


XPS 13 9350

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 XPS 13 9350

Right



Figure 1. Right view

1. Thunderbolt 4 port with Power Delivery (Type-C)

Supports USB4, DisplayPort 1.4, Thunderbolt 4 and also enables you to connect to an external display using a display adapter. Provides data transfer rates of up to 40 Gbps for USB4 and Thunderbolt 4.

NOTE: A USB Type-C to DisplayPort adapter (sold separately) is required to connect a DisplayPort device.

NOTE: USB4 is backward compatible with USB 3.2, USB 2.0, and Thunderbolt 3.

NOTE: Thunderbolt 4 supports three 4K displays, one 5K display, or one 8K display.

Left



Figure 2. Left view

1. Thunderbolt 4 port with Power Delivery (Type-C)

Supports USB4, DisplayPort 1.4, Thunderbolt 4 and also enables you to connect to an external display using a display adapter. Provides data transfer rates of up to 40 Gbps for USB4 and Thunderbolt 4.

NOTE: A USB Type-C to DisplayPort adapter (sold separately) is required to connect a DisplayPort device.

NOTE: USB4 is backward compatible with USB 3.2, USB 2.0, and Thunderbolt 3.

NOTE: Thunderbolt 4 supports three 4K displays, one 5K display, or one 8K display with internal display off.

Top

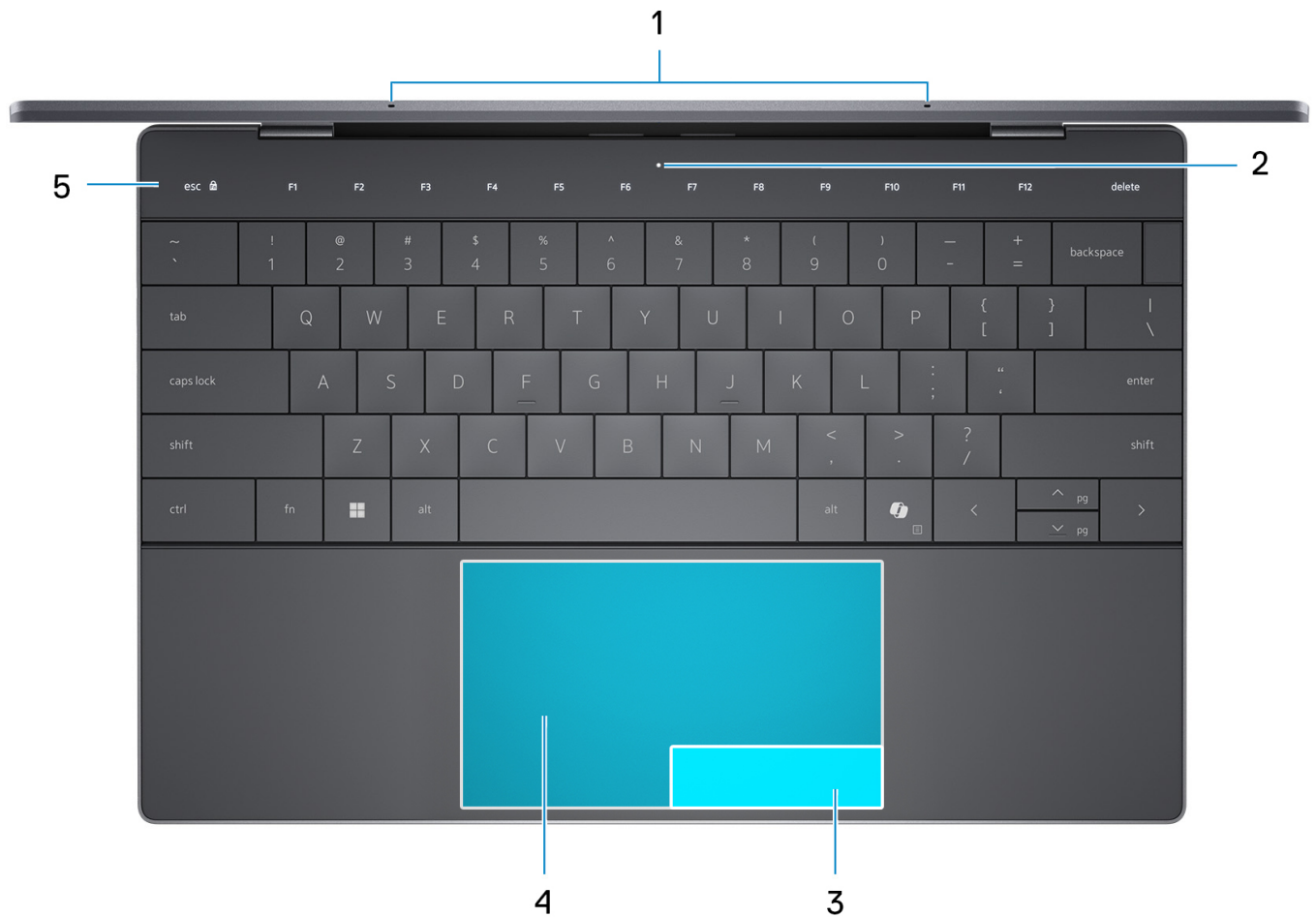


Figure 3. Top view

1. Microphones (2)

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

2. Service LED

The service LED is used for troubleshooting with a Dell service representative. The LED emits amber or white light.

3. Right-click area of the touchpad

Move your finger on the touchpad within this area to control the cursor. Tap this area to right-click.

4. Left-click area of the touchpad

Move your finger on the touchpad within this area to control the cursor. Tap this area to left-click.

5. Capacitive touch function row

Displays media and display control keys or standard function keys, with **esc** and **delete** keys.

Press and hold the **fn** key on the physical keyboard to switch to the next set of keys.

Press the **fn** key on the physical keyboard and the **esc** key on the capacitive touch function row to switch to the next set of keys and lock the mode of the panel.

Front



Figure 4. Front view

1. Infrared emitter

Emits infrared light, which enables the infrared camera to sense and track motion.

NOTE: The infrared emitter is not available if the camera is not in the configuration ordered.

2. Infrared camera

Enhances security when paired with Windows Hello face authentication.

3. RGB camera

Enables you to video chat, capture photos, and record videos in an RGB camera.

4. Camera-status light

Turns on when the camera is in use.

NOTE: The camera-status light is not available if the camera is not in the configuration ordered.

5. Ambient-light sensor

The sensor detects the ambient light and automatically adjusts the keyboard backlight and display brightness.

6. Infrared emitter

Emits infrared light, which enables the infrared camera to sense and track motion.

NOTE: The infrared emitter is not available if the camera is not in the configuration ordered.

Bottom



Figure 5. Bottom view

1. Left speaker

Provides audio output.

2. MyDell QR code

MyDell is your hub for content personalized to your XPS 13 9350, including videos, articles, manuals, and easy access to support.

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. Right speaker

Provides audio output.

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

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. The Express Service Code is a numeric version of the Service Tag.

For more information about how to find the Service Tag of your computer, search in the Knowledge Base Resource at the [Dell Support Site](#).



Figure 6. Service Tag/Express Service Code location

Set up your XPS 13 9350

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 7. 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 an existing Microsoft account or create an 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 1. Locate Dell apps


Resources	Description
	<p>MyDell (replaced with Dell Optimizer)</p> <p>MyDell (replaced with Dell Optimizer) provides a consolidated application experience housing capability that helps you get the most out of your computer. Intelligent, AI-based optimization features automatically fine-tune your computer for the best audio, video, battery, and performance. Each MyDell (replaced with Dell Optimizer) user experience is unique as the software learns and responds to the way you use your computer.</p> <ul style="list-style-type: none"> • Applications • Audio • Power • Color and Display • Presence detection • Network <p>For more information about how to use MyDell (replaced with Dell Optimizer), see product guides at Dell Support Site.</p>
	<p>Dell Product Registration</p> <p>Register your computer with Dell.</p>
	<p>Dell Help & Support</p> <p>Access help and support for your computer.</p>
	<p>SupportAssist</p> <p>SupportAssist proactively and predictively identifies hardware and software issues on your computer and automates the engagement process with Dell Technical support. It also 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 Dell Support Site.</p> <p> NOTE: In SupportAssist, click the warranty expiry date to renew or upgrade your warranty.</p>
	<p>Dell Update</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 Dell Support Site.</p>
	<p>Dell Digital Delivery</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 Dell Support Site.</p>

Specifications of XPS 13 9350

Dimensions and weight

The following table lists the height, width, depth, and weight of your XPS 13 9350.

Table 2. Dimensions and weight

Description	Values
Height	<ul style="list-style-type: none"> 15.30 mm (0.60 in.): For computers shipped with FHD+ or QHD+ display 14.80 mm (0.50 in.): For computers shipped with OLED display
Width	295.30 mm (11.63 in.)
Depth	199.10 mm (7.84 in.)
Weight  NOTE: The weight of your computer depends on the configuration that is offered.	<ul style="list-style-type: none"> 1.19 kg (2.62 lb): For computers shipped with FHD+ or QHD+ display 1.18 kg (2.59 lb): For computers shipped with OLED display

Processor

The following table lists the details of the processors that are supported in your XPS 13 9350.

Table 3. Processor

Description	Option one	Option two	Option three	Option four	Option five
Processor type	Intel Core Ultra 5 226V	Intel Core Ultra 7 256V	Intel Core Ultra7 258V	Intel Core Ultra7 268V	Intel Core Ultra9 288V
Processor wattage	17 W	17 W	17 W	17 W	30 W
Processor core count	8	8	8	8	8
Processor thread count	8	8	8	8	8
Processor speed	Up to 4.5 GHz	Up to 4.8 GHz	Up to 4.8 GHz	Up to 5.0 GHz	Up to 5.1 GHz
Processor cache	8 MB	12 MB	12 MB	12 MB	12 MB
Integrated graphics	<ul style="list-style-type: none"> Intel Arc Graphics 130V Intel Arc Graphics 140V 	<ul style="list-style-type: none"> Intel Arc Graphics 130V Intel Arc Graphics 140V 	<ul style="list-style-type: none"> Intel Arc Graphics 130V Intel Arc Graphics 140V 	<ul style="list-style-type: none"> Intel Arc Graphics 130V Intel Arc Graphics 140V 	<ul style="list-style-type: none"> Intel Arc Graphics 130V Intel Arc Graphics 140V

Chipset

The following table lists the details of the chipset that is supported in your XPS 13 9350.

Table 4. Chipset

Description	Values
Chipset	Integrated in the processor
Processor	Intel Core Ultra 5/7/9
DRAM bus width	128-bit
Flash EPROM	64 MB
PCIe bus	Up to Gen4

Operating system


Your XPS 13 9350 supports the following operating systems:

- Windows 11 Pro
- Windows 11 Pro National Education
- Windows 11 Home
- Windows 11 Enterprise
- Ubuntu Linux 24.04 LTS

Memory

The following table lists the memory specifications of your XPS 13 9350.






Table 5. Memory specifications

Description	Values
Memory slots	No memory slots  NOTE: The memory is integrated in the processor and is not upgradeable.
Memory type	LPDDR5x
Memory speed	8533 MT/s
Maximum memory configuration	32 GB
Minimum memory configuration	16 GB
Memory configurations supported	<ul style="list-style-type: none">• 16 GB: LPDDR5x, 8533 MT/s (Computers shipped with Intel Core Ultra 5 226V and Intel Core Ultra 7 256V processors)• 32 GB: LPDDR5x, 8533 MT/s (Computers shipped with Intel Core Ultra 7 258V/268V processors and Intel Core Ultra 9 288V processor)

External ports and slots

The following table lists the external ports and slots on your XPS 13 9350.


Table 6. External ports and slots

Description	Values
USB ports	Two Thunderbolt 4 ports with Power Delivery (Type-C)  NOTE: Connect the USB Type-C power adapter to only one of the two USB Type-C ports.  NOTE: You can connect a Dell Docking Station to these ports. For more information, search in the Knowledge Base Resource at Dell Support Site .
Audio port	Two Thunderbolt 4 ports with Power Delivery (Type-C)  NOTE: A USB-C to 3.5 mm AUX audio adapter can be purchased separately to connect an audio device.
Video port(s)	Two Thunderbolt 4 ports with Power Delivery (Type-C)  NOTE: A USB-C to DisplayPort adapter (sold separately) is required to connect a DisplayPort device.
Media-card reader	Not applicable
Power-adapter port	USB power input  NOTE: You can connect a Dell Docking Station to this port. For more information, search in the Knowledge Base Resource at Dell Support Site .
Security-cable slot	Not applicable

Internal slots

The following table lists the internal slots of your XPS 13 9350.

Table 7. Internal slots

Description	Values
M.2	One M.2 slot for M.2 2230 or M.2 2280 solid-state drive  NOTE: To learn more about the features of different types of M.2 cards, search in the Knowledge Base Resource at Dell Support Site .

Wireless module

The following table lists the Wireless Local Area Network (WLAN) module that is supported on your XPS 13 9350.

Table 8. Wireless module specifications

Description	Values
Model number	Intel BE201
Transfer rate	Up to 5760 Mbps


Table 8. Wireless module specifications (continued)

Description	Values
Frequency bands supported	2.4 GHz/5 GHz/6 GHz
Wireless standards	<ul style="list-style-type: none"> • WiFi 802.11a/b/g • Wi-Fi 4 (WiFi 802.11n) • Wi-Fi 5 (WiFi 802.11ac) • Wi-Fi 6 (WiFi 802.11ax) • Wi-Fi 7 (WiFi 802.11be)
Encryption	<ul style="list-style-type: none"> • 64-bit/128-bit WEP • AES-CCMP • TKIP
Bluetooth wireless card	Bluetooth 5.4 wireless card

Audio

The following table lists the audio specifications of your XPS 13 9350.

Table 9. Audio specifications

Description	Values				
Audio controller	Realtek ALC1318				
Stereo conversion	Supported				
Internal audio interface	SoundWire				
External audio interface	Two Thunderbolt 4 USB Type-C ports with Power Delivery  NOTE: A USB-C to 3.5 mm AUX audio adapter can be purchased separately to connect an audio device.				
Number of speakers	<ul style="list-style-type: none"> • Two tweeter speakers • Two woofer speakers 				
External-speaker amplifier	Supported				
External volume controls	Keyboard shortcut controls				
Speaker output:					
	<table> <tr> <td>Average</td><td> <ul style="list-style-type: none"> • 2 W + 2 W (tweeter) • 2 W + 2 W (woofer) </td></tr> <tr> <td>Peak</td><td> <ul style="list-style-type: none"> • 2.5 W + 2.5 W (tweeter) • 2.5 W + 2.5 W (woofer) </td></tr> </table>	Average	<ul style="list-style-type: none"> • 2 W + 2 W (tweeter) • 2 W + 2 W (woofer) 	Peak	<ul style="list-style-type: none"> • 2.5 W + 2.5 W (tweeter) • 2.5 W + 2.5 W (woofer)
Average	<ul style="list-style-type: none"> • 2 W + 2 W (tweeter) • 2 W + 2 W (woofer) 				
Peak	<ul style="list-style-type: none"> • 2.5 W + 2.5 W (tweeter) • 2.5 W + 2.5 W (woofer) 				
Microphone	Dual digital-array microphones				

Storage

This section lists the storage options on your XPS 13 9350.

Your XPS 13 9350 supports one of the following storage configurations:

- One M.2 2230 solid-state drive

- One M.2 2280 solid-state drive

Table 10. Storage specifications

Storage type	Interface type	Capacity
M.2 2230 solid-state drive	Gen4 PCIe NVMe	<ul style="list-style-type: none"> • 512 GB • 1 TB
M.2 2280 solid-state drive	Gen4 PCIe NVMe	<ul style="list-style-type: none"> • 2 TB • 4 TB

Keyboard

The following table lists the keyboard specifications of your XPS 13 9350.

Table 11. Keyboard specifications

Description	Values
Keyboard type	Backlit keyboard with Copilot key <i>i</i> NOTE: The top row of the keyboard is a capacitive touch panel. It can display standard Function buttons or media and display control buttons.
Keyboard layout	QWERTY
Number of keys	<ul style="list-style-type: none"> • Arabic, Canada Bilingual (MUI), Chinese Traditional, English International, English US, Hebrew, and Korean: 64 keys • Czech and Slovakian (MUI), English UK, French European, German, Hungarian, Italian, Nordic (MUI), Portuguese Brazil, Portuguese Iberian, Spanish Castillian, Spanish Latin America, Swiss European (MUI), and Turkish: 65 keys • Japanese: 68 keys
Key pitch	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><i>i</i> NOTE: You can define the primary behavior of the function keys (F1–F12) changing Function Key Behavior in BIOS Setup program.</p> <p><i>i</i> NOTE: If Copilot in Windows is not available on your computer, the Copilot key launches Windows Search. For more information about Copilot in Windows, search in the Knowledge Base Resource at the Dell Support Site.</p>

Keyboard shortcuts of XPS 13 9350

i **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 top row of the keyboard is a capacitive touch panel. The **fn** mechanical key toggles between the keys **F1-F12** and keys for multimedia control. Releasing the **fn** key switches back to the previous mode.

Pressing the **fn** key and the **esc** key locks the "mode" of the capacitive touch panel. If the computer restarts, the default mode is the last mode set by the user before the computer is restarted.

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

Table 12. List of keyboard shortcuts

Keyboard shortcut	Behavior
Copilot	Launch Copilot in Windows. NOTE: If Copilot in Windows is not available on your computer, the Copilot key launches Windows Search. For more information about Copilot in Windows, search in the Knowledge Base Resource at Dell Support Site .
fn	Switch between modes of the capacitive touch panel
fn + B	Pause
fn + S	Toggle scroll lock.
fn + R	System request
fn + ctrl + B	Break
fn + esc	Lock the mode of the capacitive touch panel.
fn + left arrow	Home
fn + left arrow	End

Camera

The following table lists the camera specifications of your XPS 13 9350.

Table 13. Camera specifications

Description	Values
Number of cameras	Two
Camera type	<ul style="list-style-type: none"> FHD RGB camera IR camera
Camera location	Front camera
Camera sensor type	CMOS sensor technology
Camera resolution:	
Still image	0.92 megapixel
Video	1280 x 720 at 30 fps
Infrared camera resolution:	
Still image	0.25 megapixel
Video	640 x 400 at 15 fps
Diagonal viewing angle:	

Table 13. Camera specifications (continued)

Description		Values
	Camera	75.8 degrees
	Infrared camera	75.8 degrees

Touchpad

The following table lists the touchpad specifications of your XPS 13 9350.

Table 14. Touchpad specifications

Description		Values
Touchpad resolution:		
	Horizontal	1300
	Vertical	722
Touchpad dimensions:		
	Horizontal	112.30 mm (4.42 in.)
	Vertical	64.15 mm (2.53 in.)
Touchpad gestures		For more information about the touchpad gestures that are available on: <ul style="list-style-type: none"> Windows, see the Microsoft Knowledge Base article at Microsoft Support Site. Ubuntu, see Ubuntu Support Site.


Power adapter

The following table lists the power adapter specifications of your XPS 13 9350.

Table 15. Power-adapter specifications

Description		Values
Type		60 W AC adapter, USB Type-C
Power-adapter dimensions:		
	Height	22 mm (0.87 in.)
	Width	55 mm (2.17 in.)
	Depth	66 mm (2.59 in.)
Input voltage		100 VAC–240 VAC
Input frequency		50 Hz–60 Hz
Input current (maximum)		1.70 A
Output current (continuous)		3 A
Rated output voltage		<ul style="list-style-type: none"> 20 VDC

Table 15. Power-adaptor specifications (continued)

Description		Values
		<ul style="list-style-type: none"> • 15 VDC • 9 VDC • 5 VDC
Temperature range:		
	Operating	0°C to 40°C (32°F to 104°F)
	Storage	-20°C to 70°C (-4°F to 158°F)
 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.		

Battery

The following table lists the battery specifications of your XPS 13 9350.

Table 16. Battery specifications




Description		Values
Battery type		3-cell, 55 Wh "smart" lithium-ion
Battery voltage		11.55 VDC
Battery weight (maximum)		0.22 kg (0.48 lb)
Battery dimensions:		
	Height	97.41 mm (3.84 in.)
	Width	238.40 mm (9.39 in.)
	Depth	4.86 mm (0.19 in.)
Temperature range:		
	Operating	0°C to 65°C (32°F to 149°F)
	Storage	-20°C to 65°C (-4°F to 149°F)
Battery operating time		Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.
Battery charging time (approximate)  NOTE: You can 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 Dell Support Site .		2 hours (when the computer is off)
Coin-cell battery		Not applicable
 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.		

Table 16. Battery specifications (continued)

Description	Values
 CAUTION: Dell Technologies recommends that you charge the battery regularly for optimal power consumption.	

Display

The following table lists the display specifications of your XPS 13 9350.

Table 17. Display specifications

Description		Option one	Option two	Option three
Display type		Full High Definition (FHD+), Eyesafe, low blue light	Quad High Definition (QHD+), Eyesafe, low blue light	OLED, Eyesafe, low blue light
Touch options		No	Yes	Yes
Display-panel technology		Wide Viewing Angle (WVA)	Wide Viewing Angle (WVA)	Wide Viewing Angle (WVA)
Display-panel dimensions (active area):				
	Height	288 mm (11.34 in.)	288 mm (11.34 in.)	288 mm (11.34 in.)
	Width	180 mm (7.09 in.)	180 mm (7.09 in.)	180 mm (7.09 in.)
	Diagonal	339.60 mm (13.37 in.)	339.60 mm (13.37 in.)	339.60 mm (13.37 in.)
Display-panel native resolution		1920x1200	2560x1600	2880x1800
Luminance (typical)		500 nits	500 nits	400 nits
Megapixels		2.304	4.096	5.184
Color gamut		100% sRGB	100% DCI-P3	100% DCI-P3
Pixels Per Inch (PPI)		169	225	254
Contrast ratio (typical)		2000:1	2000:1	1000000:1
Response time (maximum)		35 millisecond	35 millisecond	2 millisecond
Refresh rate		120 Hz (maximum)	120 Hz (maximum)	60 Hz
Horizontal view angle		85 degrees	85 degrees	85 degrees
Vertical view angle		85 degrees	85 degrees	85 degrees
Pixel pitch		0.150 mm	0.1125 mm	0.10002 mm
Power consumption (maximum)		2.20 W	3.91 W	6.07 W
Anti-glare vs glossy finish		Anti-glare	Anti-reflective	Anti-reflective

Fingerprint reader

The following table lists the fingerprint-reader specifications of your XPS 13 9350.


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

Table 18. Fingerprint reader specifications

Description	Values
Sensor technology	Trans-capacitive sensing
Sensor resolution	500 dpi
Sensor pixel size	88 x 108

Sensor

The following table lists the sensor of your XPS 13 9350.

