Dell Pro Max 16 Premium

MA16250

External Display Connection Guide

Regulatory Model: P143F
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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

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Before you begin

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 that are supported by your computer depends on the graphic processing unit (GPU) that is installed on your computer.

For more information about the GPUs available on your computer, run **Dell SupportAssist** on your computer, or scan your hardware at Dell Support Site.

The following GPUs may be installed in your computer:

- Intel Arc 140T (integrated graphics)
- Intel Arc Pro 140T (integrated graphics)
- NVIDIA RTX PRO 1000 Blackwell (discrete graphics)
- NVIDIA RTX PRO 2000 Blackwell (discrete graphics)
- NVIDIA RTX PRO 3000 Blackwell (discrete graphics)

Modes of connection

The external display connection mode that is selected in the BIOS defines the number of displays that your computer supports.

The different external display connection modes that are supported are as follows:

- Hybrid Graphics mode
- Discrete Graphics Controller Direct Output Mode

Connect the display to the Thunderbolt 5 (USB Type-C) port, Thunderbolt 4 (USB Type-C) ports, or HDMI port on your computer using:

- Thunderbolt 5 or Thunderbolt 4 cables, adapters, or docking stations
- USB Type-C cables, adapters, or docking stations
- HDMI cable

NOTE: Use appropriate cables to experience the maximum resolution supported by your external displays. For example, use Thunderbolt cables or USB-C cables for 4K and above resolutions.

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, search for **Guide to Dell Docking Stations** at the Knowledge Base Resource at the Dell Support site.

NOTE: USB-C adapters can also be used to connect external displays to the computer, though these do not allow power charging simultaneously. For more information about the types of USB-C adapters available from Dell, search for **Thunderbolt USB-C Adapters and Cables** at the Knowledge Base Resource at the Dell Support site.

Thunderbolt USB Type-C ports available on your computer

Depicted below are the Thunderbolt (USB Type-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 (USB Type-C) port on your computer.

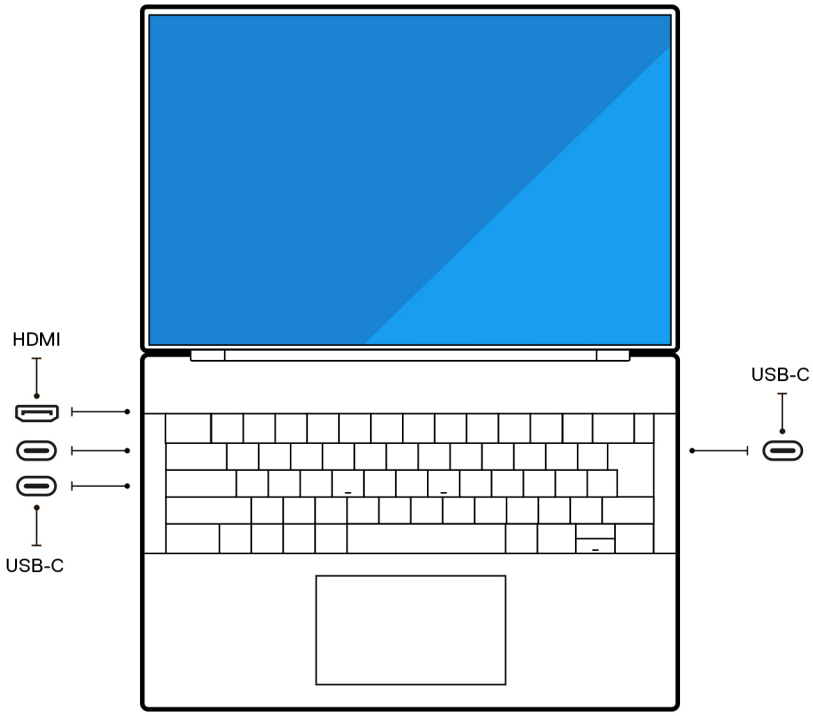

Figure 1. Thunderbolt USB Type-C ports available on your computer

Turning off the internal display

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

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

To turn off the computer display:

1. Type **Intel Graphics Command Center** in the Windows search bar and press **enter**.
2. If you have't already, accept the **Intel Graphics Command Center** software license agreement.
3. On the **Intel Graphics Command Center** window, click **Display**. The list of active displays is listed in the **Connected Displays** section.
4. Click the ellipsis (**...**) at the upper right corner of your primary display, then click **Mirror > Display 2**.
5. Click the ellipsis (**...**) at the upper right corner of your secondary display, then click **Make Display Primary**.
6. Click the ellipsis (**...**) at the upper right corner of your computer display, and click **Disable**.

