XRCC Documentation

General Guide

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Overview

Extended Reality Content Creator (XRCC) - a content creator for XR content development, allowing users to create scenarios, add interactions, and play the XR application on multiple hardware platforms all within the XRCC. This intuitive content creation tool is also easy for beginners to pick up creation skills with built-in tools and behaviour blocks. It provides the foundation for any creator to quickly kick start their XR content creation, and enough functionality for users to create a decent quality interactable crossplatform XR experience.

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📄 Main Components

The XRCC comes with the following main components:

📄 System Requirement

The followings are the recommended software and hardware specifications for using the XRCC.

Main Components

The XRCC comes with the following main components:

Name	Description
XRCC (PC)	Desktop-based editor for building scenes and behaviours, as well as running tests before experiencing the project in XR systems
XRCC (Server)	Multiplayer server that facilitates multiplayer session when playing XRCC projects under the XR mode.
XRCC (XR)	XR-based application for creating, playing, and fine-tuning the XRCC projects in XR systems such as the immersive CAVE system, headmounted display (HMD) systems, and multi-display system.

System Requirement

The followings are the recommended software and hardware specifications for using the XRCC.

Recommended System Specifications

	Recommended Spec
Processor	Intel™ Core™ i5-4590 or AMD FX™ 8350, equivalent or better
Memory	8 GB RAM or more
Graphics Card	NVIDIA GeForce™ GTX 1060 or AMD Radeon™ RX 480, equivalent or better
Operating System	Windows 10+ 64-bit OS

For running the XRCC (XR) in VR headsets, please also check out the recommended system requirements of VIVE, Oculus, Meta Quest Link, and Windows Mixed Reality.

> ⓘ **NOTE**
>
> You may use a computer without the recommended dedicated graphics card if you do not require running the XRCC (XR) on your system.

Software Requirement

VotancXR Suite

The XRCC requirements the VotanicXR Suite to be installed at your system first.You can download a copy at the VotanicXR page.

XR System Drivers

For running the XRCC (XR) in VR headsets, please also install the corresponding drivers:

VR headsets	Install Drivers
All VR Heasets	Download and install SteamVR
Oculus / Meta Quest	Also download and install Oculus Software
Windows Mixed Reality	Also download and install Windows Window Mixd Reality for SteamVR
Pico 4	Also download and install Streaming Assistant

Media Codec Pack

For better media playback compatibility with videos added to XRCC projects, we recommend installing the K-Lite Codec Pack to any system that will be running the XRCC.

InstallationGuide

XRCC is distributed using an installer with license activation required for using both the XRCC PC and XRCC XR.

📄 Installation

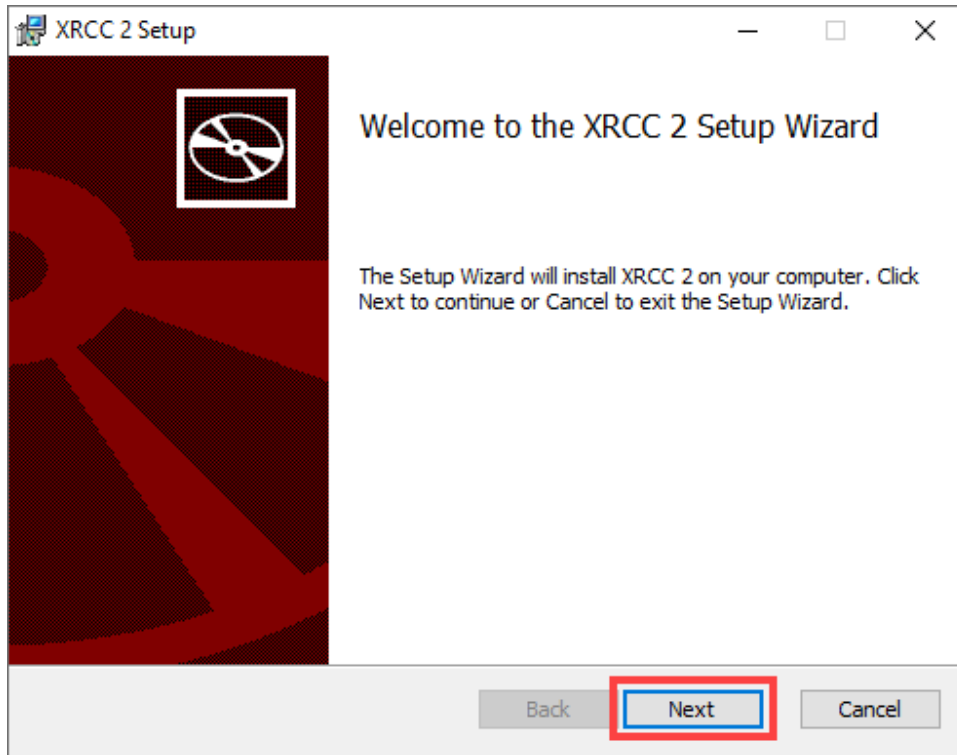Follow the following simple steps to install XRCC:

📄 Activation

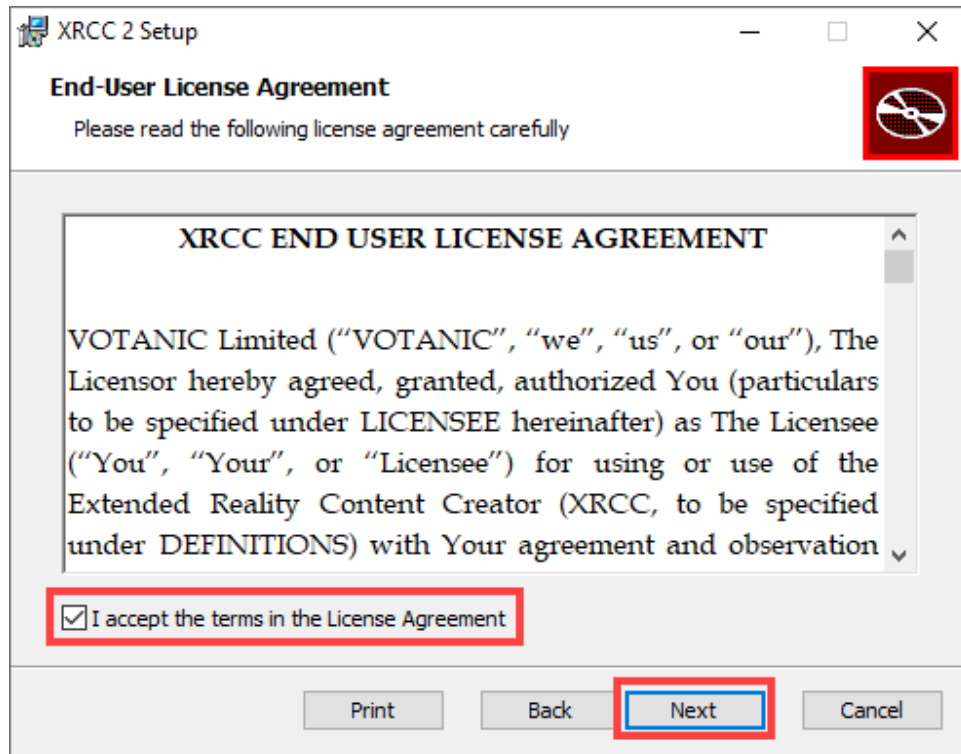You will need to use the License Manager in VotanicXR Suite to activate

Installation

Follow the following simple steps to install XRCC:

1. Double click the **XRCC 2.x.x.msi** file to launch the installer and press "**Next**".

2. Read and accept the **XRCC End User License Agreement** and click "**Next**". You must accept the XRCC End User License Agreement to progress the installation.
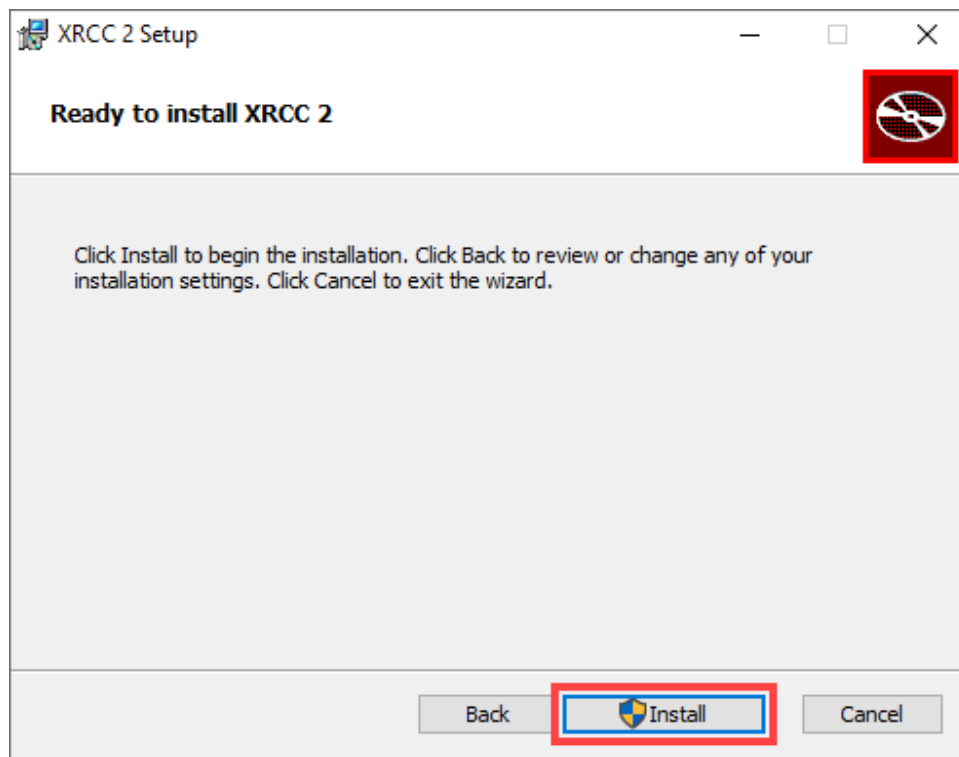
3. Select the folder to install XRCC and click "**Next**". By default, the XRCC will be installed to **C:\Program Files\Votanic\XRCC 2** . If you would like to install it elsewhere, please change it at this step.