Table 19. Sensor

Sensor support
Ambient Light Sensor
Adaptive Thermal Performance
Dell ExpressSign-in 2.0 (using Intel Camera Sensing Technology)
Wake/Power on with lid open
Hall sensor

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your XPS 13 9350.

Table 20. GPU—Integrated

Controller	Memory size	Processor
<ul style="list-style-type: none">Intel Arc Graphics 130VIntel Arc Graphics 140V	Shared system memory	Intel Core Ultra 5/7/9

Multiple display support matrix

The following table lists the multi-monitor support matrix that is supported by your XPS 13 9350.

Table 21. Integrated - Multiple display support matrix

Description	Values
Video ports on Integrated Graphics Card	Two Thunderbolt 4 ports with Power Delivery
Number of displays (with computer internal display on)	Two 4K external displays using the Thunderbolt 4 (USB-C) ports available on your XPS 13 9350.
Number of displays (with computer internal display off)	Three 4K external displays, one 5K, or one 8K and above displays using the Thunderbolt 4 (USB-C) ports available on your XPS 13 9350

Table 21. Integrated - Multiple display support matrix (continued)

Description	Values
Supported 5K Displays	One 5K monitor

Hardware security

The following table lists the hardware security of your XPS 13 9350.

Table 22. Hardware security


Hardware security
NIST 800-147 protocol
Trusted Platform Module (TPM) 2.0 FIPS-140-2 Certified/TCG Certified
Touch Fingerprint Reader (in Power Button) with Control Vault 3.0 Advanced Authentication with FIPS 140-2 Level 3 Certification
Face IR camera (Windows Hello compliant) with ExpressSign-in 2.0 (Camera Sensing) (Optional)
Intel Platform Trust Technology
Support for Absolute module interface and external SmartCard Reader

Operating and storage environment

This table lists the operating and storage specifications of your XPS 13 9350.

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

Table 23. Computer environment

Description	Operating	Storage
Temperature range	0°C to 35°C (32°F to 95°F)	-40°C to 65°C (-40°F to 149°F)
Relative humidity (maximum)	10% to 90% (non-condensing)	0% to 95% (non-condensing)
Vibration (maximum)*	0.66 GRMS	1.30 GRMS
Shock (maximum)	110 G†	160 G†
Altitude range	-15.2 m to 3048 m (-49.87 ft to 10,000 ft)	-15.20 m to 10,668 m (-49.87 ft to 35,000 ft)
 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.		

* 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](#).

Dell low blue light display

 **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:** You should only perform troubleshooting and repairs as authorized or directed by the Dell technical support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. 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:** To avoid damaging the components and cards, handle them by their edges, and avoid touching the pins and the contacts.



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

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

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

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 instructions.
3. Turn off all the attached peripherals.
4. Disconnect your computer from the electrical outlets.
5. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.
6. Remove any media card and optical drive from your computer, if applicable.
7. Enter the Service Mode.

Service Mode

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



CAUTION: If you are unable to turn on the computer to put it into 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 power adapter is disconnected.

- a. Press and hold the B key and the power button for 3 seconds or until the Dell logo appears on the screen.
- b. Press any key to continue.
- c. If the power adapter is not disconnected, a message prompting you to disconnect the power adapter appears on the screen. Disconnect the power adapter and then press any key to enter into the Service Mode. 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.
The computer shuts down and enters the Service Mode.

Safety precautions

This section details the primary steps to be followed 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 from AC power.
- Disconnect all network cables and peripherals from the computer.
- Use an ESD field service kit when working inside any to avoid electrostatic discharge (ESD) damage.
- Place the removed component on an anti-static mat after removing it from the computer.
- Wear shoes with nonconductive 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 back cover. Systems that are equipped with 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. Ensure that the wrist strap is secure and in full contact with your skin. Remove all jewelry, watches, bracelets, or rings before grounding yourself and the equipment.

Electrostatic discharge—ESD protection

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

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 module that has

received a static shock and immediately generates a "No POST/No Video" symptom with a beep code that is emitted for missing or nonfunctional memory.

- **Intermittent** – Intermittent failures represent approximately 80 percent of ESD-related failures. The high rate of intermittent failures means that most of the time when damage occurs, it is not immediately recognizable. The memory module receives a static shock, but the tracing is merely weakened and does not immediately produce outward symptoms that are related to the damage. The weakened trace may take weeks or months to melt, and in the meantime may cause degradation of memory integrity, intermittent memory errors, and so on.


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

Perform the following steps to prevent ESD damage:

- Use a wired ESD wrist strap that is properly grounded. Wireless anti-static straps do not provide adequate protection. Touching the chassis before handling parts does not ensure adequate ESD protection on parts with increased sensitivity to ESD damage.
- Handle all static-sensitive components in a static-safe area. If possible, use anti-static floor pads and workbench pads.
- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the anti-static packing material until you are ready to install the component. Before unwrapping the anti-static packaging, use the anti-static wrist strap to discharge the static electricity from your body. For more information about the wrist strap and ESD wrist strap tester, see [Components of an ESD Field Service Kit](#).
- Before transporting a static-sensitive component, place it in an anti-static container or packaging.

ESD Field Service kit

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

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

Working Environment

Before 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 component using the same ESD bag and packaging that the new part arrived in. The ESD bag should be folded over and taped shut and all the same foam packing material should be used in the original box that the new part arrived in. ESD-sensitive devices should be removed from packaging only at an ESD-protected work surface, and parts should never be placed on top of the ESD bag because only the inside of the bag is shielded. Always place parts in your hand, on the anti-static mat, in the computer, or inside an ESD bag.


Components of an ESD Field Service kit

The components of an ESD Field Service kit are:

- **Anti-Static Mat** – The anti-static mat is dissipative and parts can be placed on it during service procedures. When using an anti-static mat, your wrist strap should be snug and the bonding wire should be connected to the anti-static mat and to any bare metal on the computer being worked on. Once deployed properly, service parts can be removed from the ESD bag and placed directly on the anti-static mat. ESD-sensitive items are safe in your hand, on the anti-static mat, in the computer, or inside an ESD bag.
- **Wrist Strap and Bonding Wire** – The wrist strap and bonding wire can be either directly connected between your wrist and bare metal on the hardware if the anti-static mat is not required, or connect 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 anti-static mat, and the hardware is known as bonding. Use only Field Service kits with a wrist strap, anti-static mat, and

bonding wire. Never use wireless wrist straps. Always be cautious that the internal wires of a wrist strap are prone to damage from normal wear and tear, and must be checked regularly with a wrist strap tester in order to avoid accidental ESD hardware damage. It is recommended to test the wrist strap and bonding wire at least once per week.

- **ESD Wrist Strap Tester** – The wires inside an ESD strap are prone to damage over time. When using an unmonitored kit, it is a best practice to regularly test the strap prior to each service, and at a minimum, test once per week. A wrist strap tester is the best method for doing this test. To perform the test, plug the bonding-wire of the 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.

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

Transporting sensitive components

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

After working inside your computer

About this task

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


Steps

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

BitLocker

 **CAUTION:** If BitLocker is not suspended before updating the BIOS, the Bitlocker key is not recognized the next time you reboot the computer. You will then be prompted to enter the recovery key to progress, and the system displays a prompt for the recovery key on each reboot. If the recovery key is not known, this can result in data loss or an operating system reinstall. For more information, 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
- Torx #5 (T5) screwdriver
















Screw list

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

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

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

Table 24. Screw list

Component	Screw type	Quantity	Screw image
Base cover	M2x3, T5	6	
Battery	M1.6x2.5	6	
Battery-connector bracket	M1.6x2 (captive)	1	
Solid state drive shield	M2x3	1	
Fans	M1.6x2.5	4	
Heat sink	Captive	4	
Display-assembly cable bracket	M1.6x2 (captive)	3	
Display-assembly cable holder	M1.6x2.5	3	
Display-assembly hinges	M2.5x5	6	
Wireless-card bracket	M1.6x2.3	1	
Type-C bracket	M1.6x3	4	
System board	M1.6x2.3	7	
Power button with fingerprint reader	M1.4x2	4	
Keyboard	M1.4x1.2	17	
Keyboard	M1.6x2	7	

Major components of XPS 13 9350

The following image shows the major components of XPS 13 9350.

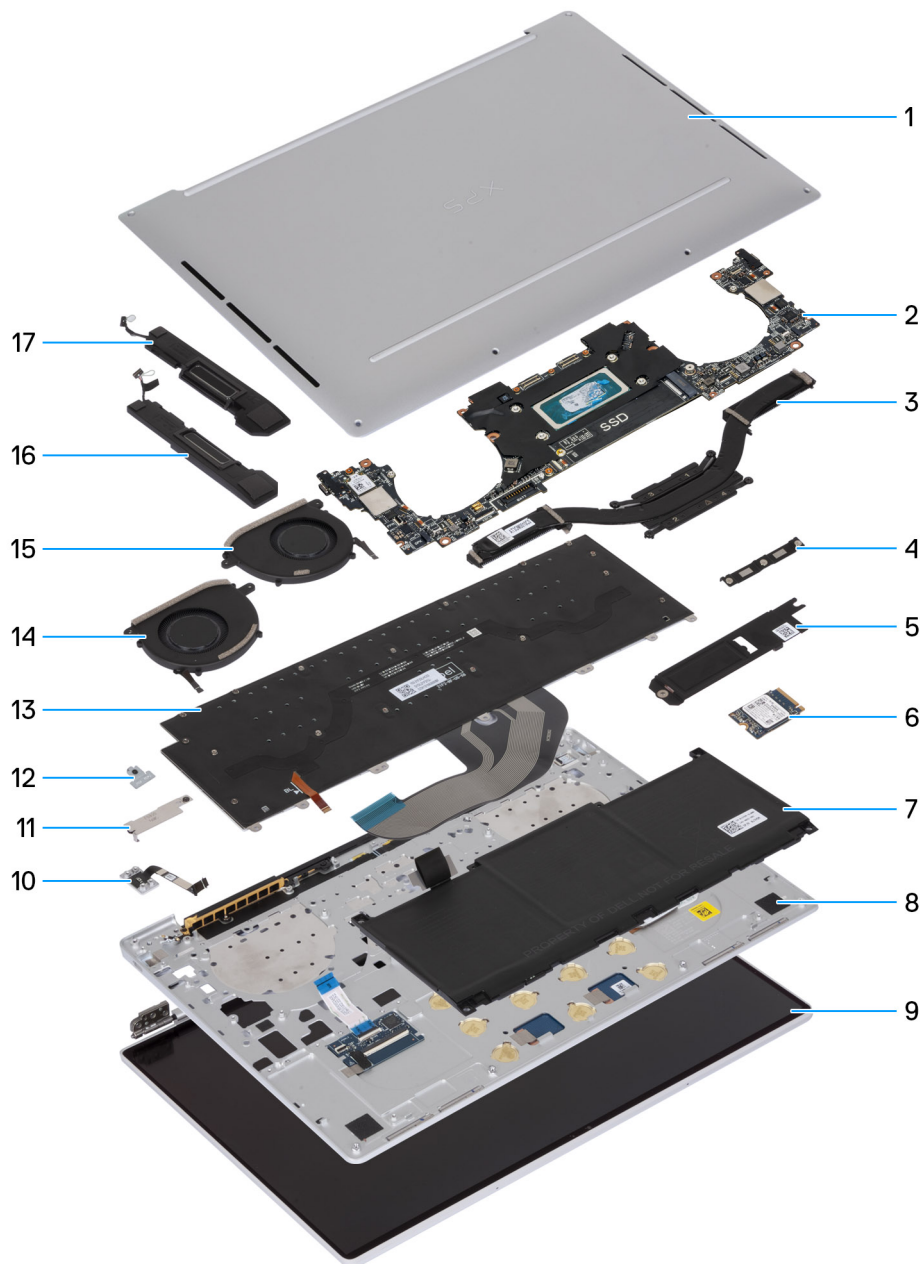



Figure 8. Major components of your computer

1. Base cover
2. System board
3. Heat sink
4. Display assembly-cable bracket
5. M.2 solid state drive thermal plate
6. M.2 solid state drive
7. Battery
8. Palm-rest assembly
9. Display assembly
10. Power button with fingerprint reader


11. Battery-connector bracket
12. Wireless-module bracket
13. Keyboard
14. Right fan
15. Left fan
16. Right speaker
17. Left speaker

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

Removing and installing Field Replaceable Units (FRUs)


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

 **CAUTION:** The information in this 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.


Base cover

Removing the base cover

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

Prerequisites

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

 **NOTE:** Ensure that your computer is in Service Mode. For more information, see [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.



6x
M2x3, T5



Figure 9. Removing the base cover



Figure 10. Removing the base cover



Figure 11. Removing the base cover

Steps

1. Remove the six screws (M2x3, T5) that secure the base cover to the palm-rest and keyboard assembly.

NOTE: A Torx #5 (T5) screwdriver is necessary to remove the six screws (M2x3, Torx 5).

2. Place your thumbs and fingers into the recess at the top edge of the base cover.
3. Use both thumbs to pry the base cover to release it from the palm-rest and keyboard assembly.

NOTE: Do not pull on or pry the base cover from where the display assembly hinges are located, doing so may damage the base cover.

4. Hold the base cover on both the sides and lift the base cover off the palm-rest and keyboard assembly.

Installing the base cover

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 base cover and provide a visual representation of the installation procedure.



Figure 12. Installing the base cover

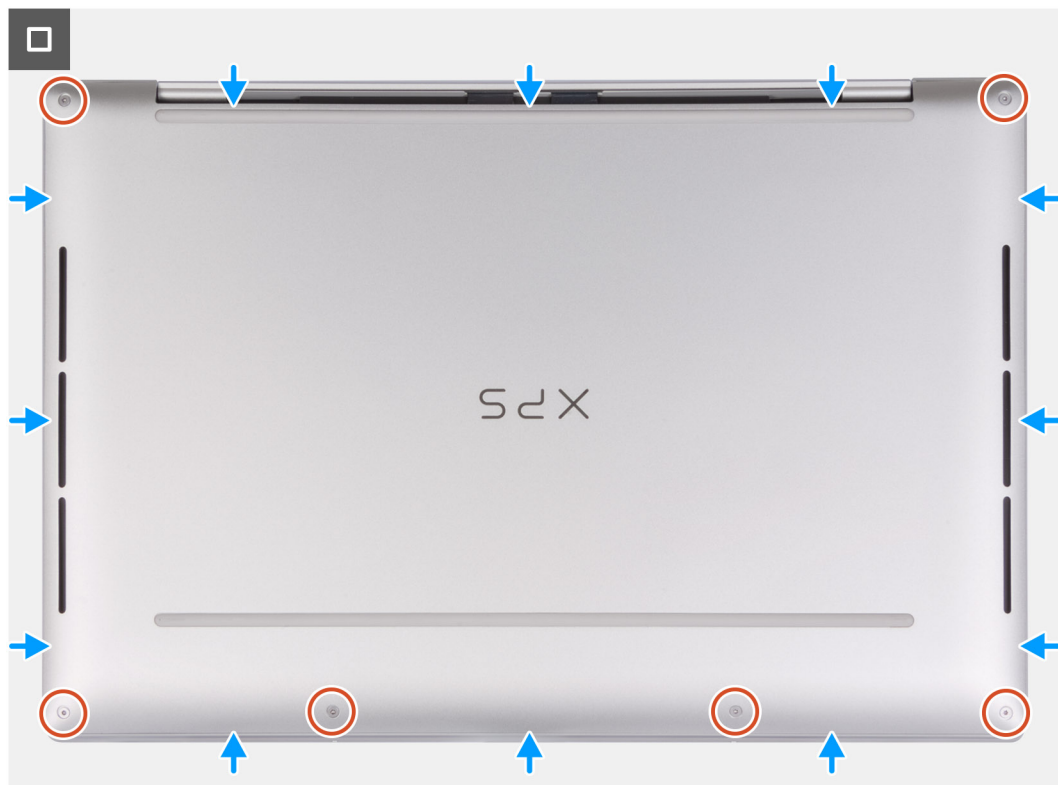


Figure 13. Installing the base cover

Steps

1. Align the screw holes on the base cover with the screw holes on the palm-rest and keyboard assembly.
2. Snap the base cover into place on the palm-rest and keyboard assembly.
3. Replace the six screws (M2x3, T5) that secure the base cover to the palm-rest and keyboard assembly.

NOTE: A Torx #5 (T5) screwdriver is necessary to install the six screws (M2x3, Torx 5).

Next steps

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

Battery

Rechargeable Li-ion battery precautions

CAUTION:

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

- To prevent accidental puncture or damage to the battery and other components, ensure that no screws are lost or misplaced during the servicing of this product.
- 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 images indicate the location of the battery and provide a visual representation of the removal procedure.

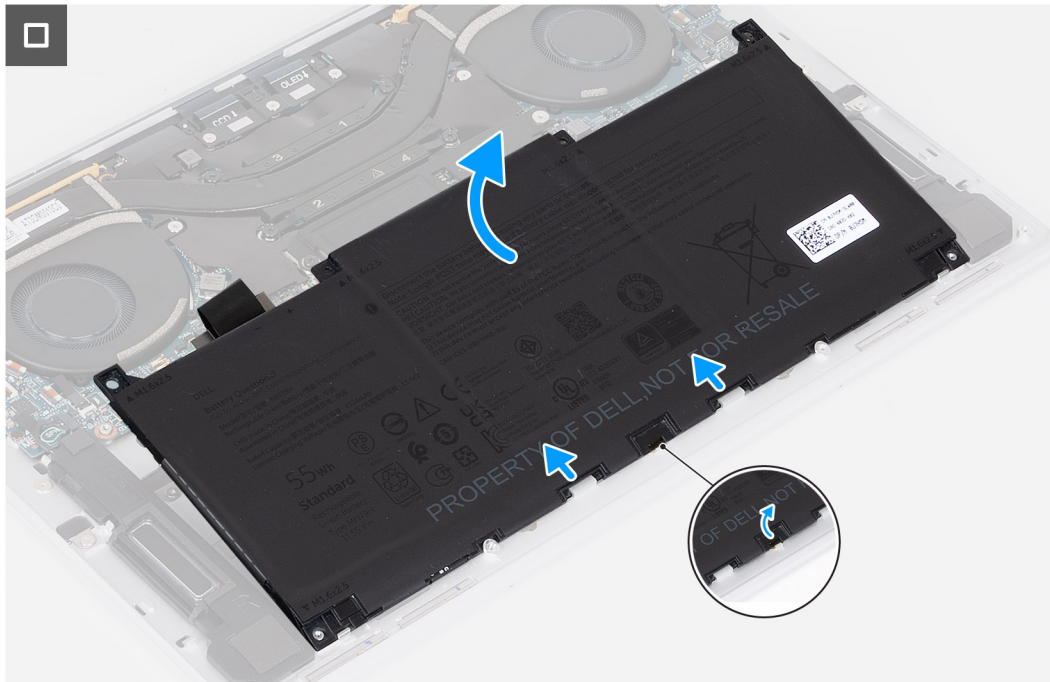


Figure 15. Removing the battery

Steps

1. Loosen the captive screw (M1.6x2) that secures the battery-connector bracket to the system board.
2. Slide the battery-connector bracket towards the bottom side of the chassis and lift the bracket off the system board.

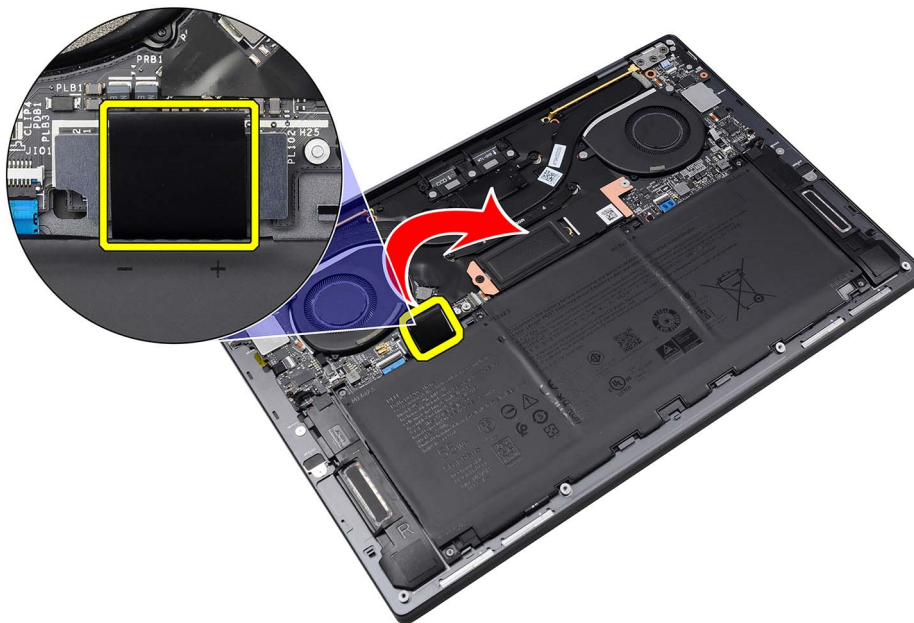


Figure 16. Removing the battery-connector bracket

3. Use the pull tab on the battery cable to disconnect it from the battery connector (BATT).
4. Remove the six screws (M1.6x2.5) that secure the battery to the palm-rest and keyboard assembly.
5. Use the pull tab to lift the battery from the top to release it from the tabs at the bottom of the palm-rest and keyboard assembly.

CAUTION: Do not lift the battery at more than an angle of 30 degrees to avoid damage to the battery and the palm-rest and keyboard assembly.

