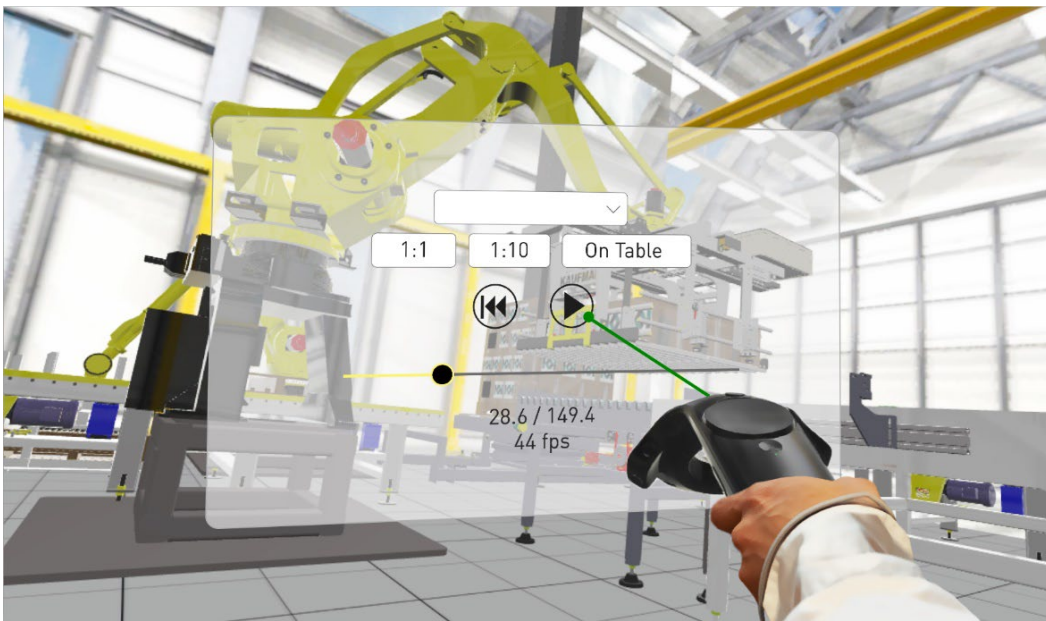


Visual Components Experience Guide

Visual Components Experience Guide 1.7 | Version: August, 2024



Visual Components Experience is a standalone application that allows you to view 3D animations 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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Supported devices

Windows OS

- Any device running Windows 10 or 11 can be used for viewing 3D animations.
- Refer to the minimum requirements for a Visual Components 4.x product.
<https://www.visualcomponents.com/system-requirements>
- An alternative for viewing 3D animations is the mobile version of Visual Components Experience.

Compatible VR Devices

Visual Components (VC) Experience relies on SteamVR for virtual reality (VR) 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

Note that if your computer has a Mini DisplayPort, you need to use a Mini DisplayPort cable. Based on field tests and feedback, adapters may not work.

- **HTC Vive and Vive Pro**
- **Oculus Rift S**
- **Samsung HMD Odyssey**
 - 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 Windows Mixed Reality for SteamVR first. Then, launch VC Experience in VR mode.
- **Valve Index**
- **Meta Quest 2**
- **Meta Quest 3**

Setup

For viewing 3D animations, install VC Experience on your device here:

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

For VR, this guide assumes that 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 your device according to the manufacturer's instructions.
2. Install Steam onto the device.
For more information, see <http://store.steampowered.com/about>.
3. Install SteamVR as follows:
 - a. Run Steam.
 - b. In Steam, go to Library > Tools and then search for SteamVR.
 - c. Right-click SteamVR and click Install Game.

Setup instructions for Meta Quest 3

Software Requirements

- Meta account
- Setup SteamVR
 - On the Meta Quest 3 install Meta's [Steam Link](#) app.
 - On the PC install and setup SteamVR (refer to beginning of this section).
 - On the PC install and setup [Meta Quest Link](#).

Hardware Requirements

- Meta Quest and PC should be connected to the same WiFi network.
 - Allow time for connecting a Meta Quest to a WiFi network.
 - If a WiFi connection is not possible using for example an office WiFi network, then try connecting the PC and Meta Quest to another router with simpler security rules.
 - Or use a smartphone to create a WiFi hotspot.

- For VC Experience the Meta Quest requires a cable connection to the PC.
 - A USB 3.0 to USB C cable is recommended (not included with headset).
 - Recommended cable type 10 Ft/3M with a right-angle USB C connection.
Example pictured below.

