Precision 3530

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.**

Contents

Set up your computer

1   Connect the power adapter.
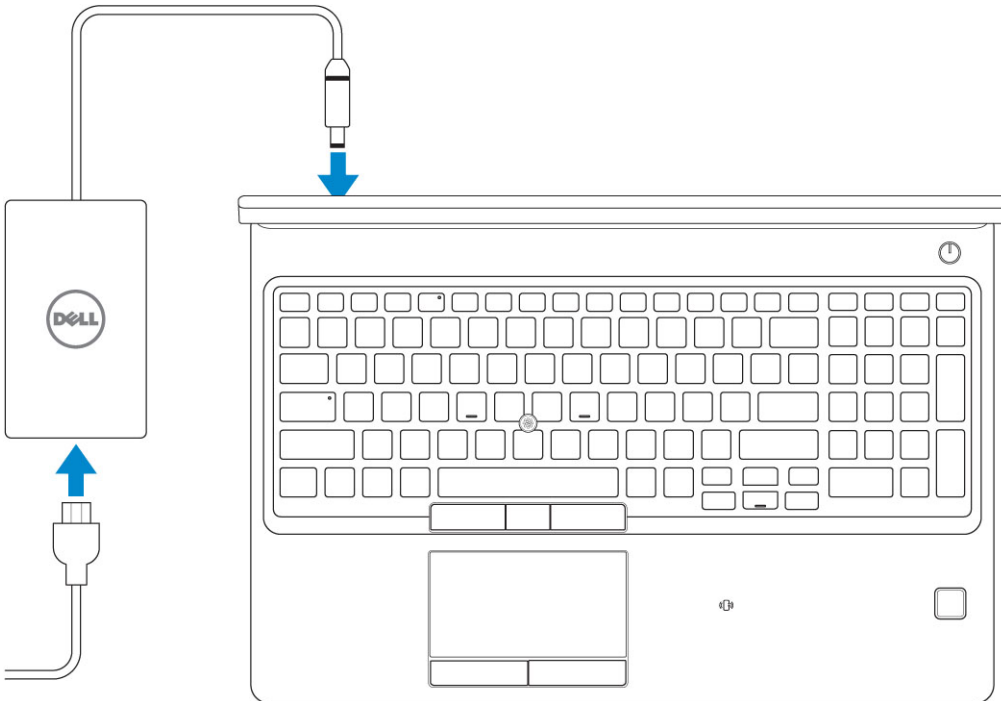
2   Press the power button.
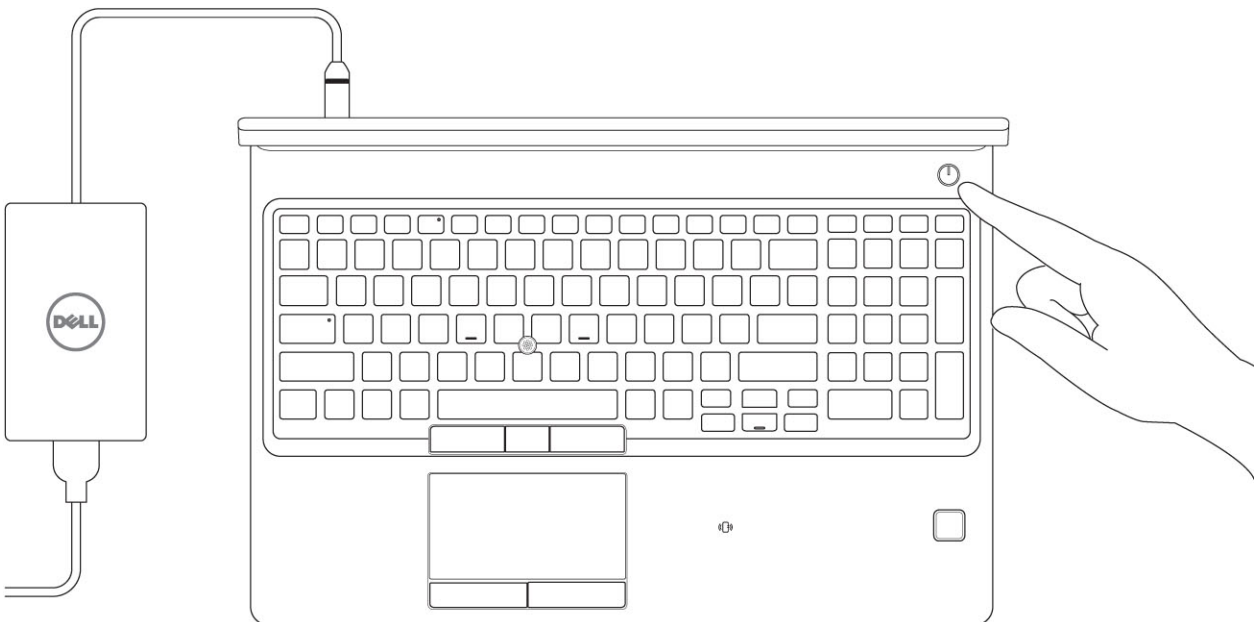
3   Follow the instructions on the screen to finish Windows setup:

      a   Connect to a network.
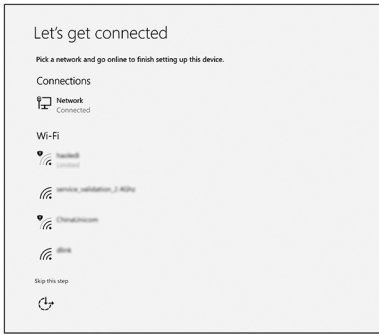
b   Sign-in to your Microsoft account or create a new account.
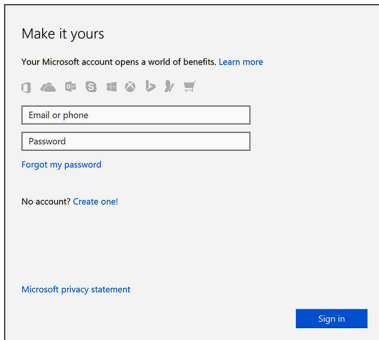
4   Locate Dell apps.

