

Dell Latitude 7480

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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Working on your computer

Turning off your computer — Windows 10

CAUTION: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

- 1 Click or tap .
- 2 Click or tap  and then click or tap **Shut down**.

NOTE: Ensure that the computer and all attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for about 6 seconds to turn them off.

Before working inside your computer

- 1 Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
- 2 Turn off your computer.
- 3 If the computer is connected to a docking device (docked), undock it.
- 4 Disconnect all network cables from the computer (if available).

CAUTION: If your computer has an RJ45 port, disconnect the network cable by first unplugging the cable from your computer.

- 5 Disconnect your computer and all attached devices from their electrical outlets.
- 6 Open the display.
- 7 Press and hold the power button for few seconds, to ground the system board.

CAUTION: To guard against electrical shock unplug your computer from the electrical outlet before performing Step # 8.

CAUTION: Before touching anything inside your computer, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface at the same time as touching a connector on the back of the computer.

- 8 Remove any installed ExpressCards or Smart Cards from the appropriate slots.

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 included in this document assumes that the following conditions exist:

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

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

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance

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

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

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

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

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

After working inside your computer

After you complete any replacement procedure, ensure that you connect external devices, cards, and cables before turning on your computer.

⚠ **CAUTION:** To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

- 1 Connect any external devices, such as a port replicator or media base, and replace any cards, such as an ExpressCard.
- 2 Connect any telephone or network cables to your computer.

⚠ **CAUTION:** To connect a network cable, first plug the cable into the network device and then plug it into the computer.

- 3 Connect your computer and all attached devices to their electrical outlets.
- 4 Turn on your computer.



Removing and installing components

This section provides detailed information on how to remove or install the components from your computer.

Recommended tools

The procedures in this document require the following tools:

- Phillips #0 screwdriver
- Phillips #1 screwdriver
- Small plastic scribe

Screw size list

Table 1. Latitude 7480 - Screw size list

Component	M2.5x 6.0	M2.5x5.0	M2.0 x 5.0	M2.5 x 4.0	M2.0x3.0	M2.0 x 2.5	M2.0 x 2.0
Back cover	8 (captive screw)						
Battery (3-cell)			1				
Battery (4-cell)			2				
SSD module					1		
Heat sink module					4		
System fan		2	2				
WWAN card					1		
WLAN card					1		
Power connector port					1		
ESD bracket						2	
EDP bracket			1				
Touchpad buttons					2		
Fingerprint reader					1		
LED board					1		
Smart card reader cage					2		
Display hinge				6			
Display panel					<ul style="list-style-type: none"> • FHD - 2 • HD - 4 		
Keyboard support plate						18	
Keyboard							5
System board			3				

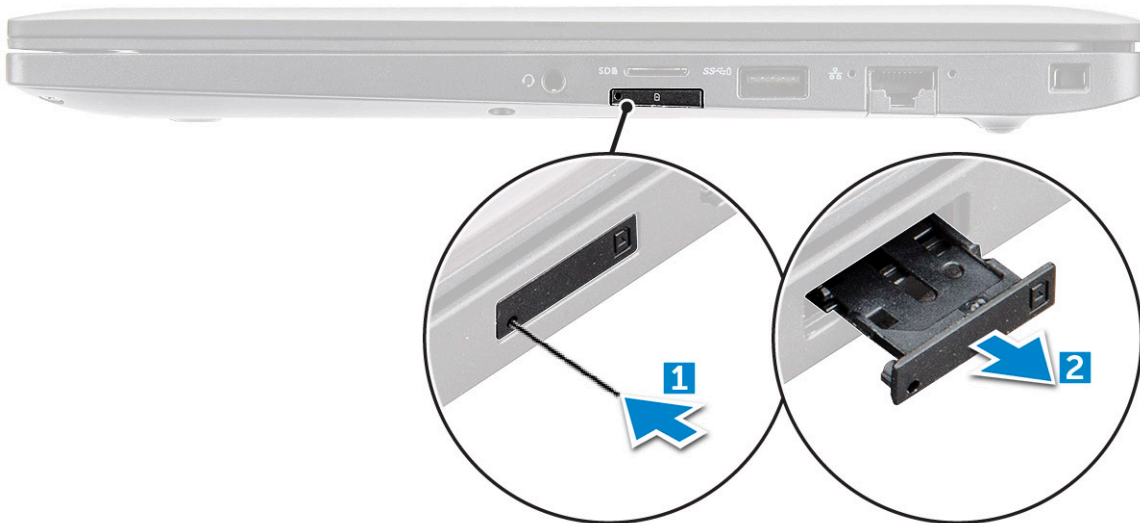
Subscriber Identification Module (SIM) card

Removing SIM card or SIM card tray

NOTE: SIM card or SIM card tray removal is only available on systems that are shipped with WWAN module. Hence, removing procedure is only applicable for systems that are shipped with WWAN module.

CAUTION: Removing the SIM card when the computer is on may cause data loss or damage the card. Ensure that your computer is turned off or the network connections are disabled.

- 1 Insert a paperclip or a SIM card removal tool into the pinhole on the SIM card tray.
- 2 Use a scribe to pull the SIM card tray.
- 3 If a SIM card is available, remove the SIM card from the SIM card tray.



Enter the tasks the user should do after finishing this task (optional).

Replacing SIM card

- 1 Insert a paperclip or a SIM card removal tool into the pinhole on the SIM card tray.
- 2 Use a scribe to pull the SIM card tray
- 3 Place on the SIM card on the tray.
- 4 Insert the SIM card tray into the slot.

Base cover

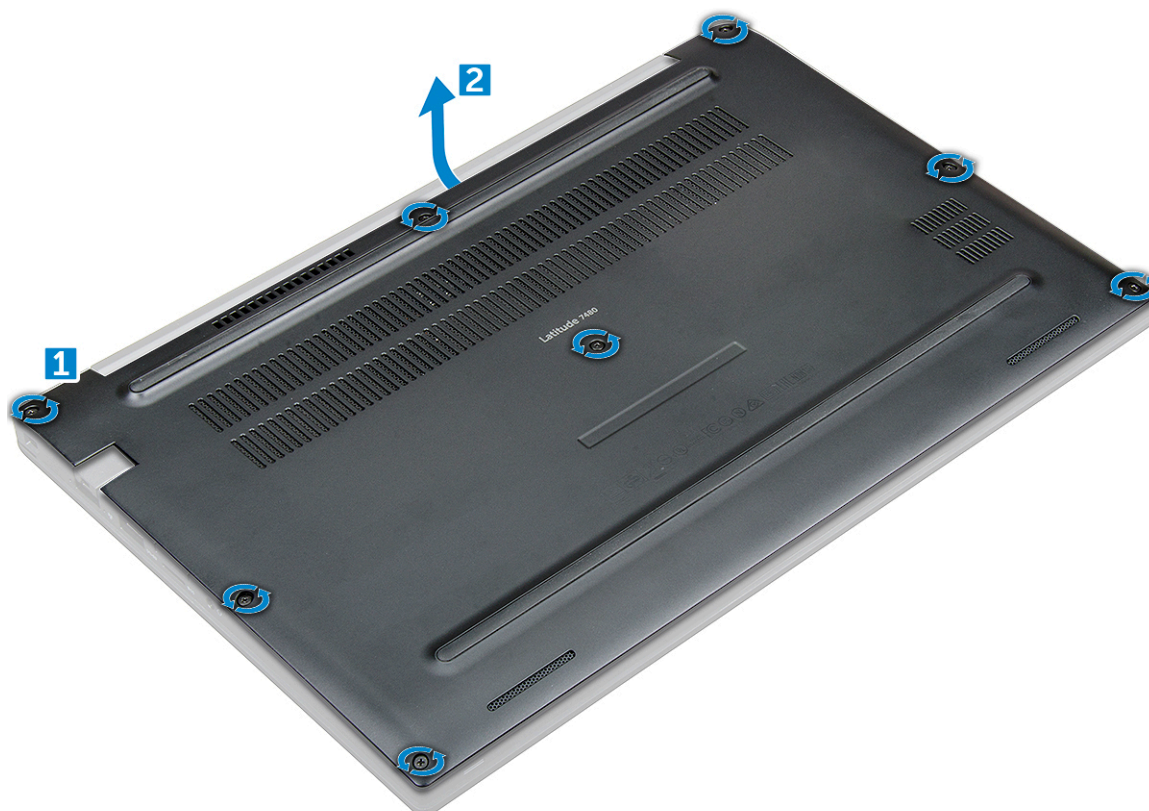
Removing base cover

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 To release the base cover:
 - a Loosen the M2.5 x 6.0 captive screws that secure the base cover to the computer [1].

NOTE: Be cautious while loosening the screws. Angle the screw driver to match the head of the screw to avoid a possible stripped screw head.



- b Use a plastic scribe to release the base cover from the edge and lift it from the computer [2].



- 3 Lift the base cover from the computer.



Installing base cover

- 1 Align the base cover tabs to the slots on the edges of the computer.
- 2 Press the edges of the cover until it clicks into place.
- 3 Tighten the M2.5 x 6.0 captive screws to secure the base cover to the computer.

① **NOTE:** Be cautious while tightening the screws. Angle the screw driver to match the head of the screw to avoid a possible stripped screw head.

