

# Vostro 3481

## 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.



- 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><b>Dell Product Registration</b></p> <p>Register your computer with Dell.</p> |
|  | <p><b>Dell Help &amp; Support</b></p>  |



Access help and support for your computer.

**SupportAssist**

Proactively checks the health of your computer's hardware and software.

**NOTE:** Renew or upgrade your warranty by clicking the warranty expiry date in SupportAssist.



**Dell Update**

Updates your computer with critical fixes and important device drivers as they become available.



**Dell Digital Delivery**

Download software applications including software that is purchased but not pre-installed on your computer.

- 4 Create recovery drive for Windows.

**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.

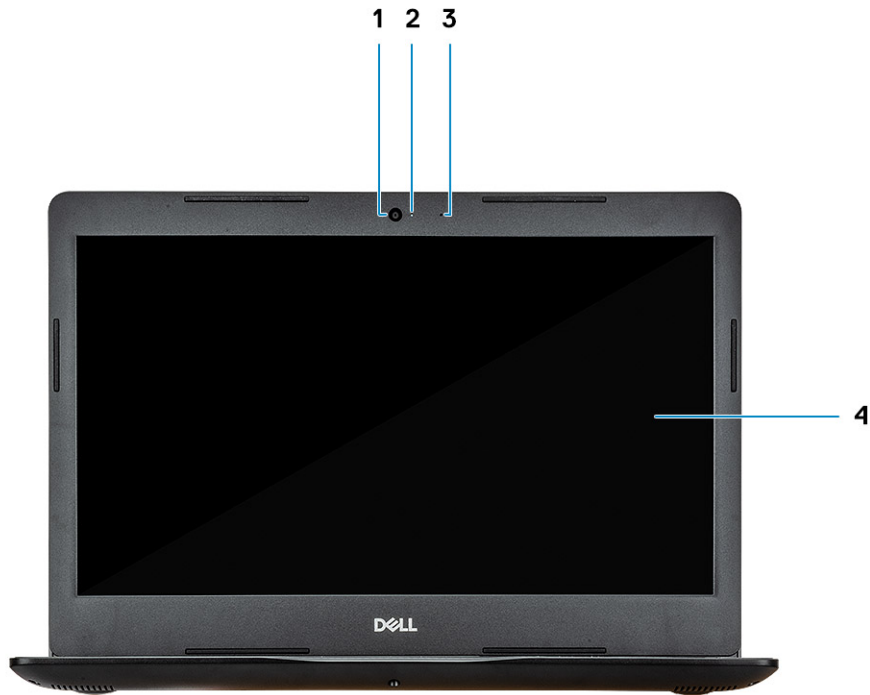
## Steps

- 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](http://www.dell.com/support/manuals).

## Chassis overview

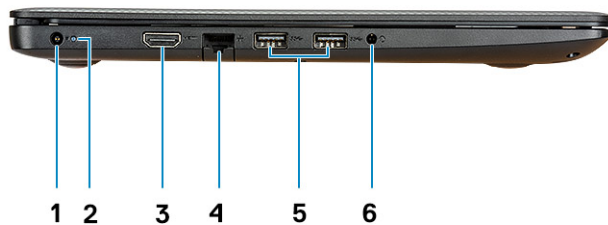
### Display view



- |   |            |   |                     |
|---|------------|---|---------------------|
| 1 | Camera     | 2 | Camera-status light |
| 3 | Microphone | 4 | Display             |



## Left view



- 1 Power adapter port
- 3 HDMI port
- 5 USB 3.1 Gen 1 ports (2)

