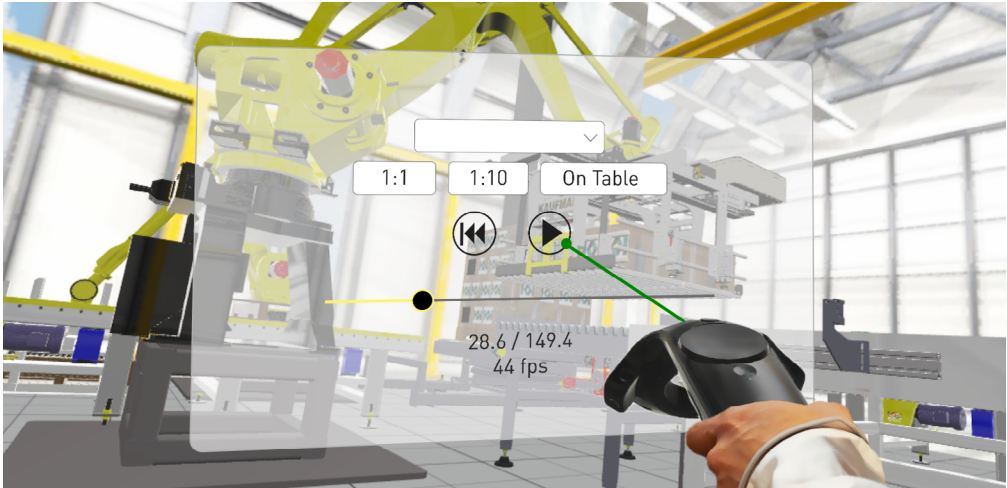


Visual Components Experience Guide

Visual Components Experience 1.5 | Version: September 30, 2020



Visual Components Experience is a standalone application that allows you to view 3D simulations and experience them in virtual reality. Simulations can be recorded as animations using any Visual Components 4.1.X or higher product.

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Support
support@visualcomponents.com

Forum
forum.visualcomponents.com

Supported Devices

Windows OS

- Any device running Windows 7, 8.1 or 10 can be used for 3D viewing
- Refer to the minimum requirements for a Visual Components 4.x product <https://www.visualcomponents.com/system-requirements>
- An alternative for 3D viewing is the mobile version of Visual Components Experience.

Compatible VR Devices

Visual Components Experience relies on SteamVR for virtual reality functionality. Any Head-mounted Display (HMD) that is supported by SteamVR should also support VC Experience. However, this is not guaranteed, and using one of the tested and verified devices listed below is recommended.

Tested VR Devices

HTC Vive and Vive Pro

- If your computer has a Mini DisplayPort, use a Mini DisplayPort cable. Based on field tests and feedback, adapters do not work.

Oculus Rift S

- Requires key rebinding to work correctly
- See section **Using Oculus Rift S** for more details.

Samsung HMD Odyssey

- Uses Microsoft Windows Mixed Reality
- See section **Using Samsung HMD Odyssey+** for more details.

Valve Index

- Different button layout: A-button is used for interacting, B-button is used for opening and closing the menu.

Setup

For 3D viewing, install Visual Components Experience on your device.

<https://www.visualcomponents.com/products/downloads>

For virtual reality, this guide assumes you are using HTC Vive. For all other devices, refer to the manufacturer on how to install new apps, set up the device, and interact with VR objects.

1. Set up HTC Vive

<https://www.vive.com/eu/setup>

2. Install Steam

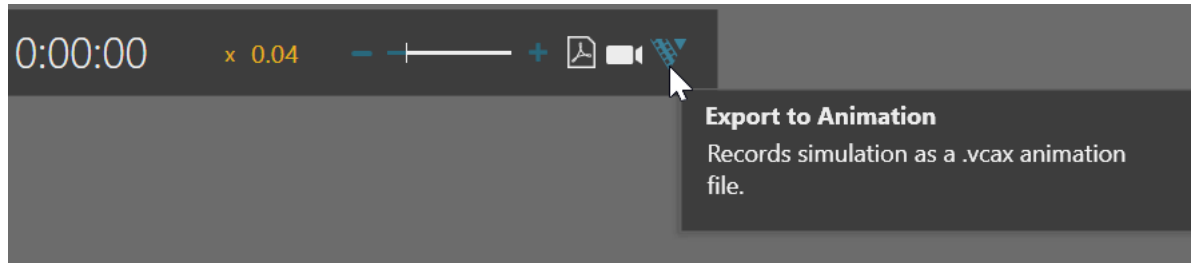
<http://store.steampowered.com/about>

3. Install SteamVR

1. Run Steam.
2. In Steam, go to **Library > Tools** and then search for SteamVR.
3. Right-click **SteamVR** and then click **Install Game**.

