OptiPlex 5090 Small Form Factor

Setup and Specifications

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.**
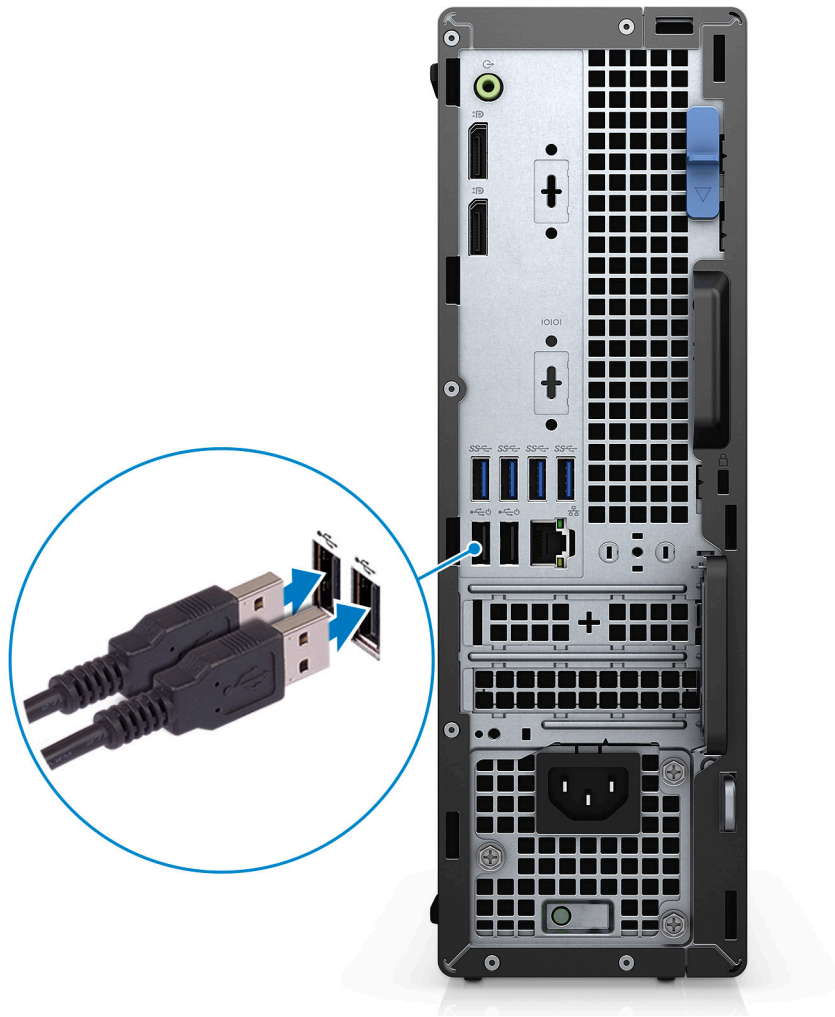
Contents

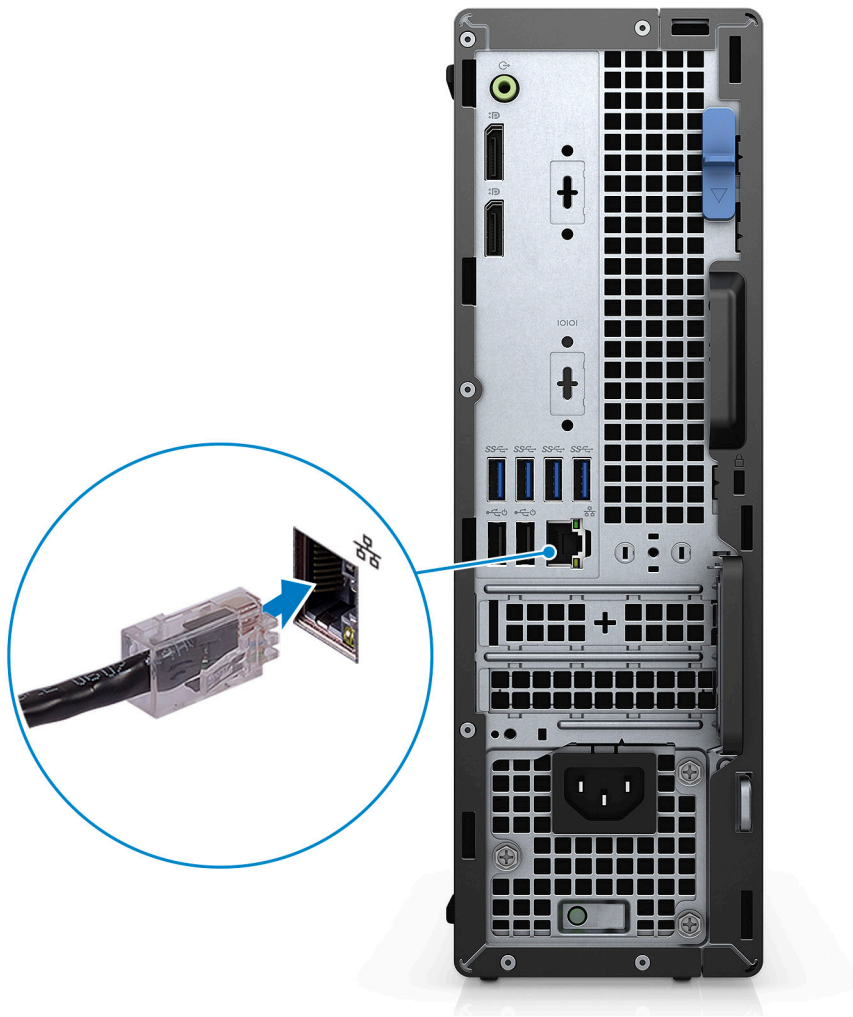# Set up your OptiPlex 5090 Small Form Factor

