Alienware Aurora R8
Setup and Specifications

ALIENWARE™

Notes, cautions, and warnings

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

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.
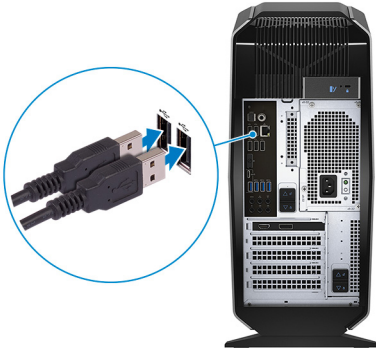
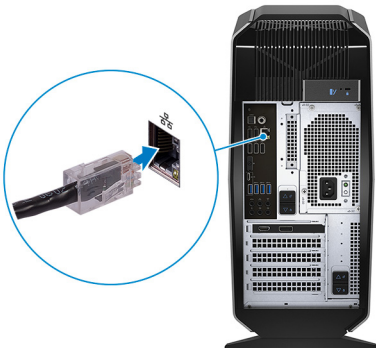**WARNING: A WARNING indicates a potential for property damage, personal injury, or death.**

Contents

Set up your computer

1 Connect the keyboard and mouse.

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

3 Connect the display.

> NOTE: If you ordered your computer with a discrete graphics card, the HDMI and the display ports on the back panel of your computer are covered. Connect the display to the discrete graphics card.

> NOTE: If you have two graphics cards, the card installed in PCI-Express X16 (graphics slot 1) is the primary graphics card.

4   Connect the power cable.

5   Press the power button.

6   Create recovery drive for Windows.

> 📝 **NOTE: It is recommended to create a recovery drive to troubleshoot and fix problems that may occur with Windows.**

For more information, see <u>Create a USB recovery drive for Windows</u>.

Create a USB recovery drive for Windows

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

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

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

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

Setting up the Virtual Reality (VR) headset — optional

✍ **NOTE: The VR headset is sold separately.**

1   Download and run the setup tools for your VR headset at www.dell.com/VRsupport.
2   Connect the VR headset to the USB 3.1 Gen 1 and HDMI ports on your computer, when prompted.
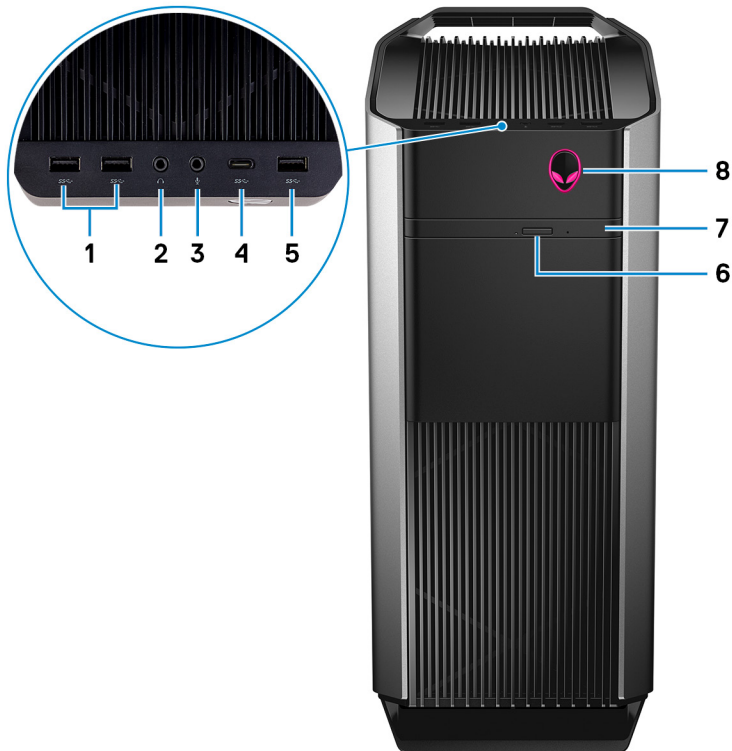

✍ **NOTE: Connect the headset to the HDMI port on the primary graphics card and connect the display to any available port on the card.**

