

# Vostro 5401

## 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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# Set up your computer

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



- NOTE:** To conserve battery power, the battery might enter power-saving mode. Connect the power adapter and press the power button to turn on the computer.
- NOTE:** After the initial turn on and setup of the computer, the computer can subsequently turn on just by opening the display from a closed position.

2. Finish operating system setup.

## For Ubuntu:


Follow the on-screen instructions to complete the setup. For more information about installing and configuring Ubuntu, see the knowledge base articles [SLN151664](#) and [SLN151748](#) at [www.dell.com/support](http://www.dell.com/support).

**For Windows:** Follow the on-screen instructions to complete the setup. When setting up, it is recommended 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   |
|---|---|
|  | <b>My Dell</b><br>Centralized location for key Dell applications, help articles, and other important information about your computer. It also notifies you about the warranty status, recommended accessories, and software updates if available. |

**Table 1. Locate Dell apps(continued)**

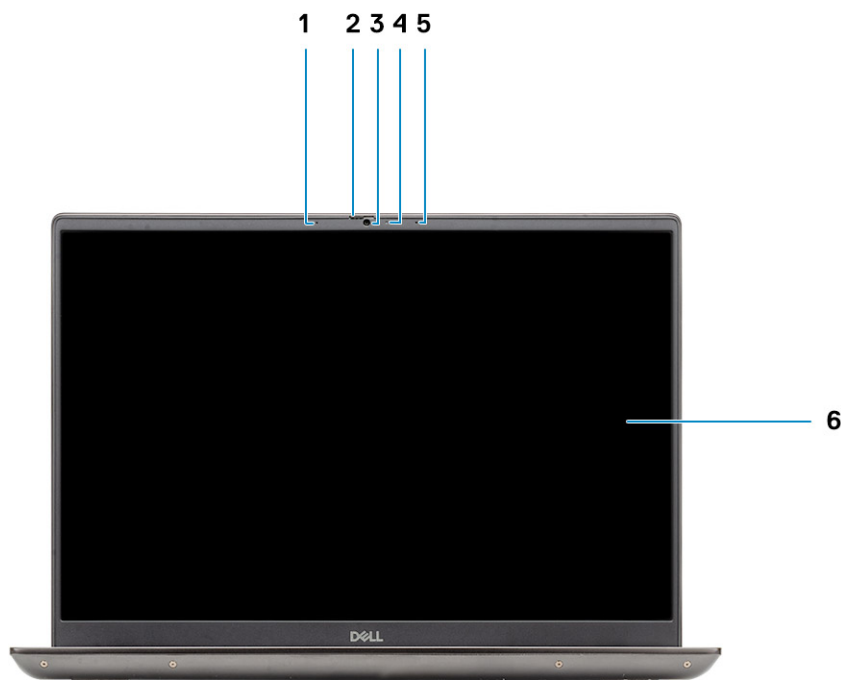
| Dell apps   | Details   |
|---|---|
|  | <b>Dell Product Registration</b><br>Register your computer with Dell.   |
|  | <b>Dell Help &amp; Support</b><br>Access help and support for your computer.  |
|  | <b>SupportAssist</b><br>Proactively checks the health of your computer's hardware and software.<br><b>NOTE:</b> Renew or upgrade your warranty by clicking the warranty expiry date in SupportAssist. |
|  | <b>Dell Update</b><br>Updates your computer with critical fixes and important device drivers as they become available.  |
|  | <b>Dell Digital Delivery</b><br>Download software applications including software that is purchased but not pre-installed on your computer.   |

## Chassis overview

### Topics:

- [Display view](#)
- [Left view](#)
- [Right view](#)
- [Palm-rest view](#)
- [Bottom view](#)
- [Keyboard shortcuts](#)

## Display view



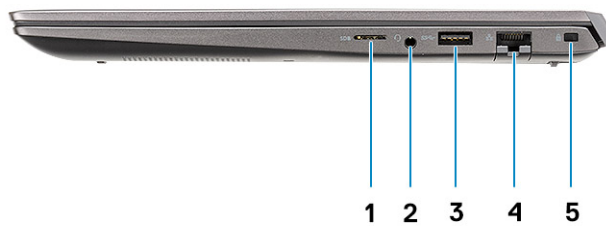
1. Microphone
2. Camera shutter
3. Camera
4. Camera-status light
5. Microphone
6. Display

## Left view



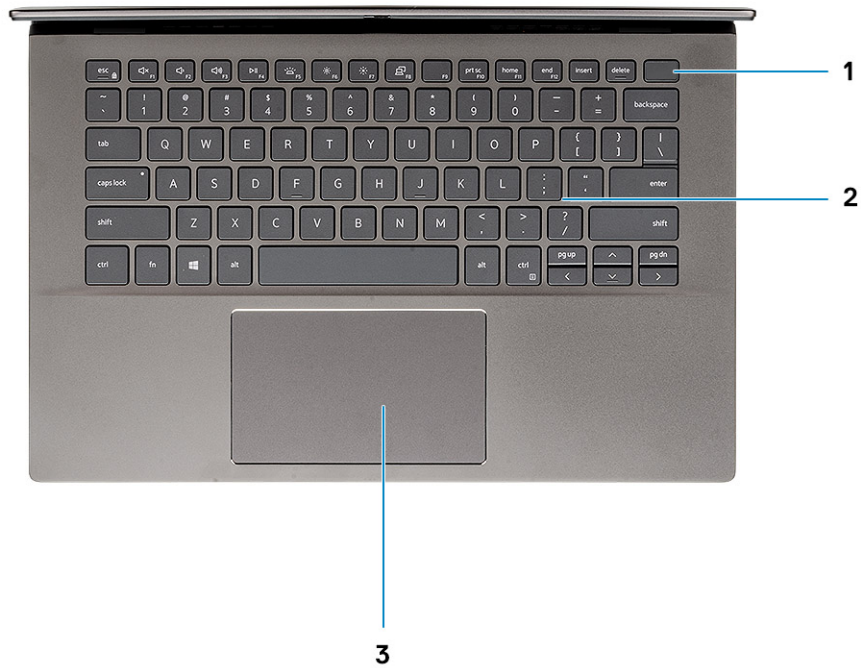
1. Power connector port
2. Power LED
3. HDMI 1.4b port
4. USB 3.2 Gen 1 Type-A port
5. USB 3.2 Gen 1 Type-C port with DisplayPort alt mode

## Right view



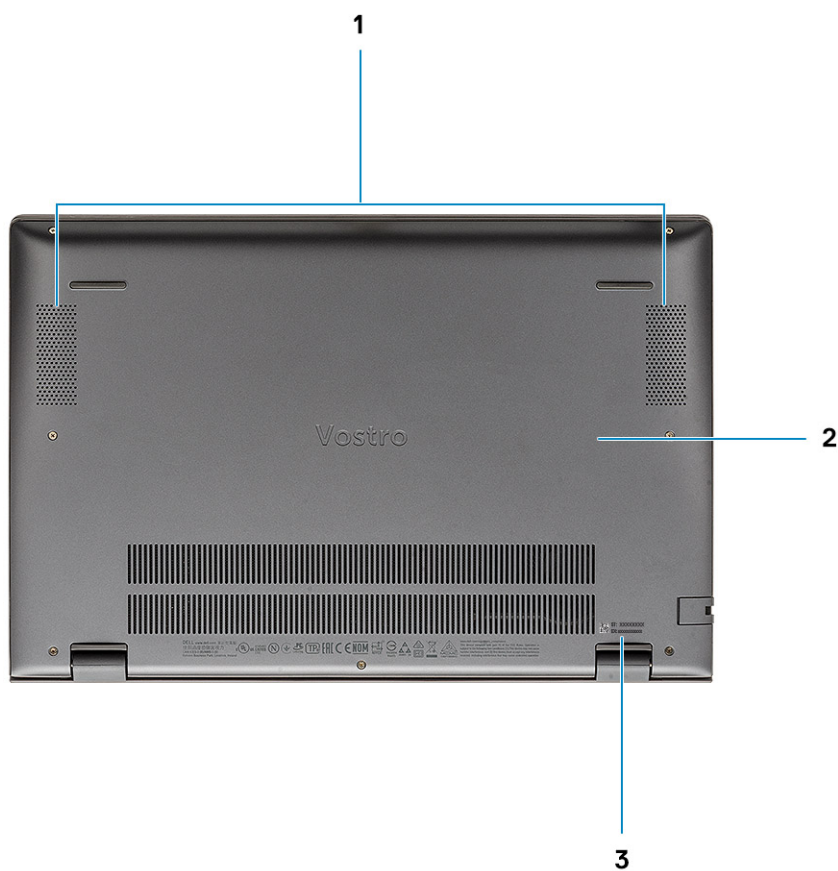
1. microSD card reader
2. Headset/Microphone port
3. USB 3.2 Gen 1 Type-A port
4. Network port
5. Wedge-shaped lock slot