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

Steps

1. Connect the keyboard and mouse.

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

3. Connect the display.

4. Connect the power cable.
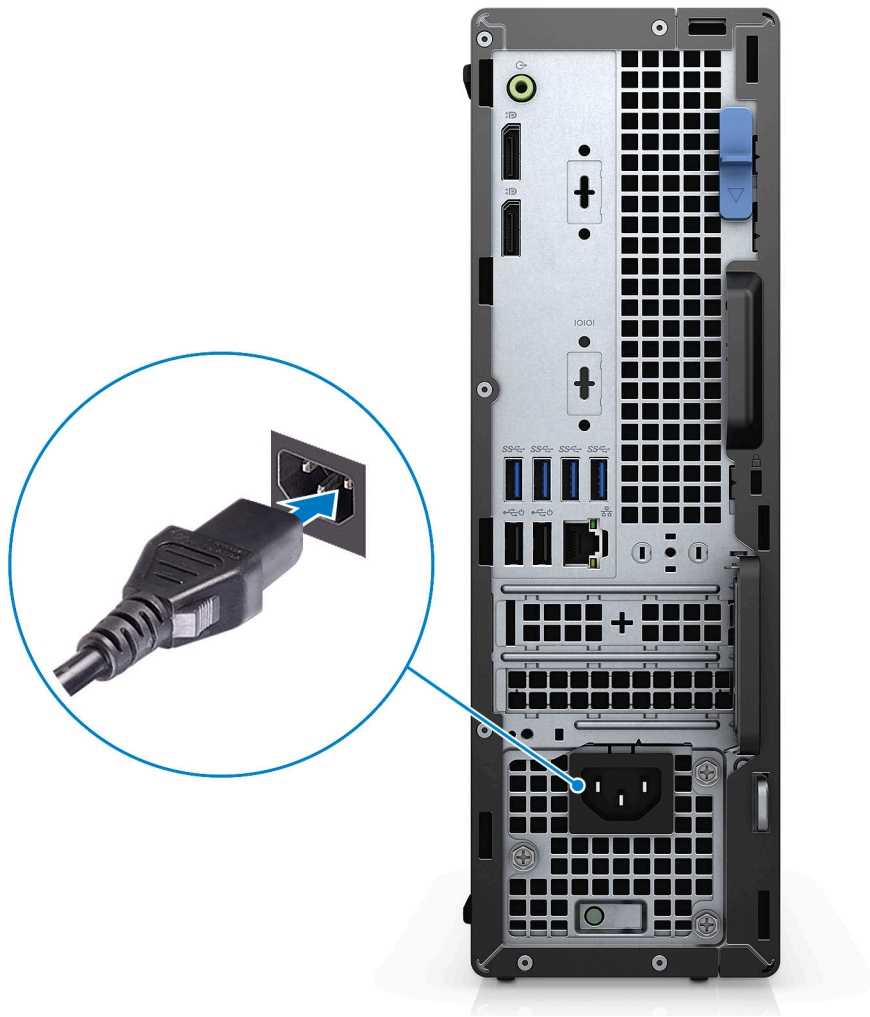
5. Press the power button.

6. Finish Windows setup.

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

   - Connect to a network for Windows updates.
     ⓘ **NOTE:** If connecting to a secured wireless network, enter the password for the wireless network access when prompted.
   - If connected to the internet, sign-in with or create a Microsoft account. If not connected to the internet, create an offline account.
   - On the **Support and Protection** screen, enter your contact details.

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

Table 1. Locate Dell apps

Dell apps	Details
	Dell Product Registration Register your computer with Dell.
	Dell Help & Support Access help and support for your computer.

Table 1. Locate Dell apps (continued)

Dell apps	Details
	SupportAssist SupportAssist is the smart technology that keeps your computer running at its best by optimizing settings, detecting issues, removing viruses and notifies when you must make system updates. SupportAssist proactively checks the health of your system's hardware and software. When an issue is detected, the necessary system state information is sent to Dell to begin troubleshooting. SupportAssist is preinstalled on most of the Dell devices running Windows operating system. For more information, see SupportAssist for Business PCs User's Guide on www.dell.com/serviceabilitytools.
	Dell Update Updates your computer with critical fixes and important device drivers as they become available.
	Dell Digital Delivery Download software applications including software that is purchased but not preinstalled on your computer.

Views of OptiPlex 5090 Small Form Factor

Front
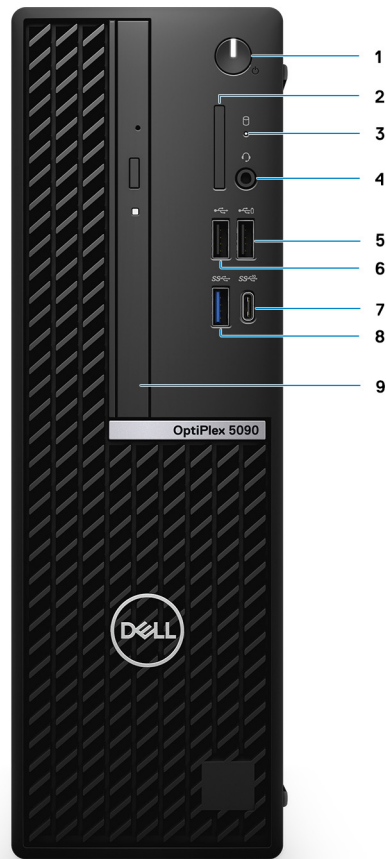
1. Power Button
2. SD-card reader (optional)
3. Hard-drive activity light
4. Universal audio port
5. One USB 2.0 port with PowerShare
6. One USB 2.0 port
7. One USB 3.2 Gen 2 Type-C port
8. One USB 3.2 Gen 1 port
9. Optical disk drive