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

Battery

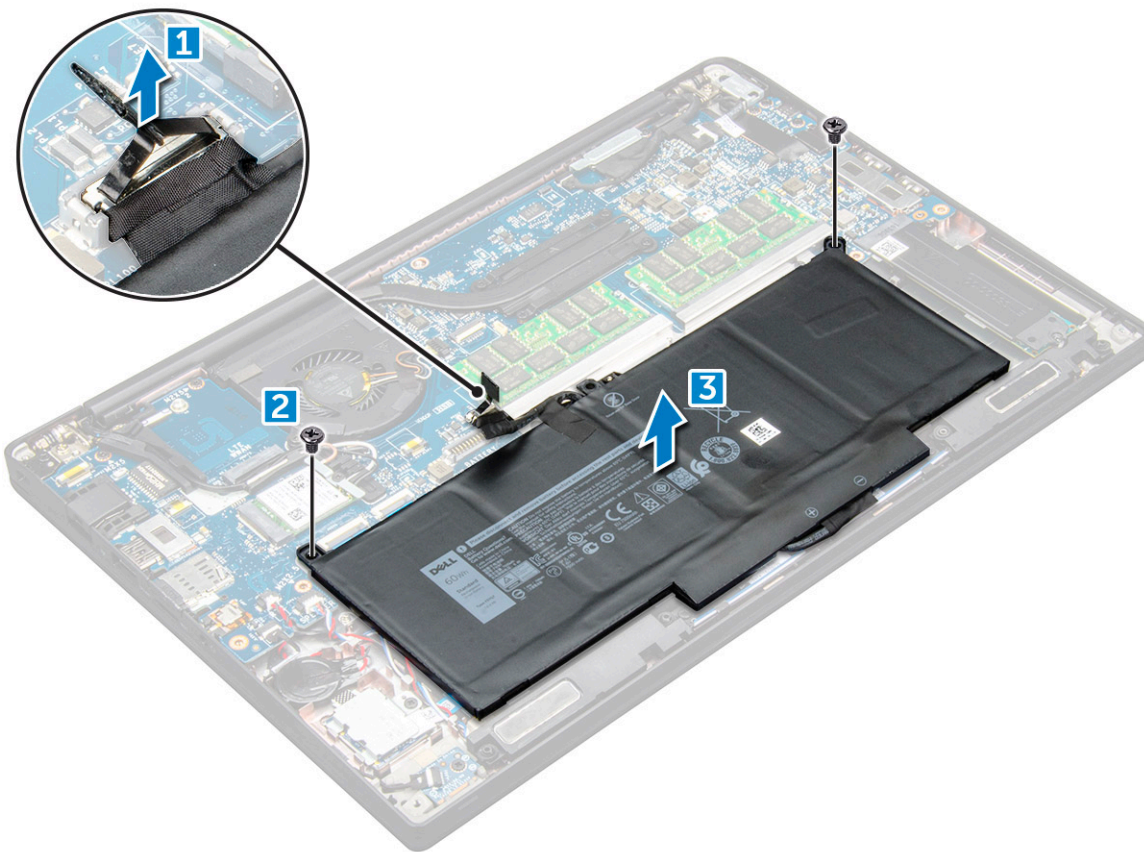
Removing battery

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the [base cover](#).
- 3 To remove the battery:
 - a Disconnect the battery cable from the connector on the system board [1].
 - b Remove the M2.0 x 5.0 screws that secure the battery to the computer [2].

① **NOTE:** A 3-cell battery has a single screw, and a 4-cell battery has two screws.

① **NOTE:** To identify the number of screws, see [screw list](#)

- c Lift the battery from the computer [3].



Installing battery

- 1 Insert the battery into the slot on the computer.
- 2 Route the battery cable through the routing clip and connect the battery cable to the connector on the system board.

① **NOTE:** Route the battery cable, if the cable at the base of the battery is un routed.

- 3 Tighten the M2.0 x 5.0 screws to secure the battery to the computer.

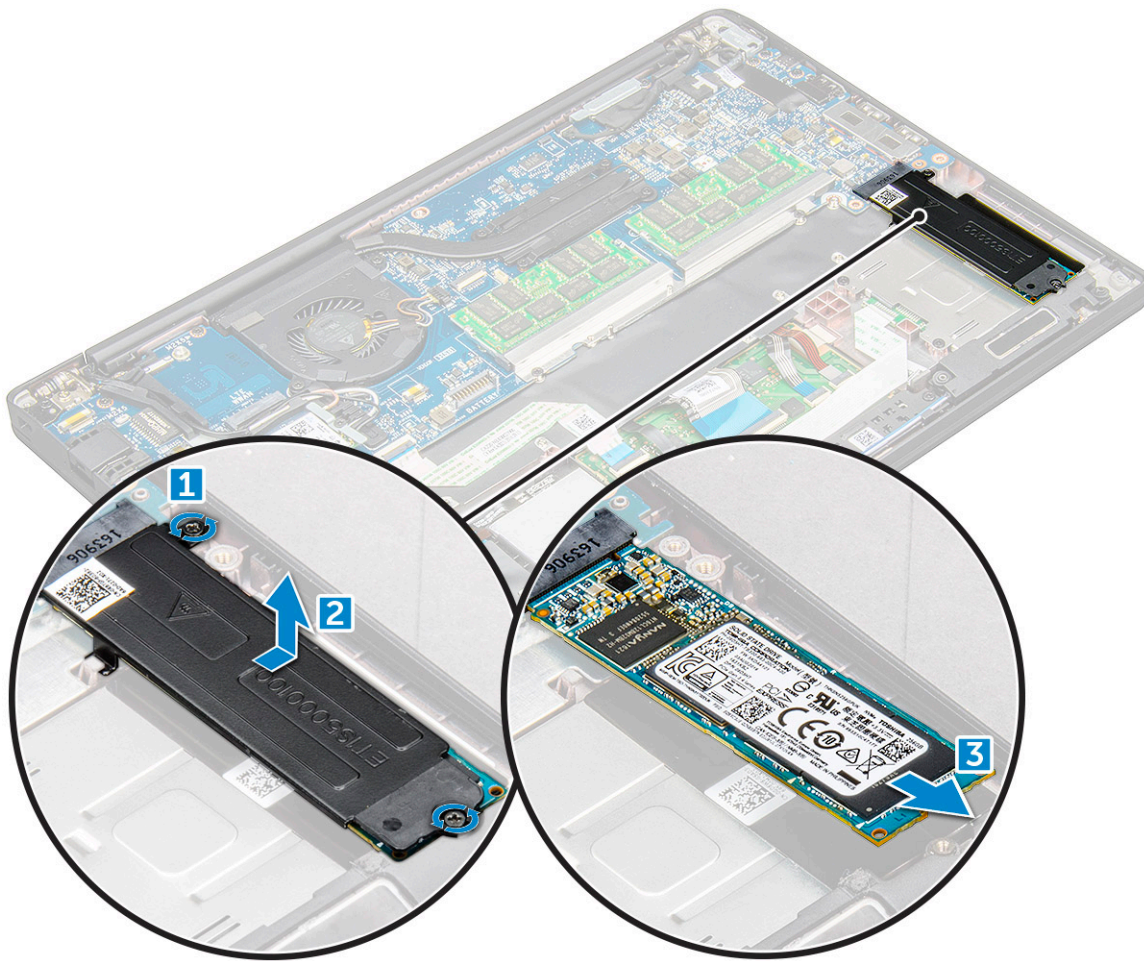
① **NOTE:** A small battery (3-cell) has a single screw, a larger battery (4-cell) has two screws.

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

PCIe Solid State Drive (SSD)

Removing PCIe SSD

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the:
 - a [base cover](#)
 - b [battery](#)
- 3 To remove the PCIe SSD:
 - a Loosen the M2.0x3.0 captive screws that secure the SSD bracket [1].
 - b Remove the SSD bracket [2].
 - c Remove the PCIe SSD from the computer [3].



Installing PCIe SSD

- 1 Insert the PCIe SSD card into the connector.
- 2 Install the SSD bracket over the PCIe SSD card.
- 3 Tighten the M2.0x3.0 screws to secure it the SSD bracket.
- 4 Install the:
 - a [battery](#)
 - b [base cover](#)
- 5 Follow the procedure in [After working iinside your computer](#).

WWAN card

Removing WWAN card

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the:
 - a [base cover](#)
 - b [battery](#)
- 3 To remove the WWAN card:
 - a Remove the M2.0 x 3.0 screw that secures the metal bracket to the WWAN card .



- b Lift the metal bracket that secures the WWAN card .
- c Disconnect the WWAN cables from the connectors on the WWAN card .
- d Lift the WWAN card from the computer .

Installing WWAN card

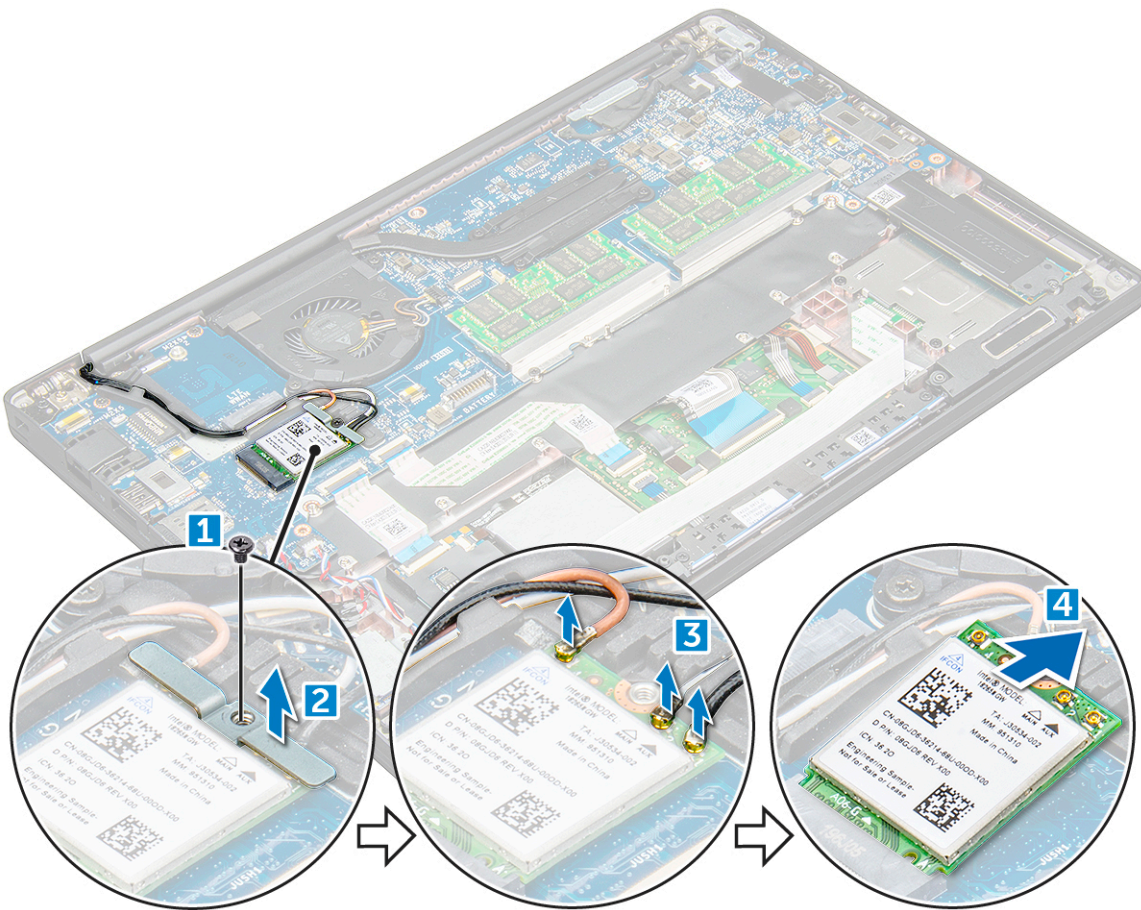
- 1 Insert the WWAN card into the connector on the system board.
- 2 Connect the WWAN cables to the connectors on the WWAN card.
- 3 Place the metal bracket and tighten the M2.0 x 3.0 screw to secure it to the computer.
- 4 Install the:
 - a [battery](#)
 - b [base cover](#)
- 5 Follow the procedure in [After working iinside your computer](#).

