

Precision 5770

External Display Connection Guide

Notes, cautions, and warnings

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

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

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

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Before you begin

You can connect up to four 4K external displays or two 5K and above displays using the Thunderbolt 4 (USB-C) ports available on your Precision 5770.

Before you begin, ensure that you:

- [Check the graphics options on your computer](#)
- Check the ports available on your external displays and decide on the [mode of connection](#)

Check the graphics options on your computer

The number of external displays supported depends on the type of graphics card available on your computer.

NOTE: On computers with a NVIDIA RTX A3000 or NVIDIA RTX A2000 graphics card installed, you can connect up to four external displays or two 8K displays by enabling the **Direct Graphics Controller Direct Output Mode** in the BIOS. For more information on enabling this mode, see [Enabling Direct Graphics Controller Direct Output Mode](#).

For more information on the graphics card available on your computer, run Dell SupportAssist on your computer, or scan your hardware at www.dell.com/support.

The following are the graphic options that may be installed in your computer:

- Intel Iris X^e Graphics (Integrated graphics)
- Intel UHD Graphics (Integrated graphics)
- NVIDIA RTX A2000 (Discrete graphics)
- NVIDIA RTX A3000 (Discrete graphics)

Modes of connection

Depending on the connectors available on your external display, you can connect the displays to the Thunderbolt 4 (USB-C) ports on your computer using:

- Thunderbolt 4 cables, adapters or docking stations
- USB-C cables, adapters or docking stations

NOTE: To experience the full resolution supported by your external displays, use appropriate cables. For example, use DisplayPort or HDMI cables for 4K and above resolution.

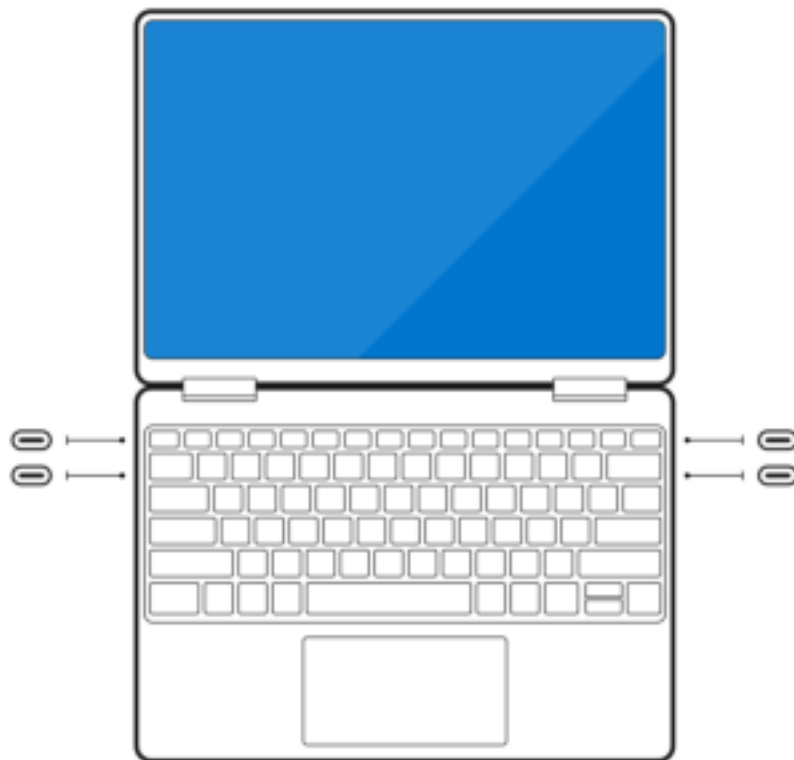
NOTE: USB-C or Thunderbolt docking stations can be used to connect external displays to the computer using a single USB-C cable, while charging the computer. For more information about the types of docking stations available from Dell, see the knowledge base article [000124295](#) at www.dell.com/support.

NOTE: USB-C adapters can also be used to connect external displays to the computer, though these do not allow power charging at the same time. For more information about the types of USB-C adapters available from Dell, see the knowledge base article [000125728](#) at www.dell.com/support.

These are the Thunderbolt 4 (USB-C) ports available on your computer:

NOTE: When connecting a display indirectly using an adapter or docking station, it is recommended that you connect the display to the docking station first, then connect the docking station to the Thunderbolt 4 (USB-C) port on your computer.

