Latitude 3410

Setup and specifications guide

1

Regulatory Model: P129G
Regulatory Type: P129G001/P129G002

May 2020
Rev. A00

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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1

Set up your computer

Steps

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

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

2. Finish Windows system setup.

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

   - Connect to a network for Windows updates.

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

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

Table 1. Locate Dell apps

Dell apps	Details
	Dell Product Registration Register your computer with Dell.
	Dell Help & Support Access help and support for your computer.

Table 1. Locate Dell apps(continued)

Dell apps	Details
	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 preinstalled 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.

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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.

3

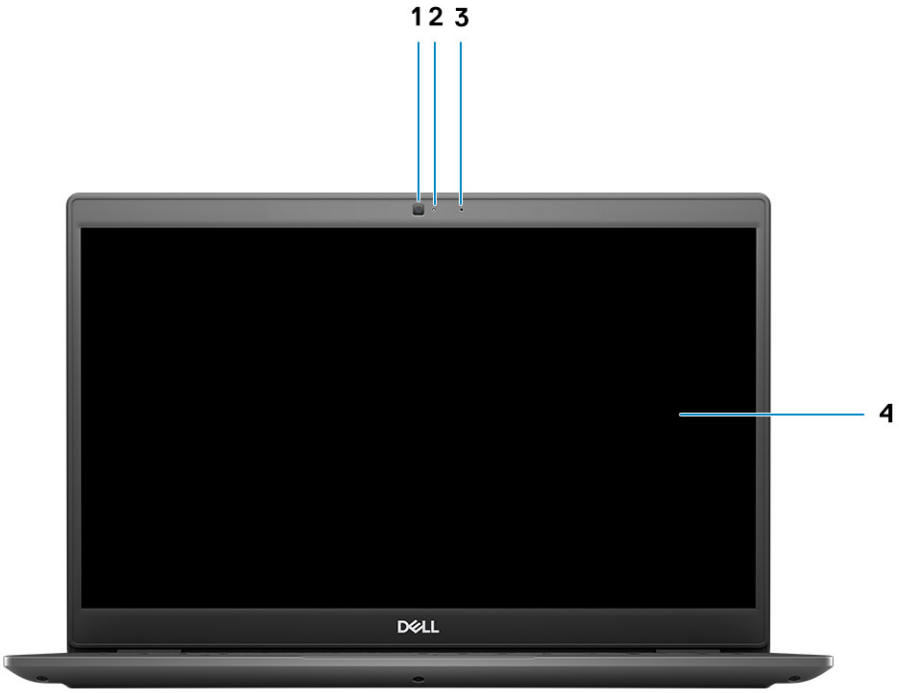
Chassis overview

Topics:

- Display view
- Left view
- Right view
- Palmrest view
- Bottom view
- Keyboard shortcuts

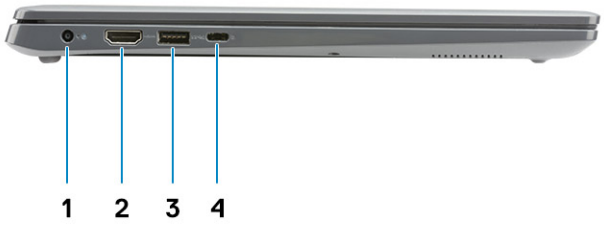
Display view

Latitude 3410 display



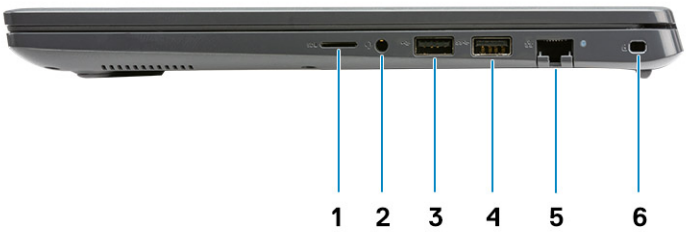
1. Camera
2. Camera status light
3. Microphone
4. LCD Panel