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Connecting to external displays

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

The number of displays supported depends on the following:

- Whether **Hybrid Graphics** or **Discrete Graphics Controller Direct Output Mode** is selected at the BIOS Setup.
- Whether the internal display is enabled or disabled.

The following table summarizes the supported external display resolutions and refresh rates depending on graphics mode setting .

Table 1. Supported external display resolutions and refresh rates depending on graphics mode setting

Graphics mode setting	Connect to external display(s) with internal display enabled			Connect to external display(s) with internal display disabled		
	One external display	Two external displays	Three external displays	Two external displays	Three external displays	Four external displays
Hybrid Graphics	Thunderbolt 5 port: 7680 x 4320 at 60 Hz OR Thunderbolt 4 port: 7680 x 4320 at 60 Hz OR HDMI 2.1 port: Up to 4096 x 2160 at 60 Hz in HDMI 2.1 Transition-Minimized Differential Signaling (TMDS) mode.	• Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 5 port: 4096 x 2304 at 60 Hz OR • Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 4 port: 4096 x 2304 at 60 Hz	• Thunderbolt 5 port: 4096 x 2304 at 60 Hz • Thunderbolt 5 port: 4096 x 2304 at 60 Hz • Thunderbolt 4 port: 4096 x 2304 at 60 Hz	• Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 5 port: 7680 x 4320 at 60 Hz OR • Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 4 port: 7680 x 4320 at 60 Hz	• Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 5 port: 4096 x 2304 at 60 Hz • Thunderbolt 4 port: 4096 x 2304 at 60 Hz	• Thunderbolt 5 port: 4096 x 2304 at 60 Hz • Thunderbolt 5 port: 4096 x 2304 at 60 Hz • Thunderbolt 4 port: 4096 x 2304 at 60 Hz • HDMI 2.1 port: Up to 4096 x 2160 at 60 Hz in HDMI 2.1 Transition-Minimized Differential Signaling (TMDS) mode.
Discrete Graphics Controller Direct Output Mode	Thunderbolt 5 port: 7680 x 4320 at 60 Hz OR Thunderbolt 4 port: 7680 x 4320 at 60 Hz OR HDMI 2.1 port: Up to 7680 x 4320 at 60 Hz in HDMI 2.1 Fixed Rate Link (FRL)	• Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 5 port: 7680 x 4320 at 60 Hz OR • Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 4 port: 4096 x 2304 at 60 Hz	• Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 5 port: 4096 x 2304 at 60 Hz • Thunderbolt 4 port: 4096 x 2304 at 60 Hz	• Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 5 port: 7680 x 4320 at 60 Hz OR • Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 4 port: 7680 x 4320 at 60 Hz	• Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 4 port: 7680 x 4320 at 60 Hz	• Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 5 port: 7680 x 4320 at 60 Hz • Thunderbolt 4 port: 7680 x 4320 at 60 Hz • HDMI 2.1 port: Up to 7680 x 4320 at 60 Hz in HDMI 2.1 Fixed Rate Link (FRL)

Connecting to an external display

Connecting to an external display

You can connect an external display directly to the HDMI port or Thunderbolt port on your computer, an adapter, or a docking station.

NOTE: If you intend to project only to the external display, connect and configure at least one external display before disabling the computer internal display. For more information, see Turn off the computer display .

- Connect an external display directly using a USB-C or Thunderbolt cable.

