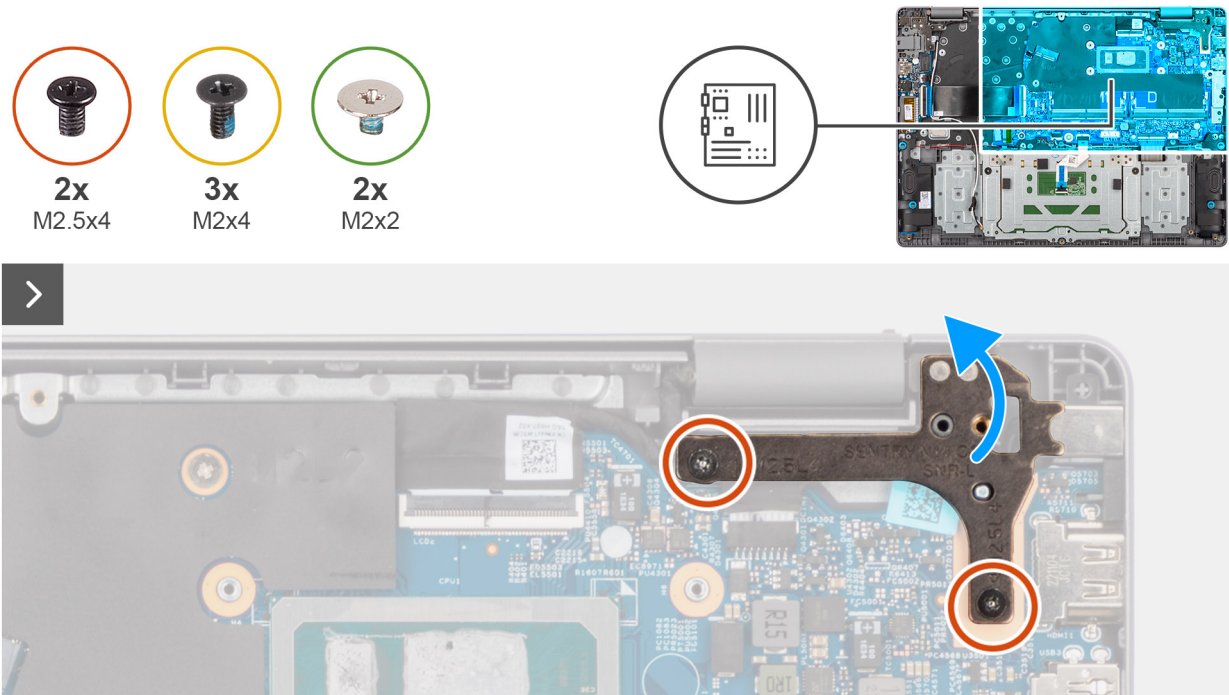


**Figure 68. System board connectors**

1. Fan cable connector (FAN1)
2. Wireless card connector (WLAN1)
3. Memory module connectors (DIMM1 and DIMM2)
4. eDP cable connector (LCD)
5. Power-adaptor port connector (DCIN1)
6. Keyboard-backlight cable connector (KBBL1)
7. Keyboard cable connector (KB1)
8. Battery connector (BATT1)
9. Touchpad cable connector (TP1)
10. Speaker cable connector (SPK1)
11. I/O-board cable connector (IOBD1)

## 12. M.2 solid-state drive connector (SSD1)

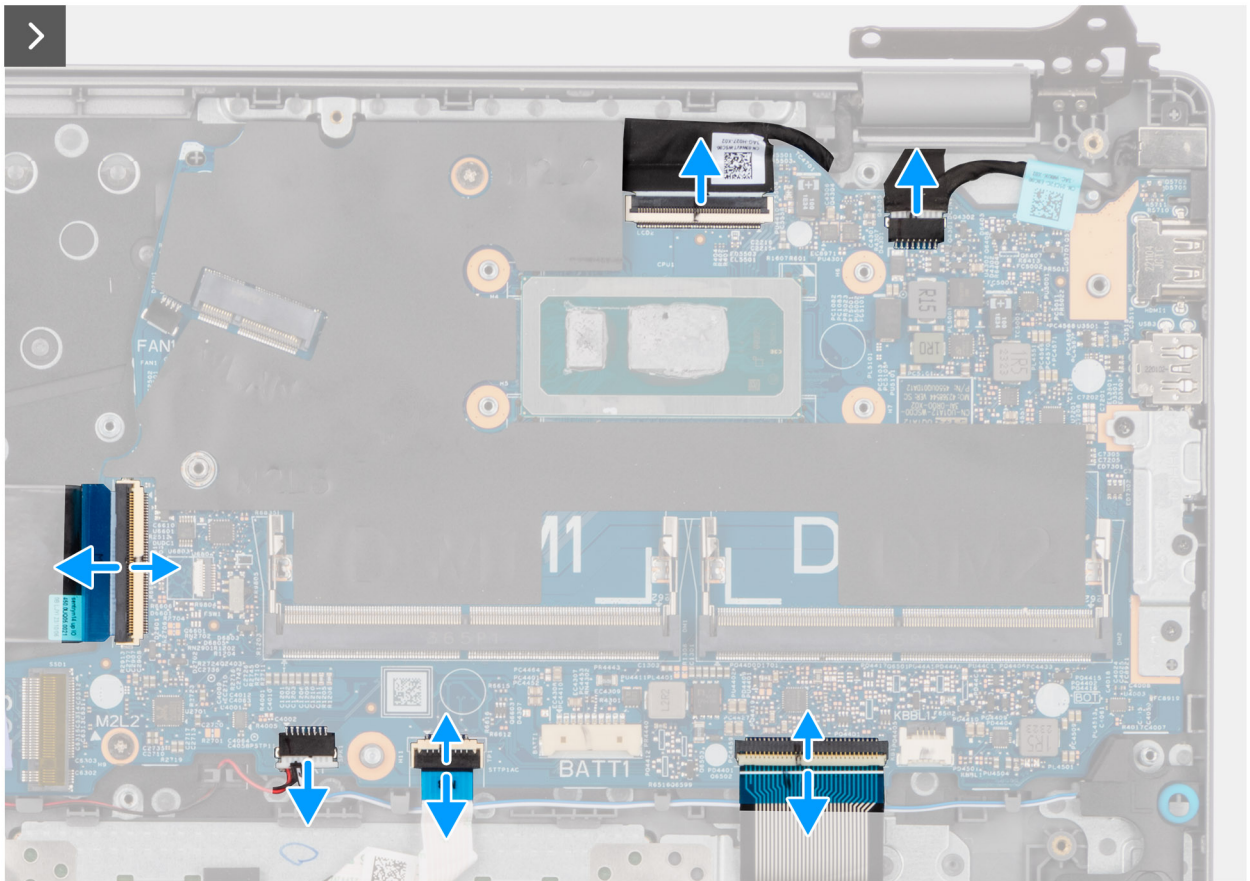
The following images indicate the location of the system board and provide a visual representation of the removal procedure.



**Figure 69. Removing the system board**

### Steps

1. Remove the two screws (M2.5x4) that secure the right display hinge to the system board and the palm-rest and keyboard assembly.
2. Using a plastic scribe, lift the right display hinge to an angle of 90 degrees from the palm-rest and keyboard assembly.
3. Disconnect the following cables from the system board:
  - a. I/O-board cable (IODB1)
  - b. eDP cable (LCD)
  - c. Power-adapter port cable (DCIN1)
  - d. Keyboard cable (KB1)
  - e. Keyboard-backlight cable (KBBL1)  
**i** **NOTE:** This step applies only to computers shipped with a keyboard backlight installed.
  - f. Touchpad cable (TP1)
  - g. Speaker cable (SPK1)



**Figure 70. Removing the system board**

4. Remove the three screws (M2x4) that secure the USB Type-C bracket to the system board.
5. Remove the two screws (M2x2) that secure the system board to the palm-rest and keyboard assembly.

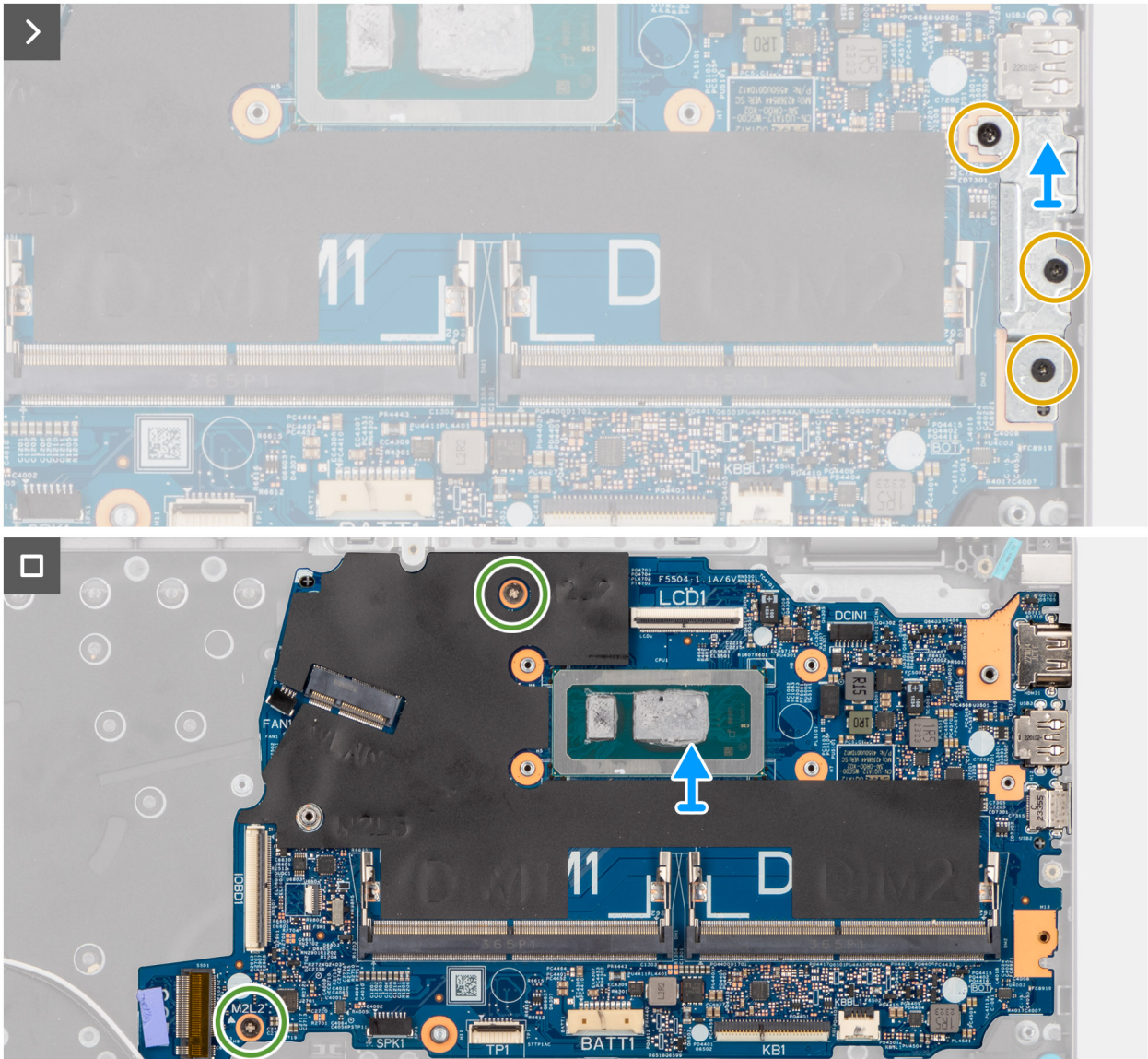


Figure 71. Removing the system board

- Carefully lift and remove the system board at angle, from the palm-rest and keyboard assembly, to clear the ports from the port slots.

