

Dell Precision 7920 Tower

VGA dongle Installation Guide



Notes, cautions, and warnings

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

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

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

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Before you begin

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 included in this document assumes that the following conditions exist:

- You have read the safety information that shipped with your computer.
- A component can be replaced or, if purchased separately, installed by performing the removal procedure in reverse order.

⚠ WARNING: Disconnect 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 to the power source.

⚠ WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the [Regulatory Compliance Homepage](#)

⚠ CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

⚠ CAUTION: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface at the same time as touching a connector on the back of the computer.

⚠ CAUTION: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

⚠ CAUTION: When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

ⓘ NOTE: The color of your computer and certain components may appear differently than shown in this document.

⚠ CAUTION: System will shut down if side covers are removed while the system is running. The system will not power on if the side cover is removed.

Before working inside your computer

- 1 Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
- 2 Turn off your computer.
- 3 Disconnect all network cables from the computer (if available).

⚠ CAUTION: If your computer has an RJ45 port, disconnect the network cable by first unplugging the cable from your computer.

- 4 Disconnect your computer and all attached devices from their electrical outlets.
- 5 Open the display.
- 6 Press and hold the power button for few seconds, to ground the system board.

⚠ CAUTION: To guard against electrical shock unplug your computer from the electrical outlet before performing Step # 8.

⚠ CAUTION: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface at the same time as touching a connector on the back of the computer.

- 7 Remove any installed ExpressCards or Smart Cards from the appropriate slots.

Safety precautions

The safety precautions chapter details the primary steps to be taken before performing any disassembly instructions.

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

- Turn off the system and all attached peripherals.
- Disconnect the system and all attached peripherals from AC power.
- Disconnect all network cables, telephone, and telecommunications lines from the system.
- Use an ESD field service kit when working inside any desktop to avoid electrostatic discharge (ESD) damage.
- After removing any system component, carefully place the removed component on an anti-static mat.
- Wear shoes with non-conductive rubber soles to reduce the chance of getting electrocuted.

Standby power

Dell products with standby power must be unplugged before you open the case. Systems that incorporate standby power are essentially powered while turned off. The internal power enables the system to be remotely turned on (wake on LAN) and suspended into a sleep mode and has other advanced power management features.

Unplugging, pressing and holding the power button for 15 seconds should discharge 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 through the use of 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 non-metal surface. The wrist strap should be secure and in full contact with your skin, and ensure that you remove all jewelry such as watches, bracelets, or rings prior to bonding 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 DIMMs, and system boards. Very slight charges 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.

Due to the increased density of semiconductors used in recent Dell products, the sensitivity to static damage is now higher than in previous Dell products. For this reason, some previously approved methods of handling parts are no longer applicable.

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 DIMM that has received a static shock and immediately generates a "No POST/No Video" symptom with a beep code 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 DIMM receives a static shock, but the tracing is merely weakened and does not immediately produce outward symptoms 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, etc.

The more difficult type of damage to recognize and troubleshoot is the intermittent (also called latent or "walking wounded") failure.

Perform the following steps to prevent ESD damage:

- Use a wired ESD wrist strap that is properly grounded. The use of wireless anti-static straps is no longer allowed; they 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, ensure that you discharge static electricity from your body.
- 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.

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 mat and to any bare metal on the system being worked on. Once deployed properly, service parts can be removed from the ESD bag and placed directly on the mat. ESD-sensitive items are safe in your hand, on the ESD mat, in the system, or inside a bag.
- **Wrist Strap and Bonding Wire** – The wrist strap and bonding wire can be either directly connected between your wrist and bare metal on the hardware if the ESD mat is not required, or connected to the anti-static mat to protect hardware that is temporarily placed on the mat. The physical connection of the wrist strap and bonding wire between your skin, the ESD mat, and the hardware is known as bonding. Use only Field Service kits with a wrist strap, mat, and bonding wire. Never use wireless wrist straps. Always be aware 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 of an ESD strap are prone to damage over time. When using an unmonitored kit, it is a best practice to regularly test the strap prior to each service call, and at a minimum, test once per week. A wrist strap tester is the best method for doing this test. If you do not have your own wrist strap tester, check with your regional office to find out if they have one. To perform the test, plug the wrist-strap's bonding-wire into the tester while it is strapped to your wrist and push the button to test. A green LED is lit if the test is successful; a red LED is lit and an alarm sounds if the test fails.
- **Insulator Elements** – It is critical to keep ESD sensitive devices, such as plastic heat sink casings, away from internal parts that are insulators and often highly charged.
- **Working Environment** – Before deploying the ESD Field Service kit, assess the situation at the customer location. For example, deploying the kit for a server environment is different than for a desktop or portable environment. Servers are typically installed in a rack within a data center; desktops or portables 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 system 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 part 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 ESD mat, in the system, or inside an anti-static bag.
- **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.

ESD protection summary

It is recommended that all field service technicians use the traditional wired ESD grounding wrist strap and protective anti-static mat at all times when servicing Dell products. In addition, it is critical that technicians keep sensitive parts separate from all insulator parts while performing service and that they use anti-static bags for transporting sensitive components.

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 weight 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 techniques in reverse to set the load down.

After working inside your computer

After you complete any replacement procedure, ensure that you connect external devices, cards, and cables before turning on your computer.

△ CAUTION: To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

- 1 Connect any external devices, such as a port replicator or media base, and replace any cards, such as an ExpressCard.
- 2 Connect any telephone or network cables to your computer.

△ CAUTION: To connect a network cable, first plug the cable into the network device and then plug it into the computer.

- 3 Connect your computer and all attached devices to their electrical outlets.
- 4 Turn on your computer.

VGA dongle

Replacing the 6A VGA power dongles with the 8A VGA power dongles for Precision 7920 Tower

The 6+2 connector adapter/splitter that converts to 2x 6+2 connectors is designed to be used with newer 5820, 7820, 7920 Tower chassis that have the upgraded (8A) supplementary power VGA dongles (or chassis which have been upgraded with the 8A VGA dongle kit described in this document). It should not be used with older (6A connector) Tower chassis. The new upgraded 5820, 7820, 7920 tower chassis launched in May 2019 and can be identified by the CL or RTX designations in the chassis SKU descriptions: For example, 7000 Towers SKU: Precision 7820 or 7920 Tower 950W Chassis CL, and 5000 Towers SKU: Precision 5820 Tower 950W RTX Chassis.

