

# XPS 17 9700

## 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 3 (USB-C) ports available on your XPS 17 9700.

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 and type of external displays supported depends on the type of graphics card installed in your computer.

**NOTE:** On computers with the NVIDIA GeForce RTX 2060 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](http://www.dell.com/support).

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

- Intel UHD Graphics 630 (Integrated graphics)
- NVIDIA GeForce GTX 1650 Ti (Discrete graphics)
- NVIDIA GeForce RTX 2060 (Discrete graphics)

## Modes of connection

Depending on the connectors available on your external display, you can connect the displays to the Thunderbolt 3 (USB-C) ports on your computer using:

- Thunderbolt 3 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.

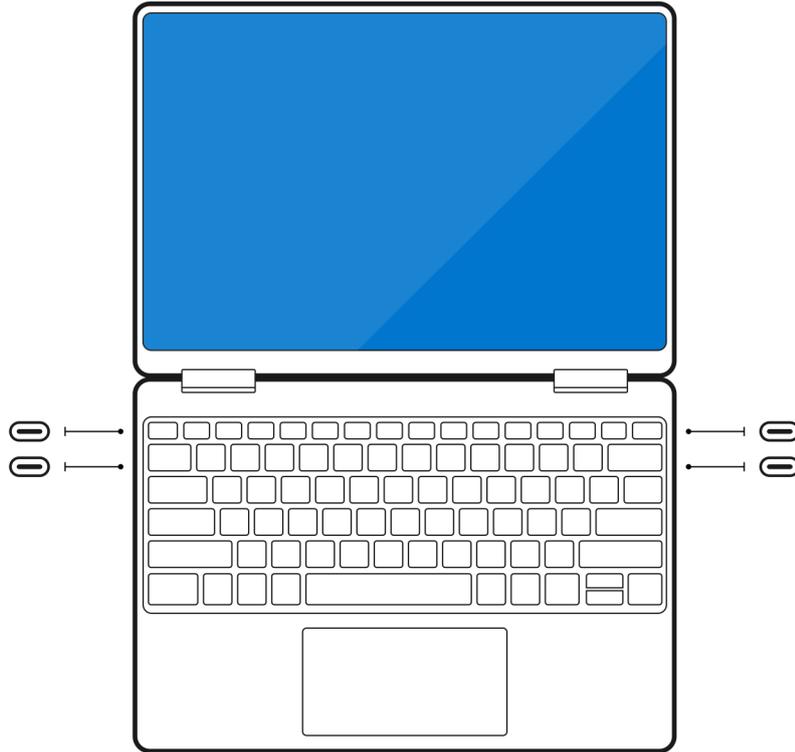
**NOTE:** USB-C or Thunderbolt docking stations can be used to connect external displays to the computer using a single USB-C cable, while charging the computer. For more information about the types of docking stations available from Dell, see the knowledge base article [SLN286158](#) at [www.dell.com/support](http://www.dell.com/support).

**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 [SLN301080](#) at [www.dell.com/support](http://www.dell.com/support).

These are the Thunderbolt 3 (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 3 (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 GeForce RTX 2060 discrete graphics card installed. To do so, you must enable **Direct Graphics Controller Direct Output Mode** in the computer's BIOS.

**NOTE:** 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 computer's BIOS.

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

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

For more information about accessing and configuring the BIOS, see the computer's *Service Manual* at [www.dell.com/support](http://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 LCD 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 (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 the NVIDIA GeForce RTX 2060 discrete graphics card installed, [if the Direct Graphics Controller Direct Output Mode is enabled](#).

The following table summarizes the number of supported external displays:

**Table 1. Display support**

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 630 (Integrated graphics)	N/A	2	3
NVIDIA GeForce GTX 1650 Ti	N/A	2	3
NVIDIA GeForce RTX 2060	N/A	2	3
NVIDIA GeForce RTX 2060	Enabled	4	4

