

ELITECAD

VR installation guide

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Introduction

About this installation guide

This installation guide doesn't substitute any installation guides of the corresponding vendors. It should serve ELITECAD users as a step by step guide on how to install the environment for using VR in ELITECAD. The installation guide is based on the WINDOWS 10 operating system. Other operating systems might differ from this tutorial. Some of the necessary steps might require administrative rights on your computer. We recommend that the installation is carried out by your system administrator.

Overview

ELITECAD provides impressive real-time visualization of your models using graphical effects like reflections, bump maps, animated grass and water, skymaps, etc. Using the walking mode, you can explore the planned building together with your customer in realistic visualization by using intuitive and well-known input devices like the PlayStation® controllers. With the help of VR glasses you can immerse yourself in virtual worlds and experience your models first hand. There are hardly any ways to present your models more impressively.

In order to be able to use VR, it is necessary to install the input devices as well as the glasses. This installation guide will describe the necessary steps in detail. Since there are countless devices and glasses on the market today, this guide focuses on the latest technology, which we know is used by our customers. For input devices, this is the PlayStation 4 controller, and for VR glasses we will describe the OCULUS RIFT S in detail. Furthermore, we will also touch on other VR glasses like the HTC Vive and the Microsoft Mixed Reality.



PlayStation 4® (PS4) controller

General remarks

Gamepads are a good choice for navigating through a model in the walking mode. ELITECAD provides predefined configurations for common devices like the PlayStation 4 and Xbox controllers, which allows for a quick and easy start. Of course any other controllers can be used and individually configured as well. Depending on the model type, the various buttons on the gamepad can be individually customized with ELITECAD functions or switches depending on your preferences. The gamepad can be used in parallel to the touch controllers of the Oculus Rift S.

The PlayStation 4 controller includes two rechargeable batteries. Therefore, you should always keep an eye on the battery level of the controllers. Upon charging, the LED of the controllers are blinking in orange.

Pairing the PS4 controllers

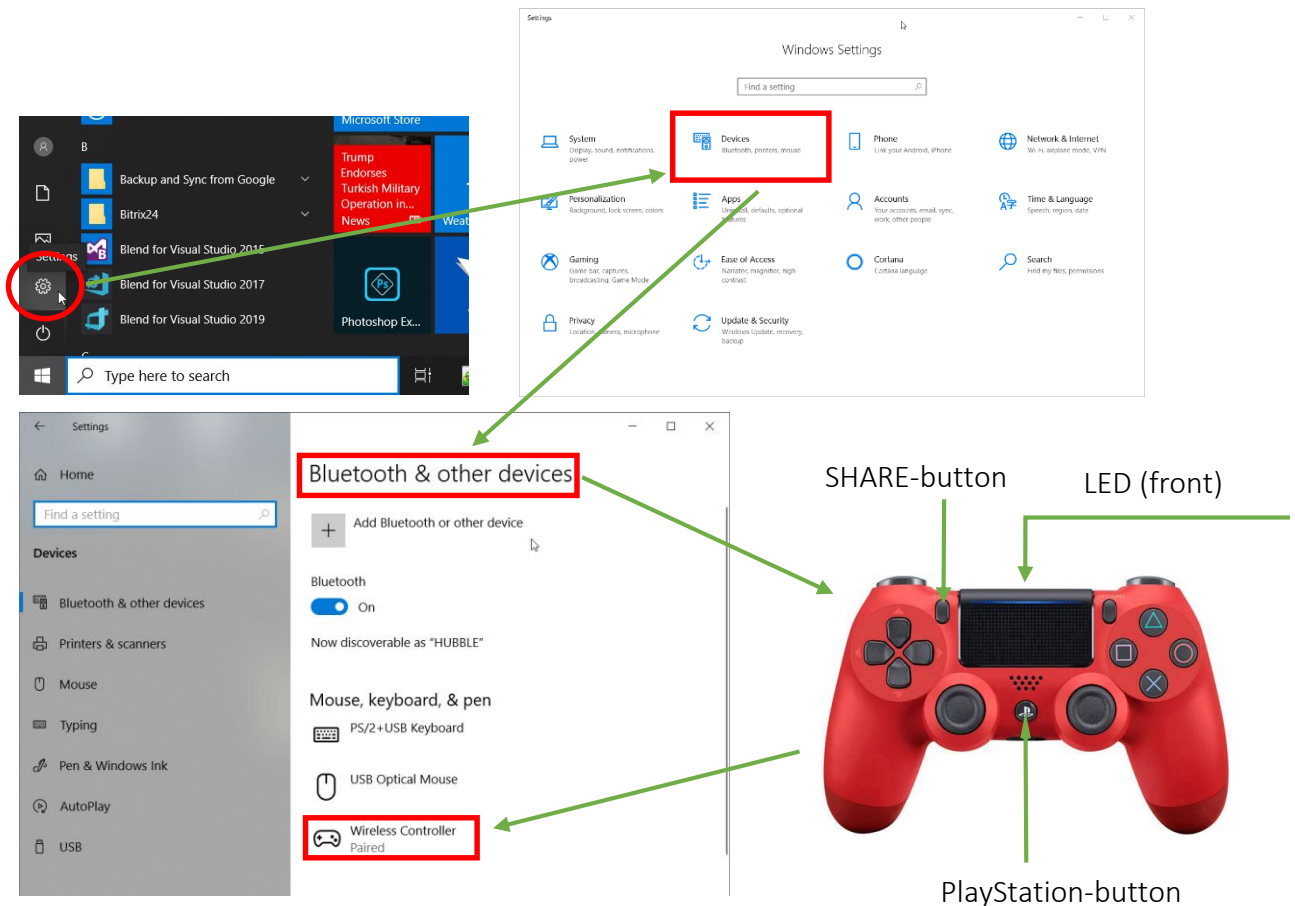
In general, the PS4 controller doesn't have to be installed under Windows 10. Since the connection is established via Bluetooth, it is necessary to pair the device with the PC before being able to use it. In order to pair the controller, please go to *Settings/Devices/Add Bluetooth or other device*.