Left view



1. DC-in port
2. HDMI 1.4 port
3. USB 3.2 Gen 1 PowerShare
4. USB 3.2 Gen 1 Type-C port with DisplayPort 1.2 Alt mode

Right view

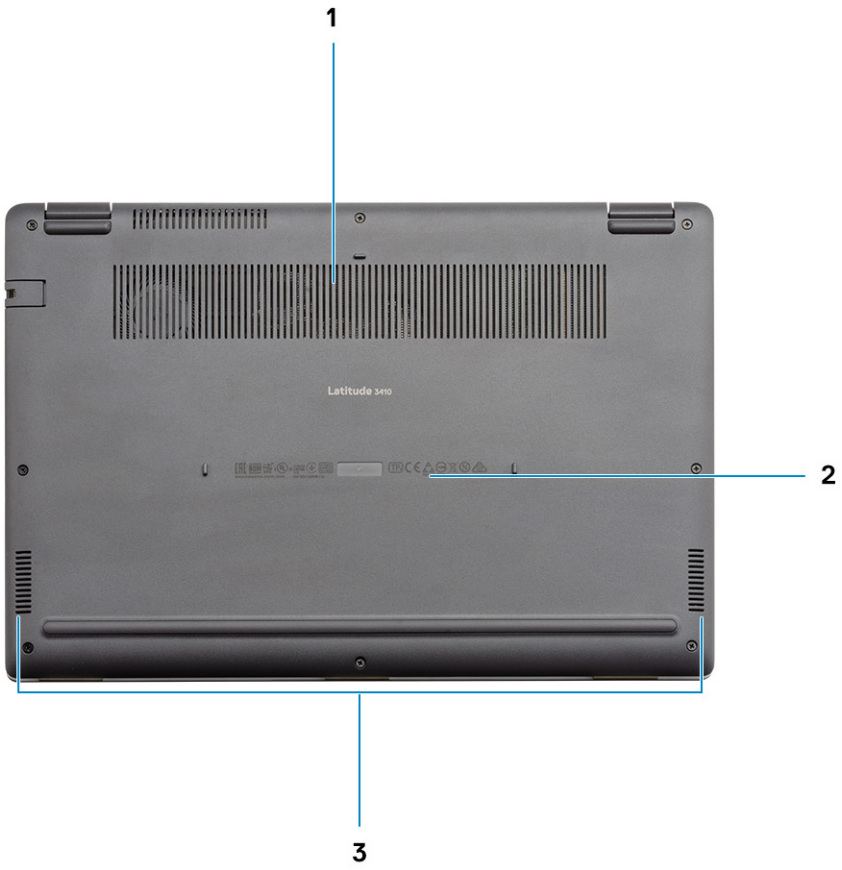


1. MicroSD 3.0 card reader slot
2. Universal audio jack
3. USB 2.0 Type-A port
4. USB 3.2 Gen 1 Type-A port
5. Network port
6. Wedge-shaped security slot

Palmrest view

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

Bottom view



1. Air vent
2. Service tag location
3. Speakers

Keyboard shortcuts

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

Table 2. List of keyboard shortcuts

Keys	Primary behavior
Fn + Esc	Toggle Fn-key lock
Fn + F1	Mute audio
Fn + F2	Decrease volume
Fn + F3	Increase volume
Fn + F4	Play/Pause
Fn + F5	Turn on/off keyboard backlight

Table 2. List of keyboard shortcuts(continued)

Keys	Primary behavior
Fn + F6	Decrease brightness
Fn + F7	Increase brightness
Fn + F8	Switch to external display
Fn + F10	Print screen
Fn + F11	Home
Fn + 12	End
Fn + Ctrl	Open application menu

4

Technical specifications

Processors

Table 3. Processors

Description	Values				
Processors	Intel Celeron 5205U Processors	10th Generation Intel Core i3 Processors, i3-10110U	10th Generation Intel Core i5 Processors, i5-10210U	10th Generation Intel Core i5 Processors, i5-10310U	10th Generation Intel Core i7 Processors, i7-10510U
Wattage	15 W	15 W	15 W	15 W	15 W
Core count	2	2	4	4	4
Thread count	2	4	8	8	8
Speed	Up to 1.9 GHz	Up to 4.1 GHz	Up to 4.2 GHz	Up to 4.4 GHz	Up to 4.9 GHz
Cache	2 MB	4 MB	6 MB	6 MB	8 MB
Integrated graphics	Intel UHD Graphics	Intel UHD Graphics	Intel UHD Graphics	Intel UHD Graphics	Intel UHD Graphics

Chipset

Table 4. Chipset

Description	Values	
Processor	Intel 10th Generation Core i3 / i5 / i7	Intel Celeron 5000 Series
Chipset	Intel	Intel
DRAM bus width	64-bit	64-bit
PCIe bus	Up to Gen 3	Up to Gen 2

Operating system

- Windows 10 Professional (64-bit)
- Ubuntu 18.04
- Neokylin 7.0 (PRTS)

Memory

Table 5. Memory specifications

Description	Values
Slots	Two SODIMM slots
Type	DDR4
Speed	• 2400 MHz (Intel Celeron) • 2667 MHz (Intel Core i3 / i5 / i7)
Maximum memory	32 GB
Minimum memory	4 GB
Configurations supported	• 4 GB DDR4 at 2400 MHz/2667 MHz (1x4 GB) • 8 GB DDR4 at 2400 MHz/2667 MHz (2 x 4 GB) • 8 GB DDR4 at 2400 MHz/2667 MHz (1 x 8 GB) • 16 GB DDR4 at 2400 MHz/2667 MHz (1 x 16 GB) • 16 GB DDR4 at 2400 MHz/2667 MHz (2 x 8 GB) • 32 GB DDR4, 2400 MHz/2667 MHz (2 x 16 GB)

Storage

Your computer supports one of the following configurations:

- 2.5-in. 5400/7200 RPM, SATA hard drive
- M.2 2230/2280 for solid-state drive

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

- 2.5-in. 5400/7200 RPM, SATA hard drive
- M.2 2230/2280 for solid-state drive

NOTE: System's configured with 40Whr battery would only support M.2 solid-state drives for storage.

Table 6. Storage specifications

Form factor	Interface type	Capacity
2.5-in. 5400 rpm, hard drive	SATA	1 TB
2.5-in. 7200 rpm, hard drive	SATA	500 GB
M.2 2230/2280 solid-state drive	PCIe NVMe 3x4	Upto 512 GB
M.2 2280 Intel Optane Memory (10th Gen Processors)	PCIe NVMe 3x4	512 GB

NOTE: Intel Celeron 5000 Series Processors would support PCIe Gen 2 speeds only.

Intel UHD Graphics

Table 7. Intel UHD Graphics specifications

Intel UHD Graphics	
Bus Type	Integrated

Table 7. Intel UHD Graphics specifications(continued)

Intel UHD Graphics	
Memory Type	UMA
Graphics Level	i3/i5/i7: GT2 (UHD)
Estimated Maximum Power Consumption (TDP)	15 W (included in the CPU power)
Overlay Planes	Yes
Operating Systems Graphics/ Video API Support	DirectX 12, OpenGL (4.5 from Intel CML POR)
Maximum Vertical Refresh Rate	• HDMI 1.4: 4096 x 2160 @ 60 Hz, 24bpp, Via optional USB Type-C to HDMI dongle • Max Digital: (DP 1.2 over Type-C Port) 4096 x 2304 @ 60 Hz, 24bpp
Number of display supported	Up to three displays supported via DisplayPort Multi-Streaming Technology (MST)
Multiple Display Support	Via Type-C: HDMI 1.4 (via optional USB-C cable to HDMI cable); DisplayPort 1.2 (via optional USB-C cable or USB-C to DP cable);
External Connectors	• USB Type–C port • HDMI 1.4 port