Table 1. Locate Dell apps

	Register your computer
	Dell Help & Support
	SupportAssist — Check and update your computer
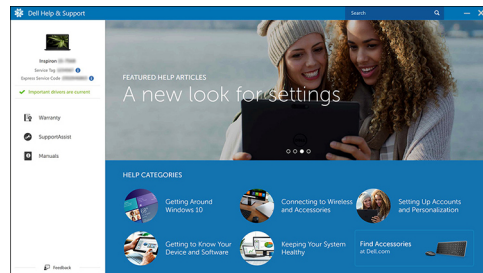
Chassis view

Front open view
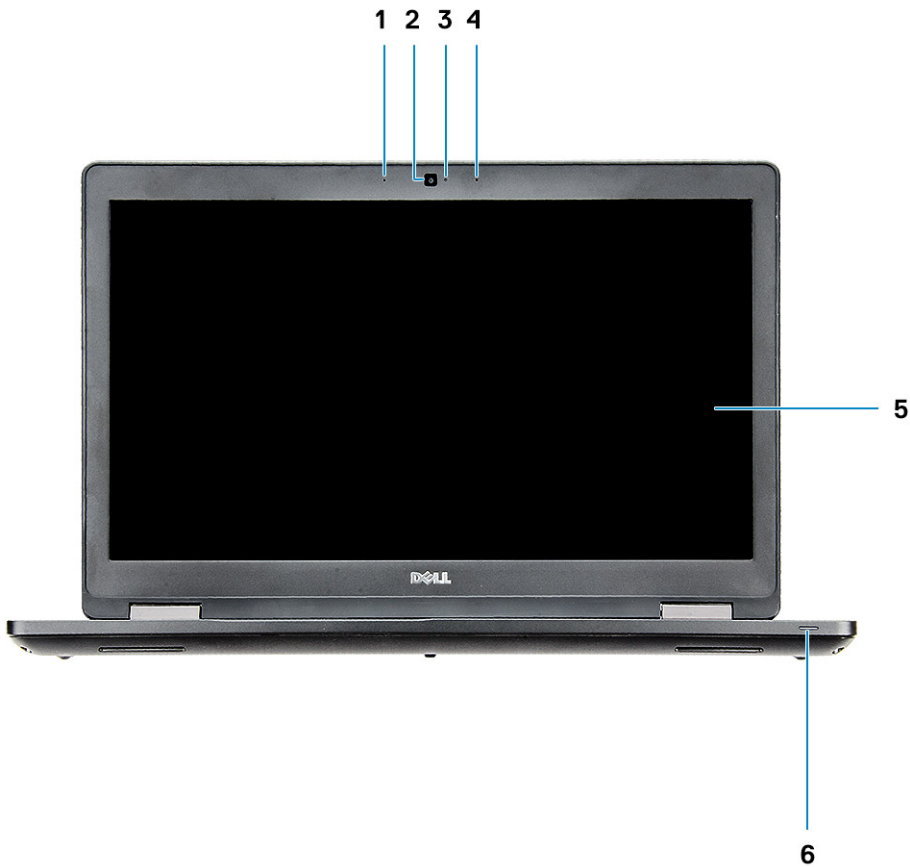
1	Array microphone	2	Camera (optional)
3	Camera status light (optional)	4	Array microphone
5	LCD panel	6	Battery charge status light

ⓘ **NOTE: Computer shipped with HD camera module is standard , IR camera is optional.**

Back view

1	Network port	2	HDMI port
3	USB 3.1 Gen 1 port	4	Power connector port

Left view

1	Display Port over USB Type-C connector (optional Thunderbolt™ 3)	2	USB 3.1 Gen 1 port
3	SD Card reader	4	Smart Card reader (optional)

Right view
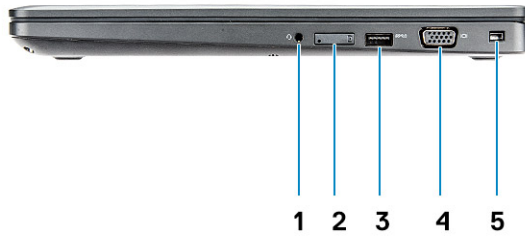
1	Headset port	2	SIM-card slot (optional)
3	USB 3.1 Gen 1 port	4	VGA port
5	Wedge lock slot		