NOTE: The devices connected to the ports on the left side of the computer have priority over the ports on the right. While connecting external displays, it is recommended that you connect the displays to the left ports.



Enable Direct Graphics Controller Direct Output mode

You can connect four external displays or two 8K displays on computers with the NVIDIA RTX A3000 or NVIDIA RTX A2000 discrete graphics card installed. To do so, you must enable **Direct Graphics Controller Direct Output Mode** in the computer's BIOS. When enabled, the graphics signals are sent to the external display using the discrete graphics card instead of integrated graphics. By default, this mode is disabled in the BIOS.

To change **Direct Graphics Controller Direct Output Mode** in the BIOS:

1. Restart your computer and press **<F2>** immediately to enter the BIOS.
2. In the BIOS screen, select **Display**.
3. Select **Direct Graphics Controller Direct Output mode**.
4. Select **Enable**.
5. Save changes and exit the BIOS.

For more information about accessing and configuring the BIOS, see the computer's *Service Manual* at www.dell.com/support.

Turn off the internal display

There may be instances where you may want to turn off the computer's internal display to connect more external displays.

You can turn off the display of your computer by using the Intel HD Graphics Command Center.

To turn off the display:

1. In the Windows search bar, type **Intel Graphics Command Center** and press **<Enter>**.
2. Accept the **Intel Graphics Command Center** software licence agreement.
3. On the **Intel Graphics Command Center** window, click **Display**. The list of active displays is listed under the **Connected Displays** section.
4. Click the ellipsis (...) in the top-right corner of your primary display, then click **Extend > Display 2**.
5. Click the ellipsis (...) in the top-right corner of display 2, then click **Make Display Primary**.
6. Click the ellipsis (...) in the top-right corner of your computer's display, then click **Disable**.

Connect external displays

You can connect up to four external displays to the Thunderbolt 4 (USB-C) ports on your computer.

The number of displays supported depends on the following:

- Whether you're using [integrated graphics](#) or [discrete graphics](#).
- [If the internal display is enabled or disabled](#).
- On computers with NVIDIA RTX A3000 or NVIDIA RTX A2000 discrete graphics card installed, [if the Direct Graphics Controller Direct Output Mode is enabled](#).
- Your docking station may also limit the number of supported external displays. Check the documentation that came with your docking station for details.

The following table summarizes the number of supported external displays:

Table 1. Display support (up to 4K/60 Hz)

Graphics card	Direct Graphics Controller Direct Output Mode	Supported external displays with computer internal display on	Supported external displays with computer internal display off
Intel UHD Graphics (Integrated graphics)	N/A	3	4
Intel Iris Xe Graphics (Integrated graphics)	N/A	3	4
NVIDIA RTX A2000	N/A	3	4
NVIDIA RTX A3000	N/A	3	4
NVIDIA RTX A3000	Enabled	4	4

Table 2. Display support (up to 8K/60 Hz)

Graphics card	Direct Graphics Controller Direct Output Mode	Supported external displays with computer internal display on	Supported external displays with computer internal display off
Intel UHD Graphics (Integrated graphics)	N/A	1	2
Intel Iris Xe Graphics (Integrated graphics)	N/A	1	2
NVIDIA RTX A2000	N/A	1	2
NVIDIA RTX A3000	N/A	1	2
NVIDIA RTX A3000	Enabled	2	2