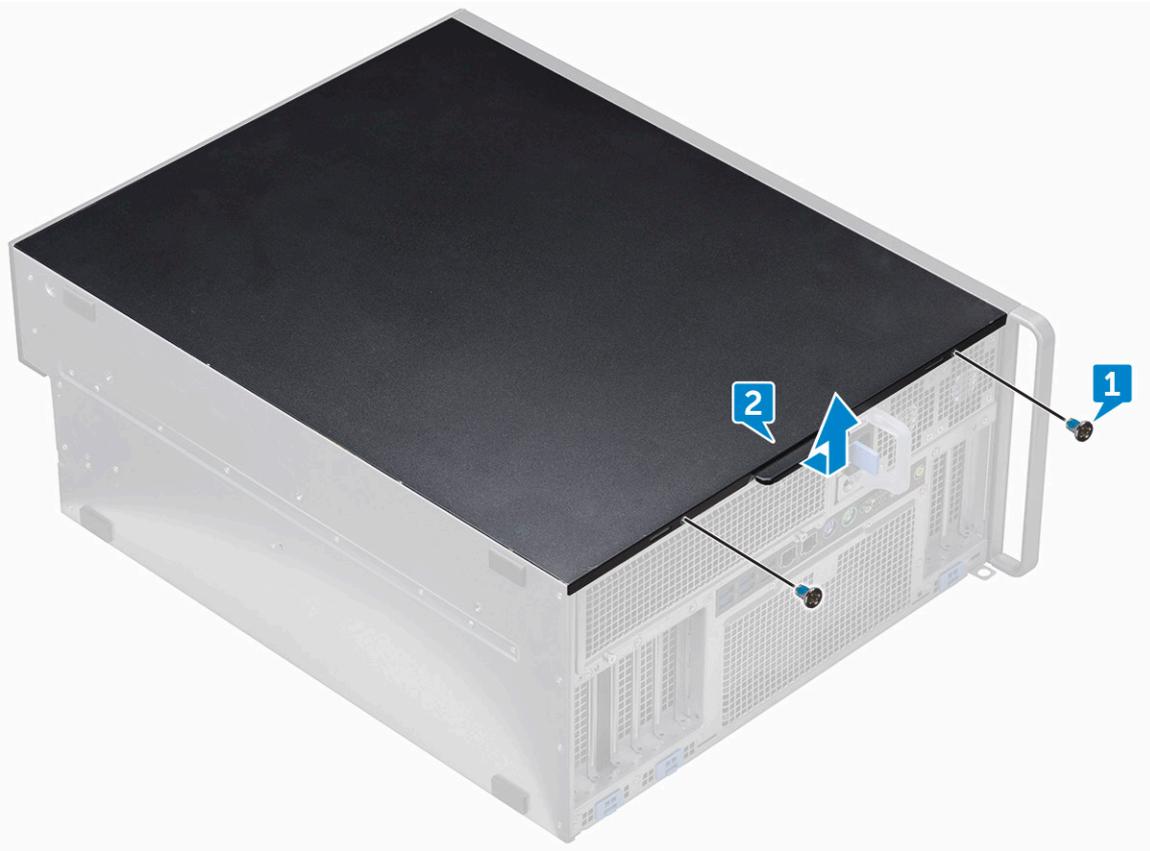
- 1 Follow the procedure in [before working inside your computer](#).

Replacing the 6A VGA power dongles with the 8A VGA power dongles for Precision 7920 Tower

The following are the three 6A VGA cables that must be connected to the system:



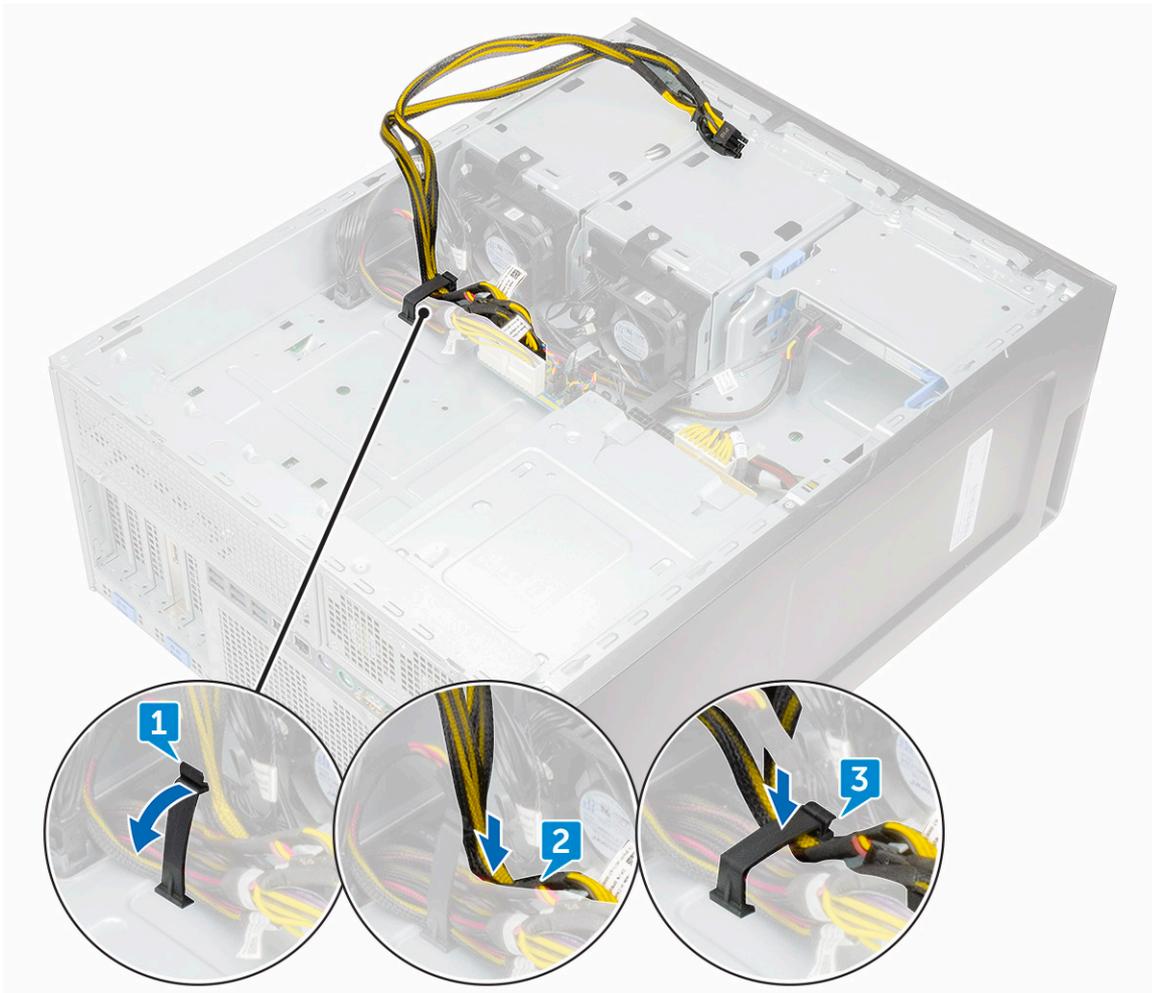
- 2 To remove the side cover, remove the two screws [1] and pull the latch upwards [2] to remove it from the system.



3 To install the two VGA power cables, connect the two VGA power cables to the slots [1] and [2] as shown in the following image:



- 4 Remove the plastic clip outward [1] and route the two VGA power cables by pressing the cables [2]. Press the clip after routing the cables to lock the routed cables [3].



- 5 Connect the other ends of the two VGA power cables to the slots by pressing the cables.



- 6 Connect the third VGA power cable in the slot as shown in the following image. The third cable needs to be connected in the slot which is opposite to the fan assembly.



- 7 Remove the plastic clip outward and route the VGA power cables by pressing the cables. Press the clip after routing the cables to lock the routed cables.
- 8 Connect the other ends of the third VGA power cable to the slot by pressing the cable.