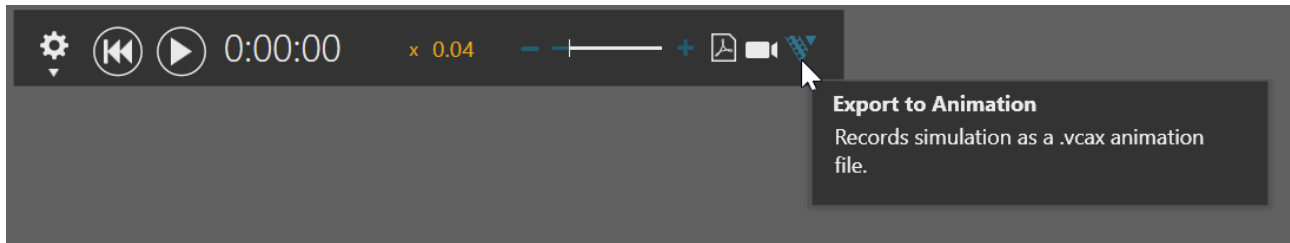


Meta Quest Link Software Setup

1. Connect the Meta Quest 3 to the PC using the USB cable and launch Meta Quest Link.
2. On the Quest 3 headset go to Settings > System > Quest Link and make sure Quest Link is set to enabled.
3. Then launch Quest Link. Now the Quest 3 headset should be in the Quest Link lobby.
4. On the PC open SteamVR. Now the Quest 3 headset should be in the SteamVR lobby.
5. On the PC open VC Experience. Now the Quest 3 headset should be in VC Experience.
6. If interactive VR is required, launch Visual Components and enable streaming. See [Interactive VR](#) section.
7. And note that using the white trigger on the right-hand controller you can interact with objects.

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 the Record a Simulation as Animation tutorial:

- To watch the tutorial from Visual Components Academy, go to <https://academy.visualcomponents.com/lessons/record-a-simulation-as-animation/>

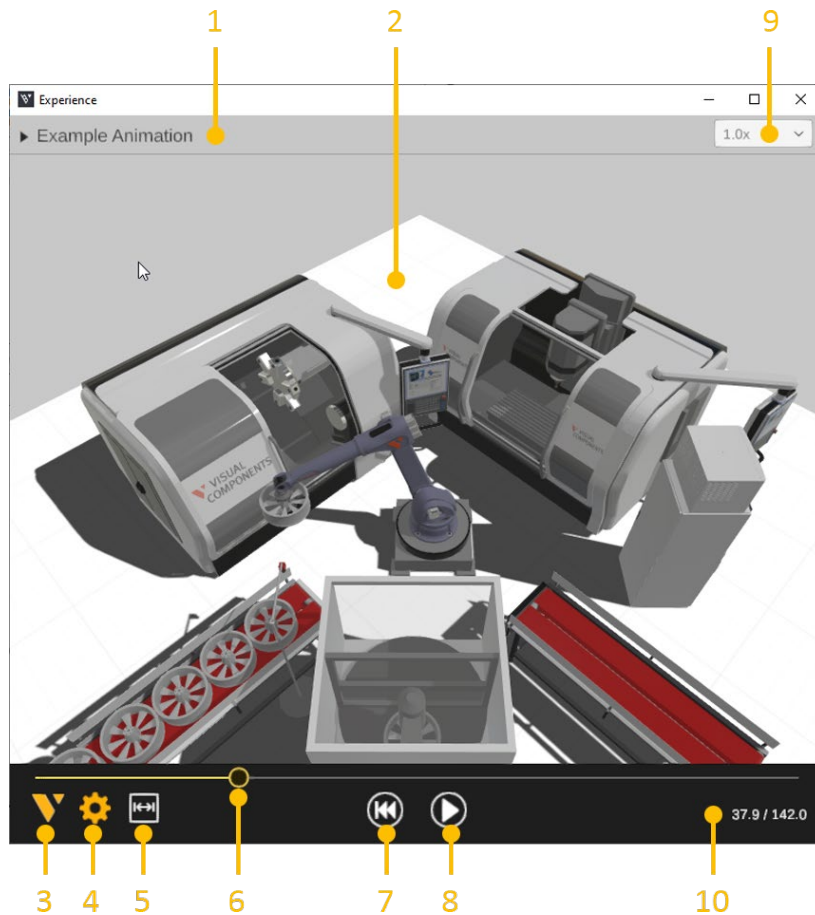
You can double-click a VCAX file on your device to automatically open it in Visual Components Experience.

