Alienware Aurora Ryzen Edition R14

Service Manual

DELLTechnologies

Notes, cautions, and warnings

(i) **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.**

Contents

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Working inside your computer

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. 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. Disconnect your computer and all attached devices from their electrical outlets.
4. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.

   ⚠ **CAUTION: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.**

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

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.**

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 20 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 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.

> (i) **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

. 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.

(i) **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 parts 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.

Removing and installing components

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

Inside view of your computer
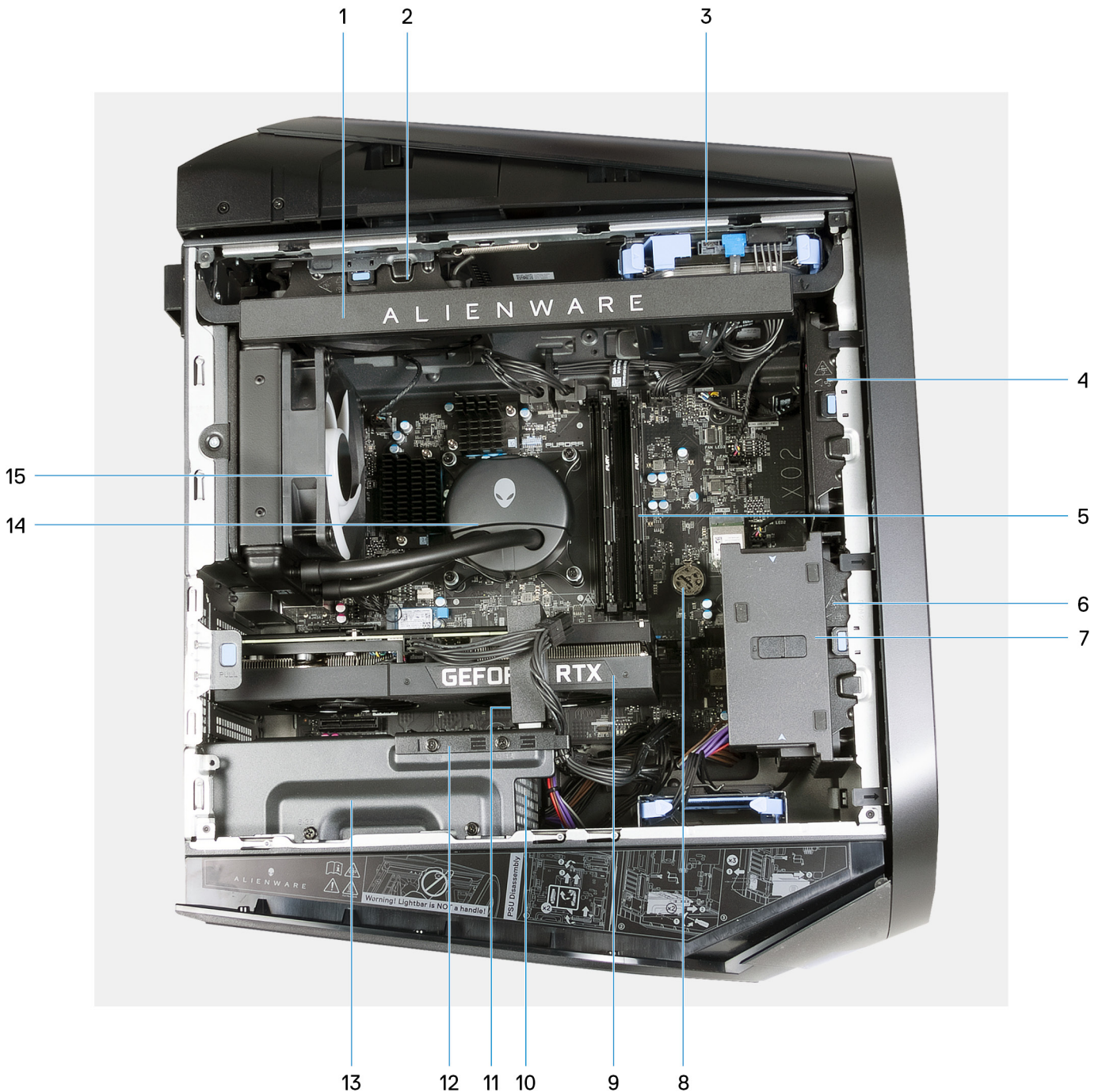
1. Side light (optional)
2. Top-chassis fan (optional)

3. 3.5-inch hard drive
5. Memory module
7. Graphics-card end holder (optional)
9. Graphics card
11. Graphics-card bracket (optional)
13. Power-supply unit bracket
15. Radiator and fan assembly

4. Front-chassis fan (optional)
6. PCIe fan
8. Coin-cell battery
10. Power-supply unit
12. Graphics-card bracket holder (optional)
14. Processor cooler of the processor liquid-cooling assembly

(i) **NOTE:** The optional components may not be present in your computer, depending on its configuration.

1. Processor cooler of the processor fan and heat-sink assembly

(i) **NOTE:** The side light is not featured for the computer that is shown in the image.

System-board components
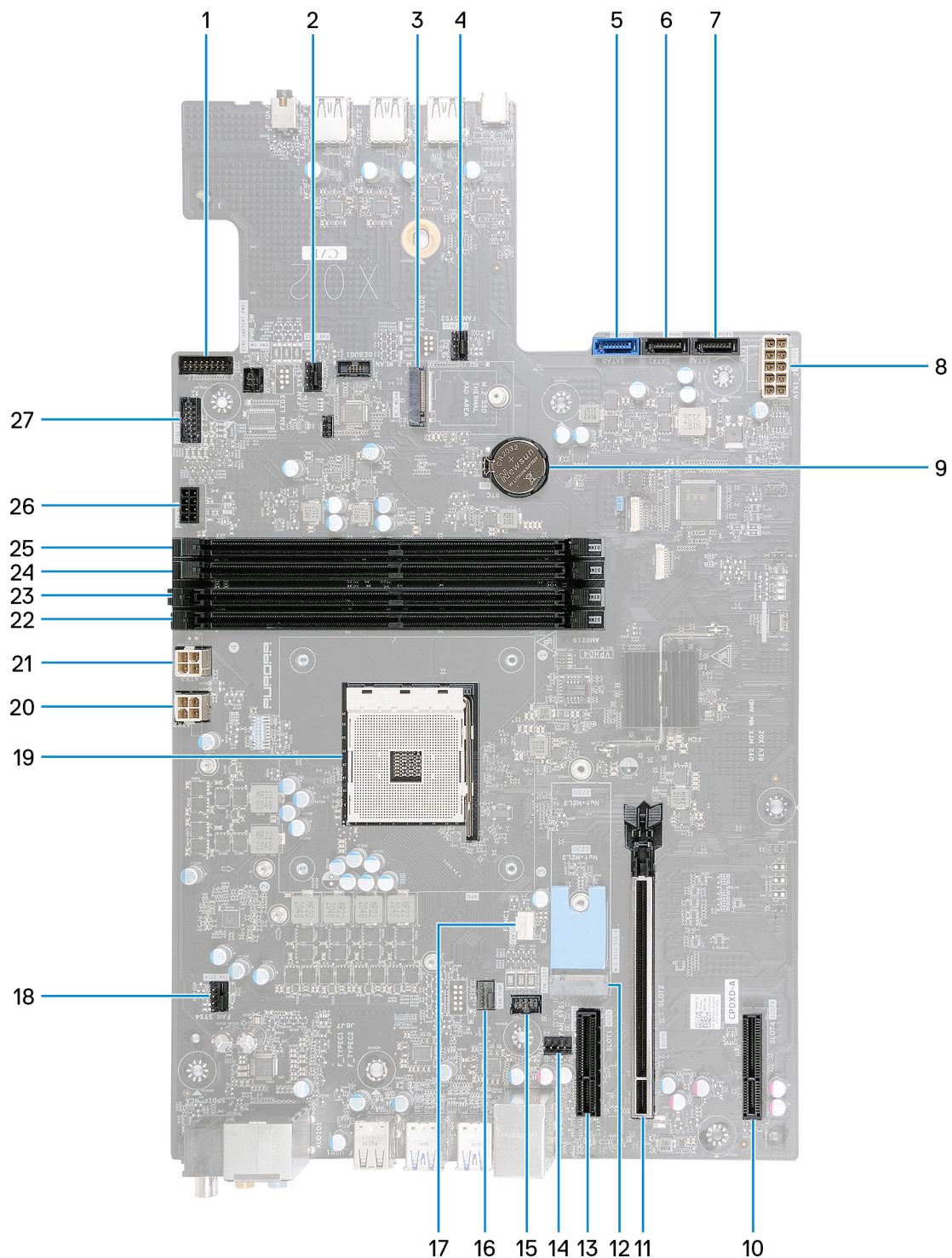
Figure 1. System-board components

1. Ring Ambient Power Button connector
2. FAN_SYS3 connector
3. Wireless-card slot (M.2 WLAN)
4. FAN_SYS2 connector
5. SATA 6 Gbps drive connector (SATA0)
6. SATA 6 Gbps drive connector (SATA1)
7. SATA 6 Gbps drive connector (SATA2)
8. Power-supply connector (ATX1_2)
9. Coin-cell battery
10. PCI-Express x4 slot (SLOT4)
11. PCI-Express x16 mechanical/x16 electrical slot PCIe Gen4 (SLOT2)
12. Solid-state drive slot (M.2 PCIe SSD.0)

13. PCI-Express x4 slot (SLOT1)
15. Fan LED connector (FAN LED1)
17. CPU fan connector
19. CPU socket
21. Power-supply connector (ATX3)
23. Memory-module slot, DIMM 1
25. Memory-module slot, DIMM 2
27. Side light connector

14. Rear-chassis fan connector (FAN_SYS1)
16. Fan pump connector (FAN PUMP)
18. Top-chassis fan connector (FAN_SYS4)
20. Power-supply connector (ATX2)
22. Memory-module slot, DIMM 3
24. Memory-module slot, DIMM 4
26. SATA power connector

Recommended tools

The procedures in this document may require the following tools:

- Philips screwdriver #1
- Flat-head screwdriver
- Plastic scribe

Screw list

(i) **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.

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

(i) **NOTE:** Screw color may vary depending on the configuration ordered.

Table 1. Screw list

Component	Screw type	Quantity	Screw image
Power-supply unit bracket	#6-32x1/4"	2	
Power-supply unit bracket (for computers shipped with clear left-side cover)	#6-32x1/4"	2	
Power-supply unit	#6-32x1/4"	4	
Power-supply unit (for computers shipped with clear left-side cover)	#6-32x1/4"	4	
Side light (for computers shipped with clear left-side cover)	M3x5	2	
Radiator and fan assembly	M3x5	1	
Antennas	M3x3	2	
Top bezel	M3x7	4	

Table 1. Screw list (continued)

Component	Screw type	Quantity	Screw image
Top bezel	#6-32x1/4"	2	
Solid-state drive (M.2 slot)	M2x3	1	
Wireless card	M2x3	1	
Front AlienFX LED board	M3x8	4	
Power-button board	M2x3	1	
System board	#6-32x1/4"	10	

Cable cover

Removing the cable cover

Prerequisites

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

About this task

The following image indicates the location of the cable cover and provides a visual representation of the removal procedure.

(i) **NOTE:** The cable cover is an optional accessory.

Steps

Pull the cable cover from the top to lift the cable cover from the chassis.

Installing the cable cover

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 cable cover and provides a visual representation of the installation procedure.

ⓘ **NOTE:** The cable cover is an optional accessory.

Steps

1. Align the cable cover with the slots at the rear of the chassis.
2. Slide the cable cover back into its place on the rear of the chassis.

Next steps

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

Left-side cover

Removing the left-side cover

Prerequisites

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

About this task

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

(i) **NOTE:** The clear left-side cover is shipped with some computers.

1x
#6x32

Steps

1. Loosen the captive screw (#6-32) that secures the side-cover release latch to the chassis.
2. Pull the side-cover release latch to release the left-side cover away from the chassis.
3. Lift the left-side panel from the chassis.

Installing the left-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 left-side cover and provide a visual representation of the installation procedure.

(i) **NOTE:** The clear left-side cover is shipped with some computers.

1x
#6x32

Steps

1. Locate the tabs on the left-side cover and slots on the chassis.
2. Rotate the left-side cover towards the chassis until it snaps into place.
3. Tighten the captive screw (#6-32) that secures the side-cover release latch to the chassis.

Next steps

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

Top cover

Removing the top cover

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.

About this task

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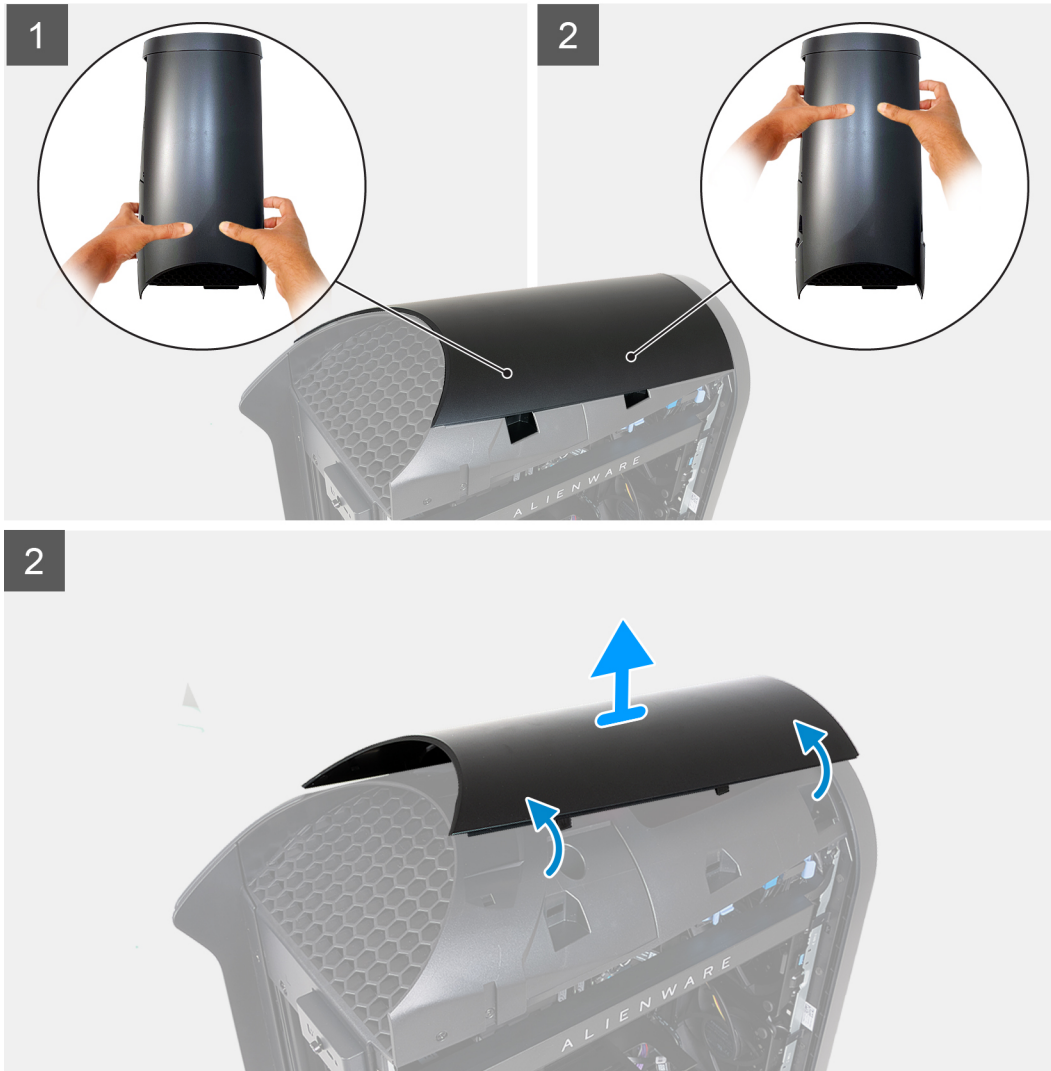
Steps

1. Press your thumbs down at the rear of the top cover, and use your fingers to pull the two rear latches out to loosen the top cover at its rear.

   ⓘ **NOTE:** The top cover is secured tight to the chassis by four latches.

2. Press your thumbs down at the front of the top cover, and use your fingers to pull the two front latches out to loosen the top cover at its front.

3. Press your thumbs down at the middle of the top cover to release the remaining two latches and lift the top cover.

Installing the top 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 top cover and provides a visual representation of the installation procedure.

Steps

Align the tabs on the top cover with the slots on the chassis and snap the top cover into place.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.

Right-side cover

Removing the right-side cover

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.
3. Remove the top cover.

About this task

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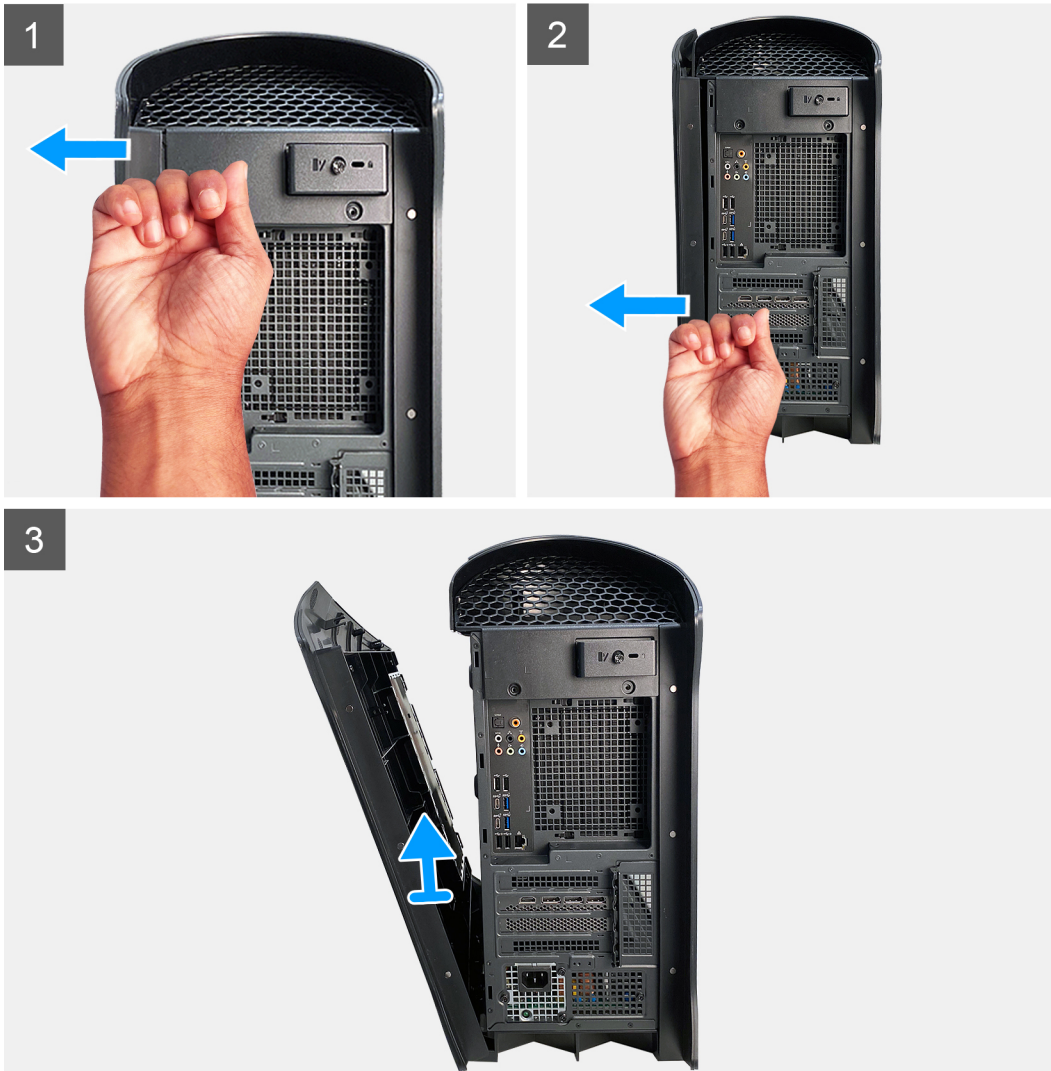
Steps

1. Knock the top rear tab of the right-side cover until the top of the right-side cover is detached from the chassis.
2. Knock the bottom rear tab of the right-side cover until the bottom of the right-side cover is detached from the chassis.
3. Pry the right-side cover to release the securing clips from the chassis.
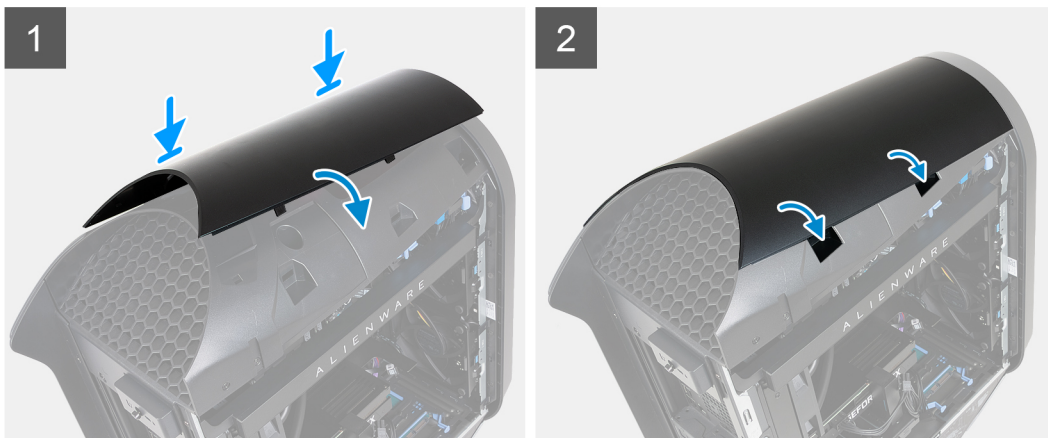4. Remove the right-side cover from the chassis.

Installing the right-side cover

Prerequisites

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

About this task

Steps

1. Align the securing clips on the right-side cover with the slots on the chassis.
2. Push the right-side cover towards the chassis until it snaps into place.

Next steps

1. Install the top cover.
2. Install the left-side cover.
3. Follow the procedure in After working inside your computer.

Front bezel

## Removing the front bezel

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.
3. Remove the top cover.
4. Remove the right-side cover.

