Dell Pro Max Tower T2

FCT2250

Owner's Manual

Regulatory Model: D33M
Regulatory Type: D33M001
May 2026
Rev. A05

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

Views of Dell Pro Max Tower T2 FCT2250

Front

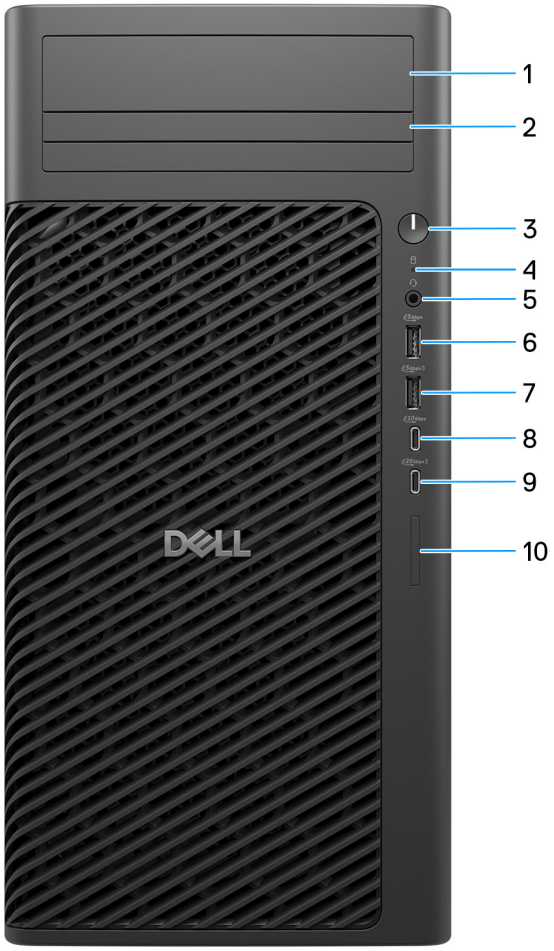


Figure 1. Front view of Dell Pro Max Tower T2 FCT2250

1. **3.5" Hard-drive bay (optional)**

   Slot to install the 3.5-inch hard drive.

2. **Slim optical-drive bay (optional)**

   Slot to install the Slim optical drive.

3. **Power button with diagnostic LED**

   Press to turn on the computer if it is turned off, in sleep state, or in hibernate state.

4. **Hard-drive activity light**

   Turns on when the computer reads from or writes to the hard drive.

   NOTE: Hard drive activity light is supported only on computers that are shipped with hard drive.

5. **Global headset jack**

   Connect headphones or a headset (headphone and microphone combo).

6. **USB 3.2 Gen 1 (5 Gbps) port**

   Connect devices such as external storage devices and printers. Provides data transfer speeds up to 5 Gbps.

7. **USB 3.2 Gen 1 (5 Gbps) port with PowerShare**

   Connect devices such as external storage devices and printers. Provides data transfer speeds up to 5 Gbps.

   PowerShare enables you to charge connected USB devices.

   NOTE: Connected USB devices will not charge when the computer is turned off or in a sleep state. To start charging connected devices, turn on the computer.

8. **USB 3.2 Gen 2 (10 Gbps) Type-C port**

   Connect devices such as external storage devices and printers. Provides data transfer speeds up to 10 Gbps.

9. **USB 3.2 Gen 2x2 (20 Gbps) Type-C port with PowerShare**

   Connect devices such as external storage devices and printers. Provides data transfer rate of up to 20 Gbps.

   PowerShare enables you to charge connected USB devices.

   NOTE: Connected USB devices will not charge when the computer is turned off or in a sleep state. To start charging connected devices, turn on the computer.

10. **SD Express 7.0-card slot (optional)**

    Reads from and writes to the SD card.

Back

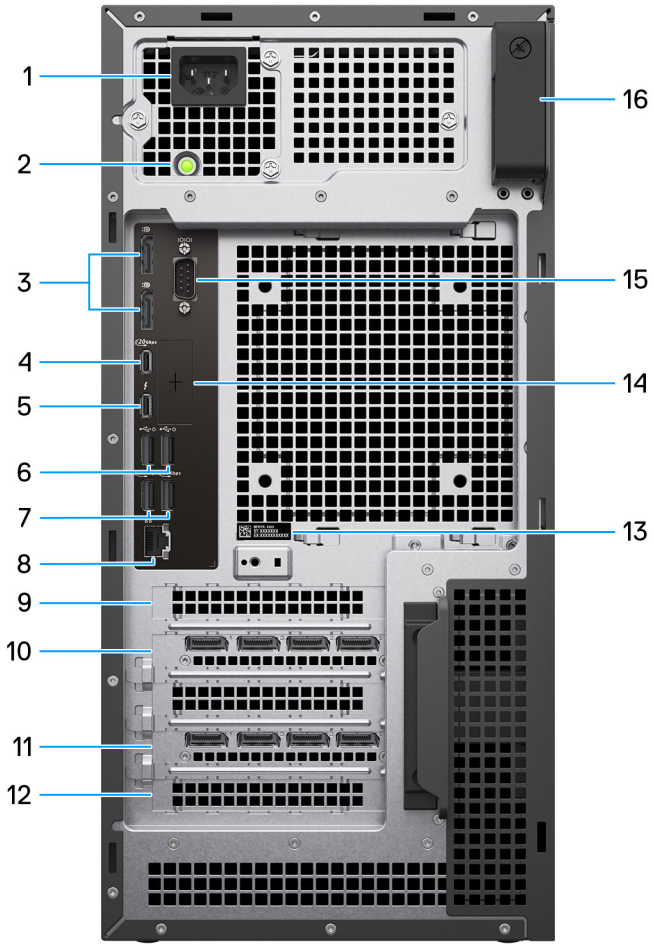


Figure 2. Back view of Dell Pro Max Tower T2 FCT2250

1. **Power-cord connector**

   Connect a power cable to provide power to your computer.

2. **Power-supply diagnostics light**

   Indicates the power-supply state.

3. **DisplayPort 1.4a HBR3 ports**

   Connect an external display or a projector.

4. **USB 3.2 Gen 2x2 (20 Gbps) capable Type-C port**

   Connect devices such as external storage devices and printers. Provides data transfer speeds up to 20 Gbps.

5. **Thunderbolt4 port**

   Connect devices that support thunderbolt Connectivity.

6. **USB 2.0 (480 Mbps) ports with SmartPower**

   Connect devices such as external storage devices and printers. Provides data transfer speeds up to 480 Mbps. Wake from standby with the keyboard or mouse that is connected to this port.

7. **USB 3.2 Gen 2 (10 Gbps) ports**

   Connect devices such as external storage devices and printers. Provides data transfer speeds up to 10 Gbps.

8. **RJ45 ethernet port (1 Gbps)**

   Connect an Ethernet (RJ45) cable from a router or a broadband modem for network or Internet access, with a transfer rate of 10/100/1000 Mbps.

9. **Full-height, half-length Gen3 x4 PCIe closed-end slot**

   Connect a PCI-Express card such as an audio, or network card to enhance the capabilities of your computer.

10. **PEG full-height Gen5 PCIe x16 slot**

    Connect a PCI-Express card such as graphics, audio, or network card to enhance the capabilities of your computer.

11. **Full-height, full-length Gen4 x4 PCIe open-end slot**

    Connect a PCI-Express card such as an audio, or network card to enhance the capabilities of your computer.

12. **Full-height, full-length Gen3 x4 PCIe open-end slot**

    Connect a PCI-Express card such as an audio, or network card to enhance the capabilities of your computer.

13. **Service Tag label**

    The Service Tag is a unique alphanumeric identifier that enables Dell service technicians to identify the hardware components in your computer and access warranty information.

14. **Optional port**

    The port or ports available at this location may vary depending on the optional-port module that is installed on your computer.

    NOTE: Only one of these options can be installed at the location that is shown on your computer.

    - **VGA port**

      Connect an external display or a projector. The maximum resolution that is supported by this port is up to 1920 x 1200 at 60 Hz.

    - **HDMI 2.1 (FRL) port**

      Connect to a TV, external display, or another HDMI-in enabled device. The maximum resolution that is supported by this port is up to 5120 x 3200 at 60 Hz.

    - **DisplayPort 2.1 (UHBR20) port**

      Connect an external display or a projector. The maximum resolution that is supported by this port is up to 7680 x 4320 at 60 Hz.

    - **Two USB 3.2 Gen 2 (10 Gbps) ports**

      Connect devices such as external storage devices and printers. Provides data transfer speeds of up to 10 Gbps.

    - **USB 3.2 Gen 2 (10 Gbps) Type-C with DisplayPort alt mode port**

      Connect devices such as external storage devices and printers. Provides data transfer speeds of up to 10 Gbps. The maximum resolution that is supported by this port is up to 5120 x 3200 at 60 Hz with a Type-C to DisplayPort adapter.

    - **One Thunderbolt 4 port + One USB 3.2 Gen 2 (10 Gbps) Type-C port**

      Connect devices such as external storage devices and printers. Provides data transfer speeds of up to 10 Gbps.

    - **RJ45 ethernet port (5 Gbps)**

      Connect an RJ45 ethernet cable from a router or a broadband modem for network or Internet access.

    - **Fiber optic port (5 Gbps, peer-to-peer)**

      Connect a fiber optic cable from a router or a broadband modem for network or Internet access.

      NOTE: Supports up to 5 Gbps connectivity on peer-to-peer transmission. Actual speed on the network depends on equipment compatibility, requiring both transceiver and switch at the same maximum speed.

15. **Legacy serial port**

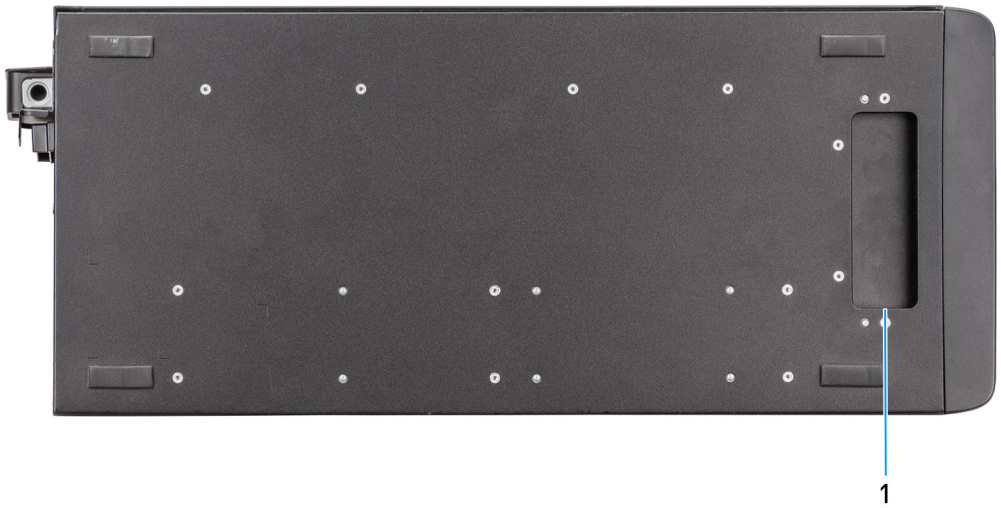
    Connect a peripheral or device to the RS-232 serial port.

16. **Side-cover release latch**

Release to open the side cover and access the internal components of your computer.

Bottom

Figure 3. Bottom view of Dell Pro Max Tower T2



FCT2250

1. **Bottom holding slot**

   To carry your full configuration computer safely.

2

Set up your computer

Steps

1. Connect the keyboard and mouse.

   NOTE: For setup instructions, see the documentation that is shipped with the keyboard and mouse.

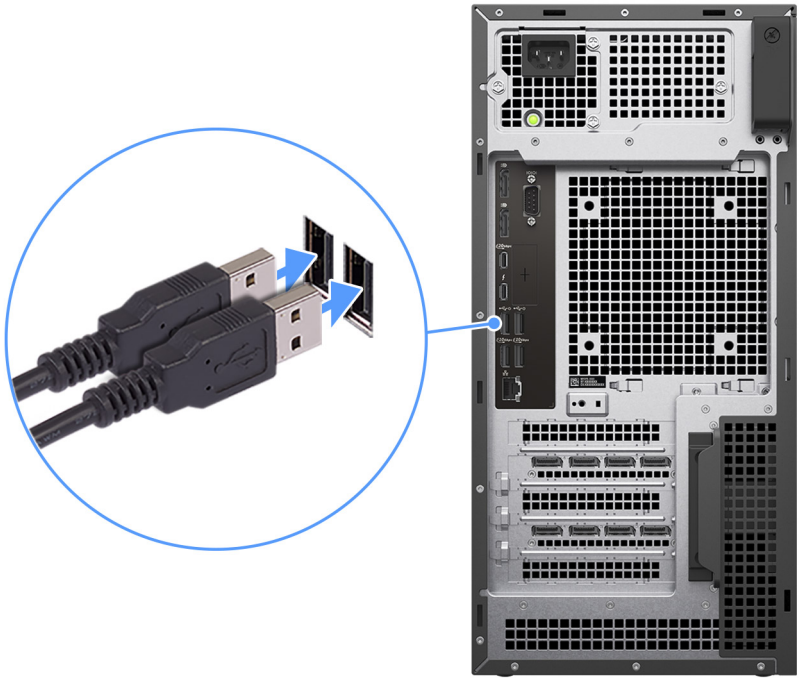


Figure 4. Connecting the keyboard and mouse

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

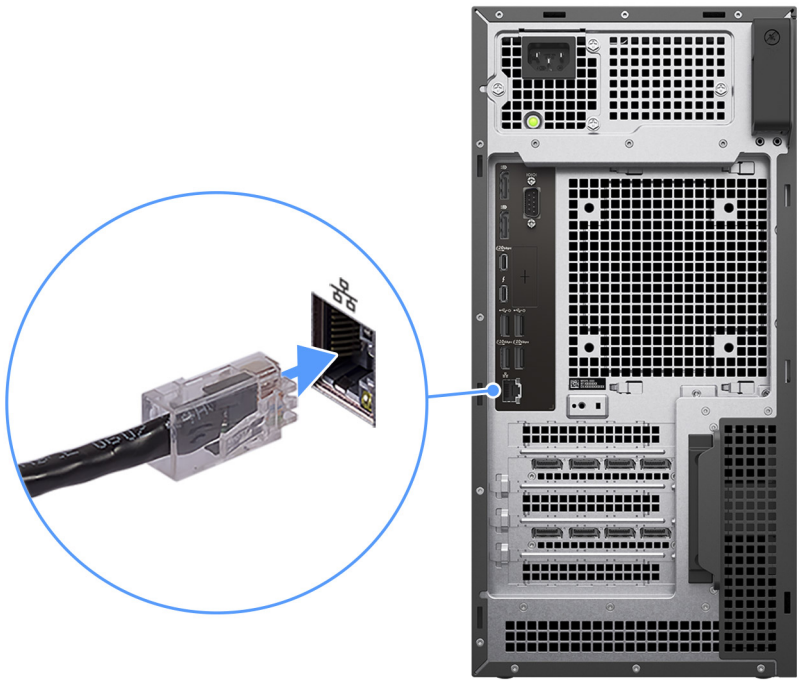


Figure 5. Connecting the network cable

3. Connect the display.

   NOTE: For improved graphical performance, connect the display to the display ports on the discrete graphics processing unit.

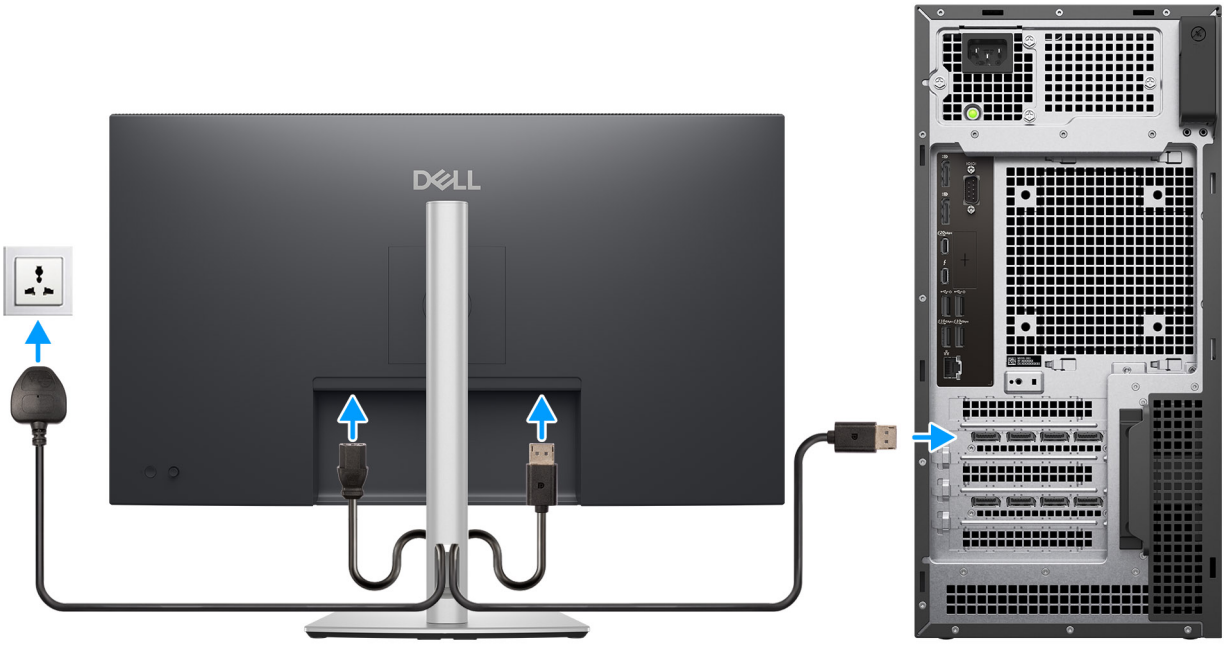


Figure 6. Connecting the display

4. Connect the power cable.

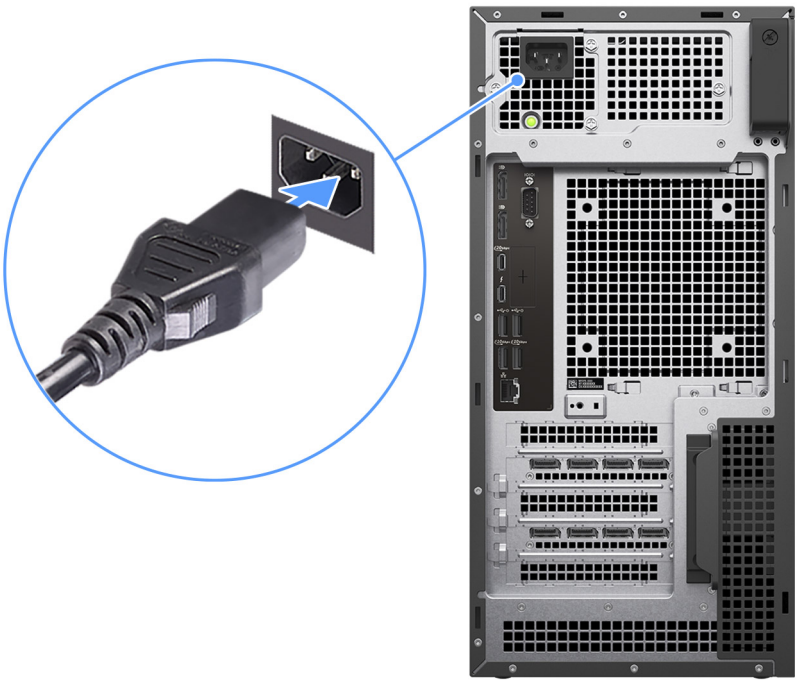


Figure 7. Connecting the power cable

5. Press the power button.



Figure 8. Pressing the power button

German GS statement

The device is not intended for use in the immediate field of vision at a computer workstation. To avoid annoying reflections at the computer workstation, this product must not be placed in the immediate field of vision.

Das Gerät ist nicht für die Benutzung im unmittelbaren Gesichtsfeld am Bildschirmarbeitsplatz vorgesehen. Um störende Reflexionen am Bildschirmarbeitsplatz zu vermeiden, darf dieses Produkt nicht im unmittelbaren Gesichtsfeld platziert werden.

6. Finish the operating system setup.

   For Ubuntu:

   Follow the on-screen instructions to complete the setup. For more information about installing and configuring Ubuntu, search in the Knowledge Base Resource at Dell Support Site.

   For Windows:

   Follow the on-screen instructions to complete the setup. When setting up, Dell Technologies 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.

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

Table 1. Locate Dell apps

Resources	Description
	Dell Optimizer is an application is designed to enhance computer performance and productivity by optimizing settings for power, battery, display, collaboration touchpad, and presence detection. It also provides access to applications purchased with your new computer. For more information, see Dell Optimizer User's Guide at Dell Support Site.
	**Dell Product Registration** Register your computer with Dell.
	**Dell Help & Support** Access help and support for your computer.
	**SupportAssist** SupportAssist is a proactive and predictive technology that offers automated technical support for Dell computers. It proactively monitors both hardware and software, addressing performance issues, preventing security threats, and automating engagement with Dell Technical Support. . For more information, see SupportAssist documentation at Dell Support Site. **NOTE:** In SupportAssist, click the warranty expiry date to renew or upgrade your warranty.

3

Specifications of Dell Pro Max Tower T2 FCT2250

Dimensions and weight

The following table lists the height, width, depth, and weight of your Dell Pro Max Tower T2 FCT2250.

Table 2. Dimensions and weight

Description	Values
Height	387.00 mm (15.24 in.)
Width	187.70 mm (7.40 in.)
Depth	438.00 mm (17.24 in.)
Weight **NOTE:** The weight of your computer depends on the configuration that is ordered and manufacturing variability.	• Minimum: 9.70 kg (21.38 lbs.) • Maximum: 20.40 kg (44.97 lbs.)

Processor

The following table lists the details of the processors that are supported in your Dell Pro Max Tower T2 FCT2250.

Table 3. Processor

Description	Option one	Option two	Option three	Option four	Option five	Option six	Option seven
Processor type	Intel Core Ultra 5 235	Intel Core Ultra 5 245	Intel Core Ultra 5 245K	Intel Core Ultra 7 265	Intel Core Ultra 7 265K	Intel Core Ultra 9 285	Intel Core Ultra 9 285K
Processor wattage	65 W	65 W	125 W	65 W	125 W	65 W	125 W
Processor core count	14	14	14	20	20	24	24
Processor thread count	14	14	14	20	20	24	24
Processor speed	Up to 5 GHz	Up to 5.10 GHz	Up to 5.20 GHz	Up to 5.30 GHz	Up to 5.50 GHz	Up to 5.60 GHz	Up to 5.70 GHz
Processor cache	24 MB	24 MB	24 MB	30 MB	30 MB	36 MB	36 MB
Integrated graphics	Intel Graphics	Intel Graphics	Intel Graphics	Intel Graphics	Intel Graphics	Intel Graphics	Intel Graphics

Chipset

The following table lists the details of the chipset that is supported by your Dell Pro Max Tower T2 FCT2250.

Table 4. Chipset

Description	Values
Chipset	Intel W880
Processor	Intel Core Ultra 5/7/9
DRAM bus width	64-bit
Flash EPROM	32 MB + 32 MB
PCIe bus	Up to Gen5

Operating system

Your Dell Pro Max Tower T2 FCT2250 supports the following operating systems:

- Windows 11 Home
- Windows 11 Pro
- Windows 11 Pro National Academic
- Windows 11 IoT Enterprise 2024 LTSC
- Ubuntu Linux 24.04 LTS

For more information about Dell operating system Recovery image, see *How to Download and Use the Dell OS Recovery Image in Microsoft Windows*, at Dell support site.

Commercial platform Windows 11 N-2 and 5-year operating system supportability:

All newly introduced 2019 and later commercial platforms (Dell, Dell Pro, and Dell Pro Max) will qualify and ship with the most current factory installed Semi-Annual Channel Windows 11 version (N) and qualify (but not ship) the previous two versions (N-1, N-2). The Dell Pro Max Tower T2 FCT2250 will RTS with Windows 11 version v23H2 at the time of launch, and this version will determine the N-2 versions that are initially qualified for this platform.

For future versions of Windows 11, Dell continues to test the commercial platform with coming Windows 11 releases during device production and for five years post-production, including both fall and spring releases from Microsoft.

For additional information about N-2 and 5-year Windows operating system supportability, see the Dell Windows as a Service (WaaS), at Dell support site.

EOML 411

The Dell Pro Max Tower T2 FCT2250 continues to test the coming Semi-Annual Channel Windows 11 version releases for five years post-production, including both fall and spring releases from Microsoft.

Memory

The following table lists the memory specifications that are supported by your Dell Pro Max Tower T2 FCT2250.

Table 5. Memory specifications

Description	Values
Memory slots	Four UDIMM slots
Memory type	DDR5
Memory speed	• 4400 MT/s : 2 DIMM-2R

Table 5. Memory specifications (continued)

Description	Values
	• 4800 MT/s : 2 DIMM-1R • 5600 MT/s : 1 DIMM-1R/2R
Maximum memory configuration	128 GB
Minimum memory configuration	8 GB
Memory size per slot	8 GB, 16 GB, 32 GB
Memory configurations supported	• 8 GB: 1 x 8 GB, DDR5, 5600 MT/s, UDIMM, Non-ECC, single-channel • 16 GB: 2 x 8 GB, DDR5, 5600 MT/s, UDIMM, Non-ECC, dual-channel • 16 GB: 1 x 16 GB, DDR5, 5600 MT/s, UDIMM, Non-ECC, single-channel • 32 GB: 2 x 16 GB, DDR5, 5600 MT/s, UDIMM, Non-ECC, dual-channel • 32 GB: 4 x 8 GB, DDR5, 4800 MT/s, UDIMM, Non-ECC, dual-channel • 64 GB: 2 x 32 GB, DDR5, 5600 MT/s, UDIMM, Non-ECC, dual-channel • 64 GB: 4 x 16 GB, DDR5, 4800 MT/s, UDIMM, Non-ECC, dual-channel • 128 GB: 4 x 32 GB, DDR5, 4400 MT/s, UDIMM, Non-ECC, dual-channel • 16 GB: 1 x 16 GB, DDR5, 5600 MT/s, UDIMM, ECC, single-channel • 32 GB: 2 x 16 GB, DDR5, 5600 MT/s, UDIMM, ECC, dual-channel • 64 GB: 2 x 32 GB, DDR5, 5600 MT/s, UDIMM, ECC, dual-channel • 64 GB: 4 x 16 GB, DDR5, 4800 MT/s, UDIMM, ECC, dual-channel • 128 GB: 4 x 32 GB, DDR5, 4400 MT/s, UDIMM, ECC, dual-channel

Memory matrix

The following table lists the memory configurations supported on your Dell Pro Max Tower T2 FCT2250.

Table 6. Memory matrix

Configuration	Slot			
	UDIMM1	UDIMM2	UDIMM3	UDIMM4
8 GB DDR5	8 GB			
16 GB DDR5	8 GB	8 GB		
16 GB DDR5	16 GB			
32 GB DDR5	8 GB	8 GB	8 GB	8 GB
32 GB DDR5	16 GB	16 GB		
32 GB DDR5	32 GB			
64 GB DDR5	16 GB	16 GB	16 GB	16 GB

Table 6. Memory matrix (continued)

Configuration	Slot			
	UDIMM1	UDIMM2	UDIMM3	UDIMM4
64 GB DDR5	32 GB	32 GB		
128 GB DDR5	32 GB	32 GB	32 GB	32 GB

External ports and slots

The following table lists the external ports and slots on your Dell Pro Max Tower T2 FCT2250.

Table 7. External ports and slots

Description	Values
Network port	One RJ45 ethernet port (1 Gbps)
USB ports	• One USB 3.2 Gen 1 (5 Gbps) port • One USB 3.2 Gen 1 (5 Gbps) port with PowerShare • One USB 3.2 Gen 2 (10 Gbps) Type-C port • One USB 3.2 Gen 2x2 (20 Gbps) Type-C port with PowerShare • Two USB 2.0 (480 Mbps) ports with SmartPower • Two USB 3.2 Gen 2 (10 Gbps) ports • One Thunderbolt4 port • One USB 3.2 Gen 2x2 (20 Gbps) Type-C port
Audio port	One global headset jack
Video port(s)	Two DisplayPort 1.4a HBR3 ports
Media-card reader	One SD 7.0 Express-card slot (optional)
Power-adapter port	One power-cable connector
Security-cable slot	One Kensington security-cable slot

Internal slots

The following table lists the internal slots on your Dell Pro Max Tower T2 FCT2250.

Table 8. Internal slots

Description	Values
M.2	• One M.2 2230 slot for WiFi and Bluetooth combo card • Three M.2 2230/2280 slots for solid-state drive **NOTE:** To learn more about the features of different types of M.2 cards, search in the Knowledge Base Resource at Dell Support Site.
SATA	• Three SATA 3.0 slot for 3.5-inch hard-disk drive • One SATA 3.0 slot for slimline optical drive
PCIe	• One PEG full-height Gen5 PCIe x16 slot • One full-height, half-length Gen3 x4 PCIe closed-end slot

Table 8. Internal slots (continued)

Description	Values
	• One full-height, full-length Gen4 x4 PCIe open-end slot • One full-height, full-length Gen3 x4 PCIe open-end slot

Ethernet

The following table lists the wired ethernet Local Area Network (LAN) specifications of your Dell Pro Max Tower T2 FCT2250.

Table 9. Ethernet specifications

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

Wireless module

The following table lists the Wireless Local Area Network (WLAN) modules that are supported on your Dell Pro Max Tower T2 FCT2250.

Table 10. Wireless module specifications

Description	Option one	Option two
Model number	Intel Wi-Fi 7 BE200	Qualcomm Wi-Fi 7 DBS WCN7851
Transfer rate	Up to 5760 Mbps	Up to 5760 Mbps
Frequency bands supported	2.4 GHz/5 GHz/6 GHz	2.4 GHz/5 GHz/6 GHz
Wireless standards	• WiFi 802.11a/b/g • Wi-Fi 4 (WiFi 802.11n) • Wi-Fi 5 (WiFi 802.11ac) • Wi-Fi 6E (WiFi 802.11ax) • Wi-Fi 7 (WiFi 802.11be)	• WiFi 802.11a/b/g • Wi-Fi 4 (WiFi 802.11n) • Wi-Fi 5 (WiFi 802.11ac) • Wi-Fi 6 (WiFi 802.11ax) • Wi-Fi 7 (WiFi 802.11be)
Encryption	• 64-bit/128-bit WEP • AES-CCMP • TKIP	• 64-bit/128-bit WEP • AES-CCMP • TKIP
Bluetooth wireless card **NOTE:** The functionality of the Bluetooth wireless card may vary based on the operating system.	Bluetooth 5.4 wireless card	Bluetooth 5.4 wireless card

Audio

The following table lists the audio specifications of your Dell Pro Max Tower T2 FCT2250.

Table 11. Audio specifications

Description	Values
Audio type	High Definition Audio
Audio controller	Realtek ALC3204
Internal audio interface	High Definition Audio (HDA) interface
External audio interface	One global headset jack

Storage

This section lists the storage options on your Dell Pro Max Tower T2 FCT2250.

Table 12. Storage specifications

Storage type	Interface type	Capacity
3.5-inch, 5400 RPM, hard drive	SATA AHCI, up to 6 Gbps	4 TB
3.5-inch, 7200 RPM, hard drive	SATA AHCI, up to 6 Gbps	1 TB
3.5-inch, 7200 RPM, hard drive	SATA AHCI, up to 6 Gbps	2 TB
3.5-inch, 7200 RPM, hard drive, SAS, Enterprise hard drive	SATA AHCI, up to 6 Gbps	4 TB
3.5-inch, 7200 RPM hard drive, SAS, Enterprise hard drive	SATA AHCI, up to 6 Gbps	8 TB
M.2 2230 solid-state drive, Class 35	PCIe Gen4 x4 NVMe, up to 64 GT/s	256 GB
M.2 2280 self-encrypting Opal 2.0 solid-state drive, Class 40	PCIe Gen4 x4 NVMe, up to 64 GT/s	512 GB
M.2 2280 self-encrypting Opal 2.0 solid-state drive, Class 40	PCIe Gen4 x4 NVMe, up to 64 GT/s	1 TB
M.2 2280 self-encrypting Opal 2.0 solid-state drive, Class 40	PCIe Gen4 x4 NVMe, up to 64 GT/s	2 TB
M.2 2280 self-encrypting Opal 2.0 solid-state drive, Class 40	PCIe Gen4 x4 NVMe, up to 64 GT/s	4 TB
M.2 2280 self-encrypting Opal 2.0 solid-state drive, Class 40	PCIe Gen5 x4 NVMe, up to 128 GT/s	1 TB

Storage matrix

The following table lists the storage configurations supported on your Dell Pro Max Tower T2 FCT2250.

Your Dell Pro Tower FCT2250 supports a combination of the following storage configurations:

- One 3.5-inch hard drive in 5.25 bay as front I/O option + one slim optical drive in 5.25 bay as front I/O option + two internal 3.5-inch hard drive or one half-height 5.25-inch device in 5.25 bay as front I/O option + two internal 3.5-inch hard drive
- Up to three M.2 2230/2280 solid-state drives

NOTE: A front fan is required for multiple solid-state drive and hard drive configurations.

The primary drive of your Dell Pro Tower FCT2250 varies with the storage configuration. For computers:

- with a M.2 drive, the M.2 drive is the primary drive
- without a M.2 drive, the 3.5-inch hard drive is the primary drive

Media-card reader

The following table provides the specification of media cards that are supported by your Dell Pro Max Tower T2 FCT2250.

Table 13. Media-card reader specifications

Description	Values
Media-card slot type	One SD Express 7.0 slot
Media-cards supported	• Secure Digital (SD) • Secure Digital High Capacity (SDHC) • Secure Digital Extended Capacity (SDXC)
NOTE: The maximum capacity of the media-card reader varies depending on the standard of the media card that is inserted in your computer.	

RAID (Redundant Array of Independent Disks)

For optimal performance when configuring drives as a RAID volume, Dell Technologies recommends drive models that are identical.

NOTE: RAID is not supported on Intel Optane configurations.

RAID 0 (Striped, Performance) volumes benefit from higher performance when drives are matched because the data is split across multiple drives: any I/O operations with block sizes larger than the stripe size splits the I/O and become constrained by the slowest of the drives. For RAID 0 I/O operations where block sizes are smaller than the stripe size, whichever drive the I/O operation targets determine the performance, which increases variability and results in inconsistent latencies. This variability is particularly pronounced for write operations, and it can be problematic for applications that are latency sensitive. One such example of this is any application that performs thousands of random writes per second in small block sizes.

RAID 1 (Mirrored, Data Protection) volumes benefit from higher performance when drives are matched because the data is mirrored across multiple drives: all I/O operations must be performed identically to both drives, thus variations in drive performance when the models are different, results in the I/O operations completing only as fast as the slowest drive. While this does not suffer the variable latency issue in small random I/O operations as with RAID 0 across heterogeneous drives, the impact is nonetheless large because the higher performing drive becomes limited in all I/O types. One of the worst examples of constrained performance here is when using unbuffered I/O. To ensure that writes are fully committed to nonvolatile regions of the RAID volume, unbuffered I/O bypasses cache (for example by using the Force Unit Access bit in the NVMe protocol) and the I/O operation will not complete until all the drives in the RAID volume have completed the request to commit the data. This kind of I/O operation completely negates any advantage of a higher performing drive in the volume.

RAID 5 provides better performance by using data striping and protection through parity. The disadvantage of RAID 5 is that rebuilding a large RAID 5 volume requires a longer period of time. The following are the key features of RAID 5:

- Requires at least three drives.
- Data is available even if ones of the drives present in the volume fails. The failed drive must be replaced, and the volume must be rebuilt for the data to be accessible.
- The total capacity is N-1, where N is the total capacity of the drives in the array. For example, if you use three 1 TB drives in a RAID 5 array, the total volume size is 2 TB.

Care must be taken to match not only the drive vendor, capacity, and class, but also the specific model. Drives from the same vendor, with the same capacity, and even within the same class, can have different performance characteristics for certain

types of I/O operations. Thus, matching by model ensures that the RAID volume is comprised of a homogeneous array of drives that deliver all the benefits of a RAID volume without incurring the additional penalties when one or more drives in the volume are lower performing.

Dell Pro Max Tower T2 FCT2250 supports RAID with more than one hard drive configuration.

Power ratings

The following table lists the power rating specifications of Dell Pro Max Tower T2 FCT2250.

Table 14. Power ratings

Description	Option one	Option two	Option three
Type	360 W, Platinum	500 W, Platinum	1500 W, Platinum
Input voltage	90 VAC–264 VAC	90 VAC–264 VAC	90 VAC–264 VAC
Input frequency	47 Hz–63 Hz	47 Hz–63 Hz	47 Hz–63 Hz
Input current (maximum)	5 A	7 A	13.5 A
Output current (continuous)	Operating: • 12 VA: 18 A • 12 VB: 18 A • 12 VC: 13 A Storage: • 12 VA: 1.50 A • 12 VB: 3.30 A • 12 VC: 0 A	Operating: • 12 VA: 18 A • 12 VB: 18 A • 12 VC: 18 A Storage: • 12 VA: 1.50 A • 12 VB: 3.30 A • 12 VC: 0 A	Operating: • 12 VA: 44 A • 12 VB: 36 A • 12 VC: 86 A Storage: • 12 VA: 1.50 A • 12 VB: 5.0 A • 12 VC: 0 A
Rated output voltage	• 12 VA • 12 VB • 12 VC	• 12 VA • 12 VB • 12 VC	• 12 VA • 12 VB • 12 VC
Temperature range:			
Operating	5°C to 45°C (41°F to 113°F)	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)	-40°C to 70°C (-40°F to 158°F)

Power supply connector

The following table lists the Power supply connector specifications of your Dell Pro Max Tower T2 FCT2250.

Table 15. Power supply connector

Power supply	Connectors
360 W internal power supply unit (PSU), 80 Plus Platinum	• Two 4-pin connectors for the processor • One 8-pin connector for the system board • One 8-pin header for graphic card
500 W internal power supply unit (PSU), 80 Plus Platinum	• One 12-pin header for the processor • One 14-pin header for the system board • One 8-pin header for graphic card
1500 W internal power supply unit (PSU),(80 PLUS Platinum)	• One 12-pin header for the processor • One 14-pin header for the system board

Table 15. Power supply connector (continued)

Power supply	Connectors
	• Two 6-pin and two 8-pin headers for the graphic card

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Dell Pro Max Tower T2 FCT2250.

Table 16. GPU—Integrated

Controller	Memory size	Processor
Intel Graphics	Shared system memory	Intel Core Ultra 5/7/9

GPU—Discrete

The following table lists the specifications of the discrete graphics processing unit (GPU) that is supported by your Dell Pro Max Tower T2 FCT2250.

Table 17. GPU—Discrete

Controller	Memory size	Memory type
NVIDIA RTX A400	4 GB	GDDR6
NVIDIA RTX A1000	8 GB	GDDR6
NVIDIA RTX 2000 Ada	16 GB	GDDR6
NVIDIA RTX 4000 Ada	20 GB	GDDR6
NVIDIA RTX 4500 Ada	24 GB	GDDR6
NVIDIA RTX 5000 Ada	32 GB	GDDR6
NVIDIA RTX 6000 Ada	48 GB	GDDR6
AMD Radeon Pro W7500	8 GB	GDDR6
AMD Radeon PRO W7600	8 GB	GDDR6
NVIDIA RTX PRO 4500 Blackwell	32 GB	GDDR7 with ECC
NVIDIA RTX PRO 5000 Blackwell	48 GB	GDDR7 with ECC

Video port resolution

The following table lists the video port resolution for your Dell Pro Max Tower T2 FCT2250.

Table 18. Video port resolution

Graphics card	Video ports	Maximum supported resolution
NVIDIA RTX A400	• Four mini DisplayPort 1.4a	• 4096 x 2160 @ 120 Hz • 5120 x 2880 @ 60 Hz

Table 18. Video port resolution (continued)

Graphics card	Video ports	Maximum supported resolution
NVIDIA RTX A1000	• Four mini DisplayPort 1.4a	• 4096 x 2160 @ 120 Hz • 5120 x 2880 @ 60 Hz • 7680 x 4320 @ 30 Hz
NVIDIA RTX 2000 Ada	• Four mini DisplayPort 1.4a	• 4096 x 2160 @ 120 Hz • 5120 x 2880 @ 60 Hz • 7680 x 4320 @ 60 Hz
NVIDIA RTX 4000 Ada	• Four DisplayPort 1.4a	• 4096 x 2160 @ 120 Hz • 5120 x 2880 @ 60 Hz • 7680 x 4320 @ 60 Hz
NVIDIA RTX 4500 Ada	• Four DisplayPort 1.4a	• 4096 x 2160 @ 120 Hz • 5120 x 2880 @ 60 Hz • 7680 x 4320 @ 60 Hz
NVIDIA RTX 5000 Ada	• Four DisplayPort 1.4a	• 4096 x 2160 @ 120 Hz • 5120 x 2880 @ 60 Hz • 7680 x 4320 @ 60 Hz
NVIDIA RTX 6000 Ada	• Four DisplayPort 1.4a	• 4096 x 2160 @ 120 Hz • 5120 x 2880 @ 60 Hz • 7680 x 4320 @ 60 Hz
AMD Radeon Pro W7500	• Four DisplayPort 2.1	• 3840 x 2160 @ 120 Hz • 5120 x 2880 @ 60 Hz • 7680 x 4320 @ 60 Hz
AMD Radeon Pro W7600	• Four DisplayPort 2.1	• 3840 x 2160 @ 120 Hz • 5120 x 2880 @ 60 Hz • 7680 x 4320 @ 60 Hz

Hardware security

The following table lists the hardware security of your Dell Pro Max Tower T2 FCT2250.

Table 19. Hardware security

Hardware security
Chassis intrusion switch
Chassis lock slot support
Intel Authenticate
Intel Secure Boot
Security-cable slot (Kensington lock)
Local hard drive data wipe through BIOS (Secure Erase)
Lockable cable covers
Microsoft 10 Device Guard and Credential Guard (Enterprise SKU)
Microsoft Windows BitLocker
SafeBIOS: includes Dell Off-host BIOS Verification, BIOS Resilience, BIOS Recovery, and additional BIOS Controls

Table 19. Hardware security (continued)

Hardware security
SafeID including Trusted Platform Module (TPM) 2.0
Self-encrypting storage drives (Opal, FIPS)
Smart card keyboard (FIPS)
Supply chain tamper alerts
Trusted Platform Module TPM 2.0

Environmental

The following table lists the environmental specifications of your Dell Pro Max Tower T2 FCT2250.

Table 20. Environmental

Feature	Values
Recyclable packaging	Yes
BFR/PVC—free chassis	Yes
Vertical orientation packaging support	Yes
Multi-Pack packaging	Yes
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. The anticipated required criteria for EPEAT 2018.

Regulatory compliance

The following table lists the regulatory compliance of your Dell Pro Max Tower T2 FCT2250.

Table 21. Regulatory compliance

Regulatory compliance
Product Safety, EMC and Environmental Datasheets
Dell Regulatory Compliance Home page
Responsible Business Alliance policy

Operating and storage environment

This table lists the operating and storage specifications of your Dell Pro Max Tower T2 FCT2250.

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

Table 22. 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)

Table 22. Computer environment (continued)

Description	Operating	Storage
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 range	-15.2 m to 3048 m (-49.87 ft to 10000 ft)	-15.2 m to 10668 m (-49.87 ft to 35000 ft)
CAUTION: Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.		

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

† Measured using a 2 ms half-sine pulse.

Dell support policy

For information about Dell support policy, search Dell Support Site.

4

Working inside your computer

Safety instructions

Use the following safety guidelines to protect your computer from potential damage and to ensure your personal safety. Unless otherwise noted, each procedure in this document assumes that you have read the safety information that shipped with your computer.

WARNING: Before working inside your computer, read the safety information that is shipped with your computer. For more safety best practices, see Dell Regulatory Compliance Home Page.

WARNING: Disconnect your computer from all power sources before opening the computer cover or panels. After you finish working inside the computer, replace all covers, panels, and screws before connecting your computer to an electrical outlet.

WARNING: For laptops, discharge the battery completely before removing it. Disconnect the AC power adapter from the computer and operate the computer solely on battery power—the battery is fully discharged when the computer no longer turns on when the power button is pressed.

CAUTION: To avoid damaging the computer, ensure that the work surface is flat, dry, and clean.

CAUTION: You should only perform troubleshooting and repairs as authorized or directed by the Dell technical support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

CAUTION: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity which could harm internal components.

CAUTION: To avoid damaging the components and cards, handle them by their edges, and avoid touching the pins and the contacts.

CAUTION: When you disconnect a cable, pull it by its connector or its pull tab, not the cable itself. Some cables have connectors with locking tabs or thumbscrews that you must disengage before disconnecting the cable. When disconnecting cables, keep them evenly aligned to avoid bending the connector pins. When connecting cables, ensure that the connector on the cable is correctly oriented and aligned with the port.

CAUTION: Press and eject any installed card from the media-card reader.

Before working inside your computer

About this task

NOTE: The images in this document may differ from your computer depending on the configuration you ordered.

Steps

1. Save and close all open files and exit all open applications.
2. Shut down your computer. For Windows operating system, click **Start** > **Power** > **Shut down**.

   NOTE: If you are using a different operating system, see the documentation of your operating system for shut-down instructions.
3. Turn off all the attached peripherals.
4. Disconnect your computer from the electrical outlet.

5. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.

   CAUTION: To disconnect a network cable, unplug the cable from your computer.

6. Remove any media card and optical disc from your computer, if applicable.

Safety precautions

This section details the primary steps to be followed before disassembling any device or component.

Observe the following safety precautions before any installation or break-fix procedures involving disassembly or reassembly:

- Turn off the computer and all attached peripherals.
- Disconnect the computer from AC power.
- Disconnect all network cables and peripherals from the computer.
- Use an ESD field service kit when working inside your computer to avoid electrostatic discharge (ESD) damage.
- Place the removed component on an anti-static mat after removing it from the computer.
- Press and hold the power button for 15 seconds to discharge the residual power in the system board.

Bonding

Bonding is a method for connecting two or more grounding conductors to the same electrical potential. This is done by using a field service electrostatic discharge (ESD) kit. When connecting a bonding wire, ensure that it is connected to bare metal and never to a painted or nonmetal surface. Ensure that the wrist strap is secure and in full contact with your skin. Remove all jewelry, watches, bracelets, or rings before grounding yourself and the equipment.

Electrostatic discharge—ESD protection

ESD is a major concern when you handle electronic components, especially sensitive components such as expansion cards, processors, memory modules, and system boards. A slight charge can damage circuits in ways that may not be obvious, such as intermittent problems or a shortened product life span. As the industry pushes for lower power requirements and increased density, ESD protection is an increasing concern.

Two recognized types of ESD damage are catastrophic and intermittent failures.

- **Catastrophic** – Catastrophic failures represent approximately 20 percent of ESD-related failures. The damage causes an immediate and complete loss of device functionality. An example of catastrophic failure is a memory module that has received a static shock and immediately generates a "No POST/No Video" symptom with a beep code that is emitted for missing or nonfunctional memory.
- **Intermittent** – Intermittent failures represent approximately 80 percent of ESD-related failures. The high rate of intermittent failures means that most of the time when damage occurs, it is not immediately recognizable. The memory module receives a static shock, but the tracing is merely weakened and does not immediately produce outward symptoms that are related to the damage. The weakened trace may take weeks or months to melt, and in the meantime may cause degradation of memory integrity, intermittent memory errors, and so on.

Intermittent failures that are also called latent or "walking wounded" are difficult to detect and troubleshoot.

Perform the following steps to prevent ESD damage:

- Use a wired ESD wrist strap that is properly grounded. Wireless anti-static straps do not provide adequate protection. Touching the chassis before handling parts does not ensure adequate ESD protection on parts with increased sensitivity to ESD damage.
- Handle all static-sensitive components in a static-safe area. If possible, use anti-static floor pads and workbench pads.
- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the anti-static packing material until you are ready to install the component. Before unwrapping the anti-static packaging, use the anti-static wrist strap to discharge the static electricity from your body.

NOTE: You can protect against ESD and discharge static electricity from your body by touching a metal-grounded object before you interact with anything electronic, for example, an unpainted metal surface on your computer's I/O panel. When connecting a peripheral (including handheld digital assistants) to your computer, you should always ground both yourself and the peripheral before connecting it to the computer. In addition, as you work inside the computer, periodically touch a metal-grounded object to remove any static charge that your body may have accumulated.

For more information about the wrist strap and ESD wrist strap tester, see Components of an ESD Field Service Kit.

- Before transporting a static-sensitive component, place it in an anti-static container or packaging.

ESD Field Service kit

The unmonitored field service kit is the most commonly used service kit. Each Field Service kit includes three main components: anti-static mat, wrist strap, and bonding wire.

CAUTION: It is critical to keep ESD-sensitive devices away from internal parts that are insulated and often highly charged, such as plastic heat sink casings.

Working environment

Before the ESD Field Service kit is deployed, conduct an evaluation of the site to ensure proper setup and readiness. For example, deploying the kit for a server environment is different than for a desktop or laptop environment. Servers are typically installed in a rack within a data center; desktops or laptops are typically placed on office desks or cubicles. Always look for a large open flat work area that is free of clutter and large enough to deploy the ESD kit with additional space to accommodate the type of computer that is being repaired. The workspace should also be free of insulators that can cause an ESD event. On the work area, insulators such as styrofoam and other plastics should always be moved at least 12 inches or 30 centimeters away from sensitive parts before physically handling any hardware components.