Rear view
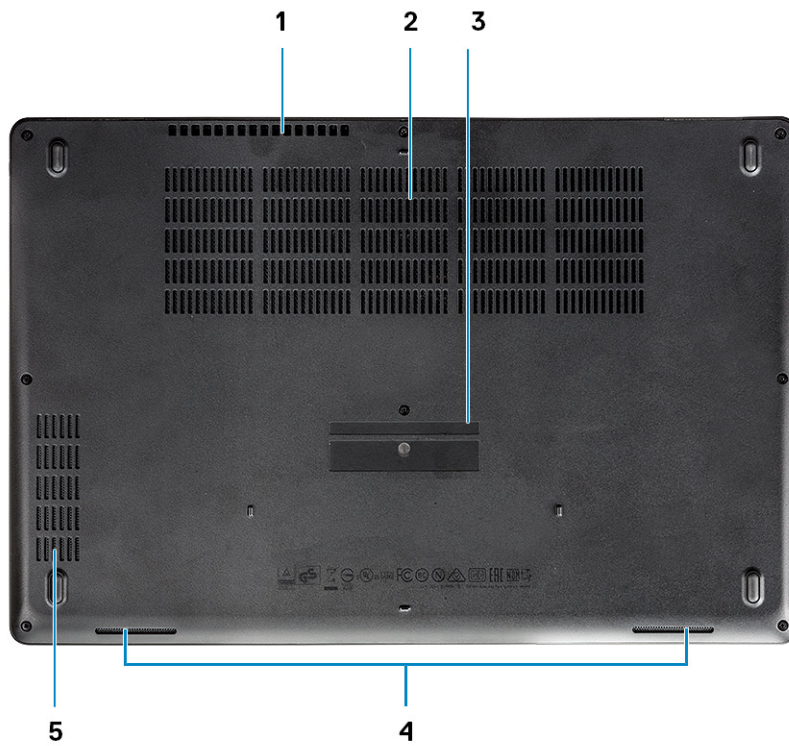
1	Air vent	2	Air vent
3	Service Tag label	4	Speaker
5	Air vent		

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:

Dimensions and weight

Table 2. Dimensions and weight

Height	• Front height - 0.8 inch (21.65 mm) • Back height - 0.9 inch (24.3 mm)
Width	14.8 inch (376 mm)
Depth	9.9 inch (250.7 mm)
Weight	Starting 4.48 lbs (2.03 kg)

Processor

Global Standard Products (GSP) are a subset of Dell's relationship products that are managed for availability and synchronized transitions on a worldwide basis. They ensure the same platform is available for purchase globally. This allows customers to reduce the number of

configurations managed on a worldwide basis, thereby reducing their costs. They also enable companies to implement global IT standards by locking in specific product configurations worldwide. The following GSP processors identified below will be made available to Dell customers.

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

Table 3. Processor specifications

Type	UMA Graphics
Intel Core i5-8300H Processor (4 Core, 8M Cache, 2.3GHz, 35W cTDP)	Intel UHD Graphics 630
Intel Core i5-8400H Processor (4 Core, 8M Cache, 2.5GHz, 35W cTDP, vPro)	Intel UHD Graphics 630
Intel Core i7-8750H Processor (6 Core, 9M Cache, 2.2GHz, Turbo, 35W cTDP)	Intel UHD Graphics 630
Intel Core i7-8850H Processor (6 Core, 9M Cache, 2.6GHz, 35W cTDP, vPro)	Intel UHD Graphics 630
Mobile Intel Xeon-E-2176M Processor(6 Core, 12M Cache, 2.7GHz, 4.4GHz Turbo, 35W cTDP, vPro)	Intel UHD Graphics P630

System information

Table 4. System information

Chipset	Intel CM246 chipset
DRAM bus width	64-bit
FLASH EPROM	{SP1 256 Mbits}
PCIe bus	100 Mhz
External bus frequency	{DMI 3.0-8GT/s}

Operating system

Table 5. Operating system

Operating systems supported	- Windows 10 Home (64 bit) - Windows 10 Professional (64 bit) - Ubuntu 16.04 LTS (64bit) - Windows 10 Pro for Workstations 64 - Red Hat 7.5

Memory

Table 6. Memory specifications

Minimum memory configuration	4 GB
Maximum memory configuration	32 GB
Number of slots	2 SODIMM
Maximum memory supported per slot	16 GB
Memory options	• 4 GB - 1 x 4 GB • 8 GB - 1 x 8 GB • 8 GB - 2 x 4 GB • 16 GB - 2 x 8 GB • 16 GB - 1 x 16 GB • 32 GB - 2 x 16 GB
Type	DDR4 SDRAM Non-ECC memory Optional ECC memory for Mobile Intel Xeon Processor
Speed	2400/2666 MHz

Ports and connectors

Table 7. Ports and connectors

Memory card reader	microSD 4.0 memory card reader
Smart card reader	Yes (Optional)
USB	Three USB 3.1 Gen 1 (one with PowerShare)
Security	Noble wedge lock slot
Docking port	DisplayPort over USB Type C (optional Thunderbolt 3)
Audio	• Universal audio jack • Noise reduction array microphones
Video	• HDMI 1.4 (UMA) • One VGA • HDMI 2.0 (Discrete)
Network adapter	One RJ-45 connector
Serial port	NA
Parallel port	NA

| SIM card reader | One uSIM card slot (optional) |

Communications

Network adapter	Intel i219LM Gigabit (10/100/1000 Mbps) Ethernet Controller (RJ-45) with Intel Remote Wake UP, PXE and Manageability capabilities alerting (AMT 11 / DASH 1.1)
Wireless	• Wi-Fi 802.11 a,b.g,n/ac via M.2 • MU-MIMO RX • Bluetooth via WLAN • Mobile Broadband LTE

