OptiPlex 3090 Ultra

Setup and specifications guide

Regulatory Model: D13U
Regulatory Type: D13U003
January 2021
Rev. A00

Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your product.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

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

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Contents

Chapter 1: Set up your OptiPlex 3090 Ultra 5
Installing the device on a fixed stand 5
Monitor tilt angle 14
Installing the device on a Pro 1 height-adjustable stand 14
Stand tilt, pivot, and swivel images 23
Installing device on offset VESA mount 23
Installing the device on a Pro 2 height-adjustable stand 30
Stand tilt, pivot, and swivel images 46
Installing device on Wall Mount 49

Chapter 2: Create a USB recovery drive for Windows 65

Chapter 3: View of OptiPlex 3090 Ultra 66
Top 66
Bottom 67
Left 68
Right 69
Front and back 69
Stands view 71
System board layout 79

Chapter 4: Specifications of OptiPlex 3090 Ultra 80
Dimensions and weight 80
Processor 81
Chipset 81
Operating system 81
Commercial platform Windows 10 N-2 and 5yrs OS supportability 81
Memory 82
External ports 82
Internal slots 83
Ethernet 83
Wireless module 83
Audio 84
Storage 84
Power adapter 85
GPU—Integrated 85
Powering the system 86
Type-C display settings 86
Dell power button sync 86
Data security 87
Computer environment 87
Energy Star and Trusted Platform Module (TPM) 88
Smart power enablement 88

Chapter 5: Getting help.....89
Contacting Dell..... 89

1

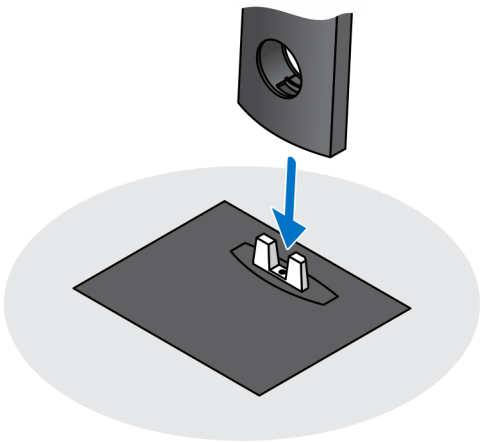
Set up your OptiPlex 3090 Ultra

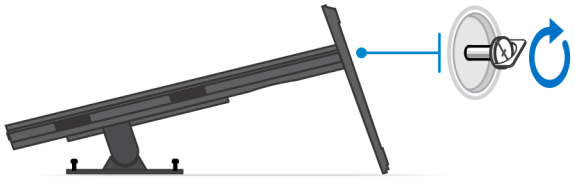
Topics:

- Installing the device on a fixed stand
- Installing the device on a Pro 1 height-adjustable stand
- Installing device on offset VESA mount
- Installing the device on a Pro 2 height-adjustable stand
- Installing device on Wall Mount

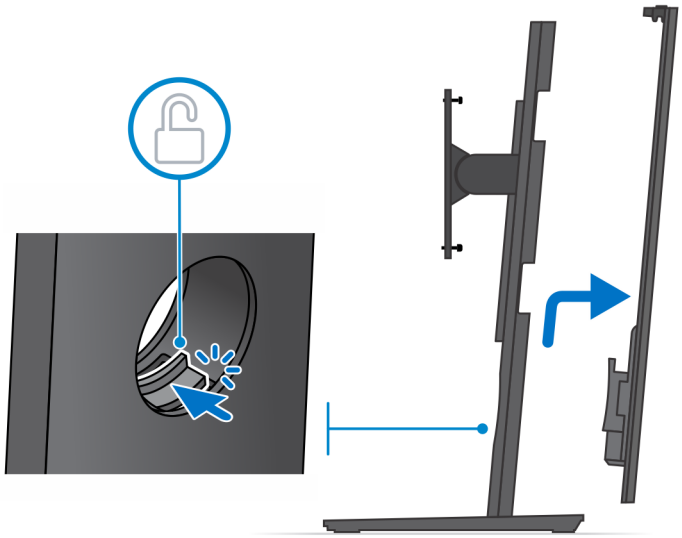
Installing the device on a fixed stand

1. Align and insert the slots on the fixed stand into the tab on the stand base.
2. Lift and tilt the stand base.
3. Tighten the captive screw to secure the stand to the base.

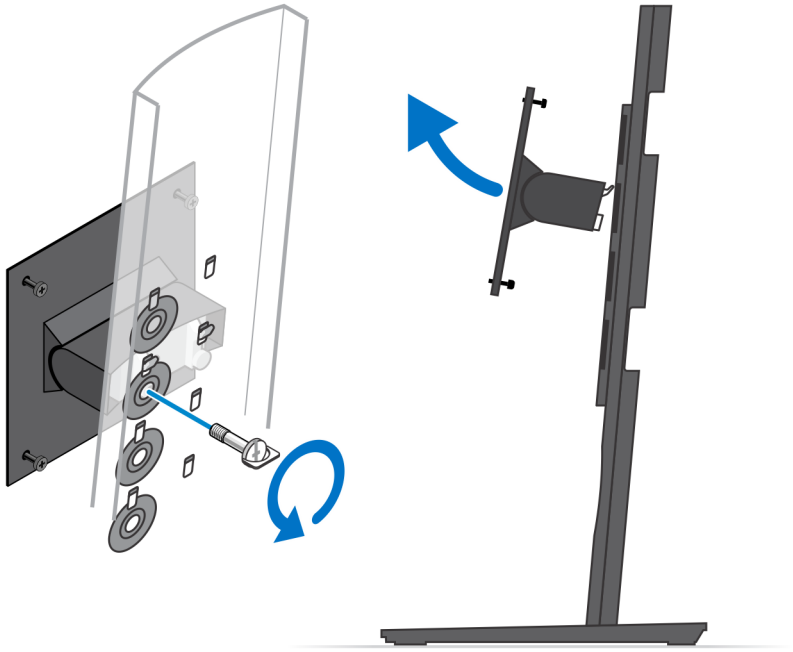




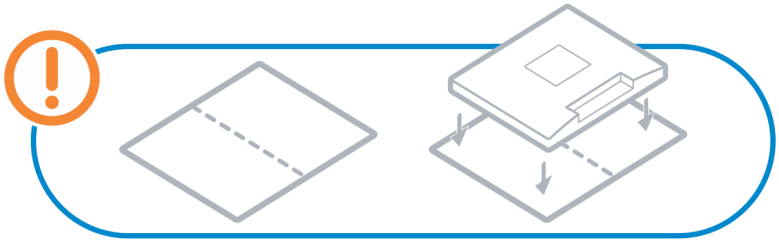
4. Slide the release latch on the stand, until you hear a click, to release the stand cover.
5. Slide and lift the cover to release it from the stand.

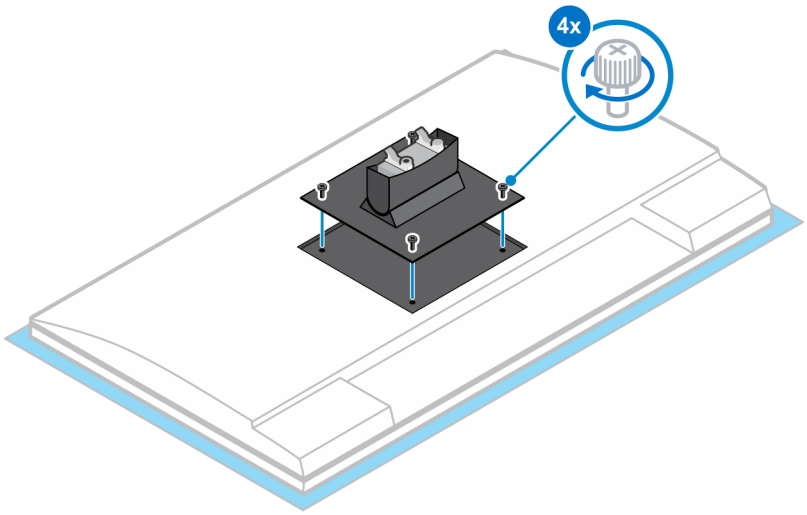


6. Remove the screw that secures the stand mounting bracket to the stand.
7. Lift the mounting bracket to release the hooks on the bracket from the slots on the stand.

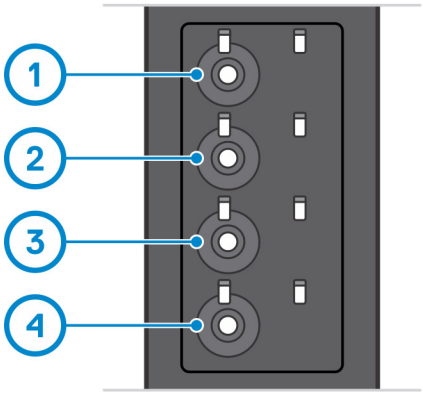


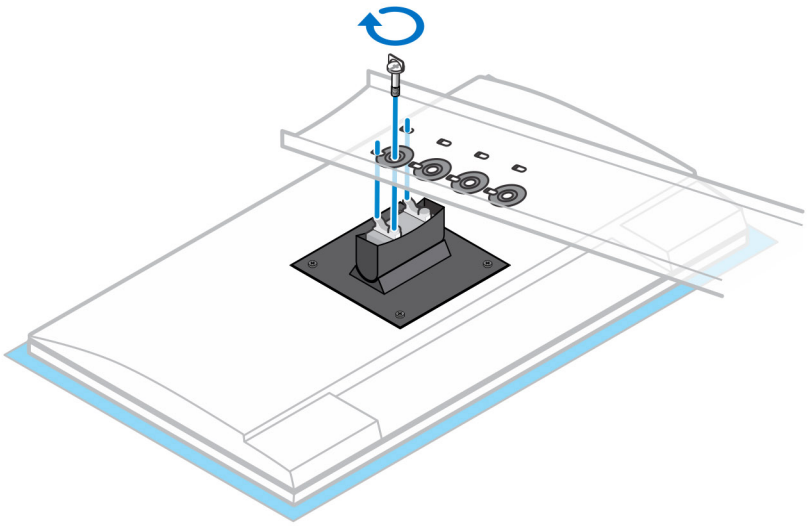
8. To avoid any damage to the monitor, ensure that you place the monitor on a protective sheet.
9. Align the screws on the mounting bracket with the screw holes on the monitor.
10. Tighten the four captive screws to secure the mounting bracket to the monitor.



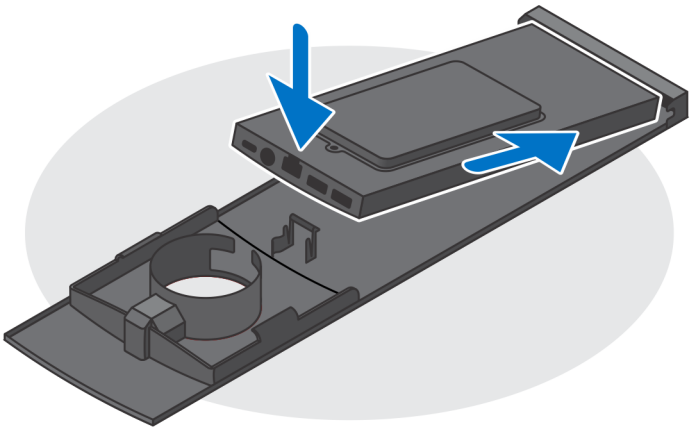


11. Select the height at which you want to mount the monitor and align the hooks on the mounting bracket with the slots on the stand.
12. Replace the screw to secure the fixed stand to the monitor.





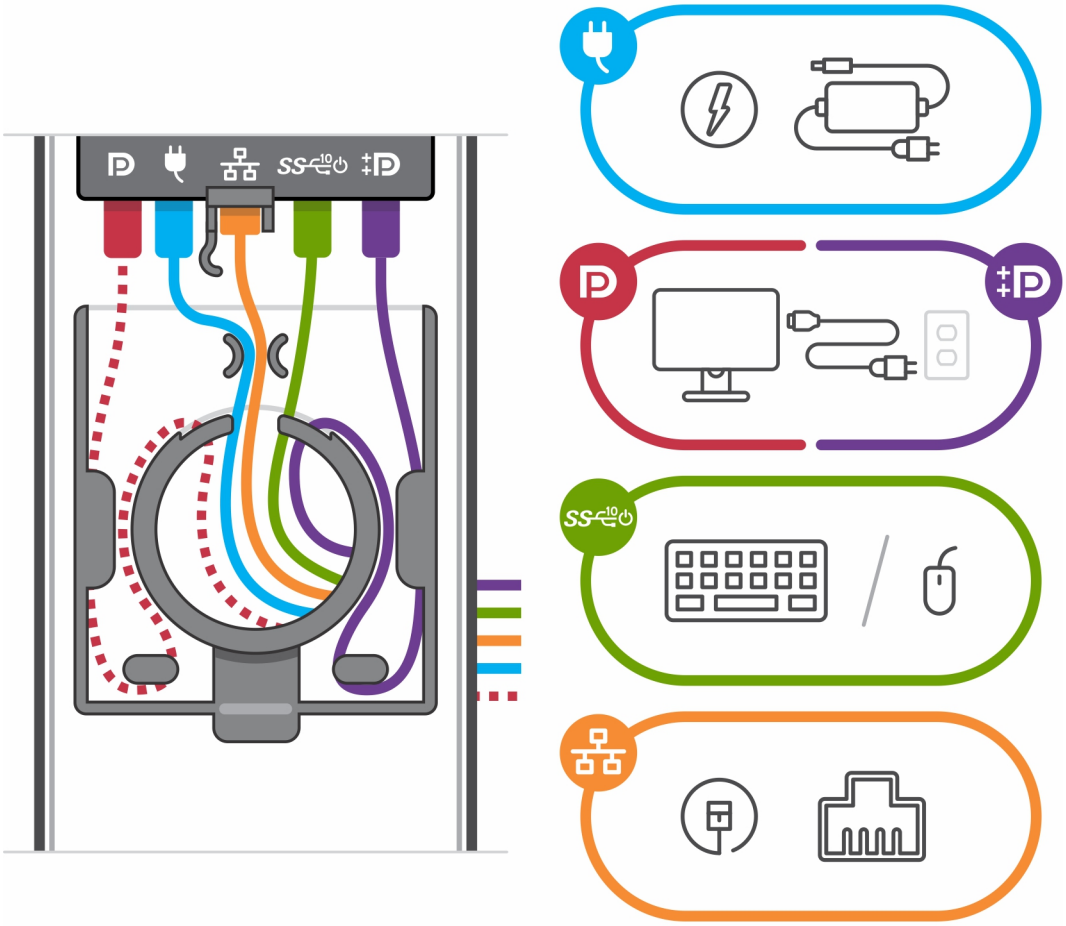
13. Align the vents on the device with the vents on the stand cover.
14. Lower the device in the stand until you hear a click.



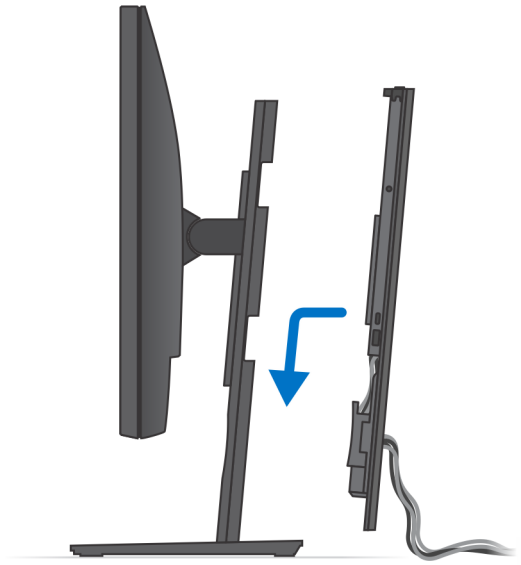
15. Connect the power, network, keyboard, mouse, and display cables to the device and to the power outlet.

NOTE: To avoid any pinching or crimping of the cables while closing the stand cover, it is recommended that you route the cables as indicated in the image.

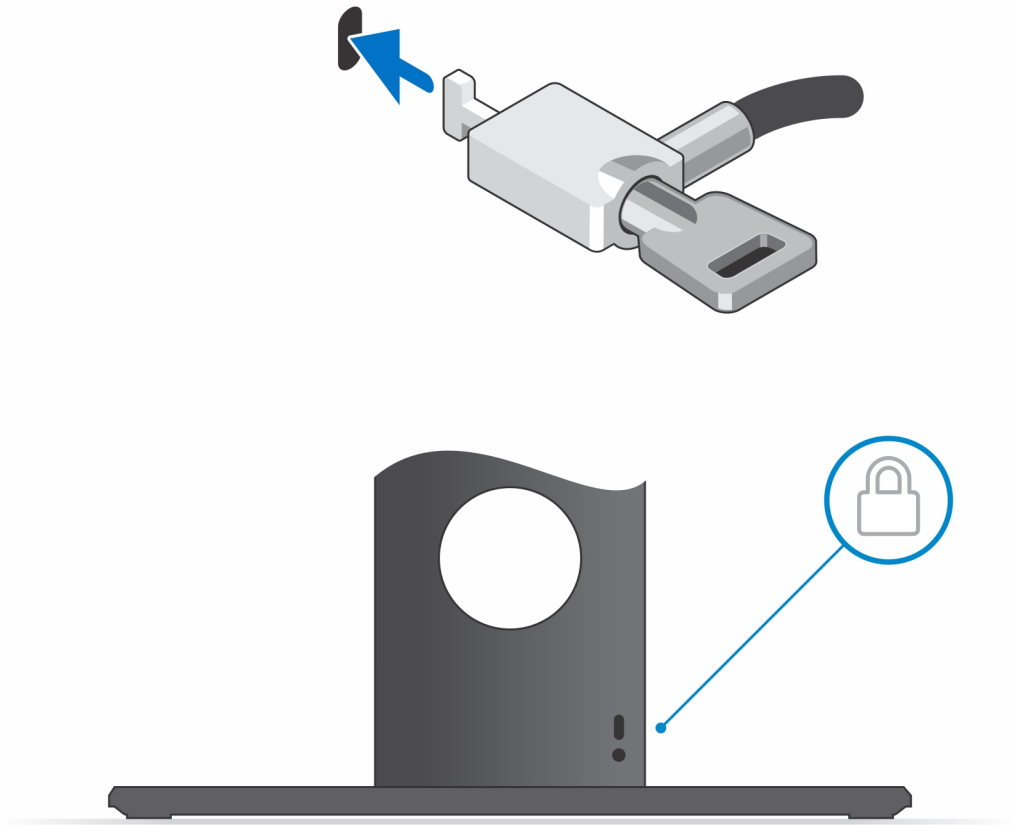
NOTE: All the cables and ports are used depending on the peripherals chosen and the configuration of the computer.



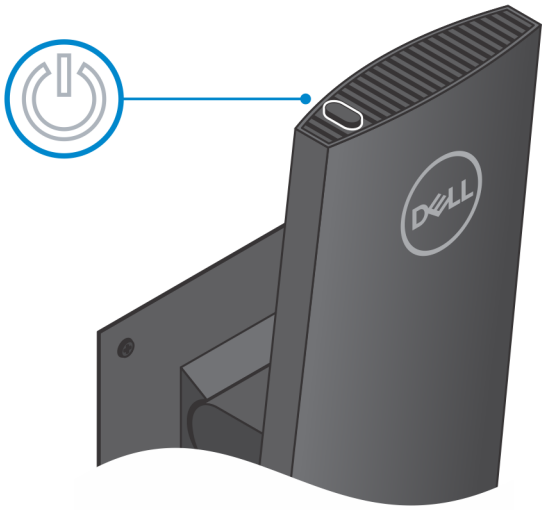
16. Slide the back cover, along with the device, into the stand until you hear a click.