About this task

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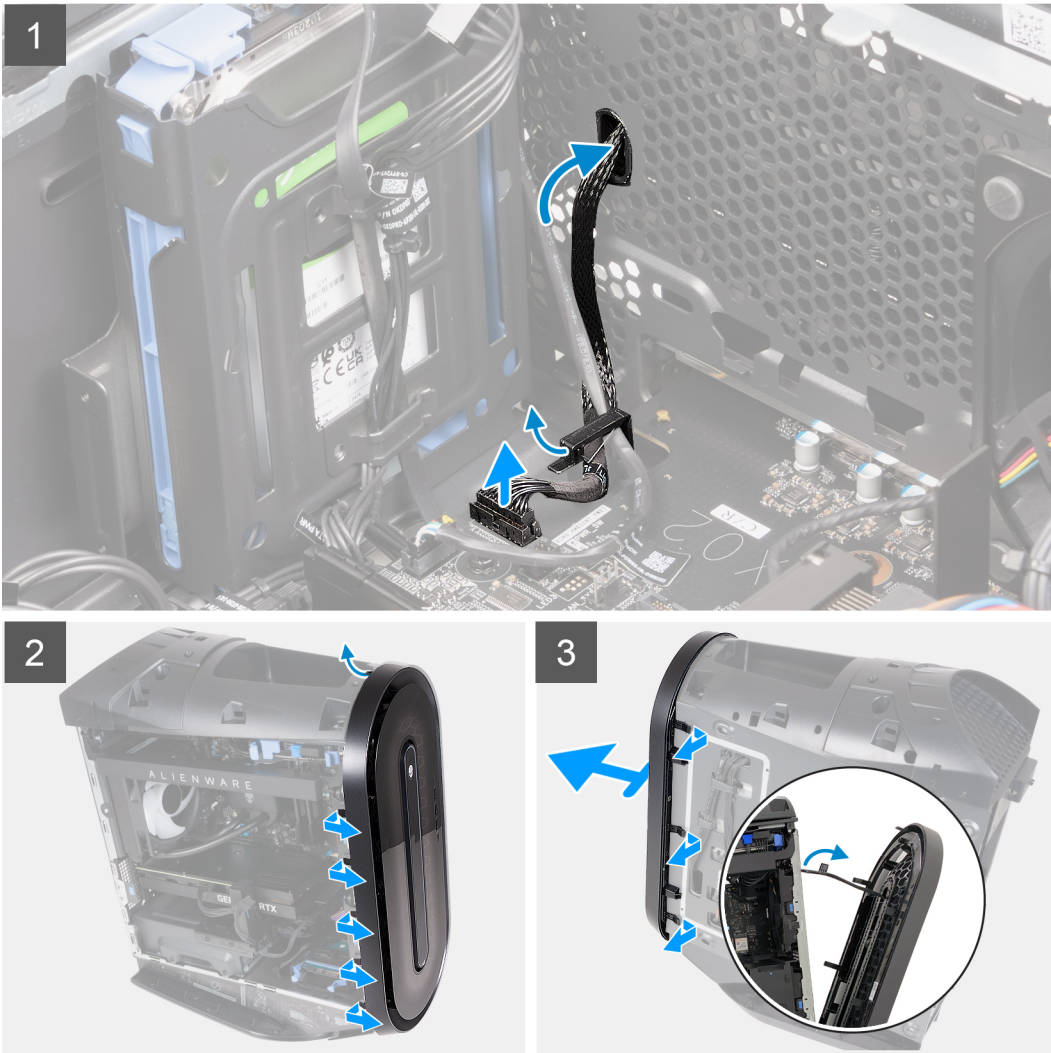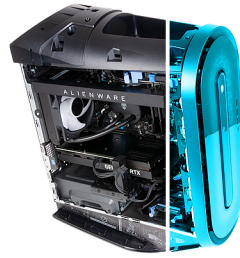
Steps

1. Place the computer in an upright position.
2. Disconnect the front I/O-panel cable from the system board.
3. Pull the tabs of the front bezel from the slots on the front panel.

   ⓘ **NOTE:** Start with tab on top, proceed to the tabs on the left of the front bezel, and then to the tabs on the right of the front bezel.

4. Pull the front bezel, together with the front I/O-panel cable, away from the chassis slowly.

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.
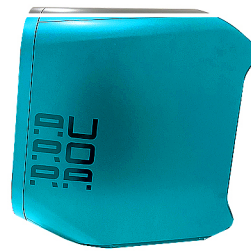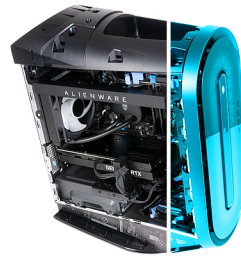

Steps

1. Align the front bezel with the front panel.
2. Route the front I/O-panel cable through the slot on the front panel.
3. Push the front bezel towards the front panel and ensure the tabs clip onto the slots of the front panel.

   ⓘ **NOTE:** Start with tab on top, proceed to the tabs on the left of the front bezel, and then to the tabs on the right of the front bezel.

4. Connect the front I/O-panel cable to the system board.

Next steps

1. Install the right-side cover.

2. Install the top cover.
3. Install the left-side cover.
4. Follow the procedure in After working inside your computer.

Top bezel

## Removing the top bezel

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.
3. Remove the top cover.
4. Remove the right-side cover.

About this task

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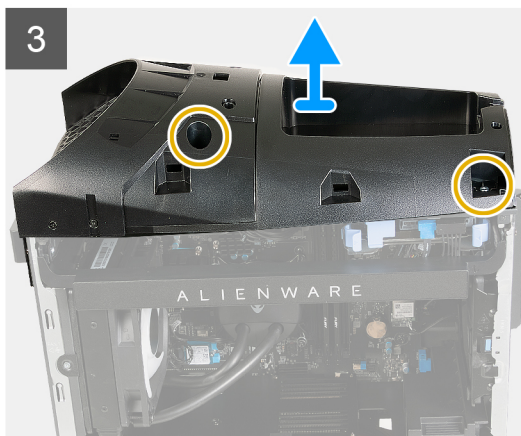
Steps

1. Place the computer in an upright position.
2. Remove the two screws (#6-32x1/4") that secure the top bezel to the chassis.
3. Remove the four screws (M3x7) that secure the top bezel to the chassis.
4. Lift the top bezel off the chassis.

Installing the top 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 top bezel and provide a visual representation of the installation procedure.
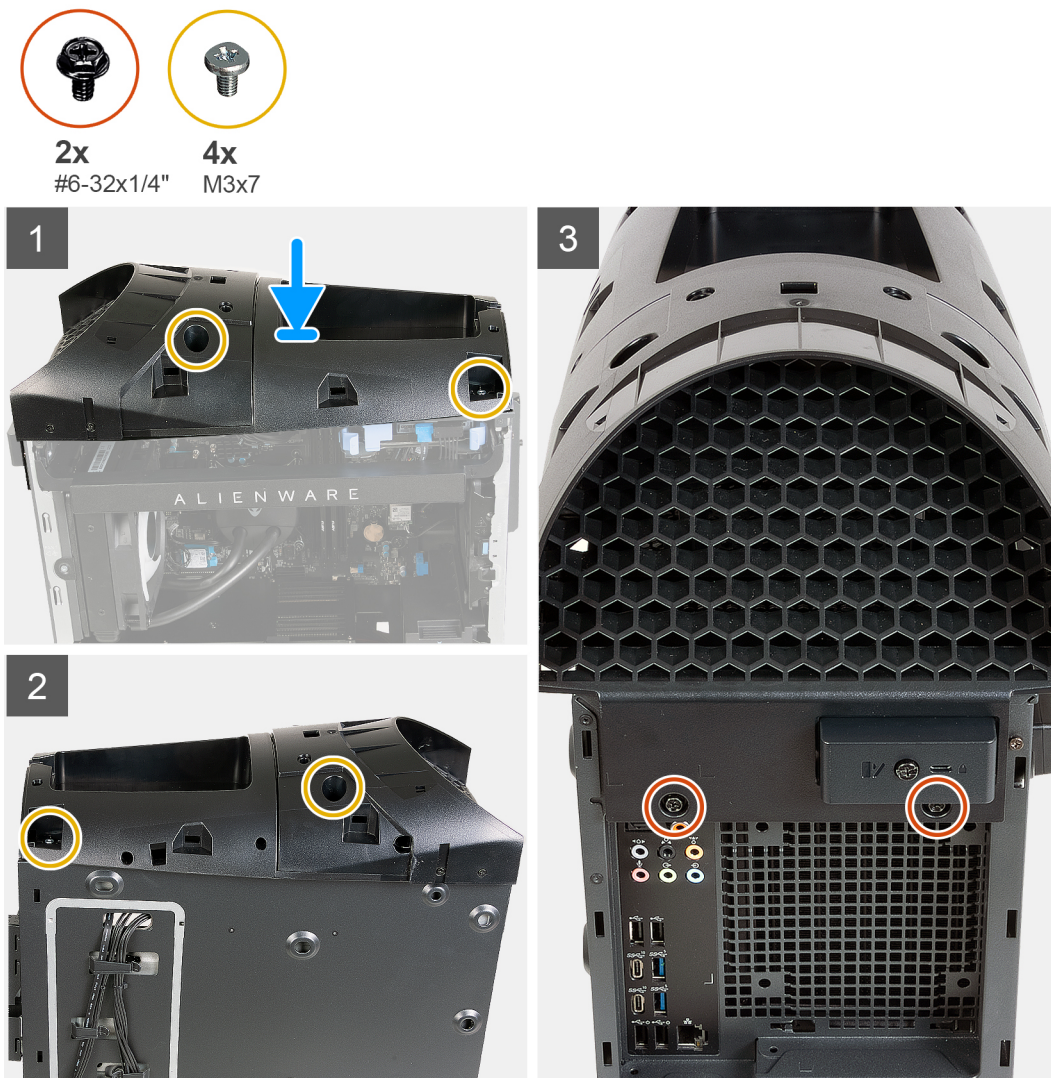
Steps

1. Place the computer in an upright position.
2. Align the top bezel screw holes with screw holes on the chassis.
3. Place the top bezel on the chassis.

4. Replace the four screws (M3x7) that secure the top bezel to the chassis.
5. Replace the two screws (#6-32x1/4") that secure the top bezel to the chassis.

Next steps

1. Install the right-side cover.
2. Install the top cover.
3. Install the left-side cover.
4. Follow the procedure in After working inside your computer.

Side light

## Removing the Side light

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.
3. Remove the top cover.
4. Remove the right-side cover.
5. Remove the front bezel.

About this task

ⓘ **NOTE:** Side light is available only on computers that are shipped with clear left-side covers.

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

2x
M3x5
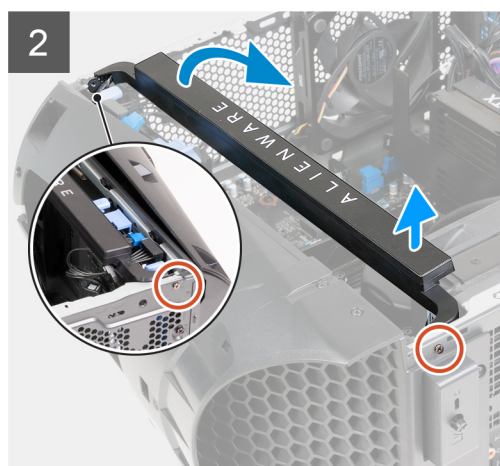
Steps

1. Lay the computer on its right side.
2. Disconnect the Side-light cable from the system board.
3. Remove the two screws (M3x5) that secure the Side light to the chassis.

4. Lift the left side of the Side light bar slightly from the screw hole at the rear of the chassis.

5. Lift the right side of the Side light bar slowly from the screw hole at the front of the chassis.

6. Lift the entire Side light bar from the chassis.

Installing the Side light

Prerequisites

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

About this task

(i) **NOTE:** Side light is available only on computers that are shipped with clear left-side covers.

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

Steps

1. Lay the computer on its right side.

2. Align the left screw hole of the Side light with the screw on the rear of the chassis.

3. Lift the right side of the Side light slowly until the right screw of the Side light is aligned with the screw hole on the front of the chassis.

4. Replace the two screws (M3x5) that secure the Side light to the chassis.

5. Connect the side-light cable to the system board.

Next steps

1. Install the front bezel.

2. Install the right-side cover.

3. Install the top cover.

4. Install the left-side cover.

5. Follow the procedure in After working inside your computer.

3.5-inch hard drive

Removing the 3.5-inch hard drive

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.

About this task

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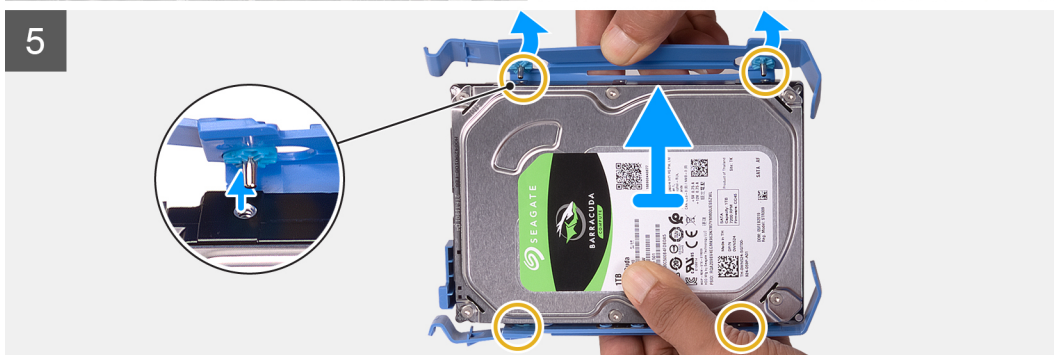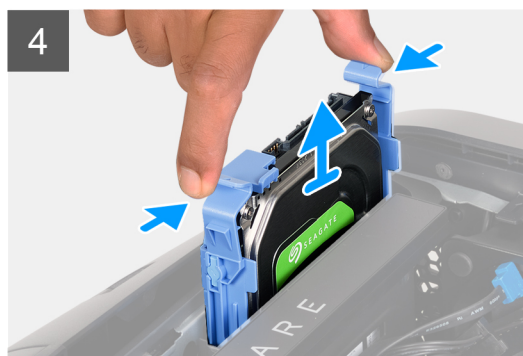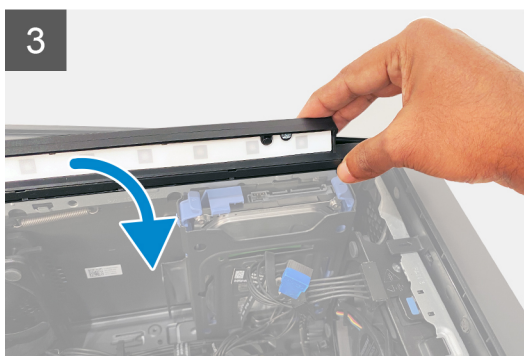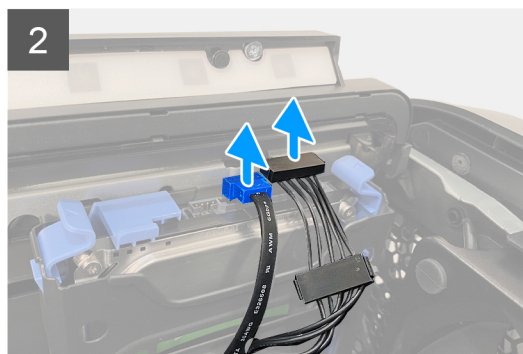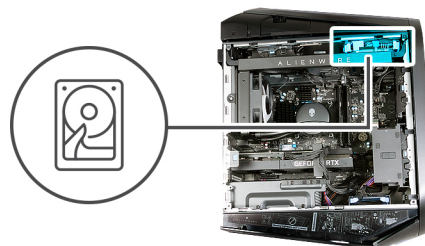
Steps

1. Lift the side light bar to reach the hard-drive data and hard-drive power cables of the hard drive.
2. Slide your finger under the hard-drive power cable as close as possible to the power cable plug, and pull the hard-drive power cable to disconnect the cable.
3. Slide your finger under the hard-drive data cable as close as possible to the data cable plug, and pull the hard-drive data cable to disconnect the cable.
4. Push the side light bar down.
5. Press the release tabs on the hard-drive carrier and slide the hard-drive carrier out of the hard-drive cage.
6. Pry the hard-drive carrier to release the tabs on the carrier from the slots on the hard drive.
7. Lift the hard drive out of the hard-drive carrier.

   (i) **NOTE:** Note the orientation of the hard drive so that you can replace it correctly.

Installing the 3.5-inch hard drive

Prerequisites

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

About this task
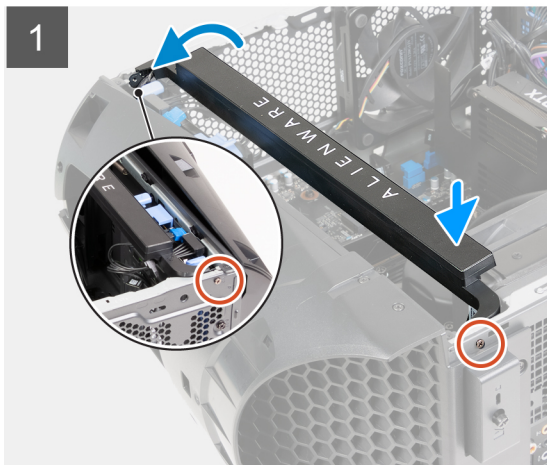
The following images indicate the location of the 3.5-inch hard drive and provide a visual representation of the installation procedure.
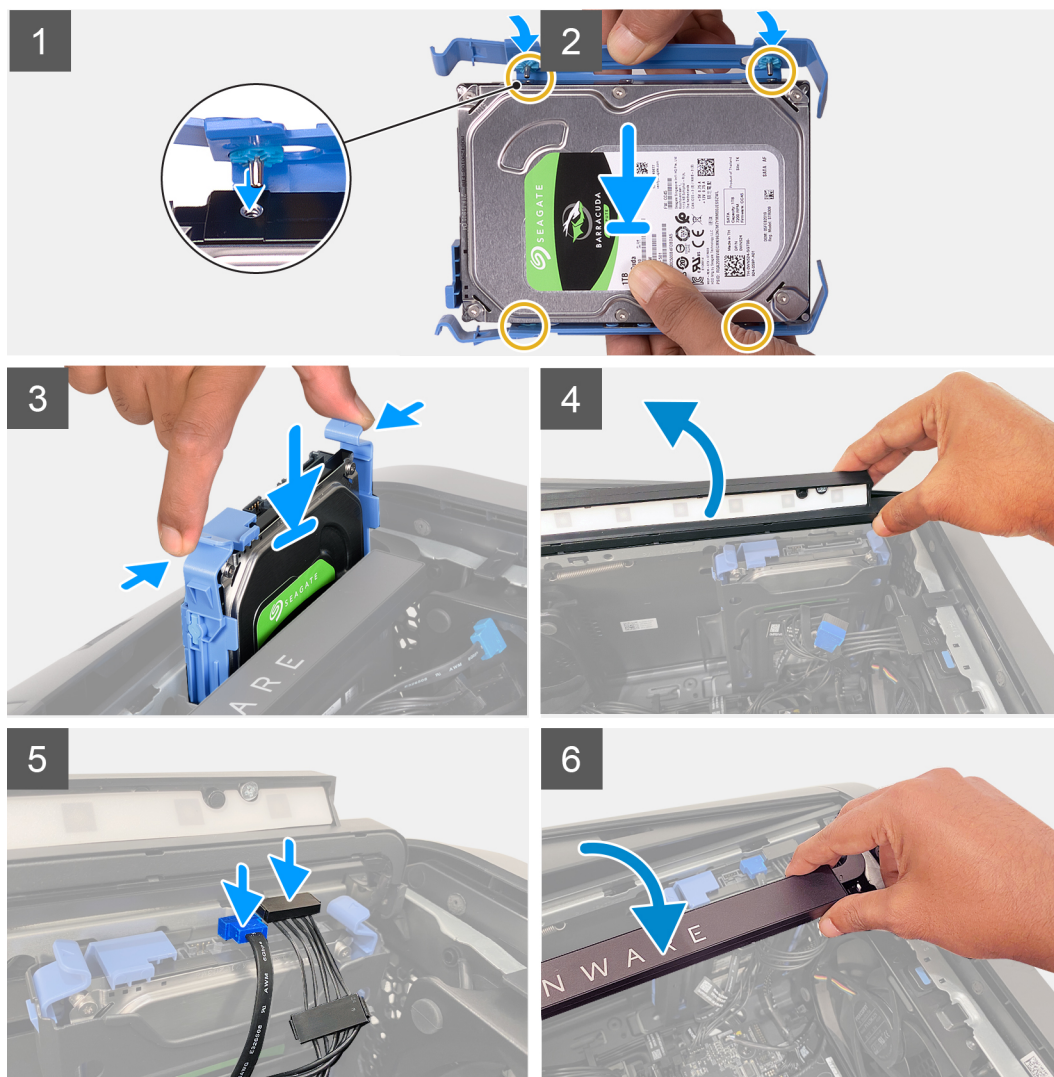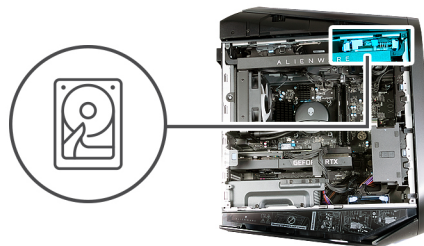
ⓘ **NOTE:** Note the orientation on the hard-drive carrier to replace it correctly.

Steps

1. Align the hard drive with the pins on the hard-drive carrier.
2. Using the tabs on the opposite side, flex open the carrier to insert the pins on the other side.
3. Slide the hard-drive assembly into the hard-drive cage until it snaps into place.
4. Lift the side light bar.
5. Connect the hard-drive data cable and hard-drive power cable to the hard drive.
6. Push the side light bar down.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.

3. Verify if the storage device is installed correctly (optional):
   a. If you are replacing a storage device which does not have the operating system installed, follow the steps in Identifying storage device in device manager.
   b. If you are replacing a storage device which does not have the operating system installed, follow the steps in Identifying your storage device in system setup (BIOS).

ⓘ **NOTE:** To install the operating system on to your storage device, see **Reinstall Windows to the Dell factory image using recovery media** in the knowledge base article 000176966.

Identifying the storage device in system setup (BIOS)

Steps

1. Turn on or restart your computer.
2. Press F2 when the Dell logo is displayed on the screen to enter the BIOS setup program.
   A list of hard drives are displayed under the **System Information** in the **General** group.

Identifying the storage device in Device Manager

Steps

1. On the taskbar, click the search box, and then type **Device Manager**.
2. Click **Device Manager**.
   The **Device Manager** window is displayed.
3. Expand **Disk drives**.

Power-supply unit

Removing the power-supply unit

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.
3. Remove the top cover.
4. Remove the right-side cover.

ⓘ **NOTE:** Note the routing of all cables as you remove them so that you can route them correctly after you replace 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.