Supported File Types

Visual Components Experience allows you to open and play VCAX files. A **VCAX** file is a container for a 3D simulation recorded as an animation using a Visual Components 4.x product.



To create a VCAX file, see "Record a Simulation as Animation" tutorial.

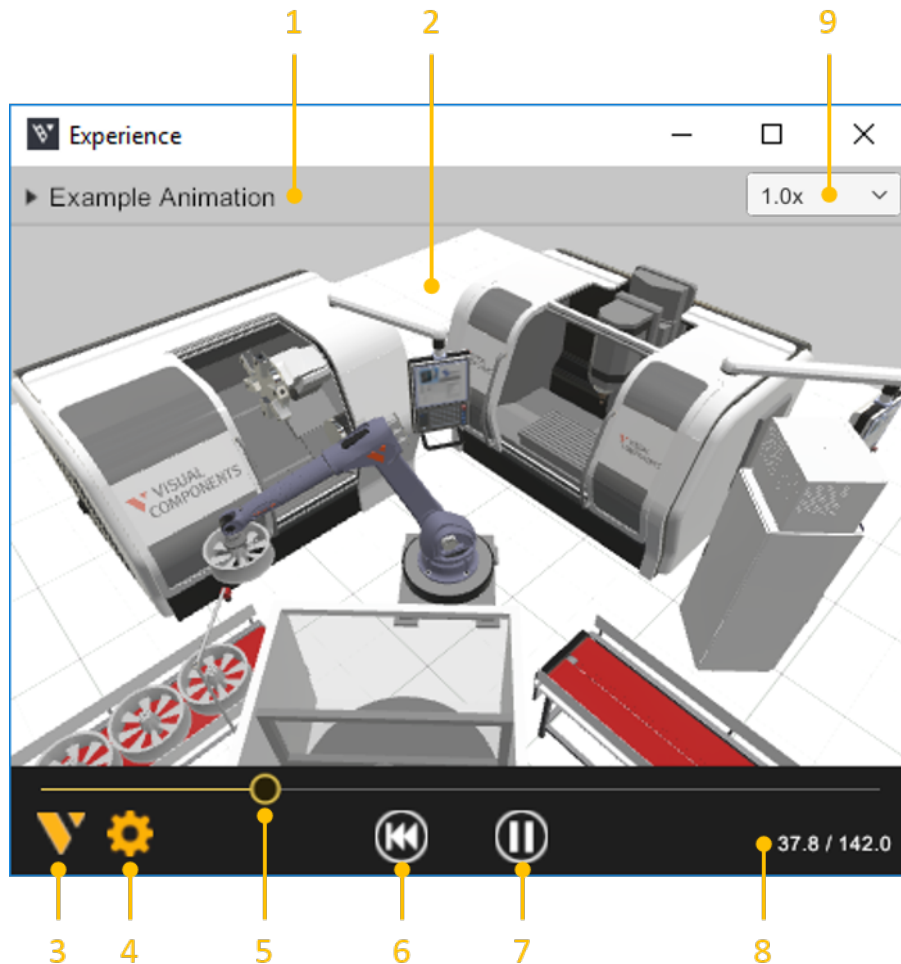
- **Academy**
<https://bit.ly/2NsE3tr>
- **Other** (download video)
<http://bit.ly/2AezIWC>

You can double-click a VCAX file to automatically open it in Visual Components Experience. Otherwise, you need to add VCAX files to your My Animations folder to list them in the app.