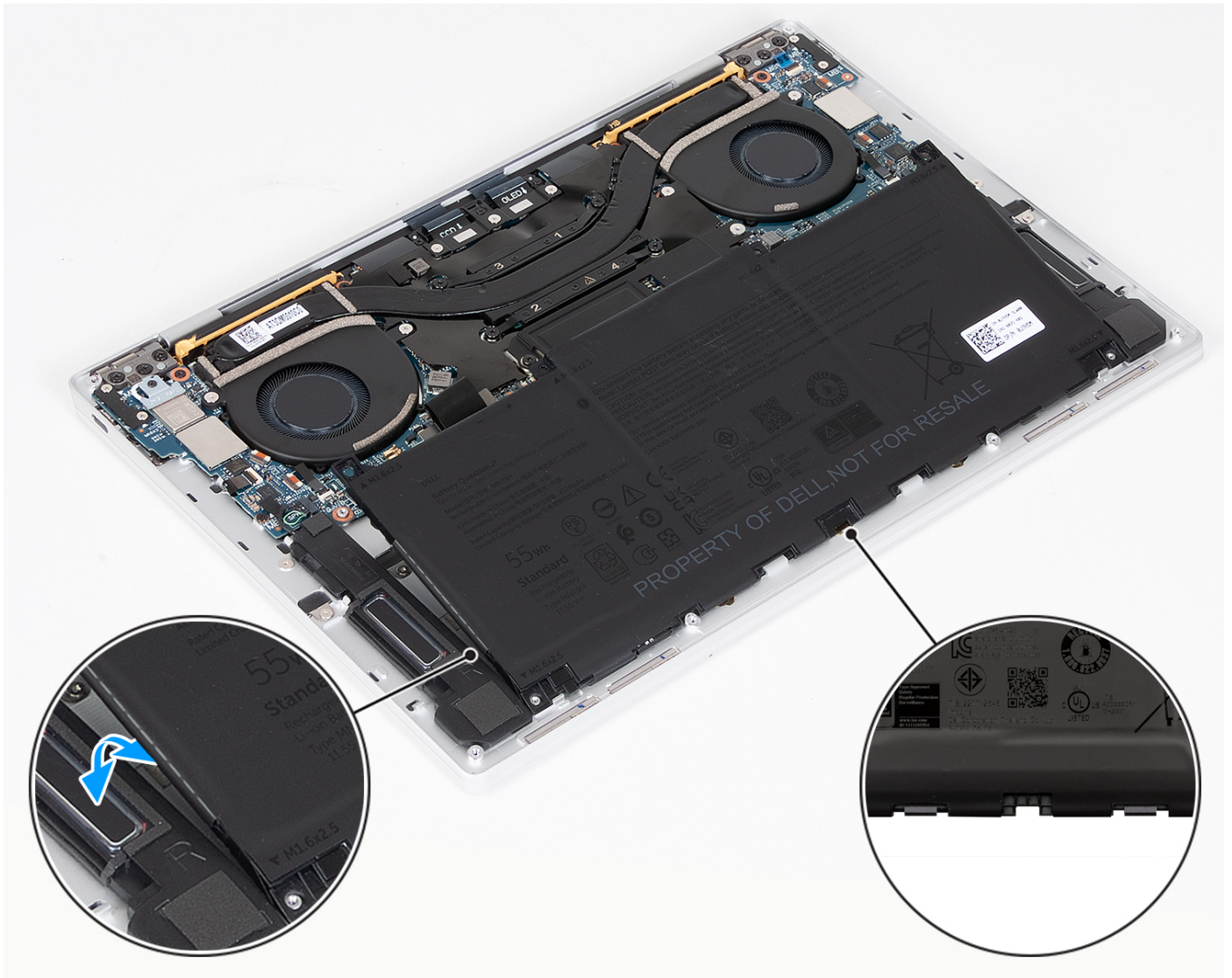


Figure 17. Lift the battery at an angle less than 30 degrees

6. Slide and lift the battery off the palm-rest and keyboard assembly.

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 images indicate the location of the battery and provide a visual representation of the installation procedure.

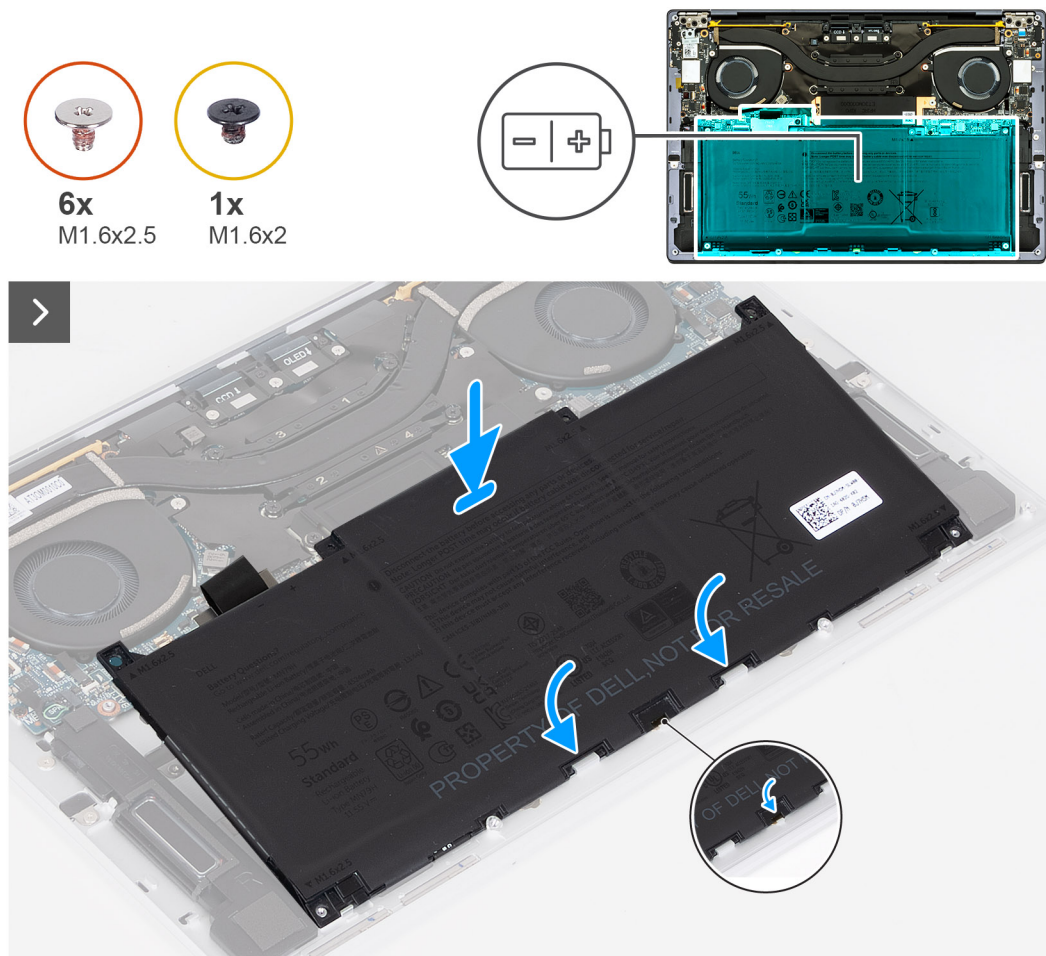


Figure 18. Installing the battery

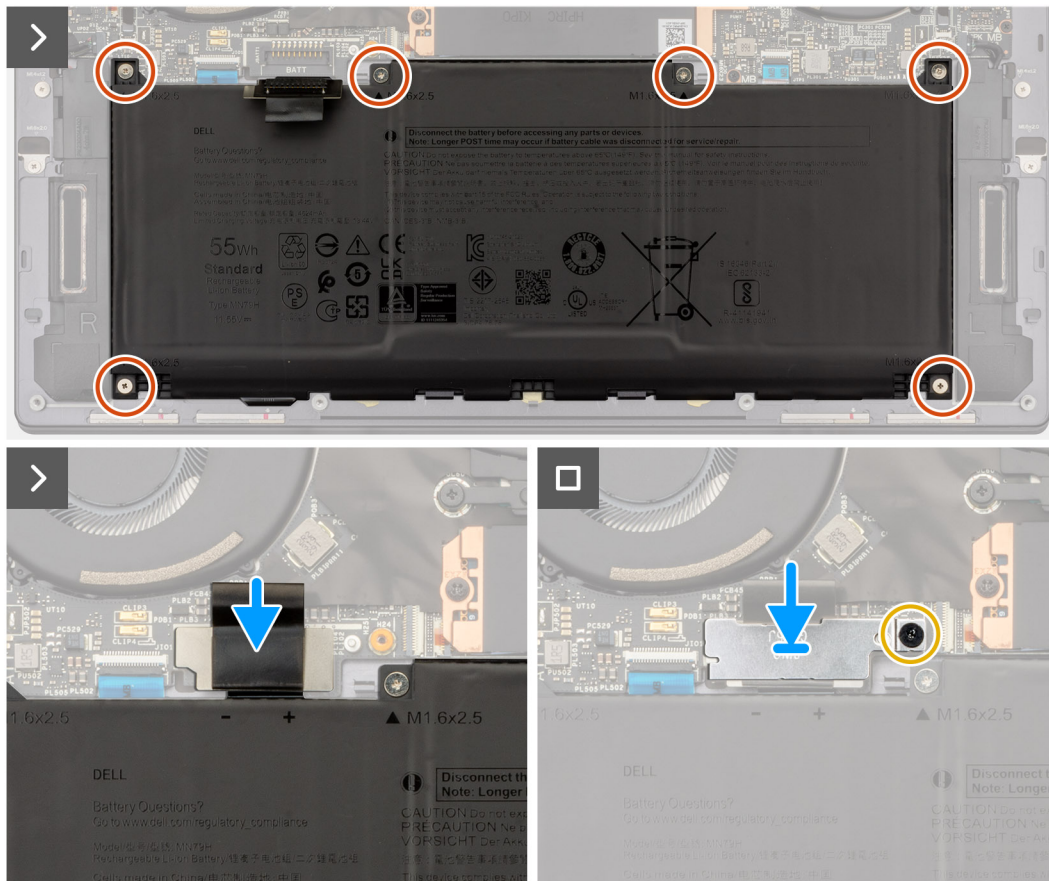


Figure 19. Installing the battery

Steps

1. Align the battery at an angle and slide it to the two 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 six screws (M1.6x2.5) to secure the battery to the palm-rest and keyboard assembly.
4. Connect the battery cable to the connector (BATT) on the system board.
5. Line up the battery-connector bracket over the battery connector on the system board.
6. Slide the hook of the battery-connector bracket under the system board.
7. Using the alignment post, place the battery-connector bracket and tighten the captive screw (M1.6x2) to secure the battery-connector bracket to the system board.

Next steps

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

Solid-state drive

Removing the M.2 2230 solid state drive (SSD)

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: Depending on the configuration ordered, your computer may support an M.2 2230 SSD or an M.2 2280 SSD.

NOTE: This procedure applies only to computers shipped with an M.2 2230 SSD.

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

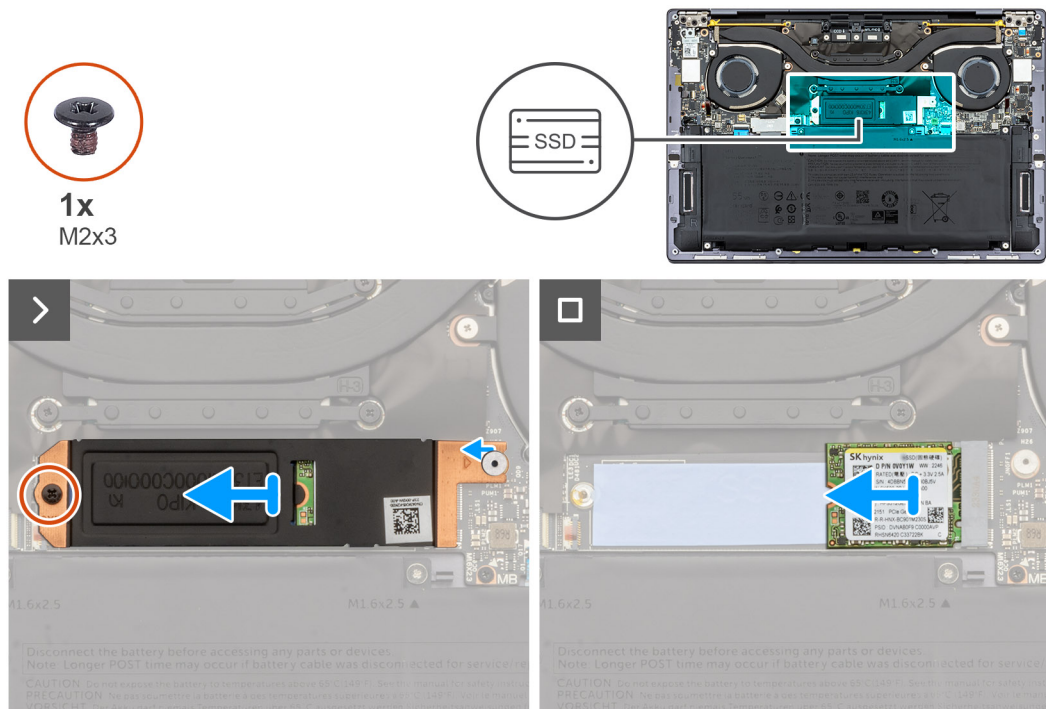


Figure 20. Removing the M.2 2230 SSD

Steps

1. Remove the screw (M2x3) that secures the M.2 SSD thermal shield to the system board.
2. Slide and remove the M.2 SSD thermal shield off the system board.
3. Lift and slide the M.2 2230 SSD out of the SSD slot.

NOTE: The computer has a thermal pad adhered to the system board under the M.2 SSD. The thermal pad may get separated from the system board or get adhered to the SSD. If the pad is detached during the removal process, readhere it to the system board.

Installing the M.2 2230 solid state drive (SSD)

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: Depending on the configuration ordered, your computer may support an M.2 2230 SSD or an M.2 2280 SSD.

NOTE: This procedure applies only to computers shipped with an M.2 2230 SSD.

The following images indicate the location of the M.2 2230 SSD and provide a visual representation of the installation procedure.

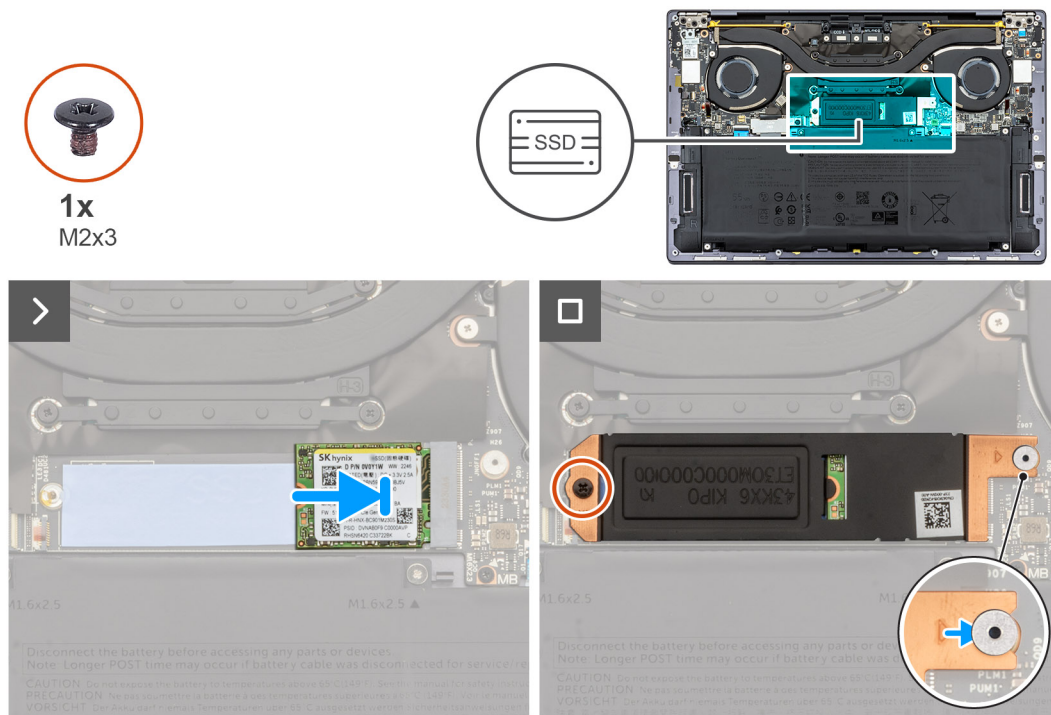
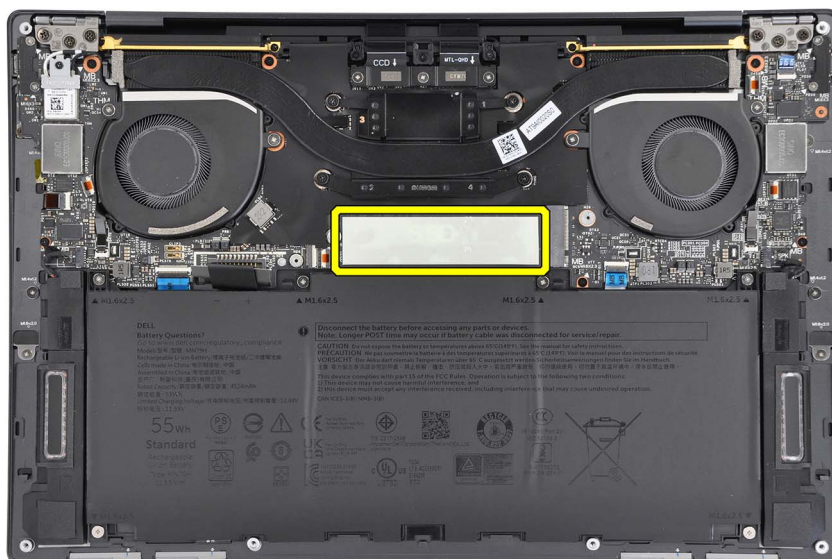


Figure 21. Installing the M.2 2230 SSD

Steps

1. Adhere the M.2 SSD thermal pad if it is detached from the system board during the removal process.
 - i NOTE:** XPS 9350 has a thermal pad adhered to the system board under the M.2 SSD. The thermal pad may get separated from the system board or get adhered to the SSD. Adhere the thermal pad to the SSD compartment if it is detached from the system board during the removal process.
2. Align the notch on the M.2 2230 SSD with the tab on the SSD slot.



b

3. Slide and place the M.2 2230 SSD on the thermal pad in the SSD slot.
4. Insert the tab of the M.2 SSD shield into the peg on the system board.
5. Replace the screw (M2x3) that secures the M.2 SSD shield to the system board.

Next steps

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

Removing the M.2 2280 solid state drive (SSD)


 **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:** Depending on the configuration ordered, your computer may support an M.2 2230 SSD or an M.2 2280 SSD.

 **NOTE:** This procedure applies only to computers shipped with an M.2 2280 SSD.

The following images indicate the location of the M.2 2280 SSD and provide a visual representation of the removal procedure.

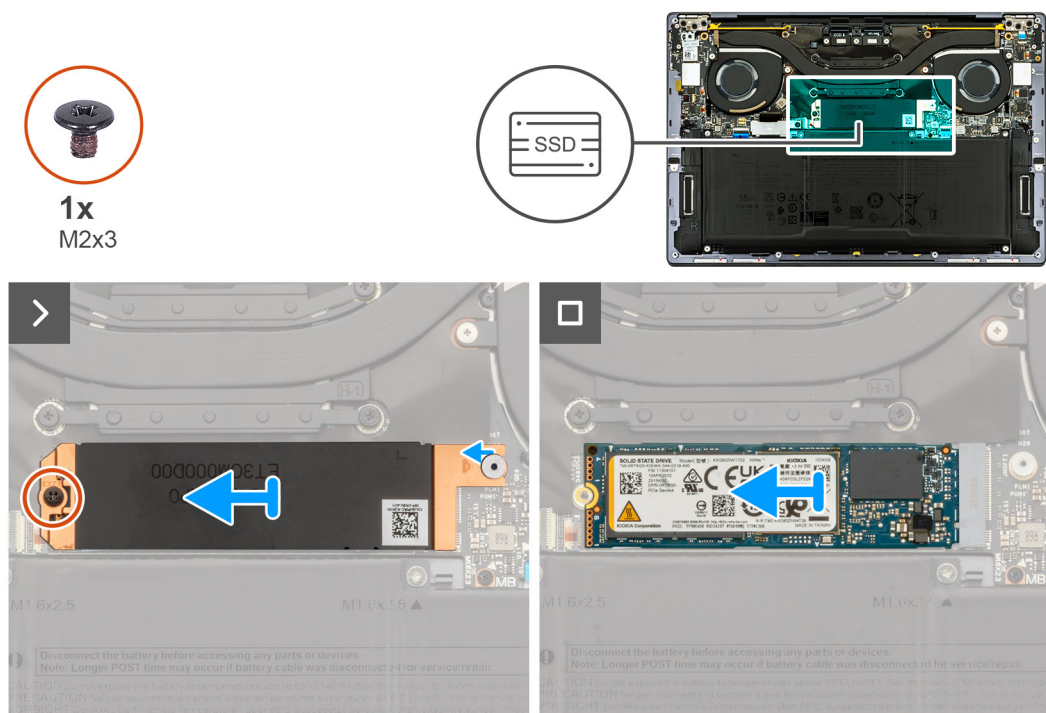



Figure 22. Removing the M.2 2280 SSD

Steps

1. Remove the screw (M2x3) that secures the M.2 SSD shield to the system board.
2. Slide and remove the M.2 SSD shield off the system board.
3. Lift and slide the M.2 2280 SSD out of the SSD slot.

 **NOTE:** The computer consists of a thermal pad adhered to the system board under the M.2 SSD. The thermal pad may get separated from the system board or get adhered to the SSD. If the pad is detached during the removal process, readhere it to the system board.


Installing the M.2 2280 solid state drive (SSD)


 **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:** Depending on the configuration ordered, your computer may support an M.2 2230 SSD or an M.2 2280 SSD.

 **NOTE:** This procedure applies only to computers shipped with an M.2 2280 SSD.

The following images indicate the location of the M.2 2280 SSD and provide a visual representation of the installation procedure.

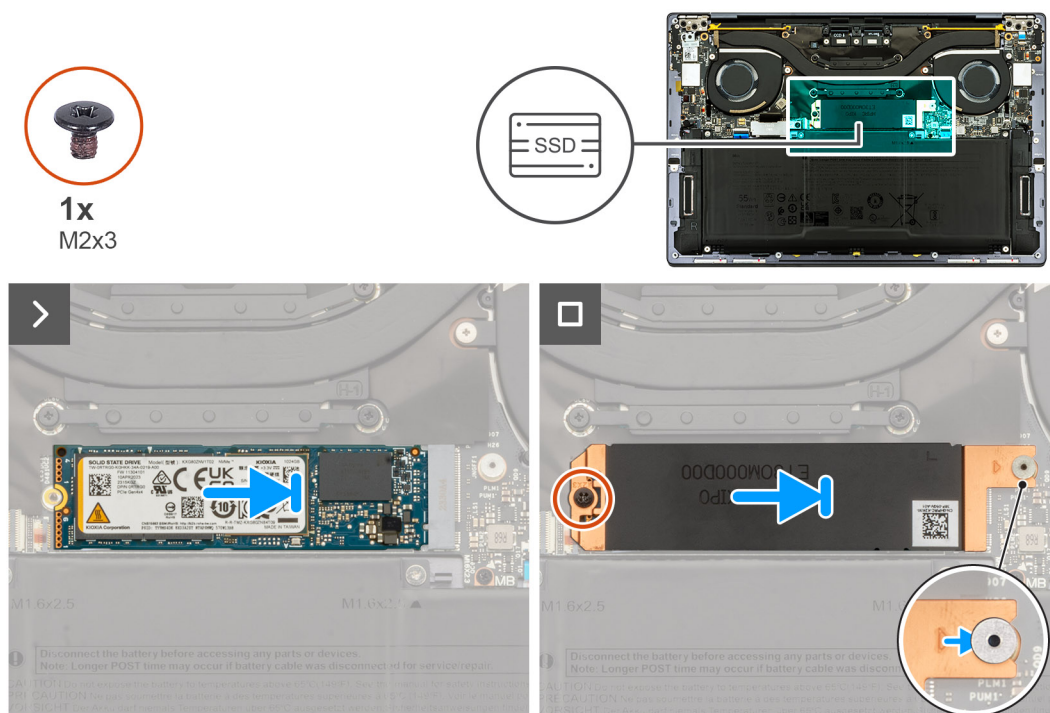



Figure 23. Installing the M.2 2280 SSD

Steps

1. Adhere the M.2 SSD thermal pad if it is detached from the system board during the removal process.

 **NOTE:** The computer consists of a thermal pad adhered to the system board under the M.2 SSD. The thermal pad may get separated from the system board or get adhered to the SSD.