Ports and connectors

Table 8. External ports and connectors

Description	Values
External:	
Network	One Flip-down RJ 45 10/100/1000 Mbps
USB	• One USB 3.2 Gen 1 Type-C port with DisplayPort alt mode/ Power Delivery • One USB 3.2 Gen 1 Type-A port with PowerShare • One USB 3.2 Gen 1 Type-A port • One USB 2.0 Type-A port
Audio	One Universal Audio Jack
Video	One HDMI 1.4 port
Power adapter port	4.5 mm barrel-type
Security	One Wedge shaped lock slot
Card slot	One microSD 3.0 card slot

Table 9. Internal ports and connectors

Description	Values
Internal:	
One M.2 Key-M (2280 or 2230) for solid-state drive One M.2 2230 Key-E for WLAN	• One M.2 2230 slot for Wi-Fi • One M.2 slot for 2230/2280 solid-state drive

Table 9. Internal ports and connectors(continued)

Description	Values
	NOTE: To learn more about the features of different types of M.2 cards, see the knowledge base article SLN301626.
SIM card	Not Supported

Audio

Table 10. Audio specifications

Description	Values
Controller	Realtek ALC3204
Stereo conversion	Supported
Internal interface	High definition audio
External interface	Universal Audio Jack
Speakers	Two
Speaker Output Average	2 W
Speaker Output Peak	2.5 W

Video

Table 11. Discrete graphics specifications

Discrete graphics			
Controller	**External display support**	**Memory size**	**Memory type**
NVIDIA GeForce MX230	Not Supported	2 GB	GDDR5

Table 12. Integrated graphics specifications

Integrated graphics			
Controller	**External display support**	**Memory size**	**Processor**
Intel UHD Graphics	• One HDMI 1.4 • One USB 3.2 Gen 1 Type-C with DisplatPort 1.2 alt mode	Shared system memory	• Intel Celeron Processor 5000 series processors • Intel 10th Generation Core i3 / i5 / i7 processors

Camera

Table 13. Camera specifications

Standard Webcam		
Description		**Values**
Number of cameras		One
Type		HD RGB camera
Location		Front Camera
Sensor type		CMOS sensor technology
Resolution:		
	Still image	0.92 megapixel
	Video	1280 x 720 (HD) at 30 fps
Diagonal viewing angle		87 degrees

Table 14. IR Webcam specifications

IR Webcam		
Description		
Number of cameras		One
Type		HD RGB-IR camera
Location		Front Camera
Sensor type		CMOS sensor technology
Resolution		
Camera		
Still image (megapixel)		0.92
	Video	1280 x 720 (HD) at 30 fps
	Infrared camera	
Still image		0.23 megapixel
Video		640 x 360 at 30 fps
Diagonal viewing angle		
	Camera	87 degree
	Infrared camera	87 degree

Communications

Ethernet

Table 15. Ethernet specifications

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

Wireless module

Table 16. Wireless module specifications

Description	Values	
Model number	Intel Wi-Fi 6 AX201	Qualcomm QCA61x4A
Transfer rate	Up to 2400 Mbps	Up to 867 Mbps
Frequency bands supported	2.4 GHz/5 GHz	2.4 GHz/5 GHz
Wireless standards	• WiFi 802.11a/b/g • Wi-Fi 4 (Wi-Fi 802.11n) • Wi-Fi 5 (Wi-Fi 802.11ac) • Wi-Fi 6 (WiFi 802.11ax)	• WiFi 802.11a/b/g • Wi-Fi 4 (Wi-Fi 802.11n) • Wi-Fi 5 (Wi-Fi 802.11ac)
Encryption	• 64-bit/128-bit WEP • AES-CCMP • TKIP	• 64-bit/128-bit WEP • AES-CCMP • TKIP
Bluetooth	Bluetooth 5.1	Bluetooth 5.0

Media-card reader

Table 17. Media-card reader specifications

Description	Values
Type	One Micro SD 3.0 card
Cards supported	• Micro Secure Digital (mSD) • Micro Secure Digital High Capacity(mSDHC) • Micro Secure Digital Extended Capacity(mSDXC)

Power adapter

Table 18. Power adapter specifications

Description	Values		
Type	45 W	65 W	65 W Type-C (Optional)

Table 18. Power adapter specifications(continued)

Description	Values		
Connector dimensions:	4.5 mm x 2.9 mm	4.5 mm x 2.9 mm	48.26 mm x 129.54 mm x 215.9 mm
Input voltage	100 VAC x 240 VAC	100 VAC x 240 VAC	100 VAC x 240 VAC
Input frequency	50 Hz x 60 Hz	50 Hz x 60 Hz	50 Hz x 60 Hz
Input current (maximum)	1.30 A	1.60 A / 1.70 A	1.70 A
Output current (continuous)	2.31 A	3.34 A	3.25 A
Rated output voltage	19.50 VDC	19.50 VDC	20 VDC
Temperature range:			
Operating	0°C to 40°C (32°F to 104°F)	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)	-40°C to 70°C (-40°F to 158°F)

Battery

Table 19. Battery specifications

Description	Values	
Type	40 Whr	53 Whr
Voltage	11.40 VDC	15.20 VDC
Weight (maximum)	0.18 kg (0.40 lb)	0.24 kg (0.53 lb)
Dimensions:		
Height	184.10 mm (7.25 in.)	239.10 mm (9.41 in.)
Width	90.73 mm (3.57 in.)	90.73 mm (3.57 in.)
Depth	5.75 mm (0.23 in.)	5.75 mm (0.23 in.)
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) **NOTE: Control the charging time, duration, start and end time, and so on using the Dell Power Manager application. For more information on the Dell Power Manager see, *Me and My Dell* on www.dell.com/**	4 hours (when the computer is off) **NOTE: Control the charging time, duration, start and end time, and so on using the Dell Power Manager application. For more information on the Dell Power Manager see, *Me and My Dell* on www.dell.com/**

