Precision 3450 Small Form Factor

Setup and Specifications

Regulatory Model: D15S
Regulatory Type: D15S104
July 2022
Rev. A06

DELL Technologies

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.

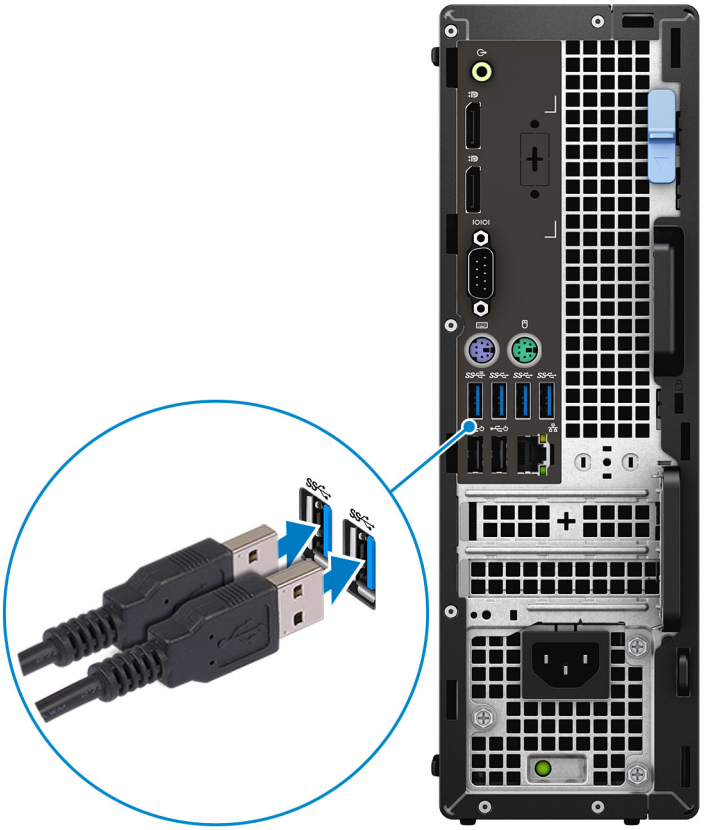
WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

1

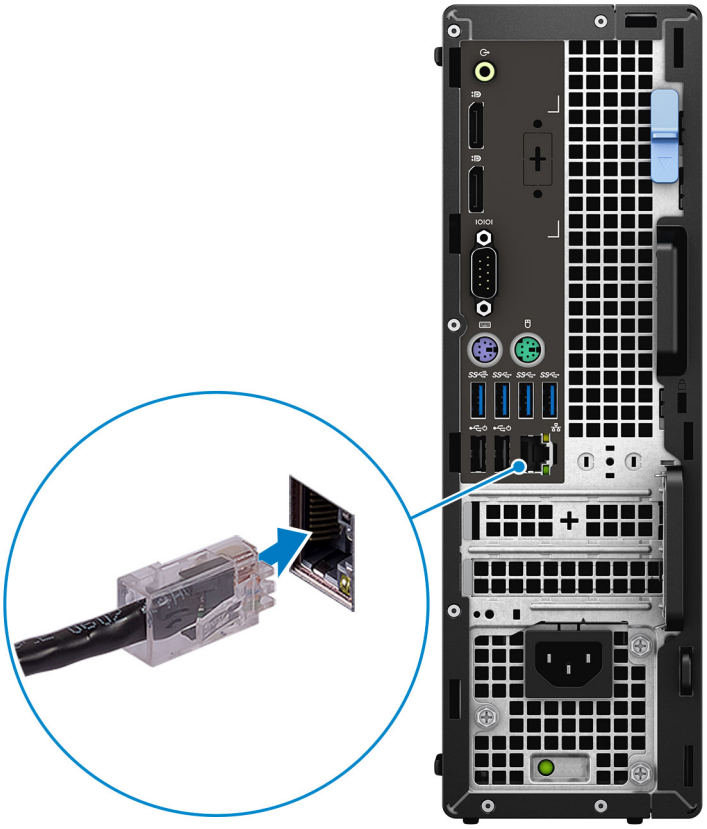
Set up your computer

Steps

1. Connect the keyboard and mouse.



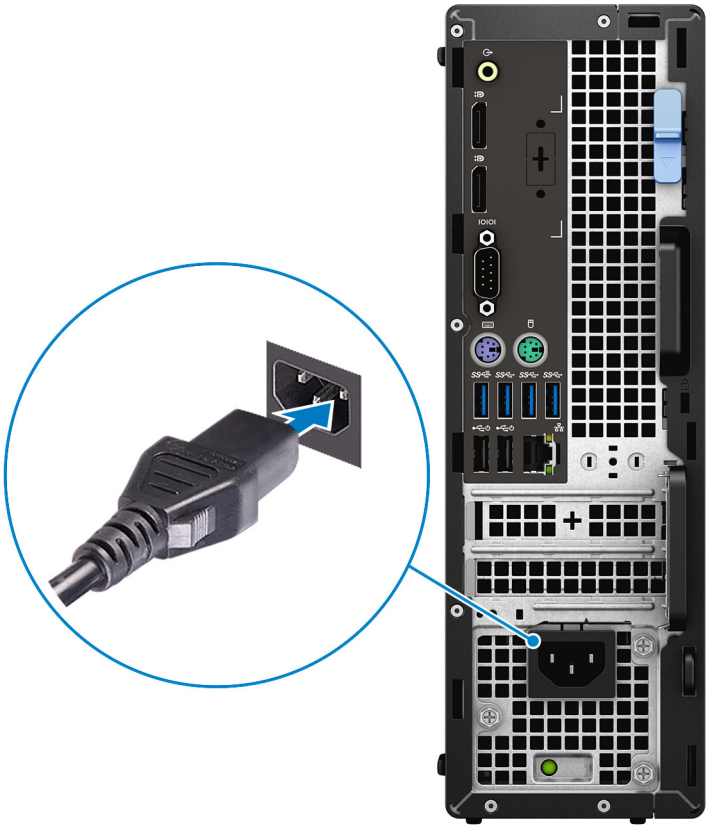
2. Connect to your network using a cable, or connect to a wireless network.



3. Connect the display.

NOTE: If you ordered your computer with a discrete graphics card, connect the display cable to the discrete graphics card connectors.

4. Connect the power cable.



5. Press the power button.

6. Finish operating system setup.

   For Windows: 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.

   a. Connect to a network.
   b. Sign-in to your Microsoft account or create a new account.

7. Locate and use Dell apps from the Windows Start menu.

Table 1. Locate Dell apps

	Dell Product Registration Register your computer with Dell.
	Dell Help & Support Access help and support for your computer.
	SupportAssist Proactively checks the health of your computer's hardware and software.

Table 1. Locate Dell apps (continued)

	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.