- 2 Battery status light
- 4 Network port
- 6 Headset port

## Right view



- 1 SD card reader
- 3 VGA port

- 2 USB 2.0 port
- 4 Security-cable slot

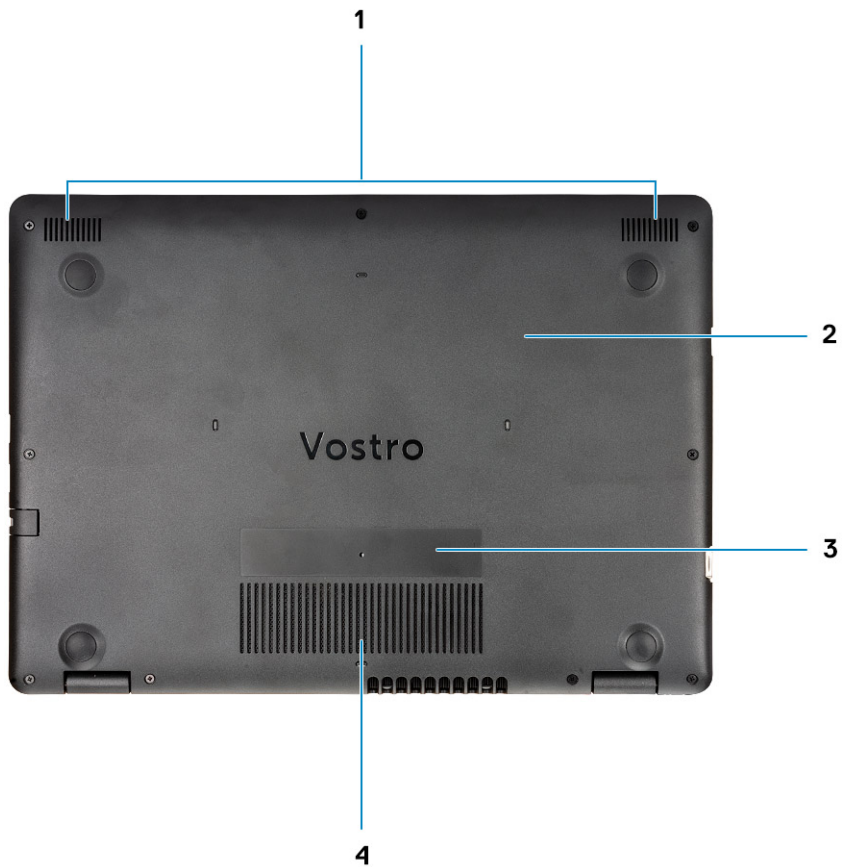
# Palmrest view



- 1 Power button with optional fingerprint reader
- 3 Touchpad

- 2 Keyboard

# Bottom view



- 1 Speakers
- 3 Service Tag label

- 2 Base cover
- 4 Air vent

# Keyboard shortcuts

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

**Table 2. List of keyboard shortcuts**

| <b>Keys</b> | <b>Description</b>         |
|-------------|----------------------------|
| Fn + Esc    | Toggle Fn-key lock         |
| Fn + F1     | Mute audio                 |
| Fn + F2     | Decrease volume            |
| Fn + F3     | Increase volume            |
| Fn + F4     | Play previous              |
| Fn + F5     | Play / Pause               |
| Fn + F6     | Play next                  |
| Fn + F8     | Switch to external display |
| Fn + F9     | Search                     |
| Fn + F11    | Decrease brightness        |
| Fn + F12    | Increase brightness        |
| Fn + PrtScr | Turn on/off wireless       |
| 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.

## System information

**Table 3. System information**

| Feature        | Specifications |
|----------------|----------------|
| Chipset        | Intel Chipset  |
| DRAM bus width | 64-bit         |
| FLASH EPROM    | SPI 16 MB      |
| PCIe bus       | 100 Mhz        |

## Processor

**NOTE:** Processor numbers are not a measure of performance. Processor availability is subject to change and may vary by region/country.


**Table 4. Processor specifications**

| Type  | UMA Graphics          |
|---|-----------------------|
| 7th Gen Intel Core i7-7500U processor (4M Cache, up to 3.5 GHz) | Intel HD Graphics 620 |
| 7th Gen Intel Core i5-7200U processor (3M Cache, up to 3.1 GHz) | Intel HD Graphics 620 |
| 7th Gen Intel Core i3-7020U processor (3M Cache, up to 2.3 GHz) | Intel HD Graphics 620 |
| Intel Celeron 3865U processor (2M Cache, up to 1.8 GHz)         | Intel HD Graphics 610 |
| Intel Pentium 4415U processor (2M Cache, up to 2.3 GHz)         | Intel HD Graphics 610 |

## Memory

**Table 5. Memory specifications**

| Feature                      | Specifications   |
|------------------------------|------------------|
| Minimum memory configuration | 4 GB             |
| Maximum memory configuration | 16 GB            |
| Number of slots              | Two SoDIMM slots |

| Feature        | Specifications   |
|----------------|--|
| Memory options | <ul style="list-style-type: none"> <li>4 GB - 1 x 4 GB</li> <li>8 GB - 2 x 4 GB</li> <li>8 GB - 1 x 8 GB</li> <li>12 GB - 1 x 4 GB, 1 x 8 GB</li> <li>16 GB - 2 x 8 GB</li> <li>16 GB - 1 x 16 GB</li> </ul> |
| Type           | DDR4   |
| Speed          | 2400 MHz / 2133 MHz  |
|                |    <b>NOTE: 2133 MHz for 7th Gen processor</b>  |

## Storage

**Table 6. Storage specifications**

| Type                                    | Form factor | Interface | Capacity     |
|---|-------------|-----------|--------------|
| Solid-State Drive                       | M.2         | M.2 SSD   | Up to 256 GB |
| HDD                                     | 2.5 inch    | SATA      | Up to 2 TB   |
| Intel Optane (PCIe m.2 module with HDD) | M.2         | PCIe      | 16 GB        |

## Storage combinations

**Table 7. Storage combinations**

| Primary/Boot drive               | Secondary drive    |
|----------------------------------|--------------------|
| 1 x M.2 SSD                      | 1 x 2.5 inch Drive |
| 1 x 2.5 inch HDD                 | None               |
| 1 x 2.5 inch HDD with M.2 Optane | None               |

## Audio

**Table 8. Audio specifications**

| Feature                    | Specifications                           |
|----------------------------|--|
| Controller                 | Realtek ALC3246 with Waves MaxxAudio Pro |
| Type                       | Two-channel high-definition audio        |
| Speakers                   | Two (Directional speakers)               |
| Interface                  | Intel HDA bus                            |
| Internal speaker amplifier | 2 W (RMS) per channel                    |