## Palm-rest view



1. Power button with optional fingerprint reader
2. Keyboard
3. Touchpad

# Bottom view



- 1. Speakers
- 2. Base cover
- 3. Service tag label

## 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     | Description   |
|----------|---|
| Fn + Esc | Toggle Fn-key lock                                      |
| Fn + F1  | Mute audio  |
| Fn + F2  | Decrease volume   |
| Fn + F3  | Increase volume   |
| Fn + F4  | Play/Pause  |
| Fn + F5  | Keyboard backlight                                      |
|          | <b>NOTE:</b> Not applicable for non-backlight keyboard. |

**Table 2. List of keyboard shortcuts(continued)**

| <b>Keys</b>     | <b>Description</b>         |
|-----------------|----------------------------|
| Fn + F6         | Decrease screen brightness |
| Fn + F7         | Increase screen brightness |
| Fn + F8         | External display           |
| Fn + F10        | Print Screen               |
| Fn + F11        | Home                       |
| Fn + F12        | End                        |
| Fn + Right Ctrl | Opens application menu     |

## System 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:

- Processors
- Chipset
- Operating system
- Memory
- Storage
- Ports and connectors
- Audio
- Video
- Camera
- Communications
- Media-card reader
- Power adapter
- Battery
- Dimensions and weight
- Display
- Keyboard
- Touchpad
- Fingerprint reader (optional)
- Security
- Security Software
- Computer environment

## Processors

**Table 3. Processors**

| Description         | Values                               |                                      |                                      |
|---------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Processors          | 10th Generation Intel Core i3-1005G1 | 10th Generation Intel Core i5-1035G1 | 10th Generation Intel Core i7-1065G7 |
| Wattage             | 15 W                                 | 15 W                                 | 15 W                                 |
| Core count          | 2                                    | 4                                    | 4                                    |
| Thread count        | 4                                    | 8                                    | 8                                    |
| Speed               | Up to 3.4 GHz                        | Up to 3.60 GHz                       | Up to 3.90 GHz                       |
| Cache               | 4 MB                                 | 6 MB                                 | 8 MB                                 |
| Integrated graphics | Intel UHD Graphics                   | Intel UHD Graphics                   | Intel Iris Plus Graphics             |

# Chipset

Table 4. Chipset

| Description    | Values   |
|----------------|--|
| Chipset        | Integrated                                     |
| Processor      | 10th Generation Intel Core i3/i5/i7 Processors |
| DRAM bus width | 64-bit   |
| Flash EPROM    | 16 MB + 8 MB                                   |
| PCIe bus       | Up to Gen3                                     |

## Operating system

- Windows 10 Professional (64-bit)
- Windows 10 Home (64-bit)
- Ubuntu 18.04

## Memory

Table 5. Memory specifications

| Description              | Values  |
|--------------------------|---|
| Slots                    | Two-SODIMM slots  |
| Type                     | DDR4  |
| Speed                    | 3200 MHz  |
| Maximum memory           | 32 GB   |
| Minimum memory           | 4 GB  |
| Configurations supported | <ul style="list-style-type: none"><li>• 4 GB, 1 x 4 GB, DDR4, 3200 MHz</li><li>• 8 GB, 2 x 4 GB, DDR4, 3200 MHz</li><li>• 8 GB, 1 x 8 GB, DDR4, 3200 MHz</li><li>• 12 GB, 1 x 8 GB + 1 x 4 GB, DDR4, 3200 MHz</li><li>• 16 GB, 2 x 8 GB, DDR4, 3200 MHz</li><li>• 16 GB, 1 x 16 GB, DDR4, 3200 MHz</li><li>• 32 GB, 2 x 16 GB, DDR4, 3200 MHz</li></ul> |

## Storage

Your computer supports one of the following configurations:

- M.2 drive x1
- M.2 drive x2

The primary drive of your computer varies with the storage configuration. For computers with two M.2 drives, the SSD-1 M.2 drive is the primary drive.

**Table 6. Storage specifications**

| Storage type                               | Interface type | Capacity                   |
|--|----------------|----------------------------|
| M.2 2230, PCIe NVMe, solid-state drive     | PCIe NVMe      | 128 GB, 256 GB, 512 GB     |
| M.2 2280, PCIe NVMe, solid-state drive     | PCIe NVMe      | 256 GB, 512 GB, 1 TB, 2 TB |
| M.2 2280, PCIe QLC NVMe, solid-state drive | PCIe NVMe      | 512 GB                     |
| M.2 2280, PCIe NVMe, Intel Optane Storage  | PCIe NVMe      | 512 GB                     |

## Ports and connectors

**Table 7. External ports and connectors**

| Description        | Values   |
|--------------------|--|
| <b>External:</b>   |  |
| Network            | One RJ 45  |
| USB                | <ul style="list-style-type: none"> <li>One USB 3.2 Gen 1 Type-C port with DisplayPort alt mode/Power Delivery</li> <li>Two USB 3.2 Gen 1 Type-A ports</li> </ul> |
| Audio              | One Universal Audio Jack   |
| Video              | One HDMI 1.4b port   |
| Media card reader  | One microSD  |
| Docking port       | Not supported  |
| Power adapter port | One DC-in port   |
| Security           | One wedge-shaped lock  |

**Table 8. Internal ports and connectors**

| Description      | Values   |
|------------------|--|
| <b>Internal:</b> |  |
| M.2              | <ul style="list-style-type: none"> <li>One M.2 2230 slot for WiFi and Bluetooth combo card</li> <li>One M.2 2230/2280 slot for solid-state drive/Intel Optane</li> <li>One M.2 2280 slot for solid-state drive/Intel Optane</li> </ul> <p><b>NOTE:</b> To learn more about the features of different types of M.2 cards, see the knowledge base article <a href="#">SLN301626</a>.</p> |

## Audio

**Table 9. Audio specifications**

| Description | Values          |
|-------------|-----------------|
| Controller  | Realtek ALC3204 |

**Table 9. Audio specifications(continued)**

| Description                |         | Values                             |
|----------------------------|---------|------------------------------------|
| Stereo conversion          |         | Supported                          |
| Internal interface         |         | High definition audio              |
| External interface         |         | Universal Audio Jack               |
| Speakers                   |         | Two                                |
| Internal speaker amplifier |         | Supported (audio codec integrated) |
| External volume controls   |         | Keyboard shortcut controls         |
| Speaker output:            |         |                                    |
|                            | Average | 2 W                                |
|                            | Peak    | 2.5 W                              |
| Subwoofer output           |         | Not supported                      |
| Microphone                 |         | Dual-array microphones             |

## Video

**Table 10. Discrete graphics specifications**

| Discrete graphics    |                          |             |             |
|----------------------|--------------------------|-------------|-------------|
| Controller           | External display support | Memory size | Memory Type |
| NVIDIA GeForce MX330 | N/A                      | 2 GB        | GDDR5       |

**Table 11. Integrated graphics specifications**

| Integrated graphics      |   |                      |                                  |
|--------------------------|---|----------------------|----------------------------------|
| Controller               | External display support  | Memory size          | Processor                        |
| Intel UHD Graphics       | <ul style="list-style-type: none"> <li>One HDMI 1.4b</li> <li>One DisplayPort 1.4</li> </ul>                      | Shared system memory | 10th Generation Intel Core i3/i5 |
| Intel Iris Plus Graphics | <ul style="list-style-type: none"> <li>One HDMI 1.4b</li> <li>One DisplayPort 1.4 over USB type-C port</li> </ul> | Shared system memory | 10th Generation Intel Core i7    |

## Camera

**Table 12. Camera specifications**

| Description       | Values          |
|-------------------|-----------------|
| Number of cameras | One             |
| Type              | HD RGB camera   |
| Location          | Front camera    |
| Sensor type       | CMOS technology |