2. Align the notch on the M.2 2280 SSD with the tab on the SSD slot.
3. Slide and place the M.2 2280 SSD into the SSD slot.
4. Insert the tab of the M.2 SSD shield into the peg on the system board.

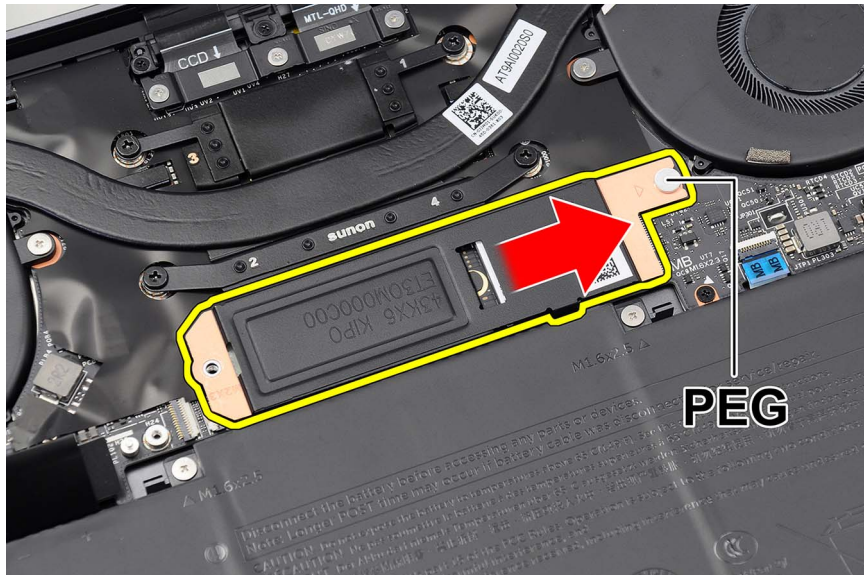


Figure 24. M.2 SSD shield

5. Replace the screw (M2x3) that secures the M.2 SSD shield to the system board.

Next steps

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

Fans

Removing the fans

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 fans and provide a visual representation of the removal procedure.

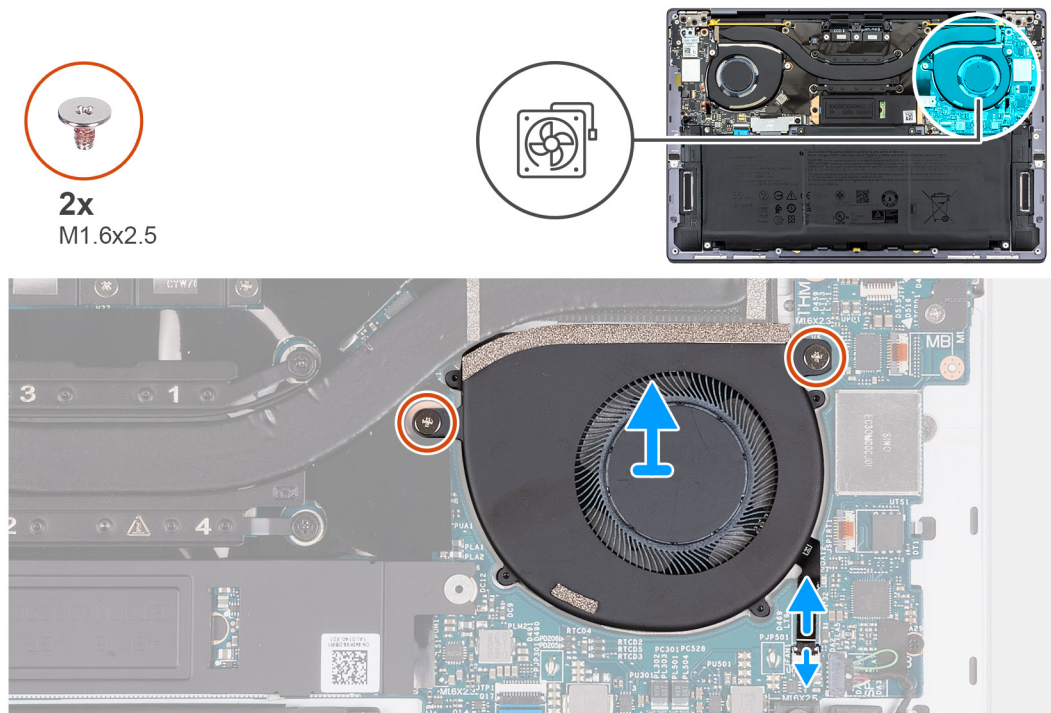


Figure 25. Removing the left fan

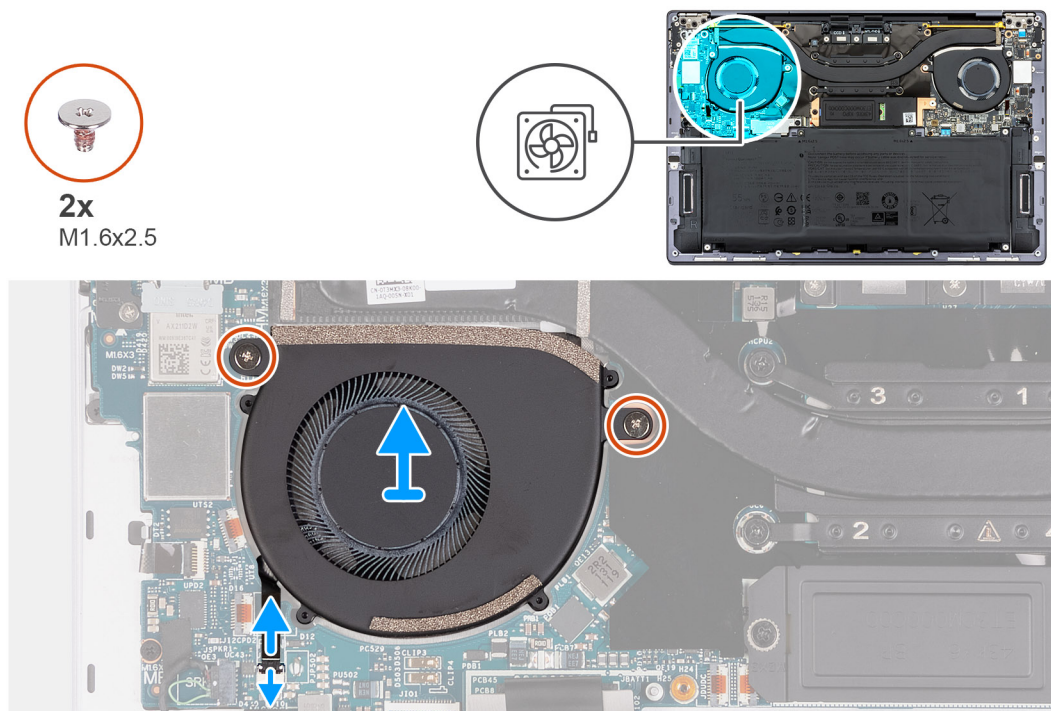


Figure 26. Removing the right fan

Steps

1. Open the latch of the left-fan cable connector (JFAN1).
2. Using the pull tab, disconnect the left-fan cable from the system board.
3. Remove the two screws (M1.6x2.5) that secure the left fan to the system board.
4. Lift the left fan off the system board.
5. Open the latch of the right-fan cable connector (JFAN2).
6. Using the pull tab, disconnect the right-fan cable from the system board.

7. Remove the two screws (M1.6x2.5) that secure the right fan to the system board.
8. Lift the right fan off the system board.

Installing the fans

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 fans and provide a visual representation of the installation procedure.

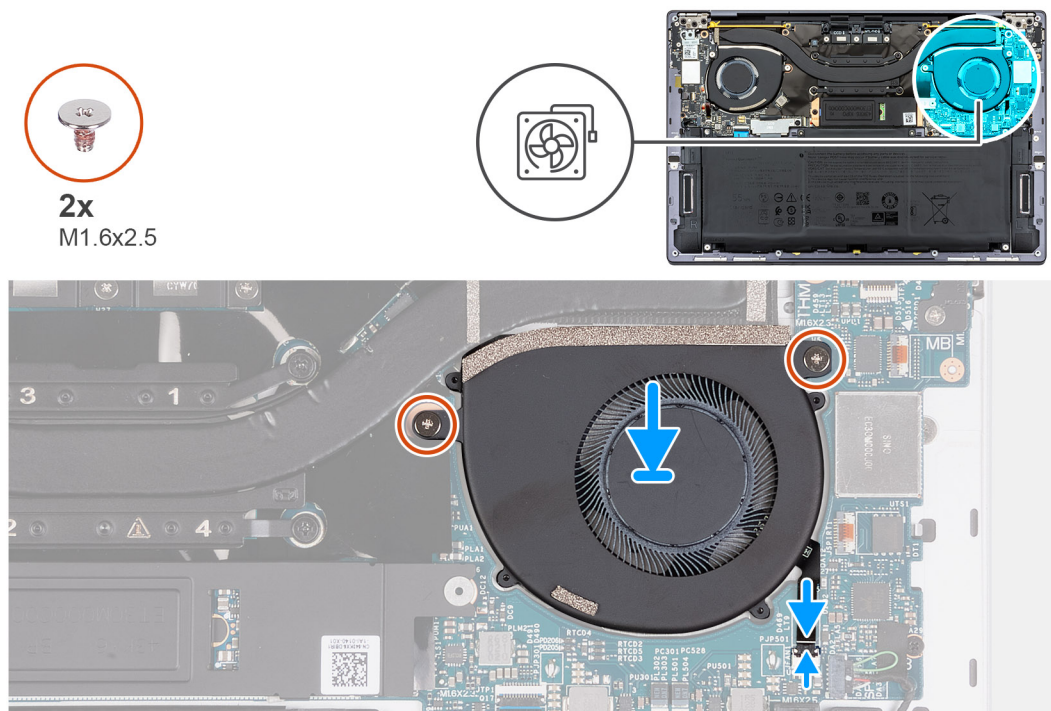


Figure 27. Installing the left fan

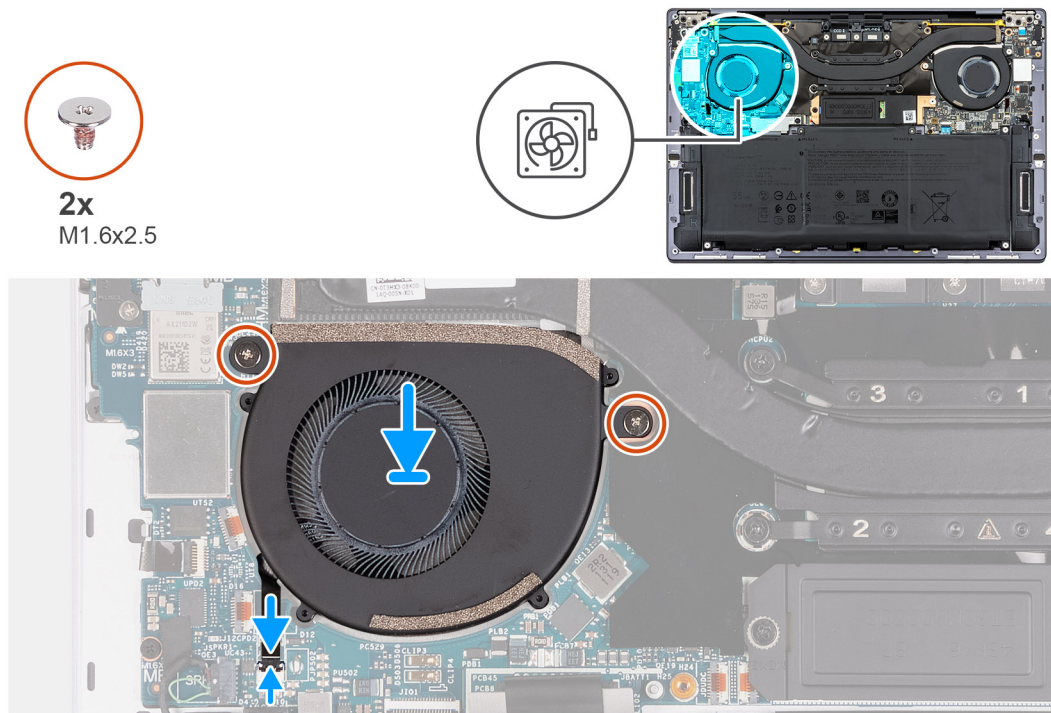


Figure 28. Installing the right fan

Steps

1. Align the screw holes of the left fan with the screw holes on the system board.
2. Replace the two screws (M1.6x2.5) that secure the left fan to the system board.
3. Connect the left-fan cable to the connector (JFAN1) and close the latch.
4. Align the screw holes of the right fan with the screw holes on the system board.
5. Replace the two screws (M1.6x2.5) that secure the right fan to the system board.
6. Connect the right-fan cable to the connector (JFAN2) and close the latch.

Next steps

1. Install the [base cover](#).
2. 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

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

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

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

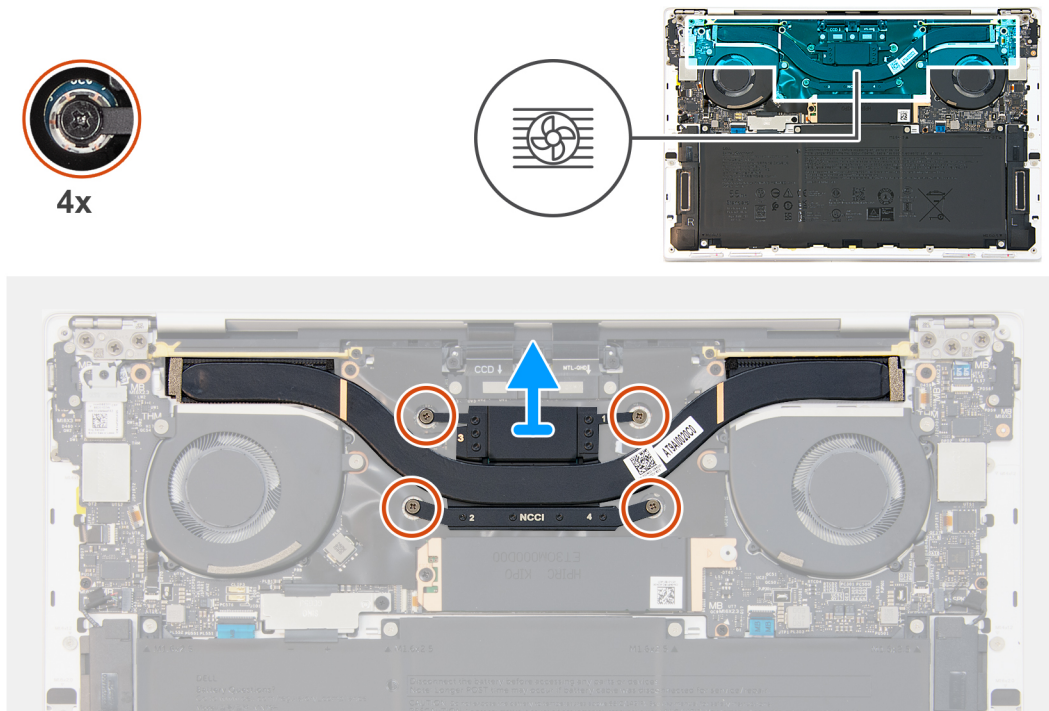


Figure 29. Removing the heat sink

Steps

1. In reverse sequential order (4>3>2>1), loosen the four captive screws that secure the heat sink to the system board.
2. Lift the heat sink off the system board.

NOTE: This computer has memory on processor package. The memory on the processor package uses a new type of XPG compression thermal gel. During a service incident where the thermal bond is broken, residue grease and gel must be cleaned. Both the thermal grease and XPG thermal gel must be reapplied. The processor uses the standard thermal grease.

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

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

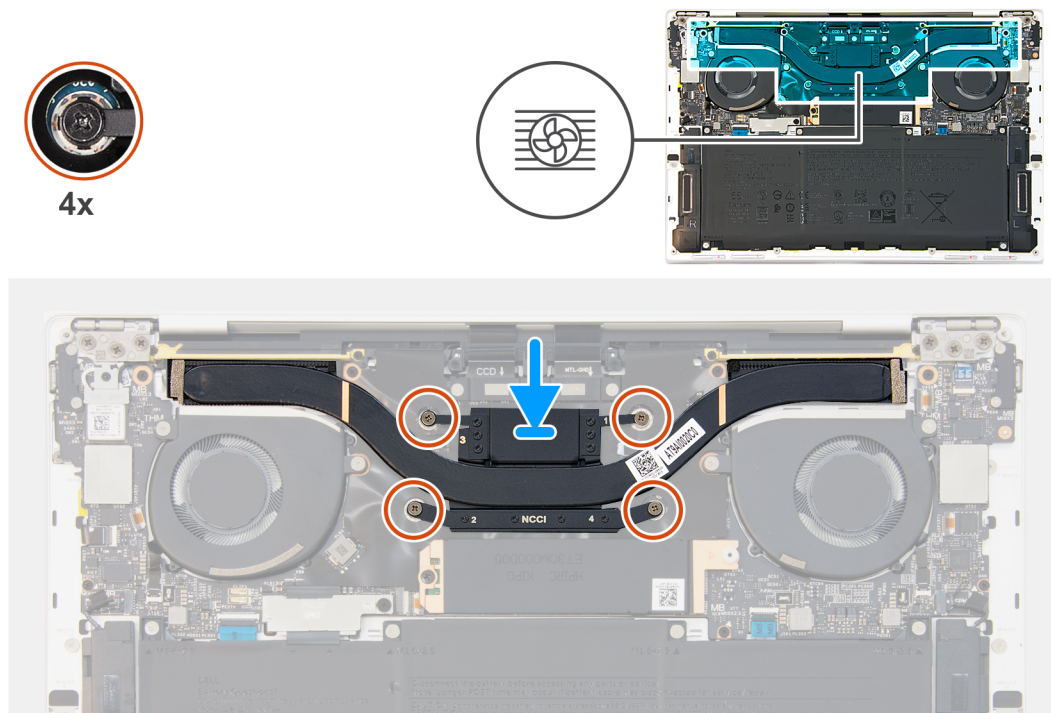


Figure 30. Installing the heat sink

NOTE: This computer has memory on processor package. The memory on the processor package uses a new type of XPG compression thermal gel. During a service incident where the thermal bond is broken, residue grease and gel must be cleaned. Both the thermal grease and XPG thermal gel must be reapplied. The processor uses the standard thermal grease.

Steps

1. Align the screw holes of the heat sink with the screw holes on the system board.
2. In sequential order (1>2>3>4), tighten the four captive screws that secure the heat sink to the system board.

Next steps

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

Display assembly

Removing the display assembly

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 display assembly and provide a visual representation of the removal procedure.

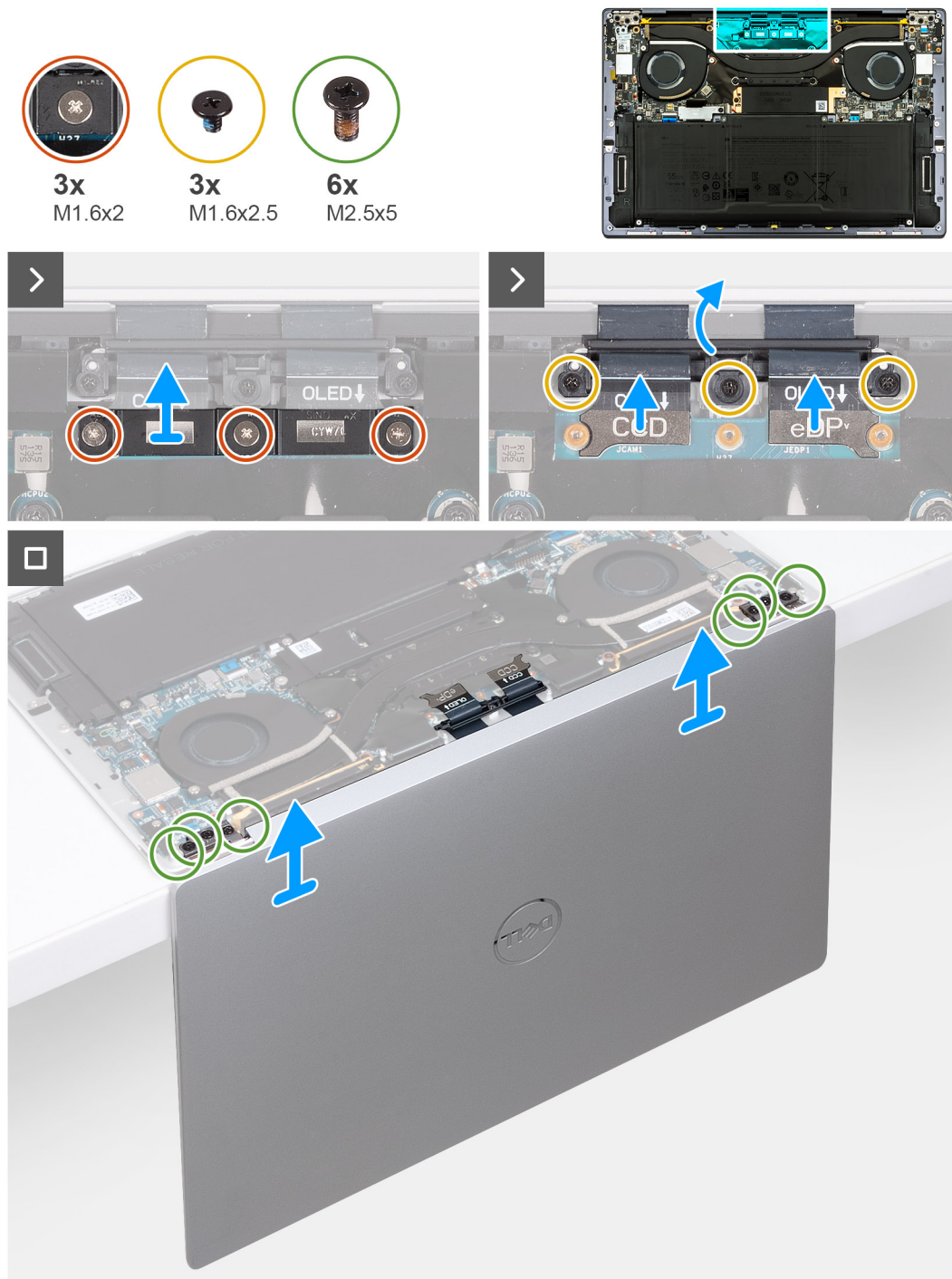


Figure 31. Removing the display assembly

Steps

1. Loosen the three captive screws (M1.6x2) that secure the display-assembly cable bracket to the system board.
2. Lift the display-assembly cable bracket off the system board.
3. Disconnect the display cable from the display-cable connector (JEDP1) on the system board.
4. Disconnect the camera cable from the camera-cable connector (JCAM1) on the system board.
5. Remove the three screws (M1.6x2.5) that secure the camera and display-assembly cable holder to the system board.
6. Open the display to a 90-degree angle and place the computer at the edge of a flat table.
7. Remove the six screws (M2.5x5) that secure the left and right hinges of the display assembly to the system board and palm-rest assembly.
8. Lift the display assembly off the palm-rest and keyboard assembly.

