

How to Daisy Chain Monitors for a Multi-Display Setup

Daisy chaining means linking multiple monitors in a series - connecting one monitor to another using a video cable, rather than connecting each monitor directly to the computer.

With DisplayPort, USB-C with DisplayPort Alternate Mode, or Thunderbolt daisy chaining, you can enjoy the flexibility of multiple displays while minimizing cable clutter. Depending on your task or application, you can either duplicate or extend the monitors.



There are three types of ports that allow you to daisy chain monitors - DisplayPort with Multi-Stream Transport (MST), USB-C with DisplayPort alternate mode, and Thunderbolt Multi-Stream Transport (MST).

NOTE: Daisy chaining is not supported over HDMI or with a USB-C port that does not support DisplayPort alternate mode or Thunderbolt (version 3 or higher).

What do I need to daisy chain multiple Lenovo monitors?

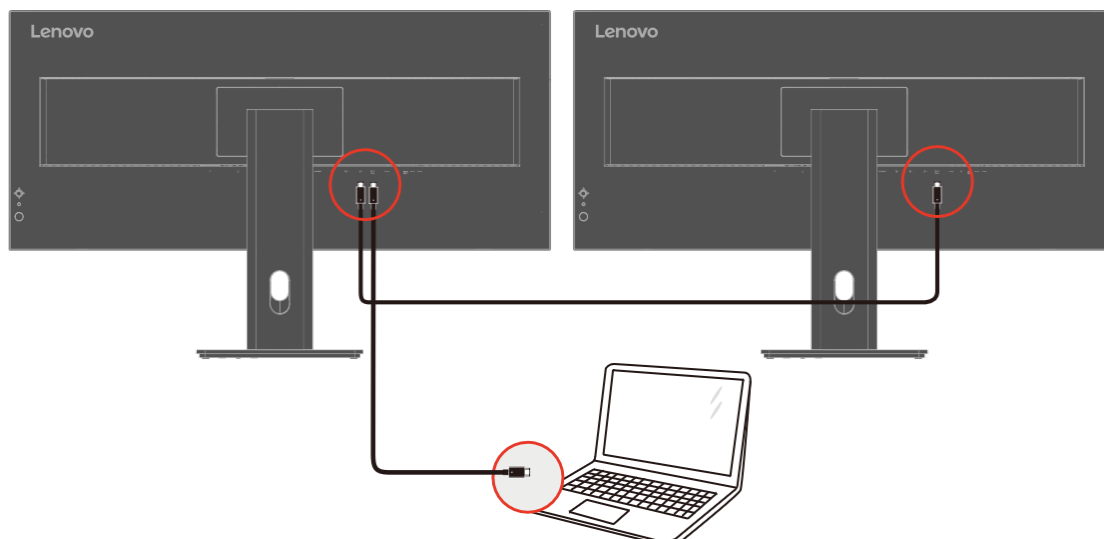
- A PC with DisplayPort (version 1.2 or higher), USB-C with DisplayPort alternate mode, or Thunderbolt (version 3 or higher).

- Lenovo monitor with DisplayPort (version 1.2 or higher with Multi-Stream Transport), USB-C with DisplayPort alternate mode, or Thunderbolt (version 3 or higher).

NOTE: DisplayPort 1.2 MST is supported on select Lenovo monitors. See the [user's guide of your Lenovo monitor](#) to check if your monitor supports DisplayPort (version 1.2 or higher with MST), USB-C with DisplayPort alternate mode, or Thunderbolt (version 3 or higher).

- Install the latest video or graphics card (GPU) drivers on your computer.

How to set up multiple monitors using daisy chain?



Step 1 – Connect your primary monitor

- Connect your PC to the primary monitor (monitor 1). To maximize display quality, connect the monitor with the highest resolution first.
- NOTE: On some older Lenovo monitors, enable MST feature to set up the monitor for daisy chaining. The instructions to navigate the menu on your Lenovo monitor may vary. Check the [user's guide of your Lenovo monitor](#) for step-by-step instructions.