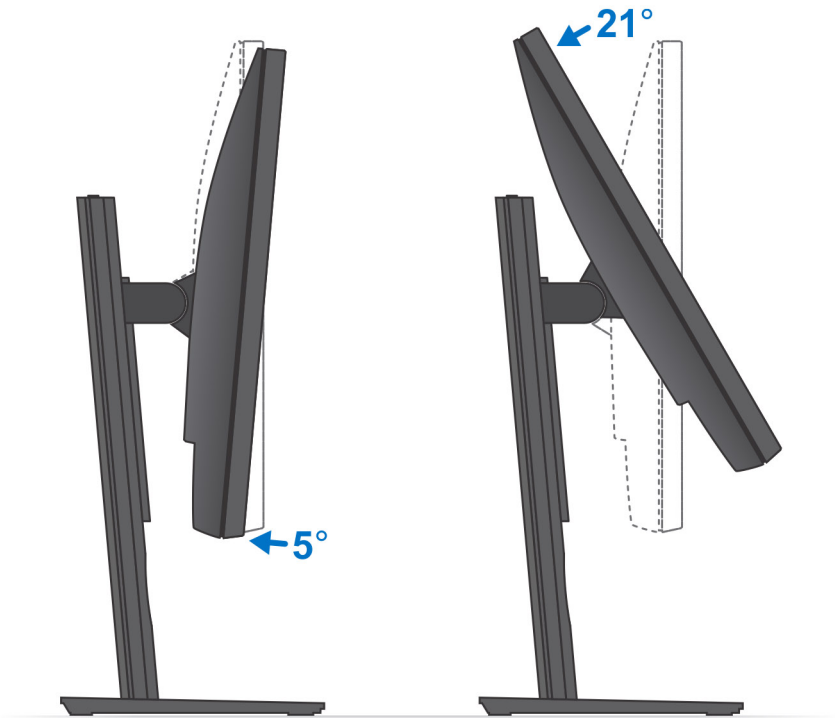
17. Lock the device and the stand cover.



18. Press the power button to turn on the device.

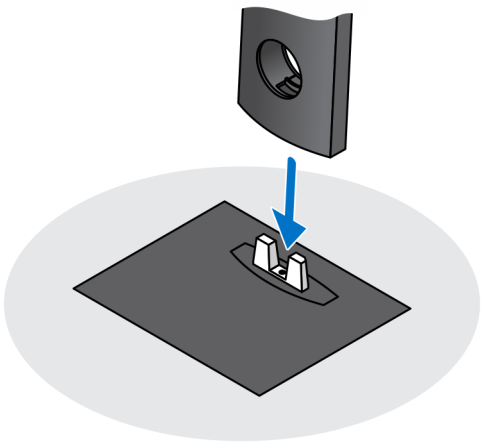


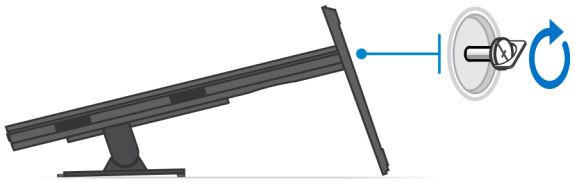
Monitor tilt angle



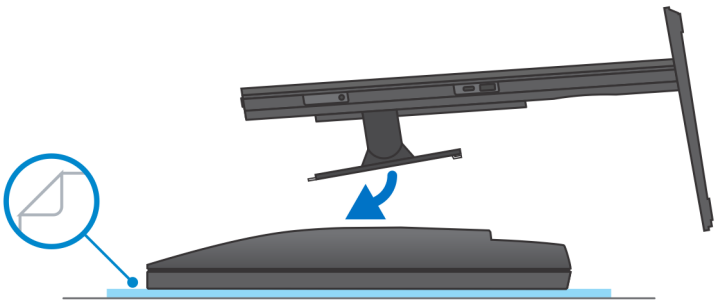
Installing the device on a Pro 1 height-adjustable stand

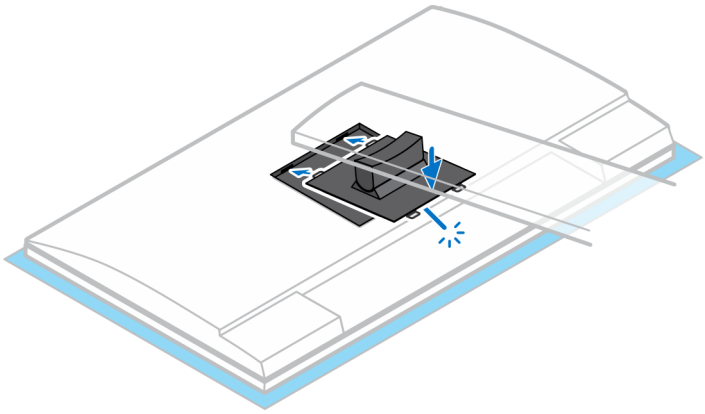
1. Align and insert the slots on the height-adjustable stand into the tab on the stand base.
2. Lift and tilt the stand base.
3. Tighten the captive screw to secure the stand to the base.



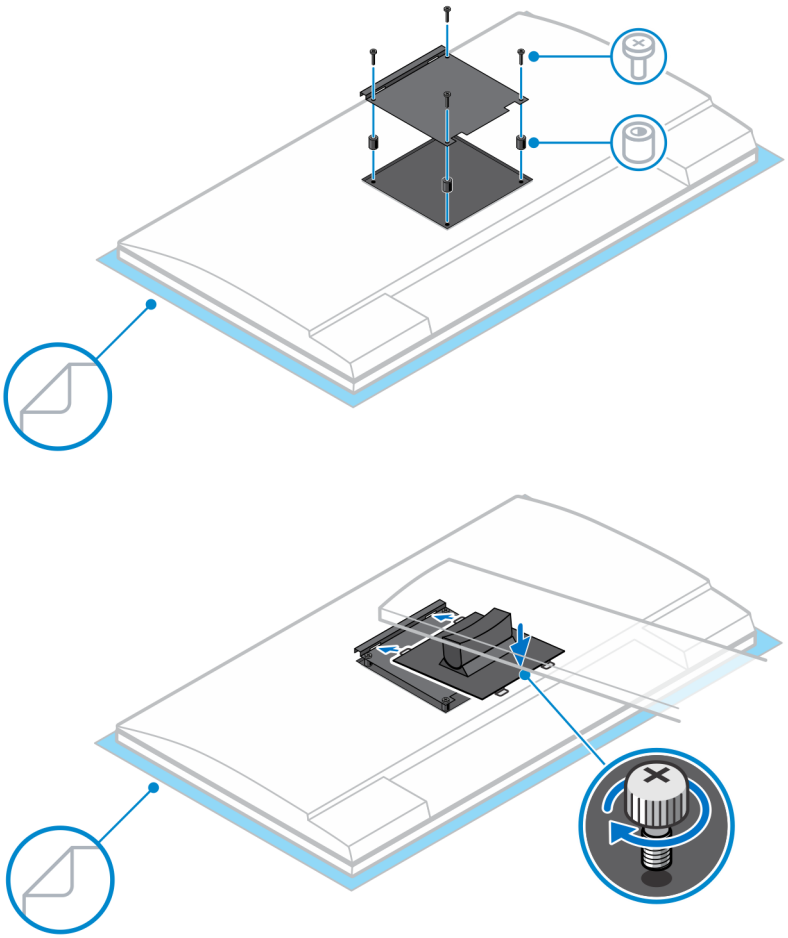


4. To avoid any damage to the monitor, ensure that you place the monitor on a protective sheet.
5. For installing the height-adjustable stand to the monitor:
   a. Align and insert the hooks on the mounting bracket on the stand into the slots on the monitor, until you hear a click.

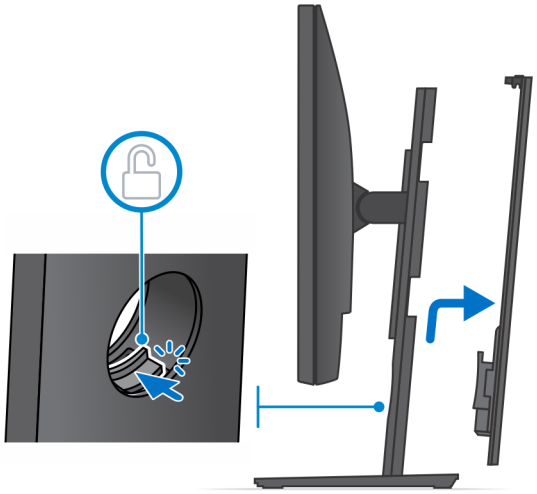


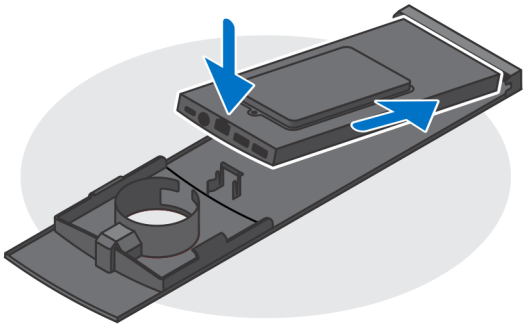


6. For installing QR to VESA bracket for E-Series monitor:
   a. Align the screw holes on the QR to VESA bracket with the screw holes on the monitor.
   b. Install the four screw spacers and the screws to secure the QR to VESA bracket to the monitor.
   c. Align and insert the QR tabs on the stand into the slots on the QR to VESA bracket on the monitor.
   d. Tighten the thumb screw to secure the stand to the QR to VESA bracket.



7. To release the stand cover, slide the release latch until you hear a click.
8. Slide and lift the cover to release it from the stand.
9. Align the vents on the device with the vents on the stand cover.
10. Lower the device in the stand until you hear a click.

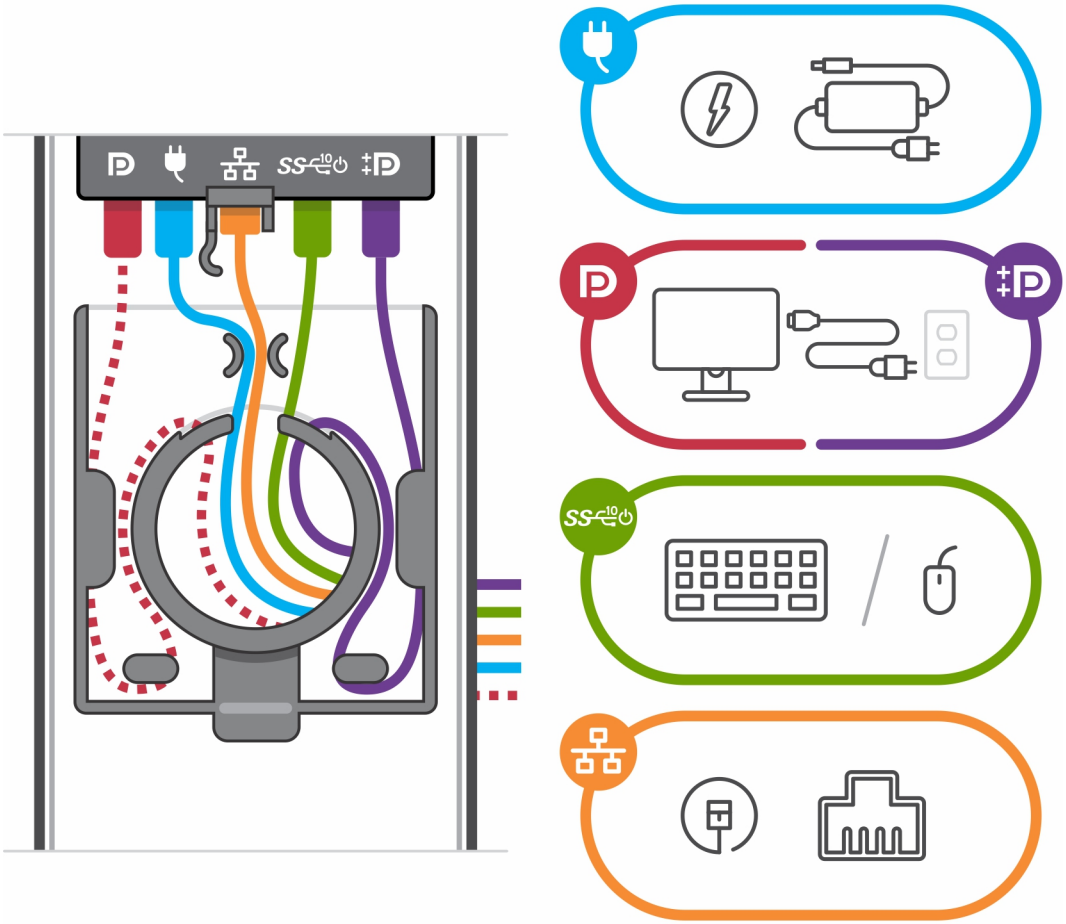




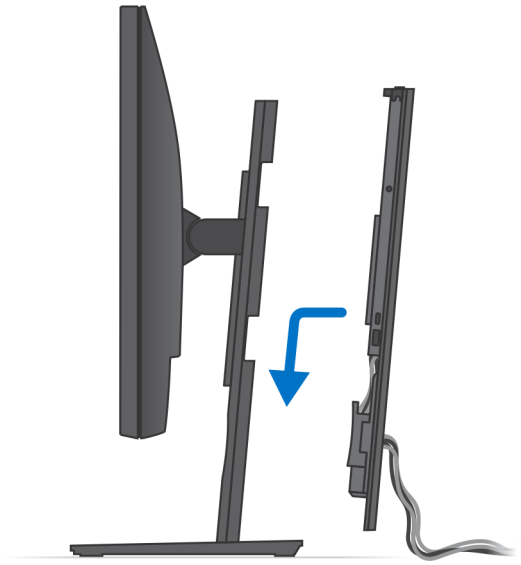
11. Connect the power, network, keyboard, mouse, and display cables to the device and to the power outlet.

NOTE: To avoid any pinching or crimping of the cables while closing the stand cover, it is recommended that you route the cables as indicated in the image.

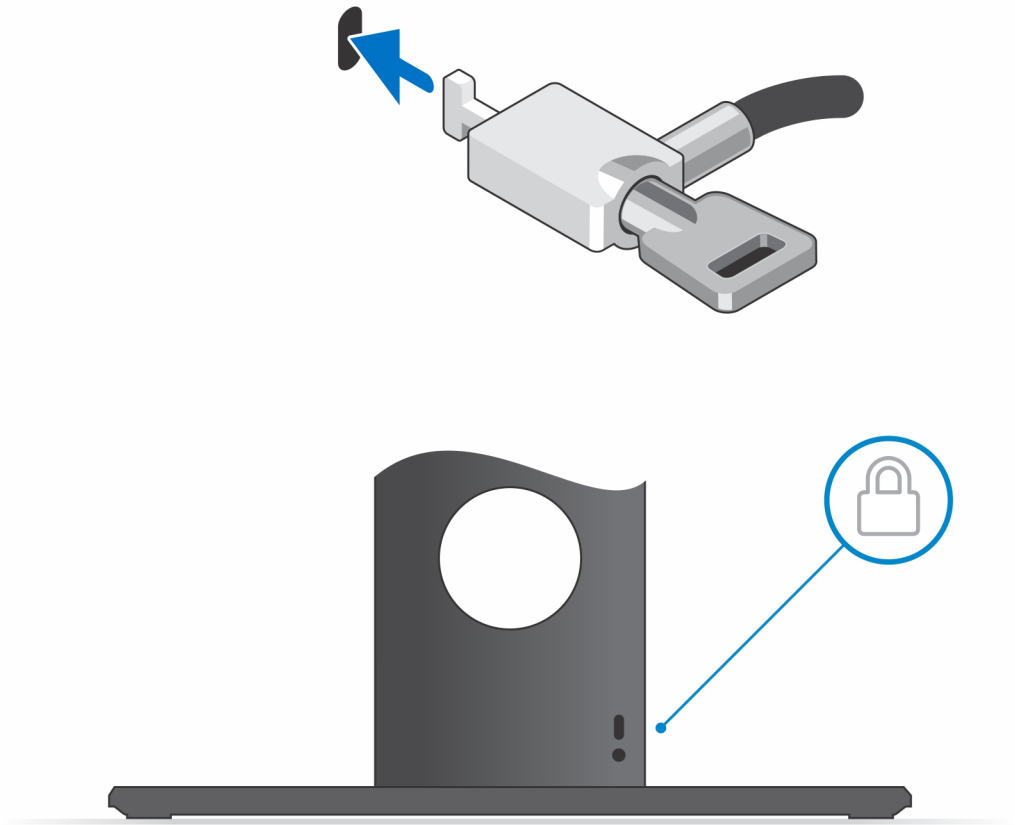
NOTE: All the cables and ports are used depending on the peripherals chosen and the configuration of the computer.



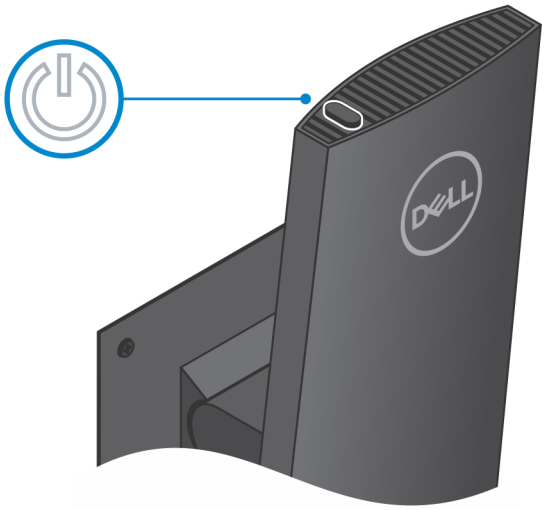
12. Slide the back cover, along with the device, into the stand until you hear a click.



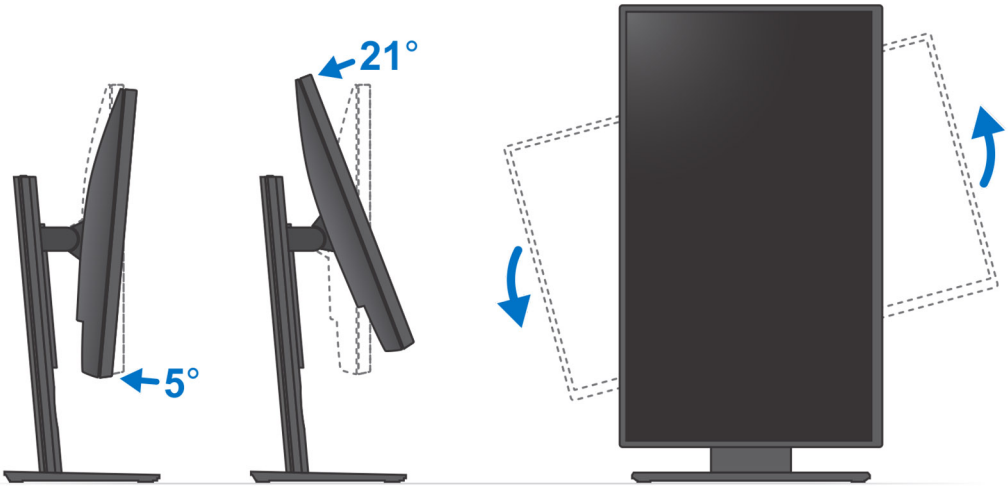
13. Lock the device and the stand cover.

