

Vostro 3401

Setup and specifications guide




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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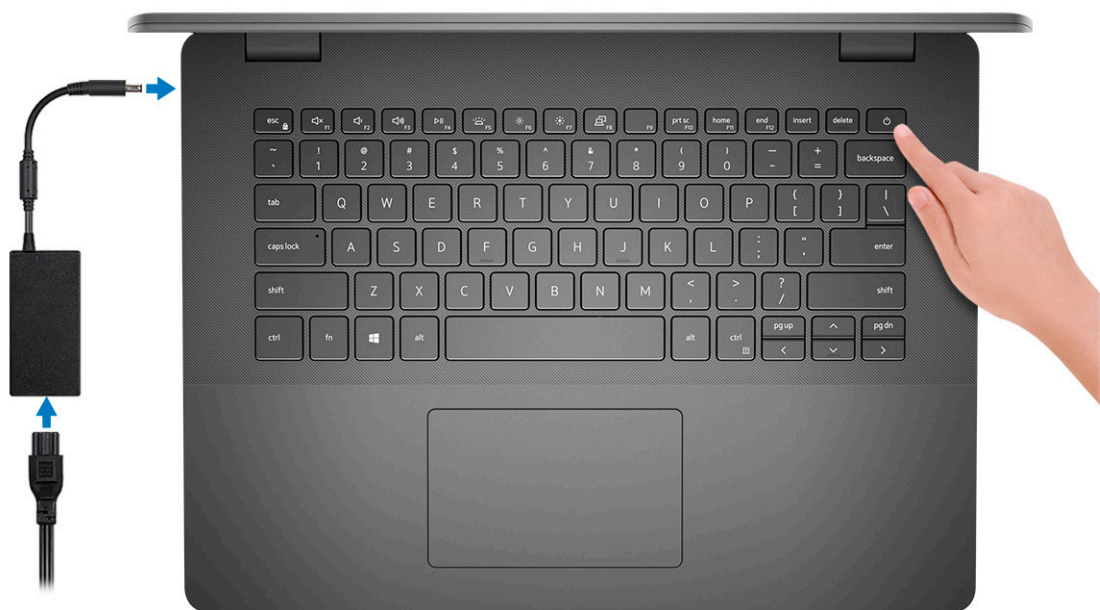
Chapter 7: Getting help and contacting Dell..... 40

Set up your computer

Steps


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

 **NOTE:** To conserve battery power, the battery might enter power saving mode.



2. Finish Windows system setup.

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

- Connect to a network for Windows updates.
 -  **NOTE:** If connecting to a secured wireless network, enter the password for the wireless network access when prompted.
- If connected to the internet, sign-in with or create a Microsoft account. If not connected to the internet, create an offline account.
- On the **Support and Protection** screen, enter your contact details.

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

Table 1. Locate Dell apps






Dell apps	Details
	<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>

Table 1. Locate Dell apps (continued)

Dell apps	Details
	<p>SupportAssist</p> <p>Proactively checks the health of your computer’s hardware and software.</p> <p>i NOTE: Renew or upgrade your warranty by clicking the warranty expiry date in SupportAssist.</p>
	<p>Dell Update</p> <p>Updates your computer with critical fixes and important device drivers as they become available.</p>
	<p>Dell Digital Delivery</p> <p>Download software applications including software that is purchased but not preinstalled on your computer.</p>

4. Create recovery drive for Windows.


i **NOTE:** It is recommended to create a recovery drive to troubleshoot and fix problems that may occur with Windows.

For more information, see [Create a USB recovery drive for Windows](#).

Create a USB recovery drive for Windows

Create a recovery drive to troubleshoot and fix problems that may occur with Windows. An empty USB flash drive with a minimum capacity of 16 GB is required to create the recovery drive.

Prerequisites

 **NOTE:** This process may take up to an hour to complete.

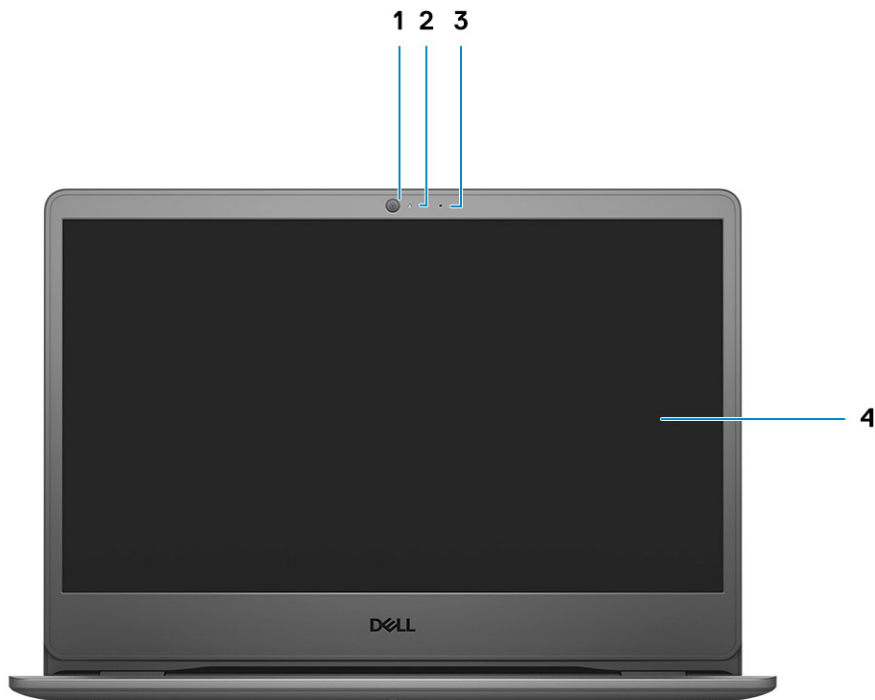
 **NOTE:** The following steps may vary depending on the version of Windows installed. Refer to the [Microsoft support site](#) for latest instructions.