Step 2 – Add a second monitor

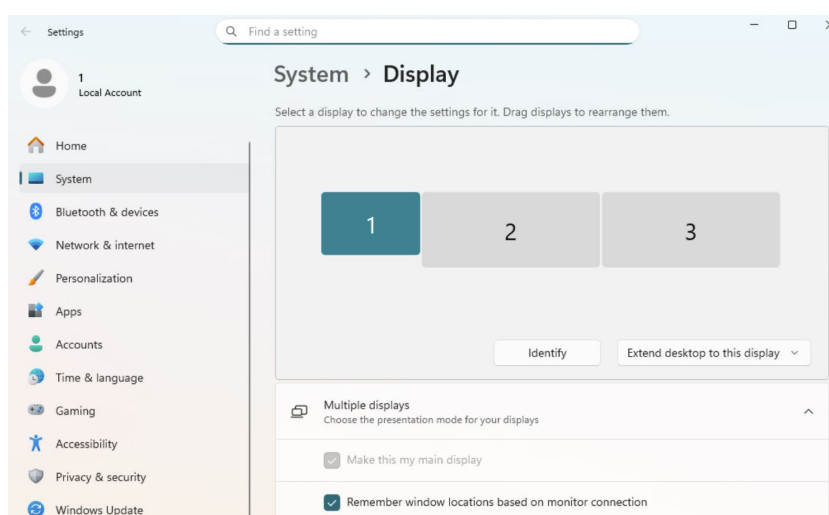
- Connect the primary monitor (monitor 1) to secondary monitor (monitor 2).

Step 3 – Add subsequent monitors

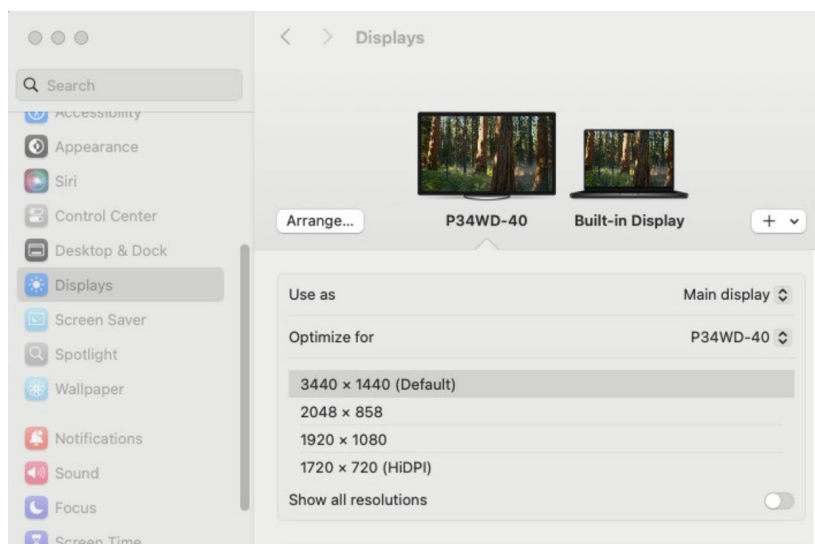
- Connect each subsequent monitor to the previous monitor.
- To daisy chain more than two monitors, see the *factors that affect daisy chaining* below.