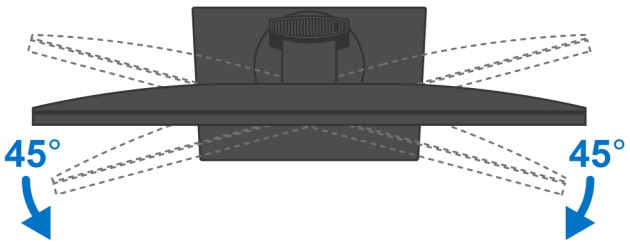


14. Press the power button to turn on the device.



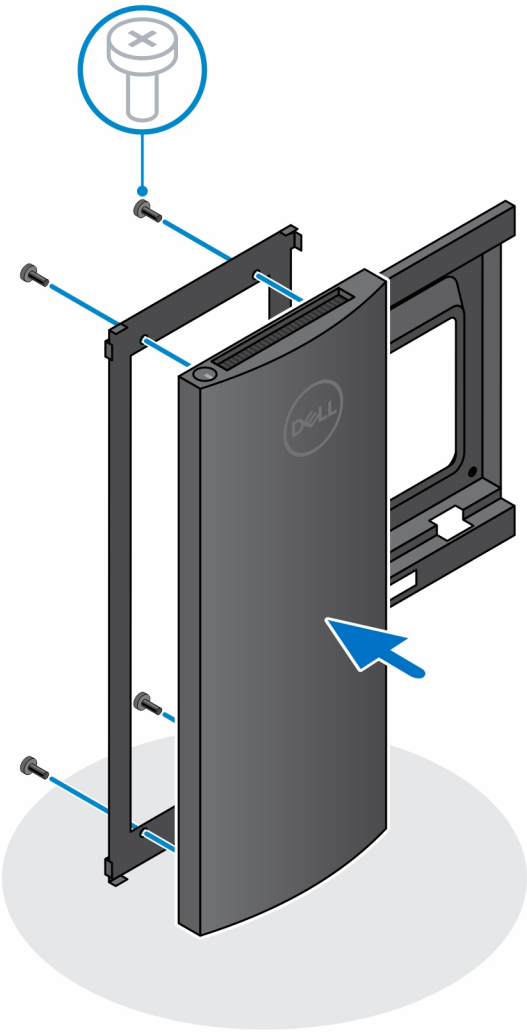
Stand tilt, pivot, and swivel images



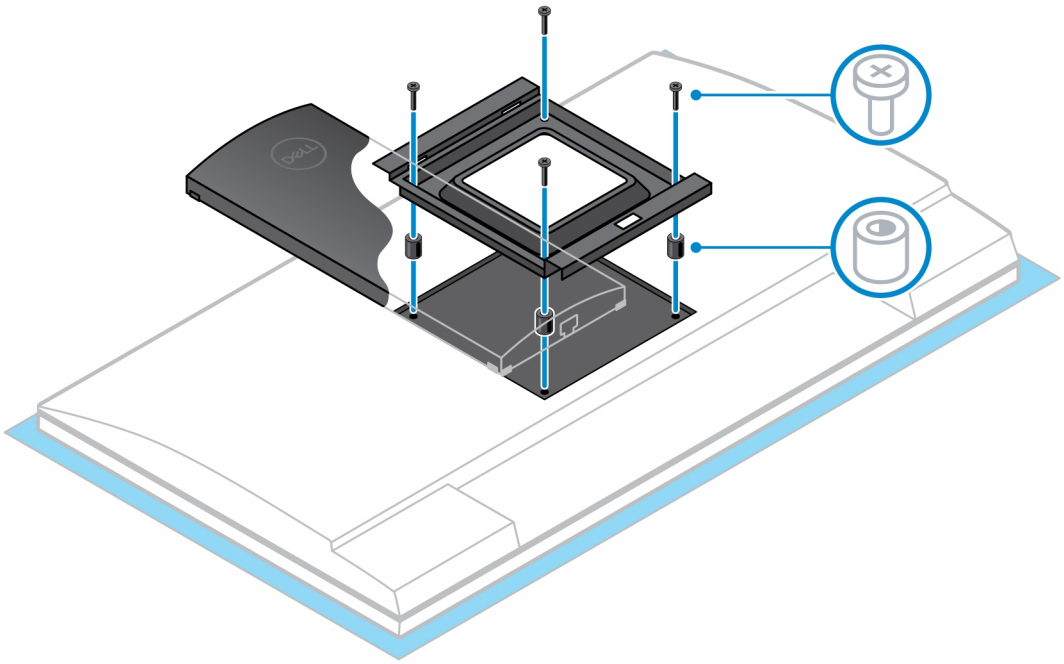


Installing device on offset VESA mount

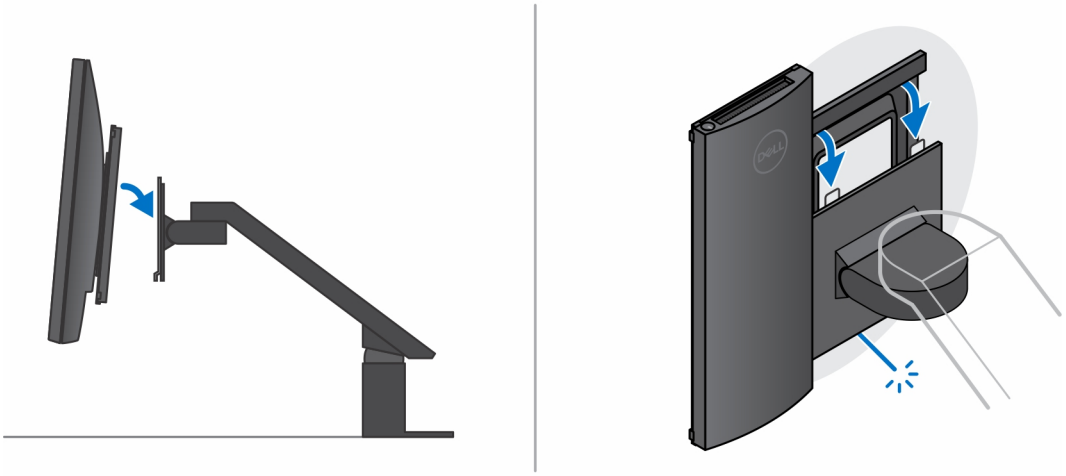
1. Align the screw holes on the device with the screw holes on the offset VESA mount.
2. Install the four screws to secure the device to the offset VESA mount.



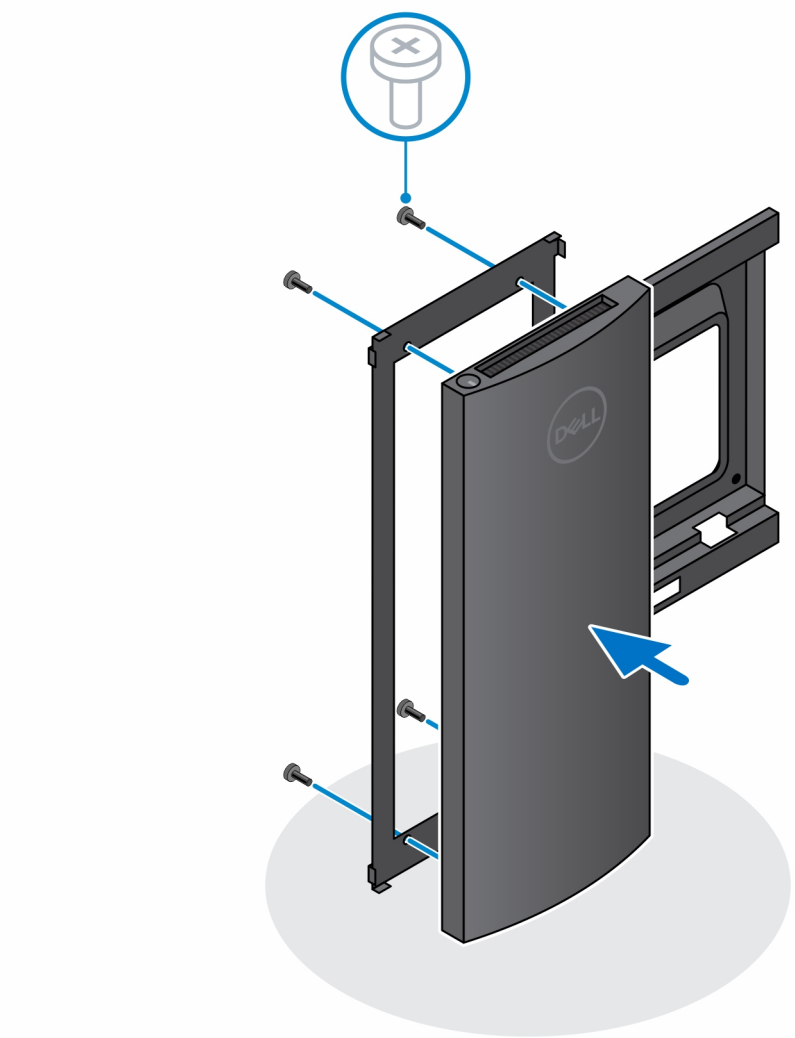
3. To avoid any damage to the monitor, ensure that you place the monitor on a protective sheet.
4. Align the screw holes on the offset VESA mount with the screw holes on the monitor.
5. Install the four screw spacers and the screws to secure the offset VESA mount to the monitor.



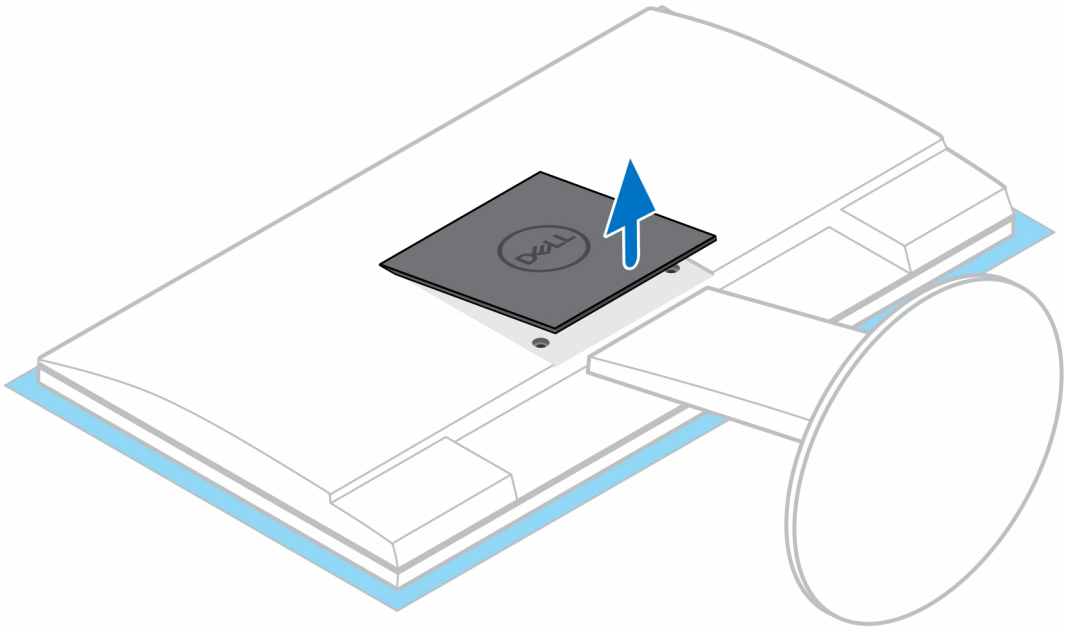
6. Insert the hooks on the mounting bracket of the monitor arm stand into the slots on the offset VESA mount on the monitor.
7. Lower the monitor on the monitor arm stand until you hear a click.

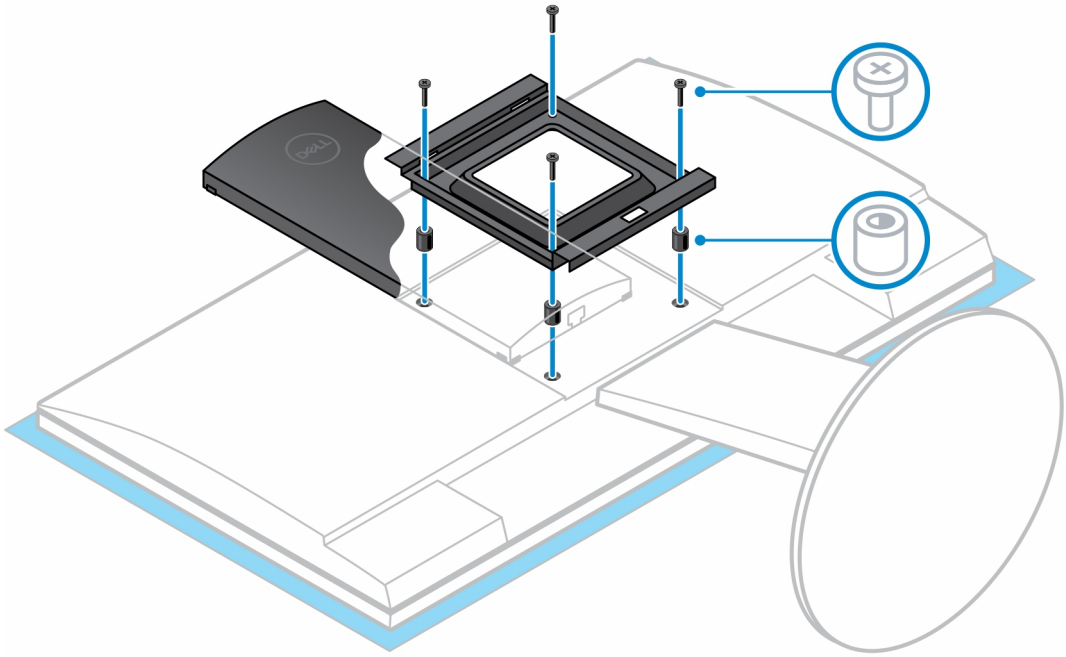


8. To install the offset VESA mount on a Dell E-Series monitor:
   a. Align and install the four screws to secure the device to the offset VESA mount.

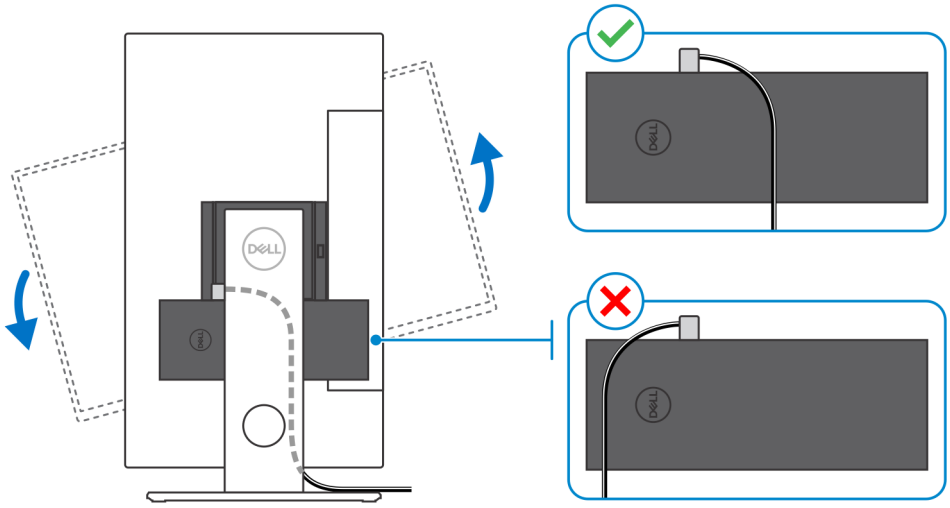


b. Remove the VESA cover from the back of the monitor and secure the offset VESA mount along with the device to the monitor.



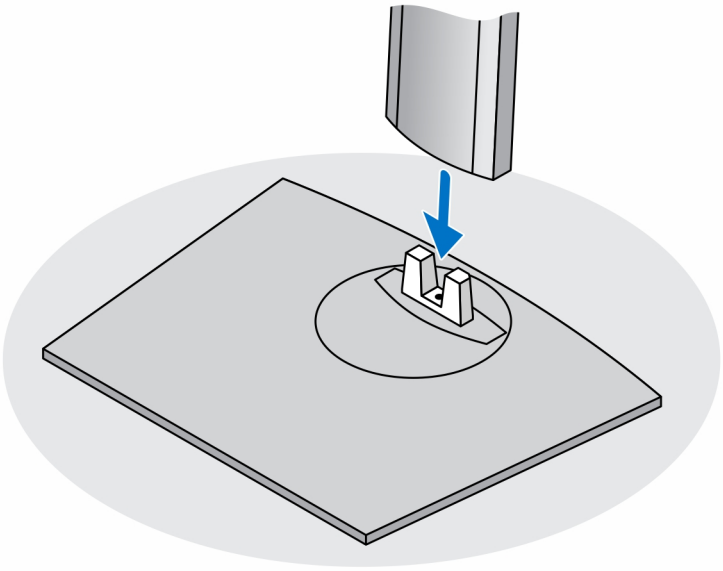


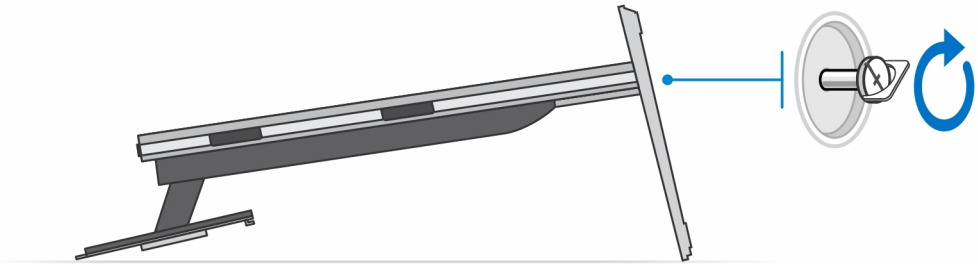
NOTE: While orienting the monitor horizontally, route the security lock cable to the right side of the device to avoid any impact to WLAN performance.



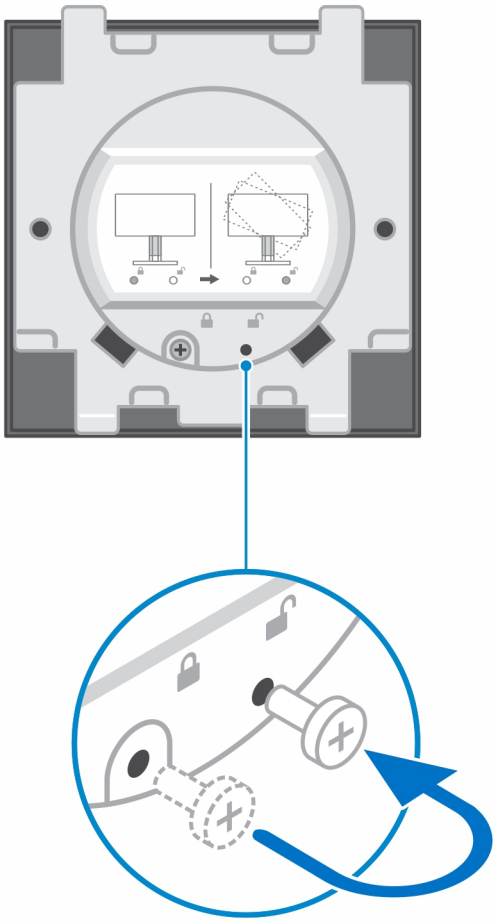
Installing the device on a Pro 2 height-adjustable stand

1. Align and insert the slots on the height-adjustable stand into the tab on the stand base.
2. Lift and tilt the stand base.
3. Tighten the captive screw to secure the stand to the base.

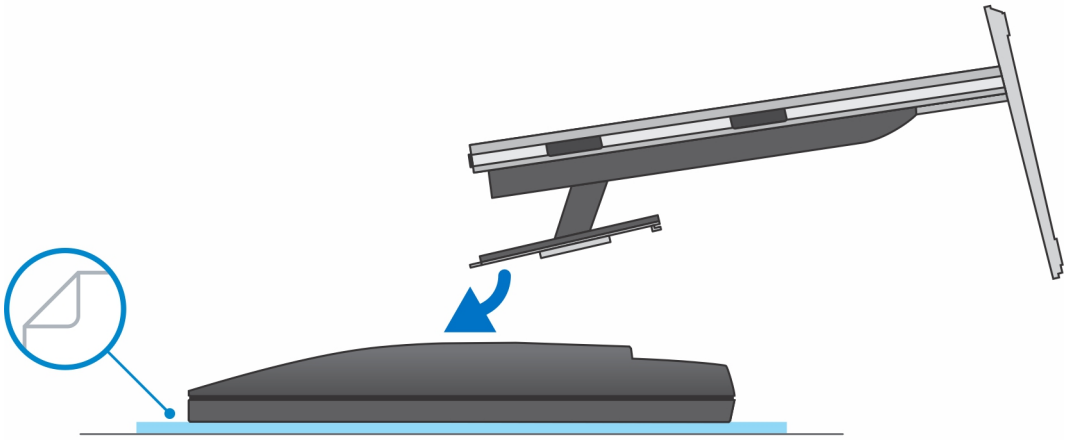


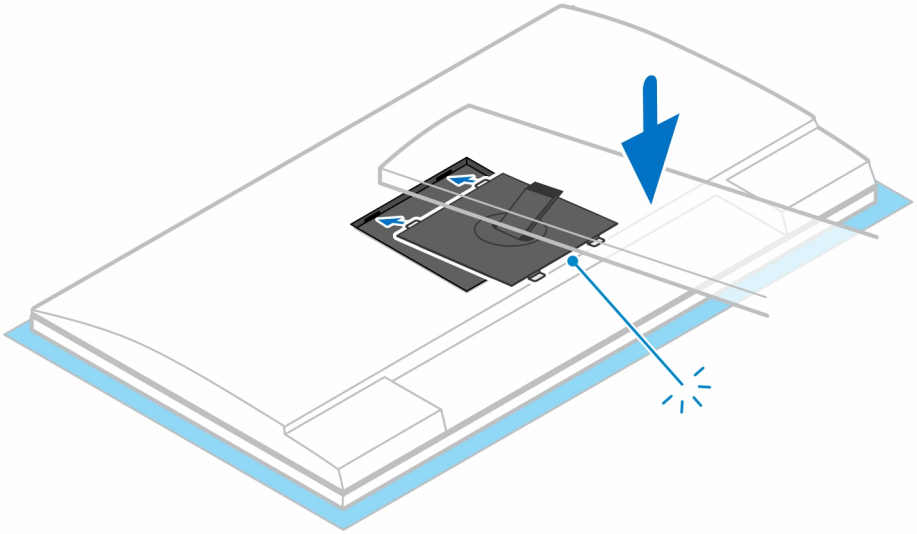


NOTE: For the large height adjustable stand, replacing the screw to the unlock icon screw hole in the stand base ensures the rotation of the 30-inch - 32-inch monitor.