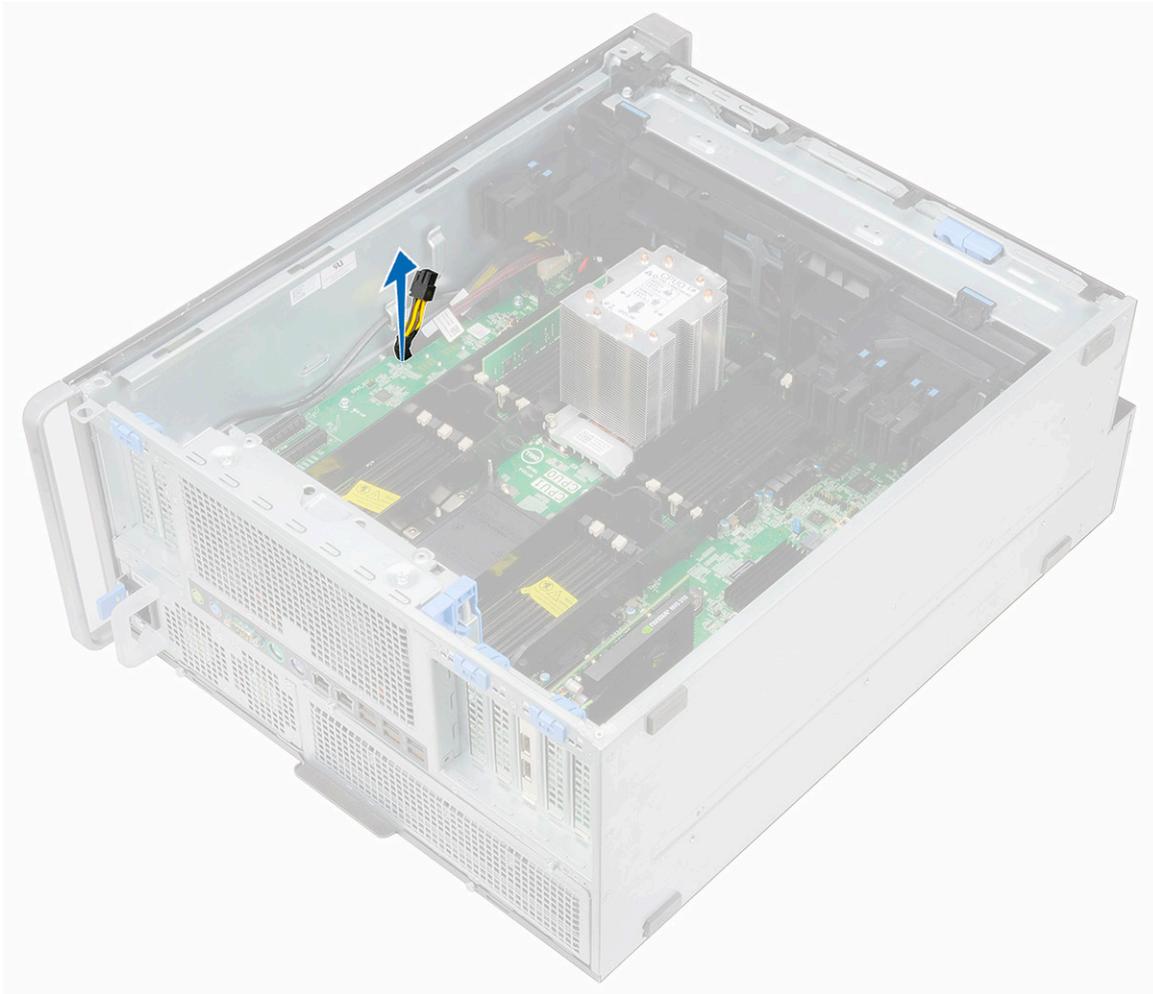


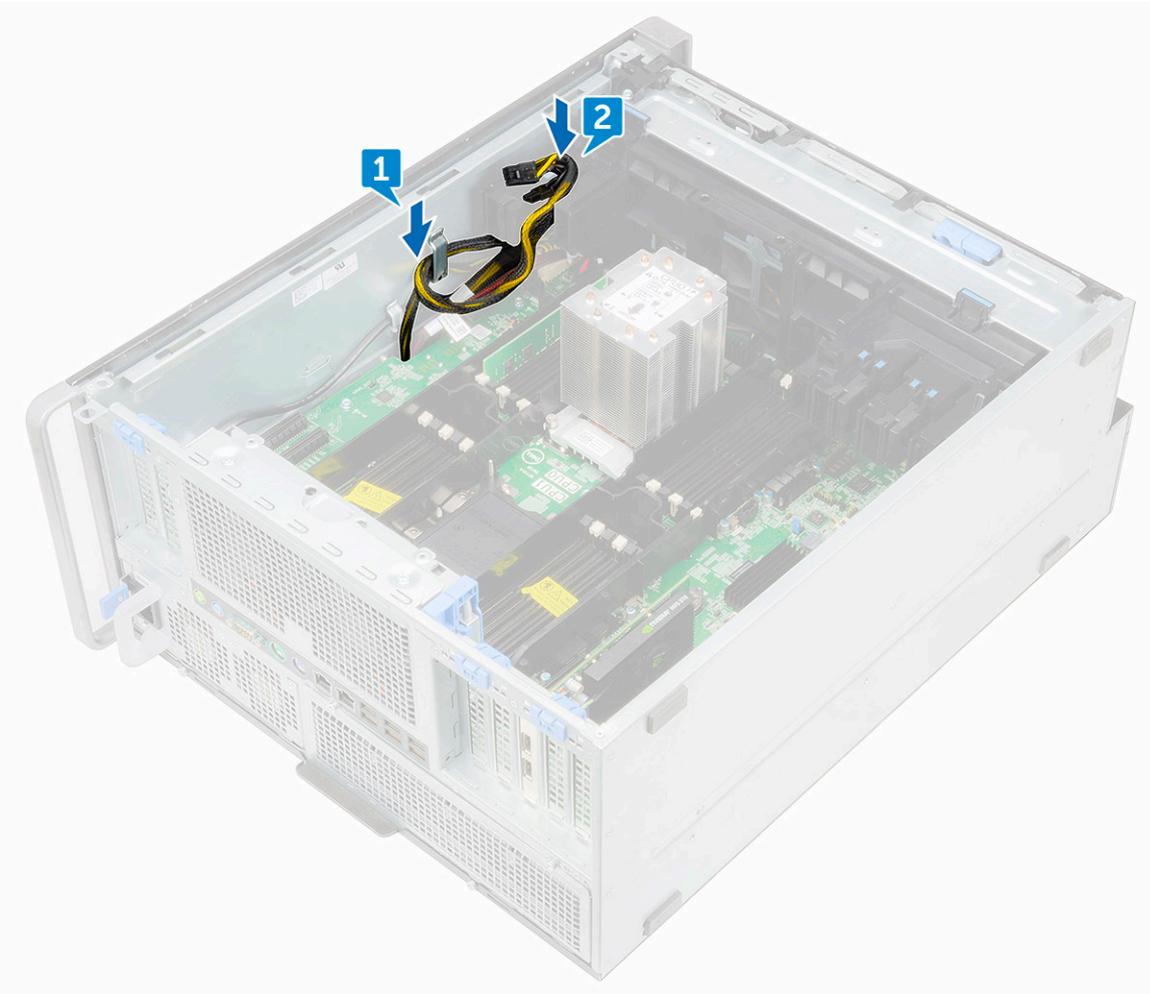
9 Align and install the side cover to the system [1], and install the two screws [2].

⚠ CAUTION: Ensure to install the side cover on the system to prevent any hazards or loss of components.