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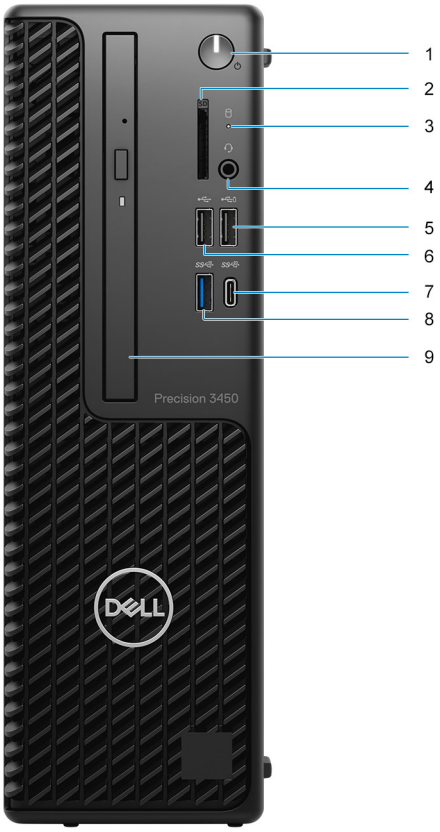
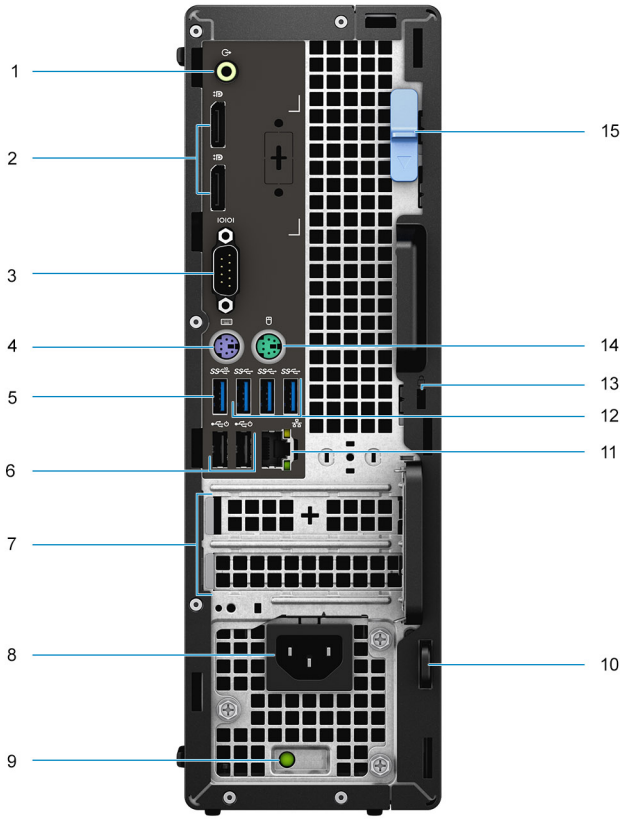
Views of Precision 3450 Small Form Factor

Front



1. Power button and power light
2. SD card reader (Optional)
3. Hard drive activity light
4. Universal audio jack port
5. USB 2.0 port with PowerShare
6. USB 2.0 port
7. USB 3.2 Gen2x2 capable Type-C® port
8. USB 3.2 Gen2 port
9. Optical disk drive (Optional)

Back



1. Line -in/out retasking
2. Two DisplayPort 1.4 ports
3. Serial Port
4. PS/2 Keyboard port
5. USB 3.2 Gen 2 port
6. Two USB 2.0 ports with Power On
7. Expansion card slots
8. Power connector port
9. Power supply diagnostic light
10. Padlock loop
11. Network port
12. Three USB 3.2 Gen 1 ports
13. Kensington security-cable slot
14. PS/2 Mouse port
15. Release latch

3

Specifications of Precision 3450 Small Form Factor

Dimensions and weight

Table 2. Dimensions and weight

Description	Values
Height:	
Front	290 mm (11.42 in.)
Rear	290 mm (11.42 in.)
Width	92.6 mm (3.65 in.)
Depth	292.8 mm (11.53 in.)
Weight (maximum)	5.956 kg (13.131 lb) **NOTE:** The weight of your computer depends on the configuration ordered and the manufacturing variability.

Processors

The following table lists the details of the processors supported by your Precision 3450 Small Form Factor

NOTE: 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.

Device Guard is a combination of enterprise-related hardware and software security features that, when configured together, will lock a device down so that it can only run trusted applications. If it is not a trusted application, it cannot run.

Credential Guard uses virtualization-based security to isolate secrets (credentials) so that only privileged system software can access them. Unauthorized access to these secrets can lead to credential theft attacks. Credential Guard prevents these attacks by protecting NTLM password hashes and Kerberos Ticket Granting Tickets.

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

Table 3. Processors

Processors	Wattage	Core count	Thread count	Speed	Cache	Integrated graphics	GSP	DG/CG Ready
10th Generation Intel Core i3-10105	65 W	4	8	3.7 GHz to 4.4 GHz	6 MB	Intel UHD Graphics 630	No	Yes

Table 3. Processors (continued)

Processors	Wattage	Core count	Thread count	Speed	Cache	Integrated graphics	GSP	DG/CG Ready
10th Generation Intel Core i5-10505	65 W	6	12	3.1 GHz to 4.5 GHz	12 MB	Intel UHD Graphics 630	No	Yes
10th Generation Intel Core i5-10600	65 W	6	12	3.3 GHz to 4.8 GHz	12 MB	Intel UHD Graphics 630	No	Yes
10th Generation Intel Core i7-10700	65 W	8	16	2.9 GHz to 4.8 GHz	16 MB	Intel UHD Graphics 630	No	Yes
10th Generation Intel Core i9-10900	65 W	10	20	2.8 GHz to 5.2 GHz	20 MB	Intel UHD Graphics 630	No	Yes
11th Generation Intel Core i5-11500	65 W	6	12	2.7 GHz to 4.6 GHz	12 MB	Intel UHD Graphics 750	Yes	Yes
11th Generation Intel Core i5-11600	65 W	6	12	2.8 GHz to 4.8 GHz	12 MB	Intel UHD Graphics 750	Yes	Yes
11th Generation Intel Core i7-11700	65 W	8	16	2.5 GHz to 4.9 GHz	16 MB	Intel UHD Graphics 750	Yes	Yes
11th Generation Intel Core i9-11900	65 W	8	16	2.5 GHz to 5.2 GHz	16 MB	Intel UHD Graphics 750	Yes	Yes
Intel Xeon W-1250	80 W	6	12	3.3 GHz to 4.4 GHz	12 MB	Intel UHD Graphics 630	Yes	Yes
Intel Xeon W-1270	80 W	8	16	3.2 GHz to 4.7 GHz	16 MB	Intel UHD Graphics 630	Yes	Yes
Intel Xeon W-1290	80 W	10	20	3.7 GHz to 4.9 GHz	20 MB	Intel UHD Graphics 630	Yes	Yes
Intel Xeon W-1350	80 W	6	12	3.3 GHz to 5.0 GHz	12 MB	Intel UHD Graphics P750	Yes	Yes
Intel Xeon W-1370	80 W	8	16	2.9 GHz to 5.1 GHz	16 MB	Intel UHD Graphics P750	Yes	Yes
Intel Xeon W-1390	80 W	8	16	2.8 GHz to 5.2 GHz	16 MB	Intel UHD Graphics P750	Yes	Yes

