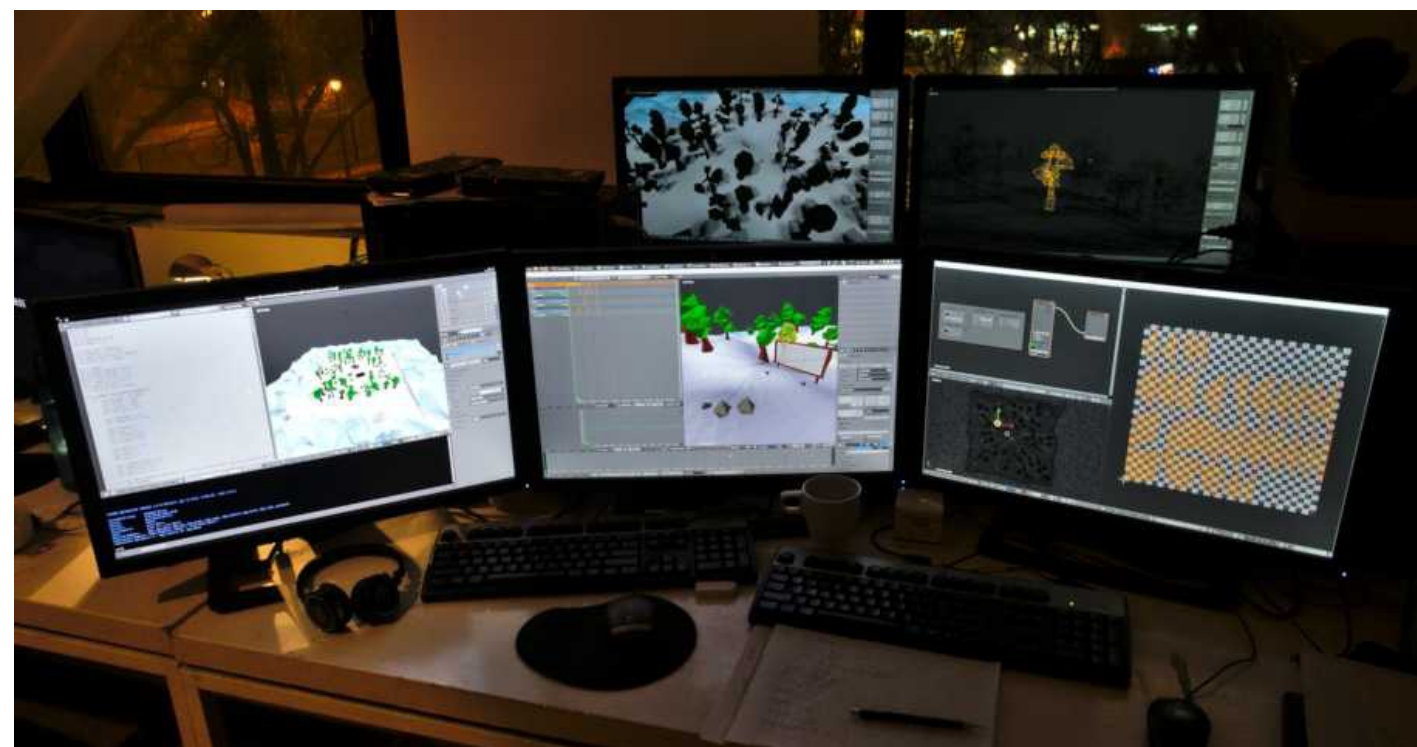


Configuring Peripherals

Displays

A full HD display or higher is recommended. Multi-monitor setups are supported, and workspaces can be configured to span multiple monitors.



Example of Blender’s multi-monitor support.

Input Devices

Blender supports various types of input devices:

- Keyboard (recommended: keyboard with numeric keypad, English layout works best)
- Mouse (recommended: three button mouse with scroll wheel)
- Graphic Tablet
- Touchpad
- NDOF Device (also known as *3D Mouse*)

Note

If you don’t have a middle mouse button or numpad, you can emulate these in the [Input Preferences](#).

Mouse

Mouse Button Emulation

If you do not have a 3 button mouse, you will need to emulate it by checking the option in the [Preferences](#).