Audio

Controller	Realtek ALC3246-CG Controller with Waves MaxxAudio Pro
Type	Multi-channel high-definition audio
Stereo conversion	Digital audio-out through HDMI — up to 7.1 compressed and uncompressed audio
Speakers	Two (Bi-Directional speakers)
Internal interface	High-definition audio codec
Interface	• Universal audio jack • High quality speakers • Noise reducing array microphones • Stereo headset/mic combo
Internal speaker amplifier	2 W(RMS) per channel
Volume controls	Hot keys

Video

Controller	Type	CPU Dependency	Graphics memory type	Capacity	External display support	Maximum resolution
Intel UHD Graphics 630 Intel UHD Graphics P630	UMA	• Intel® Core i5-8300H • Intel® Core i5-8400H • Intel® Core i7-8850H	Integrated	Shared system memory(Upto 32 GB)	VGA HDMI 1.4(UMA) HDMI 2.0(DSC) eDP(Internal)	HDMI 1.4 (UMA): 4096x2160 @ 30 Hz HDMI 2.0 (DSC): 4096x2160 @ 60 Hz

Controller	Type	CPU Dependency	Graphics memory type	Capacity	External display support	Maximum resolution
		• Intel Xeon Processor E-2176M			Via Optional Type-C Port: DisplayPort	Analog: (VGA) system 1920x1200 @ 60Hz
						Max Digital: (DP 1.2 over Type-C Port) 4096x2304 @ 60Hz
Nvidia Quadro P600	Discrete	NA	GDDR5	4GB	DisplayPort HDMI 2.0	HDMI 1.4 (UMA): 4096x2160 @ 30 Hz
						HDMI 2.0 (DSC): 4096x2160 @ 60 Hz
						Analog: (VGA) system 1920x1200 @ 60Hz
						Max Digital: (DP 1.2 over Type-C Port) 4096x2304 @ 60Hz

Storage

Table 11. Storage specifications

Primary/Boot drive	Primary interface	Secondary drive	Secondary interface	Security option
SSD M.2 2280 SATA: up to 512GB, OPAL SED options	SATA AHCI, Up to 6 Gbps	M.2 2230 (WWAN slot)	PCIe 3 x2 NVME, Up to 16 Gbps	YES
SSD M.2 2280 PCIe/NVMe: up to 2TB, OPAL SED options	PCIe 3 x4 NVME, Up to 32 Gbps	M.2 2230 (WWAN slot)	PCIe 3 x2 NVME, Up to 16 Gbps	YES
One 2.5 " HDD: up to 2TB, OPAL SED options	SATA AHCI, Up to 6 Gbps	M.2 2230 (WWAN slot)	PCIe 3 x2 NVME, Up to 16 Gbps	YES
SSD M.2 2230 PCIe/NVMe : up to 256GB (in WWAN slot only)	PCIe 3 x2 NVME, Up to 16 Gbps	M.2 2280 SATA	SATA AHCI, Up to 6 Gbps	NO
SSD M.2 2230 PCIe/NVMe : up to 256GB (in WWAN slot only)	PCIe 3 x2 NVME, Up to 16 Gbps	2.5" HDD	SATA AHCI, Up to 6 Gbps	NO

Media card-reader

Table 12. Media-card reader specifications

Type	One SD 4.0 card slot
Supported cards	• SD 4.0 • Memory Stick, Pro, HG, Duo and XC • SDHC • Secure Digitale Xtended Capacity(SDXC) and Multi-Media Card • SD UHS-I (Ultra High Speed-I) and SD UHS-II (Ultra High Speed-II) FD/HD mode

Display

Type	• 15.6" HD (1366 x 768) Anti-glare (16:9) WLED, 220 nits, 45% color gamut, non-touch, Carbon Fiber Reinforced Polymer LCD Back • 15.6" FHD WVA (1920 x 1080) Anti-glare (16:9) WLED, 300 nits, non-touch, 72% color gamut w/ PremierColor, Carbon Fiber Reinforced Polymer LCD Back • 15.6" FHD WVA (1920 x 1080) Embedded Touch Display with Truelife, 220 nits, 45% color gamut, Carbon Fiber Reinforced Polymer LCD Back
Height (Active area)	7.62 inch (193.5 mm)
Width (Active area)	13.55 inch (344.2 mm)
Diagonal	15.6 inch(396.25 mm)
Touch panel specification	10 finger touch support is supported on the embedded 15.6" touch panel.
Luminance/Brightness (typical)	220/300 nits
Refresh rate	60 Hz
Horizontal viewing angle (min)	+/- 40 degrees(HD) +85/-85 degrees(FHD)
Vertical viewing angle (min)	+10/- 30 degrees(HD) +85/-85 degrees(FHD)

Keyboard

Number of keys	• 82 (U.S. and Canada) • 83 (Europe) • 84(Brazil) • 86 (Japan)
Size	Full sized • X= 19.05 mm key pitch • Y= 19.05 mm key pitch
Backlit keyboard	Yes(Optional)
Layout	QWERTY/AZERTY/Kanji

Camera

Table 15. Camera specifications

Resolution	Camera:
	• Still image: 0.92 megapixels • Video: 1280x720 at 30 fps Infrared camera (optional): • Still image: 0.92 megapixels • Video: 1280x720 at 30 fps
Diagonal viewing angle	• Camera : 74 degrees • Infrared camera : 74 degrees

Touchpad

Table 16. Touchpad specifications

Resolution	• Horizontal: 1221 • Vertical: 661
Dimensions	• Width: 4.0 inch (101.7 mm) • Height: 2.17 inch (55.2mm)
Multi-touch	Supports up to 5 fingers. Gesture support is dependent on operating system.