C:\Users\%username%\Documents\Visual Components\4.2\My Animations

Controls

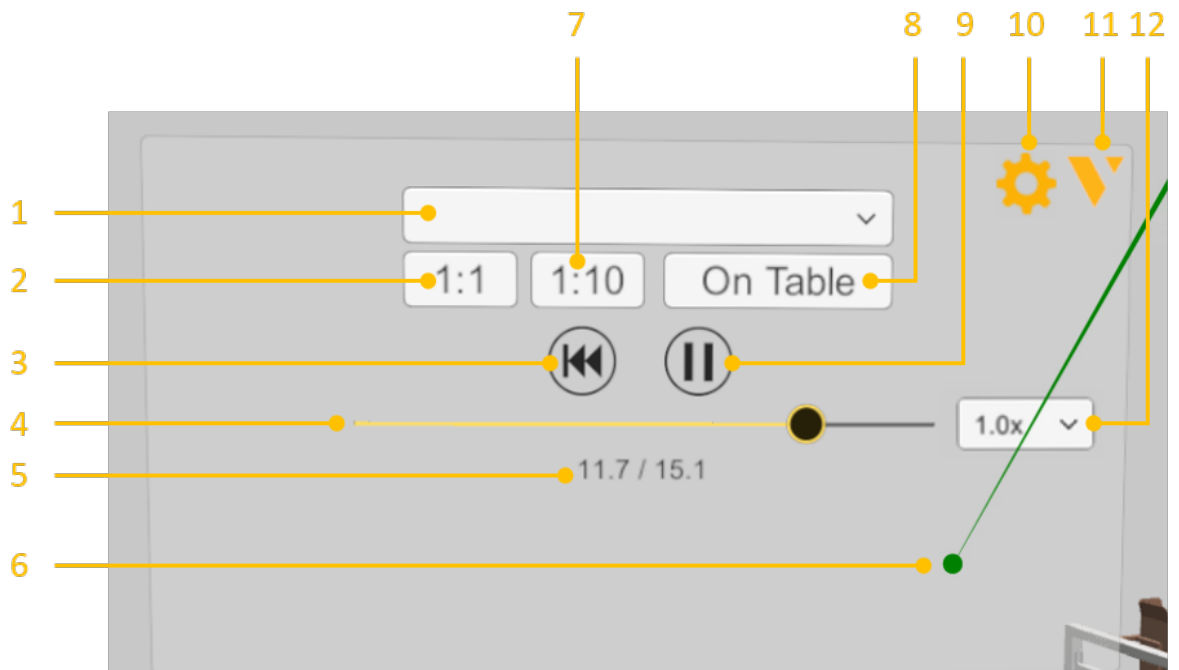
3D Viewing



1. **Select animation** allows you to select and open a VCAX file in the My Animations folder of your Visual Components documents.
2. **Viewport** displays the 3D scene and animation.
3. **About** displays app information.
4. **Quality Settings** displays a dialog for controlling the level of detail (LOD) and quality level of the viewport. The frame rate (FPS) of the scene is also indicated based on the current settings.
5. **Slider** and **Thumb** show the position of animation and allow you to jump forward or backward in time.
6. **Reset** returns animation to its initial state and time of zero.
7. **Play** allows you to start or stop animation.
8. **Time** shows the position (in seconds) of animation followed by its duration.
9. **Playback speed** can be changed to play the animation slower or faster.