Table 19. Battery specifications(continued)

Description	Values	
Life span (approximate)	300 discharge/charge cycles	300 discharge/charge cycles
Coin-cell battery	CR2032	CR2032
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 20. Dimensions and weight

Description	Values
Height:	
Front	18.35 mm (0.72 in.)
Rear	18.35 mm (0.72 in.)
Width	326.50 mm (12.85 in.)
Depth	226.38 mm (8.91 in.)
Weight	1.61 kg (3.54 lb) **NOTE: The weight of your tablet depends on the configuration ordered and the manufacturing variability.**

Display

Table 21. Display specifications

Decsription		Values		
Type		Full High Definition (FHD)	Full High Definition (FHD)	High Definition (HD)
Panel technology		WLED	WVA(wide view angle)	TN
Luminance (typical)		220 nits	220 nits	220 nits
Dimensions (active area):				
	Height	173.99 mm (6.85 in.)	173.99 mm (6.85 in.)	173.99 mm (6.85 in.)
	Width	309.35 mm (12.17 in.)	309.35 mm (12.17 in.)	309.35 mm (12.17 in.)
	Diagonal	355.60 mm (14.00 in.)	355.60 mm (14.00 in.)	355.60 mm (14.00 in.)
Native resolution		1920 x 1080	1920 x 1080	1366 x 768
Megapixels		2.0736	2.0736	1.049
Color gamut		0.45	NTSC 45% Typ.	NTSC 45% Typ.
Pixels per inch (PPI)		157	157	112

Table 21. Display specifications (continued)

Decsription	Values		
Contrast ratio (min)	500:1	500:1	400:1
Response time (max)	35 ms	35 ms	16 ms
Refresh rate	60 Hz	60 Hz	60 Hz
Horizontal view angle	80 degrees	80 degrees	40 degrees
Vertical view angle	80 degrees	80 degrees	Top/bottom 10/30 degrees
Pixel pitch	0.16 mm	0.16 mm	0.22 mm
Power consumption (maximum)	3.15 W	3.15 W	3.15 W
Anti-glare vs glossy finish	Anti-glare	Anti-glare	Anti-glare
Touch options	Yes	No	No

Fingerprint reader

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

NOTE: Systems with Intel Celeron 5000 series processors ship with firmware TPM only.

Security Software

Table 24. Security Software specifications

Specifications
Dell Client Command Suite
Optional Dell Data Security and Management Software

Table 24. Security Software specifications(continued)

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

Computer environment

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

Table 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.

5

Software

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

Topics:

- Downloading Windows drivers

Downloading Windows drivers

Steps

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.

6

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
- Overview
- Boot Configuration
- Integrated Devices
- Storage
- Connection
- Power
- Security
- Passwords
- Update Recovery
- System Management
- Keyboard
- Pre-boot Behavior
- Virtualization
- Performance
- System Logs
- 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 that are 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.

Table 26. UEFI Boot options

Options
Windows Boot Manager
UEFI hard drive

Table 27. Other Options

Options	Description
BIOS SETUP	Allows the user to configure the BIOS and control system functions
Diagnostics	Allows the user to run system tests to identify issues
BIOS Update	Allows the user to search and install the latest BIOS updates
SupportAssist OS Recovery	Used to analyze, repair, and restore the operating system on the system
BIOS Flash Update - Remote	
Device Configuration	

Navigation keys

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

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

Overview

This section provides hardware specification for the system and contains no modifiable settings.

Table 28. BIOS Overview Page

Options	Description
Series and system model number	This field shows the following information: • BIOS Version - The version of the BIOS installed on the computer. • Service tag - The unique 7 digit hexadecimal identification number for the computer. • Asset tag • Manufacture Date - The date for when the unit was manufactured. • Ownership Date - The date for when the unit's ownership was transferred to the end user. • Express Service Code - An alternative to Service Tag, 11-digit numerical identification number for the computer. • Ownership Tag • Signed Firmware Update - This helps to verify that only Dell Signed and released BIOS can be installed on the computer.
Battery	The Battery field provides battery and adapter related information:

Table 28. BIOS Overview Page(continued)

Options	Description

	• Primary battery - This helps identify if the system is running on the primary battery.
	• Battery level - This gives the percentage of battery backup remaining for the computer.
	• Battery state - This helps identify if the battery is in charging or active use state.
	• Health - This helps identify the health of the battery. It would show one of the following states based on the battery life remaining:
	  ○ Excellent
	  ○ Good
	  ○ Fair
	  ○ Poor
	• AC Adapter - This helps identify if the charger is plugged in and mentions the wattage of the charger connected.