Back
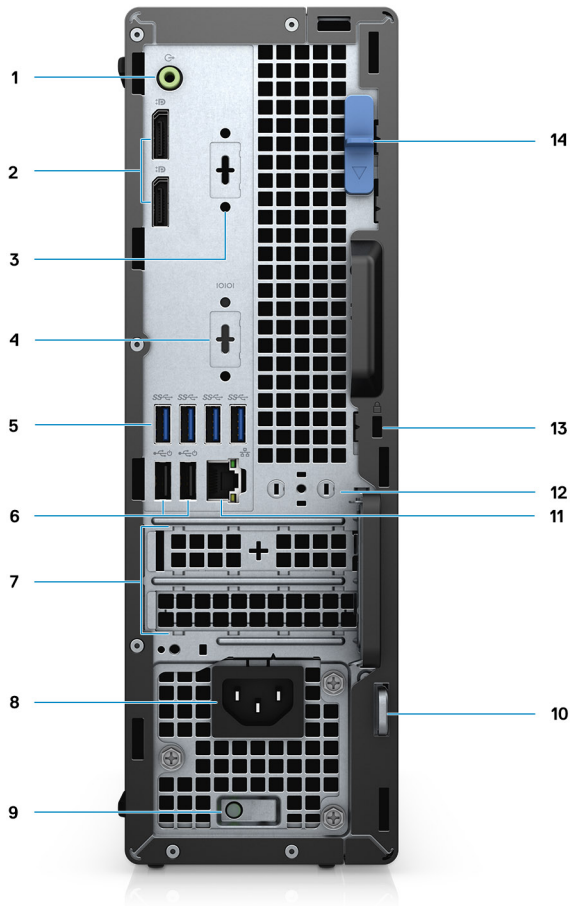
1. Line-out re-tasking Line-in audio port
2. Two DisplayPort 1.4 ports
3. One VGA port/DisplayPort 1.4 port/HDMI 2.0b port/USB 3.2 Gen 2 Type-C port with Alt-Mode (optional)
4. Serial port (optional)
5. Four USB 3.2 Gen 1 ports
6. Two USB 2.0 ports with SmartPower On
7. Two expansion card slots

   (i) **NOTE:** Supports only Slot 1

8. Power connector port
9. Power supply diagnostic light
10. Padlock ring
11. RJ45 Ethernet port
12. Antenna module slot
13. Kensington security-cable slot
14. Release latch

Specifications of OptiPlex 5090

Product overview

OptiPlex 5090 SFF system is a next-generation Premium category OptiPlex 5 series business desktop. Aligned with the latest Intel Rocket Lake chipset, processors, and relevant technology features while driving a competitive cost position in the market.

This system offers the following features:
- 10th Generation Intel Core i3/i5/i7 processors
- 11th Generation Intel Core i5/i7 processors
- Dual M.2 slots for NVMe storage
- Intel Optane memory H20
- AMD Radeon RX640/550/540 graphics
- Realtek audio codec

The OptiPlex 5090 SFF is the successor of OptiPlex 5080 SFF. The product includes the ultimate space savings, most flexible deployment options, basic performance, minimum service, and simplified expandability.

Product comparison

This topic details the product comparison with the predecessor.

Table 2. Product comparison

Features	OptiPlex 5080 SFF	OptiPlex 5090 SFF
Processor	• Intel Celeron G5900, 2 MB Cache, 2 Cores, 2 Threads, 3.4 GHz, 58 W • Intel Pentium G6400, 4 MB Cache, 2 Cores, 4 Threads, 4.0 GHz, 58 W • Intel Pentium G6500, 4 MB Cache, 2 Cores, 4 Threads, 4.1 GHz, 58 W • 10th Generation Intel Core i3-10100, 6 MB Cache, 4 Cores, 8 Threads, 3.6 GHz to 4.3 GHz, 65 W • 10th Generation Intel Core i3-10300, 8 MB Cache, 4 Cores, 8 Threads, 3.7 GHz to 4.4 GHz, 65 W • 10th Generation Intel Core i5-10400, 12 MB Cache, 6 Cores, 12 Threads, 2.9 GHz to 4.3 GHz, 65 W • 10th Generation Intel Core i5-10500, 12 MB Cache, 6 Cores, 12 Threads, 3.1 GHz to 4.5 GHz, 65 W • 10th Generation Intel Core i5-10600, 12 MB Cache, 6 Cores, 12 Threads, 3.3 GHz to 4.8 GHz, 65 W	• 10th Generation Intel Pentium G6405, 4 MB Cache, 2 Cores, 4 Threads, 4.10 GHz, 58 W • 10th Generation Intel Pentium G6505, 4 MB Cache, 2 Cores, 4 Threads, 4.20 GHz, 58 W • 10th Generation Intel Core i3-10105, 6 MB Cache, 4 Cores, 8 Threads, 3.70 GHz to 4.40 GHz, 65 W • 10th Generation Intel Core i3-10305, 8 MB Cache, 4 Cores, 8 Threads, 3.80 GHz to 4.50 GHz, 65 W • 10th Generation Intel Core i5-10400, 12 MB Cache, 6 Cores, 12 Threads, 2.90 GHz to 4.30 GHz, 65 W • 10th Generation Intel Core i5-10500, 12 MB Cache, 6 Cores, 12 Threads, 3.10 GHz to 4.50 GHz, 65 W • 10th Generation Intel Core i5-10505, 12 MB Cache, 6 Cores, 12 Threads, 3.20 GHz to 4.60 GHz, 65 W • 10th Generation Intel Core i5-10600, 12 MB Cache, 6 Cores, 12 Threads, 3.30 GHz to 4.80 GHz, 65 W • 10th Generation Intel Core i7-10700, 16 MB Cache, 8 Cores, 16 Threads, 2.90 GHz to 4.80 GHz, 65 W

Table 2. Product comparison (continued)