6x
#6-32x1/4"
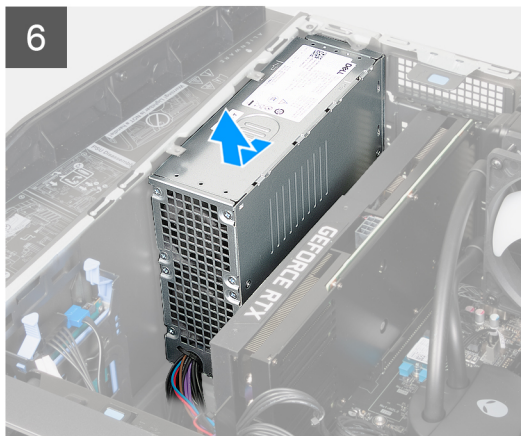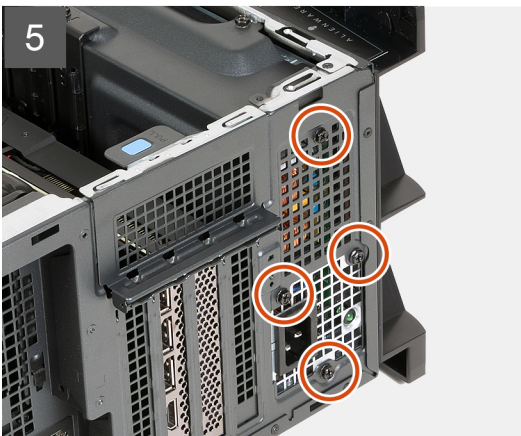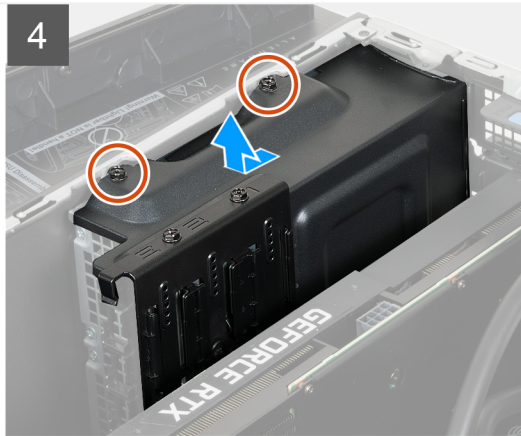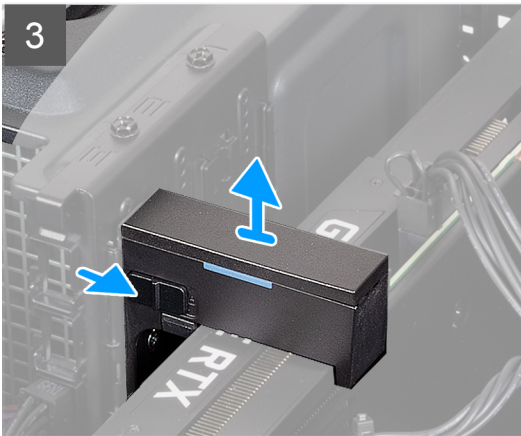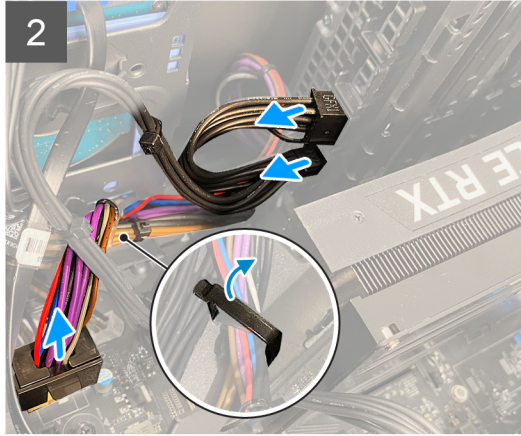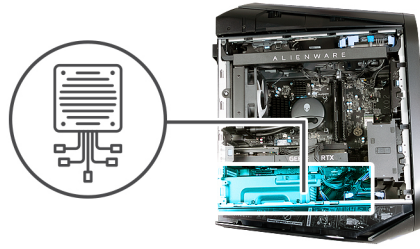
Steps

1. Disconnect the power-supply unit cables from the power-supply unit extension cables on the right side of the computer.
2. Slide the power-supply unit cables out from the routing guide.
3. Lay the computer on the right side.
4. Release the power-supply unit cables from the plastic cable clip.

5. Disconnect the power-supply cables from the system board.
6. Press the release clips on the power-supply connectors before disconnecting the power-supply cables from the system board.
7. Disconnect the graphics-card power cables from the power-supply unit.
8. Press the release clips on the graphics-card power connectors before disconnecting the graphics-card power cables from the power-supply unit.
9. Slide the release latch to the unlock position and lift the graphics-card bracket away from the graphics card.
10. Remove the two screws (#6-32x1/4") that secure the power-supply unit bracket to the power-supply unit.
11. Slide and lift the power-supply unit bracket from the power-supply unit.
12. Remove the four screws (#6-32x1/4") that secure the power-supply unit to the chassis.
13. Slide and lift the power-supply unit, along with the cables, off the chassis.

Installing the power-supply unit

Prerequisites

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

⚠ **WARNING: The cables and ports on the back of the power-supply unit are color-coded to indicate the different power wattage. Ensure that you plug in the cable to the correct port. Failure to do so may result in damaging the power-supply unit and/or system components.**

About this task

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

6x
#6-32x1/4"
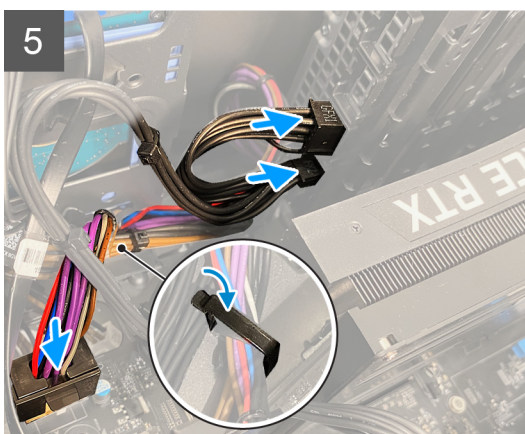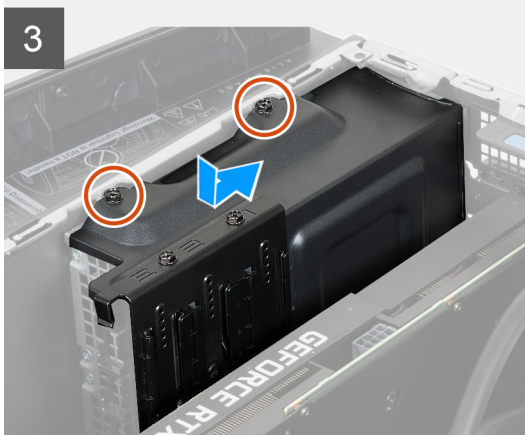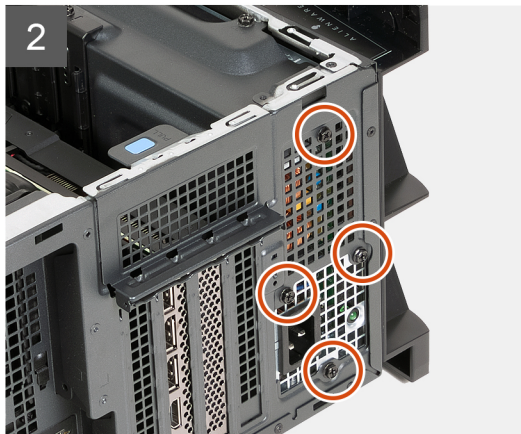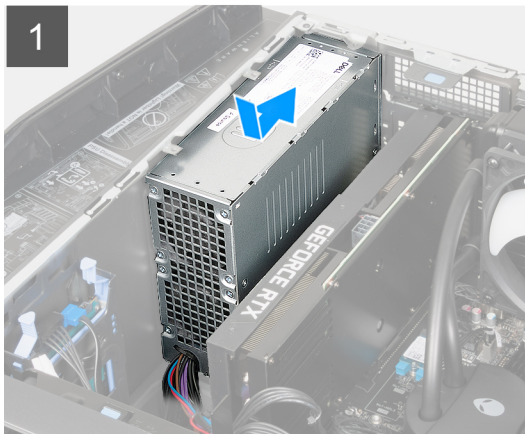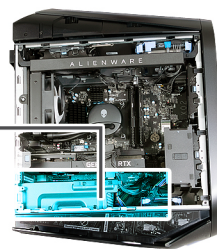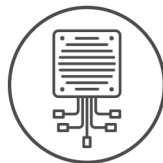
Steps

1. Lay the computer on the right side.
2. Place the power-supply unit on the chassis.
3. Align the screw holes on the power-supply unit with the screw holes on the chassis.
4. Replace the four screws (#6-32x1/4") that secure the power-supply unit to the chassis.
5. Place the power-supply unit bracket on the power-supply unit.

6. Replace the two screws (#6-32x1/4") that secure the power-supply unit bracket to the power-supply unit.
7. Replace the graphics-card bracket and slide the release latch to the lock position.
8. Place the power-supply unit cables back into the plastic cable clip.
9. Connect the power-supply cables to the system board.
10. Connect the graphics-card power cables to the power-supply unit.
11. Place the computer in an upright position.
12. Place the power-supply unit cables back to the routing guide on the right side of the computer.
13. Connect the power-supply unit cables to the power-supply unit extension cables on the right side of the computer.

Next steps
1. Install the right-side cover.
2. Install the top cover.
3. Install the left-side cover.
4. Follow the procedure in After working inside your computer.

Coin-cell battery

Removing the coin-cell battery

Prerequisites
1. Follow the procedure in Before working inside 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.**

   ⚠ **CAUTION: Removing the coin-cell battery resets the BIOS setup program's settings to default. It is recommended that you note the BIOS setup program's settings before removing the coin-cell battery.**

2. Remove the left-side cover.

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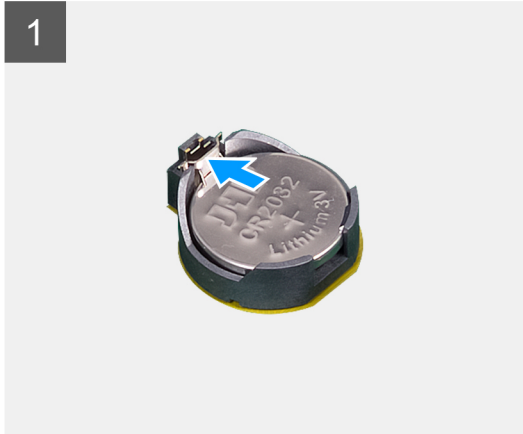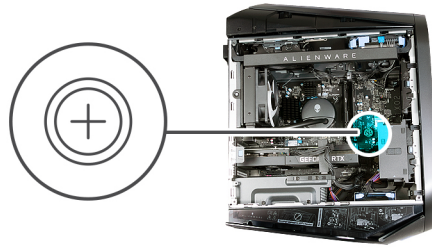
Steps

1. Lay the computer on the right side.
2. Press the battery-release lever away from the coin-cell battery until the coin-cell battery pops up.
3. Lift the coin-cell battery out of its socket.

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.
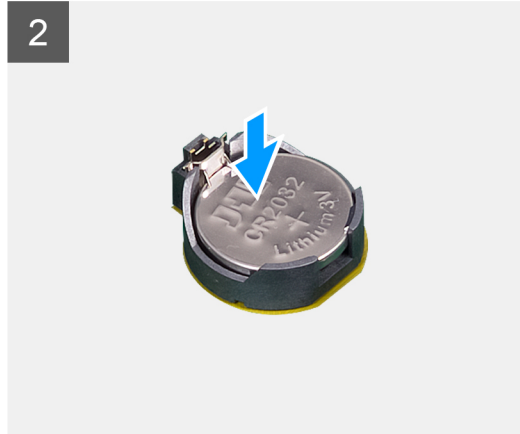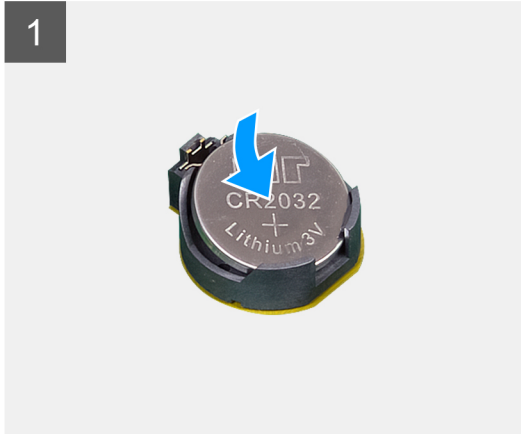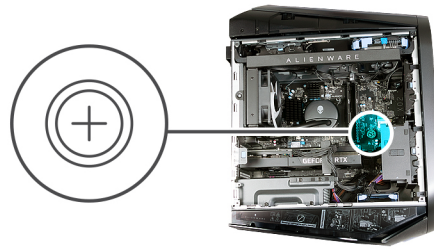
Steps

Insert the new coin-cell battery (CR2032) into the battery socket with the positive side facing up, and snap the battery into place.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.

Memory module

Removing the memory modules

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.

About this task

The following images indicate the location of the memory modules and provide a visual representation of the removal procedure.
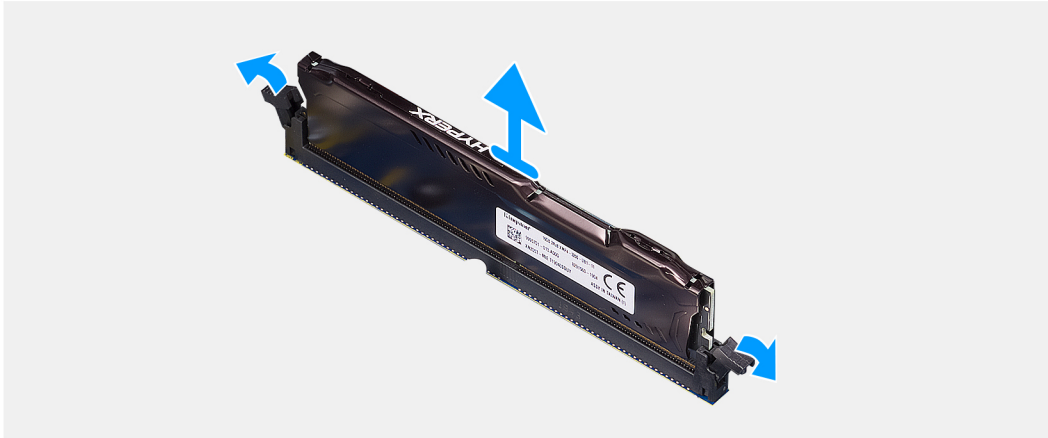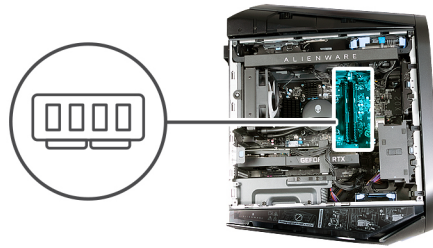
Steps

1. Lay the computer on the right side.
2. Push the securing clips away from the memory module.
3. Lift the memory module off the memory-module slot.

   (i) **NOTE:** Repeat step 2 to step 3 to remove any other memory modules installed in your computer.

   ⚠ **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 modules

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 memory modules and provide a visual representation of the installation procedure.
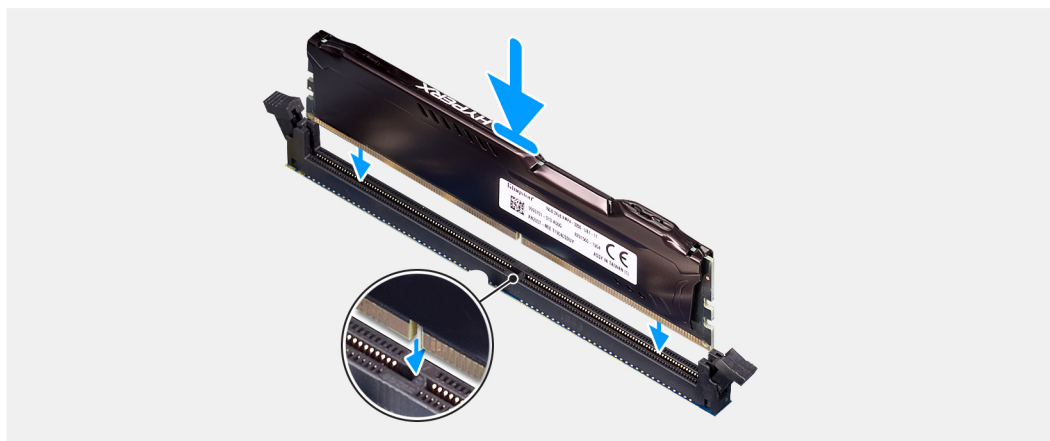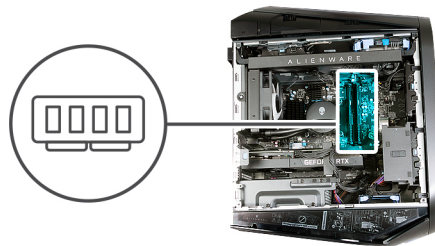
Steps

1. Ensure that the securing clips are extended away from the memory-module slot.
2. Align the notch on the memory module with the tab on the memory-module slot.
3. Insert the memory module into the memory-module slot and press the memory module down until it snaps into position and the securing clips lock in place.

   ⚠ **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.**

   ⓘ **NOTE:** Repeat step 1 to step 3 to replace any other memory modules installed in your computer.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.

Single-graphics card

Removing the single-graphics card

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.

About this task

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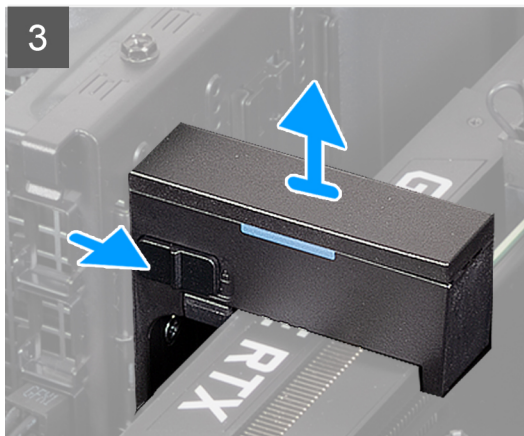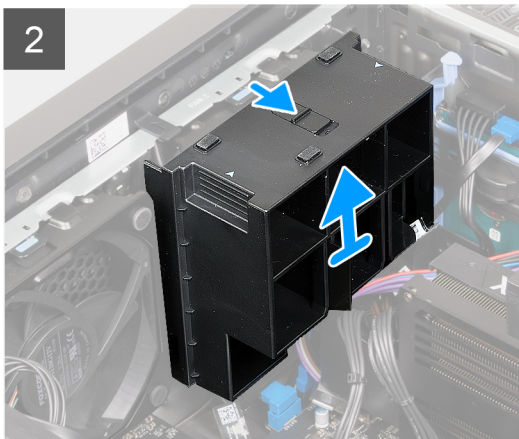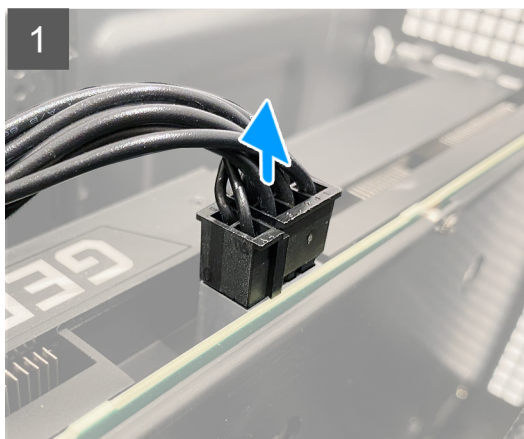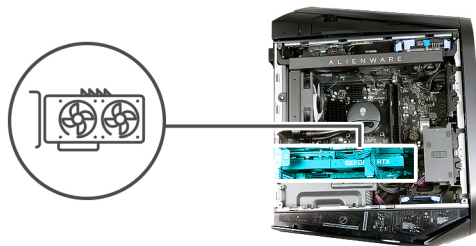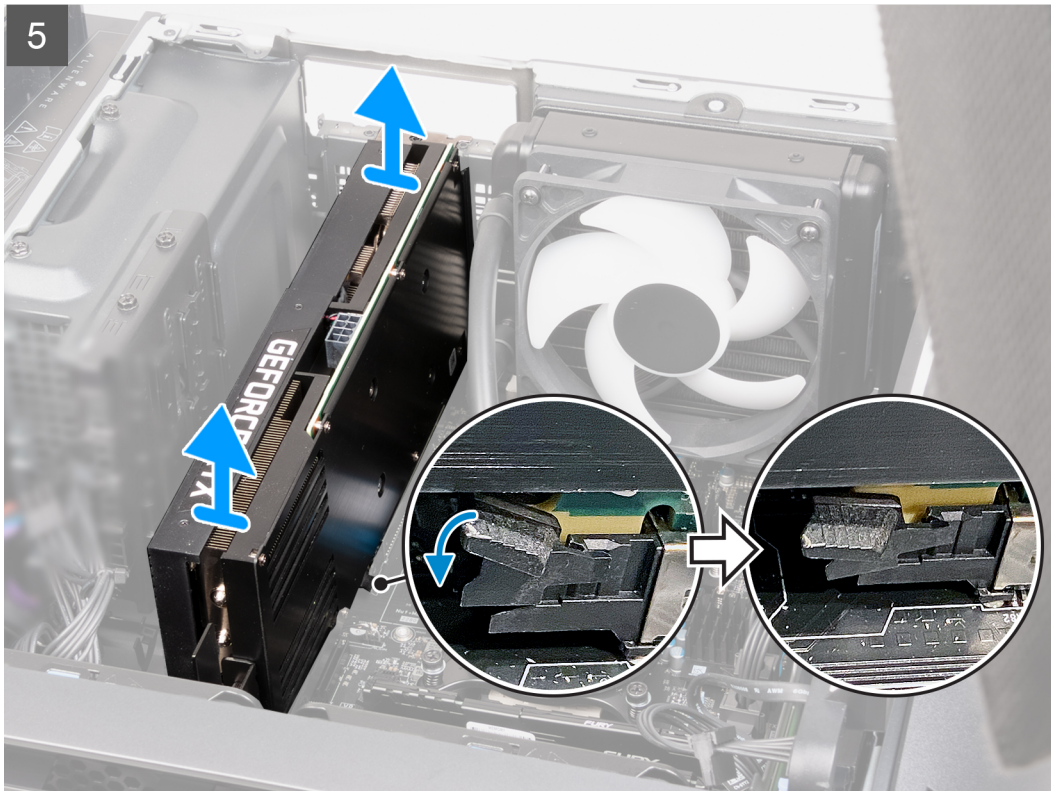
Steps

1. Lay the computer on the right side.

2. Press the releasing clip on the graphics-card power connectors and disconnect the graphics-card power cables from the graphics card.

3. Slide the release latch to its unlock position and lift the graphics-card end holder away from the PCIe fan.

   (i) **NOTE:** Skip this step if your graphics card does not ship with a graphics-card end holder.

4. Slide the release latch to its unlock position and lift the graphics-card bracket away from the graphics card.

   (i) **NOTE:** Skip this step if your graphics card does not ship with a graphics-card bracket.

5. Lift the pull tab and open the expansion-card door.

6. Push the securing tab on the PCIe x16 slot down, grasp the graphics card by its top edge, and ease it out of the slot.