# Media card-reader

Table 9. Media card-reader specifications

| Feature         | Specifications   |
|-----------------|--|
| Type            | One SD card slot   |
| Supported cards | <ul style="list-style-type: none"><li>• SD</li><li>• SDHC</li><li>• SDXC</li></ul> |

# Camera

Table 10. Camera specifications

| Feature                    | Specifications   |
|----------------------------|--|
| Resolution                 | <ul style="list-style-type: none"><li>• Still image: 0.92 megapixels (HD)</li><li>• Video: 1280x720 (HD) at 30 fps</li></ul> |
| Diagonal viewing angle     | 78.6°  |
| Number of cameras          | One front camera   |
| Type                       | HD fixed focus   |
| Sensor type                | CMOS sensor technology   |
| Video Max resolution       | 1280x720 (HD) at 30 fps  |
| Still image max resolution | 0.92 megapixel (HD)  |

# Wireless

Table 11. Wireless specifications

| Feature               | Specifications   |
|-----------------------|--|
| Type                  | <ul style="list-style-type: none"><li>• Qualcomm QCA9565, DW1707 802.11bgn (1x1) WiFi + Bluetooth 4.0</li><li>• Qualcomm QCA9377, DW1810 802.11ac Dual Band (1x1) WiFi + Bluetooth 4.1</li><li>• Qualcomm QCA61x4A, DW1820 802.11ac Dual Band (2x2) WiFi + Bluetooth 4.1</li></ul> |
| Maximum transfer rate | 867 Mbps   |
| Frequency bands       | 2.4 GHz/5 GHz  |
| Encryption            | <ul style="list-style-type: none"><li>• 64-bit/128-bit WEP</li><li>• AES-CCMP</li><li>• TKIP</li></ul>   |

# Ports and connectors

**Table 12. Ports and connectors**

| Features           | Specifications  |
|--------------------|---|
| Memory card reader | SD 3.0 memory card reader   |
| USB                | <ul style="list-style-type: none"> <li>One USB 2.0 port</li> <li>Two USB 3.1 Gen 1 port</li> </ul>                |
| Security           | wedge lock slot   |
| Docking port       | Dell USB 3.0 Dock (UNO)   |
| Audio              | <ul style="list-style-type: none"> <li>Universal audio jack</li> <li>Noise reduction single microphone</li> </ul> |
| Video              | <ul style="list-style-type: none"> <li>HDMI 1.4b</li> <li>VGA port</li> </ul>                                     |
| Network adapter    | One RJ-45 connector   |

## Video card

**Table 13. Video card specifications**

| Controller            | Type     | CPU Dependency  | Graphics memory type | Capacity             | External display support | Maximum resolution |
|-----------------------|----------|---|----------------------|----------------------|--------------------------|--------------------|
| Intel HD Graphics 620 | UMA      | <ul style="list-style-type: none"> <li>7th Gen Intel Core i7-7500U processor</li> <li>7th Gen Intel Core i5-7200U processor</li> <li>7th Gen Intel Core i3-7020U processor</li> <li>Intel Celeron 3865U processor</li> <li>Intel Pentium 4415U processor</li> </ul> | Integrated           | Shared system memory | HDMI 1.4b<br>VGA         | 4096×2304          |
| Intel HD Graphics 610 | UMA      |   | Integrated           | Shared system memory | HDMI 1.4b                | 4096×2304          |
| AMD Radeon 520        | Discrete | NA  | GDDR5                | 2 GB                 | No                       | 1920 x 1080        |



# Display

**Table 14. Display specifications**

| <b>Feature</b>                 | <b>Specifications</b>   |
|--------------------------------|---|
| Type                           | <ul style="list-style-type: none"><li>• 14 inch HD (1366 x 768) TN, Anti-glare, Ultra slim, non-touch display</li><li>• 14 inch FHD (1920 x 1080) IPS, Anti-glare (optional), non-touch display</li></ul> |
| Height (Active area)           | 320.90 mm (12.63 inches)  |
| Width (Active area)            | 205.60 mm (8.09 inches)   |
| Diagonal                       | 355.00 mm (14.00 inches)  |
| Luminance/Brightness (typical) | 400 nits max  |
| Refresh rate                   | 60 Hz   |
| Horizontal viewing angle (min) | +/- 40 degrees  |
| Vertical viewing angle (min)   | +10/- 30 degrees  |

# Keyboard

**Table 15. Keyboard specifications**

| <b>Feature</b>   | <b>Specifications</b>   |
|------------------|---|
| Number of keys   | <ul style="list-style-type: none"><li>• 80 (U.S)</li><li>• 81 (UK)</li><li>• 82 (Brazil)</li><li>• 84 (Japan)</li></ul> |
| Size             | Full sized <ul style="list-style-type: none"><li>• X= 19.00 mm key pitch</li><li>• Y= 19.00 mm key pitch</li></ul>      |
| Backlit keyboard | Optional  |
| Layout           | QWERTY/AZERTY/Kanji   |