Step 4 – Configure display settings

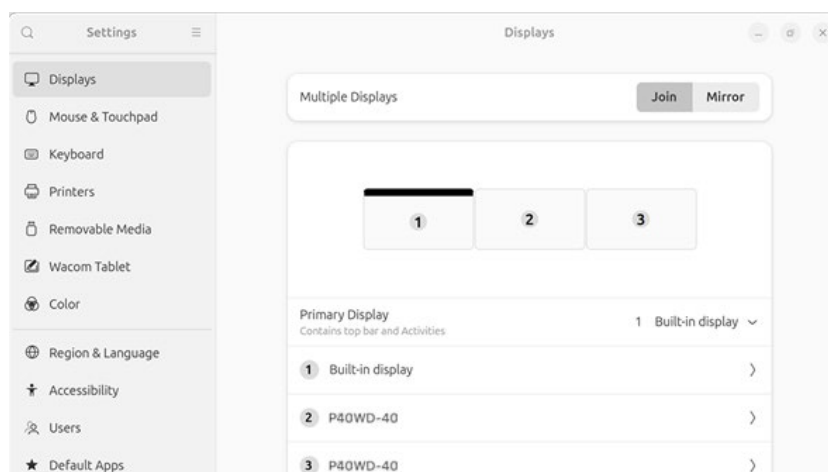
- After connecting your monitors, you may need to adjust your display settings. Go to your computer's display settings to arrange the monitors and choose whether to mirror or extend your desktop.
 - In Windows, go to Start > Settings > System > Display.



- In macOS, go to Apple menu > System Settings > Displays (from the sidebar).



- In Ubuntu, go to Settings, and then select Display.



- Drag and drop the monitors to arrange them in your preferred order. Choose whether to mirror (clone) or extend your desktop and adjust the screen resolution to your preference.

Display modes supported in Windows and macOS

PC Output	Windows	Apple macOS
DisplayPort	Extended mode or duplicate mode	Duplicate mode only
USB-C with DisplayPort alternate mode	Extended mode or duplicate mode	Duplicate mode only
Thunderbolt	Extended mode or duplicate mode	Extended mode is supported exclusively with M1 Pro, M1 Max, M1 Ultra, M2 Pro, M2 Max, M2 Ultra, M3 Pro, or M3 Max, M4 Max.

Daisy chain connection matrix

PC Output	Monitor 1 Input	Monitor 1 Output	Monitor 2** Input
DisplayPort	DisplayPort In	DisplayPort Out	DisplayPort In
DisplayPort	DisplayPort In	Thunderbolt (downstream)	USB-C with DP alternate mode (upstream) or Thunderbolt (upstream)
USB-C with DP alternate mode	USB-C (upstream) or Thunderbolt (upstream)	DisplayPort Out	DisplayPort In
USB-C with DP alternate mode	USB-C (upstream) or Thunderbolt (upstream)	Thunderbolt (downstream)	USB-C with DP alternate mode (upstream) or Thunderbolt (upstream)
Thunderbolt	Thunderbolt (upstream)	DisplayPort Out	DisplayPort In
Thunderbolt	Thunderbolt (upstream)	Thunderbolt (downstream)	USB-C with DP alternate mode (upstream) or Thunderbolt (upstream)

To use USB upstream for data communication between your PC and monitors, ensure that the connection between your PC and monitor is either USB-C with DisplayPort alternate mode or Thunderbolt. Or connect the USB device directly to the PC.

With macOS devices, the number of external displays that you can use at the same time depends on your Mac model, the resolution, and refresh rate of each display. See the [Apple official website](#) to learn more.

Factors that affect daisy chaining

- The number of monitors that you can set up in the daisy chain and display quality depends on several factors.

Graphics card capability

- An integrated graphics card is suitable for typical office productivity applications, browsing, and basic games, image, and video applications.
- A discrete graphics card is required to handle more complex graphics, images, videos, applications, and gaming.
- The number of monitors you can daisy chain depends on whether you have an integrated or discrete graphics card.

Operating system capability

- macOS only allows monitor daisy chaining via Thunderbolt.
- The primary monitor must be connected to the MacBook using Thunderbolt and the primary monitor must have a Thunderbolt Out port.
- Active Thunderbolt cable must be used.

Input and output ports on the PC and monitor

- Different output ports have different bandwidth and technical restrictions that affect the total number of monitors that can be daisy chained.
- The output port of the PC must match the input port of the monitor for optimal performance.

- Display Stream Compression (DSC) is a virtually lossless video compression algorithm that increases the number of monitors (and resolution) that can be daisy chained or connected via a docking station. See the documentation of the primary monitor for technical specifications of the input or outputs to daisy chain.