Virtual Reality

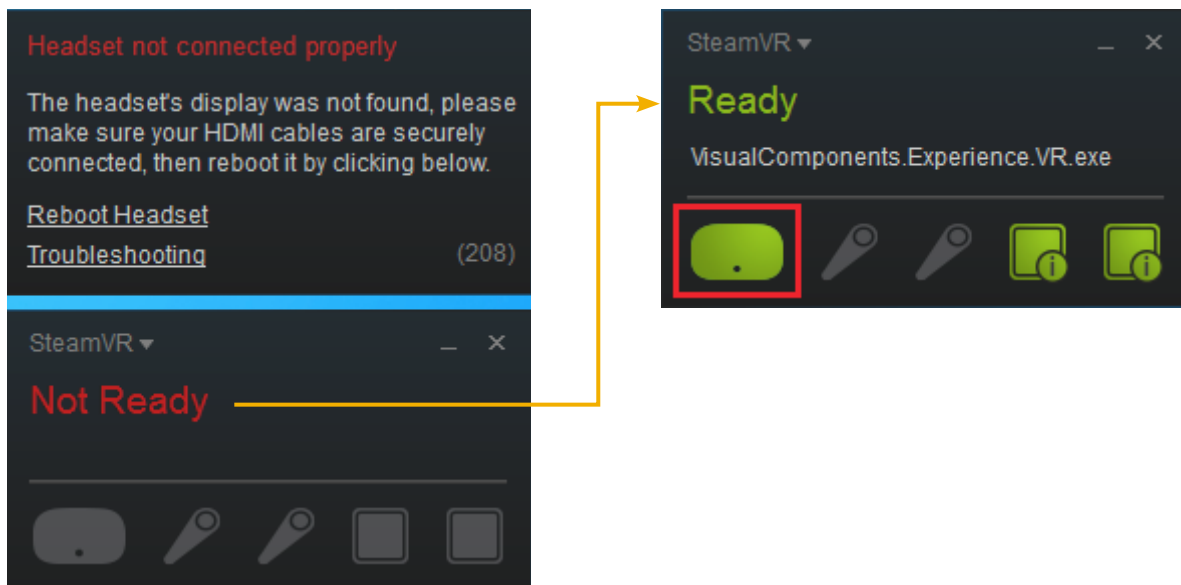
Main Menu



1. **Select animation** allows you to select and open a VCAX file in the My Animations folder of your Visual Components documents.
2. **1:1** scales components to their original size.
3. **Reset** returns animation to its initial state and time of zero.
4. **Slider** and **Thumb** show the position of animation and allow you to jump forward or backward in time.
5. **Time** shows the position (in seconds) of animation followed by its duration..
6. **Ray** is the pointer of a connected joystick that can be used for selecting objects and menu items.
7. **1:10** scales components to 1/10th of their original size.
8. **On Table** scales components to HTC Vive play area.
9. **Play** allows you to start or stop animation.
10. **Quality Settings** displays a dialog for controlling the level of detail (LOD) and quality level of the viewport. The frame rate (FPS) of the scene is also indicated based on the current settings.
11. **About** displays app information.
12. **Playback speed** can be changed to play the animation slower or faster.

Headset

A headset allows you to look around in the scene. You must connect the headset to SteamVR before using Visual Components Experience in Virtual Reality mode.

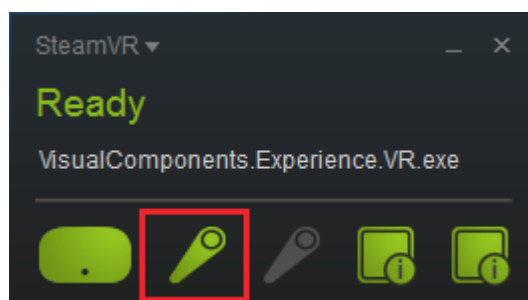


Joystick

A joystick allows you to select and interact with objects in the scene.

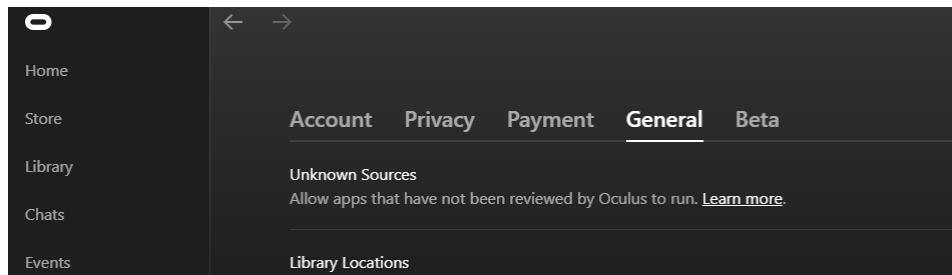
- **Connect joystick** - Press and hold Menu and System buttons
- **Show main menu** - Press the Menu button
- **Raise camera** - Press top face of trackpad
- **Lower camera** - Press bottom face of trackpad
- **Cast ray to display pointer** - Lightly press trigger
- **Select menu item** - Point at item and pull trigger
- **Teleport to new location** - Point at location and pull trigger
- **Interact** - Touch a interactable object and hold down the grip button. Requires VC Premium

You must connect the right joystick to SteamVR to support these actions.