## Installing the system board

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

### Prerequisites

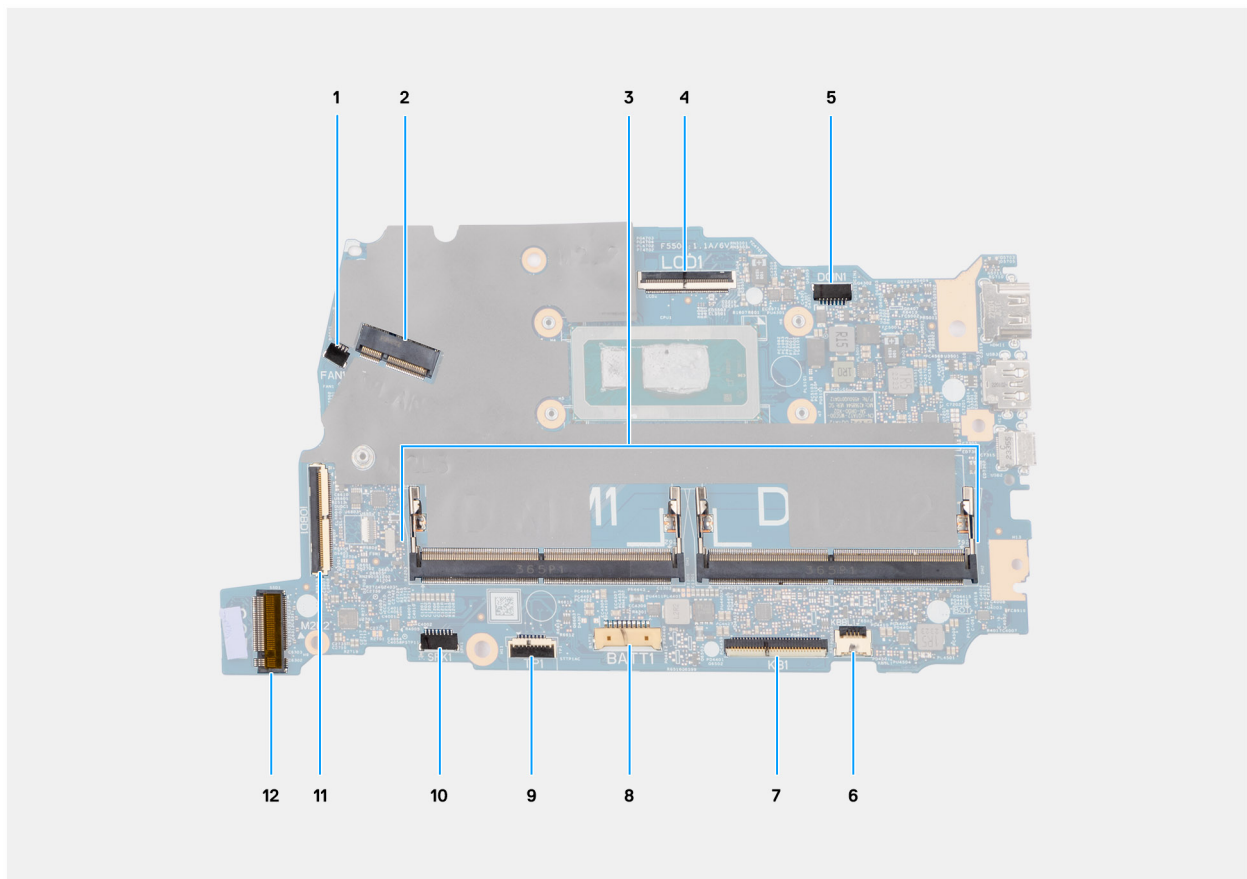
If you are replacing a component, remove the existing component before performing the installation procedure.

### About this task

**NOTE:** 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.

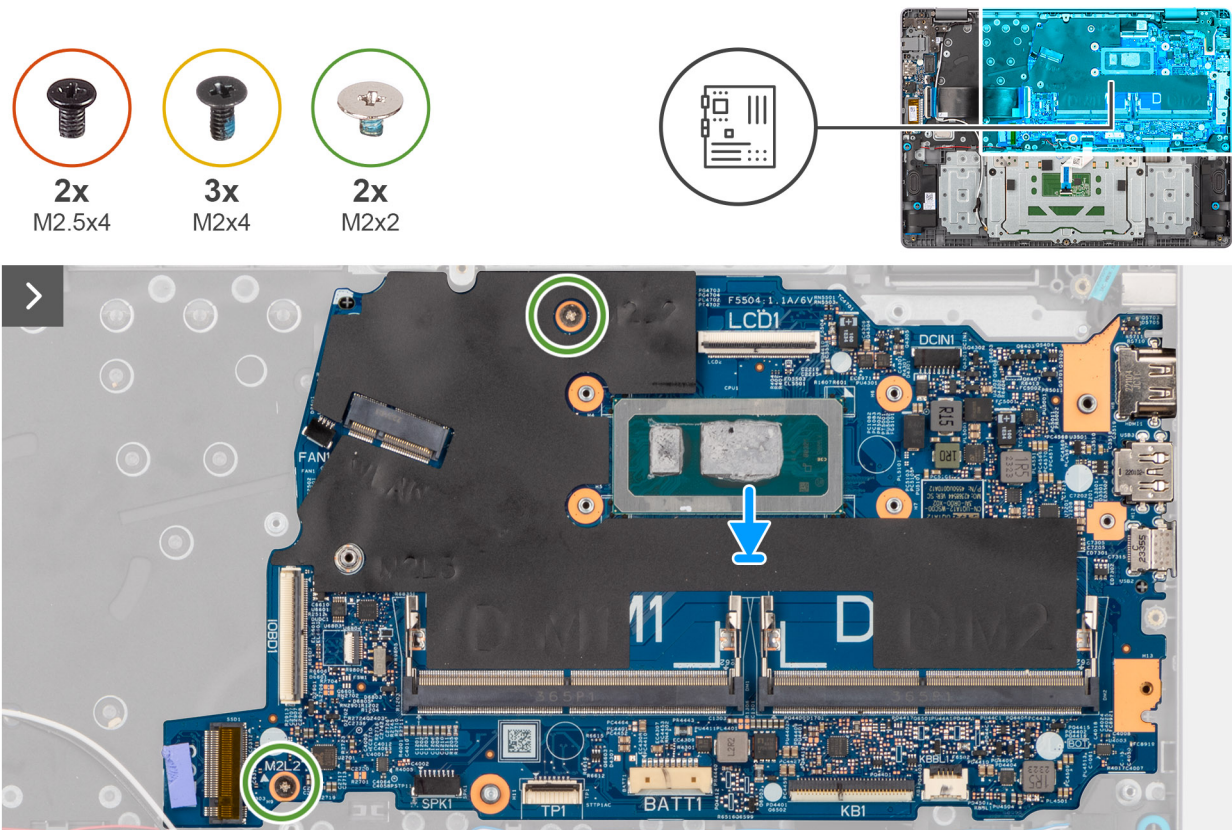




**Figure 72. System board connectors**

1. Fan cable connector (FAN1)
2. Wireless card connector (WLAN1)
3. Memory module connectors (DIMM1 and DIMM2)
4. eDP cable connector (LCD)
5. Power-adapter port connector (DCIN1)
6. Keyboard-backlight cable connector (KBBL1)
7. Keyboard cable connector (KB1)
8. Battery connector (BATT1)
9. Touchpad cable connector (TP1)
10. Speaker cable connector (SPK1)
11. I/O-board cable connector (IOBD1)
12. M.2 solid-state drive connector (SSD1)

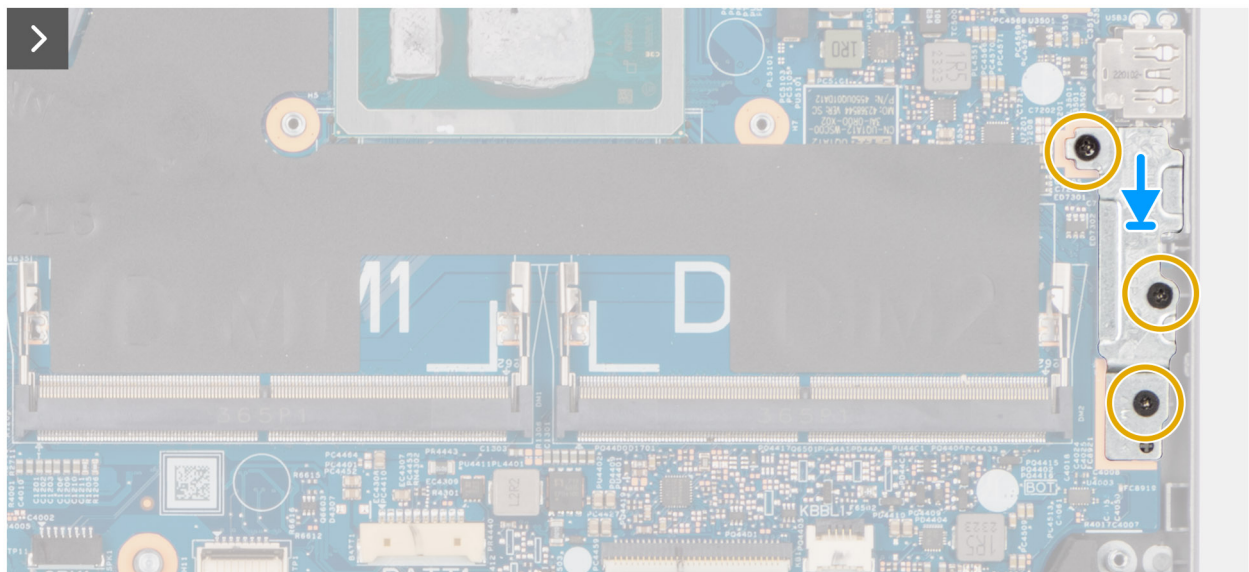
The following images indicate the location of the system board and provide a visual representation of the installation procedure.