ESD packaging

All ESD-sensitive devices must be shipped and received in static-safe packaging. Metal, static-shielded bags are preferred. However, you should always return the damaged component using the same ESD bag and packaging that the new part arrived in. The ESD bag should be folded over and taped shut and all the same foam packing material should be used in the original box that the new part arrived in. ESD-sensitive devices should be removed from packaging only at an ESD-protected work surface, and parts should never be placed on top of the ESD bag because only the inside of the bag is shielded. Always place parts in your hand, on the anti-static mat, in the computer, or inside an ESD bag.

Components of an ESD Field Service kit

The components of an ESD Field Service kit are:

- **Anti-Static Mat** – The anti-static mat is dissipative and parts can be placed on it during service procedures. When using an anti-static mat, your wrist strap should be snug and the bonding wire should be connected to the anti-static mat and to any bare metal on the computer being worked on. Once deployed properly, service parts can be removed from the ESD bag and placed directly on the anti-static mat. ESD-sensitive items are safe in your hand, on the anti-static mat, in the computer, or inside an ESD bag.
- **Wrist Strap and Bonding Wire** – If an anti-static mat is not being used, the wrist strap and bonding wire should be connected directly between your wrist and an exposed metal part of the hardware. If you are using an anti-static mat, connect the wrist strap and bonding wire to the anti-static mat to ensure protection for any hardware placed on the mat. The physical connection of the wrist strap and bonding wire between your skin, the anti-static mat, and the hardware is known as bonding. Use only Field Service kits with a wrist strap, anti-static mat, and bonding wire. Never use wireless wrist straps. Always be cautious that the internal wires of a wrist strap are prone to damage from normal wear and tear, and must be checked regularly with a wrist strap tester in order to avoid accidental ESD hardware damage. It is recommended to test the wrist strap and bonding wire at least once per week.
- **ESD Wrist Strap Tester** – The wires inside an ESD strap are prone to damage over time. When using an unmonitored ESD kit, it is recommended to test the wrist strap regularly—ideally before each service session, and at a minimum, once per week. The most reliable method for testing is with a wrist strap tester. To perform the test, connect the bonding wire of the wrist strap to the tester while wearing the strap. Press the test button to initiate the check. A green LED indicates a successful test, while a red LED and audible alarm signal a failure.

NOTE: It is recommended to always use the traditional wired ESD grounding wrist strap and protective anti-static mat when servicing Dell products. In addition, it is critical to keep sensitive parts separate from all insulator parts while servicing the computer.

Transporting sensitive components

When transporting ESD sensitive components such as replacement parts or parts to be returned to Dell, it is critical to place these parts in anti-static bags for safe transport.

Lifting equipment

Adhere to the following guidelines when lifting heavy equipment:

CAUTION: Do not lift greater than 50 pounds. Always obtain additional resources or use a mechanical lifting device.

1. Get a firm balanced footing. Keep your feet apart for a stable base, and point your toes out.
2. Tighten stomach muscles. Abdominal muscles support your spine when you lift, offsetting the force of the load.
3. Lift with your legs, not your back.
4. Keep the load close. The closer it is to your spine, the less force it exerts on your back.
5. Keep your back upright, whether lifting or setting down the load. Do not add the weight of your body to the load. Avoid twisting your body and back.
6. Follow the same technique in reverse to set the load down.

After working inside your computer

About this task

CAUTION: Leaving stray or loose screws inside your computer may severely damage your computer.

Steps

1. Replace all screws and ensure that no stray screws remain inside your computer.
2. Connect any external devices, peripherals, or cables you removed before working on your computer.
3. Replace any media cards, discs, or any other components that you removed before working on your computer.
4. Connect your computer and all attached devices to their electrical outlets.
5. Turn on your computer.

BitLocker

When updating the BIOS on a computer with BitLocker enabled, consider the following precautions.

CAUTION: If BitLocker is not suspended before updating the BIOS, the BitLocker key will not be recognized the next time that you reboot the computer. You are prompted to enter the recovery key to progress, and the computer displays a prompt for the recovery key on each reboot. If the recovery key is not known, this can result in data loss or an operating system reinstall. For more information, see Knowledge Article: updating the BIOS on Dell computers with BitLocker enabled.

The installation of the following components triggers BitLocker:

- Hard disk drive or solid state drive
- System board

Information on repairability for Québec - From Dell Canada Inc. - to Quebec consumers

Dell does not guarantee the availability of replacement parts, repair services, or information necessary for maintenance or repair.

Recommended tools

The procedures in this document may require the following tools:

- Phillips screwdriver #1
- Phillips screwdriver #2
- Plastic scribe

Screw list

NOTE: When removing screws from a component, it is recommended to note the screw type and the quantity of screws, and then place them in a screw storage box. This is to ensure that the correct number of screws and correct screw type is restored when the component is replaced.

NOTE: Some computers have magnetic surfaces. Ensure that the screws are not left attached to such surfaces when replacing a component.

NOTE: Screw color may vary depending on the configuration ordered.

Table 23. Screw list

Component	Screw type	Quantity	Screw image
Side cover	Captive screw	1	
M.2 2230/2280 solid state drive	M2x3.5	1	
WLAN card	M2x3.5	1	
WLAN Internal antenna	M3x3	2	
Power supply unit cover	#6-32	1	
1500 W Power supply unit	#6-32	4	
360 W Power supply unit	#6-32	3	
Processor fan and 125 W heat-sink assembly	Captive screw	4	
Processor fan and 65 W heat-sink assembly	Captive screw	4	
VR heat sink	Captive screw	2	
Front fan 1	M3x5	1	
Front fan 2	M3x5	1	

Table 23. Screw list (continued)

Component	Screw type	Quantity	Screw image
Rear fan (1500 W PSU)	M3x5	1	
System board	#6-32 M2	10 2	 
Optional modules • DisplayPort • HDMI • LAN • Thunderbolt • USB • VGA	M2x4	2	
Optional 5 GbE Optical module	M2x4	3	

Major components of Dell Pro Max Tower T2 FCT2250

The following image shows the major components of Dell Pro Max Tower T2 FCT2250.

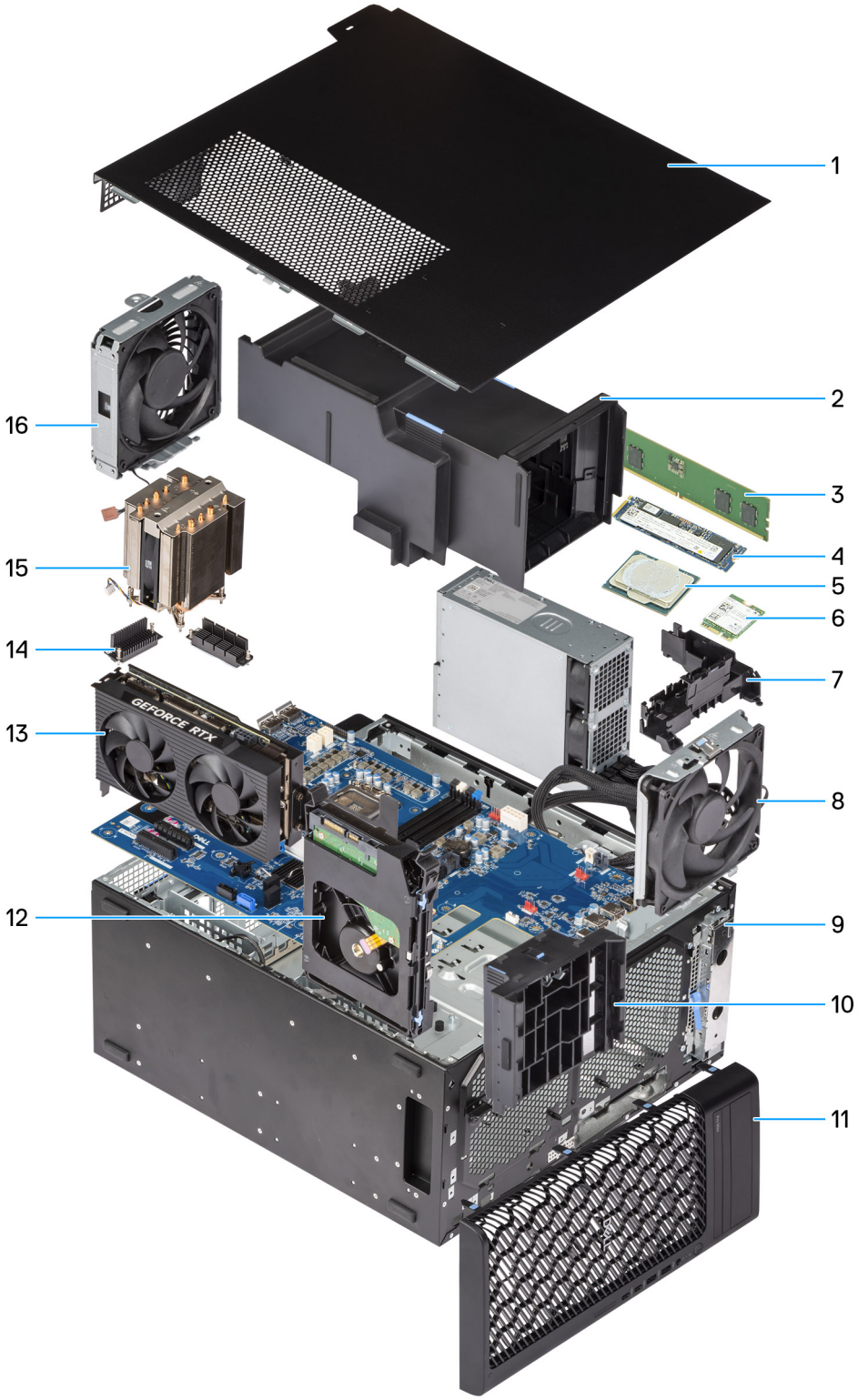


Figure 9. Major Components of Dell Pro Tower Plus FCT2250

1. Side cover
2. Air shroud

NOTE: For computers with 1500 W PSU only.

3. Memory module
4. M.2 2280 solid state drive

5. Processor
6. WLAN card
7. Cable hub
8. Rear system fan
9. 5.25-inch front flexbay
10. GPU end holder
11. Front bezel
12. 3.5-inch hard drive
13. Powered-graphics card
14. Voltage-regulator heatsink
15. Processor heatsink
16. Front system fan

NOTE: Dell Technologies provides a list of components and their part numbers for the original system configuration purchased. These parts are available according to warranty coverages purchased by the customer. Contact your Dell sales representative for purchase options.

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Side cover

Removing the side cover

Prerequisites

1. Follow the procedure in before working inside your computer.

NOTE: Ensure that you remove the security cable from the security-cable slot (if applicable).

About this task

The following images indicate the location of the side cover and provide a visual representation of the removal procedure.



Figure 10. Removing the side cover



Figure 11. Removing the side cover

Steps

1. Loosen the single captive screw that secures the side cover release latch to the computer.

   NOTE: Ensure that the captive screw is fully loosened.

2. Pull the release latch away from the back of the chassis to release the cover from the computer.
3. Pull the side cover away from the chassis and remove the side cover.

Installing the side cover

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the side cover and provide a visual representation of the installation procedure.



Figure 12. Installing the side cover



Figure 13. Installing the side cover

Steps

1. Align the tabs on the side cover with the slots on the chassis.
2. Press the side cover towards the side of the computer to install it.
3. The release latch automatically locks the side cover to the computer.
4. Tighten the single captive screw to secure the side cover to the computer.

Next steps

1. Follow the procedure in after working inside your computer.

6

Air shroud

Removing the air shroud

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the Removing the side cover.

NOTE: For computers with 1500 W PSU only.

About this task

The following image indicates the location of the air shroud and provides a visual representation of the removal procedure.



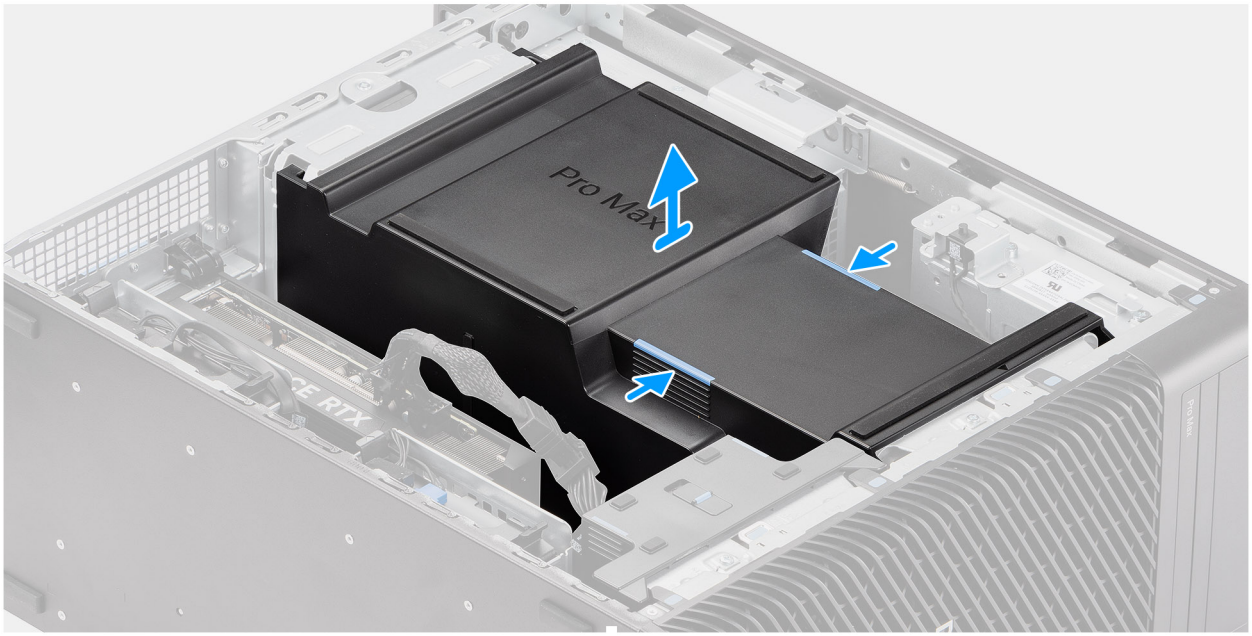


Figure 14. Removing the air shroud

Steps

1. Hold the air shroud at the gripping points.
2. Pull the air shroud upwards and out of the computer.

Installing the air shroud

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

NOTE: For computers with 1500 W PSU only.

NOTE: Route all the power cables through the bottom air shroud cover to prevent the air shroud installation interference.

About this task

The following image indicates the location of the air shroud and provides a visual representation of the installation procedure.

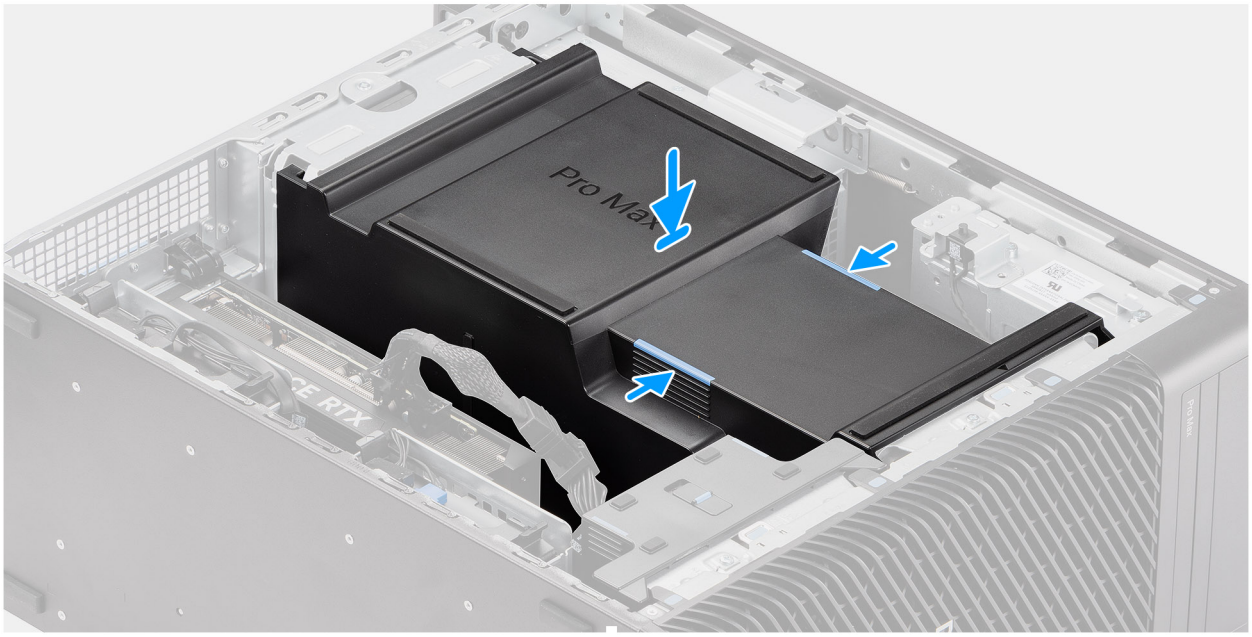


Figure 15. Installing the air shroud

Steps

1. Align the air shroud over the heat-sink and system board holding and place it in the slot.
2. Press the air shroud down until the tabs secure into place.

Next steps

1. Install the side cover.
2. Follow the procedure in after working inside your computer.

7

Coin-cell battery

Removing the coin-cell battery

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

NOTE: For computers with 1500 W PSU only.

About this task

The following images indicate the location of the coin-cell battery and provide a visual representation of the removal procedure.

CAUTION: Removing the coin-cell battery clears the CMOS and resets BIOS settings.

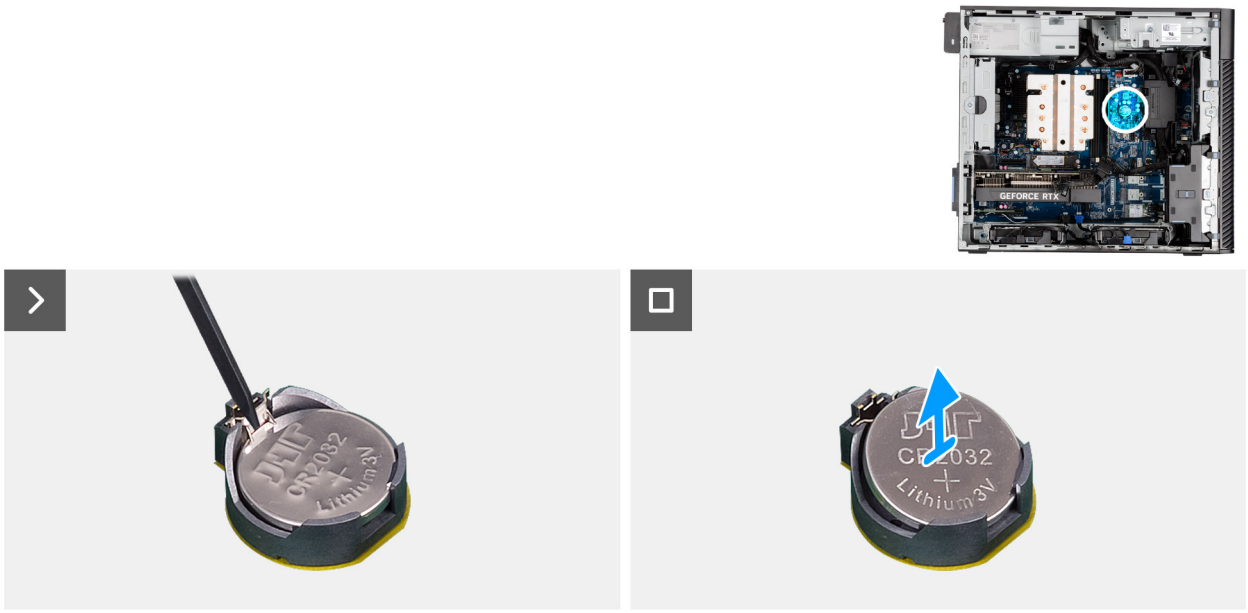


Figure 16. Removing the coin-cell battery

Steps

1. Using a plastic scribe, gently pry the coin-cell battery out of the slot on the system board.
2. Remove the coin-cell battery away from the computer.

Installing the coin-cell battery

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the coin-cell battery and provide a visual representation of the installation procedure.

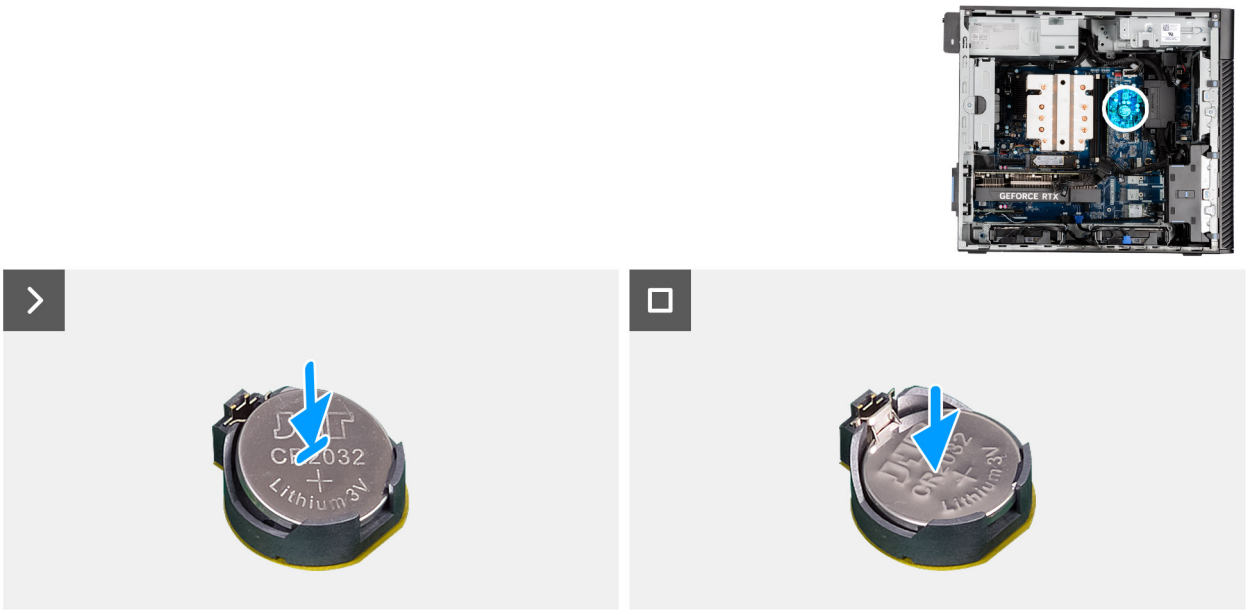


Figure 17. Installing the coin-cell battery

Steps

1. Insert the coin-cell battery with the "+" sign facing up and slide it under the securing tabs at the positive side of the connector.
2. Press the battery into the connector until it locks into place.

Next steps

1. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

2. Install the side cover.
3. Follow the procedure in after working inside your computer.

8

Removing and installing Customer Replaceable Units (CRUs)

The replaceable components in this chapter are Customer Replaceable Units (CRUs).

CAUTION: Customers can replace only the Customer Replaceable Units (CRUs) following the safety precautions and replacement procedures.

NOTE: The images in this document may differ from your computer depending on the configuration you ordered.

Front bezel

Removing the front bezel

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.

About this task

The following images indicate the location of the front bezel and provide a visual representation of the removal procedure.



Figure 18. Removing the front bezel

Steps

1. Pry the retention tabs to release the front bezel from the computer.
2. Slightly pull the front bezel and gently rotate it to release the other tabs on the bezel from the slots in the computer chassis.
3. Remove the front bezel from the computer.

Installing the front bezel

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the front bezel and provide a visual representation of the installation procedure.



Figure 19. Installing the front bezel

Steps

1. Position the front bezel to align the tabs on the bezel with the slots on the chassis.
2. Press the bezel until the tabs clicks into place.

Next steps

1. Install the side cover.
2. Follow the procedure in after working inside your computer.

Front I/O bracket

Removing the front I/O bracket

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the side cover.
3. Remove the front bezel.

About this task

The following images indicate the location of the front I/O bracket and provide a visual representation of the removal procedure.

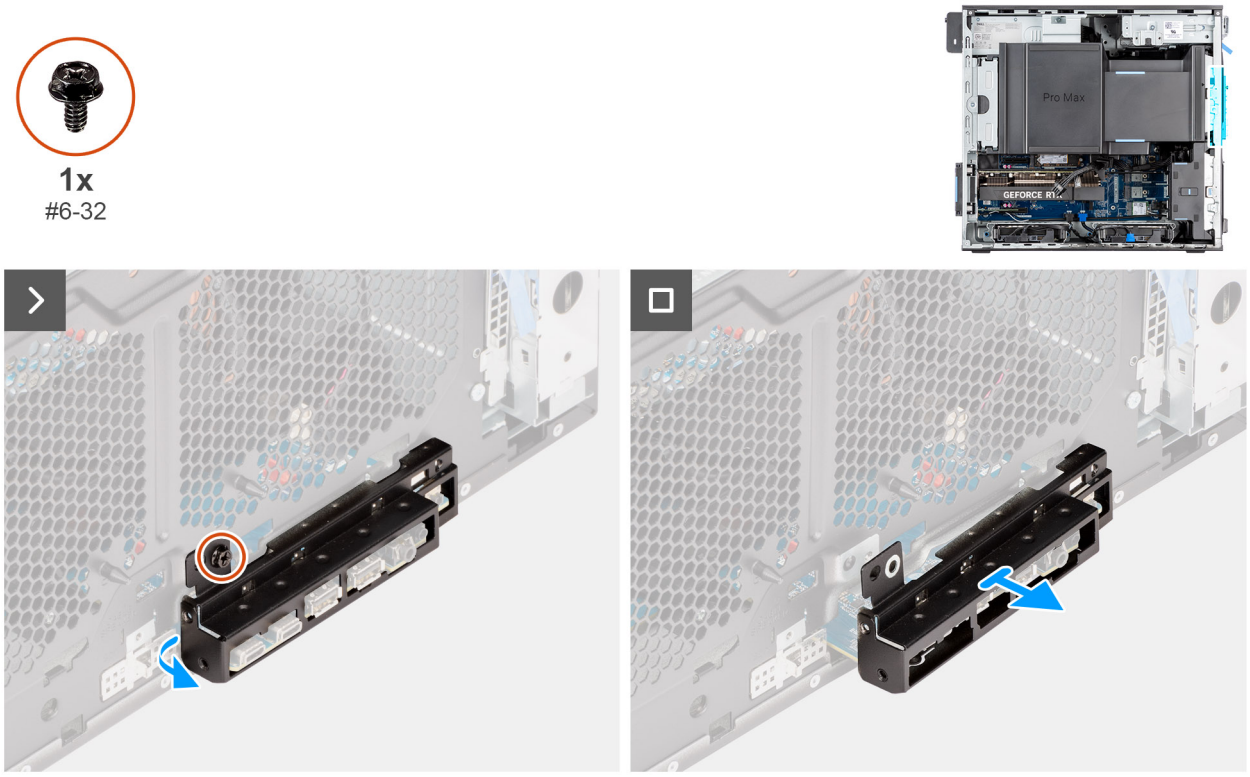


Figure 20. Removing the front I/O bracket

Steps

1. Remove the screw (#6-32) that secures the front I/O bracket to the chassis.
2. Slide and remove the front I/O bracket out of the chassis.

Installing the front I/O bracket

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the front I/O bracket and provide a visual representation of the installation procedure.

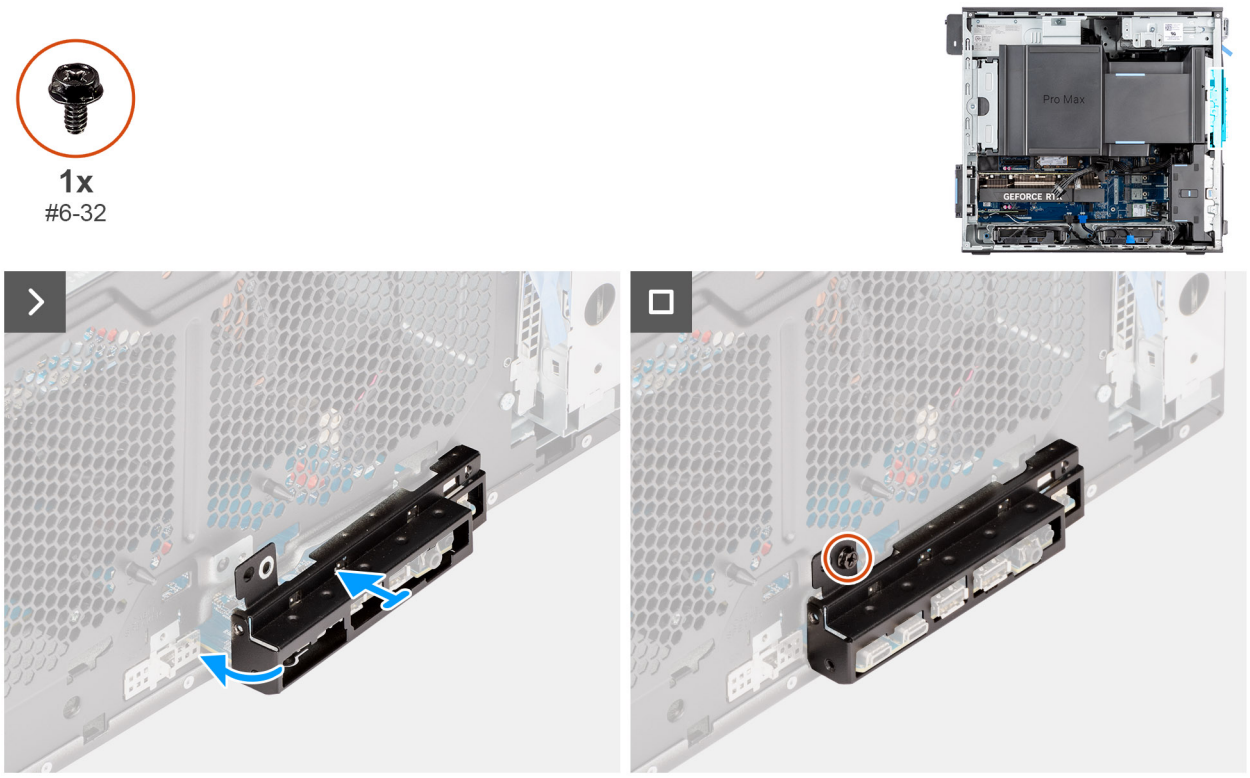


Figure 21. Installing the front I/O bracket

Steps

1. Align and slide the front I/O bracket into its slot on the chassis.
2. Replace the screw (#6-32) to secure the front I/O bracket to the chassis.

Next steps

1. Install the front bezel.
2. Install the side cover.
3. Follow the procedure in After working inside your computer.

Slim optical-drive

Removing the optical drive

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the front bezel.

About this task

NOTE: The optical drive is located within the disk bay.

The following images indicate the location of the optical drive and provide a visual representation of the removal procedure.



Figure 22. Removing the optical drive

Steps

1. Disconnect the data and power cable from the connectors on the optical drive.
2. Press on the securing tab to release the optical drive from the drive bay.
3. Pull to slide the optical drive out of the drive bay.

Installing the optical drive

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

NOTE: The optical drive is located within the drive bay. Follow the below-mentioned procedure **on the disk-drive cage** to remove or install the optical drive.

The following images indicate the location of the optical drive and provide a visual representation of the installation procedure.

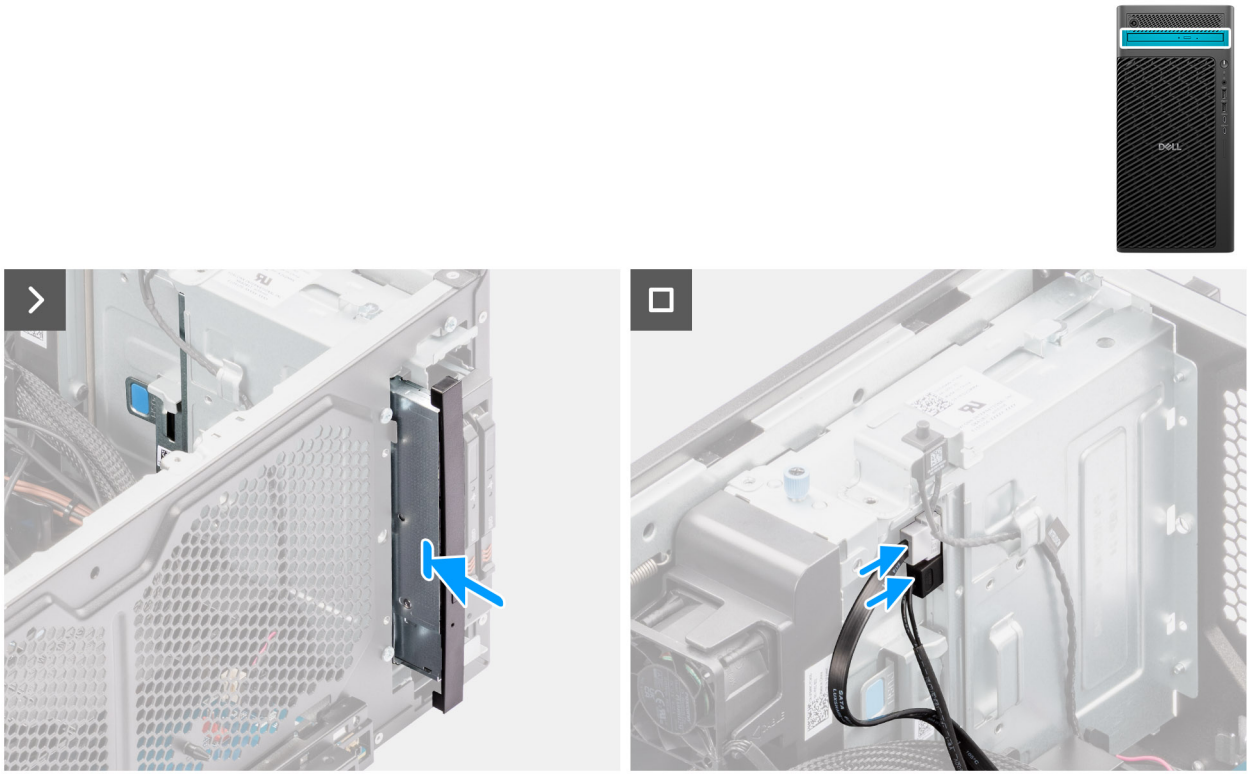


Figure 23. Installing the optical drive

Steps

1. Slide the optical drive into the drive bay until the optical drive clicks into place.
2. Connect the data and power cable to the connectors on the optical drive.

Next steps

1. Install the front bezel.
2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Internal speaker

Removing the internal speaker

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

NOTE: For computers with 1500 W PSU only.

About this task

The following images indicate the location of the internal speaker and provide a visual representation of the removal procedure.

Figure 24. Removing the internal speaker

Steps

1. Disconnect the internal speaker cable from the connector on the system board.
2. Unroute the internal speaker cable through the recess on the chassis.
3. Slide and remove the internal speaker from the chassis.

Installing the internal speaker

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the internal speaker and provide a visual representation of the installation procedure.

Figure 25. Installing the internal speaker

Steps

1. Align the holes on the internal speaker with the alignment post on the chassis.
2. Insert the internal speaker into its slot.
3. Route the internal speaker cable through the recess on the front of the chassis.
4. Connect the internal speaker cable to the connector on the system board.

Next steps

1. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Memory

Removing the memory module

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

   NOTE: For computers with 1500 W PSU only.

About this task

The following image indicates the location of the memory module and provides a visual representation of the removal procedure.

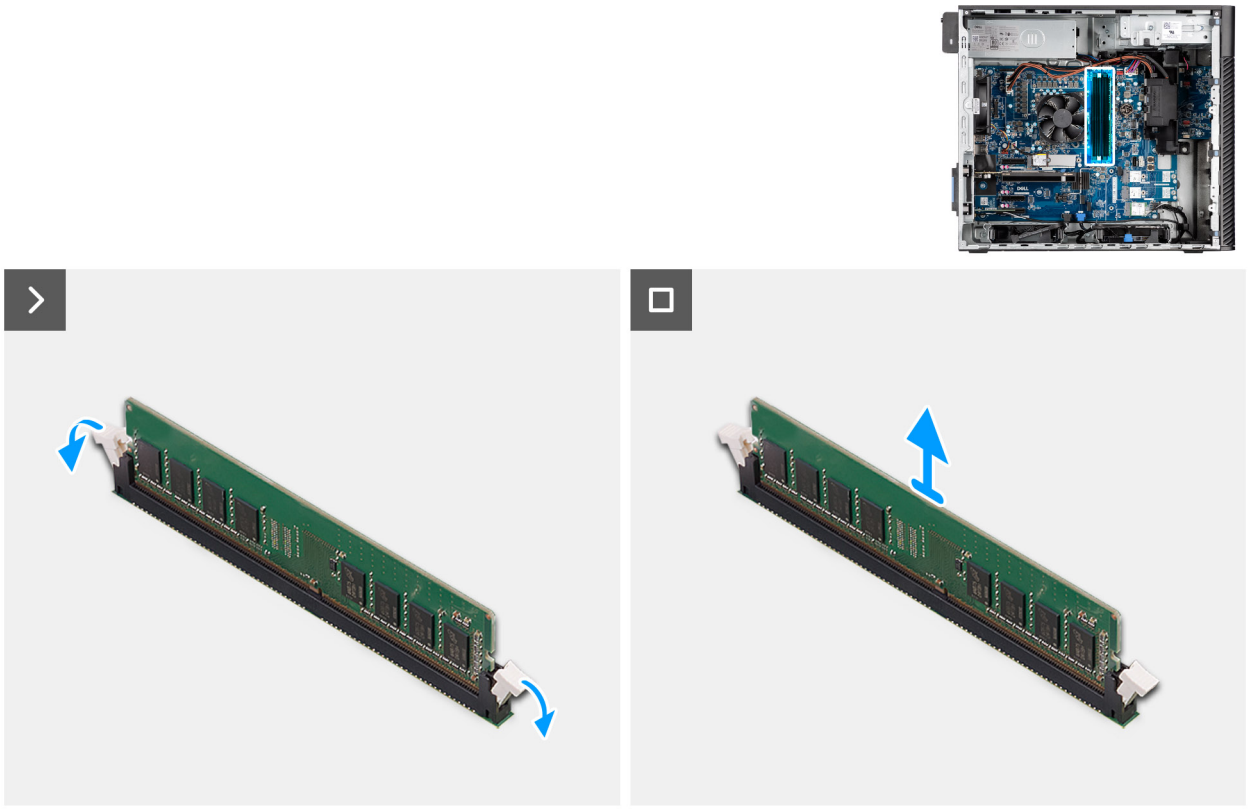


Figure 26. Removing the memory module

Steps

1. Pull the securing clips from both sides of the memory module until the memory module pops up.
2. Slide and remove the memory module from the memory-module slot.

CAUTION: To prevent damage to the memory module, hold the memory module by the edges. Do not touch the components or metallic contacts on the memory module as electrostatic discharge(ESD) can inflict severe damage on the components. To read more about ESD protection, see ESD protection.

Installing the memory module

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the memory module and provides a visual representation of the installation procedure.

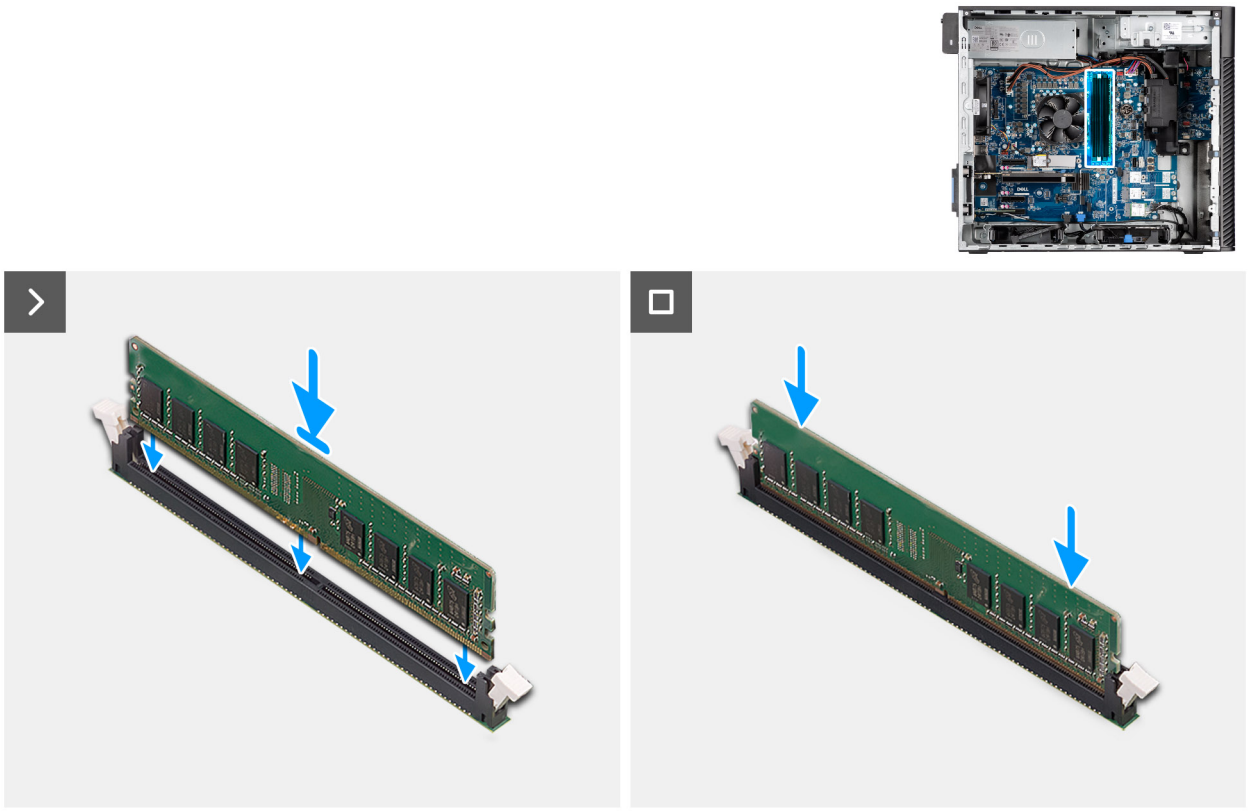


Figure 27. Installing the memory module

Steps

1. Align the notch on the memory module with the tab on the memory-module slot.
2. Slide the memory module firmly into the slot at an angle and press the memory module down until it secures into place.

NOTE: If the memory module is not secure, then remove the memory module and reinstall it.

CAUTION: To prevent damage to the memory module, hold the memory module by the edges. Do not touch the components or metallic contacts on the memory module as electrostatic discharge(ESD) can inflict severe damage on the components. To read more about ESD protection, see ESD protection.

Next steps

1. Install the air shroud.
2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Hard drive

Removing the 3.5-inch hard drive assembly (Bay-1)

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the front bezel.

About this task

The following images indicate the location of the 3.5-inch hard drive assembly (Bay-1) and provide a visual representation of the removal procedure.

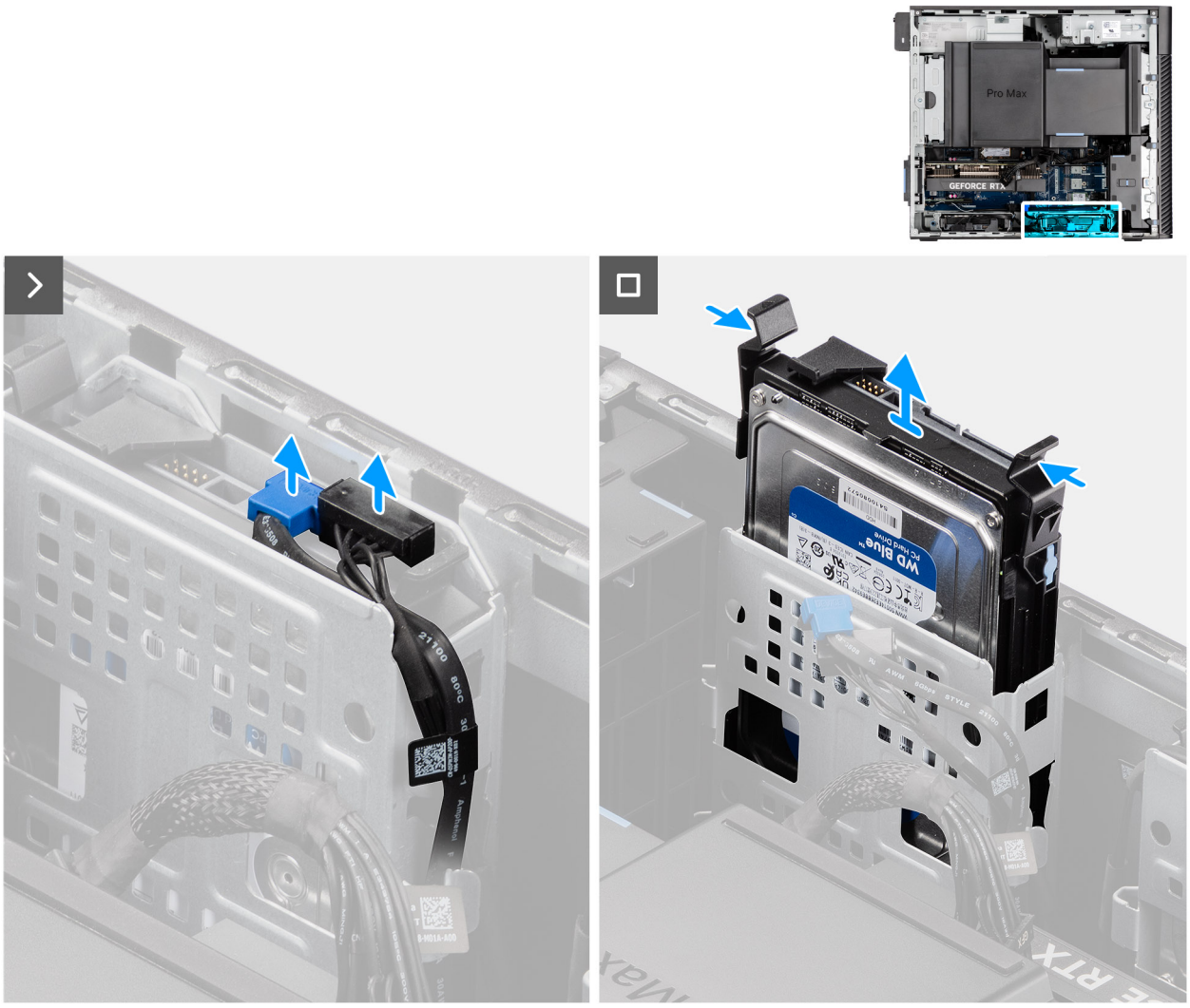


Figure 28. Removing the 3.5-inch hard drive assembly from Bay 1

Steps

1. Disconnect the data and power cables from the 3.5-inch hard drive module.
2. Press the securing tabs to release the hard drive assembly from the chassis.
3. Slide the hard drive assembly away from the chassis.

Removing the 3.5-inch hard drive assembly (Bay-2)

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the front bezel.

About this task

The following images indicate the location of the 3.5-inch hard drive assembly (Bay-2) and provide a visual representation of the removal procedure.

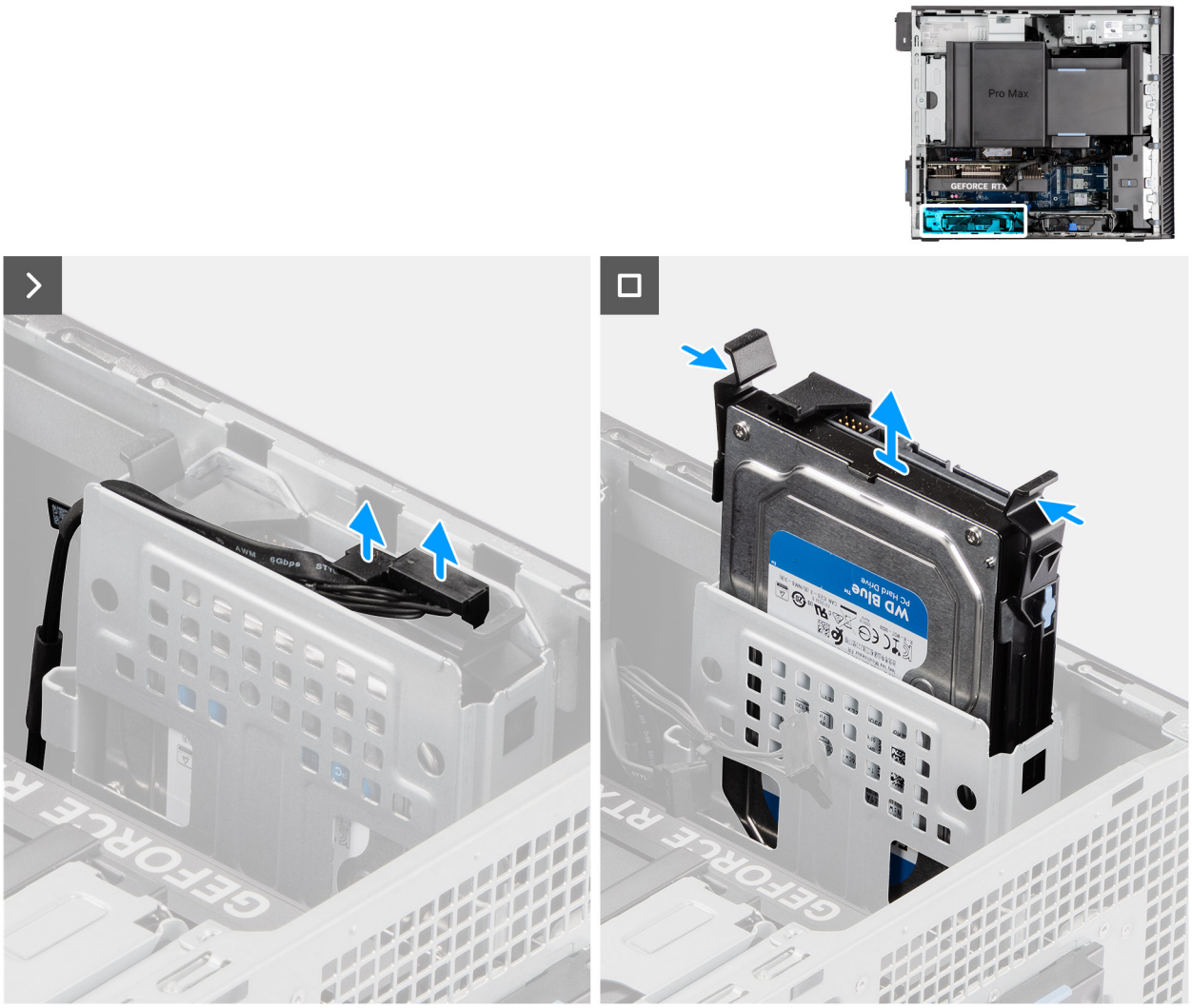


Figure 29. Removing the 3.5-inch hard drive assembly (Bay-2)

Steps

1. Disconnect the data and power cables from the 3.5-inch hard drive module.
2. Press the securing tabs to release the hard drive assembly from the chassis.
3. Slide the hard drive assembly away from the chassis.