**Table 12. Camera specifications(continued)**

| Description            |             | Values                    |
|------------------------|-------------|---------------------------|
| Resolution:            |             |                           |
|                        | Still image | 0.92 megapixel            |
|                        | Video       | 1280 x 720 (HD) at 30 fps |
| Diagonal viewing angle |             | 74.90 degrees             |

## Communications

### Ethernet

**Table 13. Ethernet specifications**

| Description   | Values           |
|---------------|------------------|
| Model number  | RTL8111          |
| Transfer rate | 10/100/1000 Mbps |

### Wireless module

**Table 14. Wireless module specifications**

| Description               | Values  |  |   |
|---------------------------|---|--|---|
| Model number              | Intel 9462  | Intel AX201  | Qualcomm QCA61x4A (DW1820)  |
| Transfer rate             | Up to 433 Mbps  | Up to 2400 Mbps  | Up to 867 Mbps  |
| Frequency bands supported | 2.4 GHz/5 GHz   | 2.4 GHz/5 GHz  | 2.4 GHz/5 GHz   |
| Wireless standards        | <ul style="list-style-type: none"> <li>• WiFi 802.11a/b/g</li> <li>• Wi-Fi 4 (WiFi 802.11n)</li> <li>• Wi-Fi 5 (WiFi 802.11ac)</li> </ul> | <ul style="list-style-type: none"> <li>• WiFi 802.11a/b/g</li> <li>• Wi-Fi 4 (WiFi 802.11n)</li> <li>• Wi-Fi 5 (WiFi 802.11ac)</li> <li>• Wi-Fi 6 (WiFi 802.11ax)</li> </ul> | <ul style="list-style-type: none"> <li>• WiFi 802.11a/b/g</li> <li>• WiFi 802.11n</li> <li>• WiFi 802.11ac</li> </ul> |
| Encryption                | <ul style="list-style-type: none"> <li>• 64-bit/128-bit WEP</li> <li>• AES-CCMP</li> <li>• TKIP</li> </ul>                                | <ul style="list-style-type: none"> <li>• 64-bit/128-bit WEP</li> <li>• AES-CCMP</li> <li>• TKIP</li> </ul>   | <ul style="list-style-type: none"> <li>• 64-bit/128-bit WEP</li> <li>• AES-CCMP</li> <li>• TKIP</li> </ul>            |
| Bluetooth                 | Bluetooth 5.0   | Bluetooth 5.1  | Bluetooth 5.0   |

## Media-card reader

**Table 15. Media-card reader specifications**

| Description     | Values              |
|-----------------|---------------------|
| Type            | One microSD card    |
| Cards supported | Secure Digital (SD) |

# Power adapter

**Table 16. Power adapter specifications**

| Description                 |           | Values                            |                                   |
|-----------------------------|-----------|-----------------------------------|-----------------------------------|
| Type                        |           | 45 W                              | 65 W                              |
| Diameter (connector)        |           | 4.50 mm +/-1 mm x 2.90 mm +/-1 mm | 4.50 mm +/-1 mm x 2.90 mm +/-1 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                            | 1.6 A/1.7 A                       |
| Output current (continuous) |           | 2.31 A                            | 3.34 A                            |
| Rated output voltage        |           | 19.50 VDC                         | 19.50 VDC                         |
| Temperature range:          |           |                                   |                                   |
|                             | 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 17. Battery specifications**


| Description                 |           | Values  |   |
|-----------------------------|-----------|---|---|
| Type                        |           | 40 WHr, 3-cell Smart Lithium-ion  | 53 WHr, 4-cell Smart Lithium-ion  |
| Voltage                     |           | 11.25 VDC   | 15 VDC  |
| Weight (maximum)            |           | 0.18 kg   | 0.235 kg  |
| Dimensions:                 |           |   |   |
|                             | Height    | 5.75 mm   | 5.75 mm   |
|                             | Width     | 184.10 mm   | 239.10 mm   |
|                             | Depth     | 90.73 mm  | 90.73 mm  |
| Temperature range:          |           |   |   |
|                             | Operating | 0°C to 35°C (32°F to 95°F)  | 0°C to 35°C (32°F to 95°F)  |
|                             | Storage   | -40°C to 65°C (-40°F to 149°F)  | -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.                                       | Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.                                       |
| Charging time (approximate) |           | 4 hours (when the computer is off)<br><b>i NOTE: Control the charging time, duration, start and end time, and so on, using the Dell Power Manager</b> | 4 hours (when the computer is off)<br><b>i NOTE: Control the charging time, duration, start and end time, and so on, using the Dell Power Manager</b> |

**Table 17. Battery specifications(continued)**

| Description             | Values  |   |
|-------------------------|---|---|
|                         | application. For more information on the Dell Power Manager, see, <i>Me and My Dell</i> on <a href="http://www.dell.com/">www.dell.com/</a> | application. For more information on the Dell Power Manager, see, <i>Me and My Dell</i> on <a href="http://www.dell.com/">www.dell.com/</a> |
| Life span (approximate) | 300 discharge/charge cycles   | 300 discharge/charge cycles   |
| Coin-cell battery       | 2032  | 2032  |
| Operating time          | Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.                             | Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.                             |

## Dimensions and weight

**Table 18. Dimensions and weight**

| Description |       | Values   |
|-------------|-------|--|
| Height:     |       |  |
|             | Front | 16.74 mm (0.66 in.)  |
|             | Rear  | 17.90 mm (0.70 in.)  |
| Width       |       | 321.30 mm (12.64 in.)  |
| Depth       |       | 216.20 mm (8.51 in.)   |
| Weight      |       | 1.41 kg (2.51 lb)  |
|             |       |  <b>NOTE:</b> The weight of your computer depends on the configuration ordered and the manufacturing variability. |

## Display

**Table 19. Display specifications**

| Description               |          | Values                            |                                   |
|---------------------------|----------|-----------------------------------|-----------------------------------|
| Type                      |          | Full High Definition (FHD) 14 in. | Full High Definition (FHD) 14 in. |
| Panel technology          |          | Wide View Angle (WVA)             | Wide View Angle (WVA)             |
| Luminance (typical)       |          | 220 nits                          | 300 nits                          |
| Dimensions (Active area): |          |                                   |                                   |
|                           | Height   | 173.99 mm (6.85 in.)              | 173.99 mm (6.85 in.)              |
|                           | Width    | 309.35 mm (12.18 in.)             | 309.35 mm (12.18 in.)             |
|                           | Diagonal | 14 in.                            | 14 in.                            |
| Native resolution         |          | 1920 x 1080                       | 1920 x 1080                       |
| Megapixels                |          | 2.0736                            | 2.0736                            |

**Table 19. Display specifications(continued)**

| Description                 | Values           |                  |
|-----------------------------|------------------|------------------|
| Color gamut                 | 45% NTSC         | 72% NTSC         |
| Pixels per inch (PPI)       | 157 ppi          | 157 ppi          |
| Contrast ratio (min)        | 500:1            | 600:1            |
| Response time (max)         | 35 ms            | 35 ms            |
| Refresh rate                | 60 Hz            | 60 Hz            |
| Horizontal view angle       | 80 +/- degrees   | 80 min           |
| Vertical view angle         | 80 +/- degrees   | 80 min           |
| Pixel pitch                 | 0.161 x 0.161 mm | 0.161 x 0.161 mm |
| Power consumption (maximum) | 3.5 W            | 4.5 W            |
| Anti-glare vs glossy finish | Anti-glare       | Anti-glare       |
| Touch options               | No               | No               |

## Keyboard

**Table 20. Keyboard specifications**

| Description    | Values   |
|----------------|--|
| Type           | Standard keyboard  |
| Layout         | QWERTY   |
| Number of keys | <ul style="list-style-type: none"> <li>• United States and Canada: 81 keys</li> <li>• United Kingdom: 82 keys</li> <li>• Japan: 85 keys</li> </ul> |
| Size           | X=18.70 mm key pitch<br>Y=18.05 mm key pitch   |

## Touchpad

**Table 21. Touchpad specifications**

| Description |            | Values            |
|-------------|------------|-------------------|
| Resolution: |            |                   |
|             | Horizontal | 3438              |
|             | Vertical   | 2170              |
| Dimensions: |            |                   |
|             | Horizontal | 115 mm (4.53 in.) |

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

| Description |          | Values           |
|-------------|----------|------------------|
|             | Vertical | 70 mm (2.76 in.) |

## Touchpad gestures

For more information about touchpad gestures for Windows 10, see the Microsoft knowledge base article [4027871](https://support.microsoft.com/4027871) at [support.microsoft.com](https://support.microsoft.com).