Battery

Table 17. Battery Specifications

Type	• 68 WHr,4 Cell, Li-ion/Polymer, ExpressCharge Capable Battery • 68 WHr,4 Cell, Li-polymer, Long Cycle Life Battery • 92 Whr, 6 Cell ExpressCharge Capable Li-ion/polymer Battery

Dimension	1 68 WHr,4 Cell,Li-ion/Polymer
	    • Length: 233mm (9.17 inch)
	    • Width: 95.9mm (3.78 inch)
	    • Height: 7.05mm (0.28 inch)
	    • Weight: 340.00 g
	2 68 WHr,4 cell, Li-polymer Battery
	    • Length: 233mm (9.17 inch)
	    • Width: 95.9mm (3.78 inch)
	    • Height: 7.05mm (0.28 inch)

	• Weight: 340.00 g
	3 92 WHr,6 cell,Li-polymer
	  • Length: 332mm (13.07 inch)
	  • Width: 96mm (3.78 inch)
	  • Height: 7.7mm (0.303 inch)
	  • Weight: 450.00 g

Weight (maximum)	0.045 kg (0.99 lb)
Voltage	• 68 WHr - 7.6 VDC • 68 WHr - 7.6 VDC • 92 WHr - 11.4 VDC
Life span	300 discharge/recharge cycles(Standard) and 1000discharge/recharge cycles(Long cycle)
Charging time when the computer is off (approximate)	2-4 hours
Operating time	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions
Temperature range: Operating	• Charge: 0 °C to 50 °C (32 °F to 122 °F) • Discharge: 0 °C to 70 °C (32 °F to 158 °F)
Temperature range: Storage	-20 °C to 65 °C (-4 °F to 149 °F)
Coin-cell battery	ML1220

Input device

- Single Point non-backlit Keyboard
- Dual Pointing backlit Keyboard
- Microsoft Precision Touchpad

Environmental

ⓘ NOTE: **For more details on Dell environmental features, please go to the environmental attributes section. See your specific region for availability.**

Table 18. Environmental

Energy efficient power supply	Internal
80 plus bronze certification	155W EPA bronze
80 plus platinum certification	240W EPA platinum
Customer replaceable unit	No
Recyclable packaging	Optional, US only
MultiPack packaging	No

Power adapter

Table 19. Power adapter specifications

Type	• 130 W adapter
Input Voltage	100 to 240 VAC
Input current (maximum)	• 130 W - 1.8 A
Adapter size	7.4 mm Barrel Type
Input frequency	50 Hz to 60 Hz
Output current	• 130 W - 6.7 A (continuous)
Rated output voltage	19.5 VDC
Temperature range (Operating)	-40º to 70º C (-40º to 158º F)
Temperature range (Non-Operating)	-40º to 70º C (-40º to 158º F)

System setup options

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

Topics:

Boot Sequence

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

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

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

- Removable Drive (if available)
- STXXXX Drive

  ⓘ **NOTE: XXX denotes the SATA drive number.**
- Optical Drive (if available)
- SATA Hard Drive (if available)
- Diagnostics

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

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

Navigation keys

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

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

System Setup overview

System Setup allows you to:

- Change the system configuration information after you add, change, or remove any hardware in your computer.
- Set or change a user-selectable option such as the user password.
- Read the current amount of memory or set the type of hard drive installed.

Before you use System Setup, it is recommended that you write down the System Setup screen information for future reference.

⚠ **CAUTION: Unless you are an expert computer user, do not change the settings for this program. Certain changes can cause your computer to work incorrectly.**

Accessing System Setup

1 Turn on (or restart) your computer.
2 After the white Dell logo appears, press F2 immediately.
 The System Setup page is displayed.

 ⓘ **NOTE: If you wait too long and the operating system logo appears, wait until you see the desktop. Then, shut down or restart your computer and try again.**

 ⓘ **NOTE: After the Dell logo appears, you can also press F12 and then select BIOS setup.**

General screen options

This section lists the primary hardware features of your computer.

Option	Description
System Information	This section lists the primary hardware features of your computer. - System Information: Displays BIOS Version, Service Tag, Asset Tag, Ownership Tag, Ownership Date, Manufacture Date, and the Express Service Code.

Option	Description
	• Memory Information: Displays Memory Installed, Memory Available, Memory Speed, Memory Channels Mode, Memory Technology, DIMM ASize, DIMM B Size,
	• Processor Information: Displays Processor Type, Core Count, Processor ID, Current Clock Speed, Minimum Clock Speed, Maximum Clock Speed, Processor L2 Cache, Processor L3 Cache, HT Capable, and 64-Bit Technology.
	• Device Information: Displays Primary Hard Drive, M.2 SATA2, M.2 SATA, M.2 PCIe SSD-0, LOM MAC Address, Video Controller, Video BIOS Version, Video Memory, Panel Type, Native Resolution, Audio Controller, Wi-Fi Device, WiGig Device, Cellular Device, Bluetooth Device.
Battery Information	Displays the battery status and the type of AC adapter connected to the computer.
Boot Sequence	Allows you to change the order in which the computer attempts to find an operating system.
	• Diskette Drive
	• Internal HDD
	• USB Storage Device
	• CD/DVD/CD-RW Drive
	• Onboard NIC
Advanced Boot Options	This option allows you the legacy option ROMs to load. By default, the **Enable Legacy Option ROMs** is disabled.
UEFI Booth Path Security	This options 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.
	• Always, Except Internal HDD
	• Always
	• Never (by default enabled)
Date/Time	Allows you to change the date and time.