Removing the 3.5-inch hard drive bracket

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the 3.5-inch hard drive assembly (Bay-1) or 3.5-inch hard drive assembly (Bay-2).

About this task

The following images indicate the location of the 3.5-inch hard drive bracket and provide a visual representation of the removal procedure.

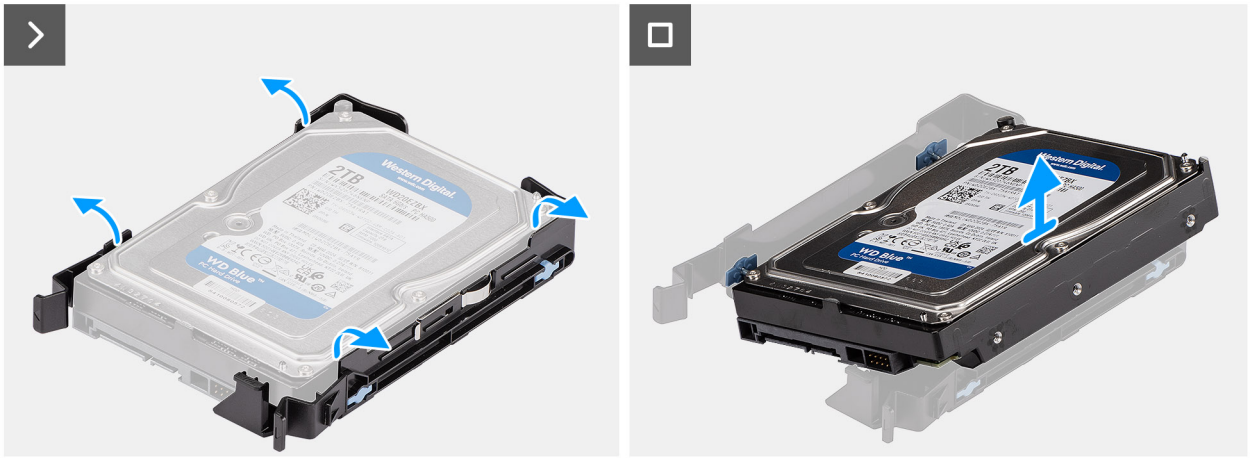


Figure 30. Removing the 3.5-inch hard-disk drive bracket

Steps

1. Pry both sides of the hard drive bracket edge to release the tabs on the bracket from the slots on the hard drive.
2. Lift and remove the hard drive off the hard drive bracket.

Installing the 3.5-inch hard drive bracket

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the 3.5-inch hard drive bracket and provide a visual representation of the installation procedure.



Figure 31. Installing the 3.5-inch hard drive bracket

Steps

1. Place the hard drive into the hard drive bracket and align the tabs on the bracket with the slots on the hard drive.
2. Snap the hard drive into the hard drive bracket.

Next steps

1. Install the 3.5-inch hard drive assembly (Bay-1) or 3.5-inch hard drive assembly (Bay-2).
2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Installing the 3.5-inch hard drive assembly (Bay-2)

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the 3.5-inch hard drive assembly (Bay-2) and provide a visual representation of the installation procedure.

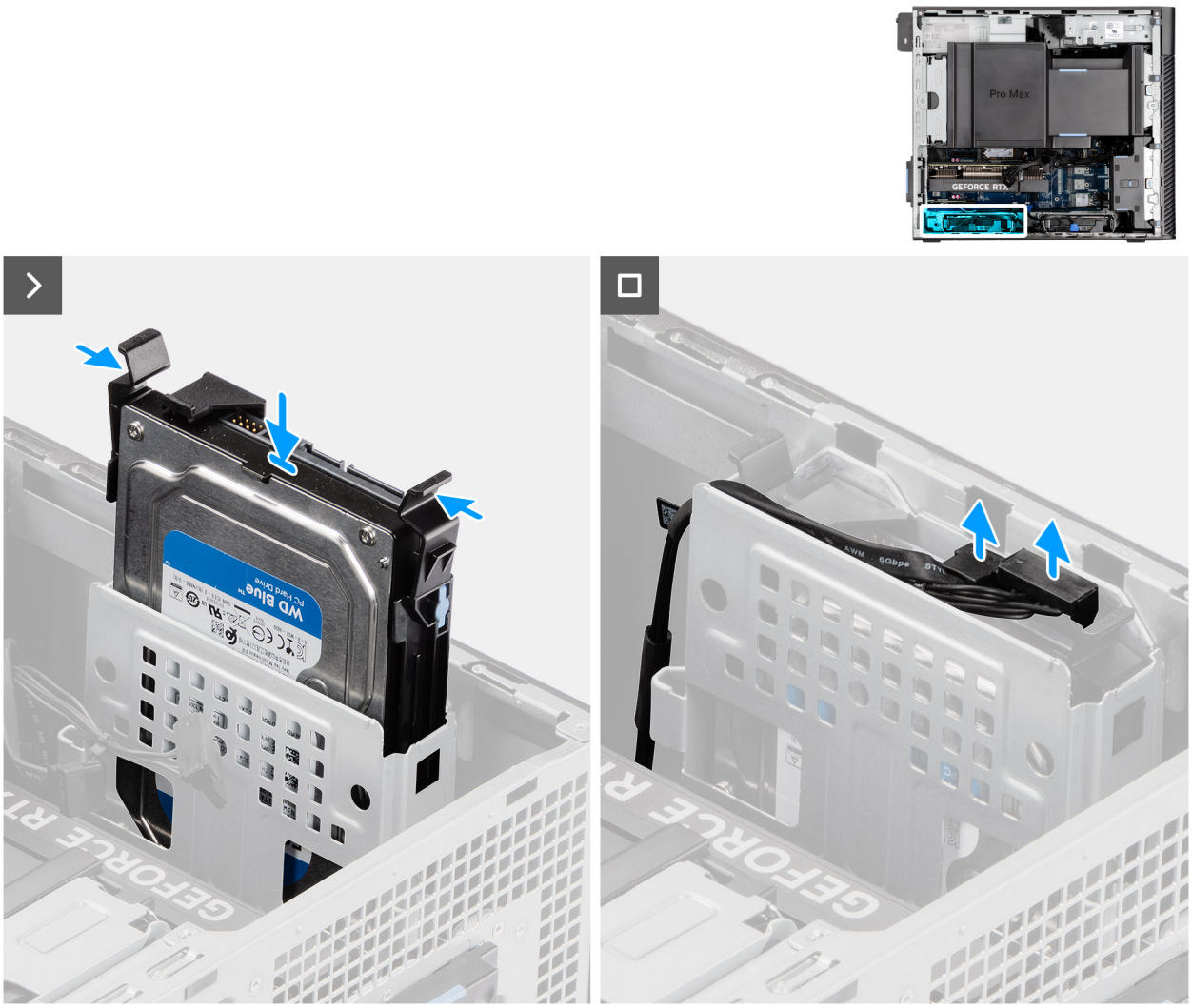


Figure 32. Installing the 3.5-inch hard drive assembly (Bay-2)

Steps

1. Slide and insert the 3.5-inch hard drive assembly into the hard drive slot.
2. Route the power cable and the data cable through the routing guides on the hard drive assembly and connect the cables to the hard drive.

Next steps

1. Install the front bezel.
2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Installing the 3.5-inch hard drive assembly (Bay-1)

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the 3.5-inch hard drive assembly and provide a visual representation of the installation procedure.

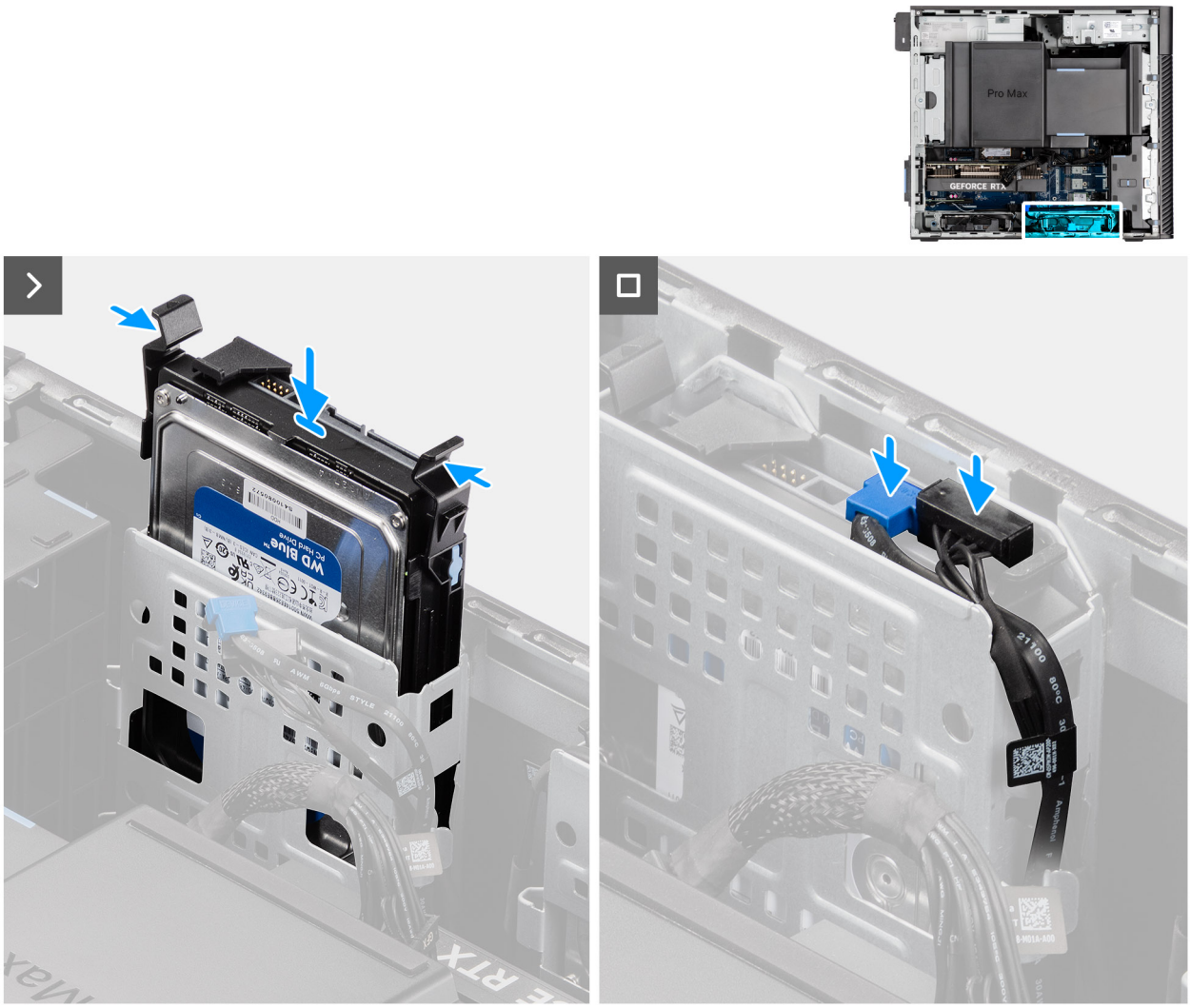


Figure 33. Installing the 3.5-inch hard drive assembly from Bay 1

Steps

1. Slide and insert the 3.5-inch hard drive assembly into the hard drive slot.
2. Route the power cable and the data cable through the routing guides on the hard drive assembly and connect the cables to the hard drive.

Next steps

1. Install the front bezel.
2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Solid state drive

Removing the M.2 2230 PCIe solid state drive

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

NOTE: For computers with 1500 W PSU only.

About this task

The following images indicate the location of the solid state drive and provide a visual representation of the removal procedure.

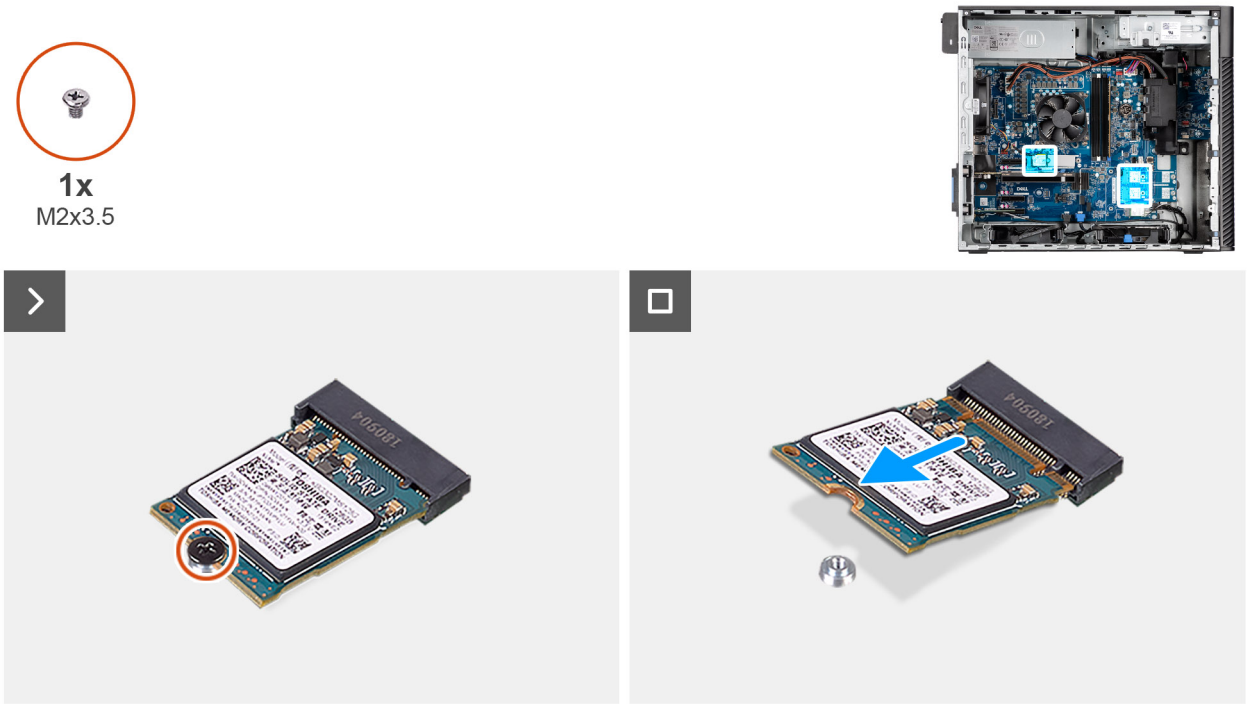


Figure 34. Removing the M.2 2230 PCIe solid state drive

Steps

1. Remove the screw (M2x3.5) that secures the solid state drive to the system board.
2. Slide and lift the solid state drive off the system board.

Installing the M.2 2230 PCIe solid state drive

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the solid state drive and provide a visual representation of the installation procedure.

NOTE: For computers shipped with 360 W power-supply unit, SSD-2 must be installed with a front chassis fan. Customers must call Dell sales to purchase the SSD CUS kit and additional front chassis fan. Follow the procedures for installing front chassis fan.

NOTE: Solid state drive installation on slot-1 requires a thermal heat sink to be installed.

NOTE: Follow the below procedures for installing solid state drive on SSD-1 and SSD-2 slots.

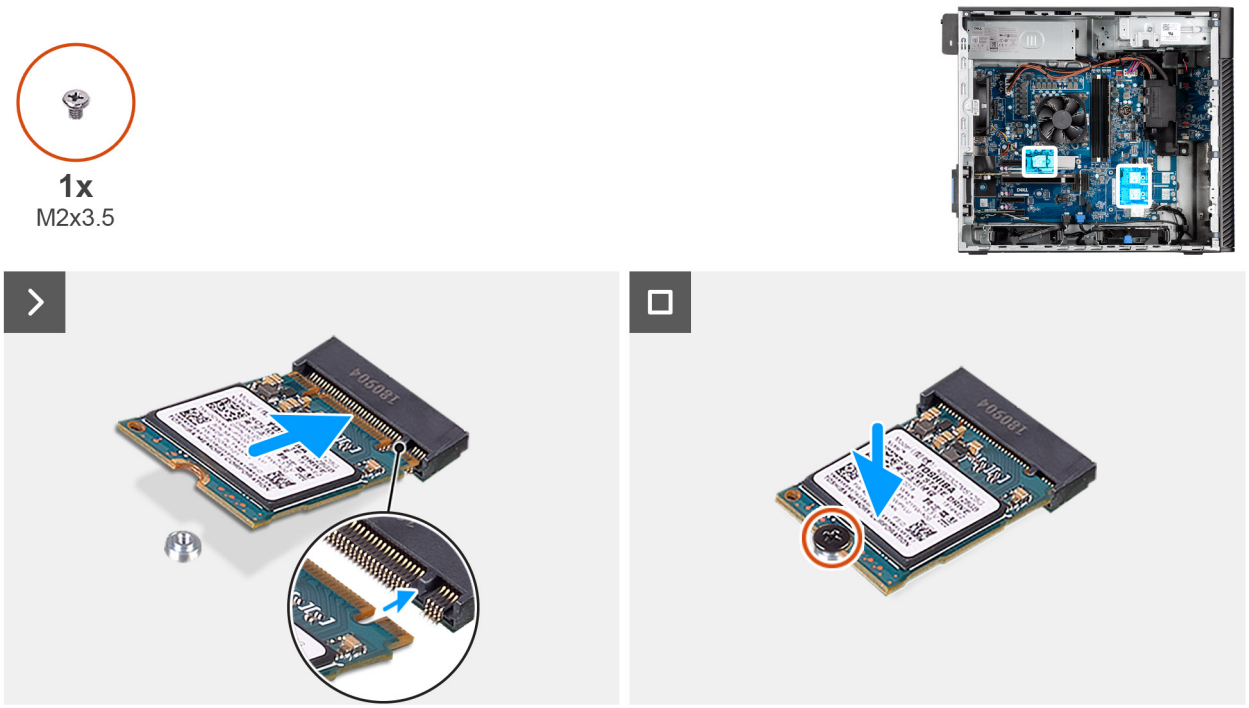


Figure 35. Installing the M.2 2230 PCIe solid state drive

Steps

1. Align the notch on the solid state drive with the tab on the solid state drive connector.
2. Insert the solid state drive at an angle into the slot on the system board.

   NOTE: When replacing a M.2 2280 solid state drive from a M.2 2230 solid state drive, ensure to move the standoff nut to the M.2 2230 solid state drive slot position.

3. Replace the screw (M2x3.5) to secure the M.2 2230 solid state drive to the system board.

Next steps

1. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Removing the M.2 2280 PCIe solid state drive

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

About this task

The following images indicate the location of the solid state drive and provide a visual representation of the removal procedure.

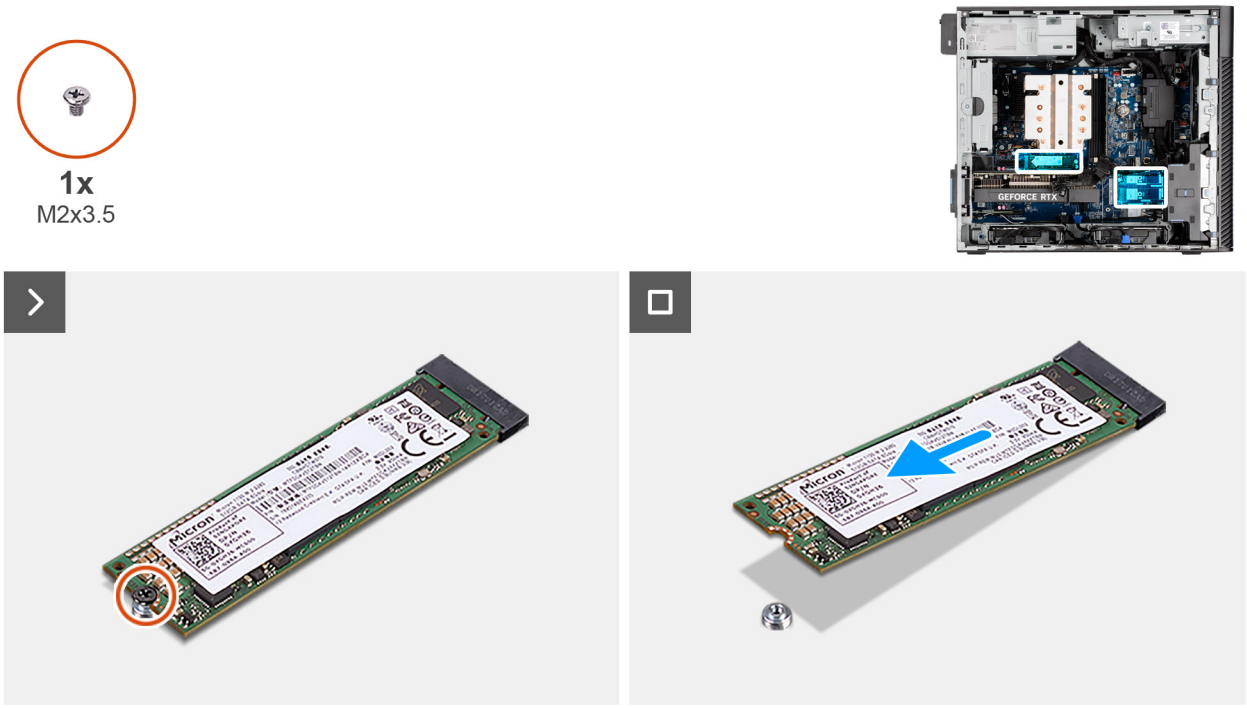


Figure 36. Removing the M.2 2280 PCIe solid state drive

Steps

1. Remove the screw (M2x3.5) that secures the solid state drive to the system board.
2. Slide and lift the solid state drive off the system board.

Installing the M.2 2280 PCIe solid state drive

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the solid state drive and provide a visual representation of the installation procedure.

NOTE: For computers shipped with 360 W power-supply unit, SSD2 must be installed with a front chassis fan. Customers must call Dell sales to purchase the SSD CUS kit and additional front chassis fan. Follow the procedures for installing front chassis fan.

NOTE: Solid state drive installation on slot-1 requires a thermal heat sink to be installed.

NOTE: Follow the below procedures for installing solid state drive on SSD-2 and SSD-3 slots.

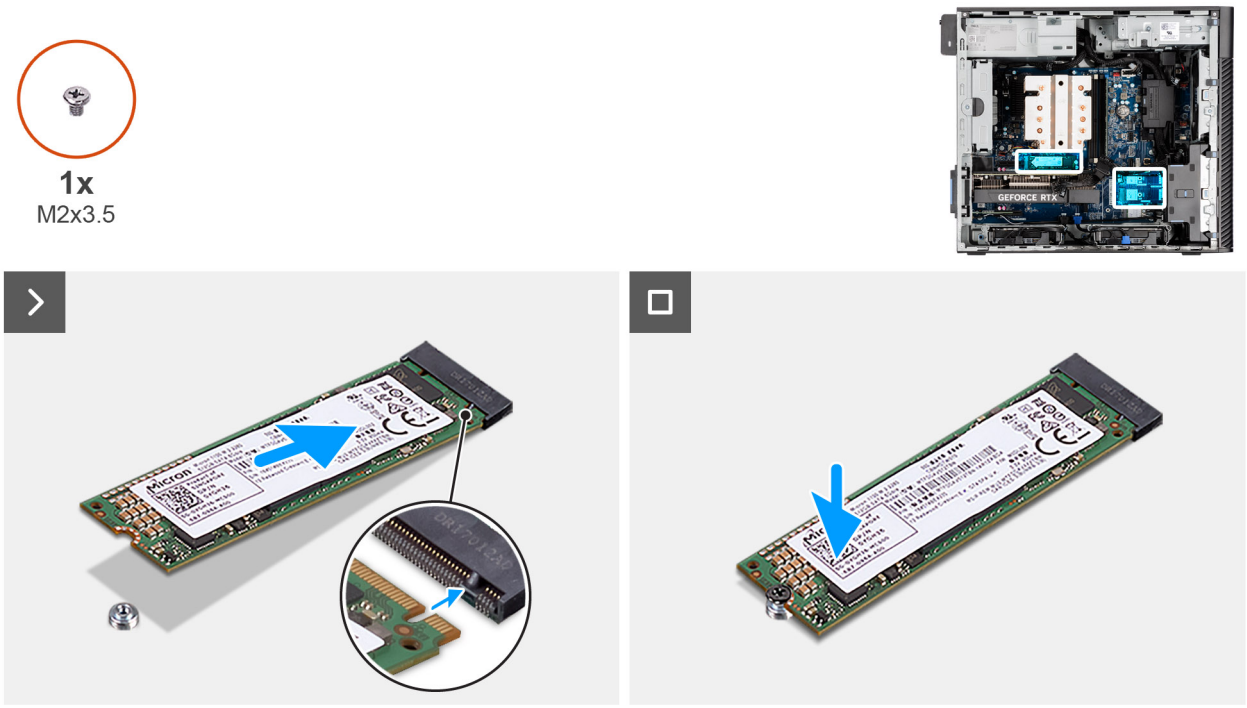


Figure 37. Installing the M.2 2280 PCIe solid state drive

Steps

1. Align the notch on the solid state drive with the tab on the solid state drive connector.
2. Insert the solid state drive into the slot on the system board.

   NOTE: When replacing a M.2 2230 solid state drive with a M.2 2280 solid state drive, ensure to move the standoff nut to the M.2 2280 solid state drive slot position.

3. Replace the screw (M2x3.5) to secure the M.2 2280 solid state drive to the system board.

   NOTE: Repeat the above procedure for installing the other solid state drives.

Next steps

1. Install the air shroud.
2. Install the side cover.
3. Follow the procedure in after working inside your computer.

External storage flexbay (Hard drive)

Removing the front external 3.5-inch hard drive assembly

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the front bezel .

About this task

The following images indicate the location of the 3.5-inch hard drive bracket and provide a visual representation of the removal procedure.

Steps

1. Press the release latch on the front 3.5-inch hard-disk drive assembly.
2. Holding the open release latch, slide the front 3.5-inch hard-disk drive out of the bay.
3. Unroute the SATA and power cables from the cable hub on the chassis and routing tabs on the front hard-disk/optical-disk drive cage.
4. Disconnect the SATA cable from the connector (SATA-2) on the system board.
5. Disconnect the SATA power cable to the connector on the system board.
6. Loosen the two captive screws that secure the hard-disk drive bracket assembly to the hard drive/optical drive cage.
7. Lift and remove the hard drive off the hard-disk drive bracket assembly.

Installing the front external 3.5-inch hard drive assembly

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the 3.5-inch hard drive bracket and provide a visual representation of the installation procedure.

Steps

1. Align and insert the two alignment post into its slot on the back of the hard drive/optical drive cage.
2. Tighten the two captive screws to secure the hard-disk drive bracket assembly to the hard drive/optical drive cage.
3. Connect the SATA cable to the connector (SATA-2) on the system board.
4. Connect the SATA power cable to the connector on the system board.
5. Route the SATA and power cables through the cable hub on the chassis and routing tabs on the front hard-disk/optical-disk drive cage.
6. Slide the EMI sheilding from the from of the bay.
7. Insert the hard-drive assembly into the front external drive bay.
8. Close the release latch to lock the hard-disk drive assembly in place.

Next steps

1. Install the front bezel.
2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Removing the external 3.5-inch hard drive caddy

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the external 3.5-inch hard-drive assembly.

About this task

The following images indicate the location of the external 3.5-inch hard drive caddy and provide a visual representation of the removal procedure.





Steps

1. Pry the sides of the external hard drive caddy to release the tabs on the bracket from the slots on the hard drive.
2. Lift and remove the hard drive off the external hard drive caddy.

Installing the external 3.5-inch hard drive caddy

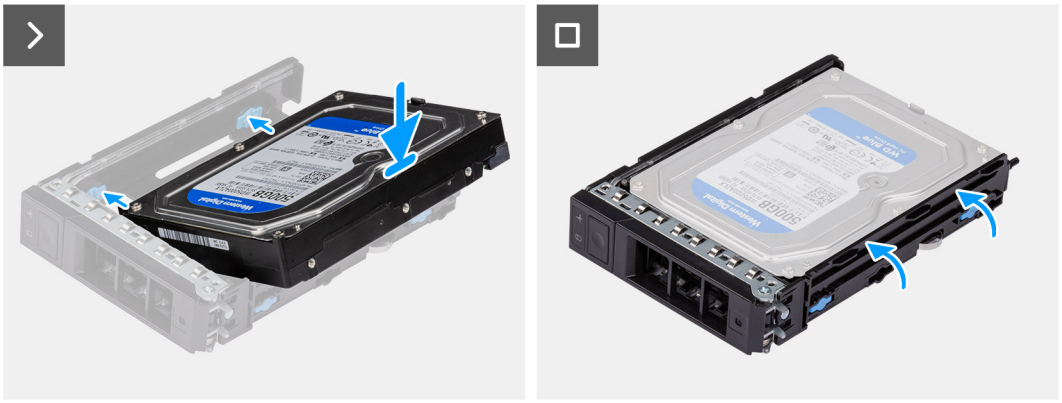
Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the external 3.5-inch hard drive caddy and provide a visual representation of the installation procedure.





Steps

1. Place the hard drive into the external hard drive caddy and align the tabs on the bracket with the slots on the hard drive.
2. Snap the hard drive into the external hard drive caddy.

Next steps

1. Install the external 3.5-inch hard-drive assembly.
2. Follow the procedure in After working inside your computer.

Front-NVMe module

Removing the M.2 SSD carrier

Prerequisites

1. Follow the procedure in before working inside your computer.

About this task

The following images indicate the location of the M.2 SSD carrier and provide a visual representation of the removal procedure.



Figure 38. Removing the front NVMe door



Figure 39. Removing the M.2 SSD carrier

Steps

1. Rotate the key to unlock the front NVMe door.
2. At an angle, remove the front NVMe door from of the front bezel.
3. Push the latch on the M.2 SSD carrier to release the carrier from the front NVMe module.
4. While holding the release tab, slide the M.2 SSD carrier out of the front NVMe module.

Removing the front NVMe module

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the front bezel.

About this task

The following images indicate the location of the front NVMe module and provide a visual representation of the removal procedure.

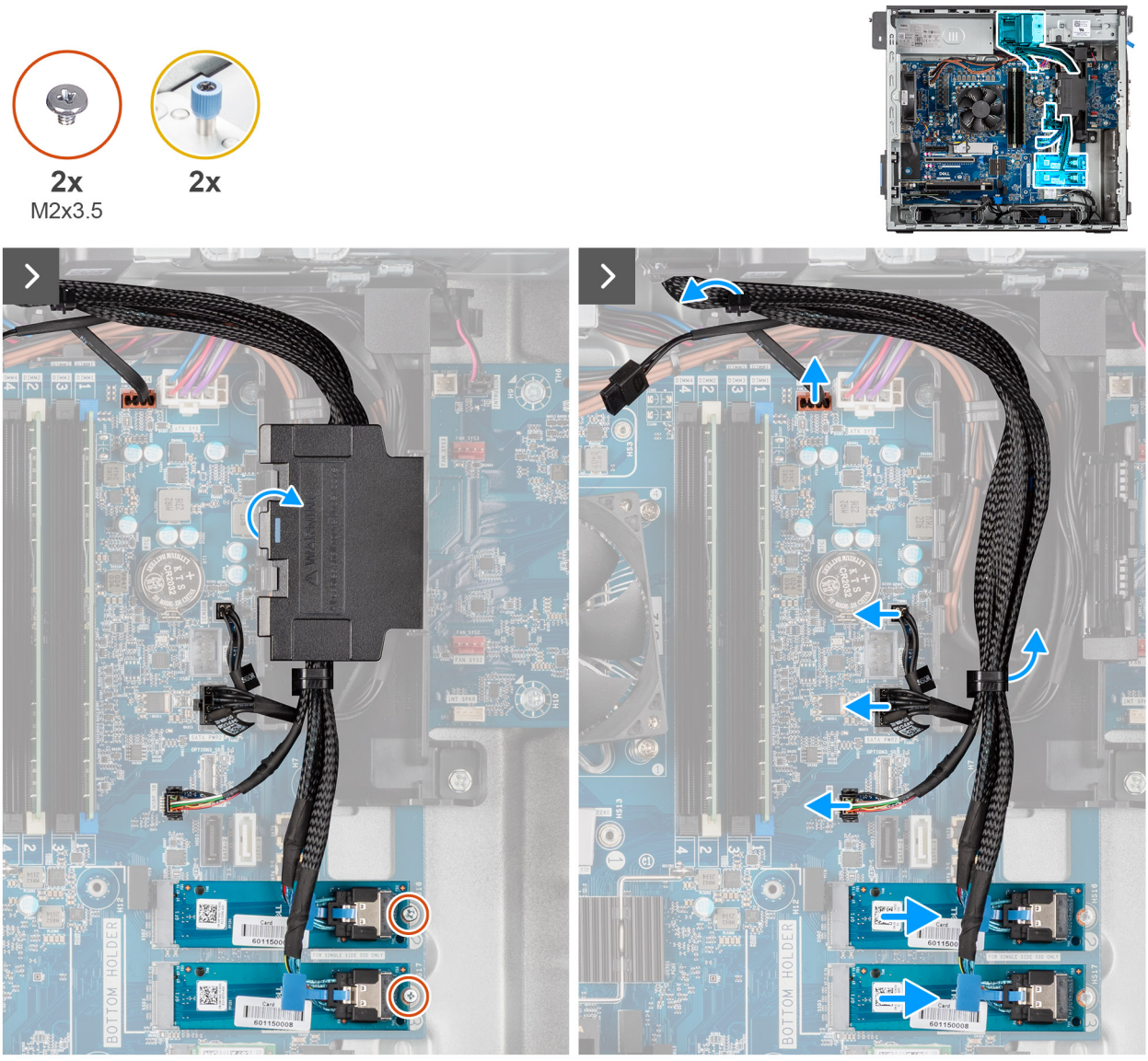


Figure 40. Removing the front NVMe module cables

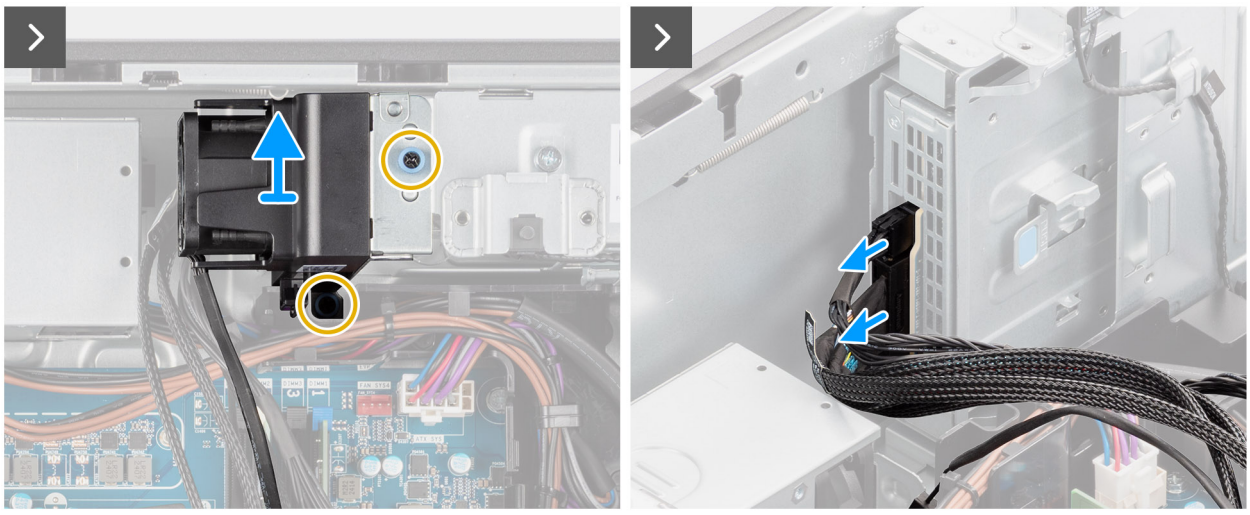


Figure 41. Removing the front NVMe fan module



Figure 42. Removing the front NVMe module

Steps

1. Remove the two screws (M2x3.5) that secure the M.2 adapter modules to the M.2 slots.
2. Open the cable box.
3. Disconnect the fan (FAN-SYS4), SATA, power (SATA PWR2), and sensor (SENSOR) cables from the connectors on the system board.
4. At an angle, slide and remove the M.2 adapters from the M.2 slots.
5. Unroute the cables from the cable box and the routing clips on the chassis.
6. Loosen the two screws that secure the fan module to the front NVMe module.
7. Slide and lift the fan module out of the computer.
8. Disconnect the signal (Z-Link) and power cable (PWR1) from the connectors of the front NVMe module.
9. Slide the NVMe module and remove it from the slot on the chassis.
10. Slide the front NVMe module out of the computer.

Removing the M.2 SSD from the carrier

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the M.2 SSD carrier.

About this task

The following images indicate the location of the M.2 SSD and provide a visual representation of the removal procedure.

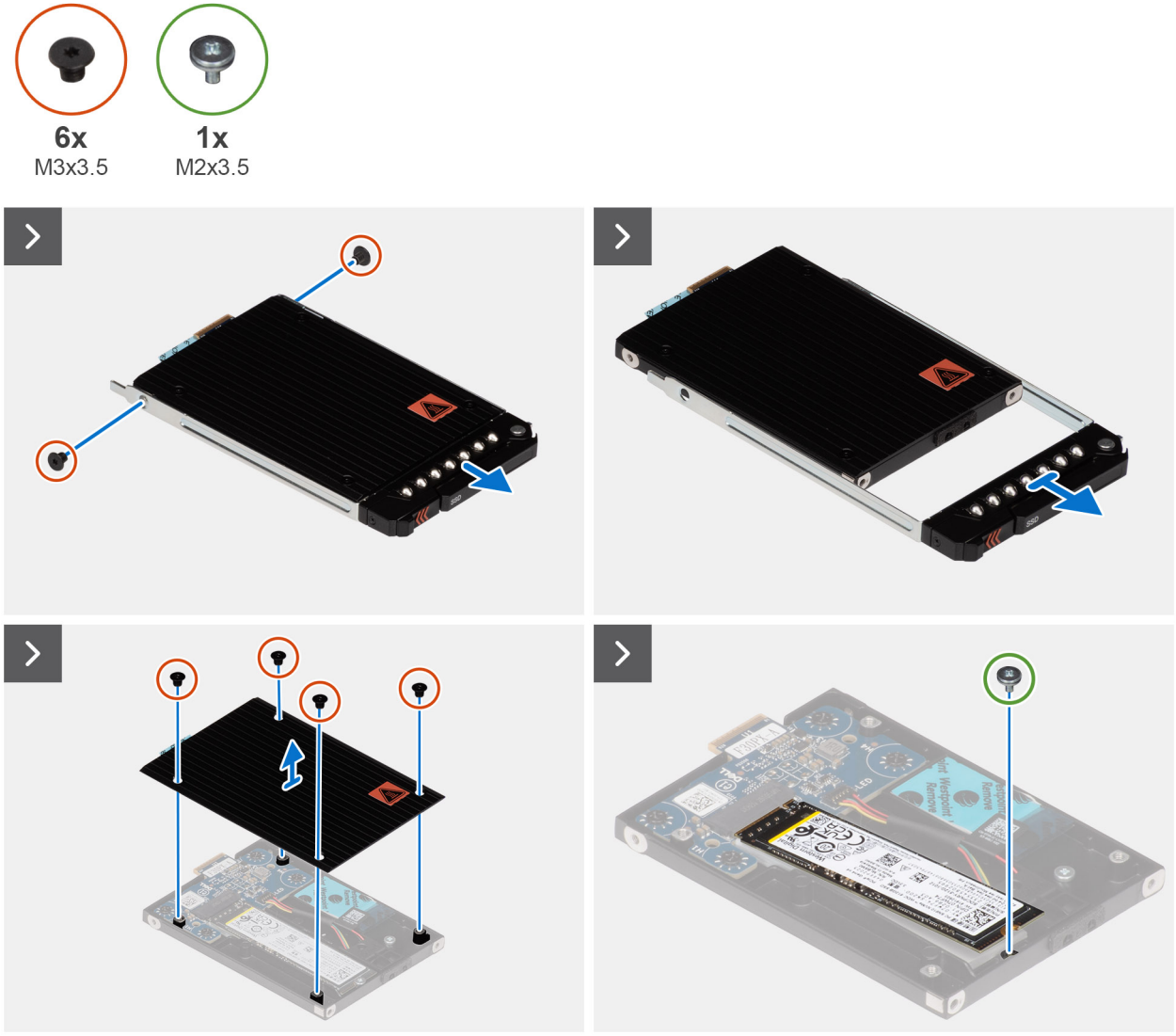


Figure 43. Removing the M.2 SSD from the carrier

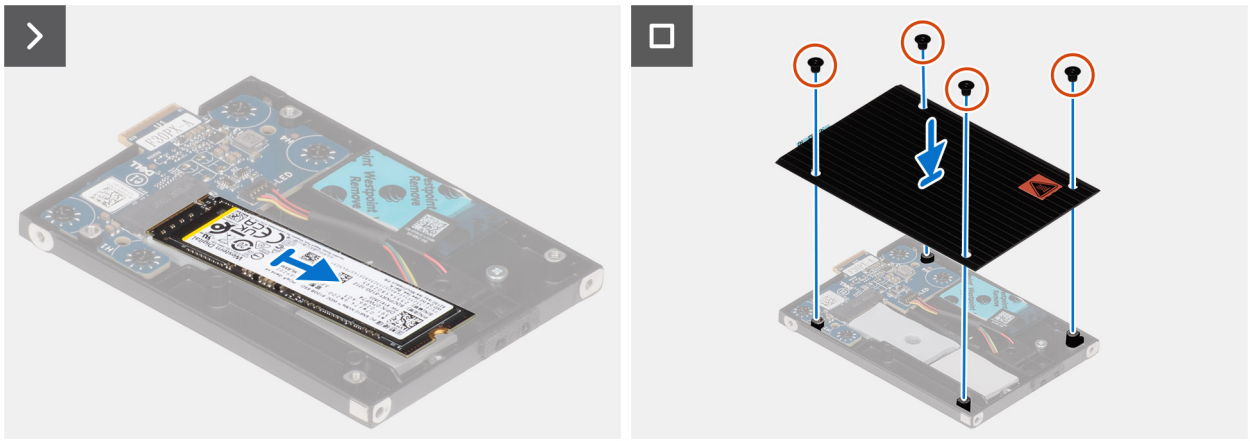


Figure 44. Removing the M.2 SSD from the carrier

Steps

1. Remove the two screws (M3x3.5) that secure the M.2 carrier handle to the carrier.

2. Slide the carrier handle away from the carrier.
3. Remove the four screws (M3x3.5) that secure the carrier cover to the carrier.
4. Lift the cover away from the carrier.
5. Remove the screw (M2x3.5) that secures the M.2 SSD to the carrier.
6. Slide and remove the M.2 SSD from the slot on the carrier.
7. Align the screw holes on the carrier cover with the screw holes on the carrier.
8. Install the four screws (M3x3.5) to secure the carrier cover to the carrier.

Installing the M.2 SSD in the carrier

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the M.2 SSD and provide a visual representation of the installation procedure.

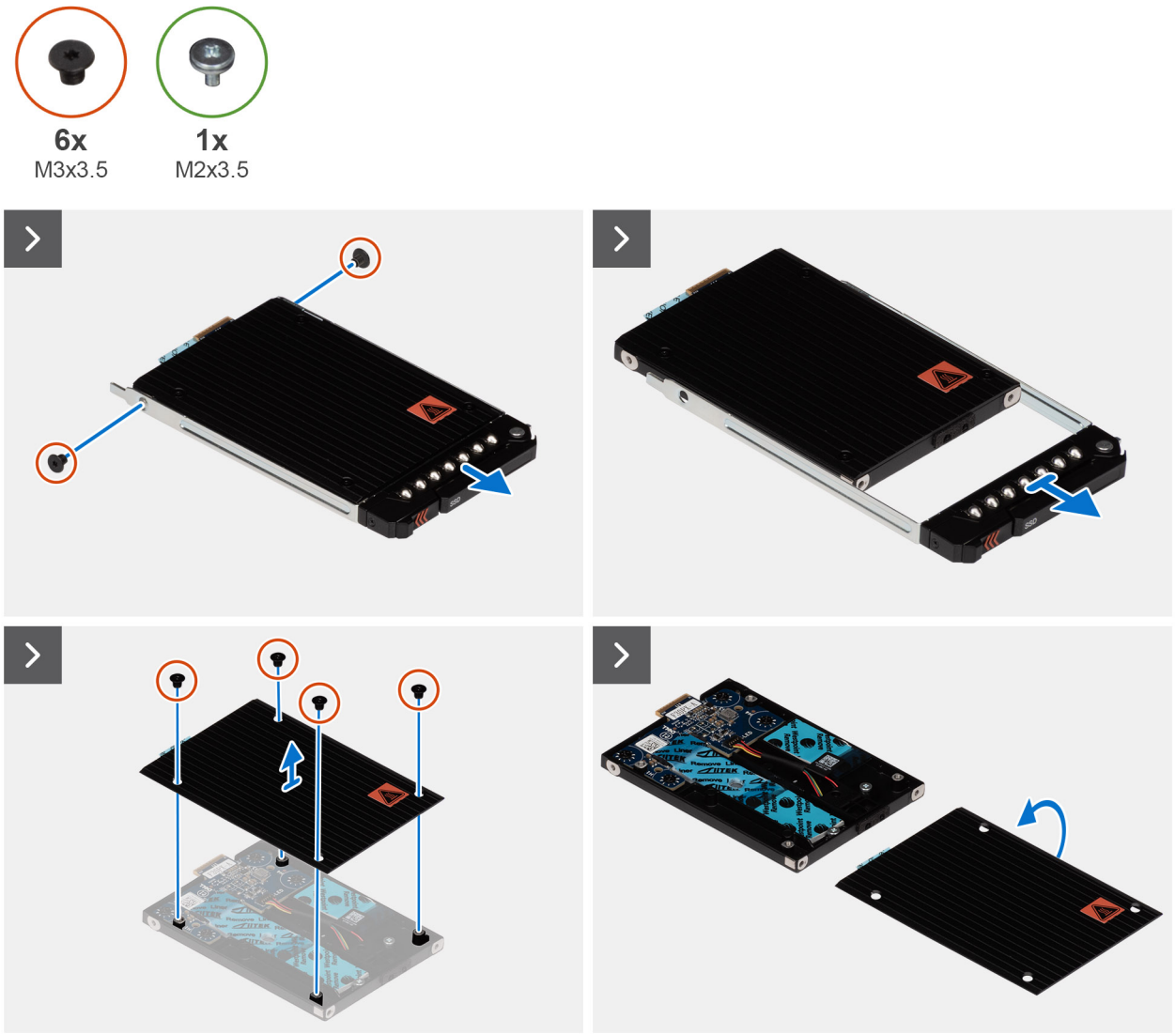


Figure 45. Installing the M.2 SSD in the carrier

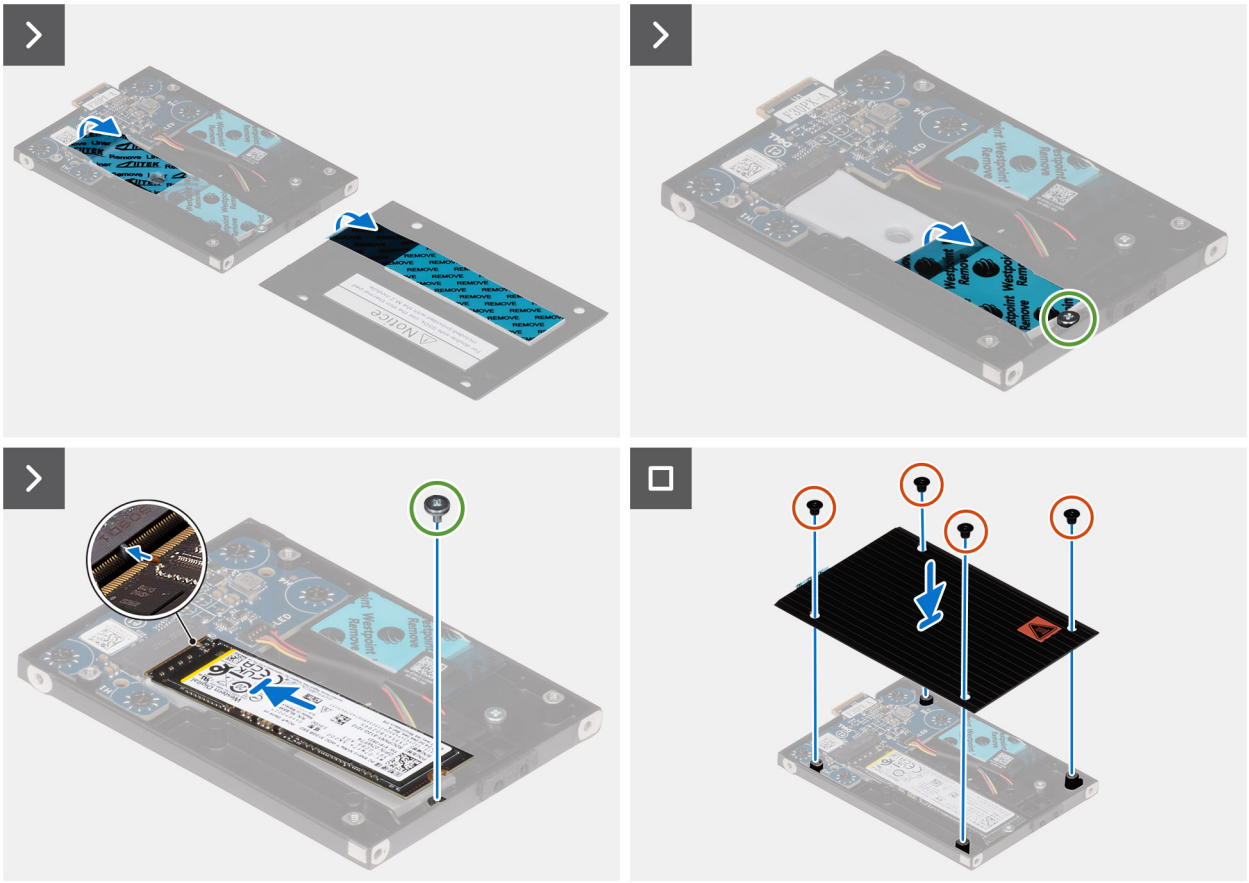


Figure 46. Installing the M.2 SSD in the carrier

Steps

1. Remove the two screws (M3x3.5) that secure the M.2 carrier handle to the carrier.
2. Slide the carrier handle away from the carrier.
3. Remove the four screws (M3x3.5) that secure the carrier cover to the carrier.
4. Lift the cover away from the carrier.
5. Remove the thermal pad protection film from the M.2 SSD slot on the carrier.
6. Flip the carrier cover and remove the thermal pad protection film from the carrier cover.
7. Remove the screw (M2x3.5) that is secured to the carrier.
8. Align the notch on the M.2 SSD with the tab on the carrier connector.
9. Insert the M.2 SSD at an angle into the slot on the carrier.
10. Install the screw (M2x3.5) to secure the M.2 SSD to the carrier.
11. Align the screw holes on the carrier cover with the screw holes on the carrier.
12. Install the four screws (M3x3.5) to secure the carrier cover to the carrier.