**Figure 73. Installing the system board**

**Steps**

1. Align the ports on the system board to the port slots and place the system board on the palm-rest and keyboard assembly.
2. Align the screw holes on the system board with the screw holes on the palm-rest and keyboard assembly.
3. Replace the two screws (M2x2) to secure the system board to the palm-rest and keyboard assembly.
4. Align and place the USB Type-C bracket in the slot on the system board.
5. Replace the three screws (M2x4) to secure the USB Type-C bracket to the system board.

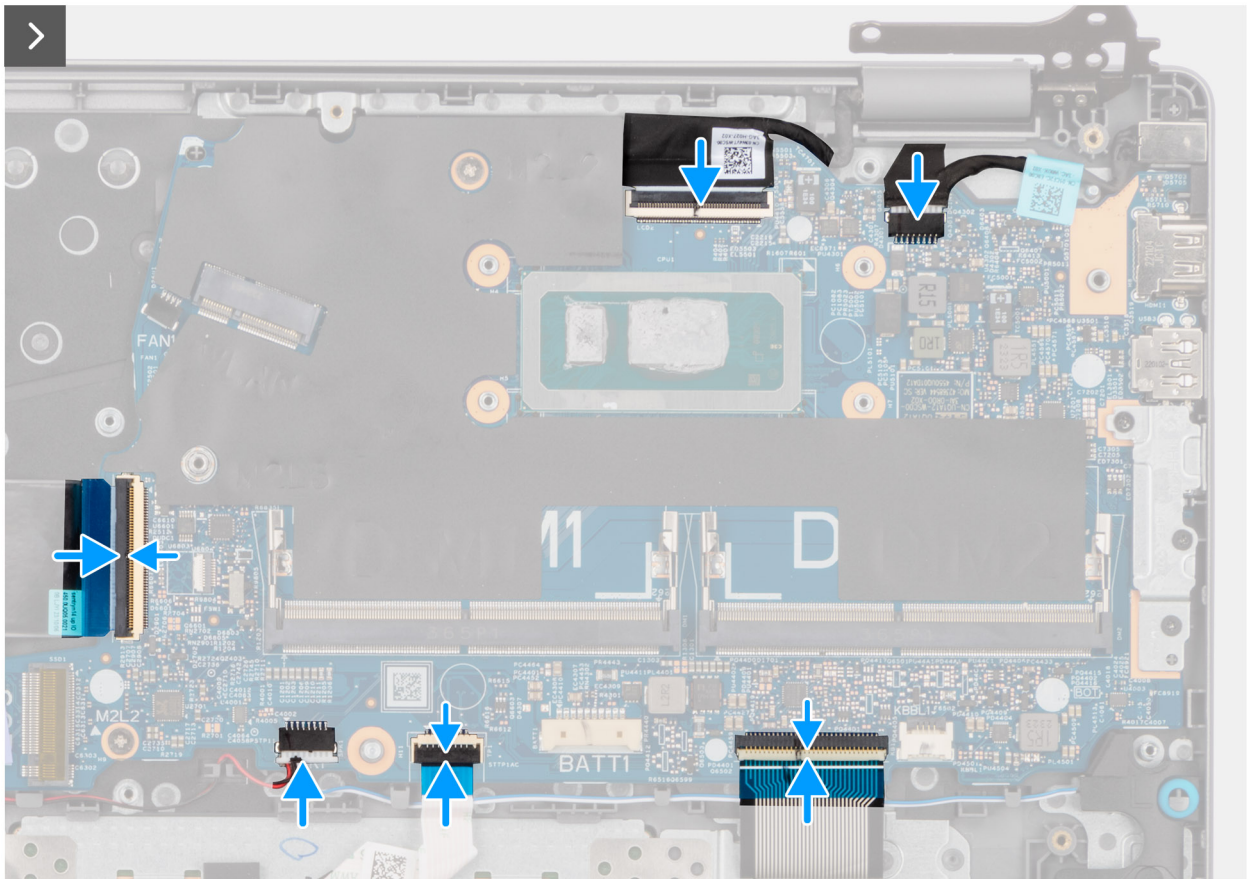


**Figure 74. Installing the system board**

6. Connect the following cables to the system board:
  - a. I/O-board cable (IODB1)
  - b. eDP cable (LCD)
  - c. Power-adaptor port cable (DCIN1)
  - d. Keyboard cable (KB1)
  - e. Keyboard-backlight cable (KBBL1)

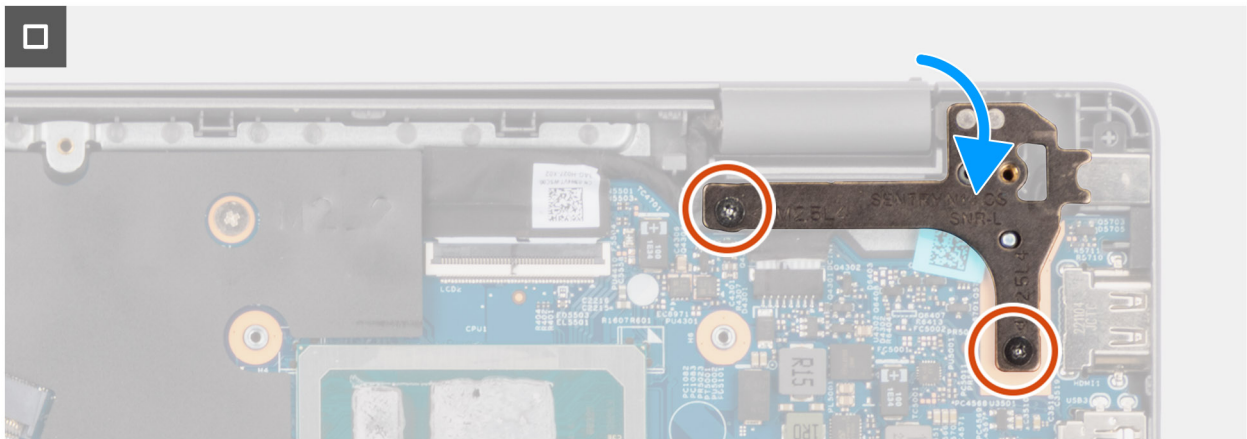
**NOTE:** This step applies only to computers shipped with a keyboard backlight installed.

- f. Touchpad cable (TP1)
- g. Speaker cable (SPK1)



**Figure 75. Installing the system board**

7. Close the right display hinge to align the screw holes on the right display hinge with the screw holes on the system board and the palm-rest and keyboard assembly.
8. Replace the two screws (M2.5x4) to secure the right display hinge to the system board and the palm-rest and keyboard assembly.



**Figure 76. Installing the system board**

### Next steps

1. Install the [heat sink](#).
2. Install the [battery](#).
3. Install the [fan](#).
4. Install the [wireless card](#).
5. Install the [solid-state drive](#).
6. Install the [memory module](#).
7. Install the [base cover](#).
8. Follow the procedure in [After working inside your computer](#).

## Palm-rest and keyboard assembly

### Removing the palm-rest and keyboard assembly

**CAUTION:** The information in this removal 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 [memory module](#).
4. Remove the [solid-state drive](#).
5. Remove the [wireless card](#).
6. Remove the [fan](#).
7. Remove the [battery](#).
8. Remove the [heat sink](#).
9. Remove the [speakers](#).
10. Remove the [touchpad](#).
11. Remove the [I/O-board cable](#).
12. Remove the [I/O board](#).
13. Remove the [power button](#) or the [power button with optional fingerprint reader](#), whichever is applicable.
14. Remove the [power-adapter port](#).
15. Remove the [display assembly](#).
16. Remove the [system board](#).

**NOTE:** When removing the system board to replace/access other parts, the system board can be removed 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.

### About this task

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

The image below shows the palm-rest and keyboard assembly after the **Prerequisites** have been performed.