Chipset

Table 4. Chipset

Description	Values
Chipset	Intel W580
Processor	10th Generation Intel Core i3/5/i7/i9/Xeon/11th Generation Intel Core/i5/i7/i9/Xeon
DRAM bus width	Two channels, 128-bit
Flash EPROM	32 MB
PCIe bus	Upto Gen 3
Non-volatile memory	Yes
BIOS Configuration Serial Peripheral Interface (SPI)	256 Mbit (32 MB) located at SPI_FLASH on chipset
Trusted Platform Module (Discrete TPM Enabled)	24 KB located at TPM 2.0 on chipset
Firmware TPM (Discrete TPM Disabled)	By default the Platform Trust Technology feature is visible to the OS
NIC EEPROM	LOM configuration contained within SPI flash ROM instead of LOM e-fuse

Operating system

Your Precision 3450 Small Form Factor supports the following operating systems:

- Windows 11 Home, 64-bit
- Windows 11 Pro, 64-bit
- Windows 11 Pro National Academic, 64-bit
- Windows 11 Pro for Workstations, 64-bit
- Windows 10 Home, 64-bit
- Windows 10 Pro, 64-bit
- Windows 10 Pro National Academic, 64-bit
- RHEL 8.4
- Ubuntu Linux 20.04 LTS, 64-bit

Memory

The following table lists the memory specifications of your Precision 3450 Small Form Factor:

Table 5. Memory specifications

Description	Values
Slots	4 DIMM slots
Type	DDR4
Speed	• 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250 processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W1290 processors, 2933 MHz/ 3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1370/W1390 processors

Table 5. Memory specifications (continued)

Description	Values
Maximum memory	128 GB
Minimum memory	8 GB
Memory size per slot	4 GB, 8 GB, 16 GB, 32 GB
Configurations supported	• 8 GB, 2 x 4 GB, DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250 processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W1290 processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1370/W1390 processors • 8 GB, 1 x 8 GB, DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250 processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W1290 processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1370/W1390 processors • 16 GB, 2 x 8 GB, DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250 processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W1290 processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1370/W1390 processors • 16 GB, 4 x 4 GB, DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250 processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W1290 processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1370/W1390 processors • 32 GB, 2 x 16 GB, DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250 processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W1290 processors, 2933 MHz/3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1370/ W1390 processors • 32 GB, 4 x 8 GB, DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250 processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W1290 processors, 2933 MHz/3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1370/ W1390 processors • 64 GB, 4 x 16 GB, DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250 processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W1290 processors, 2933 MHz/3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1370/ W1390 processors • 128 GB, 4 x 32 GB, DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250 processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W1290 processors, 2933 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1370/W1390 processors **NOTE:** Memory speed varies by different type of DPC (DIMM per Channel) installation

Memory configuration matrix

Table 6. Memory configuration matrix

Configuration	Slot			
	XMM1	XMM2	XMM3	XMM4
4 GB DDR4	4 GB			
8 GB DDR4	4 GB	4 GB		
8 GB DDR4	8 GB			
16 GB DDR4	8 GB	8 GB		
16 GB DDR4	16 GB			
32 GB DDR4	8 GB	8 GB	8 GB	8 GB
32 GB DDR4	16 GB	16 GB		
32 GB DDR4	32 GB			
64 GB DDR4	16 GB	16 GB	16 GB	16 GB
64 GB DDR4	32 GB	32 GB		
64 GB DDR4	64 GB			
128 GB DDR4	32 GB	32 GB	32 GB	32 GB

NOTE: Memory speed varies by different type of DPC (DIMM per Channel) installation.

NOTE: Systems configured with 128 GB memory will only run at 2933MHz.

NOTE: Memory on systems configured with 11th Generation Intel processors will run at 2933 MHz clock speed when in Dual-channel mode.

Table 7. Dual-channel mode

Channel A	Channel B	Memory speed
2 UDIMM	None	2666/2933/3200 MHz
None	2 UDIMM	2666/2933/3200 MHz
2 UDIMM	2 UDIMM	2666/2933/3200 MHz

External ports

The following table lists the external ports of your Precision 3450 Small Form Factor.

Table 8. External ports

Description	Values
Network port	1 RJ-45
USB ports	• One USB 2.0 Type-A port (front) • One USB 2.0 Type-A with PowerShare (front) • One USB 3.2 Gen 2 (front) • One USB 3.2 Gen 2x2 capable Type-C® port (front) • Two USB 2.0 ports with SmartPower On (rear) • Three USB 3.2 Gen 1 ports (rear)

Table 8. External ports (continued)

Description	Values
	• One USB 3.2 Gen 2 port (rear)
Audio port	• One Universal Audio Jack (front) • One Line -in/out retasking (rear)
Video port	• Two DisplayPort 1.4 port (rear) • One DisplayPort 1.4 port (rear, optional) • One VGA port (rear, optional) • One HDMI 2.0 port (rear, optional) • One Type-C w/DP-Alt mode (rear, optional) **NOTE:** Download and install the latest Intel Graphics driver from www.dell.com/support to enable multiple displays.
Legacy port	• One serial port (rear) • Two PS/2 ports (rear)
Media-card reader	One SD-card 4.0 slot
Power-adapter port	AC-in
Security	• One Wedge-shaped lock • One Padlock Loop • One Lockable Port Cover • One Intrusion switch

Internal slots

The following table lists the internal slots of your Precision 3450 Small Form Factor.

Table 9. Internal slots

Description	Values
PCIe Expansion	• One Half-height Gen 4 PCIe x16 slot • One Half-height Gen 3 PCIe x4 slots
SATA	• Two SATA 3.0 slot for 3.5-inch/2.5-inch hard drive • One SATA 2.0 slot for slim optical drive
M.2	• Two M.2 2280 slot for solid-state drive • One M.2 2280/2230 slot for PCIe solid-state drive/Intel Optane • One M.2 2230 slot for WiFi/Bluetooth card **NOTE:** To learn more about the features of different types of M.2 cards, see the knowledge base article SLN301626 at www.dell.com/support.