Next steps

1. Install the M.2 SSD carrier.
2. Follow the procedure in after working inside your computer.

Installing the front NVMe module

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the front NVMe module and provide a visual representation of the installation procedure.



Figure 47. Installing the front NVMe module

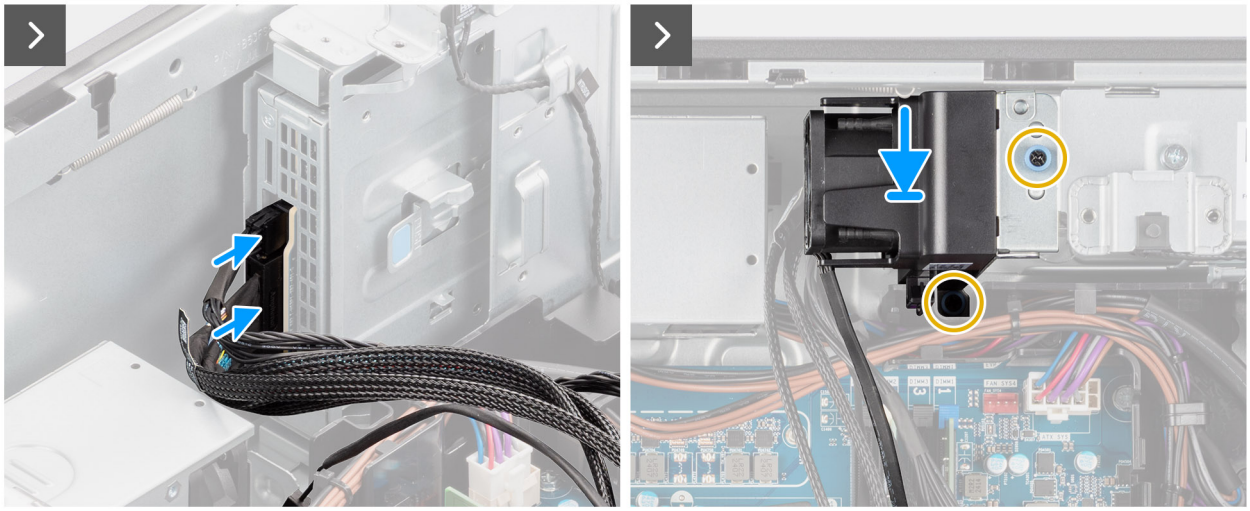


Figure 48. Installing the front NVMe fan module

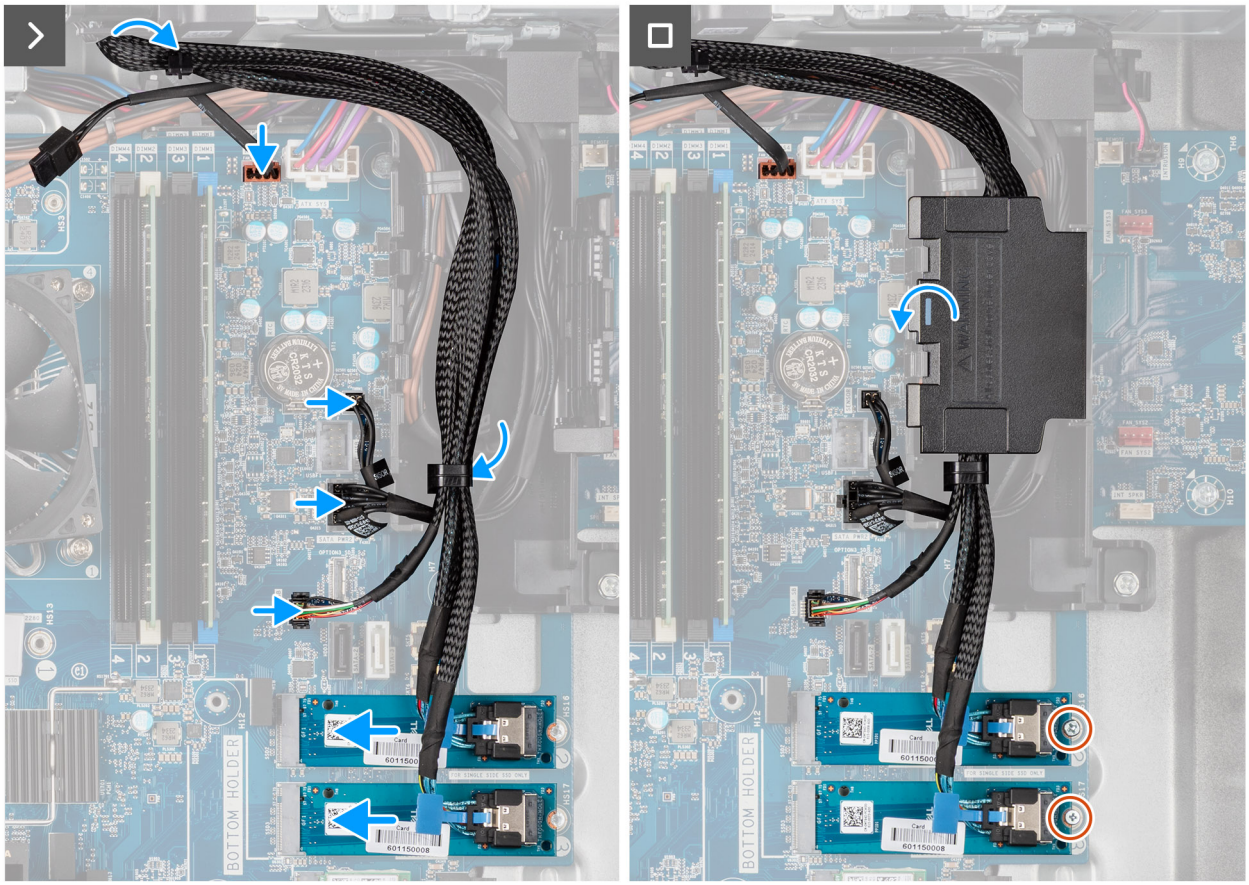


Figure 49. Installing the front NVMe module cables

Steps

1. Slide the front NVMe module into the slot on the chassis until it clicks into place.
2. Connect the signal (Z-Link) and the power cable (PWR1) to the connector on the front NVMe module.
3. Slide the NVMe fan module into its slot.
4. Tighten the two captive screws to secure the fan module to the chassis.
5. Connect the fan power cable to the connector (FAN_SYS4) on the system board.
6. Connect the M.2 SATA, power (SATA PWR2), and sensor (SENSOR) cables to the connectors on the system board.
7. Route the MICO, HSBP, power, and sensor cables through the routing clips on the chassis and cable box.

   NOTE: Ensure that you route the P2 cable first and then the P3 MICO cable.

8. Align the notch on the M.2 adapters with the M.2 slot 2 and slot 3.
9. Slide the M.2 adapters into the slots.
10. Replace the two screws (M2x3.5) that secure the M.2 adapters to the M.2 slots.
11. Close the cable box.

Next steps

1. Install the front bezel.
2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Installing the M.2 SSD carrier

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the M.2 SSD carrier and provide a visual representation of the installation procedure.

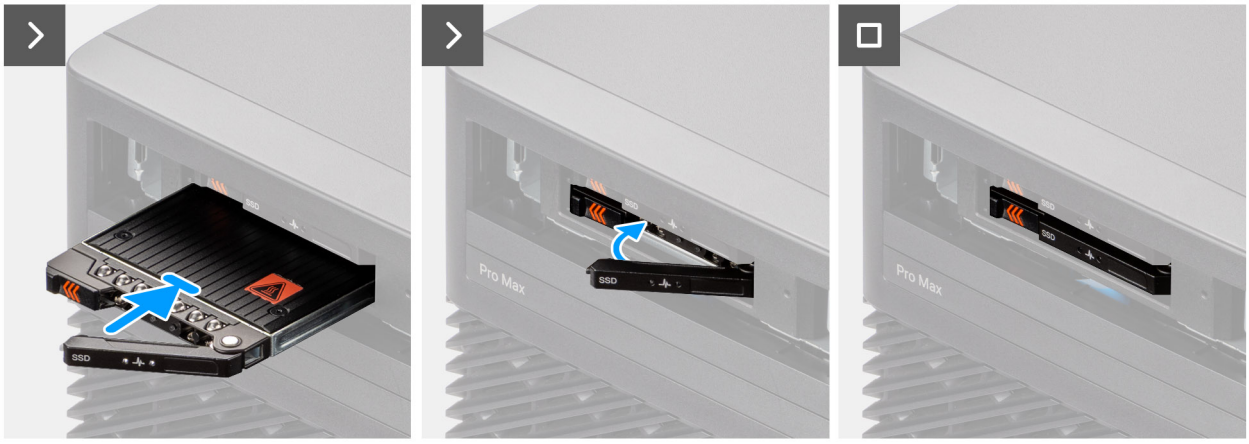


Figure 50. Installing the M.2 SSD carrier

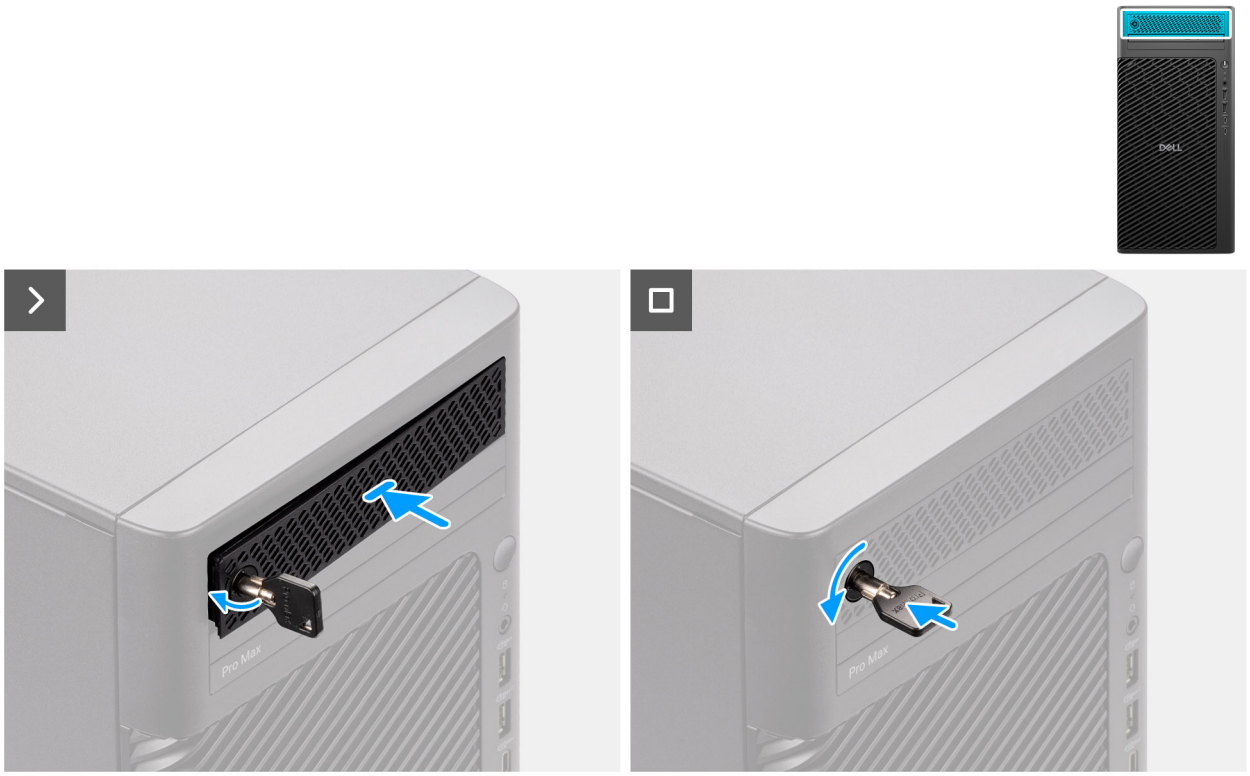


Figure 51. Installing the M.2 SSD carrier door

Steps

1. Align the M.2 SSD carrier with the slot on the front NVMe module.
2. Slide the carrier into the slot, until it clicks into place.
3. Push the carrier latch to lock the carrier in the front NVMe module.

4. Align and slide the front NVMe module door in to the front bezel.
5. Rotate the key to lock the front NVMe module.

Next steps

1. Follow the procedure in after working inside your computer.

Graphics-card end holder

Removing GPU end holder

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

NOTE: For computers with 1500 W PSU only.

NOTE: The GPU end holder is an optional component that comes with certain discrete GPU configurations. It does not come with integrated GPU configurations.

About this task

The following images indicate the location of the GPU end holder and provide a visual representation of the removal procedure.

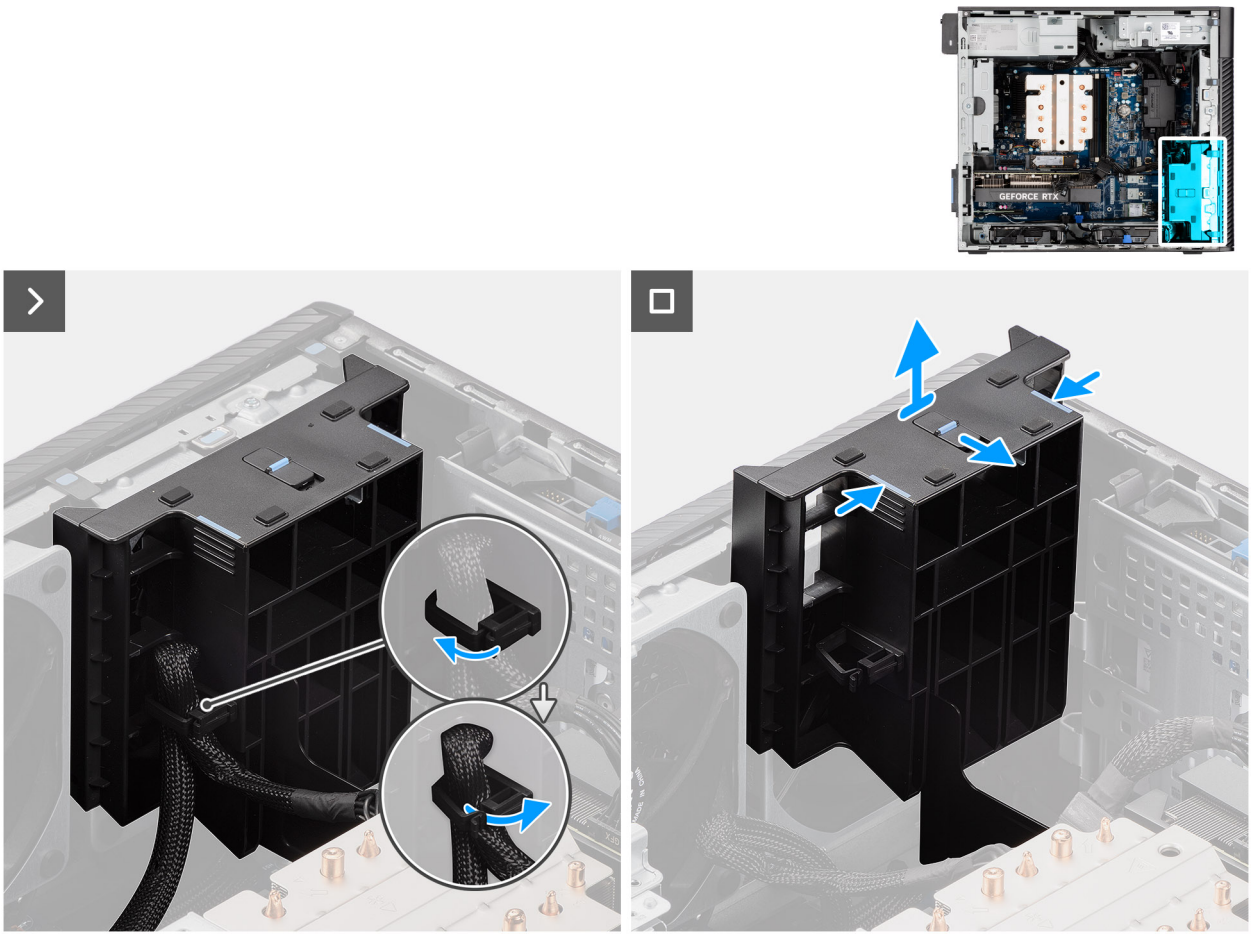


Figure 52. Removing the GPU end holder

Steps

1. Unroute the graphics card power cable from the retention clip on the GPU end holder.
2. Slide the latch to unlock position on the GPU end holder.
3. Press the retention tabs on both sides of the GPU end holder to release it.
4. Lift and remove the GPU end holder from the computer.

Installing the GPU end holder

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the GPU end holder and provide a visual representation of the installation procedure.

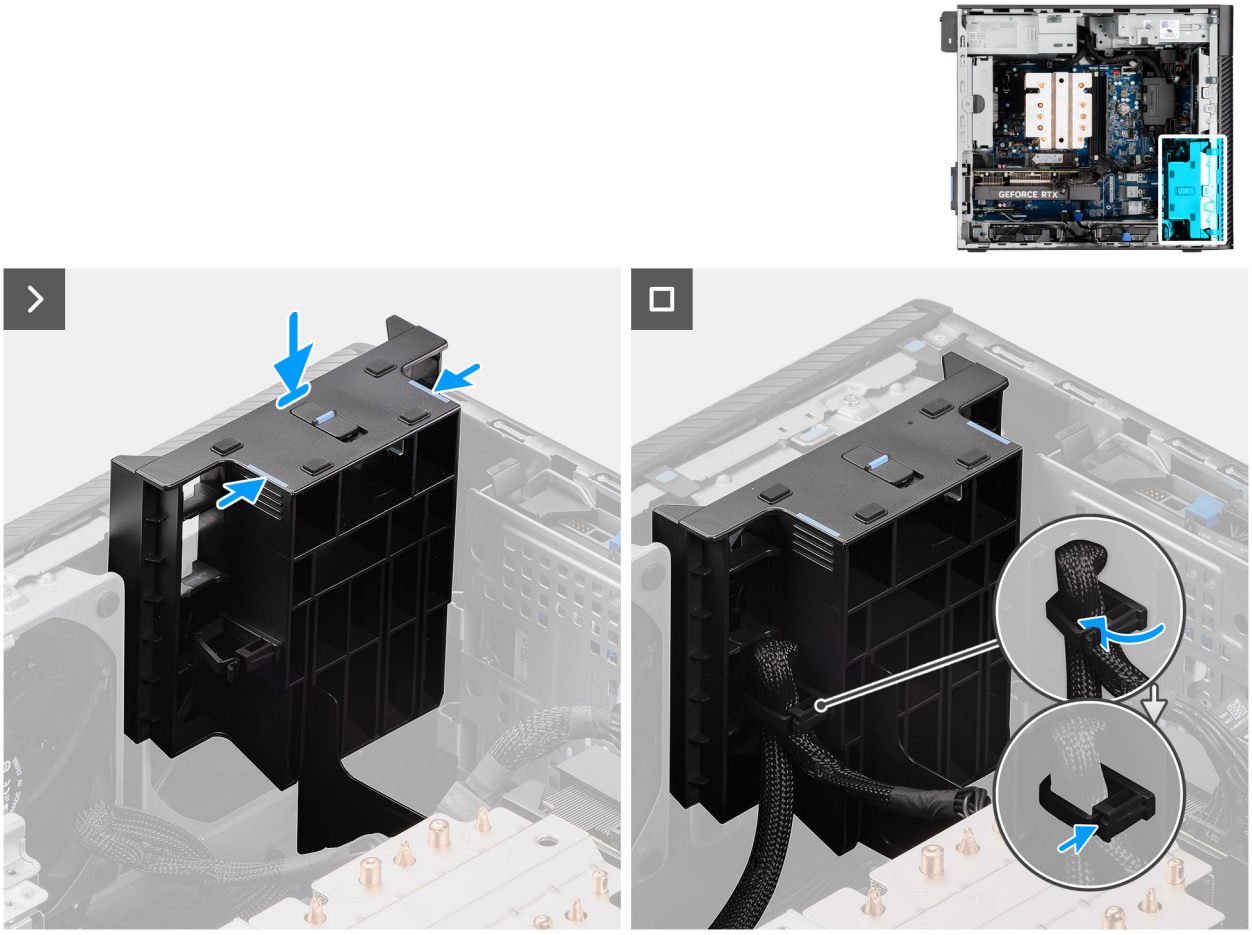


Figure 53. Installing the GPU end holder

Steps

1. Position the GPU end holder to align it with the slots on the computer chassis.
2. Press the GPU end holder down until it secures into place.
3. Slide the latch to lock position on the GPU end holder.
4. Route the graphics card power cable through the retention clip on the GPU end holder.
5. Press and lock the retention clip to secure the graphics card power cable.

Next steps

1. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Graphics card

Removing the graphics card

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.

About this task

The following images indicate the location of the graphics card and provide a visual representation of the removal procedure.



Figure 54. Removing the graphics card

Steps

1. Press the pull tab down to open the PCIe door.
2. Remove the screw (M3x5) that secures the graphics card to the PCIe slot.
3. Push and hold the securing tab on the graphics-card slot and lift the graphics card from the graphics-card slot.
4. Insert the blank filler.
5. Lift the pull tab to close the PCIe door.

Installing the graphics card

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the graphics card and provide a visual representation of the installation procedure.



Figure 55. Installing the graphics card

Steps

1. Press the pull tab down to open the PCIe door.
2. Remove the blank filler.
3. Align the graphics card with the PCI-express card connector on the system board.
4. Using the alignment post, connect the graphics card to the connector and press down firmly. Ensure that the card is firmly seated.
5. Replace the screw (M3x5) to secure the graphics card to the PCIe slot.
6. Lift the pull tab to close the PCIe door.

Next steps

1. Install the side cover.
2. Follow the procedure in after working inside your computer.

Removing the powered graphics card

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the GPU end holder

About this task

The following images indicate the location of the powered graphics card and provide a visual representation of the removal procedure.



Figure 56. Removing the powered graphics card

Steps

1. Press the pull tab down to open the PCIe door.
2. Disconnect the power cable from the connector on the powered graphics card.
3. Remove the screw (M3x5) that secures the graphics card to the PCIe slot.

4. Push and hold the securing tab on the graphics-card slot and lift the powered graphics card from the graphics-card slot.
5. Lift the pull tab to close the PCIe door.

Installing the powered graphics card

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the powered graphics card and provide a visual representation of the installation procedure.



Figure 57. Installing the powered graphics card

Steps

1. Align the graphics card with the PCI-express card connector on the system board.

2. Using the alignment post, connect the graphics card to the connector and press down firmly. Ensure that the card is firmly seated.
3. Replace the screw (M3x5) to secure the graphics card to the PCIe slot.
4. Connect the power cable to the connector on the powered graphics card.
5. Lift the pull tab to close the PCIe door.

Next steps

1. Install the GPU end holder
2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Wireless card

Removing the wireless card

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

NOTE: For computers with 1500 W PSU only.

About this task

The following image indicates the location of the wireless card and provides a visual representation of the removal procedure.

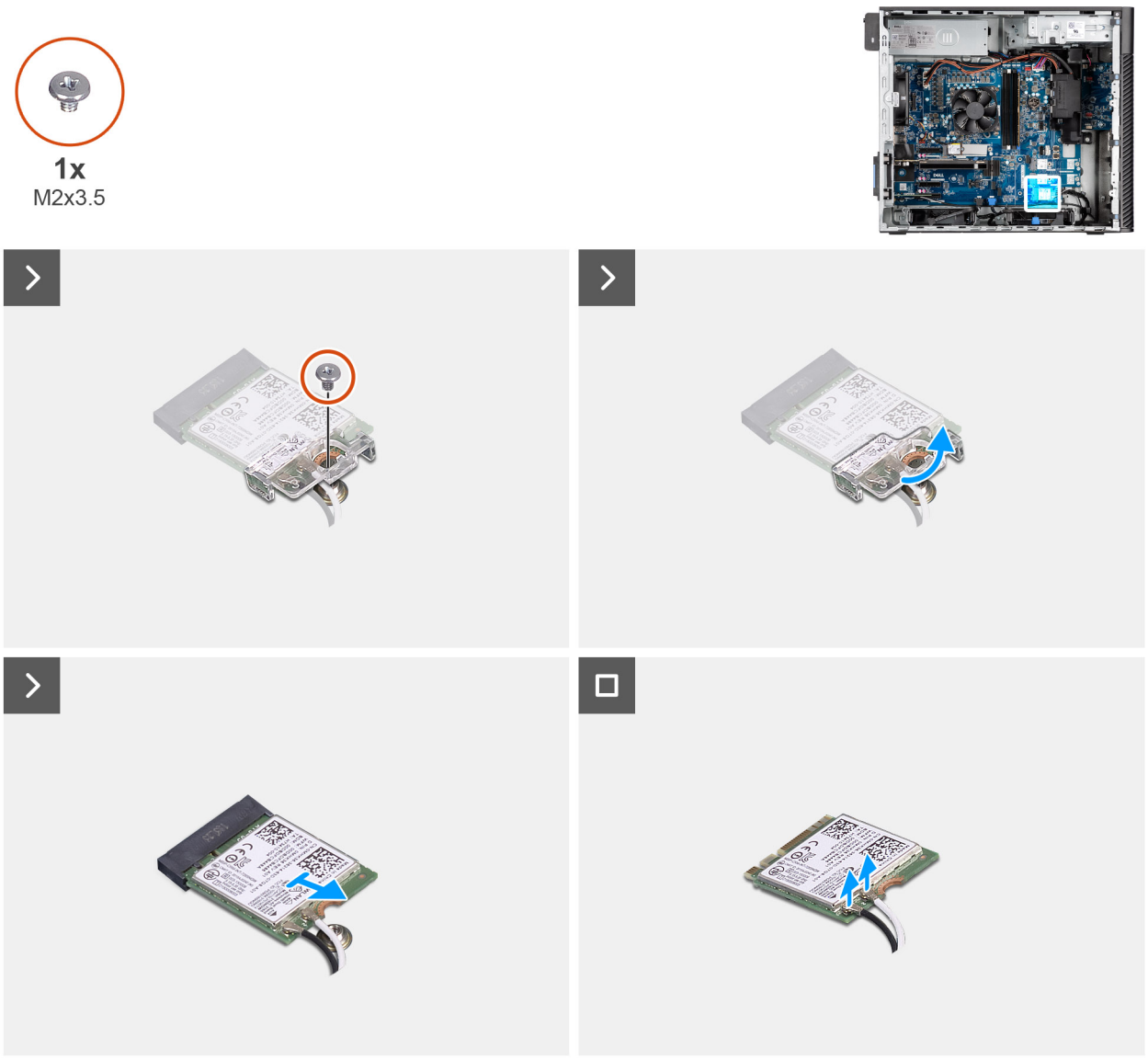


Figure 58. Removing the wireless card

Steps

1. Remove the screw (M2x3.5) that secures the wireless card to the system board.
2. Slide and lift the wireless-card bracket off the wireless card.
3. Disconnect the antenna cables from the wireless card.
4. Slide and remove the wireless card at an angle from the wireless-card slot (M.2 WLAN).

Installing the wireless card

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the wireless card and provides a visual representation of the installation procedure.

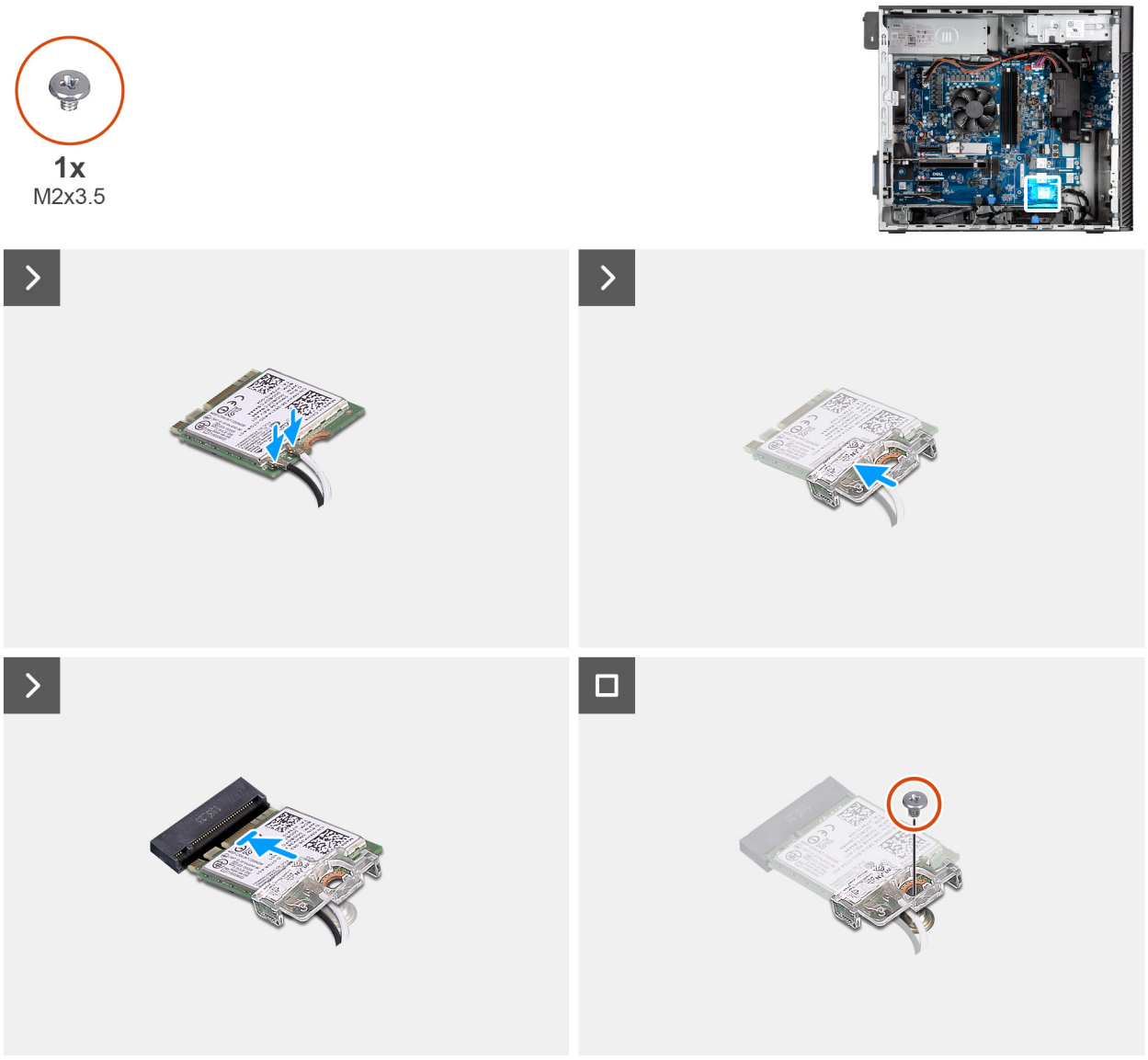


Figure 59. Installing the wireless card

Steps

1. Connect the antenna cables to the wireless card.

Table 24. Antenna-cable color scheme

Connector on the wireless card	Antenna-cable color	Silkscreen marking	
Main	White	MAIN	▵ (white triangle)
Auxiliary	Black	AUX	▲ (black triangle)

2. Slide and place the wireless-card bracket on the wireless card.
3. Align the notch on the wireless card with the tab on the wireless-card slot (M.2 WLAN).
4. Slide the wireless card at an angle into the wireless-card slot.
5. Replace the screw (M2x3.5) that secures the wireless card to the system board.

Next steps

1. Install the air shroud.

NOTE: For computers with 1500 W PSU only.

2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Intrusion switch

Removing the intrusion switch

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

NOTE: For computers with 1500 W PSU only.

About this task

The following images indicate the location of the intrusion switch and provide a visual representation of the removal procedure.

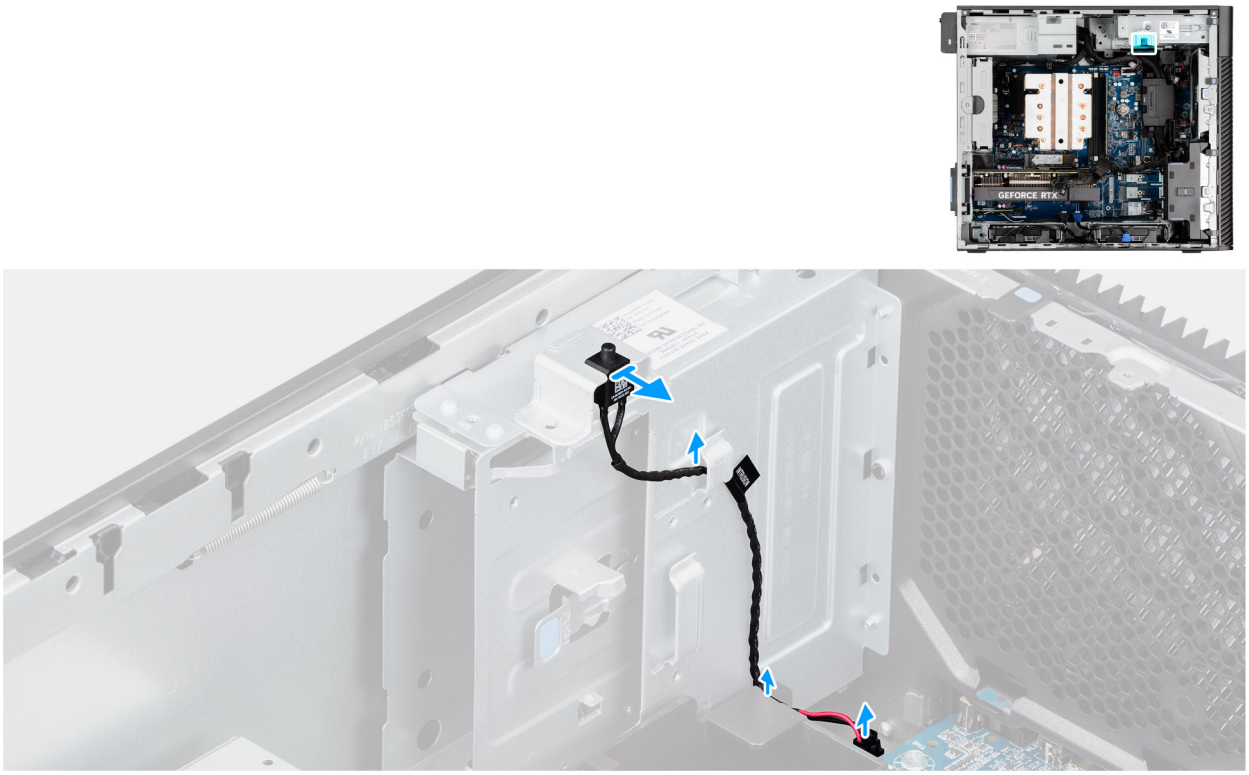


Figure 60. Removing the intrusion switch

Steps

1. Disconnect the intruder switch cable from the connector on the system board and unroute the cable from the routing guide.
2. Slide and remove the intrusion switch from the chassis.

Installing the intrusion switch

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the intrusion switch and provides a visual representation of the installation procedure.

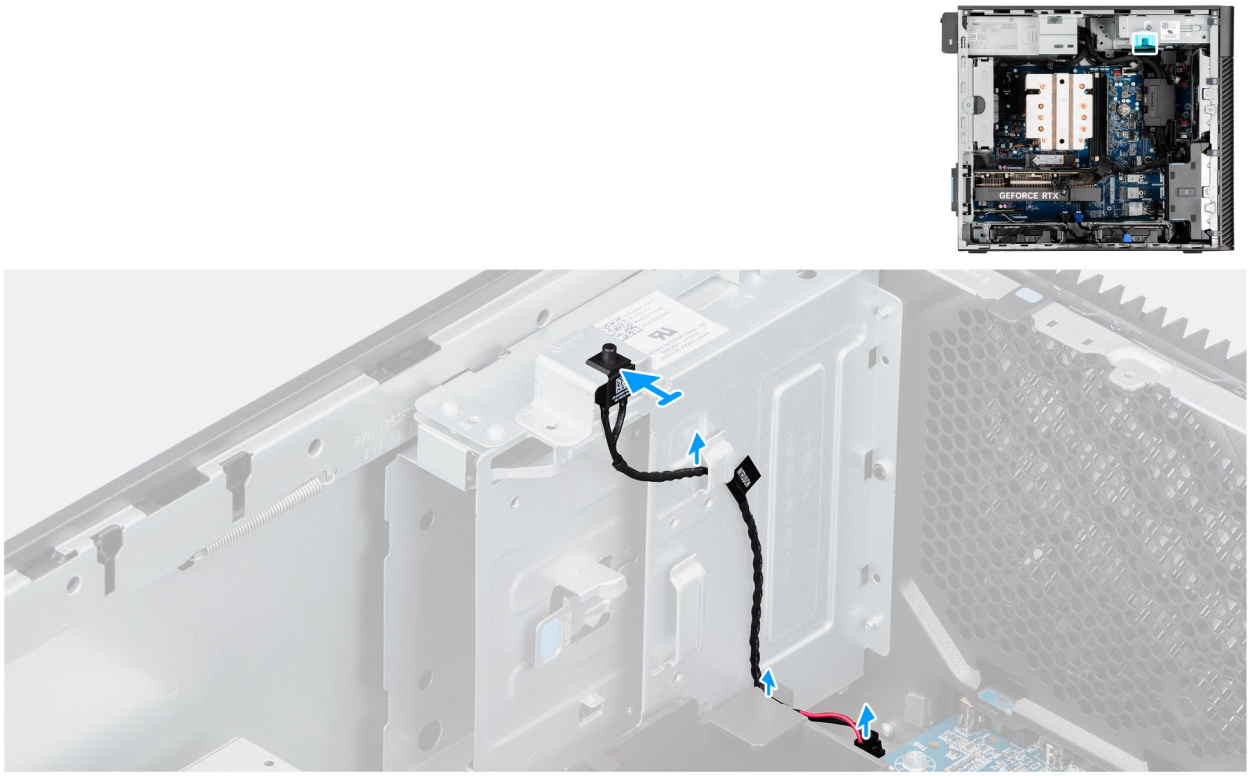


Figure 61. Installing the intrusion switch

Steps

1. Insert the intrusion switch into its slot and slide the switch to secure it into the slot.
2. Route the intruder switch cable through the routing guide and connect the intruder cable to the connector on the system board.

Next steps

1. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Fan

Removing the front fan

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

NOTE: For computers with 1500 W PSU only.

About this task

The following images indicate the location of the chassis fan and provide a visual representation of the removal procedure.

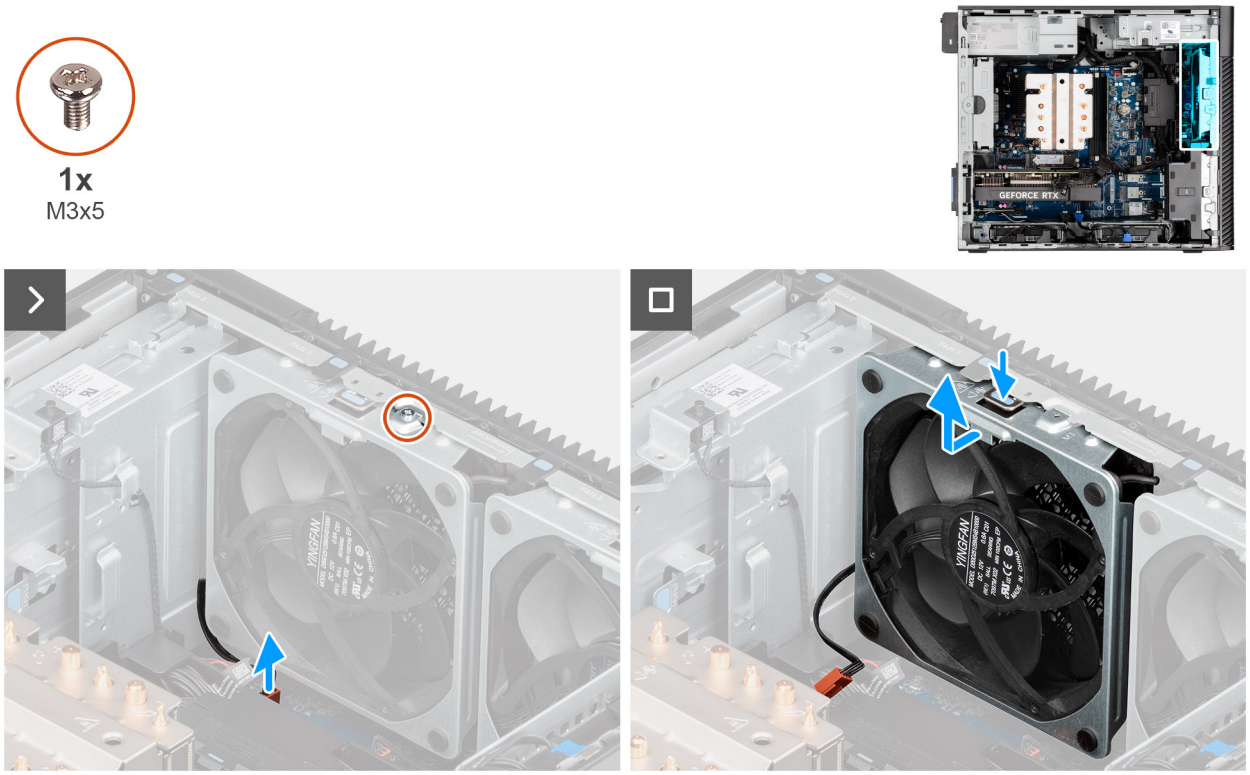


Figure 62. Front fan 1

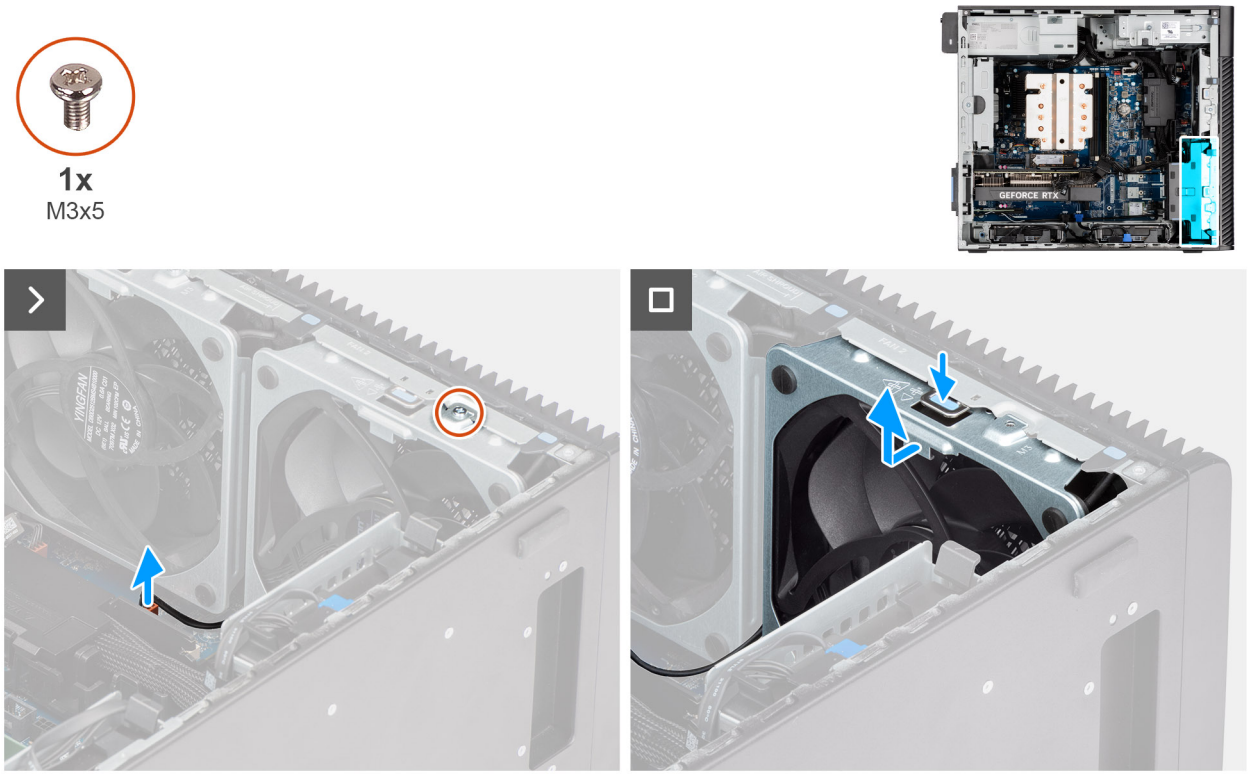


Figure 63. Front fan 2

Steps

1. Remove the screw (M3x5) that secures the fan 1 to the chassis.
2. Disconnect the fan cable from the connector on the system board.
3. Press the tab to release the chassis fan from the slot.
4. At an angle, lift the chassis fan and remove it from the chassis.

NOTE: Follow the procedure from step 1 to 4 for fan 2.

Installing the front fan

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the chassis fan and provide a visual representation of the installation procedure.



Figure 64. Front fan 1



Figure 65. Front fan 2

Steps

1. Align the tabs on the fan with the slots on the chassis.
2. Insert the chassis fan at an angle into the slot in the chassis.

3. Press the chassis fan into the slot until the release tab locks into place.
4. Connect the fan cable to the connector on the system board.
5. Replace the screw (M3x5) to secure the fan 1 to the chassis.

NOTE: Follow the procedure from step 1 to 5 for fan 2.

Next steps

1. Install the air shroud.

NOTE: For computers with 1500 W PSU only.

2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Removing the rear fan for 360 W PSU computers

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.

About this task

The following images indicate the location of the rear fan and provide a visual representation of the removal procedure.



Figure 66. Removing the rear fan for 360 W PSU computers

Steps

1. Disconnect the fan cable from the connector on the system board.
2. Locate the position of rubber grommets.
3. Gently pull the rubber grommets to release the fan from the chassis.
4. Remove the fan from the chassis.

Installing the rear fan for 360 W PSU computers

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the rear fan and provide a visual representation of the installation procedure.