# Fingerprint reader—optional

Table 16. Fingerprint reader specifications

| Feature           | Specifications                              |
|-------------------|---|
| Sensor technology | Capacitive                                  |
| Sensor resolution | 500 PPI                                     |
| Sensor area       | 5.5 mm x 4.4 mm (0.22 inches x 0.17 inches) |
| Sensor pixel size | 108 x 88                                    |

## Operating system

Table 17. Operating system

| Feature                     | Specifications  |
|-----------------------------|---|
| Operating systems supported | <ul style="list-style-type: none"><li>Windows 10 Home (64 bit)</li><li>Windows 10 Pro (64 bit)</li><li>Ubutnu</li></ul> |

## Touchpad

Table 18. Touchpad specifications

| Feature     | Specifications  |
|-------------|---|
| Resolution  | 1219 x 919  |
| Dimensions  | <ul style="list-style-type: none"><li>Width: 4.13 inch (105 mm)</li><li>Height: 2.56 inch (65 mm)</li></ul> |
| Multi-touch | Supports five fingers   |

## Battery

Table 19. Battery specifications

| Feature   | Specifications                  |                    |
|-----------|---------------------------------|--------------------|
| Type      | Prismatic/Polymer 3-cell 42 WHr |                    |
| Dimension | Width                           | 175.37 mm (6.9 in) |
|           | Depth                           | 90.73 mm (3.57 in) |
|           | Height                          | 5.9 mm (0.24 in)   |

| Feature  | Specifications   |                        |
|--|--|------------------------|
| Weight (maximum)                                     | 0.2 kg (0.44 lb )  |                        |
| Voltage  | 11.4 VDC   |                        |
| Life span  | 300 discharge / charge cycles  |                        |
| Charging time when the computer is off (approximate) | Standard charge  | 0°C to 60°C : 4 hours  |
|  | Express Charge   | 0°C to 35°C : 4 hours  |
|  |  | 16°C to 45°C : 2 hours |
|  |  | 46°C to 60°C : 3 hours |
| Operating time                                       | Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions |                        |
| Temperature range: Operating                         | 0°C to 35°C (32°F to 95°F)   |                        |
| Temperature range: Storage                           | -20°C to 65°C (-40°F to 149°F)   |                        |
| Coin-cell battery                                    | CR 2032  |                        |

## Power adapter

**Table 20. Power adapter specifications**

| Feature                           | Specifications   |
|-----------------------------------|--|
| Type                              | <ul style="list-style-type: none"> <li>• 45 W (UMA)</li> <li>• 65 W (Discrete)</li> </ul>      |
| Input Voltage                     | 100 VAC - 240 VAC  |
| Input current (maximum)           | <ul style="list-style-type: none"> <li>• 1.3 A for 45 W</li> <li>• 1.7 A for 65 W</li> </ul>   |
| Input frequency                   | 50 Hz to 60 Hz   |
| Output current                    | <ul style="list-style-type: none"> <li>• 2.31 A for 45 W</li> <li>• 3.34 A for 65 W</li> </ul> |
| Rated output voltage              | 19.5 VDC   |
| Temperature range (Operating)     | 0°C to 40° C (32°F to 104°F)   |
| Temperature range (Non-Operating) | 40°C to 70°C (-40°F to 158°F)  |

# Dimensions and weight



**Table 21. Dimensions and weight**

| Feature | Specifications                            |
|---------|---|
| Height  | 19.9 mm to 21 mm (0.35 inch to 0.62 inch) |
| Width   | 339 mm (13.34 inch)                       |
| Depth   | 241.9 mm ( 9.52 inch)                     |
| Weight  | 1.79 kg (3.94 lb)                         |

# Computer environment

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

**Table 22. Computer environment**

|                             | 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)   |
|                             |  <b>NOTE: Maximum dew point temperature = 26°C</b> |  <b>NOTE: Maximum dew point temperature = 33°C</b> |
| Vibration (maximum)         | 0.66 GRMS  | 1.30 GRMS  |
| Shock (maximum)             | 140 G †  | 160 G‡   |
| Altitude (maximum)          | 0 m to 3048 m (0 ft to 10,000 ft)  | 0 m to 10,668 m (0 ft to 35,000 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.

‡ Measured using a 2 ms half-sine pulse when the hard-drive head is in parked position.