Ethernet

Table 10. Ethernet specifications

Description	Values
Model number	Intel i219-LM
Transfer rate	10/100/1000 Mbps

Wireless module

The following table lists the Wireless Local Area Network (WLAN) modules supported on your Precision 3450 Small Form Factor.

Table 11. Wireless module specifications

Description	Option one	Option two
Model number	Qualcomm QCA61x4a (DW1820)	Intel AX201
Transfer rate	Up to 867 Mbps	Up to 2400 Mbps
Frequency bands supported	2.4 GHz/5 GHz	2.4 GHz/5 GHz
Wireless standards	• WiFi 802.11a/b/g • Wi-Fi 4 (WiFi 802.11n) • Wi-Fi 5 (WiFi 802.11ac)	• Wi-Fi 802.11a/b/g • Wi-Fi 4 (Wi-Fi 802.11n) • Wi-Fi 5 (Wi-Fi 802.11ac) • Wi-Fi 6 (Wi-Fi 802.11ax)
Encryption	• 64-bit/128-bit WEP • AES-CCMP • TKIP	• 64-bit/128-bit WEP • AES-CCMP • TKIP
Bluetooth	Bluetooth 5.0	Bluetooth 5.2

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Precision 3450 Small Form Factor.

Table 12. GPU—Integrated

Controller	External display support	Memory size	Processor
Intel UHD Graphics 630	Two DisplayPort 1.4	Shared system memory	10th Generation Intel Core i3/i5/i7/i9
Intel UHD Graphics 750	Two DisplayPort 1.4	Shared system memory	11th Generation Intel Core i5/i7/i9
Intel UHD Graphics P750	Two DisplayPort 1.4	Shared system memory	11th Generation Intel Xeon

GPU - Discrete

The following table lists the specifications of the discrete graphics processing unit (GPU) supported by your Precision 3450 Small Form Factor.

Table 13. GPU - Discrete

Controller	External display support	Memory size	Memory Type
AMD Radeon 550	• Two DisplayPort 1.2	2 GB	GDDR5
AMD Radeon 540	• Two DisplayPort 1.2	4 GB	GDDR5
AMD Radeon Pro WX 2100	• One DisplayPort 1.4 • Two Mini DisplayPort 1.4	2 GB	GDDR5
AMD Radeon Pro WX 3200	• Four Mini DisplayPort 1.4	4 GB	GDDR5
NVIDIA Quadro P400	• Three Mini DisplayPort 1.4	2 GB	GDDR5
NVIDIA Quadro P630	• Four Mini DisplayPort 1.4	3 GB	GDDR5
NVIDIA Quadro P1000	• Two DisplayPort 1.2	4 GB	GDDR5

Audio and Speaker

The following table lists the audio specifications of your Precision 3450 Small Form Factor.

Table 14. Audio and speaker specifications

Description	Values
Audio Type	4 Channel High Definition Audio
Audio Controller	Realtek ALC3246
Internal interface	High definition audio interface
External interface	Universal Audio Jack

Storage

Your computer supports one of the following configurations:

- One 2.5-inch hard-disk drive
- Two 2.5-inch hard-disk drives
- One 3.5-inch hard-disk drive
- One 2.5-inch hard-disk drive and one 3.5-inch hard-disk drive
- One 2280 solid-state drive (class 40)
- Two 2280 solid-state drive (class 40)
- One M.2 2280 solid-state drive (class 40) and one 3.5-inch hard-disk drive
- One M.2 2280 solid-state drive (class 40) and one 2.5-inch hard-disk drive
- One M.2 2280 solid-state drive (class 40) and two 2.5-inch hard-disk drives

Table 15. Storage specifications

Storage type	Interface type	Capacity
2.5 in. hard-disk drive, 5400 RPM	SATA	Upto 2 TB

Table 15. Storage specifications (continued)

Storage type	Interface type	Capacity
2.5 in. hard-disk drive, 7200 RPM	SATA	Upto 1 TB
2.5 in. hard-disk drive, 7200 RPM, FIPS Self Encrypting Opal 2.0	SATA	Upto 500 GB
3.5 in, hard-disk drive, 5400 RPM	SATA	Upto 4 TB
3.5 in, hard-disk drive, 7200 RPM	SATA	Upto 2 TB
M.2 2280 solid-state drive	Gen 3 PCIe x4 NVMe, Class 40	Upto 2 TB
M.2 2280 Opal Self-Encrypting solid-state drive	Gen 3 PCIe x4 NVMe, Class 40	Upto 1 TB

Hard drive preloaded bracket matrix

Table 16. HDD preloaded bracket cable

3.5-inch Caddy/Bracket	Yes
2.5-inch Caddy/Bracket	No

Media-card reader

Table 17. Media-card reader specifications

Type	SD-card 4.0 (Optional)
Cards supported	• SD card • microSecure Digital (mSD) • microSecure Digital High Capacity (mSDHC) • microSecure Digital Extended Capacity (mSDXC)

Power ratings

The following table lists the power rating specifications of Precision 3450 Small Form Factor.

Table 18. Power ratings

Description	Option one	Option two
Type	260 W Bronze	300 W Platinum
Input voltage	90 V AC to 264 V AC	90 V AC to 264 V AC
Input frequency	47 Hz to 63 Hz	47 Hz to 63 Hz
Input current (maximum)	• 4.2 A • 2.1 A	• 4.2 A • 2.1 A
Output current (continuous)	• 12 VA/16 A • 12 VB/18 A Stanby mode:	• 12 VA/18 A • 12 VB/18 A Stanby mode:

Table 18. Power ratings (continued)

Description		Option one	Option two
		• 12 VA/1.5 A • 12 VB/2.5 A	• 12 VA/1.5 A • 12 VB/3.3 A
Rated output voltage		• +12 VA • +12 VB	• +12 VA • +12 VB
Temperature range			
	Operating	5°C to 45°C (41°F to 113°F)	5°C to 45°C (41°F to 113°F)
	Storage	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)

Multiple display support matrix

Table 19. Integrated - Multiple display support matrix

Graphics Card	Intel 630	Intel 750	Intel P750
Memory	UMA	UMA	UMA
Video Ports on Graphics Card	2 x DisplayPorts	2 x DisplayPorts	2 x DisplayPorts
Max Displays (direct connect)	2	2	2
Max Displays (DP multi-stream)	1	1	1
Number of displays	3	3	3
Supported Resolution	DP: 4096 x 2304 @60 Hz, 24 bpp	DP: 4096 x 2304 @60 Hz, 24 bpp	DP: 4096 x 2304 @60 Hz, 24 bpp
Total Power	65 W	65 W	65 W

Security Software

Table 20. Security Software

Features	Description
Dell Endpoint Security Suite Enterprise	Optional
Dell Data Guardian	Optional
Dell Encryption (Enterprise or Personal)	Optional
Dell Threat Defense	Optional
RSA SecurID Access	Optional
RSA NetWitness Endpoint	Optional
MozyPro or MozyEnterprise	Optional