## Integrated graphics

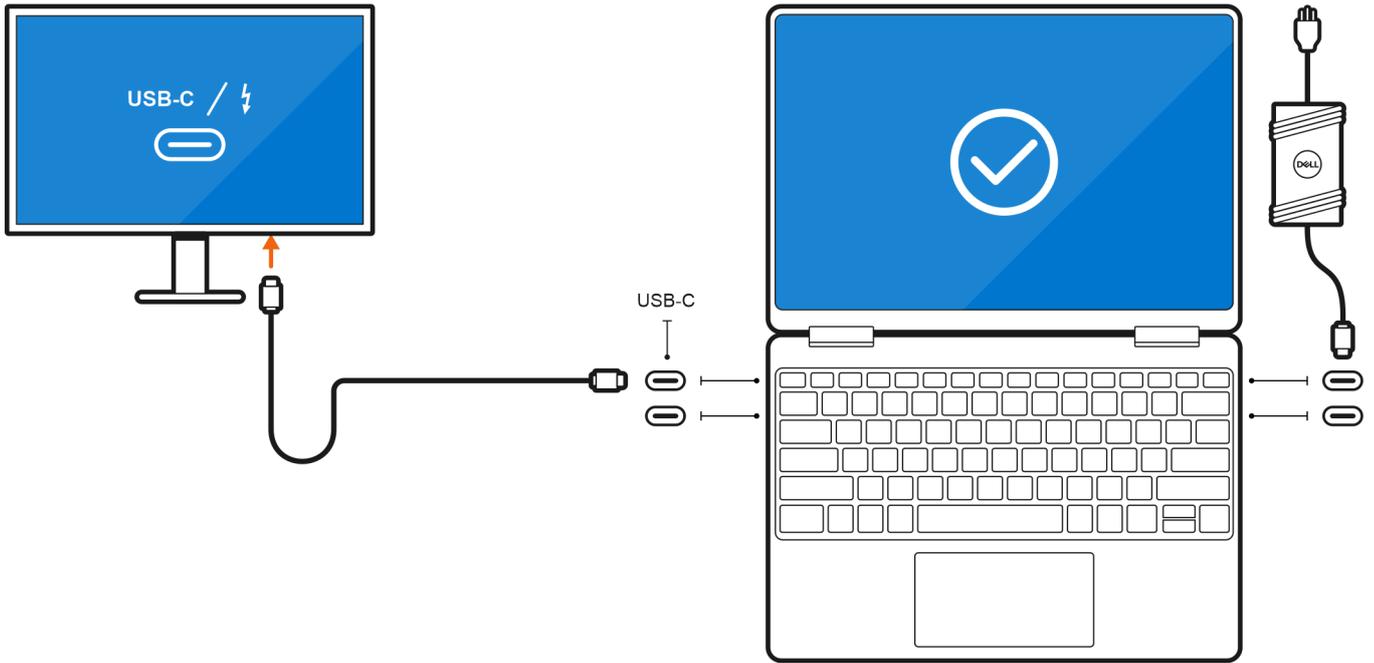
### Connecting external displays to XPS 17 9700 with integrated graphics

- ⓘ **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 3 (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.