 **NOTE:** The IMEI number can also be found on the WWAN card.

WLAN card

Removing WLAN card

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the:
 - a [base cover](#)
 - b [battery](#)
- 3 To remove the WLAN card:
 - a Remove the M2.0 x 3.0 screw that secures the metal bracket to the WLAN card [1].
 - b Lift the metal bracket [2].
 - c Disconnect the WLAN cables from the connectors on the WLAN card [3].
 - d Remove the WLAN card from the computer [4].



Installing WLAN card

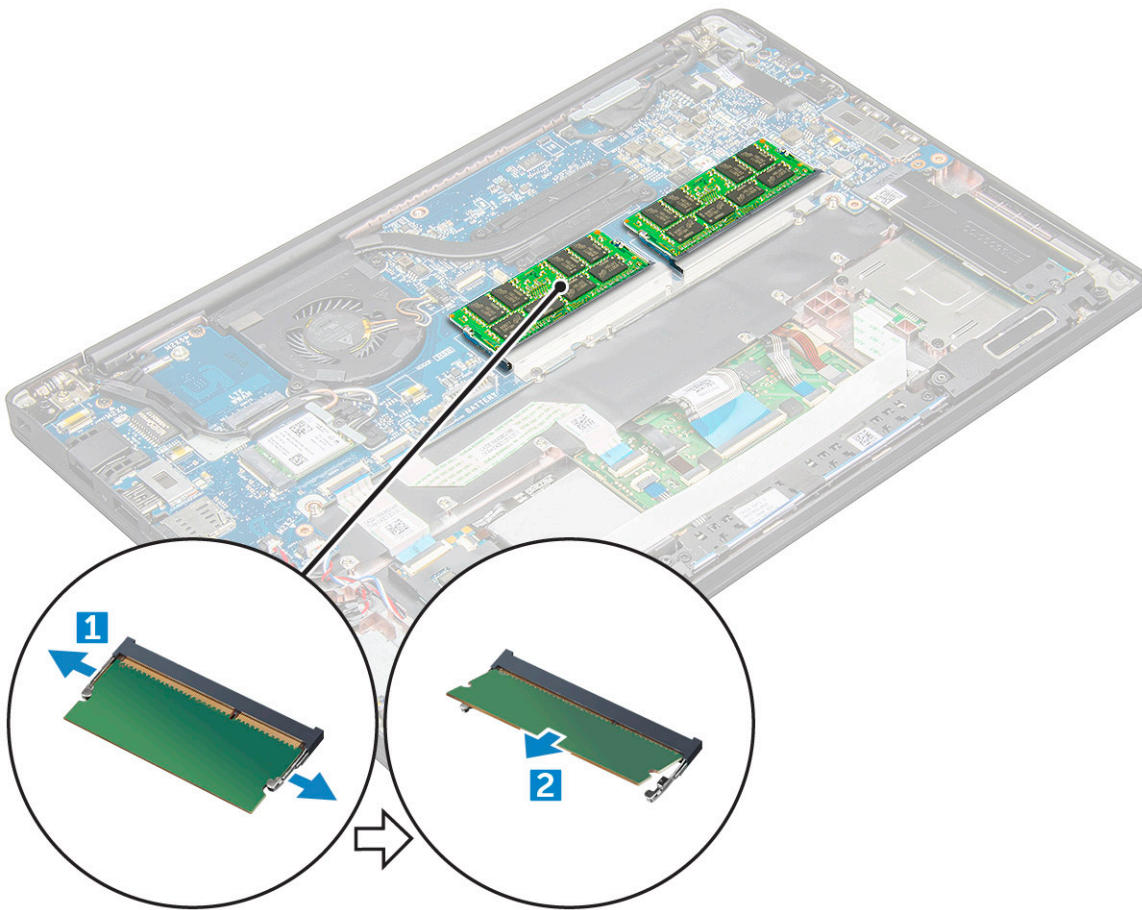
- 1 Insert the WLAN card into the connector on the system board.
- 2 Connect the WLAN cables to the connectors on the WLAN card.
- 3 Place the metal bracket and tighten the M2.0 x 3.0 screw to secure it to the computer.
- 4 Install the:
 - a [battery](#)
 - b [base cover](#)
- 5 Follow the procedure in [After working inside your computer](#).

Memory module

Removing memory module

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the:
 - a [base cover](#)
 - b [battery](#)
- 3 To remove the memory module:
 - a Pull the clips securing the memory module until the module snaps-out [1].
 - b Remove the memory module from the connector on the system board [2].





Installing memory module

- 1 Insert the memory module into the connector until snaps in.
- 2 Install the:
 - a [battery](#)
 - b [base cover](#)
- 3 Follow the procedures in [After working inside your computer](#).

System Setup

Topics:

- [Boot menu](#)
- [Navigation keys](#)
- [System setup options](#)
- [General screen options](#)
- [System Configuration screen options](#)
- [Video screen options](#)
- [Security screen options](#)
- [Secure Boot screen options](#)
- [Intel software guard extensions screen options](#)
- [Performance screen options](#)
- [Power management screen options](#)
- [POST behavior screen options](#)
- [Manageability](#)
- [Virtualization support screen options](#)
- [Wireless screen options](#)
- [Maintenance screen options](#)
- [System logs screen options](#)
- [Updating the BIOS in Windows](#)
- [System and setup password](#)

Boot menu

Press <F12> when the Dell™ logo appears to initiate a one-time boot menu with a list of the valid boot devices for the system. Diagnostics and BIOS Setup options are also included in this menu. The devices listed on the boot menu depend on the bootable devices in the system. This menu is useful when you are attempting to boot to a particular device or to bring up the diagnostics for the system. Using the boot menu does not make any changes to the boot order stored in the BIOS.

The options are:

- Legacy Boot:
 - Internal HDD
 - Onboard NIC
- UEFI Boot:
 - Windows Boot Manager
- Other Options:
 - BIOS Setup
 - BIOS Flash Update
 - Diagnostics
 - Change Boot Mode Settings



Navigation keys

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

Keys	Navigation
Up arrow	Moves to the previous field.
Down arrow	Moves to the next field.
Enter	Selects a value in the selected field (if applicable) or follow the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
Tab	Moves to the next focus area.

NOTE: For the standard graphics browser only.

Esc Moves to the previous page until you view the main screen. Pressing Esc in the main screen displays a message that prompts you to save any unsaved changes and restarts the system.

System setup options

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

General screen options

This section lists the primary hardware features of your computer.


Option	Description
System Information	<p>This section lists the primary hardware features of your computer.</p> <ul style="list-style-type: none">System Information: Displays BIOS Version, Service Tag, Asset Tag, Ownership Tag, Ownership Date, Manufacture Date, Express Service Code, the Signed Firmware update—enabled by defaultMemory Information: Displays Memory Installed, Memory Available, Memory Speed, Memory Channels Mode, Memory Technology, DIMM ASize, DIMM B Size,Processor Information: Displays Processor Type, Core Count, Processor ID, Current Clock Speed, Minimum Clock Speed, Maximum Clock Speed, Processor L2 Cache, Processor L3 Cache, HT Capable, and 64-Bit TechnologyDevice Information: Displays M.2 SATA, M.2 PCIe SSD-0, LOM MAC Address, Passthrough MAC address, Video Controller, Video BIOS Version, Video Memory, Panel Type, Native Resolution, Audio Controller, Wi-Fi Device, WiGig Device, Cellular Device, Bluetooth Device
Battery Information	Displays the battery status health and whether the AC adapter is installed.
Boot Sequence	<p>Allows you to change the order in which the computer attempts to find an operating system.</p> <ul style="list-style-type: none">Diskette DriveInternal HDDUSB Storage DeviceCD/DVD/CD-RW DriveOnboard NIC
Boot sequence options	<ul style="list-style-type: none">Windows boot managerWindowsIns

Option	Description
Boot list options	<ul style="list-style-type: none"> • Legacy • UEFI—selected by default
Advanced Boot Options	This option allows you the legacy option ROMs to load. By default, the Enable Legacy Option ROMs is disabled. Enable Attempt Legacy Boot is disabled by default.
UEFI boot path security	<ul style="list-style-type: none"> • Always, except internal HDD • Always • Never
Date/Time	Allows you to change the date and time.