Processor	The Processor field provides information related to the CPU on the computer: • Processor Type - This field mentions the CPU model and generation information. • Maximum Clock Speed - This field mentions the maximum clock speed that the CPU is capable of reaching. • Minimum Clock Speed - This field mentions the minimum clock speed that the CPU is capable of reaching. • Current Clock Speed - This field mentions the clock speed that the CPU is running at currently. • Core Count - This field gives the count of the physical cores on the CPU. • Processor ID • Processor L3 Cache - This field gives mentions the amount of cache storage available on the CPU. • Microcode Version • Intel Hyper-Threading Capable - This field helps identify if the CPU is capable of Hyper-Threading. • 64-bit Technology - This field helps identify the CPU architecture.
Memory	The Memory field provides information related to the memory on the computer: • Memory Installed - This field gives the amount of memory installed available on the computer. • Memory Available - This field gives the amount of memory available for use on the computer. • Memory Speed - This field mentions the speed at which the memory runs on the computer. • Memory Channel Mode - This field helps us identify if the computer has Dual-Channel memory utilization capability. • DIMM_SLOT 1 - This field shows the capacity of the memory installed in the first DIMM slot. • DIMM_SLOT 2 - This field shows the capacity of the memory installed in the second DIMM slot.
Devices	The Devices field provides information related to the memory on the computer:

Table 28. BIOS Overview Page(continued)

Options	Description
	• Panel Type - This field mentions the type of display panel used on the computer. • Video controller - This field mentions the type of video controller used on the computer. • Video Memory - This field gives the capacity of the video memory available for use on the computer. • Wi-Fi Device - This field mentions the type wireless device available for use on the computer. • Native Resolution - This field mentions the native video resolution supported on the computer. • Video BIOS Version - The version of the BIOS installed on the computer. • Audio Controller - This field mentions the type of audio controller used on the computer. • Bluetooth Device - This field mentions the type Bluetooth device available for use on the computer. • LOM MAC Address - This field provides the unique MAC address for the computer. • Pass Through MAC Address - This field provides the MAC address used to override the dock or dongle MAC address every time it's connected to the network.

Boot Configuration

This section provides Boot Configuration related details and settings.

Table 29. Boot Configuration:

Options	Description
Boot Sequence	
Boot Mode: UEFI only	This section allows the user to choose the first bootable device that the computer should use to boot the system. It lists all potential bootable devices. • Windows Boot Manager • UEFI Boot Drive • Add Boot option - Allows the user to manually add a Boot path.
Secure Digital(SD) Card Boot	This section contains a toggle switch that allows the user to enable or disable the option to allow the computer to boot from an SD Card.
Secure Boot	
Enable Secure Boot	This section contains a toggle switch that allows the user to enable or disable Secure Boot.
Secure Boot Mode	This section allows the user to select one of the two Secure Boot options available on the computer: • Deployed Mode - This mode checks the integrity of UEFI drivers and bootloaders before allowing execution. This option allows for full Secure Boot protections. • Audit Mode - This mode performs a signature check but never does a block execution of all UEFI drivers and bootloaders. This mode is only used when making changes to Secure Boot Keys.

Table 29. Boot Configuration: (continued)

Options	Description
Expert Key Management	
Enable Custom Mode	This section contains a toggle switch that allows the user to enable or disable Custom Mode. This mode allows the PK, KEK, db and dbx security key databases to be manipulated.
Custom Mode Key Management	This section helps the user to select the Key Database to allow modification. The options available are as below: • PK • KEK • db • dbx

Integrated Devices

This section provides Integrated Devices details and settings.

Table 30. Integrated Devices

Options	Description
Date/Time	
Date	This section allows the user to change the date which takes effect immediately. The format used is MM/DD/YYYY
Time	This section allows the user to change the time which takes effect immediately. The format used is HH/MM/SS in 24 hour format. The user also has an option to switch between 12-hours or 24-hours clock.
Camera	
Enable Camera	This section contains a toggle switch that allows the internal webcam.
Audio	
Enable Audio	This section contains a toggle switch that allows the user to enable or disable the audio on the computer. It also allows the user to: • Enable Microphone • Enable Internal Speakers
USB Configuration	This section helps the user to make changes to the USB settings on the computer. The options available are as follows: • Enable USB Boot Support - Allows the system to boot from an external USB device. • Enable External USB Ports - Allows the user to enable or disable the USB ports on the computer.

Storage

This section provides Storage details and settings.

Table 31. Storage

Options	Description
SATA Operation	
SATA Operation	This section allows the user to select the operating mode of the integrated SATA hard drive controller. The following options are available here: • Disabled - SATA controllers are disabled. • AHCI - SATA is configured in AHCI mode. • RAID On - SATA is setup to support RAID (Intel Rapid Storage Technology).
Storage Interface	
Port Enablement	This section allows the user to enable or disable the onboard drives on the computer. The following options are available here: • SATA-0 • M.2 PCIe SSD-0
SMART Reporting	
Enable SMART Reporting	This section contains a toggle switch that allows the user to enable or disable the S.M.A.R.T(Self-Monitoring, Analysis, and Reporting Technology) option on the system.
Drive Information	This section provides information about the connected and active drives on the computer.The following options are available here: • SATA-0 ○ Type ○ Device • M.2 PCIe SSD-0 ○ Type ○ Device
Enable MediaCard	This section allows the user to switch all media cards On/Off, or enable/disable the media card in read-state only. The options seen are as below • Secure Digital(SD) Card • Secure Digital(SD) Card Read-Only Mode

Connection

This section provides connection details and settings.

Table 32. Connection

Options	Description
Wireless Device Enable	This section contains a toggle switch that allows the user to enable or disable WLAN and Bluetooth on the computer. The options are as follows: • WLAN • Bluetooth
Enable UEFI Network Stack	This section contains a toggle switch that allows the user to enable or disable installation of UEFI networking protocols.

Table 32. Connection(continued)

Options	Description
Wireless Radio Control	This section contains a toggle switch that allows the user to enable or disable a feature where the system will sense a connection to a wired network and disable the WLAN or WWAN connection.

Power

This section provides power details and settings.