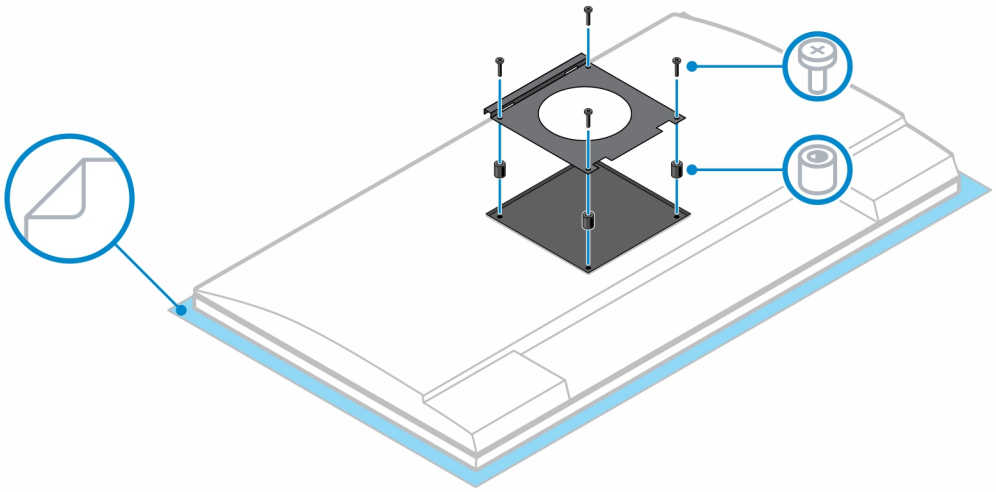


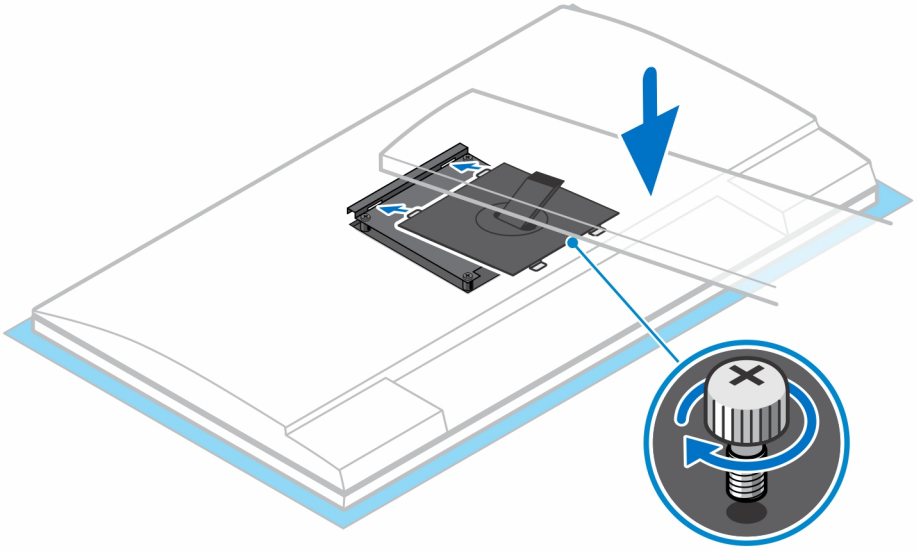
4. To avoid any damage to the monitor, ensure that you place the monitor on a protective sheet.
5. For installing the height-adjustable stand to the monitor:
   a. Align and insert the hooks on the mounting bracket on the stand into the slots on the monitor, until you hear a click.



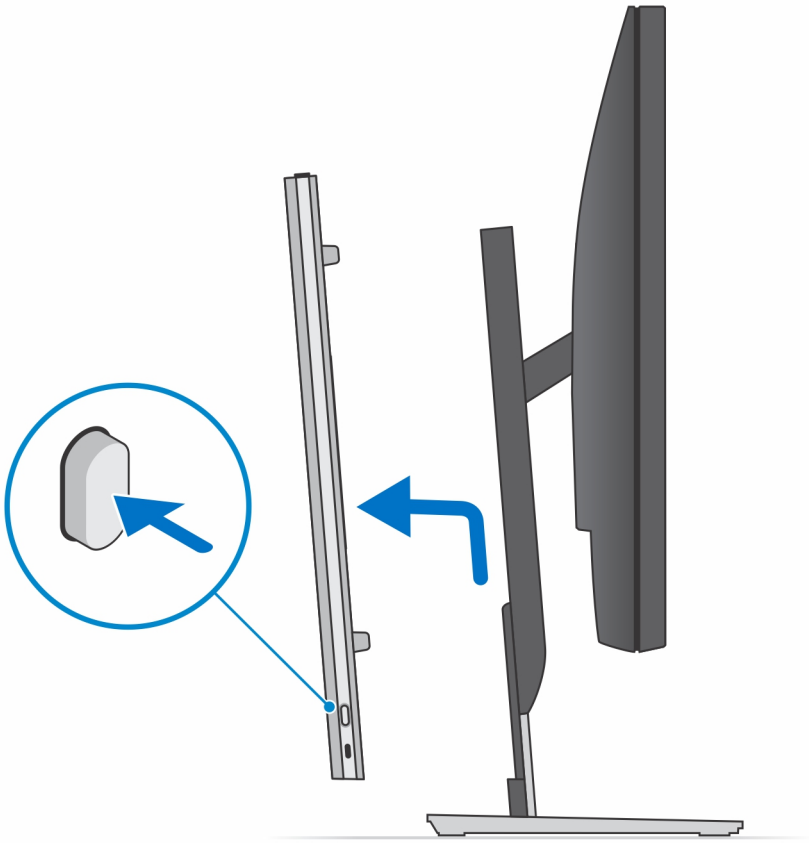


6. For installing QR to VESA bracket for E-Series monitor:
   a. Align the screw holes on the QR to VESA bracket with the screw holes on the monitor.
   b. Install the four screw spacers and the screws to secure the QR to VESA bracket to the monitor.
   c. Align and insert the QR tabs on the stand into the slots on the QR to VESA bracket on the monitor.
   d. Tighten the thumb screw to secure the stand to the QR to VESA bracket.

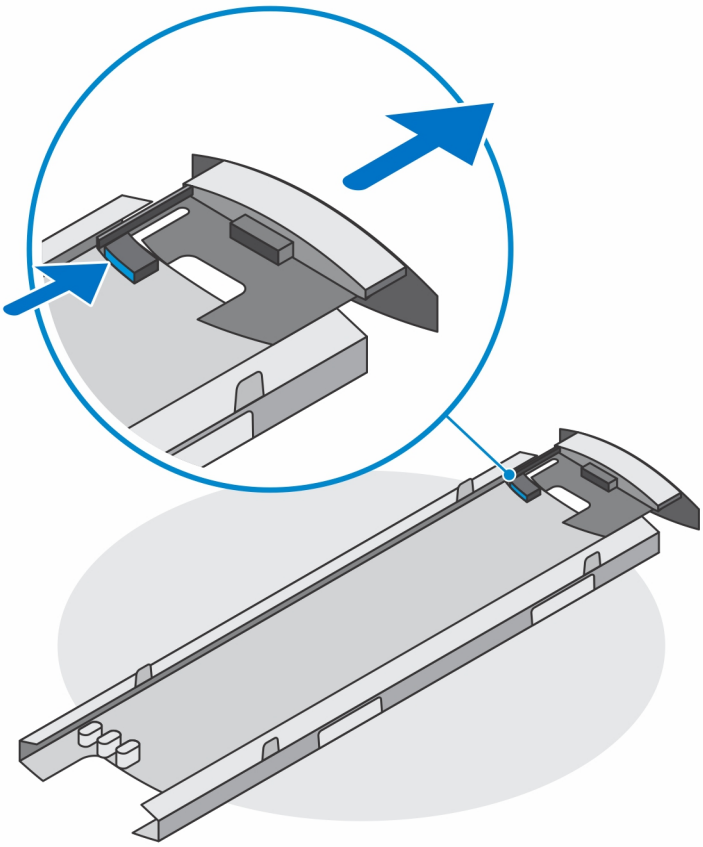




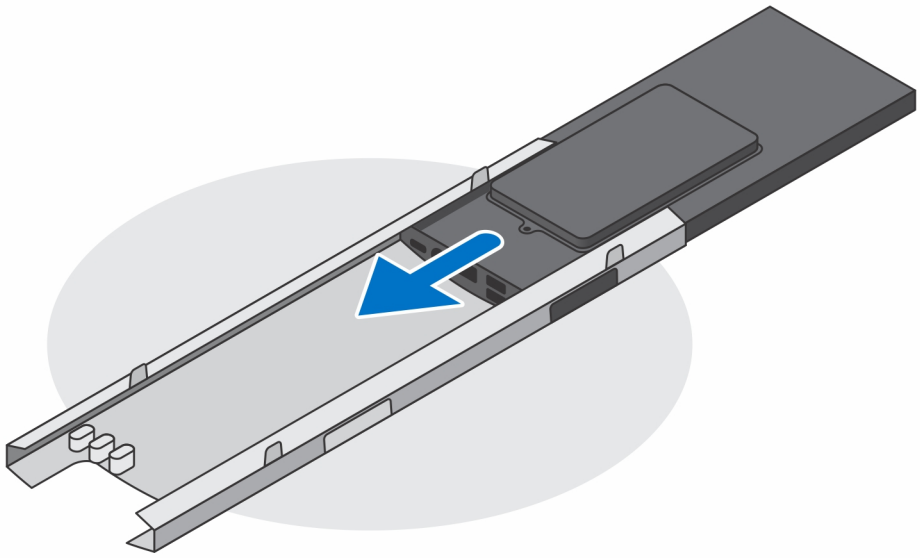
7. To release the stand cover, press the button on the side of the stand chassis.
8. Slide and lift the cover to release it from the stand.



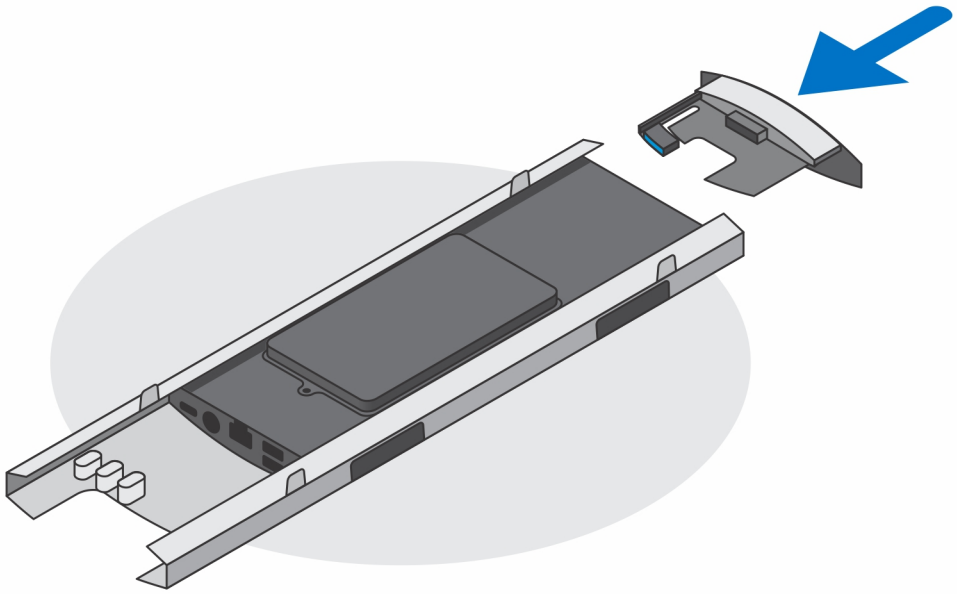
9. Slide and release the inner bar on the lower edge of the stand cover.



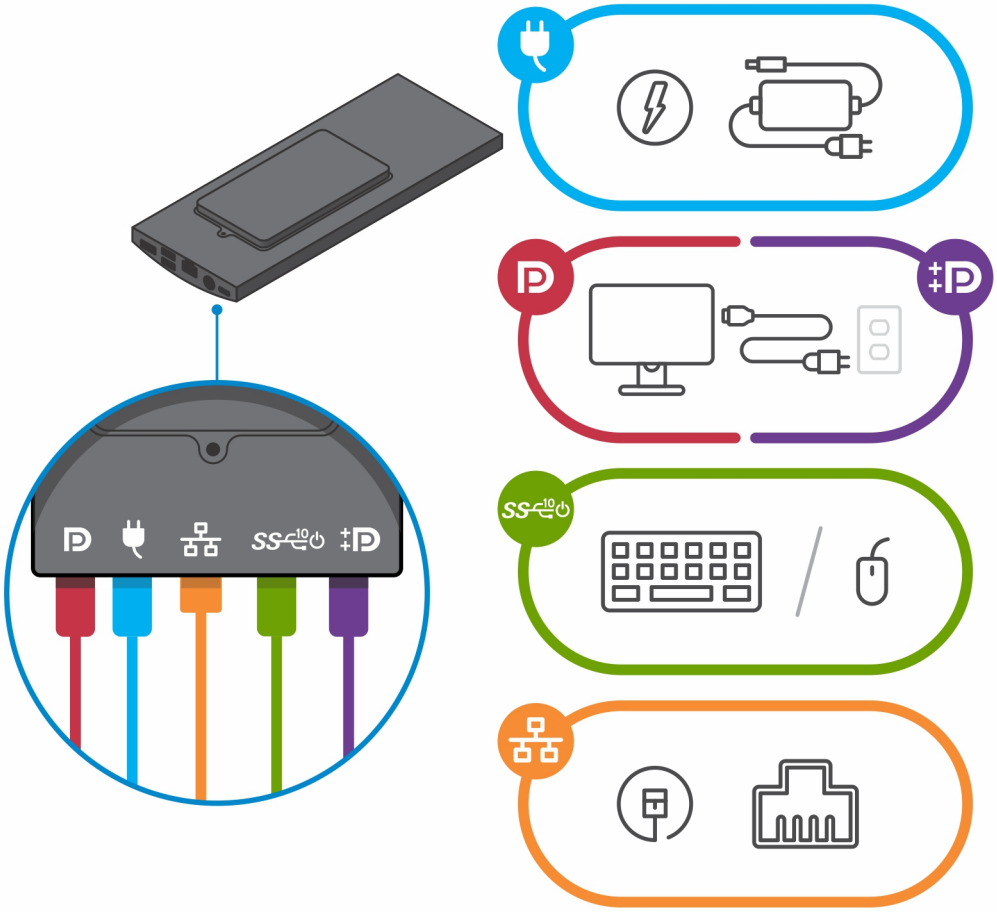
10. Align the vents on the device with the vents on the stand cover and slide the device in the cover.



11. Slide the inner bar back to the lower edge of the stand cover to lock the device to the cover.



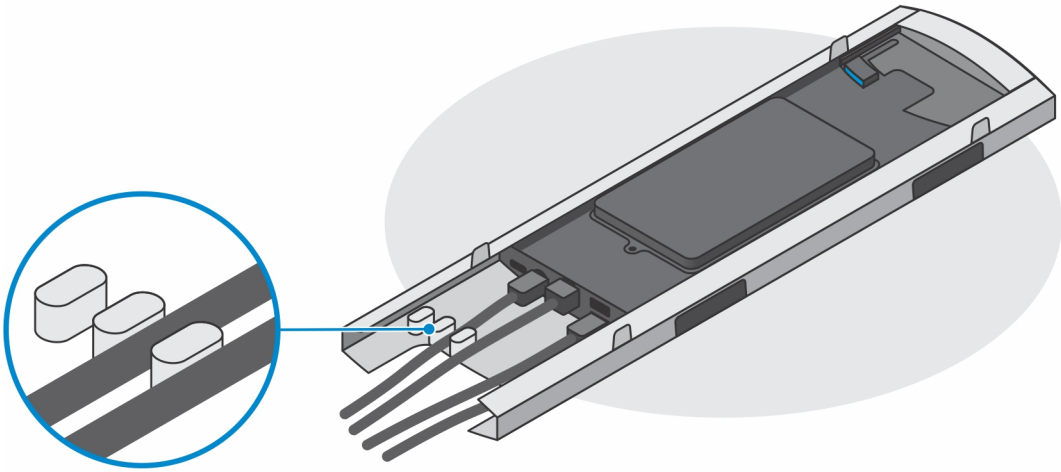
12. Connect the power, network, keyboard, mouse, and display cables to the device and to the power outlet.



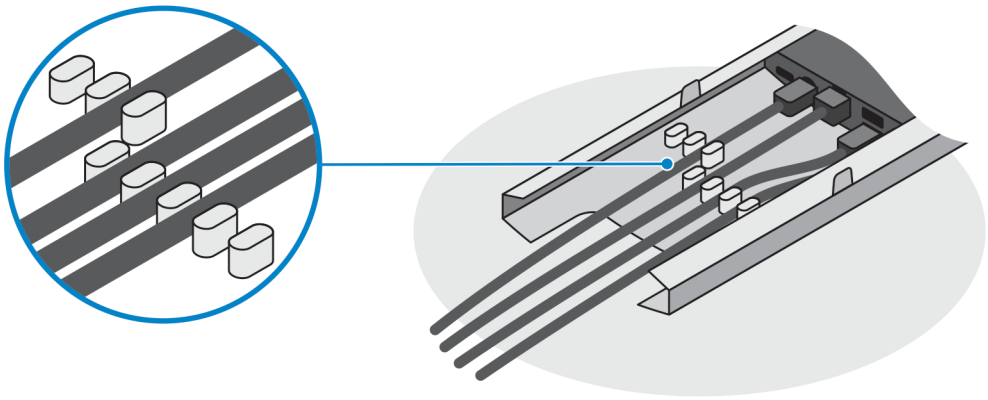
13. To avoid any pinching or crimping of the cables while closing the stand cover, it is recommended that you route the cables as indicated in the image.

NOTE: All the cables and ports are used depending on the peripherals chosen and the configuration of the computer.