XRCC will use this path in some features of the software, make sure you do not move the folder after the installation process.
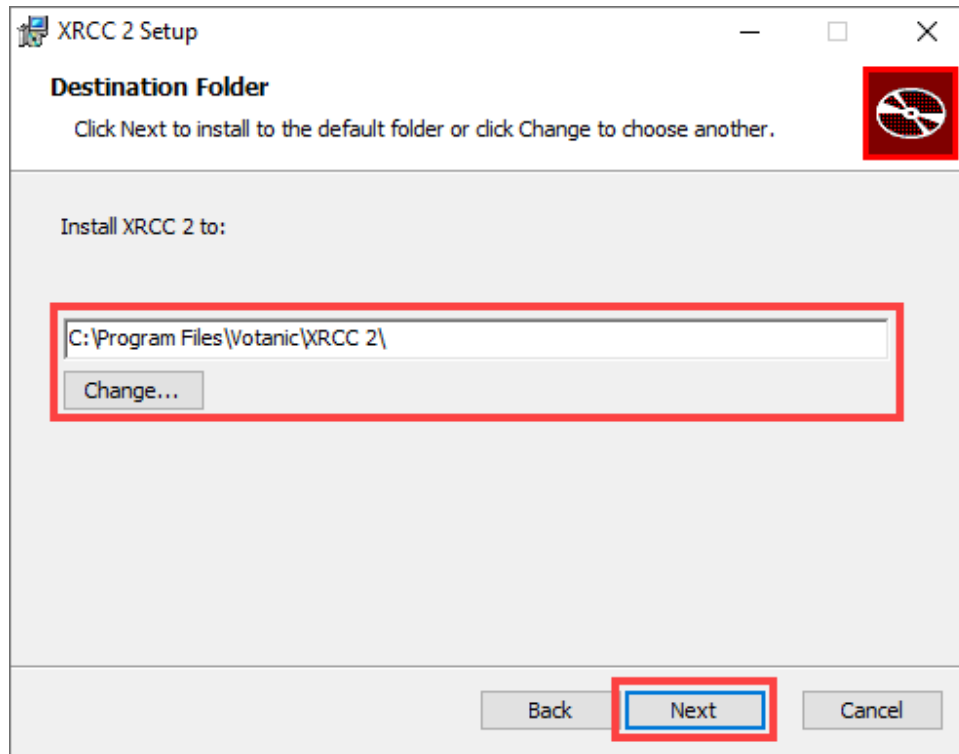
4. Click "**Install**" to start the installation.

5. Wait for the installation process to complete.
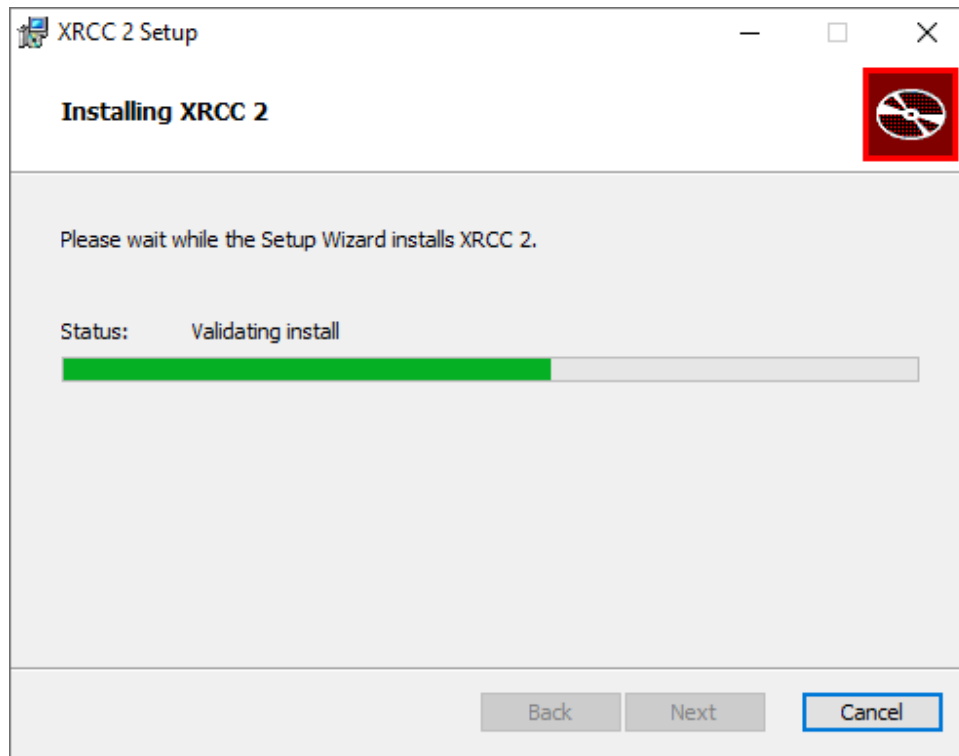
6. Click "**Finish**" to finish the installation. A XRCC shortcut will be added to your desktop after installation is completed.

7. Double click the XRCC shortcut will launch the file browser and open the XRCC installation directory. From there, you can access different components of XRCC.