Steps

1. Connect the USB flash drive to your computer.
2. In Windows search, type **Recovery**.
3. In the search results, click **Create a recovery drive**.
The **User Account Control** window is displayed.
4. Click **Yes** to continue.
The **Recovery Drive** window is displayed.
5. Select **Back up system files to the recovery drive** and click **Next**.
6. Select the **USB flash drive** and click **Next**.
A message appears, indicating that all data in the USB flash drive will be deleted.
7. Click **Create**.
8. Click **Finish**.
For more information about reinstalling Windows using the USB recovery drive, see the *Troubleshooting* section of your product's *Service Manual* at www.dell.com/support/manuals.

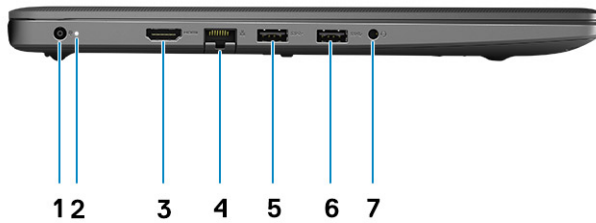
Chassis overview

Display view



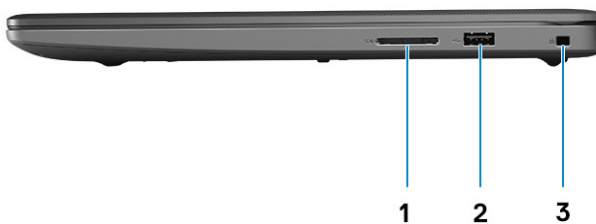
1. Camera
2. Camera Status Light
3. Microphones
4. LCD Panel

Left view



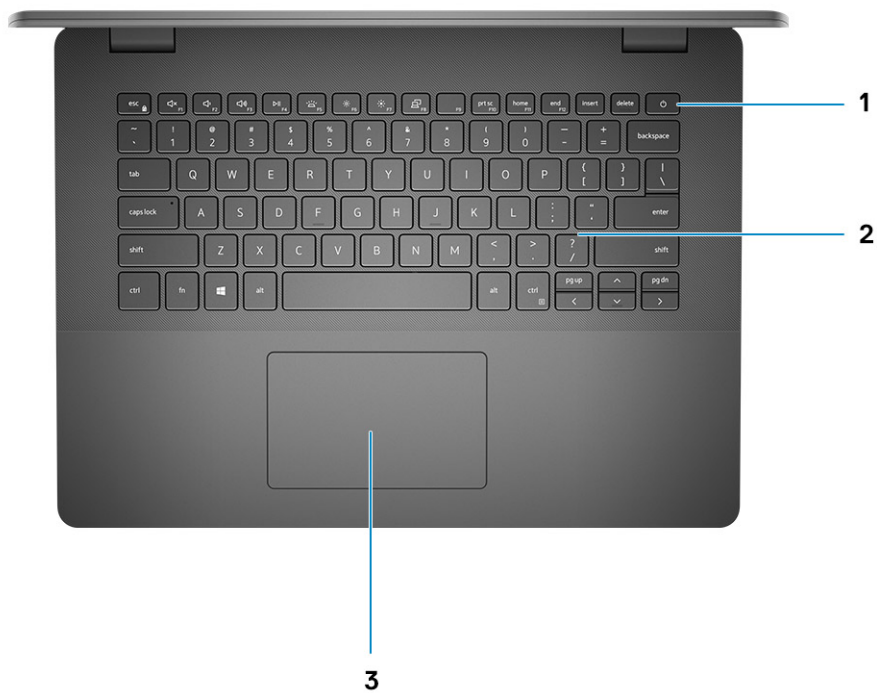
1. DC-in port
 2. Power LED
 3. HDMI 1.4 port
- i** **NOTE:** The maximum resolution supported by HDMI port is 1920x1080 @60Hz (24 bit)
4. Network port
 5. USB 3.2 Gen 1 port
 6. USB 3.2 Gen 1 port
 7. Universal audio jack (Realtek audio) / Audio jack (Cirrus logic audio)

Right view



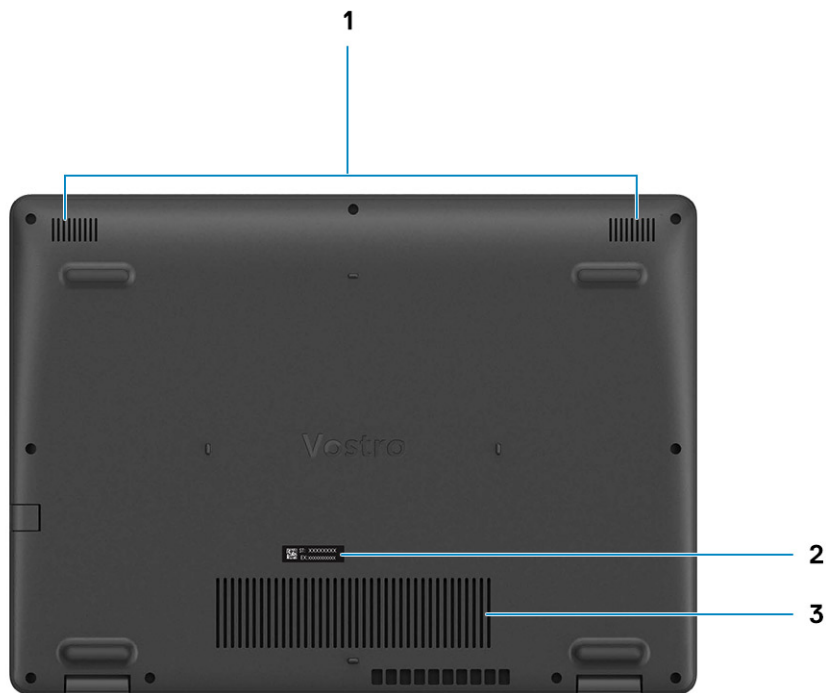
1. SD 3.0 card reader slot
2. USB 2.0 Type-A port
3. Wedge-shaped security slot

Palmrest view



1. Power button with optional finger print reader
2. Keyboard
3. Touchpad

Bottom view



1. Speakers
2. Service Tag
3. Air Vents

Keyboard shortcuts

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

Table 2. List of keyboard shortcuts

Keys	Primary behavior
Fn + F1	Mute audio
Fn + F2	Decrease volume
Fn + F3	Increase volume
Fn + F4	Play/Pause
Fn + F5	Turn on/off keyboard backlight
Fn + F6	Decrease brightness

Table 2. List of keyboard shortcuts (continued)

Keys	Primary behavior
Fn + F7	Increase brightness
Fn + F8	Switch to external display
Fn + F10	Print screen
Fn + F11	Home
Fn + 12	End
Fn + Ctrl	Open application menu

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.