3   Follow the instructions on the screen to complete the setup.
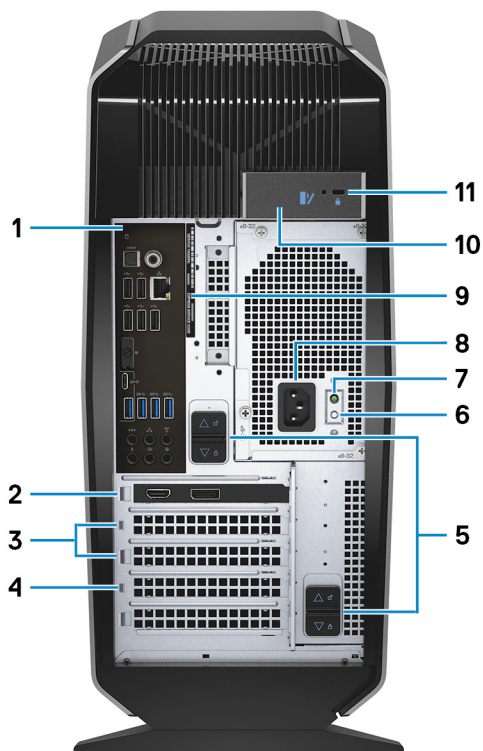
Views of Alienware Aurora R8

Front

1   **USB 3.1 Gen 1 ports (2)**

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

2   **Headphone port**

Connect a headphone or speakers.

3   **Microphone port**

Connect an external microphone to provide sound input.

4   **USB 3.1 Gen 1 Type-C port**

Connect to external storage devices. Provides data transfer speeds up to 5 Gbps.

   ✎ **NOTE: This port does not support video/audio streaming or power delivery.**

5   **USB 3.1 Gen 1 port**

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

6   **Optical-drive eject button**

Press to open the optical drive tray.

7   **Optical drive (optional)**

Reads from and writes to CDs, DVDs, and Blu-ray discs.

8   **Power button (AlienHead)**

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

Press to put the computer in sleep state if it is turned on.

Press and hold for 4 seconds to force shut-down the computer.

∅ **NOTE: You can customize the power-button behavior in Power Options.**

Back

1 **Back panel**

   Connect USB, audio, video, and other devices.

2 **PCI-Express X16 (graphics slot 1)**

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

   For optimal graphics performance, use a PCI-Express X16 slot for connecting the graphics card.

   ∅ **NOTE: The PCI-Express X16 slot works at X8 speed only.**

   ∅ **NOTE: If you have two graphics cards, the card installed in PCI-Express X16 (graphics slot 1) is the primary graphics card.**

3 **PCI-Express X4 slots (2)**

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

4 **PCI-Express X16 (graphics slot 2)**

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

   For optimal graphics performance, use a PCI-Express X16 slot for connecting the graphics card.

   ∅ **NOTE: The PCI-Express X16 slot works at X8 speed only.**

5 **Power-supply cage release-latches (2)**

   Allows you to remove the power supply unit from your computer.

6 **Power-supply diagnostics button**

   Press to check the power-supply state.

7 **Power-supply diagnostics light**

   Indicates the power-supply state.

8   **Power port**

Connect a power cable to provide power to your computer.

9   **Service Tag label**

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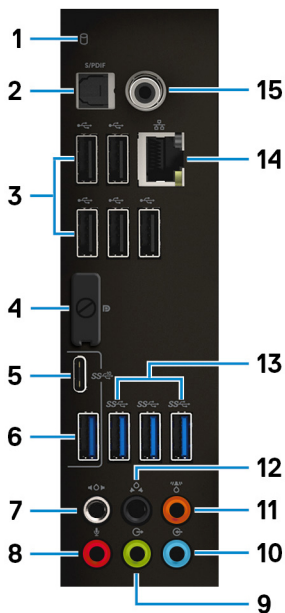
10   **Side panel release latch**

Allows you to remove the side panel from your computer.

11   **Security-cable slot (for Kensington locks)**

Connect a security cable to prevent unauthorized movement of your computer.