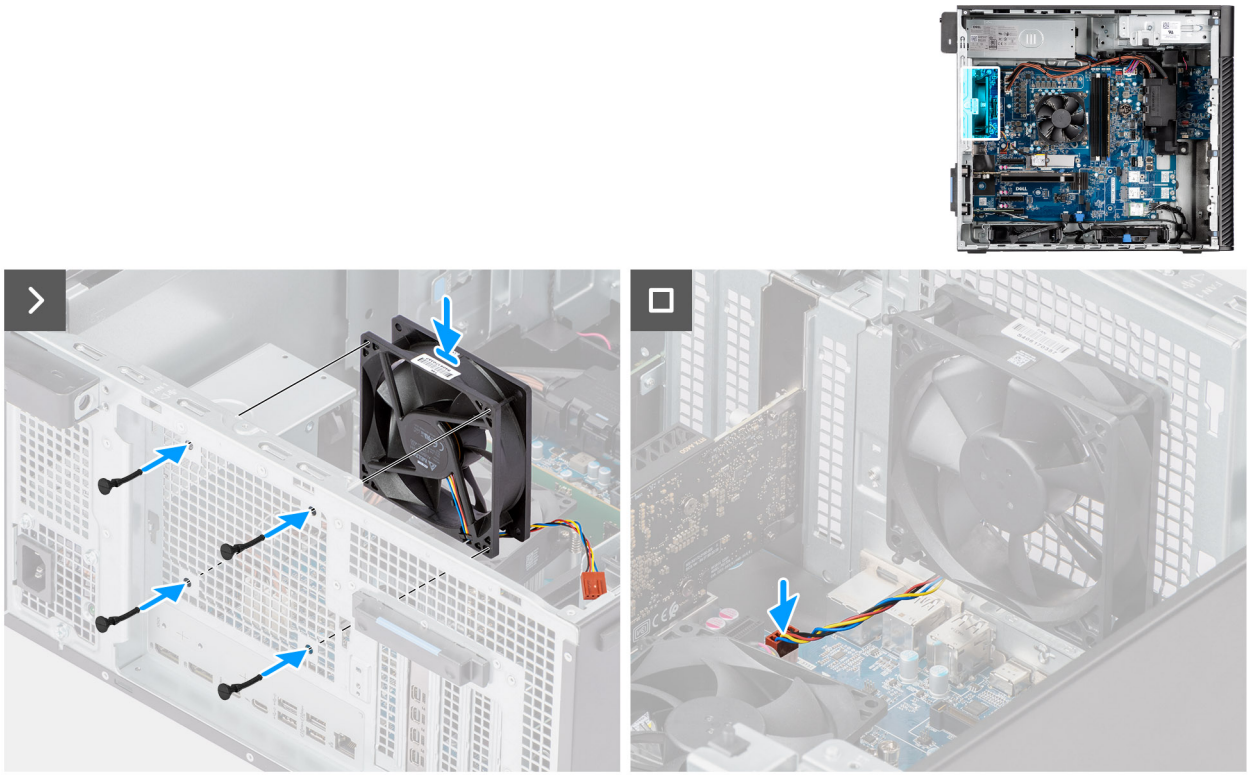


Figure 67. Installing the rear fan for 360 W PSU computers

Steps

1. Insert the rubber grommets on the chassis.
2. Align the slots on the fan with the rubber grommets on the chassis.
3. Route the rubber grommets through the slots on the fan and pull the rubber grommets until the fan snaps into position.
4. Connect the fan cable to the connector on the system board.

Next steps

1. Install the side cover.
2. Follow the procedure in after working inside your computer.

Removing the rear fan for 1500 W PSU computers

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

NOTE: For computers with 1500 W PSU only.

About this task

The following images indicate the location of the chassis fan and provide a visual representation of the removal procedure.

Figure 68. Removing the rear fan for 1500 W PSU computers

Steps

1. Remove the (M3x5) screw that secures the computer fan to the chassis.
2. Disconnect the fan cable from the connector on the system board.
3. Remove the fan from the chassis.

Installing the rear fan for 1500 W PSU computers

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the chassis fan and provide a visual representation of the installation procedure.

Figure 69. Installing the rear fan for 1500 W PSU computers

Steps

1. Align and place the fan into the chassis.
2. Connect the fan cable to the connector on the system board.
3. Replace the (M3x5) screw to secure the fan to the chassis.

Next steps

1. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Power-supply unit

Removing the 500 W or the 1500 W power-supply unit

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.
4. Remove the 125 W heat-sink assembly or 65 W heat-sink assembly.

NOTE: Note the routing of all cables as you remove them so that you can route them correctly while you are replacing the power-supply unit.

About this task

The following images indicate the location of the power-supply unit and provide a visual representation of the removal procedure.

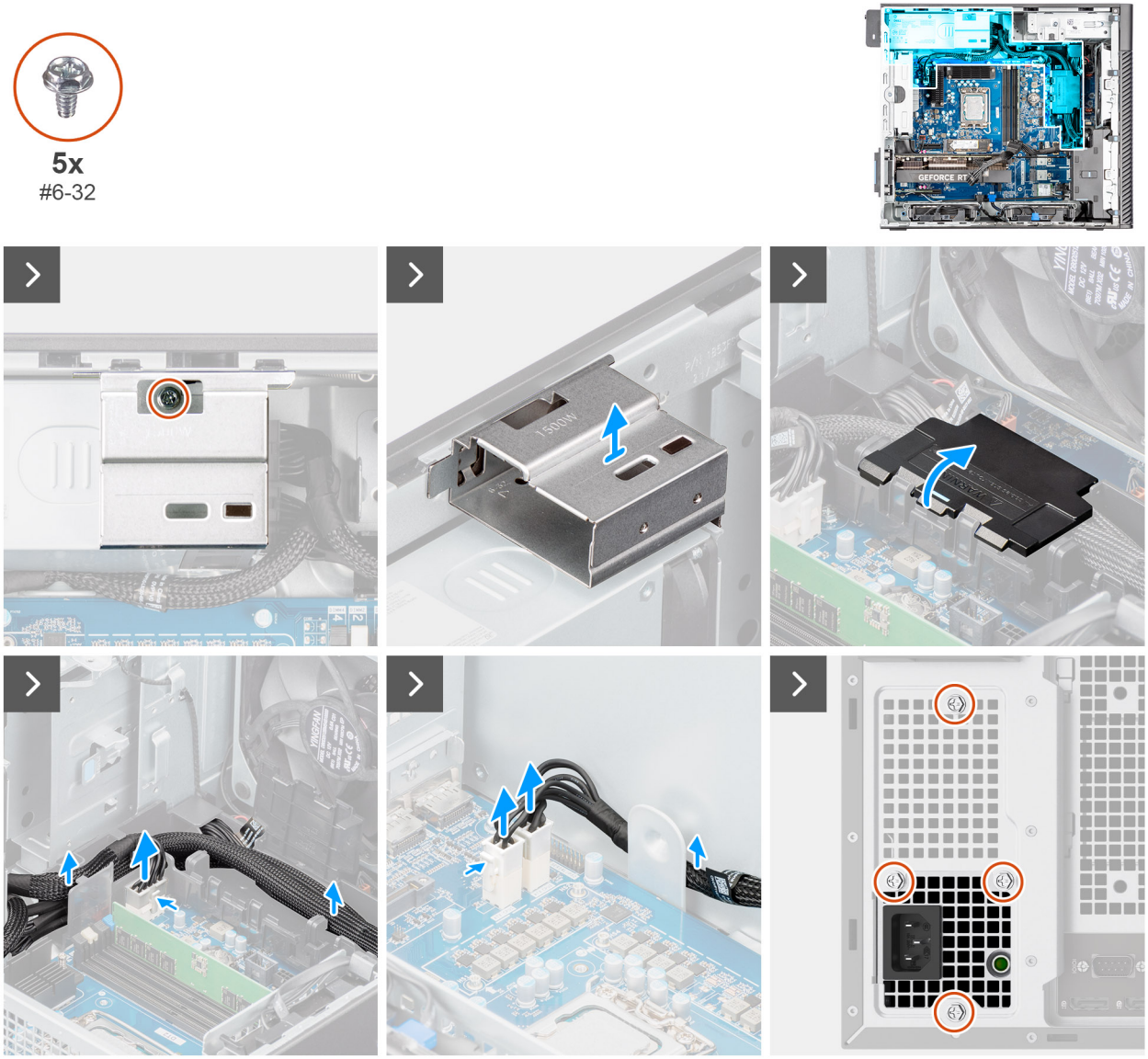


Figure 70. Removing the 1500 W power-supply unit

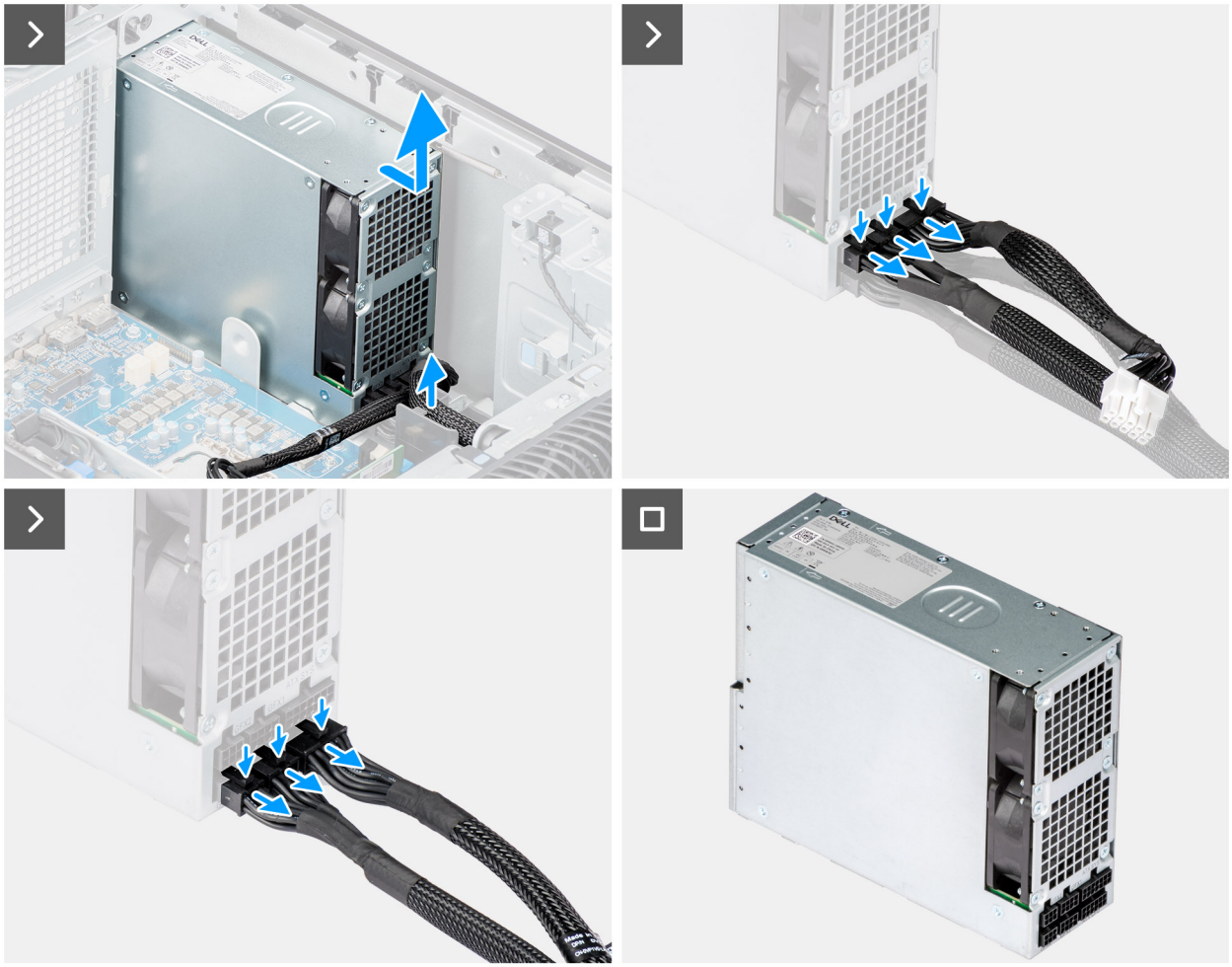


Figure 71. Removing the 1500 W power-supply unit

Steps

1. Remove the screw (#6-32) that secure the power-supply cover to the power-supply unit.
2. Lift the power-supply cover from the chassis.
3. Open the cover of the cable box and carefully unroute the power cables from both the cable box and the routing guides on the chassis.
4. Disconnect the power cables from the connectors on the system board.
5. Remove the four screws (#6x32) that secure the power-supply unit to the chassis.
6. Slide the power-supply unit away from the back of the chassis.
7. Lift the power-supply unit off the chassis.
8. Press down on the release tabs on the power cables and disconnect the power cables from the connector on the power-supply unit.

Installing the 500 W or the 1500 W power-supply unit

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the power-supply unit and provide a visual representation of the installation procedure.



Figure 72. Installing the 1500 W power-supply unit

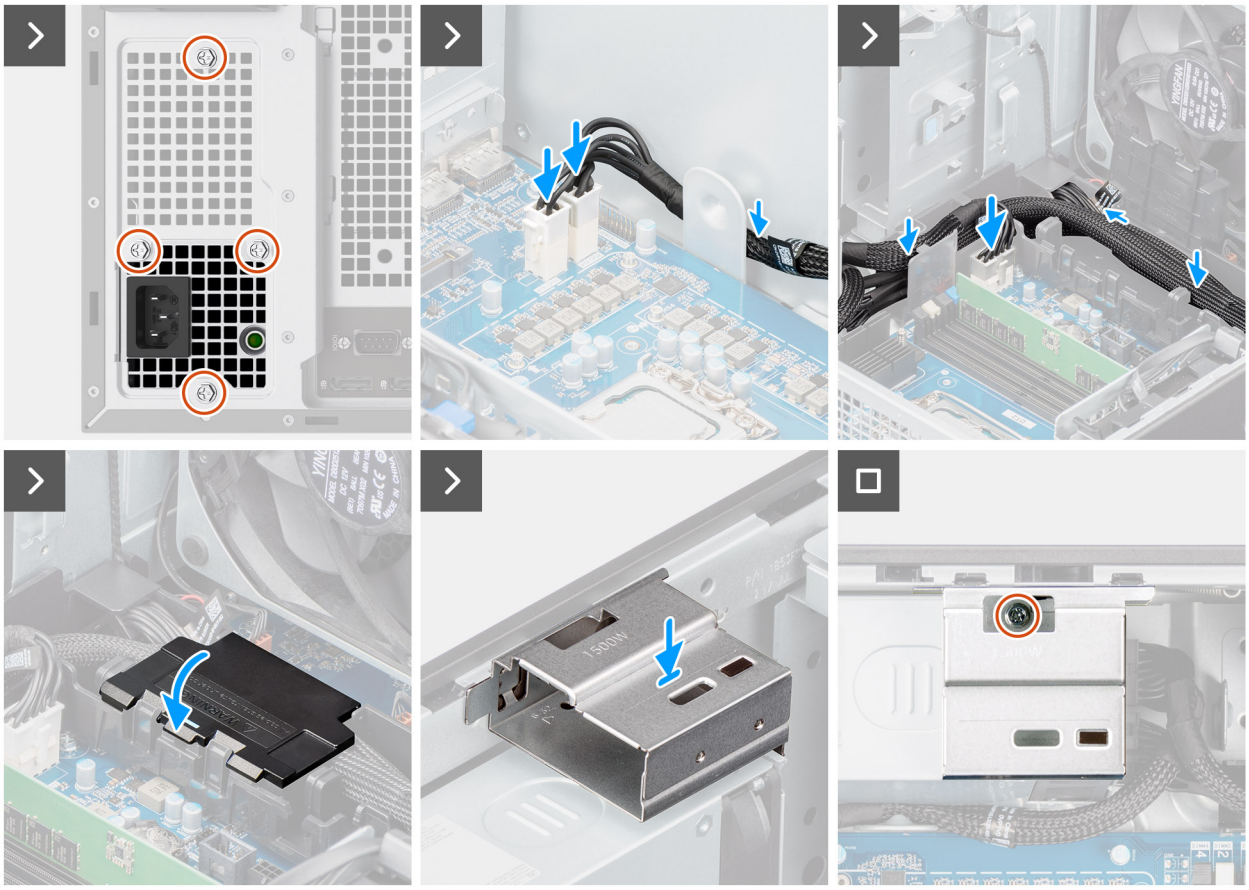


Figure 73. Installing the 1500 W power-supply unit

Steps

1. Connect the power cables to the connectors on the power-supply unit.
2. Slide the power-supply unit into the chassis until the securing tab snaps into position.
3. Replace the four screws (#6x32) to secure the power-supply unit to the chassis.
4. Route the power cable through the cable box and routing guides on the chassis.
5. Connect the power cables to the connectors on the system board and close the cable-box cover.
6. Align and place the power-supply cover in the slot on the chassis.
7. Replace the screw (#6-32) to secure the power-supply cover to the power-supply unit.

Next steps

1. Install the 125 W heat-sink assembly or 65 W heat-sink assembly.
2. Install the air shroud
3. Install the side cover.
4. Follow the procedure in after working inside your computer.

Removing the 360 W power-supply unit

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the 125 W heat-sink assembly or 65 W heat-sink assembly.

NOTE: Note the routing of all cables as you remove them so that you can route them correctly while you are replacing the power-supply unit.

About this task

The following images indicate the location of the power-supply unit and provide a visual representation of the removal procedure.

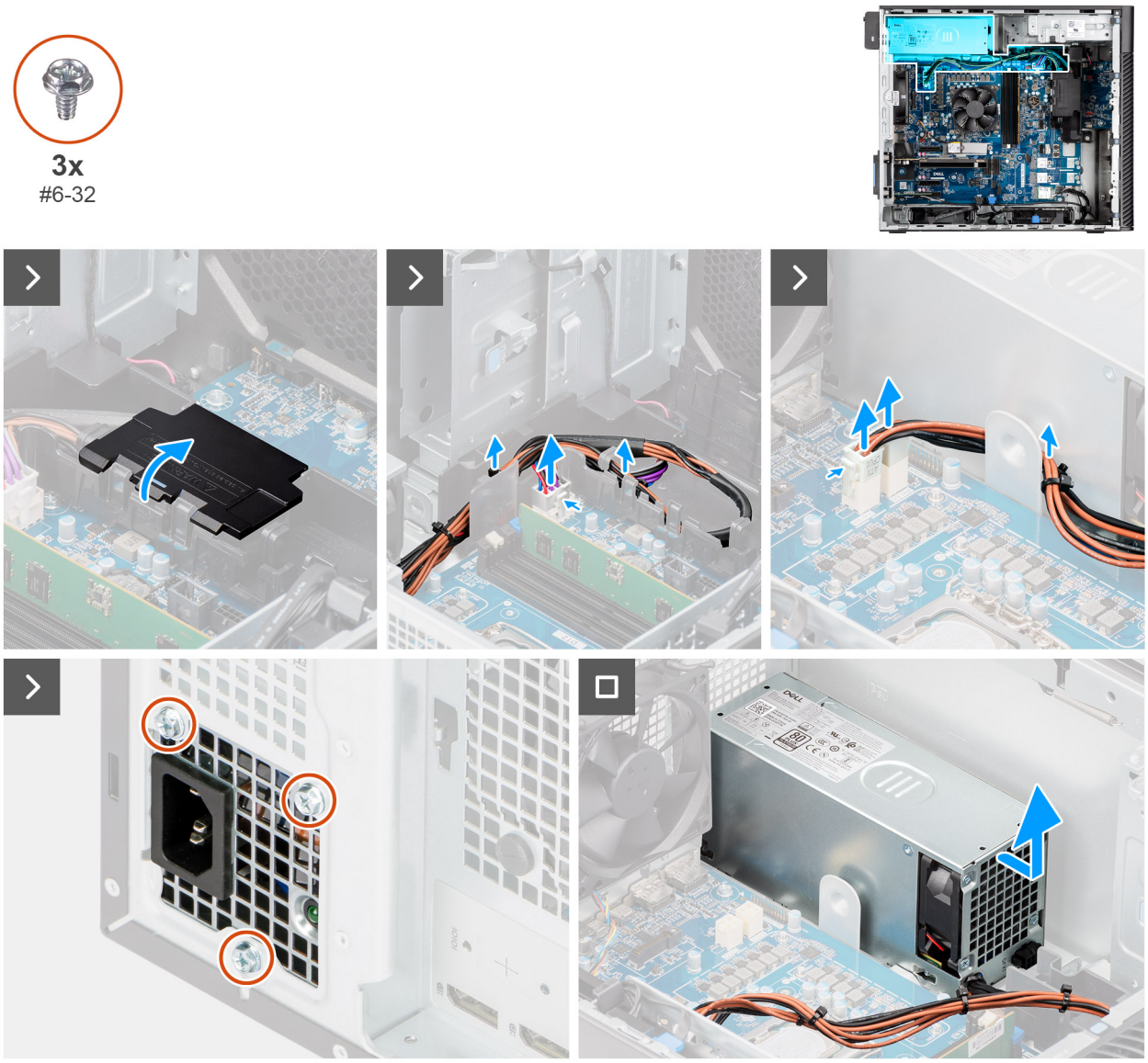


Figure 74. Removing the 360 W power-supply unit

Steps

1. Open the cover of the cable box and carefully unroute the power cables from both the cable box and the routing guides on the chassis.
2. Disconnect the power cables from the connectors on the system board.
3. Remove the three screws (#6x32) that secure the power-supply unit to the chassis.
4. Slide the power-supply unit away from the back of the chassis.
5. Lift the power-supply unit off the chassis.

Installing the 360 W power-supply unit

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the power-supply unit and provide a visual representation of the installation procedure.

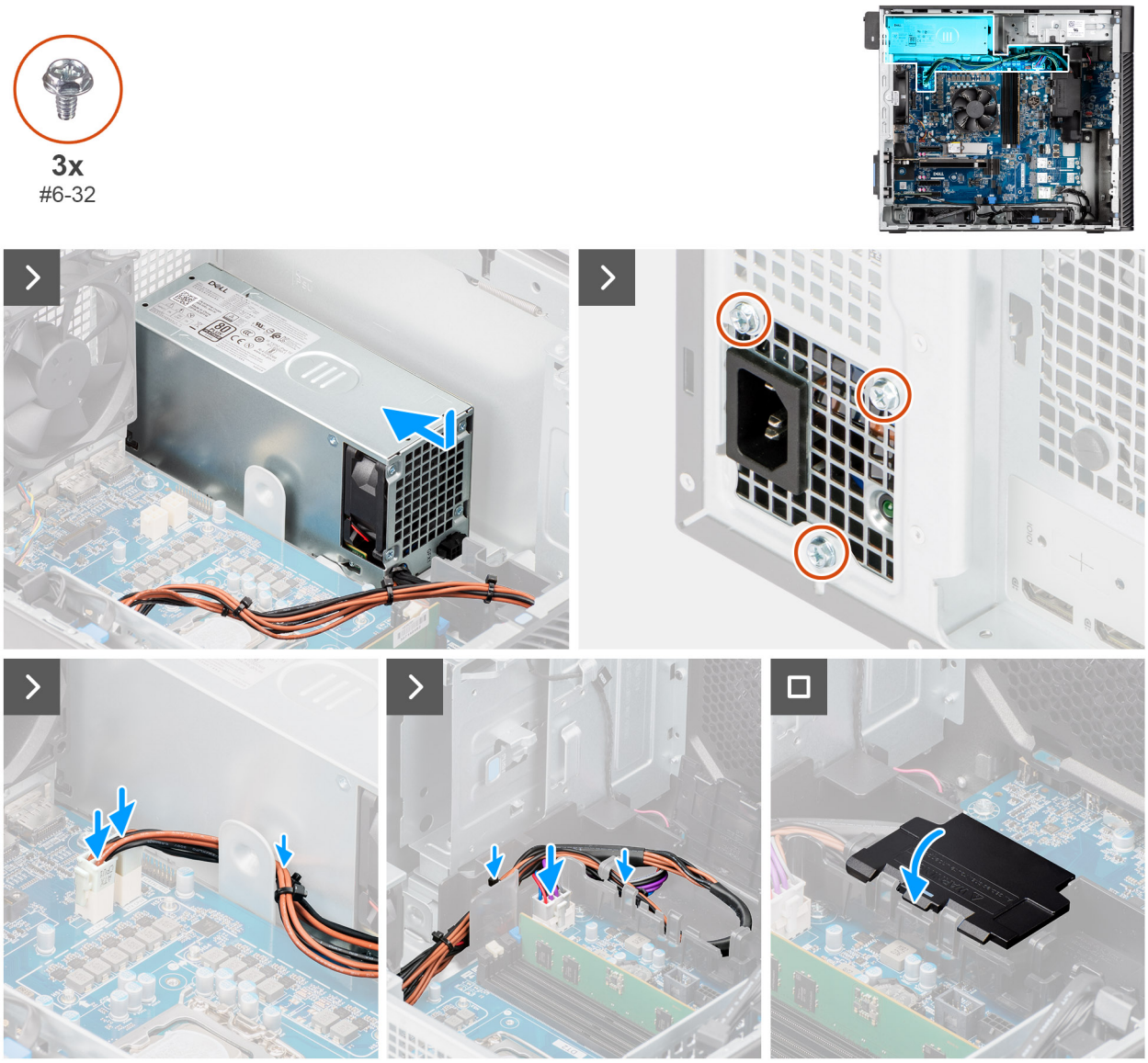


Figure 75. Installing the 360 W power-supply unit

Steps

1. Slide the power-supply unit into the chassis until the securing tab snaps into position.
2. Connect the power cables to the connectors on the power-supply unit.
3. Replace the three screws (#6x32) to secure the power-supply unit to the chassis.
4. Route the power cable through the cable box and routing guides on the chassis.
5. Connect the power cables to the connectors on the system board and close the cable-box cover.

Next steps

1. Install the 125 W heat-sink assembly or 65 W heat-sink assembly.
2. Install the side cover.
3. Follow the procedure in after working inside your computer.

9

Removing and installing Field Replaceable Units (FRUs)

The replaceable components in this chapter are Field Replaceable Units (FRUs).

CAUTION: The information in this removing and installing FRUs section is intended for authorized service technicians only.

CAUTION: To avoid any potential damage to the component or loss of data, Dell Technologies recommends that an authorized service technician replaces the Field Replaceable Units (FRUs).

CAUTION: Your warranty does not cover damages that may occur during FRU repairs that are not authorized by Dell Technologies.

NOTE: The images in this document may differ from your computer depending on the configuration you ordered.

Processor fan and heat-sink assembly

Removing the processor fan and 125 W heat-sink assembly

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in before working inside your computer.

   WARNING: The heat sink may become hot during normal operation. Allow sufficient time for the heat sink to cool before you touch it.

   CAUTION: For maximum cooling of the processor, do not touch the heat-transfer areas on the heat sink. The oils in your skin can reduce the heat-transfer capability of the thermal grease.

2. Remove the side cover.
3. Remove the air shroud.

   NOTE: For computers with 1500 W PSU only.

About this task

The following images indicate the location of the processor fan and 125 W heat-sink assembly and provide a visual representation of the removal procedure.

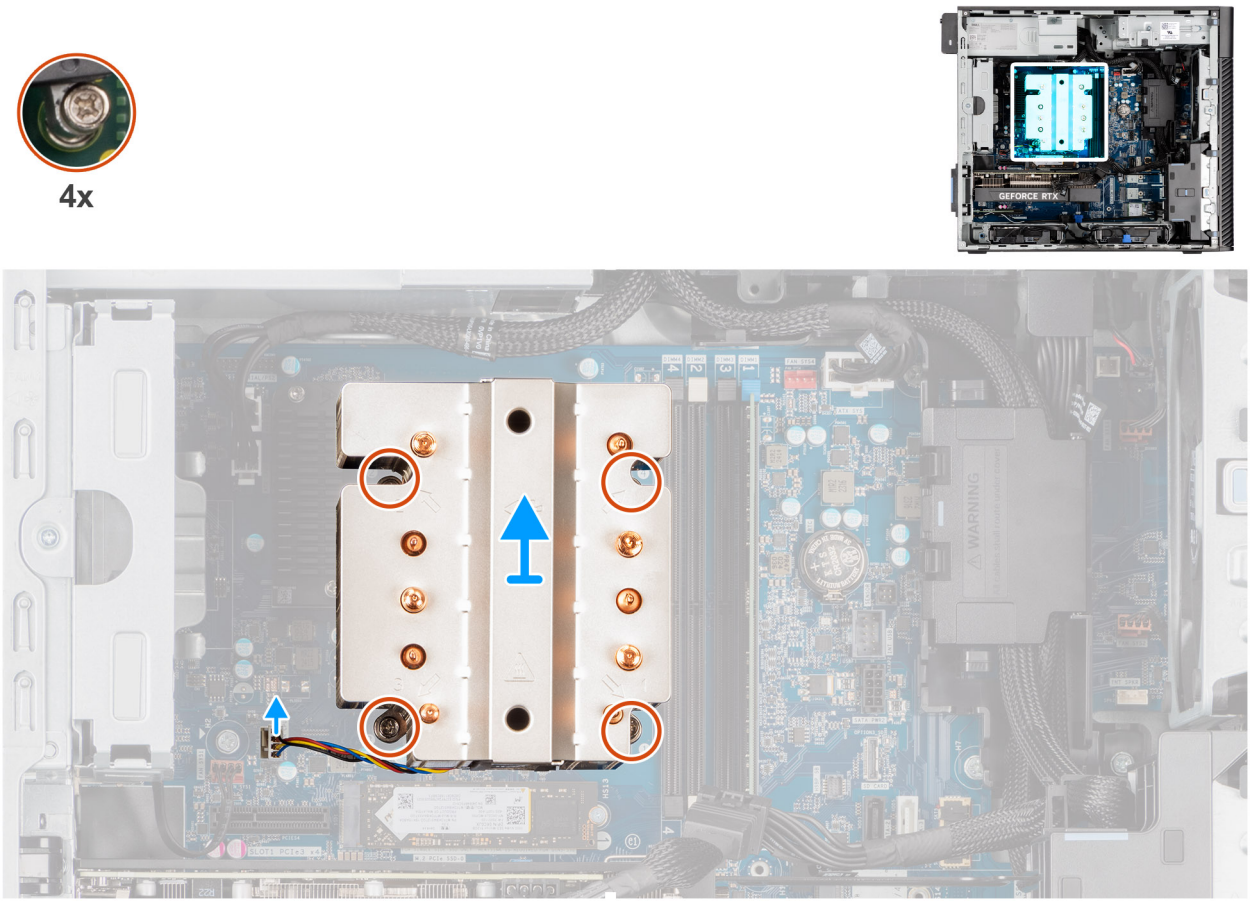


Figure 76. Removing the processor fan and 125 W heat-sink assembly

Steps

1. Disconnect the processor-fan cable from the connector on the system board.
2. In the reverse sequential order (4->3->2->1), loosen the four captive screws that secure the processor fan and heat-sink assembly to the system board.
3. Lift the processor fan and heat-sink assembly from the system board.

Installing the processor fan and 125 W heat-sink assembly

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

NOTE: If you replace the processor or heat sink, use the provided thermal grease to ensure proper thermal conductivity.

About this task

The following images indicate the location of the processor fan and 125 W heat-sink and provide a visual representation of the installation procedure.

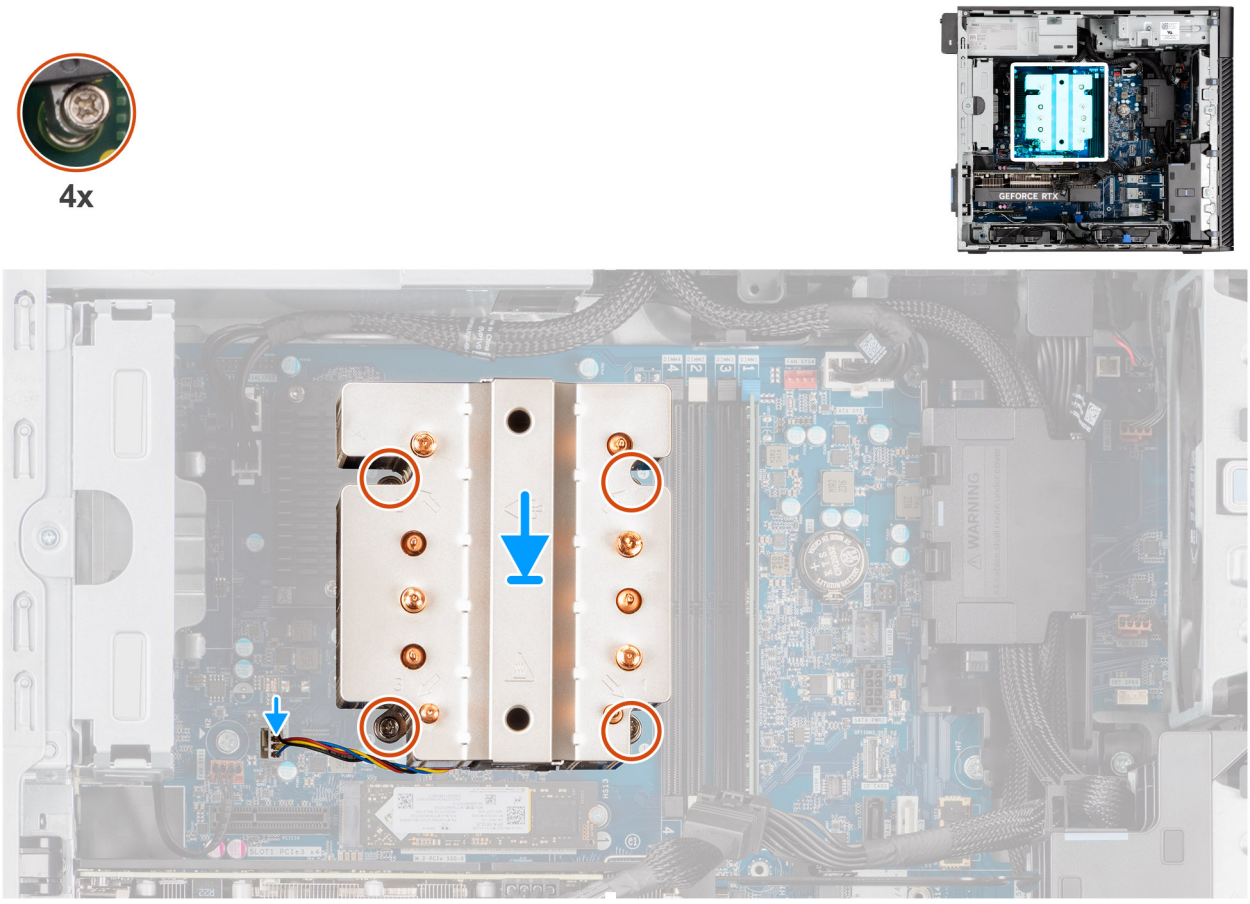


Figure 77. Installing the processor fan and 125 W heat-sink assembly

Steps

1. Align the screws on the processor fan and heat-sink assembly with the screw holders on the system board, then place the assembly on the processor.

   NOTE: Ensure that the triangle mark is directed towards the rear side of the computer.

2. In the sequential order (1->2->3->4), tighten the captive screws to secure the processor fan and heat-sink assembly to the system board.

   NOTE: Tighten the screws in a sequential order (1,2,3,4) as printed on the system board.

3. Connect the processor-fan cable to the connector on the system board.

   NOTE: Ensure to connect the cable to the corresponding connector with the same color on the system board.

Next steps

1. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

2. Install the side cover.
3. Follow the procedure in after working inside your computer.

Removing the processor fan and 65 W heat-sink assembly

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in before working inside your computer.

WARNING: The heat sink might heat up during regular operation. Allow sufficient time for the heat sink to cool before you touch it.

CAUTION: For maximum cooling of the processor, do not touch the heat-transfer areas on the heat sink. The oils in your skin can reduce the heat-transfer capability of the thermal grease.

2. Remove the side cover.
3. Remove the air shroud.

NOTE: For computers with 1500 W PSU only.

About this task

The following images indicate the location of the processor fan and heat-sink and provide a visual representation of the removal procedure.

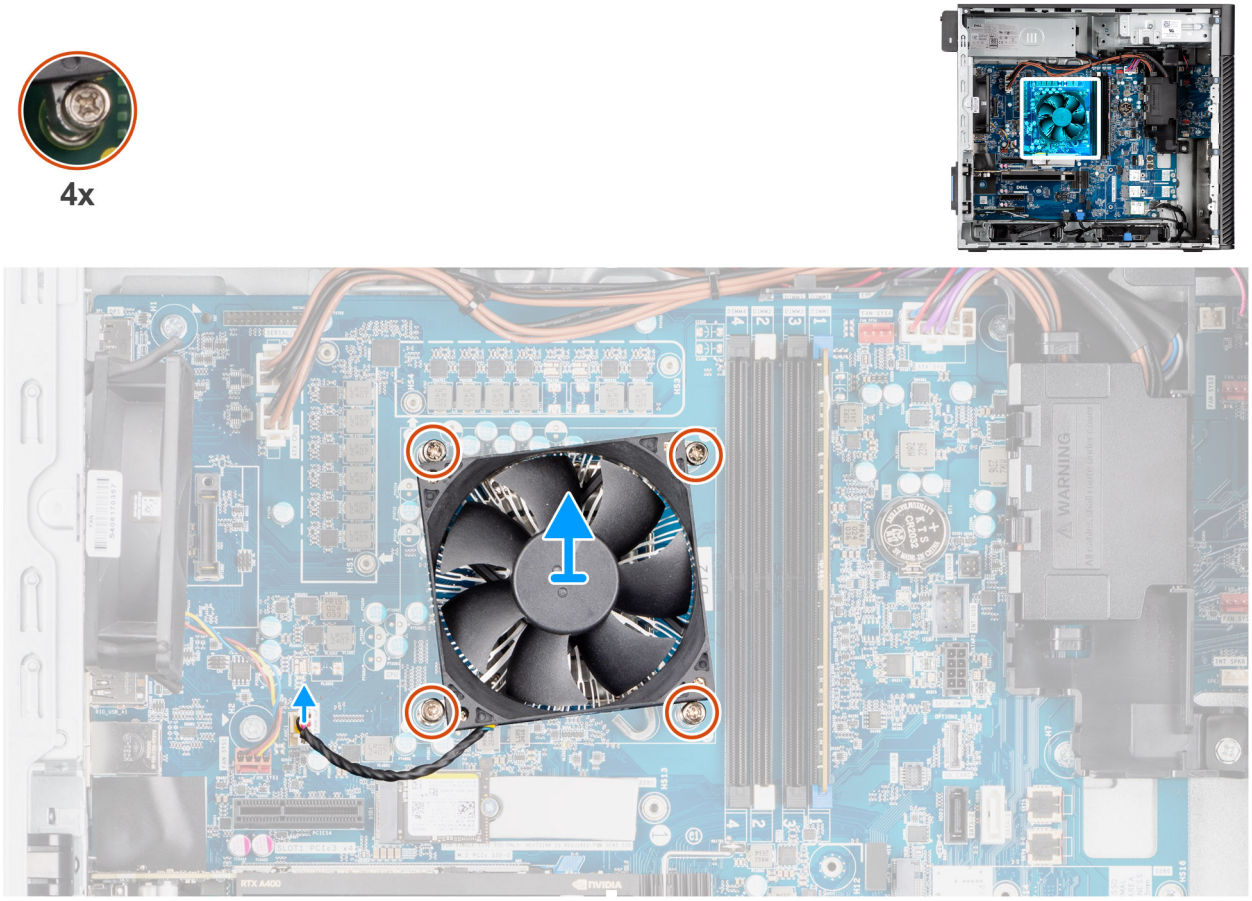


Figure 78. Removing the processor fan and 65 W heat-sink assembly

Steps

1. Disconnect the processor fan cable from the connector on the system board.
2. Loosen the four captive screws that secure the processor fan and heat-sink assembly to the system board.
3. Lift the processor fan and heat-sink assembly off the system board.

Installing the processor fan and 65 W heat-sink assembly

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

NOTE: If you replace the processor or heat sink, use the provided thermal grease to ensure proper thermal conductivity.

About this task

The following images indicate the location of the processor fan and heat-sink assembly and provide a visual representation of the installation procedure.

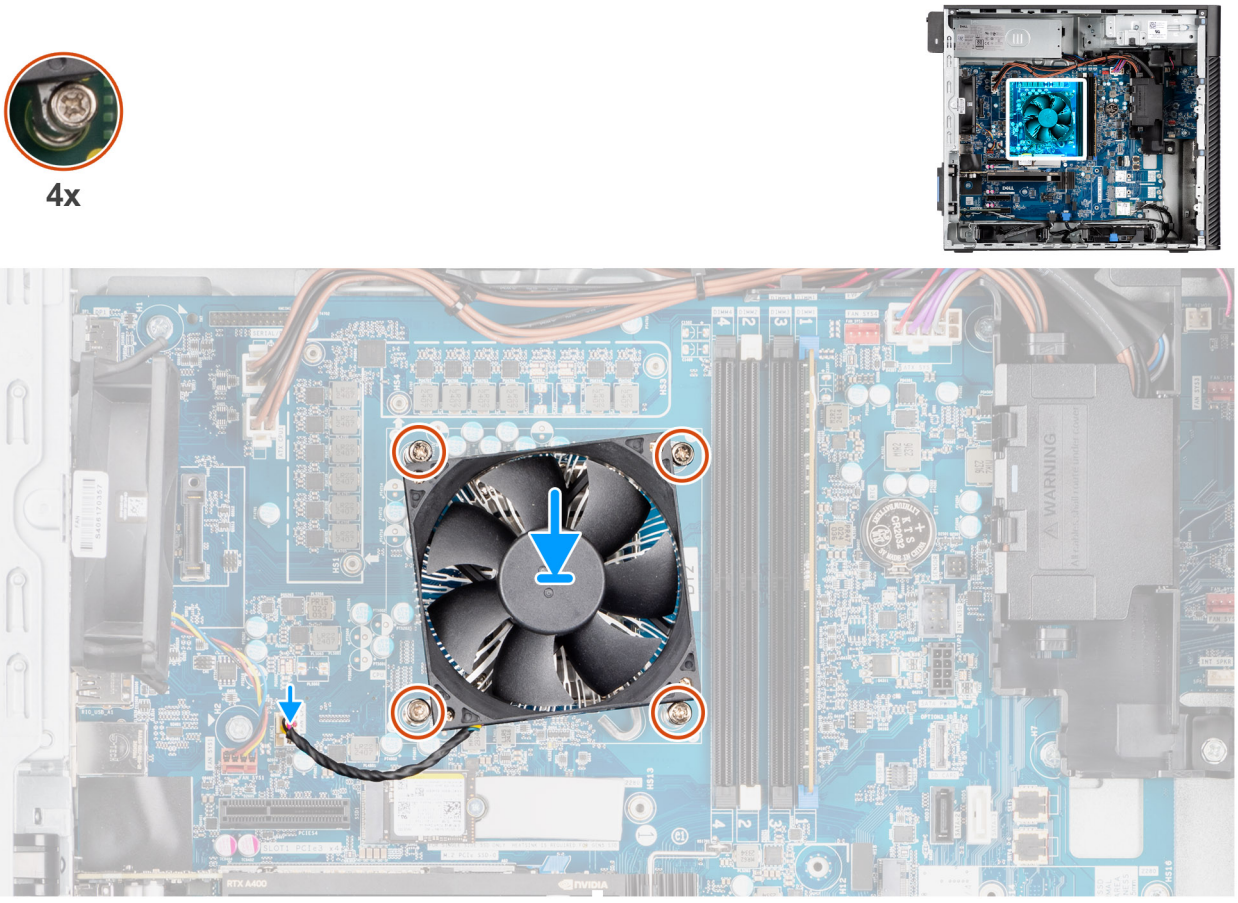


Figure 79. Installing the processor fan and 65 W heat-sink assembly

Steps

1. Align the screw holes on the processor fan and heat-sink assembly with the screw holes on the system board.
2. Tighten the four captive screws that secure the processor fan and heat-sink assembly to the system board.
3. Connect the processor-fan cable to the connector on the system board.

   NOTE: Ensure to connect the cable to the corresponding connector with the same color on the system board.

Next steps

1. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

2. Install the side cover.

3. Follow the procedure in after working inside your computer.

Processor

Removing the processor

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

NOTE: For computers with 1500 W PSU only.

4. Remove the 125 W heat-sink assembly or 65 W heat-sink assembly.

NOTE: The processor might still be hot after the computer is shut down. Allow the processor to cool down before removing it.

About this task

The following images indicate the location of the processor and provide a visual representation of the removal procedure.

Figure 80. Removing the processor

Steps

1. Press down and push the release lever away from the processor to release it from the securing tab.
2. Lift the lever upward to lift the processor cover.

   CAUTION: When removing the processor, do not touch any of the pins inside the socket or allow any objects to fall on the pins in the socket.

3. Gently lift the processor from the processor socket.

Installing the processor

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the processor and provide a visual representation of the installation procedure.

Figure 81. Installing the processor

Steps

1. Ensure that the release lever on the processor socket is fully extended in the open position.
2. Align the notches on the processor with the tabs on the processor socket, and place the processor in the processor socket.

NOTE: The pin 1 corner of the processor has a triangle that aligns with the triangle on the pin 1 corner of the processor socket. When the processor is properly seated, all four corners are aligned at the same height. If one or more corners of the processor are higher than the others, the processor is not secured properly.

3. When the processor is secured in the socket, pivot the release-lever down and place it under the tab on the processor cover.

Next steps

1. Install the 125 W heat-sink assembly or 65 W heat-sink assembly.
2. Install the air shroud.

NOTE: For computers with 1500 W PSU only.

3. Install the side cover.
4. Follow the procedure in after working inside your computer.

Voltage-regulator (VR) heat sink

Removing the VR heat sink

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in before working inside your computer.

WARNING: The heat sink may become hot during normal operation. Allow sufficient time for the heat sink to cool before you touch it.

CAUTION: For maximum cooling of the processor, do not touch the heat-transfer areas on the heat sink. The oils in your skin can reduce the heat-transfer capability of the thermal grease.

2. Remove the side cover.
3. Remove the air shroud.

NOTE: For computers with 1500 W PSU only.

4. Remove the 125 W heat-sink assembly or 65 W heat-sink assembly.

About this task

The following image indicates the location of the VR heat sink and provide a visual representation of the removal procedure.

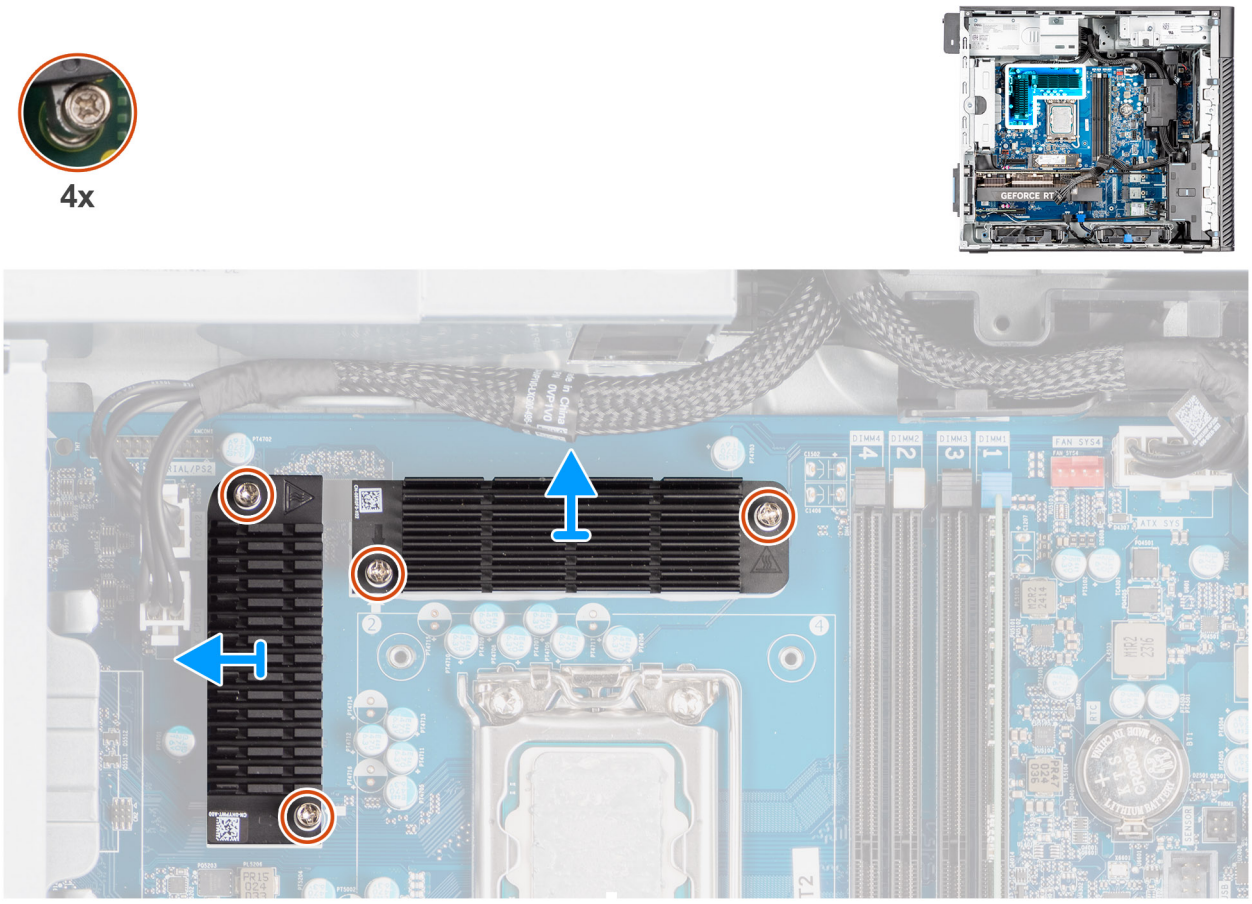


Figure 82. Removing the VR heat sink

Steps

1. Loosen the four captive screws that secure the VR heat sinks to the system board.
2. Lift the VR heat sink off the system board.

Installing the VR heat sink

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the VR heat sink and provide a visual representation of the installation procedure.