Features	OptiPlex 5080 SFF	OptiPlex 5090 SFF
		11th Generation Intel Core i5-11400, 12 MB Cache, 6 Cores, 12 Threads, 2.60 GHz to 4.40 GHz, 65 W 11th Generation Intel Core i5-11500, 12 MB Cache, 6 Cores, 12 Threads, 2.70 GHz to 4.60 GHz, 65 W 11th Generation Intel Core i5-11600, 12 MB Cache, 6 Cores, 12 Threads, 2.80 GHz to 4.80 GHz, 65 W 11th Generation Intel Core i7-11700, 16 MB Cache, 8 Cores, 16 Threads, 2.50 GHz to 4.90 GHz, 65 W
Chipset	Intel Q470	Intel Q570
Memory	2666 MHz for Intel Core i3/i5 processors 2 slots supporting up to 64 GB	2666 MHz for 10th Generation Intel Pentium and Intel Core i3/i5, 2933 MHz for 10th Generation Intel Core i7, 2933/3200 MHz for 11th Generation Intel Core i5/i7 processors 4 slots supporting up to 128 GB
Intel Optane memory	M.2 2280, PCIe Gen 3 x4: Up to 32 GB	Intel Optane Memory H20 32GB with 512 GB SSD
Storage	2.5-inch, 1 TB, 5400 RPM, SATA HDD 2.5-inch, 2 TB, 5400 RPM, SATA HDD 2.5-inch, 500 GB, 7200 RPM, Opal Self-Encrypting FIPS HDD 2.5-inch, 500 GB, 7200 RPM, SATA HDD 2.5-inch, 1 TB, 7200 RPM, SATA HDD 3.5-inch, 4 TB, 5400 RPM, SATA HDD 3.5-inch, 500 GB, 7200 RPM, SATA HDD 3.5-inch, 1 TB, 7200 RPM, SATA HDD 3.5-inch, 2 TB, 7200 RPM, SATA HDD - M.2 2230, 128 GB, Gen 3 PCIe x4 NVMe, Class 35 SSD - M.2 2230, 256 GB, Gen 3 PCIe x4 NVMe, Class 35 SSD - M.2 2230, 512 GB, Gen 3 PCIe x4 NVMe, Class 35 SSD - M.2 2280, 256 GB, Gen 3 PCIe x4 NVMe, Class 40 SSD - M.2 2280, 512 GB, Gen 3 PCIe x4 NVMe, Class 40 SSD - M.2 2280, 1 TB, Gen 3 PCIe x4 NVMe, Class 40 SSD - M.2 2280, 256 GB, Gen 3 PCIe x4, NVMe, Opal Self-Encrypting Class 40 SSD - M.2 2280, 512 GB, Gen 3 PCIe x4, NVMe, Opal Self-Encrypting Class 40 SSD	2.5-inch, 500 GB, 5400 RPM, SATA HDD 2.5-inch, 1 TB, 5400 RPM, SATA HDD 2.5-inch, 2 TB, 5400 RPM, SATA HDD 2.5-inch, 500 GB, 7200 RPM, SATA HDD 2.5-inch, 1 TB, 7200 RPM, SATA HDD 2.5-inch, 500 GB, 7200 RPM, Opal Self-Encrypting FIPS HDD 3.5-inch, 500 GB, 5400 RPM, SATA HDD 3.5-inch, 500 GB, 7200 RPM, SATA HDD 3.5-inch, 1 TB, 7200 RPM, SATA HDD 3.5-inch, 2 TB, 7200 RPM, SATA HDD 3.5-inch, 4 TB, 7200 RPM, SATA HDD - M.2 2230, 128 GB, PCIe NVMe Gen3 x4, Class 35 SSD - M.2 2230, 256 GB, PCIe NVMe Gen3 x4, Class 35 SSD - M.2 2230, 512 GB, PCIe NVMe Gen3 x4, Class 35 SSD - M.2 2280, 256 GB, PCIe NVMe Gen3 x4, Class 40 SSD - M.2 2280, 512 GB, PCIe NVMe Gen3 x4, Class 40 SSD - M.2 2280, 1 TB, PCIe NVMe Gen3 x4, Class 40 SSD - M.2 2280, 256 GB, PCIe NVMe Gen3 x4, Class 40 SSD, self-encrypting drive - M.2 2280, 512 GB, PCIe NVMe Gen3 x4, Class 40 SSD, self-encrypting drive - M.2 2280, 1 TB, PCIe NVMe Gen3 x4, Class 40 SSD, self-encrypting drive
Video	Integrated: Intel UHD Graphics 610 – (integrated in Pentium Processors)	Integrated: Intel UHD Graphics 610 – (integrated in 10th Generation Pentium G6405 processor)

Table 2. Product comparison (continued)

Features	OptiPlex 5080 SFF	OptiPlex 5090 SFF
	● Intel UHD Graphics 630 – (integrated in Intel 10th generation Core i3/i5/i7 Processors) Discrete: ● NVIDIA GeForce GT 730 ● AMD Radeon R5 430 ● AMD Radeon RX640	● Intel UHD Graphics 630 – (integrated in Intel 10th Generation Pentium G6505 and Intel Core i3/i5/i7 processors) ● Intel UHD Graphics 730 – (integrated in Intel 11th Generation Core i5-11400 processors) ● Intel UHD Graphics 750 – (integrated in Intel 11th Generation Core i3/i5/i7 processors) Discrete: ● AMD Radeon RX640 ● AMD Radeon 550 ● AMD Radeon 540
Wireless	● Qualcomm QCA9377 Dual-band 1x1 802.11ac Wireless + Bluetooth 5.0 ● Qualcomm QCA61x4A Dual-band 2x2 802.11ac Wireless + Bluetooth 5.0 ● Intel Wi-Fi 6 AX201 2x2 (Gig+) + Bluetooth 5.1	● Qualcomm QCA9377 Dual-band 1x1 802.11ac Wireless + Bluetooth 5.0 ● Qualcomm QCA61x4A Dual-band 2x2 802.11ac Wireless + Bluetooth 5.0 ● Intel Wi-Fi 6 AX201 2x2 (Gig+) + Bluetooth 5.1
Ports and connectors	● One RJ-45 port 10/100/1000 Mbps (rear) ● One USB 2.0 Type-A port with PowerShare (front) ● One USB 3.2 Gen 1 Type-A port (front) ● One USB 2.0 port (front) ● One USB 3.2 Gen 2 Type-C port (front) ● Two USB 2.0 Type-A ports with Smart Power On (rear) ● Four USB 3.2 Gen 1 Type-A ports (rear) ● One Universal Audio Jack (front) ● Two DisplayPort 1.4 ports ● One VGA Port/DisplayPort 1.4 Port/HDMI 2.0b Port/ USB Type-C Port with DisplayPort Alt-mode (optional) ● One Serial/PS2 slot (optional) ● Kensington security-cable slot	Front: ● One USB 3.2 Gen 1 port ● One USB 2.0 ports with PowerShare ● One USB 2.0 ports ● One USB 3.2 Gen 2 Type-C port ● One universal audio port Rear: ● Four USB 3.2 Gen 1 ports ● Two USB 2.0 ports ● One re-tasking Line out/Line in audio port ● Two DisplayPort 1.4 ports ● One RJ45 Ethernet port
Audio	Realtek ALC3254 with Waves MaxxAudio Pro	Realtek ALC3246 with Waves MaxxAudio Pro
Operating system	● Windows 10 Home (64-bit) ● Windows 10 Professional (64-bit) ● Windows 10 IoT Enterprise 2019 LTSC (OEM only) ● Windows 10 Pro Education (64-bit) ● NeoKylin 7.0 (China only) ● Ubuntu 18.04 (64-bit)	● Windows 10 Pro, 64-bit ● Ubuntu Linux 20.04 LTS, 64-bit
BIOS	UEFI	UEFI
AC adapter	● 200 W typical 85% Efficient PSU (80 Plus Bronze) ● 200W typical 92% Efficient PSU (80 Plus Platinum)	● 300 W typical 92% Efficient PSU (80 Plus Platinum) ● 200W typical 92% Efficient PSU (80 Plus Bronze)
Dimensions	● Height (Front): 324.30 mm (12.77 in.) ● Height (Rear): 324.30 mm (12.77 in.) ● Width: 154.00 mm (6.06 in.) ● Depth: 292.20 mm (11.50 in.)	● Height (Front): 290 mm (11.42 in.) ● Width: 92.60 mm (3.65 in.) ● Depth: 292.80 mm (11.53 in.)
Weight	5.90 kg (13.01 lb)	● Min: 4.43 kg (9.76 lbs) ● Max: 5.65 kg (12.53 lbs)