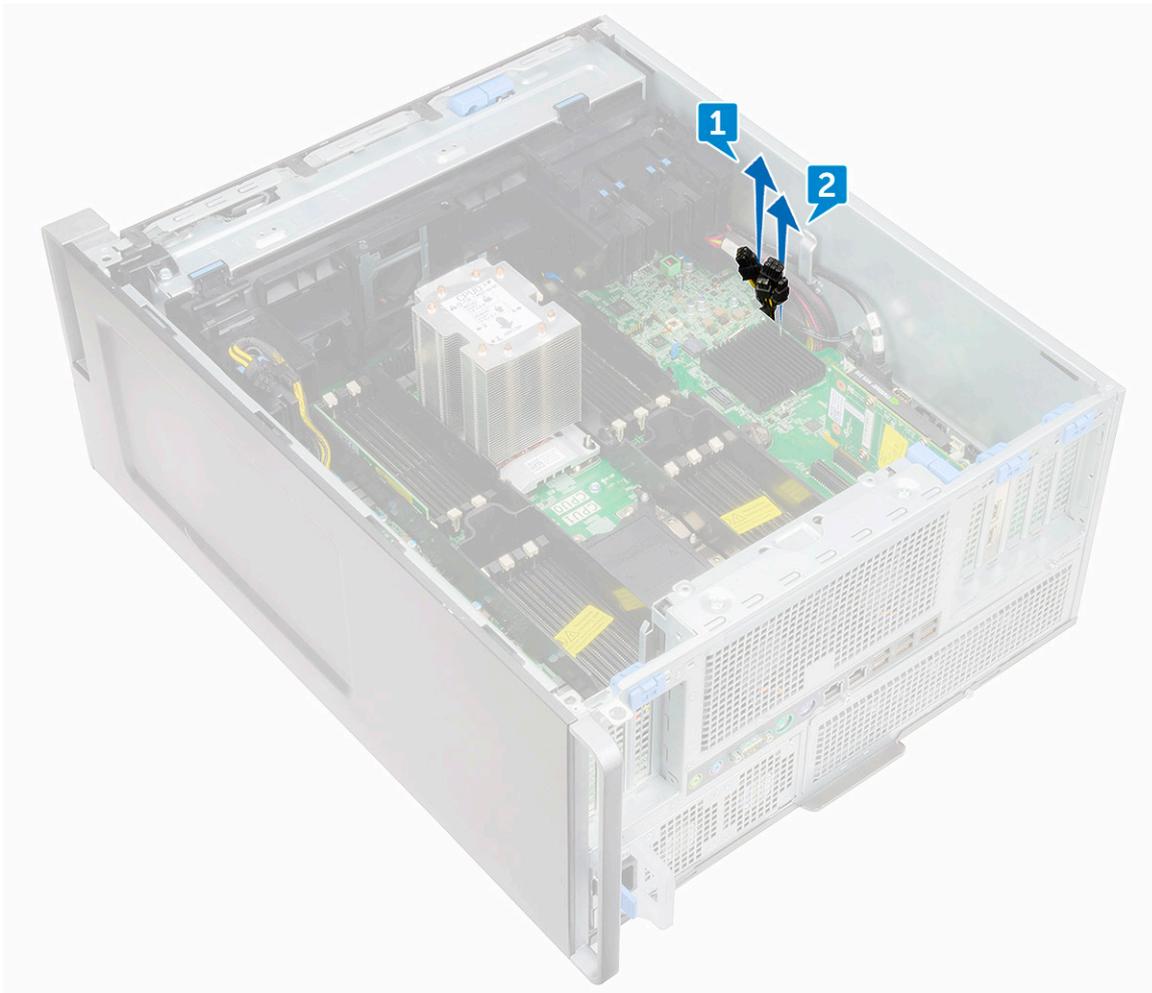


- 10 Remove the side cover on the opposite side of the system and route the three VGA power cables in the latch as shown in following images.





11 Connect the cables to the slots in the system and install the side cover.



⚠ CAUTION: Ensure to install the side cover on the system to prevent any hazards or loss of components.

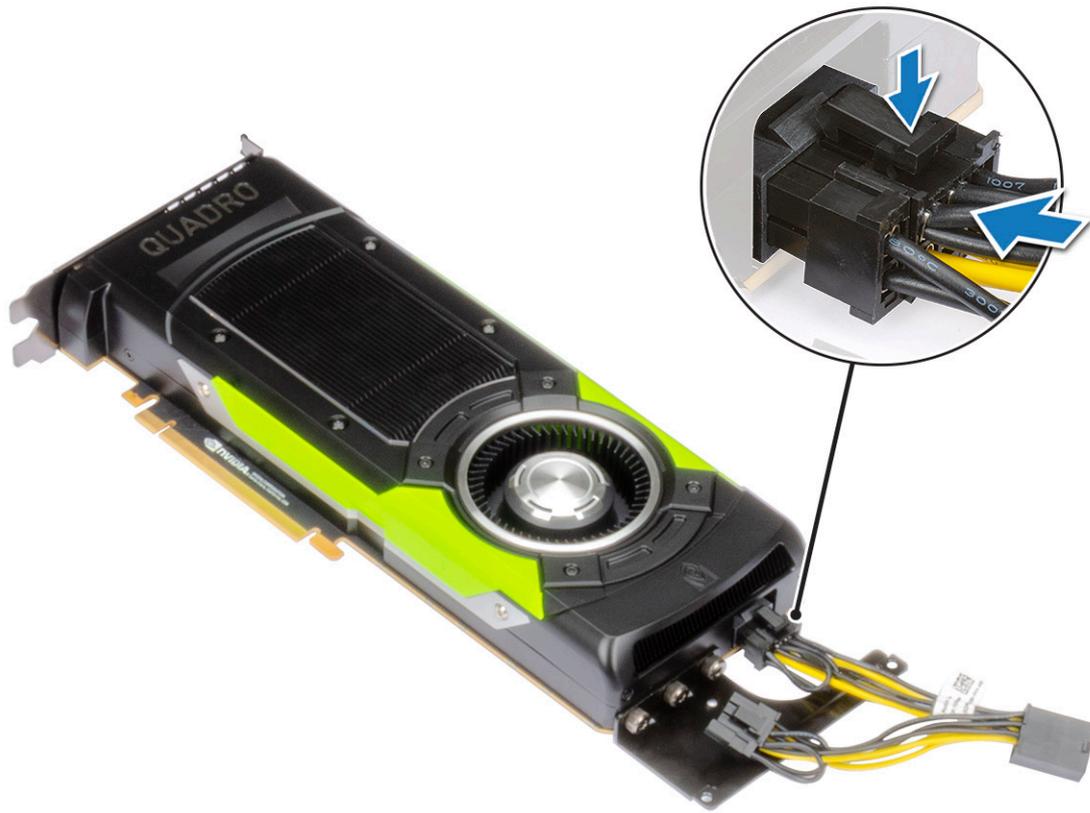
VGA power dongle splitter installation kit

The following components are required to install the VGA dongle:

- 1 Graphics card
- 2 VGA power dongle

Installing the VGA power dongle for Precision 7920 Tower

- 1 Follow the procedure in [before working inside your computer](#).
- 2 Press the tab and connect the VGA power dongle plug into the graphic card.