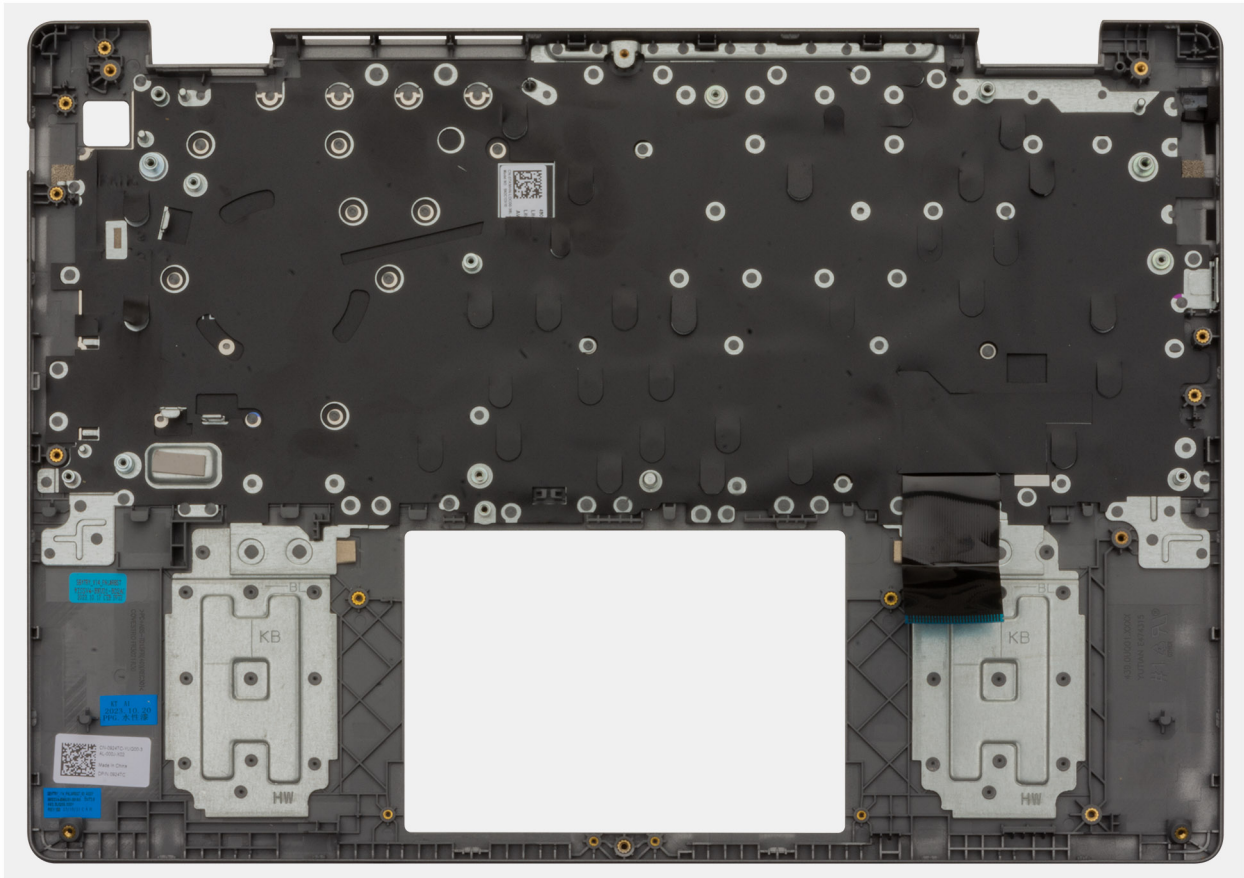


Figure 77. Palm-rest and keyboard assembly

### Steps

After performing the **Prerequisites**, you are left with the palm-rest and keyboard assembly.

## Installing the palm-rest and keyboard assembly

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

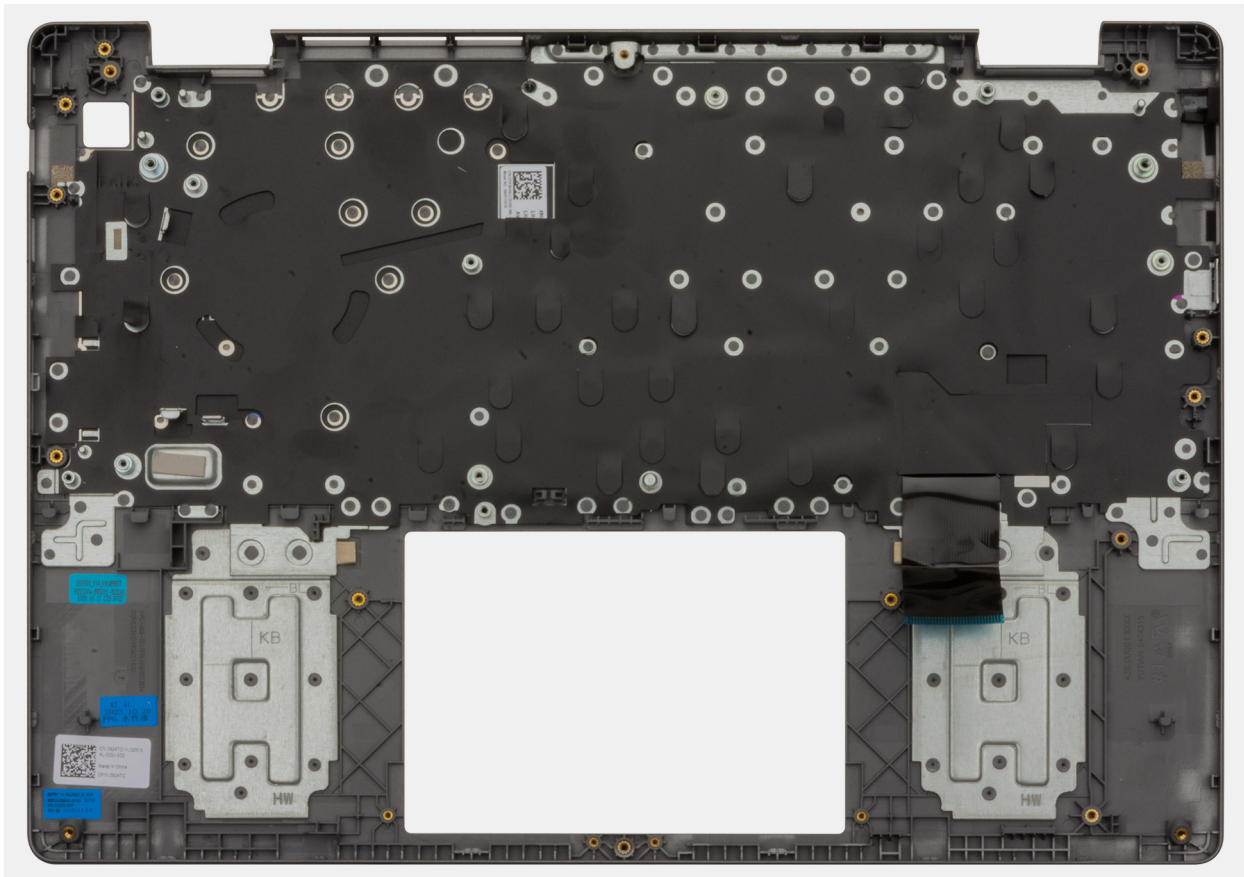
### Prerequisites

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

### About this task

**NOTE:** 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 location of the palm-rest and keyboard assembly and provides a visual representation of the installation procedure.



**Figure 78. Palm-rest and keyboard assembly**

### Steps

Place the palm-rest and keyboard assembly on a flat surface and perform the **Next steps** to install the palm-rest and keyboard assembly.

### Next steps

1. Install the [system board](#).
2. Install the [display assembly](#).
3. Install the [power-adaptor port](#).
4. Install the [power button](#) or the [power button with optional fingerprint reader](#), whichever is applicable.
5. Install the [I/O board](#).
6. Install the [I/O-board cable](#).
7. Install the [touchpad](#).
8. Install the [speakers](#).
9. Install the [heat sink](#).
10. Install the [battery](#).
11. Install the [fan](#).
12. Install the [wireless card](#).
13. Install the [solid-state drive](#).
14. Install the [memory module](#).
15. Install the [base cover](#).
16. Follow the procedure in [After working inside your computer](#).

# Software

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

## Operating system

Your Vostro 14 3440 supports the following operating systems:

- Windows 11 Home
- Windows 11 Home (S Mode)
- Windows 11 Pro
- Windows 11 Pro National Education
- Ubuntu Linux 22.04 LTS, 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 000123347](#).

# BIOS Setup

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

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

**NOTE:** Before you change the settings in BIOS Setup, it is recommended that you note down the original settings for future reference.

Use BIOS Setup for the following purposes:

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

## Entering BIOS Setup program

### About this task

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

## Navigation keys

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


**Table 31. 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. <b>NOTE:</b> For the standard graphical user interface only.
Esc	Moves to the previous page until you view the main screen. Pressing Esc in the main screen displays a message that prompts you to save any unsaved changes and restart the computer.

## F12 One Time Boot menu

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




 **NOTE:** It is recommended to shut down the computer, if it is on.

The F12 One Time Boot menu displays the devices that you can boot from including the diagnostic option. The boot menu options are:

- Windows Boot Manager
- UEFI HTTPs Boot
- UEFI M.2 solid-state drive Boot
- ONBOARD NIC (IPV4)
- ONBOARD NIC (IPV6)

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

## System setup options

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

**Table 32. System setup options—Overview menu**

Overview	
Vostro 14 3440	
BIOS Version	Displays the BIOS version number.
Service Tag	Displays the Service Tag of the computer.
Asset Tag	Displays the Asset Tag of the computer.
Manufacture Date	Displays the manufacture date of the computer.
Ownership Date	Displays the ownership date of the computer.
Express Service Code	Displays the Express Service Code of the computer.
Ownership Tag	Displays the Ownership Tag of the computer.
Signed Firmware Update	Displays whether the Signed Firmware Update is enabled on your computer. By default, the <b>Signed Firmware Update</b> option is enabled.
Battery	
Primary	Displays the primary battery of the computer.
Battery Level	Displays the battery level of the computer.
Battery State	Displays the battery state of the computer.
Health	Displays the battery health of the computer.
AC Adapter	Displays whether an AC adapter is connected. If connected, displays the type of AC adapter that is connected.
Processor	
Processor Type	Displays the processor type.
Maximum Clock Speed	Displays the maximum processor clock speed.
Minimum Clock Speed	Displays the minimum processor clock speed.
Current Clock Speed	Displays the current processor clock speed.
Core Count	Displays the number of cores on the processor.
Processor ID	Displays the processor identification code.
Processor L2 Cache	Displays the processor L2 Cache size.

**Table 32. System setup options—Overview menu (continued)**

<b>Overview</b>	
Processor L3 Cache	Displays the processor L3 Cache size.
Microcode Version	Displays the microcode version.
Intel Hyper-Threading Capable	Displays whether the processor is Hyper-Threading (HT) capable.
64-Bit Technology	Displays whether 64-bit technology is used.
<b>Memory</b>	
Memory Installed	Displays the total computer memory installed.
Memory Available	Displays the total computer memory available.
Memory Speed	Displays the memory speed.
Memory Channel Mode	Displays single or dual channel mode.
Memory Technology	Displays the technology that is used for the memory.
DIMM_SLOT1	Displays the memory installed and memory type in DIMM SLOT1.
DIMM_SLOT2	Displays the memory installed and memory type in DIMM SLOT2.
<b>Devices</b>	
Panel Type	Displays the Panel Type of the computer.
Video Controller	Displays the video controller type of the computer.
Video Memory	Displays the video memory information of the computer.
Wi-Fi Device	Displays the wireless device information of the computer.
Native Resolution	Displays the native resolution of the computer.
Video BIOS Version	Displays the video BIOS version of the computer.
Audio Controller	Displays the audio controller information of the computer.
Bluetooth Device	Displays the Bluetooth device information of the computer.
LOM MAC Address	Displays the MAC address of the computer.

**Table 33. System setup options—Boot Configuration menu**

<b>Boot Configuration</b>	
<b>Boot Sequence</b>	
Boot Mode: UEFI only	Displays the boot mode of the computer.
Boot Sequence	Displays the boot sequence.
Enable PXE Boot Priority	Enables adding new PXE boot options to the top of the Boot Sequence. By default, the <b>Enable PXE Boot Priority</b> option is disabled.
Secure Digital (SD) Card Boot	Enables or disables read-only boot from Secure Digital (SD) card. By default, the <b>Secure Digital (SD) Card Boot</b> option is disabled.
<b>Secure Boot</b>	
	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.
Enable Secure Boot	Enables the computer to boot using only validated boot software. By default, the <b>Enable Secure Boot</b> option is enabled.