Processors

Table 3. Processors

Description	Values
Processors	10th Generation Intel Core i3-1005G1
Wattage	15 W
Core count	2
Thread count	4
Speed	Up to 3.4 GHz
Cache	4 MB
Integrated graphics	Intel UHD Graphics

Chipset

Table 4. Chipset

Description	Values
Processor	Ice lake U (ICL U) PCH-LP
Chipset	Intel Core i3
DRAM bus width	64-bit
PCIe bus	Gen 3

Operating system

Your Vostro 3401 supports the following operating systems:

- Windows 11 Home, 64-bit
- Windows 11 Pro, 64-bit
- Windows 11 Pro National Academic, 64-bit
- Windows 11 Home National Academic, 64-bit
- Windows 10 Home, 64-bit
- Windows 10 Pro, 64-bit

Memory

Table 5. Memory specifications

Description	Values
Slots	Two SODIMM slots
Type	DDR4
Speed	2666 MHz
Maximum memory	16 GB
Minimum memory	4 GB
Configurations supported	<ul style="list-style-type: none"> • 4 GB DDR4 at 2666 MHz (1x4 GB) • 8 GB DDR4 at 2666 MHz (2 x 4 GB) • 8 GB DDR4 at 2666 MHz (1 x 8 GB) • 12 GB DDR4 at 2666 MHz (1 x 8 GB + 1 x 4 GB) • 16 GB DDR4 at 2666 MHz (1 x 16 GB) • 16 GB DDR4 at 2666 MHz (2 x 8 GB)

Storage

Your computer supports one of the following configurations:

- 2.5 in. 5400 RPM, SATA hard drive
- M.2 2230/2280 for solid-state drive

The primary drive of your computer varies with the storage configuration. For computers:

- 2.5 in. 5400 RPM, SATA hard drive
- M.2 2230/2280 for solid-state drive

Table 6. Storage specifications

Form factor	Interface type	Capacity
2.5 in. 5400 rpm, hard drive	SATA	upto 2 TB
M.2 2230 solid-state drive	PCIe NVMe 3x4	upto 512 GB
M.2 2280 solid-state drive	PCIe NVMe 3x4	upto 1 TB

Ports and connectors

Table 7. External ports and connectors

Description	Values
External:	
Network	One Flip-down RJ 45 10/100/1000 Mbps
USB	<ul style="list-style-type: none"> • Two USB 3.2 Gen 1 Type-A port • One USB 2.0 Type-A port
Audio	<ul style="list-style-type: none"> • One Universal audio port (Computers with Realtek audio configuration)

Table 7. External ports and connectors (continued)

Description	Values
	<ul style="list-style-type: none"> One Audio jack (Computers with Cirrus logic audio configuration)
Video	One HDMI 1.4 port ⓘ NOTE: The maximum resolution supported by HDMI port is 1920x1080 @60Hz (24 bit)
Power adapter port	4.5 mm barrel-type
Security	One Wedge shaped lock slot
Card slot	One SD 3.0 card slot

Table 8. Internal ports and connectors

Description	Values
Internal:	
One M.2 Key-M (2280 or 2230) for solid-state drive One M.2 2230 Key-E for WLAN	<ul style="list-style-type: none"> One M.2 2230 slot for Wi-Fi One M.2 slot for 2230/2280 solid-state drive ⓘ NOTE: To learn more about the features of different types of M.2 cards, see the knowledge base article SLN301626 .
SIM card	Not Supported

Audio

Table 9. Audio specifications

Description	Values	
Controller	Realtek ALC3204	Cirrus CS8409 (CS42L42 + TI SN005825)
Stereo conversion	Supported	Supported
Internal interface	High definition audio	HDA bridge + CS42L42 audio codec
External interface	Universal Audio Jack	Headset jack ⓘ NOTE: 3.5mm headset jack functionality varies by model configuration. For best results, use Dell recommended audio accessories
Speakers	Two	Two
Internal-speaker amplifier	Supported	Supported
External volume controls	Keyboard shortcut controls	Keyboard shortcut controls
Speaker Output Average	2 W	2 W

Table 9. Audio specifications (continued)

Description	Values	
Speaker Output Peak	2.5 W	2.5 W
Subwoofer output	Not supported	Not supported
Microphone	Single digital microphone	Single digital microphone

Video

Table 10. Integrated graphics specifications

Integrated graphics			
Controller	External display support	Memory size	Processor
Intel UHD Graphics	<ul style="list-style-type: none"> One HDMI 1.4 <p>NOTE: The maximum resolution supported by HDMI port is 1920x1080 @60Hz (24 bit)</p>	Shared system memory	<ul style="list-style-type: none"> Intel 10th Generation Core i3 processors

Camera

Table 11. Camera specifications

Standard Webcam		
Description		Values
Number of cameras		One
Type		HD RGB camera
Location		Front Camera
Sensor type		CMOS sensor technology
Resolution:		
	Still image	0.92 megapixel
	Video	1280 x 720 (HD) at 30 fps
Diagonal viewing angle		78.6 degrees