## Fingerprint reader (optional)

**Table 22. Fingerprint reader specifications**

| Description       | Values            |
|-------------------|-------------------|
| Sensor technology | Capacitive        |
| Sensor resolution | 500 dpi           |
| Sensor area       | 4.06 mm x 3.25 mm |
| Sensor pixel size | 80 x 64           |

## Security

**Table 23. 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 24. Security Software specifications**

| Specifications  |
|---|
| McAfee Small Business Security 30-day Trial                               |
| McAfee Small Business Security 12-month subscription, Digitally Delivered |
| McAfee Small Business Security 24-month subscription, Digitally Delivered |
| McAfee Small Business Security 36-month subscription, Digitally Delivered |

## Computer environment

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

**Table 25. Computer environment**

| Description                 | Operating                                | Storage                                    |
|-----------------------------|--|--|
| Temperature range           | 0°C to 35°C (32°F to 95°F)               | -40°C to 65°C (-40°F to 149°F)             |
| Relative humidity (maximum) | 10% to 90% (non-condensing)              | 0% to 95% (non-condensing)                 |
| Vibration (maximum)*        | 0.66 GRMS                                | 1.30 GRMS                                  |
| Shock (maximum)             | 110 G†                                   | 160 G†                                     |
| Altitude (maximum)          | -15.2 m to 3048 m (4.64 ft to 5518.4 ft) | -15.2 m to 10668 m (4.64 ft to 19234.4 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.

## Topics:

- [Downloading Windows drivers](#)

## Downloading Windows drivers

1. Turn on the notebook.
2. Go to **Dell.com/support**.
3. Click **Product Support**, enter the Service Tag of your notebook, and then click **Submit**.

 **NOTE:** If you do not have the Service Tag, use the auto detect feature or manually browse for your notebook model.

4. Click **Drivers and Downloads**.
5. Select the operating system installed on your notebook.
6. Scroll down the page and select the driver to install.
7. Click **Download File** to download the driver for your notebook.
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.

## Topics:

- [Boot menu](#)
- [Navigation keys](#)
- [Boot Sequence](#)
- [BIOS setup](#)
- [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:

- **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.     |

| Keys            | Navigation  |
|-----------------|---|
| <b>Enter</b>    | Selects a value in the selected field (if applicable) or follow the link in the field.  |
| <b>Spacebar</b> | Expands or collapses a drop-down list, if applicable.   |
| <b>Tab</b>      | Moves to the next focus area.   |
| <b>Esc</b>      | 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 laptop and its installed devices, the items listed in this section may or may not appear.**

## Overview

**Table 26. Overview**


| Option                    | Description   |
|---------------------------|---|
| <b>System Information</b> | <p>This section lists the primary hardware features of your computer.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>System Information</b> <ul style="list-style-type: none"> <li>○ BIOS version</li> <li>○ Service Tag</li> <li>○ Asset Tag</li> <li>○ Manufacture Date</li> <li>○ Ownership Date</li> <li>○ Express Service Code</li> <li>○ Ownership Tag</li> <li>○ Signed Firmware Update</li> </ul> </li> <li>• <b>Battery</b> <ul style="list-style-type: none"> <li>○ Primary</li> <li>○ Battery Level</li> <li>○ Battery State</li> <li>○ Health</li> </ul> </li> </ul> |

**Table 26. Overview**


| Option | Description   |
|--------|---|
|        | <ul style="list-style-type: none"> <li>○ AC Adapter</li> <li>· <b>Processor Information</b> <ul style="list-style-type: none"> <li>○ Processor Type</li> <li>○ Maximum Clock Speed</li> <li>○ Minimum Clock Speed</li> <li>○ Current Clock Speed</li> <li>○ Core Count</li> <li>○ Processor ID</li> <li>○ Processor L2 Cache</li> <li>○ Processor L3 Cache</li> <li>○ Microcode Version</li> <li>○ Intel Hyper-Threading Capable</li> <li>○ 64-Bit Technology</li> </ul> </li> <li>· <b>Memory Configuration</b> <ul style="list-style-type: none"> <li>○ Memory Installed</li> <li>○ Memory Available</li> <li>○ Memory Speed</li> <li>○ Memory Channel Mode</li> <li>○ Memory Technology</li> <li>○ DIMM_Slot 1</li> <li>○ DIMM_Slot 2</li> </ul> </li> <li>· <b>Device Information</b> <ul style="list-style-type: none"> <li>○ Panel Type</li> <li>○ Video Controller</li> <li>○ Video Memory</li> <li>○ Wi-Fi Device</li> <li>○ Native Resolution</li> <li>○ Video BIOS Version</li> <li>○ Audio Controller</li> <li>○ Bluetooth Device</li> <li>○ LOM MAC Address</li> <li>○ dGPU Video Controller</li> </ul> </li> </ul> |

## Boot configuration

**Table 27. Boot configuration**

| Option               | Description   |
|----------------------|---|
| <b>Boot Sequence</b> | <p>Allows you to change the order in which the computer attempts to find an operating system.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>· <b>Windows Boot Manager</b></li> <li>· <b>UEFI Hard Drive</b></li> <li>· <b>Onboard NIC (IPV4)</b></li> <li>· <b>Onboard NIC (IPV6)</b></li> </ul> <p> <b>NOTE:</b> Legacy Boot mode is not supported on this platform.</p> |
| <b>Secure Boot</b>   | <p>Secure Boot helps ensure your system boots using only validated boot software.</p>   |

**Table 27. Boot configuration(continued)**

| Option                       | Description   |
|------------------------------|---|
|                              | <p><b>Enable Secure Boot</b>—By default, this option is disabled.</p> <p> <b>NOTE:</b> The system has to be in UEFI boot mode to enable Enable Secure Boot.</p>  |
| <b>Secure Boot Mode</b>      | <p>Changes to the Secure Boot operation mode modifies the behavior of Secure Boot to allow evaluation of UEFI driver signatures.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>Deployed Mode</b>—By default, this option is enabled.</li> <li>• <b>Audit Mode</b></li> </ul>  |
| <b>Expert Key Management</b> | <p>Allows you to enable or disable Expert Key Management.</p> <p><b>Enable Custom Mode</b>—By default, this option is disabled.</p> <p>The Custom Mode Key Management options are:</p> <ul style="list-style-type: none"> <li>• <b>PK</b>—By default, this option is enabled.</li> <li>• <b>KEK</b></li> <li>• <b>db</b></li> <li>• <b>dbx</b></li> </ul> |


## Integrated Devices

**Table 28. Integrated device options**

| Option                   | Description   |
|--------------------------|---|
| <b>Date/Time</b>         | Allows you to set the date and time. The change to the system date and time takes effect immediately.   |
| <b>Camera</b>            | <p>Allows you to enable or disable camera.</p> <p><b>Enable Camera</b> - This option is enabled by default.</p>   |
| <b>Audio</b>             | <p>Allows you to turn off all integrated audio. By default, the <b>Enable Audio</b> option is selected.</p> <p>Allows you to enable or disable the integrated audio or microphone and speaker separately. By default, the Enable Audio option is selected.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>Enable Microphone</b></li> <li>• <b>Enable Internal Speaker</b></li> </ul> |
| <b>USB Configuration</b> | <p>Allows you to enable or disable the internal or integrated USB configuration.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>Enable USB Boot Support</b></li> <li>• <b>Enable External USB Port</b></li> </ul> <p>By default, all the options are enabled.</p>  |