# Security

**Table 23. Security specifications**

| Feature                           | Specifications                 |
|-----------------------------------|--------------------------------|
| Trusted Platform Module (TPM) 2.0 | Integrated on the system board |
| Discrete TPM                      | Integrated on the system board |
| Windows Hello Support             | Optional                       |
| Cable cover                       | Optional                       |

| Feature                            | Specifications |
|------------------------------------|----------------|
| Chassis intrusion switch           | Optional       |
| Chassis lock slot and loop support | Optional       |

## Security Software

**Table 24. Security Software specifications**

| Feature                                  | Specifications |
|--|----------------|
| Dell Endpoint Security Suite Enterprise  | Optional       |
| Dell Data Guardian                       | Optional       |
| Dell Encryption (Enterprise or Personal) | Optional       |
| Dell Threat Defense                      | Optional       |
| RSA SecurID Access                       | Optional       |
| RSA NetWitness Endpoint                  | Optional       |
| MozyPro or MozyEnterprise                | Optional       |
| VMware Airwatch/WorkspaceONE             | Optional       |
| Absolute Data & Device Security          | Optional       |

# System setup

System setup enables you to manage your notebook hardware and specify BIOS level options. From the System setup, you can:

- Change the NVRAM settings after you add or remove hardware
- View the system hardware configuration
- Enable or disable integrated devices
- Set performance and power management thresholds
- Manage your computer security

Topics:

- [Boot menu](#)
- [Navigation keys](#)
- [System setup options](#)
- [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:
  - Windows Boot Manager
- Other Options:
  - BIOS Setup
  - BIOS Flash Update
  - Diagnostics
  - Change Boot Mode Settings

## Navigation keys

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

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

|      |   |
|------|---|
| Keys | Navigation  |
| Tab  | Moves to the next focus area.<br><br> <b>NOTE: For the standard graphics browser only.</b>         |
| Esc  | Moves to the previous page until you view the main screen. Pressing Esc in the main screen displays a message that prompts you to save any unsaved changes and restarts the system. |

## System setup options

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

### General options

**Table 25. General**

| Option                  | Description  |
|-------------------------|--|
| System Information      | Displays the following information: <ul style="list-style-type: none"> <li>System Information: Displays <b>BIOS Version, Service Tag, Asset Tag, Ownership Tag, Ownership Date, Manufacture Date,</b> and the <b>Express Service Code.</b></li> <li>Memory Information: Displays <b>Memory Installed, Memory Available, Memory Speed, Memory Channel Mode, Memory Technology, DIMM A size, and DIMM B size</b></li> <li>Processor Information: Displays <b>Processor Type, Core Count, Processor ID, Current Clock Speed, Minimum Clock Speed, Maximum Clock Speed, Processor L2 Cache, Processor L3 Cache, HT Capable,</b> and <b>64-Bit Technology.</b></li> <li>Device Information: Displays <b>Primary HDD, ODD Device, M.2 SATA SSD, M.2 PCIe SSD-0, LOM MAC Address, Video Controller, Video BIOS Version, Video Memory, Panel type, Native Resolution, Audio Controller, Wi-Fi Device, and Bluetooth Device.</b></li> </ul> |
| Battery Information     | Displays the battery status health and whether the AC adapter is installed.  |
| Boot Sequence           | Allows you to specify the order in which the computer attempts to find an operating system from the devices specified in this list.  |
| Advanced Boot Options   | Allows you to select the Legacy Option ROMs option, when in UEFI boot mode. By default, no option is selected. <ul style="list-style-type: none"> <li>Enable Legacy Option ROMs</li> <li>Enable Attempt Legacy Boot</li> </ul>   |
| UEFI Boot Path Security | This option controls whether or not the system will prompt the user to enter the Admin password when booting a UEFI boot path from the F12 Boot Menu. <ul style="list-style-type: none"> <li>Always, Except Internal HDD—Default</li> <li>Always</li> <li>Never</li> </ul>   |
| Date/Time               | Allows you to set the date and time settings. Changes to the system date and time take effect immediately.   |

# System configurations

Table 26. System Configuration

| Option                | Description   |
|-----------------------|---|
| Integrated NIC        | Allows you to configure the on-board LAN controller. <ul style="list-style-type: none"><li>• Disabled = The internal LAN is off and not visible to the operating system.</li><li>• Enabled = The internal LAN is enabled.</li><li>• Enabled w/PXE = The internal LAN is enabled (with PXE boot) (selected by default)</li></ul> |
| SATA Operation        | Allows you to configure the operating mode of the integrated hard drive controller. <ul style="list-style-type: none"><li>• Disabled = The SATA controllers are hidden</li><li>• AHCI = SATA is configured for AHCI mode</li><li>• RAID ON = SATA is configured to support RAID mode (selected by default)</li></ul>            |
| Drives                | Allows you to enable or disable the various drives on-board: <ul style="list-style-type: none"><li>• SATA-0 (enabled by default)</li><li>• SATA-1 (enabled by default)</li><li>• SATA-2 (enabled by default)</li><li>• M.2 PCIe SSD-0 (enabled by default)</li></ul>  |
| Smart Reporting       | This field controls whether hard drive errors for integrated drives are reported during system startup. The <b>Enable Smart Reporting option</b> is disabled by default.  |
| USB Configuration     | Allows you to enable or disable the integrated USB controller for: <ul style="list-style-type: none"><li>• Enable USB Boot Support</li><li>• Enable External USB Port</li></ul> All the options are enabled by default.   |
| Audio                 | Allows you to enable or disable the integrated audio controller. The option <b>Enable Audio</b> is selected by default. <ul style="list-style-type: none"><li>• Enable Microphone</li><li>• Enable Internal Speaker</li></ul> Both the options are selected by default.   |
| Miscellaneous Devices | Allows you to enable or disable the following devices: <ul style="list-style-type: none"><li>• Enable Camera (enabled by default)</li></ul>   |