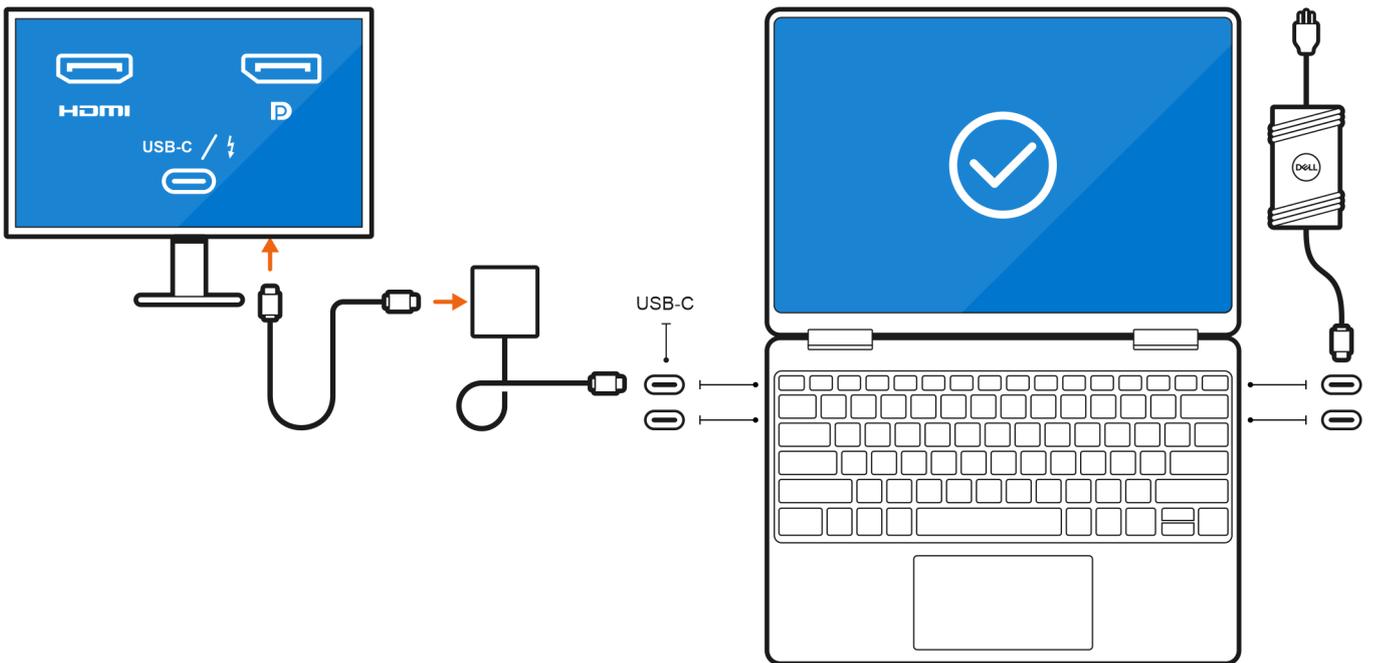
### With the internal display turned on

You can connect external displays directly to Thunderbolt 3 (USB-C) ports, or up to two external displays using a docking station.

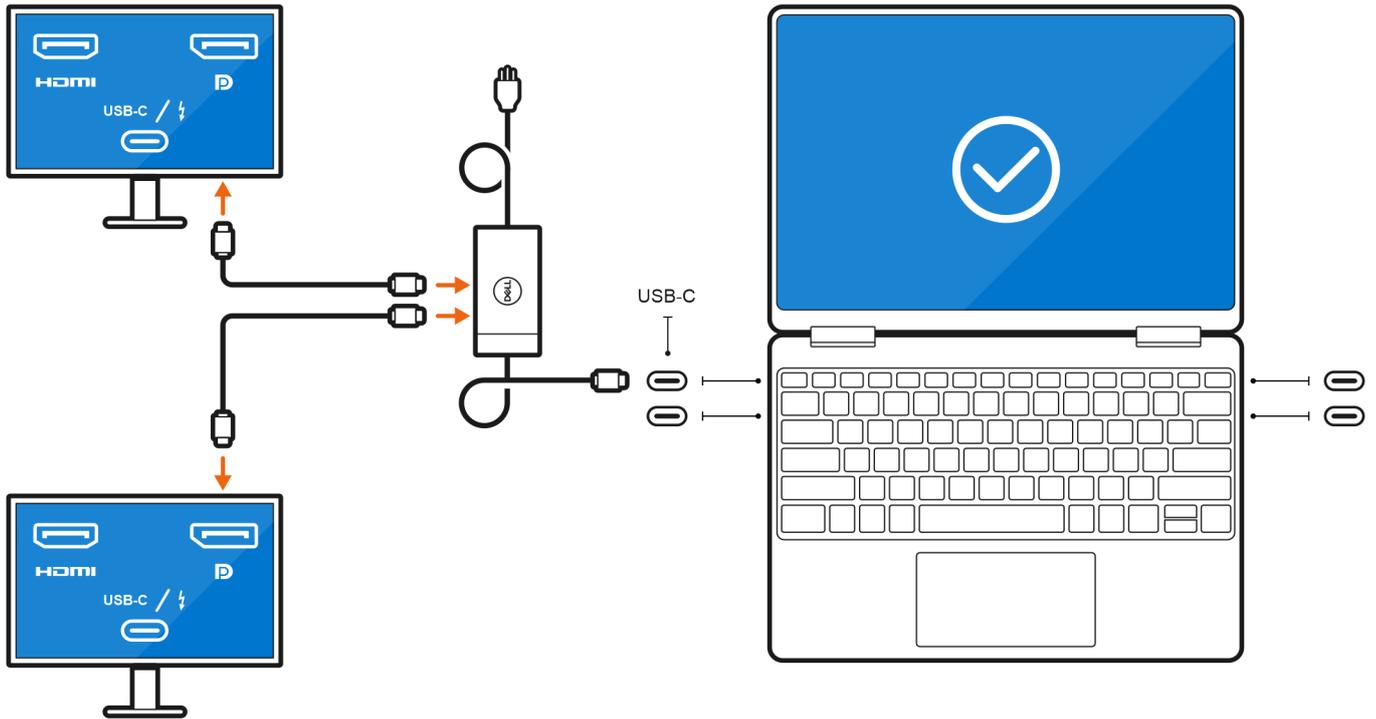
- Connect an external display using a direct USB-C or Thunderbolt cable:



- 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:

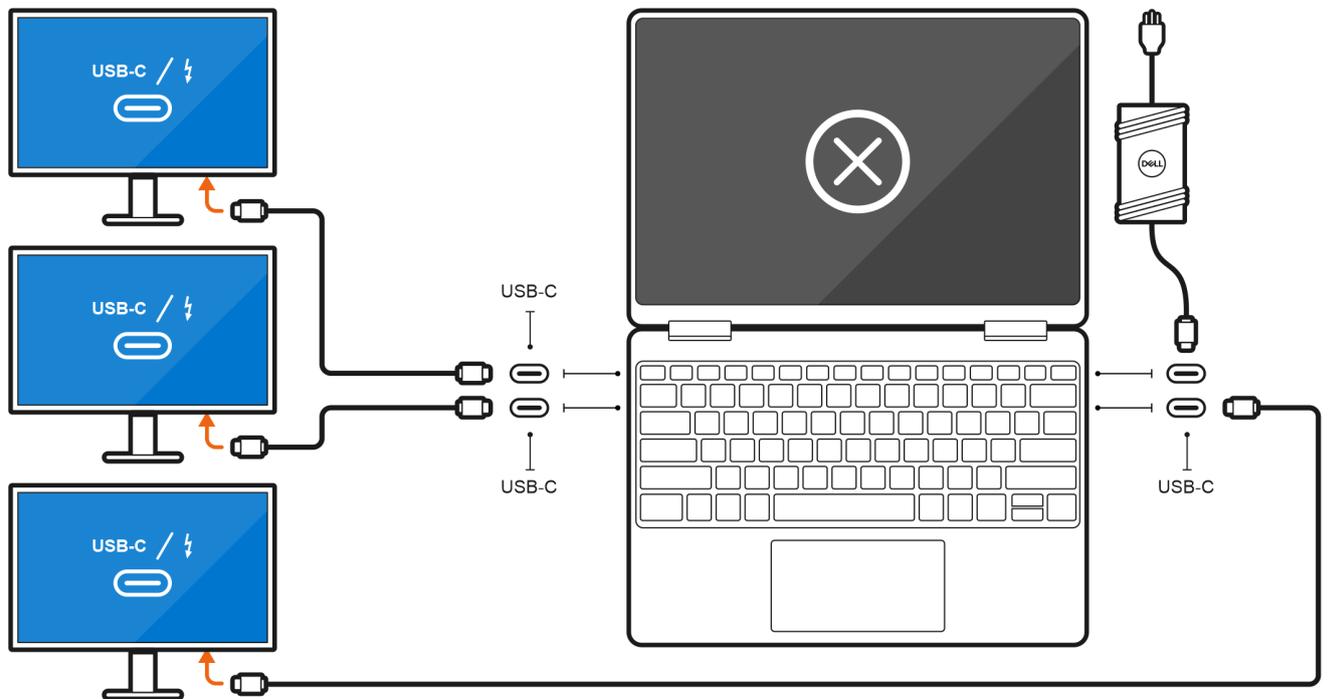


## With the internal display turned off

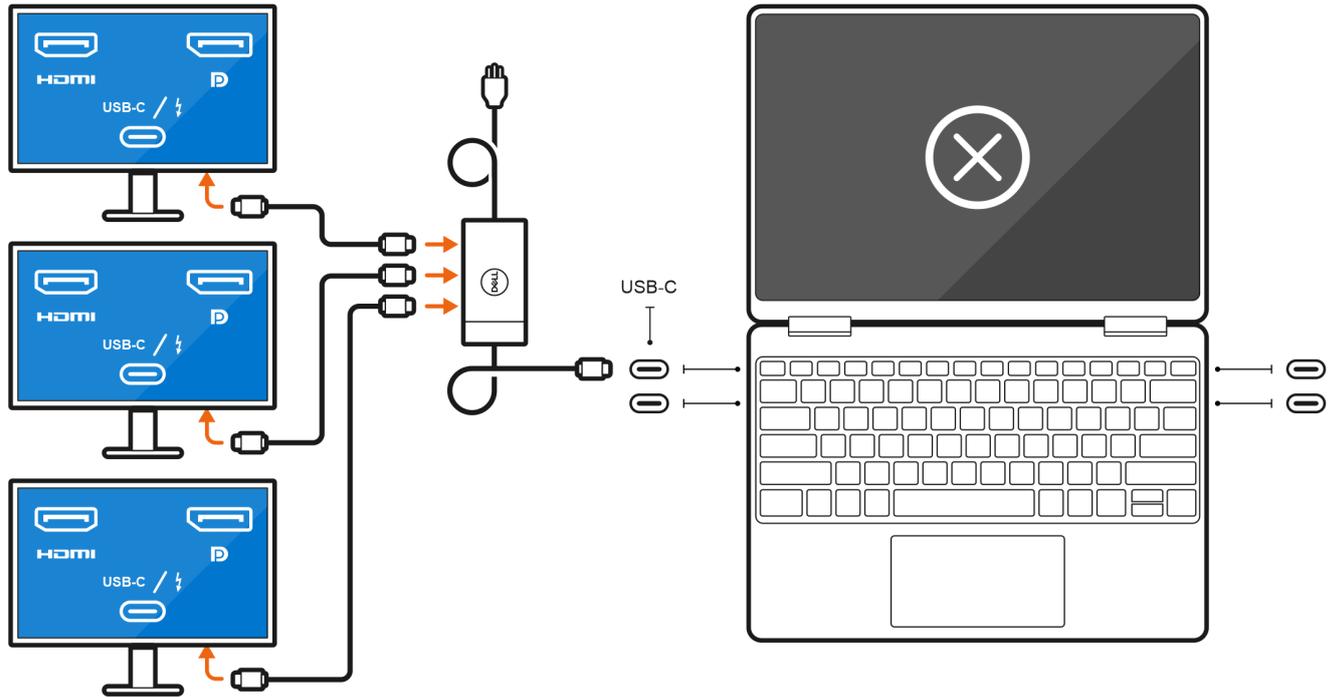
**i** **NOTE:** Ensure that you turn off the internal LCD before connecting the external displays. For more information, see [Turn off the internal display](#).

You can connect up to three external displays directly to Thunderbolt 3 (USB-C) ports, or using a docking station.

- Connect three external displays using direct USB-C cables:



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



## Discrete graphics

### Connecting external displays to XPS 17 9700 with discrete graphics

If you have a discrete graphics card such as NVIDIA GeForce RTX2060 installed in your computer, you can connect up to four external displays or two 8K displays.