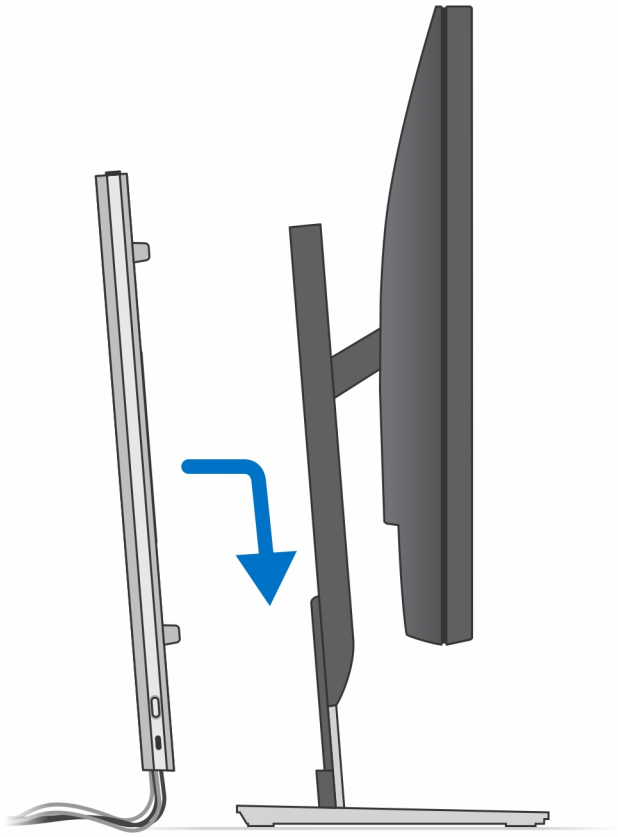
Standard Height Adjustable Stand



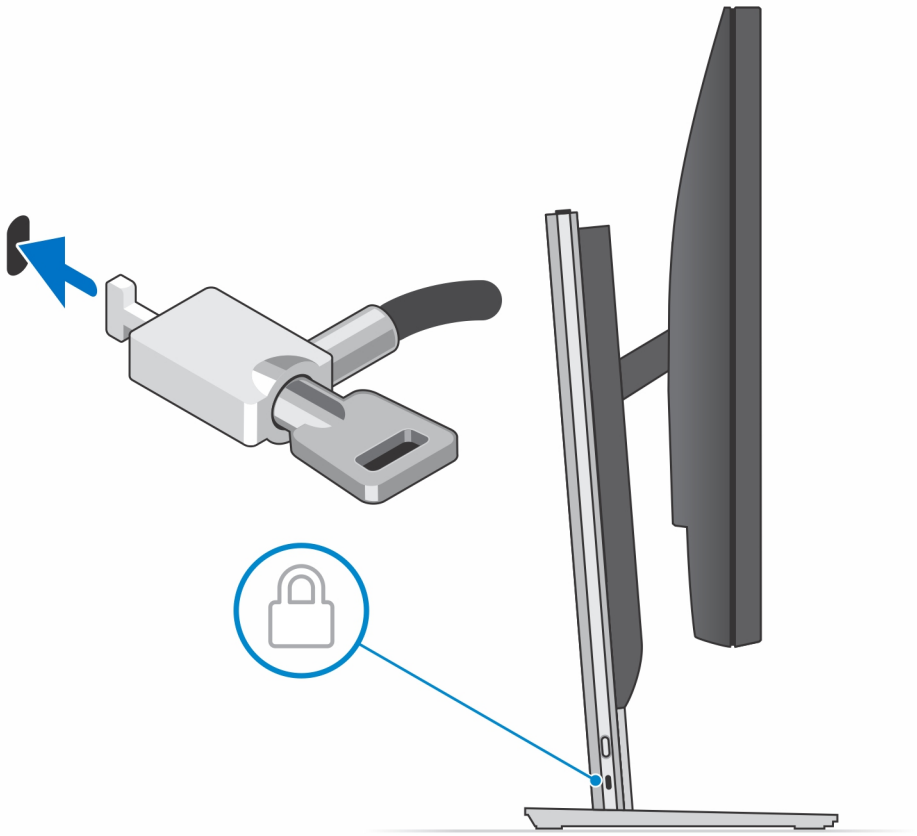
Large Height Adjustable Stand



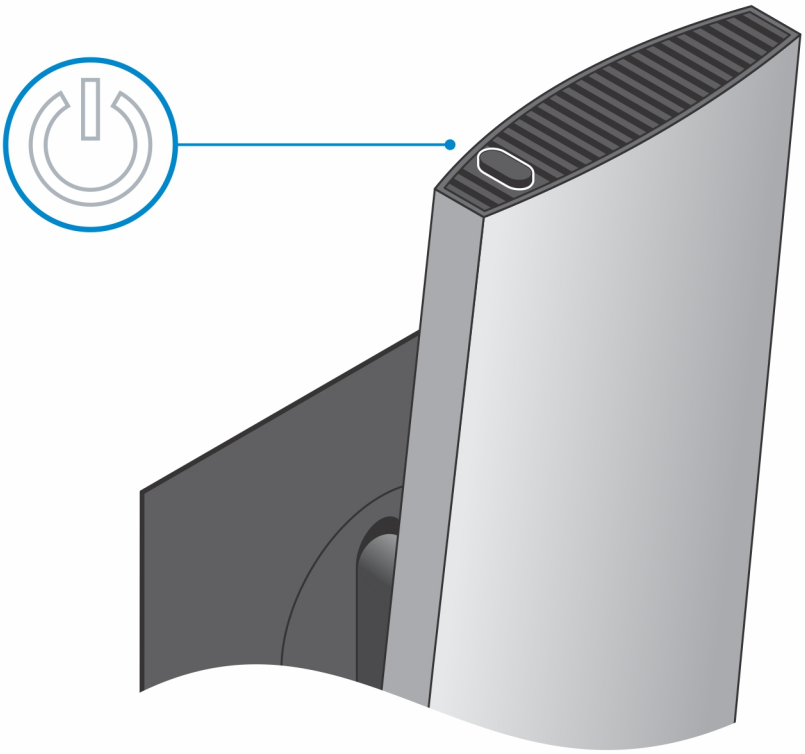
14. Slide the stand cover, along with the device, into the stand until you hear a click.



15. Lock the device and the stand cover.

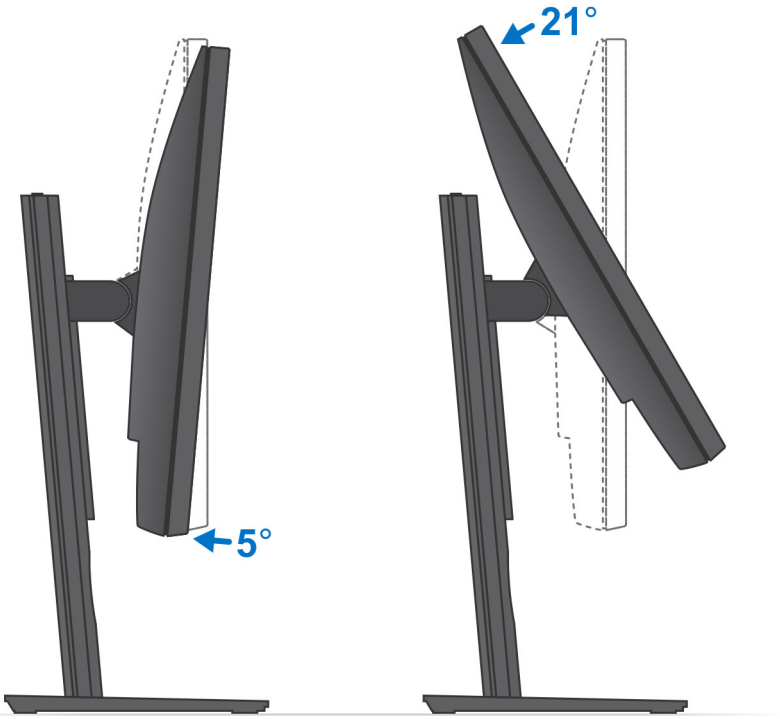


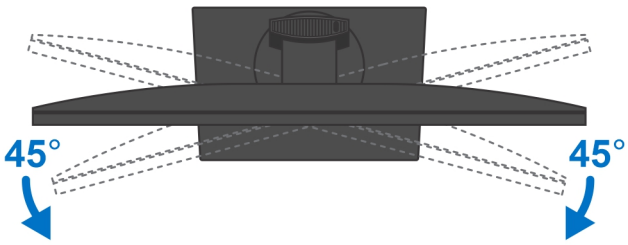
16. Press the power button to turn on the device.



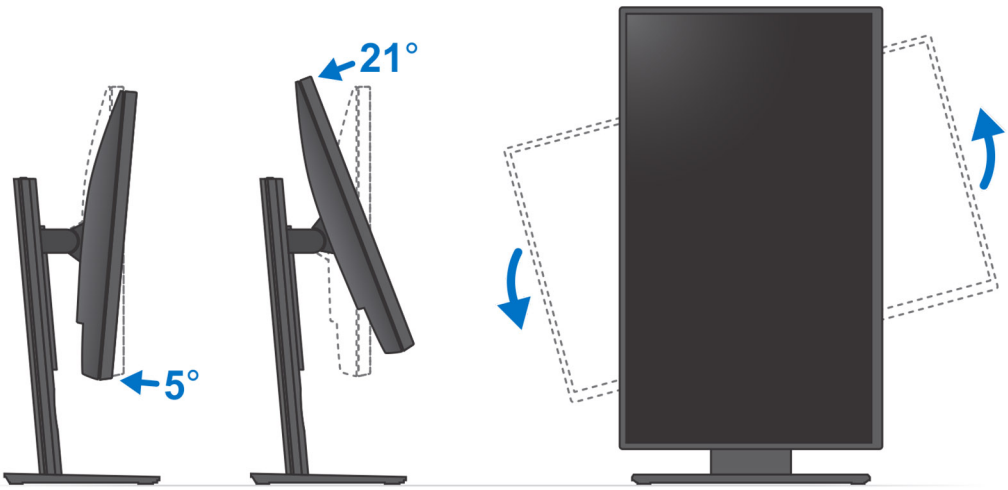
Stand tilt, pivot, and swivel images

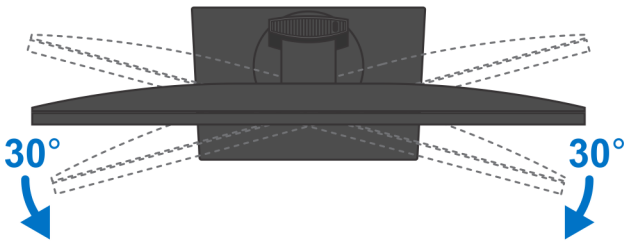
For 19-inch to 27-inch monitor (Standard height adjustable stand):



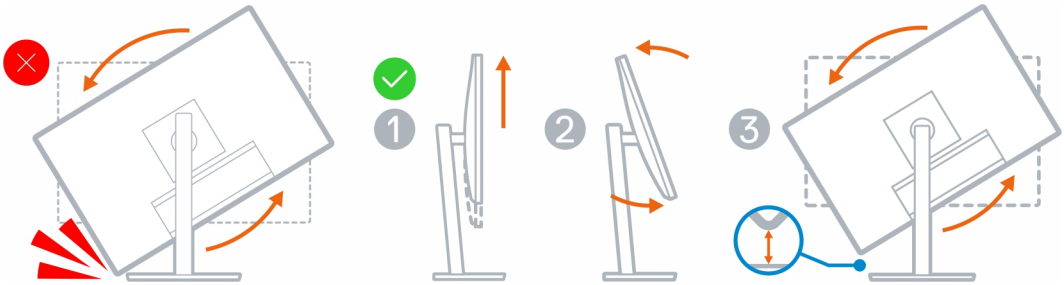


For 30-inch to 32-inch monitor (Large height adjustable stand):



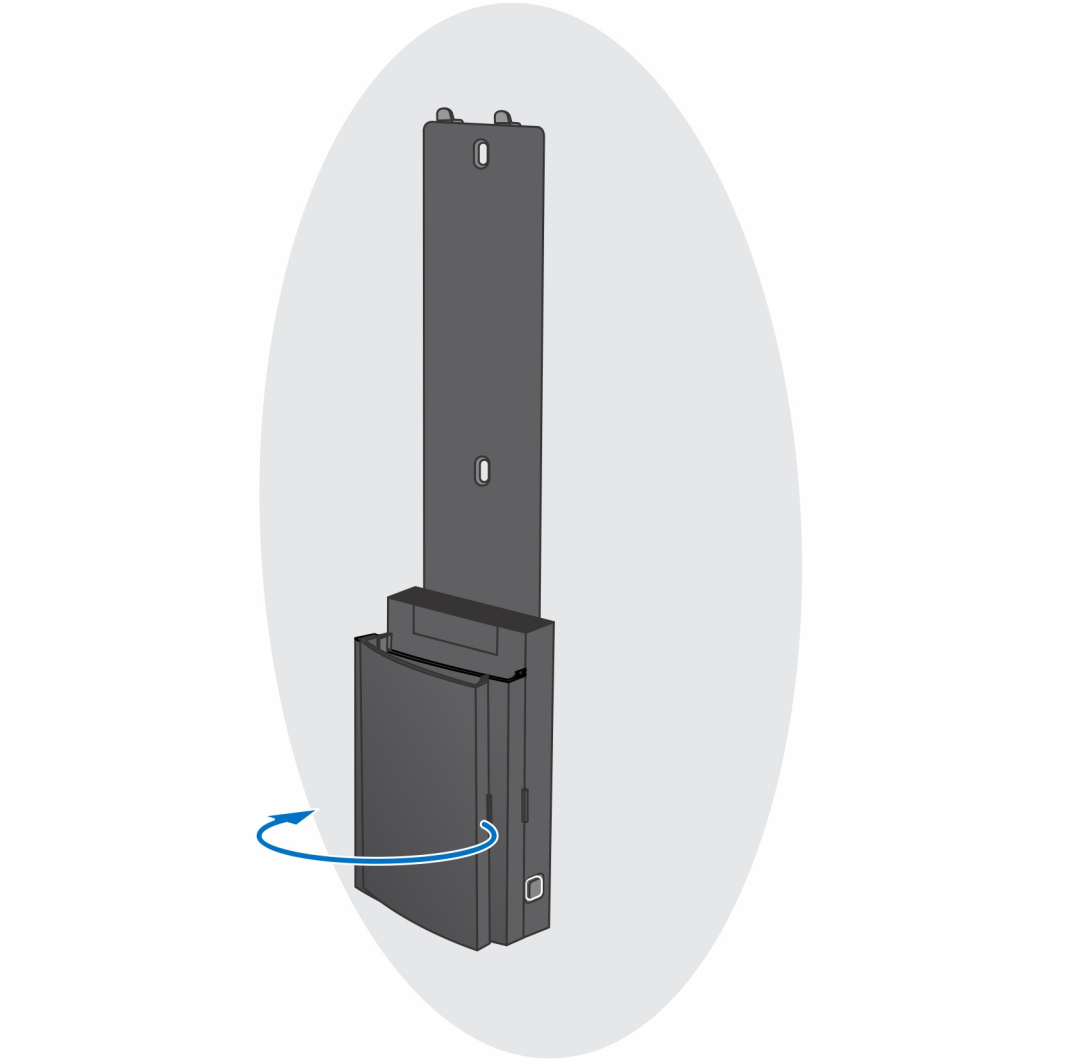


For monitors > 32-inch (Large height adjustable stand):

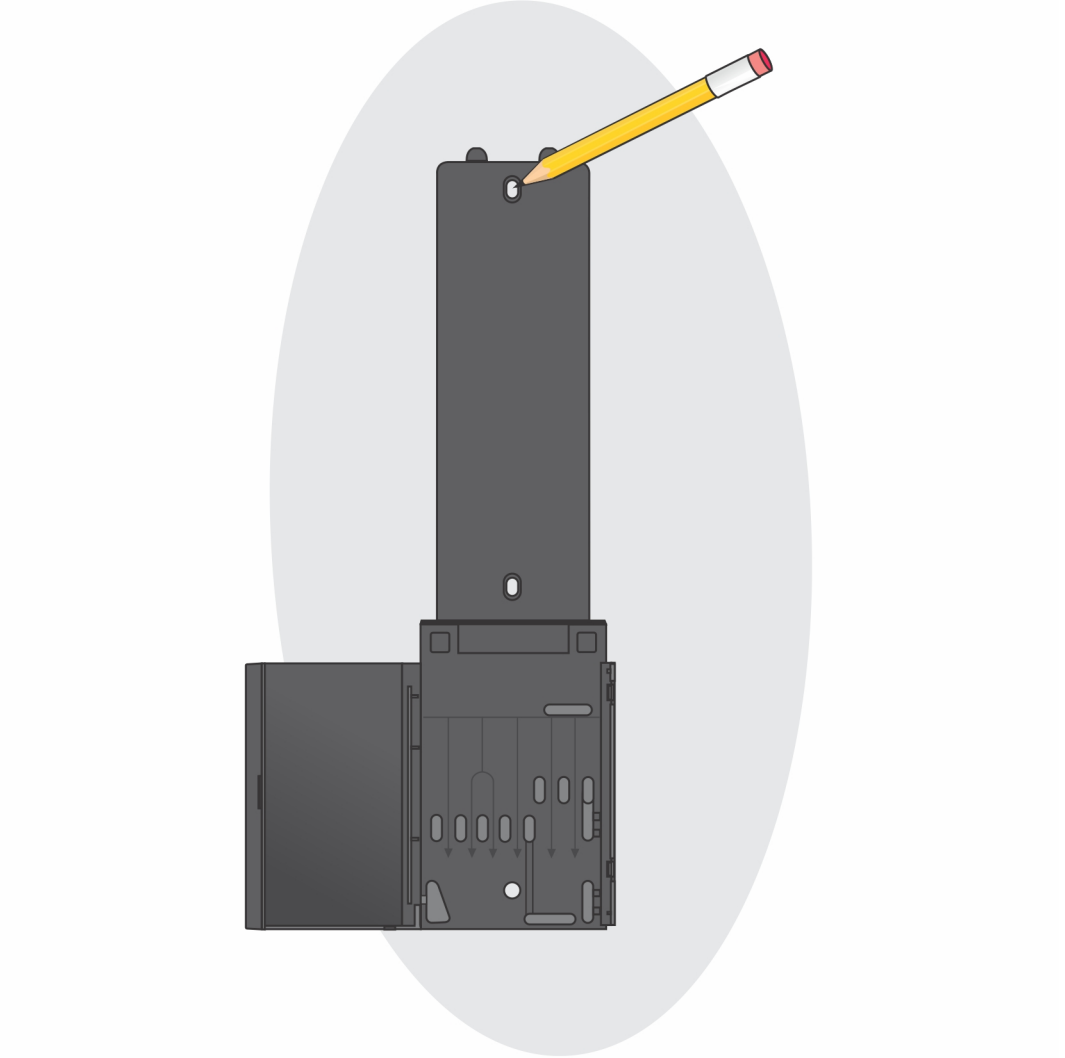


Installing device on Wall Mount

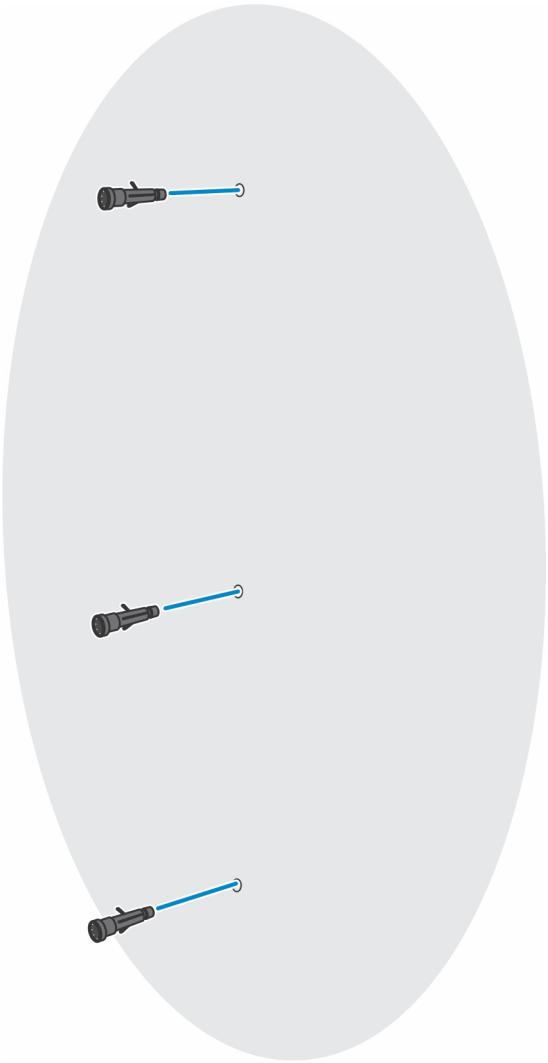
1. Full Function
   a. Press the release button to open the cable cover.