Activation

You will need to use the License Manager in VotanicXR Suite to activate the XRCC licenses.
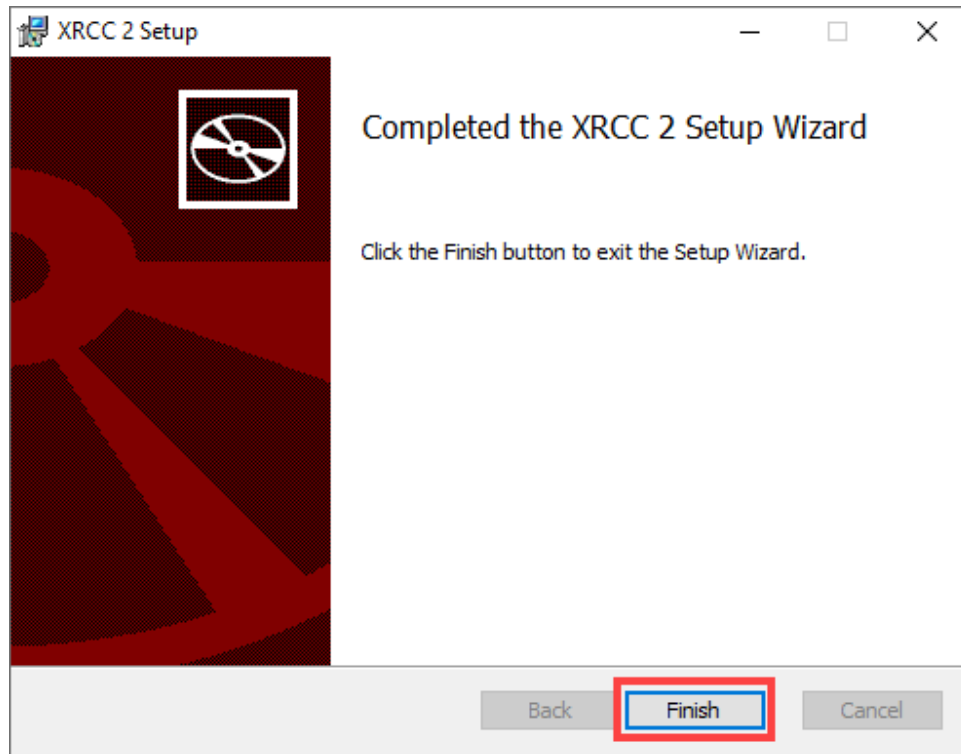
1. Open the **VotanicXR Suite** and select the "**License Manager**" button to launch the License Manager
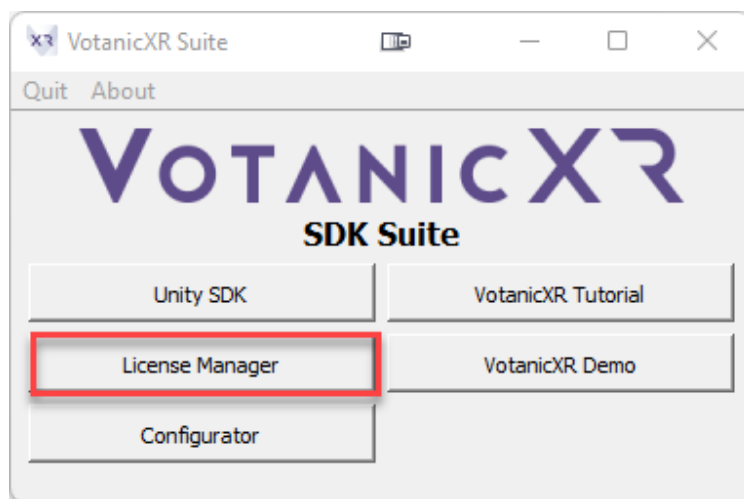
2. In the License Manager, click the "Activate" button and paste your XRCC PC or XR License key into the Activation Key text field and click "Activation".
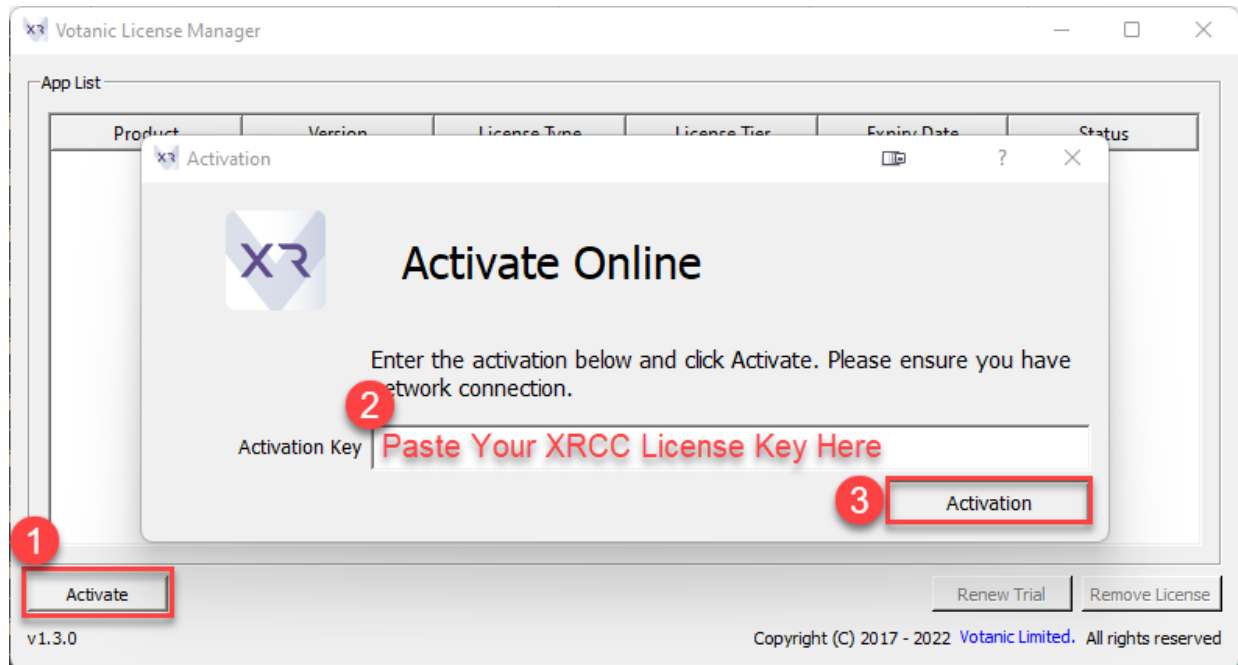
3. After activation, you will see XRCC (PC) or XRCC (XR) show up in the License
   Manager's App List.
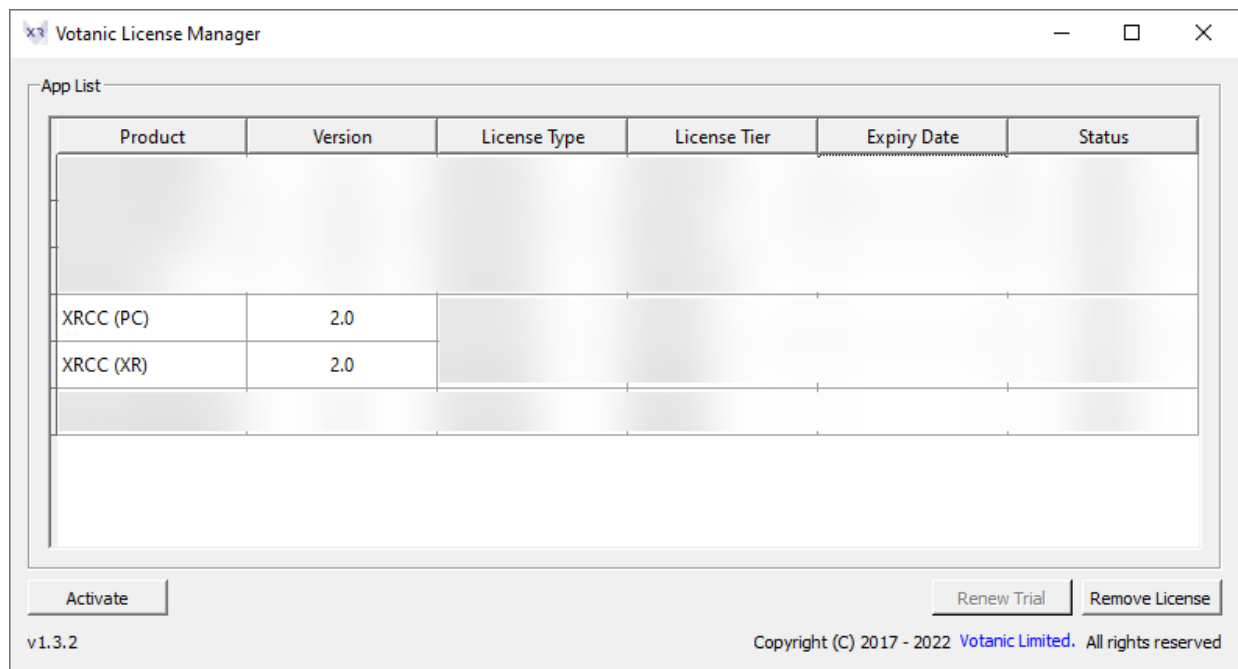
XR Driver Configuration

XRCC uses the SteamVR as OpenXR runtime when running the XRCC XR mode. For head-mounted display (HMD) VR systems and other XR systems using OpenXR devices, it is necessary to configure the XR drivers before running the XRCC XR.