# Storage

Table 29. Storage options

| Option            | Description  |
|-------------------|--|
| SATA Operation    | <p>Allows you to configure the operating mode of the integrated SATA hard drive controller.</p> <p>The options are:</p> <ul style="list-style-type: none"><li>• <b>Disabled</b></li><li>• <b>AHCI</b></li><li>• <b>RAID On</b>—By default, the RAID On option is enabled.</li></ul> <p> <b>NOTE:</b> SATA is configured to support RAID mode.</p> |
| Storage Interface | <p>Allows you to enable or disable various drives on board.</p> <p>The options are:</p> <ul style="list-style-type: none"><li>• <b>M.2 PCIe SSD-1</b></li><li>• <b>M.2 PCIe SSD-0</b></li></ul> <p>By default, all the options are enabled.</p>  |
| SMART Reporting   | <p>This field controls whether hard drive errors for integrated drives are reported during system startup. This technology is part of the Self Monitoring Analysis and Reporting Technology (SMART) specification. By default, the <b>Enable SMART Reporting</b> option is disabled .</p>  |
| Drive Information | <p>Provides information about drive type and device.</p>   |

# Display

Table 30. Display options

| Option             | Description  |
|--------------------|--|
| Display Brightness | <p>Allows you to set the screen brightness when running on battery and AC power.</p> <p>The options are:</p> <ul style="list-style-type: none"><li>• <b>Brightness on battery power</b> - By default, set to 50.</li><li>• <b>Brightness on AC power</b> - By default, set to 100.</li></ul> |
| Full Screen Logo   | <p>Displays full screen logo when the image matches screen resolution.</p> <p>By default, all the option is disabled.</p>  |

# Connection options

Table 31. Connection




| Option         | Description  |
|----------------|--|
| Integrated NIC | <p>Integrated NIC controls the onboard LAN controller. It allows pre-OS and early operating system networking features to use any enabled NICs when UEFI networking protocols are installed and available.</p> <p>The options are:</p> |

**Table 31. Connection(continued)**

| Option                           | Description   |
|----------------------------------|---|
|                                  | <ul style="list-style-type: none"> <li>• <b>Disabled</b></li> <li>• <b>Enabled</b></li> <li>• <b>Enabled with PXE</b> - This option is enabled by default.</li> </ul>   |
| <b>Wireless Device Enable</b>    | <p>Allows you to enable or disable the internal wireless devices.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>WLAN</b></li> <li>• <b>Bluetooth</b></li> </ul> <p>Both the options are enabled by default.</p>   |
| <b>Enable UEFI Network Stack</b> | <p>Allows you to control the onboard LAN controller. It allows pre-OS and early operating system networking features to use any enabled NICs when UEFI networking protocols are installed and available.</p> <p><b>Enable UEFI Network Stack</b> - This option is enabled by default.</p> |

## Power management

**Table 32. Power Management**

| Option                        | Description  |
|-------------------------------|--|
| <b>Battery Configuration</b>  | <p>Allows the system to run on battery during peak power usage hours.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>Adaptive</b>—enabled by default</li> <li>• <b>Standard</b></li> <li>• <b>ExpressCharge</b></li> <li>• <b>Primarily AC Use</b></li> <li>• <b>Custom</b></li> </ul> <p> <b>NOTE:</b> If Custom Charge is selected, you can also configure Custom Charge Start and Custom Charge Stop.</p> |
| <b>Advanced Configuration</b> | <p>This option enables you to maximize the battery health.</p> <p>By default, the <b>Enable Advanced Battery Charge Mode</b> option is disabled.</p> <p> <b>NOTE:</b> The user can charge battery using feature Beginning of Day and Work Period.</p> <p>By default, <b>Work Period</b> is disabled.</p> <p>Use ExpressCharge for accelerated battery charging.</p>   |
| <b>Peak Shift</b>             | <p>Allows the system to run on battery during peak power usage hours.</p> <p><b>Peak Shift</b> - By default, this option is disabled.</p> <p> <b>NOTE:</b> The user can:</p> <ul style="list-style-type: none"> <li>• <b>Set Battery Threshold Min = 15, Max = 100</b></li> <li>• <b>Prevent AC power between certain times of the day using Peak Shift Start, Peak Shift End, and Peak Shift Charge Start.</b></li> </ul>            |
| <b>Thermal Management</b>     | <p>Allows cooling of fans and the processor heat management to adjust system performance, noise, and temperature.</p> <p>The options are:</p>  |

**Table 32. Power Management(continued)**


| Option                              | Description  |
|-------------------------------------|--|
|                                     | <ul style="list-style-type: none"> <li>• <b>Optimized</b>—enabled by default</li> <li>• <b>Cool</b></li> <li>• <b>Quiet</b></li> <li>• <b>Ultra Performance</b></li> </ul>   |
| <b>USB Wake Support</b>             | <p><b>Enable USB Wake Support</b> Allows you to enable USB devices to wake the system from standby mode. By default, the option <b>Enable USB Wake Support</b> is disabled.</p> <p><b>Wake on Dell USB-C Dock</b> Allows you to connect a Dell USB-C Dock to wake the system from standby mode. By default, the option <b>Wake on Dell USB-C Dock</b> is enabled.</p> <p><b>NOTE:</b> 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> |
| <b>Block Sleep</b>                  | <p>This option enables you to block entering to sleep (S3) mode in operating system environment. By default, the <b>Block Sleep</b> option is disabled.</p> <p><b>NOTE:</b> When <b>Block Sleep</b> 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>  |
| <b>Lid Switch</b>                   | <p>Allows you to disable the lid switch.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>Enable Lid Switch</b>—enabled by default</li> <li>• <b>Power On Lid Open</b>—enabled by default</li> </ul>  |
| <b>Intel Speed Shift technology</b> | <p>Allows you to enable or disable the Intel Speed Shift Technology support. By default, <b>Intel Speed Shift technology</b> is enabled. Enabling this option allows the operating system to select appropriate processor performance.</p>   |

## Security

**Table 33. Security**


| Option                                 | Description   |
|--|---|
| <b>TPM 2.0 Security</b>                | <p>Allows you to enable or disable the Trusted Platform Module (TPM).</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>TPM 2.0 Security On</b>—This option is enabled by default.</li> <li>• <b>PPI Bypass for Enable Commands</b></li> <li>• <b>PPI Bypass for Disable Commands</b></li> <li>• <b>PPI Bypass for Clear Command</b></li> <li>• <b>Attestation Enable</b>—This option is enabled by default.</li> <li>• <b>Key Storage Enable</b>—This option is enabled by default.</li> <li>• <b>SHA-256</b>—This option is enabled by default.</li> <li>• <b>Clear</b></li> <li>• <b>TPM State</b>—This option is enabled by default.</li> </ul> |
| <b>Intel Software Guard Extensions</b> | <p>Provides a secure environment for running code or storing sensitive information in the context of the main operating system and sets enclave reserve memory size.</p> <p><b>Intel SGX</b></p>  |

**Table 33. Security(continued)**




| Option                         | Description   |
|--------------------------------|---|
|                                | <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>Disabled</b></li> <li>• <b>Enabled</b></li> <li>• <b>Software Control</b>—This option is enabled by default.</li> </ul>   |
| <b>SMM Security Mitigation</b> | <p>Allows you to enable or disable additional UEFI SMM Security Mitigation protection.</p> <p><b>SMM Security Mitigation</b> - By default, this option is enabled.</p>  |
| <b>Data Wipe on Next Boot</b>  | <p>Allows BIOS to queue up data wipe cycle for storage devices connected to the motherboard on the next reboot.</p> <p><b>Start Data Wipe</b> - By default, this option is disabled.</p> <p> <b>NOTE: Secure Wipe operation deletes information in a way that it cannot be reconstructed.</b></p>                              |
| <b>Absolute</b>                | <p>This field allows you to Enable, Disable, or Permanently Disable the BIOS module interface of the optional Absolute Persistence Module service from Absolute® Software.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>Enable Absolute</b>—This option is enabled by default.</li> <li>• <b>Disable Absolute</b></li> <li>• <b>Permanently Disable Absolute</b></li> </ul>          |
| <b>UEFI Boot Path Security</b> | <p>Controls whether the system prompts the user to enter the admin password (if set) when booting to a UEFI boot path device from the F12 boot menu.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>Never</b></li> <li>• <b>Always</b></li> <li>• <b>Always Except Internal HDD</b>—This option is enabled by default.</li> <li>• <b>Always Except Internal HDD&amp;PXE</b></li> </ul> |