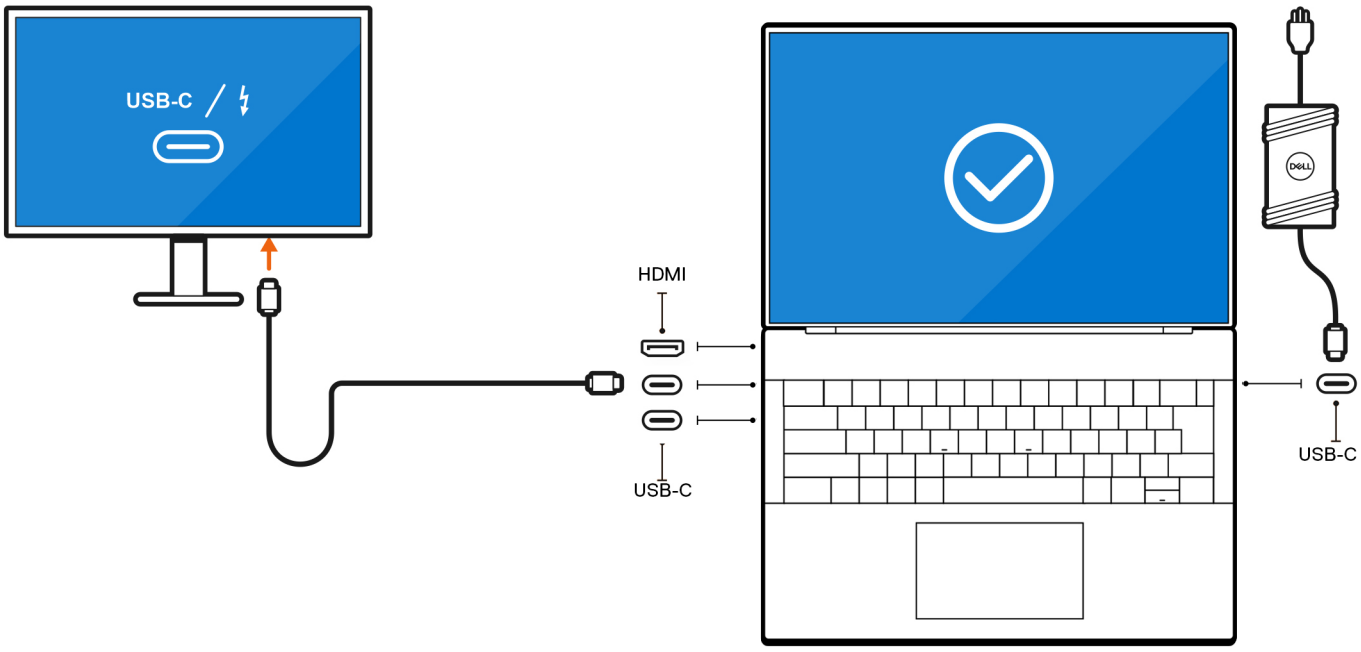

Figure 2. Connect an external display directly using a USB-C or Thunderbolt cable

- Connect an external display using an HDMI cable to the HDMI port.