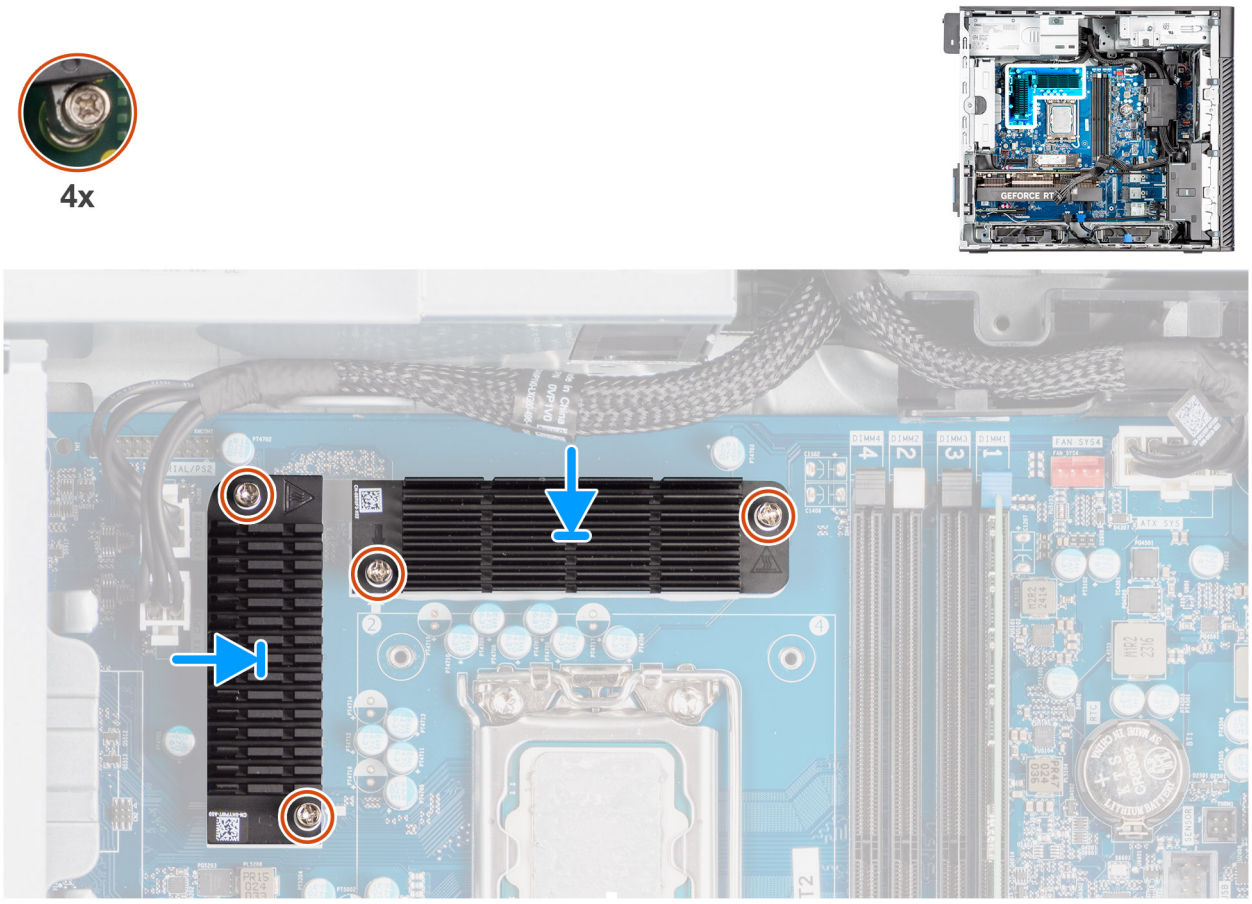


Figure 83. Installing the VR heat sink

Steps

1. Remove the liner behind the VR heat-sink modules.

   NOTE: Step 1 is only applicable for a new installation or an upgrade. For replacing an existing component, follow the procedure from step two.

2. Adhere the VR heatsinks to the system board.
3. Tighten the four captive screws that secure the VR heat sinks to the system board.

Next steps

1. Install the 125 W heat-sink assembly or 65 W heat-sink assembly.
2. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

3. Install the side cover.
4. Follow the procedure in after working inside your computer.

External port (optional module)

NOTE: For more information about the ports supported by the external port (optional module slot), see Specifications.

Removing the optional DisplayPort module

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Remove the fan.
5. Remove the 125 W heat sink. If applicable.

About this task

The following image indicates the location of the optional DisplayPort module and provides a visual representation of the removal procedure.

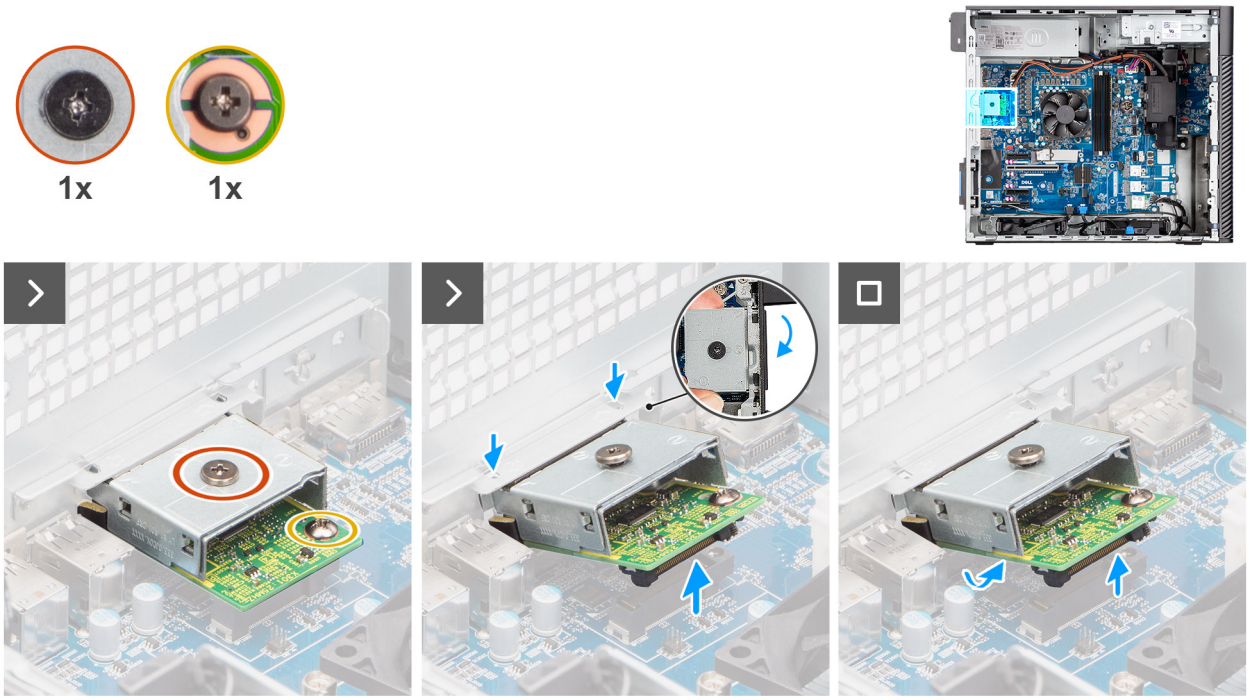


Figure 84. Removing the optional DisplayPort module

Steps

1. Remove the screw (M2x4) that secures the optional DisplayPort cover to the optional DisplayPort module.
2. Remove the screw (M2x4) that secures the optional DisplayPort module to the system board.
3. Lift the optional DisplayPort module at an angle and remove the tabs on the optional DisplayPort module from the slots on the chassis.
4. Remove the optional DisplayPort module off the system board.

Installing the optional DisplayPort module

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

NOTE: The optional-port modules are mutually exclusive; only a single module can be installed at a time.

The following images indicate the location of the optional DisplayPort module and provide a visual representation of the installation procedure.

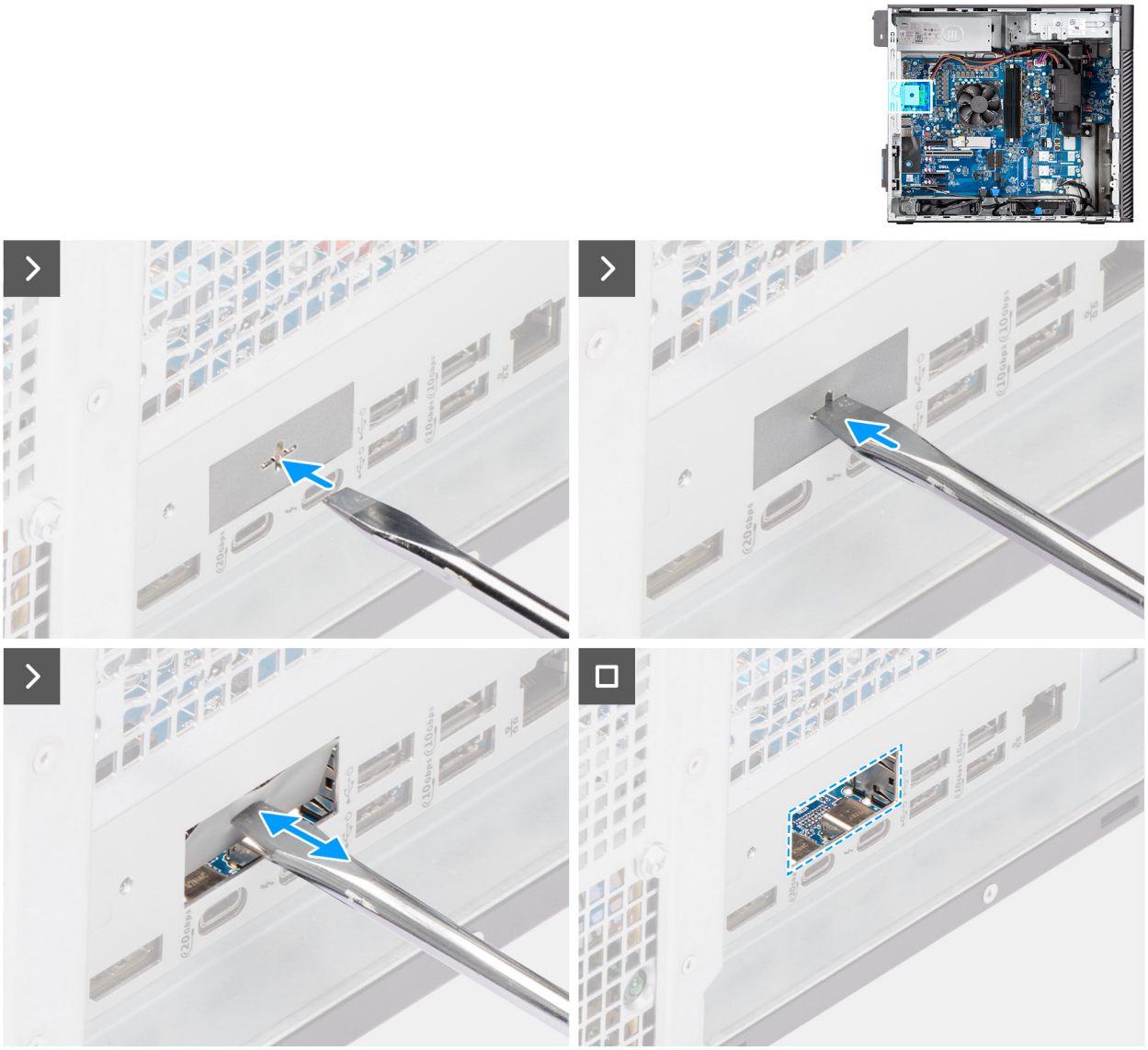


Figure 85. Installing the optional DisplayPort module

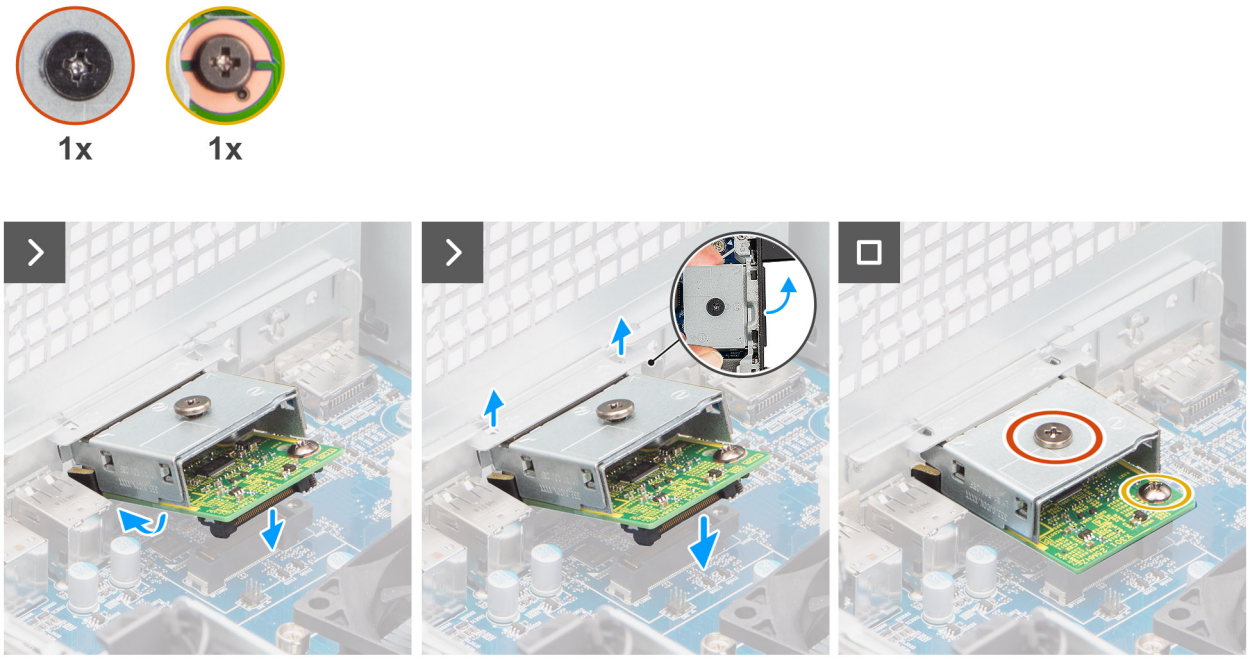


Figure 86. Installing the optional DisplayPort module

Steps

1. Using a screw driver, push against the optional-port cover until it comes off.

   NOTE: This step is only applicable if you are installing the optional-port module on a computer that did not previously have it installed.

2. Place the optional DisplayPort module at an angle and align the tabs on the module to the slots on the chassis.
3. Align the optional DisplayPort module to the slot on the chassis and connect the module to the connector on the system board (OPTION).
4. Replace the screw (M2x4) that secures the optional DisplayPort module to the system board.
5. Align the screw on the optional DisplayPort cover to the screw hole on the optional DisplayPort module.
6. Replace the screw (M2x4) that secures the optional DisplayPort cover to the optional DisplayPort module.

Next steps

1. Install the 125 W heat sink. If applicable.
2. Install the fan.
3. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Install the side cover.
5. Follow the procedure in after working inside your computer.

Removing the optional HDMI module

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Remove the fan.
5. Remove the 125 W heat sink. If applicable.

About this task

The following image indicates the location of the optional HDMI module and provides a visual representation of the removal procedure.

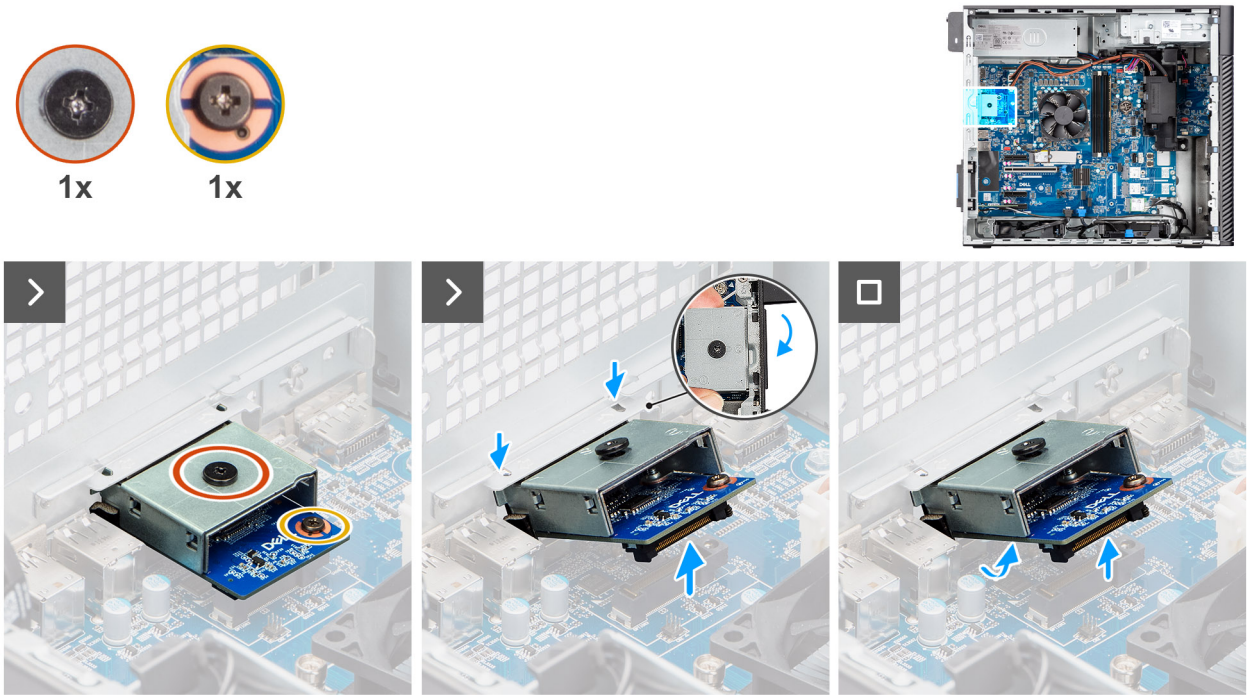


Figure 87. Removing the optional HDMI module

Steps

1. Remove the screw (M2x4) that secures the optional HDMI cover to the optional HDMI module.
2. Remove the screw (M2x4) that secures the optional HDMI module to the system board.
3. Lift the optional HDMI module at an angle and remove the tabs on the optional HDMI module from the slots on the chassis.
4. Remove the optional HDMI module off the system board.

Installing the optional HDMI module

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

NOTE: The optional-port modules are mutually exclusive; only a single module can be installed at a time.

The following images indicate the location of the optional HDMI module and provide a visual representation of the installation procedure.

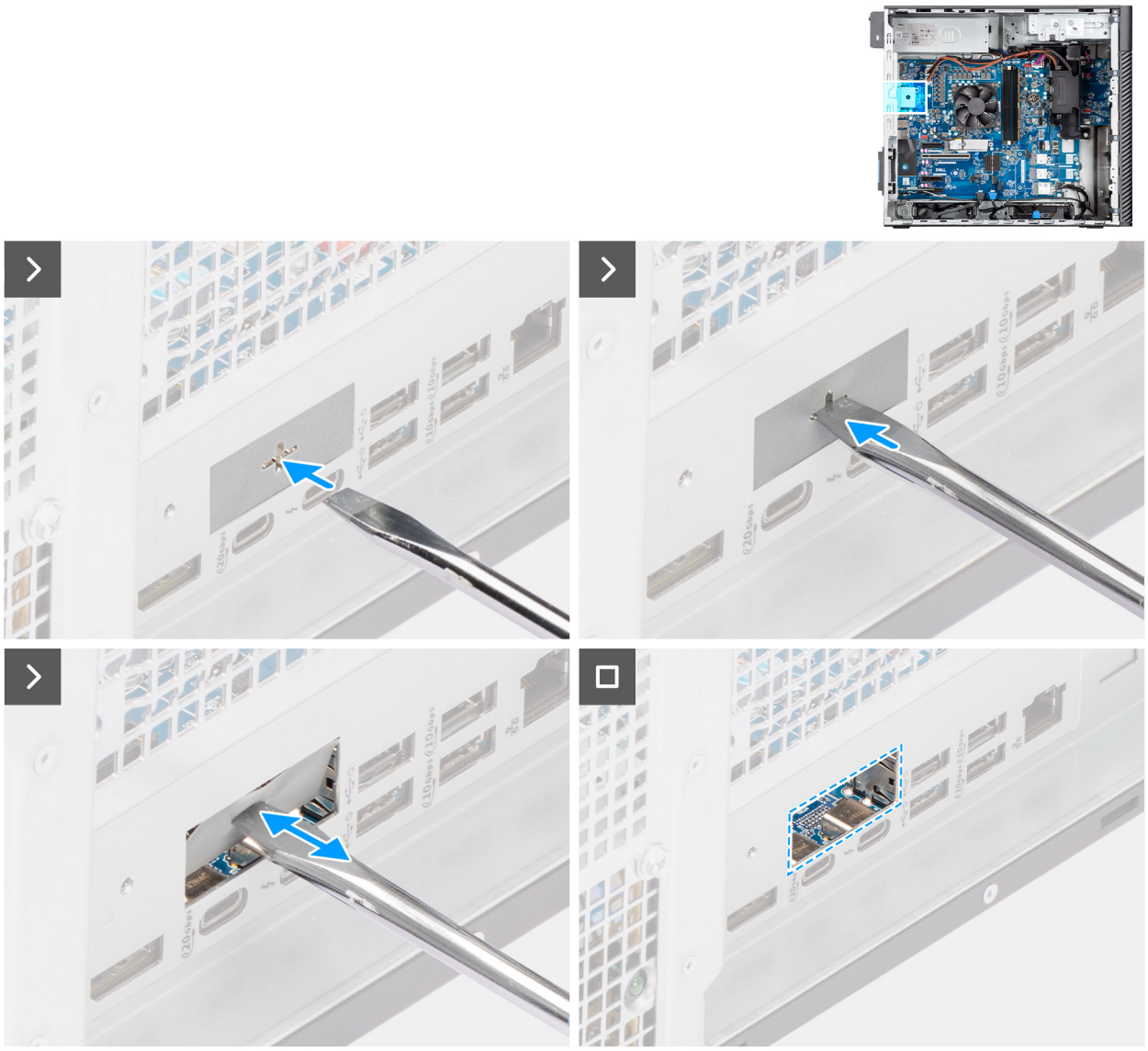


Figure 88. Installing the optional HDMI module

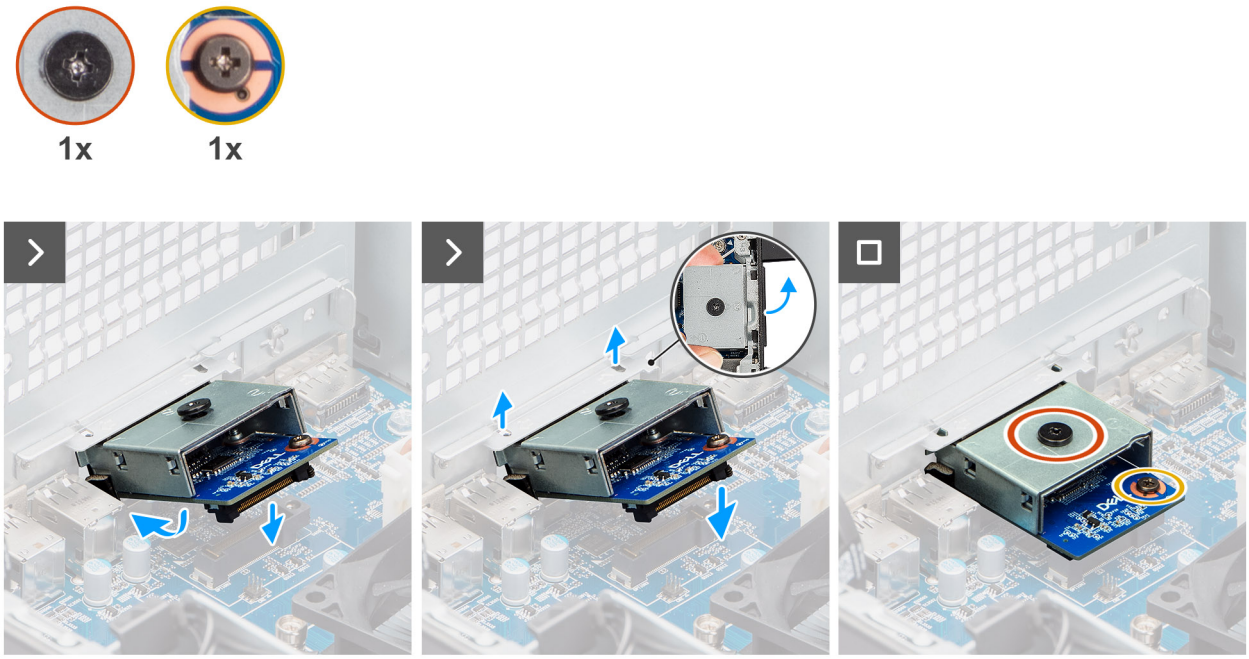


Figure 89. Installing the optional HDMI module

Steps

1. Using a screw driver, push against the optional-port cover until it comes off.

   NOTE: This step is only applicable if you are installing the optional-port module on a computer that did not previously have it installed.

2. Place the optional HDMI module at an angle and align the tabs on the module to the slots on the chassis.
3. Align the optional HDMI module to the slot on the chassis and connect the module to the connector on the system board (OPTION).
4. Replace the screw (M2x4) that secures the optional HDMI module to the system board.
5. Align the screw on the optional HDMI cover to the screw hole on the optional HDMI module.
6. Replace the screw (M2x4) that secures the optional HDMI cover to the optional HDMI module.

Next steps

1. Install the 125 W heat sink. If applicable.
2. Install the fan.
3. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Install the side cover.
5. Follow the procedure in after working inside your computer.

Removing the optional 5 GbE Optical module

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Remove the fan.
5. Remove the 125 W heat sink. If applicable.

About this task

The following image indicates the location of the optional 5 GbE Optical module and provides a visual representation of the removal procedure.

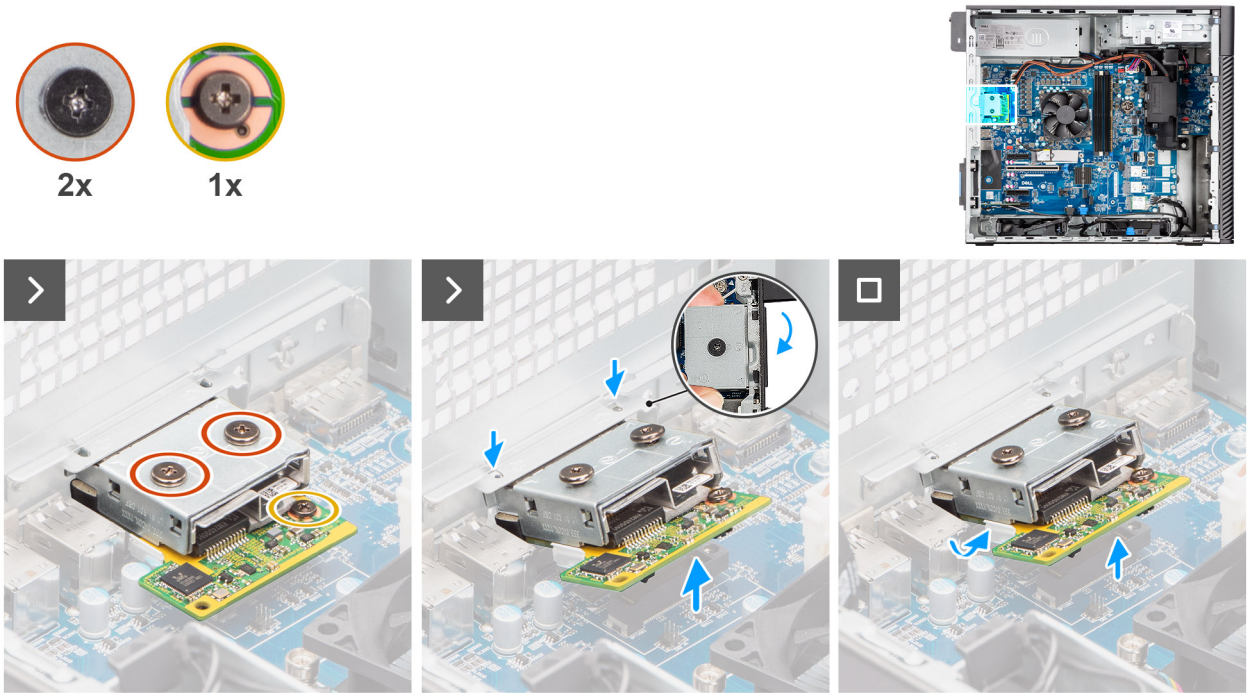


Figure 90. Removing the optional 5GbE Optical module

Steps

1. Remove the two screws (M2x4) that secure the optional 5 GbE Optical module cover to the optional 5 GbE Optical module.
2. Remove the screw (M2x4) that secures the optional 5 GbE Optical module to the system board.
3. Lift the optional 5 GbE Optical module at an angle and remove the tabs on the optional 5 GbE Optical module from the slots on the chassis.
4. Remove the optional 5 GbE Optical module off the system board.

Installing the optional 5 GbE Optical module

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

NOTE: The optional-port modules are mutually exclusive; only a single module can be installed at a time.

The following images indicate the location of the optional 5 GbE Optical module and provide a visual representation of the installation procedure.

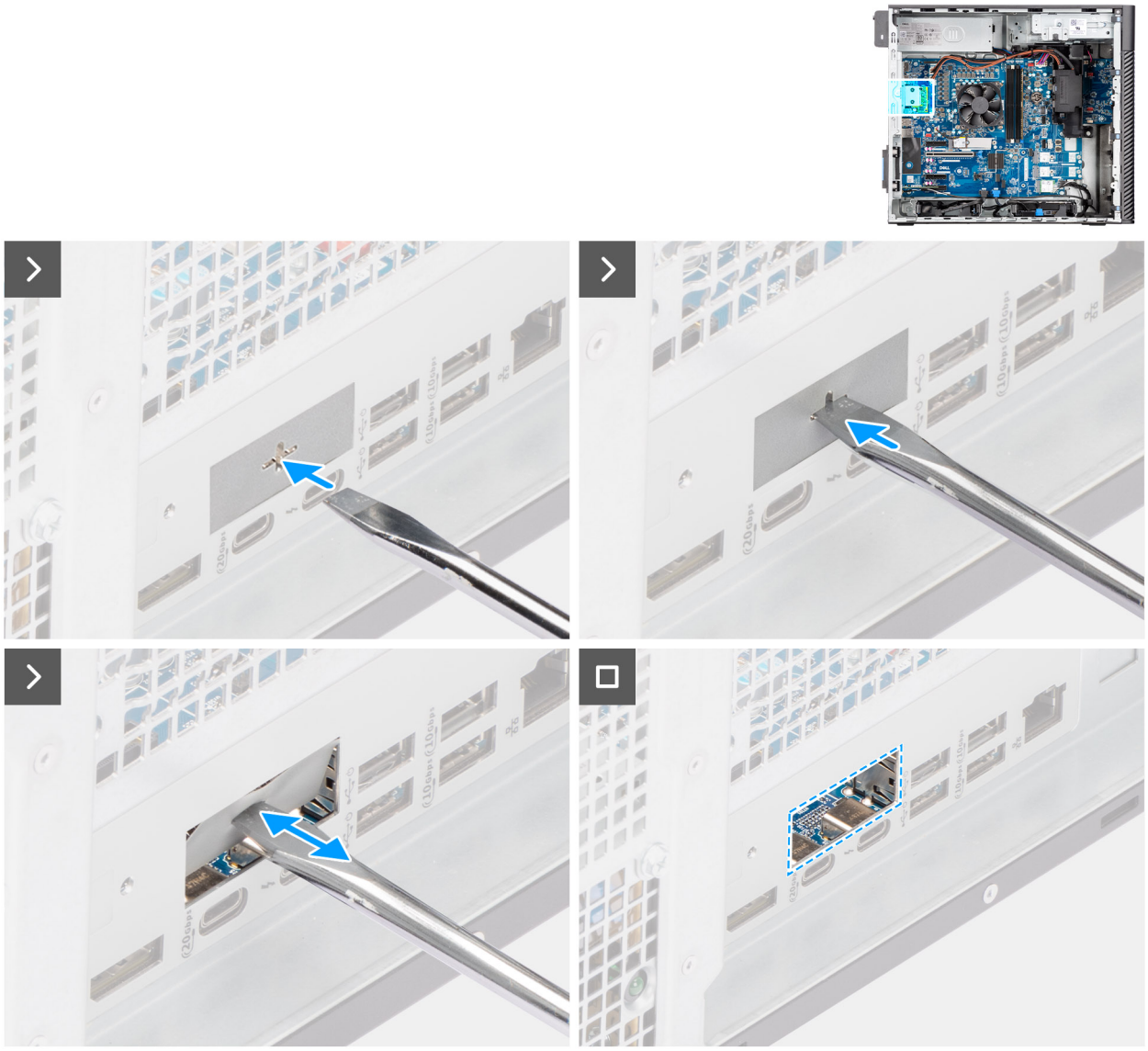


Figure 91. Installing the optional 5GbE Optical module

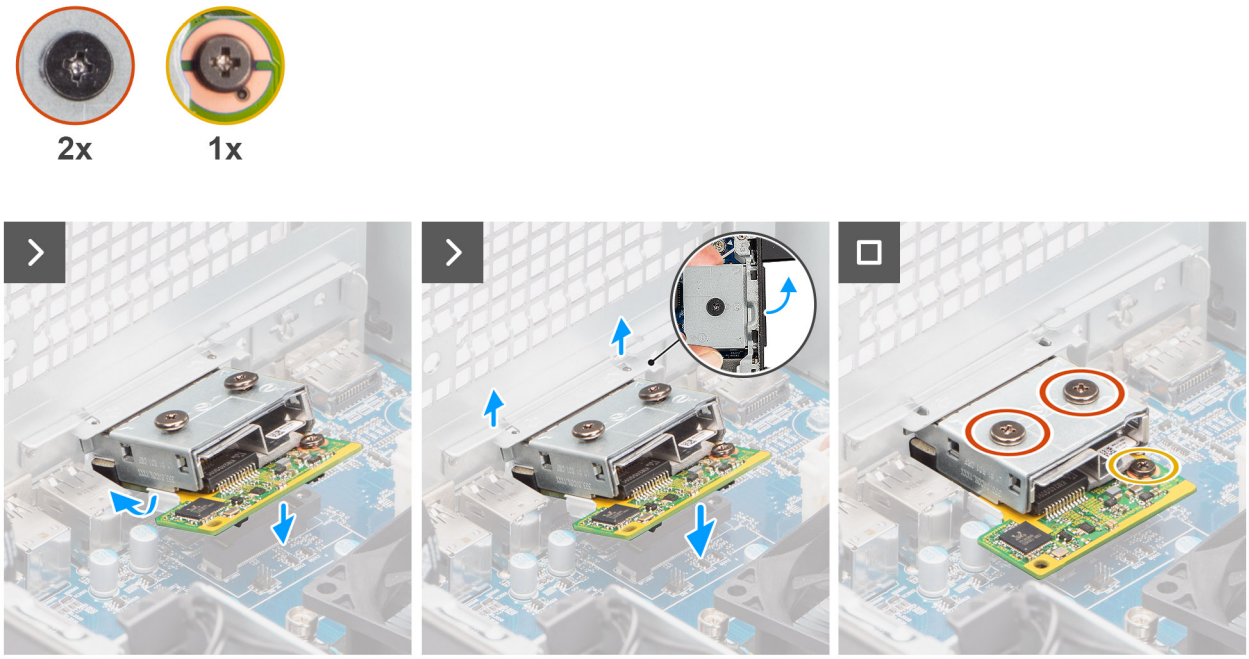


Figure 92. Installing the optional 5GbE Optical module

Steps

1. Using a screw driver, push against the optional-port cover until it comes off.

   NOTE: This step is only applicable if you are installing the optional-port module on a computer that did not previously have it installed.

2. Place the optional 5 GbE Optical module at an angle and align the tabs on the module to the slots on the chassis.
3. Align the optional 5 GbE Optical module to the slot on the chassis and connect the module to the connector on the system board (OPTION).
4. Replace the screw (M2x4) that secures the optional 5 GbE Optical module to the system board.
5. Align the screw on the optional 5 GbE Optical module cover to the screw hole on the optional 5 GbE Optical module.
6. Replace the screw (M2x4) that secures the optional 5 GbE Optical module cover to the optional 5 GbE Optical module.

Next steps

1. Install the 125 W heat sink. If applicable.
2. Install the fan.
3. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Install the side cover.
5. Follow the procedure in after working inside your computer.

Removing the optional LAN module

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Remove the fan.
5. Remove the 125 W heat sink. If applicable.

About this task

The following image indicates the location of the optional LAN module and provides a visual representation of the removal procedure.

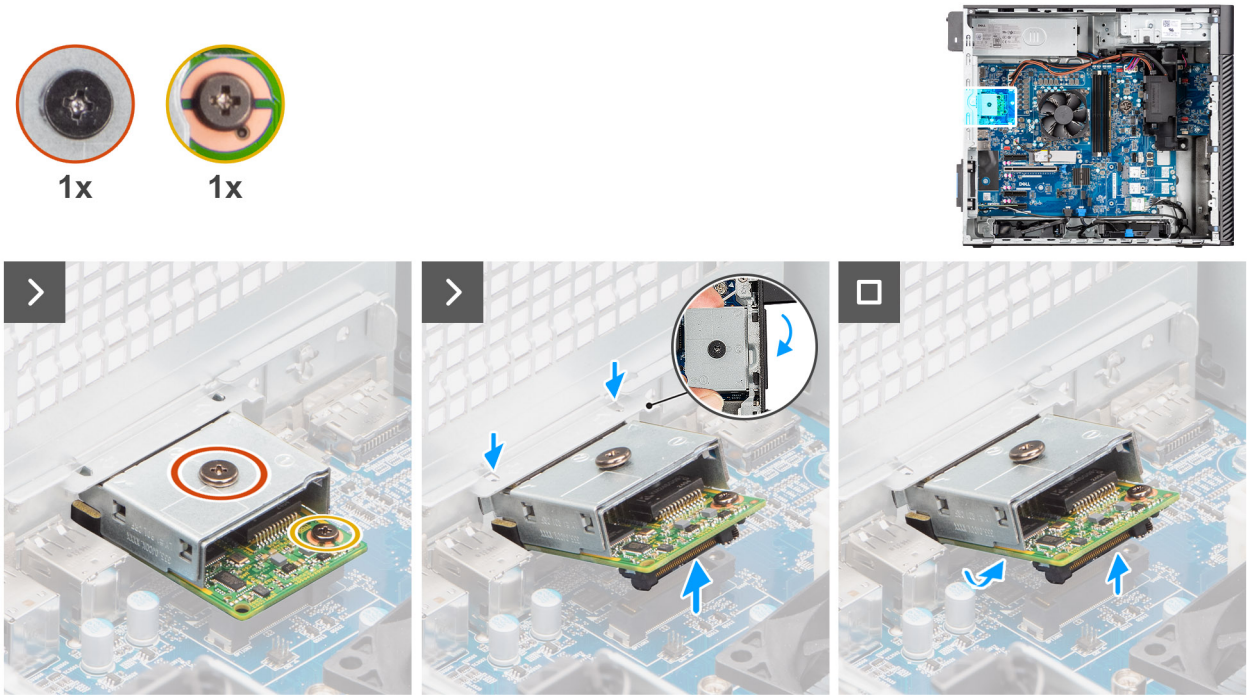


Figure 93. Removing the optional LAN module

Steps

1. Remove the screw (M2x4) that secures the optional LAN module cover to the optional LAN module.
2. Remove the screw (M2x4) that secures the optional LAN module to the system board.
3. Lift the optional LAN module at an angle and remove the tabs on the optional LAN module from the slots on the chassis.
4. Remove the optional LAN module off the system board.

Installing the optional LAN module

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

NOTE: The optional-port modules are mutually exclusive; only a single module can be installed at a time.

The following images indicate the location of the optional LAN module and provide a visual representation of the installation procedure.

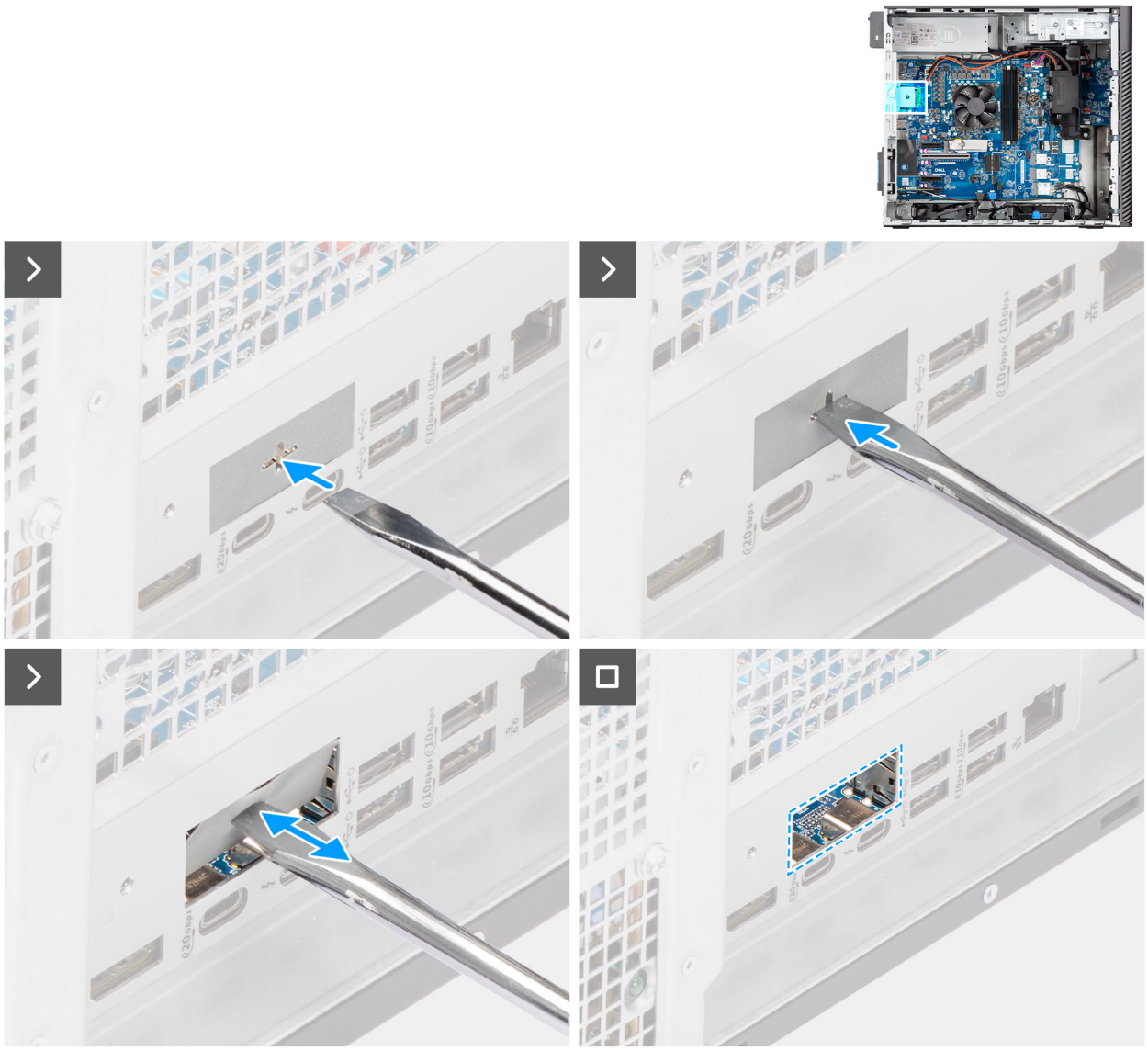


Figure 94. Installing the optional LAN module

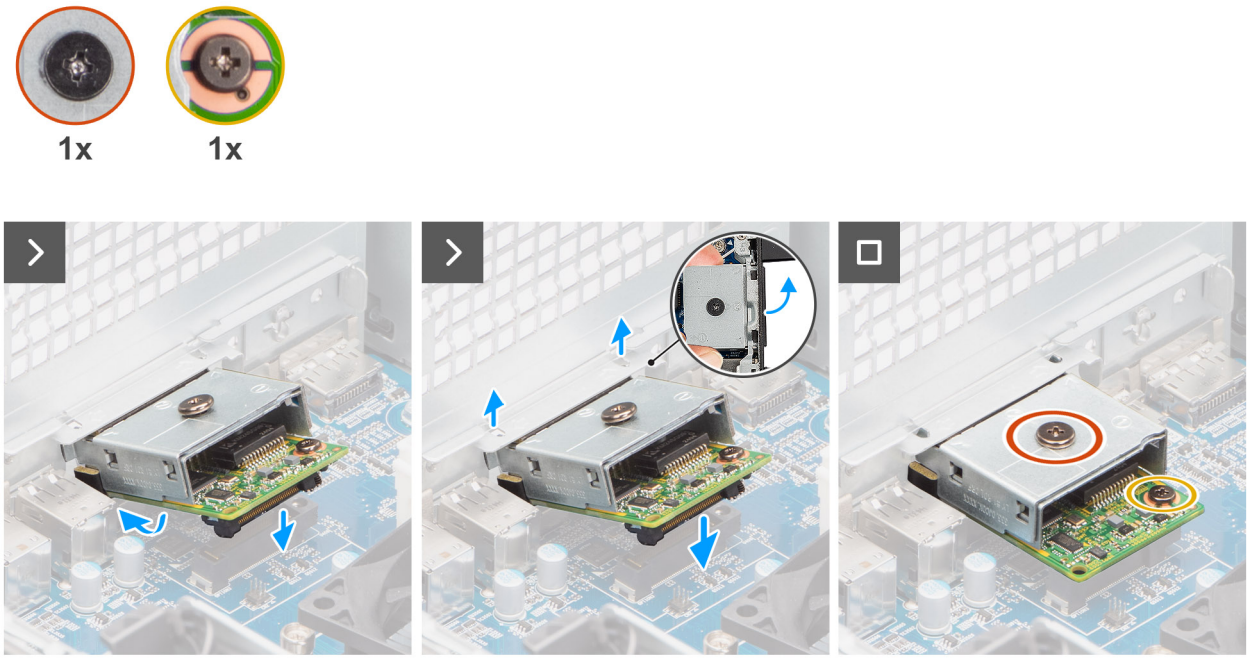


Figure 95. Installing the optional LAN module

Steps

1. Using a screw driver, push against the optional-port cover until it comes off.

   NOTE: This step is only applicable if you are installing the optional-port module on a computer that did not previously have it installed.

2. Place the optional LAN module at an angle and align the tabs on the module to the slots on the chassis.
3. Align the optional LAN module to the slot on the chassis and connect the module to the connector on the system board (OPTION).
4. Replace the screw (M2x4) that secures the optional LAN module to the system board.
5. Align the screw on the optional LAN module cover to the screw hole on the optional LAN module.
6. Replace the screw (M2x4) that secures the optional LAN module cover to the optional LAN module.

Next steps

1. Install the 125 W heat sink. If applicable.
2. Install the fan.
3. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Install the side cover.
5. Follow the procedure in after working inside your computer.

Removing the optional Thunderbolt module

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Remove the fan.
5. Remove the 125 W heat sink. If applicable.

About this task

The following image indicates the location of the optional Thunderbolt module and provides a visual representation of the removal procedure.

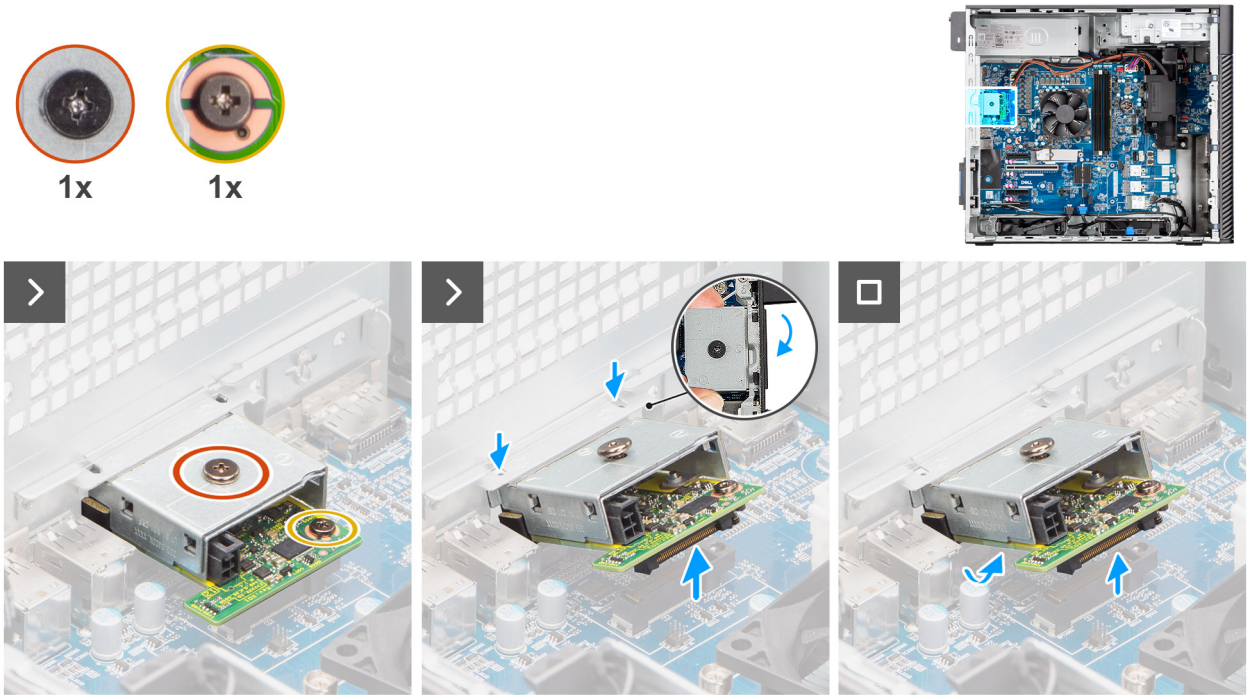


Figure 96. Removing the optional Thunderbolt module

Steps

1. Remove the screw (M2x4) that secures the optional Thunderbolt module cover to the optional Thunderbolt module.
2. Remove the screw (M2x4) that secures the optional Thunderbolt module to the system board.
3. Lift the optional Thunderbolt module at an angle and remove the tabs on the optional Thunderbolt module from the slots on the chassis.
4. Remove the optional Thunderbolt module off the system board.