Using Oculus Rift S with Visual Components Experience

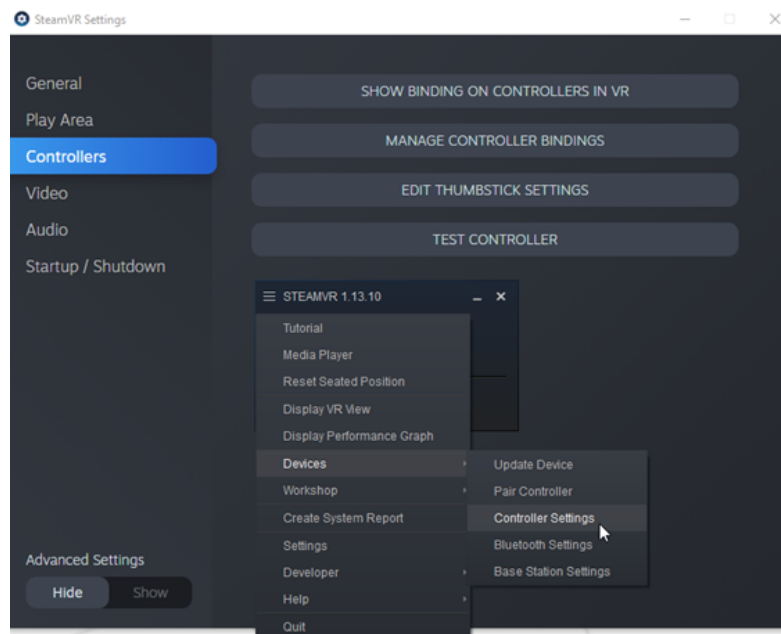
To use Oculus Rift S with steam VR, you must open the Oculus application and allow the Oculus to communicate with applications that have not been officially reviewed by Oculus. This is done in the Oculus application by going to Settings, General, and enabling the Unknown Sources.



After enabling unknown sources, you can use the Oculus device to control applications that use the Steam VR platform.

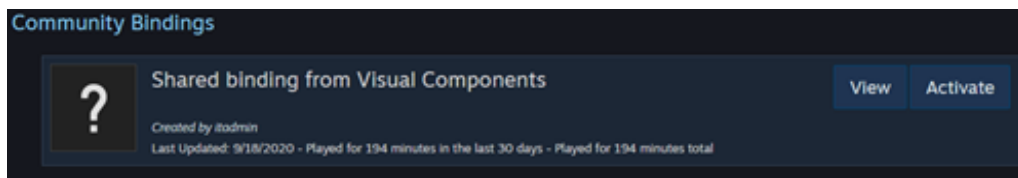
Because the default Oculus handheld device key binding is different from native Steam VR handheld devices, you must also change the key bindings before you can use the rift with VC Experience.

To change the key bindings in Steam VR, you must open Steam VR and go to Settings, Controllers, and press Manage Controller Bindings.



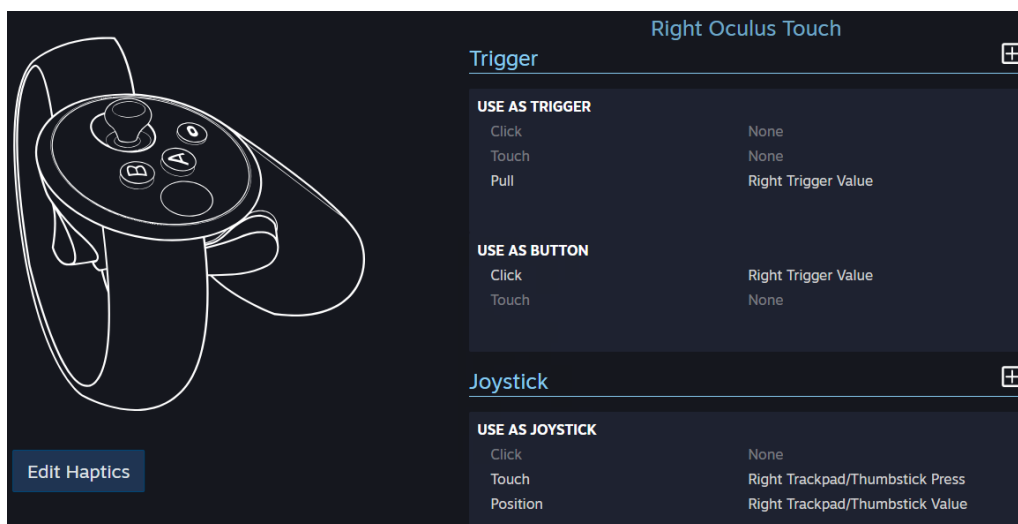
While in the binding settings, change the Active Controller Binding to Custom and press Choose another.