9. After performing all the above steps, you are left with the display assembly.



Figure 32. Display assembly

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



Figure 33. Installing the display assembly

Steps

1. Place the palm-rest and keyboard assembly at the edge of a flat table.
2. Align the screw holes of the palm-rest and keyboard assembly with the screw holes on the hinges of the display assembly.
3. Replace the six screws (M2.5x5) that secure the left and right hinges of the display assembly to the system board and palm-rest assembly.
4. Close the display assembly, turn the computer over, and place it on the flat surface.
5. Slide the camera and display-assembly cable holder back to the system board.
6. Replace three screws (M1.6x2.5) that secure the camera and display-assembly cable holder to the system board.
7. Connect the camera cable to the camera-cable connector (JCAM1) on the system board.
8. Connect the display cable to the display-cable connector (JEDP1) on the system board.

9. Place the display-assembly cable bracket on the system board and align the screw holes on the display-cable bracket with the screw holes on the system board.
10. Tighten the three captive screws (M1.6x2) that secure the display-assembly cable bracket to the system board.

Next steps

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

System board

Removing the system board

Prerequisites

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [base cover](#).
3. Remove the [M.2 2230 solid-state drive](#) or [M.2 2280 solid-state drive](#), whichever is applicable.
4. Remove the [battery](#).
5. Remove the [fans](#).
6. Remove the [heat sink](#).

About this task

The following image indicates the connectors and components on your system board.

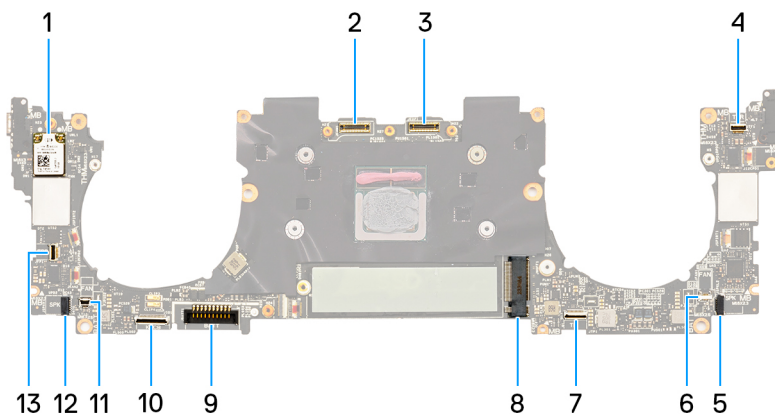


Figure 34. System-board connectors

- | | |
|--|---|
| 1. Wireless card | 2. Camera-assembly cable connector (JCAM1) |
| 3. Display-assembly cable connector (JEDP1) | 4. Capacitive touch-panel cable connector (JTF1) |
| 5. Left-speaker cable connector (JSPKL2) | 6. Left-fan cable connector (JFAN1) |
| 7. Haptic-module cable connector (JTP1) | 8. M.2 solid-state drive slot |
| 9. Battery cable connector (BATT) | 10. Keyboard-daughterboard cable connector (JIO1) |
| 11. Right-fan cable connector (JFAN2) | 12. Right-speaker cable connector (JSPKR1) |
| 13. Power-button and fingerprint-reader cable connector (JFP1) | |

NOTE: When removing the system board, open the display assembly to a 90-degree angle and then place the computer at the edge of a flat table. Maintain the angle throughout the removal process to avoid damaging the thin display panel when applying torque to install and remove screws from the computer.



Figure 35. Opening the display assembly to a 90-degree angle

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

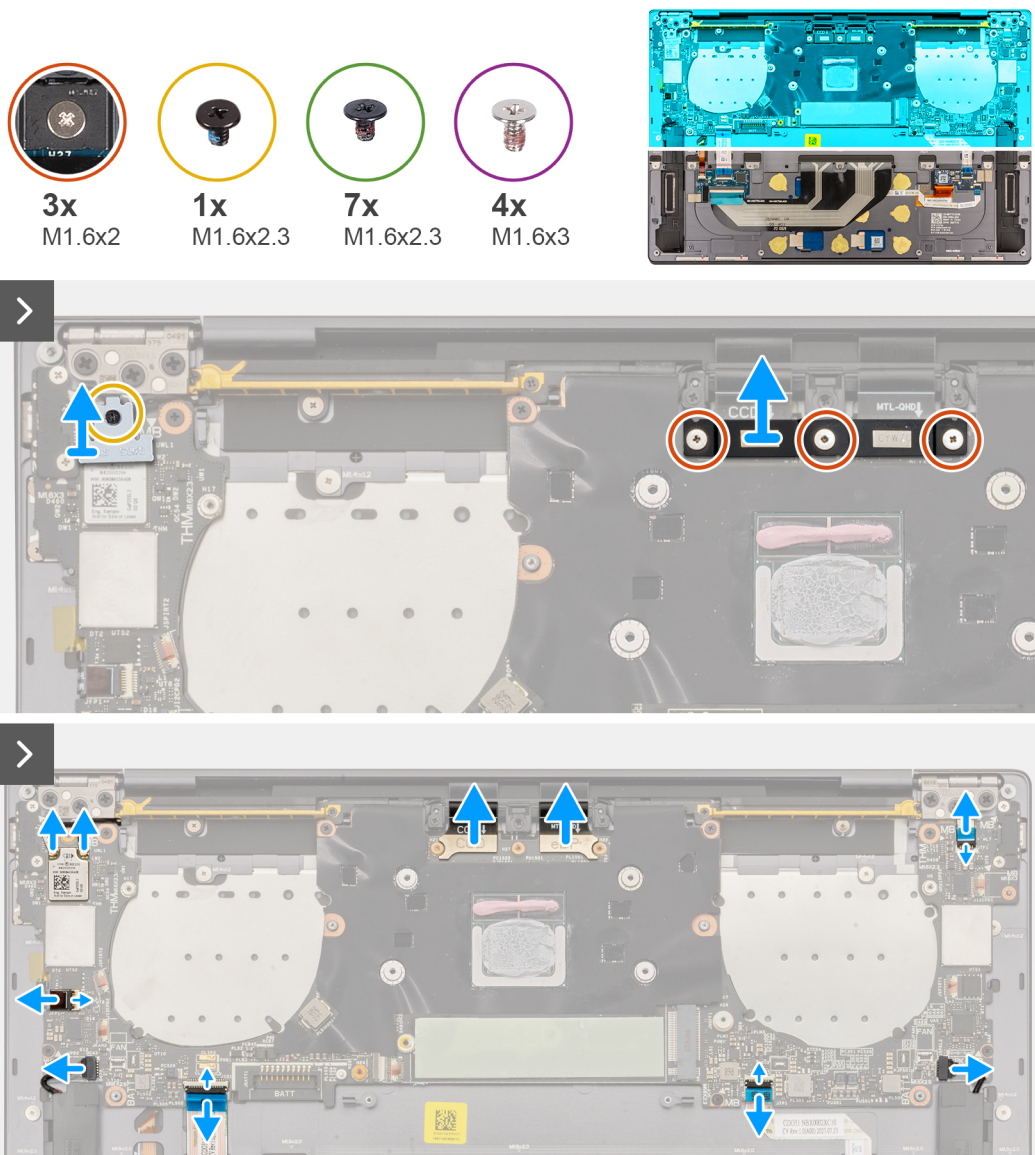


Figure 36. Removing the system board

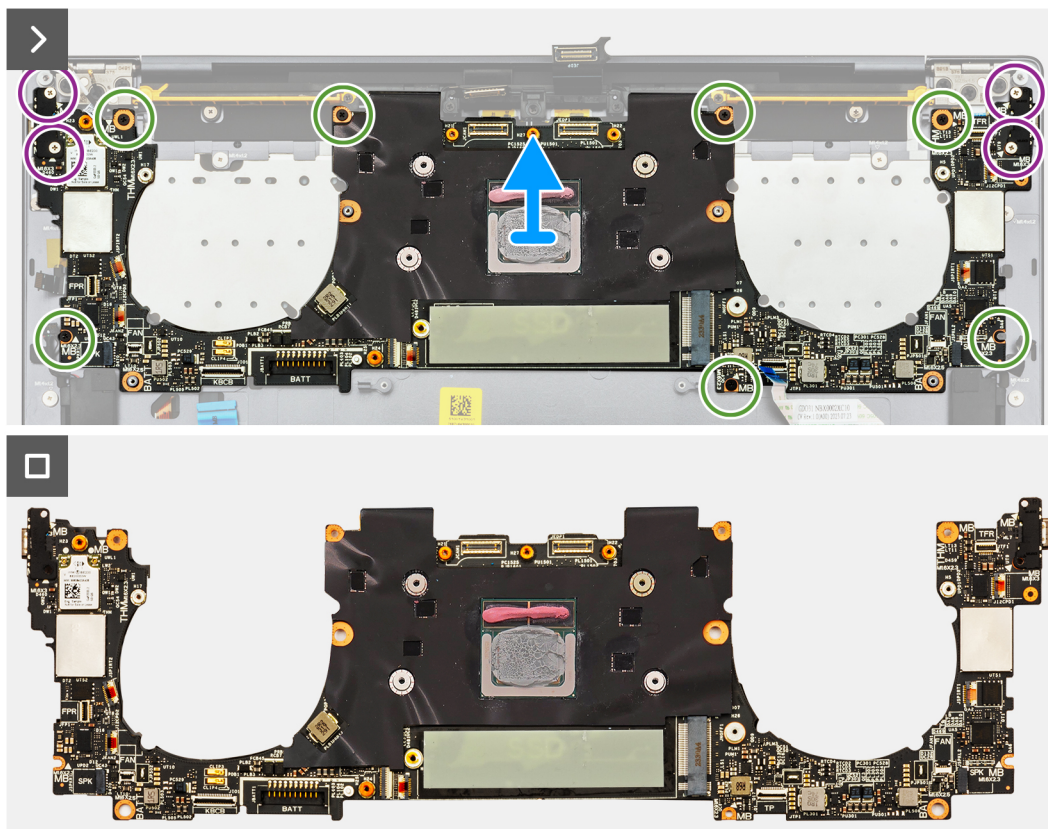


Figure 37. Removing the system board

Steps

1. Loosen the captive screw (M1.6x2.3) that secures the wireless-module bracket to the system board.

NOTE: Ensure that the small, clear washer that holds the captive screw in place does not fall off.
2. Lift the wireless-module bracket off the system board.
3. Disconnect the wireless-module cables from the wireless module.
4. Loosen the three captive screws (M1.6x2) that secure the display-assembly cable bracket to the system board.
5. Lift the display-assembly cable bracket off the system board.
6. Disconnect the display cable from the display-cable connector (JEDP1) on the system board.
7. Disconnect the camera cable from the camera-cable connector (JCAM1) on the system board.
8. For computers shipped with the AITO touchpad, open the latch, and disconnect the following cables:
 - Touch function row cable from the connector (JTF1)
 - Left-speaker cable from the connector (JSPKL2)
 - AITO-module cable from the connector (JTP1)
 - Keyboard-control daughter board cable from the connector (JIO1)
 - Right-speaker cable from the connector (JSPKR1)
 - Power-button cable from the connector (JFP1)
9. For computers shipped with the BORS touchpad, open the latch, and disconnect the following cables:
 - Touch function row cable from the connector (JTF1)
 - Left-speaker cable from the connector (JSPKL2)
 - Touchpad cable from the connector (JTP1)
 - Keyboard-control daughter board cable from the connector (JIO1)
 - Right-speaker cable from the connector (JSPKR1)
 - Power-button cable from the connector (JFP1)
10. Remove the four screws (M1.6x3) that secure the system board to the palm-rest and keyboard assembly.
11. Remove the seven screws (M1.6x2.3) that secure the system board to the palm-rest and keyboard assembly.

12. Hold the system board by the short edges and carefully lift the board off the palm-rest and keyboard assembly.

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

The following image indicates the connectors and components on your system board.

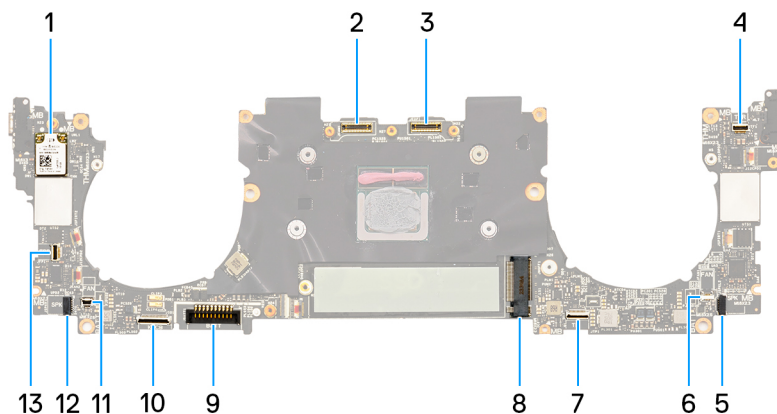


Figure 38. System-board connectors

- | | |
|--|---|
| 1. Wireless card | 2. Camera-assembly cable connector (JCAM1) |
| 3. Display-assembly cable connector (JEDP1) | 4. Capacitive touch-panel cable connector (JTF1) |
| 5. Left-speaker cable connector (JSPKL2) | 6. Left-fan cable connector (JFAN1) |
| 7. Haptic-module cable connector (JTP1) | 8. M.2 solid-state drive slot |
| 9. Battery cable connector (BATT) | 10. Keyboard-daughterboard cable connector (JIO1) |
| 11. Right-fan cable connector (JFAN2) | 12. Right-speaker cable connector (JSPKR1) |
| 13. Power-button and fingerprint-reader cable connector (JFP1) | |

NOTE: When installing the system board, open the display assembly to a 90-degree angle and then place the computer on the edge of a flat table. Maintain the angle throughout the installation process to avoid damaging the thin display panel when applying torque to install and remove screws from the computer.



Figure 39. Opening the display assembly to a 90-degree angle

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

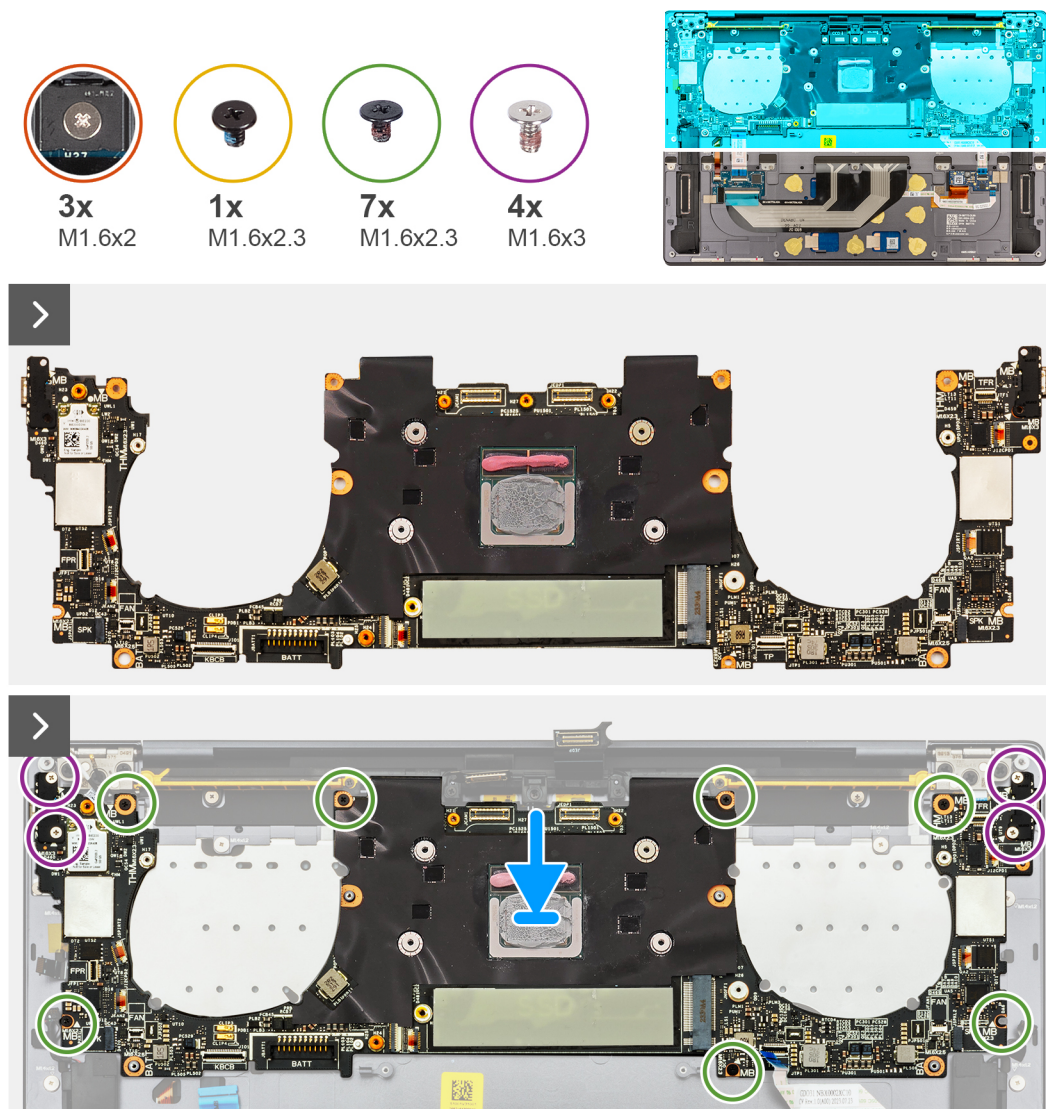


Figure 40. Installing the system board

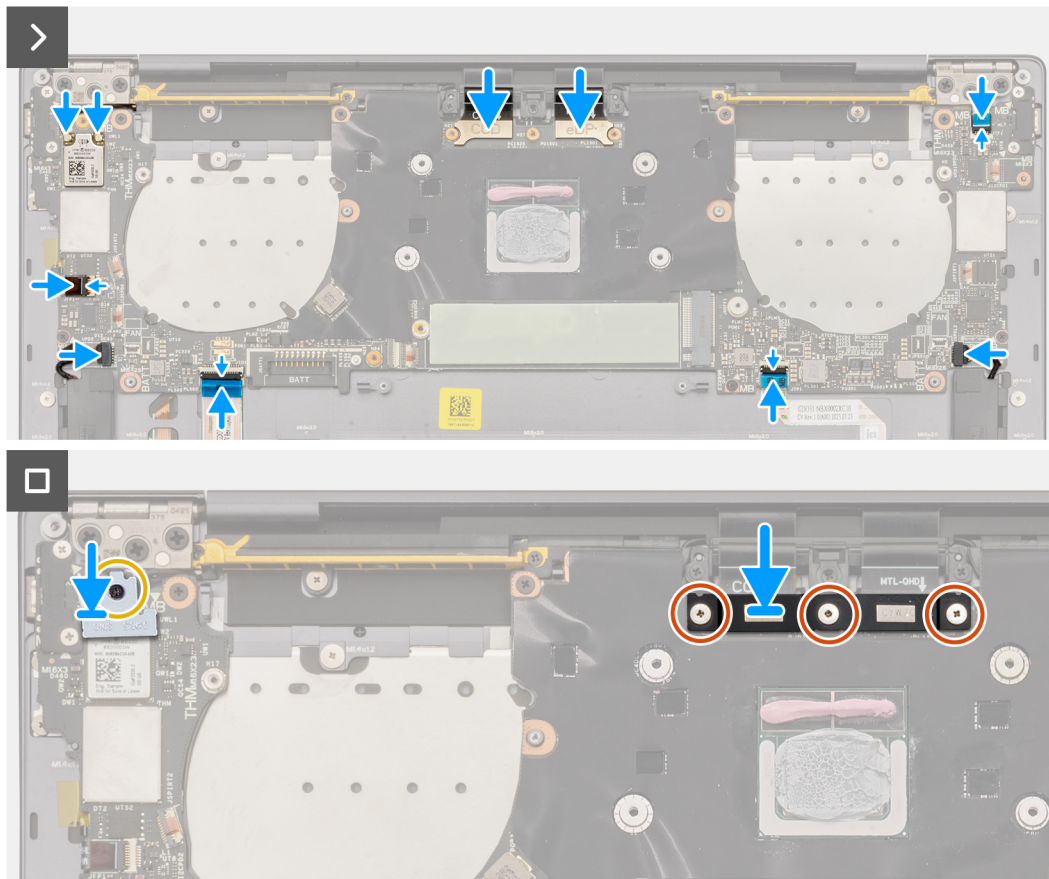



Figure 41. Installing the system board

Steps

1. Align the screw holes on the system board with the screw holes on the palm-rest and keyboard assembly.
2. Hold the system board by the short edges, and place the system board on the palm-rest and keyboard assembly.