If the controller is switched off, first press the SHARE button and then the PLAYSTATION button, and keep pressing both for at least 3 seconds. The LED on the controller should start blinking white. If pairing was successful, the blinking changes to a constant light.

TIP

Before pairing a new device, please make sure that your system has a Bluetooth interface. Especially PCs don't always have Bluetooth by default. In some cases, it is necessary to add a Bluetooth USB adapter in order to establish a connection.

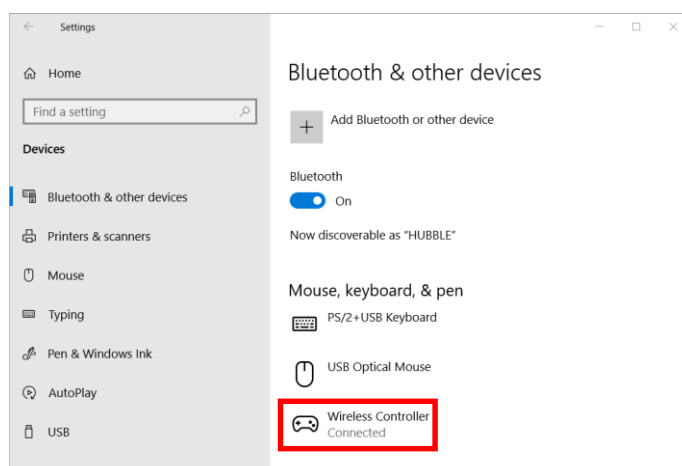
Here is a graphical guideline on how to couple a controller with your PC:



Connecting the PS4 controllers

If the controller is already paired with your PC system, then one simple press on the PLAYSTATION button will establish a connection again. While the connection is being established the LED is blinking white, if the connection was successful the LED should switch to a constant light.

Use the dialog *Settings/Devices/Bluetooth and other devices* to check if the connection was successful.