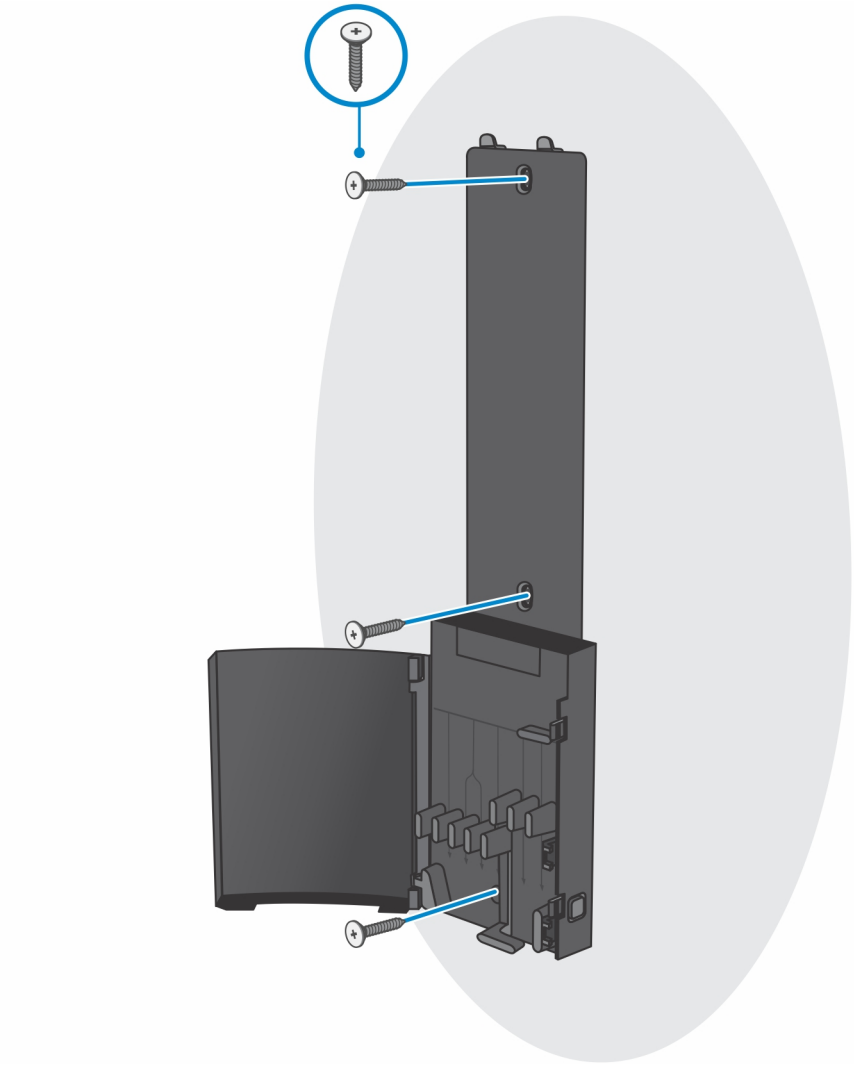
   b. Align the screw holes on the wall mount in the wall and mark them against the wall using a pencil.



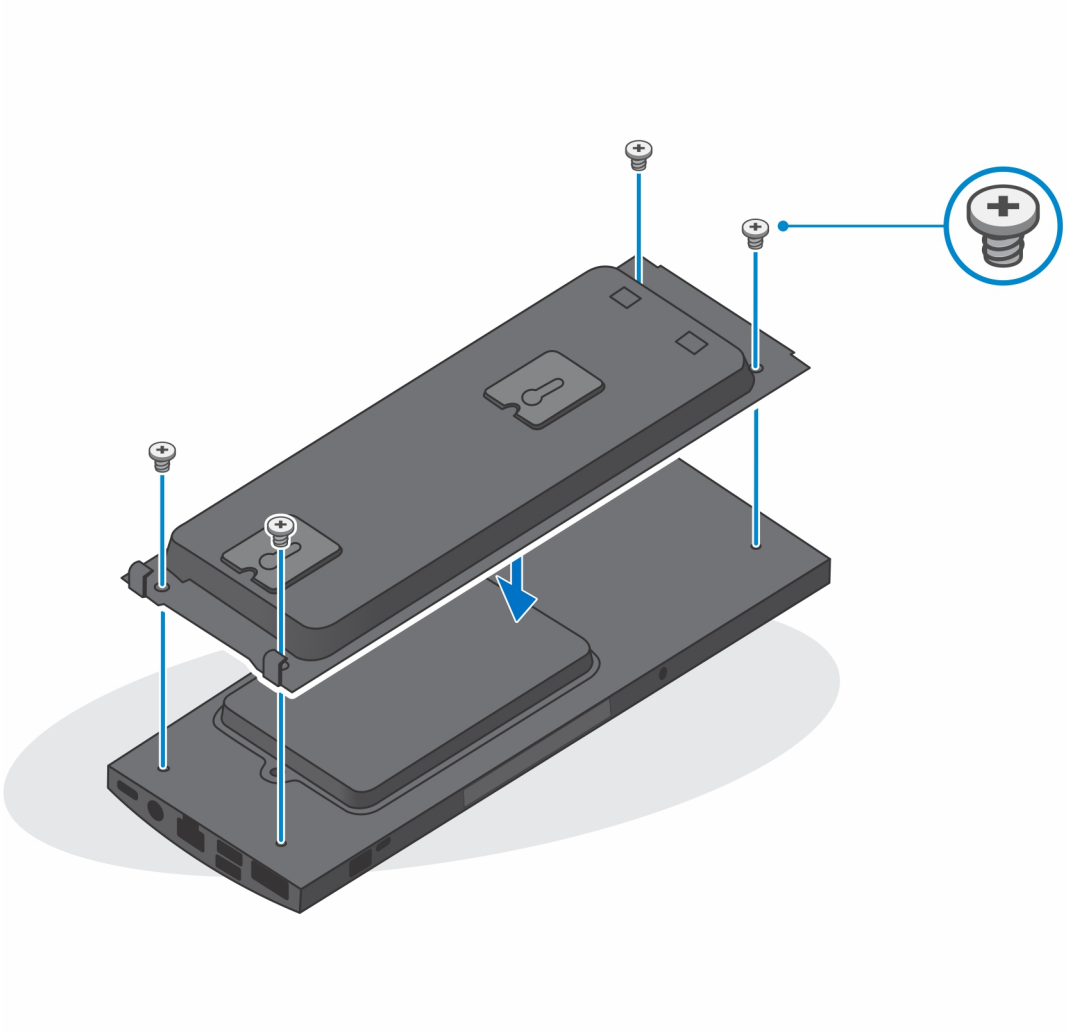
c. Drill the screw marks on the wall and insert the three screw anchors into the screw holes in the wall.



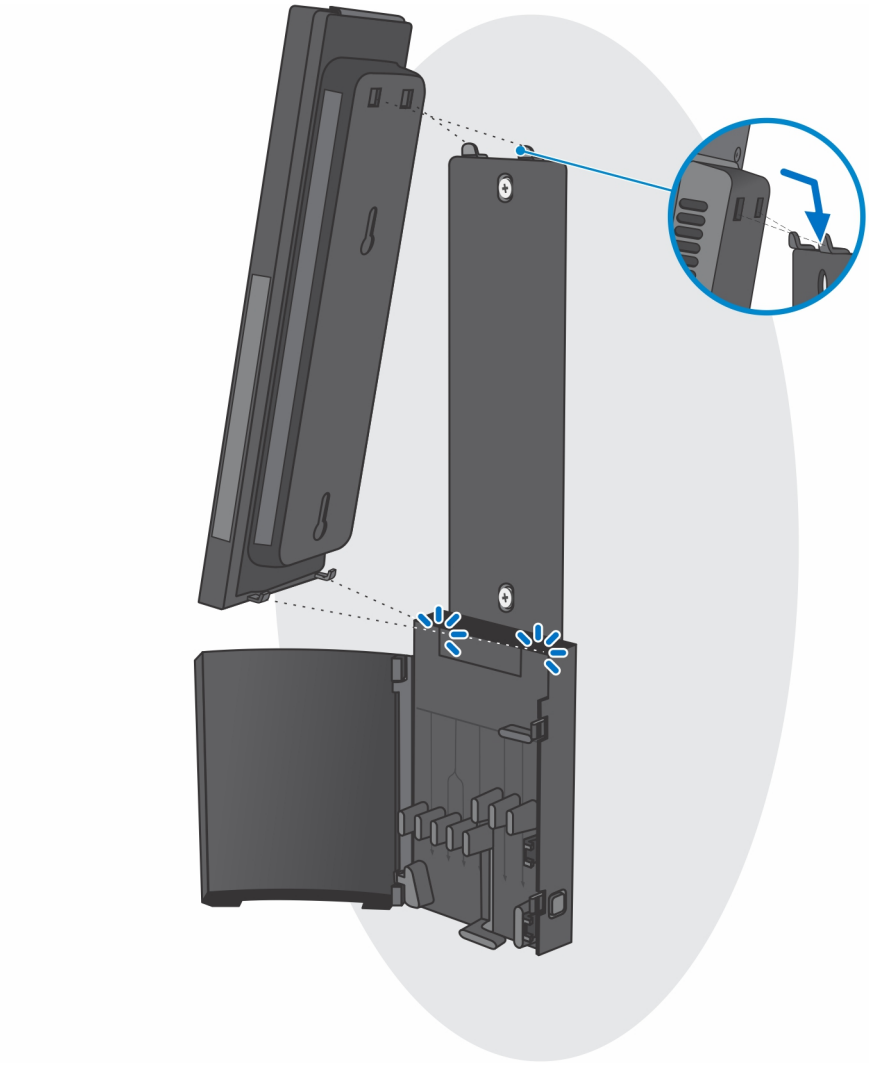
d. Align the screw holes on the wall mount with the screw holes on the wall and install the three screws to secure the wall mount in the wall.



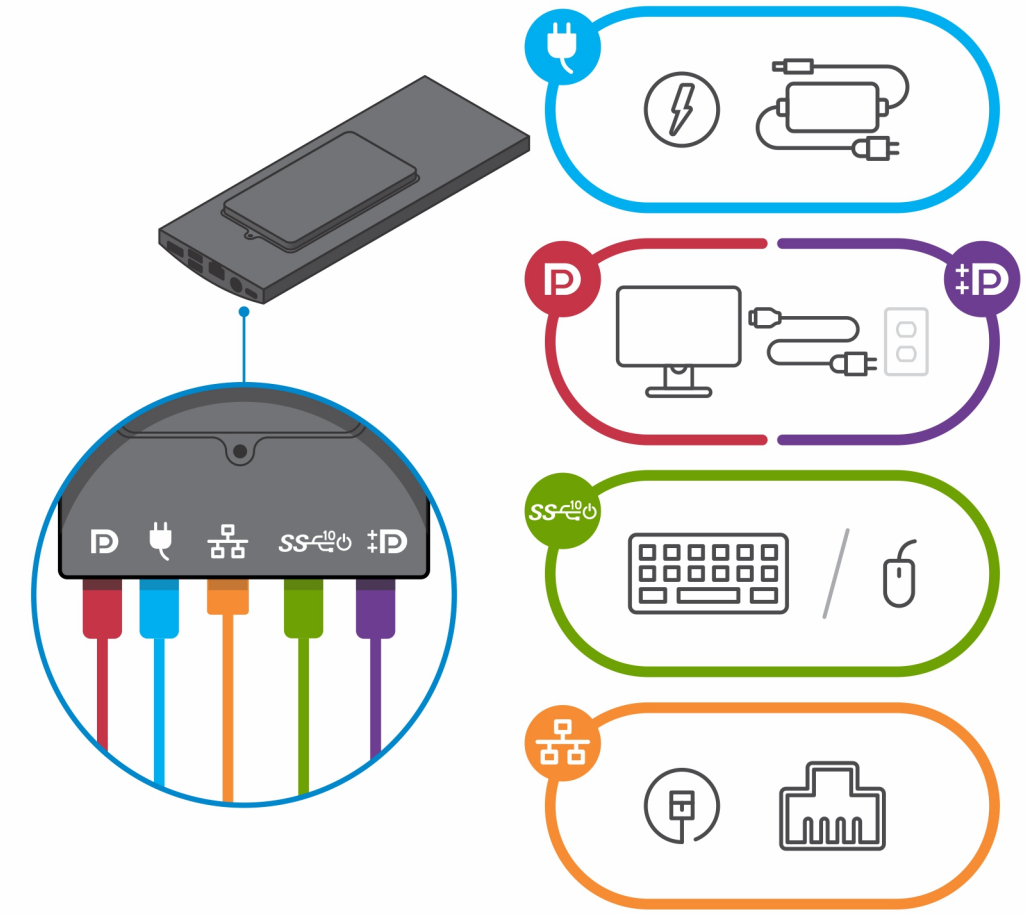
e. Align the screw holes on the device with the screw holes on the wall mount bracket.
f. Install the four screws to secure the device to the wall mount bracket.



g. Insert the hooks on the mounting bracket of the wall mount into the slots on the wall mount bracket module.
h. Align and insert the hooks on the wall mount bracket module into the slots on the wall mount until it clicks into place

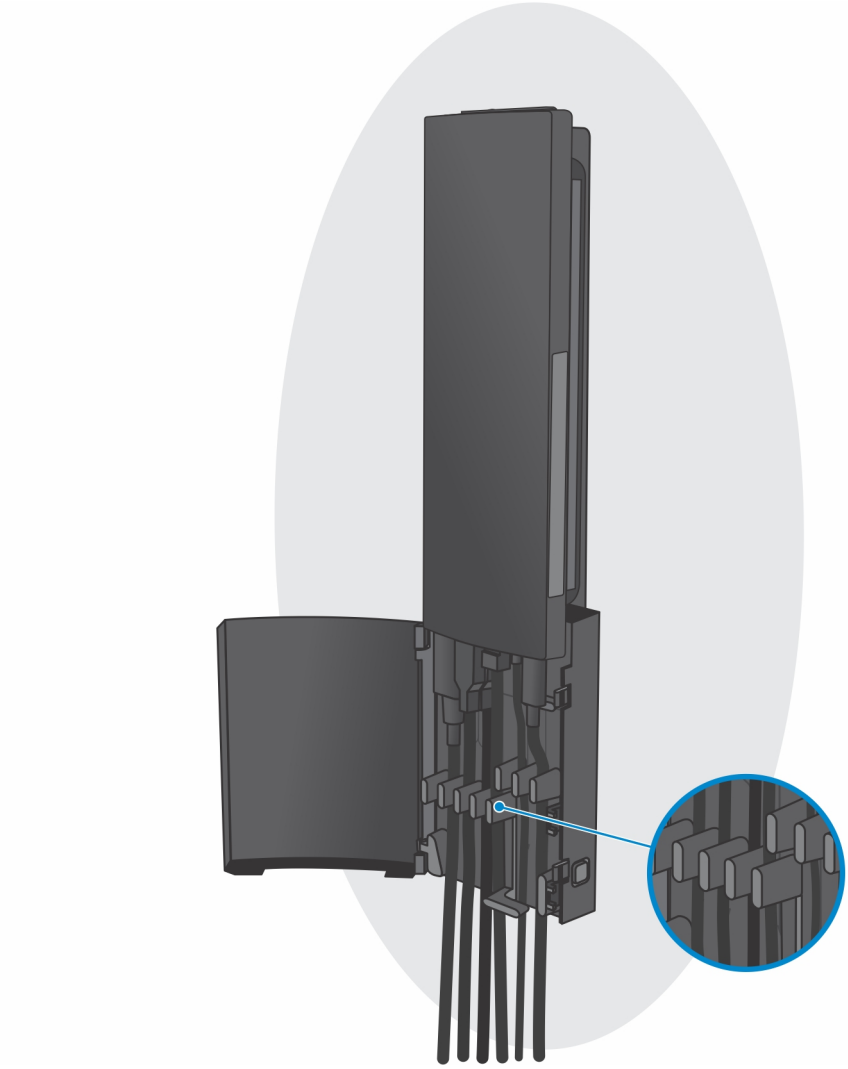


i. Connect the power, network, keyboard, mouse, and display cables to the device and to the power outlet.



j. To avoid any pinching or crimping of the cables while closing the stand cover, it is recommended that you route the cables as indicated in the image.

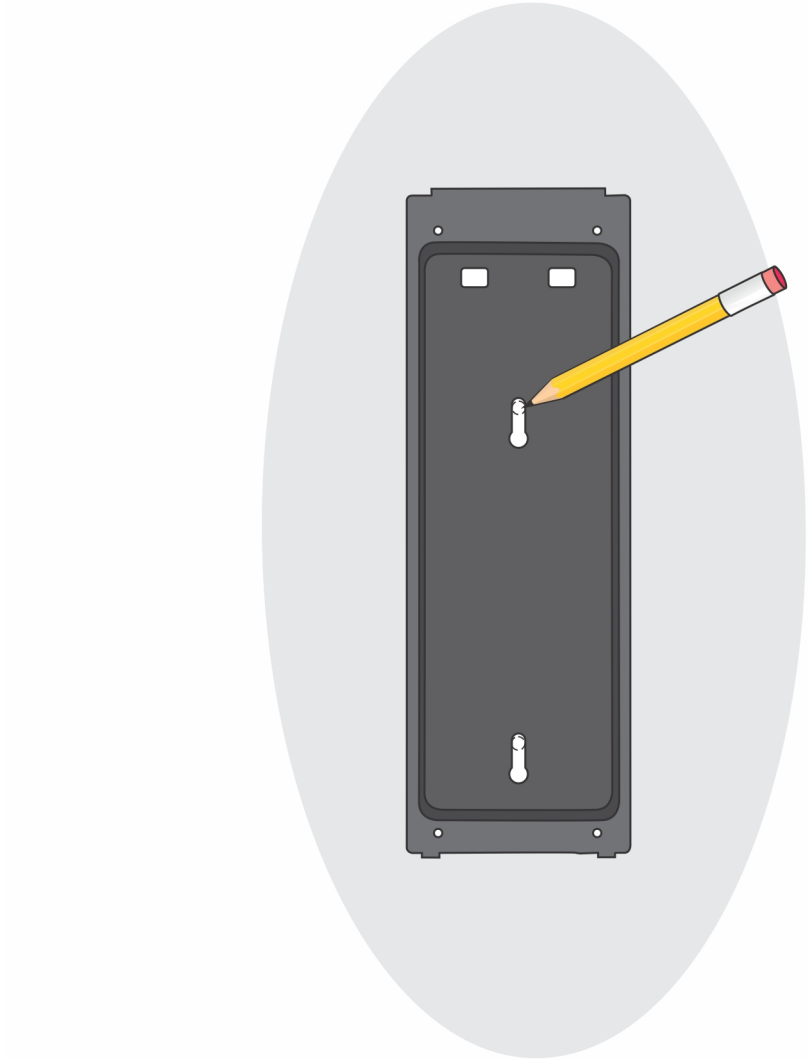
NOTE: All the cables and ports are used depending on the peripherals chosen and the configuration of the computer.



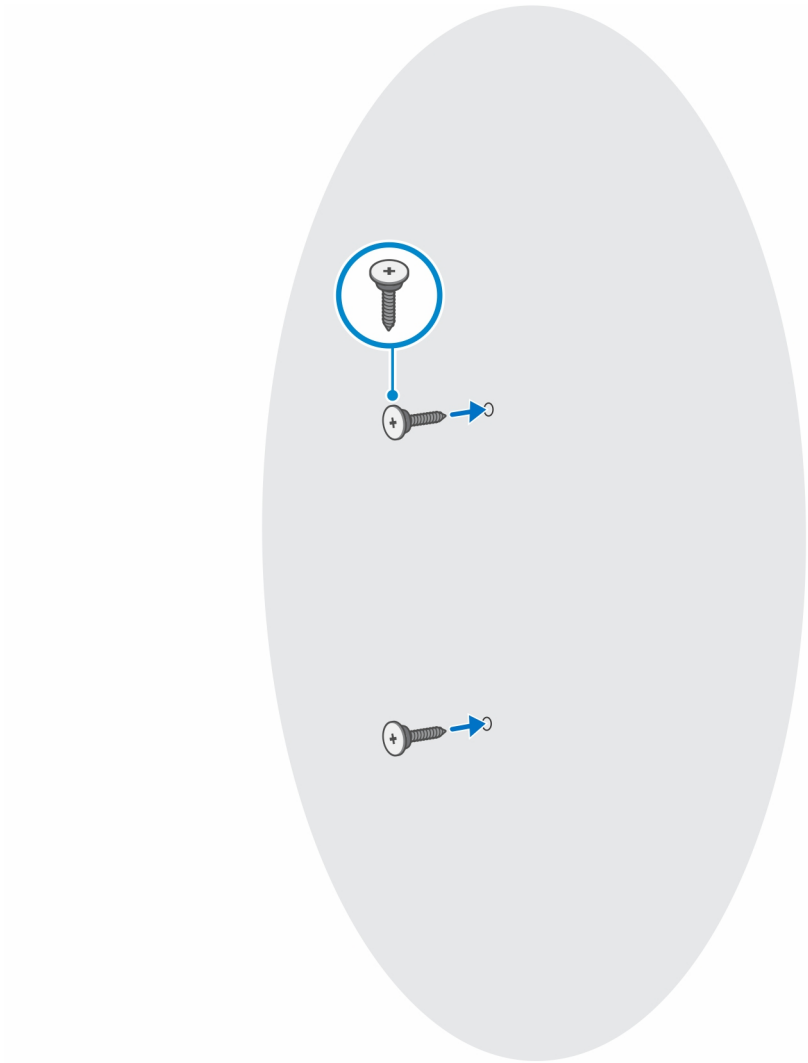
k. Close the stand cover.

l. Lock the device and the stand cover.