Table 33. Power

Options	Description
Battery configuration	This section provides options to enable different power modes on the computer. The options are as follows: • Adaptive - battery settings are adaptively optimized based on the users typical battery usage patterns. • Standard - Fully charge the battery at a standard rate. • ExpressCharge - The battery may be charged over a shorter period using Dell's fast charging technology. • Primarily AC use - The battery lifespan for users who primarily operate their system while plugged in to an external power source. • Custom - Custom select when the battery starts and stops charging. ○ Custom Charge Start ○ Custom Charge Stop
Advanced Configuration	
Enable Advanced Battery Charge Configuration	This feature maximizes battery health while still supporting heavy use during the work day. The section contains a toggle switch that allows the user to enable or disable this feature and set the daily times and work time periods.
Peak Shift	This feature allows the computer to run on battery during peak usage hours. The section contains a toggle switch that allows the user to enable or disable this feature and set the Peak Shift Start/End times and Peak Shift Charge Start/End.
USB PowerShare	This setting contains a toggle witch which allows the user to enable or disable this feature. It allows for any external USB devices to charge via the designated USB PowerShare port, even when the computer is on sleep mode.
Thermal Management	This setting allows for cooling fan and processor heat management to adjust system performance, noise and temperature. The options available are as below: • Optimized - Standard setting for cooling fan and processor heat management. • Cool - Processor and cooling fan speed are adjusted for a cooler system surface temperature. • Quiet - Processor and cooling fan speed are adjusted to reduce fan noise. • Ultra Performance - Processor and cooling fan speed are increased for more performance.

Security

This section provides security details and settings.

Table 34. Security

Options	Description
TPM 2.0 Security	
TPM 2.0 Security On	This section contains a toggle switch to select whether Trusted Platform Module(TPM) is visible to the Operating System(OS).
PPI Bypass for Enabled Commands	This section contains a toggle switch which controls the TPM Physical Presence Interface(PPI). When enabled, this setting allows the OS to skip BIOS PPI user prompts when issuing TPM PPI enable and activate commands.
PPI Bypass for Disabled Commands	This section contains a toggle switch which controls the TPM Physical Presence Interface(PPI). When enabled, this setting will allow the OS to skip BIOS PPI user prompts when issuing TPM PPI disable and deactivate commands(#2, 4, 7, 9, & 11).
PPI Bypass for Clear Commands	This section contains a toggle switch which controls the TPM Physical Presence Interface(PPI). When enabled, this setting will allow the OS to skip BIOS PPI user prompts when issuing the clear command.
Attestation Enable	This section contains toggle switch which lets the user control whether the TPM Endorsement Hierarchy is available to the OS.
Key Storage Enable	This sections contains a toggle switch that allows the user to control whether TPM Storage Hierarchy is available to the operating system.
SHA-256	This sections contains a toggle switch that when enabled, allows the BIOS and the TPM to use the SHA-256 hash algorithm to extend measurements into the TPM PCRs during BIOS boot.
Clear	This section contains toggle switch which clears the TPM owner information, and returns the TPM to the default state.
TPM State	This section allows the user to enable or disable the TPM. this is the normal operating state for the TPM when you want to use its complete arrays of capabilities.
Intel Software Guard Extension	
Intel SGX	This sections allows the user to select the Intel Software Guard Extension Enclave Reserve Memory Size. The options are as follows: • Disabled • Enabled • Software Control
SMM Security Mitigation	This section allows the user to enable or disable UEFI SMM security Mitigation protections.
Data Wipe on Next Boot	

Table 34. Security(continued)

Options	Description
Start Data Wipe	This section contains toggle switch which when enabled ensures that the BIOS will queue up a data wipe cycle for storage device(s) connected to the motherboard on the next reboot.
Absolute	
Absolute	This section lets the user enable, disable or permanently disable the BIOS module interface of the optional Absolute Persistence Module service from Absolute Software. The options available are as follows: • Enable Absolute - Enables Absolute Persistence and load the firmware Persistence Module • Disable Absolute - Disables Absolute Persistence. The firmware Persistence Module is not installed. • Permanently Disable Absolute - Permanently disables Absolute Persistence module interface from further use.
UEFI Boot Path Security	
UEFI Boot Path Security	This section lets the user control whether or not the system will prompt the user to enter the admin password(if set) when booting to a UEFI booth path device from F12 boot menu. The options available are as below: • Never • Always • Always Except Internal HDD • Always Except Internal HDD&PXE

Passwords

This section provides details on password settings.

Table 35. Passwords

Options	Description
Admin Password	This field allows the user to set, change, or delete the administrator password.
System Password	This field allows the user to set, change, or delete the system password.
Internal HDD-0 Password	This field allows the user to set, change, or delete the Hard Drive password.
Password Configurator	
Upper Case Letter	Enable or disable reinforced use of upper case letters.
Lower Case Letter	Enable or disable reinforced use of lower case letters.
Digit	Enable or disable reinforced use of at least one digit.
Special Character	Enable or disable reinforced use of at least one special character.
Minimum Character	Allows the user to select the number of characters allowed for a password.

Table 35. Passwords(continued)

Options	Description
Password Bypass	
Password Bypass	When enabled, this always prompts for system and internal hard drive passwords when powered on from Off state. Options available are as below: • Disabled • Reboot Bypass
Password Changes	
Enable Non-Admin Password Changes	This section contains a toggle switch which when on, user can change system and hard drive password without the need for admin password.
Password Changes	
Enable Non-Admin Password Changes	This section contains a toggle switch which when on, user can change system and hard drive password without the need for admin password.
Admin Setup Lockout	
Enable Admin Setup Lockout	This section contains a toggle switch which allows the administrator to control how users can or cannot access BIOS setup.
Master Password Lockout	
Enable Master Password Lockout	This section contains a toggle switch which allows the user to disable master password support.

Update Recovery

This section provides details on Update Recovery settings.