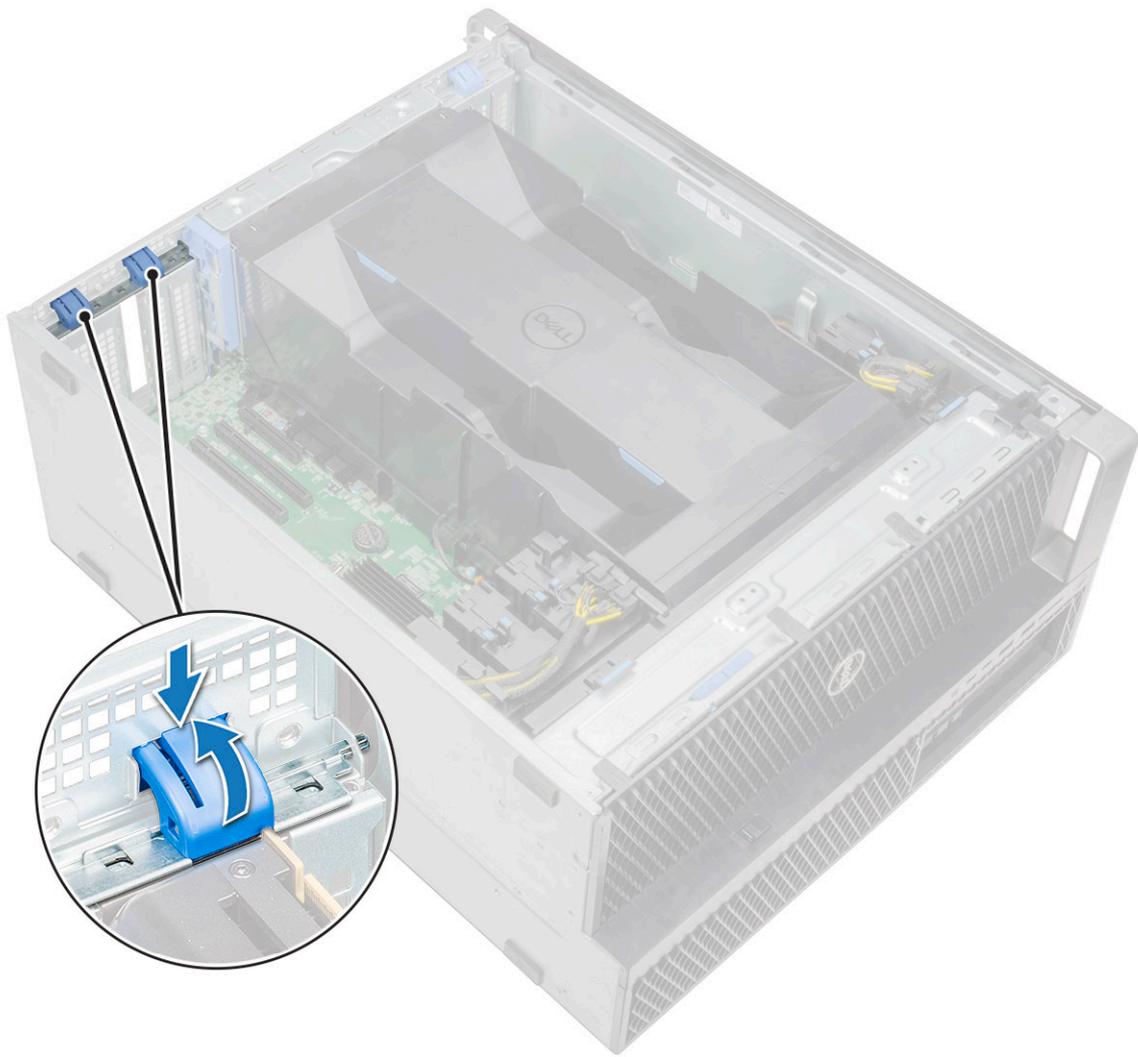
- 3 Remove the side cover:
 - a Press the latch.



b Pull the latch [1] upward and slide the side cover outwards to remove it from the system [2].



- 4 To install two graphics card into 2nd and 4th PCIe slot:
 - a Press and rotate the PCIe latch backward to unlock the filler bracket.
 - b Remove the filler bracket from the slots on the system. You must remove the filler bracket from three slots. The following image shows only one slot 3 as an example.



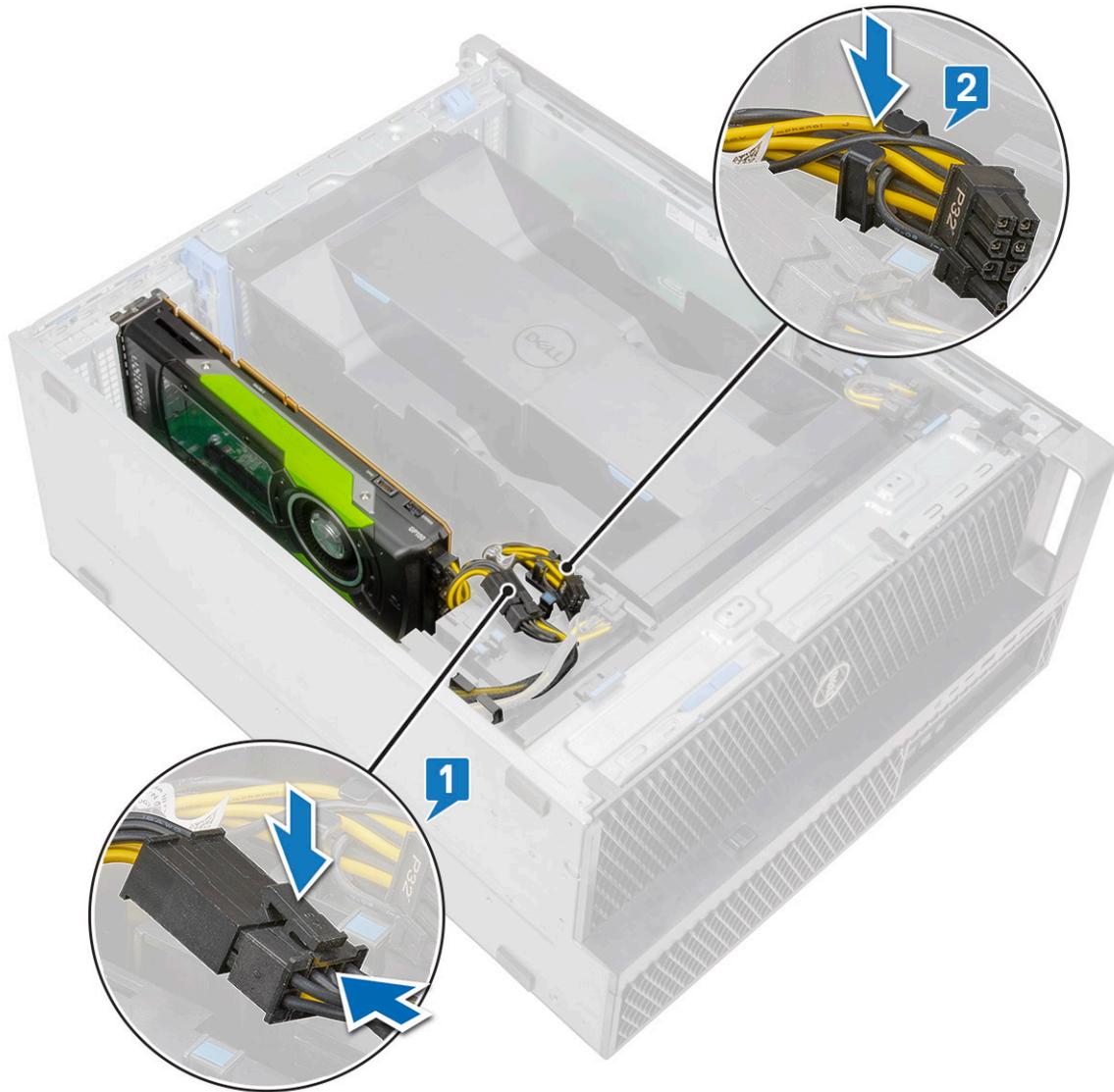
- c Align and place the graphic card to the PCIe slot on the system board. The following image shows the graphic card being placed on PCIe slot 3. You must place the graphics card in PCIe slot 2.