OCULUS Software

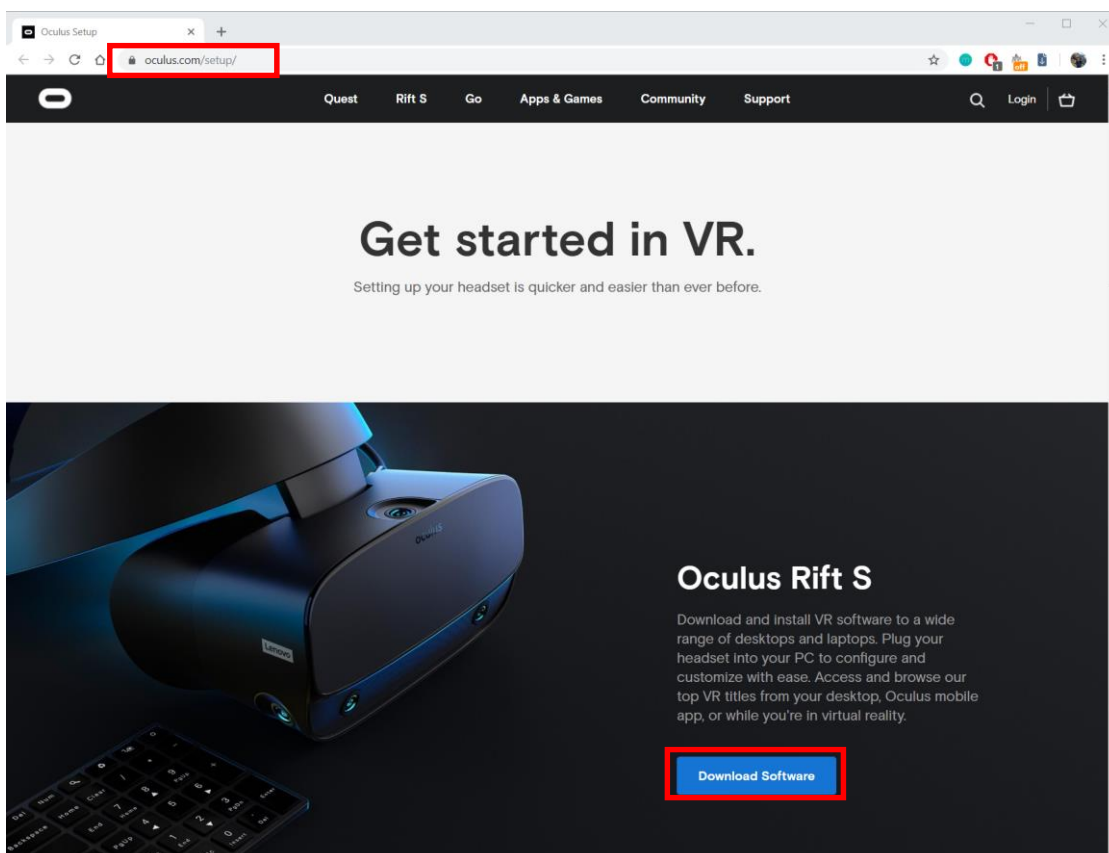
General



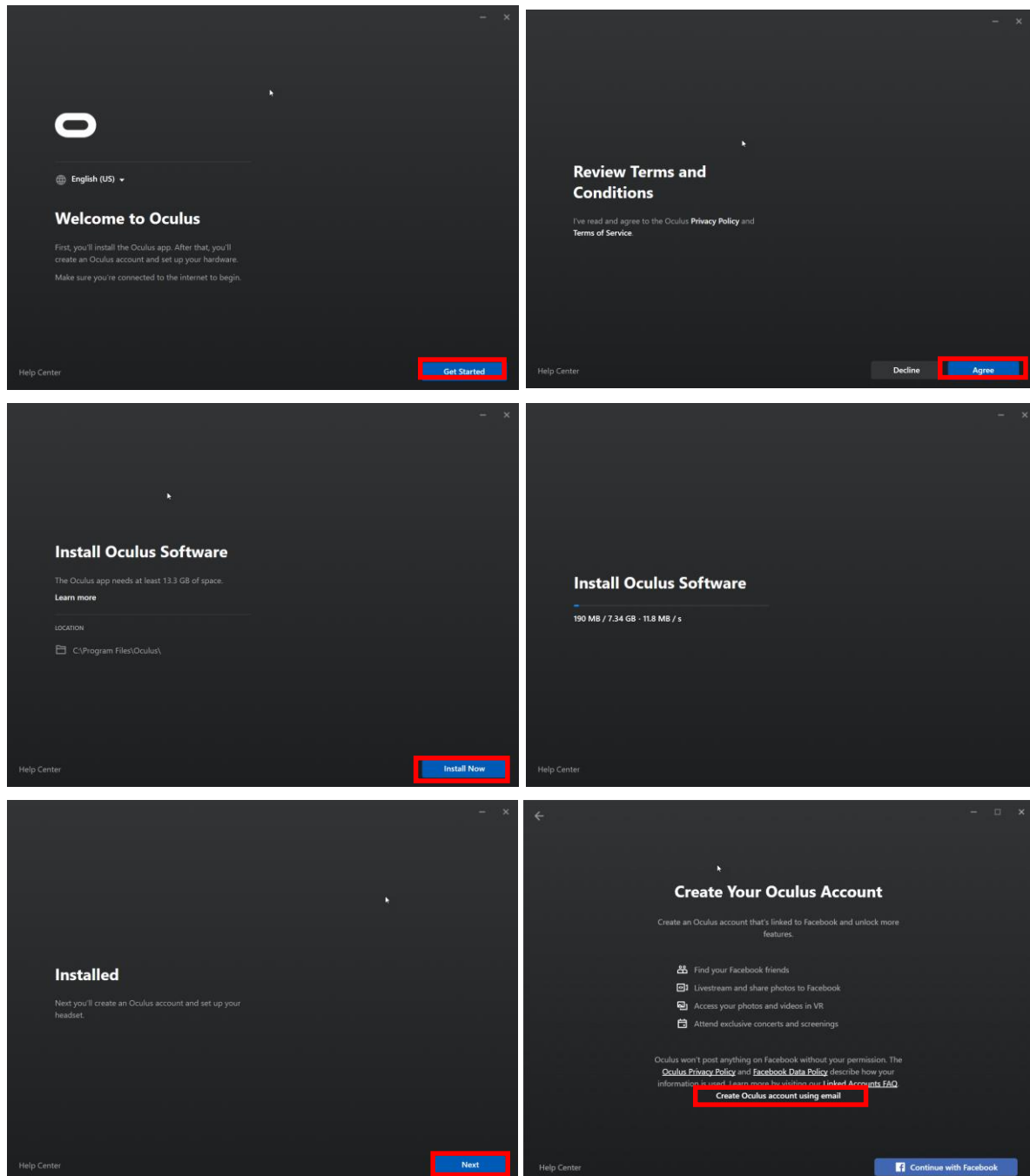
In order to use the Oculus Rift S with ELITECAD it is first necessary to install the Oculus software and afterwards the SteamVR software needs to be installed. Upon installation the touch controllers are installed as well.

Installation of the Oculus-Software

In order to install the Oculus software, you need to navigate to <https://www.oculus.com/setup/> in your browser and download the software for Oculus Rift S. Afterwards start the installation by choosing *Execute after Download software*.



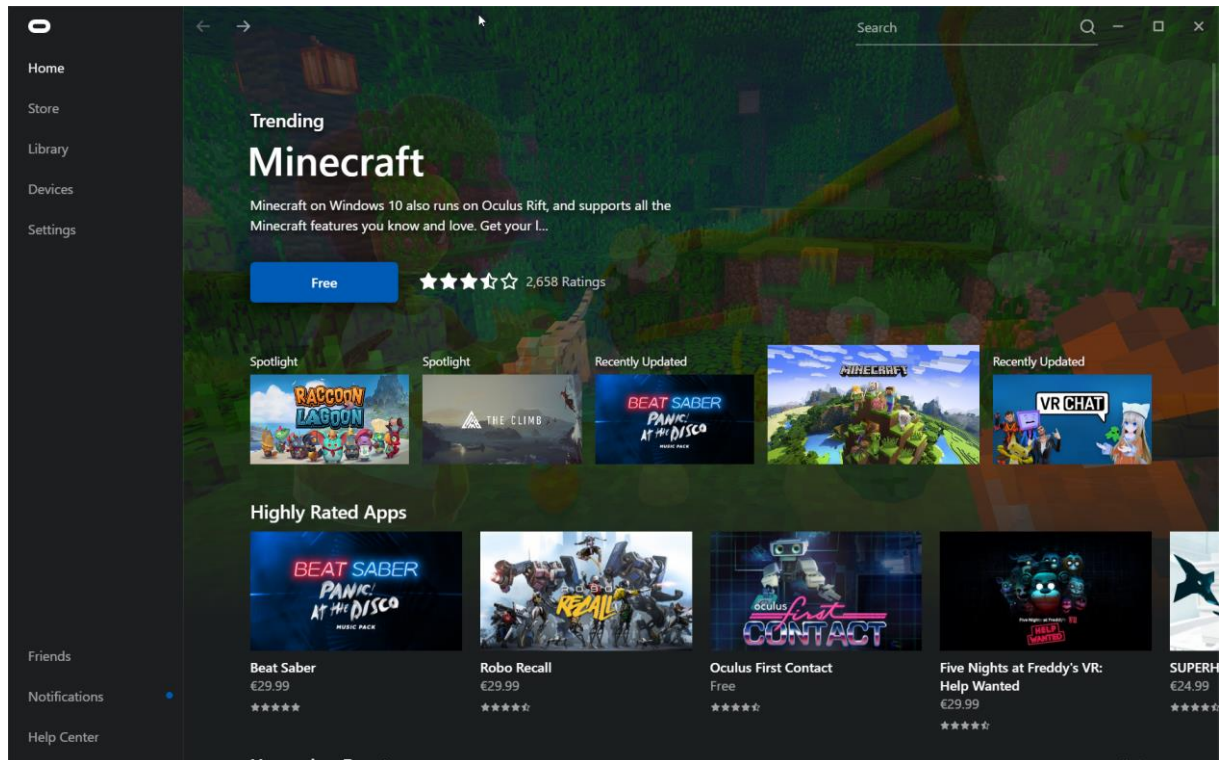
Now we follow the instructions on the screen and in the end create an oculus account.