Installing the single-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 single-graphics card and provide a visual representation of the installation procedure.
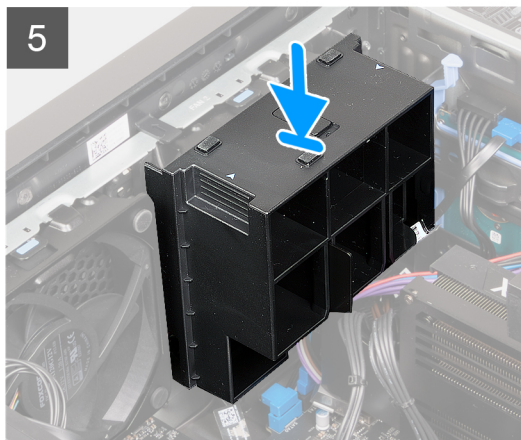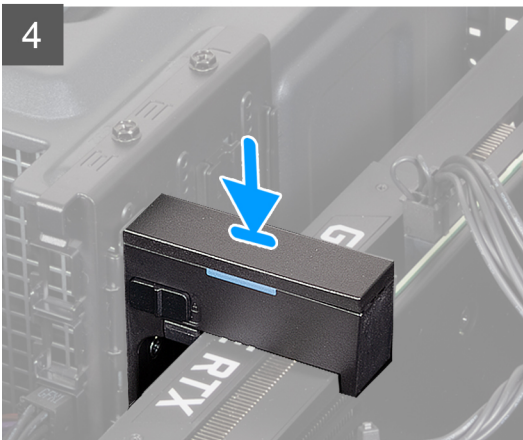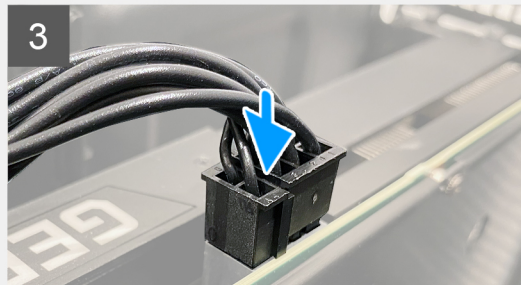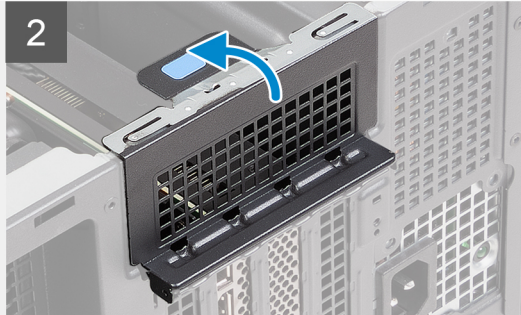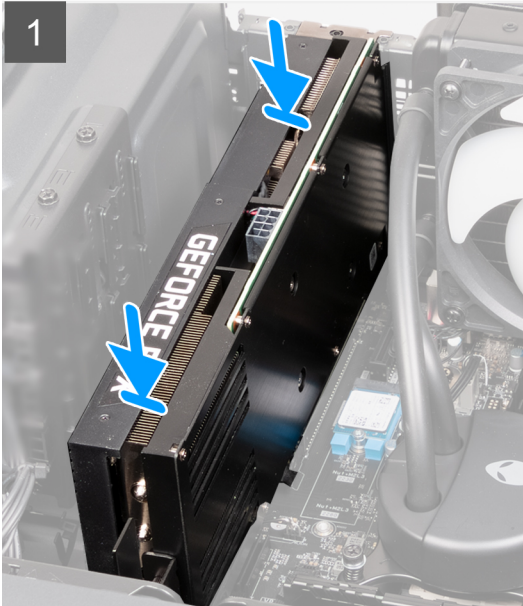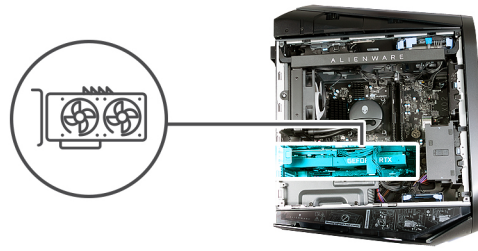
Steps

1. Place the card into the PCIe x16 slot and press down firmly until the single-graphics card snaps into place.
2. Close the expansion-card door and snap the latch back into position.
3. Connect the graphics-card power cables to the graphics card.
4. Replace the graphics-card bracket onto the graphics-card bracket holder and slide the latch into its lock position.

   (i) **NOTE:** Skip this step if your graphics card does not ship with a graphics-card end bracket or a graphics-card bracket holder.

5. Replace the graphics-card end holder over the PCIe fan and slide the latch into its lock position.

   (i) **NOTE:** Skip this step if your graphics card does not ship with a graphics-card end holder.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.

Graphics-card bracket and graphics-card end holder

The following table shows whether the graphics-card bracket or/and the graphics-card end holder is/are shipped with your Alienware Aurora Ryzen Edition R14.

Table 2. Graphics-card bracket and graphics-card end holder

Graphics card	Graphics-card bracket	Graphics-card end holder
AMD Radeon RX 5300	Yes	No
AMD Radeon RX 6600 XT	Yes	No
AMD Radeon RX 6700 XT	Yes	No
AMD Radeon RX 6800 XT	Yes	Yes
AMD Radeon RX 6900 XT	Yes	Yes
NVIDIA GeForce GTX 1650 SUPER	No	No
NVIDIA GeForce GTX 1660 SUPER	No	No
NVIDIA GeForce GTX 1660 Ti	No	No
NVIDIA GeForce RTX 3060	Yes	No
NVIDIA GeForce RTX 3060 Ti	Yes	No
NVIDIA GeForce RTX 3070	Yes	Yes
NVIDIA GeForce RTX 3070 Ti	Yes	Yes
NVIDIA GeForce RTX 3080	Yes	Yes
NVIDIA GeForce RTX 3080 Ti	Yes	Yes
NVIDIA GeForce RTX 3090	Yes	Yes
NVIDIA GeForce RTX 3090 Ti	Yes	Yes

Solid-state drive

Removing the 2230 solid-state drive

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.

About this task

The following images indicate the location of the 2230 solid-state drive and provide a visual representation of the removal procedure.
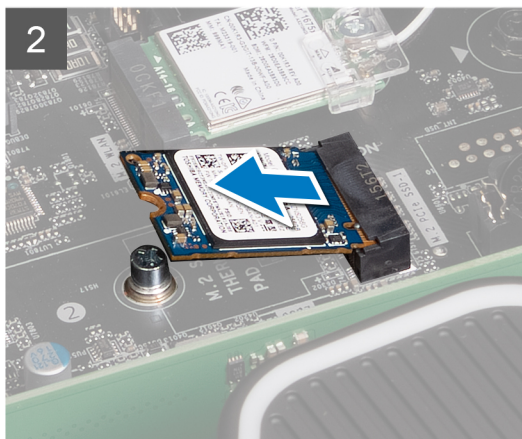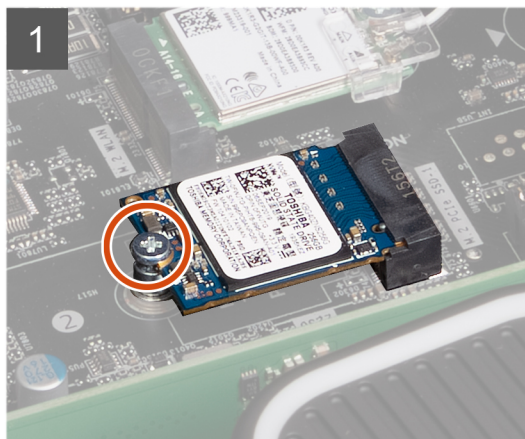
Steps

1. Remove the screw (M2x3) that secures the 2230 solid-state drive to the system board.
2. Slide and lift the 2230 solid-state drive off the system board.

Installing the 2230 solid-state drive

Prerequisites

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

⚠ **CAUTION: Solid state drives are fragile. Exercise care when handling the solid state drive.**

About this task

ⓘ **NOTE:** This procedure applies only to computers shipped with a 2230 solid-state drive installed in the SSD slot.

ⓘ **NOTE:** Depending on the configuration ordered, your computer may support either 2230 solid-state drive or 2280 solid-state drive in the SSD slot.

If you want to replace your 2230 solid-state drive with a 2280 solid-state drive, see Installing the 2280 solid-state drive.

The following images indicate the location of the 2230 solid-state drive and provide a visual representation of the installation procedure.

Steps

1. Align the notch on the 2230 solid-state drive with the tab on the solid-state drive slot.
2. Insert the 2230 solid-state drive at a 45-degree angle into the system board.
3. Press the other end of the 2230 solid-state drive down and replace the screw (M2x3) that secures the 2230 solid-state drive to the system board.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.
3. Verify if the storage device is installed correctly (optional):
   a. If you are replacing a storage device which does not have the operating system installed, follow the steps in Identifying storage device in device manager.
   b. If you are replacing a storage device which does not have the operating system installed, follow the steps in Identifying your storage device in system setup (BIOS).

> (i) **NOTE:** To install the operating system on to your storage device, see **Reinstall Windows to the Dell factory image using recovery media** in the knowledge base article 000176966.

Removing the 2280 solid-state drive

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.

About this task

The following images indicate the location of the 2280 solid-state drive and provide a visual representation of the removal procedure.
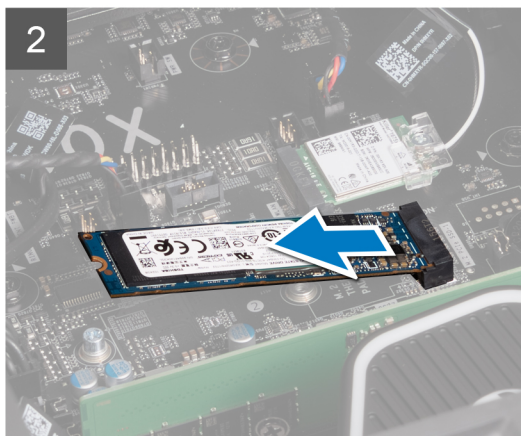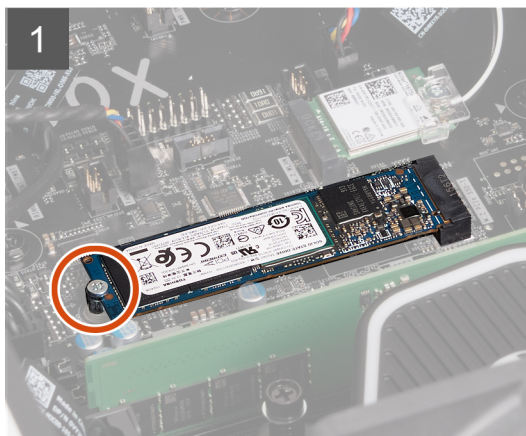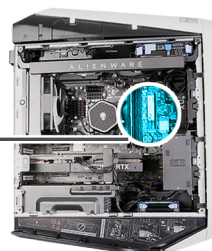
Steps

1. Remove the screw (M2x3) that secures the 2280 solid-state drive to the system board.
2. Slide and lift the 2280 solid-state drive off the system board.

Installing the 2280 solid-state drive

Prerequisites

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

⚠ **CAUTION: Solid state drives are fragile. Exercise care when handling the solid state drive.**

About this task

ⓘ **NOTE:** This procedure applies only to computers shipped with a 2280 solid-state drive installed in the SSD slot.

ⓘ **NOTE:** Depending on the configuration ordered, your computer may support either 2280 solid-state drive or 2230 solid-state drive in the SSD slot.

If you want to replace your 2280 solid-state drive with a 2230 solid-state drive, see Installing the 2230 solid-state drive.

The following images indicate the location of the 2280 solid-state drive and provide a visual representation of the installation procedure.

1x
M2x3
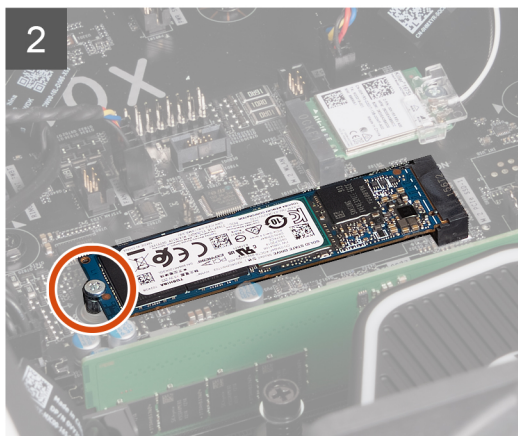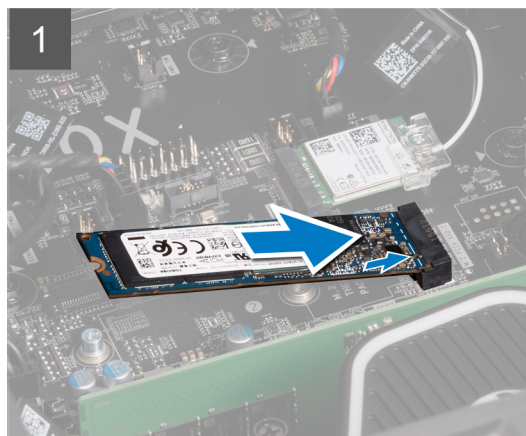
Steps

1. Align the notch on the 2280 solid-state drive with the tab on the solid-state drive slot.
2. Insert the 2280 solid-state drive at a 45-degree angle into the system board.
3. Press the other end of the 2280 solid-state drive down and replace the screw (M2x3) that secures the 2280 solid-state drive to the system board.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.
3. Verify if the storage device is installed correctly (optional):
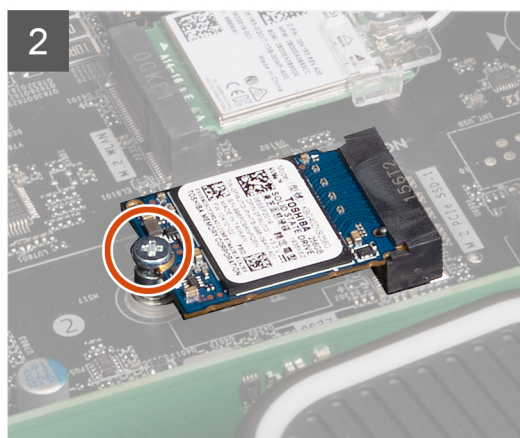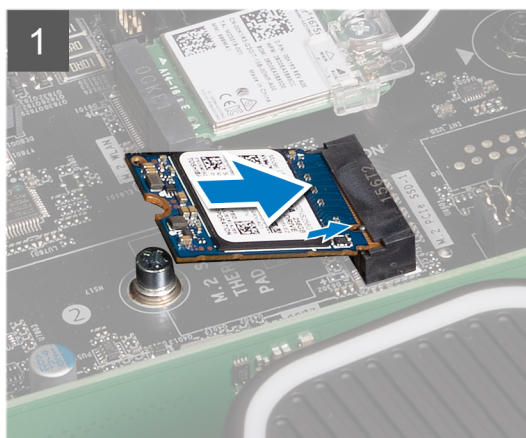   a. If you are replacing a storage device which does not have the operating system installed, follow the steps in Identifying storage device in device manager.
   b. If you are replacing a storage device which does not have the operating system installed, follow the steps in Identifying your storage device in system setup (BIOS).

ⓘ **NOTE:** To install the operating system on to your storage device, see **Reinstall Windows to the Dell factory image using recovery media** in the knowledge base article 000176966.

Processor fan and heat-sink assembly

Removing the processor fan and heat-sink assembly

Prerequisites

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

   ⓘ **NOTE:** 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 left-side cover.

About this task

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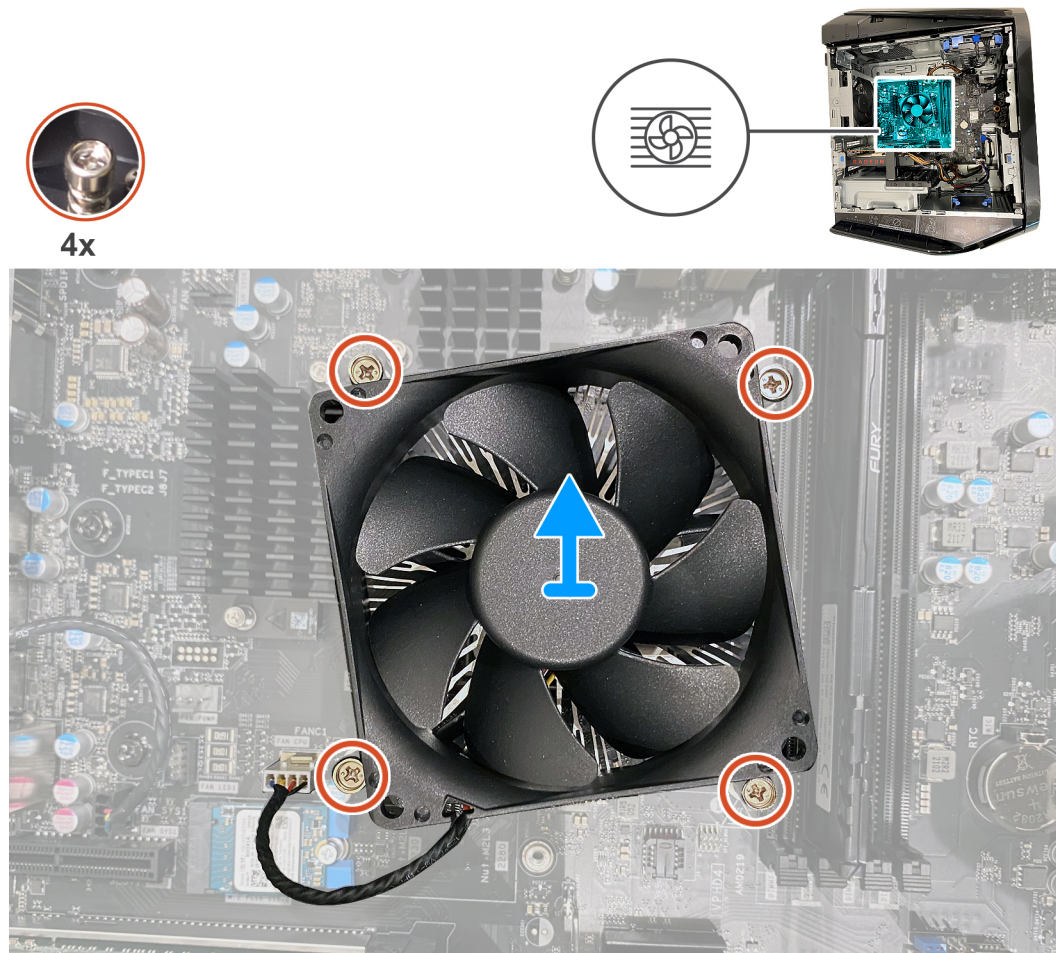
Steps

1. Lay the computer on the right side.
2. Disconnect the processor-fan cable from the system board.
3. In reverse sequential order, loosen the four captive screws that secure the processor fan and heat-sink assembly to the system board.
4. Lift the processor fan and heat-sink assembly off the system board.

Installing the processor fan and heat-sink assembly

Prerequisites

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

⚠ CAUTION: **If either the processor or the heat sink is replaced, use the thermal grease that is provided in the kit to ensure that thermal conductivity is achieved.**

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.

4x
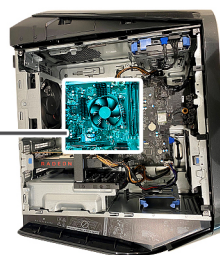
Steps

1. Place the processor fan and heat-sink assembly on the processor.
2. Align the captive screws on the processor fan heat-sink assembly with the screw holes on the system board.
3. In sequential order, tighten the four captive screws that secure the processor fan and heat-sink assembly to the system board.
4. Connect the processor-fan cable to the system board.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.

Processor liquid-cooling assembly

Removing the processor liquid-cooling assembly

Prerequisites

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

> ⚠ **WARNING: Despite having a plastic shield, the processor liquid-cooling assembly may become very hot during normal operation. Ensure that it has had sufficient time 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 left-side cover.