Specifications

> ⓘ **NOTE:** Offerings may vary by region. The following specifications are only those required by law to ship with your computer. For more information about the configuration of your computer, go to **Help and Support** in your Windows operating system and select the option to view information about your computer.

Dimensions and weight

Table 3. Dimensions and weight

Description		Values
Height:		
	Front	290 mm (11.42 in.)
	Rear	290 mm (11.42 in.)
Width		92.60 mm (3.65 in.)
Depth		292.80 mm (11.53 in.)
Weight (minimum)		4.43 kg (9.76 lb)
Weight (maximum)		5.65 kg (12.53 lb) ⓘ **NOTE:** The weight of your computer depends on the configuration ordered and the manufacturing variability.

Processors

The following table lists the details of the processors supported by your OptiPlex 5090.

Table 4. Processors

Processors	Wattage	Core count	Thread count	Speed	Cache	Integrated graphics
10th Generation Intel Pentium Gold G6405	58 W	2	4	Up to 4.10 GHz	4 MB	Intel UHD Graphics 610
10th Generation Pentium Gold G6505	58 W	2	4	Up to 4.20 GHz	4 MB	Intel UHD Graphics 630
10th Generation Intel Core i3-10105	65 W	4	8	3.70 GHz to 4.40 GHz	6 MB	Intel UHD Graphics 630
10th Generation Intel Core i3-10305	65 W	4	8	3.80 GHz to 4.50 GHz	8 MB	Intel UHD Graphics 630
10th Generation Intel Core i5-10400	65 W	6	12	2.90 GHz to 4.30 GHz	12 MB	Intel UHD Graphics 630

Table 4. Processors (continued)

Processors	Wattage	Core count	Thread count	Speed	Cache	Integrated graphics
10th Generation Intel Core i5-10500	65 W	6	12	3.10 GHz to 4.50 GHz	12 MB	Intel UHD Graphics 630
10th Generation Intel Core i5-10505	65 W	6	12	3.20 GHz to 4.60 GHz	12 MB	Intel UHD Graphics 630
10th Generation Intel Core i5-10600	65 W	6	12	3.30 GHz to 4.80 GHz	12 MB	Intel UHD Graphics 630
10th Generation Intel Core i7-10700	65 W	8	16	2.90 GHz to 4.80 GHz	16 MB	Intel UHD Graphics 630
11th Generation Intel Core i5-11400	65 W	6	12	2.60 GHz to 4.40 GHz	12 MB	Intel UHD Graphics 730
11th Generation Intel Core i5-11500	65 W	6	12	2.70 GHz to 4.60 GHz	12 MB	Intel UHD Graphics 750
11th Generation Intel Core i5-11600	65 W	6	12	2.80 GHz to 4.80 GHz	12 MB	Intel UHD Graphics 750
11th Generation Intel Core i7-11700	65 W	8	16	2.50 GHz to 4.90 GHz	16 MB	Intel UHD Graphics 750

Chipset

The following table lists the details of the chipset supported by your OptiPlex 5090

Table 5. Chipset

Description	Option one	Option two
Processors	11th Generation Intel Core i5/i7	10th Generation Intel Pentium Gold, Core i3/i5/i7
Chipset	Intel Q570	Intel Q570
DRAM bus width	64-bit, Dual-channel	64-bit, Dual-channel
Flash EPROM	32 MB	32 MB
PCIe bus	Up to Gen 3.0	Up to Gen 3.0

Operating system

Your OptiPlex 5090 supports the following operating systems:

- Windows 10 Pro, 64-bit
- Ubuntu Linux 20.04 LTS, 64-bit

Memory

The following table lists the memory specifications of your OptiPlex 5090.