System Configuration screen options

Option	Description
Integrated NIC	<p>Allows you to configure the integrated network controller. The options are:</p> <ul style="list-style-type: none"> • Disabled • Enabled • Enable UEFI network stack: This option is enabled by default. • Enabled w/PXE
Parallel Port	<p>Allows you to configure the parallel port on the docking station. The options are:</p> <ul style="list-style-type: none"> • Disabled • AT: This option is enabled by default. • PS2 • ECP
Serial Port	<p>Allows you to configure the integrated serial port. The options are:</p> <ul style="list-style-type: none"> • Disabled • COM1: This option is enabled by default. • COM2 • COM3 • COM4
SATA Operation	<p>Allows you to configure the internal SATA hard-drive controller. The options are:</p> <ul style="list-style-type: none"> • Disabled • AHCI • RAID On: This option is enabled by default.
Drives	<p>Allows you to configure the SATA drives on board. All drives are enabled by default. The options are:</p> <ul style="list-style-type: none"> • SATA-0 • M.2 PCI-e SSD-0 • SATA-2



Option	Description
SMART Reporting	<p>This field controls whether hard drive errors for integrated drives are reported during system startup. This technology is part of the SMART (Self-Monitoring Analysis and Reporting Technology) specification. This option is disabled by default.</p> <ul style="list-style-type: none"> · Enable SMART Reporting
USB Configuration	<p>This is an optional feature.</p> <p>This field configures the integrated USB controller. If Boot Support is enabled, the system is allowed to boot any type of USB Mass Storage Devices—HDD, memory key, floppy.</p> <p>If USB port is enabled, device attached to this port is enabled and available for OS.</p> <p>If USB port is disabled, the OS cannot see any device attached to this port.</p> <p>The options are:</p> <ul style="list-style-type: none"> · Enable USB Boot Support—enabled by default · Enable the Thunderbolt ports—enabled by default · Always Allow dell docks—enabled by default · Enable External USB Port—enabled by default · Enable Thunderbolt Boot Support · Enable Thunderbolt (and PCIE behind TBT) Preboot · Security level-no security · Security level-user configuration—enabled by default · Security level-secure connect · Security level- Display port only <p> NOTE: USB keyboard and mouse always work in the BIOS setup irrespective of these settings.</p>
USB PowerShare	<p>This field configures the USB PowerShare feature behavior. This option allows you to charge external devices using the stored system battery power through the USB PowerShare port. This option is disabled by default</p>
Audio	<p>This field enables or disables the integrated audio controller. By default, the Enable Audio option is selected. The options are:</p> <ul style="list-style-type: none"> · Enable Microphone—by default enable · Enable Internal Speaker—by default enable
Keyboard Illumination	<p>This field lets you choose the operating mode of the keyboard illumination feature. The keyboard brightness level can be set from 0% to 100%. The options are:</p> <ul style="list-style-type: none"> · Disabled—enabled by default · Dim (50%) · Bright
Keyboard Backlight with AC	<p>The Keyboard Backlight with AC option does not affect the main keyboard illumination feature. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. This option is enabled by default.</p>
Keyboard Backlight Timeout on AC	<p>The Keyboard Backlight Timeout dims out with AC option. The main keyboard illumination feature is not affected. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. The options are:</p> <ul style="list-style-type: none"> · 5 sec

Option	Description
	<ul style="list-style-type: none"> • 10 sec—enabled by default • 15 sec • 30 sec • 1 min • 5 min • 15 min • Never
Keyboard Backlight Timeout on Battery	<p>The Keyboard Backlight Timeout dims out with the Battery option. The main keyboard illumination feature is not affected. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. The options are:</p> <ul style="list-style-type: none"> • 5 sec • 10 sec—enabled by default • 15 sec • 30 sec • 1 min • 5 min • 15 min • Never
Touchscreen	It controls whether the screen is enabled or disabled. This option is enabled by default.
Unobtrusive Mode	This option, when enabled, pressing Fn+F7 turns off all light and sound emissions in the system. To resume normal operation, press Fn+F7 again. This option is disabled by default.
Miscellaneous Devices	<p>Allows you to enable or disable the following devices:</p> <ul style="list-style-type: none"> • Enable Camera—enabled by default • Secure Digital (SD) card—enabled by default • Secure Digital (SD) card boot • Secure Digital (SD) card read-only-mode

Video screen options




Option	Description
LCD Brightness	Allows you to set the display brightness depending up on the power source—On Battery and On AC. The LCD brightness is independent for battery and AC adapter. It can be set using the slider.



NOTE: The video setting is visible only when a video card is installed into the system.

Security screen options

Option	Description
Admin Password	<p>Allows you to set, change, or delete the administrator (admin) password.</p> <p>NOTE: You must set the admin password before you set the system or hard drive password. Deleting the admin password automatically deletes the system password and the hard drive password.</p> <p>NOTE: Successful password changes take effect immediately.</p>




Option	Description Default setting: Not set
System Password	Allows you to set, change, or delete the system password.  NOTE: Successful password changes take effect immediately. Default setting: Not set
Internal HDD-2 Password	Allows you to set, change, or delete the administrator password.  NOTE: Successful password changes take effect immediately. Default setting: Not set
Strong Password	Allows you to enforce the option to always set strong passwords. Default Setting: Enable Strong Password is not selected.  NOTE: If Strong Password is enabled, the Admin and System passwords must contain at least one uppercase character, one lowercase character and be at least 8 characters long.
Password Configuration	Allows you to specify the minimum and max password lengths of the Administrator and System passwords. <ul style="list-style-type: none"> • min-4—by default, if you want to change you can increase the number • max-32—you can decrease the number
Password Bypass	Allows you to enable or disable the permission to bypass the System and the Internal HDD password, when they are set. The options are: <ul style="list-style-type: none"> • Disabled • Reboot bypass Default setting: Disabled
Password Change	Allows you to enable the disable permission to the System and Hard Drive passwords when the admin password is set. Default setting: Allow Non-Admin Password Changes is selected.
Non-Admin Setup Changes	Allows you to determine whether changes to the setup options are allowed when an Administrator Password is set. If disabled the setup options are locked by the admin password. Option "allow wireless switch changes" is not selected by default.
TPM 2.0 Security	Allows you to enable the Trusted Platform Module (TPM) during POST. The options are: <ul style="list-style-type: none"> • UEFI capsule Firmware updates—enabled by default • TPM On—enabled by default • Clear • PPI Bypass for Enable Commands • PPI Bypass for Disabled Commands • Attestation enable—enabled by default • Key storage enable—enabled by default • SHA-256—enabled by default • Disabled • Enabled—enabled by default

Option	Description
	 NOTE: To upgrade or downgrade TPM 2.0, download the TPM wrapper tool—software.
Computrace	<p>Allows you to activate or disable the optional Computrace software. The options are:</p> <ul style="list-style-type: none"> • Deactivate • Disable • Activate—enabled by default <p>  NOTE: The Activate and Disable options will permanently activate or disable the feature and no further changes are allowed </p>
CPU XD Support	<p>Allows you to enable the Execute Disable mode of the processor.</p> <p>Enable CPU XD Support—enabled by default</p>
OROM Keyboard Access	<p>Allows you to set an option to enter the Option ROM Configuration screens using hotkeys during boot. The options are:</p> <ul style="list-style-type: none"> • Enabled • One Time Enable • Disable <p>Default setting: Enable</p>
Admin Setup Lockout	<p>Allows you to prevent users from entering Setup when an Administrator password is set.</p> <p>Default Setting: This option is enabled</p>
Master password lockout	<p>This option is not enabled by default</p>

Secure Boot screen options

Option	Description
Secure Boot Enable	<p>This option enables or disables the Secure Boot feature.</p> <ul style="list-style-type: none"> • Disabled • Enabled <p>Default setting: Enabled</p>
Expert Key Management	<p>Allows you to manipulate the security key databases only if the system is in Custom Mode. The Enable Custom Mode option is disabled by default. The options are:</p> <ul style="list-style-type: none"> • PK—enabled by default • KEK • db • dbx <p>If you enable the Custom Mode, the relevant options for PK, KEK, db, and dbx appear. The options are:</p> <ul style="list-style-type: none"> • Save to File—Saves the key to a user-selected file • Replace from File—Replaces the current key with a key from a user-selected file • Append from File—Adds a key to the current database from a user-selected file



Option	Description
	<ul style="list-style-type: none"> • Delete—Deletes the selected key • Reset All Keys—Resets to default setting • Delete All Keys—Deletes all the keys
	<p> NOTE: If you disable the Custom Mode, all the changes made are erased and the keys restore to default settings.</p>

Intel software guard extensions screen options

Option	Description
Intel SGX Enable	<p>This field specifies you to provide a secured environment for running code/storing sensitive information in the context of the main OS. The options are:</p> <ul style="list-style-type: none"> • Disabled • Enabled <p>Default setting: Enabled</p>
Enclave Memory Size	<p>This option sets SGX Enclave Reserve Memory Size. The options are:</p> <ul style="list-style-type: none"> • 32 MB • 64 MB • 128 MB—enabled by default

Performance screen options

Option	Description
Multi-Core Support	<p>This field specifies whether the process has one or all cores enabled. The performance of some applications improves with the additional cores. This option is enabled by default. Allows you to enable or disable multi-core support for the processor. The installed processor supports two cores. If you enable Multi-Core Support, two cores are enabled. If you disable Multi-Core Support, one core is enabled.</p> <ul style="list-style-type: none"> • Enable Multi-Core Support <p>Default setting: The option is enabled.</p>
Intel SpeedStep	<p>Allows you to enable or disable the Intel SpeedStep feature.</p> <ul style="list-style-type: none"> • Enable Intel SpeedStep <p>Default setting: The option is enabled.</p>
C-States Control	<p>Allows you to enable or disable the additional processor sleep states.</p> <ul style="list-style-type: none"> • C states <p>Default setting: The option is enabled.</p>
Intel TurboBoost	<p>Allows you to enable or disable the Intel TurboBoost mode of the processor.</p> <ul style="list-style-type: none"> • Enable Intel TurboBoost

Option	Description
	Default setting: The option is enabled.
HyperThread Control	Allows you to enable or disable the Hyper-Threading in the processor. <ul style="list-style-type: none"> • Disabled • Enabled Default setting: Enabled is selected.