## Video

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

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



# Security

**Table 27. Security**

| Option                        | Description  |
|-------------------------------|--|
| Admin Password                | Allows you to set, change, or delete the admin password.   |
| System Password               | Allows you to set, change, or delete the system password.  |
| Internal HDD-0 Password       | Allows you to set, change or delete the internal HDD password.   |
| Strong Password               | This option lets you enable or disable strong passwords for the system.  |
| Password Configuration        | Allows you to control the minimum and maximum number of characters allowed for a administrative password and the system password. The range of characters is between 4 and 32.   |
| Password Bypass               | <p>This option lets you bypass the System (Boot) Password and the internal HDD password prompts during a system restart.</p> <ul style="list-style-type: none"> <li>Disabled — Always prompt for the system and internal HDD password when they are set. This option is enabled by default.</li> <li>Reboot Bypass — Bypass the password prompts on Restarts (warm boots).</li> </ul> <p><b>i</b> <b>NOTE: The system will always prompt for the system and internal HDD passwords when powered on from the off state (a cold boot). Also, the system will always prompt for passwords on any module bay HDDs that may be present.</b></p> |
| Password Change               | <p>This option lets you determine whether changes to the System and Hard Disk passwords are permitted when an administrator password is set.</p> <p><b>Allow Non-Admin Password Changes</b> - This option is disabled by default.</p>  |
| Non-Admin Setup Changes       | Determines whether changes to the setup option are permitted when an administrator password is set.  |
| UEFI Capsule Firmware Updates | This option controls whether this system allows BIOS updates via UEFI capsule update packages. This option is selected by default. Disabling this option will block BIOS updates from services such as Microsoft Windows Update and Linux Vendor Firmware Service (LVFS)   |
| TPM 2.0 Security              | <p>Allows you to control whether the Trusted Platform Module (TPM) is visible to the operating system.</p> <ul style="list-style-type: none"> <li>TPM On (default)</li> <li>Clear</li> <li>PPI Bypass for Enable Commands</li> <li>PPI Bypass for Disable Commands</li> <li>PPI Bypass for Clear Commands</li> <li>Attestation Enable (default)</li> <li>Key Storage Enable (default)</li> <li>SHA-256 (default)</li> </ul> <p>Choose any one option:</p> <ul style="list-style-type: none"> <li>Disabled</li> <li>Enabled (default)</li> </ul>  |
| Computrace(R)                 | <p>This field lets you Activate or Disable the BIOS module interface of the optional Computrace Service from Absolute Software. Enables or disables the optional Computrace service designed for asset management.</p> <ul style="list-style-type: none"> <li>Deactivate</li> <li>Disable</li> </ul>   |

| Option                  | Description   |
|-------------------------|---|
|                         | <ul style="list-style-type: none"> <li>· Activate - This option is selected by default.</li> </ul>  |
| OROM Keyboard Access    | <p>This option determines whether users are able to enter Option ROM configuration screen via hotkeys during boot.</p> <ul style="list-style-type: none"> <li>· Enabled (default)</li> <li>· Disabled</li> <li>· One Time Enable</li> </ul> |
| Admin Setup Lockout     | Allows you to prevent users from entering Setup when Admin password is set. This option is not set by default.  |
| Master Password Lockout | Allows you to disable master password support Hard Disk passwords need to be cleared before the settings can be changed. This option is not set by default.   |
| SMM Security Mitigation | Allows you to enable or disable additional UEFI SMM Security Mitigation protections. This option is not set by default.   |

## Secure boot

**Table 28. Secure Boot**

| Option                | Description   |
|-----------------------|---|
| Secure Boot Enable    | <p>Allows you to enable or disable Secure Boot feature</p> <ul style="list-style-type: none"> <li>· Secure Boot Enable</li> </ul> <p>This option is selected by default.</p>  |
| Secure Boot Mode      | <p>Allows you to modify the behavior of Secure Boot to allow evaluation or enforcement of UEFI driver signatures.</p> <ul style="list-style-type: none"> <li>· Deployed Mode (default)</li> <li>· Audit Mode</li> </ul>   |
| Expert key Management | <p>Allows you to manipulate the security key databases only if the system is in Custom Mode. The <b>Enable Custom Mode</b> option is disabled by default. The options are:</p> <ul style="list-style-type: none"> <li>· PK (default)</li> <li>· KEK</li> <li>· db</li> <li>· dbx</li> </ul> <p>If you enable the <b>Custom Mode</b>, the relevant options for <b>PK, KEK, db, and dbx</b> appear. The options are:</p> <ul style="list-style-type: none"> <li>· <b>Save to File</b>- Saves the key to a user-selected file</li> <li>· <b>Replace from File</b>- Replaces the current key with a key from a user-selected file</li> <li>· <b>Append from File</b>- Adds a key to the current database from a user-selected file</li> <li>· <b>Delete</b>- Deletes the selected key</li> <li>· <b>Reset All Keys</b>- Resets to default setting</li> <li>· <b>Delete All Keys</b>- Deletes all the keys</li> </ul> <p><b>NOTE:</b> If you disable the Custom Mode, all the changes made will be erased and the keys will restore to default settings.</p> |