Otherwise, you need to add VCAX files to the following folder to list them in the app:

C:\Users\%username%\Documents\Visual Components\Experience

Controls

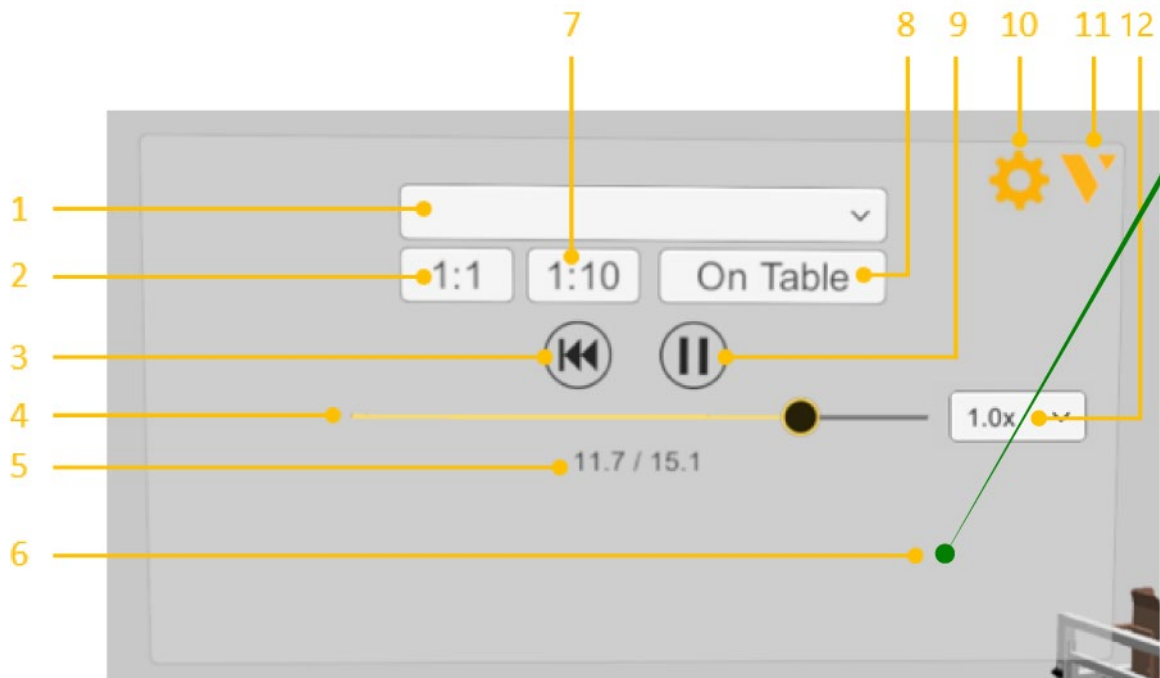
3D Viewing



1. Select animation allows you to select and open a VCAX file in the My Animations folder of your Visual Components documents.
2. Slider and Thumb show the position of animation and allow you to jump forward or backward in time.
3. Viewport displays the 3D scene and animation.
4. Reset returns animation to its initial state and time of zero.
5. About displays app information.
6. Play/Pause allows you to start or stop animation.
7. Settings displays a dialog for controlling the Level of Detail (LOD) and Quality level of the scene. User can also enable and disable Shadows in the scene as well as using the recorded camera (when available).
8. Playback speed can be changed to play the animation slower or faster.
9. Measurement enables the user to create and visualize distances between objects by clicking on geometries in the 3D World
10. Time shows the position (in seconds) of animation followed by its duration.