Integrated graphics

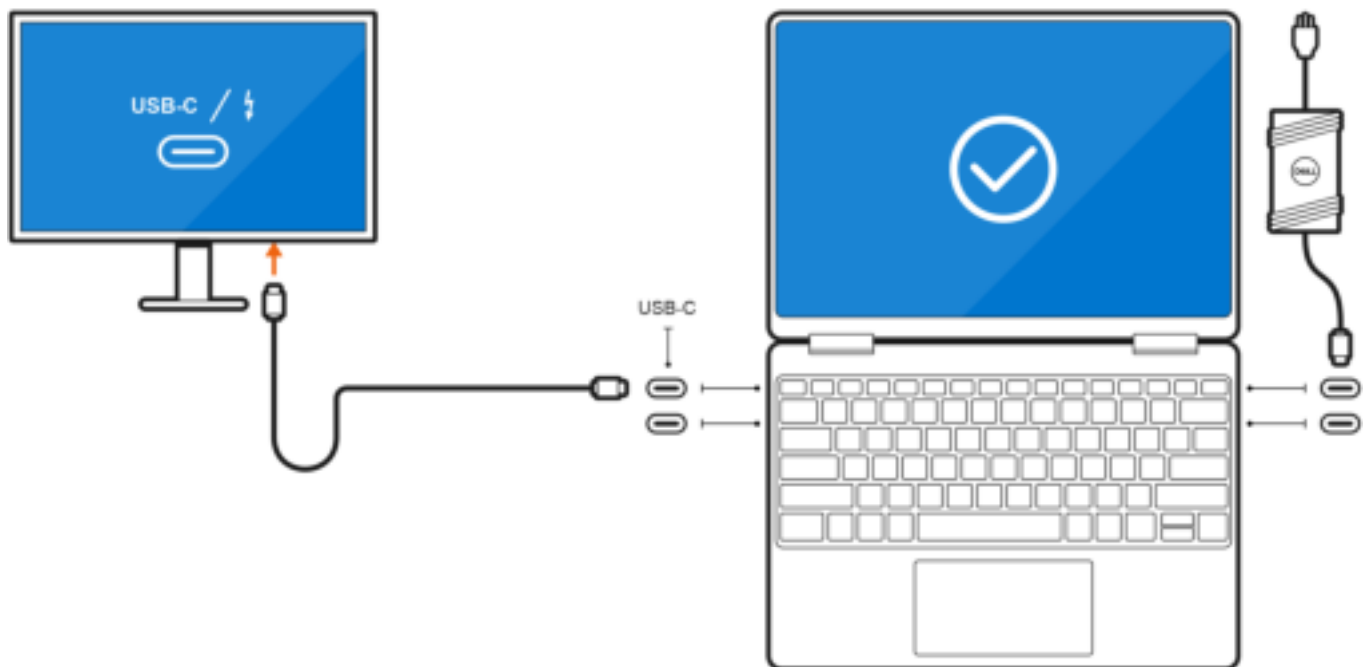
Connecting external displays to Precision 5770 with integrated graphics

- NOTE:** When connecting a display indirectly using an adapter or docking station, it is recommended that you connect the display to the docking station first, then connect the docking station to the Thunderbolt 4 (USB-C) port on your computer.
- NOTE:** The devices connected to the ports on the left side of the computer have priority over the ports on the right. While connecting external displays, it is recommended that you connect the displays to the left ports.