For All VR Headsets

1. Install SteamVR

2. Open SteamVR Settings
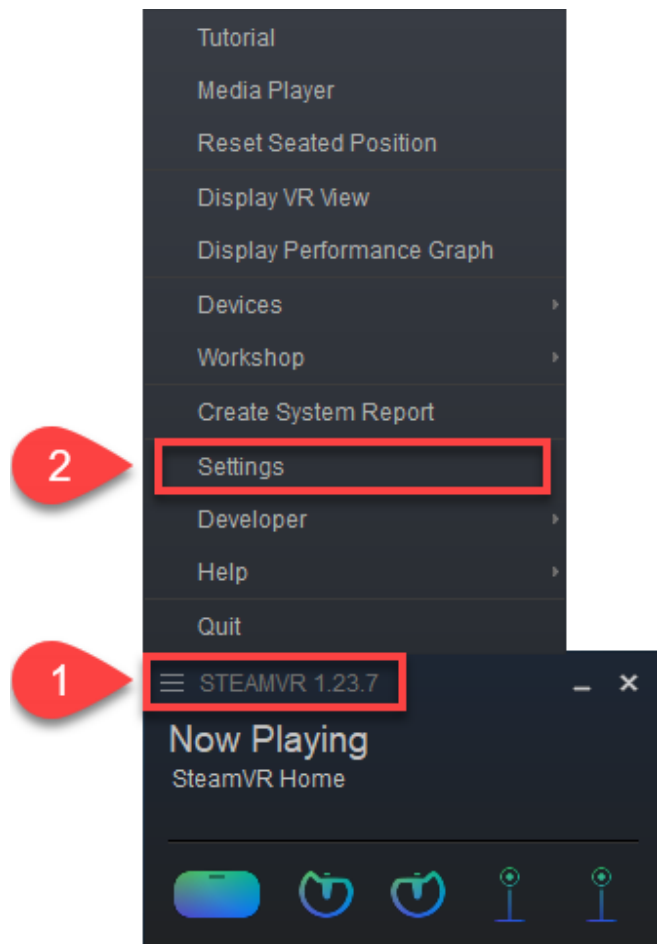
3. Turn on Developer Settings and set SteamVR as Current OpenXR Runtime
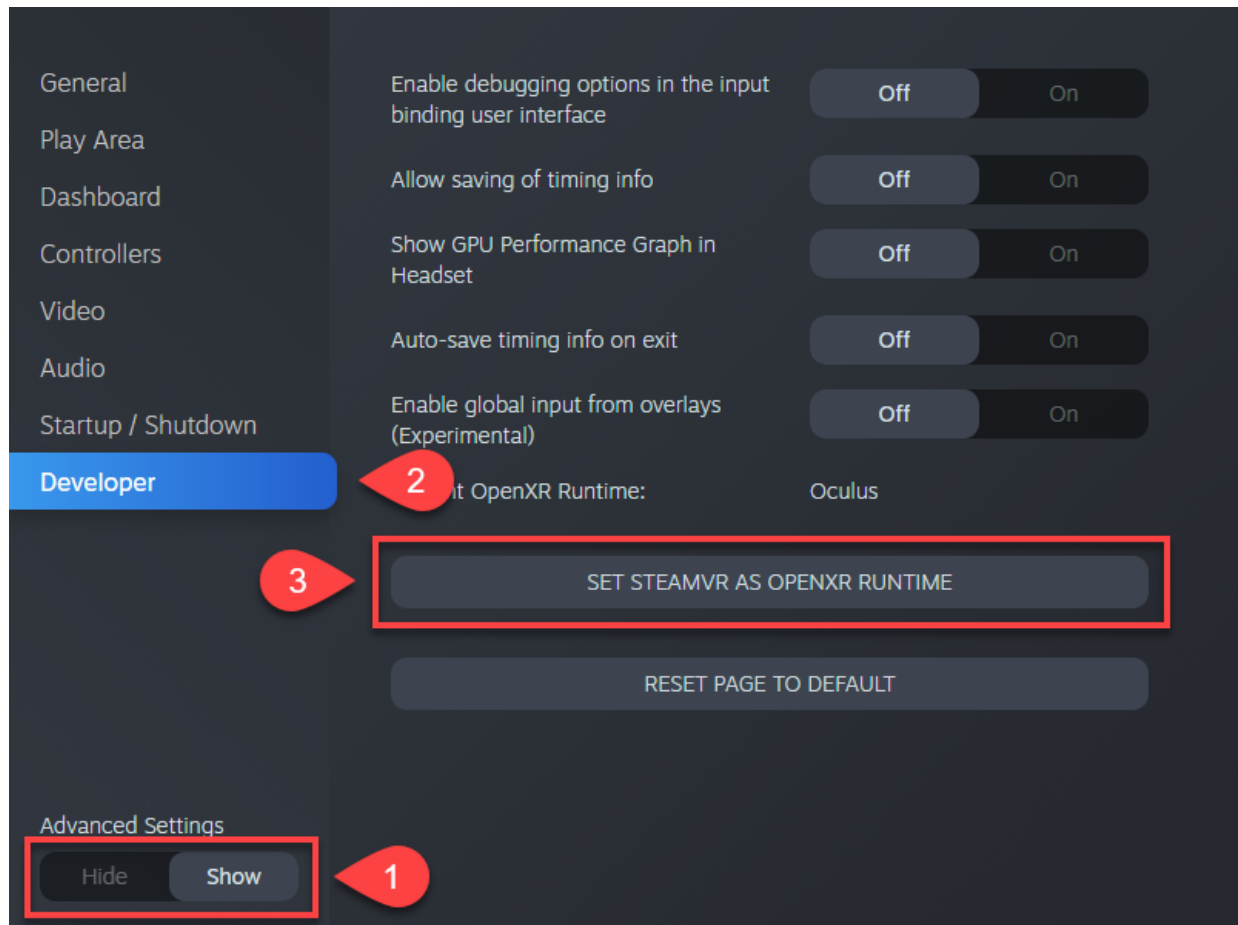
Oculus / Meta Quest

1. Install Oculus Software

2. Open Oculus Settings and allow content from unknown sources

Windows Mixed Reality Headset

1. After connecting the headset, open SteamVR and install Windows Mixed Reality
   driver following the pop-up prompt.

Basic Usage

Double-click on the XRCC short-cut on the desktop will open the XRCC directory. From there, you can access different components of the XRCC:

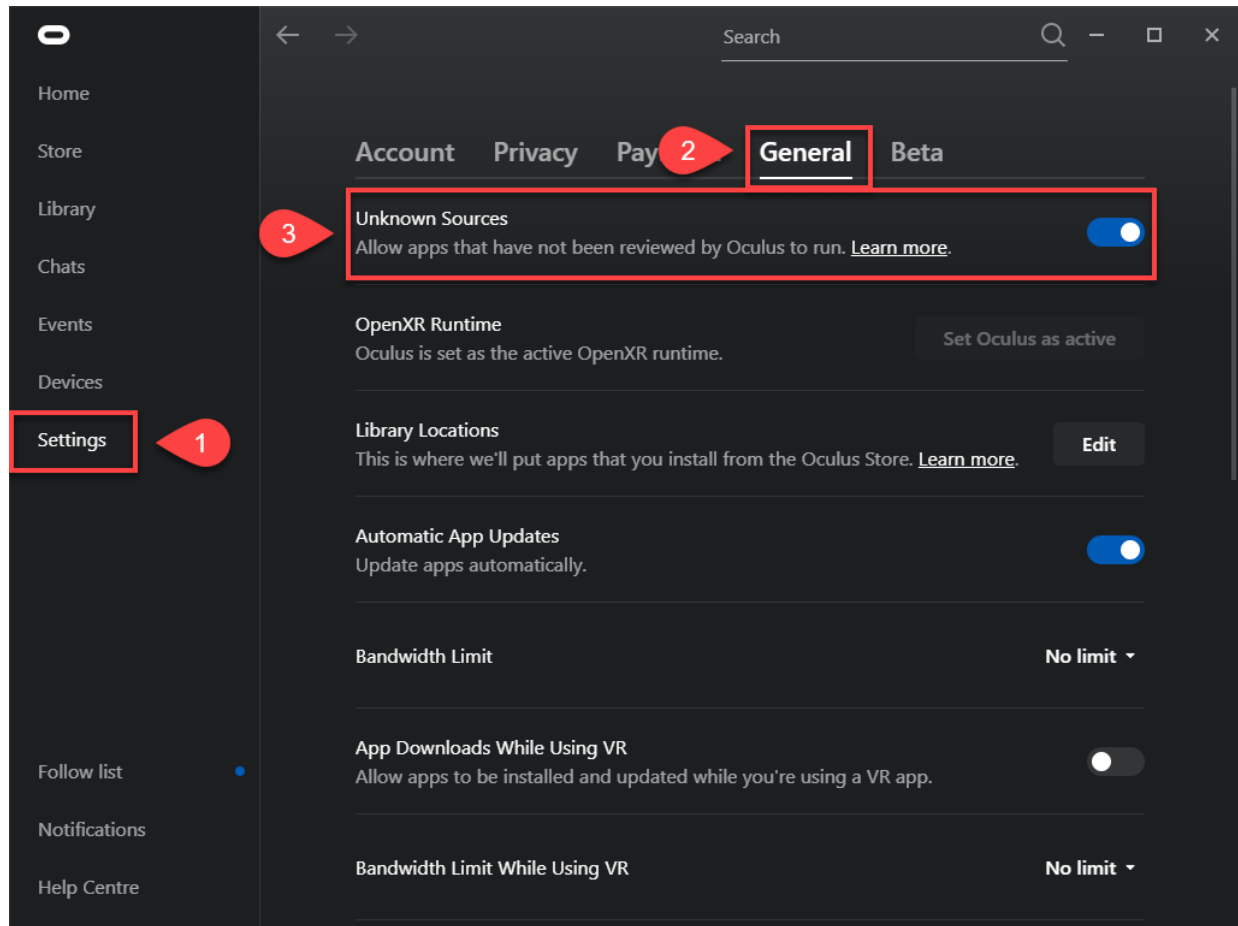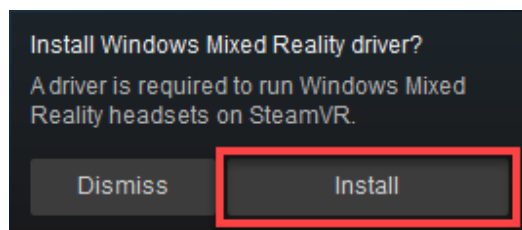| Folder	Description
Docs/User Guide	Contains a set of user guide documents on using the XRCC: 1. **General Guide**: (This document) Provides general instruction to set up and use the XRCC. 2. **User Guide PC Mode**: Provides detailed guide and instruction on different functionalities of the XRCC PC application. 3. **User Guide XR Mode**: Provides detailed guide and instruction on different functionalities of the XRCC XR application. 4. **Behaviour Blocks Reference Guide**: Introduces all the behaviour blocks in XRCC and their expected functionalities. 5. **XRCC Behaviour Overview**: A one-page poster showing all behaviour blocks under each category for quick reference.
Docs/Tutorial	Contains a set of tutorial documents for learning XRCC to create different types of interactive XR experiences: 1. **Fundamentals Guide**: Provides a basic introduction to the XR content creation process using XRCC. 2. **Museum**: A comprehensive guide on basic scene building techniques to create a VR museum. 3. **Solar System**: A comprehensive guide on building a multi-scene solar system XR experience.