About this task

The following images indicate the location of the processor liquid-cooling assembly and provide a visual representation of the installation procedure. The processor liquid-cooling assembly that is shipped may vary, depending on the configuration.
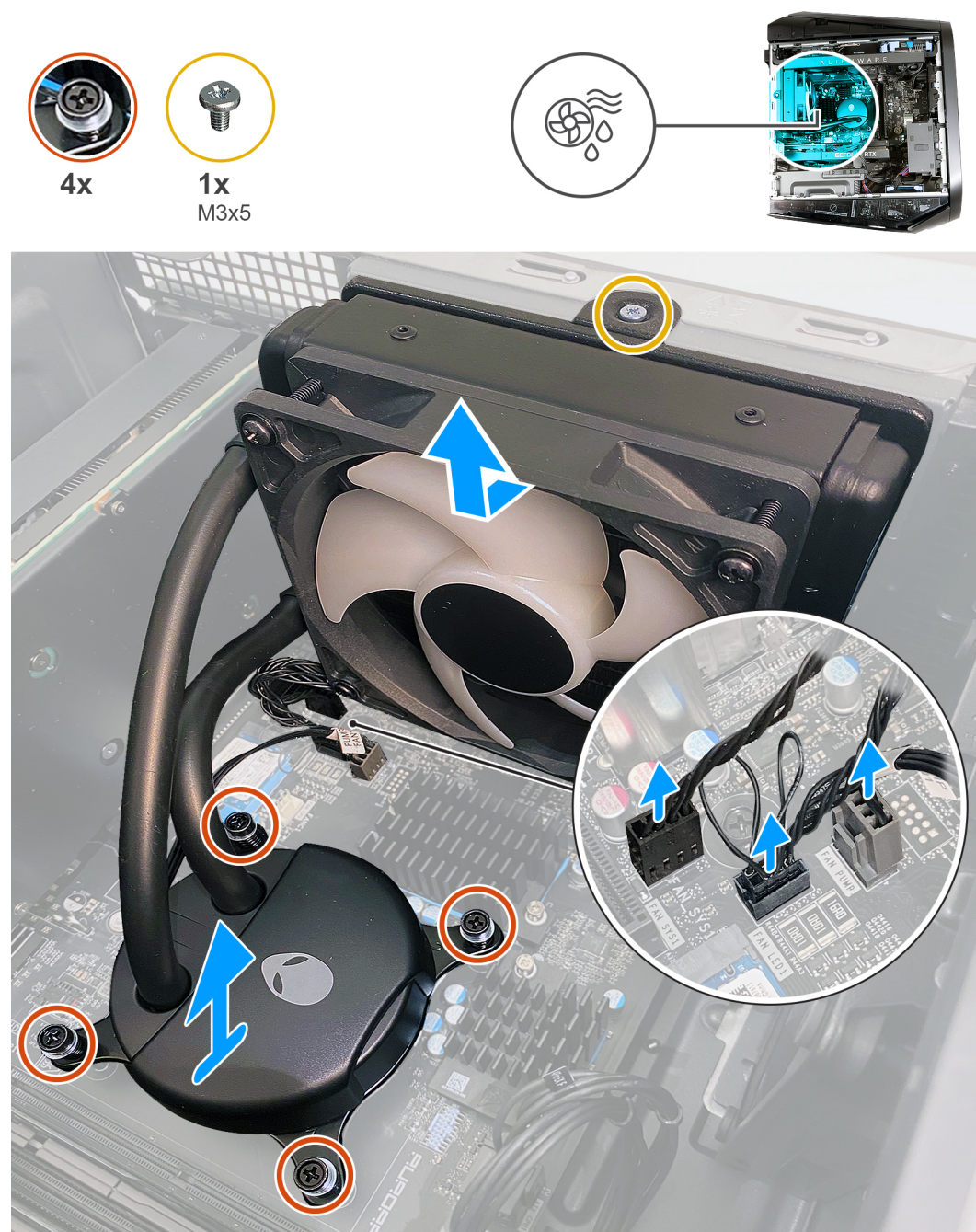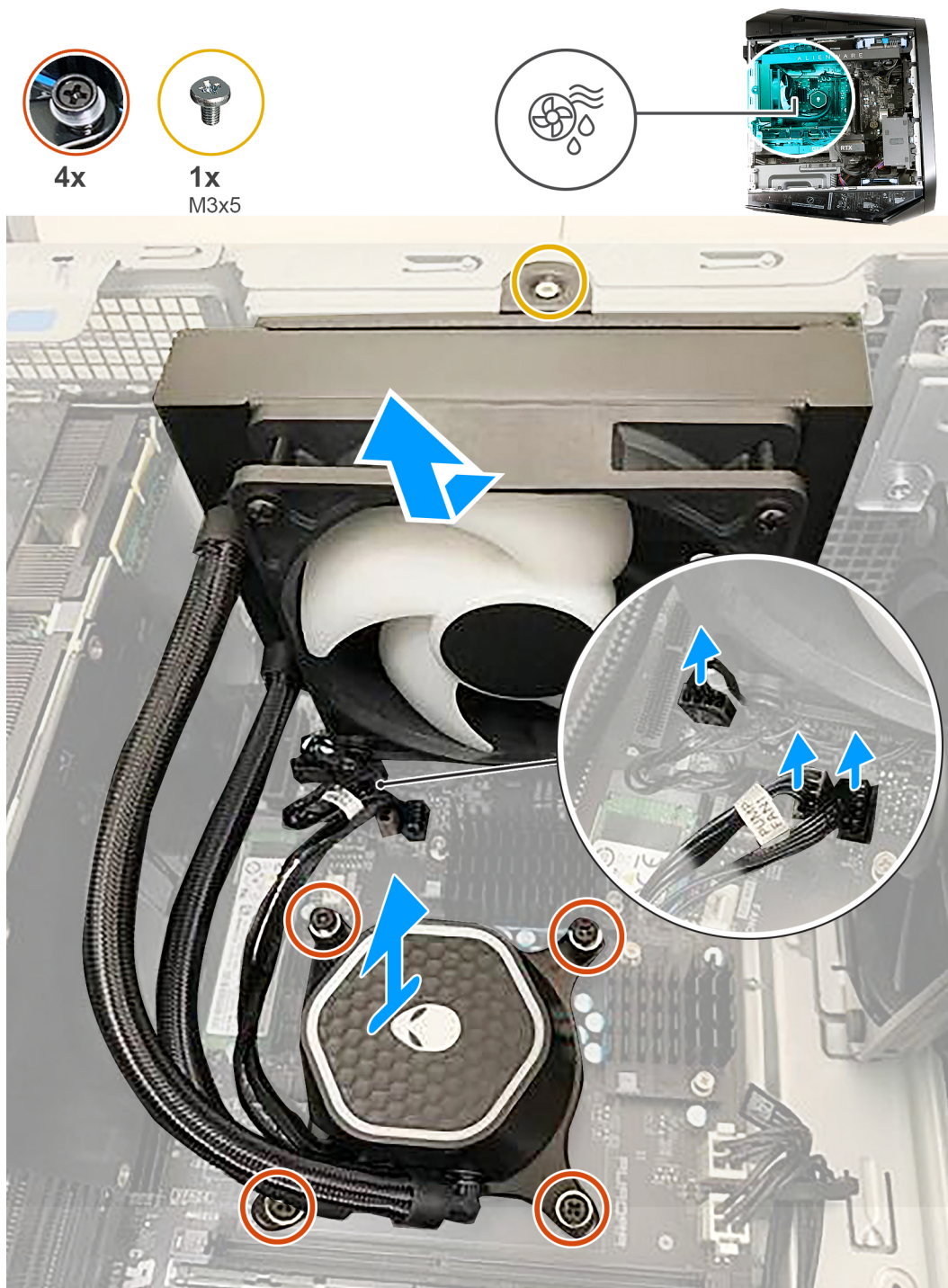
(i) **NOTE:** This processor liquid-cooling assembly features a processor cooler with RGB lighting effects.

Steps

1. Lay the computer on the right side.
2. Disconnect the processor-cooling assembly cables from the system board.
3. In reverse sequential order, loosen the four captive screws that secure the processor cooler to the system board.
4. Remove the screw (M3x5) that secures the radiator and fan assembly to the chassis.
5. Lift the processor-cooling assembly along with the cables off the system board.

Installing the processor liquid-cooling assembly

Prerequisites

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

⚠ **CAUTION: Incorrect alignment of the processor liquid-cooling assembly can damage the system board and processor.**

⚠ **CAUTION: If either the processor or the heat sink is replaced, use the thermal grease that is provided in the kit to ensure that thermal conductivity is achieved.**

About this task

The following images indicate the location of the processor liquid-cooling assembly and provide a visual representation of the installation procedure. The processor liquid-cooling assembly that is shipped may vary, depending on the configuration.

ⓘ **NOTE:** This processor liquid-cooling assembly features a processor cooler with RGB lighting effects.

Steps

1. Align the screw hole of the radiator and fan assembly to the screw hole on the chassis.

   ⓘ **NOTE:** Ensure that the hoses are facing the front of the computer.

2. Replace the screw (M3x5) that secures the radiator and fan assembly to the chassis.
3. Align the screw holes on the processor cooler with the screw holes on the system board.
4. In sequential order, tighten the four captive screws that secure the processor cooler to the system board.
5. Connect the processor-cooling assembly cables to the system board.

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.

Processor

Removing the processor

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.
3. Remove the processor liquid-cooling assembly or processor fan and heat-sink assembly, as applicable.

About this task

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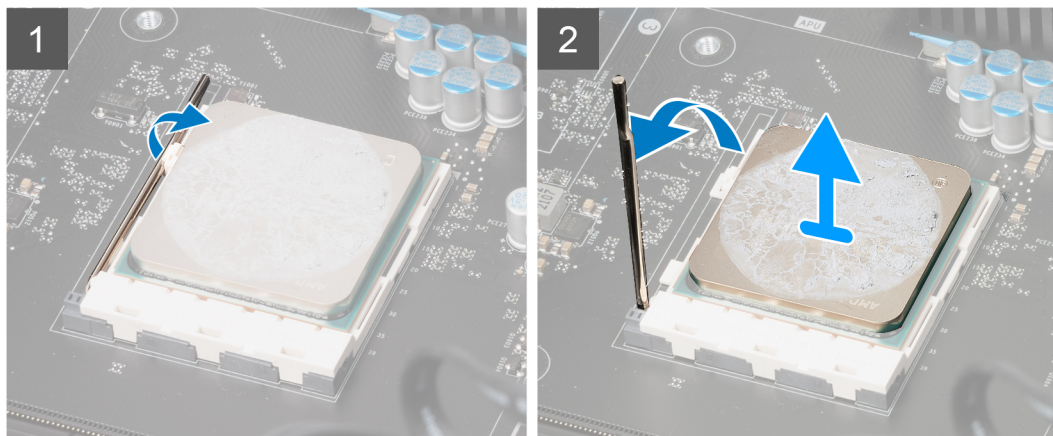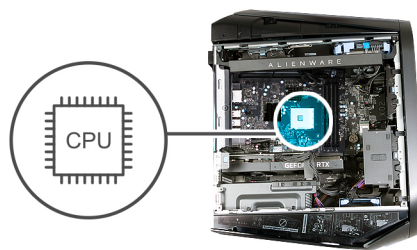
Steps

1. Press the release lever down and then push it away from the processor to release it from the tab.
2. Extend the release lever completely.
3. Lift the processor off the processor socket.

Installing the processor

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.
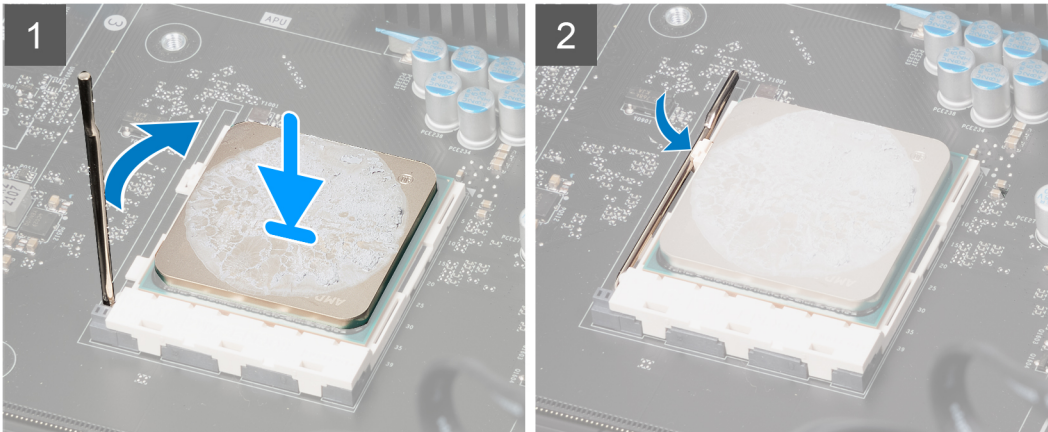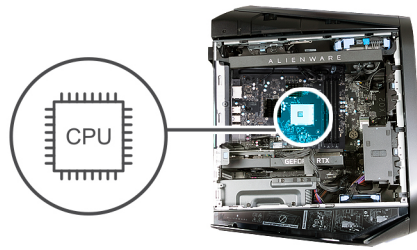
Steps

1. Ensure that the release lever on the processor socket is fully extended.

   ⚠ **CAUTION: Position the processor correctly in the processor socket to avoid permanent damage to the processor.**

2. Align the pin-1 corner on the processor with the pin-1 corner on the processor socket, and then place the processor in the processor socket.

   ⚠ **CAUTION: Ensure that the processor-cover notch is positioned underneath the alignment post.**

3. Push the release lever down and place it under the tab next to the processor socket.

Next steps

1. Install the processor liquid-cooling assembly or processor fan and heat-sink assembly, as applicable.
2. Install the left-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 left-side cover.

About this task

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

Steps

1. Remove the screw (M2x3) that secures the wireless card to the system board.
2. 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 from the wireless-card slot.

Installing the wireless card

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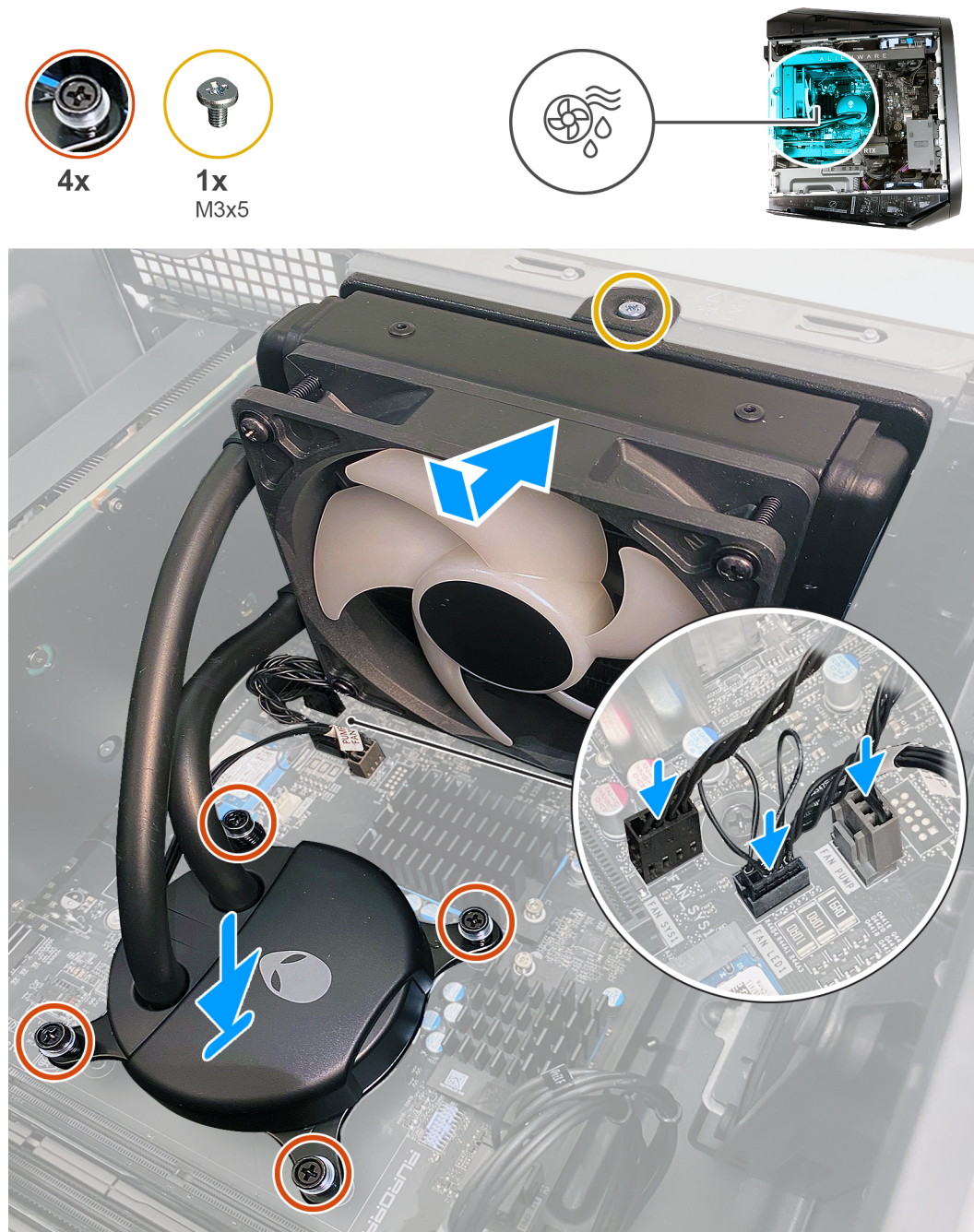
If you are replacing a component, remove the existing component before performing the installation procedure.

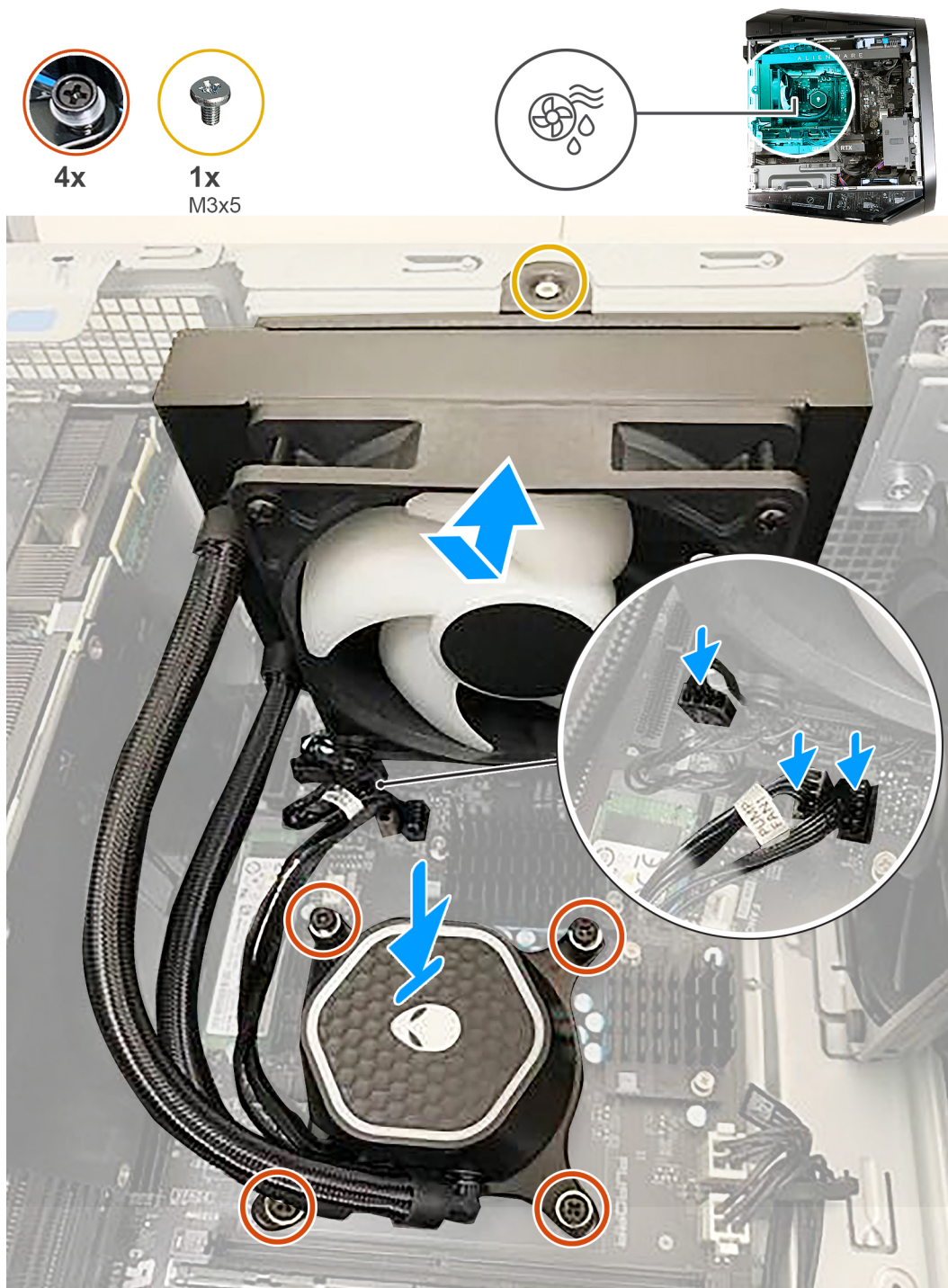⚠ **CAUTION: To avoid damage to the wireless mini-card, do not place any cables under it.**

About this task

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

1x
M2x3
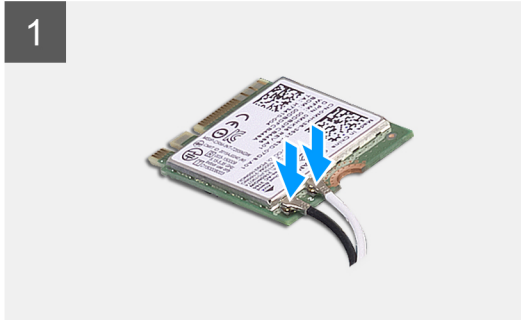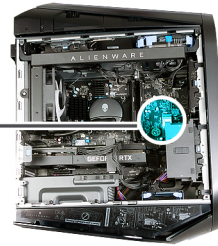
Steps

1. Connect the antenna cables to the wireless card.

   The following table provides the antenna-cable color scheme for the wireless card supported by your computer.

   Table 3. Antenna-cable color scheme

Connectors on the wireless card	Antenna-cable color
Main (white triangle)	White
Auxiliary (black triangle)	Black

2. 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.
4. Slide the wireless card at an angle into the wireless-card slot.
5. Replace the screw (M2x3) that secures the wireless card to the system board.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.

Antennas

## Removing the antennas

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.
3. Remove the wireless card.
4. Remove the top cover.
5. Remove the right-side cover.
6. Remove the front bezel.

About this task

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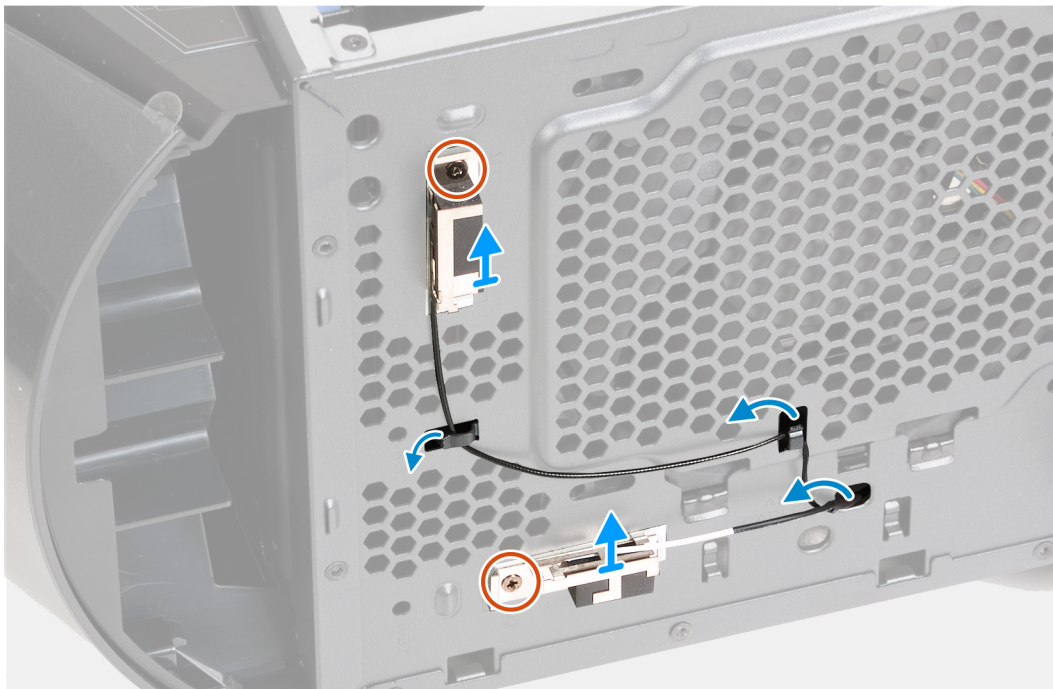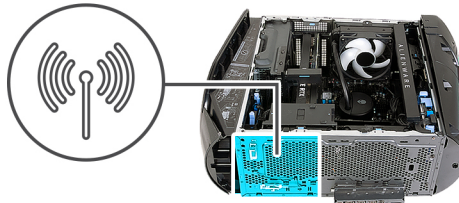
Steps

1. Remove the two screws (M3x3) that secure the antennas to the chassis.
2. Peel the two antennas and remove them from the slots of the chassis.
3. Remove the antenna cables from the routing guides on the chassis.
4. Remove the antenna cables from the routing clip inside the chassis.
5. Pull the antenna cables carefully through the hole on the chassis, and remove the antennas with their cables from the chassis.