NOTE: Ensure that the Thunderbolt 4 ports are aligned with their corresponding slots on the palm-rest and keyboard assembly.
3. Replace the seven screws (M1.6x2.3) that secure the system board to the palm-rest and keyboard assembly.
4. Replace the four screws (M1.6x3) that secure the system board to the palm-rest and keyboard assembly.
5. For computers shipped with the BORS touchpad, connect the following cables and close the latch:
 - Touch function row cable from the connector (JTF1)
 - Left-speaker cable from the connector (JSPKL2)
 - Touchpad cable from the connector (JTP1)
 - Keyboard-control daughter board cable from the connector (JIO1)
 - Right-speaker cable from the connector (JSPKR1)
 - Power-button cable from the connector (JFP1)
6. For computers shipped with the AITO touchpad, connect the following cables and close the latch:
 - Touch function row cable from the connector (JTF1)
 - Left-speaker cable from the connector (JSPKL2)
 - AITO-module cable from the connector (JTP1)
 - Keyboard-control daughter board cable from the connector (JIO1)
 - Right-speaker cable from the connector (JSPKR1)
 - Power-button cable from the connector (JFP1)
7. Connect the camera cable to the camera-cable connector (JCAM1) on the system board.
8. Connect the display cable to the display-cable connector (JEDP1) on the system board.
9. Place the display-assembly cable bracket on the system board.

10. Tighten the three captive screws (M1.6x2) that secure the display-assembly cable bracket to the system board.
11. Connect the wireless-module cables to the wireless module.
12. Replace the wireless-module bracket on the system board.
13. Tighten the captive screw (M1.6x2.3) that secures the wireless-module bracket to the system board.

 **NOTE:** Ensure that the small, clear washer that holds the captive screw in place does not fall off.

Next steps

1. Install the [heat sink](#).
2. Install the [fans](#).
3. Install the [battery](#).
4. Install the [M.2 2230 solid-state drive](#) or [M.2 2280 solid-state drive](#), whichever is applicable.
5. Install the [base cover](#).
6. Follow the procedure in [After working inside your computer](#).


Power button with fingerprint reader

Removing the power button with 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 [battery](#).
4. Remove the [system board](#).

 **NOTE:** The system board can be removed with the following components attached:

- Heat sink
- Fans
- Solid state drive

About this task

The following images indicate the location of the power button with fingerprint reader and provide a visual representation of the removal procedure.

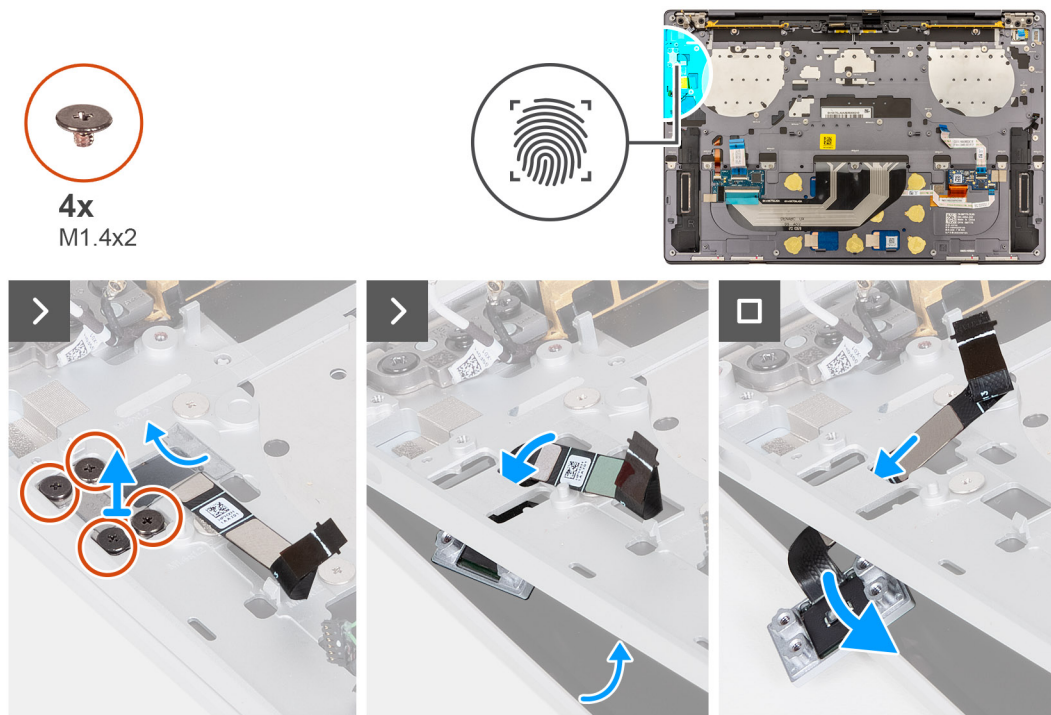


Figure 42. Removing the power button with fingerprint reader

Steps

- NOTE:** When removing the power button with fingerprint reader, open the display assembly at a 90-degree angle. Place the computer at the edge of a flat table. Maintain the angle throughout the removal process to avoid damaging the thin display panel when applying torque to install and remove screws from the computer.



Figure 43. Opening the display assembly to a 90-degree angle

1. Open the display assembly to a 90-degree angle and place the computer on the edge of a flat table.
2. Remove the four screws (M1.4x2) that secure the power-button bracket to the palm-rest and keyboard assembly.
3. Lift the power-button bracket off the palm-rest and keyboard assembly.
4. Lift the palm-rest and keyboard assembly slightly.
5. Unthread the power-button cable through the opening on the palm-rest and keyboard assembly and remove the power button with fingerprint reader.

Installing the power button with 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 process.

About this task

The following images indicate the location of the power button with fingerprint reader and provide a visual representation of the installation procedure.

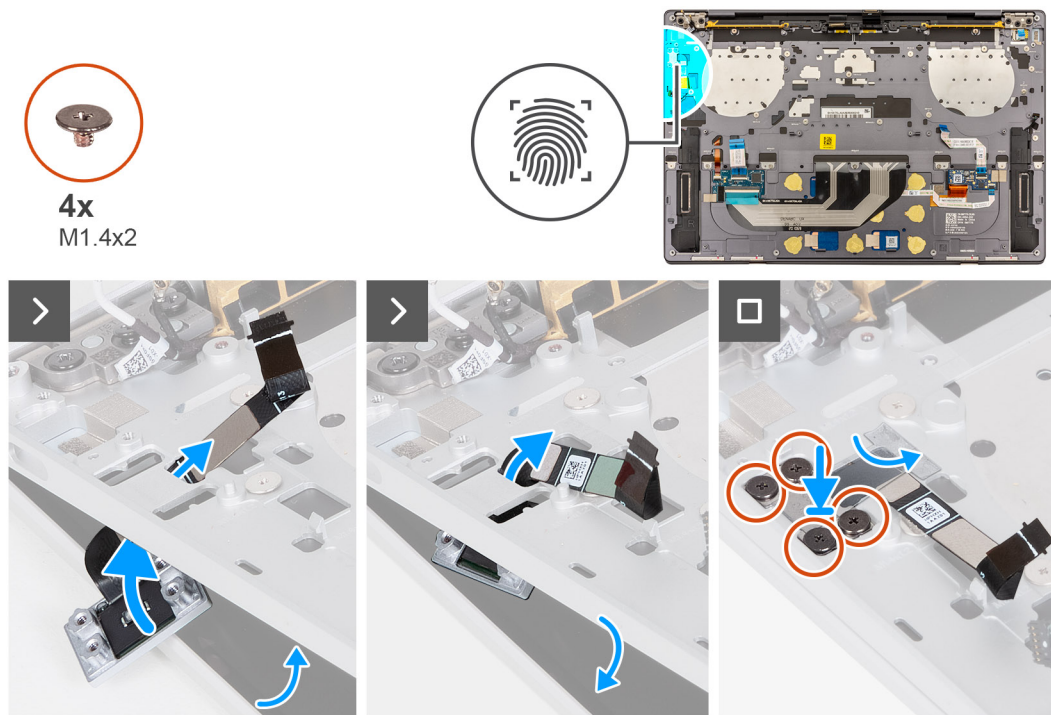


Figure 44. Installing the power button with fingerprint reader

Steps

- NOTE:** When installing the power button with fingerprint reader, open the display assembly to a 90-degree angle. Place the computer at the edge of a flat table. Maintain the angle throughout the installation process to avoid damaging the thin display panel when applying torque to install and remove screws from the computer.



Figure 45. Opening the display assembly to a 90-degree angle

1. Open the display assembly to a 90-degree angle and place the computer on the edge of a flat surface.
2. Thread the power-button cable through the opening on the palm-rest and keyboard assembly.
3. Place the power button with fingerprint reader on the palm-rest and keyboard assembly.
4. Align the screw holes of the power button with the screw holes of the power-button bracket.
5. Replace the four screws (M1.4x2) that secure the power-button bracket to the palm-rest and keyboard assembly.

Next steps

1. Install the [system board](#).



NOTE: The system board can be replaced with the following components attached:

- Heat sink
- Fans
- Solid state drive

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

Keyboard

Removing the keyboard

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](#).
4. Remove the [system board](#).

NOTE: The system board can be removed with the following components attached:

- Heat sink
- Fans
- Solid state drive

5. Remove the [power button with fingerprint reader](#).

About this task

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

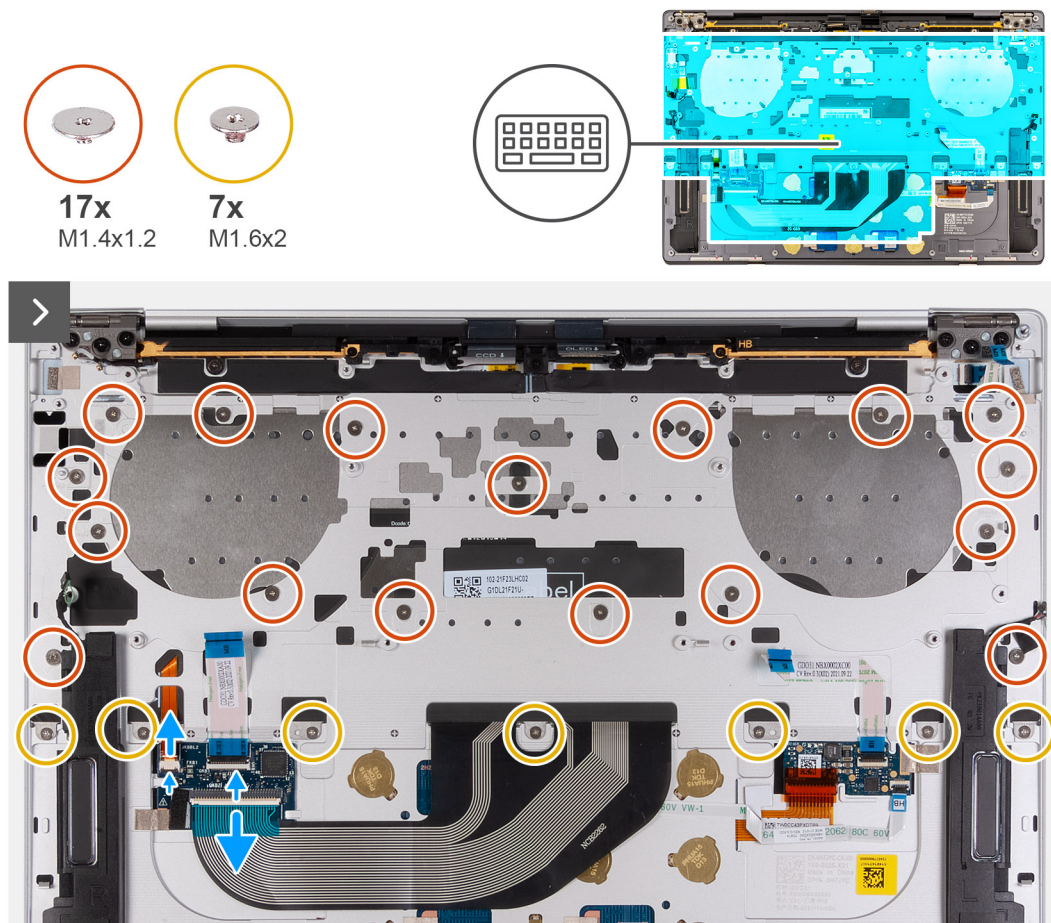


Figure 46. Removing the keyboard

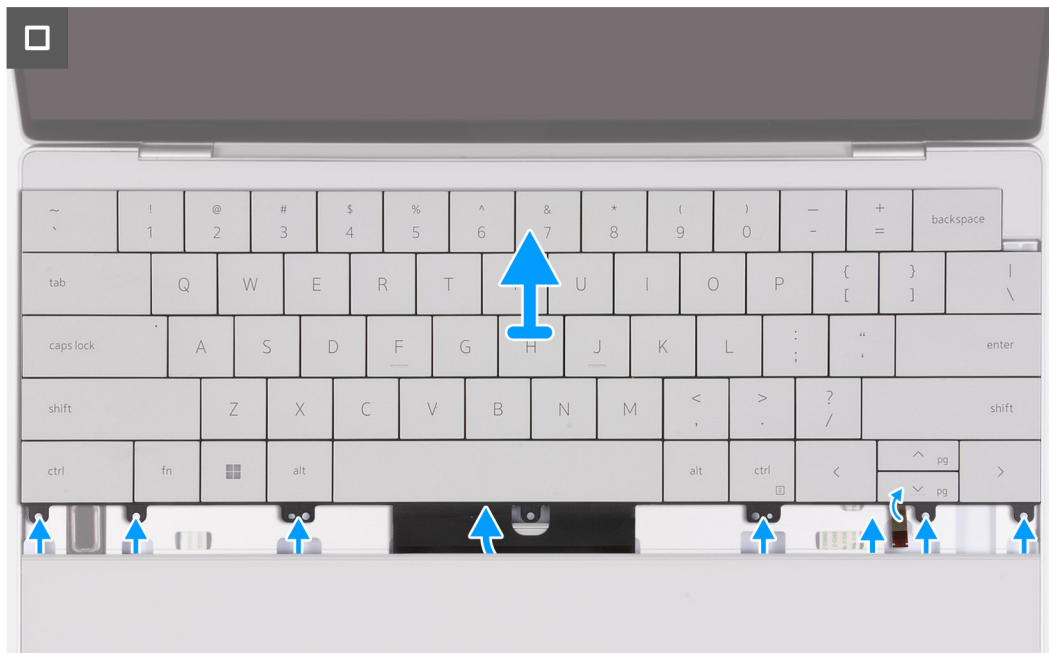


Figure 47. Removing the keyboard

Steps

1. Remove the 17 screws (M1.4x1.2) that secure the keyboard to the palm-rest assembly.
2. Remove the seven screws (M1.6x2) that secure the keyboard to the palm-rest assembly.
3. Open the latch of the keyboard-backlight connector and use the pull tab of the cable to disconnect the keyboard-backlight cable.
4. Open the latch of the keyboard connector (JIO1) and use the pull tab of the cable to disconnect the keyboard cable.
5. Unthread the keyboard-backlight cable and the keyboard cable through the openings of the palm-rest assembly.
6. Lift the keyboard off the palm-rest assembly until the tabs of the keyboard are out from the openings on the palm-rest assembly.

Installing the keyboard

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 keyboard and provide a visual representation of the installation procedure.

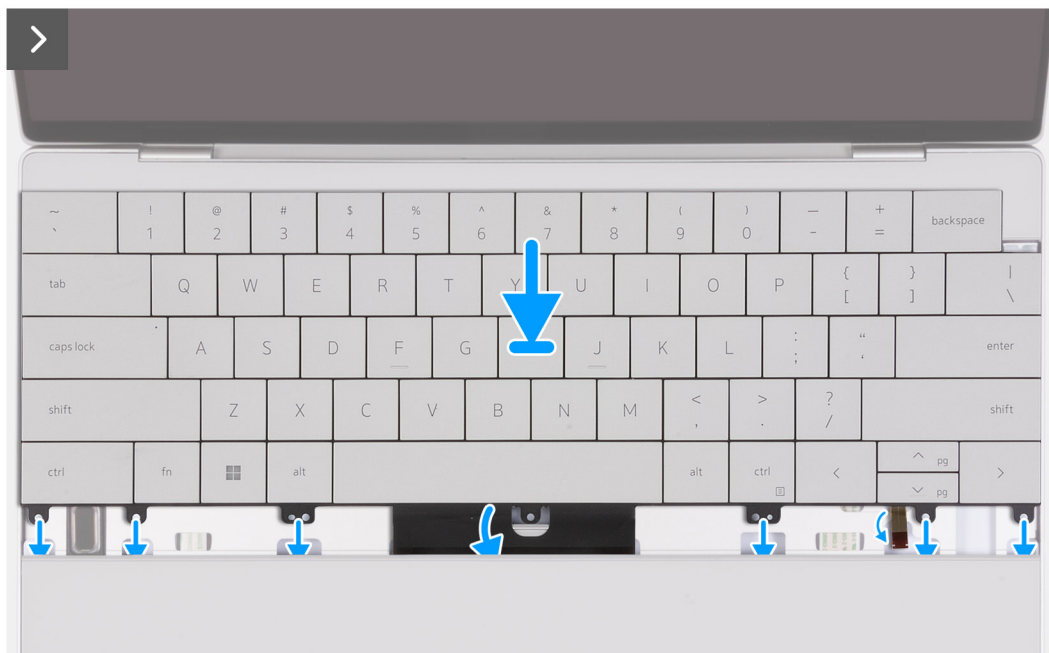


Figure 48. Installing the keyboard

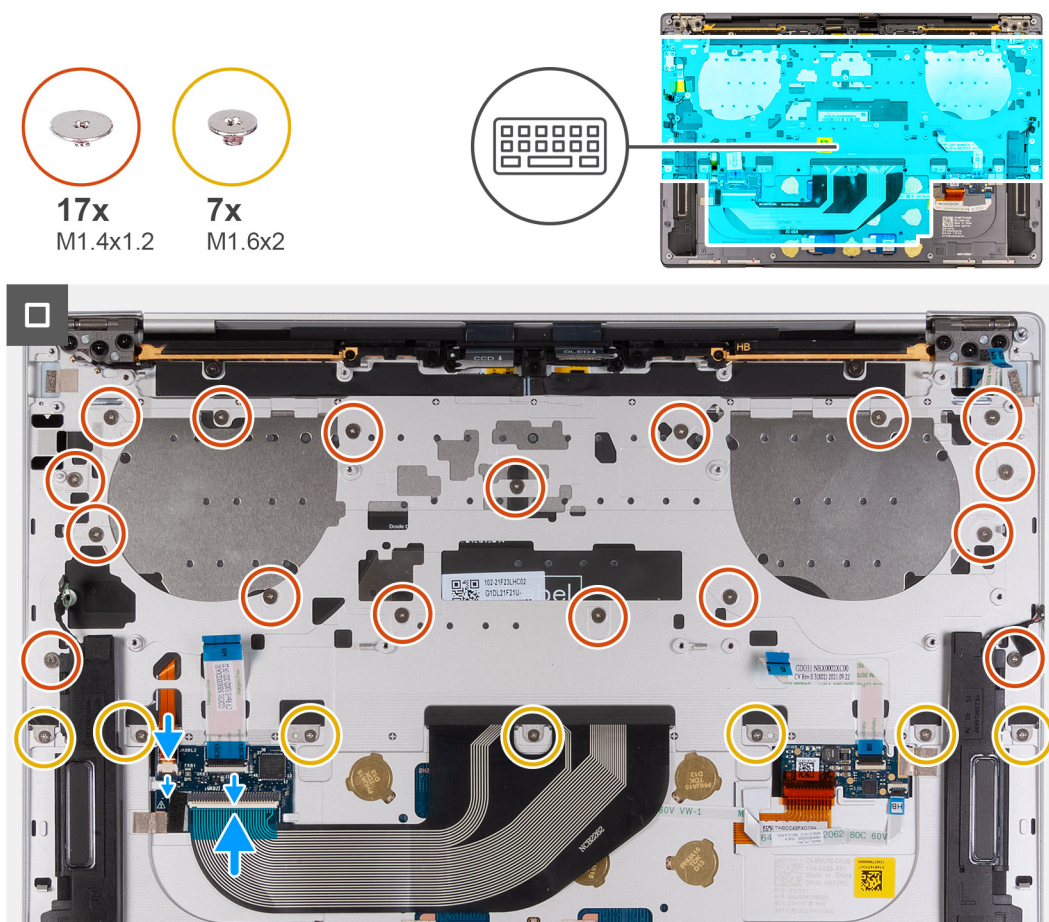


Figure 49. Installing the keyboard

Steps

1. Align the screw holes of the keyboard with the screw holes of the palm-rest assembly.

2. Thread the keyboard-backlight cable and the keyboard cable through the openings at the center and right side of the palm-rest assembly. Insert the tabs on the keyboard into the openings on the palm-rest assembly.
3. Replace the seven screws (M1.6x2) that secure the keyboard to the palm-rest assembly.
4. Replace the 17 screws (M1.4x1.2) that secure the keyboard to the palm-rest assembly.
5. Connect the keyboard-backlight cable and close the latch of the keyboard-backlight connector.
6. Connect the keyboard cable and close the latch of the keyboard connector (JIO1).

Next steps

1. Install the [power button with fingerprint reader](#).
2. Install the [system board](#).



NOTE: The system board can be replaced with the following components attached:

- Heat sink
- Fans
- Solid state drive

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

Palm-rest assembly

Removing the palm-rest 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 [battery](#).
4. Remove the [display assembly](#).
5. Remove the [system board](#).



NOTE: The system board can be removed with the following components attached:

- Heat sink
- Fans
- Solid state drive

6. Remove the [power button with fingerprint reader](#).
7. Remove the [keyboard](#).

About this task

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

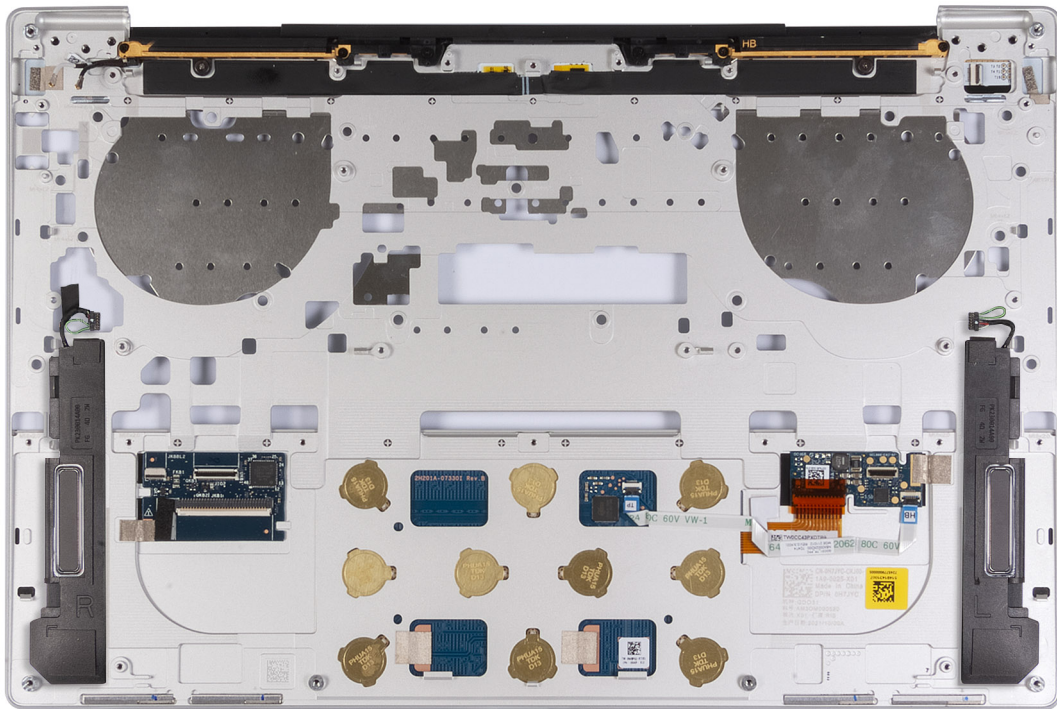


Figure 50. Removing the palm-rest assembly

Steps

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

Installing the palm-rest 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 process.