Back panel

1   **Hard-drive activity light**

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

2   **Optical S/PDIF port**

Connect an amplifier, speakers, or a TV for digital audio output through an optical cable.

3   **USB 2.0 ports (5)**

Connect peripherals such as external storage devices and printers. Provides data transfer speeds up to 480 Mbps.

4   **DisplayPort**

Connect an external display or a projector.

> **NOTE: The DisplayPort on the back panel of your computer is covered. Connect the display to the discrete graphics card of your computer.**

5   **USB 3.1 Gen 2 Type-C port**

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

> **NOTE: This port does not support video/audio streaming or power delivery.**

6   **USB 3.1 Gen 2 port**

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

7   **Side L/R surround port**

Connect audio-output devices such as speakers and amplifiers. In a 7.1 speaker channel setup, connect the side-left and side-right speakers.

8   **Microphone port**

Connect an external microphone to provide sound input.

9   **Front L/R surround line-out port**

Connect audio-output devices such as speakers and amplifiers. In a 2.1 speaker channel setup, connect the left and right speakers. In a 5.1 or a 7.1 speaker channel setup, connect the front-left and front-right speakers.

10   **Line-in port**

Connect recording or playback devices such as a microphone or CD player.

11   **Center/subwoofer LFE surround port**

Connect the center speaker or the subwoofer.

> **NOTE: For more information about the speaker setup, refer the documentation that shipped with the speakers.**

12   **Rear L/R surround port**

Connect audio-output devices such as speakers and amplifiers. In a 5.1 or a 7.1 speaker channel setup, connect the rear-left and rear-right speakers.

13   **USB 3.1 Gen 1 ports (3)**

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

14   **Network port (with lights)**

Connect an Ethernet (RJ45) cable from a router or a broadband modem for network or Internet access.

The two lights next to the connector indicate the connectivity status and network activity.

15   **Coaxial S/PDIF port**

Connect an amplifier, speakers, or a TV for digital audio output through a coaxial cable.

Specifications of Alienware Aurora R8

Dimensions and weight

Table 1. Dimensions and weight

Description	Values
Height:	
Front	422.8 mm (16.65 in.)
Rear	472.5 mm (18.60 in.)
Width	212 mm (8.34 in.)
Depth	360.50 mm (14.19 in.)
Weight (maximum)	14.82 kg (32.67 lb)
	NOTE: The weight of your computer depends on the configuration ordered and the manufacturing variability.

Processors

Table 2. Processor specifications

Description	Values	
Processor	8th Generation Intel Core i3/i5/i7	9th Generation Intel Core i5k/i7k/i9k
Wattage	65 W	95 W
Core count	2/4/4	6/8/8
Thread count	6/8/8	6/8/16
Speed	Up to 3.40 GHz/3.90 GHz/4.6 GHz Turbo Boost	Up to 4.6 GHz/4.9 GHz/5.0 GHz Turbo Boost
Intel Smart Cache	4 MB/6 MB/8 MB	9 MB/12 MB/16 MB
Integrated graphics	Intel UHD Graphics 620	Intel UHD Graphics 630

Chipset

Table 3. Chipset specifications

Description	Values
Chipset	Intel Z370 chipset
Processor	• 8th Generation Intel Core i3/i5/i7 • 9th Generation Intel Core i5k/i7k/i9k
DRAM bus width	Not supported
Flash EPROM	16 MB
PCIe bus	PCIe Gen3
External bus frequency	PCIe Gen3x4

Operating system

- Windows 10 Home (64-bit)
- Windows 10 Professional (64-bit)

Memory

Table 4. Memory specifications

Description	Values
Slots	Four DIMM sockets
Type	DDR4
Speed	2666 MHz - Up to HyperX FURY DDR4 XMP at 3200 MHz
Maximum memory	64 GB
Minimum memory	4 GB
Memory per slot	4 GB, 8 GB, and 16 GB
Configurations supported	8 GB DDR4 at 2666 MHz 16 GB DDR4 at 2666 MHz 32 GB DDR4 at 2666 MHz 64 GB DDR4 at 2666 MHz 8 GB XMP at 2933 MHz 16 GB XMP at 2933 MHz 32 GB XMP at 2933 MHz 64 GB XMP at 2933 MHz 16 GB XMP at 3200 MHz 32 GB XMP at 3200 MHz 64 GB XMP at 3200 MHz

Intel Optane memory

Intel Optane memory functions only as a storage accelerator. It neither replaces nor adds to the memory (RAM) installed on your computer.