Power management screen options


Option	Description
AC Behavior	Allows you to enable or disable the computer from turning on automatically when an AC adapter is connected. Default setting: Wake on AC is not selected.
Auto On Time	Allows you to set the time at which the computer must turn on automatically. The options are: <ul style="list-style-type: none"> • Disabled • Every Day • Weekdays • Select Days Default setting: Disabled
USB Wake Support	Allows you to enable USB devices to wake the system from Standby. <div> <i>i</i> NOTE: This feature is only functional when the AC power adapter is connected. If the AC power adapter is removed during Standby, the system setup removes power from all the USB ports to conserve battery power. </div> <ul style="list-style-type: none"> • Enable USB Wake Support • Wake on Dell USB-C dock Default setting: The option is disabled.
Wireless Radio Control	Allows you to enable or disable the feature that automatically switches from wired or wireless networks without depending on the physical connection. <ul style="list-style-type: none"> • Control WLAN Radio • Control WWAN Radio Default setting: The options are disabled.
Wake on WLAN	Allows you to enable or disable the feature that powers on the computer from the Off state when triggered by a LAN signal. <ul style="list-style-type: none"> • Disabled • LAN Only • WLAN Only • LAN or WLAN Default setting: Disabled



Option	Description
Block Sleep	<p>This option lets you block entering to sleep (S3 state) in operating system environment.</p> <p>Block Sleep (S3 state)</p> <p>Default setting: This option is disabled</p>
Peak Shift	<p>This option enables you to minimize the AC power consumption during the peak power times of day. After you enable this option, your system runs only in battery even if the AC is attached.</p> <ul style="list-style-type: none"> • Enable peak shift • Set battery threshold (15% to 100%) - 15 % (enabled by default)
Advanced Battery Charge Configuration	<p>This option enables you to maximize the battery health. By enabling this option, your system uses the standard charging algorithm and other techniques, during the nonwork hours to improve the battery health.</p> <p>Disabled</p> <p>Default setting: Disabled</p>
Primary Battery Charge Configuration	<p>Allows you to select the charging mode for the battery. The options are:</p> <ul style="list-style-type: none"> • Adaptive—enabled by default • Standard—Fully charges your battery at a standard rate. • ExpressCharge—The battery charges over a shorter time using Dell's fast charging technology This option is enabled by default. • Primarily AC use • Custom <p>If Custom Charge is selected, you can also configure Custom Charge Start and Custom Charge Stop.</p> <p>NOTE: All charging mode may not be available for all the batteries. To enable this option, disable the Advanced Battery Charge Configuration option.</p>
Sleep mode	<ul style="list-style-type: none"> • OS Automatic selection—enabled by default <p>Force S3</p>
Type-C connector power	<ul style="list-style-type: none"> • 7.5 Watts • 15 Watts—enabled by default

POST behavior screen options

Option	Description
Adapter Warnings	<p>Allows you to enable or disable the system setup (BIOS) warning messages when you use certain power adapters.</p> <p>Default setting: Enable Adapter Warnings</p>
Keypad (Embedded)	<p>Allows you to choose one of two methods to enable the keypad that is embedded in the internal keyboard.</p> <ul style="list-style-type: none"> • Fn Key Only—default. • By Numlock

Option	Description
	 NOTE: When setup is running, this option has no effect. Setup works in Fn Key Only mode.
Mouse/Touchpad	<p>Allows you to define how the system handles mouse and touch pad input. The options are:</p> <ul style="list-style-type: none"> Serial Mouse PS2 Mouse Touchpad/PS-2 Mouse: This option is enabled by default.
Numlock Enable	<p>Allows you to enable the Numlock option when the computer boots.</p> <p>Enable Network. This option is enabled by default.</p>
Fn Key Emulation	<p>Allows you to set the option where the Scroll Lock key is used to simulate the Fn key feature.</p> <p>Enable Fn Key Emulation (default)</p>
Fn Lock Options	<p>Allows you to let hot key combinations Fn + Esc toggle the primary behavior of F1–F12, between their standard and secondary functions. If you disable this option, you cannot toggle dynamically the primary behavior of these keys. The available options are:</p> <ul style="list-style-type: none"> Lock Mode Disable/Standard—enabled by default Lock Mode Enable/Secondary
MEBx Hotkey	<p>Allows you to specify whether the MEBx Hotkey function should enable, during the system boot.</p> <p>Default Setting: Enable MEBx Hotkey</p>
Fastboot	<p>Allows you to speed up the boot process by bypassing some of the compatibility steps. The options are:</p> <ul style="list-style-type: none"> Minimal Thorough—enabled by default Auto
Extended BIOS POST Time	<p>Allows you to create an extra preboot delay. The options are:</p> <ul style="list-style-type: none"> 0 seconds—enabled by default. 5 seconds 10 seconds
Security audit	<ul style="list-style-type: none"> Disable display of security audit display—not enabled
Full Screen Log	<ul style="list-style-type: none"> Enable Full Screen Logo—not enabled
Warnings and errors	<ul style="list-style-type: none"> Prompt on warnings and errors—enabled by default Continue on warnings Continue on warnings and errors




Manageability

Option	Description
MEBX Hotkey	<p>Allows you to specify whether the MEBx Hotkey function should enable, during the system boot.</p> <ul style="list-style-type: none">• Disabled• Enabled <p>Default setting: Disabled</p>
For USB provision	Enable USB provision is not selected by default

Virtualization support screen options

Option	Description
Virtualization	<p>Allows you to enable or disable the Intel Virtualization Technology.</p> <p>Enable Intel Virtualization Technology—default.</p>
VT for Direct I/O	<p>Enables or disables the Virtual Machine Monitor (VMM) from utilizing the additional hardware capabilities provided by Intel® Virtualization technology for direct I/O.</p> <p>Enable VT for Direct I/O - enabled by default.</p>
Trusted Execution	<p>This option specifies whether a Measured Virtual Machine Monitor (MVMM) can utilize the additional hardware capabilities provided by Intel Trusted Execution Technology. The TPM Virtualization Technology, and the Virtualization technology for direct I/O must be enabled to use this feature.</p> <p>Trusted Execution - disabled by default.</p>

Wireless screen options

Option	Description
Wireless Switch	<p>Allows to set the wireless devices that can be controlled by the wireless switch. The options are:</p> <ul style="list-style-type: none">• WWAN• GPS (on WWAN Module)• WLAN/WiGig• Bluetooth <p>All the options are enabled by default.</p> <p> NOTE: For WLAN and WiGig enable or disable controls are tied together and they cannot be enabled or disabled independently.</p>
Wireless Device Enable	<p>Allows you to enable or disable the internal wireless devices.</p> <ul style="list-style-type: none">• WWAN/GPS• WLAN/WiGig• Bluetooth

Option	Description
	All the options are enabled by default.

① **NOTE:** IMEI number for WWAN can be found on the outer box or the WWAN card.

Maintenance screen options

Option	Description
Service Tag	Displays the Service Tag of your computer.
Asset Tag	Allows you to create a system asset tag if an asset tag is not already set. This option is not set by default.
BIOS Downgrade	This controls flashing of the system firmware to previous revisions. Option 'Allow BIOS downgrade' is enabled by default.
Data Wipe	<p>This field allows users to erase the data securely from all internal storage devices. Option 'Wipe on Next boot' is not enabled by default. The following is list of devices affected:</p> <ul style="list-style-type: none"> • Internal SATA HDD/SSD • Internal M.2 SATA SSD • Internal M.2 PCIe SSD • Internal eMMC
BIOS Recovery	<p>This field allows you to recover from certain corrupted BIOS conditions from a recover file on the user primary hard drive or an external USB key.</p> <ul style="list-style-type: none"> • BIOS Recovery from Hard Drive—enabled by default • Always perform integrity check—disabled by default

System logs screen options

Option	Description
BIOS Events	Allows you to view and clear the System Setup (BIOS) POST events.
Thermal Events	Allows you to view and clear the System Setup (Thermal) events.
Power Events	Allows you to view and clear the System Setup (Power) events.

Updating the BIOS in Windows

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

- 1 Restart the computer.
- 2 Go to **Dell.com/support**.
 - Enter the **Service Tag** or **Express Service Code** and click **Submit**.
 - Click **Detect Product** and follow the instructions on screen,
- 3 If you are unable to detect or find the Service Tag, click the **Choose from all products**.
- 4 Choose the **Products** category from the list.

① **NOTE:** Choose the appropriate category to reach the product page

- 5 Select your computer model and the **Product Support** page of your computer appears.
- 6 Click **Get drivers** and click **Drivers and Downloads**.



The Drivers and Downloads section opens.

- 7 Click **Find it myself**.
- 8 Click **BIOS** to view the BIOS versions.
- 9 Identify the latest BIOS file and click **Download**.
- 10 Select your preferred download method in the **Please select your download method below** window, click **Download File**.
The **File Download** window appears.
- 11 Click **Save** to save the file on your computer.
- 12 Click **Run** to install the updated BIOS settings on your computer.
Follow the instructions on the screen.

NOTE: It is recommended not to update the BIOS version for more than 3 revisions. For example: If you want to update the BIOS from 1.0 to 7.0, then install version 4.0 first and then install version 7.0.

System and setup password

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

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

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

CAUTION: Anyone can access the data stored on your computer if it is not locked and left unattended.

NOTE: Your computer is shipped with the system and setup password feature disabled.

Assigning a system password and setup password

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

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

- 1 In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.
The **Security** screen is displayed.
- 2 Select **System Password** and create a password in the **Enter the new password** field.
Use the following guidelines to assign the system password:
 - A password can have up to 32 characters.
 - The password can contain the numbers 0 through 9.
 - Only lower case letters are valid, upper case letters are not allowed.
 - Only the following special characters are allowed: space, ("), (+), (,), (-), (.), (/), (:), ([), (\), (]), (`).
- 3 Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
- 4 Press Esc and a message prompts you to save the changes.
- 5 Press Y to save the changes.
The computer reboots.

Deleting or changing an existing system and/or setup password

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

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

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

NOTE: If you change the System and/or Setup password, re-enter the new password when promoted. If you delete the System and/or Setup password, confirm the deletion when promoted.

- 5 Press Esc and a message prompts you to save the changes.
- 6 Press Y to save the changes and exit from System Setup.
The computer reboots.



Technical specifications

NOTE: Offerings may vary by region. The following specifications are only those required by law to ship with your computer. For more information about the configuration of your computer, go to Help and Support in your Windows operating system and select the option to view information about your computer.