## Password

**Table 34. Security**

| Option                 | Description  |
|------------------------|--|
| <b>Admin Password</b>  | <p>Allows you to set, change, or delete the administrator (admin) password.</p> <p>The entries to set password are:</p> <ul style="list-style-type: none"> <li>• <b>Enter the old password:</b></li> <li>• <b>Enter the new password:</b></li> </ul> <p>Press <b>Enter</b> once you enter the new password and again press <b>Enter</b> to confirm the new password.</p> <p> <b>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.</b></p> |
| <b>System Password</b> | <p>Allows you to set, change, or delete the system password.</p> <p>The entries to set password are:</p> <ul style="list-style-type: none"> <li>• <b>Enter the old password:</b></li> </ul>  |

**Table 34. Security(continued)**



| Option                         | Description  |
|--------------------------------|--|
|                                | <ul style="list-style-type: none"> <li>• <b>Enter the new password:</b><br/>Press <b>Enter</b> once you enter the new password and again press <b>Enter</b> to confirm the new password.</li> </ul>  |
| <b>Password Configuration</b>  | <p>Allows you to configure a password.</p> <p><b>Upper Case Letter</b> When enabled, this field reinforces password must contain at least one upper capital letter.</p> <p><b>Lower Case Letter</b> When enabled, this field reinforces password must contain at least one lower capital letter.</p> <p><b>Digit</b> When enabled, this field reinforces password must contain at least one-digit number.</p> <p><b>Special Character</b> When enabled, this field reinforces password must contain at least one special character.</p> <p> <b>NOTE:</b> These options by default are disabled.</p> <p><b>Minimum Characters</b> Defines the number of characters allowed for a password. Min = 4</p> |
| <b>Password Bypass</b>         | <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"> <li>• <b>Disabled</b>—This option is enabled by default.</li> <li>• <b>Reboot bypass</b></li> </ul>  |
| <b>Password Changes</b>        | <p>Allows you to change the system password and hard drive password without the need of administrator password.</p> <p><b>Enable Non-Admin Password Changes</b> - By default, this option is disabled.</p>   |
| <b>Admin Setup Lockout</b>     | <p>Allows the administrator to control how the user can access BIOS setup.</p> <p><b>Enable Admin Setup Lockout</b> - By default, this option is disabled.</p> <p> <b>NOTE:</b></p> <ul style="list-style-type: none"> <li>• If the admin password is set and <b>Enable Admin Setup Lockout</b> is enabled, you cannot view the BIOS setup (using F2 or F12) without the admin password.</li> <li>• If the admin password is set and <b>Enable Admin Setup Lockout</b> is disabled, the BIOS setup can be entered and items that are viewed in Locked mode.</li> </ul>  |
| <b>Master Password Lockout</b> | <p>Allows you to disable master password support.</p> <p><b>Enable Master Password Lockout</b> - By default, this option is disabled.</p> <p> <b>NOTE:</b> The Hard Disk password has to be cleared before the settings can be changed.</p>   |

## Update and Recovery

**Table 35. Update and recovery**

| Option                               | Description  |
|--------------------------------------|--|
| <b>UEFI Capsule Firmware Updates</b> | <p>Allows you to update the system BIOS through UEFI capsule update packages.</p> <p><b>Enable UEFI Capsule Firmware Updates</b> - By default, this option is enabled.</p> |

**Table 35. Update and recovery(continued)**

| Option                                 | Description  |
|--|--|
| <b>BIOS Recovery from Hard Drive</b>   | <p>Allows you to recover BIOS on the primary hard drive or USB drive in corrupted conditions.</p> <p><b>BIOS Recovery from Hard Drive</b> - By default, this option is enabled.</p> <p> <b>NOTE:</b> BIOS Recovery from hard drives is not available for Self-Encrypting Drives (SED).</p>  |
| <b>BIOS Downgrade</b>                  | <p>Allows you to control flashing of the system firmware to previous versions.</p> <p><b>Allow BIOS Downgrade</b> - By default, this option is enabled.</p>  |
| <b>SupportAssist OS Recovery</b>       | <p>Allows you to enable or disable the boot flow for SupportAssist OS Recovery if there are certain system errors.</p> <p><b>SupportAssist OS Recovery</b> - By default, this option is enabled.</p> <p> <b>NOTE:</b> If SupportAssist OS Recovery setup option is disabled, then all the automatic boot flow for SupportAssist OS Recovery tool is disabled.</p> |
| <b>BIOSConnect</b>                     | <p>Allows you to recover cloud service operating system if the main operating system and/or local service operating system fails to boot with the number of failures equal to or greater than the value specified by the Auto operating system Recovery Threshold setup.</p> <p><b>BIOSConnect</b> - By default, this option is enabled.</p>   |
| <b>Dell Auto OS Recovery Threshold</b> | <p>The Auto OS Recovery threshold setup options control the automatic flow for SupportAssist System Resolution Console and for Dell OS Recovery Tool.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>Off</b></li> <li>• <b>1</b></li> <li>• <b>2</b> - Default</li> <li>• <b>3</b></li> </ul>   |




## System management

**Table 36. System management**

| Option              | Description  |
|---------------------|--|
| <b>Service Tag</b>  | Displays the service tag of your computer.   |
| <b>Asset Tag</b>    | An Asset Tag is a string of 64 characters that are used by IT administrator to uniquely identify a particular system. On an asset tag is set, it cannot be changed.  |
| <b>AC Behavior</b>  | <p>Allows you to enable or disable the computer from turning on automatically when an AC adapter is connected.</p> <p><b>Wake on AC</b></p> <p>By default, this option is disabled.</p>  |
| <b>Auto On Time</b> | <p>This setting allows a system to automatically power on for defined days/time.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>Disabled</b> - This option is enabled by default.</li> <li>• <b>Every Day</b></li> <li>• <b>Weekdays</b></li> <li>• <b>Select Days</b></li> </ul> |


# Keyboard

Table 37. Keyboard

| Option                                       | Description  |
|--|--|
| <b>Numlock Enable</b>                        | <p>Allows you to enable or disable Numlock function when the system boots.</p> <p><b>Enable Numlock</b></p> <p>This option is enabled by default.</p>  |
| <b>Fn Lock Options</b>                       | <p>Allows you to change the function key settings.</p> <p><b>Fn Lock Mode</b></p> <p>This option is enabled by default.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>Lock Mode Standard</b></li> <li>• <b>Lock Mode Secondary</b>- This option is enabled by default.</li> </ul>  |
| <b>Keyboard Illumination</b>                 | <p>Allows you to set keyboard illumination settings using hotkeys &lt;Fn&gt;+&lt;F5&gt; during normal system operation.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>Disabled</b></li> <li>• <b>Dim</b></li> <li>• <b>Bright</b>- This option is enabled by default.</li> </ul> <p> <b>NOTE:</b> The keyboard illumination brightness is set at 100%.</p>  |
| <b>Keyboard Backlight Timeout on AC</b>      | <p>This feature defines the timeout value for the keyboard backlight when an AC adapter is plugged in the system.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>5 seconds</b></li> <li>• <b>10 seconds</b> - This option is enabled by default.</li> <li>• <b>15 seconds</b></li> <li>• <b>30 seconds</b></li> <li>• <b>1 minute</b></li> <li>• <b>5 minutes</b></li> <li>• <b>15 minutes</b></li> <li>• <b>Never</b></li> </ul> <p> <b>NOTE:</b> If Never is selected, the backlight stays on always when the system has AC adapter plugged in.</p>        |
| <b>Keyboard Backlight Timeout on Battery</b> | <p>This feature defines the timeout value for the keyboard backlight when the system is running only on battery power.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>• <b>5 seconds</b></li> <li>• <b>10 seconds</b> - This option is enabled by default.</li> <li>• <b>15 seconds</b></li> <li>• <b>30 seconds</b></li> <li>• <b>1 minute</b></li> <li>• <b>5 minutes</b></li> <li>• <b>15 minutes</b></li> <li>• <b>Never</b></li> </ul> <p> <b>NOTE:</b> If Never is selected, the backlight stays on always when the system is running on battery power.</p> |