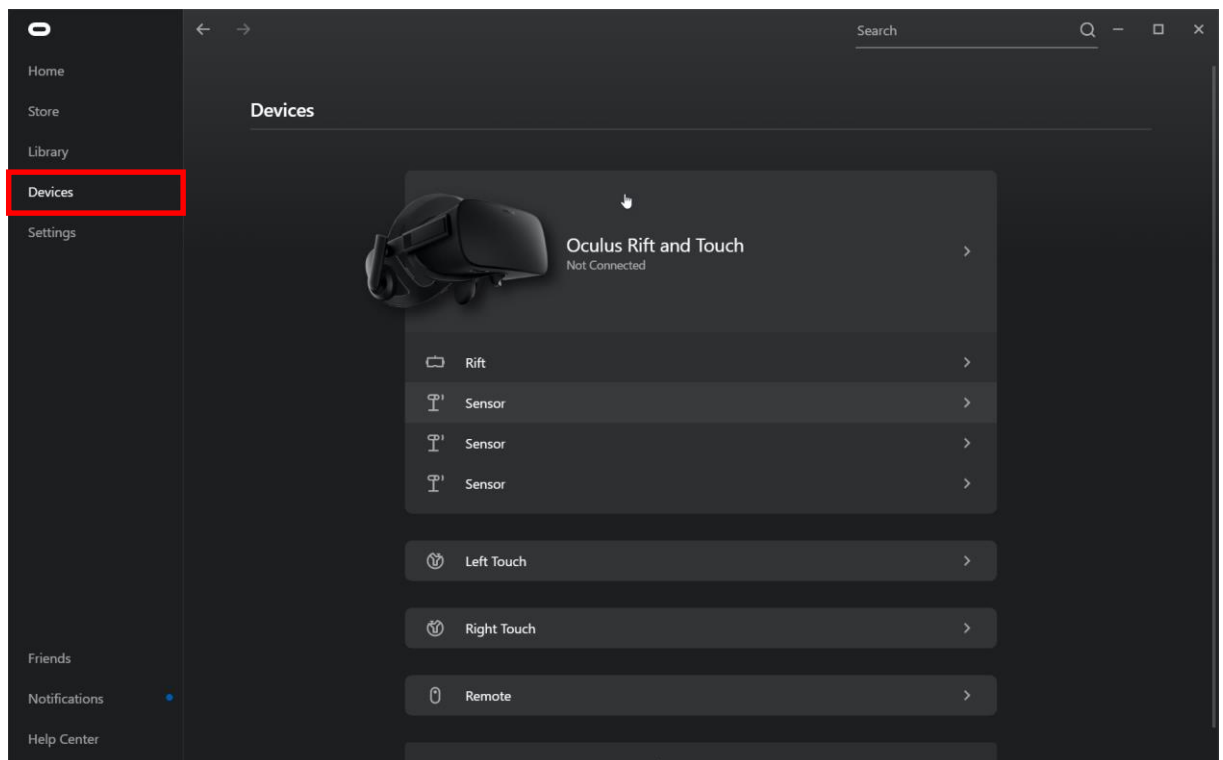
After the installation is finished, Oculus home will be launched and the headset is activated. To establish a connection, the Oculus Rift S headset has to be connected properly to the PC. Please note that the DisplayPort as well as the USB cable have to be connected to the PC. The USB port needs to be at least 3.0 (blue socket) in order for the connection to be possible. After those steps, the Oculus Rift should be ready to use and all necessary drivers including the touch controllers should be installed.

TIP

Please take care to connect the DisplayPort cable to the correct port if multiple graphics cards are available on your system.



Under the section *Devices* you can check the installed devices and their status.



TIP

If you have troubles installing the Oculus Rift S, please refer to the FAQ of the installation page of the Oculus website to find a solution.

SteamVR

General Remarks

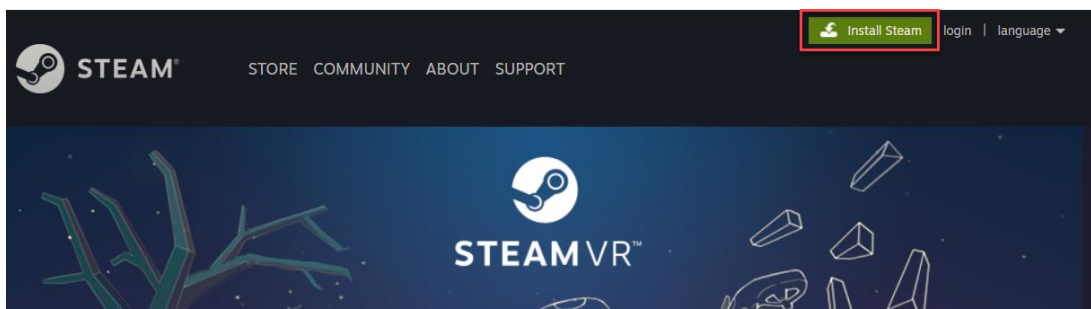
ELITECAD uses the SteamVR runtime, due to its technical advantages and the possibilities to use many different VR devices. SteamVR/OpenVR is a vendor independent runtime that allows to control various VR devices like Oculus Rift, HTC Vive and Windows mixed reality devices. Furthermore, it offers many additional features, for instance the use of VR gesture controllers like Oculus Touch or HTC as well as all other Windows Mixed Reality input devices.

TIP

Oculus Rift S users have to install SteamVR runtime in addition to the Oculus runtime.