Installing the antennas

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 antennas and provide a visual representation of the installation procedure.
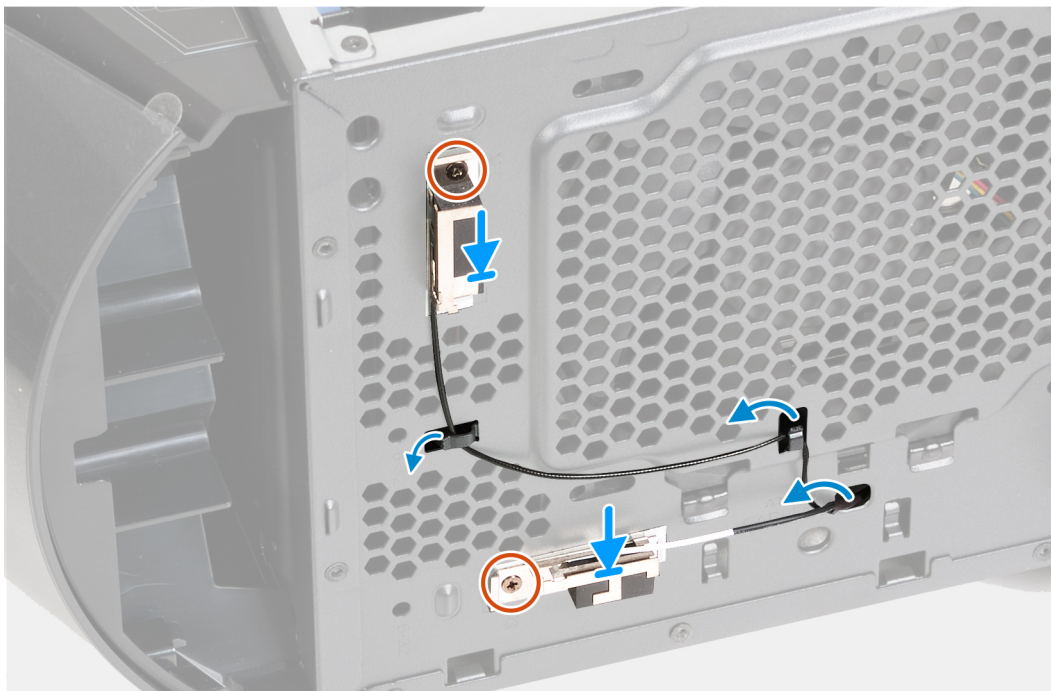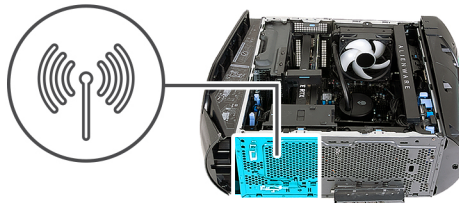
Steps

1. Place the antennas on the slots of the chassis and adhere the antennas to the chassis.
2. Align the screw holes and replace the two screws (M3x3) that secures the antennas to the chassis.
3. Route the antenna cables through the routing guides on the chassis.
4. Push the end of the antenna cables with the connectors to the wireless-card through the hole of the chassis.
5. Route the antenna cables through the routing clip inside the chassis.

Next steps

1. Install the front bezel.
2. Install the right-side cover.
3. Install the top cover.
4. Install the wireless card.
5. Install the left-side cover.
6. Follow the procedure in After working inside your computer.

Front-chassis fan

Removing the front-chassis fan

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.

About this task

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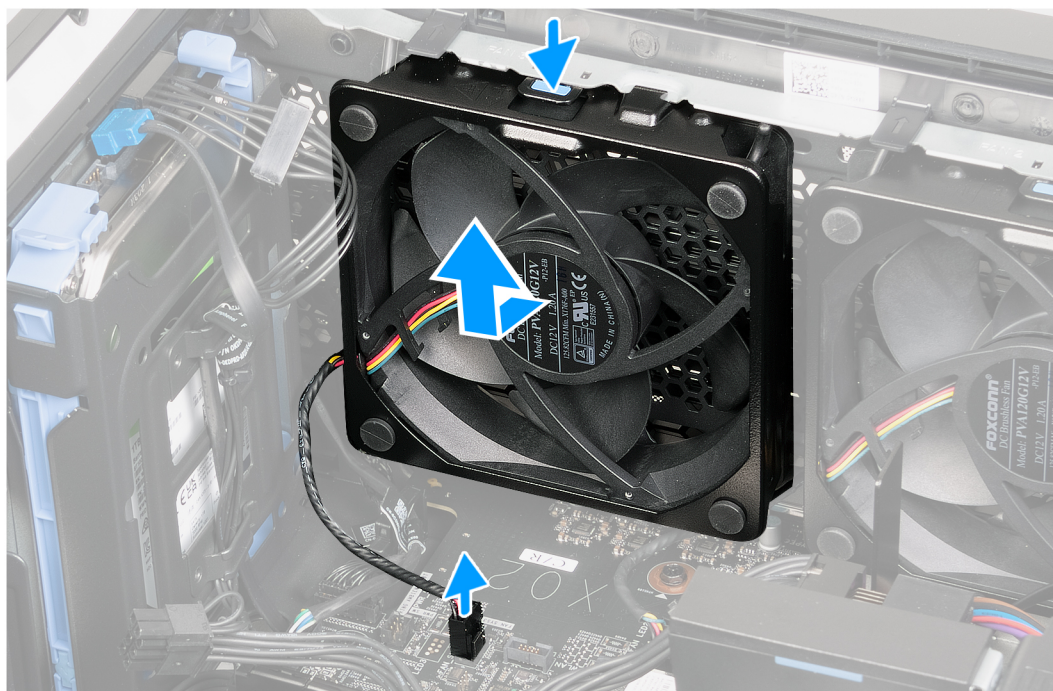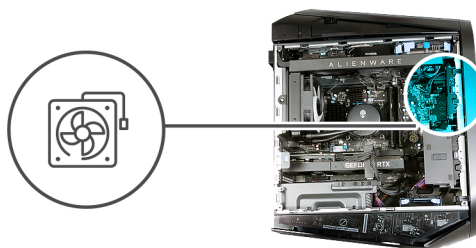
Steps

1. Lay the computer on its right side.
2. Disconnect the front-chassis fan cable from the system board.
3. Press the releasing clip; slide and lift the front-chassis off the chassis.

Installing the front-chassis 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 front-chassis fan and provide a visual representation of the installation procedure.
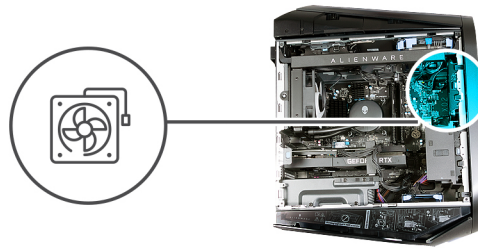
Steps

1. Lay the computer on its right side.
2. Align the front-chassis fan with the slot on the chassis; slide and push the fan until the releasing clip snaps into position.
3. Connect the front-chassis fan cable to the system board.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.

PCIe fan

Removing the PCIe fan

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.

About this task

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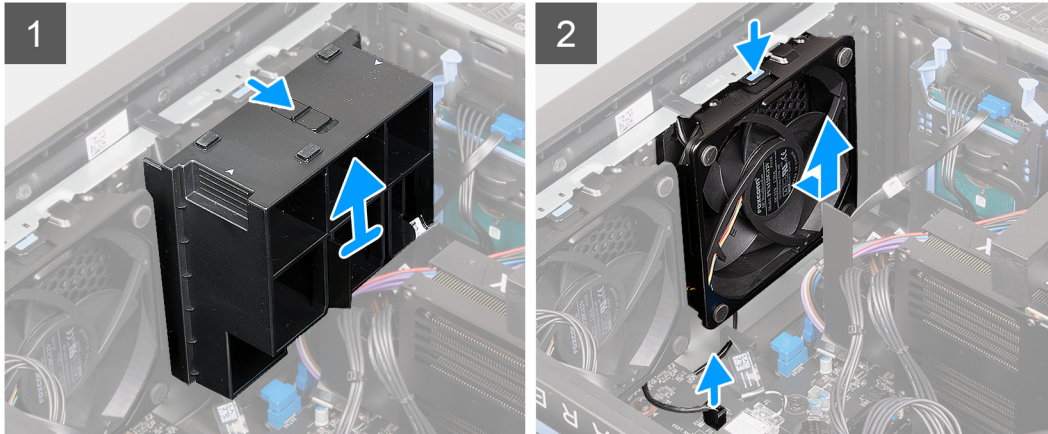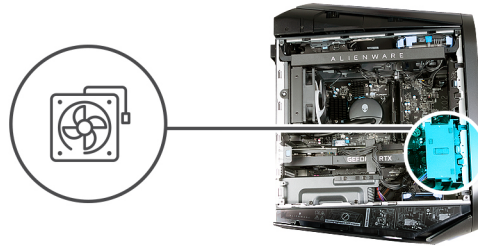
Steps

1. Lay the computer on its right side.
2. Slide the release latch to the unlock position and lift the graphics-card end holder away from the chassis.
3. Disconnect the PCIe fan cable from the system board.
4. Push the tab to release the PCIe fan from the chassis.
5. Slide and lift the PCIe fan off the chassis.

Installing the PCIe 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 PCIe fan and provide a visual representation of the installation procedure.
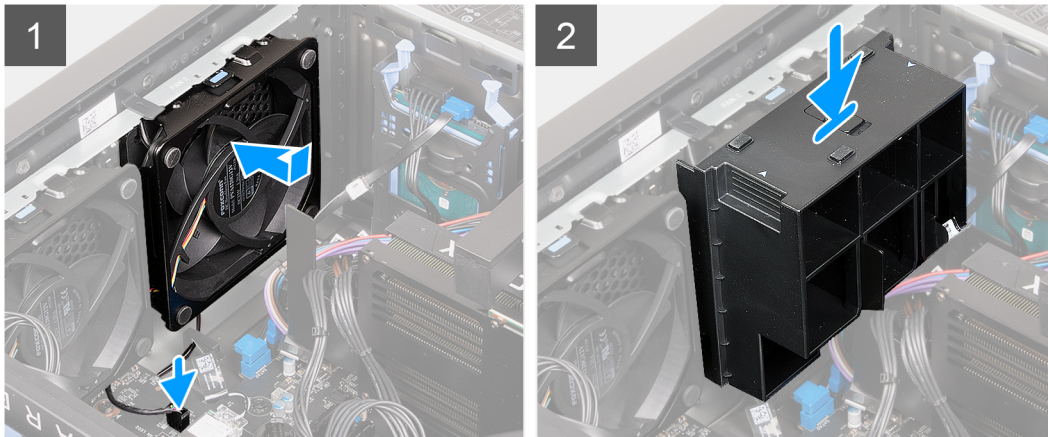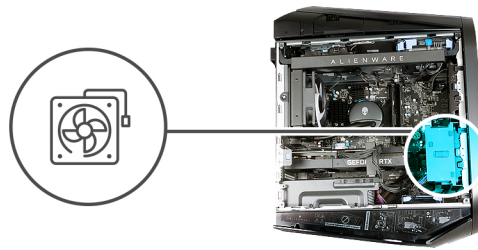
Steps

1. Lay the computer on its right side.
2. Align the tabs on the PCIe fan with the slots on the chassis.
3. Slide and push the fan until the releasing clip snaps into position on the chassis.
4. Connect the PCIe fan cable to the system board.
5. Replace the graphics-card end holder and slide the release latch to the lock position.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.

Top-chassis fan

Removing the top-chassis fan

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.

About this task

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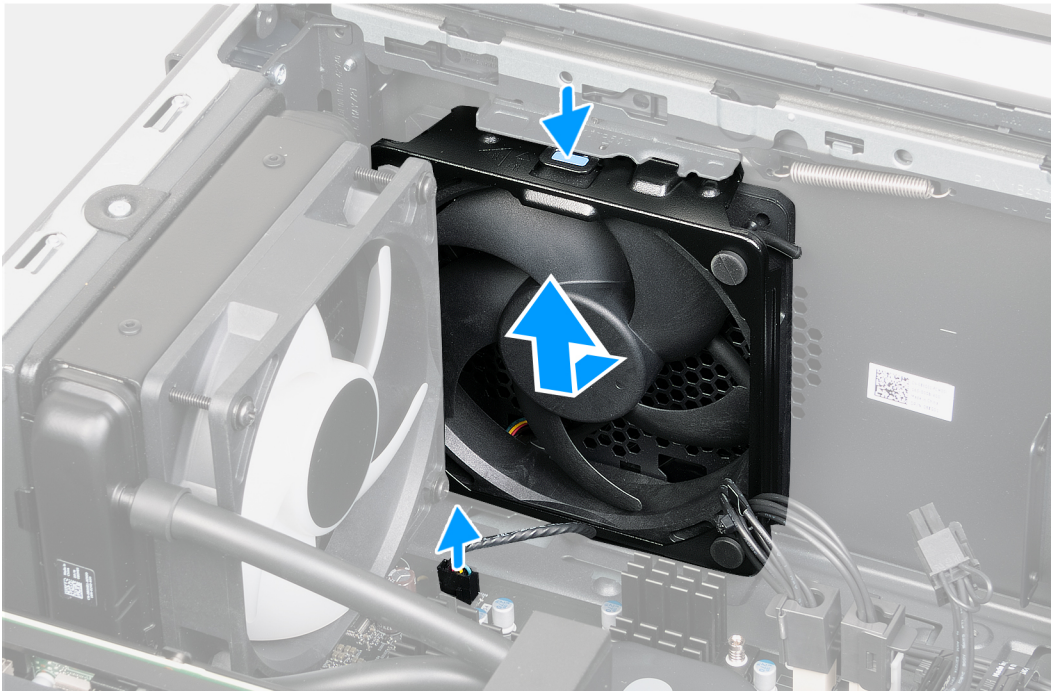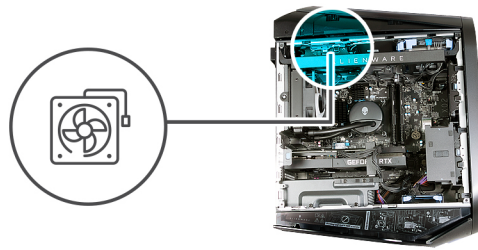
Steps

1. Lay the computer on the right side.
2. Disconnect the top-chassis fan cable from the system board.
3. Press the releasing clip of the top-chassis fans.
4. Slide and lift the top-chassis fan from the chassis.

# Installing the top-chassis 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 top-chassis fan and provide a visual representation of the installation procedure.
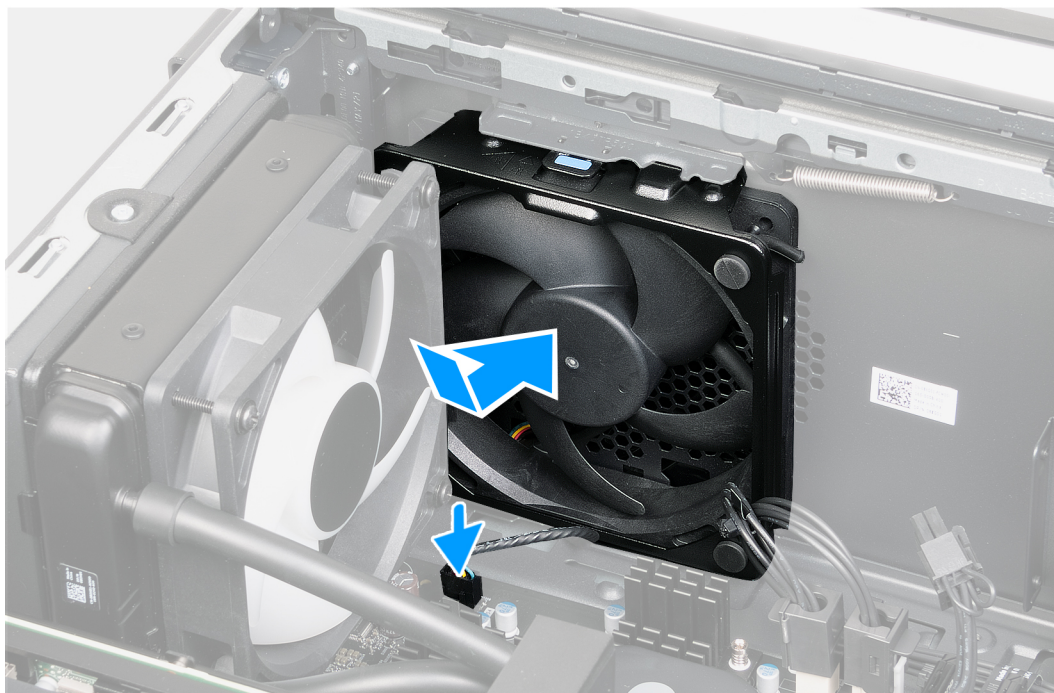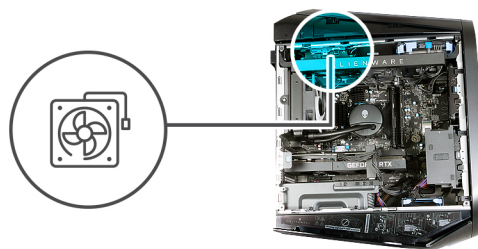
Steps

1. Lay the computer on its right side.
2. Align the top-chassis fan with the slot on the chassis.
3. Push the top-chassis fan into the slot on the chassis until its releasing clip is locked into place.
4. Connect the top-chassis fan cable to the system board.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.

Front AlienFX LED boards

Removing the Front AlienFX LED board

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.
3. Remove the top cover.
4. Remove the right-side cover.
5. Remove the front bezel.

About this task

The following images indicate the location of the front AlienFX LED board and provide a visual representation of the removal procedure.
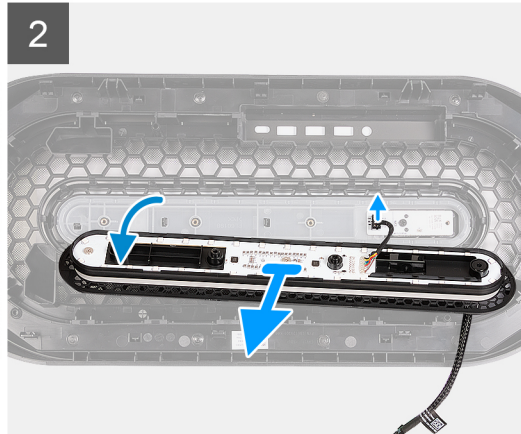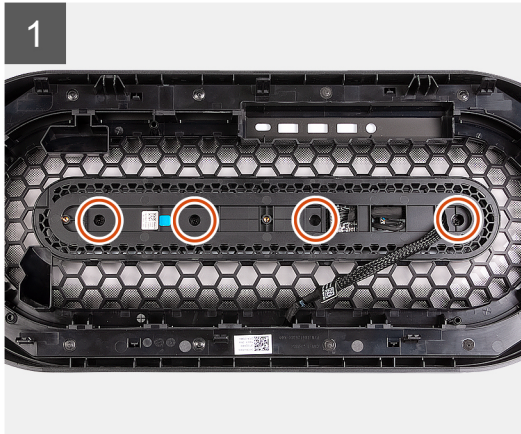
Steps

1. Place the front bezel on a flat surface to locate the AlienFX LED board.
2. Remove the four screws (M3x8) that secure the AlienFX LED board to the front bezel.
3. Lift the AlienFX LED board slightly off the front bezel and disconnect the power-button board cable from the power-button board.
4. Lift the AlienFX LED board with its cables off the front bezel.

Installing the Front AlienFX LED board

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 AlienFX LED board and provide a visual representation of the installation procedure.

4x
M3x8
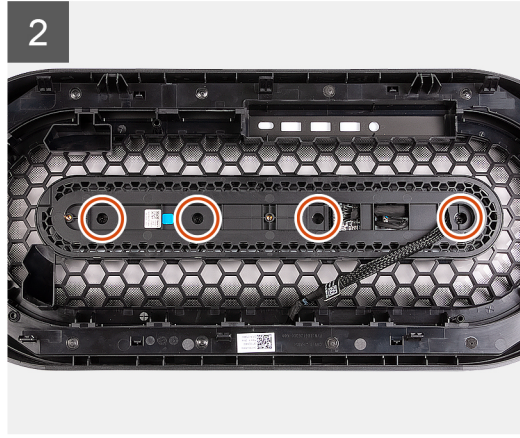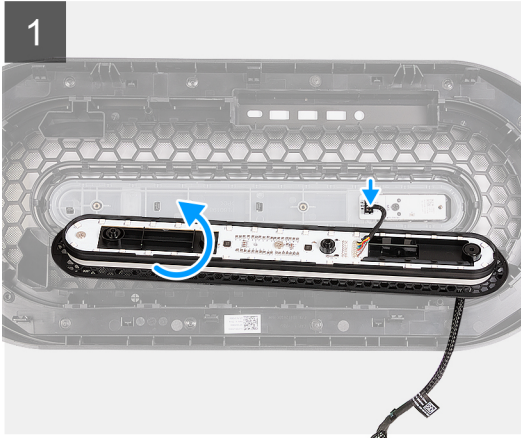
Steps

1. Place the front bezel on a flat surface and locate the power-button board.
2. Bring the AlienFX LED board near the front bezel and connect the power-button board cable to the power-button board.
3. Align the screw hole of the AlienFX LED board to the screw hole on the front bezel.
4. Replace the four screws (M3x8) that secure the AlienFX LED board to the front bezel.

Next steps

1. Install the front bezel.
2. Install the right-side cover.
3. Install the top cover.
4. Install the left-side cover.
5. Follow the procedure in After working inside your computer.

Power-button board

Removing the power-button board

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the left-side cover.
3. Remove the top cover.
4. Remove the right-side cover.
5. Remove the front bezel.
6. Remove the front AlienFX LED board.

About this task

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

1x
M2x3
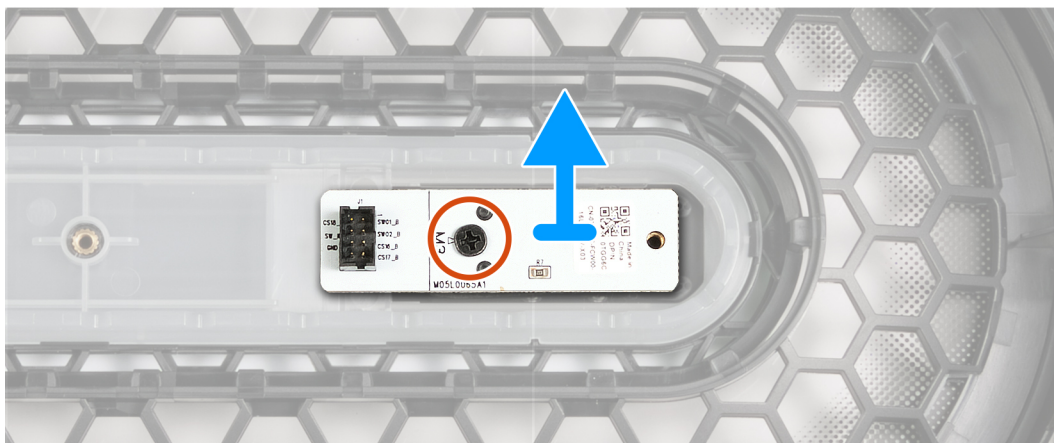
Steps

1. Remove the screw (M2x3) that secures the power-button board to the front bezel.
2. Lift the power-button board off the front bezel.

Installing the power-button board

**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-button board and provide a visual representation of the installation procedure.