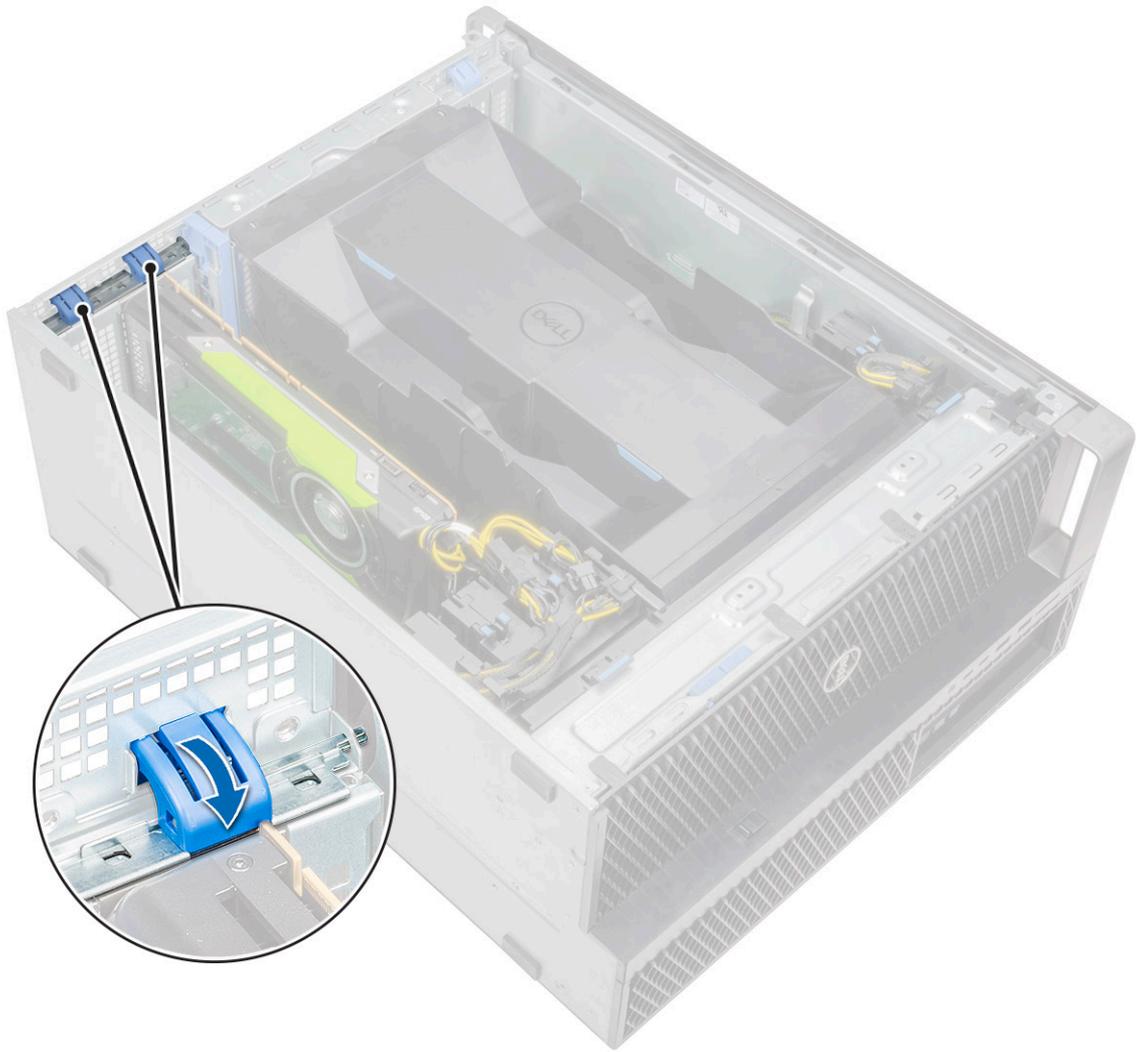
- d Disconnect one of the power cables from the card holder by pressing the tab and pulling it out of the cable slot in the PCIe holder.



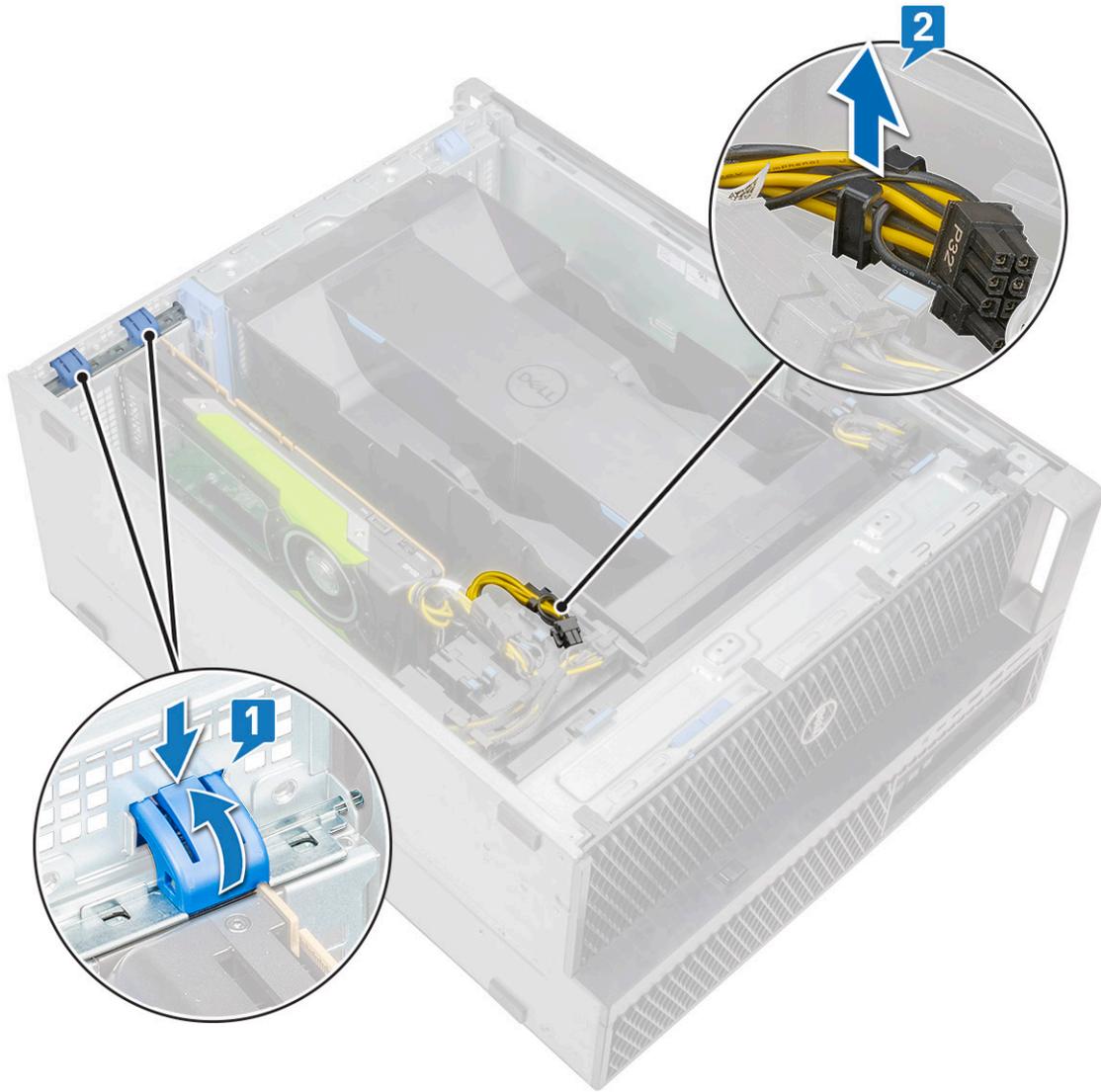
- e Connect one cable of the VGA power dongle, to the power cable disconnected in the previous step [1].
- f Route the other cable of the VGA power dongle to the clip on the card holder [2].



g Lock the blue clip forward to secure the graphic card to the system board.