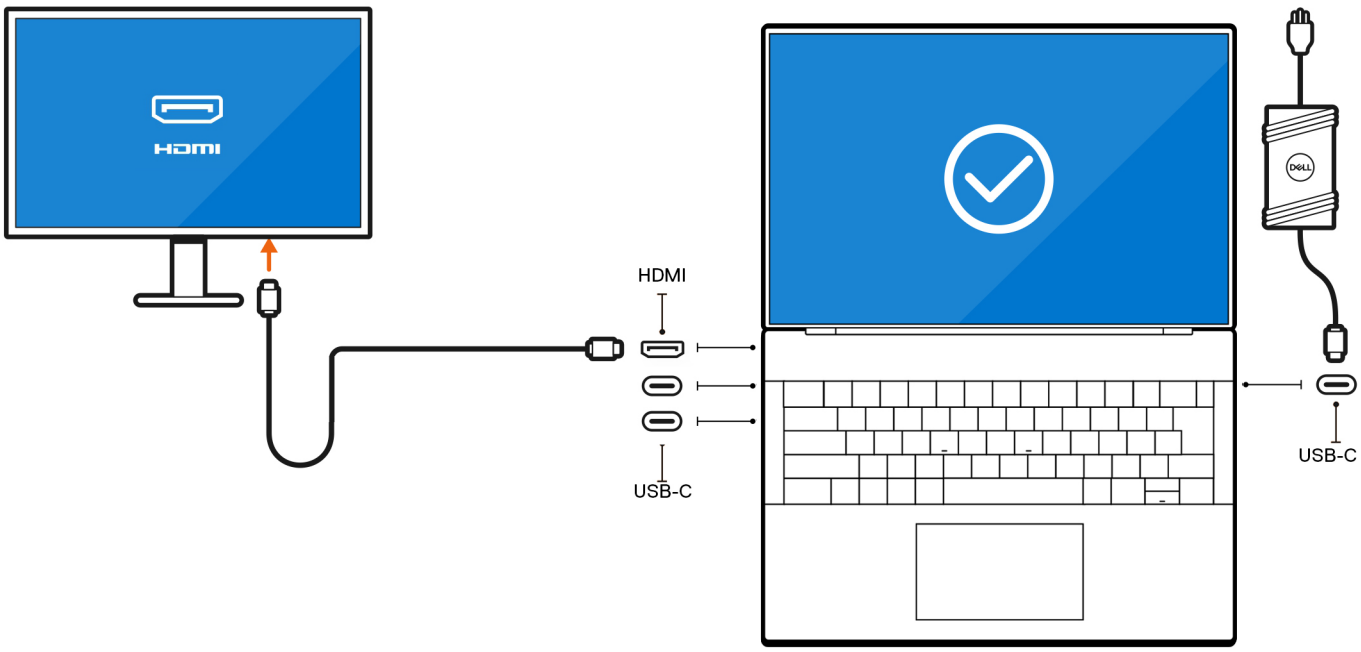

Figure 3. Connect an external display using an HDMI cable to the HDMI port

- Connect an external display using a USB-C cable to Thunderbolt, HDMI, or DisplayPort adapter.