Table 20. Security Software (continued)

Features	Description
VMware Airwatch/WorkspaceONE	Optional
Absolute Data & Device Security	Optional

Add-in cards

Table 21. Add-in cards

Add-in cards
USB 3.1 Gen 2 Type-C PCIe card
USB 3.1 Gen 2 PCIe card
Serial and parallel port PCIe card
Intel Gigabit NIC PCIe card
Aquantia AQtion AQN-108 5/2.5 GbE NIC adapter

CAC/PIV Module

Table 22. CAC/PIV Module

Features	Tower/Small Form Factor/Micro
Connector Type	ISO 7816 compliant contact smart card NFC forum 2.0
PCB	
Dimensions (W x L x T)	74.5 mm x 45.7 mm
Layer	6
Controller Details	
Controller bus architecture (example PCIe 1.0a x1)	USB 2.0
Data transfer mode (example Bus-Master DMA)	USB 2.0
Power consumption (full operation per data rate connection speed)	288.08 mA x 3.3 V
Power consumption (standby operation)	8.9 mA x 3.3 V
Standard compliance (example 802.1P)	NFC Forum 2.0, ISO7816
Hardware Certifications (example FCC, B, GS mark…)	FIPS201, FIPS140-2
Boot ROM Support	Integrated inside Lynx SoC
Processor/Chipset	
NFC	Broadcom Cortex-M3 BC58102
Card reader driver	NXP TDA8034HN/C2

Table 22. CAC/PIV Module (continued)

Features	Tower/Small Form Factor/Micro
USB 2.0 Hub	GENESYS GL850G-OHY50
PROM	WINBOND W25Q32JVSSIQ 32M/bit
Power IC	RICHTEK RT5796AHGJ5
Power LDO (NFC VBAT)	GMT G9141T11U
Environmental	
Operating System Driver Support	Dell ControlVault2 Driver
Manageability (examples WOL, PXE)	No, this is not a LAN controller chipset.
Management Capabilities Alerting (example ASF 2.0)	No, this is not a LAN controller chipset.
Add-in Slots	
Card reader connector	1 (10 PIN)
USB 2.0 header	1 (5 PIN)
NFC header	1 (6 PIN)

Environmental

The following table lists the environment specifications supported by your Precision 3450 Small Form Factor.

Table 23. Environmental specifications

Feature	Precision 3450 Small Form Factor
Recyclable packaging	Yes
BFR/PVC—free chassis	No
MultiPack packaging	Yes (US only) (optional)
Energy-Efficient Power Supply	Standard
ENV0424 compliant	Yes

NOTE: Wood-based fiber packaging contains a minimum of 35% recycled content by total weight of wood-based fiber. Packaging that contains without wood-based fiber can be claimed as Not Applicable.

Energy Star, EPEAT and Trusted Platform Module (TPM)

Table 24. Energy Star, EPEAT and TPM

Features	Specifications
Energy Star 8.0	Compliant configurations available
EPEAT	Gold and Silver compliant configurations available

Table 24. Energy Star, EPEAT and TPM (continued)

Features	Specifications
Trusted Platform Module (TPM) 2.0[1,2]	Integrated on system board
Firmware-TPM (Discrete TPM disabled)	Optional

NOTE:

[1]TPM 2.0 is FIPS 140-2 certified.

[2]TPM is not available in all countries.

Out of Band Systems Management Intel Standard Manageability

Intel Standard Manageability (ISM) must be configured in our factory at the time of purchase, as it is NOT field upgradable. ISM offers out-of-band management and DASH compliance https://registry.dmtf.org/registry/results/field_initiative_name%3A%22DASH%201.0%22. ISM offers a limited set of out-of-band features like remote power on/off, Serial-over-LAN redirect, Wake-on-LAN, etc. ISM leverages the same capabilities that were available with Intel's Active Management Technology (AMT) version 5.0.

To learn more about Intel ISM, visit Intel's website at: https://software.intel.com/en-us/blogs/2009/03/27/what-is-standard-manageability

Computer environment

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

Table 25. Computer environment

Description	Operating	Storage
Temperature range	10°C–35°C (50°F–95°F)	-40°C-65°C (-40°F-149°F)
Relative humidity (maximum)	20% to 85% (non-condensing)	5% to 95% (non-condensing)
Vibration (maximum)*	0.52 GRMS random at 5 Hz to 350 Hz	2.0 GRMS random at 5 Hz to 350 Hz
Shock (maximum)	Bottom half-sine pulse with a change in velocity of 50.8 cm/sec (20 in./sec)	105G half-sine pulse with a change in velocity of 133 cm/sec (52.5 in./sec)
Altitude (maximum)	3048 m (10,000 ft)	10,668 m (35,000 ft)

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

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

Service and support

NOTE: For more details on Dell Service Plans, see https://www.dell.com/learn/us/19/services/warranty-support-services.

Table 26. Warranty

Warranty
1 Year Basic Warranty with Hardware Service on site service after remote diagnosis

Table 26. Warranty (continued)

Warranty
2 Years Basic Warranty Extension
3 Years Basic Warranty Extension
4 Years Basic Warranty Extension
5 Years Basic Warranty Extension
1 Year ProSupport and Next Business Day on-site service
2 Years ProSupport and Next Business Day on-site service
3 Years ProSupport and Next Business Day on-site service
4 Years ProSupport and Next Business Day on-site service
5 Years ProSupport and Next Business Day on-site service
1 Year ProSupport Plus for Client with Next Business Day on-site service
2 Years ProSupport Plus for Client with Next Business Day on-site service
3 Years ProSupport Plus for Client with Next Business Day on-site service
4 Years ProSupport Plus for Client with Next Business Day on-site service
5 Years ProSupport Plus for Client with Next Business Day on-site service

Table 27. Accidental damage services

Accidental Damage Services
1 Year Accidental Damage Service
2 Years Accidental Damage Service
3 Years Accidental Damage Service
4 Years Accidental Damage Service
5 Years Accidental Damage Service

4

System setup

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

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

Use the BIOS Setup program for the following purposes:

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

Boot menu

Press <F12> when the Dell logo appears to initiate a one-time boot menu with a list of the valid boot devices for the system. Diagnostics and BIOS Setup options are also included in this menu. The devices listed on the boot menu depend on the bootable devices in the system. This menu is useful when you are attempting to boot to a particular device or to bring up the diagnostics for the system. Using the boot menu does not make any changes to the boot order stored in the BIOS.

The options are:

- UEFI Boot:
  - Windows Boot Manager
- Other Options:
  - BIOS Setup
  - BIOS Flash Update
  - Diagnostics
  - Change Boot Mode Settings

Navigation keys

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

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

Boot Sequence

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

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

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

- Removable Drive (if available)
- STXXXX Drive

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

  NOTE: Choosing **Diagnostics**, displays the **SupportAssist** screen.