Topics:

- [Processor specifications](#)
- [System specifications](#)
- [Memory specifications](#)
- [Video specifications](#)
- [Audio specifications](#)
- [Battery specifications](#)
- [AC adapter specifications](#)
- [Port and connector specifications](#)
- [Communication specifications](#)
- [Camera specifications](#)
- [Touchpad specifications](#)
- [Display specifications](#)
- [Physical specifications](#)
- [Environmental specifications](#)

Processor specifications

Feature	Specification
Types	7th generation Intel Core i3 / i5 / i7

System specifications

Feature	Specification
Chipset	Integrated in the processor
DRAM bus width	64-bit
Flash EPROM	SPI 128 Mbits
PCIe bus	100 MHz
External Bus Frequency	DMI 3.0—8GT/s

Memory specifications

Feature	Specification
Memory connector	Two SoDIMM slots
Memory capacity	4 GB, 8 GB, 16 GB, and 32 GB
Memory type	DDR4 SDRAM—2133MHz
Minimum memory	4 GB
Maximum memory	32 GB

Video specifications

Feature	Specification
Type	Integrated on system board
UMA controller	Intel Integrated HD Graphics 620
External display support	<ul style="list-style-type: none">On system – eDP (internal display), HDMIOptional Type-C port – VGA, DisplayPort 1.2, DVI and Thunderbolt <p>NOTE: Supports one VGA, DisplayPort, HDMI through the Docking station.</p>
Supported docking stations	<p>NOTE: The docking stations are sold separately.</p> <ul style="list-style-type: none">Dell Dock WD15Dell Dock Stand DS1000Dell Thunderbolt Dock TB16Dell Wireless Dock WLD15 (requires optional installed Intel Tri-Band Wireless-AC 18265 WiGig + Wi-Fi + BT4.2)

Audio specifications

Feature	Specification
Types	Four-channel high-definition audio
Controller	Realtek ALC3246
Stereo conversion	24-bit—analog-to-digital and digital-to-analog
Internal interface	High-definition audio
External interface	Microphone-in, stereo headphones, and headset combo connector
Speakers	Two
Internal speaker amplifier	2 W (RMS) per channel
Volume controls	Hot keys



Battery specifications

Feature	Specification
Type	<ul style="list-style-type: none">3-cell Lithium Prismatic battery with ExpressCharge4-cell Lithium Prismatic battery with ExpressCharge

42 WHr (3-cell):

Length	200.5 mm (7.89 inches)
Width	95.9 mm (3.78 inches)
Height	5.7 mm (0.22 inch)
Weight	185.0 g (0.41 lb)
Voltage	11.4 VDC

60 WHr (4-cell):

Length	238 mm (9.37 inches)
Width	95.9 mm (3.78 inch)
Height	5.7 mm (0.22 inch)
Weight	270 g (0.6 lb)
Voltage	7.6 VDC
Life span	300 discharge per charge cycles

Temperature range

Operating	<ul style="list-style-type: none">Charge: 0°C to 50°C (32°F to 158°F)Discharge: 0°C to 70°C (32°F to 122°F)
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Non-operating	- 20°C to 65°C (- 4°F to 149°F)
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Coin cell battery	3 V CR2032 lithium coin cell
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AC adapter specifications

Feature	Specification
Type	65 W or 90 W
Input voltage	100 V AC to 240 V AC
Input current— maximum	1.7 A / 2.5 A
Input frequency	50 Hz to 60 Hz
Output current	3.34 A and 4.62 A
Rated output voltage	19.5 V DC
Weight	230 g (65 W) and 320 g (90 W)
Dimensions	22 x 66 x 106 mm (65 W) and 22 x 66 x 130 (90 W)

Feature	Specification
Temperature range —Operating	0°C to 40°C (32°F to 104°F)
Temperature range —Non-Operating	–40°C to 70°C (–40°F to 158°F)

Port and connector specifications

Feature	Specification
Audio	Microphone-in, stereo headphones, and headset combo connector
Video	HDMI 1.4
Network adapter	One RJ-45 connector
USB	<ul style="list-style-type: none"> Two USB 3.0 One USB 3.0 with PowerShare
Memory card reader	Up to Micro SD 4.0
Micro Subscriber Identity Module (uSIM) card	One
Docking port	None
	 NOTE: Cable docking is available.
Express Card	None

Communication specifications

Features	Specification
Network adapter	10/100/1000 Mb/s Ethernet (RJ-45)
Wireless	Internal wireless local area network (WLAN), wireless wide area network (WWAN), WiGig <ul style="list-style-type: none"> Bluetooth 4.1 LE

Camera specifications

Feature	Specification
Type	HD fixed focus
Sensor type	CMOS sensor technology
Imaging rate	Up to 30 frames per second
Video Resolution	1280 x 720 pixels



Touchpad specifications

Feature	Specification
Active Area:	
X-axis	99.50 mm
Y-axis	53.0 mm
X/Y position resolution	X: 1048dpi; Y:984dpi
Multi-touch	Configurable single finger and multi-finger gestures

Display specifications

Feature	Specification
Type - 14.0"	Anti Glare HD WLED-Non Touch
Luminance	200 nits
Height	205.6 mm (8.09 inches)
Width	320.9 mm (12.63 inches)
Diagonal	355.6 mm (14.0 inches)
Maximum resolution	1366 x 768
Megapixels	1.05
Pixels per inch (PPI)	112
Contrast ratio (minimum)	300:2
Refresh rate	60 Hz
Maximum viewing angles—horizontal	+/-40°
Maximum viewing angles—vertical	+10/-30°
Pixel pitch	0.2265 x 0.2265 mm
Type- 14.0":	Anti Glare FHD - Non Touch
Luminance	300 nits
Height	205.6 mm (8.09 inches)
Width	302.9 mm (12.63 inches)
Diagonal	355.6 mm (14.0 inches)
Maximum resolution	1920 x 1080
Megapixels	2.07
Pixels per inch (PPI)	157
Contrast ratio (minimum)	600:1

Feature	Specification
Refresh rate	60 Hz
Maximum viewing angles—horizontal	+/-80°
Maximum viewing angles—vertical	+/-80°
Pixel pitch	0.161 x 0.161 mm

Feature	Specification
Type - 14.0"	FHD Anti Glare IPDS - Touch

Luminance	270 nits
Height	205.05 mm (8.07 inches)
Width	327.8 mm (12.90 inches)
Diagonal	355.6 mm (14.0 inches)
Maximum resolution	1920 x 1080
Megapixels	2.07
Pixels per inch (PPI)	157
Contrast ratio (minimum)	600:1
Refresh rate	60 Hz
Maximum viewing angles—horizontal	+/-80°
Maximum viewing angles—vertical	+/-80°
Pixel pitch	0.161 x 0.161 mm

Type - 14.0":	QHD Anti Glare - Touch
Luminance	270
Height	206.6 mm (8.13 inches)
Width	327.8 mm(12.90 inches)
Diagonal	355.6 mm—14.0 inch
Maximum resolution	2560 x 1440
Megapixels	3.68
Pixels per inch (PPI)	210
Contrast ratio (minimum)	600:1
Refresh rate	60 Hz
Maximum viewing angles—horizontal	+/-80°
Maximum viewing angles—vertical	+/-80°
Pixel pitch	0.1209 x 0.1209 mm



Physical specifications

Feature	Specification
Front height—non-touch	11.58 mm (0.45 inch)
Back height—non-touch	18.41 mm (0.72 inch)
Back height—touch	18.41 mm (0.72 inch)
Width	331.0 mm (13.03inches)
Depth	220.9 mm (8.69 inches)
Weight—non-touch with 3-cell battery	1.36 kg (3.01 lbs)

Environmental specifications

Temperature	Specifications
Operating	0°C to 60°C (32°F to 140°F)
Storage	–51°C to 71°C (–59°F to 159°F)
Relative humidity—maximum	Specifications
Operating	10% to 90% (non-condensing)
Storage	5% to 95% (non-condensing)
Altitude—maximum	Specifications
Operating	–15.2 m to 3048 m (–50 to 10,000 ft) 0°C to 35°C
Non-operating	–15.24 m to 10,668 m (–50 ft to 35,000 ft)
Airborne contaminant level	G2 or lower as defined by ISA S71.04–1985



System Setup

Topics:

- [Boot Sequence](#)
- [Navigation keys](#)
- [System setup options](#)
- [General screen options](#)
- [System Configuration screen options](#)
- [Video screen options](#)
- [Security screen options](#)
- [Secure Boot screen options](#)
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- [System and setup password](#)

Boot Sequence

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

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

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

- Removable Drive (if available)
- STXXXX Drive

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

- Optical Drive (if available)
- Diagnostics

 **NOTE: Choosing Diagnostics, will display the ePSA diagnostics screen.**

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



Navigation keys

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

Keys	Navigation
Up arrow	Moves to the previous field.
Down arrow	Moves to the next field.
Enter	Selects a value in the selected field (if applicable) or follow the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
Tab	Moves to the next focus area.

NOTE: For the standard graphics browser only.

Esc Moves to the previous page until you view the main screen. Pressing Esc in the main screen displays a message that prompts you to save any unsaved changes and restarts the system.

System setup options

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

General screen options

This section lists the primary hardware features of your computer.

Option	Description
System Information	<p>This section lists the primary hardware features of your computer.</p> <ul style="list-style-type: none">• System Information: Displays BIOS Version, Service Tag, Asset Tag, Ownership Tag, Ownership Date, Manufacture Date, Express Service Code, the Signed Firmware update—enabled by default• Memory Information: Displays Memory Installed, Memory Available, Memory Speed, Memory Channels Mode, Memory Technology, DIMM ASize, DIMM B Size,• Processor Information: Displays Processor Type, Core Count, Processor ID, Current Clock Speed, Minimum Clock Speed, Maximum Clock Speed, Processor L2 Cache, Processor L3 Cache, HT Capable, and 64-Bit Technology• Device Information: Displays M.2 SATA, M.2 PCIe SSD-0, LOM MAC Address, Passthrough MAC address, Video Controller, Video BIOS Version, Video Memory, Panel Type, Native Resolution, Audio Controller, Wi-Fi Device, WiGig Device, Cellular Device, Bluetooth Device
Battery Information	Displays the battery status health and whether the AC adapter is installed.
Boot Sequence	<p>Allows you to change the order in which the computer attempts to find an operating system.</p> <ul style="list-style-type: none">• Diskette Drive• Internal HDD• USB Storage Device• CD/DVD/CD-RW Drive• Onboard NIC
Boot sequence options	<ul style="list-style-type: none">• Windows boot manager• WindowsIns




Option	Description
Boot list options	<ul style="list-style-type: none"> • Legacy • UEFI—selected by default
Advanced Boot Options	This option allows you the legacy option ROMs to load. By default, the Enable Legacy Option ROMs is disabled. Enable Attempt Legacy Boot is disabled by default.
UEFI boot path security	<ul style="list-style-type: none"> • Always, except internal HDD • Always • Never
Date/Time	Allows you to change the date and time.