Communications

Ethernet

Table 12. Ethernet specifications

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

Wireless module

Table 13. Wireless module specifications

Description	Values		
Model number	Intel 9462	Qualcomm QCA9377 (DW1810)	Realtek RTL8723DE
Transfer rate	Up to 433 Mbps	Up to 433 Mbps	Up to 150 Mbps
Frequency bands supported	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz
Wireless standards	<ul style="list-style-type: none"> • WiFi 802.11a/b/g • Wi-Fi 4 (Wi-Fi 802.11n) • Wi-Fi 5 (Wi-Fi 802.11ac) • Wi-Fi 6 (WiFi 802.11ax) 	<ul style="list-style-type: none"> • WiFi 802.11a/b/g • Wi-Fi 4 (Wi-Fi 802.11n) • Wi-Fi 5 (Wi-Fi 802.11ac) 	<ul style="list-style-type: none"> • Wi-Fi 802.11 a/b/g • Wi-Fi 4 (WiFi 802.11n)
Encryption	<ul style="list-style-type: none"> • 64-bit/128-bit WEP • AES-CCMP • TKIP 	<ul style="list-style-type: none"> • 64-bit/128-bit WEP • AES-CCMP • TKIP 	<ul style="list-style-type: none"> • 64-bit/128-bit WEP • AES-CCMP • TKIP
Bluetooth	Bluetooth 5.0	Bluetooth 5.0	Bluetooth 4.2

Keyboard

The following table lists the keyboard specifications of your Vostro 3401.

Table 14. Keyboard specifications

Description	Values
Keyboard type	<ul style="list-style-type: none"> • Standard keyboard • White backlight keyboard
Keyboard layout	QWERTY
Number of keys	<ul style="list-style-type: none"> • United States and Canada: 81 keys • United Kingdom: 82 keys • Japan: 85 keys
Keyboard size	X=18.7 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>NOTE: You can define the primary behavior of the function keys (F1–F12) changing Function Key Behavior in BIOS setup program.</p>

Touchpad

The following table lists the touchpad specifications of your Vostro 3401.

Table 15. Touchpad specifications

Description		Values
Touchpad resolution:		
	Horizontal	<ul style="list-style-type: none"> • Synaptics: 1230 • Lite-on: 1920
	Vertical	<ul style="list-style-type: none"> • Synaptics: 750 • Lite-on: 1080
Touchpad dimensions:		
	Horizontal	105 mm (4.13 in.)
	Vertical	65 mm (2.55 in.)
Touchpad gestures		For more information about touchpad gestures available on Windows, see the Microsoft knowledge base article 4027871 at support.microsoft.com .

Media-card reader

Table 16. Media-card reader specifications

Description	Values
Type	One Micro SD 3.0 card
Cards supported	<ul style="list-style-type: none"> • Micro Secure Digital (mSD) • Micro Secure Digital High Capacity(mSDHC) • Micro Secure Digital Extended Capacity(mSDXC)

Power adapter

Table 17. Power adapter specifications

Description	Values	Values
Type	45 W	65 W
Connector dimensions:	4.5 mm x 2.9 mm	4.5 mm x 2.9 mm
Input voltage	100 VAC x 240 VAC	100 VAC x 240 VAC
Input frequency	50 Hz x 60 Hz	50 Hz x 60 Hz
Input current (maximum)	1.30 A	1.60 A / 1.70 A
Output current (continuous)	2.31 A	3.34 A
Rated output voltage	19.50 VDC	19.50 VDC
Temperature range:		

Table 17. Power adapter specifications (continued)

Description		Values	Values
	Operating	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)
	Storage	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)

Battery

Table 18. Battery specifications


Description		Values
Type		42 WHr Polymer battery
Voltage		11.40 VDC
Weight (maximum)		0.2 kg (0.44 lb)
Dimensions:		
	Height	184.15 mm (7.25 in.)
	Width	97.15 mm (3.82 in.)
	Depth	5.90 mm (0.23 in.)
Temperature range:		
	Operating	0°C to 35°C (32°F to 95°F)
	Storage	-40°C to 65°C (-40°F to 149°F)
Operating time		Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.
Charging time (approximate)		4 hours (when the computer is off) <i>i</i> NOTE: Dell recommends that you charge the battery regularly for optimal power consumption. If your battery charge is completely depleted, connect the power adapter, turn on your computer and then restart your computer to reduce the power consumption. Control the charging time, duration, start and end time, and so on using the Dell Power Manager application. For more information on the Dell Power Manager see, <i>Me and My Dell</i> on www.dell.com/
Coin-cell battery		CR2032
Operating time		Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.

Dimensions and weight

Table 19. Dimensions and weight

Description	Values
Height:	

Table 19. Dimensions and weight (continued)

Description		Values
	Front	18.10 mm (0.71 in.)
	Rear	19.90 mm (0.78 in.)
Width		328.70 mm (12.94 in.)
Depth		239.50 mm (9.42 in.)
Weight		1.64 kg (3.61 lb)
		 NOTE: The weight of your notebook depends on the configuration ordered and the manufacturing variability.

Display

Table 20. Display specifications

Description		Values	
Type		High Definition (HD)	Full High Definition (FHD)
Panel technology		TN	WVA (wide view angle)
Luminance (typical)		220 nits	220 nits
Dimensions (active area):			
	Height	173.99 mm (6.85 in.)	173.99 mm (6.85 in.)
	Width	309.35 mm (12.17 in.)	309.35 mm (12.17 in.)
	Diagonal	355.60 mm (14.00 in.)	355.60 mm (14.00 in.)
Native resolution		1366 x 768	1920 x 1080
Megapixels		1.049	2.0736
Color gamut		NTSC 45% Typ.	NTSC 45% Typ.
Pixels per inch (PPI)		112	157
Contrast ratio (min)		400:1	500:1
Response time (max)		16 ms	35 ms
Refresh rate		60 Hz	60 Hz
Horizontal view angle		40 degrees	80 degrees
Vertical view angle		Top/Bottom 10/30 degrees	80 degrees
Pixel pitch		0.2265 mm x 0.2265 mm	0.161 mm x 0.161 mm
Power consumption (maximum)		3.2 W	3.5 W
Anti-glare vs glossy finish		Anti-glare	Anti-glare