> **NOTE: Intel Optane memory is supported on computers that meet the following requirements:**

- 7th Generation or higher Intel Core i3/i5/i7 processor
- Windows 10 64-bit version or higher
- Intel Rapid Storage Technology driver version 15.9.1.1018 or higher

Table 5. Intel Optane memory specifications

Description	Values
Type	Storage accelarator
Interface	PCIe 3.0x4
Connector	M.2 2280

Description	Values
Configurations supported	16 GB and 32 GB
Capacity	Up to 32 GB

Ports and connectors

Table 6. External ports and connectors specifications

Description	Values
Front	
USB	• Three USB 3.1 Gen 1 ports • One USB 3.1 Gen 1 Type-C port
Audio	• One audio output/headphone port (supports 2 channel audio) • One audio input/microphone port
Back	
Network	One RJ-45 port
USB	• Five USB 2.0 ports • Three USB 3.1 Gen 1 ports • One USB 3.1 Gen 2 port • One USB 3.1 Gen 2 Type-C port
Audio	• One audio input/microphone port • One optical S/PDIF port • One coaxial S/PDIF port • One front L/R surround line-out port • One side L/R surround port • One rear L/R surround port • One center/subwoofer LFE surround port • One line-in port
Video	One DisplayPort - optional ✎ **NOTE: The DisplayPort on the back panel of your computer is covered. Connect the display to the discrete graphics card of your computer.**
Media-card reader	Not supported
Power adapter port	Not supported
Security	Kensington locks
Legacy ports	Not supported

Table 7. Internal ports and connectors specifications

Description	Values
Expansion	• Two PCIe x16 slots

Description	Values
M.2	• Two PCIe x4 slots • One M.2 slot for Wi-Fi and Bluetooth combo card • One PCIe/SATA M.2 2280 slots for solid-state drive

Communications

Ethernet

Table 8. Ethernet specifications

Description	Values
Model number	Killer E2500 Ethernet controller integrated on system board
Transfer rate	10/100/1000 Mbps

Wireless module

Table 9. Wireless module specifications

Description	Values		
Model number	QCA9377 (DW1810)	QCA61x4A (DW1820)	Rivet 1535 (Killer)
Transfer rate	433 Mbps	Up to 867 Mbps	Up to 867 Mbps (1.867 Gbps with Doubleshot Pro technology)
Frequency bands supported	Dual band 2.4 GHz/5 GHz	Dual band 2.4 GHz/5 GHz	Dual band 2.4 GHz/5 GHz
Wireless standards	WiFi 802.11ac	WiFi 802.11a/b/g/n/ac	WiFi 802.11a/b/g/n/ac
Encryption	• 64-bit and 128-bit WEP • CKIP • TKIP • AES-CCMP	• 64-bit and 128-bit WEP • CKIP • TKIP • AES-CCMP	• 64-bit and 128-bit WEP • CKIP • TKIP • AES-CCMP
Bluetooth	Bluetooth 4.1	Bluetooth 4.1	Bluetooth 4.2

Video

Table 10. Discrete graphics specifications

Discrete graphics			
Controller	External display support	Memory size	Memory type
NVIDIA GeForce RTX 2080	One HDMI port and one DisplayPort	8 GB	GDDR6
NVIDIA GeForce RTX 2080 Ti	One HDMI port and one DisplayPort	11 GB	GDDR6

Table 11. Integrated graphics specifications

Controller	External display support	Memory size	Processor
Intel UHD Graphics 620	One DisplayPort NOTE: Use discrete card output for best performance.	Shared system memory	8th Generation Intel Core i3/i5/i7
Intel UHD Graphics 630	One DisplayPort NOTE: Use discrete card output for best performance.	Shared system memory	9th Generation Intel Core i5k/i7k/i9k