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

System setup options

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

Table 28. System setup options—System information menu

Overview	
Precision 3450 SFF	
BIOS Version	Displays the BIOS version number.
Service Tag	Displays the Service Tag of the computer.
Asset Tag	Displays the Asset Tag of the computer.
Manufacture Date	Displays the manufacture date of the computer.
Ownership Date	Displays the ownership date of the computer.
Express Service Code	Displays the express service code of the computer.
Ownership Tag	Displays the Ownership Tag of the computer.
Signed Firmware Update	Displays whether the Signed Firmware Update is enabled on your computer.
Processor Information	
Processor Type	Displays the processor type.
Maximum Clock Speed	Displays the maximum processor clock speed.
Minimum Clock Speed	Displays the minimum processor clock speed.
Current Clock Speed	Displays the current processor clock speed.
Core Count	Displays the number of cores on the processor.
Processor ID	Displays the processor identification code.
Processor L2 Cache	Displays the processor L2 Cache size.
Processor L3 Cache	Displays the processor L3 Cache size.
Microcode Version	Displays the microcode version.
Intel Hyper-Threading Capable	Displays whether the processor is Hyper-Threading (HT) capable.
64-Bit Technology	Displays whether 64-bit technology is used.

Table 28. System setup options—System information menu (continued)

Overview	
Memory Information	
Memory Installed	Displays the total computer memory installed.
Memory Available	Displays the total computer memory available.
Memory Speed	Displays the memory speed.
Memory Channel Mode	Displays single or dual channel mode.
Memory Technology	Displays the technology that is used for the memory.
DIMM 1 Size	Displays the DIMM 1 memory size.
DIMM 2 Size	Displays the DIMM 2 memory size.
DIMM 3 Size	Displays the DIMM 3 memory size.
DIMM 4 Size	Displays the DIMM 4 memory size.
Devices Information	
Video Controller	Displays the video controller type of the computer.
Video Memory	Displays the video memory information of the computer.
Wi-Fi Device	Displays the wireless device information of the computer.
Native Resolution	Displays the native resolution of the computer.
Video BIOS Version	Displays the video BIOS version of the computer.
Audio Controller	Displays the audio controller information of the computer.
Bluetooth Device	Displays the Bluetooth device information of the computer.
LOM MAC Address	Displays the LAN On Motherboard (LOM) MAC address of the computer.
dGPU Video Controller	Displays the discrete video controller type of the computer.
Slot 1	Displays the SATA hard drive information of the computer.
Slot 2	Displays the SATA hard drive information of the computer.
Slot 3	Displays the SATA hard drive information of the computer.
Slot 4	Displays the SATA hard drive information of the computer.

Table 29. System setup options—Boot Configuration menu

Boot Configuration	
Boot Sequence	
Boot Mode: UEFI only	Displays the boot mode.
Boot Sequence	Displays the boot sequence.
Secure Digital (SD) Card Boot	Enable or disable the SD card read-only boot. By default, the **Secure Digital (SD) Card Boot** option is not enabled.
Secure Boot	
Enable Secure Boot	Enable or disable the secure boot feature. By default, the option is not enabled.
Secure Boot Mode	Enable or disable to change the secure boot mode options. By default, the **Deployed Mode** is enabled.
Expert Key Management	
Enable Custom Mode	Enable or disable custom mode.

Table 29. System setup options—Boot Configuration menu (continued)

Boot Configuration	
	By default, the **custom mode** option is not enabled.
Custom Mode Key Management	Select the custom values for expert key management.

Table 30. System setup options—Integrated Devices menu

Integrated Devices	
Date/Time	Displays the current date in MM/DD/YYYY format and current time in HH:MM:SS AM/PM format.
Audio	
Enable Audio	Enable or disable the integrated audio controller. By default, all the options are enabled.
Serial Port	
Serial Port Configuration	Enable or disable the serial port address. By default, the **COM1: Port is configured at 3F8h with IRQ4** option is enabled.
USB Configuration	• Enable or disable booting from USB mass storage devices through the boot sequence or boot menu. By default, all the options are enabled.
Front USB Configuration	Enable or disable the individual front USB ports. By default, all the options are enabled.
Rear USB Configuration	Enable or disable the individual rear USB ports. By default, all the options are enabled.
Miscellaneous Devices	Enable or disable the PCI Slot By default, the option is enabled.
Dust Filter Maintenance	Enable or disable the dust filter maintenance. By default, the **Disabled** option is enabled.

Table 31. System setup options—Storage menu

Storage	
SATA Operation	Enable or disable the operating mode of the integrated SATA hard drive controller. By default, the **AHCI**option is enabled.
Storage Interface	
Port Enablement	Enable or disable the onboard drives. By default, all the options are enabled.
SMART Reporting	
Enable SMART Reporting	Enable or disable Self-Monitoring, Analysis, and Reporting Technology (SMART) during computer startup. By default, the **Enable SMART Reporting** option is not enabled.
Drive Information	
SATA-0	
Type	Displays the SATA HDD type information of the computer.

Table 31. System setup options—Storage menu (continued)

Storage	
Device	Displays the SATA HDD device information of the computer.
SATA-1	
Type	Displays the SATA HDD type information of the computer.
Device	Displays the SATA HDD device information of the computer.
SATA-2	
Type	Displays the SATA HDD type information of the computer.
Device	Displays the SATA HDD device information of the computer.
SATA-3	
Type	Displays the SATA HDD type information of the computer.
Device	Displays the SATA HDD device information of the computer.
M.2 PCIe SSD-0	
Type	Displays the M.2 PCIe SSD-0 type information of the computer.
Device	Displays the M.2 PCIe SSD-0 device information of the computer.
M.2 PCIe SSD-1	
Type	Displays the M.2 PCIe SSD-1 type information of the computer.
Device	Displays the M.2 PCIe SSD-1 device information of the computer.
Enable MediaCard	
Secure Digital (SD) Card	Enable or disable the SD card. By default, the **Secure Digital (SD) Card** option is enabled.
Secure Digital (SD) Card Read-Only Mode	Enable or disable the SD card read-only mode. By default, the **Secure Digital (SD) Card Read-Only Mode** option is not enabled.

Table 32. System setup options—Display menu

Display	
Multi-Display	
Enable Multi-Display	Enable or disable the Enable Multi-Display buttons on the computer. By default, the option is enabled.
Primary Display	
Video Primary Display	Determines the primary display when multiple controllers are available on the computer By default, the **Auto** option is enabled.
Full Screen Logo	Enable or disable full screen logo. By default, the option is not enabled.