**Table 33. System setup options—Boot Configuration menu (continued)**

<b>Boot Configuration</b>	
	<p>For additional security, Dell Technologies recommends keeping the <b>Secure Boot</b> option enabled to ensure that the UEFI firmware validates the operating system during the boot process.</p> <p><b>i</b> <b>NOTE:</b> 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.</p>
Enable Microsoft UEFI CA	<p>When disabled, the UEFI CA is removed from the BIOS UEFI Secure Boot database.</p> <p><b>i</b> <b>NOTE:</b> When disabled, the Microsoft UEFI CA could render your computer unable to boot, computer graphics may not function, some devices may not function properly, and the computer could become unrecoverable.</p> <p>By default, the <b>Enable Microsoft UEFI CA</b> option is enabled.</p> <p>For additional security, Dell Technologies recommends keeping the <b>Microsoft UEFI CA</b> option enabled to ensure the broadest compatibility with devices and operating systems.</p>
Secure Boot Mode	<p>Enables or disables the Secure Boot operation mode.</p> <p>By default, the <b>Deployed Mode</b> is selected.</p> <p><b>i</b> <b>NOTE:</b> <b>Deployed Mode</b> should be selected for normal operation of Secure Boot.</p>
<b>Expert Key Management</b>	
Enable Custom Mode	<p>Enables or disables the keys in the PK, KEK, db, and dbx security key databases to be modified.</p> <p>By default, the <b>Enable Custom Mode</b> option is disabled.</p>
Custom Mode Key Management	<p>Selects the custom values for expert key management.</p> <p>By default, the <b>PK</b> option is selected.</p>

**Table 34. System setup options—Integrated Devices menu**

<b>Integrated Devices</b>	
<b>Date/Time</b>	
Date	Sets the computer date in MM/DD/YYYY format. Changes to the date format take effect immediately.
Time	Sets the computer time in HH/MM/SS 24-hour format. You can switch between a 12-hour and 24-hour clock. Changes to the time format take effect immediately.
<b>Camera</b>	
Enable Camera	<p>Enables the camera.</p> <p>By default, the <b>Enable Camera</b> option is enabled.</p> <p><b>i</b> <b>NOTE:</b> Depending on the configuration ordered, the camera setup option may not be available.</p>
<b>Audio</b>	
Enable Audio	<p>Enables all integrated audio controller.</p> <p>By default, all the options are enabled.</p>
Enable Microphone	<p>Enables the microphone.</p> <p>By default, the <b>Enable Microphone</b> option is enabled.</p>

**Table 34. System setup options—Integrated Devices menu (continued)**

<b>Integrated Devices</b>	
	<p> <b>NOTE:</b> Depending on the configuration ordered, the microphone setup option may not be available.</p>
Enable Internal Speaker	<p>Enables the internal speaker.</p> <p>By default, the <b>Enable Internal Speaker</b> option is enabled.</p>
<b>USB Configuration</b>	
Enable External USB Ports	<p>Enables the external USB ports.</p> <p>By default, the <b>Enable External USB Ports</b> option is enabled.</p>
Enable USB Boot Support	<p>Enables booting from USB mass storage devices that are connected to external USB ports.</p> <p>By default, the <b>Enable USB Boot Support</b> option is enabled.</p>
<b>Miscellaneous Devices</b>	
Enable Fingerprint Reader Device	<p>Enables the Fingerprint Reader Device option.</p> <p>By default, the <b>Enable Fingerprint Reader Device</b> option is enabled.</p>

**Table 35. System setup options—Storage menu**

<b>Storage</b>	
<b>SATA/NVMe Operation</b>	<p>Sets the operating mode of the integrated SATA hard drive controller.</p> <p>By default, the <b>RAID On</b> option is selected. The storage device is configured to support RAID functions with VMD controller.</p>
<b>Storage Interface</b>	<p>Displays the information of various onboard drives.</p>
Port Enablement	<p>Enables or disables the M.2 PCIe SSD option.</p> <p>By default, the <b>M.2 PCIe SSD</b> option is enabled.</p>
<b>SMART Reporting</b>	
Enable SMART Reporting	<p>Enables SMART (Self-Monitoring, Analysis, and Reporting Technology) Reporting.</p> <p>When enabled, the BIOS can receive analytical information from integrated drives and send notifications during startup about possible future failure of the hard drive.</p> <p>By default, the <b>Enable SMART Reporting</b> option is disabled.</p>
<b>Drive Information</b>	<p>Displays the information of onboard drives.</p>
<b>Enable MediaCard</b>	
Secure Digital (SD) Card	<p>Enables or disables the SD card.</p> <p>By default, the <b>Secure Digital (SD) Card</b> option is enabled.</p>

**Table 36. System setup options—Display menu**

<b>Display</b>	
<b>Display Brightness</b>	
Brightness on battery power	<p>Enables to set the screen brightness when the computer is running on battery power.</p> <p>By default, the screen brightness is set to 50 when the computer is running on battery power.</p>
Brightness on AC power	<p>Enables to set the screen brightness when the computer is running on AC power.</p>

**Table 36. System setup options—Display menu (continued)**

<b>Display</b>	
	By default, the screen brightness is set to 100 when the computer is running on AC power.
<b>Full Screen Logo</b>	Enables or disables the computer to display a full-screen logo, if the image matches screen resolution.  By default, the <b>Full Screen Logo</b> option is disabled.

**Table 37. System setup options—Connection menu**

<b>Connection</b>	
<b>Network Controller Configuration</b>	
Integrated NIC	Enables or disables the on-board LAN Controller.  By default, the <b>Enabled with PXE</b> option is selected.
<b>Wireless Device Enable</b>	
WLAN	Enables or disables the internal WLAN device.  By default, the <b>WLAN</b> option is enabled.
Bluetooth	Enables or disables the internal Bluetooth device.  By default, the <b>Bluetooth</b> option is enabled.
<b>Enable UEFI Network Stack</b>	Enables or disables the UEFI Network Stack and controls the onboard LAN Controller.  By default, the <b>Auto Enabled</b> option is selected.
<b>HTTP(s) Boot Feature</b>	
HTTP(s) Boot	Displays if the computer has HTTP(s) Boot capabilities or not.  By default, the <b>HTTP(s) Boot</b> option is enabled.
HTTP(s) Boot Modes	Allows you to set the HTTP(s) Boot Mode for the computer.  By default, the <b>Auto Mode</b> option is selected. HTTP(s) Boot automatically extracts Boot URL from Dynamic Host Configuration Protocol (DHCP).

**Table 38. System setup options—Power menu**

<b>Power</b>	
<b>Battery Configuration</b>	Enables or disables the computer to run on battery during peak power usage hours. Use the table <b>Custom Charge Start</b> and <b>Custom Charge Stop</b> , to prevent AC power usage between certain times of each day.  By default, the <b>Adaptive</b> option is selected. Battery settings are adaptively optimized based on your typical battery usage pattern.
<b>Advanced Configuration</b>	
Enable Advanced Battery Charge Configuration	Enables Advanced Battery Charge Configuration from the beginning of the day to a specified work period. When enabled, Advanced Battery Charged maximizes battery health while still supporting heavy use during the work day.  By default, the <b>Enable Advanced Battery Charge Configuration</b> option is disabled.
<b>Peak Shift</b>	
Enable Peak Shift	Enables Advanced Battery Charge Configuration from the beginning of the day to a specified work period. When enabled, Advanced Battery Charged maximizes battery health while still supporting heavy use during the work day.




**Table 38. System setup options—Power menu (continued)**

Power	
	By default, the <b>Enable Peak Shift</b> option is disabled.
<b>Thermal Management</b>	Enables or disables cooling of fan and manages processor heat to adjust the computer performance, noise, and temperature.  By default, the <b>Optimized</b> option is selected. Standard setting for balanced performance, noise, and temperature.
<b>Block Sleep</b>	Enables or disables the computer from entering Sleep (S3) mode in the operating system.  By default, the <b>Block Sleep</b> option is disabled.  <b>i</b> <b>NOTE:</b> When enabled, the computer does not go to Sleep, Intel Rapid Start is disabled automatically, and the operating system power option is blank if it was set to Sleep.
Lid Switch	
Enable Lid Switch	When enabled, connecting a Dell USB-C Dock wakes the computer from Standby, Hibernate, and Power Off.  By default, the <b>Enable Lid Switch</b> option is enabled.
<b>Intel Speed Shift Technology</b>	Enables or disables the Intel Speed Shift Technology support. When enabled, the operating system selects the appropriate processor performance automatically.  By default, the <b>Intel Speed Shift Technology</b> option is enabled.

**Table 39. System setup options—Security menu**

Security	
<b>Trusted Platform Module (TPM) 2.0 Security</b>	The Trusted Platform Module (TPM) provides various cryptographic services which serve as the cornerstone for many platform security technologies. Trusted Platform Module (TPM) is a security device that stores computer-generated keys for encryption and features such as BitLocker, Virtual Secure Mode, remote Attestation.  By default, the <b>Trusted Platform Module (TPM)</b> option is enabled.  For additional security, Dell Technologies recommends keeping <b>Trusted Platform Module (TPM)</b> enabled to allow these security technologies to fully function.  <b>i</b> <b>NOTE:</b> The options that are listed apply to computers with a discrete <b>Trusted Platform Module (TPM)</b> chip.
TPM 2.0 Security On	Allows you to select whether or not the TPM is visible to the operating system.  By default, the <b>TPM 2.0 Security On</b> option is enabled.  For additional security, Dell Technologies recommends keeping <b>TPM 2.0 Security On</b> enabled to allow these security technologies to fully function.
Attestation Enable	The <b>Attestation Enable</b> option controls the endorsement hierarchy of TPM. Disabling the <b>Attestation Enable</b> option prevents TPM from being used to digitally sign certificates.  By default, the <b>Attestation Enable</b> option is enabled.  For additional security, Dell Technologies recommends keeping the <b>Attestation Enable</b> option enabled.  <b>i</b> <b>NOTE:</b> When disabled, this feature may cause compatibility issues or loss of functionality in some operating systems.