Installation of Steam

Before we can start with the installation of the SteamVR runtime, we first need to install the Steam software and create a Steam account. Let's download the software from the website <https://steamcommunity.com/steamvr> and start the installation of the steam software.



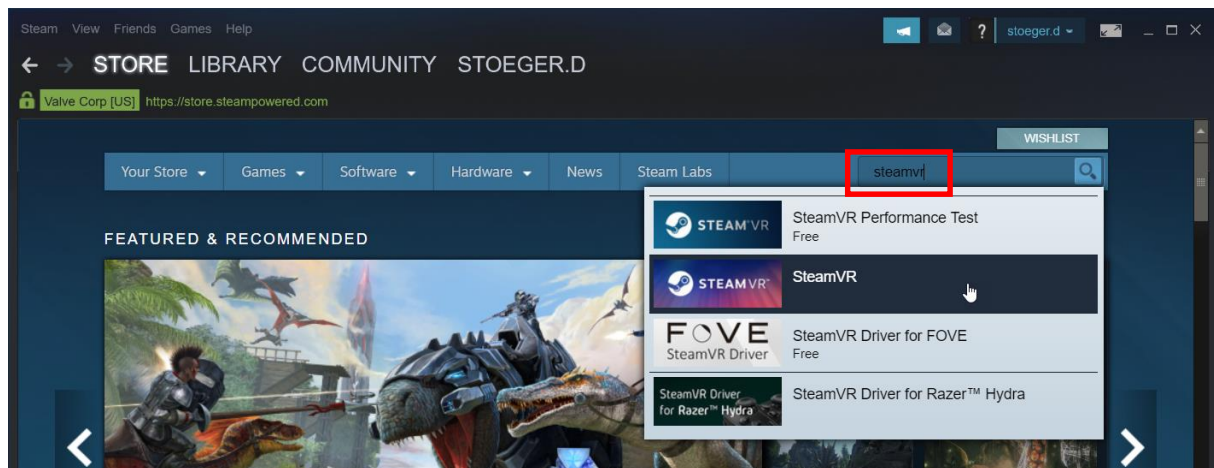
After we have installed the software we create a Steam account and now are able to use the Steam platform.

Installation of SteamVR



Start Steam using the Desktop icon.

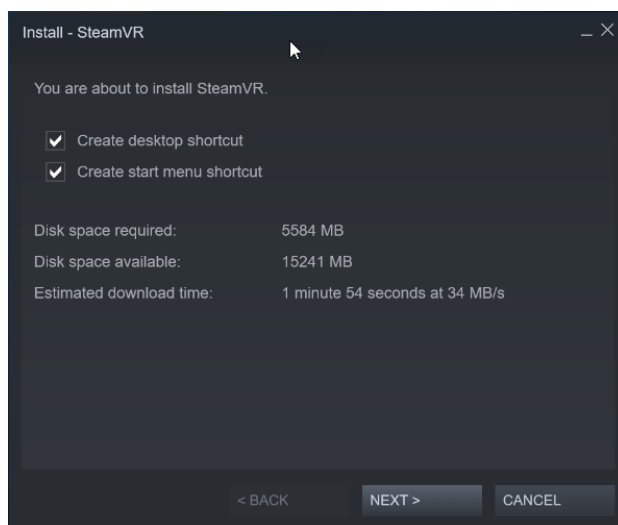
Then go to the section STORE and enter *SteamVR* in the search bar and choose the suggested result.



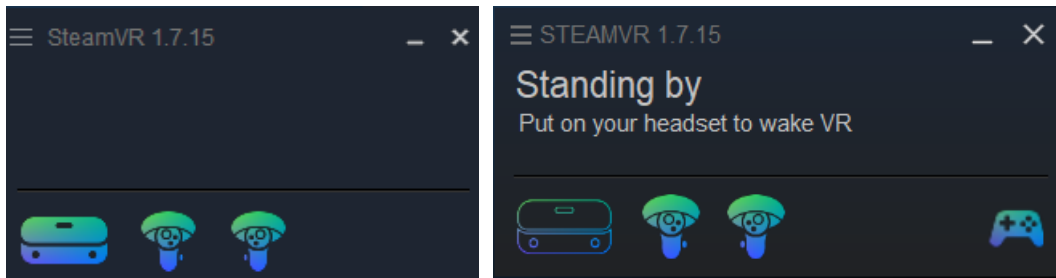
Select the button *Play Game* in order to install the software.



Follow the instructions on the screen and install SteamVR.