Audio

Table 12. Audio specifications

Description	Values
Type	Integrated 7.1 channel audio with S/PDIF support
Controller	Realtek ALC3861
Internal interface	High-definition audio
External interface	7.1 channel output, microphone-in, stereo headphones, and headset combo connector

Storage

Your computer supports one of the following configurations:

- One U.2 drive and two 2.5-inch hard drives
- One M.2 2242/2260/2280 solid-state drive, one 3.5-inch hard drive, and two 2.5-inch hard drives
- One 3.5-inch hard drive and two 2.5-inch hard drives

NOTE: The primary drive of your computer varies depending on the storage configuration.

For computers:

- with a U.2 drive, the U.2 drive is the primary drive
- with an M.2 drive, the M.2 drive is the primary drive.
- without both U.2 drive and M.2 drive, the 3.5-inch drive is the primary drive.

Table 13. Storage specifications

Storage type	Interface type	Capacity
Two 2.5-inch hard drives	SATA AHCI 6 Gbps	Up to 2 TB
One 3.5-inch hard drive	SATA AHCI 6 Gbps	Up to 1 TB
Two M.2 2242/2260/2280 solid-state drives	• SATA AHCI 6 Gbps • PCIe NVMe up to 32 Gbps	Up to 1 TB
One U.2 drive	PCIe NVMe up to 32 Gbps (U.2 drive)	Up to 280 GB
One 9.5 mm slim drive for DVD+/-RW drive or Blue-ray Disc.	SATA 1.5 Gbps	Not applicable

Power ratings

Table 14. Power ratings

Description	Values	
Input voltage	100 VAC to 240 VAC	
Input frequency	50 Hz to 60 Hz	
Temperature range:		
Operating	5°C to 50°C (41°F to 122°F)	
Storage	-40°C to 70°C (-40°F to 158°F)	
Type	460 W	850 W
Input current (maximum)	8 A	10 A
Output current (continuous)	3.3V/17A, 5V/25A, 12VA/18A, 12VB/16A, 12VC/8A, 5Vaux/3A	3.3V/20A, 5V/20A, 12VA/32A, 12VB/48A, 12VD/16A, -12V/0.5A, 5Vaux/4A
Rated output voltage	3.3V, 5V, 12VA, 12VB, 12VC, 5Vaux	3.3V, 5V, 12VA, 12VB, 12VD, -12V, 5Vaux

Computer environment

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

Table 15. Computer environment

	Operating	Storage
Temperature range	5°C to 35°C (41°F to 95°F)	−40°C to 65°C (−40°F to 149°F)
Relative humidity (maximum)	10% to 90% (non-condensing)	0% to 95% (non-condensing)
Vibration (maximum)	0.26 GRMS	1.30 GRMS
Shock (maximum)	40 G for 2 ms with a change in velocity of 20 in/s (51 cm/s)†	105 G for 2 ms with a change in velocity of 52.5 in/s (133 cm/s)‡
Altitude (maximum)	−15.2 m to 3,048 m (−50 ft to 10,000 ft)	−15.2 m to 10,668 m (−50 ft to 35,000 ft)

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

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

‡ Measured using a 2 ms half-sine pulse when the hard-drive head is in parked position.

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 16. Alienware products and online self-help resources

Self-help resources	Resource location
Information about Alienware products and services	www.alienware.com
Tips	💡
Contact Support	In Windows search, type **Contact Support**, and press **Enter.**
Online help for operating system	www.dell.com/support/windows www.dell.com/support/linux
Troubleshooting information, user manuals, setup instructions, product specifications, technical help blogs, drivers, software updates, and so on	www.alienware.com/gamingservices
VR Support	www.dell.com/VRsupport
Videos providing step-by-step instructions to service your computer	www.youtube.com/alienwareservices

Contacting Alienware

To contact Alienware for sales, technical support, or customer service issues, see www.alienware.com.

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

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