1x
M2x3
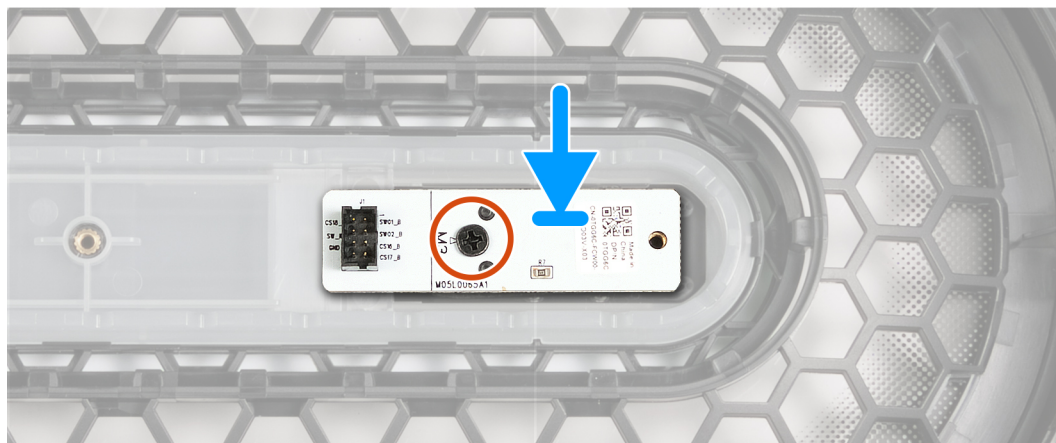
Steps

1. Align the screw hole on the power-button board with the screw hole on the front bezel.
2. Replace the screw (M2x3) that secures the power-button board to the front bezel.

Next steps

1. Install the front AlienFX LED board.
2. Install the front bezel.
3. Install the right-side cover.
4. Install the top cover.
5. Install the left-side cover.
6. Follow the procedure in After working inside your computer.

VR heat sink

Removing the VR heat sink

Prerequisites

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

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

   ⚠ **CAUTION: If either the processor or the heat sink is replaced, use the thermal grease that is provided in the kit to ensure that thermal conductivity is achieved.**

   ⓘ **NOTE:** 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.

> (i) **NOTE:** The VR heat sinks are shipped as separate units and they do not ship along with the new system board. Remove the VR heat sinks from old system board for transfer to the new system board.

2. Remove the left-side cover.

About this task

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

Steps

1. Lay the computer on the right side.
2. Loosen the captive screws that secure the VR heat sink to the system board.

3. Repeat the same process for the other VR heat sink.
4. Lift the VR heat sinks off the system board.

Installing the VR heat sink

Prerequisites

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

⚠ **CAUTION: If either the processor or the heat sink is replaced, use the thermal grease that is provided in the kit to ensure that thermal conductivity is achieved.**

ⓘ **NOTE:** 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.

ⓘ **NOTE:** The VR heat sinks are shipped as separate units and they do not ship along with the new system board. Remove the VR heat sinks from old system board for transfer to the new system board.

About this task

The following images indicate the location of the VR heat sink and provide a visual representation of the installation procedure.
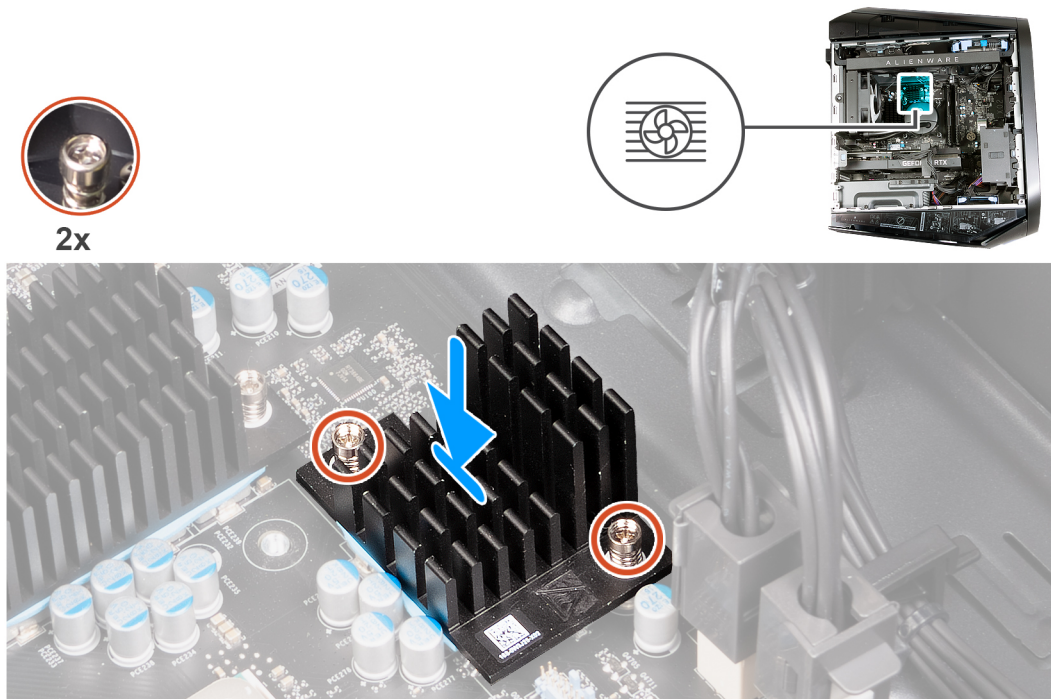
Steps

1. Align the captive screws of the VR heat sink with the screw holes on the system board.
2. Tighten the two captive screws that secure the VR heat sink to the system board.
3. Repeat the same procedure with the other VR heat sink.

Next steps

1. Install the left-side cover.
2. Follow the procedure in After working inside your computer.

# System board

Removing the system board

Prerequisites

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

   (i) **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.

   (i) **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.

   (i) **NOTE:** Before disconnecting the cables from the system board, note the location of the connectors so that you can reconnect the cables correctly after you replace the system board.

2. Remove the left-side cover.
3. Remove the top cover.
4. Remove the right-side cover.
5. Remove the front bezel.
6. Remove the memory module.
7. Remove the single-graphics card.
8. Remove the 2230 solid-state drive or the 2280 solid-state drive.
9. Remove the wireless card.
10. Remove the processor liquid-cooling assembly or processor fan and heat-sink assembly, as applicable.
11. Remove the processor.
12. Remove the VR heat sink.

About this task

The following image indicates the connectors on your system board.
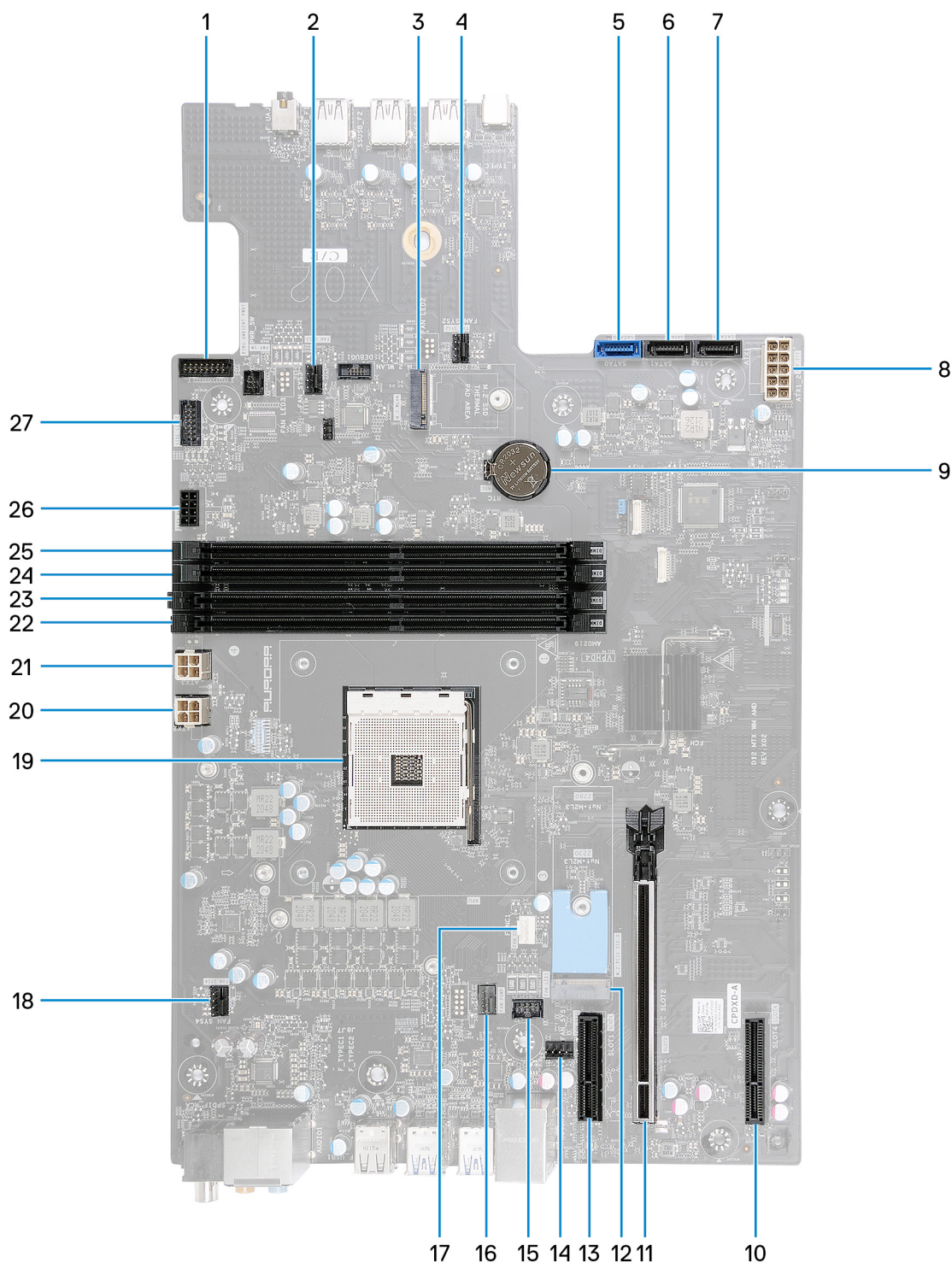
1. Ring Ambient Power Button connector
2. FAN_SYS3 connector
3. Wireless-card slot (M.2 WLAN)
4. FAN_SYS2 connector
5. SATA 6 Gbps drive connector (SATA0)
6. SATA 6 Gbps drive connector (SATA1)
7. SATA 6 Gbps drive connector (SATA2)
8. Power-supply connector (ATX1_2)
9. Coin-cell battery
10. PCI-Express x4 slot (SLOT4)
11. PCI-Express x16 mechanical/x16 electrical slot PCIe Gen4 (SLOT2)

12. Solid-state drive slot (M.2 PCIe SSD.0)
13. PCI-Express x4 slot (SLOT1)
14. Rear-chassis fan connector (FAN_SYS1)
15. Fan LED connector (FAN LED1)
16. Fan pump connector (FAN PUMP)
17. CPU fan connector
18. Top-chassis fan connector (FAN_SYS4)
19. CPU socket
20. Power-supply connector (ATX2)
21. Power-supply connector (ATX3)
22. Memory-module slot, DIMM 3
23. Memory-module slot, DIMM 1
24. Memory-module slot, DIMM 4
25. Memory-module slot, DIMM 2
26. SATA power connector
27. Side light connector

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

10x

#6-32x1/4"
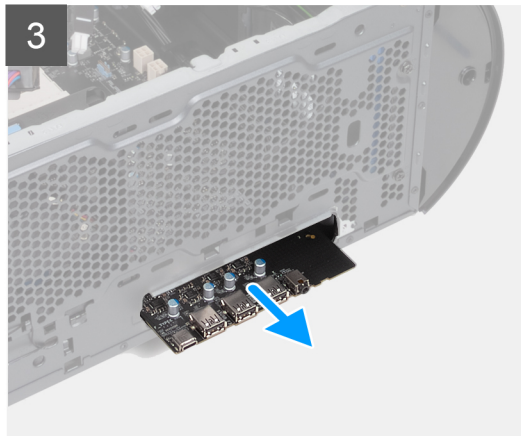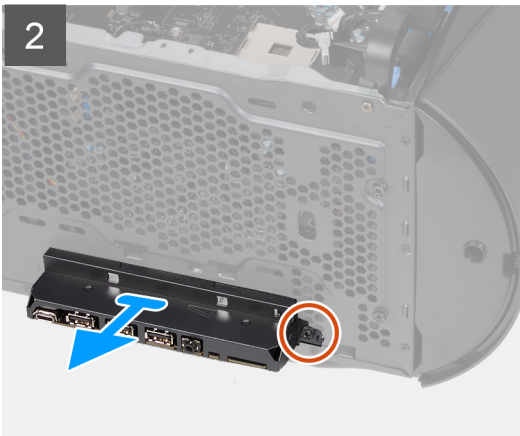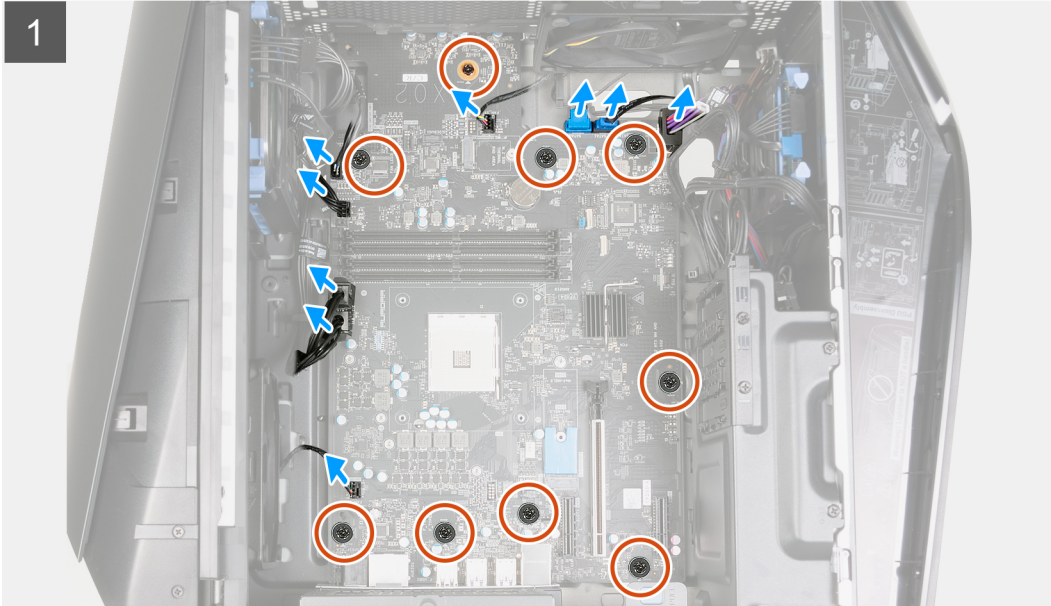
Steps

1. Disconnect the hard-drive data cables from the system board.
2. Disconnect the processor-power cables from the system board.
3. Disconnect the system-board power cables from the system board.
4. Disconnect the top-chassis fan power cable from the system board.
5. Disconnect the front-chassis fan power cable from the system board.
6. Disconnect the side-light power cable from the system board.
7. Disconnect the SATA power cable from the system board.
8. Disconnect all the cables that are connected to the system board.

   ⓘ **NOTE:** Note the routing of all cables as you remove them so that you can route them correctly after you replace the system board. For information about system-board connectors, see "system-board components".

   ⓘ **NOTE:** Note the routing of all cables as you remove them so that you can route them correctly after you replace the system board.

9. Remove the nine screws (#6-32x1/4") that secure the system board to standoffs on the chassis.
10. Remove the screw (#6-32x1/4") that secures the front I/O-bracket to the chassis and remove the front I/O-bracket.
11. Hold the edge of the system board where the front I/O-ports are located.
12. Hold the edge of the system board where the rear ports are located.
13. Lift the system board off the chassis at an angle and remove the system board from the chassis.

Installing the system board

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 system board and provide a visual representation of the installation procedure.

10x
#6-32x1/4"
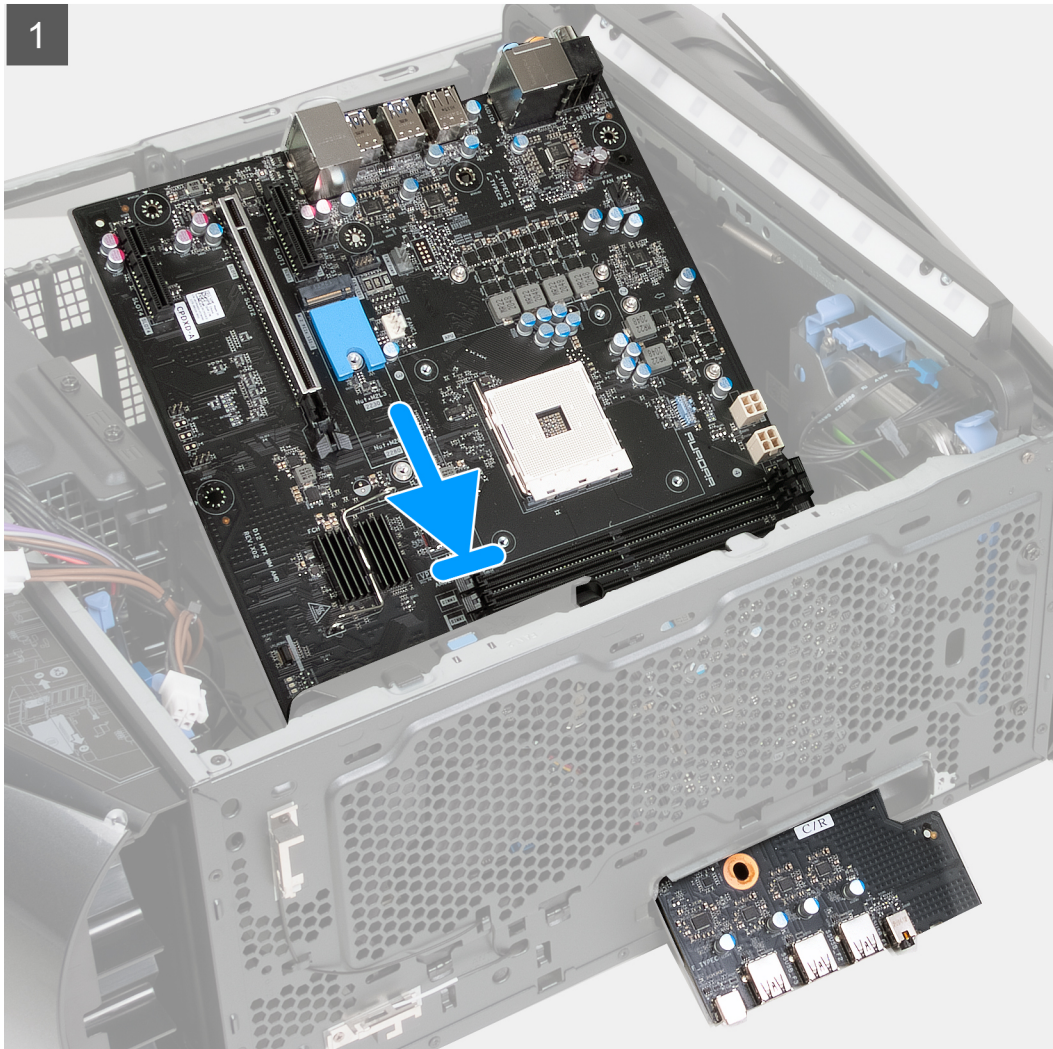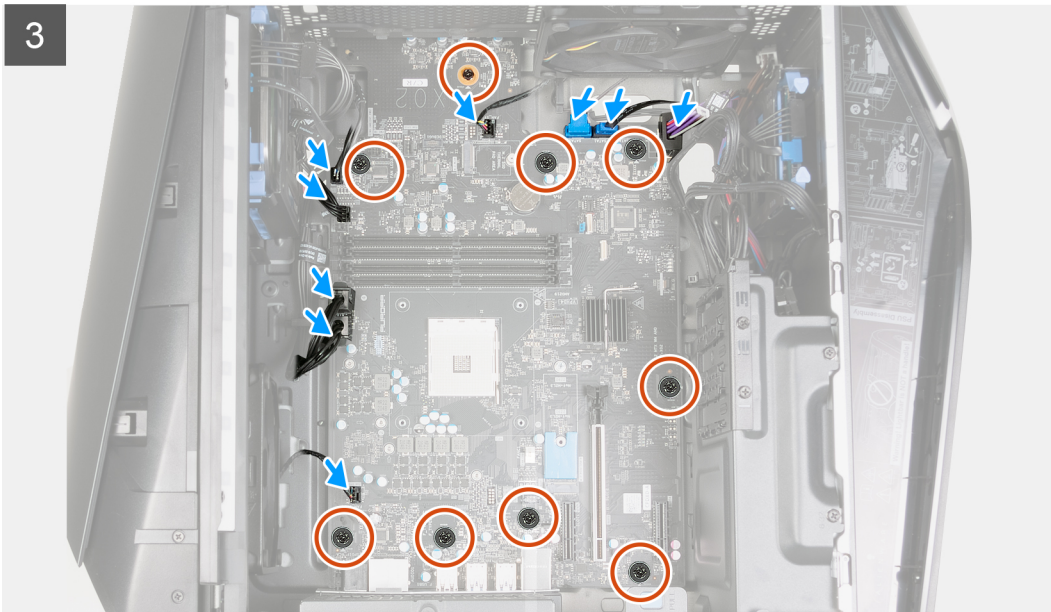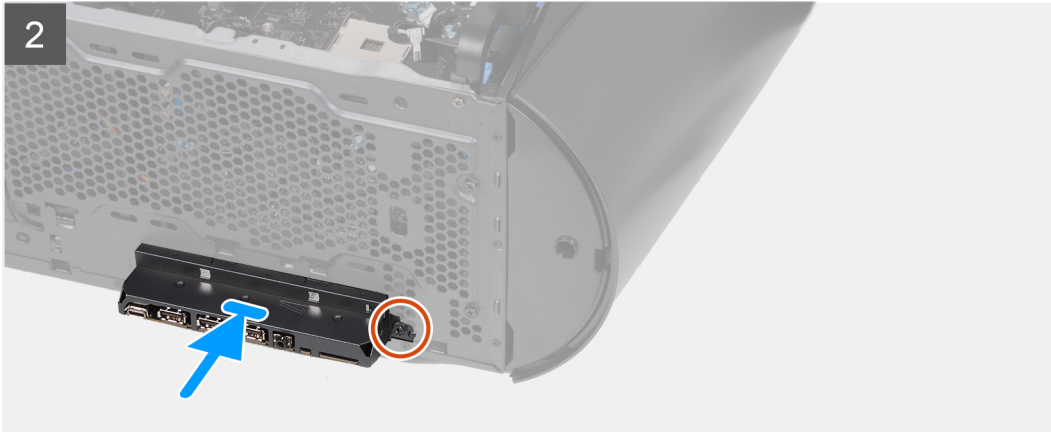
Steps

1. Slide the front I/O-ports on the system board into the front I/O-slot on the chassis and align the screw holes on the system board with the standoffs on the chassis.
2. Place the system board on the standoffs on the chassis.
3. Align the front I/O-bracket to the front I/O-ports and install the bracket on the chassis.
4. Replace the screw (#6-32x1/4") that secures the front I/O-bracket to the chassis.
5. Replace the nine screws (#6-32x1/4") that secure the system board assembly to the standoffs on the chassis.
6. Route and connect all the cables that were disconnected from the system board.
7. Connect the SATA power cable from the system board.
8. Connect the Side-light power cable from the system board.
9. Connect the front-chassis fan power cable from the system board.
10. Connect the top-chassis fan power cable from the system board.
11. Connect the system-board power cables from the system board.
12. Connect the processor-power cables from the system board.
13. Connect the hard-drive data cables from the system board.