Table 33. System setup options—Connection menu

Connection	
Network Controller Configuration	
Integrated NIC	Controls the on-board LAN controller. By default, the **Enabled with PXE** option is enabled.

Table 33. System setup options—Connection menu (continued)

Connection	
Wireless Device Enable	
WLAN	Enable or disable the internal WLAN device By default, the option enabled.
Bluetooth	Enable or disable the internal Bluetooth device By default, the option enabled.
Enable UEFI Network Stack	Enable or disable UEFI Network Stack and controls the on-board LAN Controller. By default, the option is enabled.
HTTPs Boot Feature	
HTTPs Boot	Enable or disable the HTTPs Boot feature. By default, the **HTTPs Boot** option is enabled.
HTTPs Boot Mode	With Auto Mode, the HTTPs Boot extracts Boot URL from the DHCP. With Manual Mode, the HTTPs Boot reads Boot URL from the user-provided data. By default, the **Auto Mode** option is enabled.

Table 34. System setup options—Power menu

Power	
USB PowerShare	
Enable USB PowerShare	Enable or disable the USB PowerShare. By default, the **Enable USB PowerShare** option is enabled
USB Wake Support	
Enable USB Wake Support	When enabled, you can use the USB devices like a mouse or keyboard to wake your computer from standby. By default, the option is enabled.
AC Behavior	
AC Recovery	Enables the system to turn on automatically, when AC is inserted. By default, the **Power Off** option is enabled.
Active State Power Management	
Aspm	Enables or disables the Active State Power Management (ASPM) level By default, the **Auto** option is enabled.
Block Sleep	Enables to block entering sleep (S3) mode in the operating system. By default, the **Block Sleep** option is disabled.
Deep Sleep Control	Enable or disable the Deep Sleep mode support. By default, the **Disabled** option is enabled.
Fan Control Override	Enable or disable the fan control override feature. By default, the option is disabled.
Intel Speed Shift Technology	Enable or disable the Intel speed shift technology support. By default, the **Intel Speed Shift Technology** option is enabled.

Table 35. System setup options—Security menu

Security	
TPM 2.0 Security	
TPM 2.0 Security On	Enable or disable TPM 2.0 security options. By default, the **TPM 2.0 Security On** option is enabled.
Attestation Enable	Enables to control whether the Trusted Platform Module (TPM) Endorsement Hierarchy is available to the operating system. By default, the **Attestation Enable** option is enabled.
Key Storage Enable	Enables to control whether the Trusted Platform Module (TPM) Storage Hierarchy is available to the operating system. By default, the **Key Storage Enable** option is enabled.
SHA-256	BIOS and the TPM will use the SHA-256 hash algorithm to extend measurements into the TPM PCRs during BIOS boot. By default, the **SHA-256** option is enabled.
Clear	Enables to clear the TPM owner information and returns the TPM to the default state. By default, the **Clear** option is disabled.
PPI ByPass for Clear Commands	Controls the TPM Physical Presence Interface (PPI). By default, the **PPI ByPass for clear Commands** option is disabled.
Chassis intrusion	Controls the chassis intrusion feature. By default, the option is disabled.
SMM Security Mitigation	Enable or disable SMM Security Mitigation. By default, the option is enabled.
Data Wipe on Next Boot	
Start Data Wipe	Enable or disable the data wipe on next boot. By default, the option is disabled.
Absolute	Enable or disable or permanently disable the BIOS module interface of the optional Absolute Persistence Module service from Absolute software. By default, the **Enable Absolute** option is enabled.
UEFI Boot Path Security	Controls whether or not the computer will prompt the user to enter the admin password (if set) when booting to a UEFI boot device from the F12 boot menu. By default, the **Always Except Internal HDD** option is enabled.

Table 36. System setup options—Passwords menu

Passwords	
Admin Password	Set, change, or delete the administrator password.
System Password	Set, change, or delete the computer password.
Internal HDD-0 Password	Set, change, or delete the Internal HDD-0 password.
NVMe SSD0	Set, change, or delete the NVMe SSD0 password.
Password Configuration	
Upper Case Letter	Reinforces password must have at least one upper case letter. By default, the option is disabled.
Lower Case Letter	Reinforces password must have at least one lower case letter.

Table 36. System setup options—Passwords menu (continued)

Passwords	
	By default, the option is disabled.
Digit	Reinforces password must have at least one digit. By default, the option is disabled.
Special Character	Reinforces password must have at least one special character. By default, the option is disabled.
Minimum Characters	Set the minimum characters allowed for password.
Password Bypass	When enabled, this always prompts for computer and internal hard drive passwords when powered on from the off state. By default, the **Disabled** option is enabled.
Password Changes	
Enable Non-Admin Password Changes	Enable or disable to change computer and hard drive password without the need for admin password. By default, the option is enabled.
Admin Setup Lockout	
Enable Admin Setup Lockout	Enables administrators control over how their users can or cannot access BIOS setup. By default, the option is disabled.
Master Password Lockout	
Enable Master Password Lockout	When enabled, this will disable the master password support. By default, the option is disabled.
Allow Non-Admin PSID Revert	
Enable Allow Non-Admin PSID Revert	Controls access to the Physical Security ID (PSID) revert of NVMe hard-drives from the Dell Security Manager prompt. By default, the option is disabled.

Table 37. System setup options—Update, Recovery menu

Update, Recovery	
UEFI Capsule Firmware Updates	Enable or disable BIOS updates through UEFI capsule update packages. By default, the option is enabled.
BIOS Recovery from Hard Drive	Enables the user to recover from certain corrupted BIOS conditions from a recovery file on the user primary hard drive or an external USB key. By default, the option is enabled.
BIOS Downgrade	
Allow BIOS Downgrade	Enable or disable the flashing of the computer firmware to previous revision is blocked. By default, the option is enabled.
SupportAssist OS Recovery	Enable or disable the boot flow for SupportAssist OS Recovery tool in the event of certain computer errors. By default, the option is enabled.
BIOSConnect	Enable or disable cloud Service OS recovery if the main operating system fails to boot with the number of failures equal to or greater than the value specified

Table 37. System setup options—Update, Recovery menu (continued)

Update, Recovery	
	by the Auto OS Recovery Threshold setup option and local Service OS does not boot or is not installed. By default, the option is enabled.
Dell Auto OS Recovery Threshold	Controls the automatic boot flow for SupportAssist System Resolution Console and for Dell OS Recovery Tool. By default, the threshold value is set to 2.