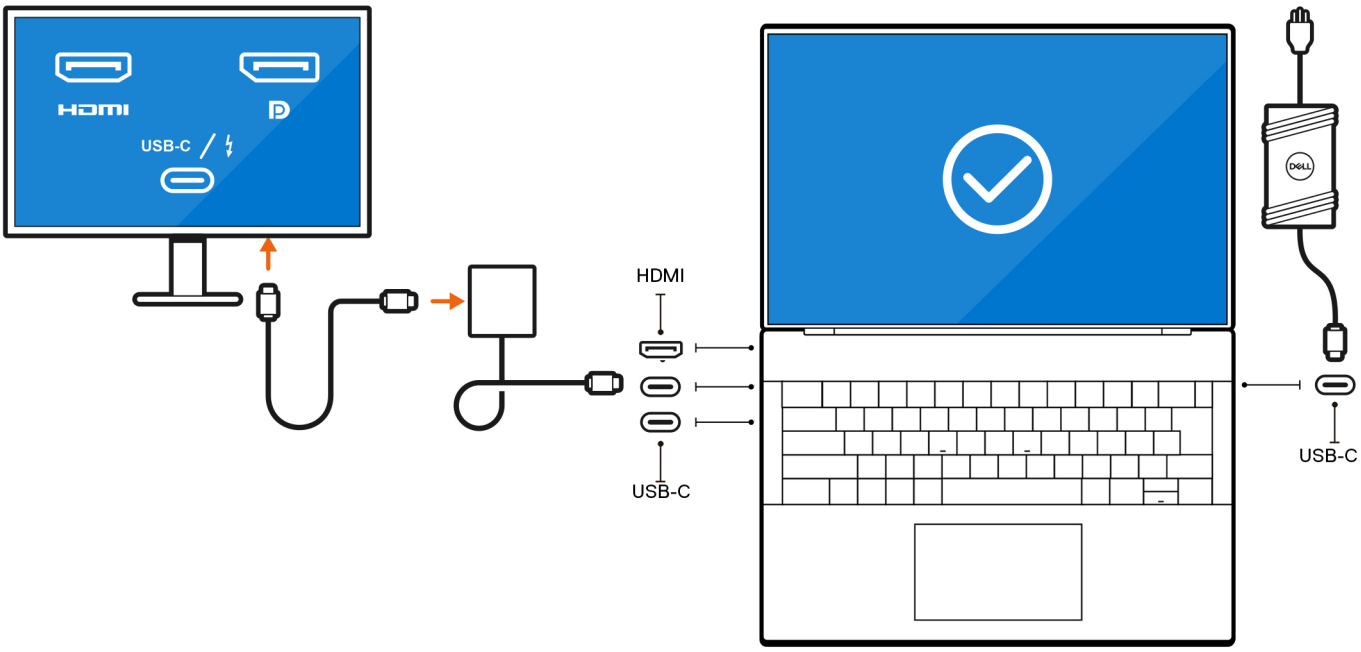

Figure 4. Connect an external display using a USB-C cable to Thunderbolt, HDMI, or DisplayPort adapter

- Connect an external display using a USB-C cable to connect to a docking station.

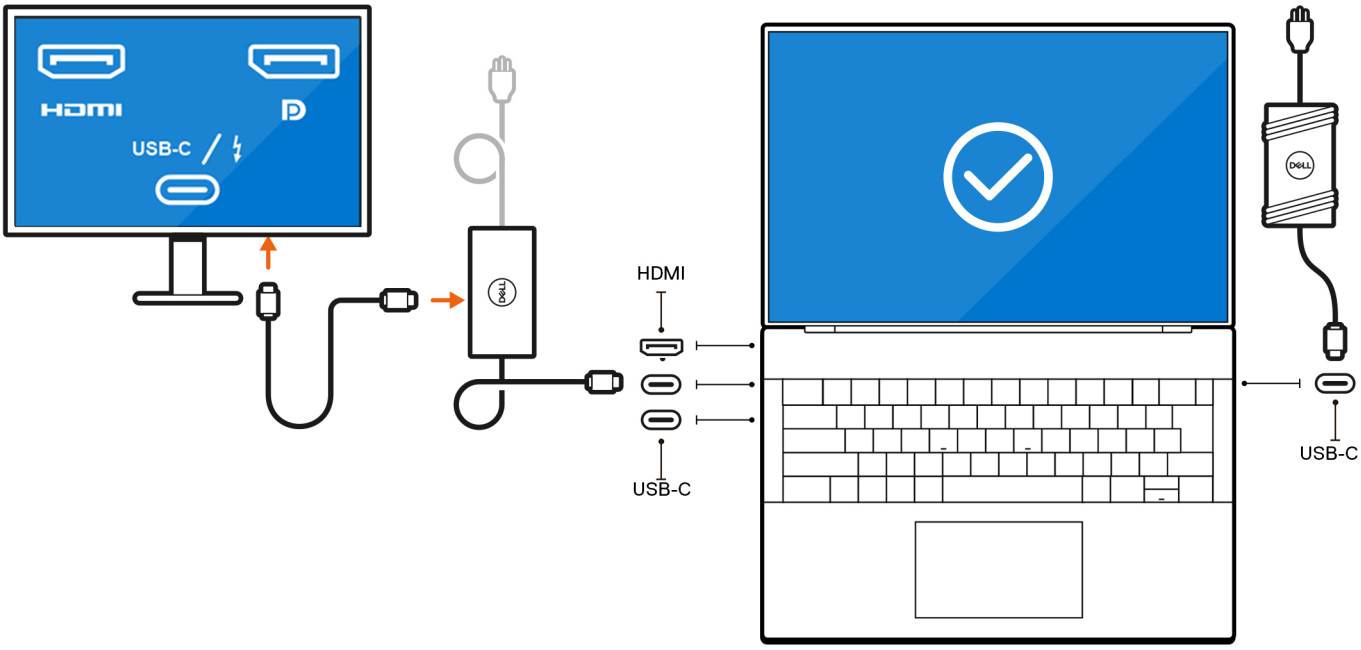

Figure 5. Connect an external display using a USB-C cable to connect to a docking station

Connecting to multiple displays

Connecting to multiple displays

Connect up to three 4K external displays to your computer or up to four 4K external displays, with the computer internal display turned off.