Table 20. Display specifications (continued)

Description	Values	
Touch options	No	No

Fingerprint reader

Table 21. Fingerprint reader specifications

Description	Values
Sensor technology	Capacitive
Sensor resolution	500 dpi
Sensor pixel size	80 x 64

Security

Table 22. Security specifications

Features	Specifications
Trusted Platform Module (TPM) 2.0	Integrated on system board
Fingerprint reader	Optional
Wedge-shaped lock slot	Standard

Security Software

Table 23. Security Software specifications

Specifications
Dell Client Command Suite
Optional Dell Data Security and Management Software
Dell Client Command Suite
Dell BIOS Verification
Optional Dell Endpoint Security and Management Software
VMware Carbon Black Endpoint Standard
VMware Carbon Black Endpoint Standard + Secureworks Threat Detection and Response
Dell Encryption Enterprise
Dell Encryption Personal
Carbonite
VMware Workspace ONE
Absolute® Endpoint Visibility and Control
Netskope
Dell Supply Chain Defense

Computer environment

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

Table 24. Computer environment

Description	Operating	Storage
Temperature range	0°C to 40°C (32°F to 104°F)	-40°C to 65°C (-40°F to 149°F)
Relative humidity (maximum)	10% to 90% (non-condensing)	0% to 95% (non-condensing)
Vibration (maximum)*	0.66 GRMS	1.30 GRMS
Shock (maximum)	140 G†	160 G†
Altitude (maximum)	0 m to 3048 m (0 ft to 10000 ft)	0 m to 10668 m (0 ft to 35000 ft)

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


† Measured using a 2 ms half-sine pulse when the hard drive is in use.

Software

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

Downloading Windows drivers

Steps

1. Turn on the .
2. Go to **Dell.com/support**.
3. Click **Product Support**, enter the Service Tag of your , and then click **Submit**.
 **NOTE:** If you do not have the Service Tag, use the auto detect feature or manually browse for your model.
4. Click **Drivers and Downloads**.
5. Select the operating system installed on your .
6. Scroll down the page and select the driver to install.
7. Click **Download File** to download the driver for your .
8. After the download is complete, navigate to the folder where you saved the driver file.
9. Double-click the driver file icon and follow the instructions on the screen.

System setup

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

NOTE: Before you change BIOS Setup program, it is recommended that you write down the BIOS Setup program screen information for future reference.

Use the BIOS Setup program for the following purposes:

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

Boot menu

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:

- **UEFI Boot Devices:**
 - Windows Boot Manager
 - UEFI Hard Drive
 - Onboard NIC (IPV4)
 - Onboard NIC (IPV6)
- **Pre-Boot Tasks:**
 - BIOS Setup
 - Diagnostics
 - BIOS Update
 - SupportAssist OS Recovery
 - BIOS Flash Update - Remote
 - Device Configuration

Navigation keys

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

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

Boot Sequence

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

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

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

- Removable Drive (if available)
- STXXXX Drive
 - ⓘ **NOTE:** XXXX denotes the SATA drive number.
- Optical Drive (if available)
- SATA Hard Drive (if available)
- Diagnostics
 - ⓘ **NOTE:** Choosing **Diagnostics**, displays the **SupportAssist diagnostics** screen.

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

BIOS setup

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

Overview

Table 25. Overview


Option	Description
System Information	<p>This section lists the primary hardware features of your computer.</p> <p>The options are:</p> <ul style="list-style-type: none">• System Information<ul style="list-style-type: none">○ BIOS version○ Service Tag○ Asset Tag○ Manufacture Date○ Ownership Date○ Express Service Code○ Ownership Tag○ Signed Firmware Update• Battery<ul style="list-style-type: none">○ Primary○ Battery Level○ Battery State○ Health○ AC Adapter• Processor Information<ul style="list-style-type: none">○ Processor Type○ Maximum Clock Speed○ Minimum Clock Speed○ Current Clock Speed○ Core Count

Table 25. Overview

Option	Description
	<ul style="list-style-type: none"> ○ Processor ID ○ Processor L2 Cache ○ Processor L3 Cache ○ Microcode Version ○ Intel Hyper-Threading Capable ○ 64-Bit Technology ● Memory Configuration <ul style="list-style-type: none"> ○ Memory Installed ○ Memory Available ○ Memory Speed ○ Memory Channel Mode ○ Memory Technology ○ DIMM_Slot 1 ○ DIMM_Slot 2 ● Device Information <ul style="list-style-type: none"> ○ Panel Type ○ Video Controller ○ Video Memory ○ Wi-Fi Device ○ Native Resolution ○ Video BIOS Version ○ Audio Controller ○ Bluetooth Device ○ LOM MAC Address ○ dGPU Video Controller


Boot Options

Table 26. Boot Options

Option	Description
<p>Enable Boot Devices</p>	<p>UEFI Hard Drive - Allows the user to select Enable boot devices detected by the system.</p> <ol style="list-style-type: none"> 1. Windows Boot Manager 2. UEFI Hard Drive <p> NOTE: Legacy Boot mode is not supported on this platform.</p>
<p>Add / Remove / View Boot Devices</p>	<p>Allows the user to add or remove boot devices listed above. The controls available are as follows:</p> <ul style="list-style-type: none"> ● Add Boot Options ● Remove Boot Options ● View
<p>UEFI Boot Path Security</p>	<p>Allows the user to control if the system should ask for admin password. The controls available are as follows:</p> <ul style="list-style-type: none"> ● Never ● Always ● Always Except Internal HDD