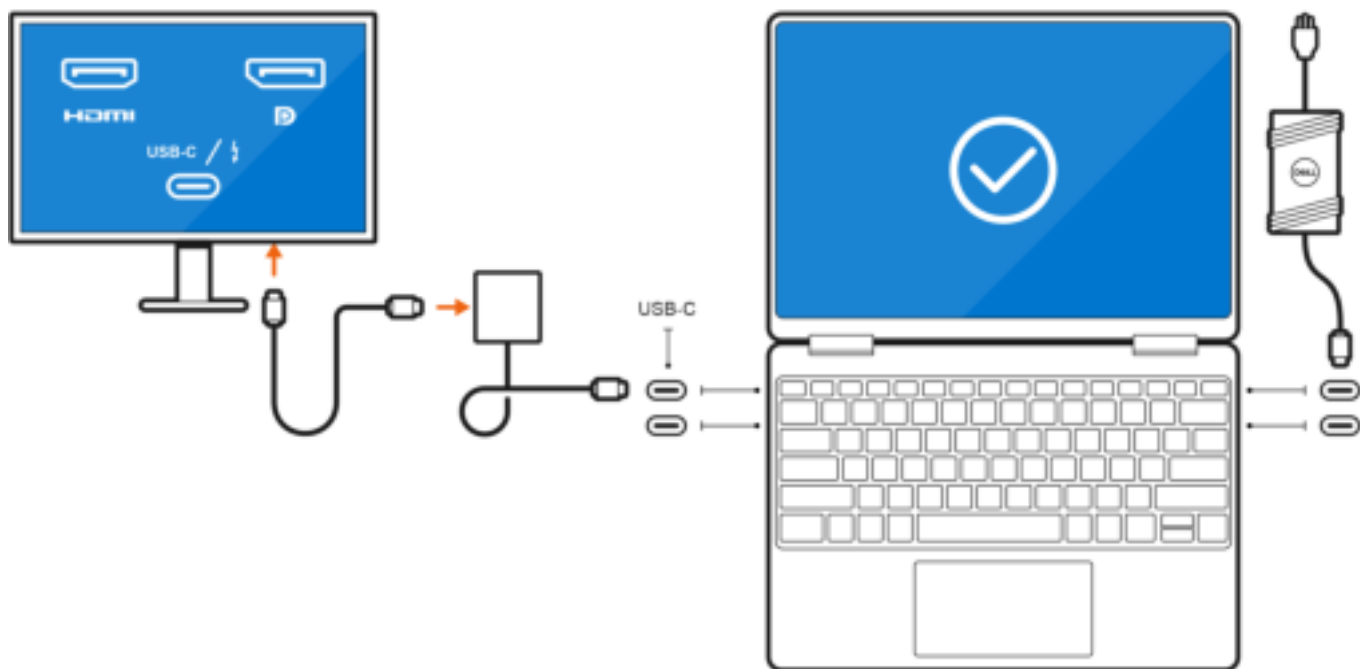
With the internal display turned on

You can connect external displays directly to Thunderbolt 4 (USB-C) ports, or up to two external displays using a docking station.

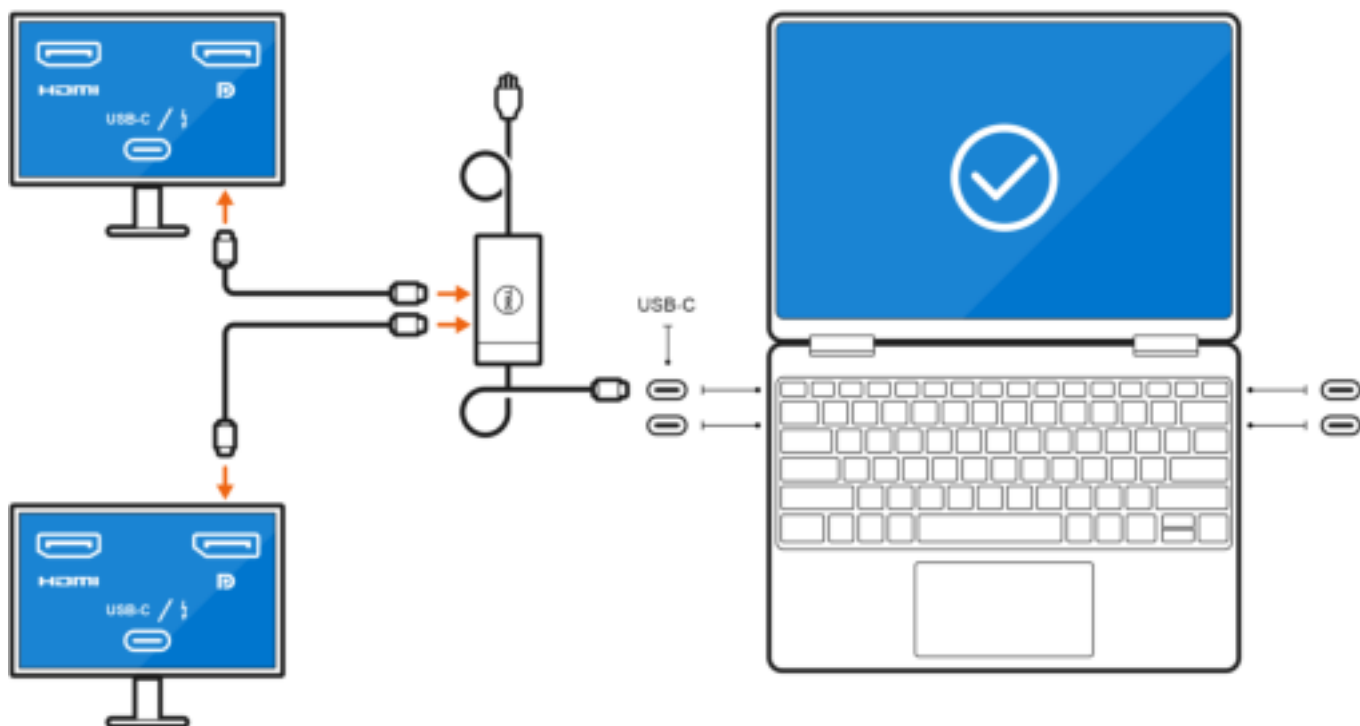
- Connect an external display using a direct USB-C or Thunderbolt cable:



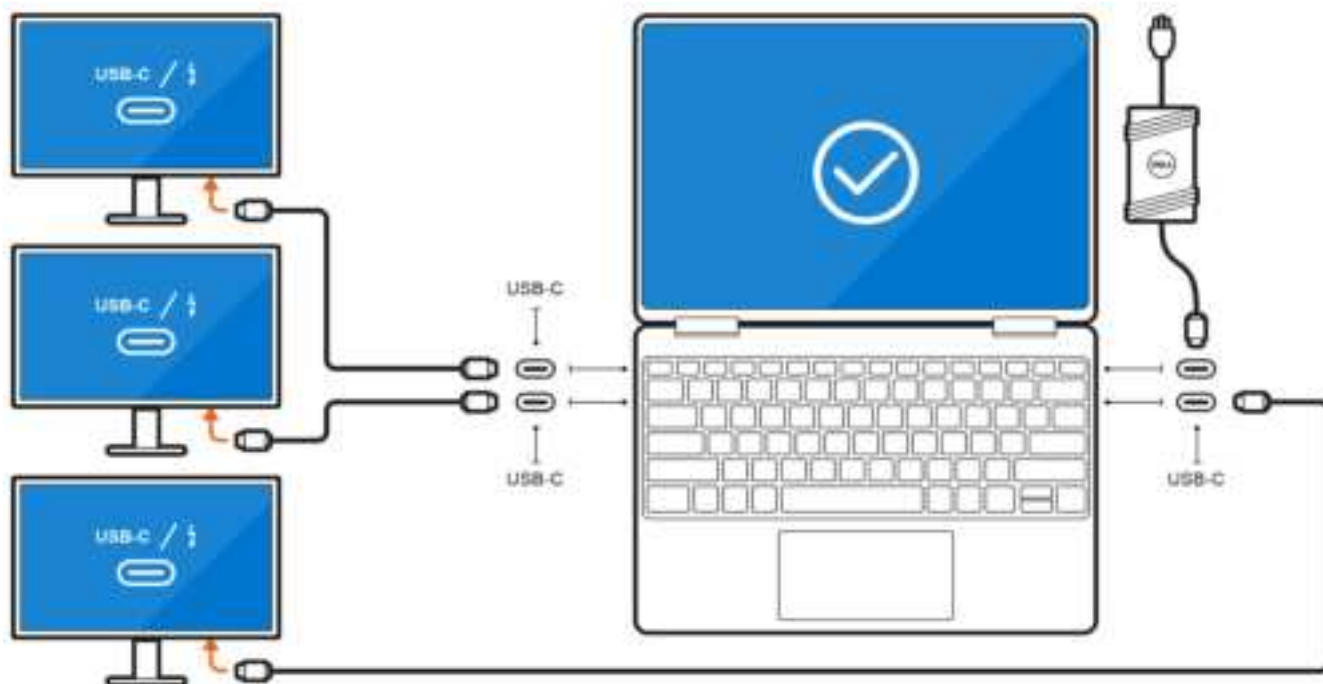
- Connect an external display using a USB-C to Thunderbolt/HDMI/DisplayPort adapter:



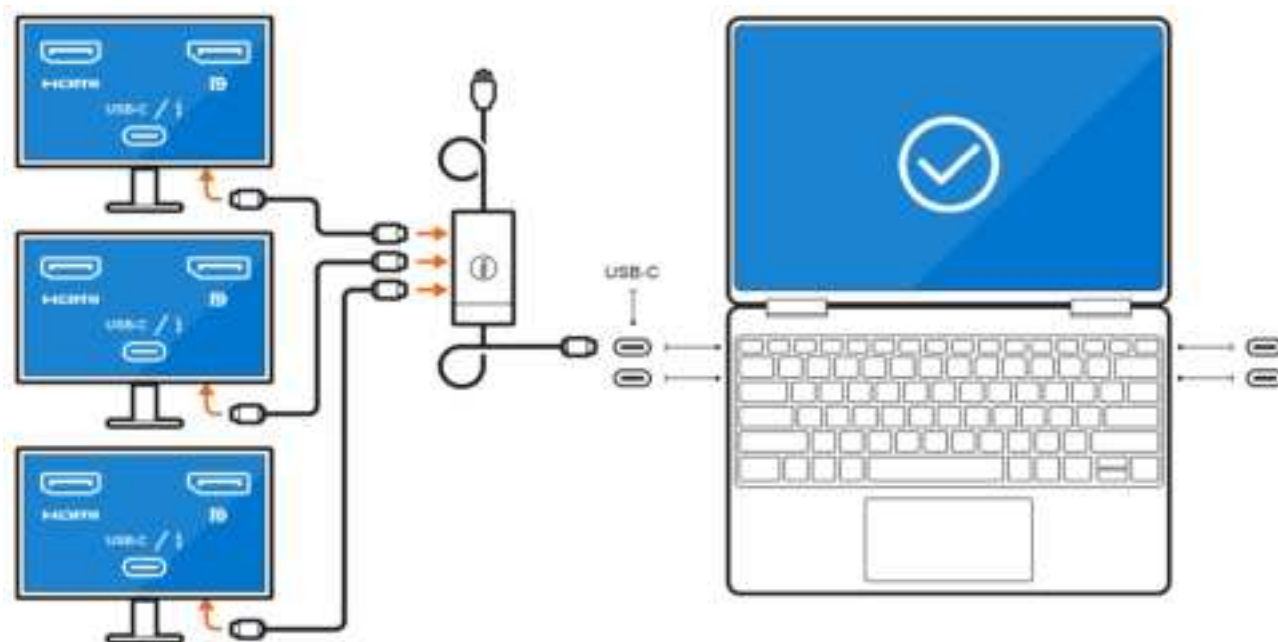
- Connect up to two external displays using a USB-C docking station:



- Connect up to three external displays using direct USB-C or Thunderbolt cables:



- Connect up to three external displays using a USB-C docking station:



With the internal display turned off

NOTE: Ensure that you turn off the computer's internal display before connecting the external displays. For more information, see [Turn off the internal display](#).

You can connect up to four external displays directly to Thunderbolt 4 (USB-C) ports.

- Connect four external displays using direct USB-C or Thunderbolt cables:



Discrete graphics

Connecting external displays to Precision 5770 with discrete graphics

If you have a discrete graphics card installed in your computer, such as the NVIDIA RTX A3000, you can connect up to four external displays or two 8K displays.