Next steps

1. Install the VR heat sink.
2. Install the processor.
3. Install the processor liquid-cooling assembly or processor fan and heat-sink assembly, as applicable.
4. Install the wireless card.

5. Install the 2230 solid-state drive or the 2280 solid-state drive.
6. Install the memory module.
7. Install the front bezel.
8. Install the right-side cover.
9. Install the top cover.
10. Install the left-side cover.
11. Follow the procedure in After working inside your computer.

Entering the Service Tag in the BIOS setup program

Steps

1. Turn on or restart your computer.
2. Press F2 when the Dell logo is displayed to enter the BIOS setup program.
3. Navigate to the **Main** tab and enter the Service Tag in the **Service Tag Input** field.

Next steps

ⓘ **NOTE:** Service tag is the alphanumeric identifier located at the back side of your computer.

Device drivers

Operating system

Your Alienware Aurora Ryzen Edition R14 supports the following operating systems:

- Windows 11 Pro Standard, 64-bit
- Windows 11 Pro Plus, 64-bit
- Windows 11 Home Standard, 64-bit
- Windows 11 Home Plus, 64-bit
- Windows 11 Home Advanced, 64-bit

Downloading the audio driver

Steps

1. Turn on your computer.
2. Go to Dell Support Site.
3. Enter the Service Tag of your computer, and then click **Submit**.

   (i) **NOTE:** If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.

4. Click **Drivers & downloads**.
5. Click the **Detect Drivers** button.
6. Review and agree to the Terms and Conditions to use **SupportAssist**, then click **Continue**.
7. If necessary, your computer starts to download and install **SupportAssist**.

   (i) **NOTE:** Review on-screen instructions for browser-specific instructions.

8. Click **View Drivers for My System**.
9. Click **Download and Install** to download and install all driver updates detected for your computer.
10. Select a location to save the files.
11. If prompted, approve requests from **User Account Control** to make changes on the system.
12. The application installs all drivers and updates identified.

    (i) **NOTE:** Not all files can be installed automatically. Review the installation summary to identify if manual installation is necessary.

13. For manual download and installation, click **Category**.
14. Click **Audio** in the drop-down list.
15. Click **Download** to download the audio driver for your computer.
16. After the download is complete, navigate to the folder where you saved the audio driver file.
17. Double-click the audio driver file icon and follow the instructions on the screen to install the driver.

Downloading the graphics driver

Steps

1. Turn on your computer.
2. Go to Dell Support Site.

3. Enter the Service Tag of your computer, and then click **Submit**.

   (i) **NOTE:** If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.

4. Click **Drivers & downloads**.
5. Click the **Detect Drivers** button.
6. Review and agree to the Terms and Conditions to use **SupportAssist**, then click **Continue**.
7. If necessary, your computer starts to download and install **SupportAssist**.

   (i) **NOTE:** Review on-screen instructions for browser-specific instructions.

8. Click **View Drivers for My System**.
9. Click **Download and Install** to download and install all driver updates detected for your computer.
10. Select a location to save the files.
11. If prompted, approve requests from **User Account Control** to make changes on the system.
12. The application installs all drivers and updates identified.

    (i) **NOTE:** Not all files can be installed automatically. Review the installation summary to identify if manual installation is necessary.

13. For manual download and installation, click **Category**.
14. Click **Video** in the drop-down list.
15. Click **Download** to download the graphics driver for your computer.
16. After the download is complete, navigate to the folder where you saved the graphics driver file.
17. Double-click the graphics driver file icon and follow the instructions on the screen to install the driver.

Downloading the USB driver

Steps
1. Turn on your computer.
2. Go to Dell Support Site.
3. Enter the Service Tag of your computer, and then click **Submit**.

   (i) **NOTE:** If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.

4. Click **Drivers & downloads**.
5. Click the **Detect Drivers** button.
6. Review and agree to the Terms and Conditions to use **SupportAssist**, then click **Continue**.
7. If necessary, your computer starts to download and install **SupportAssist**.

   (i) **NOTE:** Review on-screen instructions for browser-specific instructions.

8. Click **View Drivers for My System**.
9. Click **Download and Install** to download and install all driver updates detected for your computer.
10. Select a location to save the files.
11. If prompted, approve requests from **User Account Control** to make changes on the computer.
12. The application installs all drivers and updates identified.

    (i) **NOTE:** Not all files can be installed automatically. Review the installation summary to identify if manual installation is necessary.

13. For manual download and installation, click **Category**.
14. Click **Chipset** in the drop-down list.
15. Click **Download** to download the USB driver for your computer.
16. After the download is complete, browse the folder where you saved the USB driver file.
17. Double-click the USB driver file icon and follow the instructions on the screen to install the driver.

Downloading the WiFi driver

Steps

1. Turn on your computer.
2. Go to Dell Support Site.
3. Enter the Service Tag of your computer, and then click **Submit**.

   ⓘ **NOTE:** If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.

4. Click **Drivers & downloads**.
5. Click the **Detect Drivers** button.
6. Review and agree to the Terms and Conditions to use **SupportAssist**, then click **Continue**.
7. If necessary, your computer starts to download and install **SupportAssist**.

   ⓘ **NOTE:** Review on-screen instructions for browser-specific instructions.

8. Click **View Drivers for My System**.
9. Click **Download and Install** to download and install all driver updates detected for your computer.
10. Select a location to save the files.
11. If prompted, approve requests from **User Account Control** to make changes on the system.
12. The application installs all drivers and updates identified.

    ⓘ **NOTE:** Not all files can be installed automatically. Review the installation summary to identify if manual installation is necessary.

13. For manual download and installation, click **Category**.
14. Click **Network** in the drop-down list.
15. Click **Download** to download the WiFi driver for your computer.
16. After the download is complete, navigate to the folder where you saved the WiFi driver file.
17. Double-click the WiFi driver icon and follow the instructions on the screen to install the driver.

Downloading the media-card reader driver

Steps

1. Turn on your computer.
2. Go to Dell Support Site.
3. Enter the Service Tag of your computer, and then click **Submit**.

   ⓘ **NOTE:** If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.

4. Click **Drivers & downloads**.
5. Click the **Detect Drivers** button.
6. Review and agree to the Terms and Conditions to use **SupportAssist**, then click **Continue**.
7. If necessary, your computer starts to download and install **SupportAssist**.

   ⓘ **NOTE:** Review on-screen instructions for browser-specific instructions.

8. Click **View Drivers for My System**.
9. Click **Download and Install** to download and install all driver updates detected for your computer.
10. Select a location to save the files.
11. If prompted, approve requests from **User Account Control** to make changes on the system.
12. The application installs all drivers and updates identified.

> ⓘ **NOTE:** Not all files can be installed automatically. Review the installation summary to identify if manual installation is necessary.

13. For manual download and installation, click **Category**.
14. Click **Chipset** in the drop-down list.
15. Click **Download** to download the media-card reader driver for your computer.
16. After the download is complete, navigate to the folder where you saved the media-card reader driver file.
17. Double-click the media-card reader driver file icon and follow the instructions on the screen to install the driver.

Downloading the chipset driver

Steps

1. Turn on your computer.
2. Go to Dell Support Site.
3. Enter the Service Tag of your computer, and then click **Submit**.

> ⓘ **NOTE:** If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.

4. Click **Drivers & downloads**.
5. Click the **Detect Drivers** button.
6. Review and agree to the Terms and Conditions to use **SupportAssist**, then click **Continue**.
7. If necessary, your computer starts to download and install **SupportAssist**.

> ⓘ **NOTE:** Review on-screen instructions for browser-specific instructions.

8. Click **View Drivers for My System**.
9. Click **Download and Install** to download and install all driver updates detected for your computer.
10. Select a location to save the files.
11. If prompted, approve requests from **User Account Control** to make changes on the computer.
12. The application installs all drivers and updates identified.

> ⓘ **NOTE:** Not all files can be installed automatically. Review the installation summary to identify if manual installation is necessary.

13. For manual download and installation, click **Category**.
14. Click **Chipset** in the drop-down list.
15. Click **Download** to download the chipset driver for your computer.
16. After the download is complete, browse the folder where you saved the chipset driver file.
17. Double-click the chipset driver file icon and follow the instructions on the screen to install the driver.

Downloading the network driver

Steps

1. Turn on your computer.
2. Go to Dell Support Site.
3. Enter the Service Tag of your computer, and then click **Submit**.

> ⓘ **NOTE:** If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.

4. Click **Drivers & downloads**.
5. Click the **Detect Drivers** button.
6. Review and agree to the Terms and Conditions to use **SupportAssist**, then click **Continue**.
7. If necessary, your computer starts to download and install **SupportAssist**.

> (i) **NOTE:** Review on-screen instructions for browser-specific instructions.

8. Click **View Drivers for My System**.
9. Click **Download and Install** to download and install all driver updates detected for your computer.
10. Select a location to save the files.
11. If prompted, approve requests from **User Account Control** to make changes on the system.
12. The application installs all drivers and updates identified.

> (i) **NOTE:** Not all files can be installed automatically. Review the installation summary to identify if manual installation is necessary.

13. For manual download and installation, click **Category**.
14. Click **Network** in the drop-down list.
15. Click **Download** to download the network driver for your computer.
16. After the download is complete, navigate to the folder where you saved the network driver file.
17. Double-click the network driver file icon and follow the instructions on the screen to install the driver.

4

System setup

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

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

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

Entering BIOS Setup program

About this task

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

Navigation keys

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

Table 4. 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 follow the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
Tab	Moves to the next focus area.
Esc	Moves to the previous page until you view the main screen. Pressing Esc in the main screen displays a message that prompts you to save any unsaved changes and restarts the system.

Boot sequence

Boot sequence allows you to bypass the System Setup–defined boot device order and boot directly to a specific device (for example: optical drive or hard drive). During the Power-on Self Test (POST), when the Dell logo appears, you can:
- Access System Setup by pressing F2 key
- Bring up the one-time boot menu by pressing F12 key

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

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

ⓘ **NOTE:** XXX denotes the SATA drive number.

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

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

System setup options

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

Table 5. System setup options—Main menu

Main	
System Time	Displays the current time in hh:mm:ss format.
System Date	Displays the current date in mm/dd/yy format.
BIOS Version	Displays the BIOS version number.
Product Name	Displays the product name. Default: Alienware Aurora Ryzen Edition R14
Service Tag	Displays the service tag of your computer.
Asset Tag	Displays the asset tag of your computer.
CPU Type	Displays the processor type.
CPU Speed	Displays the speed of the processor.
CPU ID	Displays the processor identification code.
CPU Cache	
L1 Cache	Displays the processor L1 cache size.
L2 Cache	Displays the processor L2 cache size.
L3 Cache	Displays the processor L3 cache size.
First HDD	Allows you to configure the first HDD.
M.2 PCIe SSD-0	Enables or disables the M.2 PCIe SSD-0.
System Memory	Displays the total computer memory installed.
Memory Speed	Displays the memory speed.

Table 6. System setup options—Advanced menu

Advanced	
Model Name Selection	
Model Name Selection	Allows you to select Model Name.
	Default: Model Name
Virtualization	
Virtualization	Enables the computer to run a virtual machine monitor (VMM).
	Default: Enabled
Integrated NIC	
Integrated NIC	Allows you to enable or disable the integrated NIC.

Table 6. System setup options—Advanced menu (continued)

Advanced	
	Default: Enabled
SATA/NVME Operation	
SATA/NVME Operation	Sets the operating mode of the integrated storage device controller.
	Default: AHCI/NVME
PCIe Resizable Base Address Register	
PCIe Resizable Base Address Register	Allows you to enable or disable the Resizable Base Address Register (BAR) feature.
	Default: Disabled
IPv4 HTTP Support	
IPv4 HTTP Support	Allows you to enable or disable IPv4 HTTP Support.
	Default: Disabled
IPv6 HTTP Support	
IPv6 HTTP Support	Allows you to enable or disable IPv6 HTTP Support.
	Default: Disabled
USB Configuration	
Front USB Ports	Allows you to enable or disable the Front USB Ports.
	Default: Enabled
Rear USB Ports	Allows you to enable or disable the Rear USB Ports.
	Default: Enabled
Power Options	
Wake Up by Integrated LAN	Allow the computer to be powered on by special LAN signals.
	Default: Enabled
AC Recovery	Sets what action the computer takes when power is restored.
	Default: Power Off
Deep Sleep Control	Allows you to define the controls when Deep Sleep is enabled.
	Default: Enabled in S4 and S5
USB PowerShare	Allows you to charge external devices.
	Default: Disabled
USB PowerShare in Sleep State	Allows you to enable front the USB devices to wake the system from sleep state.
	Default: Normal
Auto Power On	Allows you to enable or disable Auto Power On.
	Default: Disabled
Auto Power On Mode	Allows you to set the computer to turn on automatically every day or on a preselected date. This option can be configured only if the Auto Power On mode is set to Enabled Everyday or Selected Day.
	Default: Selected Day

Table 6. System setup options—Advanced menu (continued)

Advanced	
Auto Power On Date	Allows you to set the date on which the computer must turn on automatically. This option can be configured only if the Auto Power On mode is set to Enabled 1 to 31.
	Default: 15
Auto Power On Time	Allows you to set the time at which the computer must turn on automatically. This option can be configured only if the Auto Power On mode is set to Enabled hh:mm:ss.
	Default: 12:30:30
Numlock Key	Allows you to set the status of the Num Lock key during boot to On or Off.
	Default: Enabled
Performance Options	
CPU TCC offset	Allows you to configure the maximum CPU temperature within a certain range of values.
Overclocking Feature	Allows you to enable or disable the Overclocking Feature.
	Default: Enabled
Maintenance	
Data Wipe on next boot	When enabled, the BIOS will schedule a data wipe cycle for all storage devices that are connected to the system board on the next reboot.
	Default: Disabled
BIOS Recovery from Hard Drive	Enables the computer to recover from certain corrupted BIOS conditions from a recovery file on the user primary hard drive or an external USB key. ⓘ **NOTE:** BIOS Recovery from Hard Drive is not available for Self-encrypting drives (SED).
	Default: Enabled
BIOS Auto-Recovery	When enabled, the autorecovery will be performed if BIOS image integrity check fails and there is a recovery image on the hard drive. ⓘ **NOTE:** BIOS Auto-Recovery is not possible from other media.
	Default: Disabled
SupportAssist System Resolution	Controls the automatic boot flow for SupportAssist System Resolution Console and for Dell operating system Recovery tool.
Auto OS Recovery Threshold	Allows you to configure the Auto OS Recovery Threshold.
	Default: 2
SupportAssist OS Recovery	Allows you to enable or disable the SupportAssist OS Recovery.
	Default: Enabled

Table 7. System setup options—Security menu

Security	
Unlock Setup Status	Displays the unlock setup status.

Table 7. System setup options—Security menu (continued)

Security	
Admin Password Status	Displays whether the admin password is set.
	Default: Not Set
System Password Status	Displays whether the system password is set.
	Default: Not Set
HDD Password Status	Displays if the hard drive password is set.
	Default: Not Set
Asset Tag	Creates a system Asset Tag that can be used by an IT administrator to uniquely identify a particular system. Once set in BIOS, the Asset Tag cannot be changed.
Admin Password	Enables the user to set, change, or delete the admin password.
System Password	Enables the user to set, change, or delete the system password.
HDD Password	Enables the user to set, change, or delete the hard drive password.
Password Change	Allows you to enable or disable password change on the computer.
	Default: Permitted
Absolute	Enable or disable the BIOS module interface of the optional Absolute Persistence Module service from Absolute Software.
	Default: Enabled
Firmware TPM	Displays the firmware TPM state.
	Default: Enabled
PPI Bypass for Clear Command	Enable or disable the TPM Physical Presence Interface (PPI). When enabled, this setting will allow the OS to skip BIOS PPI user prompts when issuing the Clear command. Changes to this setting take effect immediately.
	Default: Disabled
UEFI Firmware Capsule Updates	Enables or disables BIOS updates through UEFI capsule update packages.
	Default: Enabled
Windows SMM Security Mitigations Table	Enables or disables Windows SMM Security Mitigation protections.
	Default: Disabled
Enable Pre-Boot DMA Protection	Enables or disables Pre-Boot DMA Protection.
	Default: Enabled
Enable OS Kernel DMA Support	Enables or disables OS Kernel DMA Protection.
	Default: Enabled
Secure Boot	
Secure Boot	Enables secure boot using only validated boot software.
	Default: Disabled

Table 7. System setup options—Security menu (continued)

Security	
Secure Boot Mode	Modifies the behavior of Secure Boot to allow evaluation or enforcement of UEFI driver signatures. Deployed Mode should be selected for normal operation of Secure Boot. Default: Deployed Mode
Expert Key Management	
Custom Mode	Allows you to enable or disable Custom Mode. When enabled, it allows the PK, KEK, db, and dbx security key databases to be modified. Default: Disabled
Enable Microsoft UEFI CA	Allows you to enable or disable Microsoft UEFI CA.
PK KEK db dbx Reset all Keys Delete all Keys	Allows for selection of key database. ● Delete All Keys will delete the selected key. ● Reset All Keys will reset all four keys to their default settings.

Table 8. System setup options—Boot menu

Boot	
Boot List Option	Displays the available boot devices. Default: UEFI
File Browser Add Boot Option	Allows you to set the boot path in the boot option list.
File Browser Del Boot Option	Allows you to delete the boot path in the boot option list.
Enable USB Boot Support	Allows you to enable or disable the USB Boot control.
Boot Option Priorities	Displays the available boot devices.
Boot Option #1	Displays the first boot device. Default: Windows Boot Manager.
Boot Option #2	Displays the second boot device. Default: Onboard NIC (IPV4)

Table 9. System setup options—Exit menu

Save & Exit	
Save Changes and Reset	Allows you to exit system setup and save your changes.
Discard Changes and Reset	Allows you to exit system setup and load previous values for all system setup options.
Restore Defaults	Allows you to load default values for all system setup options.
Discard Changes	Allows you to exit your changes.
Save Changes	Allows you to save your changes.

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 10. 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.

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, see the Knowledge Base Resource 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 in the Knowledge Base Resource 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, see the Knowledge Base Resource 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 the Knowledge Base Resource at 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 Knowledge base article 000128928 at Dell Support Site.

Troubleshooting

SupportAssist diagnostics

About this task

The SupportAssist diagnostics (previously known as ePSA diagnostics) performs a complete check of your hardware. The SupportAssist diagnostics is embedded in the BIOS and is launched by it internally. The SupportAssist diagnostics provides a set of options for particular devices or device groups. It allows you to:

● Run tests automatically or in an interactive mode.
● Repeat tests
● Display or save test results
● Run thorough tests to introduce additional test options and provide extra information about the failed device(s)
● View status messages that indicate if the tests are completed successfully
● View error messages that indicate if problems were encountered during the test

(i) **NOTE:** Some tests are meant for specific devices and require user interaction. Ensure that you are present in front of the computer when the diagnostic tests are performed.

For more information, see SupportAssist Pre-Boot System Performance Check.

System-diagnostic lights

The power-status light indicates the power status of the computer. These are the power states:

Solid white—Computer is in S0 state. This is the normal power state of the computer.

Blinking white—Computer is in Modern Standby mode. This does not indicate a fault.

Solid amber—Computer is experiencing a boot failure, including the power-supply unit.

Blinking amber—Computer is experiencing a boot failure but the power-supply unit is functioning correctly.

Off—Computer is in hibernation mode or turned off.

The power-status light may also blink amber or white according to predefined "beep codes" indicating various failures.

For example, the power and battery-status light blinks amber two times followed by a pause, and then blinks white three times followed by a pause. This 2,3 pattern continues until the computer is turned off, indicating no memory or RAM is detected.

The following table shows different power and battery-status light patterns and associated problems.

(i) **NOTE:** The following diagnostic light codes and recommended solutions are intended for Dell service technicians to troubleshoot problems. 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.

Table 11. 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
2,1	CPU configuration or CPU failure

Table 11. Diagnostic light codes (continued)

Diagnostic light codes (Amber, White)	Problem description
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
3,1	CMOS battery failure
3,2	PCI of Video card/chip failure
3,3	BIOS Recovery 1: BIOS recovery image not found
3,4	BIOS Recovery 2: Recovery image found but invalid
3,5	Power Rail Failure: EC ran into power sequencing failure
3,6	Flash corruption detected by SBIOS
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**.

> (i) **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.

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.
   > (i) **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.

Drain residual flea power (perform hard reset)

About this task

Flea power is the residual static electricity that remains in the computer even after it has been powered off and the battery is removed.

For your safety, and to protect the sensitive electronic components in your computer, you are requested to drain residual flea power before removing or replacing any components in your computer.

Draining residual flea power, also known as a performing a "hard reset", is also a common troubleshooting step if your computer does not power on or boot into the operating system.

To drain residual flea power (perform a hard reset)

Steps

1. Turn off your computer.
2. Disconnect the power adapter from your computer.
3. Press and hold the power button for 20 seconds to drain the flea power.
4. Connect the power adapter to your computer.
5. Turn on your computer.

   (i) **NOTE:** For more information about performing a hard reset, see the knowledge base article 000130881 at www.dell.com/support.

Modern Standby

What is Modern Standby

Alienware Aurora Ryzen Edition R14 supports Modern Standby. It is a power model that uses a gradual process to turn off components of the computer. This process allows for a quicker transition between sleep and resumption of normal operation of the computer.

For more information about the Modern Standby mode, see the following:

- What is Modern Standby and how does it differ from S3 Standby?
- What is Modern Standby?
- Modern Standby versus S3
- Modern Standby States

Getting help and contacting Alienware

Self-help resources

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

Table 12. Alienware products and online self-help resources

Self-help resources	Resource location
Information about Alienware products and services	Alienware Support Site
Contact Support	In Windows search, type **Contact Support**, and press **Enter**.
Online help for operating system	Windows Support Site
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals, and documents.	Your Alienware computer is uniquely identified by 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 Instructions on how to find your Service Tag or Serial Number.
Videos providing step-by-step instructions to service your computer.	Alienware Support Channel

Contacting Alienware

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

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

(i) **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.

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 13. Revision history

Revision	Date	Description
A00	08-10-2021	Original publish date.
A01	28-10-2021	● Updated marketing name. ● Accessibility compliance fix.
A02	16-03-2022	● Added additional SSD option. ● Added new discrete graphics card option.
A03	14-04-2022	Added new AMD Ryzen 7 58003XD processor option.
A04	22-5-2023	Updated the storage specifications
A05	08-08-2025	● Updated the removal and installation process of the right-side cover. ● Added the removal and installation process of the top bezel.