Table 38. System setup options—System Management menu

System Management	
Service Tag	Display the Service Tag of the computer.
Asset Tag	Create a computer Asset Tag.
Wake on LAN/WLAN	Enable or disable the computer to power on by special LAN signals when it receives a wakeup signal from the WLAN. By default, the **Disabled** option is selected.
Auto on Time	Enable to set the computer to turn on automatically every day or on a preselected date and time. This option can be configured only if the Auto On Time is set to Everyday, Weekdays, or Selected Days. By default, the option is disabled.
Intel AMT Capability	
Enable Intel AMT Capability	Enable or disable the Intel AMT capabilty. By default, the **Restrict MEBx Access** option is enabled.
MEBx Hotkey	Enable or disable MEBx hotkey. By default, the option is disabled.
USB Provision	
Enable USB Provision	Enable or disable the Intel AMT provisioning using the local provisioning file through a USB storage device. By default, the option is disabled.
SERR Messages	Enable or disable SERR messages. By default, the option is enabled.
Dell Development Configuration	
Enable Flash Updated Signature Override	Enable or disable certain features to control BIOS By default, the option is disabled.

Table 39. System setup options—Keyboard menu

Keyboard	
Keyboard Errors	
Enable Keyboard Error Detection	Enable or disable the keyboard error detection. By default, the option is enabled.
Numlock LED	
Enable Numlock LED	Enable or disable Numlock LED. By default, the option is enabled.

Table 39. System setup options—Keyboard menu (continued)

Keyboard	
Device Configuration Hotkey Access	
Device Configuration Hotkey Access	Enable or disable users to access device configuration by using hotkeys. By default, the option is enabled.

Table 40. System setup options—Pre-boot Behavior menu

Pre-boot Behavior	
Warning and Errors	Enable or disable the action to be done when a warning or error is encountered. By default, the **Prompt on Warnings and Errors** option is enabled.
Fastboot	Enable to set the speed of the boot process. By default, the **Minimal** option is enabled.
Extend BIOS POST Time	Set the BIOS POST time. By default, the **0 seconds** option is enabled.

Table 41. System setup options—Virtualization menu

Virtualization	
Intel Virtualization Technology	
Enable Intel Virtualization Technology (VT)	Specify whether a Virtual Machine Monitor (VMM) can utilize the additional hardware capabilities that are provided by Intel Virtualization Technology. By default, the option is enabled.
VT for Direct I/O	Specify whether a Virtual Machine Monitor (VMM) can utilize the additional hardware capabilities that are provided by Intel Virtualization Technology for Direct I/O. By default, the option is enabled.
Intel Trusted Execution Technology (TXT)	
Enable Intel Trusted Execution Technology (TXT)	Specifies whether a measured Virtual Machine Monitor (MVMM) can utilize the additional hardware capabilities that are provided by Intel Trusted Execution Technology. By default, the option is disabled.

Table 42. System setup options—Performance menu

Performance	
Multi Core Support	
Active Cores	Enables to change the number of CPU cores available to the operating system. By default, the **All Cores** options are enabled.
Intel SpeedStep	
Enable Intel SpeedStep Technology	Enables the computer to dynamically adjust processor voltage and core frequency, decreasing average power consumption and heat production. By default, the option is enabled.
C-States Control	
Enable C-State Control	Enable or disable additional processor sleep states. By default, the option is enabled.

Table 42. System setup options—Performance menu (continued)

Performance	
Intel Turbo Boost Technology	
Enable Intel Turbo Boost Technology	Enable or disable Intel TurboBoost mode of the processor. By default, the option is enabled.
Intel Hyper-Threading Technology	
Enable Intel Hyper-Threading Technology	Enable or disable Hyper-Threading in the processor. By default, the option is enabled.

Table 43. System setup options—System Logs menu

System Logs	
BIOS Event Log	
Clear BIOS Event Log	Display BIOS events. By default, the **Keep** option is enabled.

Updating the BIOS

Updating the BIOS in Windows

About this task

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

Steps

1. Go to www.dell.com/support.
2. Click **Product support**. In the **Search support** box, enter the Service Tag of your computer, and then click **Search**.

   NOTE: If you do not have the Service Tag, use the SupportAssist feature to automatically identify your computer. You can also use the product ID or manually browse for your computer model.

3. Click **Drivers & Downloads**. Expand **Find drivers**.
4. Select the operating system installed on your computer.
5. In the **Category** drop-down list, select **BIOS**.
6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
7. After the download is complete, browse the folder where you saved the BIOS update file.
8. Double-click the BIOS update file icon and follow the on-screen instructions.
   For more information, search in the Knowledge Base Resource at www.dell.com/support.

Updating the BIOS in Linux and Ubuntu

To update the system BIOS on a computer that is installed with Linux or Ubuntu, see the knowledge base article 000131486 at www.dell.com/support.

Updating the BIOS using the USB drive in Windows

About this task

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

Steps

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

Updating the BIOS from the F12 One-Time boot menu

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

About this task

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

BIOS Update

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

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

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

Updating from the One-Time boot menu

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

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

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

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

Steps

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

System and setup password

Table 44. 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.

5

Getting help and contacting Dell

Self-help resources

You can get information and help on Dell products and services using these self-help resources:

Table 45. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	https://www.dell.com/
Dell Support	
Tips	
Contact Support	In Windows search, type `Contact Support`, and press Enter.
Online help for operating system	• Windows: https://www.dell.com/support/windows • Linux: https://www.dell.com/support/linux
Troubleshooting information, user manuals, set up instructions, product specifications, technical help blogs, drivers, software updates, and so on.	https://www.dell.com/support/home/
Dell knowledge base articles for various of system concerns:	1. Go to https://www.dell.com/support/home/?app=knowledgebase. 2. Type the subject or keyword in the **Search** box. 3. Click **Search** to retrieve the related articles.
Learn and get more information about your product: • Product specifications • Operating system • Setting up and using your product • Data backup • Troubleshooting and diagnostics • Factory and system restore • BIOS information	Dell provides several online and telephone-based support and service options. If you do not have an active Internet connection, you can find contact information about your purchase invoice, packing slip, bill, or Dell product catalog. • Select **Detect Product**. • Locate your product through the drop-down menu under **View Products**. • Enter the **Service Tag number** or **Product ID** in the search bar. • Once on product support page, scroll down to Manuals and Documents section to preview all the Manuals, documents, and other information for your product.

Contacting Dell

Dell provides several online and telephone-based support and service options. If you do not have an active Internet connection, you can find contact information about your purchase invoice, packing slip, bill, or Dell product catalog. Availability varies by country/region 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 https://www.dell.com/support/.
2. Select your country/region from the drop-down menu on the lower right corner of the page.
3. For **customized support:**
   a. Enter your system Service Tag in the **Enter your Service Tag** field.
   b. Click **submit**.
      - The support page that lists the various support categories is displayed.
4. For **general support:**
   a. Select your product category.
   b. Select your product segment.
   c. Select your product.
      - The support page that lists the various support categories is displayed.
5. For contact details of Dell Global Technical Support, see https://www.dell.com/contactdell.

   NOTE: The Contact Technical Support page is displayed with details to call, chat, or email the Dell Global Technical Support team.

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