Table 6. Memory specifications

Description	Values
Memory slots	Four UDIMM slots
Memory type	DDR4
Memory speed	2666/2933/3200 MHz
Maximum memory configuration	128 GB
Minimum memory configuration	4 GB
Memory size per slot	4 GB, 8 GB, 16 GB, 32 GB
Memory configurations supported	4 GB, 1 x 4 GB, DDR4, 2666 MHz for 10th Generation Intel Pentium and Intel Core i3/i5 processors, 2933 MHz for 10th Generation Intel Core i7, 3200 MHz for 11th Generation Intel Core i5/i7 processors 8 GB, 1 x 8 GB, DDR4, 2666 MHz for 10th Generation Intel Pentium and Intel Core i3/i5 processors, 2933 MHz for 10th Generation Intel Core i7, 3200 MHz for 11th Generation Intel Core i5/i7 processors 8 GB, 2 x 4 GB, DDR4, 2666 MHz for 10th Generation Intel Pentium and Intel Core i3/i5 processors, 2933 MHz for 10th Generation Intel Core i7, 3200 MHz for 11th Generation Intel Core i5/i7 processors 16 GB, 1 x 16 GB, DDR4, 2666 MHz for 10th Generation Intel Pentium and Intel Core i3/i5 processors, 2933 MHz for 10th Generation Intel Core i7, 3200 MHz for 11th Generation Intel Core i5/i7 processors 16 GB, 2 x 8 GB, DDR4, 2666 MHz for 10th Generation Intel Pentium and Intel Core i3/i5 processors, 2933 MHz for 10th Generation Intel Core i7 processors, 2933/3200 MHz for 11th Generation Intel Core i5/ i7 processors 16 GB, 4 x 4 GB, DDR4, 2666 MHz for 10th Generation Intel Pentium and Intel Core i3/i5 processors, 2933 MHz for 10th Generation Intel Core i7 processors, 2933/3200 MHz for 11th Generation Intel Core i5/ i7 processors 32 GB, 1 x 32 GB, DDR4, 2666 MHz for 10th Generation Intel Pentium and Intel Core i3/i5 processors, 2933 MHz for 10th Generation Intel Core i7 processors, 2933/3200 MHz for 11th Generation Intel Core i5/ i7 processors 32 GB, 2 x 16 GB, DDR4, 2666 MHz for 10th Generation Intel Pentium and Intel Core i3/i5 processors, 2933 MHz for 10th Generation Intel Core i7 processors, 2933/3200 MHz for 11th Generation Intel Core i5/ i7 processors 32 GB, 4 x 8 GB, DDR4, 2666 MHz for 10th Generation Intel Pentium and Intel Core i3/i5 processors, 2933 MHz for 10th Generation Intel Core i7 processors, 2933/3200 MHz for 11th Generation Intel Core i5/ i7 processors 64 GB, 2 x 32 GB, DDR4, 2666 MHz for 10th Generation Intel Pentium and Intel Core i3/i5 processors, 2933 MHz for 10th Generation Intel Core i7 processors, 2933/3200 MHz for 11th Generation Intel Core i5/ i7 processors

Table 6. Memory specifications (continued)

Description	Values
	64 GB, 4 x 16 GB, DDR4, 2666 MHz for 10th Generation Intel Pentium and Intel Core i3/i5 processors, 2933 MHz for 10th Generation Intel Core i7 processors, 2933/3200 MHz for 11th Generation Intel Core i7 processors 128 GB, 4 x 32 GB, DDR4,2666 MHz for Intel Pentium and Intel Core i3/i5 processors, 2933 MHz for 10th Generation Intel Core i7 processors, 2933 MHz for 11th Generation Intel Core i5/ i7 processors

Memory configuration matrix

Table 7. Memory configuration matrix

Configuration	Slot			
	XMM1	XMM2	XMM3	XMM4
4 GB DDR4	4 GB			
8 GB DDR4	4 GB	4 GB		
8 GB DDR4	8 GB			
16 GB DDR4	8 GB	8 GB		
16 GB DDR4	16 GB			
32 GB DDR4	8 GB	8 GB	8 GB	8 GB
32 GB DDR4	16 GB	16 GB		
32 GB DDR4	32 GB			
64 GB DDR4	16 GB	16 GB	16 GB	16 GB
64 GB DDR4	32 GB	32 GB		
64 GB DDR4	64 GB			
128 GB DDR4	32 GB	32 GB	32 GB	32 GB

(i) **NOTE:** Memory speed varies by different type of DPC (DIMM per Channel) installation.

(i) **NOTE:** Systems configured with 128 GB memory will only run at 2933MHz.

(i) **NOTE:** Memory on systems configured with 11th Generation Intel processors will run at 2933 MHz clock speed when in Dual-channel mode.

Table 8. Dual-channel mode

Channel A	Channel B	Memory speed
2 UDIMM	None	2666/2933/3200 MHz
None	2 UDIMM	2666/2933/3200 MHz
2 UDIMM	2 UDIMM	2666/2933/3200 MHz

External ports

The following table lists the external ports of your OptiPlex 5090.

Table 9. External ports

Description	Values
Network port	One RJ-45 port 10/100/1000 Mbps (rear)
USB ports	- One USB 3.2 Gen 1 port (front) - One USB 3.2 Gen 2 Type-C port (front) - One USB 2.0 port (front) - One USB 2.0 port with PowerShare (front) - Four USB 3.2 Gen 1 ports (rear) - Two USB 2.0 ports with SmartPower On (rear)
Audio port	- One Universal audio port (front) - One Line-out audio port with re-tasking to Line-in (rear)
Video port	- Two DisplayPort 1.4 ports (rear) - One VGA/DP 1.4/HDMI 2.0b port (rear, optional) - One USB 3.2 Gen 2 Type-C port with DisplayPort Alt Mode (rear. optional)
Media-card reader	One SD 4.0 card slot (front)
Power-adapter port	Not supported
Security-cable slot	- One Kensington lock slot - One Padlock ring

Internal slots

The following table lists the internal slots of your OptiPlex 5090.

Table 10. Internal slots

Description	Values
PCIe Expansion	- One Half-height Gen3 PCIe x16 slot - One Half-height Gen3 PCIe x4 slot
SATA	Three SATA 3.0 slot for 3.5-inch/2.5-inch hard drive and slim optical drive
M.2	- One M.2 2230 slot for WiFi and Bluetooth card - One M.2 2230/2280 slot for SSD/Intel Optane (i) **NOTE:** To learn more about the features of different types of M.2 cards, see the knowledge base article SLN301626 at www.dell.com/support.

Ethernet

The following table lists the wired Ethernet Local Area Network (LAN) specifications of your OptiPlex 5090.