System Configuration screen options

Option	Description
Integrated NIC	Allows you to configure the integrated network controller. The options are:
	• Disabled
	• Enabled
	• Enabled w/PXE: This option is enabled by default.
Parallel Port	Allows you to configure the parallel port on the docking station. The options are:
	• Disabled
	• AT: This option is enabled by default.
	• PS2
	• ECP
Serial Port	Allows you to configure the integrated serial port. The options are:
	• Disabled
	• COM1: This option is enabled by default.
	• COM2
	• COM3

Option	Description
	· COM4
SATA Operation	Allows you to configure the internal SATA hard-drive controller. The options are:
	· Disabled
	· AHCI
	· RAID On: This option is enabled by default.
Drives	Allows you to configure the SATA drives on board. All drives are enabled by default. The options are:
	· SATA-0
	· SATA-2
	· SATA-4
	· M.2 PCI-e SSD-0
SMART Reporting	This field controls whether hard drive errors for integrated drives are reported during system startup. This technology is part of the SMART (Self Monitoring Analysis and Reporting Technology) specification. This option is disabled by default.
	· Enable SMART Reporting
USB Configuration	This is an optional feature.
	This field configures the integrated USB controller. If Boot Support is enabled, the system is allowed to boot any type of USB Mass Storage Devices (HDD, memory key, floppy). If USB port is enabled, device attached to this port is enabled and available for OS.
	If USB port is disabled, the OS cannot see any device attached to this port.
	The options are:
	· Enable USB Boot Support (by default enable)
	· Enable External USB Port (by default enable)
	· Enable Thunderbolt Ports (by default enable)
	· Enable Thunderbolt Boot Support
	· Always Allow Dell Docks (by default enable)
	· Enable Thunderbolt (ans PCIe behind TBT) Pre-boot
	· Security level — No Secuirty
	· Security level — User Configuration(by default enable)
	· Security level — Secure connect
	· Security level — Display Port Only
	ⓘ **NOTE: USB keyboard and mouse always work in the BIOS setup irrespective of these settings.**
USB PowerShare	This field configures the USB PowerShare feature behavior. This option allows you to charge external devices using the stored system battery power through the USB PowerShare port.
Audio	This field enables or disables the integrated audio controller. By default, the **Enable Audio** option is selected. The options are:
	· Enable Microphone (by default enable)
	· Enable Internal Speaker (by default enable)

Option	Description
Keyboard Illumination	This field lets you choose the operating mode of the keyboard illumination feature. The keyboard brightness level can be set from 0% to 100%. The options are: · Disabled · Dim · Bright (enabled by default)
Keyboard Backlight Timeout on AC	The Keyboard Backlight Timeout dims out with AC option. The main keyboard illumination feature is not affected. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. · 5 seconds · 10 seconds (enabled by default) · 15 seconds · 30 seconds · 1 minute · 5 minutes · 15 minutes · Never
Keyboard Backlight Timeout on Battery	The Keyboard Backlight Timeout dims out with Battery option. The main keyboard illumination feature is not affected. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. · 5 seconds · 10 seconds (enabled by default) · 15 seconds · 30 seconds · 1 minute · 5 minutes · 15 minutes · Never
Keyboard Backlight with AC	The Keyboard Backlight with AC option does not affect the main keyboard illumination feature. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled.
Touchscreen	This fields controls whether the touchscreen is enabled or diabled. · Touchscreen (enabled by default)
Unobtrusive Mode	This option, when enabled, pressing Fn+F7 turns off all light and sound emissions in the system. To resume normal operation, press Fn+F7 again. This option is disabled by default.
Miscellaneous Devices	Allows you to enable or disable the following devices: · Enable Camera —enabled by default · Enable Hard Drive Free Fall Protection (enabled by default) · Enable Secure Digital (SD) Card (enabled by default) · Secure Digital (SD) Card Boot · Secure Digital (SD) Card Read — only Mode

Video screen options

Option	Description
LCD Brightness	Allows you to set the display brightness depending up on the power source (On Battery and On AC).

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

Security screen options

Option	Description
Admin Password	Allows you to set, change, or delete the administrator (admin) password. ⓘ NOTE: You must set the admin password before you set the system or hard drive password. Deleting the admin password automatically deletes the system password and the hard drive password. ⓘ NOTE: Successful password changes take effect immediately. Default setting: Not set
System Password	Allows you to set, change or delete the system password. ⓘ NOTE: Successful password changes take effect immediately. Default setting: Not set
M.2 SATA SSD Password	Allows you to set, change, or delete the M.2 SATA SSD password. ⓘ NOTE: Successful password changes take effect immediately. Default setting: Not set
Strong Password	Allows you to enforce the option to always set strong passwords. Default Setting: Enable Strong Password is not selected. ⓘ NOTE: If Strong Password is enabled, Admin and System passwords must contain at least one uppercase character, one lowercase character and be at least 8 characters long.
Password Configuration	Allows you to determine the minimum and maximum length of Administrator and System passwords.
Password Bypass	Allows you to enable or disable the permission to bypass the System and the Internal HDD password, when they are set. The options are: · Disabled · Reboot bypass Default setting: Disabled
Password Change	Allows you to enable the disable permission to the System and Hard Drive passwords when the admin password is set. Default setting: **Allow Non-Admin Password Changes** is selected.
Non-Admin Setup Changes	Allows you to determine whether changes to the setup options are allowed when an Administrator Password is set. If disabled the setup options are locked by the admin password.