A window will pop up where you can select the correct application, which is VisualComponents Experience.VR. A ready-made key binding has been published in the steam workshop, which you can find from Community bindings.



To use the Shared binding from Visual Components, press Activate.

Alternatively, you can edit the default key bindings so that the right controller is configured as shown.



Right Oculus Touch

Trigger, Use as trigger
 Pull = Right Trigger Value
 Trigger, Use as button
 Click = Right Trigger Value

Joystick

Use as joystick
 Touch = Right Trackpad/Thumbstick Press
 Position = Right Trackpad/Thumbstick Value

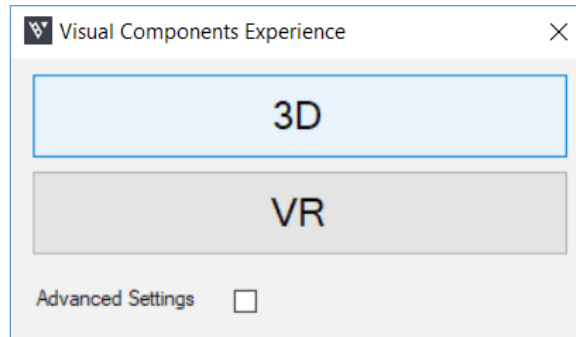
Using Samsung HMD Odyssey+ with Visual Components Experience

To use the Samsung HMD Odyssey with VC Experience you need to also install **Windows Mixed Reality for SteamVR** from the Steam store.

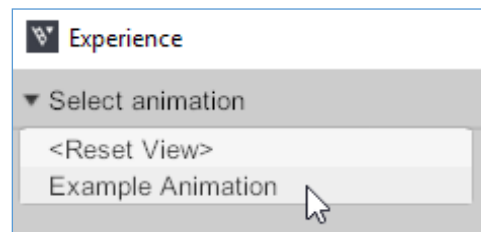
When you want to use the device with VC Experience, launch the **Windows Mixed Reality for SteamVR** and then launch Visual Components Experience in VR mode.

Experience 3D Viewing

1. Run Visual Components Experience.
2. Click **3D**.



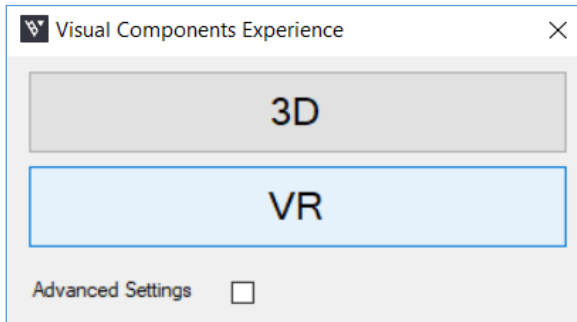
3. Click **Select animation**, and then select an animation to load it in the scene.