The following table shows the combinations used:

3-button Mouse	LMB	MMB	RMB
2-button Mouse	LMB	Alt + LMB	RMB

Keyboard

Numpad Emulation

If you do not have a numpad on the side of your keyboard, you may want to emulate one. You can then use the number row at the top of the keyboard instead, but will no longer have access to these keys’ original functions (such as switching between vertex/edge/face selection in Edit Mode).

See also

Read more about *Numpad Emulation* in the [Preferences](#).

Non-English Keyboards

If you use a keyboard with a non-English layout, you may still benefit from switching to the UK or US layout while working with Blender.

Note

You can also change the keymap from the [Preferences](#). However, this manual assumes you are using the default keymap.

Graphic Tablet

Graphics tablets can be used to provide a more traditional method of controlling the mouse cursor using a pen. This can help provide a more familiar experience for artists who are used to painting and drawing with similar tools, as well as provide additional controls such as pressure sensitivity.

Note

If you are using a graphic tablet instead of a mouse and pressure sensitivity does not work properly, try to place the mouse pointer in the Blender window and then disconnect/reconnect your graphic tablet. This might help.

Touchpad

Touchpad controls are available on Windows, macOS and Linux with Wayland. If you are working from a laptop without a mouse, you can emulate controls using multi-touch gestures with the trackpad from [Preferences](#).

Supported multi-touch gestures	
Gesture	Effect
Pan	Hold the <code>Shift</code> key while dragging two fingers on the pad.
Zoom	Hold the <code>Ctrl</code> or <code>OSKey</code> key while dragging two fingers on the pad.
Orbit	Drag two fingers on the pad.
Emulate right-click	Tap two fingers on the pad.

NDOF (3D Mouse)

3D mice or [NDOF](#) devices are hardware that you can use to navigate a scene in Blender. Currently only devices made by 3Dconnexion are supported. These devices allow you to explore a scene, and make [Fly/Walk Navigation](#) easier to control. The NDOF device can be configured in the [Preferences](#). These settings can also be accessed directly from the viewport using the `NDOFMenu` button on the NDOF device.

See also

See [Input Preference](#) for more information on configuring peripherals.

Head-Mounted Displays (Virtual Reality)

[HMDs](#) make it possible to place users in an interactive, virtual environment. Attached to the head, they track head movements to project a seemingly surrounding world onto small screens in front of the user’s eyes. If the system works well, they experience the virtual environment as if they were really inside of it.

Supported Platforms

Virtual reality support in Blender is implemented through the multi-platform OpenXR standard. This standard is new and therefore support for it is still limited.

OpenXR compatible platforms.

Platform	Operating System	Notes
HTC Vive Cosmos	Windows	Developer Preview
HTC Vive Focus 3	Windows	Developer Preview
Monado	GNU/Linux	<i>Not</i> recommended for general use yet.
Meta (formerly Oculus) (Rift and Quest)	Windows	Requires Oculus v31 Software Update. Oculus Link required for Quest.
SteamVR	Windows, GNU/Linux	Requires SteamVR 1.16 or greater.
Varjo	Windows	—
Windows Mixed Reality	Windows	Requires Windows 10 May 2019 Update (1903).

Getting Started

The following subsections describe how an HMD can be set up for usage with the [supported platforms](#). If this is not done, Blender will report an error when trying to start a virtual reality session.

HTC Vive Cosmos

The dedicated platform for the [HTC Vive Cosmos](#) is currently targeted at developers and may lack features found in other platforms.

- Follow the steps from the [Vive Developer Forums](#).
- Enable the [VR Scene Inspection add-on](#) in Blender.

HTC Vive Focus 3

The dedicated platform for the [HTC Vive Focus 3](#) is currently targeted at developers and may lack features found in other platforms.

- Follow the steps from the [Vive Developer Forums](#).
- Enable the [VR Scene Inspection add-on](#) in Blender.

Monado

[Monado](#) is a [free and open source](#) XR platform for Linux. It is not yet ready for production usage and should only be used for testing purposes.