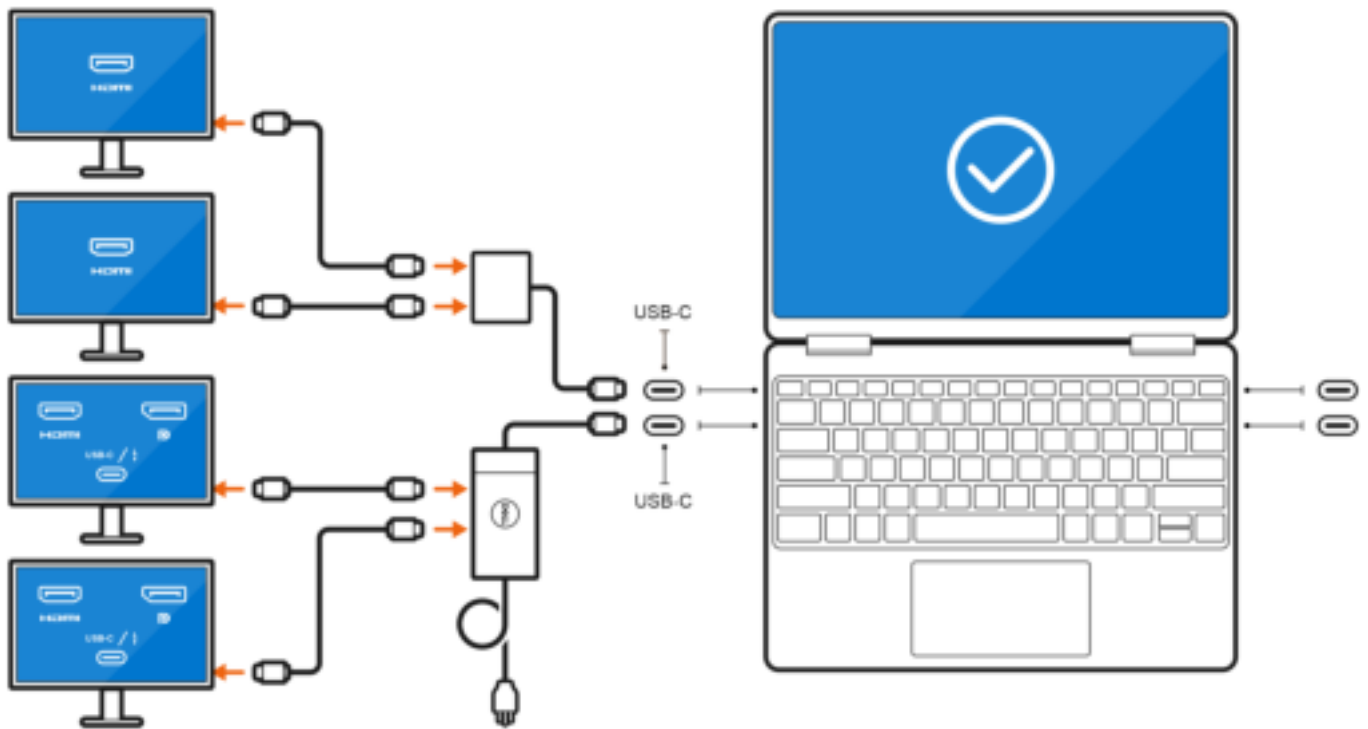
NOTE: Direct Graphics Controller Direct Output Mode, needs to be enabled to connect four external displays.

NOTE: When connecting a display indirectly using an adapter or docking station, it is recommended that you connect the display to the docking station first, then connect the docking station to a Thunderbolt 4 (USB-C) port on your computer.

NOTE: The devices connected to the ports on the left side of the computer have priority over the ports on the right. While connecting external displays, it is recommended that you connect the displays to the left ports.

If you have a NVIDIA RTX A3000 discrete card with Direct Graphics Controller Direct Output Mode disabled, the maximum number of external displays supported is the same as the integrated graphics option.

- Connect two external displays using a docking station and two more external displays using a USB-C to HDMI/DisplayPort/Thunderbolt 4 adapter:



Troubleshooting

8K displays cannot select 8K@60Hz

Question

When I connect an 8K display to the computer using a Thunderbolt or type-C cable directly, the display output only runs 8K@30Hz.

Cause

This is due to a hardware limitation (HDMI 8k@60Hz requires VESA DSC 1.2a PCON IC support which is not supported on the system).

Workaround

The system is work as designed.

There is no display on the monitor while connecting the monitor via Dell WD15 dock to the system

Question

When I connect a display monitor to the computer using a Dell WD15 Thunderbolt docking station with Direct Graphics Controller Direct Output mode enabled (dGPU mode), there is no display output.

Cause

This is due to a hardware limitation on the Dell WD15 dock while Direct Graphics Controller Direct Output mode is enabled on the system.

Workaround

Use default iGPU mode when connecting the Dell WD15 dock or use latest Dell WD19 or WD22 docking stations.

The display output resolution cannot reach 4K@60Hz while connecting the display monitor with a HDMI-to-DP or DP-to-HDMI dongle from the docking station to the system

Question

When I connect a display monitor to the computer using an HDMI-to-DP or DP-to-HDMI dongle from a Dell WD19/WD22 Thunderbolt docking station, the display output resolution cannot reach 4K@60Hz (only 4K@30Hz).

Cause

This is due to a hardware limitation while connecting dongles to the Dell WD19/WD22 (Limited Graphic bandwidth) Thunderbolt docking station.

Workaround

Connect the monitor directly to the HDMI or DP ports on the Thunderbolt docking station.

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 3. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	www.dell.com
My Dell app	
Tips	
Contact Support	In Windows search, type <code>Contact Support</code> , 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.

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

 **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.