Folder	Description
	4. **Pinball**: A tutorial to guide you to build a physics-based pinball game.
	5. **Cook and Serve**: A step-by-step tutorial to build a food ordering game using XRCC behaviour blocks.
	6. **Pick Rubbish**: A simple guide on creating a time-based rubbish picking game by using timer and variables in XRCC.
Resources	Contains the necessary resources required by XRCC when running XRCC projects. Including: • **PredefinedDBs**: Hosts the pre-packaged assets (if any) . • **Saves_local**: Default XRCC project save location.
XRCC (PC)	Contains the XRCC PC mode application. Launch the XRCC PC mode by double-clicking the "**XRCC (PC).exe**" file.
XRCC (Server)	Contains the XRCC multiplayer server application. Launch the XRCC multiplayer server by double-clicking the "**XRCC (Server).exe**" file.
XRCC (XR)	Contains the XRCC XR mode application. Launch the XRCC XR mode for various XR platforms by double-clicking the corresponding batch file: 1. **CAVE**: XRCC (XR)_[CAVE][XR].bat 2. **VR Headsets**: XRCC (XR)_[Local][HMD][XR].bat 3. **PC**: XRCC (XR)_[Local][PC][XR].bat

Appendix A - Meta Quest Steam VR Setup Guide

For running XRCC (XR) in Meta Quest 2, you will need to use the Quest Link feature in Oculus and start SteamVR manually before running the XRCC (XR). Here are the instructions to setup SteamVR for Meta Quest 2:

1. Make sure the Meta Quest 2 is connected to PC with cable for wired connection, or connected to the same Wi-fi network for wireless connection.

2. In the headset, open **Quick Settings** menu.
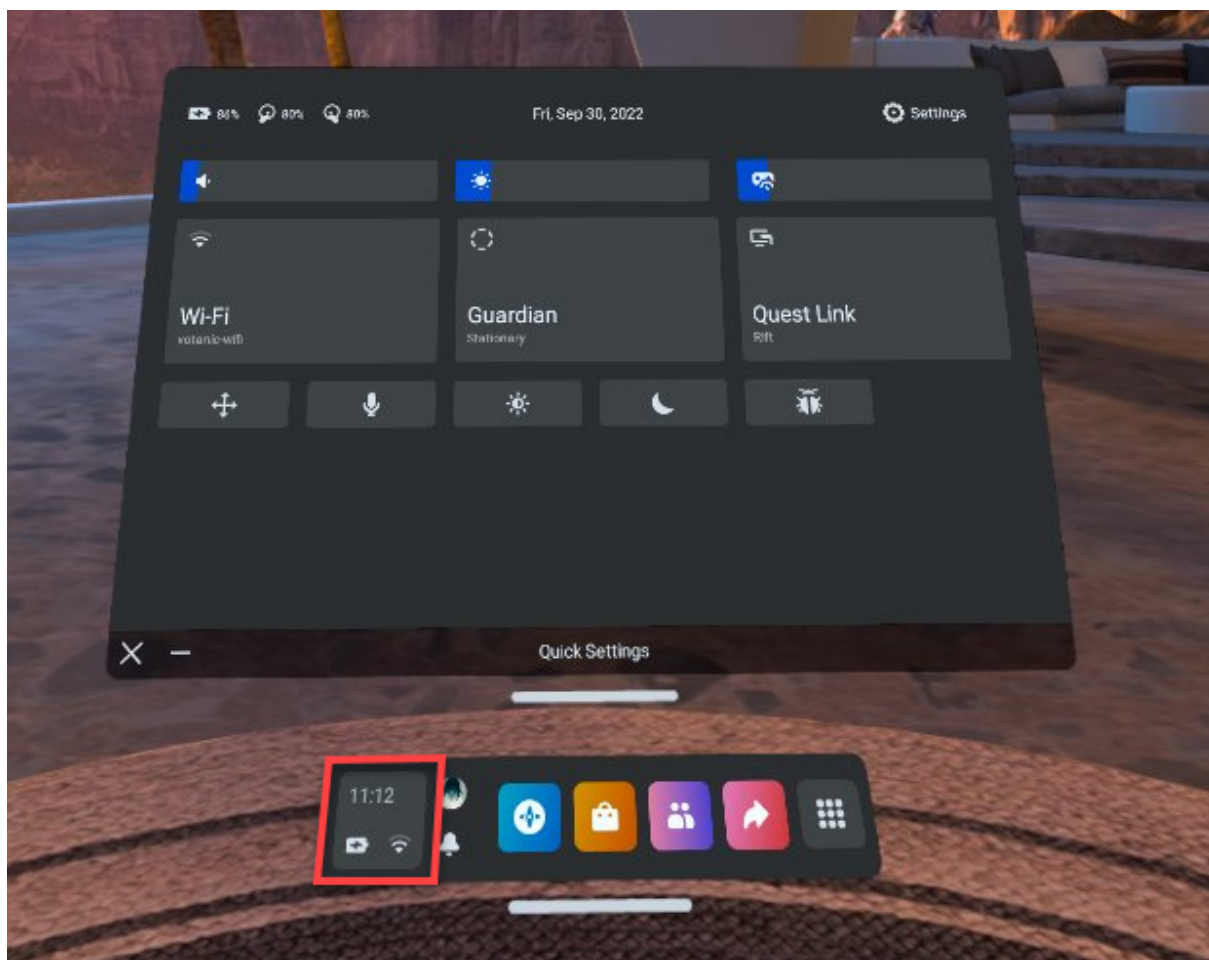
3. Open **Quest Link** menu.
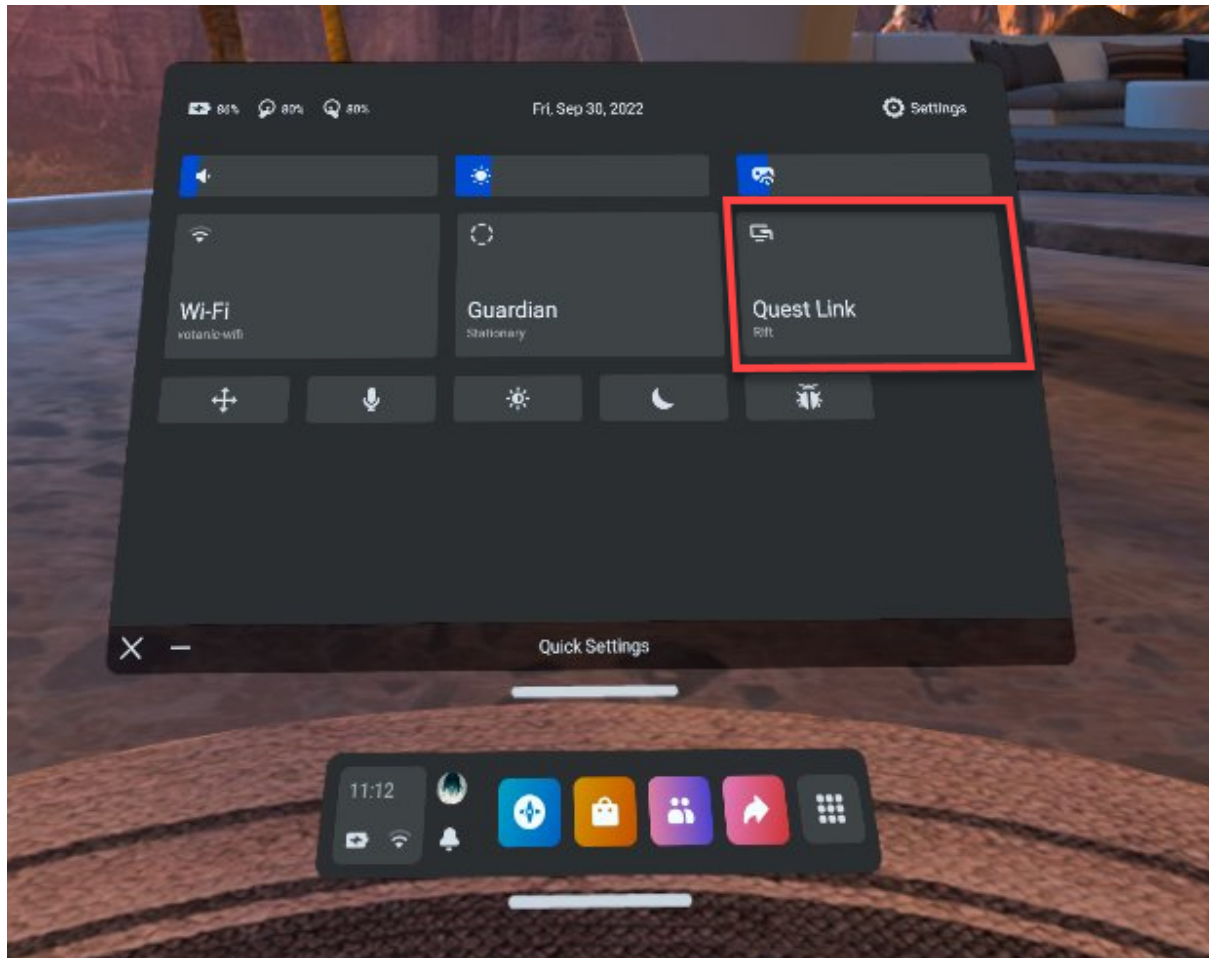
4. Make sure the **Use Air Link** option matched your connection method, disable for wireless connection; enable for wired connection.