NOTE: When setting up a display with a docking station, connect the display to the docking station first, and then connect the docking station to the Thunderbolt port on the computer.

Connect up to three external displays

Connect two external displays using a docking station and one external display directly to the Thunderbolt ports on the computer.

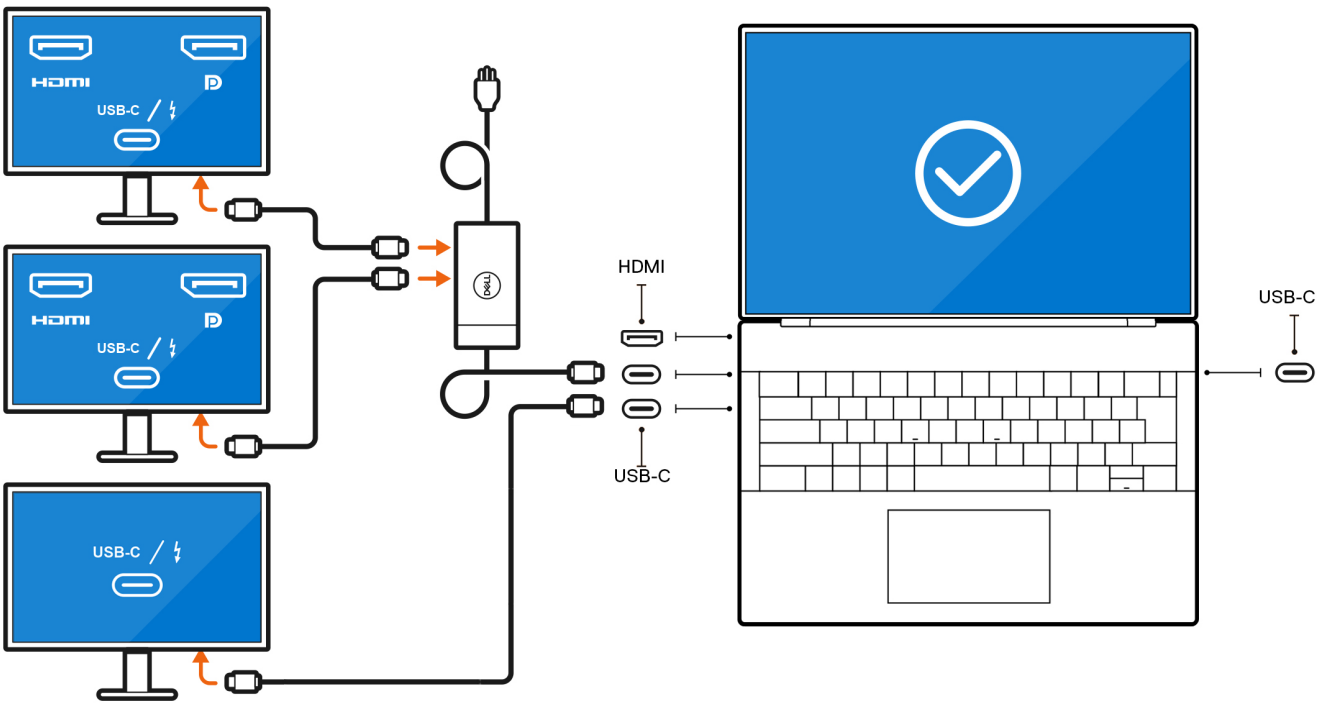

Figure 6. Connect two external displays using a docking station and one external display directly to the Thunderbolt ports on the computer

Connect up to four external displays

- Connect two external displays using a docking station and two more external displays directly to the Thunderbolt ports on the computer.