About this task

NOTE: The replacement palm-rest assembly comes preassembled with the following components that include the following:

- Palm rest
- Speakers
- Wireless-antenna modules
- Touchpad
- Haptic module
- Keyboard-control daughterboard

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

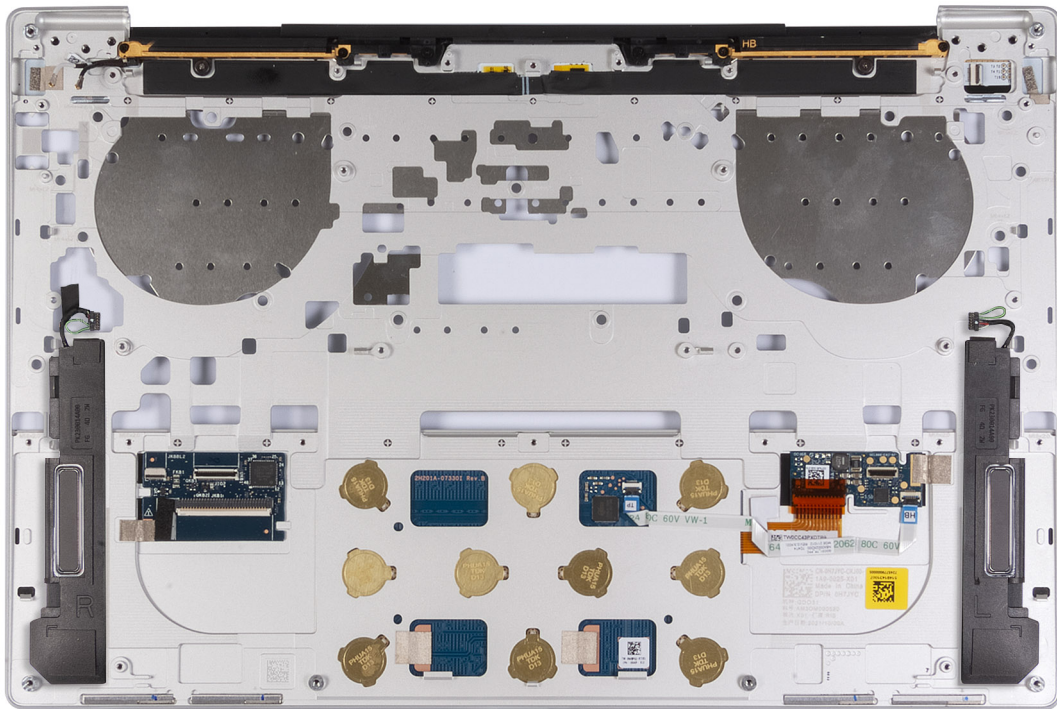


Figure 51. Installing the palm-rest assembly

Steps

Place the palm-rest assembly on a flat surface.

Next steps

1. Install the [keyboard](#).
2. Install the [power button with fingerprint reader](#).
3. Install the [system board](#).

NOTE: The system board can be replaced with the following components attached:

- Heat sink
- Fans
- Solid state drive

4. Install the [display assembly](#).
5. Install the [battery](#).
6. Install the [base cover](#).
7. 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 XPS 13 9350 supports the following operating systems:

- Windows 11 Pro
- Windows 11 Pro National Education
- Windows 11 Home
- Windows 11 Enterprise
- Ubuntu Linux 24.04 LTS

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

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

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

Use BIOS Setup for the following purposes:

- Get information about the hardware installed in your computer, such as the amount of RAM and the capacity of the storage device.
- Change the system configuration information.
- Set or change a user-selectable option, such as the user password, type of storage device installed, and enable or disable 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 BIOS Setup options, changes that you make are recorded but do not take effect until you restart the computer.

Table 25. Navigation keys

Keys	Navigation
Up arrow	Moves to the previous field.
Down arrow	Moves to the next field.
Enter	Selects a value in the selected field (if applicable) or follows the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
Tab	Moves to the next focus area.
Esc	Moves to the previous page until you view the main screen. Pressing Esc in the main screen displays a message that prompts you to save any unsaved changes and restart the computer.

F12 One Time Boot menu


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

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

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

- Removable Drive (if available)

- STXXXX Drive (if available)

 **NOTE:** XXX denotes the SATA drive number.


- Optical Drive (if available)
- SATA Hard Drive (if available)
- Diagnostics

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

View Advanced Setup options

About this task

Some BIOS Setup options are only visible by enabling **Advanced Setup** mode.


 **NOTE:** BIOS Setup options, including **Advanced Setup** options, are described in [System Setup options](#). By default, **Advanced Setup** options are visible.

To enable Advanced Setup

Steps

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

System Setup options

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


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

Table 26. System Setup options—Overview menu

Overview	
XPS 13 9350	
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.
Intel vPro Technology	Displays if the computer is Intel based computer.
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.

Table 26. System Setup options—Overview menu (continued)

Overview	
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. i NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options .
Minimum Clock Speed	Displays the minimum processor clock speed. i NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options .
Current Clock Speed	Displays the current processor clock speed. i NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options .
Core Count	Displays the number of cores on the processor.
Processor ID	Displays the processor identification code.
Microcode Version	Displays the microcode version. i NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options .
Intel Hyper-Threading Capable	Displays whether the processor is Hyper-Threading (HT) capable. i NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options .
MEMORY	
Memory Installed	Displays the total computer memory installed.
Memory Available	Displays the total computer memory available.
Memory Speed	Displays the memory speed. i NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options .
Memory Channel Mode	Displays single or dual channel mode. i NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options .
Memory Technology	Displays the technology that is used for the memory.
DEVICES	
Panel Type	Displays the panel type of the computer.
Panel Revision	Displays the panel revision 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.
Audio Controller	Displays the audio controller information of the computer.
Video BIOS Version	Displays the video BIOS version of the computer.

Table 26. System Setup options—Overview menu (continued)


Overview	
	 NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options .
Bluetooth Device	Displays the Bluetooth device information of the computer.
Pass Through MAC Address	Displays the MAC address of the video pass-through.

Table 27. System Setup options—Boot Configuration menu






Boot Configuration	
Boot Sequence	
Boot Mode: UEFI only	Displays the boot mode of the computer.
Enable PXE Boot Priority	When enabled, if a new PXE boot option is detected, it will be added to the top of the Boot Sequence.
Secure Boot	
	Secure Boot is a method of guaranteeing the integrity of the boot path by performing additional validation of the operating system and PCI add-in cards. The computer stops booting to the operating system when a component is not authenticated during the boot process. Secure Boot can be enabled in BIOS setup or using management interfaces like Dell Command Configure, but can only be disabled from BIOS setup.
Enable Secure Boot	<p>Enables the computer to boot using only validated boot software.</p> <p>By default, this Enable Secure Boot option is disabled. For additional security, Dell Technologies recommends keeping the Secure Boot option enabled to ensure that the UEFI firmware validates the operating system during the boot process.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p> <p> NOTE: To enable Secure Boot, the computer is required to be in UEFI boot mode and the Enable Legacy Option ROMs option is required to be turned off.</p>
Secure Boot Mode	<p>Enables or disables the Secure Boot operation mode.</p> <p>By default, the Deployed Mode is selected. Deployed Mode should be selected for normal operation of Secure Boot.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Add Boot Option	Enables you to add name to the boot option and upload from an external file.
Expert Key Management	
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 Enable Custom Mode option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Custom Mode Key Management	<p>Selects the custom values for expert key management.</p> <p>By default, the PK option is selected.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>

Table 28. System Setup options—Integrated Devices menu





Integrated Devices	
Date/Time	
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 or 24-hour clock. Changes to the time format take effect immediately.
Camera	
Enable Camera	<p>Enables the camera.</p> <p>By default, the Enable Camera option is enabled.</p> <p> NOTE: Depending on the configuration ordered, the camera setup option may not be available.</p>
Audio	
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 Enable Microphone option is enabled.</p> <p> NOTE: 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 Enable Internal Speaker option is enabled.</p>
USB/Thunderbolt Configuration	
Enable External USB Ports	<p>Enables the external USB ports.</p> <p>By default, the Enable External USB Ports option is enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</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 Enable USB Boot Support option is enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Enable Thunderbolt Technology Support	
Enable Thunderbolt Technology Support	<p>Enable the associated ports and adapters for Thunderbolt Technology support.</p> <p>By default, the Enable Thunderbolt Technology Support option is enabled.</p>
Enable Thunderbolt Boot Support	
Enable Thunderbolt Boot Support	<p>Enables the Thunderbolt adapter-peripheral device and USB devices that are connected to the Thunderbolt adapter to be used during BIOS Pre-boot.</p> <p>By default, the Enable Thunderbolt Boot Support option is disabled.</p>
Enable Thunderbolt (and PCIe behind TBT) pre-boot modules	<p>Enables the PCIe devices that are connected through Thunderbolt adapter to execute the PCIe device's UEFI Option ROM(s) during pre-boot, if available.</p> <p>By default, the Enable Thunderbolt (and PCIe behind TBT) pre-boot modules option is disabled.</p>

Table 28. System Setup options—Integrated Devices menu (continued)





Integrated Devices	
Disable USB4 PCIE Tunneling	<p>Disables the USB4 PCIE Tunneling option.</p> <p>By default, the Disable USB4 PCIE Tunneling option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Video/Power only on Type-C Ports	<p>Enables or disables the Type-C port functionality to video or only power.</p> <p>By default, the Video/Power only on Type-C Ports option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Type-C Dock Override	<p>Enables you to use connected Type-C Dell Dock to provide data stream when keeping the External USB Ports disabled. When Type-C Dell Dock is enabled, it activates Audio/Lan submenu.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Type C Dock Audio	Enables you to use Audio on Dell Dock external ports.
Miscellaneous Devices	
Enable Fingerprint Reader Device	<p>Enables or disables the Fingerprint Reader Device option.</p> <p>By default, the Enable Fingerprint Reader Device option is enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>

Table 29. System Setup options—Storage menu


Storage	
	Displays the information of various onboard drives.
SATA/NVMe Operation	
SATA/NVMe Operation	<p>Sets the operating mode of the integrated SATA hard drive controller.</p> <p>By default, the AHCI/NVMe option is selected.</p>
Storage Interface	
Port Enablement	<p>Enables or disables the M.2 PCIe SSD option.</p> <p>By default, the M.2 PCIe SSD option is enabled.</p>
SMART Reporting	<p>Enables or disables the SMART Reporting option.</p> <p>By default, the Smart Reporting option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Drive Information	Displays the information of onboard drives.

Table 30. System Setup options—Display menu

Display	
Display Brightness	
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>

Table 30. System Setup options—Display menu (continued)




Display	
	<p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Brightness on AC power	<p>Enables to set the screen brightness when the computer is running on AC power.</p> <p>By default, the screen brightness is set to 100 when the computer is running on AC power.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Touchscreen	<p>Enables or disables the touch screen option.</p> <p>By default, the Touchscreen option is enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Full Screen Logo	<p>Enables or disables the computer to display full screen logo, if the image matches screen resolution.</p> <p>By default, the Full Screen Logo option is disabled.</p>

Table 31. System Setup options—Connection menu




Connection	
Wireless Device Enable	
WLAN	<p>Enables or disables the internal WLAN device.</p> <p>By default, the WLAN option is enabled.</p>
Bluetooth	<p>Enables or disables the internal Bluetooth device.</p> <p>By default, the Bluetooth option is enabled.</p>
Enable UEFI Network Stack	<p>Enables or disables the UEFI Network Stack and controls the onboard LAN Controller.</p> <p>By default, the Enable UEFI Network Stack option is enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Wireless Radio Control	<p>Enables or disables the connection of the computer to a wired network and subsequently disable the selected wireless radios (WLAN and/or WWAN).</p> <p>By default, the Control WLAN radio option is disabled.</p>
Enable UEFI Bluetooth Stack	<p>Enables or disables UEFI Bluetooth protocols that are installed and available, allowing pre-OS Bluetooth HID features.</p> <p>By default, the Enable UEFI Bluetooth Stack option is enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
HTTP(s) Boot Feature	
HTTP(s) Boot	<p>When enabled, supports HTTP(s) boot on the client BIOS, which offers wired or wireless and HTTP/HTTPS connection options.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
HTTP(s) Boot Modes	<p>In Auto Mode, the boot URL is obtained from the DHCP response; the boot URL specifies the HTTP Boot Server and location of the Network Boot Program (NBP)</p>

Table 31. System Setup options—Connection menu (continued)



Connection	
	<p>file. In Manual mode, the user enters the URL in the text box, which must start with <code>http://</code> or <code>https://</code> and end with the NBP file name.</p> <p>By default, Auto Mode is selected.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
CA Certificate	<p>Upload or delete the CA certificate.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>

Table 32. System Setup options—Power menu




Power	
Battery Configuration	<p>Enables or disables the computer to run on battery during peak power usage hours. Use the table Custom Charge Start and Custom Charge Stop, to prevent AC power usage between certain times of each day.</p> <p>By default, the Adaptive option is selected. Battery settings are adaptively optimized based on your typical battery usage pattern.</p>
Advanced Configuration	
Enable Advanced Battery Charge Configuration	<p>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.</p> <p>By default, the Enable Advanced Battery Charge Configuration option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Peak Shift	
Enable Peak Shift	<p>Enables or disables the computer to run on battery during peak power usage hours.</p> <p>By default, the Enable Peak Shift option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Thermal Management	<p>Enables or disables cooling of the fan and manages the processor heat to adjust the system performance, noise, and temperature.</p> <p>By default, the Optimized option is selected. Standard settings for balanced performance, noise, and temperature.</p>
USB Wake Support	
Wake on Dell USB-C Dock	<p>When enabled, connecting a Dell USB-C Dock wakes the computer from Standby, Hibernate, and Power Off.</p> <p>By default, the Wake on Dell USB-C Dock option is enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Block Sleep	<p>Enables or disables the computer from entering Sleep (S3) mode in the operating system.</p> <p>By default, the Block Sleep option is disabled.</p>

Table 32. System Setup options—Power menu (continued)



Power	
	<p> NOTE: 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.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Lid Switch	
Enable Lid Switch	<p>Enables or disables the Lid Switch.</p> <p>By default, the Enable Lid Switch option is enabled.</p>
Power On Lid Open	<p>When enabled, allows the computer to turn on when the display is opened.</p> <p>By default, the Power On Lid Open option is disabled.</p>

Table 33. System Setup options—Security menu





Security	
TPM 2.0 Security	<p>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.</p> <p>By default, the TPM 2.0 Security option is enabled.</p> <p>For additional security, Dell Technologies recommends keeping the Trusted Platform Module (TPM) enabled to allow these security technologies to fully function.</p>
TPM 2.0 Security On	<p>Enables or disables the TPM.</p> <p>By default, the TPM 2.0 Security On option is enabled.</p> <p>For additional security, Dell Technologies recommends keeping TPM enabled to allow these security technologies to fully function.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Attestation Enable	<p>The Attestation Enable option controls the endorsement hierarchy of TPM. Disabling the Attestation Enable option prevents TPM from being used to digitally sign certificates.</p> <p>By default, the Attestation Enable option is enabled.</p> <p>For additional security, Dell Technologies recommends keeping the Attestation Enable option enabled.</p> <p> NOTE: When disabled, this feature may cause compatibility issues or loss of functionality in some operating systems.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Key Storage Enable	<p>The Key Storage Enable option controls the storage hierarchy of TPM, which is used to store digital keys. Disabling the Key Storage Enable option restricts the ability of TPM to store owner's data.</p> <p>By default, the Key Storage Enable option is enabled.</p> <p>For additional security, Dell Technologies recommends keeping the Key Storage Enable option enabled.</p> <p> NOTE: When disabled, this feature may cause compatibility issues or loss of functionality in some operating systems.</p>

Table 33. System Setup options—Security menu (continued)





Security	
Clear	<p>When enabled, the Clear option clears information that is stored in the TPM after exiting the system's BIOS. This option returns to the disabled state when the computer restarts.</p> <p>By default, the Clear option is disabled.</p> <p>Dell Technologies recommends enabling the Clear option only when TPM data is required to be cleared.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
PPI Bypass for Clear Commands	<p>The Physical Presence Interface (PPI) Bypass for Clear Commands option allows the operating system to manage certain aspects of PTT. When enabled, you are not prompted to confirm changes to the PTT configuration.</p> <p>By default, the PPI Bypass for Clear Commands option is disabled.</p> <p>For additional security, Dell Technologies recommends keeping the PPI Bypass for Clear Commands option disabled.</p>
Chassis Intrusion	
Chassis Intrusion	<p>Enables or disables the detection of chassis intrusion events. This feature notifies the user when the base cover has been removed from the computer.</p> <p>When set to Enabled, a notification is displayed on the next boot and the event is logged in the BIOS Events log.</p> <p>When set to Disabled, no notification is displayed and no event is logged in the BIOS Events log.</p> <p>When set to On-Silent, the event is logged in the BIOS Events log, but no notification is displayed.</p> <p>By default, the Chassis Intrusion Detection option is disabled.</p> <p>For additional security, Dell Technologies recommends keeping the Chassis Intrusion option enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Data Wipe on Next Boot	
Start Data Wipe	<p>Data Wipe is a secure wipe operation that deletes information from a storage device.</p> <p> CAUTION: The Secure Data Wipe operation erases information in a way that it cannot be reconstructed.</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 BIOS will queue up a data wipe cycle for storage devices that are connected to the motherboard on the next reboot.</p> <p>By default, the Start Data Wipe option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</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 features, you must enable the Absolute BIOS setting and contact Absolute for configuration and activation.</p> <p>By default, the Absolute option is enabled.</p>

Table 33. System Setup options—Security menu (continued)








Security	
	<p>For additional security, Dell Technologies recommends keeping the Absolute option enabled.</p> <p> WARNING: The Permanently Disabled option can only be selected once. When Permanently Disabled is selected, Absolute Persistence cannot be reenabled. No further changes to the Enable/Disable states are allowed.</p> <p> NOTE: The Enable/Disable options are unavailable while the computer is in the activated state.</p> <p> NOTE: 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 Always Except Internal HDD option is enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Firmware Device Tamper Detection	<p>Allows you to control the firmware device tamper detection feature. This feature notifies the user when the firmware device is tampered. When enabled, a screen warning message is displayed on the computer and a tamper detection event is logged in the BIOS Events log. The computer fails to reboot until the event is cleared.</p> <p>By default, the Firmware Device Tamper Detection option is enabled.</p> <p>For additional security, Dell Technologies recommends keeping the Firmware Device Tamper Detection option enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Clear Firmware Device Tamper Detection	<p>Allows you to clear the events that are logged when tampering of firmware device is detected.</p> <p>By default, the Clear Firmware Device Tamper Detection option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Pluton Security Processor	<p>Enables or disables the utilization of the Pluton Security Processor by the operating system to provide security services such as Key Storage Provider functionality.</p> <p>By default, the Pluton Security Processor option is enabled.</p> <p> NOTE: For additional security, Dell Technologies recommends keeping the Pluton Security Processor option enabled.</p>

Table 34. System Setup options—Passwords menu

Passwords	
Admin Password	<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"> • The administrator password cannot be set if system and/or internal hard drive passwords are previously set.