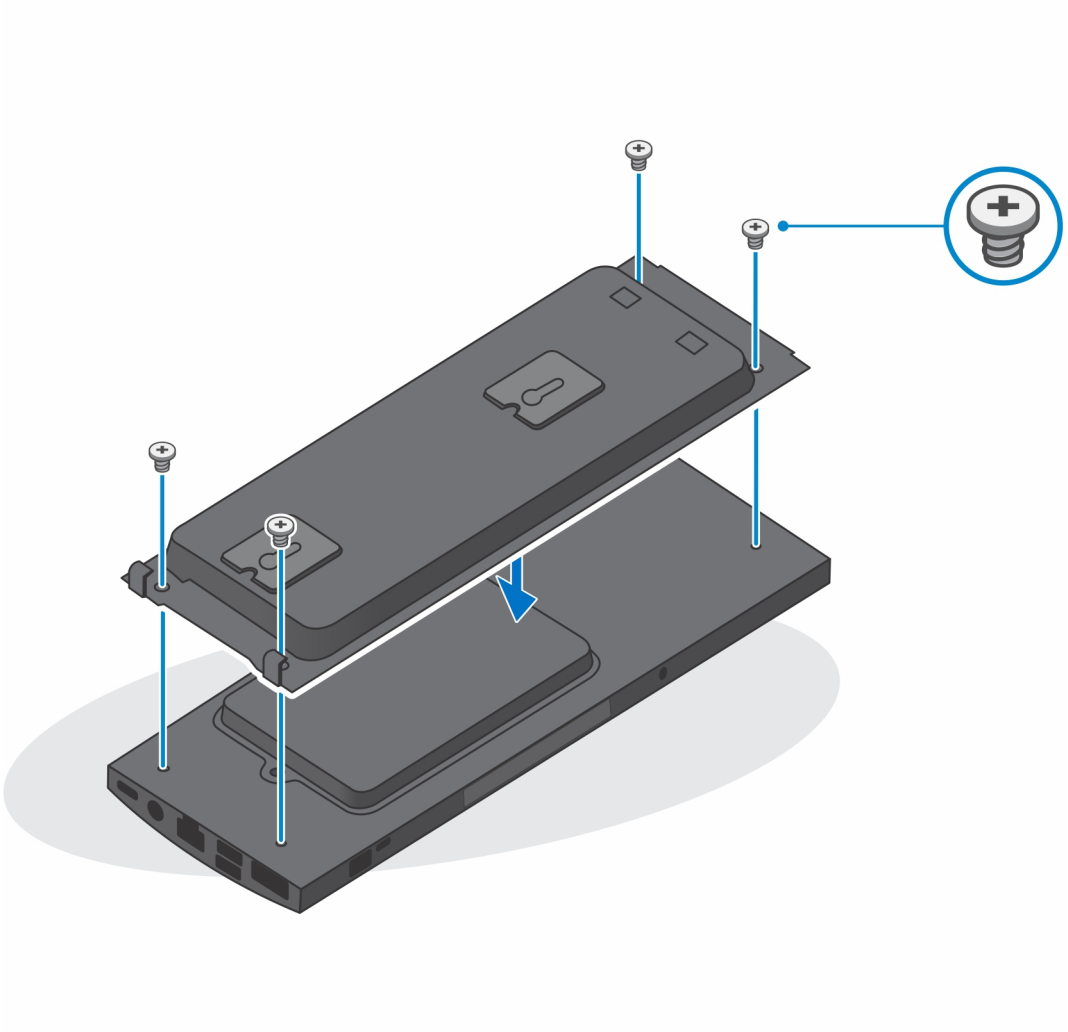
2. Simple Function
   a. Align the screw holes on the wall mount in the wall and mark them using a pencil.



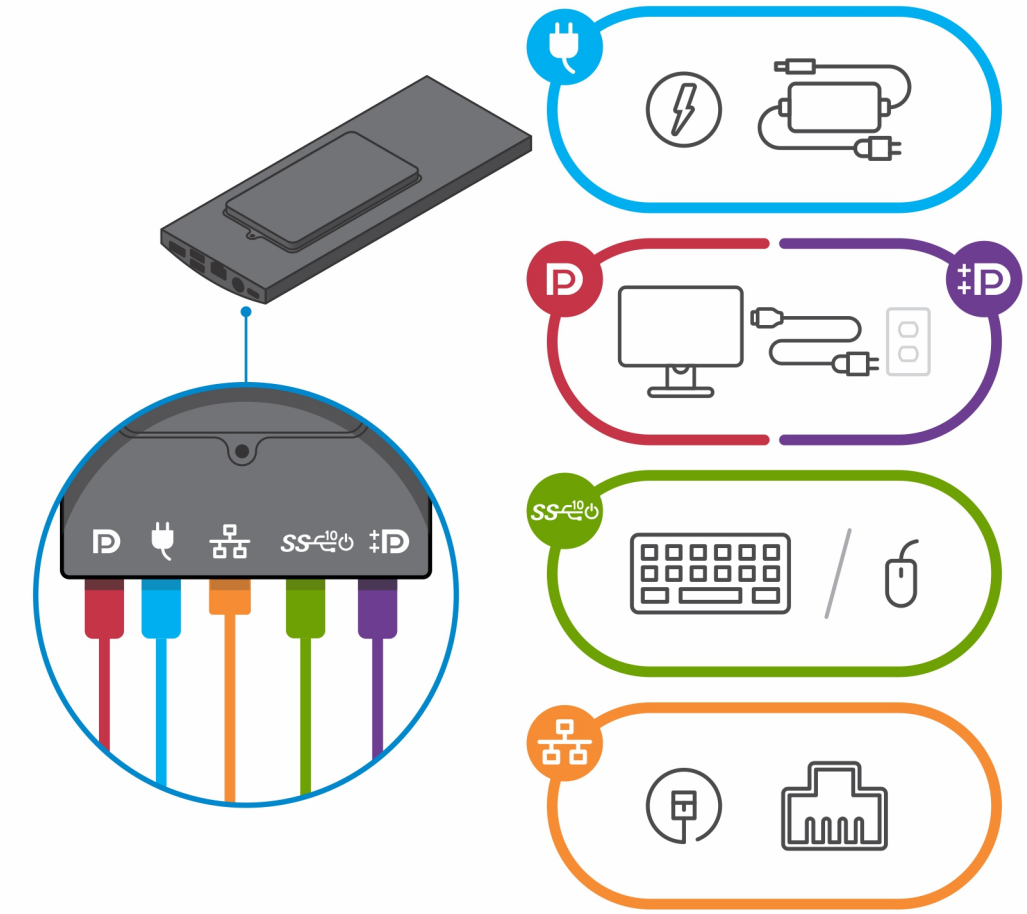
b. Drill the screw marks on the wall and insert the two screws into the screw holes in the wall.



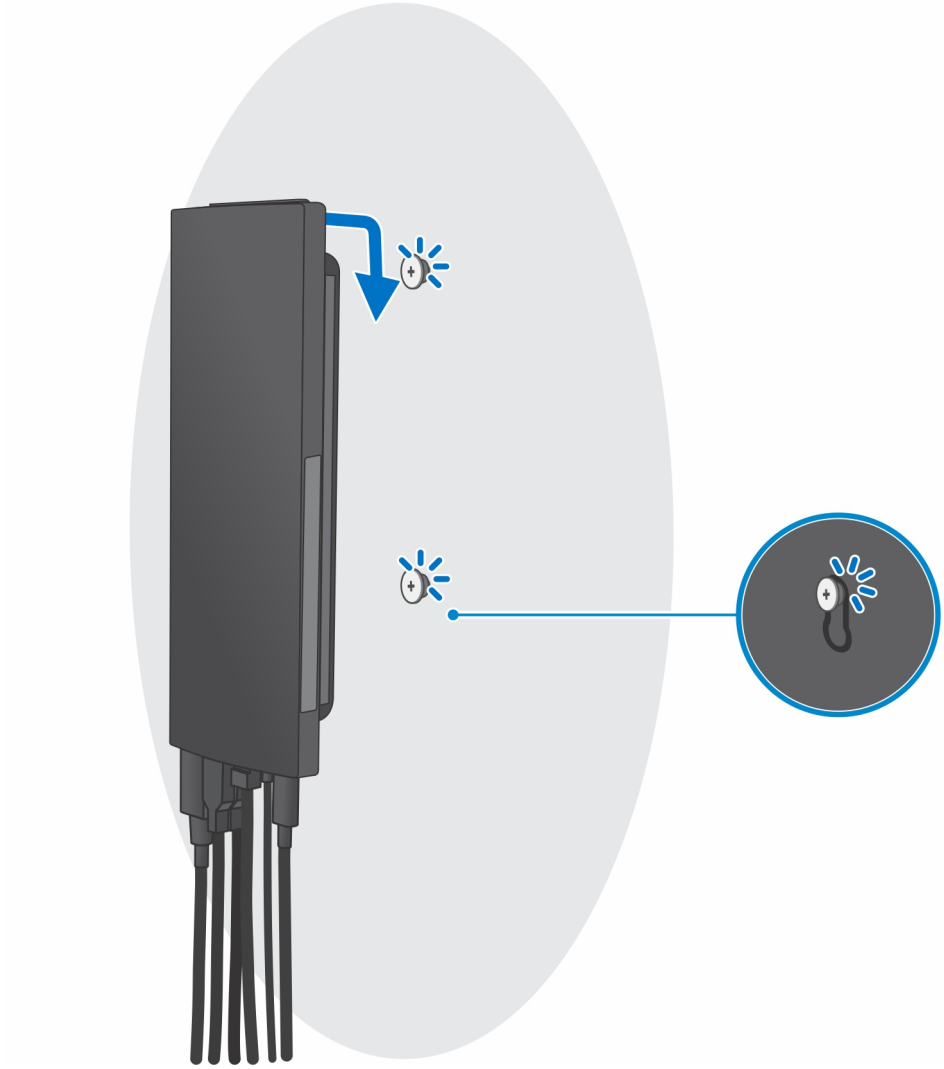
c. Align the screw holes on the device with the screw holes on the wall mount bracket.
d. Install the four screws to secure the device to the wall mount bracket.



e. Connect the power, network, keyboard, mouse, and display cables to the device and to the power outlet.



f. Align the screws on the wall with the retention clips on the wall mount bracket module.
g. Mount the wall mount bracket module in the screws on the wall.



h. Press the power button to turn on the device.

2

Create a USB recovery drive for Windows

Create a recovery drive to troubleshoot and fix problems that may occur with Windows. An empty USB flash drive with a minimum capacity of 16 GB is required to create the recovery drive.

NOTE: This process may take up to an hour to complete.

NOTE: The following steps may vary depending on the version of Windows installed. Refer to the Microsoft support site for latest instructions.

1. Connect the USB flash drive to your computer.
2. In Windows search, type `Recovery`.
3. In the search results, click **Create a recovery drive**.
   The **User Account Control** window is displayed.
4. Click **Yes** to continue.
   The **Recovery Drive** window is displayed.
5. Select **Back up system files to the recovery drive** and click **Next**.
6. Select the **USB flash drive** and click **Next**.
   A message appears, indicating that all data in the USB flash drive will be deleted.
7. Click **Create**.
8. Click **Finish**.
   For more information about reinstalling Windows using the USB recovery drive, see the *Troubleshooting* section of your product's *Service Manual* at www.dell.com/support/manuals.

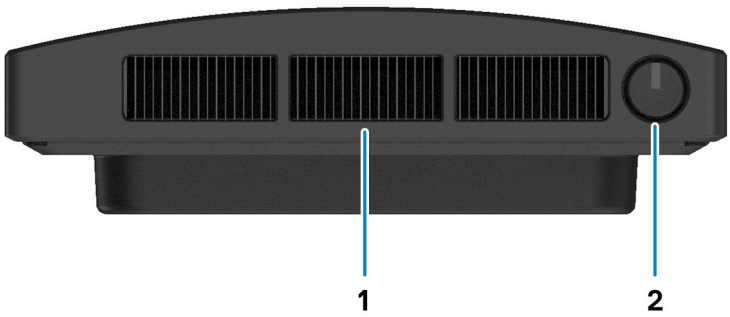
3

View of OptiPlex 3090 Ultra

Topics:

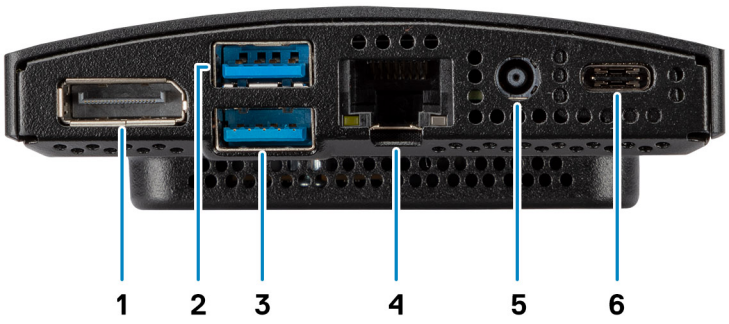
- Top
- Bottom
- Left
- Right
- Front and back
- Stands view
- System board layout

Top



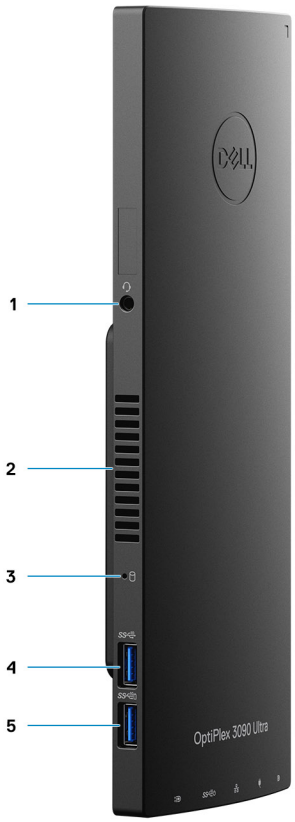
1. Fan vent
2. Power button

Bottom



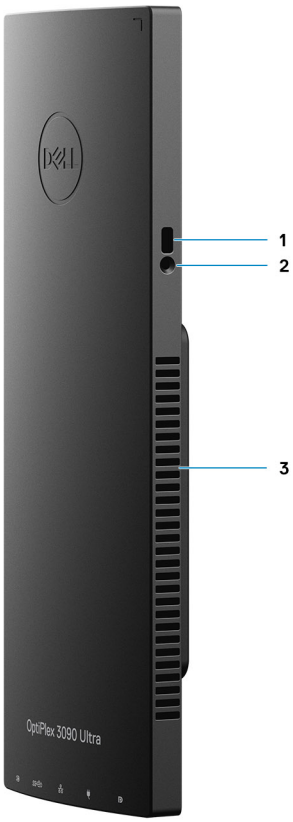
1. DisplayPort 1.4 + + HBR2
2. 1 USB 3.2 Gen 2 Type-A ports with SmartPower On
3. 1 USB 3.2 Gen 2 Type-A ports with SmartPower On
4. RJ45 Ethernet port
5. DC-in port
6. 1 USB 3.2 Gen 2 Type-C port with Display Port Alt Mode/Power delivery

Left



1. Headset/Universal Audio Jack
2. Fan vent
3. Hard-drive status LED
4. 1 USB 3.2 Gen 2 Type-A port
5. 1 USB 3.2 Gen 2 Type-A port with PowerShare

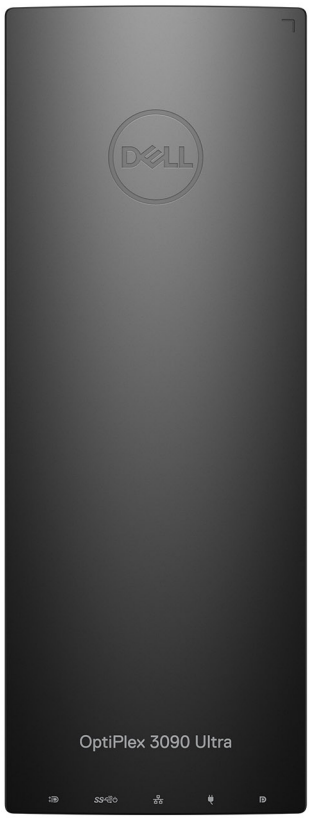
Right



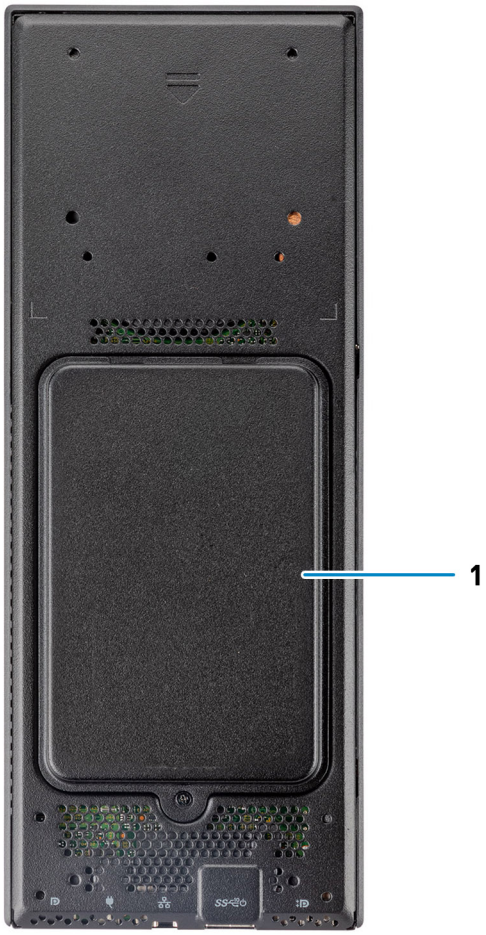
1. Kensington lock slot
2. Security screw lock slot
3. Air vents

Front and back

Front



Back



1. Hard drive cover

Stands view

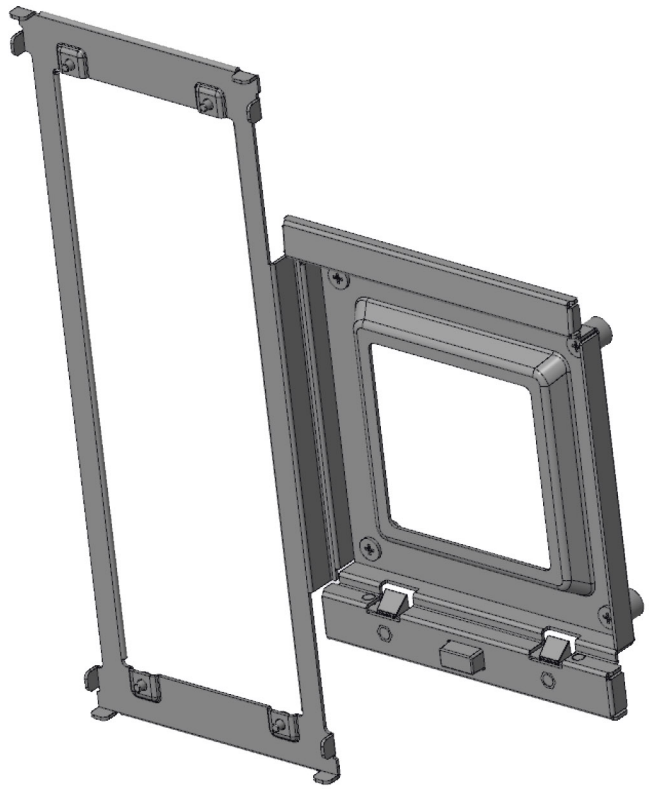
Fixed stand:

Pro 1.0 Height-adjustable stand:

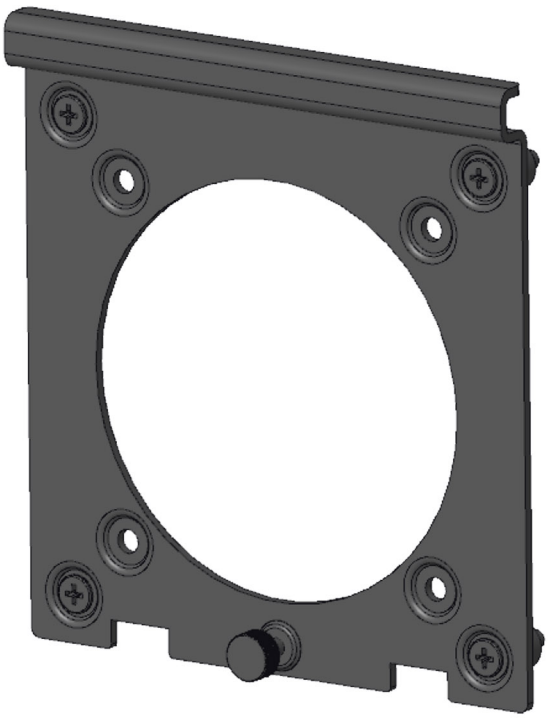
Pro 2.0 Height Adjustable Stand Standard:

Pro 2.0 Height Adjustable Stand Large:

Offset VESA Mount:



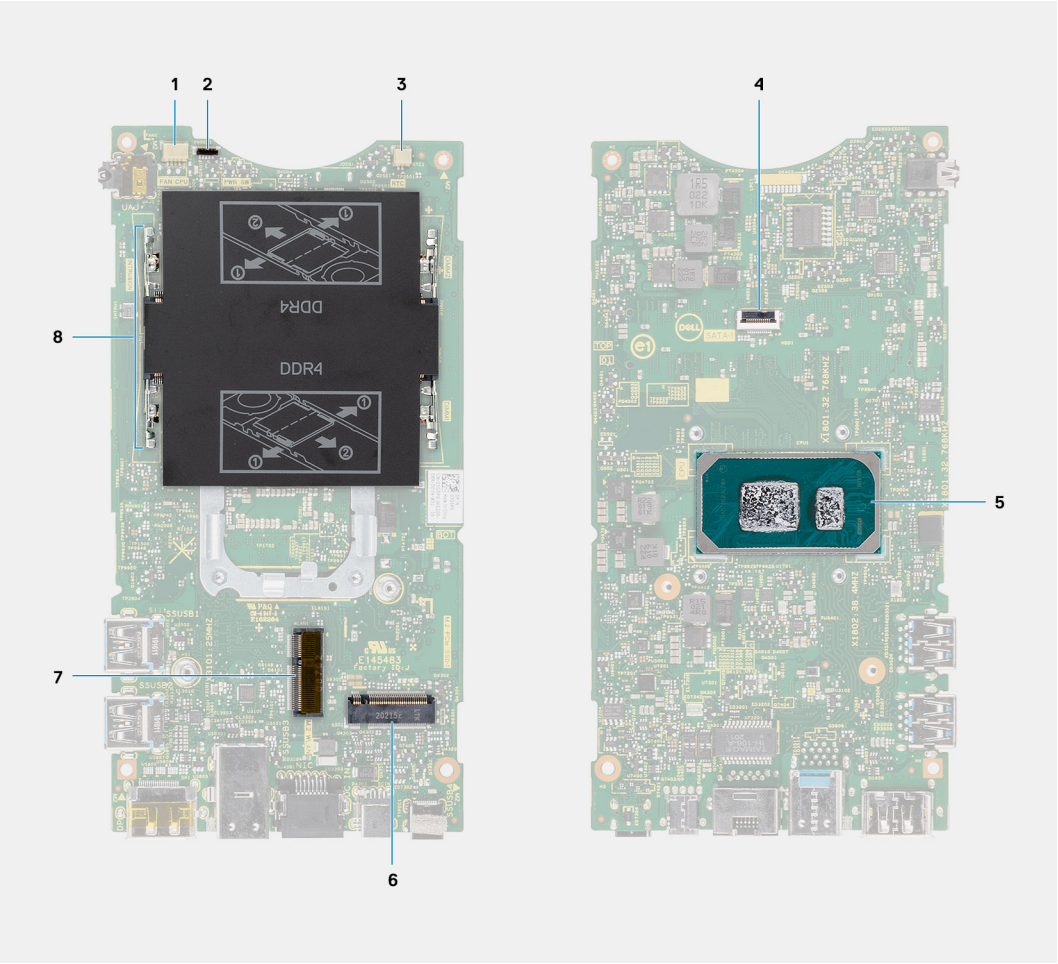
VESA Adapter for Pro2.0 Height Adjustable Stand:



VESA Adapter for Pro1.0 Height Adjustable Stand:

Wall Mount:

System board layout



1. System fan connector
2. Power button connector
3. Coin-cell battery connector
4. Hard-drive connector
5. CPU
6. M.2 SSD PCIe Gen4 connector
7. M.2 WLAN connector
8. Memory-module slots

4

Specifications of OptiPlex 3090 Ultra

Topics:

- Dimensions and weight
- Processor
- Chipset
- Operating system
- Commercial platform Windows 10 N-2 and 5yrs OS supportability
- Memory
- External ports
- Internal slots
- Ethernet
- Wireless module
- Audio
- Storage
- Power adapter
- GPU—Integrated
- Powering the system
- Type-C display settings
- Dell power button sync
- Data security
- Computer environment
- Energy Star and Trusted Platform Module (TPM)
- Smart power enablement

Dimensions and weight

Table 1. Dimensions and weight

Description	Values
Height:	256.20 mm (10.09 in.)
Width	96.10 mm (3.78 in.)
Depth	• Without hard drive: 19.70 mm (0.78 in.) • With hard drive: 27.74 mm (1.09 in.)
Weight	• Minimum 0.51 kg (1.13 lb) • Maximum 0.65 kg (1.43 lb) **NOTE:** The weight of your computer depends on the configuration ordered and the manufacturing variability.

Processor

The following table lists the details of the processors supported by your OptiPlex 3090 Ultra.

Table 2. Processor

Description	Option one	Option two	Option three	Option four
Processor type	11th Generation Intel Core i3-1115G4	11th Generation Intel Core i3-1115G4E	11th Generation Intel Core i5-1145G7	Intel Celeron 6305
Processor wattage	15 W	15 W	15 W	15 W
Processor core count	2	2	4	2
Processor thread count	4	4	8	2
Processor speed	3.0 GHz to 4.1 GHz	2.2 GHz to 3.9 GHz	2.6 GHz to 4.4 GHz	Up to 1.80 GHz
Processor cache	6 MB	6 MB	8 MB	4 MB
Integrated graphics	Intel UHD Graphics	Intel UHD Graphics	Intel IrisXe Graphics at 80EU	Intel UHD Graphics

Chipset

Table 3. Chipset

Description	Values
Chipset	Tiger Lake PCH-LP (Integrated with the processor)
Processor	11th Generation Intel Core i3/i5/Celeron
DRAM bus width	64-bit
Flash EPROM	32 MB
PCIe bus	Up to Gen4

Operating system

- Windows 10 Pro, 64-bit
- Windows 10 Home, 64-bit
- Windows 10 Pro Education, 64-bit
- Windows 10 CMIT Government Edition (CMGE) v10
- Windows 10 IoT Enterprise 2019, LTSC (OEM only)
- Ubuntu Linux 20.04 LTS, 64-bit

Commercial platform Windows 10 N-2 and 5yrs OS supportability

All newly introduced 2020 and later commercial platforms (Latitude, OptiPlex, and Precision) will qualify and ship with the most current factory installed Semi-Annual Channel Windows 10 version (N) and qualify (but not ship) the previous two versions (N-1,

N-2). This device platform, **OptiPlex 3090 Ultra** will RTS with Windows 10 version (20H2, 20H1, 19H2) 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 10, Dell will continue to test the commercial platform with coming Windows 10 releases during device production and for five years post-production, including both fall and spring releases from Microsoft.

Please reference the Dell Windows as a Service (WaaS) website for additional information on N-2 and 5 year Windows OS supportability. Website can be found at this link: https://www.dell.com/support/article/us/en/04/qna44484/dell-windows-as-a-service-waas-supported-products?lang=en.

This website also includes a matrix of other platforms qualified on specific versions of Windows 10.

Memory

Table 4. Memory specifications

Description	Values
Slots	Two SODIMM slots
Type	Single-channel DDR4
Speed	3200 MHz
Maximum memory	64 GB
Minimum memory	4 GB
Memory size per slot	4 GB, 8 GB, 16 GB, 32 GB
Configurations supported	• 4 GB, 1 x 4 GB, DDR4, 3200 MHz, single-channel • 8 GB, 1 x 8 GB, DDR4, 3200 MHz, single-channel • 8 GB, 2 x 4 GB, DDR4, 3200 MHz, single-channel • 16 GB, 1 x 16 GB, DDR4, 3200 MHz, single-channel • 16 GB, 2 x 8 GB, DDR4, 3200 MHz, single-channel • 32 GB, 1 x 32 GB, DDR4, 3200 MHz, single-channel • 32 GB, 2 x 16 GB, DDR4, 3200 MHz, single-channel • 64 GB, 2 x 32 GB, DDR4, 3200 MHz, single-channel

External ports

The following table lists the external ports of your OptiPlex 3090 Ultra.

Table 5. External ports

Description	Values
Network port	1 RJ-45 Ethernet port
USB ports	• 1 USB 3.2 Gen 2 Type-A port with PowerShare (side) • 1 USB 3.2 Gen 2 Type-A port (side) • 2 USB 3.2 Gen 2 Type-A with SmartPower On (rear) • 1 USB 3.2 Gen 2 Type-C port with Display Port Alt Mode/ Power delivery (rear)
Audio port	1 Headset/Universal Audio Jack
Video port	1 DisplayPort 1.4 + + HBR2 port
Media-card reader	Not supported

Table 5. External ports (continued)

Description	Values
Power-adapter port	4.50 mm x 2.90 mm DC-in port
Security-cable slot	• 1 Kensington lock slot • 1 Security screw hole to secure cover • Chassis Intrusion Switch

Internal slots

Table 6. Internal slots

Description	Values
Internal:	
M.2	• 1 M.2 2230 slot for WiFi and Bluetooth card • 1 M.2 2230 slot for PCIe solid-state drive **NOTE:** To learn more about the features of different types of M.2 cards, see the knowledge base article SLN301626.
SATA	1 SATA 3.0 FFC connector for hard drive

Ethernet

Table 7. Ethernet specifications

Description	Values
Model number	Realtek RTL8111HS
Transfer rate	10/100/1000 Mbps

Wireless module

The following table lists the Wireless Local Area Network (WLAN) module specifications of your OptiPlex 3090 Ultra.

Table 8. Wireless module specifications

Description	Option one	Option two	Option three
Model number	Qualcomm QCA61x4A	Intel Wi-Fi 6 AX201	Qualcomm QCA9377
Transfer rate	Up to 867 Mbps	Up to 2.4 Gbps	Up to 433 Mbps
Frequency bands supported	2.4 GHz, 5 GHz	2.4 GHz, 5 GHz	2.4 GHz, 5 GHz
Wireless standards	• Wi-Fi 802.11 a/b/g • Wi-Fi 4 (WiFi 802.11n) • Wi-Fi 5 (WiFi 802.11ac)	• Wi-Fi 802.11 a/b/g • Wi-Fi 4 (Wi-Fi 802.11n) • Wi-Fi 5 (Wi-Fi 802.11ac) • Wi-Fi 6 (Wi-Fi 802.11ax)	• Wi-Fi 802.11 a/b/g • Wi-Fi 4 (WiFi 802.11n) • Wi-Fi 5 (WiFi 802.11ac)
Encryption	• 64-bit/128-bit WEP	• 64-bit/128-bit WEP	• 64-bit/128-bit WEP

Table 8. Wireless module specifications (continued)

Description	Option one	Option two	Option three
	• AES-CCMP • TKIP	• AES-CCMP • TKIP	• AES-CCMP • TKIP
Bluetooth	Bluetooth 5.0	Bluetooth 5.1	Bluetooth 5.0

Audio

Table 9. Audio specifications

Description	Values
Controller	Realtek ALC3204-CG
Stereo conversion	Supported
Internal interface	High definition audio interface
External interface	Universal Audio Jack
Speakers	Not applicable

Storage

This section lists the storage options on your OptiPlex 3090 Ultra.

Your computer supports the following configuration:

- One M.2 2230 solid-state drive
- One M.2 2230 solid-state drive and One 2.5-inch, 7 mm hard drive
- One 2.5-inch, 7 mm hard drive
- One 32/64 GB eMMC - supported on Ubuntu only

Table 10. Storage specifications

Storage type	Interface type	Capacity
2.5-inch 5400 RPM hard drive	SATA AHCI, upto 6 Gbps (SATA 3.0)	Up to 2 TB
2.5-inch 7200 RPM hard drive	SATA AHCI, upto 6 Gbps (SATA 3.0)	Up to 1 TB
2.5-inch 7200 RPM FIPS Self Encrypting Opal 2.0 hard drive	FIPS, upto 6 Gbps (SATA 3.0)	500 GB
M.2 PCIe NVMe Class 35 solid-state drive	Gen 3 PCIe x4 NVMe	Up to 1 TB
M.2 PCIe NVMe Class 35 Self Encrypting Opal 2.0 solid-state drive	Gen 3 PCIe x4 NVMe	256 GB
eMMC	eMMC	Up to 64 GB

Power adapter

The following table lists the power adapter specifications of your OptiPlex 3090 Ultra.

Table 11. Power adapter specifications

Description		Values
Type		65 W
Connector dimensions:		
	External diameter	4.50 mm
	Internal diameter	2.90 mm
Input voltage		100 VAC-240 VAC
Input frequency		50 Hz-60 Hz
Input current (maximum)		1.60 A /1.70 A
Output current (continuous)		3.34 A
Rated output voltage		19.50 VDC
Temperature range:		
	Operating	0°C to 40°C (32°F to 104°F)
	Storage	-40°C to 70°C (-40°F to 158°F)

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your OptiPlex 3090 Ultra.

Table 12. GPU—Integrated

Controller	External display support	Memory size	Processor
Intel UHD Graphics	• Up to four displays supported via DisplayPort Multi-Streaming Technology (MST) • One DisplayPort 1.4 support over USB 3.2 Type-C port • One DisplayPort 1.4 ++ HBR2 support over rear standard DP port	Shared system memory	11th Generation Intel Core i3/ Celeron processor
Intel IrisXe Graphics	• Up to four displays supported via DisplayPort Multi-Streaming Technology (MST) • One DisplayPort 1.4 support over USB 3.2 Type-C port	Shared system memory	11th Generation Intel Core i5 processor

Table 12. GPU—Integrated (continued)

Controller	External display support	Memory size	Processor
	• One DisplayPort 1.4 ++ HBR2 support over rear standard DP port		

Powering the system

This system can be powered using a 65 W adapter (4.5 mm input power source) or through the USB Type-C cable connected to a display capable of providing power delivery of 65 W or greater. During normal operation, when the device is connected with a single power source (primary power source), connecting a second power source and disconnecting the primary power source will shut down the device. However, if the secondary power source is disconnected while the primary power source is connected, the system continues to operate normally.

When the device is powered with both the power sources—AC adapter and USB Type-C cable, the AC adapter is the primary power source and USB Type-C is the secondary power source. Disconnecting the AC adapter will shut down the system. If the secondary power source is disconnected, the system continues to operate normally.

NOTE: Hotswap between the AC adapter and USB Type-C power source is not supported.

Table 13. Powering the system

Primary Power Source	Secondary power source connected	Power source disconnected	Operation
AC Adapter	Rear Type-C	AC Adapter	Shut down
AC Adapter	Rear Type-C	Rear Type-C	Normal operation
Rear Type-C	AC Adapter	AC Adapter	Normal operation
Rear Type-C	AC Adapter	Rear Type-C	Shut down

Type-C display settings

When using a Dell USB Type-C display to power on your OptiPlex 3090 Ultra, to avoid any power loss to the device when the display is turned off or on Standby mode, ensure that the **Always on USB-C Charging setting** on the display is enabled.

When turning on the Dell USB Type-C display for the first time, the **Easy initial setup** is displayed. Click **Yes**, to enable the **Always on USB-C charging** option.

If you miss enabling the option on Easy Initial setup window, then you can enable the setting using the on-screen display menu available on the display. For more information on enabling the option, see the documentation that is shipped with your display.

NOTE: The "USB-C Always On Charging" firmware option may not be present on all Dell USB Type-C displays. You can enable the USB-C Always On charging feature only after you update the firmware. Download the Dell display firmware, at Dell.com/support.

NOTE: Type-C display settings will be applicable only with the monitors of CY20. The C-series or CY21 monitors are enabled with Dell Power Button Sync and therefore do not require this setting.

Dell power button sync

The C-series or CY21 monitors are enabled with Dell power button sync feature to control computer power state from monitor power button. This feature is compatible with Dell OptiPlex 3090 Ultra platform, and is only supported over USB Type-C interface. The user needs to establish a sync between the computer and the Dell power button sync enabled monitor by configuring the control panel of the computer for the first time.

To setup the Dell power button sync for the first time, follow the below instructions in the control panel of Dell OptiPlex 3090 Ultra computer.

1. Open Control Panel.
2. Select **Hardware and Sound** option.
3. Select **Power Options** from the list.
4. In the Systems Settings page, you can choose the power settings required for the computer.
5. For the option **When I press the power button:**, you can select Sleep/Hibernate/Shut down.

NOTE: Do not select the option "**Do nothing**" from the drop down. This will prevent the monitor power button to sync with the computer power state.

NOTE: Re-configuring the control panel settings is not required when connecting the computer and the monitor for the next time, as the computer will automatically contract and sync with the monitor.

Data security

Table 14. Data security

Features	Specifications
Dell Encryption Personal	Optional
Dell Encryption Enterprise	Optional
Dell Encryption External Media	Optional
Dell Data Guardian	Optional
Dell Data Protection | Bitlocker Manager (DDP | BLM)	Optional
Dell Data Protection | Endpoint Security Suite or Dell Endpoint Security Suite Pro	Optional
Dell Data Protection | Endpoint Security Suite Enterprise or Dell Endpoint Security Suite Enterprise	Optional
Dell Threat Defense	Optional
RSA SecureID	Optional
RSA NetWitness Endpoint	Optional
Microsoft Windows Bitlocker Manager	Optional
Windows 10 Device Guard and Credential Guard	Optional
Intel Secure Boot (TXT + TPM) - Launch control policy	Optional
Intel Identity Protection (IPT)	Optional
Intel Guard Technologies & Secure Key	Optional
McAfee Small Business Security subscription, Digitally Delivered	Optional
SafeGuard and Response (powered by Secureworks)	Optional
SafeData: includes Dell Data Guardian, Dell Encryption, Dell Endpoint Security Services	Optional

Computer environment

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

Table 15. 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 15. 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 (maximum)	-15.2 m to 3048 m (-49.87 ft to 10000 ft)	-15.2 m to 10668 m (-49.87 ft to 35000 ft)

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

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

Energy Star and Trusted Platform Module (TPM)

Table 16. Energy star and TPM

Features	Specifications
Energy Star	ENERGY STAR 8.0 qualified Compliant
TPM	• Hardware trusted Platform Module (Discrete TPM Enabled) • Firmware Trusted Platform Module only (Discrete TPM Disabled)
Environmental, Ergonomic and Regulatory standards	Environmental Standards (eco-labels): ENERGY STAR, EPEAT Registered, TCO Certified, CEL, WEEE, Japan Energy Law, South Korea E-standby, South Korea Eco-label, EU RoHS, China RoHS. Please see your local representative or www.dell.com for specific details.

Smart power enablement

Deep sleep is enabled in the BIOS by default. If the system is connected to a USB keyboard and Deep sleep is enabled in the BIOS, the system will not power on or wake from hibernation when a key is pressed on the USB keyboard.

Enable USB Wake support:

1. Press <F12> when the Dell logo appears to initiate a one-time boot menu. Go to BIOS Setup.
2. Select Power Management.
3. Navigate to **USB Wake Support**
4. Turn on **Enable USB Wake Support**
5. Navigate to **Deep Sleep control**
6. Disable **Deep Sleep**

5

Getting help

Topics:

- Contacting Dell

Contacting Dell

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

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Go to **Dell.com/support**.
2. Select your support category.
3. Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
4. Select the appropriate service or support link based on your need.