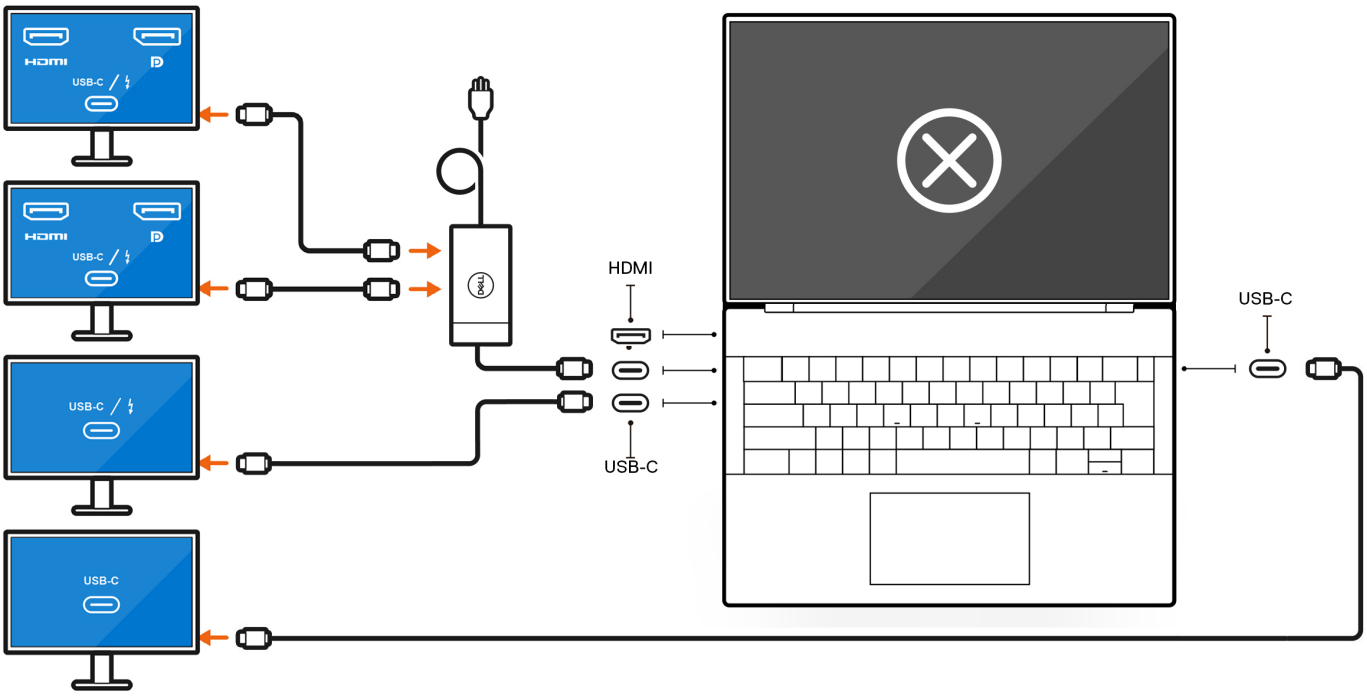

Figure 7. Connect two external displays using a docking station and two more external displays directly to the Thunderbolt ports on the computer

- Connect two external displays using a docking station and two more external displays directly to the Thunderbolt ports on the computer.