System Configuration screen options

Option	Description
Integrated NIC	<p>Allows you to configure the integrated network controller. The options are:</p> <ul style="list-style-type: none"> • Disabled • Enabled • Enable UEFI network stack: This option is enabled by default. • Enabled w/PXE
Parallel Port	<p>Allows you to configure the parallel port on the docking station. The options are:</p> <ul style="list-style-type: none"> • Disabled • AT: This option is enabled by default. • PS2 • ECP
Serial Port	<p>Allows you to configure the integrated serial port. The options are:</p> <ul style="list-style-type: none"> • Disabled • COM1: This option is enabled by default. • COM2 • COM3 • COM4
SATA Operation	<p>Allows you to configure the internal SATA hard-drive controller. The options are:</p> <ul style="list-style-type: none"> • Disabled • AHCI • RAID On: This option is enabled by default.
Drives	<p>Allows you to configure the SATA drives on board. All drives are enabled by default. The options are:</p> <ul style="list-style-type: none"> • SATA-0 • M.2 PCI-e SSD-0 • SATA-2



Option	Description
SMART Reporting	<p>This field controls whether hard drive errors for integrated drives are reported during system startup. This technology is part of the SMART (Self-Monitoring Analysis and Reporting Technology) specification. This option is disabled by default.</p> <ul style="list-style-type: none"> · Enable SMART Reporting
USB Configuration	<p>This is an optional feature.</p> <p>This field configures the integrated USB controller. If Boot Support is enabled, the system is allowed to boot any type of USB Mass Storage Devices—HDD, memory key, floppy.</p> <p>If USB port is enabled, device attached to this port is enabled and available for OS.</p> <p>If USB port is disabled, the OS cannot see any device attached to this port.</p> <p>The options are:</p> <ul style="list-style-type: none"> · Enable USB Boot Support—enabled by default · Enable the Thunderbolt ports—enabled by default · Always Allow dell docks—enabled by default · Enable External USB Port—enabled by default · Enable Thunderbolt Boot Support · Enable Thunderbolt (and PCIE behind TBT) Preboot · Security level-no security · Security level-user configuration—enabled by default · Security level-secure connect · Security level- Display port only <p> NOTE: USB keyboard and mouse always work in the BIOS setup irrespective of these settings.</p>
USB PowerShare	<p>This field configures the USB PowerShare feature behavior. This option allows you to charge external devices using the stored system battery power through the USB PowerShare port. This option is disabled by default</p>
Audio	<p>This field enables or disables the integrated audio controller. By default, the Enable Audio option is selected. The options are:</p> <ul style="list-style-type: none"> · Enable Microphone—by default enable · Enable Internal Speaker—by default enable
Keyboard Illumination	<p>This field lets you choose the operating mode of the keyboard illumination feature. The keyboard brightness level can be set from 0% to 100%. The options are:</p> <ul style="list-style-type: none"> · Disabled—enabled by default · Dim (50%) · Bright
Keyboard Backlight with AC	<p>The Keyboard Backlight with AC option does not affect the main keyboard illumination feature. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. This option is enabled by default.</p>
Keyboard Backlight Timeout on AC	<p>The Keyboard Backlight Timeout dims out with AC option. The main keyboard illumination feature is not affected. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. The options are:</p> <ul style="list-style-type: none"> · 5 sec

Option	Description
	<ul style="list-style-type: none"> • 10 sec—enabled by default • 15 sec • 30 sec • 1 min • 5 min • 15 min • Never
Keyboard Backlight Timeout on Battery	<p>The Keyboard Backlight Timeout dims out with the Battery option. The main keyboard illumination feature is not affected. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. The options are:</p> <ul style="list-style-type: none"> • 5 sec • 10 sec—enabled by default • 15 sec • 30 sec • 1 min • 5 min • 15 min • Never
Touchscreen	It controls whether the screen is enabled or disabled. This option is enabled by default.
Unobtrusive Mode	This option, when enabled, pressing Fn+F7 turns off all light and sound emissions in the system. To resume normal operation, press Fn+F7 again. This option is disabled by default.
Miscellaneous Devices	<p>Allows you to enable or disable the following devices:</p> <ul style="list-style-type: none"> • Enable Camera—enabled by default • Secure Digital (SD) card—enabled by default • Secure Digital (SD) card boot • Secure Digital (SD) card read-only-mode

Video screen options




Option	Description
LCD Brightness	Allows you to set the display brightness depending up on the power source—On Battery and On AC. The LCD brightness is independent for battery and AC adapter. It can be set using the slider.



NOTE: The video setting is visible only when a video card is installed into the system.

Security screen options

Option	Description
Admin Password	<p>Allows you to set, change, or delete the administrator (admin) password.</p> <p>NOTE: You must set the admin password before you set the system or hard drive password. Deleting the admin password automatically deletes the system password and the hard drive password.</p> <p>NOTE: Successful password changes take effect immediately.</p>




Option	Description Default setting: Not set
System Password	Allows you to set, change, or delete the system password.  NOTE: Successful password changes take effect immediately. Default setting: Not set
Internal HDD-2 Password	Allows you to set, change, or delete the administrator password.  NOTE: Successful password changes take effect immediately. Default setting: Not set
Strong Password	Allows you to enforce the option to always set strong passwords. Default Setting: Enable Strong Password is not selected.  NOTE: If Strong Password is enabled, the Admin and System passwords must contain at least one uppercase character, one lowercase character and be at least 8 characters long.
Password Configuration	Allows you to specify the minimum and max password lengths of the Administrator and System passwords. <ul style="list-style-type: none"> • min-4—by default, if you want to change you can increase the number • max-32—you can decrease the number
Password Bypass	Allows you to enable or disable the permission to bypass the System and the Internal HDD password, when they are set. The options are: <ul style="list-style-type: none"> • Disabled • Reboot bypass Default setting: Disabled
Password Change	Allows you to enable the disable permission to the System and Hard Drive passwords when the admin password is set. Default setting: Allow Non-Admin Password Changes is selected.
Non-Admin Setup Changes	Allows you to determine whether changes to the setup options are allowed when an Administrator Password is set. If disabled the setup options are locked by the admin password. Option "allow wireless switch changes" is not selected by default.
TPM 2.0 Security	Allows you to enable the Trusted Platform Module (TPM) during POST. The options are: <ul style="list-style-type: none"> • UEFI capsule Firmware updates—enabled by default • TPM On—enabled by default • Clear • PPI Bypass for Enable Commands • PPI Bypass for Disabled Commands • Attestation enable—enabled by default • Key storage enable—enabled by default • SHA-256—enabled by default • Disabled • Enabled—enabled by default

Option	Description
	 NOTE: To upgrade or downgrade TPM 2.0, download the TPM wrapper tool—software.
Computrace	<p>Allows you to activate or disable the optional Computrace software. The options are:</p> <ul style="list-style-type: none"> • Deactivate • Disable • Activate—enabled by default <p>  NOTE: The Activate and Disable options will permanently activate or disable the feature and no further changes are allowed </p>
CPU XD Support	<p>Allows you to enable the Execute Disable mode of the processor.</p> <p>Enable CPU XD Support—enabled by default</p>
OROM Keyboard Access	<p>Allows you to set an option to enter the Option ROM Configuration screens using hotkeys during boot. The options are:</p> <ul style="list-style-type: none"> • Enabled • One Time Enable • Disable <p>Default setting: Enable</p>
Admin Setup Lockout	<p>Allows you to prevent users from entering Setup when an Administrator password is set.</p> <p>Default Setting: This option is enabled</p>
Master password lockout	<p>This option is not enabled by default</p>

Secure Boot screen options

Option	Description
Secure Boot Enable	<p>This option enables or disables the Secure Boot feature.</p> <ul style="list-style-type: none"> • Disabled • Enabled <p>Default setting: Enabled</p>
Expert Key Management	<p>Allows you to manipulate the security key databases only if the system is in Custom Mode. The Enable Custom Mode option is disabled by default. The options are:</p> <ul style="list-style-type: none"> • PK—enabled by default • KEK • db • dbx <p>If you enable the Custom Mode, the relevant options for PK, KEK, db, and dbx appear. The options are:</p> <ul style="list-style-type: none"> • Save to File—Saves the key to a user-selected file • Replace from File—Replaces the current key with a key from a user-selected file • Append from File—Adds a key to the current database from a user-selected file



Option	Description
	<ul style="list-style-type: none"> • Delete—Deletes the selected key • Reset All Keys—Resets to default setting • Delete All Keys—Deletes all the keys
	<p> NOTE: If you disable the Custom Mode, all the changes made are erased and the keys restore to default settings.</p>

Intel software guard extensions screen options

Option	Description
Intel SGX Enable	<p>This field specifies you to provide a secured environment for running code/storing sensitive information in the context of the main OS. The options are:</p> <ul style="list-style-type: none"> • Disabled • Enabled <p>Default setting: Enabled</p>
Enclave Memory Size	<p>This option sets SGX Enclave Reserve Memory Size. The options are:</p> <ul style="list-style-type: none"> • 32 MB • 64 MB • 128 MB—enabled by default

Performance screen options

Option	Description
Multi-Core Support	<p>This field specifies whether the process has one or all cores enabled. The performance of some applications improves with the additional cores. This option is enabled by default. Allows you to enable or disable multi-core support for the processor. The installed processor supports two cores. If you enable Multi-Core Support, two cores are enabled. If you disable Multi-Core Support, one core is enabled.</p> <ul style="list-style-type: none"> • Enable Multi-Core Support <p>Default setting: The option is enabled.</p>
Intel SpeedStep	<p>Allows you to enable or disable the Intel SpeedStep feature.</p> <ul style="list-style-type: none"> • Enable Intel SpeedStep <p>Default setting: The option is enabled.</p>
C-States Control	<p>Allows you to enable or disable the additional processor sleep states.</p> <ul style="list-style-type: none"> • C states <p>Default setting: The option is enabled.</p>
Intel TurboBoost	<p>Allows you to enable or disable the Intel TurboBoost mode of the processor.</p> <ul style="list-style-type: none"> • Enable Intel TurboBoost

Option	Description
	Default setting: The option is enabled.
HyperThread Control	Allows you to enable or disable the Hyper-Threading in the processor. <ul style="list-style-type: none"> • Disabled • Enabled Default setting: Enabled is selected.