# Pre-boot behavior

Table 38. Pre-boot behavior

| Option                | Description   |
|-----------------------|---|
| Adapter Warnings      | This option displays warning messages during boot when adapters with little power capacity are detected. <ul style="list-style-type: none"><li>• <b>Enable Adapter Warnings</b>—enabled by default</li></ul>  |
| Warnings and Errors   | This option causes the boot process to only pause when warnings and errors are detected rather than stop, prompt, and wait for user input. This feature is useful where the system is being remotely managed.<br>Select one of the following options: <ul style="list-style-type: none"><li>• <b>Prompt on Warnings and Errors</b>—enabled by default</li><li>• <b>Continue on Warnings</b></li><li>• <b>Continue on Warnings and Errors</b></li></ul> <p> <b>NOTE:</b> Errors deemed critical to the operation of the system hardware always stop the system.</p> |
| USB-C Warnings        | This option enables or disables dock warning messages.<br><b>Enable Dock Warning Messages</b> — enabled by default.   |
| Fastboot              | This option allows you to configure the speed of UEFI boot process.<br>Select one of the following options: <ul style="list-style-type: none"><li>• <b>Minimal</b></li><li>• <b>Thorough</b>—enabled by default</li><li>• <b>Auto</b></li></ul>   |
| Extend BIOS POST Time | This option allows you to configure the BIOS POST load time.<br>Select one of the following options: <ul style="list-style-type: none"><li>• <b>0 seconds</b>—enabled by default.</li><li>• <b>5 seconds</b></li><li>• <b>10 seconds</b></li></ul>  |
| Mouse/Touchpad        | This option defines how the system handles mouse and touchpad input.<br>Select one of the following options: <ul style="list-style-type: none"><li>• <b>Serial Mouse</b></li><li>• <b>PS/2 Mouse</b></li><li>• <b>Touchpad and PS/2 Mouse</b>—enabled by default.</li></ul>   |

# Virtualization support

Table 39. Virtualization Support

| Option                          | Description  |
|---------------------------------|--|
| Intel Virtualization Technology | This option specifies whether the system can run on a Virtual Machine Monitor (VMM). By default, the <b>Enable Intel Virtualization Technology (VT)</b> option is enabled.   |
| VT for Direct I/O               | This option specifies whether the system can perform Virtualization technology for direct I/O; an Intel method for virtualization for memory map I/O. By default, the <b>Enable Intel VT for Direct I/O</b> option is enabled. |

# Performance

Table 40. Performance

| Option                           | Description   |
|----------------------------------|---|
| Multi Core Support               | <p>This field specifies whether the process has one or all cores enabled. The default value is set to the maximum number of cores.</p> <ul style="list-style-type: none"><li>• <b>All Cores</b> — This option is enabled by default.</li><li>• <b>1</b></li><li>• <b>2</b></li><li>• <b>3</b></li></ul>   |
| Intel SpeedStep                  | <p>This feature allows the system to dynamically adjust processor voltage and core frequency, decreasing average power consumption and heat production.</p> <p><b>Enable Intel SpeedStep</b></p> <p>This option is enabled by default.</p>  |
| 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><b>Enable C-state control</b></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><b>Enable Adaptive C-states for Discrete Graphics</b></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><b>Enable Intel Turbo Boost Technology</b></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><b>Enable Intel Hyper-Threading Technology</b></p> <p>This option is enabled by default.</p>   |

## System logs

Table 41. System Logs

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

**Table 41. System Logs(continued)**

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

## Updating the BIOS in Windows

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

**NOTE:** If BitLocker is enabled, it must be suspended prior to updating the system BIOS, and then re enabled after the BIOS update is completed.

For more information about this subject, see Knowledge Article: [How to Enable or Disable BitLocker with TPM in Windows](#).

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 **Choose from all products**.
4. Choose the **Products** category from the list.

**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.

## Updating BIOS on systems with BitLocker enabled

**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 reinstall. For more information about this subject, see Knowledge Article: [Updating the BIOS on Dell Systems With BitLocker Enabled](#)

# Updating the Dell BIOS in Linux and Ubuntu environments

If you want to update the system BIOS in a Linux environment, such as Ubuntu, see [Update the Dell BIOS in a Linux or Ubuntu environment](#).

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

Updating your system BIOS using a BIOS update .exe file copied to a FAT32 USB key and booting from the F12 one time boot menu.

### BIOS Update

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

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

**NOTE:** Only systems with BIOS Flash Update option in the F12 One-Time Boot Menu can use this function.

### Updating from the One-Time Boot Menu

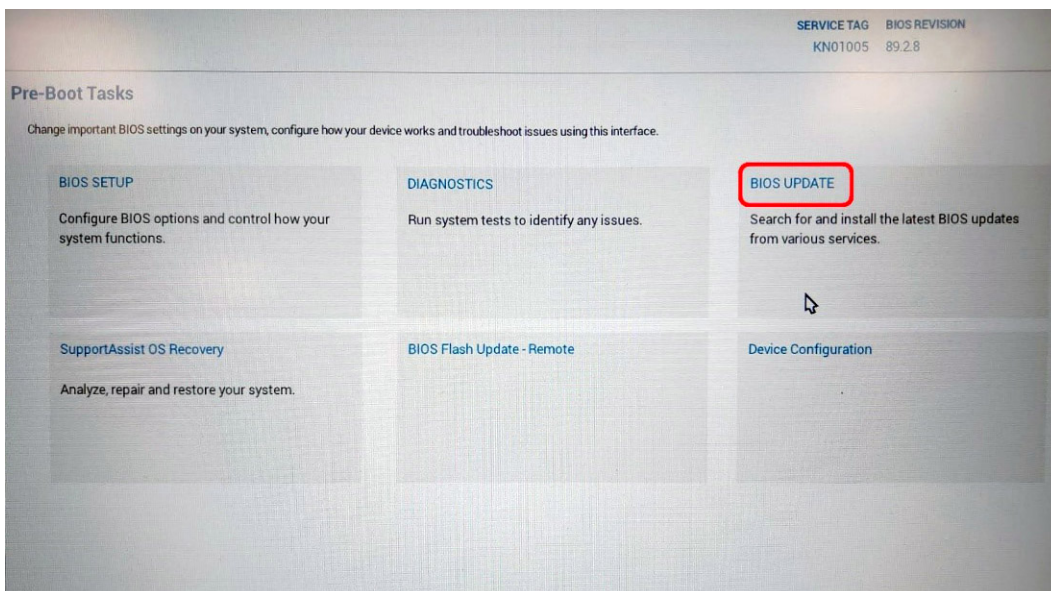
To update your BIOS from the F12 One-Time boot menu, you need:

- USB key 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 key.
- AC power adapter that is connected to the system.
- Functional system battery to flash the BIOS.

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

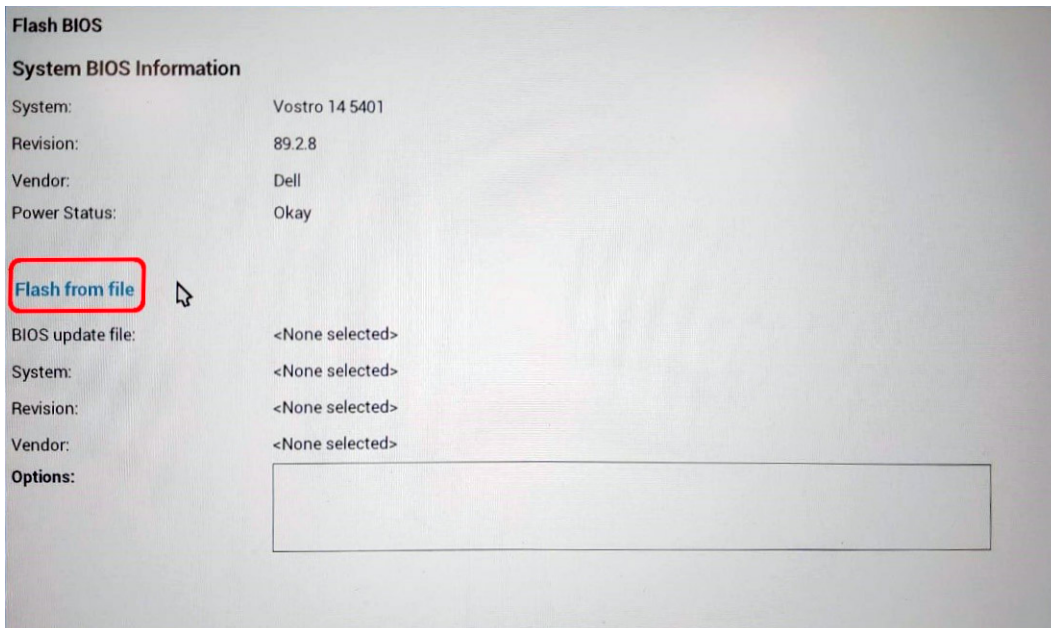
**CAUTION:** Do not power off the system during the BIOS update process. Powering off the system could make the system fail to boot.