Installing the optional Thunderbolt module

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

NOTE: The optional-port modules are mutually exclusive; only a single module can be installed at a time.

The following images indicate the location of the optional Thunderbolt module and provide a visual representation of the installation procedure.

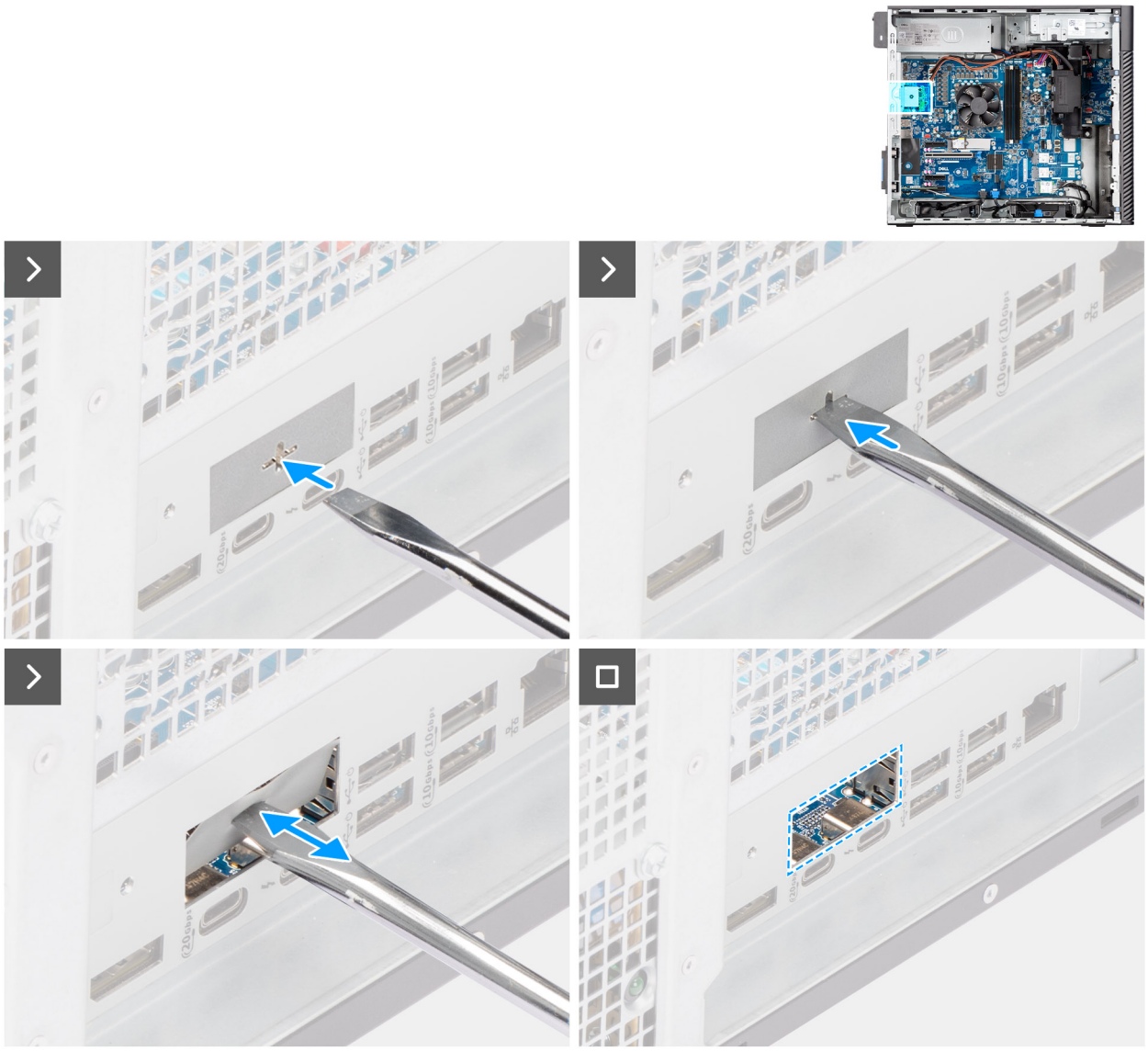


Figure 97. Installing the optional Thunderbolt module

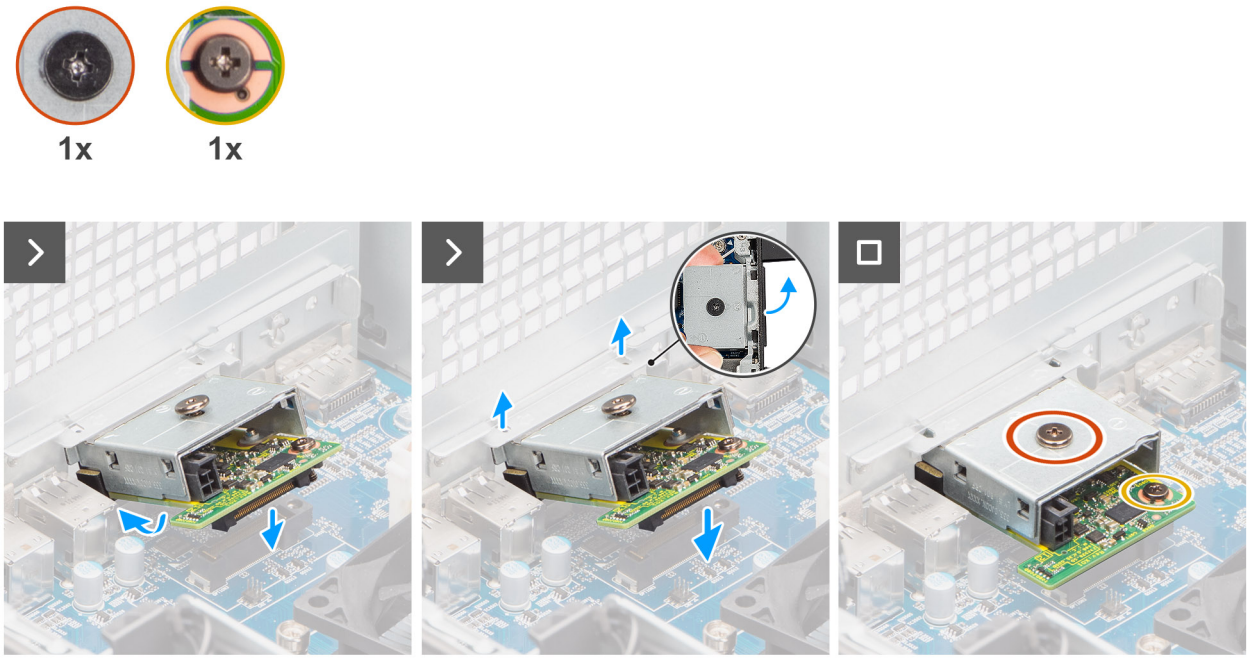


Figure 98. Installing the optional Thunderbolt module

Steps

1. Using a screw driver, push against the optional-port cover until it comes off.

   NOTE: This step is only applicable if you are installing the optional-port module on a computer that did not previously have it installed.

2. Place the optional Thunderbolt module at an angle and align the tabs on the module to the slots on the chassis.
3. Align the optional Thunderbolt module to the slot on the chassis and connect the module to the connector on the system board (OPTION).
4. Replace the screw (M2x4) that secures the optional Thunderbolt module to the system board.
5. Align the screw on the optional Thunderbolt module cover to the screw hole on the optional Thunderbolt module.
6. Replace the screw (M2x4) that secures the optional Thunderbolt module cover to the optional Thunderbolt module.

Next steps

1. Install the 125 W heat sink. If applicable.
2. Install the fan.
3. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Install the side cover.
5. Follow the procedure in after working inside your computer.

Removing the optional USB module

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Remove the fan.
5. Remove the 125 W heat sink. If applicable.

About this task

The following image indicates the location of the optional USB module and provides a visual representation of the removal procedure.

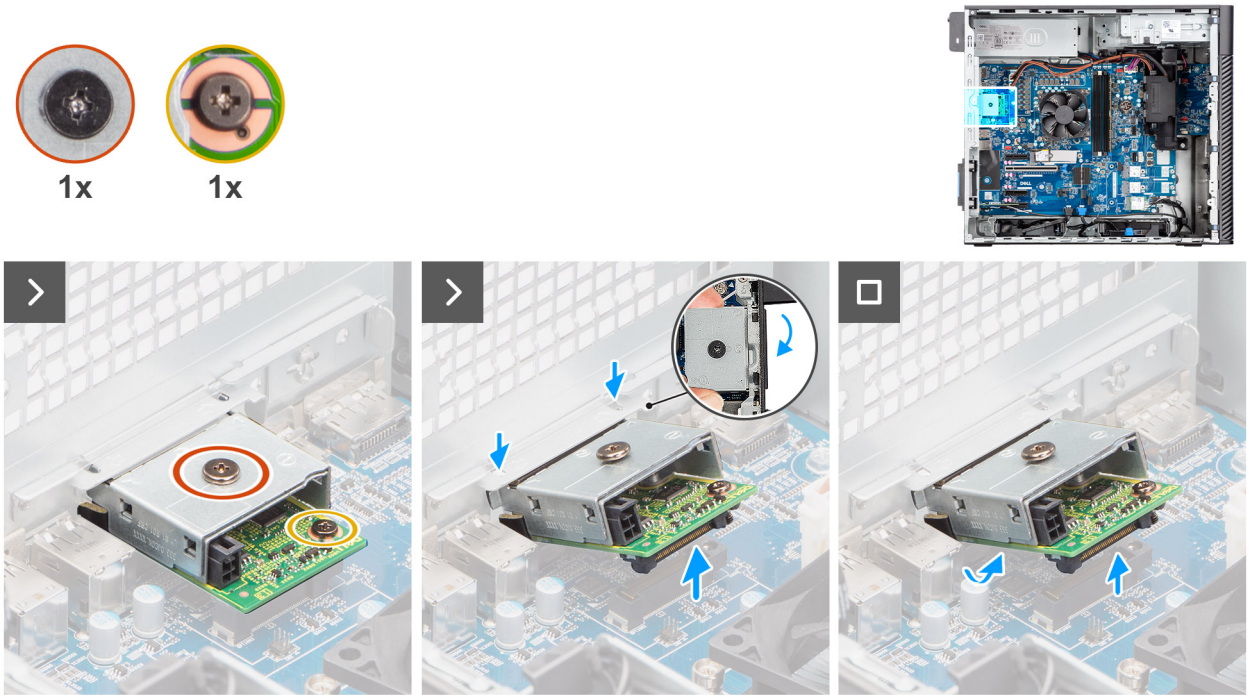


Figure 99. Removing the optional USB module

Steps

1. Remove the screw (M2x4) that secures the optional USB module cover to the optional USB module.
2. Remove the screw (M2x4) that secures the optional USB module to the system board.
3. Lift the optional USB module at an angle and remove the tabs on the optional USB module from the slots on the chassis.
4. Remove the optional USB module off the system board.

Installing the optional USB module

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

NOTE: The optional-port modules are mutually exclusive; only a single module can be installed at a time.

The following images indicate the location of the optional USB module and provide a visual representation of the installation procedure.

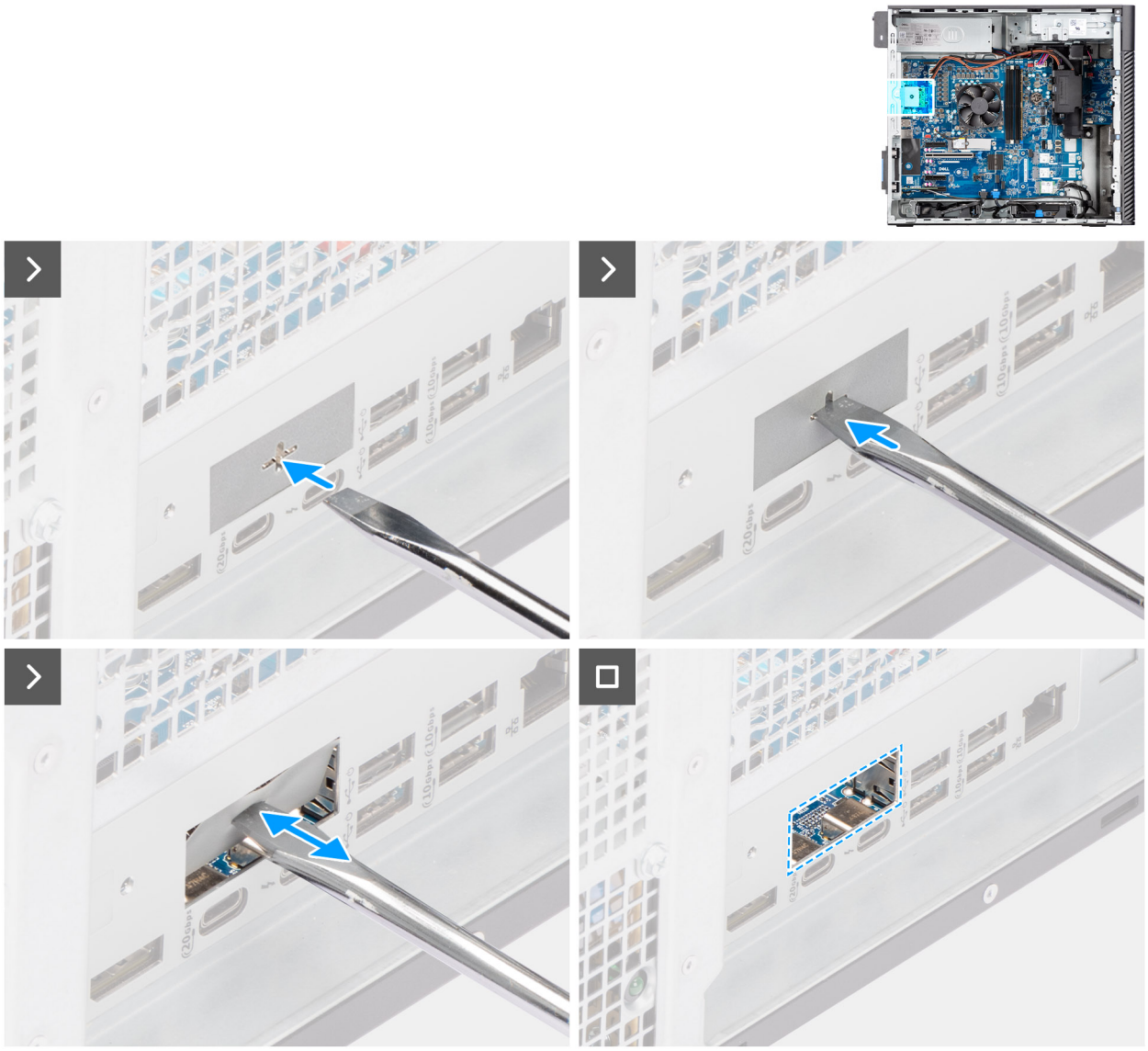


Figure 100. Installing the optional USB module

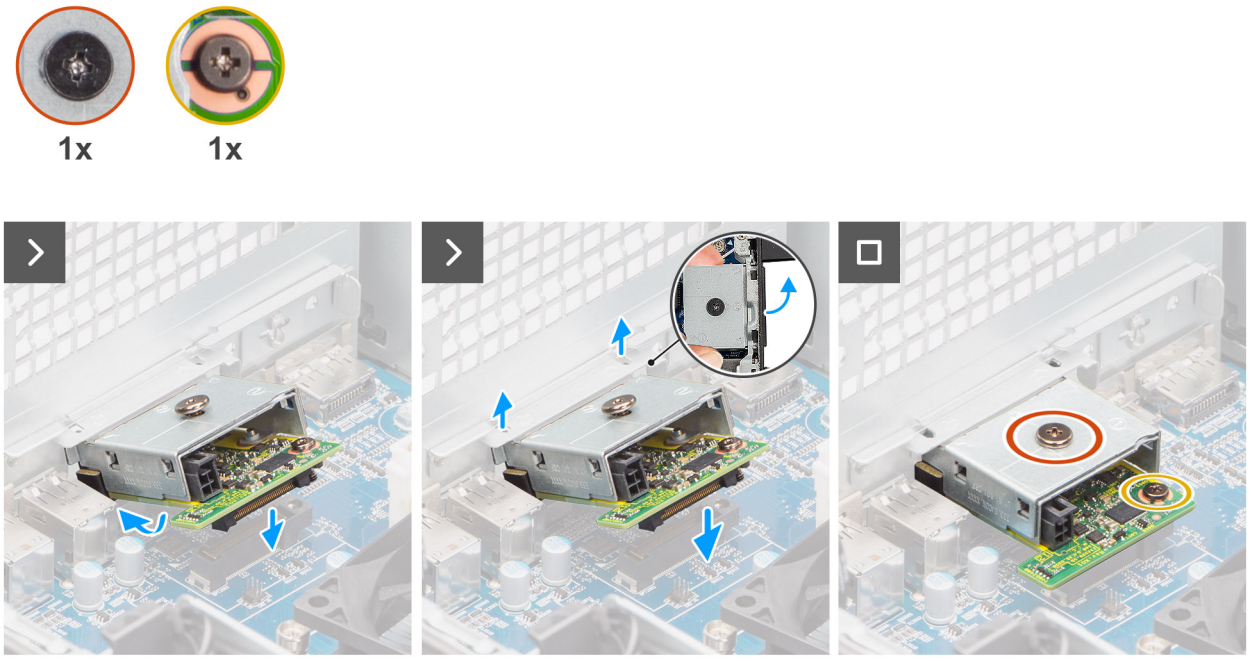


Figure 101. Installing the optional USB module

Steps

1. Using a screw driver, push against the optional-port cover until it comes off.

   NOTE: This step is only applicable if you are installing the optional-port module on a computer that did not previously have it installed.

2. Place the optional USB module at an angle and align the tabs on the module to the slots on the chassis.
3. Align the optional USB module to the slot on the chassis and connect the module to the connector on the system board (OPTION).
4. Replace the screw (M2x4) that secures the optional USB module to the system board.
5. Align the screw on the optional USB module cover to the screw hole on the optional USB module.
6. Replace the screw (M2x4) that secures the optional USB module cover to the optional USB module.

Next steps

1. Install the 125 W heat sink. If applicable.
2. Install the fan.
3. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Install the side cover.
5. Follow the procedure in after working inside your computer.

Removing the optional VGA module

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the side cover.
3. Remove the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Remove the fan.
5. Remove the 125 W heat sink. If applicable.

About this task

The following image indicates the location of the optional VGA module and provides a visual representation of the removal procedure.



Figure 102. Removing the optional VGA module

Steps

1. Remove the screw (M2x4) that secures the optional VGA module cover to the optional VGA module.
2. Remove the screw (M2x4) that secures the optional VGA module to the system board.
3. Lift the optional VGA module at an angle and remove the tabs on the optional VGA module from the slots on the chassis.
4. Remove the optional VGA module off the system board.

Installing the optional VGA module

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

NOTE: The optional-port modules are mutually exclusive; only a single module can be installed at a time.

The following images indicate the location of the optional VGA module and provide a visual representation of the installation procedure.

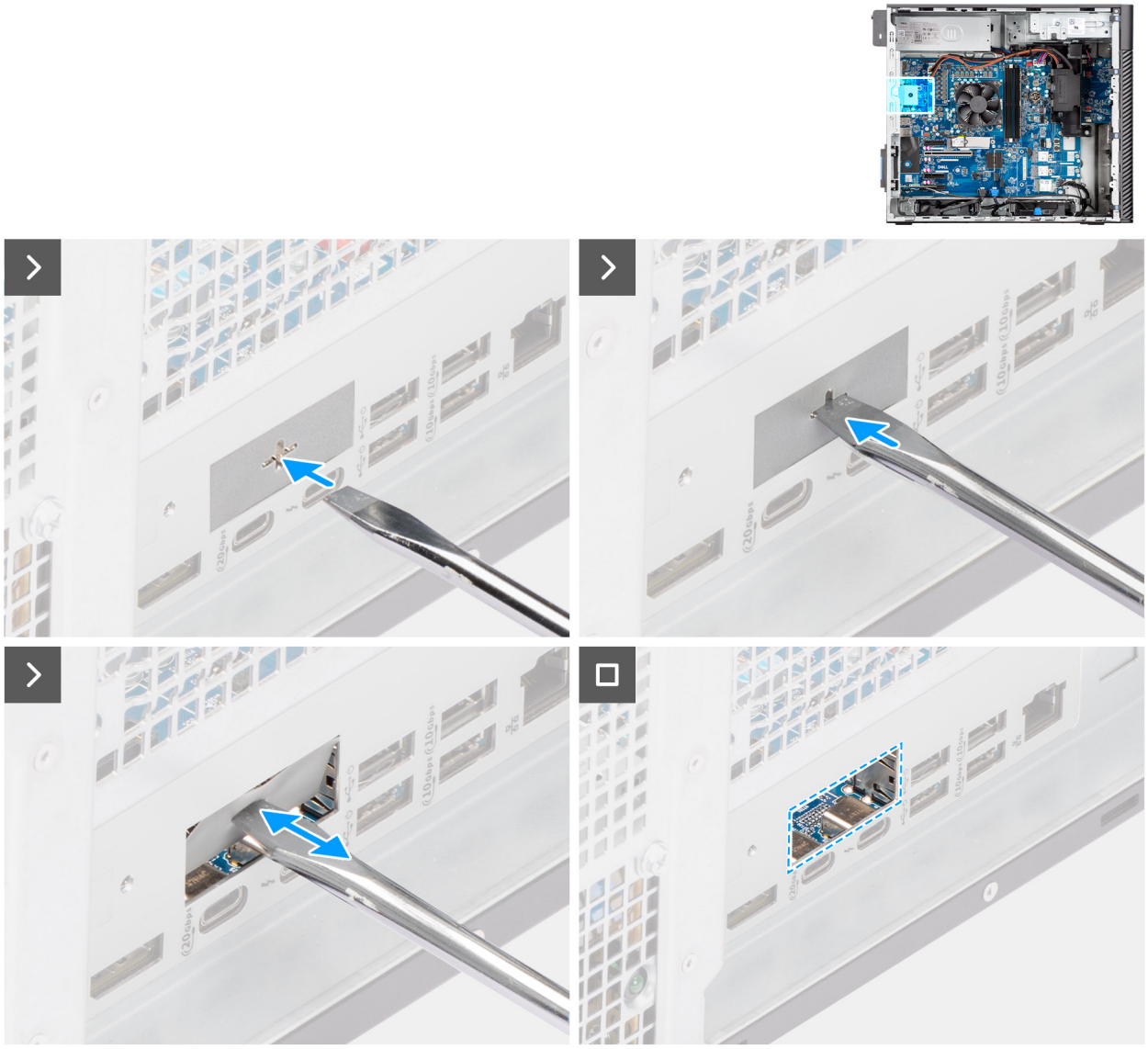


Figure 103. Installing the optional VGA module



Figure 104. Installing the optional VGA module

Steps

1. Using a screw driver, push against the optional-port cover until it comes off.

   NOTE: This step is only applicable if you are installing the optional-port module on a computer that did not previously have it installed.

2. Place the optional VGA module at an angle and align the tabs on the module to the slots on the chassis.
3. Align the optional VGA module to the slot on the chassis and connect the module to the connector on the system board (OPTION).
4. Replace the screw (M2x4) that secures the optional VGA module to the system board.
5. Align the screw on the optional VGA module cover to the screw hole on the optional VGA module.
6. Replace the screw (M2x4) that secures the optional VGA module cover to the optional VGA module.

Next steps

1. Install the 125 W heat sink. If applicable.
2. Install the fan.
3. Install the air shroud.

   NOTE: For computers with 1500 W PSU only.

4. Install the side cover.
5. Follow the procedure in after working inside your computer.

System board

Removing the system board

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in before working inside your computer.

   NOTE: Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the BIOS setup program after you replace the system board.

   NOTE: Replacing the system board removes any changes that you have made to the BIOS using the BIOS setup program. You must make the appropriate changes again after you replace the system board.

   NOTE: Before disconnecting cables from the system board, note the connector locations to ensure correct reconnection after replacing the board.

2. Remove the side cover.
3. Remove the front bezel.
4. Remove the air shroud.

   NOTE: For computers with 1500 W PSU only.

5. Remove the 3.5-inch HDD.
6. Remove the M.2 2230 SSD or the M.2 2280 SSD.
7. Remove the WLAN.
8. Remove the memory module.
9. Remove the graphics card.
10. Remove the powered GPU.

    NOTE: This step is required only if the computer is configured with a powered GPU.

11. Remove the 125 W heat-sink assembly or the 65 W heat-sink assembly.
12. Remove the processor.
13. Remove the front chassis fan and therear chassis fan.
14. Remove the intrusion switch.
15. Remove the internal speaker.
16. Remove the front I/O bracket.

About this task

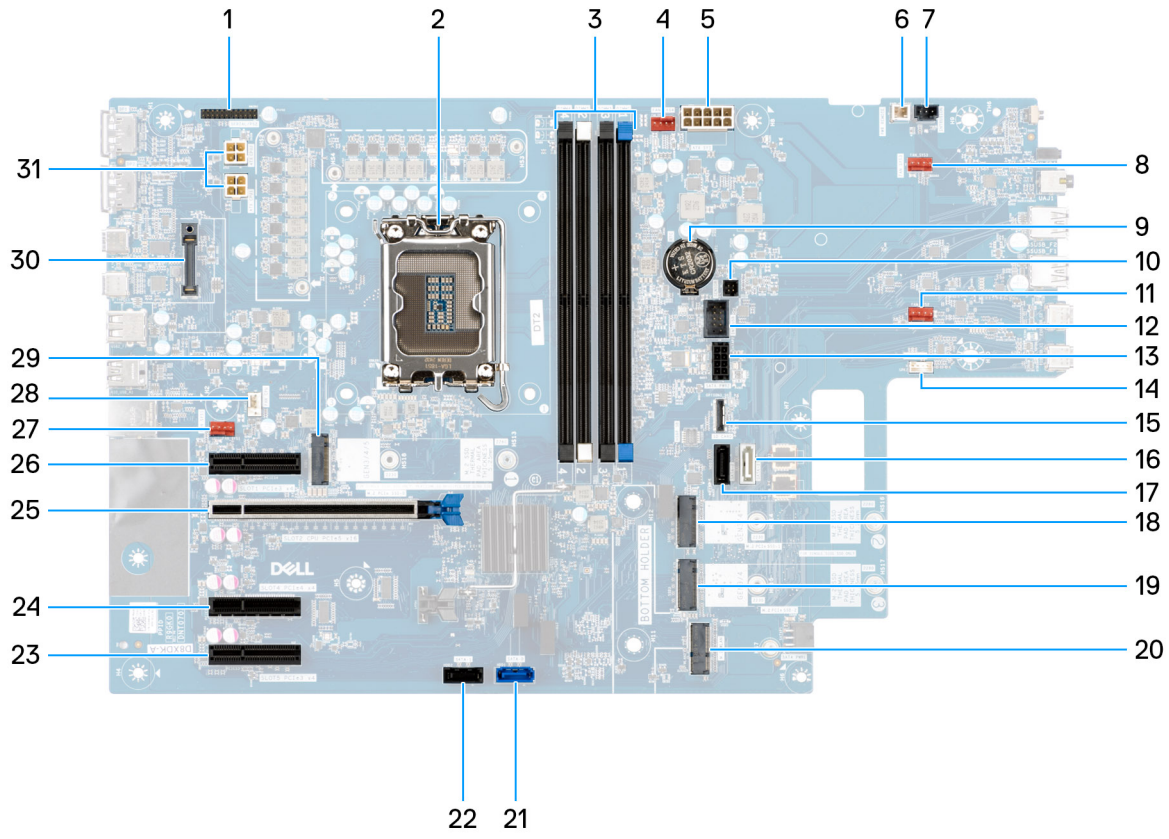


Figure 105. System-board callouts

Table 25. Dell Pro Max Tower T2 FCT2250 system board callouts

No	Connector	Description
1	Serial/PS2	Serial/PS2 module connector
2	CPU0_SKT	Processor socket
3	DIMM1 to DIMM4	Memory module connectors
4	FAN SYS4	System fan connector 4
5	ATX SYS	ATX system power connector
6	PWR REMOTE	Power remote connector
7	INTRUSION	Intrusion switch connector
8	FAN SYS3	System fan connector 3
9	RTC	Coin cell battery
10	SENSOR	Thermal sensor connector
11	FAN SYS2	System fan connector 2
12	INT USB	Internal USB connector
13	SATA PWR2	SATA power connector
14	INT SPKR	Internal speaker connector
15	SD CARD	SD card connector

Table 25. Dell Pro Max Tower T2 FCT2250 system board callouts (continued)

No	Connector	Description
16	SATA-3	SATA 3 connector
17	SATA-2	SATA 2 connector
18	M.2 PCIe SSD-2	M.2 PCIe SSD slot 2
19	M.2 PCIe SSD-3	M.2 PCIe SSD slot 3
20	M.2 WLAN	WLAN slot
21	SATA-0	SATA 0 connector
22	SATA-1	SATA 1 connector
23	SLOT5 PCIe3 x4	PCIe x4 connector
24	SLOT4 PCIe4 x4	PCIe x4 connector
25	SLOT2 PCIe5 x16	PCIe x16 connector
26	SLOT1 PCIe3 x4	PCIe x4 connector
27	FAN SYS1	System fan connector 1
28	FAN CPU	CPU fan connector
29	M.2 PCIe SSD-1	M.2 PCIe SSD slot 1
30	OPTIONAL MODULE	Optional module header
31	ATX CPU1 and ATX CPU2	4-pin processor power connectors

The following images indicate the location of the system board and provide a visual representation of the removal procedure.

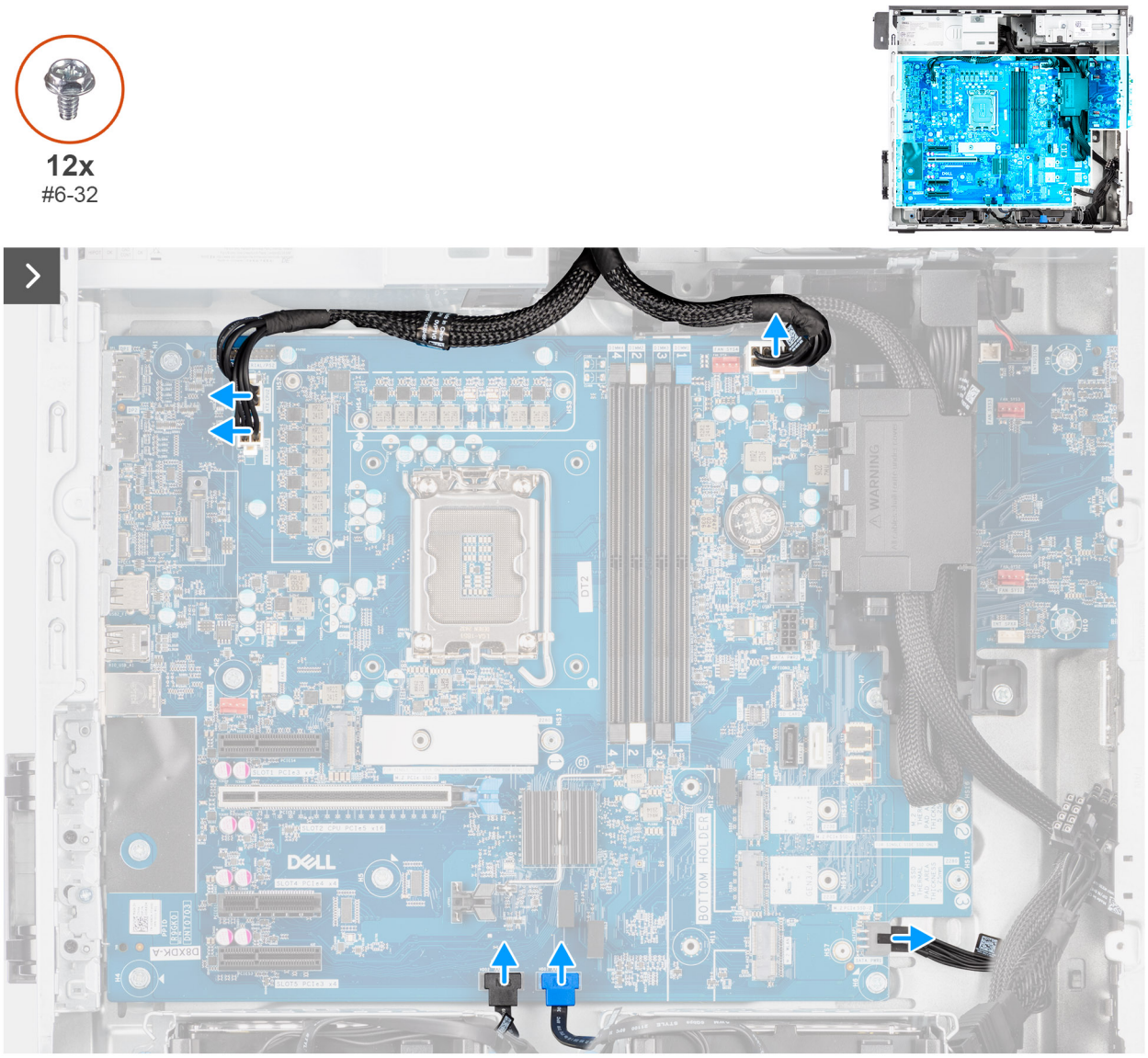


Figure 106. Removing the system board

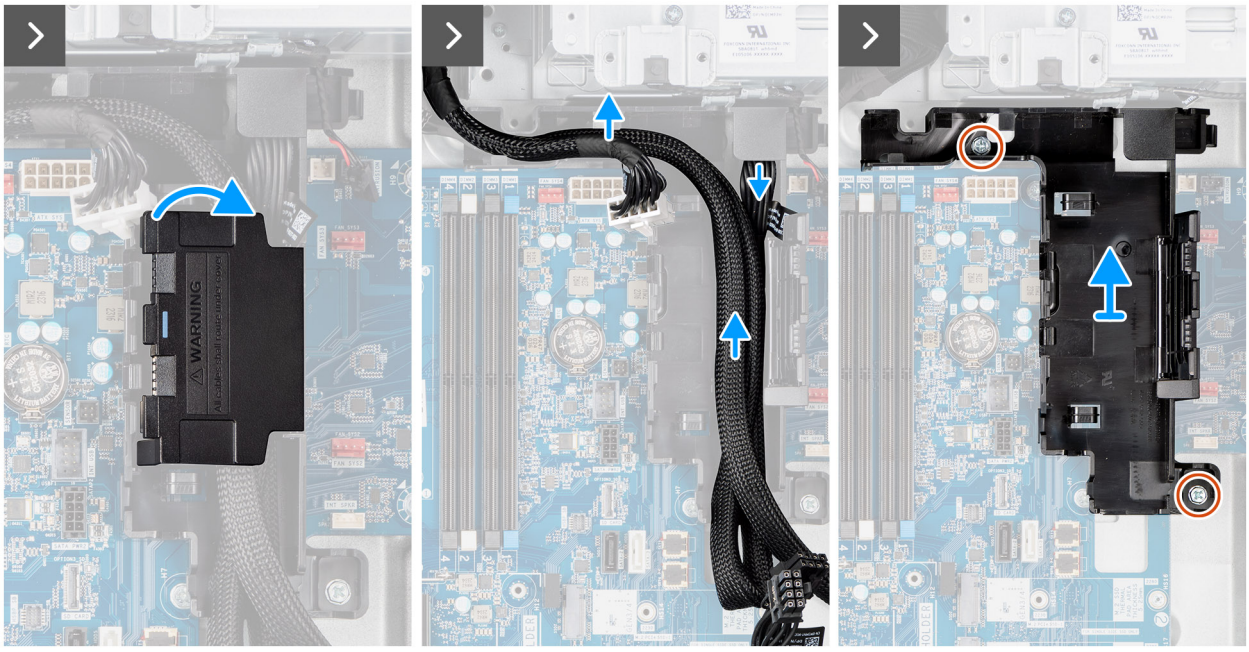


Figure 107. Removing the system board

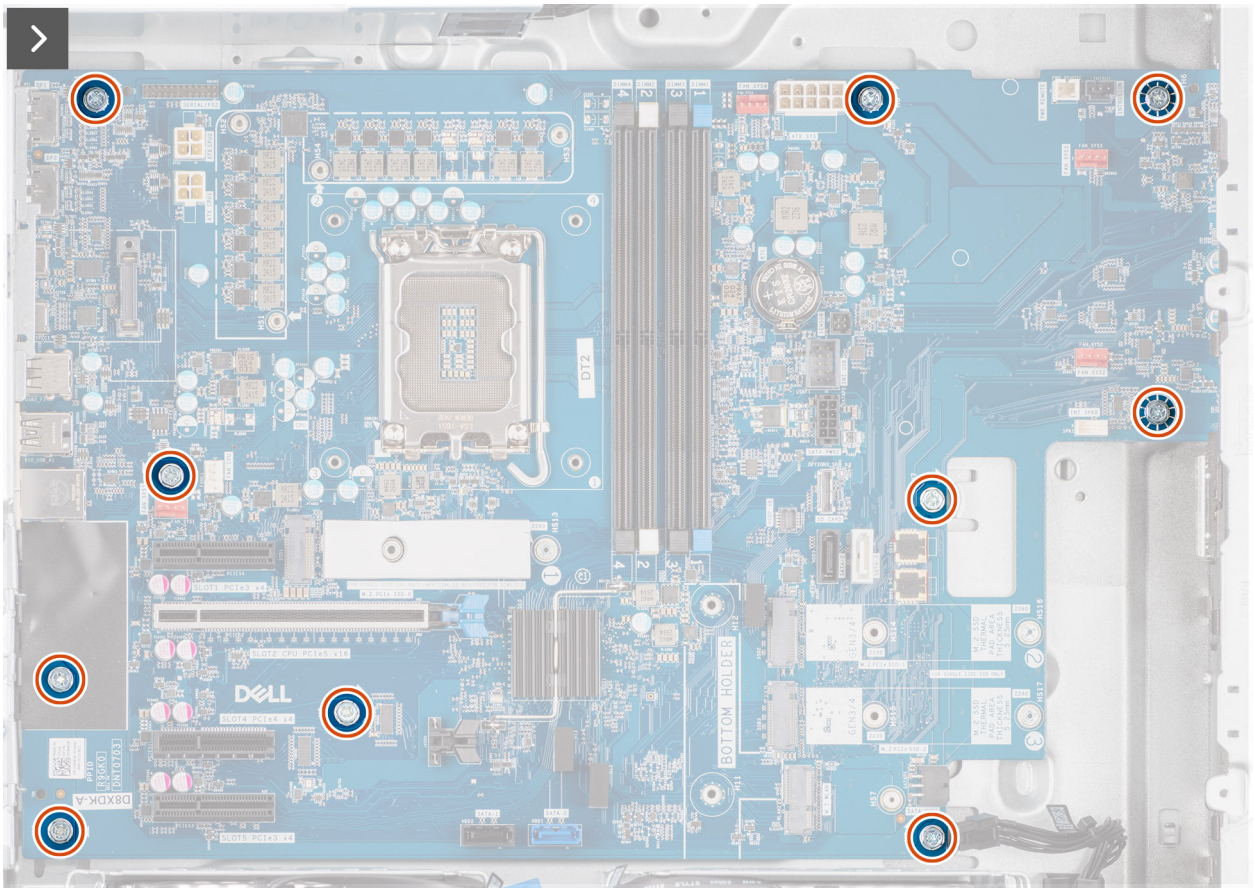


Figure 108. Removing the system board



Figure 109. Removing the system board

Steps

1. Disconnect the power and hard drive cables that are connected to the system board.
2. Open the cable-box cover and unroute them from the cable box.
3. Remove the two screws (#6-32) that secure the cable box to the chassis.
4. Lift the cable box out of the chassis.
5. Remove the ten screws (#6-32) that secure the system board to the chassis.
6. Lift the system board at an angle and remove the system board from the chassis.

Installing the system board

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

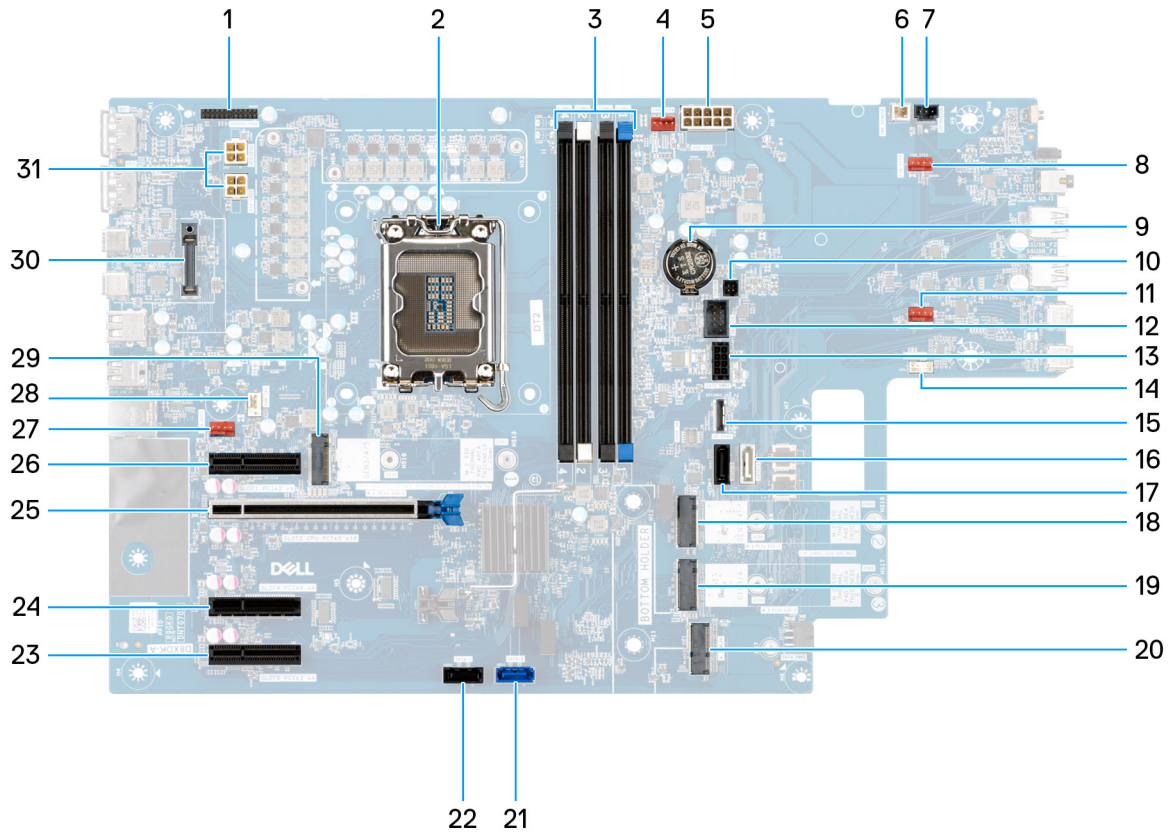


Figure 110. System-board callouts

Table 26. Dell Pro Max Tower T2 FCT2250 system board callouts

No	Connector	Description
1	Serial/PS2	Serial/PS2 module connector
2	CPU0_SKT	Processor socket
3	DIMM1 to DIMM4	Memory module connectors
4	FAN SYS4	System fan connector 4
5	ATX SYS	ATX system power connector
6	PWR REMOTE	Power remote connector
7	INTRUSION	Intrusion switch connector
8	FAN SYS3	System fan connector 3
9	RTC	Coin cell battery
10	SENSOR	Thermal sensor connector
11	FAN SYS2	System fan connector 2
12	INT USB	Internal USB connector
13	SATA PWR2	SATA power connector
14	INT SPKR	Internal speaker connector
15	SD CARD	SD card connector

Table 26. Dell Pro Max Tower T2 FCT2250 system board callouts (continued)

No	Connector	Description
16	SATA-3	SATA 3 connector
17	SATA-2	SATA 2 connector
18	M.2 PCIe SSD-2	M2 PCIe SSD slot 2
19	M.2 PCIe SSD-3	M.2 PCIe SSD slot 3
20	M.2 WLAN	WLAN slot
21	SATA-0	SATA 0 connector
22	SATA-1	SATA 1 connector
23	SLOT5 PCIe3 x4	PCIe x4 connector
24	SLOT4 PCIe4 x4	PCIe x4 connector
25	SLOT2 PCIe5 x16	PCIe x16 connector
26	SLOT1 PCIe3 x4	PCIe x4 connector
27	FAN SYS1	System fan connector 1
28	FAN CPU	CPU fan connector
29	M.2 PCIe SSD-1	M2 PCIe SSD slot 1
30	OPTIONAL MODULE	Optional module header
3 1	ATX CPU1 and ATX CPU2	4-pin processor power connectors

The following images indicate the location of the system board and provide a visual representation of the installation procedure.