Power management screen options


Option	Description
AC Behavior	Allows you to enable or disable the computer from turning on automatically when an AC adapter is connected. Default setting: Wake on AC is not selected.
Auto On Time	Allows you to set the time at which the computer must turn on automatically. The options are: <ul style="list-style-type: none"> • Disabled • Every Day • Weekdays • Select Days Default setting: Disabled
USB Wake Support	Allows you to enable USB devices to wake the system from Standby. <div> <i>i</i> NOTE: This feature is only functional when the AC power adapter is connected. If the AC power adapter is removed during Standby, the system setup removes power from all the USB ports to conserve battery power. </div> <ul style="list-style-type: none"> • Enable USB Wake Support • Wake on Dell USB-C dock Default setting: The option is disabled.
Wireless Radio Control	Allows you to enable or disable the feature that automatically switches from wired or wireless networks without depending on the physical connection. <ul style="list-style-type: none"> • Control WLAN Radio • Control WWAN Radio Default setting: The options are disabled.
Wake on WLAN	Allows you to enable or disable the feature that powers on the computer from the Off state when triggered by a LAN signal. <ul style="list-style-type: none"> • Disabled • LAN Only • WLAN Only • LAN or WLAN Default setting: Disabled



Option	Description
Block Sleep	<p>This option lets you block entering to sleep (S3 state) in operating system environment.</p> <p>Block Sleep (S3 state)</p> <p>Default setting: This option is disabled</p>
Peak Shift	<p>This option enables you to minimize the AC power consumption during the peak power times of day. After you enable this option, your system runs only in battery even if the AC is attached.</p> <ul style="list-style-type: none"> • Enable peak shift • Set battery threshold (15% to 100%) - 15 % (enabled by default)
Advanced Battery Charge Configuration	<p>This option enables you to maximize the battery health. By enabling this option, your system uses the standard charging algorithm and other techniques, during the nonwork hours to improve the battery health.</p> <p>Disabled</p> <p>Default setting: Disabled</p>
Primary Battery Charge Configuration	<p>Allows you to select the charging mode for the battery. The options are:</p> <ul style="list-style-type: none"> • Adaptive—enabled by default • Standard—Fully charges your battery at a standard rate. • ExpressCharge—The battery charges over a shorter time using Dell's fast charging technology This option is enabled by default. • Primarily AC use • Custom <p>If Custom Charge is selected, you can also configure Custom Charge Start and Custom Charge Stop.</p> <p>NOTE: All charging mode may not be available for all the batteries. To enable this option, disable the Advanced Battery Charge Configuration option.</p>
Sleep mode	<ul style="list-style-type: none"> • OS Automatic selection—enabled by default <p>Force S3</p>
Type-C connector power	<ul style="list-style-type: none"> • 7.5 Watts • 15 Watts—enabled by default

POST behavior screen options

Option	Description
Adapter Warnings	<p>Allows you to enable or disable the system setup (BIOS) warning messages when you use certain power adapters.</p> <p>Default setting: Enable Adapter Warnings</p>
Keypad (Embedded)	<p>Allows you to choose one of two methods to enable the keypad that is embedded in the internal keyboard.</p> <ul style="list-style-type: none"> • Fn Key Only—default. • By Numlock

Option	Description
	 NOTE: When setup is running, this option has no effect. Setup works in Fn Key Only mode.
Mouse/Touchpad	<p>Allows you to define how the system handles mouse and touch pad input. The options are:</p> <ul style="list-style-type: none"> Serial Mouse PS2 Mouse Touchpad/PS-2 Mouse: This option is enabled by default.
Numlock Enable	<p>Allows you to enable the Numlock option when the computer boots.</p> <p>Enable Network. This option is enabled by default.</p>
Fn Key Emulation	<p>Allows you to set the option where the Scroll Lock key is used to simulate the Fn key feature.</p> <p>Enable Fn Key Emulation (default)</p>
Fn Lock Options	<p>Allows you to let hot key combinations Fn + Esc toggle the primary behavior of F1–F12, between their standard and secondary functions. If you disable this option, you cannot toggle dynamically the primary behavior of these keys. The available options are:</p> <ul style="list-style-type: none"> Lock Mode Disable/Standard—enabled by default Lock Mode Enable/Secondary
MEBx Hotkey	<p>Allows you to specify whether the MEBx Hotkey function should enable, during the system boot.</p> <p>Default Setting: Enable MEBx Hotkey</p>
Fastboot	<p>Allows you to speed up the boot process by bypassing some of the compatibility steps. The options are:</p> <ul style="list-style-type: none"> Minimal Thorough—enabled by default Auto
Extended BIOS POST Time	<p>Allows you to create an extra preboot delay. The options are:</p> <ul style="list-style-type: none"> 0 seconds—enabled by default. 5 seconds 10 seconds
Security audit	<ul style="list-style-type: none"> Disable display of security audit display—not enabled
Full Screen Log	<ul style="list-style-type: none"> Enable Full Screen Logo—not enabled
Warnings and errors	<ul style="list-style-type: none"> Prompt on warnings and errors—enabled by default Continue on warnings Continue on warnings and errors




Manageability

Option	Description
MEBX Hotkey	<p>Allows you to specify whether the MEBx Hotkey function should enable, during the system boot.</p> <ul style="list-style-type: none">• Disabled• Enabled <p>Default setting: Disabled</p>
For USB provision	Enable USB provision is not selected by default

Virtualization support screen options

Option	Description
Virtualization	<p>Allows you to enable or disable the Intel Virtualization Technology.</p> <p>Enable Intel Virtualization Technology—default.</p>
VT for Direct I/O	<p>Enables or disables the Virtual Machine Monitor (VMM) from utilizing the additional hardware capabilities provided by Intel® Virtualization technology for direct I/O.</p> <p>Enable VT for Direct I/O - enabled by default.</p>
Trusted Execution	<p>This option specifies whether a Measured Virtual Machine Monitor (MVMM) can utilize the additional hardware capabilities provided by Intel Trusted Execution Technology. The TPM Virtualization Technology, and the Virtualization technology for direct I/O must be enabled to use this feature.</p> <p>Trusted Execution - disabled by default.</p>

Wireless screen options

Option	Description
Wireless Switch	<p>Allows to set the wireless devices that can be controlled by the wireless switch. The options are:</p> <ul style="list-style-type: none">• WWAN• GPS (on WWAN Module)• WLAN/WiGig• Bluetooth <p>All the options are enabled by default.</p> <p> NOTE: For WLAN and WiGig enable or disable controls are tied together and they cannot be enabled or disabled independently.</p>
Wireless Device Enable	<p>Allows you to enable or disable the internal wireless devices.</p> <ul style="list-style-type: none">• WWAN/GPS• WLAN/WiGig• Bluetooth

Option	Description
	All the options are enabled by default.

① **NOTE:** IMEI number for WWAN can be found on the outer box or the WWAN card.

Maintenance screen options

Option	Description
Service Tag	Displays the Service Tag of your computer.
Asset Tag	Allows you to create a system asset tag if an asset tag is not already set. This option is not set by default.
BIOS Downgrade	This controls flashing of the system firmware to previous revisions. Option 'Allow BIOS downgrade' is enabled by default.
Data Wipe	This field allows users to erase the data securely from all internal storage devices. Option 'Wipe on Next boot' is not enabled by default. The following is list of devices affected: <ul style="list-style-type: none"> • Internal SATA HDD/SSD • Internal M.2 SATA SSD • Internal M.2 PCIe SSD • Internal eMMC
BIOS Recovery	This field allows you to recover from certain corrupted BIOS conditions from a recover file on the user primary hard drive or an external USB key. <ul style="list-style-type: none"> • BIOS Recovery from Hard Drive—enabled by default • Always perform integrity check—disabled by default

System logs screen options

Option	Description
BIOS Events	Allows you to view and clear the System Setup (BIOS) POST events.
Thermal Events	Allows you to view and clear the System Setup (Thermal) events.
Power Events	Allows you to view and clear the System Setup (Power) events.

Updating the BIOS in Windows

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

- 1 Restart the computer.
- 2 Go to **Dell.com/support**.
 - Enter the **Service Tag** or **Express Service Code** and click **Submit**.
 - Click **Detect Product** and follow the instructions on screen,
- 3 If you are unable to detect or find the Service Tag, click the **Choose from all products**.
- 4 Choose the **Products** category from the list.

① **NOTE:** Choose the appropriate category to reach the product page

- 5 Select your computer model and the **Product Support** page of your computer appears.
- 6 Click **Get drivers** and click **Drivers and Downloads**.



The Drivers and Downloads section opens.

- 7 Click **Find it myself**.
- 8 Click **BIOS** to view the BIOS versions.
- 9 Identify the latest BIOS file and click **Download**.
- 10 Select your preferred download method in the **Please select your download method below** window, click **Download File**.
The **File Download** window appears.
- 11 Click **Save** to save the file on your computer.
- 12 Click **Run** to install the updated BIOS settings on your computer.
Follow the instructions on the screen.

NOTE: It is recommended not to update the BIOS version for more than 3 revisions. For example: If you want to update the BIOS from 1.0 to 7.0, then install version 4.0 first and then install version 7.0.

System and setup password

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

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

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

CAUTION: Anyone can access the data stored on your computer if it is not locked and left unattended.

NOTE: Your computer is shipped with the system and setup password feature disabled.

Assigning a system password and setup password

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

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

- 1 In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.
The **Security** screen is displayed.
- 2 Select **System Password** and create a password in the **Enter the new password** field.
Use the following guidelines to assign the system password:
 - A password can have up to 32 characters.
 - The password can contain the numbers 0 through 9.
 - Only lower case letters are valid, upper case letters are not allowed.
 - Only the following special characters are allowed: space, ("), (+), (.), (-), (.), (/), (:), ([), (\), (]), (`).
- 3 Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
- 4 Press Esc and a message prompts you to save the changes.
- 5 Press Y to save the changes.
The computer reboots.

Deleting or changing an existing system and/or setup password

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

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

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

NOTE: If you change the System and/or Setup password, re-enter the new password when promoted. If you delete the System and/or Setup password, confirm the deletion when promoted.

- 5 Press Esc and a message prompts you to save the changes.
- 6 Press Y to save the changes and exit from System Setup.
The computer reboots.



Troubleshooting

Enhanced Pre-Boot System Assessment (ePSA) diagnostics

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

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


 **CAUTION:** Use the system diagnostics to test only your computer. Using this program with other computers may cause invalid results or error messages.

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

Running the ePSA diagnostics

- 1 Power-on the 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.
The **Enhanced Pre-boot System Assessment** window is displayed.
- 4 Click the arrow key at the bottom left corner.
Diagnostics front page is displayed.
- 5 Press the arrow in the lower right hand corner to go to the page listing.
The items detected are listed.
- 6 To run a diagnostic test on a specific device, press Esc and click **Yes** to stop the diagnostic test.
- 7 Select the device from the left pane and click **Run Tests**.
- 8 If there are any issues, error codes are displayed.
Note the error code and validation number and contact Dell.

Contacting Dell

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

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

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