Option	Description
UEFI Capsule Firmware Updates	Allows yout to control whether this system allows BIOS updates via UEFI capsule update packages. • Enable UEFI Capsule Firmware Updates (enabled by default)
TPM 2.0 Security	Allows you to enable the Trusted Platform Module (TPM) during POST. The options are: • TPM On (enabled by default) • Clear • PPI Bypass for Enabled Commands(enabled by default) • Attestation Enable (enabled by default) • Key Storage Enable (enabled by default) • PPI Bypass for Disabled Commands • SHA-256 (enabled by default) • Disabled • Enabled ⓘ **NOTE: To upgrade or downgrade TPM1.2/2.0, download the TPM wrapper tool (software).**
Computrace	Allows you to activate or disable the optional Computrace software The options are: • Deactivate • Disable • Activate ⓘ **NOTE: The Activate and Disable options will permanently activate or disable the feature and no further changes will be allowed** Default setting: Deactivate
CPU XD Support	Allows you to enable the Execute Disable mode of the processor. Enable CPU XD Support (default)
OROM Keyboard Access	Allows you to set an option to enter the Option ROM Configuration screens using hotkeys during boot. The options are: • Enable • One Time Enable • Disable Default setting: Enable
Admin Setup Lockout	Allows you to prevent users from entering Setup when an Administrator password is set. Default Setting: **Disabled**
Master Password Lockout	Allows you to disable master password support. Hard disk password need to be cleared before the setting can be changed • Enable Master Password Lockout (Disabled)

Secure Boot screen options

Option	Description
Secure Boot Enable	This option enables or disables the **Secure Boot** feature. • Disabled • Enabled Default setting: Enabled.
Expert Key Management	Allows you to manipulate the security key databases only if the system is in Custom Mode. The **Enable Custom Mode** option is disabled by default. The options are: • PK • KEK • db • dbx If you enable the **Custom Mode**, the relevant options for **PK, KEK, db, and dbx** appear. The options are: • **Save to File**—Saves the key to a user-selected file • **Replace from File**—Replaces the current key with a key from a user-selected file • **Append from File**—Adds a key to the current database from a user-selected file • **Delete**—Deletes the selected key • **Reset All Keys**—Resets to default setting • **Delete All Keys**—Deletes all the keys (i) **NOTE: If you disable the Custom Mode, all the changes made will be erased and the keys will restore to default settings.**

Intel Software Guard Extensions

Option	Description
Intel SGX Enable	This fields specifies you to provide a secured environment for running code/storing sensitive information in the context of the main OS. The options are: • Disabled • Enabled • Software Controlled: This option is enabled by default.
Enclave Memory Size	This option sets SGX Enclave Reserve Memory Size. The option are: • 32 MB • 64 MB • 128 MB

Performance screen options

Option	Description
Multi Core Support	This field specifies whether the process has one or all cores enabled. The performance of some applications improves with the additional cores. • All (By default enabled) • 1 • 2 • 3
Intel SpeedStep	Allows you to enable or disable the Intel SpeedStep feature. • Enable Intel SpeedStep Default setting: The option is enabled.
C-States Control	Allows you to enable or disable the additional processor sleep states. • C states Default setting: The option is enabled.
Intel TurboBoost	Allows you to enable or disable the Intel TurboBoost mode of the processor. • Enable Intel TurboBoost Default setting: The option is enabled.

Power Management screen options

Option	Description
AC Behavior	Allows you to enable or disable the computer from turning on automatically when an AC adapter is connected. Default setting: Wake on AC is not selected.
Auto On Time	Allows you to set the time at which the computer must turn on automatically. The options are: • Disabled • Every Day • Weekdays • Select Days Default setting: Disabled
USB Wake Support	Allows you to enable USB devices to wake the system from Standby. ⓘ **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.** • Enable USB Wake Support • Wake on Dell USB-C Dock (By default enable)

Option	Description
Wireless Radio Control	Allows you to enable or disable the feature that automatically switches from wired or wireless networks without depending on the physical connection. · Control WLAN Radio · Control WWAN Radio Default setting: The option is disabled.
Wake on LAN/ WLAN	Allows you to enable or disable the feature that powers on the computer from the Off state when triggered by a LAN signal. · Disabled · LAN Only · WLAN Only · LAN or WLAN Default setting: Disabled
Block Sleep	This option lets you block entering to sleep (S3 state) in operating system environment. Block Sleep (S3 state) Default setting: This option is disabled
Peak Shift	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.
Advanced Battery Charge Configuration	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. Disabled Default setting: Disabled
Primary Battery Charge Configuration	Allows you to select the charging mode for the battery. The options are: · Adaptive · Standard — Fully charges your battery at a standard rate. · ExpressCharge — The battery charges over a shorter period of time using Dell's fast charging technology. This option is enabled by default. · Primarily AC use · Custom If Custom Charge is selected, you can also configure Custom Charge Start and Custom Charge Stop. ⓘ **NOTE: All charging mode may not be available for all the batteries. To enable this option, disable the Advanced Battery Charge Configuration option.**
Sleep Mode	This option is used to select which sleep mode will be used by operating system. · OS Automatic Selection · Force S3 (By default enable)
Type-C Connector Power	This option lets you set the maximum power that can be drawn from the USB Type-C connector. · 7.5 Watts (By default enable)