- Packages are available for the following distributions:
 - Ubuntu ([Eoan](#), [Focal](#))
 - Debian ([bullseye](#), [sid](#))

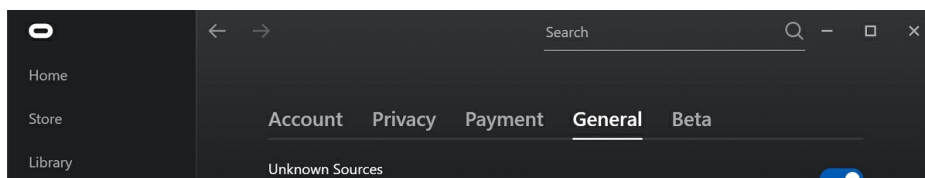
For other systems, it has to be compiled from source, which in this case is not recommended for people with little experience in compiling software. Follow the [Getting Started Guides](#) from Monado to do so nevertheless.

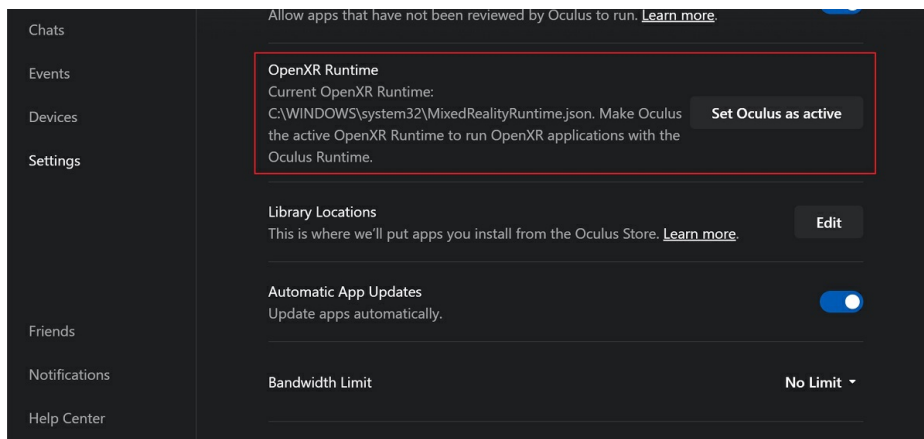
- Enable the [VR Scene Inspection add-on](#) in Blender.

Meta (formerly Oculus)

[Meta \(formerly Oculus\)](#) provides full support for OpenXR as of the Oculus v31 Software Update.

- Download and install the [Oculus Rift/Oculus Link software](#).
- Set Oculus as the active OpenXR runtime via the *General* tab in the Oculus App Settings.





- Enable the [VR Scene Inspection add-on](#) in Blender.

Passthrough Support

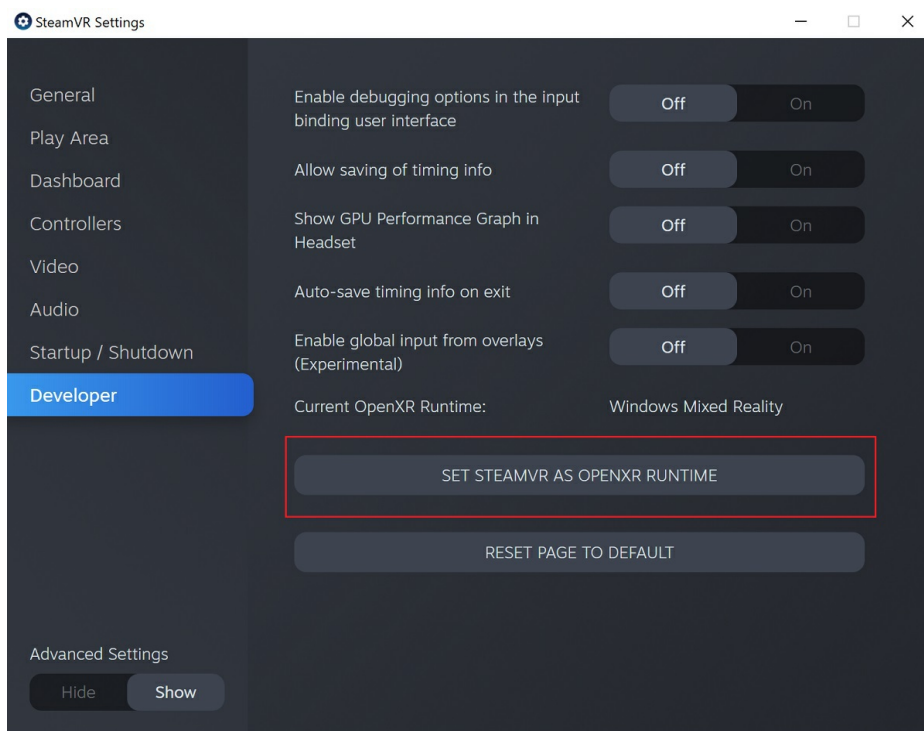
Currently, passthrough support over OpenXR is disabled by default in the Quest Link app, and must be manually enabled in it's settings to use this feature.