# Intel Software Guard Extensions

Table 29. Intel Software Guard Extensions

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

## Performance

Table 30. Performance

| Option                      | Description  |
|-----------------------------|--|
| <b>Multi Core Support</b>   | <p>This field specifies whether the process has one or all cores enabled. The performance of some applications improves with the additional cores.</p> <ul style="list-style-type: none"><li>• Enable = 2 cores are enabled</li><li>• Disabled = 1 core is enabled</li></ul> |
| <b>Intel SpeedStep</b>      | <p>Allows you to enable or disable the Intel SpeedStep mode of processor.</p> <ul style="list-style-type: none"><li>• <b>Enable Intel SpeedStep</b></li></ul> <p>This option is set by default.</p>  |
| <b>C-States Control</b>     | <p>Allows you to enable or disable the additional processor sleep states.</p> <ul style="list-style-type: none"><li>• <b>C states</b></li></ul> <p>This option is set by default.</p>  |
| <b>Hyper-Thread Control</b> | <p>Allows you to enable or disable the HyperThreading in the processor.</p> <ul style="list-style-type: none"><li>• <b>Disabled</b></li><li>• <b>Enabled—Default</b></li></ul>   |

# POST behavior

| Option                         | Description   |
|--------------------------------|---|
| <b>Adapter Warnings</b>        | Allows you to enable or disable the system setup (BIOS) warning messages when you use certain power adapters.<br>Default setting: Enable Adapter Warnings   |
| <b>Fn Lock Options</b>         | Allows you to let hot key combinations Fn + Esc toggle the primary behavior of F1–F12, between their standard and secondary functions. If you disable this option, you cannot toggle dynamically the primary behavior of these keys. The available options are: <ul style="list-style-type: none"><li>· Fn Lock—enabled by default</li><li>· Lock Mode Disable/Standard</li><li>· Lock Mode Enable/Secondary—enabled by default</li></ul> |
| <b>Fastboot</b>                | Allows you to speed up the boot process by bypassing some of the compatibility steps. The options are: <ul style="list-style-type: none"><li>· Minimal</li><li>· Thorough-enabled by default</li><li>· Auto</li></ul>   |
| <b>Extended BIOS POST Time</b> | Allows you to create an extra preboot delay. The options are: <ul style="list-style-type: none"><li>· 0 seconds—enabled by default.</li><li>· 5 seconds</li><li>· 10 seconds</li></ul>  |
| <b>Full Screen Log</b>         | <ul style="list-style-type: none"><li>· Enable Full Screen Logo—not enabled</li></ul>   |
| <b>Warnings and errors</b>     | <ul style="list-style-type: none"><li>· Prompt on warnings and errors—enabled by default</li><li>· Continue on warnings</li><li>· Continue on warnings and errors</li></ul>   |
| <b>Sign of Life Indication</b> | <ul style="list-style-type: none"><li>· Enable Sign of Life Keyboard Backlight Indication—enabled by default</li></ul>  |

# Virtualization support

| Option                   | Description   |
|--------------------------|---|
| <b>Virtualization</b>    | This field specifies whether a virtual Machine Monitor (VMM) can utilize the conditional hardware capabilities provided by Intel Virtualization Technology.<br>Enable Intel Virtualization Technology—enabled by default. |
| <b>VT for Direct I/O</b> | Enables or disables the Virtual Machine Monitor (VMM) from utilizing the additional hardware capabilities provided by Intel® Virtualization technology for direct I/O.<br>Enable VT for Direct I/O - enabled by default.  |

# Wireless

## Option Description

### Wireless Switch

Allows to set the wireless devices that can be controlled by the wireless switch. The options are:

- WLAN
- Bluetooth

All the options are enabled by default.

**NOTE:** For WLAN enable or disable controls are tied together and they cannot be enabled or disabled independently.

### Wireless Device Enable

Allows you to enable or disable the internal wireless devices.

- WLAN
- Bluetooth

All the options are enabled by default.

# Maintenance screen

## Option

## Description

### Service Tag

Displays the Service Tag of your computer.

### Asset Tag

Allows you to create a system asset tag if an asset tag is not already set. This option is not set by default.

### BIOS Downgrade

This controls flashing of the system firmware to previous revisions. Option 'Allow BIOS downgrade' is enabled by default.

### Data Wipe

This field allows users to erase the data securely from all internal storage devices. Option 'Wipe on Next boot' is not enabled by default. The following is list of devices affected:

- Internal SATA HDD/SSD
- Internal M.2 SATA SDD
- Internal M.2 PCIe SSD
- Internal eMMC

### BIOS Recovery

This field allows you to recover from certain corrupted BIOS conditions from a recover file on the user primary hard drive or an external USB key.