Table 11. Ethernet specifications

Description	Values
Model number	Intel I219
Transfer rate	10/100/1000 Mbps

Wireless module

The following table lists the Wireless Local Area Network (WLAN) module specifications of your OptiPlex 5090.

Table 12. Wireless module specifications

Description	Option one	Option two	Option three
Model number	Qualcomm QCA61x4a	Qualcomm QCA9377	Intel AX201
Transfer rate	Up to 867 Mbps	Up to 433 Mbps	Up to 2400
Frequency bands supported	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz
Wireless standards	- WiFi 802.11a/b/g - Wi-Fi 4 (WiFi 802.11n) - Wi-Fi 5 (WiFi 802.11ac)	- WiFi 802.11a/b/g - Wi-Fi 4 (WiFi 802.11n) - Wi-Fi 5 (WiFi 802.11ac)	- WiFi 802.11a/b/g - Wi-Fi 4 (WiFi 802.11n) - Wi-Fi 5 (WiFi 802.11ac) - Wi-Fi 6 (WiFi 802.11ax)
Encryption	64-bit and 128-bit WEP 128-bit AES-CCMP - TKIP	64-bit and 128-bit WEP 128-bit AES-CCMP - TKIP	64-bit and 128-bit WEP 128-bit AES-CCMP - TKIP
Bluetooth	5.0	5.0	5.1

Audio

The following table lists the audio specifications of your OptiPlex 5090.

Table 13. Audio specifications

Description	Values
Audio type	Waves MaxxAudio
Audio controller	Waves MaxxAudio API
Internal audio interface	Intel HDA (high-definition audio)
External audio interface	- One Universal audio port (front) - One Line-out audio port with re-tasking to Line-in(rear)

Storage

Your computer supports one of the following configurations:

Table 14. Storage Matrix

Storage		1st 2.5-inch hard drive	2nd 2.5-inch hard drive	1st 3.5-inch hard drive	2nd 3.5-inch hard drive	Single M.2 socket	2nd M.2 2280 socket	1st Bootable Device
2.5-inch hard drive		Y	N	N	N	N	N	2.5-inch hard drive
Dual 2.5-inch hard drive		Y	Y	N	N	N	N	1st 2.5-inch hard drive
3.5-inch hard drive		N	N	Y	N	N	N	3.5-inch hard drive
2.5-inch hard drive	3.5-inch hard drive	Y	N	Y	N	N	N	2.5-inch hard drive
3.5-inch hard drive	2.5-inch hard drive	N	Y	Y	N	N	N	3.5-inch hard drive
3.5-inch hard drive	Dual 2.5-inch hard drive	Y	Y	Y	N	N	N	3.5-inch hard drive
Dual 2.5-inch hard drive	3.5-inch hard drive	Y	Y	Y	N	N	N	1st 2.5-inch hard drive
Dual 3.5-inch hard drive	Dual 2.5-inch hard drive	Y	Y	Y	Y	N	N	1st 2.5-inch hard drive
Dual 3.5-inch hard drive	Dual 2.5-inch hard drive	Y	Y	Y	Y	N	N	1st 3.5-inch hard drive
M.2 solid-state drive		N	N	N	N	Y	N	M.2 solid-state drive
Dual M.2 solid-state drive		N	N	N	N	Y	Y	1st M.2 solid-state drive
M.2 solid-state drive	3.5-inch hard drive	N	N	Y	N	Y	N	M.2 solid-state drive
M.2 solid-state drive	2.5-inch hard drive/ solid-state drive	N	Y	N	N	Y	N	M.2 solid-state drive
M.2 solid-state drive	Dual 2.5-inch hard drive	Y	Y	N	N	Y	N	M.2 solid-state drive
M.2 Intel Optane	2.5-inch hard drive	Y	N	N	N	Y	N	2.5-inch hard drive
M.2 Intel Optane	Dual 2.5-inch hard drive	Y	Y	N	N	Y	N	2.5-inch hard drive

Table 14. Storage Matrix (continued)

Storage			1st 2.5-inch hard drive	2nd 2.5-inch hard drive	1st 3.5-inch hard drive	2nd 3.5-inch hard drive	Single M.2 socket	2nd M.2 2280 socket	1st Bootable Device
M.2 Intel Optane		3.5-inch hard drive	N	N	Y	N	Y	N	3.5-inch hard drive
M.2 Intel Optane	2.5-inch hard drive	3.5-inch hard drive	Y	N	Y	N	Y	N	2.5-inch hard drive
M.2 Intel Optane	3.5-inch hard drive	2.5-inch hard drive	N	Y	Y	N	Y	N	3.5-inch hard drive

Table 15. Storage specifications

Storage type	Interface type	Capacity
2.5-inch, 5400 RPM, hard-disk drive	SATA 3.0	Up to 2 TB
2.5-inch, 7200 RPM, hard-disk drive	SATA 3.0	Up to 2 TB
3.5-inch, 7200 RPM, hard-disk drive	SATA 3.0	Up to 4 TB
M.2 2230, Class 35 solid-state drive	PCIe NVMe Gen3 x4	Up to 1 TB
M.2 2280, Class 40 solid-state drive	PCIe NVMe Gen3 x4	Up to 2 TB
M.2 2280 Opal Self-Encrypting solid-state drive	PCIe NVMe Gen3 x4, Class 40	Up to 1 TB

RAID (Redundant Array of Independent Disks)

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

(i) **NOTE:** RAID is not supported on Intel Optane configurations.

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

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

Care must be taken to match not only the drive vendor, capacity, and class, but also the specific model. Drives from the same vendor, with the same capacity, and even within the same class, can have different performance characteristics for certain types of I/O operations. Thus, matching by model ensures that the RAID volumes are consisted of a homogeneous array of drives that deliver all the benefits of a RAID volume without incurring the additional penalties when one or more drives in the volume are lower performing.

OptiPlex 7080 supports RAID with more than one hard drive configuration.

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.