The performance of the passthrough render varies with the quality of the connection between the headset and the computer. For better results, connecting the headset directly through USB to the PC, or at least connecting the computer to the local network over Ethernet, is recommended.

SteamVR

[SteamVR](#) provides full support for OpenXR as of SteamVR 1.16.

- Set SteamVR as the active OpenXR runtime via the *Developer* tab in the SteamVR Settings.



- Enable the [VR Scene Inspection add-on](#) in Blender.

Note

The SteamVR runtime can also be used for HTC Vive Cosmos, Oculus, and Windows Mixed Reality HMDs.


Varjo

[Varjo](#) includes full OpenXR support with its required Varjo Base software.

- Enable the [VR Scene Inspection add-on](#) in Blender.

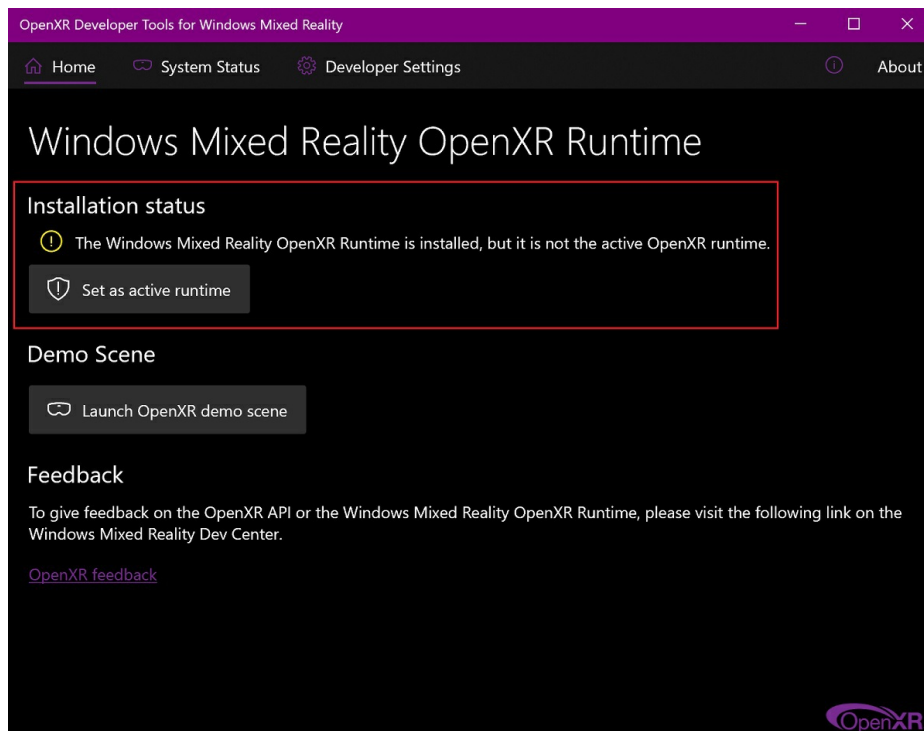
Windows Mixed Reality

[Windows Mixed Reality](#) provides full support for OpenXR. To check if a PC meets the requirements to run the software, Microsoft offers the [Windows Mixed Reality PC Check](#) application.

- Make sure the Windows 10 May 2019 Update (1903) is installed.
- If the system meets all requirements, the Mixed Reality Portal should already be installed. It is also available in the [Microsoft Store](#).
- Launch the Mixed Reality Portal. Click the menu button  in the lower left corner. In the menu it opens, select the *Set up OpenXR*.
- Enable the [VR Scene Inspection add-on](#) in Blender.

Note

To switch to Windows Mixed Reality from another OpenXR runtime (e.g. SteamVR), download the OpenXR Developer Tools from the [Microsoft Store](#) and set Windows Mixed Reality as the active runtime.



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