5. After setting the correct **User Air Link** option, you should see the headset is **connected** to your PC in Oculus Devices tab.
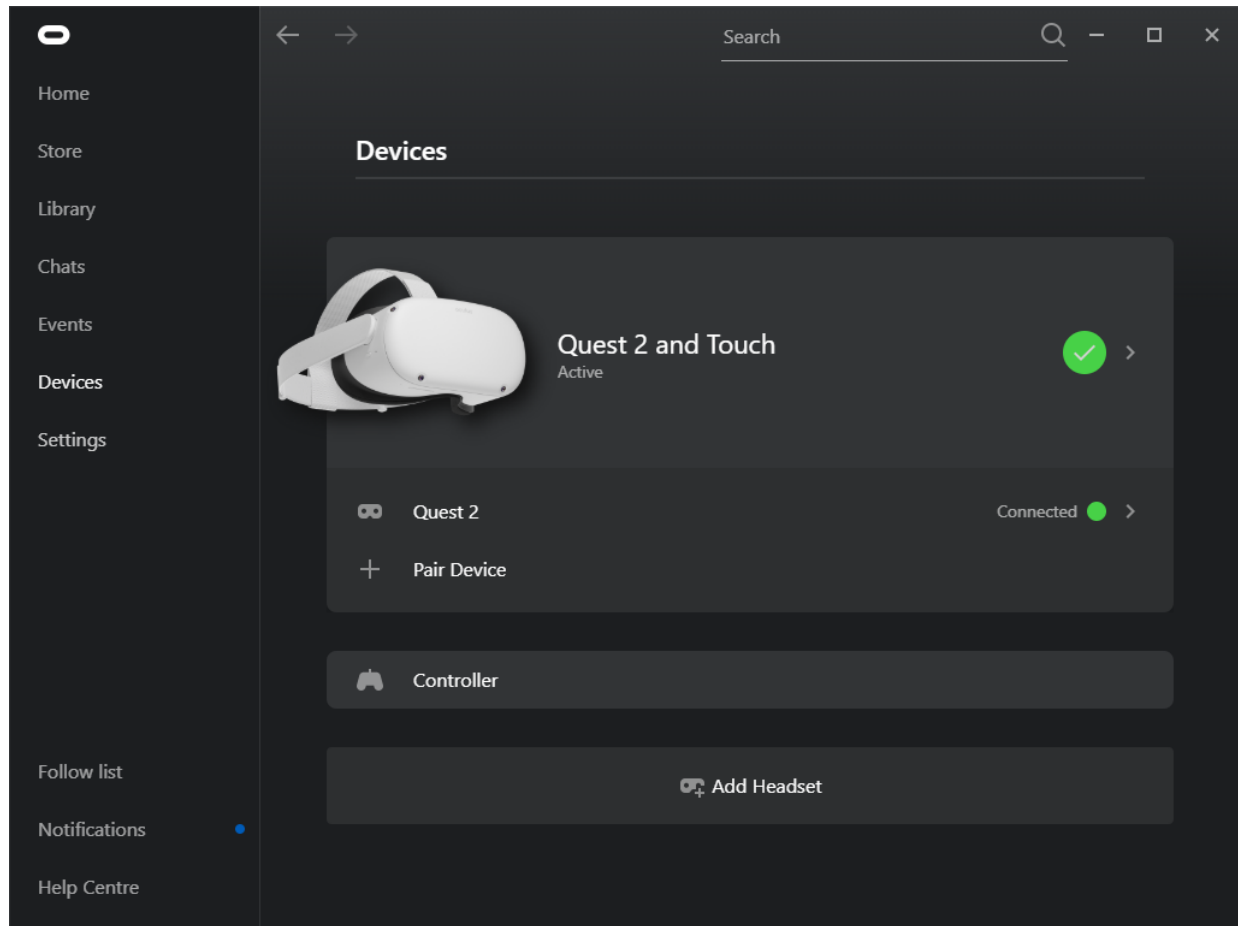
6. Select your **connected** PC in the list and **Launch**.
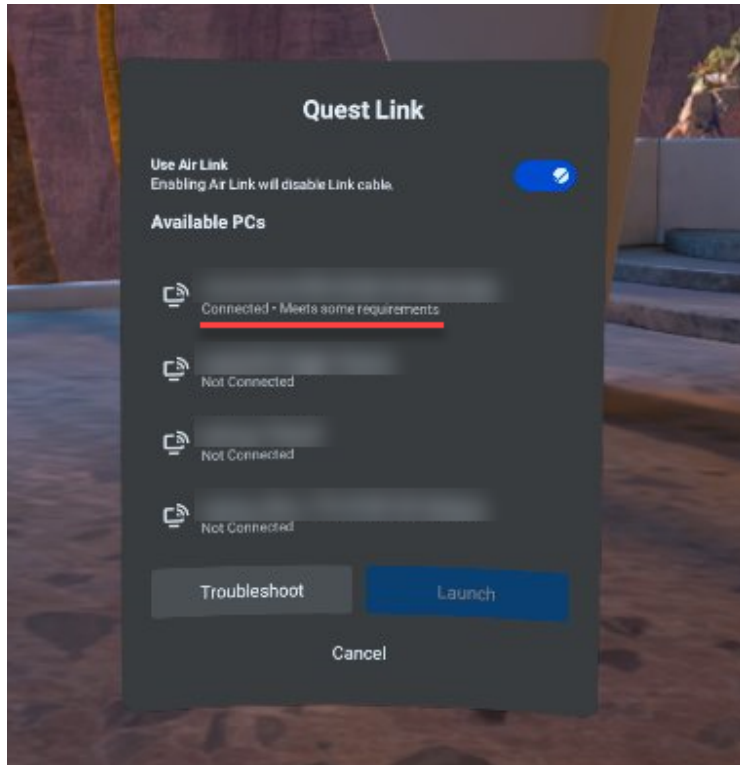
7. If the connection is successful, you should be able to see both the headset and **controllers** in Oculus Devices tab.

8. Open SteamVR and SteamVR will connect to the headset automatically.

Appendix B - Meta Quest Steam VR Setup Guide

For running XRCC (XR) in Pico 4, you will need to connect the headset to your PC thought Streaming Assistant and start SteamVR. Here are the instructions to setup Pico 4:
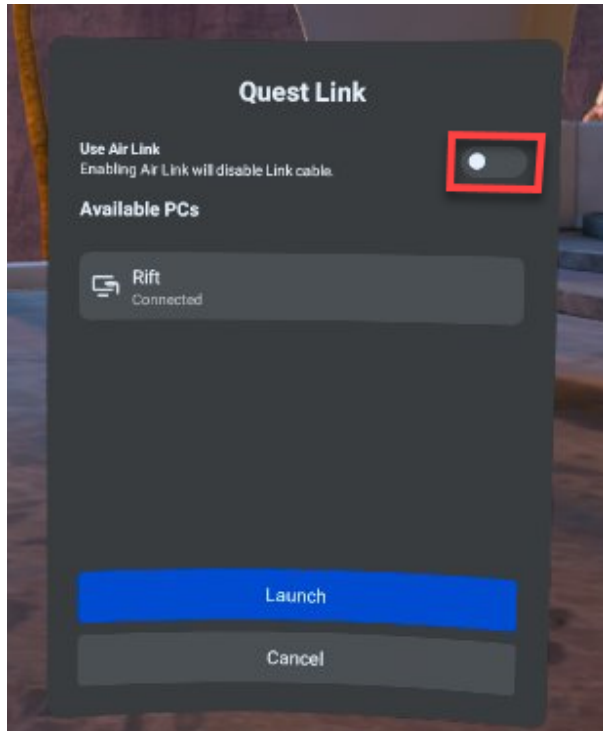
1. Make sure the Pico 4 is connected to PC with cable for wired connection, or connected to the same Wi-fi network for wireless connection.