1. From a power off state, insert the USB key where you copied the flash into a USB port of the system .
2. Power on the system and press the **F12** key to access the One-Time Boot Menu.
3. Select **BIOS Update** using the mouse or arrow keys then press **Enter**.

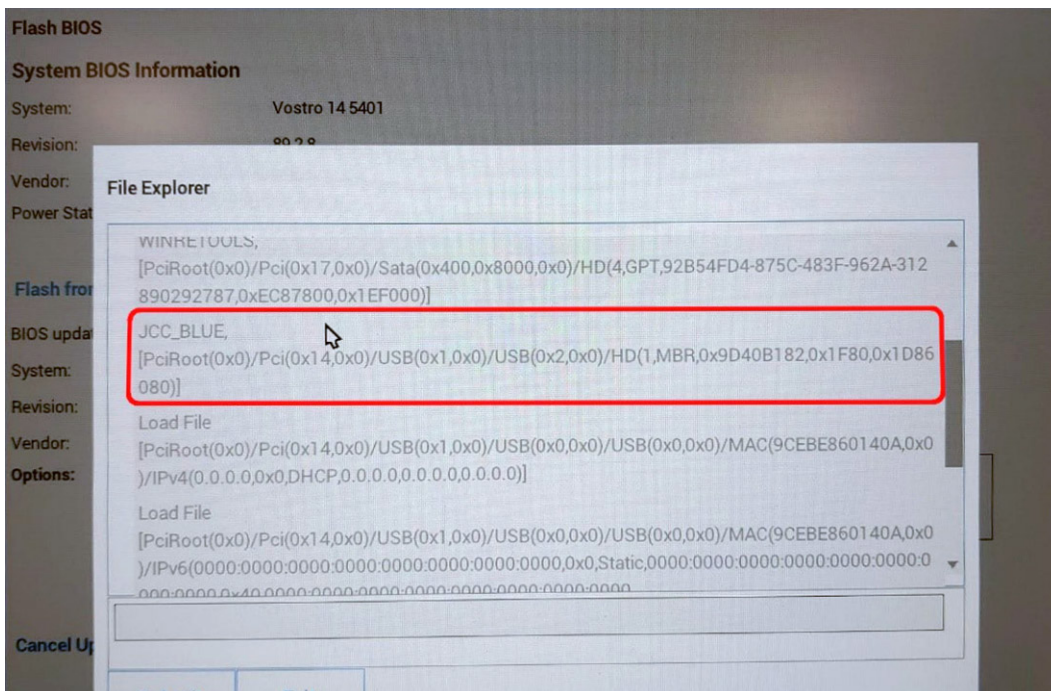


The **Flash BIOS** opens.

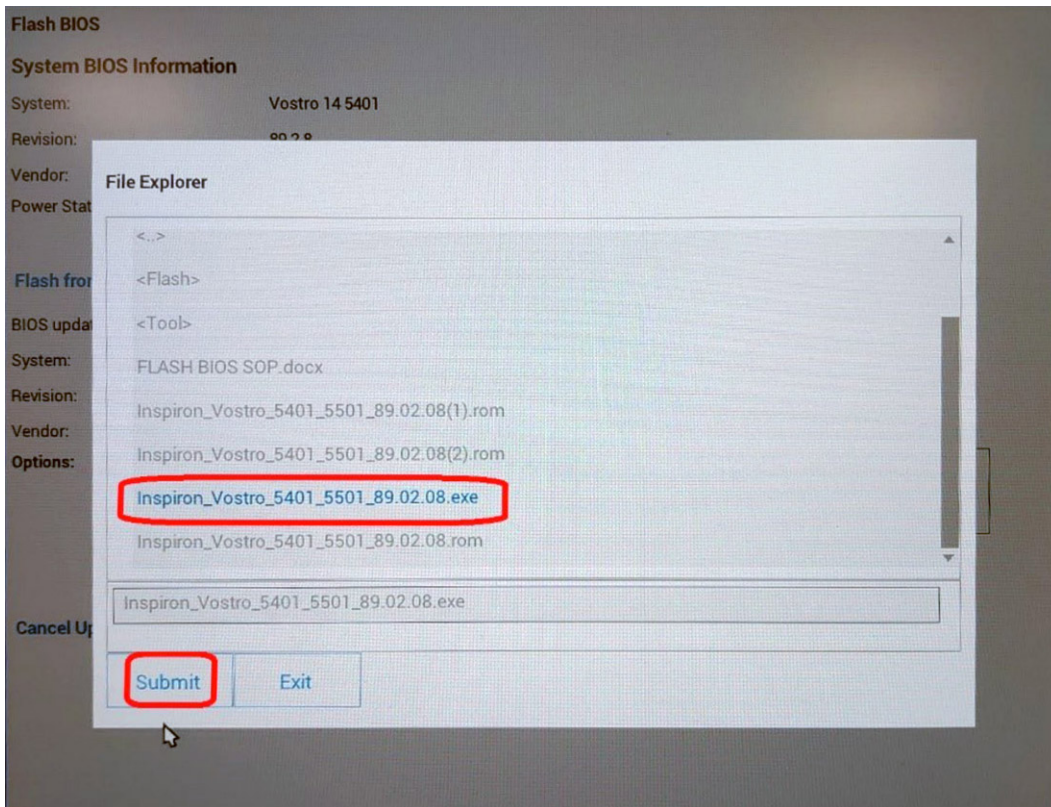
4. Click **Flash from file**.



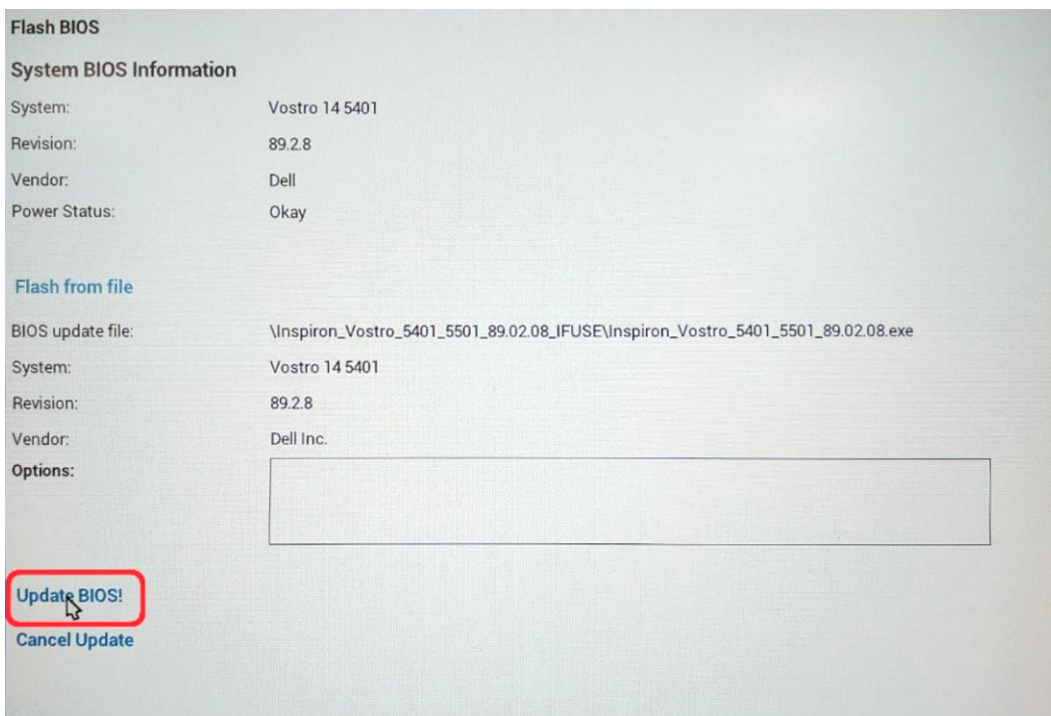
5. Select external USB device.



6. Once the file is selected, double-click the flash target file and click **Submit**.



- Click **Update BIOS** for the system to reboot and flash the BIOS.



- Once complete, the system reboots and the BIOS update process is completed.

# System and setup password

Table 42. 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

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


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

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

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.

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 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

## Topics:

- [Contacting 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.