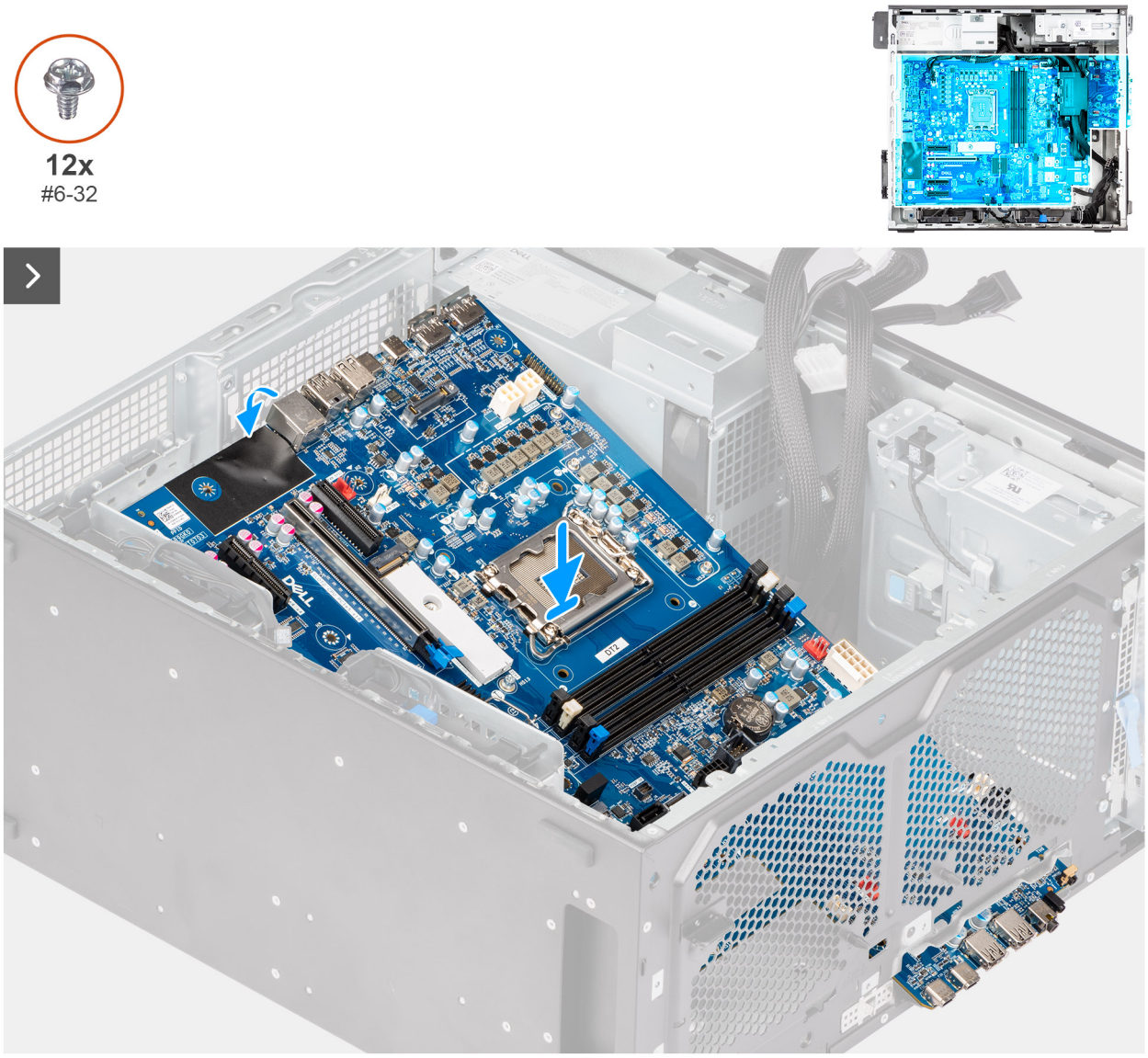


Figure 111. Installing the system board

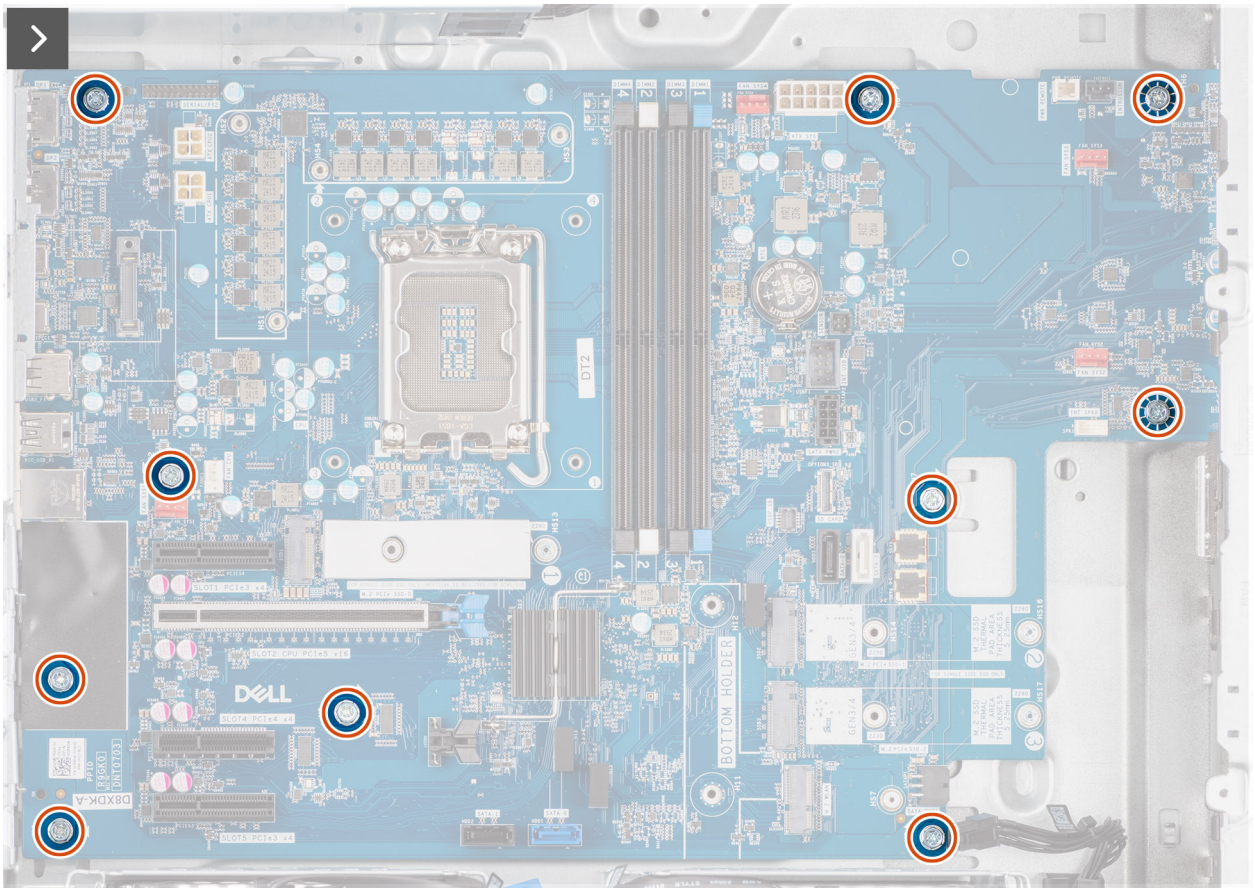


Figure 112. Installing the system board

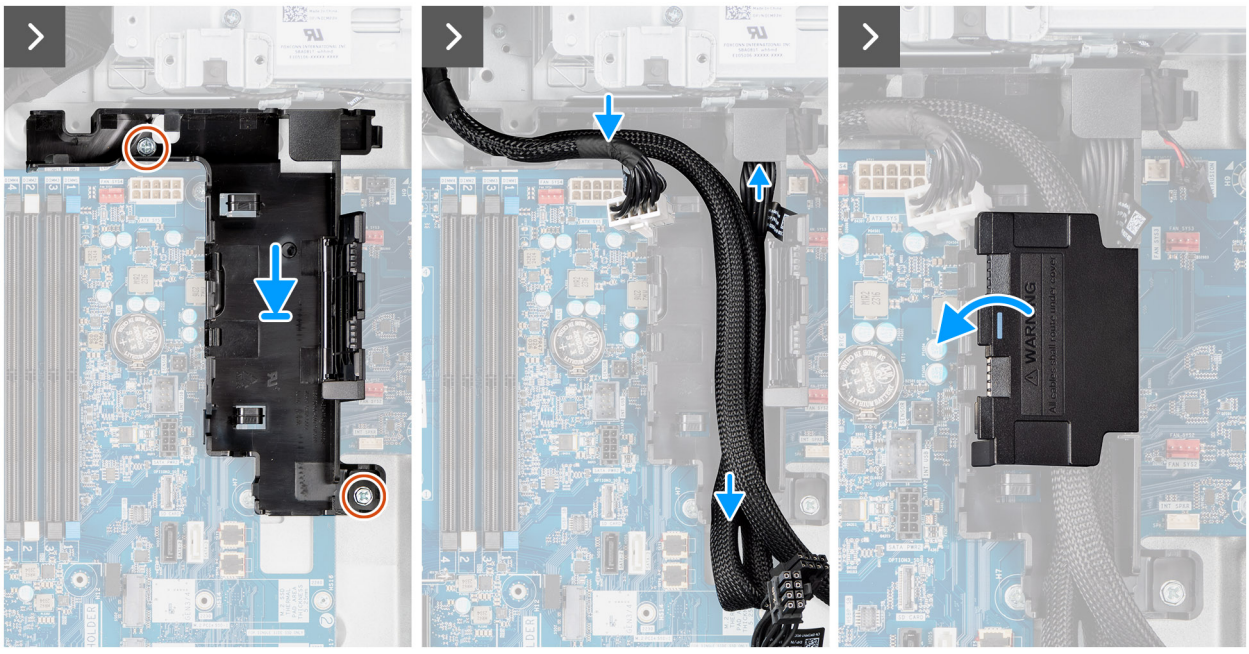


Figure 113. Installing the system board

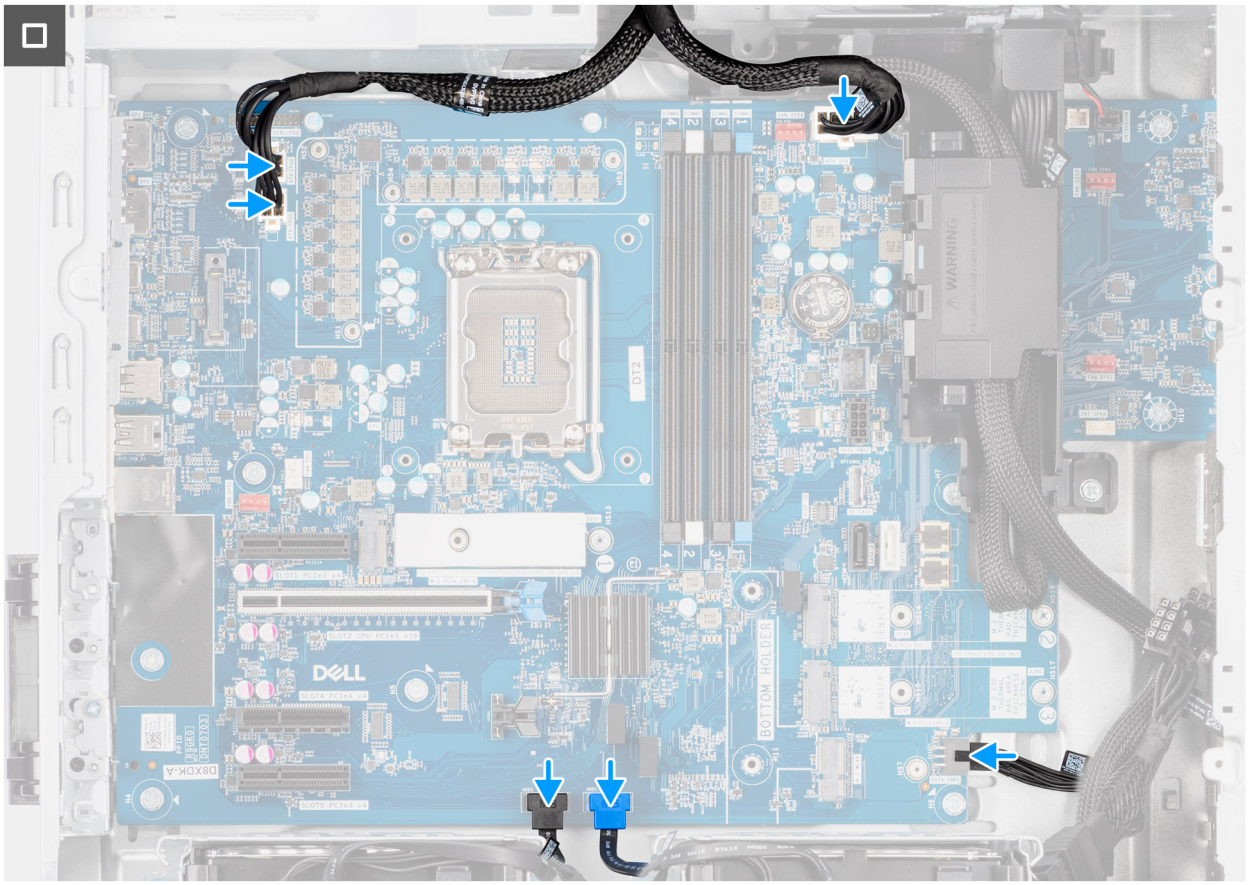


Figure 114. Installing the system board

Steps

1. Align and slide the front I/O ports on the system board into the front I/O slot on the chassis.
2. Align the screw holes on the system board with screw holes on the chassis.
3. Replace the ten screws (#6-32) that secure the system board to the chassis.
4. Align and place the cable box in its slot on the chassis.
5. Replace the two screws (#6-32) that secure the cable box to the chassis.
6. Route the cables through the cable box and close the cable-box cover.

   NOTE: Fold the excess cabling and insert it into the cable box.

7. Connect the power and hard drive cables to their respective connectors on the system board.

Next steps

1. Install the front I/O bracket.
2. Install the internal speaker.
3. Install the intrusion switch.
4. Install the front chassis fan and the rear chassis fan.
5. Install the processor.
6. Install the 125 W heat-sink assembly or the65 W heat-sink assembly.
7. Install the powered GPU.

   NOTE: This step is required only if the computer is configured with a powered GPU.

8. Install the graphics card.
9. Install the memory module.
10. Install the WLAN.
11. Install the M.2 2230 SSD or the M.2 2280 SSD.

12. Install the 3.5-inch HDD.
13. Install the air shroud.

NOTE: For computers with 1500 W PSU only.

14. Install the front bezel.
15. Install the side cover.
16. Follow the procedure in after working inside your computer.

NOTE: Your computers Service Tag is stored on the system board. You must enter the Service Tag in the BIOS setup program after you replace the system board.

NOTE: Replacing the system board removes any changes that you have made to the BIOS using the BIOS setup program. You must make the appropriate changes again after you replace the system board.

10

Software

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

Operating system

Your Dell Pro Max Tower T2 FCT2250 supports the following operating systems:

- Windows 11 Home
- Windows 11 Pro
- Windows 11 Pro National Academic
- Windows 11 IoT Enterprise 2024 LTSC
- Ubuntu Linux 24.04 LTS

Drivers and downloads

When troubleshooting, downloading, or installing drivers, it is recommended that you read the Dell Knowledge Base article Drivers and Downloads FAQs.

11

BIOS Setup

CAUTION: Certain changes can make your computer work incorrectly. Before you change the settings in BIOS Setup, it is recommended that you note down the original settings for future reference.

NOTE: Depending on the computer and the installed devices, the options that are listed in this section may differ.

Use BIOS Setup for the following purposes:

- Get information about the hardware installed in your computer, such as the amount of RAM and the capacity of the storage device.
- Change the system configuration information.
- Set or change user-selectable options such as the user password, enabling or disabling base devices, and configuring hard drive settings.

Entering BIOS Setup program

About this task

Turn on (or restart) your computer and press F2 immediately.

Navigation keys

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

Table 27. Navigation keys

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 follows 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 restart the computer.

One time boot menu

To access the **one time boot menu**, turn on your computer, and then press F2 immediately.

NOTE: If your computer fails to enter the boot menu, restart the computer and press F2 immediately.

The one-time boot menu displays the devices that you can boot from, and also displays the option to start diagnostics. The boot menu options are:

- Removable Drive (if available)

- STXXXX Drive (if available)

  NOTE: XXX denotes the SATA drive number.

- Optical Drive (if available)
- SATA Hard Drive (if available)
- Diagnostics

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

The **one time boot menu** also displays the option to access the System Setup screen.

F12 One Time Boot menu

To enter the One Time Boot menu, turn on or restart your computer, and then press F12 immediately.

NOTE: If you are unable to enter the One Time Boot menu, repeat the above action.

The One Time Boot menu displays the devices that you can boot from and also display the options to start diagnostics. The boot menu options are:

- Removable Drive (if available)
- STXXXX Drive (if available)

  NOTE: XXXX denotes the SATA drive number.

- Optical Drive (if available)
- SATA Hard Drive (if available)
- Diagnostics

The One Time Boot menu screen also displays the option to access BIOS Setup.

View Advanced Setup options

About this task

Some BIOS Setup options are only visible by enabling **Advanced Setup** mode, which is disabled by default.

NOTE: BIOS Setup options, including **Advanced Setup** options, are described in the **System setup options** option.

To enable Advanced Setup:

Steps

1. Enter BIOS Setup.
   The Overview menu appears.
2. Click the **Advanced Setup** option to move it to the **ON** mode.
   Advanced BIOS Setup options are displayed.

BIOS Setup options

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

Table 28. BIOS Setup options—Overview menu

Dell Pro Max Tower T2 FCT2250	
Overview	**Description**
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.
System UUID	Displays the UUID of the computer.
Processor Information	
Processor Type	Displays the processor type.
Maximum Clock Speed	Displays the maximum 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.
Intel vPro Technology	Displays whether the Intel vPro technology is used.
Memory Information	
Memory Installed	Displays the total memory that is installed on the computer.
Memory Available	Displays the total memory available on the computer.
Memory Speed	Displays the memory speed.
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	
Wi-Fi Device	Displays the wireless device information of the computer.
Native Resolution	Displays the native resolution 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 LOM MAC address of the integrated Ethernet (network) controller.
dGPU Video Controller	Displays the dGPU video controller information of the computer.
Slot 1	Displays the PCIe slot information of the system.
Slot 2	Displays the PCIe slot information of the system.

Table 28. BIOS Setup options—Overview menu (continued)

Dell Pro Max Tower T2 FCT2250	
Overview	**Description**
Slot 3	Displays the PCIe slot information of the system.
Slot 4	Displays the PCIe slot information of the system.
Slot 5	Displays the PCIe slot information of the system.

Table 29. BIOS Setup options—Boot Configuration menu

Boot Configuration	Description
Boot Sequence	Displays the boot sequence.
Enable PXE Boot Priority	Enable or disable the PXE Boot priority. By default, the **Enable PXE Boot Priority** option is disabled. When enabled and if a PXE boot option is detected, it is added to the top of the boot sequence.
UEFI Network Boot Order	Allows you to select the IPv4 and IPv6 boot order. By default, the **IPv4** option is enabled.
Extended IPV4 PXE Boot Timeout	Allows you to enter the Extended IPV4 PXE Boot timeout value only if the IPV4 PXE boot fails with standard timeouts. By default, the timeout is set to 0.
Secure Digital (SD) Card Boot	Enables or disable the SD card boot. By default, the option is disabled.
Secure Boot	
Enable Secure Boot	Enables the computer to boot using only validated boot software. By default, the **Enable Secure Boot** option is enabled. For additional security, Dell Technologies recommends keeping the **Secure Boot** option enabled to ensure that the UEFI firmware validates the operating system during the boot process. **NOTE:** For Secure Boot to be enabled, the computer must be in UEFI boot mode and the Enable Legacy Option ROMs option must be turned off.
Secure Boot Mode	Enables or disables the Secure Boot operation mode. By default, the **Deployed Mode** is selected. **NOTE:** **Deployed Mode** should be selected for normal operation of Secure Boot.
Expert Key Management	
Enable Custom Mode	Enables or disables the ability to modify the keys in the PK, KEK, db, and dbx security key databases to be modified. By default, the **Enable Custom Mode** option is disabled.
Custom Mode Key Management	Selects the custom values for expert key management. By default, the **PK** option is selected.

Table 30. BIOS Setup options—Integrated Devices menu

Integrated Devices	Description
Date/Time	

Table 30. BIOS Setup options—Integrated Devices menu (continued)

Integrated Devices	Description
Date	Sets the computer date in MM/DD/YYYY format. Changes to the date format take effect immediately.
Time	Sets the computer time in HH/MM/SS 24-hour format. You can select between a 12-hour and 24-hour clock. Changes to the time format take effect immediately.
HDD Fans	
HDD0 Fan Enable	Enables or disable the hard drive fans. By default, the option is enabled.
Limit system memory to less than 1 TB	Enables or disables the system memory limit to less than 1 TB. By default, the option is disabled.
Audio	
Enable Audio	Enables all integrated audio controller. By default, all the options are enabled.
Rear Audio Jack	Enables the rear audio jack. By default, the **Line Out** option is enabled.
USB/Thunderbolt 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.
Dust Filter Maintenance	Enables or disables the BIOS messages for maintaining the optional dust filter. By default, the option is disabled.
PCIe Bifurcation	Enable or disable the configuration settings of the CPU's PCIe port bifurcation feature. By default, the **Auto** option is enabled.
PCIe Bus Allocation	Displays the PCIe bus allocation information of the system. By default, the Default option is enabled.

Table 31. BIOS Setup options—Storage menu

Storage	Description
SATA/NVMe Operation	
SATA/NVMe Operation	Sets the operating mode of the integrated SATA hard drive controller. By default, the **RAID On** option is selected. The storage device is configured to support RAID functions with VMD Controller.
Storage Interface	
Port Enablement	Displays the information of various onboard drives. By default, all the options are enabled.
SMART Reporting	

Table 31. BIOS Setup options—Storage menu (continued)

Storage	Description
Enable SMART Reporting	Enable or disable Self-Monitoring, Analysis, and Reporting Technology (SMART) during system startup. By default, the **Enable SMART Reporting** option is not enabled.
Drive Information	Displays the information of onboard drives.
Enable MediaCard	
Secure Digital (SD) Card	Enables or disables the SD card. By default, the **Secure Digital (SD) Card** option is enabled.
Secure Digital (SD) Card Read-Only Mode	Enables or disables the SD card read-only mode. By default, the **Secure Digital (SD) Card Read-Only Mode** option is disabled.

Table 32. BIOS Setup options—Display menu

Display	Description
Primary Video Slot	Enable to determine which video controller becomes the primary display when multiple controllers are available in the system. By default, the **Auto** option is enabled.
Full Screen Logo	Enables or disables the computer to display a full-screen logo, if the image matches screen resolution. By default, the **Full Screen Logo** option is disabled.

Table 33. BIOS Setup options—Connection menu

Connection	Description
Network Controller Configuration	
Integrated NIC 1	Enable or disable the onboard LAN controller. By default, the **Enabled with PXE** option is enabled.
Wireless Device Enable	
WLAN	Enables or disables the internal WLAN device. By default, the **WLAN** option enabled.
Bluetooth	Enables or disables the internal Bluetooth device. By default, the **Bluetooth** option enabled.
Enable UEFI Network Stack	Enables or disables the UEFI Network Stack and controls the onboard LAN Controller. By default, the **Auto Enabled** option is enabled.
IPv4 PXE Boot	Enable or disable the IPv4 PXE Boot option. By default, the option is enabled.
IPv6 PXE Boot	Enable or disable the IPv6 PXE Boot option. By default, the option is enabled.
HTTP(s) Boot Feature	

Table 33. BIOS Setup options—Connection menu (continued)

Connection	Description
HTTP(s) Boot	Enable or disable the HTTPs Boot feature. By default, the option is enabled.
HTTP(s) Boot Modes	By default, the **Auto Mode** option is enabled.

Table 34. BIOS Setup options—Power menu

Power	Description
USB PowerShare	
Enable USB PowerShare	Enable or disable the USB PowerShare feature. By default, the option is enabled.
Thermal Management	Allows you to manage the fan settings to regulate processor temperature and control computer performance, noise, and thermal levels. By default, the **Optimized** option is selected.
Lower PCIe Slot Zone	Allows you to increase the target fan speed on the Lower PCIe slot zone using this control.
CPU/Memory Zone	Allows you to increase the target fan speed on the CPU/Memory Zone using this control.
Storage Zone	Allows you to increase the target fan speed on the storage zone using this control.
Riser Zone	Allows you to increase the target fan speed on the riser zone using this control.
USB Wake Support	
Enable USB Wake Support	When enabled, the USB devices like a mouse or keyboard can be used to wake the system from Standby, Hibernate, and Power Off. **NOTE:** This feature requires Deep Sleep Control to be disabled. By default, the **Enable USB Wake Support** option is disabled.
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	
Enable ASPM	Allows you to set the active state power management level. By default, the **Auto** option is enabled.
Block Sleep	Enabled to block entering sleep (S3) mode in the operating system. By default, the **Block Sleep** option is disabled. **NOTE:** When enabled, the computer does not go to Sleep, Intel Rapid Start is disabled automatically, and the operating system power option is blank if it was set to Sleep.
Deep Sleep Control	The deep Sleep Control option is disabled in order to enable the Wake from USB keyboard and mouse feature to work in the shutdown (S5) and Hibernate (S4) states. By default, the **Enabled in S4 and S5** option is enabled.

Table 35. BIOS Setup options—Security menu

Security	Description
TPM 2.0 Security	
TPM 2.0 Security On	Allows you to enable or disable TPM visibility to the operating system. By default, the **TPM 2.0 Security On** option is enabled.
Attestation Enable	The **Attestation Enable** option controls the endorsement hierarchy of the TPM. Disabling the **Attestation Enable** option prevents TPM from being used to digitally sign certificates. By default, the **Attestation Enable** option is enabled. For additional security, Dell Technologies recommends keeping the **Attestation Enable** option enabled. **NOTE:** When disabled, this feature may cause compatibility issues or loss of functionality in some operating systems.
Key Storage Enable	The **Key Storage Enable** option controls the storage hierarchy of TPM, which is used to store digital keys. Disabling the **Key Storage Enable** option restricts the ability of TPM to store owner's data. By default, the **Key Storage Enable** option is enabled. For additional security, Dell Technologies recommends keeping the **Key Storage Enable** option enabled. **NOTE:** When disabled, this feature may cause compatibility issues or loss of functionality in some operating systems.
PPI Bypass for Clear Commands	The PPI Bypass for Clear Commands option allows the operating system to manage certain aspects of PTT. When enabled, you are not prompted to confirm changes to the PTT configuration. By default, the **PPI Bypass for Clear Commands** option is disabled. For additional security, Dell Technologies recommends keeping the **PPI Bypass for Clear Commands** option disabled.
Intel Total Memory Encryption	
Multi-Key Total Memeory Encryption (Up to 16 keys)	Enable or disable to protect memory from physical attacks including freeze spray, probing DDR to read the cycles, and others. Up to 16 different encryption keys are supported for use by OS/VMM. By default, the option is disabled.
Data Wipe on Next Boot	
Start Data Wipe	Data Wipe is a secure wipe operation that deletes information from a storage device. **CAUTION: The secure Data Wipe operation deletes information in a way that it cannot be reconstructed.** Commands such as delete and format in the operating system may remove files from showing up in the file system. However, they can be reconstructed through forensic means as they are still represented on the physical media. Data Wipe prevents this reconstruction, and the data can no longer be recovered. When enabled, the data wipe option provides prompts to wipe any storage devices that are connected to the computer on the next boot. By default, the **Start Data Wipe** option is disabled.
HDD Security	
SED Block SID Authentication	Enables or disables the SED block SID authentication to control the mechanism that is used by the BIOS to block the entries from taking ownership of the Self-Encrypting Drive (SED) when the drive does not have a password set.

Table 35. BIOS Setup options—Security menu (continued)

Security	Description
	By default, the option is enabled.
PPI Bypass for SED Block SID Command	Enables or disables you to control the SED block SID PPI. By default, the option is disabled.
Absolute	Absolute Software provides various cyber security solutions, some requiring software preloaded on Dell computers and integrated into the BIOS. To use these features, you must enable the Absolute BIOS setting and contact Absolute for configuration and activation. By default, the **Absolute** option is enabled. For additional security, Dell Technologies recommends keeping the **Absolute** option enabled. **NOTE:** When the Absolute features are activated, the Absolute integration cannot be disabled from the BIOS setup screen.
UEFI Boot Path Security	Enables or disables the computer to prompt the user to enter the Administrator password (if set) when booting to a UEFI boot path device from the F12 boot menu. By default, the **Always Except Internal HDD** option is enabled.
Authenticated BIOS Interface	
Enable Authenticated BIOS Interface	Enable or disable the authenticated BIOS interface. By default, the option is disabled.
Legacy Manageability Interface Access	Allows the administrator to control the access to BIOS configuration through the Legacy Manageability Interface option. When enabled, this prevents the BIOS Administrator password-based manageability tools from running, prevents some Dell software applications from reading configuration settings, and/or prevents changes to the BIOS configuration settings. When enabled, this option only supports the Authenticated BIOS Manageability Interface (ABI) for managing the BIOS configuration changes. To support this feature, ABI must be enabled and provisioned. When set to **Enabled**, the Legacy Manageability Interface can be used to read and change BIOS configuration settings. When set to **Read-Only**, BIOS configuration settings can be read, but cannot be changed through the Legacy Manageability Interface. When set to **Disabled**, the Legacy Manageability Interface is disabled. BIOS configuration reads and writes are blocked.
Firmware Device Tamper Detection	Allows you to control the firmware device tamper detection feature. This feature notifies the user when the firmware device is tampered. When enabled, a screen warning messages are displayed on the computer and a tamper detection event is logged in the BIOS Events log. The computer fails to reboot until the event is cleared. By default, the **Silent** option is enabled. For additional security, Dell Technologies recommends keeping the **Silent** option enabled.
Clear Firmware Device Tamper Detection	Enable or disable the Clear Firmware Device Tamper Detection. By default, the **Clear Firmware Device Tamper Detection** option is disabled.
Bypass BIOS Administrator Password for Platform Firmware Updates	Enable or disable the Bypass BIOS administrator platform firmware updates. By default, the option is disabled.

Table 36. BIOS Setup options—Passwords menu

Passwords	Description
Admin Password	The Administrator Password prevents unauthorized access to the BIOS Setup options. Once the administrator password is set, the BIOS setup options can only be modified after providing the correct password. The following rules and dependencies apply to the Administrator Password - ● The administrator password cannot be set if computer and/or internal storage device passwords are already set. ● The administrator password can be used in place of the computer and/or internal storage passwords. ● When set, the administrator password must be provided during a firmware update. ● Clearing the administrator password also clears the computer password (if set). Dell Technologies recommends using an administrator password to prevent unauthorized changes to BIOS setup options.
System Password	The System Password prevents the computer from booting to an operating system without entering the correct password. The following rules and dependencies apply when the System Password is used: ● The computer shuts down when idle for approximately 10 minutes at the computer password prompt. ● The computer shuts down after three incorrect attempts to enter the computer password. ● The computer shuts down when the **Esc** key is pressed at the System Password prompt. ● The computer password is not prompted when the computer resumes from standby mode. Dell Technologies recommends using the computer password in situations where it is likely that a computer may be lost or stolen.
M.2 PCIe SSD-1	Set, change, or delete the M.2 PCIe SSD-1 password.
M.2 PCIe SSD-2	Set, change, or delete the M.2 PCIe SSD-2 password.
Password Configuration	The Password configuration page includes several options for changing the requirements of BIOS passwords. You can modify the minimum and maximum length of the passwords and require passwords to contain certain character classes (upper case, lower case, digit, special character). Dell Technologies recommends setting the minimum password length to at least eight characters.
Password Bypass	The **Password Bypass** option allows the computer to reboot from the operating system without entering the computer or hard drive password. If the computer has already booted to the operating system, it is presumed that the user has already entered the correct computer or hard drive password. **NOTE:** This option does not remove the requirement to enter the password after shutting down. By default, the option is disabled.
Password Changes	
Allow Non-Admin Password Changes	The **Allow Non-Admin Password Changes** option in BIOS setup allows an end user to set or change the computer or hard drive passwords without entering the administrator password. This gives an administrator control over the BIOS settings but enables an end user to provide their own password. By default, the **Allow Non-Admin Password Changes** option is enabled. For additional security, Dell Technologies recommends keeping the **Allow Non-Admin Password Changes** option disabled.

Table 36. BIOS Setup options—Passwords menu (continued)

Passwords	Description
Admin Setup Lockout	
Enable Admin Setup Lockout	The **Admin Setup Lockout** option prevents an end user from even viewing the BIOS setup configuration without first entering the administrator password (if set). By default, the **Admin Setup Lockout** option is disabled. For additional security, Dell Technologies recommends keeping the **Admin Setup Lockout** option disabled.
Master Password Lockout	
Enable Master Password Lockout	The Master Password Lockout setting allows you to disable the Recovery Password feature. If the computer, administrator, or hard drive password is forgotten, the computer becomes unusable. **NOTE:** When the owner password is set, the Master Password Lockout option is not available. **NOTE:** When an internal hard drive password is set, it must first be cleared before Master Password Lockout can be changed. By default, the **Enable Master Password Lockout** option is disabled. Dell does not recommend enabling the **Master Password Lockout** unless you have implemented your own password recovery computer.
Allow Non-Admin PSID Revert	
Enable Allow Non-Admin PSID Revert	Enables or disables the 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. BIOS Setup options—Update, Recovery menu

Update, Recovery	Description
BIOS Recovery from Hard Drive	
BIOS Recovery from Hard Drive	Enables or disables 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 **BIOS Recovery from Hard Drive** option is enabled. **NOTE:** BIOS Recovery from Hard Drive is not available for self-encrypting drives (SED). **NOTE:** BIOS recovery is designed to fix the main BIOS block and cannot work if the Boot Block is damaged. In addition, this feature cannot work in the event of EC corruption, ME corruption, or a hardware issue. The recovery image must exist on an unencrypted partition on the drive.
BIOS Downgrade	
Allow BIOS Downgrade	Controls flashing of the computer firmware to previous revisions. By default, the **Allow BIOS Downgrade** option is enabled.
SupportAssist OS Recovery	Enables or disables the boot flow for SupportAssist OS Recovery tool in the event of certain computer errors. By default, the **SupportAssist OS Recovery** option is enabled.
BIOSConnect	Enables or disables cloud Service operating system recovery if the main operating system fails to boot with the number of failures equal to or greater than the value specified by the Auto OS Recovery Threshold setup option and the local Service operating system does not boot or is not installed.

Table 37. BIOS Setup options—Update, Recovery menu (continued)

Update, Recovery	Description
	By default, the **BIOSConnect** option is enabled.
Dell Auto OS Recovery Threshold	Allows you to control the automatic boot flow for SupportAssist System Resolution Console and for Dell OS Recovery Tool. By default, the **Dell Auto OS Recovery Threshold** value is set to 2.
Connected Service Delivery	Enables or disables the connected service delivery. By default, the option is enabled.

Table 38. BIOS Setup options—System Management menu

System Management	Description
Service Tag	Displays the Service Tag of the computer.
Asset Tag	Creates a computer Asset Tag that can be used by an IT administrator to uniquely identify a particular computer. **NOTE:** Once set in the BIOS, the Asset Tag cannot be changed.
Wake on LAN/WLAN	Enables or disables the computer to turn on by a special LAN signal. By default, the **Wake on LAN/WLAN** option is disabled.
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 **Auto On Time** option is disabled.
Intel AMT Capability	
Enable Intel AMT Capability	Enable or disable the Intel AMT capabilty. By default, the R**estrict Preboot Access** option is enabled.
SERR Messages	
Enable SERR Messages	Enable or disable the SERR message mechanism. By default, the option is enabled.
First Power On Date	
Set Ownership Date	Allows to set the ownership date. By default, the option is disabled.
Diagnostics	Enable or disable the Power-on-Self-Test Automatic Recovery option.
OS Agent Requests	Enable or disable the OS agent requests. By default, the option is enabled.
Power-on-Self-Test Automatic Recovery	Enable or disable the Power-on-Self-Test Automatic Recovery option. By default, the option is enabled.

Table 39. BIOS Setup options—Keyboard menu

Keyboard	Description
Numlock LED	
Enable Numlock LED	Enables or disables the Num lock option. By default, the option is enabled.

Table 39. BIOS Setup options—Keyboard menu (continued)

Keyboard	Description
Device Configuration HotKey Access	Allows you to control whether you can access device configuration screens through hotkeys during computer startup. By default, the **Device Configuration HotKey Access** option is enabled. **NOTE:** This setting controls only the Intel RAID (CTRL+I), MEBX (CTRL+P), and LSI RAID (CTRL+C) Option ROMs. Other preboot Option ROMs, which support entry using a key sequence, are not affected by this setting.

Table 40. BIOS Setup options—Pre-boot Behavior menu

Preboot Behavior	Description
Warnings and Errors	Enables or disables the action to be taken when a warning or error is encountered. By default, the **Prompt on Warnings and Errors** option is selected. **NOTE:** Errors deemed critical to the operation of the computer hardware stop the functioning of the computer.
Extend BIOS POST Time	Sets the BIOS POST (Power-On Self-Test) load time. By default, the **0 seconds** option is selected.
Show Ownership Tag with Logo	Enables or disables the display of the computer ownership tag in addition to the BIOS Boot logo. By default, the option is enabled.

Table 41. BIOS Setup options—Virtualization menu

Virtualization Support	Description
Intel Trusted Execution Technology (TXT)	
Enable Intel Trusted Execution Technology (TXT)	Intel Trusted Execution Technology (TXT) is hardware extensions to Intel processors and chipsets. It provides a hardware-based root of trust to ensure that a platform boots with a known good configuration of firmware, BIOS, virtual machine monitor, and operating system. By default, the **Intel Trusted Execution Technology (TXT)** option is disabled. For additional security, Dell Technologies recommends keeping the **Intel Trusted Execution Technology (TXT)** option enabled.
DMA Protection	
Enable Pre-Boot DMA Support	Allows you to control the Pre-Boot DMA protection for both internal and external ports. This option does not directly enable DMA protection in the operating system. **NOTE:** This option is not available when the virtualization setting for IOMMU is disabled (VT-d/AMD Vi). By default, the **Enable Pre-Boot DMA Support** option is enabled. For additional security, Dell Technologies recommends keeping the **Enable Pre-Boot DMA Support** option enabled. **NOTE:** This option is provided only for compatibility purposes, since some older hardware is not DMA capable.
Enable OS Kernel DMA Support	Allows you to control the Kernel DMA protection for both internal and external ports. This option does not directly enable DMA protection in the operating system. For operating systems that support DMA protection, this setting indicates to the operating system that the BIOS supports the feature.

Table 41. BIOS Setup options—Virtualization menu (continued)

Virtualization Support	Description
	NOTE: This option is not available when the virtualization setting for IOMMU is disabled (VT-d/AMD Vi). By default, the **Enable OS Kernel DMA Support** option is enabled. **NOTE:** This option is provided only for compatibility purposes, since some older hardware is not DMA capable.
Internal Port DMA Compatibility Mode	Enables or disables the notification to the operating system that the internal ports are not DMA capable. By default, the option is disabled.

Table 42. BIOS Setup options—Performance menu

Performance	Description
Enable Dell RMT	Enable or disable Dell Reliable Memory Technology (RMT) to identify and isolate memory errors in the system RAM. By default, the option is enabled.
Clear Dell RMT Log	By default, the option is disabled.
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 **Enable Intel SpeedStep Technology** option is enabled.
Intel Turbo Boost maximum Technology 3.0	
Enable Intel Turbo Boost Maximum Technology 3.0	Enables or disables the Intel TurboBoost mode of the processor. When enabled, the Intel TurboBoost driver increases the performance of the CPU or graphics processor. By default, the **Enable Intel Turbo Boost Technology 3.0** option is enabled.
Intel Hyper-Threading Technology	
Enable Intel Hyper-Threading Technology	Enables or disables the Intel Hyper-Threading mode of the processor. When enabled, the Intel Hyper-Threading increases the efficiency of the processor resources when multiple threads run on each core. By default, the **Intel Hyper-Threading Technology** option is enabled.
Cache Prefetch	Enables or disables the hardware prefetcher to turn on the MLC streamer prefetcher. By default the **Hardware Prefetcher** is enabled. Enables or disables the Adjacent Cache Line prefetcher to turn on the MLC spatial prefetcher. By default the **Adjacent Cache Prefetcher** is enabled.
Pcie Link Speed	Allows you to select the maximum PCIe link speed attainable by devices within the system. By default, the Auto option is enabled.
PCIe Resizable Base Address Register (BAR)	Enable or disable the PCIe resizable BAR support. By default, the option is disabled.
RAS Support	
Memory RAS	Enable or disable RAS on memory modules to report errors and help minimize system downtime caused by memory failures. By default, the option is disabled.

Table 42. BIOS Setup options—Performance menu (continued)

Performance	Description
PCIE RAS	Enable or disable RAS on PCIe modules to log errors caused by PCIe failures. By default, the option is disabled.
CPU RAS	Enable or disable RAS on CPU to log errors caused by CPU failures. By default, the option is disabled.
PCIe Data Link Feature Exchange	Enables or disables the PCIe Data Link Feature Exchange. By default, the option is disabled.

Table 43. BIOS Setup options—System Logs menu

System Logs	Description
BIOS Event Log	
Clear BIOS Event Log	Allows you to select option to keep or clear BIOS events logs. By default, the **Keep Log** option is selected.
Power Event Log	
Clear Power Event Log	Allows you to select option to keep or clear power events logs. By default, the **Keep Log** option is selected.
Dell Reliable Memory Technology Events	Displays the Dell Reliable Memory Technology events.

Updating the BIOS

Updating the BIOS in Windows

About this task

CAUTION: If BitLocker is not suspended before updating the BIOS, the BitLocker key is not recognized the next time you reboot the computer. You will then be prompted to enter the recovery key to proceed, and the computer displays a prompt for the recovery key on each reboot. Failure to provide the recovery key can result in data loss or an operating system reinstall. For more information, refer Updating the BIOS on Dell systems with BitLocker enabled.

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

Steps

1. Go to Dell Support Site.
2. Go to **Identify your product or ask support**. In the box, enter the product identifier, model, service request or describe what you are looking for, and then click **Search**.

   NOTE: If you do not have the Service Tag, click **Detect This PC**. The site automatically detects your device, and you can then click **Explore Product Support** to go to the support page for your device. You can also use the product ID or manually browse for your computer model.

3. Click **Drivers & Downloads**.
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, navigate to the folder where the BIOS update file has been saved.
8. Double-click the BIOS update file and follow the on-screen instructions.
   For more information, search Dell Support Site.

Updating the BIOS in Linux and Ubuntu

To update the system BIOS on a computer that is installed with Linux or Ubuntu, see How to Update the Dell BIOS in the Ubuntu or Linux Environment at Dell Support Site.

Updating the BIOS using the USB drive in Windows

About this task

CAUTION: If BitLocker is not suspended before updating the BIOS, the BitLocker key is not recognized the next time you reboot the computer. You will then be prompted to enter the recovery key to proceed, and the computer displays a prompt for the recovery key on each reboot. Failure to provide the recovery key can result in data loss or an operating system reinstall. For more information, refer Updating the BIOS on Dell systems with BitLocker enabled.

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

Steps

1. Go to Dell Support Site.
2. Go to **Identify your product or ask support**. In the box, enter the product identifier, model, service request or describe what you are looking for, and then click **Search**.

   NOTE: If you do not have the Service Tag, click **Detect This PC**. The site automatically detects your device, and you can then click **Explore Product Support** to go to the support page for your device. You can also use the product ID or manually browse for your computer model.

3. Click **Drivers & Downloads**.
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. Create a bootable USB drive. For more information, search Dell Support Site.
8. Copy the BIOS setup program file to the bootable USB drive.
9. Connect the bootable USB drive to the computer that needs the BIOS update.
10. Restart the computer and press **F12**.
11. Select the USB drive from the **One Time Boot Menu**.
12. Type the BIOS setup program filename and press **Enter**.
    The **BIOS Update Utility** appears.
13. Follow the on-screen instructions to complete the BIOS update.

Updating the BIOS from the One-Time boot menu

To update the BIOS from the One-Time boot menu, see Updating the BIOS from the One Time Boot Menu at Dell Support Site..

System and setup password

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

CAUTION: Ensure that your computer is locked when it is not in use. Anyone can access the data that is stored on your computer, when left unattended.

Table 44. System and setup password

Password type	Description
System password	Password that you must enter to boot to your operating system.
Setup password	Password that you must enter to access and change the BIOS settings of your computer.

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

NOTE: The System and setup password feature is disabled by default.

Assigning a System Setup password

Prerequisites

You can assign a new System or Admin Password only when the status is set to **Not Set**. To enter BIOS System Setup, press F2 immediately after a power-on or reboot.

Steps

1. To enter the **System Setup**, press **F2** immediately after a power-on or reboot.
2. In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.
   The **Security** screen is displayed.
3. Select **System/Admin Password** and create a password in the **Enter the new password** field.
   Use the following guidelines to create the system password:
   - Password can be up to 32 characters.
   - Password must contain at least one special character: "(! " # $ % & ' * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | })"
   - The password can contain numbers from 0 to 9.
   - The password can contain alphabets A to Z and a to z.
4. Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
5. Press Y to save the changes.
   The computer restarts.

Deleting or changing an existing system password or setup password

Prerequisites

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

Steps

1. To enter the **System Setup**, press **F2** immediately after a power-on or reboot.
2. In the **System BIOS** or **System Setup** screen, select **System Security** and press Enter.
   The **System Security** screen is displayed.
3. In the **System Security** screen, verify that the **Password Status** is Unlocked.
4. Select **System Password**. Update or delete the existing system password, and press Enter or Tab.
5. Select **Setup Password**. Update or delete the existing setup password, and press Enter or Tab.

NOTE: If you change the system password and/or setup password, reenter the new password when prompted. If you delete the system password and/or setup password, confirm the deletion when prompted.

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

Clearing CMOS settings

About this task

CAUTION: Clearing CMOS settings resets the BIOS settings on your computer.

Steps

1. Remove the side cover.
2. Disconnect the battery cable from the system board.
3. Remove the coin-cell battery.
4. Wait for one minute.
5. Replace the coin-cell battery.
6. Connect the battery cable to the system board.
7. Replace the side cover.

Clearing system and setup passwords

About this task

To clear the system or setup passwords, contact Dell technical support as described at Contact Support.

NOTE: For information about how to reset Windows or application passwords, see the documentation accompanying Windows or your application.

12

Troubleshooting

Dell SupportAssist Pre-boot System Performance Check diagnostics

About this task

SupportAssist diagnostics (also known as system diagnostics) performs a complete check of your hardware. The Dell SupportAssist Pre-boot System Performance Check diagnostics is embedded within the BIOS and launched by the BIOS internally. The embedded system diagnostics provides options for particular devices or device groups allowing you to:

- Run tests automatically or in an interactive mode.
- Repeat the tests.
- Display or save test results.
- Run thorough tests to add more options and obtain details about any failed devices.
- View status messages that inform you when the tests are completed successfully.
- View error messages that inform you of problems encountered during testing.

NOTE: Some tests for specific devices require user interaction. Always ensure that you are present at the computer when the diagnostic tests are performed.

For more information, see How to Run Dell Preboot Diagnostics and Hardware Tests on Your Dell Computer.

Running the SupportAssist Pre-Boot System Performance Check

Steps

1. Turn on your computer.
2. As the computer boots, press the F12 key.
3. On the boot menu screen, select **Diagnostics**.
   The diagnostic quick test begins.
   NOTE: For more information about running the SupportAssist Pre-Boot System Performance Check on a specific device, see Dell Support Site.
4. If there are any issues, error codes are displayed.
   Note the error code and validation number and contact Dell.

Power-Supply Unit Built-in Self-Test

Built-in Self-Test (BIST) helps determine if the power-supply unit is working. To run self-test diagnostics on the power-supply unit of a desktop or all-in-one computer, search in the Knowledge Base Resource at Dell Support Site.

System-diagnostic lights

This section lists the system-diagnostic lights of your Dell Pro Max Tower T2 FCT2250.

The following table shows different Service LED blinking patterns and associated problems. The diagnostic light codes consist of a two-digit number, and the digits are separated by a comma. The number stands for a blinking pattern; the first digit shows the number of blinks in amber color, and the second digit shows the number of blinks in white color. The Service LED blinks in the following manner:

- The Service LED blinks the number of times equal to the value of the first digit and turns off with a short pause.

- After that, the Service LED blinks the number of times equal to the value of the second digit.
- The Service LED turns off again with a longer pause.
- After the second pause, the blinking pattern will be repeated.

Table 45. Diagnostic light codes

Diagnostic light codes (Amber, White)	Problem description
1,1	TPM Detection Failure
1,2	Unrecoverable SPI Flash Failure
1,5	EC unable to program i-Fuse
1,6	Generic catch-all for ungraceful EC code flow errors
1,7	Non-RPMC Flash on Boot Guard fused system
1,8	Chipset “Catastrophic Error” signal has tripped
2,1	CPU configuration or CPU failure
2,2	System board: BIOS or Read-Only Memory (ROM) failure
2,3	No memory or Random-Access Memory (RAM) detected
2,4	Memory or Random-Access Memory (RAM) failure
2,5	Invalid memory installed
2,6	System board/Chipset Error
2,7	LCD failure SBIOS message
2,8	Display power-rail failure on the system board
3,1	CMOS battery failure
3,2	PCI of Video card/chip failure
3,3	Recovery image not found
3,4	Recovery image found but invalid
3,5	EC power-rail error
3,6	Flash corruption detected by SBIOS
3,7	Timeout waiting on ME to reply to HECI message
4,1	Memory DIMM power rail failure
4,2	CPU Power cable connection issue

Recovering the operating system

When your computer is unable to boot to the operating system even after repeated attempts, it automatically starts Dell SupportAssist OS Recovery.

Dell SupportAssist OS Recovery is a stand-alone tool that is preinstalled on Dell computers running the Windows operating system. It consists of tools to diagnose and troubleshoot issues that may occur before your computer boots to the operating system. It enables you to diagnose hardware issues, repair your computer, back up your files, and restore your computer to its factory state.

You can also download it from the Dell Support website to troubleshoot and fix your computer when it fails to boot into the primary operating system due to software or hardware failures.

For more information about the Dell SupportAssist OS Recovery, see *Dell SupportAssist OS Recovery User's Guide* at Serviceability Tools at the Dell Support Site. Click **SupportAssist** and then click **SupportAssist OS Recovery**.

NOTE: Windows 11 IoT Enterprise LTSC 2024 and Dell ThinOS 10 do not support Dell SupportAssist. For more information about recovering ThinOS 10, see Recovery mode using R-Key.

Real-Time Clock—RTC reset

The Real-Time Clock (RTC) reset function allows you or the service technician to recover the recently launched model Dell Pro and Pro Max computers from **No POST/No Boot/No Power** situations. You can initiate the RTC reset on the computer from a power-off state only if it is connected to AC power. Press and hold the power button for 25 seconds. The system RTC reset occurs after you release the power button.

NOTE: If AC power is disconnected from the computer during the process or the power button is held longer than 40 seconds, the RTC reset process gets aborted.

The RTC reset will reset the BIOS to its default settings, disable Intel vPro, and reset the computer date and time. The following items are not affected by the RTC reset:

- Service Tag
- Asset Tag
- Ownership Tag
- Admin Password
- System Password
- Storage Password
- Key Databases
- System Logs

NOTE: The IT administrator's vPro account and password on the computer will be unprovisioned. The computer must go through the setup and configuration process again to reconnect it to the vPro server.

The below items may or may not be reset based on your custom BIOS setting selections:

- Boot List
- Enable Legacy Option ROMs
- Secure Boot Enable
- Allow BIOS Downgrade

Backup media and recovery options

It is recommended to create a recovery drive to troubleshoot and fix problems that may occur with Windows. Dell provides multiple options for recovering the Windows operating system on your Dell computer. For more information, see Dell Windows Backup Media and Recovery Options.

Network power cycle

About this task

If your computer is unable to access the Internet due to network connectivity issues, reset your network devices by performing the following steps:

Steps

1. Turn off the computer.
2. Turn off the modem.
   NOTE: Some Internet service providers (ISPs) provide a modem and router combo device.
3. Turn off the wireless router.
4. Wait for 30 seconds.
5. Turn on the wireless router.
6. Turn on the modem.
7. Turn on the computer.

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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 46. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	Dell Site
Contact Support	In Windows search, type `Contact Support`, and press Enter.
Online help for operating system	Windows Support Site Linux Support Site
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals, and documents.	Your Dell computer is uniquely identified using a Service Tag or Express Service Code. To view relevant support resources for your Dell computer, enter the Service Tag or Express Service Code at Dell Support Site. For more information about how to find the Service Tag for your computer, see Locate the Service Tag on your computer.
Dell knowledge base articles	1. Go to Dell Support Site. 2. On the menu bar at the top of the Support page, select **Support** > **Support Library**. 3. In the Search field on the Support Library page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles.

Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see Dell Support Site.

NOTE: Availability of the services may vary depending on the country or region, and product.

NOTE: If you do not have an active Internet connection, you can find contact information in your purchase invoice, packing slip, bill, or Dell product catalog.

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Revision history

Tracks all updates that are made to the document. It typically includes the date of change, version number, and a brief description of the modification. This log helps maintain transparency, accountability, and a clear timeline of progress.

Table 47. Revision history

Revision	Date	Description
A06	June 2026	Added topics: • Front NVMe module. • Slim ODD.
A05	March 2026	Added Quebec requirement information.
A04	December 2025	Added front external storage topic.
A03	August 2025	• Added Air shroud note for all topics referencing it. • Added front fan note for running multiple storage configurations .
A02	July 2025	• Added revision history topic.
A01	June 2025	• Removed NVIDIA GeForce RTX 4060 8GB GDDR6.
A00	March 2025	• Original publish date.