Table 36. Update Recovery

Options	Description
UEFI capsule Firmware Updates	
Enable UEFI Capsule Firmware Updates	This field contains a toggle switch which allows the user to enable or disable BIOS updates via UEFI capsule update packages.
BIOS Recovery from Hard Drive	
BIOS Recovery from Hard Drive	This field contains a toggle switch which allows the user to enable or disable recovery from certain corrupted BIOS conditions from a recovery file on the user's primary hard drive or an external USB key.
BIOS Downgrade	
Allow BIOS Downgrade	This field contains a toggle switch which allows the user to enable or disable flashing of the system firmware to previous revisions.
SupportAssist OS Recovery	
SupportAssist OS Recovery	This field contains a toggle switch which allows the user to enable or disable the boot flow for SupportAssist OS Recovery tool in the events of certain system errors.

Table 36. Update Recovery(continued)

Options	Description
BIOSConnect	
BIOSConnect	This field contains a toggle switch which allows the user to enable or disable BIOSConnect setup to attempt cloud Service OS recovery if the main operating system fails to boot with a set number of failures.
Dell Auto OS Recovery Threshold	
Dell Auto OS Recovery Threshold	This field allows the user to select and number of failed boot attempts by the system before SupportAssist OS Recovery is triggered. The options here are as below: • Off • 1 • 2 • 3

System Management

This section provides System Management settings.

Table 37. System Management

Options	Description
Service Tag	
Service Tag	This field provides the unique Service Tag of the computer.
Asset Tag	
Asset Tag	This field provides the unique up to 64 character identification that can be set by the IT administrator.
AC Behaviour	
Wake on AC	This field contains a toggle switch which allows the user to enable or disable the feature where the system boots when charger is detected.
Wake on LAN	
Wake on LAN	This field allows the user to select if and how the system should boot when connected to LAN. The options here are as follows: • Disabled - The system will not boot with any special LAN signals. • LAN only - Allows the system to be powered on by a special LAN signal from a network computer. • LAN with PXE Boot - Allows the system to wake-up from S4 or S5 state and boot to PXE.
Auto On Time	
Auto On Time	This field allows the user to set defined days/time when the sytem can automatically power on. The options here are as follows: • Disabled • Everyday • Weekdays

Table 37. System Management(continued)

Options	Description
	• Select Days

Keyboard

This section provides keyboard settings.

Table 38. Keyboard

Options	Description
Numlock Enable	
Enable Numlock	This field contains a toggle switch to enable or disable Numlock function on boot.
Fn Lock Options	
Fn Lock Options	This field contains a toggle switch to change the mode of the function keys. The options are as follows: • Lock Mode Standard - Traditional F1-F12 functions • Lock Mode Secondary - Enables secondary functions on the Fn keys.
Keyboard Illumination	
Keyboard Illumination	This field allows the user to set the keyboard illumination settings. The options available are as follows: • Disabled - The keyboard illumination will be off • Dim - Enable the keyboard illumination feature at 50% brightness level • Bright - Enable the keyboard illumination feature at 100% brightness level
Keyboard Backlight Timeout on AC	
Keyboard Backlight Timeout on AC	This field allows the user to define the timeout value for the backlight when the AC adapter is connected to the computer. The options here are as follows: • 5 seconds • 10 seconds • 15 seconds • 30 seconds • 1 minute • 5 minute • 15 minute • Never
Keyboard Backlight Timeout on Battery	
Keyboard Backlight Timeout on Battery	This field allows the user to define the timeout value for the backlight when the battery is powering to the computer. The options here are as follows: • 5 seconds • 10 seconds • 15 seconds • 30 seconds

Table 38. Keyboard(continued)

Options	Description
	• 1 minute • 5 minute • 15 minute • Never

Pre-boot Behavior

This section provides Pre-boot Behavior details and settings.

Table 39. Pre-boot Behavior

Options	Description
Adapter Warnings	
Enable Adapter Warnings	This field contains a toggle switch to enable or disable warning messages during boot when adapters with low power capacity are detected.
Warning and Errors	
Warning and Errors	This field allows the user to enable or disable boot process to be paused only when warnings or errors are detected. The options are as follows: • Prompt on Warnings and Errors - Stop, prompt and wait for user input when warnings or errors are detected • Continue on Warnings - Continue when warnings are detected but pause on errors • Continue on Warnings and Errors - Continue when either warnings or errors are detected during POST
USB-C Warnings	
Enable Dock Warning Messages	This field contains a toggle switch to enable or disable dock warning messages.
Fastboot	
Fastboot	This field allows the user to configure the speed of the UEFI boot process. The options here are as follows: • Minimal - reduces boot time by skipping certain hardware and configuration initialization during boot • Thorough - Performs complete hardware and configuration initialization during boot • Auto - Allows the BIOS to decide configuration initialization performed during boot
Extend BIOS POST Time	
Extend BIOS POST Time	This field allows the user to configure the BIOS POST load time. The options are as follows: • 0 seconds • 5 seconds • 10 seconds
MAC Address Pass-Through	

Table 39. Pre-boot Behavior(continued)

Options	Description
MAC Address Pass-Through	This field allows the user to configure the MAC address pass-through replacing the external NIC MAC address.: • System Unique MAC Address • Integrated NIC 1 MAC Address • Disabled

Virtualization

This section provides details on Virtualization settings.

Table 40. Virtualization

Options	Description
Intel Virtualization Technology	
Enable Intel Virtualization Technology(VT)	This field contains a toggle switch to enable or disable Virtualization to run Virtual machine monitor(VMM).
VT for Direct I/O	
Enable Intel VT for Direct I/O	This field allows the user to enable or disable the system from being able to perform VT for Direct I/O.
Intel Trusted Execution Technology(TXT)	
Enable Intel Trusted Execution Technology(TXT)	This field contains a toggle switch to enable or disable the option to allow a Measured VMM to utilize the additional hardware capabilities provided by Intel TXT. The following must be enabled to configure Intel TXT: • Trusted Platform Module(TPM) • Intel Hyper-Threading • All CPU cores(Multi-Core Support) • Intel Virtualization technology • Intel VT for Direct I/O

Performance

This section provides Performance settings.