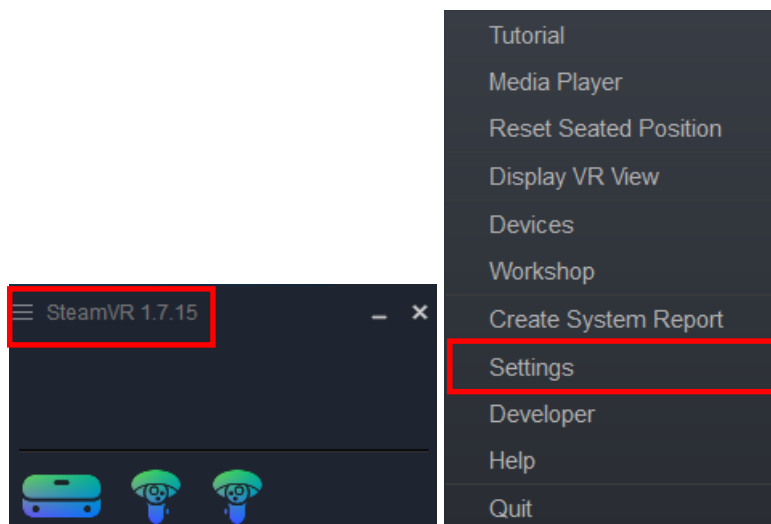


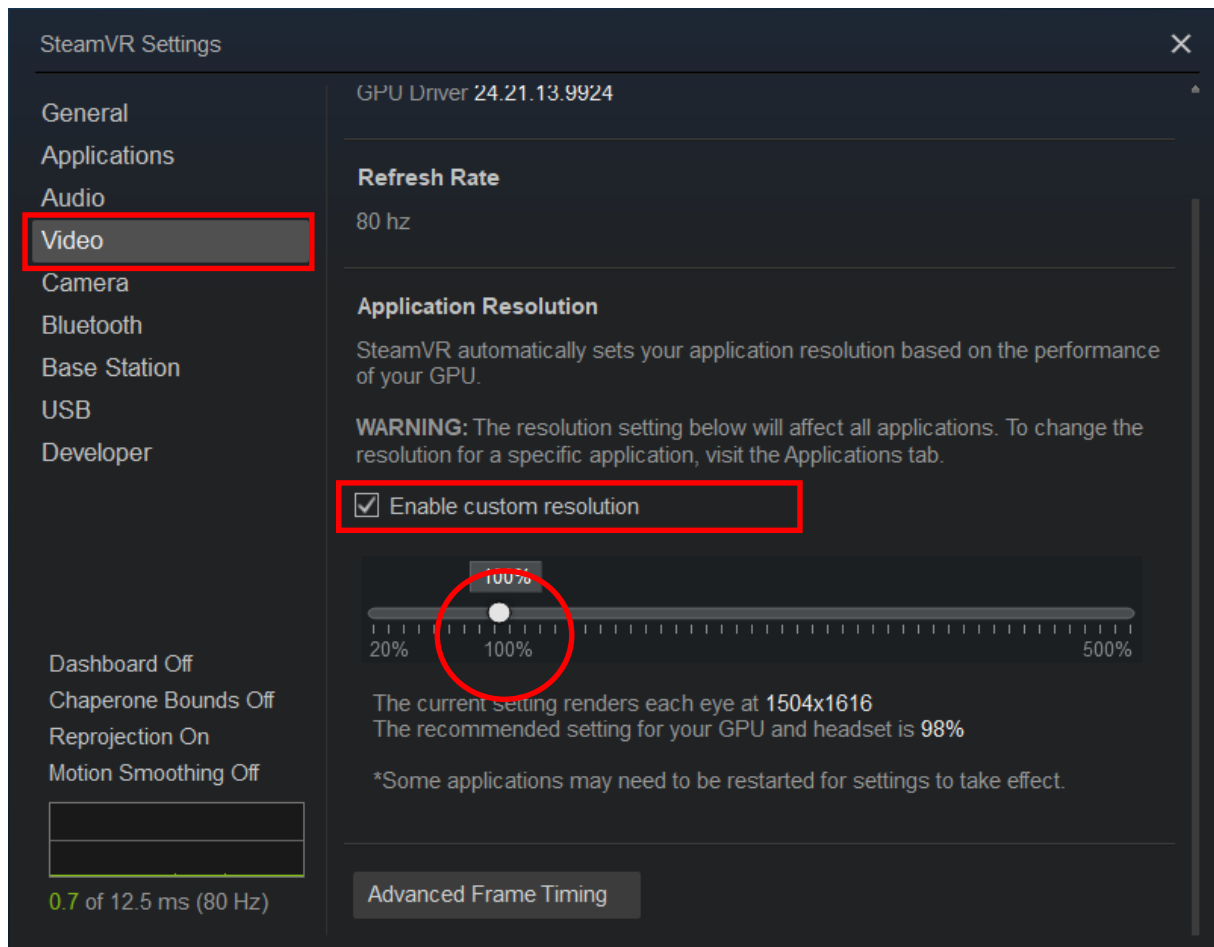
Start the SteamVR application using the desktop Icon. By launching the SteamVR application the Oculus software will be started as well automatically. The software displays the detected devices and if the symbols are active, this indicates that they are connected and ready to use. If the symbols are not active, it means that the devices are in stand-by, and they can be activated by moving the device or putting the glasses on.



Configuring SteamVR

In the SteamVR application we set the application resolution to 100%, so the images are calculated exactly in the resolution which can be displayed in the glasses natively. This setting leads to better performance, since the required computing power will be reduced. Using the standard settings, depending on your graphics card, a higher resolution is calculated and the images are downscaled to the native resolution (super sampling), which leads to better anti-aliasing effects.