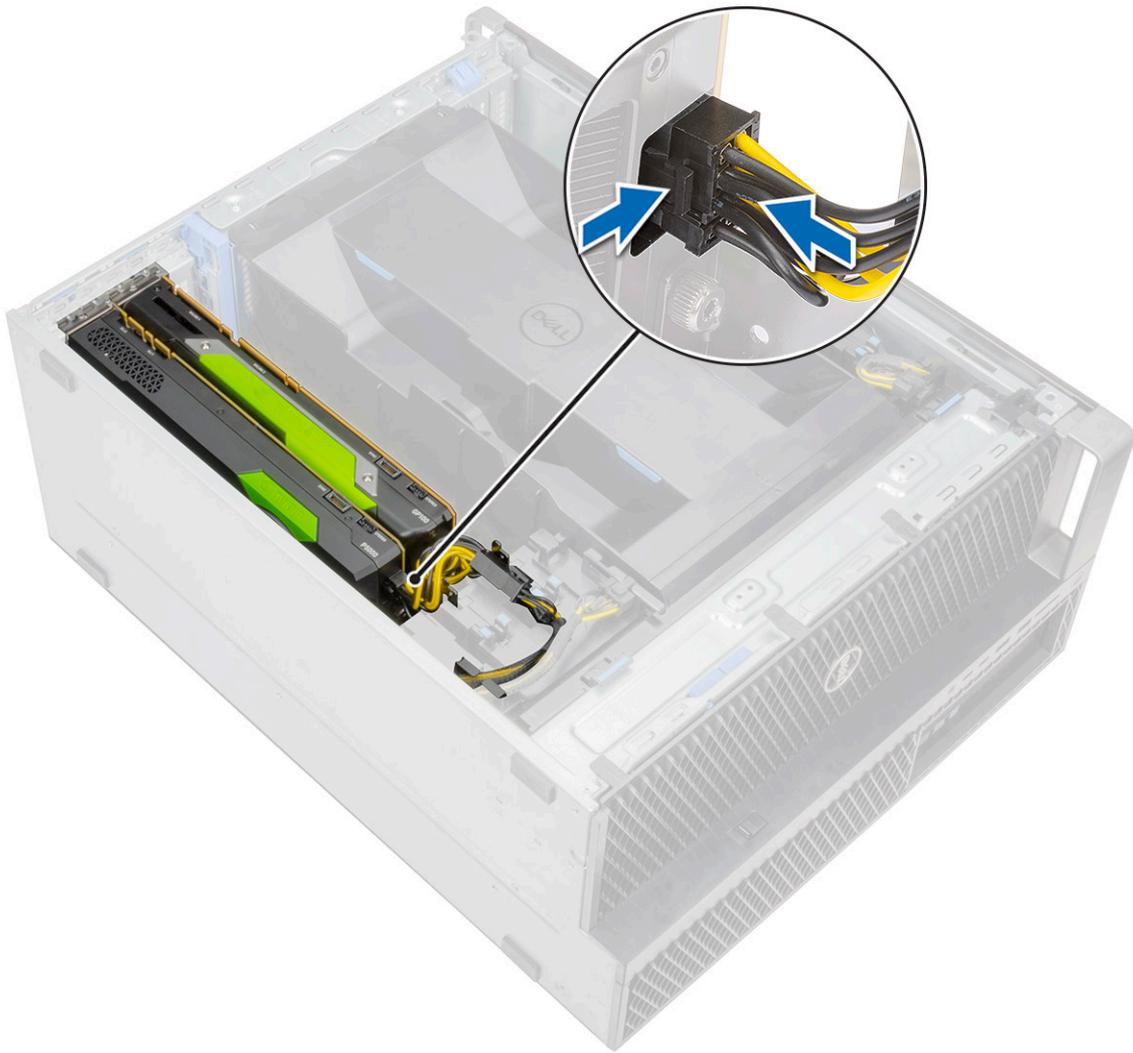
- h Press and rotate the PCIe latch backward to unlock the filler bracket [1].
- i Unroute the cable of the VGA power dongle from the clip on the card holder [2].



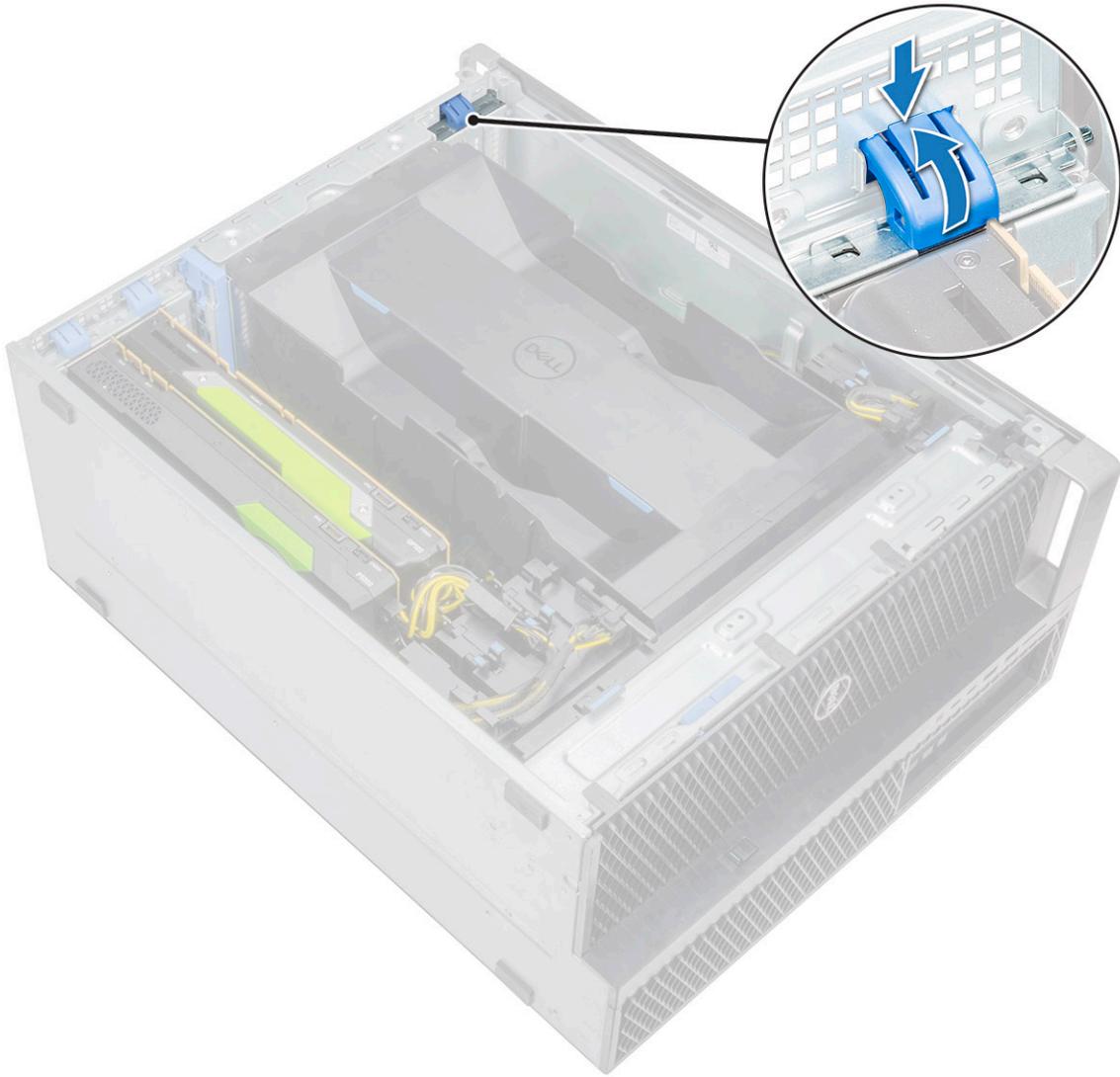
- j Remove the filler bracket from the slots on the system [1].
- k Align and place the second graphic card to the PCIe slot on the system board [2].