- BIOS Recovery from Hard Drive—enabled by default
- Always perform integrity check—disabled by default

# Power management

## Option

## Description

### AC Behavior

Allows you to enable or disable the computer from turning on automatically when an AC adapter is connected.

| Option                                | Description  |
|---------------------------------------|--|
| Enable Intel Speed Shift Technology   | <p data-bbox="331 149 772 174">Default setting: Wake on AC is not selected.</p> <ul data-bbox="331 243 730 268" style="list-style-type: none"> <li data-bbox="331 243 730 268">· Enable Intel Speed Shift Technology</li> </ul> <p data-bbox="331 296 571 321">Default setting: Enabled</p>  |
| Auto On Time                          | <p data-bbox="331 369 1276 394">Allows you to set the time at which the computer must turn on automatically. The options are:</p> <ul data-bbox="331 422 488 558" style="list-style-type: none"> <li data-bbox="331 422 453 447">· Disabled</li> <li data-bbox="331 464 472 489">· Every Day</li> <li data-bbox="331 506 472 531">· Weekdays</li> <li data-bbox="331 548 488 573">· Select Days</li> </ul> <p data-bbox="331 590 576 615">Default setting: Disabled</p>  |
| USB Wake Support                      | <p data-bbox="331 663 1023 688">Allows you to enable USB devices to wake the system from Standby.</p> <p data-bbox="339 705 1473 800"><b>i NOTE: This feature is only functional when the AC power adapter is connected. If the AC power adapter is removed during Standby, the system setup removes power from all the USB ports to conserve battery power.</b></p> <ul data-bbox="331 827 639 852" style="list-style-type: none"> <li data-bbox="331 827 639 852">· Enable USB Wake Support</li> </ul>   |
| Wake on WLAN                          | <p data-bbox="331 894 1457 951">Allows you to enable or disable the feature that powers on the computer from the Off state when triggered by a LAN signal.</p> <ul data-bbox="331 978 453 1041" style="list-style-type: none"> <li data-bbox="331 978 453 1003">· Disabled</li> <li data-bbox="331 1020 437 1045">· WLAN</li> </ul> <p data-bbox="331 1073 576 1098">Default setting: Disabled</p>   |
| Peak Shift                            | <p data-bbox="331 1146 1437 1203">This option enables you to minimize the AC power consumption during the peak power times of day. After you enable this option, your system runs only in battery even if the AC is attached.</p> <ul data-bbox="331 1230 1018 1293" style="list-style-type: none"> <li data-bbox="331 1230 671 1255">· Enable peak shift—is disabled</li> <li data-bbox="331 1272 1018 1293">· Set battery threshold (15% to 100%) - 15 % (enabled by default)</li> </ul>   |
| Advanced Battery Charge Configuration | <p data-bbox="331 1335 1441 1392">This option enables you to maximize the battery health. By enabling this option, your system uses the standard charging algorithm and other techniques, during the non work hours to improve the battery health.</p> <p data-bbox="331 1409 850 1430">Enable Advanced Battery Charge Mode- is disabled</p>   |
| Primary Battery Charge Configuration  | <p data-bbox="331 1482 1054 1507">Allows you to select the charging mode for the battery. The options are:</p> <ul data-bbox="331 1535 938 1671" style="list-style-type: none"> <li data-bbox="331 1535 671 1560">· Adaptive—enabled by default</li> <li data-bbox="331 1577 938 1602">· Standard—Fully charges your battery at a standard rate.</li> <li data-bbox="331 1619 536 1644">· Primarily AC use</li> <li data-bbox="331 1661 453 1686">· Custom</li> </ul> <p data-bbox="331 1703 1345 1728">If Custom Charge is selected, you can also configure Custom Charge Start and Custom Charge Stop.</p> <p data-bbox="339 1745 1425 1801"><b>i NOTE: All charging mode may not be available for all the batteries. To enable this option, disable the Advanced Battery Charge Configuration option.</b></p> |

# System logs

| Option                | Description   |
|-----------------------|---|
| <b>BIOS Events</b>    | Allows you to view and clear the System Setup (BIOS) POST events. |
| <b>Thermal Events</b> | Allows you to view and clear the System Setup (Thermal) events.   |
| <b>Power Events</b>   | Allows you to view and clear the System Setup (Power) events.     |

# SupportAssist System Resolution

| Option                            | Description   |
|-----------------------------------|---|
| <b>Auto OS Recovery Threshold</b> | Allows you to control the automatic boot flow for SupportAssist System. Options are: <ul style="list-style-type: none"><li>· Off</li><li>· 1</li><li>· 2 (Enabled by default)</li><li>· 3</li></ul> |
| <b>SupportAssist OS Recovery</b>  | Allows you to recover the SupportAssist OS Recovery ( Enabledby default)  |

# System and setup password

Table 31. 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.

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

# Assigning a system setup password

## Prerequisite

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 re-boot.

## 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

## Prerequisite

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

## About this task

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

## Steps

- 1 In the **System BIOS** or **System Setup** screen, select **System Security** and press Enter.  
The **System Security** screen is displayed.
- 2 In the **System Security** screen, verify that **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/or 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 reboot.



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

## Downloading 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.

# Getting help

## Contacting Dell

### Prerequisite

**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.

### About this task

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:

### Steps

- 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.