2. In your PC, open **Streaming Assistant** and select your connection method.
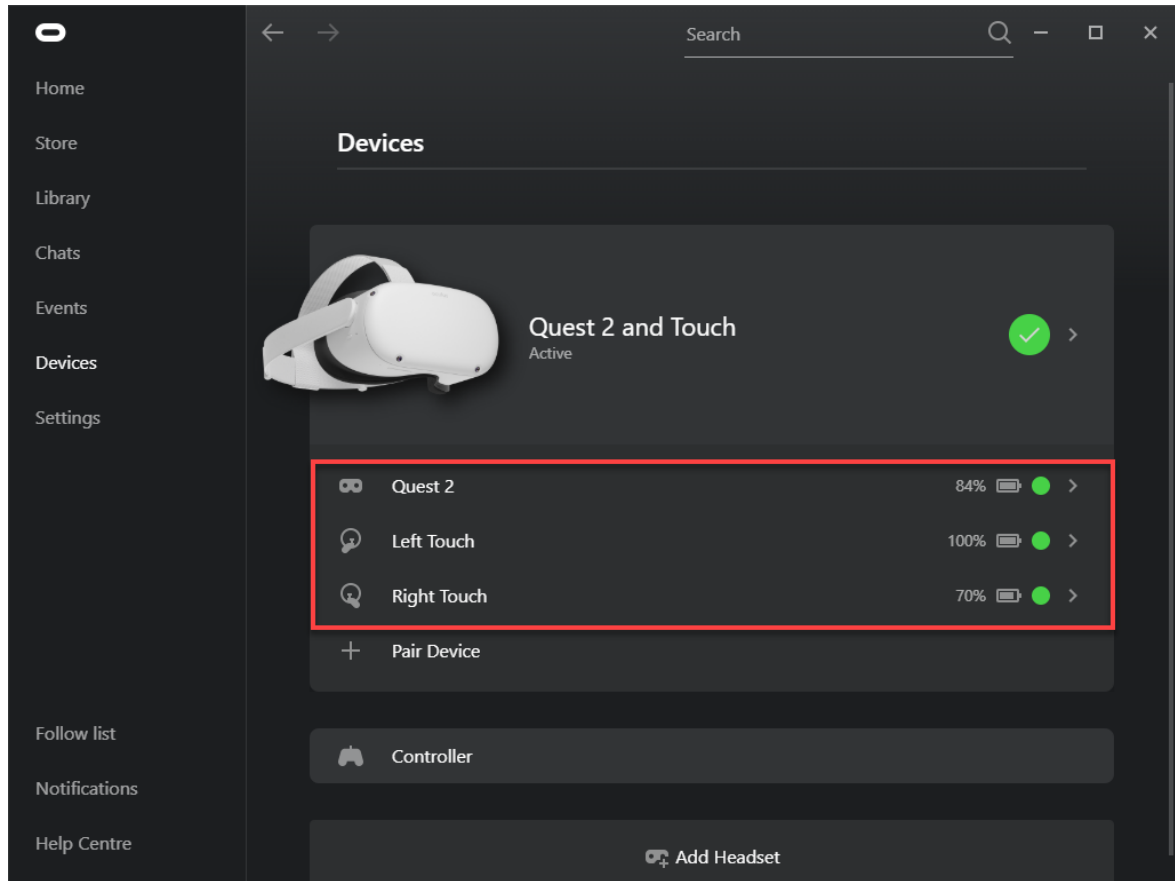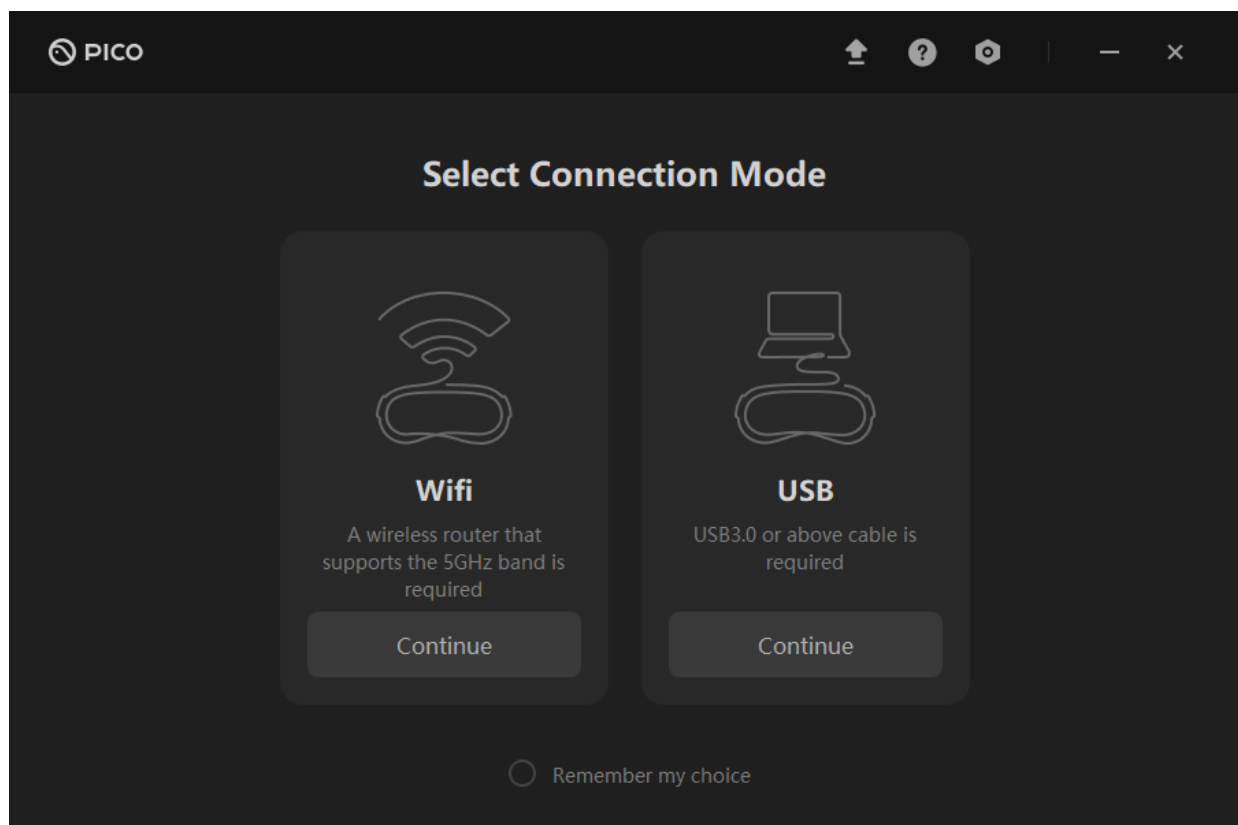

3. In the headset, open **My Library**.

4. Open **Streaming Assistant**.

5. Select your PC in the list and click **Connect**.

Streaming Assistant

1 Turn on Streaming Assistant on your computer

2 Connect your VR headset and computer to the same router

3 For wired streaming, connect your VR headset to computer via USB

Devices Available

Wireless   Connect

Connected
votanic-wifi   >

Frequency Band
5 GHZ

Performance Panel

The panel will be at the top of the screen during the game
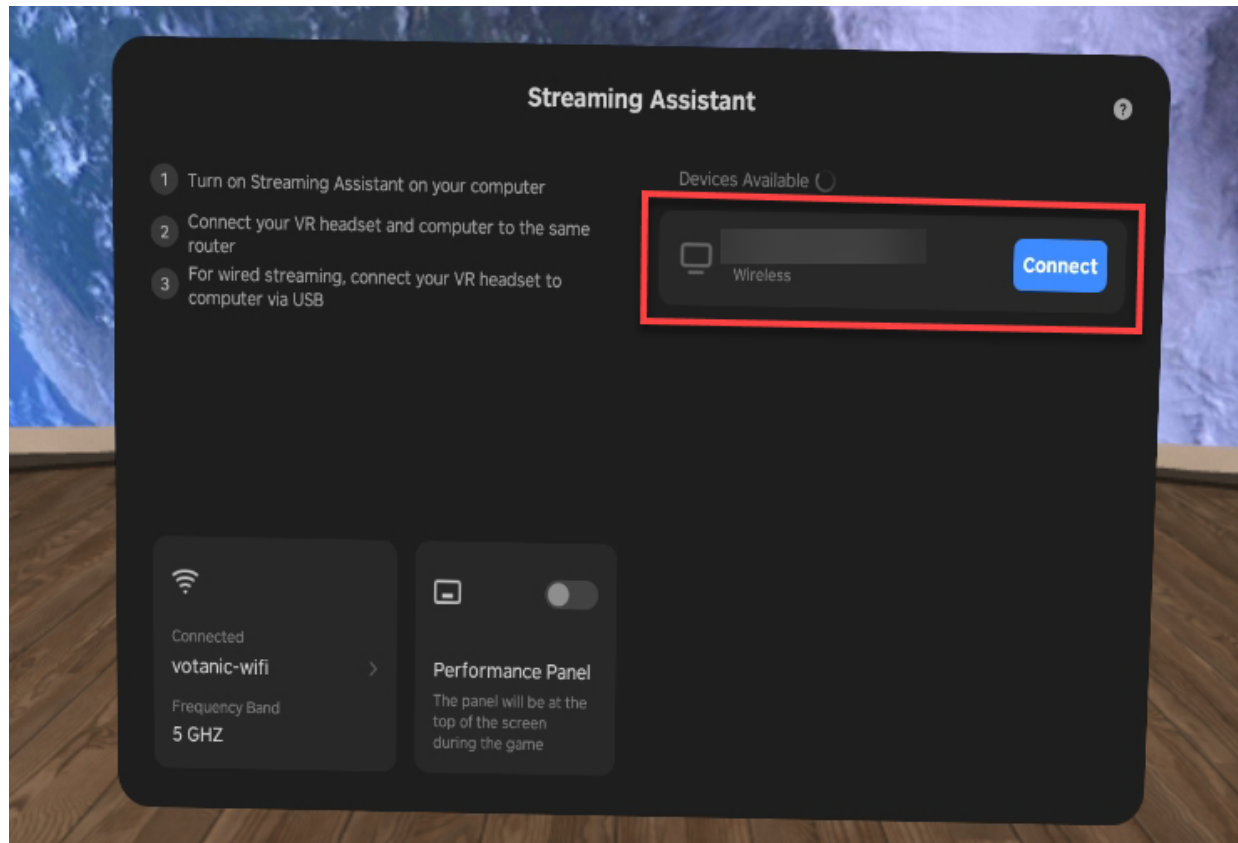
6. If the connection is successful, you should be able to see both the headset and controllers in Streaming Assistant of your PC.