System configuration

Table 27. System configuration

Option	Description
Date/Time	The options are: <ul style="list-style-type: none"> ● Date ● Time  NOTE: Legacy Boot mode is not supported on this platform.
Network Controller Configurator	Integrated NIC: <ol style="list-style-type: none"> 1. Disabled 2. Enabled 3. Enabled with PXE Enable UEFI Network Stack: <ol style="list-style-type: none"> 1. On 2. Off
Storage Interface	Port Enablement - Allows the user to enable/disable onboard drives. The user can toggle on/off for the following drives: <ul style="list-style-type: none"> ● SATA-0 ● M.2 PCIe SSD-0/SATA-2
SATA Operation	Allows the user to set the SATA operation mode for the storage devices available. The options available are as follows: <ul style="list-style-type: none"> ● Disabled ● AHCI ● RAID On
Drive Information	This section displays the driver configuration and specification for all storage devices available.
Enable Audio	Allows the user to enable internal audio devices. The options available are as follows: <ul style="list-style-type: none"> ● Enable Microphone ● Enable Internal Speaker
USB Configuration	Allows the user to enable USB Boot devices. The options available are as follows: <ul style="list-style-type: none"> ● Enable USB Boot Support ● Enable External USB Ports
Miscellaneous Devices	Allows the user to enable internal Camera. The options available are as follows: <ul style="list-style-type: none"> ● Enable Camera
Keyboard Illumination	Allows the user to configure the keyboard brightness levels. The options available are as follows: <ul style="list-style-type: none"> ● Disabled ● Dim ● Bright

Video

Table 28. Video

Option	Description
LCD Brightness	Set the screen brightness when running on battery power. <ul style="list-style-type: none"> • 0 - 100
Brightness on AC power	Set the screen brightness when running on AC power. <ul style="list-style-type: none"> • 0 - 100
EcoPower	<p>Enable EcoPower - Enable to increase battery life and reduce the display brightness when appropriate.</p> <p>The options are:</p> <ul style="list-style-type: none"> • On • Off

Security

Table 29. Security

Option	Description
Enable Admin Setup Lockout	<p>Allows the admin to allow/block users from accessing the BIOS menu</p> <ul style="list-style-type: none"> • On • Off <p>i NOTE: Deleting the admin password deletes the system password (if set). The admin password can also be used to delete hard drive password. For this reason, you cannot set an admin password if a system password or hard drive password is set. Hence, an admin password has to be set first if the admin password has to be used with system password and/or hard drive password.</p>
Password Bypass	<p>Allows the user to control if the systems prompts for the system and hard drive passwords when powered on from off state:</p> <ul style="list-style-type: none"> • Disabled • Reboot Bypass
Enable Non-Admin Password Changes	<p>When enabled, the user can change system and hard drive password without admin password.</p> <ul style="list-style-type: none"> • On • Off
Enable UEFI Capsule Firmware Updates	<p>Allows the user to configure BIOS updates via UEFI capsule update packages</p> <ul style="list-style-type: none"> • On • Off
Absolute	<p>Allows the user to enable, disable or permanently disable the BIOS module interface of the optional Absolute Persistence Module service. The controls are as follows:</p> <ul style="list-style-type: none"> • Enabled • Disabled • Permanently Disabled
TPM 2.0 Security On	<p>Allows the user to enable or disable TPM security. The controls are as follows:</p> <ul style="list-style-type: none"> • On • Off

Table 29. Security (continued)

Option	Description
PPI Bypass for Enable Commands	Allows the user to enable or disable TPM Physical Presence Interface (PPI). The controls are as follows: <ul style="list-style-type: none"> • On • Off
PPI Bypass for Disabled Commands	Allows the user to enable or disable TPM Physical Presence Interface (PPI). The controls are as follows: <ul style="list-style-type: none"> • On • Off
PPI Bypass for Clear Commands	Allows the user to enable or disable TPM Physical Presence Interface (PPI). The controls are as follows: <ul style="list-style-type: none"> • On • Off
Attestation Enable	Allows the user to enable or disable TPM endorsement Hierarchy for the operating system. The controls are as follows: <ul style="list-style-type: none"> • On • Off
Key Storage Enable	Allows the user to enable or disable TPM endorsement Hierarchy for the operating system. The controls are as follows: <ul style="list-style-type: none"> • On • Off
SHA-256	Allows the user to enable SHA-256 hash algorithm to extend the measurements into the TPM PCRs during BIOS boot. The controls are as follows: <ul style="list-style-type: none"> • On • Off
Clear	Allows the user to clear TPM owner information and returns TPM to default state. The controls are as follows: <ul style="list-style-type: none"> • On • Off
TPM State	Allows the user to enable/disable TPM. The controls are as follows: <ul style="list-style-type: none"> • On • Off
SMM Security Mitigation	Allows the user to enable/disable UEFI SMM Security Mitigation. The controls are as follows: <ul style="list-style-type: none"> • On • Off

Passwords

Table 30. Passwords



Option	Description
Enable Strong Passwords	Allows the user to enable complex admin and system passwords: <ul style="list-style-type: none"> • On • Off <p> NOTE: Deleting the admin password deletes the system password (if set). The admin password can also be used to delete hard drive password. For this reason, you cannot set an admin password if a system password or hard drive password is set. Hence, an admin</p>

Table 30. Passwords (continued)