Table 41. Performance

Multi-Core Support	
Active Cores	This field allows the user to configure the number of active cores on the computer. The options are as follows: • All Cores • 1 • 2 • 3
Intel SpeedStep	
Enable Intel SpeedStep Technology	This field contains a toggle switch to enable or disable Intel SpeedStep Technology which allows the computer to dynamically

Table 41. Performance(continued)

	adjust processor voltage and core frequency, decreasing average power consumption and heat production.
C-States Control	
Enable C-States Control	This field contains a toggle switch to enable or disable C-States Control that configures the CPU's ability to enter and exit low power states. When off, it disables all C-States.
Intel Turbo Boost Technology	
Enable Intel Turbo Boost Technology	This field allows the user to enable or disable Intel Turbo Boost Technology. • Disabled - Does not allow the Intel Turbo Boost Technology driver to increase the performance state of the processor above the standard performance. • Enabled - Allows the Intel Turbo Boost Technology to increase the performance of the CPU or graphics processor.
Intel Hyper-Threading Technology	
Enable Intel Hyper-Threading Technology	This field allows the user to configure this feature where the processor resources are used more effectively, enabling multiple threads to run on each core.

System Logs

This section contains BIOS, Thermal and Power event logs.

Table 42. System Logs

Options	Description
BIOS Event Log	
Clear BIOS Event log	This field contains a toggle switch to Keep or Clear BIOS Event logs. It also lists all saved events(Date, Time, Message).
Thermal Event Log	
Clear Thermal Event Log	This field contains a toggle switch to Keep or Clear Thermal Event logs. It also lists all saved events(Date, Time, Message).
Power Event Log	
Clear Power Event Log	This field contains a toggle switch to Keep or Clear Power Event logs. It also lists all saved events(Date, Time, Message).

Updating the BIOS in Windows

Prerequisites

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.

About this task

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.

Steps

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 your system BIOS using a USB flash drive

About this task

If the system cannot load into Windows, but there is still a need to update the BIOS, download the BIOS file using another system and save it to a bootable USB Flash Drive.

NOTE: You will need to use a bootable USB flash drive. Please refer to the following article for further details How to Create a Bootable USB Flash Drive using Dell Diagnostic Deployment Package (DDDP)

Steps

1. Download the BIOS update .EXE file to another system.
2. Copy the file e.g. O9010A12.EXE onto the bootable USB flash drive.
3. Insert the USB flash drive into the system that requires the BIOS update.
4. Restart the system and press F12 when the Dell splash logo appears to display the One Time Boot Menu.
5. Using arrow keys, select **USB Storage Device** and click **Enter**.
6. The system will boot to a Diag C:\> prompt.
7. Run the file by typing the full filename, for example, O9010A12.exe and press **Enter**.
8. The BIOS Update Utility will load. Follow the instructions on screen.

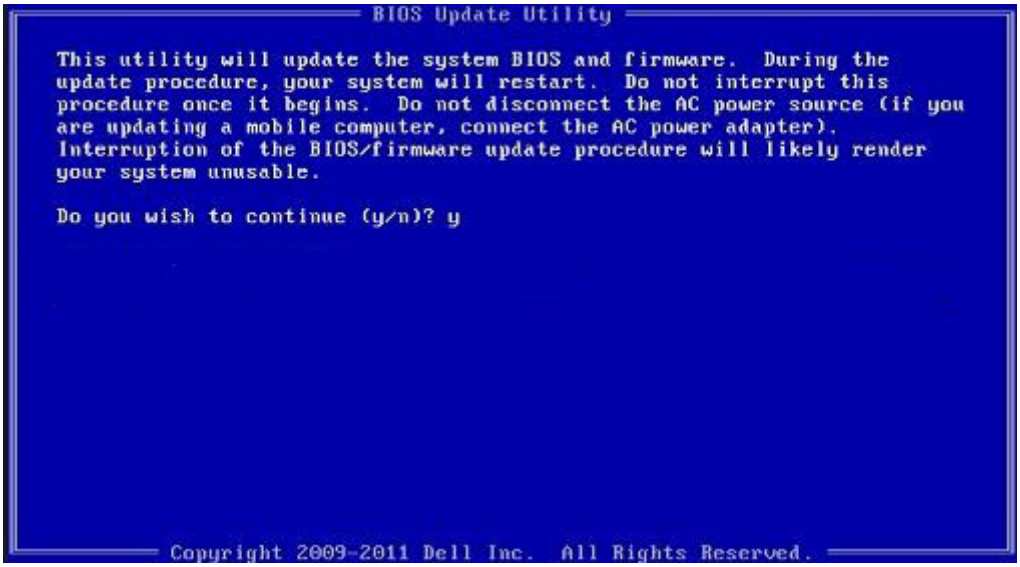


Figure 1. DOS BIOS Update Screen

System and setup password

Table 43. System and setup password

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

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

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

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

NOTE: System and setup password feature is disabled.

Assigning a system setup password

Prerequisites

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

About this task

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

Steps

1. In the **System BIOS** or **System Setup** screen, select **Security** and press **Enter**.
   The **Security** screen is displayed.
2. Select **System/Admin Password** and create a password in the **Enter the new password** field.
   Use the following guidelines to assign the system password:
   - A password can have up to 32 characters.

- The password can contain the numbers 0 through 9.
- Only lower case letters are valid, upper case letters are not allowed.
- Only the following special characters are allowed: space, ("), (+), (,), (-), (.), (/), (;), ([), (\), (]), (`).

3. Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
4. Press Esc and a message prompts you to save the changes.
5. Press Y to save the changes.
   The computer reboots.

Deleting or changing an existing system setup password

Prerequisites

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

About this task

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

Steps

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

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

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

7

Getting help

Topics:

- Contacting Dell

Contacting Dell

Prerequisites

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.