HTC Vive® VR-glasses



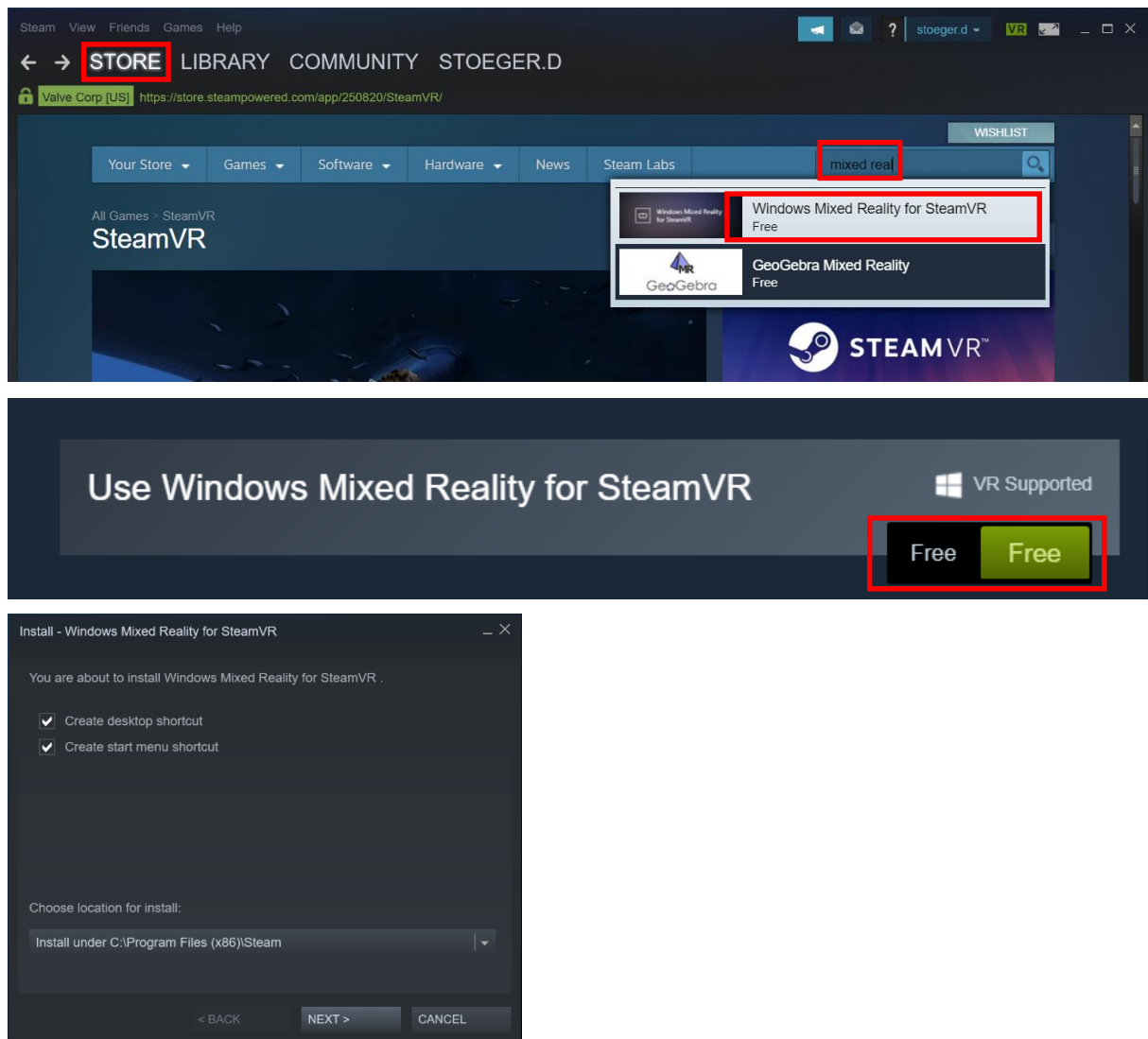
Since the HTC Vive was developed in cooperation with Valve, which is the owner of the Steam platform, the required software is already integrated into the SteamVR application.

Microsoft Mixed Reality®



In order to use Microsoft Mixed Reality with the SteamVR software, we need to install the required drivers.

Let's search for the term *mixed reality* and start the installation of the software.

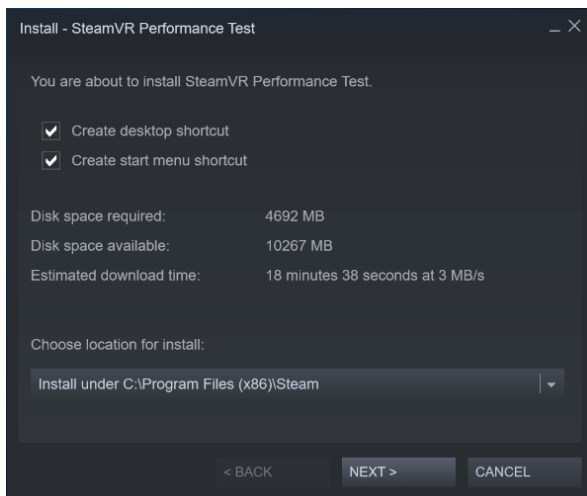
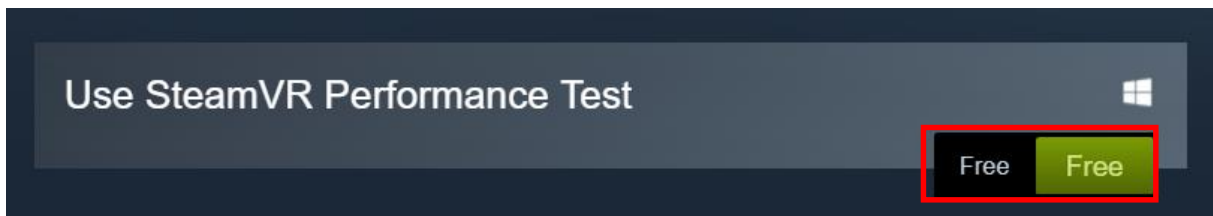
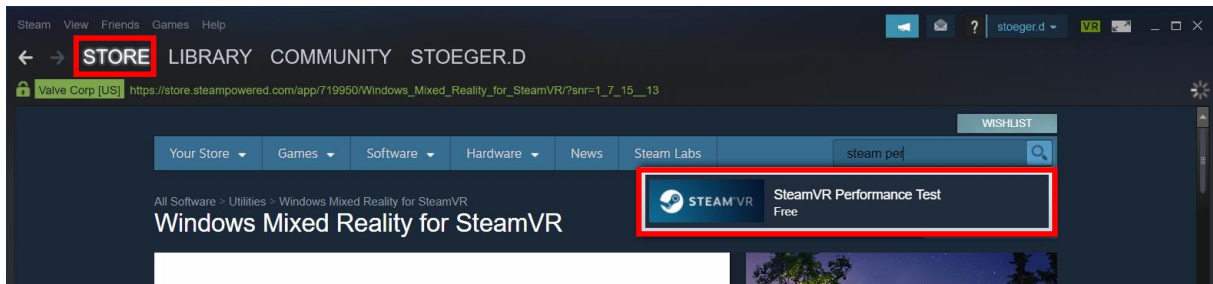


As soon as the tool is started, the Microsoft Mixed Reality VR device is ready to use.