Option	Description
	• 15 Watts

POST Behavior screen options

Option	Description
Adapter Warnings	Allows you to enable or disable the system setup (BIOS) warning messages when you use certain power adapters. Default setting: Enable Adapter Warnings
Keypad (Embedded)	Allows you to choose one of two methods to enable the keypad that is embedded in the internal keyboard. • Fn Key Only: This option is enabled by default. • By Numlock ⓘ NOTE: When setup is running, this option has no effect. Setup works in Fn Key Only mode.
Mouse/Touchpad	Allows you to define how the system handles mouse and touch pad input. The options are: • Serial Mouse • PS2 Mouse • Touchpad/PS-2 Mouse: This option is enabled by default.
Numlock Enable	Allows you to enable the Numlock option when the computer boots. Enable Network. This option is enabled by default.
Fn Key Emulation	Allows you to set the option where the Scroll Lock key is used to simulate the Fn key feature. Enable Fn Key Emulation (default)
Fn Lock Options	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: • Fn Lock. This option is selected by default. • Lock Mode Disable/Standard • Lock Mode Enable/Secondary
Fastboot	Allows you to speed up the boot process by bypassing some of the compatibility steps. The options are: • Minimal • Thorough (default) • Auto
Extended BIOS POST Time	Allows you to create an additional preboot delay. The options are: • 0 seconds. This option is enabled by default. • 5 seconds • 10 seconds
Full Screen Logo	This option will display full screen logo if your image match screen resolution • Enable Full Screen Logo

Option	Description
Warnings and Error	This option will cause the boot process to only pause when warnings or errors are detected.

- Prompt on Warnings and Errors This option is enabled by default.
- Continue on Warnings
- Continue on Warnings and Errors

ⓘ **NOTE: Error deemed critical to the operation of the system hardware will always halt the system.**

Virtualization support screen options

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

Wireless screen options

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

- WWAN
- GPS (on WWAN Module)
- WLAN/WiGig
- Bluetooth

All the options are enabled by default.

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

Option	Description
Wireless Device Enable	Allows you to enable or disable the internal wireless devices.

- WWAN/GPS
- WLAN/WiGig
- Bluetooth

All the options are enabled by default.

Maintenance screen options

Option	Description
Service Tag	Displays the Service Tag of your computer.
Asset Tag	Allows you to create a system asset tag if an asset tag is not already set. This option is not set by default.
BIOS Downgrade	This controls flashing of the system firmware to previous revisions. • Allows BIOS Downgrade (enabled by default)
Data Wipe	This field allows users to erase the data securely from all internal storage devices. 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) • BIOS Auto-Recovery • Always perform Integrity Check

System Log screen options

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

Updating the BIOS in Windows

It is recommended to update your BIOS (System Setup), 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 outlet

> ⓘ **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.**

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.

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

System and setup password

Table 20. 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 password and setup password

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

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

1   In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.
The **Security** screen is displayed.

2   Select **System Password** and create a password in the **Enter the new password** field.
Use the following guidelines to assign the system password:
  - A password can have up to 32 characters.
  - The password can contain the numbers 0 through 9.
  - Only lower case letters are valid, upper case letters are not allowed.
  - Only the following special characters are allowed: space, ("), (+), (,), (-), (.), (/), (;), ([), (\), (]), (`).

3   Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.

4   Press Esc and a message prompts you to save the changes.

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

Deleting or changing an existing system setup password

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

1   In the **System BIOS** or **System Setup** screen, select **System Security** and press Enter.

The **System Security** screen is displayed.

2   In the **System Security** screen, verify that **Password Status** is **Unlocked**.

3   Select **System Password**, alter or delete the existing system password and press Enter or Tab.

4   Select **Setup Password**, alter or delete the existing setup password and press Enter or Tab.

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

5   Press Esc and a message prompts you to save the changes.

6   Press Y to save the changes and exit from System Setup.

The computer reboot.

Software

Supported operating systems

The following list shows supported operating systems

Table 21. Supported operating systems

Supported operating systems	Operating System Description
Microsoft Windows	• Microsoft Windows 10 Pro (64-bit) • Microsoft Windows 10 Home (64-bit) • Windows 10 Pro for Workstations 64
Other	• Ubuntu 16.04 LTS 64-bit • Red Hat 7.5
OS Media Support	• Dell.com/support to download eligible Windows OS • USB media available for upsell

Downloading drivers

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

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

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

Downloading the chipset driver

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

    ⓘ **NOTE: If you do not have the Service Tag, use the autodetect feature or manually browse for your laptop model.**

4   Click **Drivers and Downloads**.
5   Select the operating system installed on your laptop.
6   Scroll down the page, expand **Chipset**, and select your chipset driver.
7   Click **Download File** to download the latest version of the chipset driver for your laptop.

8 After the download is complete, navigate to the folder where you saved the driver file.

9 Double-click the chipset driver file icon and follow the instructions on the screen.

Intel chipset drivers

Verify if the Intel chipset drivers are already installed in the laptop.

Table 22. Intel chipset drivers

Before installation	After installation

Intel HD Graphics drivers

Verify if the Intel HD Graphics drivers are already installed in the laptop.

Table 23. Intel HD Graphics drivers

Before installation	After installation

Getting help

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.