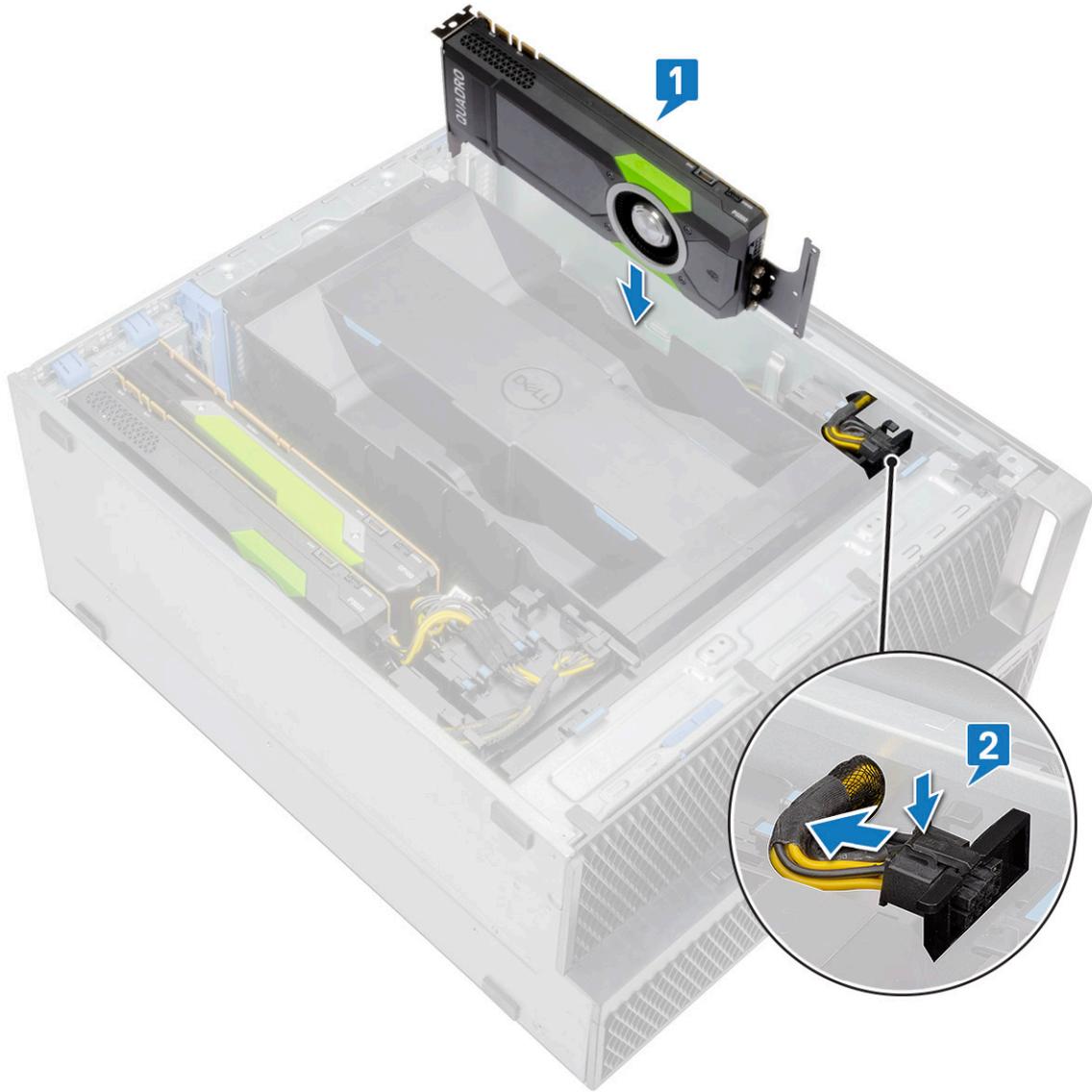
1 Connect the cable of the VGA power dongle to the graphic card.



- 5 To install three graphics card into 2nd, 4th, and 6th PCIe slot:
 - a Follow the above steps to install two graphic cards in the 2nd and 4th PCIe slot.
 - b Press and rotate the 6th PCIe latch backward to unlock the filler bracket.



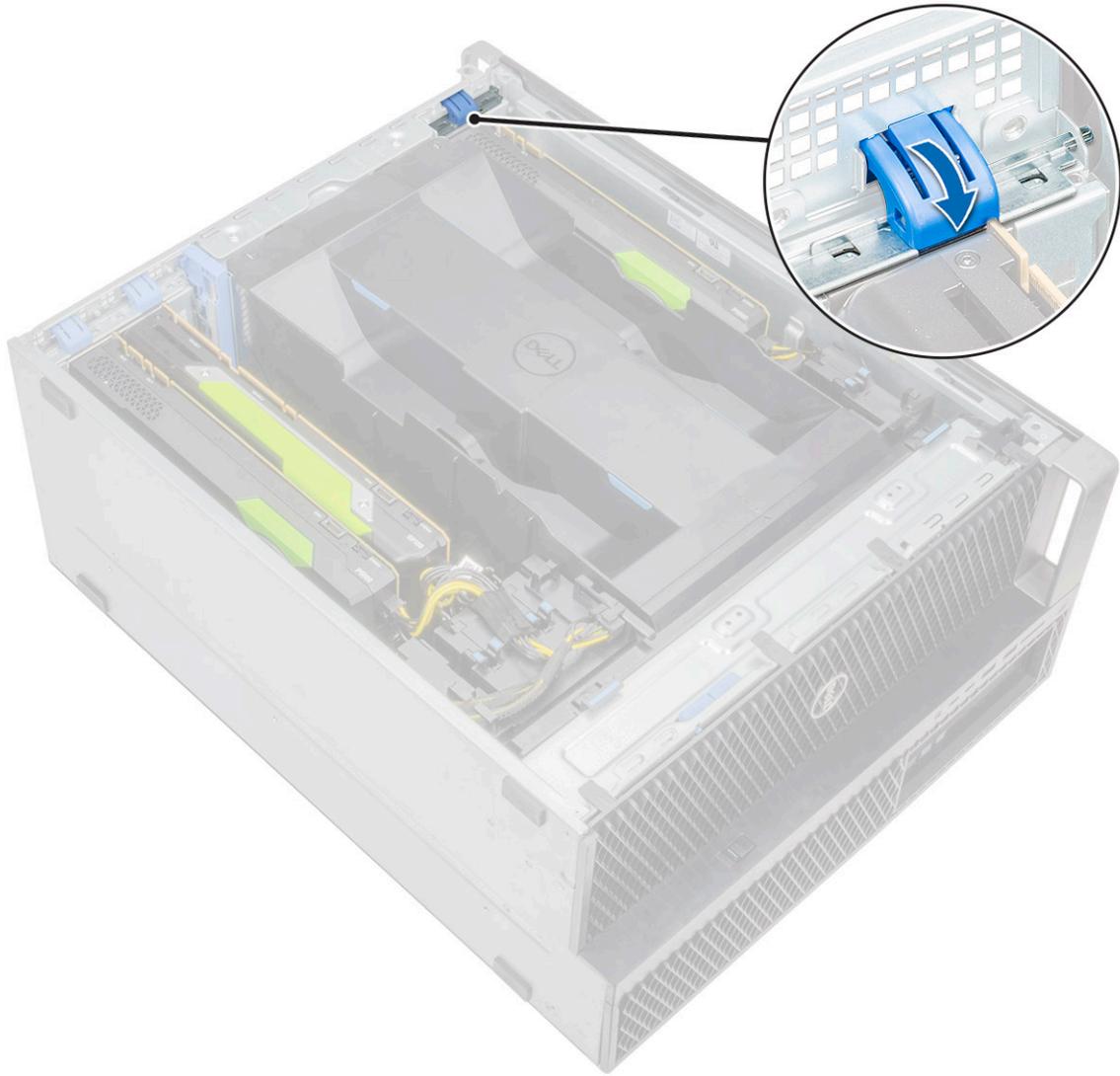
- c Remove the filler bracket from the slots on the system.
- d Align and place the graphic card to the 6th PCIe slot on the system board [1].
- e Disconnect the power cable from the card holder by pressing the tab and pulling it out of the cable slot in the PCIe holder [2].



f Connect the power cable to the graphic card.



g Press and rotate the PCIe latch backward to unlock the filler bracket.



6 Align and install the side cover to the system.



⚠ CAUTION: Ensure to install the side cover on the system to prevent any hazards or loss of components.

Getting help

Contacting Dell

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

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

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