Table 34. System Setup options—Passwords menu (continued)

Passwords	
	<ul style="list-style-type: none"> • The administrator password can be used in place of the system and/or internal hard drive passwords. • When set, the administrator password must be provided during a firmware update. • Clearing the administrator password also clears the system password (if set). <p>Dell Technologies recommends using an administrator password to prevent unauthorized changes to BIOS Setup options.</p>
System Password	<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"> • The computer shuts down when idle for approximately 10 minutes at the system password prompt. • The computer shuts down after three incorrect attempts to enter the system password. • The computer shuts down when the Esc key is pressed at the System Password prompt. • The system password is not prompted when the computer resumes from standby mode. <p>Dell Technologies recommends using the system password in situations where it is likely that a computer may be lost or stolen.</p>
Hard Drive Password <i>i</i> NOTE: On some computers, the M.2 PCIe SSD-0 Password option is shown.	<p>The hard drive password can be set to prevent unauthorized access of the data stored on the solid-state drive. The computer prompts for the hard drive password during boot in order to unlock the drive. A password-secured hard 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 Hard Drive Password or M.2 PCIe SSD-0 Password option is used.</p> <ul style="list-style-type: none"> • The hard drive password option cannot be accessed when the hard drive is disabled in the BIOS Setup. • The computer shuts down when idle for approximately 10 minutes at the hard drive password prompt. • The computer shuts down after three incorrect attempts to enter the hard drive password and treats the hard drive as not available. • The hard drive does not accept password unlock attempts after five incorrect attempts to enter the hard drive password from the BIOS Setup. The hard drive password must be reset for the new password unlock attempts. • The computer treats the hard drive as not available when the Esc key is pressed at the hard drive password prompt. • The hard drive password is not prompted when the computer resumes from standby mode. When the hard drive is unlocked by the user before the computer goes into standby mode, it remains unlocked after the computer resumes from standby mode. • If the system and hard drive passwords are set to the same value, the hard drive unlocks after the correct system password is entered. <p>Dell Technologies recommends using a hard drive password to protect unauthorized data access.</p>
Password Configuration	<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 as well as require passwords to contain certain character classes (upper case, lower case, digit, special character).</p> <p>When the Lower Case Letter option is enabled, the password requires at least one lower case letter.</p>

Table 34. System Setup options—Passwords menu (continued)

Passwords	
	<p>When the Upper Case Letter option is enabled, the password requires at least one upper case letter.</p> <p>When the Digit option is enabled, the password requires at least one numeric digit.</p> <p>When the Special Character option is enabled, the password requires at least one special character from the set: !"#%&'()*+,-./:;<=>?@[\\]^_`{ }~.</p> <p>When setting Minimum Characters for password length, Dell Technologies recommends setting the minimum password length to at least eight characters.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Password Bypass	<p>The Password Bypass option allows the computer to reboot from the operating system without entering the system or hard drive password. If the computer has already booted to the operating system, it is presumed that the user has already entered the correct system or hard drive password.</p> <p>NOTE: This option does not remove the requirement to enter the password after shutting down.</p> <p>By default, the Password Bypass option is disabled.</p> <p>For additional security, Dell Technologies recommends keeping the Password Bypass option enabled.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Password Changes	
Allow Non-Admin Password Changes	<p>The Allow Non-Admin Password Changes option in BIOS Setup allows an end user to set or change the system 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 Allow Non-Admin Password Changes option is enabled.</p> <p>For additional security, Dell Technologies recommends keeping the Allow Non-Admin Password Changes option disabled.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Admin Setup Lockout	<p>The Admin Setup Lockout 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 Enable Admin Setup Lockout option is disabled.</p> <p>For additional security, Dell Technologies recommends keeping the Admin Setup Lockout option disabled.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Master Password Lockout	<p>The Master Password Lockout option allows you to disable the Recovery Password feature. If the system, administrator, or hard drive password is forgotten, the computer becomes unusable.</p> <p>NOTE: When the owner password is set, the Master Password Lockout option is not available.</p> <p>NOTE: When an internal hard drive password is set, it must first be cleared before Master Password Lockout can be changed.</p> <p>By default, the Enable Master Password Lockout option is disabled.</p>

Table 34. System Setup options—Passwords menu (continued)

Passwords	
	<p>Dell Technologies does not recommend enabling the Master Password Lockout unless you have implemented your own password recovery system.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Allow Non-Admin PSID Revert	<p>The Allow Non-Admin PSID Revert option allows a user to clear the hard drive password without entering the BIOS Admin Password. When an Admin Password is set, the ability to enter the PSID is protected by requiring authentication with the Admin Password. If this option is enabled, any user can clear the drive without entering the Admin Password.</p> <p>By default, the Enable Allow Non-Admin PSID Revert option is disabled.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>

Table 35. System Setup options—Update, Recovery menu

Update, Recovery	
BIOS Recovery from Hard Drive	<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 drive.</p> <p>By default, the BIOS Recovery from Hard Drive option is enabled.</p> <p>NOTE: BIOS Recovery from Hard Drive is not available for self-encrypting drives (SED).</p> <p>NOTE: BIOS recovery is designed to fix the main BIOS block and cannot work if the Boot Block is damaged. In addition, this feature cannot work in the event of EC corruption, ME corruption, or a hardware issue. The recovery image must exist on an unencrypted partition on the drive.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
BIOS Downgrade	
Allow BIOS Downgrade	<p>Allows downgrading of the system firmware to previous revisions.</p> <p>By default, the Allow BIOS Downgrade option is enabled.</p>
SupportAssist OS Recovery	<p>Enables or disables the boot flow for SupportAssist OS Recovery tool if certain system errors occur.</p> <p>By default, the SupportAssist OS Recovery option is enabled.</p>
BIOSConnect	<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 OS Recovery Threshold setup option and local service operating system does not boot or is not installed.</p> <p>By default, the BIOSConnect option is enabled.</p>
Dell Auto OS Recovery Threshold	<p>Allows the control of the automatic boot flow for the SupportAssist System Resolution Console and the Dell OS Recovery Tool.</p> <p>By default, the Dell Auto OS Recovery Threshold value is set to 2.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>

Table 36. System Setup options—System Management menu







System Management	
Service Tag	Displays the Service Tag of the computer.
Asset Tag	<p>Creates a computer Asset Tag that an IT administrator can use to uniquely identify a particular computer.</p> <p> NOTE: Once set in the BIOS, the Asset Tag cannot be changed.</p>
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 Wake on AC option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Wake on LAN	<p>Enables or disables the computer to turn on by a special LAN signal.</p> <p>By default, the Wake on LAN option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Auto On Time	<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 Auto On Time option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Diagnostics	
Diagnostics OS Agent Requests	<p>Enable or disable the option for applications running in the operating system to run with preboot diagnostics on subsequent boots.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Power-On-Self-Test Automatic Recovery	<p>Enable or disable the automatic recovery of the computer from no power or no-POST failure by applying mitigation steps.</p> <p>By default, the Power-On-Self-Test Automatic Recovery option is enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>

Table 37. System Setup options—Keyboard menu


Keyboard	
Fn Lock Options	<p>Enables or disables the Fn Lock option.</p> <p>By default, the Fn Lock option is enabled.</p>
Keyboard Illumination	<p>Configures the operating mode of the keyboard illumination feature.</p> <p>By default, the Auto option is selected. Enables the keyboard illumination feature at 100% brightness level.</p>
Keyboard Backlight Timeout on AC	<p>Sets the timeout value for the keyboard backlight when an AC adapter is connected to the computer.</p> <p>By default, the 1 minute option is selected.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>

Table 37. System Setup options—Keyboard menu (continued)

Keyboard	
Keyboard Backlight Timeout on Battery	<p>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.</p> <p>By default, the 1 minute option is selected.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Device Configuration HotKey Access	<p>Allows you to control whether you can access device configuration screens through hotkeys during system startup.</p> <p>By default, the Device Configuration HotKey Access option is enabled.</p> <p>NOTE: This setting controls only the Intel RAID (CTRL+I), MEBX (CTRL+P), and LSI RAID (CTRL+C) Option ROMs. Other preboot Option ROMs, which support entry using a key sequence, are not affected by this setting.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>

Table 38. System Setup options—Pre-boot Behavior menu

Pre-boot Behavior	
Adapter Warnings	
Enable Adapter Warnings	<p>Enables the warning messages during boot when the adapters with less power capacity are detected.</p> <p>By default, the Enable Adapter Warnings option is enabled.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Warnings and Errors	<p>Enables or disables the action to be taken when a warning or error is encountered.</p> <p>By default, the Prompt on Warnings and Errors option is selected.</p> <p>NOTE: Errors deemed critical to the operation of the computer hardware stop the functioning of the computer.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
USB-C Warnings	
Enable Dock Warning Messages	<p>Enables the warning messages during boot when the USB-C adapters with less power capacity are detected.</p> <p>By default, the Enable Dock Warning Messages option is enabled.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Extend BIOS POST Time	<p>Sets the BIOS POST (Power-On Self-Test) load time.</p> <p>By default, the 0 seconds option is selected.</p> <p>NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
MAC Address Pass-Through	<p>Replaces the external NIC MAC address (in a supported dock or dongle) with the selected MAC address from the computer.</p> <p>By default, the System Unique MAC Address option is selected.</p>
Sign of Life	

Table 38. System Setup options—Pre-boot Behavior menu (continued)



Pre-boot Behavior	
Early Logo Display	<p>Displays the Logo Sign of Life.</p> <p>By default, the Early Logo Display option is enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Early Keyboard Backlight	<p>Enables or disables the Keyboard Backlight Sign of Life.</p> <p>By default, the Early Keyboard Backlight option is enabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>

Table 39. System Setup options—Virtualization Support menu








Virtualization Support	
Intel Trusted Execution Technology (TXT)	<p>Specifies whether a measured Virtual Machine Monitor (MVMM) can use the additional hardware capabilities provided by Intel Trusted Execution Technology. The following must be enabled in order to enable Intel TXT -</p> <ul style="list-style-type: none"> • Trusted Platform Module (TPM) • Intel Hyper-Threading • All CPU cores (Multi-Core Support) • Intel Virtualization Technology • Intel VT for Direct I/O <p>By default, the Intel Trusted Execution Technology (TXT) option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
DMA Protection	
Enable Pre-Boot DMA Support	<p>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.</p> <p> NOTE: This option is not available when the virtualization setting for IOMMU is disabled (VT-d/AMD Vi).</p> <p>By default, the Enable Pre-Boot DMA Support option is enabled.</p> <p>For additional security, Dell Technologies recommends keeping the Enable Pre-Boot DMA Support option enabled.</p> <p> NOTE: This option is provided only for compatibility purposes, since some older hardware is not DMA capable.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Enable OS Kernel DMA Support	<p>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.</p> <p> NOTE: This option is not available when the virtualization setting for IOMMU is disabled (VT-d/AMD Vi).</p> <p>By default, the Enable OS Kernel DMA Support option is enabled.</p> <p> NOTE: This option is provided only for compatibility purposes, since some older hardware is not DMA capable.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>

Table 39. System Setup options—Virtualization Support menu (continued)





Virtualization Support	
Internal Port DMA Compatibility Mode	<p>When enabled, BIOS notifies the OS that the internal ports are not DMA capable. This is intended to help with devices that have OS DMA compatibility issues. This setting does not affect external port DMA or Pre-boot DMA support.</p> <p>By default, the Internal Port DMA Compatibility Mode option is disabled.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>

Table 40. System Setup options—Performance menu

Performance	
Intel SpeedStep	
Enable Intel SpeedStep Technology	<p>Enables the computer to dynamically adjust processor voltage and core frequency, decreasing average power consumption and heat production.</p> <p>By default, the Enable Intel SpeedStep Technology option is enabled.</p>
C-States Control	
Enable C-States Control	<p>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.</p> <p>By default, the Enable C-States Control option is enabled.</p>


Table 41. System Setup options—System Logs menu

System Logs	
BIOS Event Log	
Clear BIOS Event Log	<p>Select the option to keep or clear BIOS events logs.</p> <p>By default, the Keep Log option is selected.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Thermal Event Log	
Clear Thermal Event Log	<p>Select the option to keep or clear thermal events logs.</p> <p>By default, the Keep Log option is selected.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>
Power Event Log	
Clear Power Event Log	<p>Select the option to keep or clear power events logs.</p> <p>By default, the Keep Log option is selected.</p> <p> NOTE: To view this option, enable Advanced Setup mode as described in View Advanced Setup options.</p>

Updating the BIOS


Updating the BIOS in Windows

Steps

1. Go to [Dell Support Site](#).
2. Go to **Identify your product or search support**. In the box, enter the product identifier, model, service request or describe what you are looking for, and then click **Search**.
 **NOTE:** If you do not have the Service Tag, use the SupportAssist 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 about how to update the system BIOS, search in the Knowledge Base Resource at [Dell Support Site](#).

Updating the BIOS using the USB drive in Windows

Steps

1. Go to [Dell Support Site](#).
2. Go to **Identify your product or search support**. In the box, enter the product identifier, model, service request or describe what you are looking for, and then click **Search**.
 **NOTE:** If you do not have the Service Tag, use the SupportAssist 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. Create a bootable USB drive. For more information, search the Knowledge Base Resource at [Dell Support Site](#).
8. Copy the BIOS Setup program file to the bootable USB drive.
9. Connect the bootable USB drive to the computer that needs the BIOS update.
10. Restart the computer and press **F12**.
11. Select the USB drive from the **One Time Boot Menu**.
12. Type the BIOS Setup program filename and press **Enter**.
The **BIOS Update Utility** appears.
13. Follow the on-screen instructions to complete the BIOS update.

Updating the BIOS 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 from the One-Time boot menu

You can run the BIOS flash update file from Windows using a bootable USB drive or you can also update the BIOS from the One-Time boot menu on the computer. To update your computers BIOS, copy the BIOS XXXX.exe file onto a USB drive

formatted with the FAT32 file system. Then, restart your computer and boot from the USB drive using the One-Time Boot Menu.

About this task

BIOS Update

To confirm if the BIOS Flash Update is listed as a boot option you can boot your computer to the **One Time Boot** Menu. If the option is listed, then the BIOS can be updated using this method.

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

- USB drive formatted to the FAT32 file system (the drive 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 must be connected to the computer
- A functional computer battery to flash the BIOS

Perform the following steps to update the BIOS from the One-Time boot menu:

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

Steps

1. Turn off the computer, insert the USB drive that contains the BIOS flash update file.
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 the 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 flash update is completed.

System and setup password

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



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

Table 42. System and setup password

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

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

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

Assigning a System Setup password

Prerequisites

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

Steps


1. In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.
The **Security** screen is displayed.
2. Select **System/Admin Password** and create a password in the **Enter the new password** field.
Use the following guidelines to create the system password:
 - A password can have up to 32 characters.
 - A password can at least have one special character: "(! " # \$ % & ' * + , - . / : ; < = > ? @ [\] ^ _ ` { | })")"
 - A password can have numbers 0 to 9.
 - A password can have an upper case letters from A to Z.
 - A password can have a 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 Y to save the changes.
The computer restarts.

Deleting or changing an existing system password or setup password

Prerequisites

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


Steps

1. 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 password and/or setup password, reenter the new password when prompted. If you delete the system password and/or setup password, confirm the deletion when prompted.
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 system and setup passwords

About this task

To clear the system or setup passwords, contact Dell technical support as described at [Contact Support](#).

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

Clearing chassis intrusion alert

The computer features a chassis intrusion switch that detects when the base cover had been removed from the computer.

Alerts to notify you of any intrusions can be enabled through the **Chassis Intrusion** field in the **Security** submenu of the BIOS setup menu.

When enabled, the **Block Boot Until Cleared** field allows you to choose whether to prevent normal boot-up of the computer until the intrusion alert is cleared.

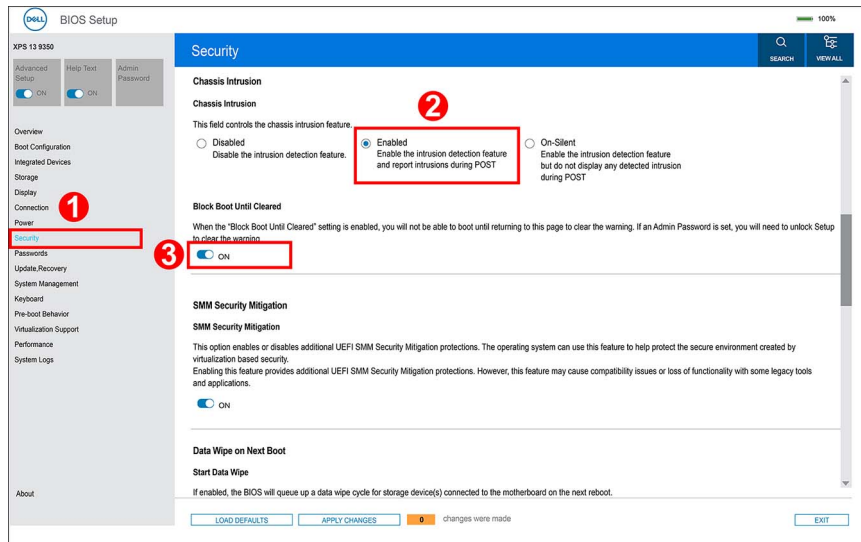


Figure 52. Block Boot Until Cleared

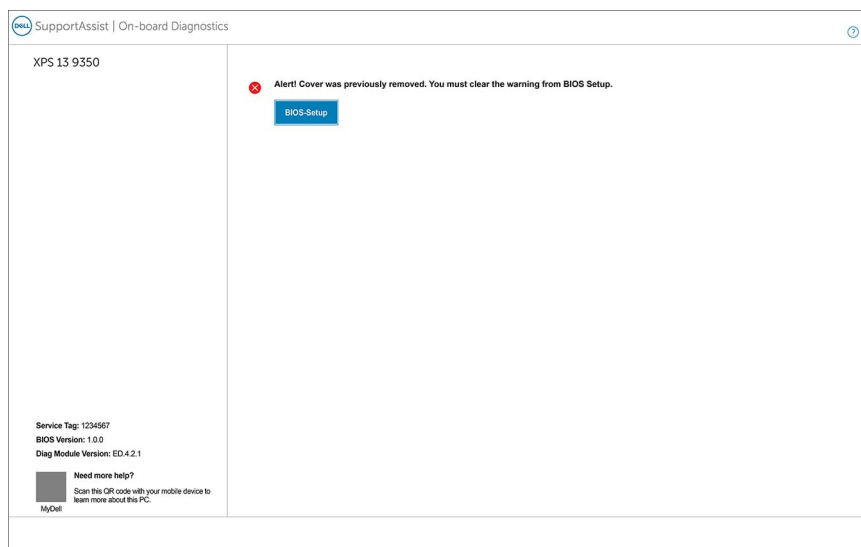


Figure 53. BIOS-Setup

If **Block Boot Until Cleared** is set to **OFF**, select **Continue** to boot up or **BIOS-Setup** to clear the alert.

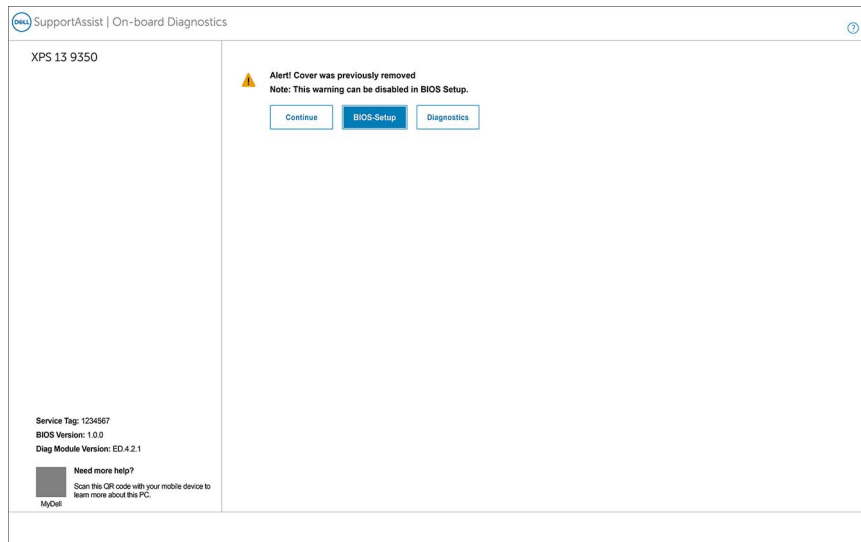


Figure 54. BIOS-Setup

NOTE: If **Continue** is selected, the user continues to see the alert each time the computer is turned on until the alert is cleared.

To clear the alert, select **ON** in the **Clear Intrusion Warning** field in the **Security** submenu of the BIOS setup menu.

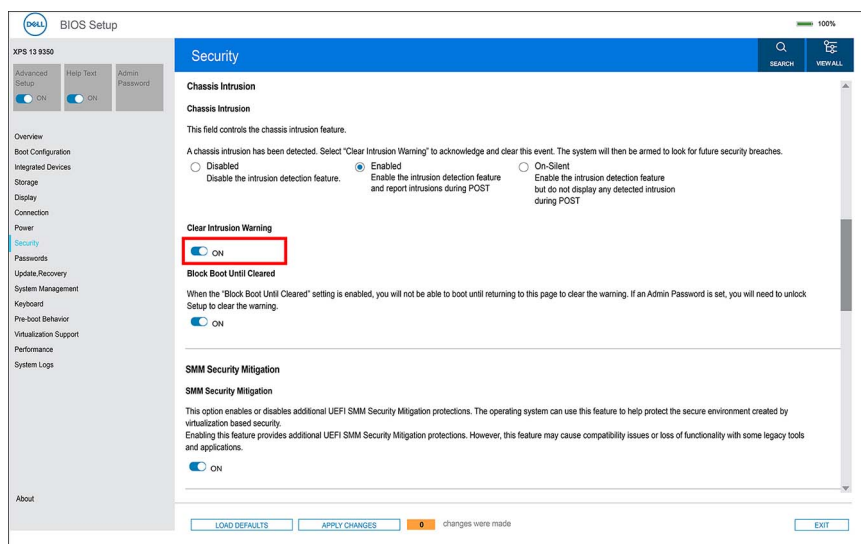


Figure 55. Clear Intrusion Warning

Troubleshooting

Handling swollen rechargeable Li-ion batteries

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

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

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

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


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

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

Pre-boot system diagnostics

About this task

Pre-boot system diagnostics performs checks on your computer hardware to identify any issues. You can troubleshoot the issues using the user interface.

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

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

Running the Pre-Boot System Diagnostics


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 to start the system diagnostics.
The diagnostic test starts automatically.


Built-in self-test (BIST)

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

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

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

How to run M-BIST

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

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

Table 43. 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

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

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

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

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

How to invoke the L-BIST

1. Turn on your computer.
2. If the computer does not start up 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.
3. For cases, when a [2,7] error code is shown, check to see if the display cable is properly connected.
 4. For cases when a [2,8] error code is shown, replace the system board.


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

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

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

How to invoke the LCD-BIST

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

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

System-diagnostic lights

This section lists the system-diagnostic lights of your XPS 13 9350.

The Service LED is used for system diagnostics, and it emits amber or white light. A Dell service representative uses the LED light patterns to troubleshoot your device.


The following table shows different Service LED light patterns and associated problems.

Table 44. Diagnostic error codes

Diagnostic light codes	Problem description
2,1	Processor failure
2,2	System board: BIOS or Read-Only Memory (ROM) failure
2,3	No memory or Random-Access Memory (RAM) detected
2,4	Memory or Random-Access Memory (RAM) failure
2,5	Invalid memory installed
2,6	System-board or chipset error
2,7	Display failure - SBIOS message
2,8	Display power-rail failure
3,2	PCI, video card, or chip failure
3,3	Recovery image not found
3,4	Recovery image found but invalid
3,5	EC power-rail error
3,6	System BIOS Flash incomplete

Table 44. Diagnostic error codes (continued)

Diagnostic light codes	Problem description
3,7	Management Engine (ME) error

 **NOTE:** An error code of **35** indicates an EC power-rail error. This error may occur during Power-On Self-Test (POST). Contact [Dell Support](#) for assistance.

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 Dell computers running the Windows operating system. It consists of tools to diagnose and troubleshoot issues that may occur before your computer boots to the operating system. It enables you to diagnose hardware issues, repair your computer, back up your files, and restore your computer to its factory state.

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

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

Real-Time Clock (RTC Reset)

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

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

Backup media and recovery options

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

Network power cycle

About this task

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

Steps

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

 **NOTE:** Some Internet service providers (ISPs) provide a modem and router combo device.

Drain flea power (perform hard reset)

About this task

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

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

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

Perform the following steps to drain the flea power:

Steps

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



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

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



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

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 45. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	Dell Site
Contact Support	In Windows search, type <code>Contact Support</code> , and press Enter.
Online help for operating system	Windows Support Site Linux Support Site
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 Dell Support Site . For more information about how to find the Service Tag for your computer, see Locate the Service Tag on your computer .
Dell knowledge base articles	<ol style="list-style-type: none"> 1. Go to Dell Support Site. 2. On the menu bar at the top of the Support page, select Support > Support Library. 3. In the Search field on the Support Library page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles.

Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see [Contact Support at Dell Support Site](#).

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

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