**Table 39. System setup options—Security menu (continued)**

<b>Security</b>	
Key Storage Enable	<p>The <b>Key Storage Enable</b> option controls the storage hierarchy of TPM, which is used to store digital keys. Disabling the <b>Key Storage Enable</b> option restricts the ability of TPM to store owner's data.</p> <p>By default, the <b>Key Storage Enable</b> option is enabled.</p> <p>For additional security, Dell Technologies recommends keeping the <b>Key Storage Enable</b> option enabled.</p> <p> <b>NOTE:</b> When disabled, this feature may cause compatibility issues or loss of functionality in some operating systems.</p>
SHA-256	<p>Allows you to control the hashing algorithm that is used by the TPM. When enabled, the TPM uses the SHA-256 hashing algorithm. When disabled, the TPM uses the SHA-1 hash algorithm.</p> <p>By default, the <b>SHA-256</b> option is enabled.</p> <p>For additional security, Dell Technologies recommends keeping the <b>SHA-256</b> option enabled.</p>
Clear	<p>When enabled, the <b>Clear</b> option clears information that is stored in the TPM after exiting the computer's BIOS. This option returns to the disabled state when the computer restarts.</p> <p>By default, the <b>Clear</b> option is disabled.</p> <p>Dell Technologies recommends enabling the <b>Clear</b> option only when TPM data is required to be cleared.</p>
Physical Presence Interface (PPI) Bypass for Clear Commands	<p>By default, the <b>PPI Bypass for Clear Commands</b> option is disabled.</p> <p>For additional security, Dell Technologies recommends keeping the <b>PPI Bypass for Clear Commands</b> option disabled.</p>
<b>SMM Security Mitigation</b>	<p>Enables or disables additional UEFI SMM Security Mitigation protections. This option uses the Windows SMM Security Mitigations Table (WSMT) to confirm to the operating system that security best practices have been implemented by the UEFI firmware.</p> <p>By default, the <b>SMM Security Mitigation</b> option is enabled.</p> <p>For additional security, Dell Technologies recommends keeping the <b>SMM Security Mitigation</b> option enabled unless you have a specific application which is not compatible.</p> <p> <b>NOTE:</b> This feature may cause compatibility issues or loss of functionality with some legacy tools and applications.</p>
<b>Data Wipe on Next Boot</b>	
Start Data Wipe	<p>Data Wipe is a secure wipe operation that deletes information from a storage device.</p> <p> <b>CAUTION: The secure Data Wipe operation deletes information in a way that it cannot be reconstructed.</b></p> <p>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.</p> <p>When enabled, the data wipe option will prompt to wipe any storage devices that are connected to the computer on the next boot.</p> <p>By default, the <b>Start Data Wipe</b> option is disabled.</p>
Absolute	<p>Absolute Software provides various cyber security solutions, some requiring software preloaded on Dell computers and integrated into the BIOS. To use these</p>

**Table 39. System setup options—Security menu (continued)**

Security	
	<p>features, you must enable the Absolute BIOS setting and contact Absolute for configuration and activation.</p> <p>By default, the <b>Enable Absolute</b> option is selected.</p> <p>For additional security, Dell Technologies recommends selecting the <b>Enable Absolute</b> option.</p> <p><b>NOTE:</b> When the Absolute features are activated, the Absolute integration cannot be disabled from the BIOS setup screen.</p>
UEFI Boot Path Security	<p>Enables or disables the computer to prompt the user to enter the Administrator password (if set) when booting to a UEFI boot path device from the F12 boot menu.</p> <p>By default, the <b>Always Except Internal HDD</b> option is enabled.</p>

**Table 40. System setup options—Passwords menu**

Passwords	
<b>Admin Password</b>	<p>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.</p> <p>The following rules and dependencies apply to the Administrator Password -</p> <ul style="list-style-type: none"> <li>• The administrator password cannot be set if computer and/or internal hard drive passwords are previously set.</li> <li>• The administrator password can be used in place of the computer and/or internal hard drive passwords.</li> <li>• When set, the administrator password must be provided during a firmware update.</li> <li>• Clearing the administrator password also clears the computer password (if set).</li> </ul> <p>Dell Technologies recommends using an administrator password to prevent unauthorized changes to BIOS setup options.</p>
<b>System Password</b>	<p>The System Password prevents the computer from booting to an operating system without entering the correct password.</p> <p>The following rules and dependencies apply when the System Password is used -</p> <ul style="list-style-type: none"> <li>• The computer shuts down when idle for approximately 10 minutes at the computer password prompt.</li> <li>• The computer shuts down after three incorrect attempts to enter the computer password.</li> <li>• The computer shuts down when the <b>Esc</b> key is pressed at the System Password prompt.</li> <li>• The computer password is not prompted when the computer resumes from standby mode.</li> </ul> <p>Dell Technologies recommends using the computer password in situations where it is likely that a computer may be lost or stolen.</p>
<b>M.2 PCIe SSD-0</b>	<p>The M.2 PCIe SSD-0 Password can be set to prevent unauthorized access of the data stored on the solid-state drive. The computer prompts for the solid-state drive password during boot in order to unlock the drive. A password-secured solid-state drive stays locked even when removed from the computer or placed into another computer. It prevents an attacker from accessing data on the drive without authorization.</p> <p>The following rules and dependencies apply when the M.2 PCIe SSD-0 Password is used -</p>



**Table 40. System setup options—Passwords menu (continued)**

<b>Passwords</b>	
	<ul style="list-style-type: none"> <li>• The solid-state drive password option cannot be accessed when a hard drive is disabled in the BIOS setup.</li> <li>• The computer shuts down when idle for approximately 10 minutes at the solid-state drive password prompt.</li> <li>• The computer shuts down after three incorrect attempts to enter the solid-state drive password and treats the hard drive as not available.</li> <li>• The solid-state drive does not accept password unlock attempts after five incorrect attempts to enter the solid-state drive password from the BIOS Setup. The solid-state drive password must be reset for the new password unlock attempts.</li> <li>• The computer treats the solid-state drive as not available when the <b>Esc</b> key is pressed at the solid-state drive password prompt.</li> <li>• The solid-state drive password is not prompted when the computer resumes from standby mode. When the solid-state drive is unlocked by the user before the computer goes into standby mode, it remains unlocked after the computer resumes from standby mode.</li> <li>• If the computer and solid-state drive passwords are set to the same value, the solid-state drive unlocks after the correct computer password is entered.</li> </ul> <p>Dell Technologies recommends using a solid-state drive password to protect unauthorized data access.</p>
<b>Password Configuration</b>	<p>The Password configuration page includes several options for changing the requirements of BIOS passwords. You can modify the minimum and maximum length of the passwords and require passwords to contain certain character classes (upper case, lower case, digit, special character).</p> <p>Dell Technologies recommends setting the minimum password length to at least eight characters.</p>
Upper Case Letter	<p>The Upper Case Letter field enforces stricter rules for administrator and system passwords.</p> <p>When enabled, the password is required to include at least one upper case letter.</p> <p>By default, the <b>Upper Case Letter</b> option is disabled.</p>
Lower Case Letter	<p>The Lower Case Letter field enforces stricter rules for administrator and system passwords.</p> <p>When enabled, the password is required to include at least one lower case letter.</p> <p>By default, the <b>Lower Case Letter</b> option is disabled.</p>
Digit	<p>The Digit field enforces stricter rules for administrator and system passwords.</p> <p>When enabled, the password is required to include at least one digit number.</p> <p>By default, the <b>Digit</b> option is disabled.</p>
Special Character	<p>The Special Character field enforces stricter rules for administrator and system passwords.</p> <p>When enabled, the password is required to include at least one special character.</p> <p>By default, the <b>Special Character</b> option is disabled.</p>
Minimum Characters	<p>The Minimum Characters field enforces stricter rules for administrator and system passwords.</p> <p>It allows you to set the minimum number of characters allowed for password.</p> <p>By default, the <b>Minimum Characters</b> option is set to 04.</p>
<b>Password Bypass</b>	<p>The <b>Password Bypass</b> option allows the computer to reboot from the operating system without entering the computer or hard drive password. If the computer</p>

**Table 40. System setup options—Passwords menu (continued)**

<b>Passwords</b>	
	<p>has already booted to the operating system, it is presumed that the user has already entered the correct computer or hard drive password.</p> <p><b>i</b> <b>NOTE:</b> This option does not remove the requirement to enter the password after shutting down.</p> <p>By default, the <b>Password Bypass</b> option is disabled.</p> <p>For additional security, Dell Technologies recommends keeping the <b>Password Bypass</b> option enabled.</p>
<b>Password Changes</b>	
Allow Non-Admin Password Changes	<p>The <b>Allow Non-Admin Password Changes</b> option in BIOS setup allows an end user to set or change the computer or hard drive passwords without entering the administrator password. This gives an administrator control over the BIOS settings but enables an end user to provide their own password.</p> <p>By default, the <b>Allow Non-Admin Password Changes</b> option is enabled.</p> <p>For additional security, Dell Technologies recommends keeping the <b>Allow Non-Admin Password Changes</b> option disabled.</p>
<b>Admin Setup Lockout</b>	
	<p>The <b>Admin Setup Lockout</b> option prevents an end user from even viewing the BIOS setup configuration without first entering the administrator password (if set).</p> <p>By default, the <b>Admin Setup Lockout</b> option is disabled.</p> <p>For additional security, Dell Technologies recommends keeping the <b>Admin Setup Lockout</b> option disabled.</p>
<b>Master Password Lockout</b>	
Enable Master Password Lockout	<p>The Master Password Lockout setting allows you to disable the Recovery Password feature. If the computer, administrator, or hard drive password is forgotten, the computer becomes unusable.</p> <p><b>i</b> <b>NOTE:</b> When an internal solid-state drive password is set, it must first be cleared before Master Password Lockout can be changed.</p> <p>By default, the <b>Enable Master Password Lockout</b> option is disabled.</p> <p>Dell Technologies does not recommend enabling the <b>Master Password Lockout</b> unless you have implemented your own password recovery computer.</p>
<b>Allow Non-Admin PSID Revert</b>	
Enable Allow Non-Admin PSID Revert	<p>Allows you to control access to the Physical Security ID (PSID) revert of NVMe hard-drives from the Dell Security Manager prompt.</p> <p>When enabled, PSID revert is allowed to proceed without providing the BIOS Admin password.</p> <p>By default, the <b>Enable Allow Non-Admin PSID Revert</b> option is disabled.</p>