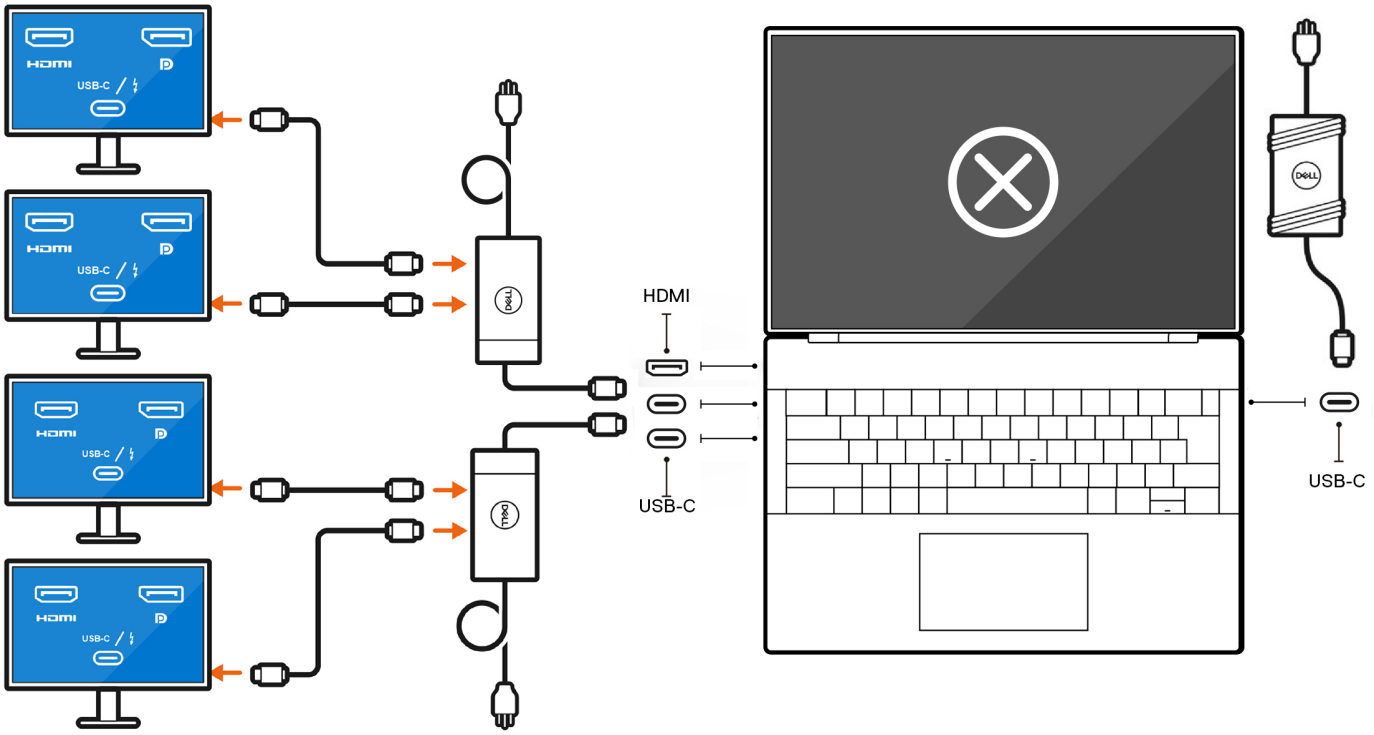

Figure 8. Connect four external displays using two docking stations

Troubleshooting

The display output resolution cannot reach 4K@60 Hz while connecting the display monitor using an HDMI-to-DisplayPort or DisplayPort-to-HDMI dongle from the docking station to the computer

Concern

When I connect a display monitor to the computer using an HDMI-to-DisplayPort or DisplayPort-to-HDMI dongle from a Dell Thunderbolt 4 Dock WD22TB4, Dell Pro Thunderbolt 4 Smart Dock SD25TB4, or Dell Pro Thunderbolt 4 TAA Dock WD25TB4 docking station, the display output resolution does not reach 4K@60 Hz (reaches only 4K@30 Hz).

Cause

This is due to a hardware limitation while connecting dongles to the Dell Thunderbolt 4 Dock WD22TB4, Dell Pro Thunderbolt 4 Smart Dock SD25TB4, or Dell Pro Thunderbolt 4 TAA Dock WD25TB4 (limited graphic bandwidth) station.

Workaround

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

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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	Dell Site
Contact Support	In Windows search, type `Contact Support`, and press Enter.
Online help for operating system	Windows Support Site Linux Support Site
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals, and documents.	Your Dell computer is uniquely identified using 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 Locate the Service Tag on your computer.
Dell knowledge base articles	1. Go to Dell Support Site. 2. On the menu bar at the top of the Support page, select **Support** > **Support Library**. 3. In the Search field on the Support Library 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 Dell Support Site.

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

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.

4

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 3. Revision history

Revision	Date	Description
A00	07-17-2025	Original publish date.