PICO 4 Connected

Connect the router to the PC with a Category 5e or above network cable, and keep the router and VR headset in the same room

L 100%

C 58%

R 100%

Quality   Smooth >

Display Refresh Rate 72 Hz >
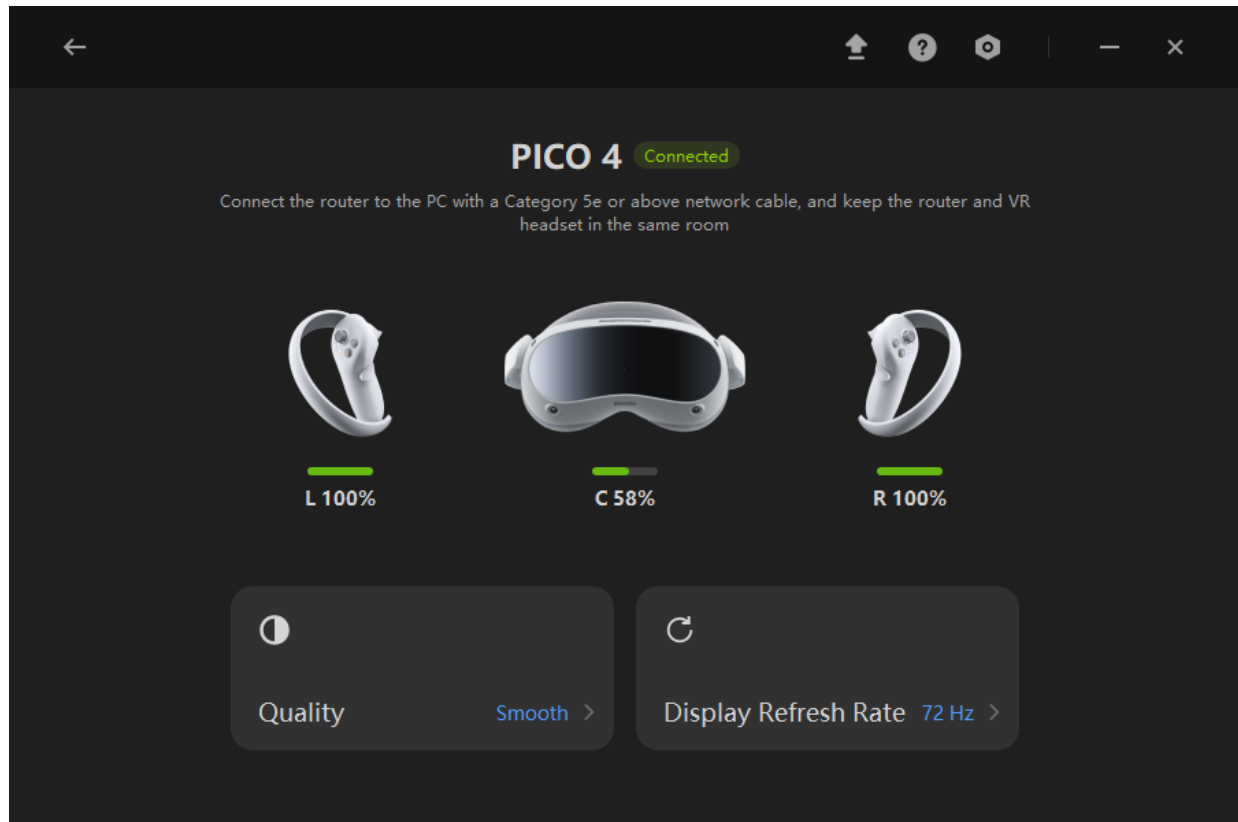
7. SteamVR will launch and connect to the headset automatically if the connection is ready. If not, Open SteamVR in your PC.

AppendixC

📄 USB Cable and Port Connection

When connecting the headset, make sure the USB cable is connected to a USB 3.0 port.

📄 Wireless Connection with Wi-Fi

When using wireless connection with Quest, make sure both your PC and headset connect to the s...
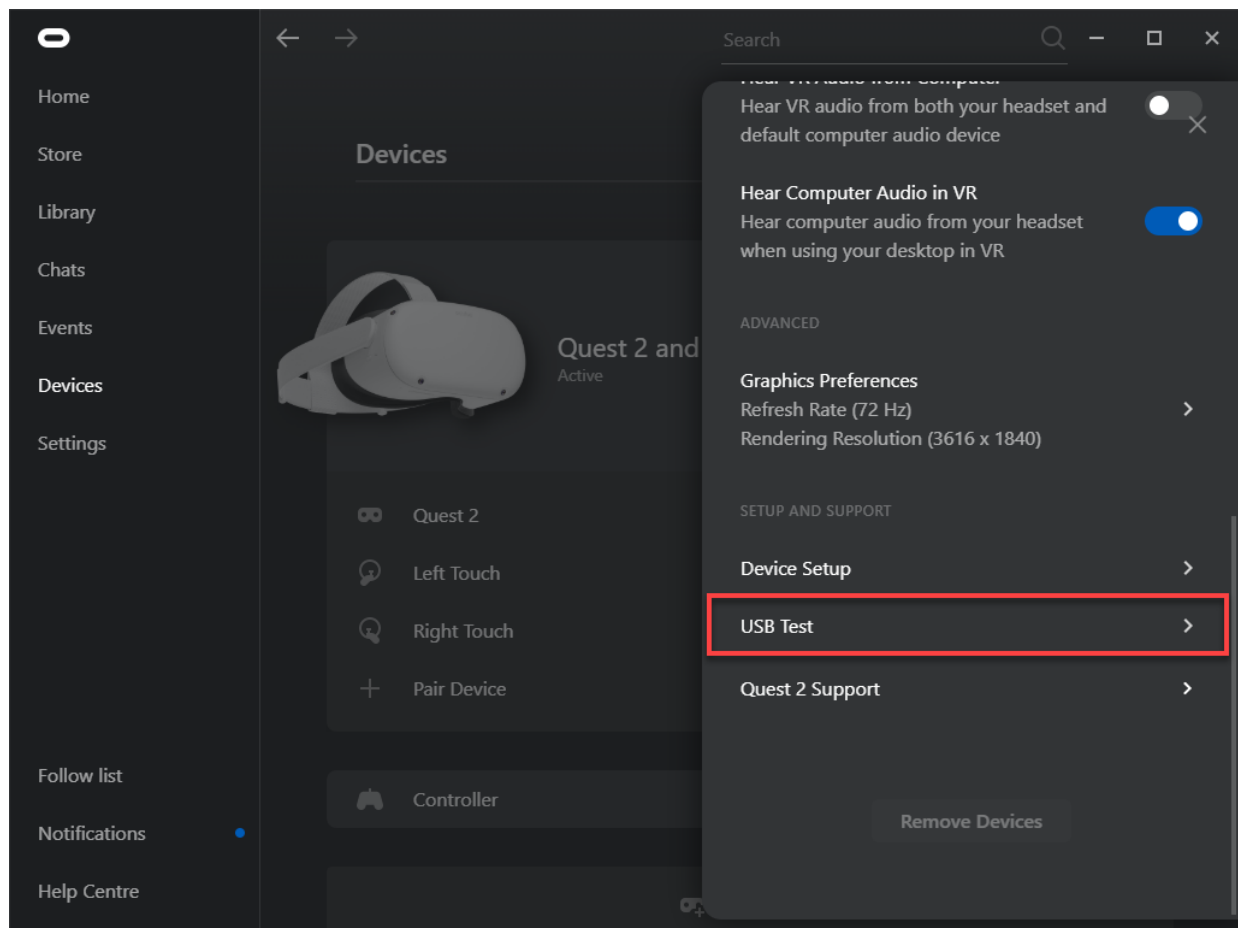
📄 Resources on Headsets Setup Instructions

Please refer to these resources and instructions if headsets setup issue occured.

USB Cable and Port Connection

When connecting the headset, make sure the USB cable is connected to a **USB 3.0 port**.

For Oculus / Meta Quest, make sure a **USB 3.0 cable and port** is used for connecting the headset. To test the compatibility of the cable, use the USB Test in Oculus Software.

Wireless Connection with Wi-Fi

When using wireless connection with Quest, make sure both your PC and headset connect to the same Wi-fi network.

Resources on Headsets Setup Instructions

Please refer to these resources and instructions if headsets setup issue occured.

- Oculus/Meta Quest: https://www.oculus.com/blog/you-got-a-quest-2-heres-how-to-set-it-up/

- Oculus Rift: https://www.pcmag.com/how-to/how-to-set-up-the-oculus-rift

- Valve Index: https://help.steampowered.com/en/faqs/view/7F7D-77FB-8CAA-4329

- Samsung HMD Odyssey: https://www.samsung.com/us/support/troubleshooting/TSG01111362/

- HTC VIVE: https://www.vive.com/us/support/vive/category_howto/setting-up-for-the-first-time.html

- Pico 4: https://vr-expert.com/kb/getting-started-with-the-pico-4/