Option	Description
	<p>password has to be set first if the admin password has to be used with system password and/or hard drive password.</p>
<p>Password Configuration</p>	<p>Allows the user to set the maximum number of characters for Admin and System passwords:</p> <ul style="list-style-type: none"> ● Admin Password Min (04) ● Admin Password Max (32) ● System Password Min (04) ● System Password Max (32)
<p>Admin Password</p>	<p>Allows you to configure an admin password.</p> <p>i NOTE: Deleting the admin password deletes the system password (if set). The admin password can also be used to delete hard drive password. For this reason, you cannot set an admin password if a system password or hard drive password is set. Hence, an admin password has to be set first if the admin password has to be used with system password and/or hard drive password.</p> <p>Upper Case Letter When enabled, this field reinforces password must contain at least one upper capital letter.</p> <p>Lower Case Letter When enabled, this field reinforces password must contain at least one lower capital letter.</p> <p>Digit When enabled, this field reinforces password must contain at least one-digit number.</p> <p>Special Character When enabled, this field reinforces password must contain at least one special character.</p> <p>i NOTE: These options by default are disabled.</p> <p>Minimum Characters Defines the number of characters allowed for a password. Min = 4</p>
<p>Password Bypass</p>	<p>Allows you to bypass the System password and the Internal hard drive password, when it is set, during a system restart.</p> <p>The options are:</p> <ul style="list-style-type: none"> ● Disabled—This option is enabled by default. ● Reboot bypass
<p>Password Changes</p>	<p>Allows you to change the system password and hard drive password without the need of administrator password.</p> <p>Enable Non-Admin Password Changes - By default, this option is disabled.</p>
<p>Admin Setup Lockout</p>	<p>Allows the administrator to control how the user can access BIOS setup.</p> <p>Enable Admin Setup Lockout - By default, this option is disabled.</p> <p>i NOTE:</p> <ul style="list-style-type: none"> ● If the admin password is set and Enable Admin Setup Lockout is enabled, you cannot view the BIOS setup (using F2 or F12) without the admin password. ● If the admin password is set and Enable Admin Setup Lockout is disabled, the BIOS setup can be entered and items that are viewed in Locked mode.
<p>Master Password Lockout</p>	<p>Allows you to disable master password support.</p> <p>Enable Master Password Lockout - By default, this option is disabled.</p> <p>i NOTE: The Hard Disk password has to be cleared before the settings can be changed.</p>

Secure Boot

Table 31. Secure Boot

Option	Description
Secure Boot	Secure Boot helps ensure the system boots using only validated boot software. Enable Secure Boot —By default, this option is disabled.  NOTE: The system has to be in UEFI boot mode to enable Enable Secure Boot .
Secure Boot Mode	Changes to the Secure Boot operation mode modifies the behavior of Secure Boot to allow evaluation of UEFI driver signatures. The options are: <ul style="list-style-type: none"> • Deployed Mode—By default, this option is enabled. • Audit Mode

Expert Key Management

Table 32. Expert Key Management

Option	Description
Enable Custom Mode	Allows the user to manipulate security key databases <ul style="list-style-type: none"> • On • Off — By default, this option is enabled.
Expert Key Management	The Custom Mode Key Management options are: <ul style="list-style-type: none"> • PK—By default, this option is enabled. • KEK • db • dbx

Performance

Table 33. Performance

Option	Description
Multi Core Support	This field specifies whether the process has one or all cores enabled. The default value is set to the maximum number of cores. <ul style="list-style-type: none"> • All Cores — This option is enabled by default. • 1 • 2 • 3
Intel SpeedStep	This feature allows the system to dynamically adjust processor voltage and core frequency, decreasing average power consumption and heat production. Enable Intel SpeedStep This option is enabled by default.

Table 33. Performance (continued)

Option	Description
C-States Control	<p>This feature allows you to enable or disable the ability of the CPU to enter and exit low-power states.</p> <p>Enable C-state control</p> <p>This option is enabled by default.</p>
	<p>This feature allows the system to dynamically detect high usage of discrete graphics and adjust system parameters for higher performance during that time period.</p> <p>Enable Adaptive C-states for Discrete Graphics</p> <p>This option is enabled by default.</p>
Intel Turbo Boost Technology	<p>This option allows you to enable or disable the Intel TurboBoost mode of the processor.</p> <p>Enable Intel Turbo Boost Technology</p> <p>This option is enabled by default.</p>
Intel Hyper-Threading Technology	<p>This option allows you to enable or disable the HyperThreading in the processor.</p> <p>Enable Intel Hyper-Threading Technology</p> <p>This option is enabled by default.</p>

Power management

Table 34. Power Management

Option	Description
Wake on AC	<p>Allows the system to wake up to perform basic checks when the adapter is connected.</p> <ul style="list-style-type: none"> • On • Off — enabled by default
Enable USB Wake Support	<p>Allows you to enable USB devices to wake the system from standby mode.</p> <ul style="list-style-type: none"> • On • Off — enabled by default <p>i NOTE: These features are only functional when the AC power adapter is connected. If the AC power adapter is removed before Standby, the BIOS removes power from all USB ports to conserve battery power.</p>
Block Sleep	<p>This option enables you to block entering to sleep (S3) mode in operating system environment. By default, the Block Sleep option is disabled.</p> <p>i NOTE: When Block Sleep is enabled, the system does not go to sleep. Intel Rapid Start gets disabled automatically, and the operating system power option remains blank if it was set to Sleep.</p>
Auto On Time	<p>Allows the user to set a defined day/time when they want the system to automatically power on</p> <p>The options are:</p> <ul style="list-style-type: none"> • Disable—enabled by default • Every Day • Weekdays • Select Days

Table 34. Power Management (continued)

Option	Description
	The user will see the days of the week listed with fields to select the time.
Battery Charge Configuration	Allows the user to set the preferred battery charging plan for the system: The options are: <ul style="list-style-type: none"> ● Adaptive—enabled by default ● Standard ● Primarily AC Use ● CUstom - Allows the user to set a Start/Stop percentage for battery
Enable Advanced Battery Charge Configuration	Allows the user to enable advanced configuration to maximize battery health while supporting heavy usage. The controls are as follows: <ul style="list-style-type: none"> ● On ● Off The UI below allows the user to set the day and time to further configure battery charging behaviour.
Peak Shift	Allows the system to run on battery during peak power usage hours. The controls are as follows: <ul style="list-style-type: none"> ● On ● Off The UI below allows the user to set the peak day and time to further configure battery usage behavior.

Wireless

Table 35. Wireless options

Option	Description
Wireless Device Enable	The options are: <ul style="list-style-type: none"> ● WLAN - Enable / Disable the WLAN device ● Bluetooth - Enable / Disable the Bluetooth device

POST behavior

Table 36. POST behavior

Option	Description
Numlock Enable	Allows the user to enable/disable numlock Enable numlock <ul style="list-style-type: none"> ● ON - Enabled by default ● OFF
FN Lock	Allows the user to enable/disable Function keys <ul style="list-style-type: none"> ● ON - Enabled by default ● OFF Lock Mode: <ul style="list-style-type: none"> ● Lock Mode Standard - When selected, the F1 - F12 keys will hold their traditional functions. ● Lock Mode Secondary - When selected, the F1 - F12 keys will switch to secondary functions with media and system controls.