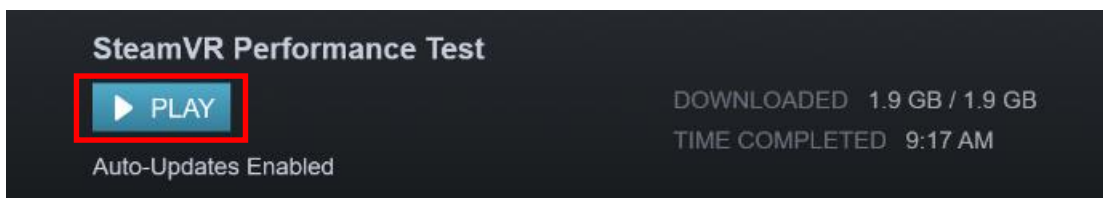
SteamVR Performance Test

In order to make sure your PC environment is suitable for VR applications, it is recommended to do the SteamVR performance test. This application can be downloaded from the Steam platform for free.

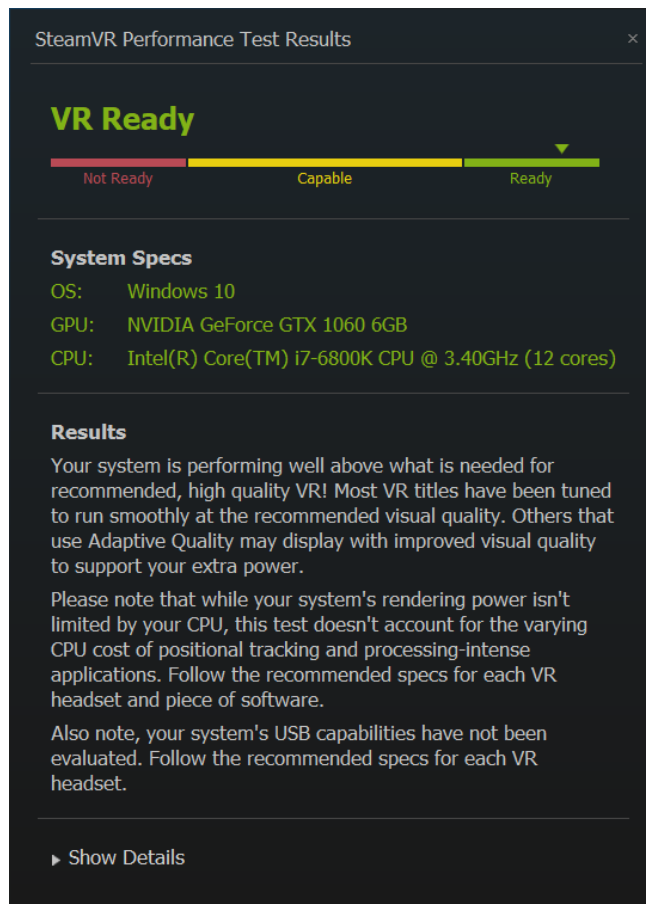
In the STORE section you will find the application *SteamVR Performance Test*. Please install the application.




After installing the tool, you can start it.

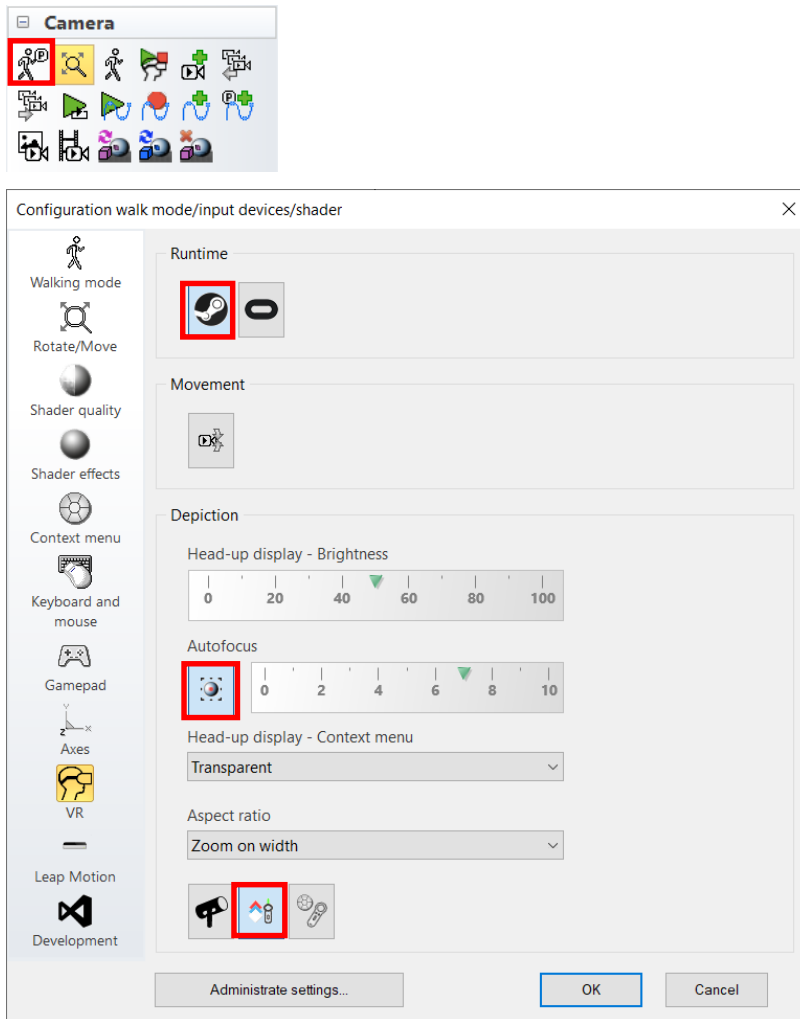




After the system is analysed and all tests are done, the results are presented to you. In the bottom part of the dialog, the results are described and details can be found.



Oculus Rift S in ELITECAD

 Now we would like to use the Oculus Rift S to move around in our ELITECAD model. First we need to start Steam and the SteamVR software, which automatically launched the Oculus software as well. After that we start ELITECAD and activated the CONFIGURATION WALK MODE and configure the following parameters.



We confirm the settings with  and activated the WALKING MODE.  Now we can walk around freely through in the virtual world and explore our ELITECAD model.

TIP

The course unit REAL-TIME VISUALIZATION describes how to use VR and the walking mode in detail.