**Table 41. System setup options—Update, Recovery menu**

<b>Update, Recovery</b>	
<b>UEFI Capsule Firmware Updates</b>	
Enable UEFI Capsule Firmware Updates	<p>Enables or disables BIOS updates through UEFI capsule update packages.</p> <p><b>i</b> <b>NOTE:</b> Disabling this option blocks the BIOS updates from services such as Microsoft Windows Update and Linux Vendor Firmware Service (LVFS).</p> <p>By default, the <b>Enable UEFI Capsule Firmware Updates</b> option is enabled.</p>
<b>BIOS Recovery from Hard Drive</b>	
	<p>Enables or disables the user to recover from certain corrupted BIOS conditions from a recovery file on the user primary hard drive or an external USB key.</p>

**Table 41. System setup options—Update, Recovery menu (continued)**

<b>Update, Recovery</b>	
	<p>By default, the <b>BIOS Recovery from Hard Drive</b> option is enabled.</p> <p><b>i</b> <b>NOTE:</b> BIOS Recovery from Hard Drive is not available for self-encrypting drives (SED).</p> <p><b>i</b> <b>NOTE:</b> BIOS recovery is designed to fix the main BIOS block and cannot work if the Boot Block is damaged. In addition, this feature cannot work in the event of EC corruption, ME corruption, or a hardware issue. The recovery image must exist on an unencrypted partition on the drive.</p>
<b>BIOS Downgrade</b>	
Allow BIOS Downgrade	<p>Controls flashing of the computer firmware to previous revisions.</p> <p>By default, the <b>Allow BIOS Downgrade</b> option is enabled.</p>
<b>SupportAssist OS Recovery</b>	<p>Enables or disables the boot flow for SupportAssist OS Recovery tool in the event of certain computer errors.</p> <p>By default, the <b>SupportAssist OS Recovery</b> option is enabled.</p>
<b>BIOSConnect</b>	<p>Enables or disables cloud Service operating system recovery if the main operating system fails to boot with the number of failures equal to or greater than the value specified by the Auto operating system Recovery Threshold setup option and local Service operating system does not boot or is not installed.</p> <p>By default, the <b>BIOSConnect</b> option is enabled.</p>
<b>Dell Auto OS Recovery Threshold</b>	<p>Allows you to control the automatic boot flow for SupportAssist System Resolution Console and for Dell operating system Recovery Tool.</p> <p>By default, the <b>Dell Auto OS Recovery Threshold</b> value is set to 2.</p>

**Table 42. System setup options—System Management menu**

<b>System Management</b>	
<b>Service Tag</b>	Displays the Service Tag of the computer.
<b>Asset Tag</b>	<p>Creates a computer Asset Tag that can be used by an IT administrator to uniquely identify a particular computer.</p> <p><b>i</b> <b>NOTE:</b> Once set in BIOS, the Asset Tag cannot be changed.</p>
<b>AC Behavior</b>	
Wake on AC	<p>Enables or disables the computer to turn on and go to boot when AC power is supplied to the computer.</p> <p>By default, the <b>Wake on AC</b> option is disabled.</p>
Wake on LAN	<p>Enables or disables the computer to turn on and go to boot when AC power is supplied to the computer.</p> <p>By default, the <b>Wake on LAN</b> option is disabled.</p>
<b>Auto On Time</b>	<p>Enable to set the computer to turn on automatically every day or on a preselected date and time. This option can be configured only if the Auto On Time is set to Everyday, Weekdays, or Selected Days.</p> <p>By default, the <b>Auto On Time</b> option is disabled.</p>
<b>First Power On Date</b>	
Set Ownership Date	<p>Allows the user to set Ownership Date of the computer.</p> <p>By default, the <b>Set Ownership Date</b> option is disabled.</p>


**Table 42. System setup options—System Management menu (continued)**

System Management	
<b>Diagnostics</b>	
OS Agent Requests	Enables or disables the computer to turn on by a special LAN signal. By default, the <b>OS Agent Requests</b> option is enabled.
<b>Power-on-Self-Test Automatic Recovery</b>	Enables or disables the computer to turn on by a special LAN signal. By default, the <b>Power-on-Self-Test Automatic Recovery</b> option is enabled.

**Table 43. System setup options—Keyboard menu**

Keyboard	
<b>Fn Lock Options</b>	Enables or disables the Fn Lock option. By default, the <b>Fn Lock</b> option is enabled.
<b>Lock Mode</b>	By default, the <b>Lock Mode Secondary</b> option is enabled. With this option, the F1-F12 keys scan the code for their secondary functions.
<b>Keyboard Illumination</b>	Configures the operating mode of the keyboard illumination feature. By default, the <b>Bright</b> option is selected. Enables the keyboard illumination feature at 100% brightness level.
<b>Keyboard Backlight Timeout on AC</b>	Sets the timeout value for the keyboard backlight when an AC adapter is connected to the computer. By default, the <b>1 minute</b> option is selected.
<b>Keyboard Backlight Timeout on Battery</b>	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 <b>1 minute</b> option is selected.

**Table 44. System setup options—Pre-boot Behavior menu**

Preboot Behavior	
<b>Adapter Warnings</b>	
Enable Adapter Warnings	Enables the warning messages during boot when the adapters with less power capacity are detected. By default, the <b>Enable Adapter Warnings</b> option is enabled.
<b>Warnings and Errors</b>	Enables or disables the action to be taken when a warning or error is encountered. By default, the <b>Prompt on Warnings and Errors</b> option is selected. Stop, prompt, and wait for user input when warnings or errors are detected.  <b>NOTE:</b> Errors deemed critical to the operation of the computer hardware stop the functioning of the computer.
<b>USB-C Warnings</b>	
Enable Dock Warning Messages	Enables the warning messages during boot when the USB-C adapters with less power capacity are detected. By default, the <b>Enable Dock Warning Messages</b> option is enabled.
<b>Extend BIOS POST Time</b>	Sets the BIOS POST (Power-On Self-Test) load time. By default, the <b>0 seconds</b> option is selected.
<b>Sign of Life</b>	

**Table 44. System setup options—Pre-boot Behavior menu (continued)**

Preboot Behavior	
Early Keyboard Backlight	Keyboard Backlight Sign of Life. By default, the <b>Early Keyboard Backlight</b> option is enabled.

**Table 45. System setup options—Virtualization menu**

Virtualization Support	
Intel Virtualization Technology	
Enable Intel Virtualization Technology (VT)	When enabled, the computer can run a Virtual Machine Monitor (VMM). By default, the <b>Enable Intel Virtualization Technology (VT)</b> option is enabled.
VT for Direct I/O	
Enable Intel VT for Direct I/O	When enabled, the computer can perform Virtualization Technology for Direct I/O (VT-d). VT-d is an Intel method that provides virtualization for memory map I/O. By default, the <b>Enable Intel VT for Direct I/O</b> option is enabled.
DMA Protection	
Enable Pre-Boot DMA Support	Allows you 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. <b>i</b> <b>NOTE:</b> This option is not available when the virtualization setting for IOMMU is disabled (VT-d/AMD Vi). By default, the <b>Enable Pre-Boot DMA Support</b> option is enabled. For additional security, Dell Technologies recommends keeping the <b>Enable Pre-Boot DMA Support</b> option enabled. <b>i</b> <b>NOTE:</b> 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 system. For operating systems that support DMA protection, this setting indicates to the operating system that the BIOS supports the feature. <b>i</b> <b>NOTE:</b> This option is not available when the virtualization setting for IOMMU is disabled (VT-d/AMD Vi). By default, the <b>Enable OS Kernel DMA Support</b> option is enabled. <b>i</b> <b>NOTE:</b> This option is provided only for compatibility purposes, as certain older hardware may not be DMA compliant.

**Table 46. System setup options—Performance menu**

Performance	
Multi-Core Support	
Multiple Atom Cores	Enables to change the number of Atom cores available to the operating system. The default value is set to the maximum number of cores. By default, the <b>All Cores</b> option is selected.
Intel SpeedStep	
Enable Intel SpeedStep Technology	Enables the computer to dynamically adjust processor voltage and core frequency, decreasing average power consumption and heat production. By default, the <b>Enable Intel SpeedStep Technology</b> option is enabled.

**Table 46. System setup options—Performance menu (continued)**

<b>Performance</b>	
<b>C-State Control</b>	
Enable C-State Control	Enables or disables the ability of the CPU to enter and exit low-power state. When disabled, it disables all C-states. When enabled, it enables all C-states that the chipset or platform allows.  By default, the <b>Enable C-State Control</b> option is enabled.
<b>Intel Turbo Boost Technology</b>	
Enable Intel Turbo Boost Technology	Enables the Intel TurboBoost mode of the processor. When enabled, the Intel TurboBoost driver increases the performance of the CPU or graphics processor.  By default, the <b>Enable Intel Turbo Boost Technology</b> option is enabled.
<b>Intel Hyper-Threading Technology</b>	
Enable Intel Hyper-Threading Technology	Enables the Intel Hyper-Threading mode of the processor. When enabled, the Intel Hyper-Threading increases the efficiency of the processor resources when multiple threads run on each core.  By default, the <b>Intel Hyper-Threading Technology</b> option is enabled.


**Table 47. System setup options—System Logs menu**

<b>System Logs</b>	
<b>BIOS Event Log</b>	
Clear BIOS Event Log	Allows you to select option to keep or clear BIOS events logs.  By default, the <b>Keep Log</b> option is selected.
<b>Thermal Event Log</b>	
Clear Thermal Event Log	Allows you to select option to keep or clear Thermal events logs.  By default, the <b>Keep Log</b> option is selected.
<b>Power Event Log</b>	
Clear Power Event Log	Allows you to select option to keep or clear Power events logs.  By default, the <b>Keep Log</b> option is selected.

## Updating the BIOS


### Updating the BIOS in Windows

#### About this task

 **CAUTION:** If BitLocker is not suspended before updating the BIOS, the next time you reboot the computer it will not recognize the BitLocker key. You will then be prompted to enter the recovery key to progress, and the computer will ask for this on each reboot. If the recovery key is not known this can result in data loss or an unnecessary operating system reinstall. For more information about this subject, search in the Knowledge Base Resource at [Dell Support Site](#).

#### Steps

1. Go to [Dell Support Site](#).
2. Click **Product support**. In the **Search support** box, enter the Service Tag of your computer, and then click **Search**.

 **NOTE:** If you do not have the Service Tag, use the SupportAssist feature to automatically identify your computer. You can also use the product ID or manually browse for your computer model.

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


For more information, search in the Knowledge Base Resource at [Dell Support Site](#).