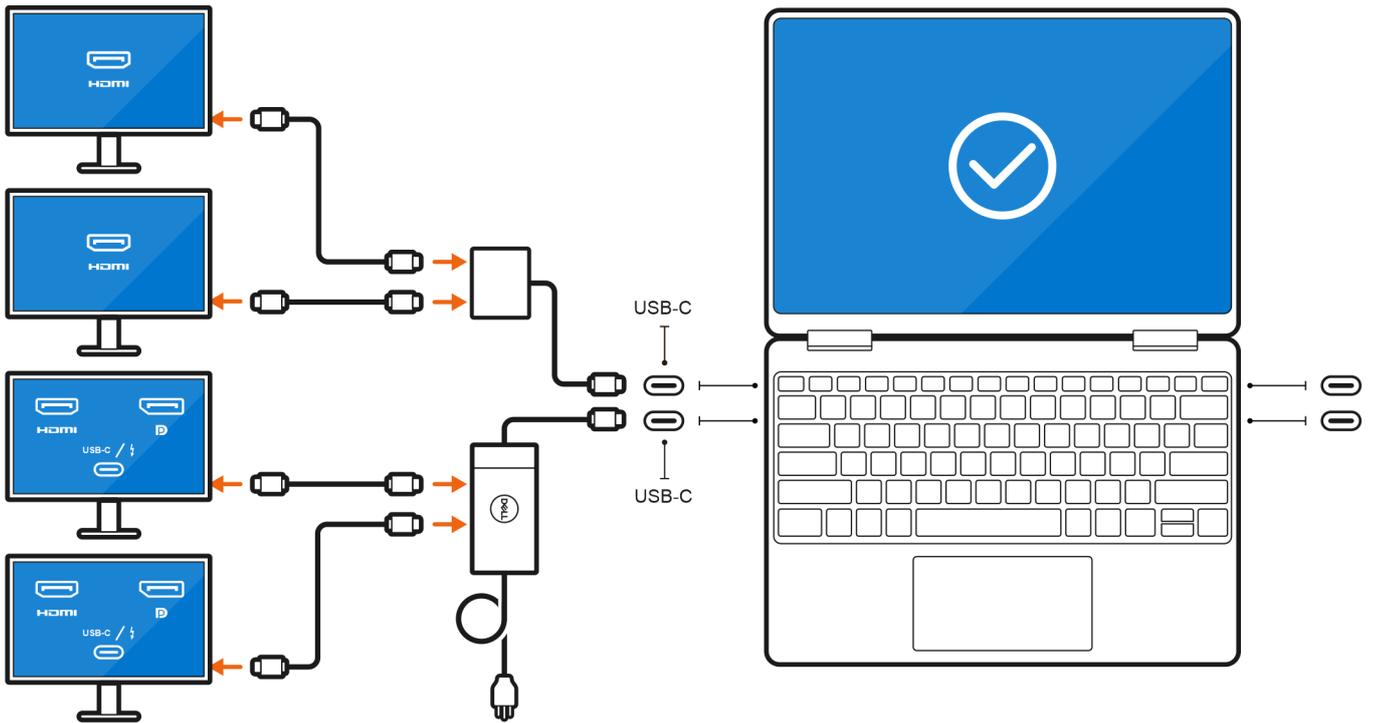
**i** **NOTE:** Direct Graphics Controller Direct Output Mode must be enabled for this multi-display support.

**i** **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 3 (USB-C) port on your computer.

**i** **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 GeForce RTX 2060 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 3 adapter:



# Troubleshooting

## 8K displays flickering

### Question

When I connect two 8K displays to both Thunderbolt ports on the left side or the right side of the computer, they flicker when run at a display rate of 60Hz.

### Cause

This may be because of interlacing or switching as the Thunderbolt controller has send only part of the data, where the other one has to send the second part of the data synchronization may be a problem..

### Workaround

Connect each 8K display to a Thunderbolt port on either side of the computer, for example, one 8K display to either Ports on the left side, and the other to either Ports on the right side. After doing so, power the displays off and on again.

## 8K displays not displaying correctly

### Question

When I connect an 8K display to the computer using a Thunderbolt docking station, the display output is not correct from the computer.

### Cause

This may be because of a hardware limitation with the Thunderbolt docking station.

### Workaround

Connect the 8K display directly to a Thunderbolt port on the computer (not using a docking station). After doing so, power the display on and off again.

# 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 2. Self-help resources**

Self-help resources	Resource location
Information about Dell products and services	<a href="http://www.dell.com">www.dell.com</a>
My Dell app	
Tips	
Contact Support	In Windows search, type <code>Contact Support</code> , and press Enter.
Online help for operating system	<a href="http://www.dell.com/support/windows">www.dell.com/support/windows</a> <a href="http://www.dell.com/support/linux">www.dell.com/support/linux</a>
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 <a href="http://www.dell.com/support">www.dell.com/support</a> .  For more information on how to find the Service Tag for your computer, see <a href="#">Locate the Service Tag on your computer</a> .
Dell knowledge base articles for a variety of computer concerns	<ol style="list-style-type: none"> <li>1. Go to <a href="http://www.dell.com/support">www.dell.com/support</a>.</li> <li>2. On the menu bar at the top of the Support page, select <b>Support &gt; Knowledge Base</b>.</li> <li>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.</li> </ol>

## Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see [www.dell.com/contactdell](http://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.