Table 36. POST behavior (continued)

Option	Description
Warnings and Errors	<p>Allows the user to configure in what circumstances would the system stop the boot process upon encountering errors:</p> <ul style="list-style-type: none"> ● Prompt on Warning Errors — System will wait for user input when errors or warnings are detected. ● Continue on Warning — System will wait for user input only when errors are detected. ● Continue on Warning and Errors — System will not ask for user input even when errors or warnings are detected.
Enable Adapter Warnings	<p>Allows the user to configure the system to give an error message when lower power adapter is detected. The controls are as follows:</p> <ul style="list-style-type: none"> ● On ● Off
Fastboot	<p>Allows the user to configure the speed of UEFI boot process:</p> <ul style="list-style-type: none"> ● Minimal ● Thorough ● Auto
Extend BIOS POST Time	<p>Allows the user to configure the BIOS POST load time</p> <ul style="list-style-type: none"> ● 0 seconds ● 5 seconds ● 10 seconds

Maintenance

Table 37. Maintenance

Option	Description
Service Tag	Displays the service tag of your computer.
Asset Tag	Allows the admin to add an Asset Tag. It is a string of 64 characters that are used by IT administrator to uniquely identify a particular system. Once an asset tag is set, it cannot be changed.
BIOS Recovery from Hard Drive	<p>Allows you to enable or disable recovery from a corrupt BIOS from a copy stored on the hard drive.</p> <ul style="list-style-type: none"> ● ON - Enabled by default. ● OFF <p>The user also gets a check box that allows enabling automatic recovery of the BIOS without user input.</p>
Start Data Wipe	<p>Allows the user to setup an autowipe on the storage devices on the system upon a reboot.</p> <p>The options are:</p> <ul style="list-style-type: none"> ● ON ● OFF - Enabled by default.

System logs


Table 38. System Logs

Option	Description
BIOS Event Log	Allows you to either keep and clear the BIOS event log. Clear BIOS Event Log The options are: <ul style="list-style-type: none">• Keep - This option is enabled by default.• Clear
Thermal Event Log	Allows you to either keep and clear the Thermal event log. Clear Thermal Event Log The options are: <ul style="list-style-type: none">• Keep - This option is enabled by default.• Clear
Power Event Log	Allows you to either keep and clear the Power event log. Clear Power Event Log The options are: <ul style="list-style-type: none">• Keep - This option is enabled by default.• Clear


Updating the BIOS

Updating the BIOS in Windows

About this task

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

Steps


1. Go to www.dell.com/support.
2. Click **Product support**. In the **Search support** box, enter the Service Tag of your computer, and then click **Search**.
 **NOTE:** If you do not have the Service Tag, use the SupportAssist feature to automatically identify your computer. You can also use the product ID or manually browse for your computer model.
3. Click **Drivers & Downloads**. Expand **Find drivers**.
4. Select the operating system installed on your computer.
5. In the **Category** drop-down list, select **BIOS**.
6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
7. After the download is complete, browse the folder where you saved the BIOS update file.
8. Double-click the BIOS update file icon and follow the on-screen instructions.
For more information, see knowledge base article [000124211](https://www.dell.com/support/article/000124211) at www.dell.com/support.

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](https://www.dell.com/support/article/000131486) at www.dell.com/support.

Updating the BIOS using the USB drive in Windows

About this task

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


Steps

1. Follow the procedure from step 1 to step 6 in [Updating the BIOS in Windows](#) to download the latest BIOS setup program file.
2. Create a bootable USB drive. For more information, see the knowledge base article [000145519](https://www.dell.com/support/article/000145519) at www.dell.com/support.
3. Copy the BIOS setup program file to the bootable USB drive.
4. Connect the bootable USB drive to the computer that needs the BIOS update.
5. Restart the computer and press **F12**.
6. Select the USB drive from the **One Time Boot Menu**.
7. Type the BIOS setup program filename and press **Enter**.
The **BIOS Update Utility** appears.
8. Follow the on-screen instructions to complete the BIOS update.

Updating the BIOS from the F12 One-Time boot menu

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


About this task

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

BIOS Update

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

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


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

Updating from the One-Time boot menu

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

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

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

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

Steps

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


System and setup password


Table 39. System and setup password

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

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

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

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

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

Assigning a system setup password

Prerequisites

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

About this task

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

Steps

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

5. Press **Y** to save the changes.
The computer reboots.

Deleting or changing an existing system setup password


Prerequisites

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

About this task

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

Steps



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

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 40. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	www.dell.com
My Dell	
Tips	
Contact Support	In Windows search, type Contact Support , and press Enter.
Online help for operating system	www.dell.com/support/windows www.dell.com/support/linux
Troubleshooting information, user manuals, setup instructions, product specifications, technical help blogs, drivers, software updates, and so on.	www.dell.com/support
Dell knowledge base articles for a variety of computer concerns.	<ol style="list-style-type: none"> 1. Go to https://www.dell.com/support/home/?app=knowledgebase. 2. Type the subject or keyword in the Search box. 3. Click Search to retrieve the related articles.
Learn and know the following information about your product: <ul style="list-style-type: none"> • Product specifications • Operating system • Setting up and using your product • Data backup • Troubleshooting and diagnostics • Factory and system restore • BIOS information 	See <i>Me and My Dell</i> at www.dell.com/support/manuals . To locate the <i>Me and My Dell</i> relevant to your product, identify your product through one of the following: <ul style="list-style-type: none"> • Select Detect Product. • Locate your product through the drop-down menu under View Products. • Enter the Service Tag number or Product ID in the search bar.

Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see www.dell.com/contactdell.

 **NOTE:** Availability varies by country and product, and some services may not be available in your country.

 **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.