## Updating the BIOS in Linux and Ubuntu

To update the system BIOS on a computer that is installed with Linux or Ubuntu, see the knowledge base article [000131486](#) at [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 next time you reboot the computer it will not recognize the BitLocker key. You will then be prompted to enter the recovery key to progress, and the computer will ask for this on each reboot. If the recovery key is not known this can result in data loss or an unnecessary operating system reinstall. For more information about this subject, search in the Knowledge Base Resource at [Dell Support Site](#).


### Steps

1. Follow the procedure from step 1 to step 6 in [Updating the BIOS in Windows](#) to download the latest BIOS setup program file.
2. Create a bootable USB drive. For more information, search in the Knowledge Base Resource at [Dell Support Site](#).
3. Copy the BIOS setup program file to the bootable USB drive.
4. Connect the bootable USB drive to the computer that needs the BIOS update.
5. Restart the computer and press **F12**.
6. Select the USB drive from the **One Time Boot Menu**.
7. Type the BIOS setup program filename and press **Enter**.  
The **BIOS Update Utility** appears.
8. Follow the on-screen instructions to complete the BIOS update.

## Updating the BIOS from the F12 One-Time boot menu

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


### About this task

 **CAUTION:** If BitLocker is not suspended before updating the BIOS, the next time you reboot the computer it will not recognize the BitLocker key. You will then be prompted to enter the recovery key to progress, and the computer will ask for this on each reboot. If the recovery key is not known this can result in data loss or an unnecessary operating system reinstall. For more information about this subject, search in the Knowledge Base Resource at [Dell Support Site](#).

### BIOS Update

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

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

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

### Updating from the One-Time boot menu

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

- USB drive formatted to the FAT32 file system (key does not have to be bootable)
- BIOS executable file that you downloaded from the Dell Support website and copied to the root of the USB drive
- AC power adapter that is connected to the computer
- Functional computer battery to flash the BIOS

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

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

### Steps

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

## System and setup password

Table 48. System and setup password

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

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

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

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

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

## Assigning a System Setup password

### Prerequisites

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

### About this task

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



## Steps

1. In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.  
The **Security** screen is visible.
2. Select **System/Admin Password** and create a password in the **Enter the new password** field.  
Use the following guidelines to assign the system password:
  - A password can have up to 32 characters.
  - At least one special character: "( ! " # \$ % & ' \* + , - . / : ; < = > ? @ [ \ ] ^ \_ ` { | } )"
  - Numbers 0 to 9.
  - Upper case letters from A to Z.
  - Lower case letters from a to z.
3. Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
4. Press Esc and save the changes as prompted by the message.
5. Press Y to save the changes.  
The computer restarts.

## Deleting or changing an existing system setup password


### Prerequisites

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

### About this task

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


## Steps

1. In the **System BIOS** or **System Setup** screen, select **System Security** and press Enter.  
The **System Security** screen is displayed.
2. In the **System Security** screen, verify that the Password Status is **Unlocked**.
3. Select **System Password**, update, or delete the existing system password, and press Enter or Tab.
4. Select **Setup Password**, update, or delete the existing setup password, and press Enter or Tab.  
 **NOTE:** If you change the System and/or Setup password, reenter the new password when prompted. If you delete the System and/or Setup password, confirm the deletion when prompted.
5. Press Esc. A message prompts you to save the changes.
6. Press Y to save the changes and exit from System Setup.  
The computer restarts.

## Clearing BIOS (System Setup) and System passwords

### About this task

To clear the computer or BIOS passwords, contact Dell technical support as described at [Contact Support](#). For more information, go to [Dell Support Site](#).

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

# 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 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 should be replaced and disposed of properly. We recommend contacting Dell product support for options to replace a swollen battery under the terms of the applicable warranty or service contract, including options for replacement by a Dell authorized service technician.

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

- Exercise caution when handling rechargeable Li-ion batteries.
- Discharge the battery before removing it from the system. To discharge the battery, unplug the AC adapter from the system and operate the system only on battery power. When the system will no longer turn on when the power button is pressed, the battery is fully discharged.
- Do not crush, drop, mutilate, or penetrate the battery with foreign objects.
- Do not expose the battery to high temperatures, or disassemble battery packs and cells.
- Do not apply pressure to the surface of the battery.
- Do not bend the battery.
- Do not use tools of any type to pry on or against the battery.
- If a battery gets stuck in a device as a result of swelling, do not try to free it as puncturing, bending, or crushing a battery can be dangerous.
- Do not attempt to reassemble a damaged or swollen battery into a laptop.
- Swollen batteries that are covered under warranty should be returned to Dell in an approved shipping container (provided by Dell)—this is to comply with transportation regulations. Swollen batteries that are not covered under warranty should be disposed of at an approved recycling center. Contact Dell product support at [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 in the Knowledge Base Resource at [Dell Support Site](#).

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

Your Dell computer is uniquely identified by a Service Tag or Express Service Code. To view relevant support resources for your Dell computer, we recommend entering the Service Tag or Express Service Code at [Dell Support Site](#).


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

# Dell SupportAssist Pre-boot System Performance Check diagnostics

## About this task

SupportAssist diagnostics (also known as system diagnostics) performs a complete check of your hardware. The Dell SupportAssist Pre-boot System Performance Check diagnostics is embedded with the BIOS and 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 introduce additional test options to provide extra information about one or more failed devices.
- View status messages that inform you 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 terminal when the diagnostic tests are performed.

For more information, see the knowledge base article [000180971](#).

## Running the SupportAssist Pre-Boot System Performance Check


### Steps

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


## Built-in self-test (BIST)

### M-BIST

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

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

### How to run M-BIST

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

1. Press and hold both the **M** key on the keyboard and the **power button** to initiate M-BIST.
2. The battery indicator LED may exhibit two states:
  - a. OFF: No fault was detected with the system board.
  - b. AMBER: Amber indicates a problem with the system board.

- If there is a failure with the system board, the battery status LED flashes one of the following error codes for 30 seconds:

**Table 49. LED error codes**

Blinking Pattern		Possible Problem
Amber	White	
2	1	CPU Failure
2	8	LCD Power Rail Failure
1	1	TPM Detection Failure
2	4	Memory/RAM failure

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

## LCD Power rail 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].

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

### How to invoke the L-BIST Test

- Press the power button to start the computer.
- If the computer does not start up normally, 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.
- For cases, when a [2,7] error code is shown, check to see if the display cable is properly connected.
- For cases when a [2,8] error code is shown, replace the system board.

## LCD Built-in Self-Test (BIST)

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

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

### How to invoke the LCD BIST Test

- Power off the Dell laptop.
- Disconnect any peripherals that are connected to the laptop. Connect only the AC adapter (charger) to the laptop.
- Ensure that the LCD (screen) is clean (no dust particles on the surface of the screen).
- Press and hold the **D** key and **Power on** the laptop to enter LCD built-in self-test (BIST) mode. Continue to hold the D key until the computer boots up.
- The screen displays solid colors and change colors on the entire screen to white, black, red, green, and blue twice.
- Then it displays the colors white, black, and red.
- Carefully inspect the screen for abnormalities (any lines, fuzzy color, or distortion on the screen).
- At the end of the last solid color (red), the computer shuts down.

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

# System-diagnostic lights

This section lists the system-diagnostic lights of your Vostro 14 3440.

## Power and battery-status light

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

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

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

### Off:

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

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

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

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

**NOTE:** The following diagnostic light codes and recommended solutions are intended for Dell service technicians to troubleshoot problems. You should only perform troubleshooting and repairs as authorized or directed by the Dell technical assistance team. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

**Table 50. System-diagnostic lights**

Blinking pattern		Problem description
Amber	White	
1	1	TPM detection failure
1	2	Unrecoverable SPI flash failure
1	3	Short in hinge cable tripped OCP1
1	4	Short in hinge cable tripped OCP2
1	5	EC unable to program i-Fuse
1	6	EC internal failure
2	1	Processor failure
2	2	System board: BIOS or ROM (Read-Only Memory) failure
2	3	No memory or RAM (Random-Access Memory) detected
2	4	Memory or RAM (Random-Access Memory) failure
2	5	Invalid memory installed
2	6	System-board or chipset error
2	7	Display failure - SBIOS message
2	8	Display failure - EC detection of power rail failure
3	1	CMOS battery failure
3	2	PCI, video card/chip failure
3	3	BIOS recovery image not found
3	4	Recovery image found but invalid

**Table 50. System-diagnostic lights (continued)**

Blinking pattern		Problem description
Amber	White	
3	5	Power-rail failure
3	6	System BIOS Flash incomplete
3	7	Management Engine (ME) error

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

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

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

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

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

## 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 stand-alone tool that is preinstalled in all Dell computers that are installed with 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, or restore your computer to its factory state.

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

For more information about the Dell SupportAssist OS Recovery, see *Dell SupportAssist OS Recovery User's Guide* at [Serviceability Tools at the Dell Support Site](#). Click **SupportAssist** and then, click **SupportAssist OS Recovery**.

## Real-Time Clock (RTC Reset)

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

Start the RTC reset with the computer powered off and connected to AC power. Press and hold the power button for twenty (20) 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 proposes multiple options for recovering the Windows operating system on your Dell computer. For more information, see [Dell Windows Backup Media and Recovery Options](#).

## Wi-Fi power cycle

### About this task

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

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

### Steps

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

## Drain residual 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 are requested to drain residual flea power before removing or replacing any components in your computer.

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

Perform the following steps to drain the residual flea power:

### Steps

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



**CAUTION: The battery is a Field Replaceable Unit (FRU) and the removal/installation is 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 your computer.
9. Turn on your computer.




**NOTE:** For more information about performing a hard reset, search in the Knowledge Base Resource at [Dell Support Site](#).

# Getting help and contacting Dell

## Self-help resources


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


**Table 51. Self-help resources**

Self-help resources	Resource location
Information about Dell products and services	<a href="#">Dell Site</a>
Tips	
Contact Support	In Windows search, type <code>Contact Support</code> , and press Enter.
Online help for operating system	<a href="#">Windows Support Site</a> <a href="#">Linux Support Site</a>
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals, and documents.	Your Dell computer is uniquely identified using a Service Tag or Express Service Code. To view relevant support resources for your Dell computer, enter the Service Tag or Express Service Code at <a href="#">Dell Support Site</a> .  For more information about how to find the Service Tag for your computer, see <a href="#">Locate the Service Tag on your computer</a> .
Dell knowledge base articles	<ol style="list-style-type: none"> <li>1. Go to <a href="#">Dell Support Site</a>.</li> <li>2. On the menu bar at the top of the Support page, select <b>Support &gt; Support Library</b>.</li> <li>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.</li> </ol>

## Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see [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 product catalog.