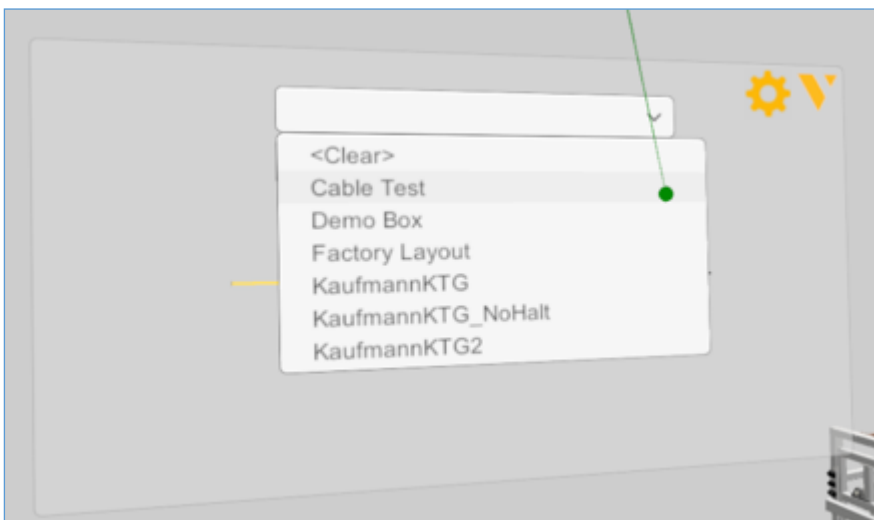
4. Do any of the following as needed:
 - To remove the animation, in **Select animation**, click **<Clear>**.
 - To return to the default view, in **Select animation**, click **<Reset View>**.
 - To orbit the camera in the scene, press and hold the right mouse button.
 - To pan the camera in the scene, press and hold the left and right mouse buttons.
 - To zoom the camera in the scene, rotate the mouse wheel.

Experience Virtual Reality

1. Run SteamVR, and then connect your headset and joystick(s).
2. Run Visual Components Experience.
3. Click **VR**.



4. With the joystick, press the **Menu** button, cast a ray, and then use **Select animation** to load an animation in the scene.



5. Do any of the following as needed:
 - To scale components, use the main menu. Generally, you would use 1:10 to view a large scene or On Table to walk around and view a scene.
 - To remove the animation, in **Select animation**, click **<Clear>**.
 - To return to the default view, in **Select animation**, click **<Reset View>**.

Interactive VR

Interactive VR requires Visual Components **Premium** 4.2 or higher product. Animation streaming is required to interact with components in VR. See the Academy lesson Streaming Simulation to VR on how to enable animation streaming.

For details on using interactive VR, check out the Academy tutorials. Components that enable interactive VR are found in eCatalog directory VR Interaction.

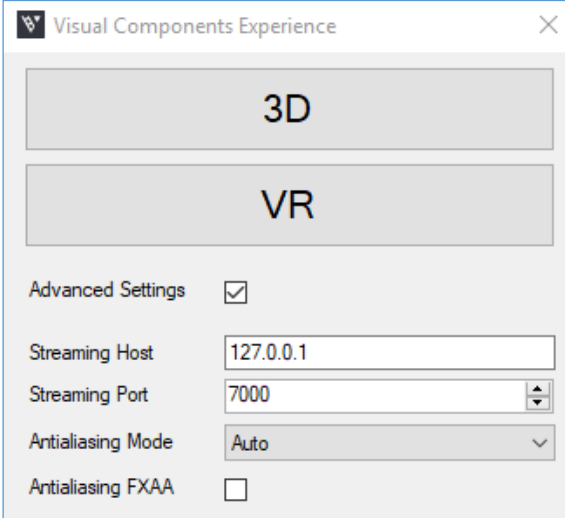
Advanced users should see the Python API documentation for vcVREvents.

Advanced Settings

On the launcher, you have the option to specify Advanced Settings related to animation streaming and Anti-Aliasing.

Streaming Host is the IP-address of the computer where the VC Premium application is running. If VC Premium and VC Experience are running on the same machine, then IP-address 127.0.0.1. Streaming Port must match the port defined in VC Premium.

Anti-aliasing settings can be changed by modifying the Antialiasing mode and Antialiasing FXAA (Fast Approximate Anti-Aliasing) options.



The screenshot shows a window titled "Visual Components Experience" with a close button (X) in the top right corner. Inside the window, there are two tabs: "3D" and "VR", with "VR" currently selected. Below the tabs, there is a section for "Advanced Settings" which is checked with a checkbox. Under this section, there are four settings: "Streaming Host" with a text input field containing "127.0.0.1", "Streaming Port" with a spin button set to "7000", "Antialiasing Mode" with a dropdown menu set to "Auto", and "Antialiasing FXAA" with an unchecked checkbox.