(i) **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 (Anniversary Update)
- Latest version of Intel Rapid Storage Technology driver

Table 16. Intel Optane memory

Description	Values
Type	Memory/Storage/Storage accelerator
Interface	PCIe NVMe Gen3 x4
Connector	M.2 2280
Configurations supported	16 GB
Capacity	16 GB

Media-card reader

Table 17. Media-card reader specifications

Type	One SD 4.0 card slot (Optional)
Cards supported	- Secure Digital (mSD) - Secure Digital High Capacity(mSDHC) - Secure Digital Extended Capacity(mSDXC)

Power ratings

The following table lists the power rating specifications of OptiPlex 5090.

Table 18. Power ratings

Description	Option one	Option two
Type	200 W (80 PLUS Bronze)	300W (80 PLUS Platinum)
Input voltage	90 VAC to 264 VAC	90 VAC to 264 VAC
Input frequency	47 Hz to 63 Hz	47 Hz to 63 Hz
Input current (maximum)	3.2 A	4.2 A
Output current (continuous)	12 VA/16.5 A 12 VB/14 A Standby mode: 12 VA/1.5 A 12 VB/2.5 A	12 VA/28 A 12 VB/18 A Standby mode: 12 VA/1.5 A 12 VB/3.3 A
Rated output voltage	+12 VA +12 VB	+12 VA +12 VB

Table 18. Power ratings (continued)

Description		Option one	Option two
Temperature range			
	Operating	5°C to 45°C (41°F to 113°F)	5°C to 45°C (41°F to 113°F)
	Storage	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)

Power Supply power cable specs

Table 19. Power Supply power cable specs

200 W (80 PLUS Bronze)	• Two 4 pin connectors for processor • One 6 pin connector for system board
300 W (80 PLUS Platinum)	• Two 4 pin connectors for processor • One 6 pin connector for system board

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your OptiPlex 5090.

Table 20. GPU—Integrated

Controller	External display support	Memory size	Processor
Intel UHD Graphics 610	Two DisplayPort 1.4 ports	Shared system memory	10th Generation Intel Pentium G6405 processor
Intel UHD Graphics 630	Two DisplayPort 1.4 ports	Shared system memory	10th Generation Intel Pentium G6505 and Intel Core i3/i5/i7 processors
Intel UHD Graphics 730	Two DisplayPort 1.4 ports	Shared system memory	11th Generation Intel Core i5-11400 processor
Intel UHD Graphics 750	Two DisplayPort 1.4 ports	Shared system memory	11th Generation Intel Core i5/i7

GPU—Discrete

The following table lists the specifications of the discrete Graphics Processing Unit (GPU) supported by your OptiPlex 5090.

Table 21. GPU—Discrete

Controller	External display support	Memory size	Memory type
AMD Radeon RX640	• One VGA port • One HDMI 2.0 port • One DisplayPort 1.4 port	DDR5	4 GB
AMD Radeon 550	• One VGA port • One HDMI 2.0 port • One DisplayPort 1.4 port	DDR5	4 GB
AMD Radeon 540	• One VGA port • One HDMI 2.0 port • One DisplayPort 1.4 port	DDR5	4 GB

Multiple display support matrix

Table 22. Integrated - Multiple display support matrix

Video ports on Integrated Graphics Card	2 DisplayPort 1.2 ports
Video port on Option Video module	VGA/ HDMI2.0/ DP++ 1.2/ TypeC w/DP-Alt mode
Number of displays	3 displays (4096 x 2304 @60 Hz,24 bpp)

Table 23. Discrete - Multiple display support matrix

Graphics Card	Radeon RX 640	Radeon RX 550	Radeon RX 540
Memory	4 GB GDDR5	4 GB GDDR5	4 GB GDDR5
Video Ports on Graphics Card	• 2 x Mini DisplayPorts • 1 x DisplayPort	• 2 x Mini DisplayPorts • 1 x DisplayPort	• 1 x HDMI 1.4 port • 1 x DisplayPort
Max Displays (direct connect)	3	3	3
Max Displays (DP multi-stream)	1	1	1
Number of displays	3	3	2
Supported Resolution	• 3 x FHD (1920 x 1080)	• 3 x FHD (1920 x 1080)	• 2 x FHD (1920 x 1080)
Total Power	50 W	50 W	50 W

Operating and storage environment

This table lists the operating and storage specifications of your OptiPlex 5090.

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

Table 24. Computer environment

Description	Operating	Storage
Temperature range	10 °C – 35°C (50 °F – 95°F)	-40°C - 65°C (-40°F - 149°F)
Relative humidity (maximum)	20% to 80% (non-condensing, Max dew point temperature = 26°C)	5% to 95% (non-condensing, Max dew point temperature = 33°C)
Vibration (maximum)*	0.26 GRMS random at 5 Hz to 350 Hz	1.37 GRMS random at 5 Hz to 350 Hz
Shock (maximum)	Bottom half-sine pulse with a change in velocity of 40.20 cm/sec (20 in./sec)	105G half-sine pulse with a change in velocity of 105.20 cm/sec (52.5 in./sec)
Altitude range	3048 m (10,000 ft)	10,668 m (35,000 ft)

⚠ **CAUTION: Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.**

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

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

Energy Star, EPEAT and Trusted Platform Module (TPM)

Table 25. Energy Star, EPEAT and TPM

Features	Specifications
Energy Star 8.0	Compliant configurations available
EPEAT	Gold and Silver compliant configurations available
Trusted Platform Module (TPM) 2.0[1,2]	Integrated on system board
Firmware-TPM (Discrete TPM disabled)	Optional

(i) **NOTE:**

[1]TPM 2.0 is FIPS 140-2 certified.

[2]TPM is not available in all countries.

Getting help and contacting Dell

Self-help resources

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

Table 26. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	www.dell.com
My Dell	
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
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals and documents.	Your Dell 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 www.dell.com/support. For more information on how to find the Service Tag for your computer, see Locate the Service Tag on your computer.
Dell knowledge base articles for a variety of computer concerns	1. Go to www.dell.com/support. 2. On the menu bar at the top of the Support page, select **Support** > **Knowledge Base**. 3. In the Search field on the Knowledge Base page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles.

Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see www.dell.com/contactdell.

(i) **NOTE:** Availability varies by country/region and product, and some services may not be available in your country/region.

(i) **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.