Resolution and refresh rates

- Higher resolution or refresh rates require more bandwidth which reduces the number of monitors that can be connected.

Color depth

- Color depth represents the maximum number of colors that can be displayed on the monitor. Higher depth color requires more bandwidth which limits the total number of monitors that can be daisy chained.

Display cables

- Ensure to use cables with correct specification that corresponds to the PC and monitor I/O ports. For example, when connecting a laptop with DP 1.4 (HBR3) port and monitor with DP 1.4, the video cable must be DP 1.4.
- Video cables shipped with the monitor typically corresponds to the same version as the monitor input and output ports.

Data or video prioritization

- Users can choose to either prioritize data speed on the USB ports or bandwidth for video signal to connect more monitors in the daisy chain at a higher resolution and/or refresh rate.

Troubleshooting Tips

If you encounter issues during the setup process, consider the following troubleshooting steps:

1. **Check Cable Connections:** Ensure the display cables are securely connected.
2. **Update Graphics Drivers:** Ensure your video or graphics card (GPU) drivers are up to date.
3. **Graphics Card Limitations:** Verify that your graphics card can support the number of monitors you are connecting. See the factors that affect daisy chaining.
4. **Power Cycle:** Restart your computer and monitors.

Frequently asked questions

1. Can I use an older monitor that does not support daisy chaining?

No. Daisy chaining requires Multi-Stream Transport (MST) support which requires a DisplayPort 1.2 (or later) output port on the monitor to pass the video signal to the next one in the chain. An older monitor without an MST output port (often labelled 'DisplayPort out') acts as a dead end for the signal, which means that the chain stops at that monitor.

2. Can I daisy chain monitors using USB-C cables?

Yes, but only if the USB-C ports on your computer or monitors support DisplayPort Alt Mode. If it does, a USB-C cable can carry a native DisplayPort signal.

A typical chain setup would look like this:

Computer (USB-C with DP Alt Mode) → Monitor 1 (USB-C Input with DP Alt Mode & MST) → Monitor 2 (via Monitor 1's USB-C or DisplayPort Out).

NOTE: Standard USB-C data-only cables will not work; they must support video output.

3. Why does my computer not detect monitors in the daisy chain?

Several issues can prevent monitors from being detected:

- **MST is disabled in the Monitor Menu:** Many monitors have an option to enable/disable MST or 'DisplayPort 1.2' mode. It must be enabled on all monitors in the chain (except the last one).
- **Insufficient bandwidth:** The total resolution and refresh rate of all monitors may exceed the available bandwidth of DisplayPort version (1.2, 1.4, etc.). Try lowering the resolution or refresh rate as a test.
- **Cable limitations:** Low-quality or incompatible cables may not support the required high bandwidth. High-quality DisplayPort cables ensure better results.
- **Firmware or Driver issues:** Update your GPU drivers and monitor firmware if available.
- **Hardware limitations:** The computer's GPU, or one of the monitors in the chain may not fully support MST.

4. Do monitors in a daisy chain need separate power connections?

Yes. Each monitor must be connected to its own power source.

The DisplayPort cable only transmits video and data signals, it does not provide power to the monitors.

5. Can HDMI be used to daisy chain monitors?

No. The HDMI standard does not support daisy chaining (like DisplayPort's MST). HDMI connections are designed as point-to-point, meaning each monitor must connect directly to the computer or graphics card. The display cannot be extended by connecting one HDMI monitor to another.

6. What are the advantages of daisy-chained monitors compared to an ultrawide monitor?

The key advantages of a Lenovo Ultrawide with TrueSplit are:

- **Seamless, bezel-free view:** It creates multiple virtual screens on a single, seamless display, unlike the physical bezel that break your workflow on a traditional multi-monitor setup.
- **Simplified, cable-free setup:** No video cables needed between monitors, resulting in an incredibly clean and simple desk setup with just one connection to your computer.
- **Plug-and-play convenience:** Delivers the multi-screen productivity of a daisy-chain without the compatibility checks and configuration steps, for a more reliable, user-friendly experience.