Virtual Reality

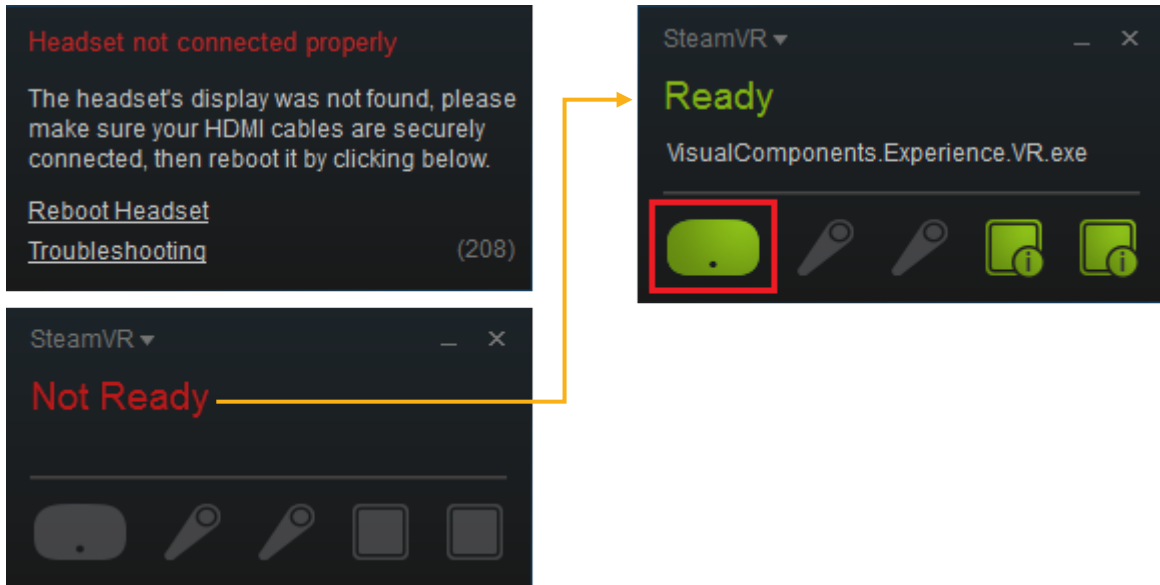
Main Menu



1. Select animation allows you to select and open a VCAX file in the My Animations folder of your Visual Components documents.
2. 1:10 scales components to 1/10th of their original size.
3. 1:1 scales the components to their original size.
4. On Table scales components to HTC Vive play area.
5. Reset returns animation to its initial state and time of zero.
6. Play allows you to start or stop animation.
7. Slider and Thumb show the position of animation and allow you to jump forward or backward in time.
8. 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.
9. Time shows the position (in seconds) of animation followed by its duration.
10. About displays app information.
11. Ray is the pointer of a connected joystick that can be used for selecting objects and menu items.
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.



Default bindings of controls

The following tables show what happens by default when you use the controllers in VC Experience.

Some actions can send data from Visual Components Experience to the Visual Components Premium application, provided that you have the layout open in Visual Components. Note that sending data also requires setting up a Python script with vcVREvent statements.

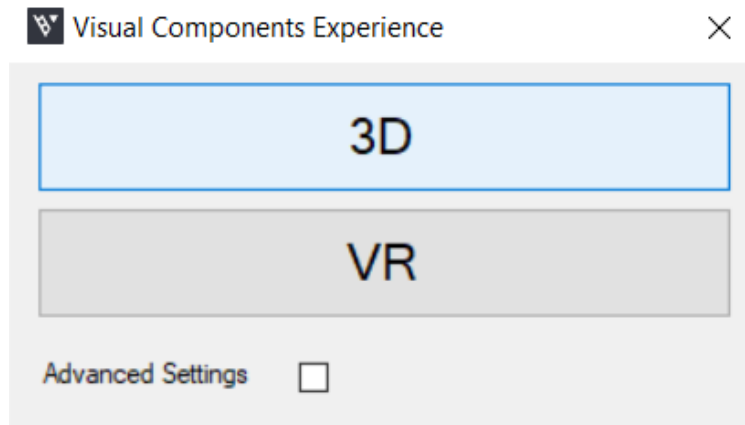
Button	Action	VR Event streamed to VC Premium
Left Trigger	- Interact with UI – When menu is showing - Grab Pinch	vrevents_triggerbutton
Right Trigger	- Interact with UI – When panel is showing - Grab Pinch - Measure (when using Measuring tool)	vrevents_triggerbutton
Left Menu	- Shows / Hides Tool Palette	vrevents_menubutton
Right Menu	- Shows / Hides Menu	vrevents_menubutton
Left Trackpad North	- Raises the camera	
Left Trackpad South	- Lowers the camera	
Left Trackpad		vrevents_primary2daxisclick vrevents_primary2daxistouch vrevents_primary2daxis
Right Trackpad North	- Starts teleport (when using Teleport tool). Position for teleporting is set with the control position. Teleport is done when the button is released.	
Right Trackpad East	- Turns camera left 90 degrees	
Right Trackpad West	- Turns camera right 90 degrees	
Right Trackpad		vrevents_primary2daxisclick vrevents_primary2daxistouch vrevents_primary2daxis
Left/Right Grip	- Pauses the simulation while clicked - Interact with components in VR during Streaming	vrevents_gripbutton vrevents_grip

Custom bindings of controls

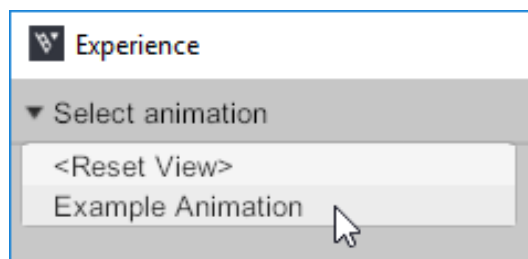
If you are not enjoying the default bindings, now you have the possibility to modify the controller bindings in SteamVR.

View 3D animations

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

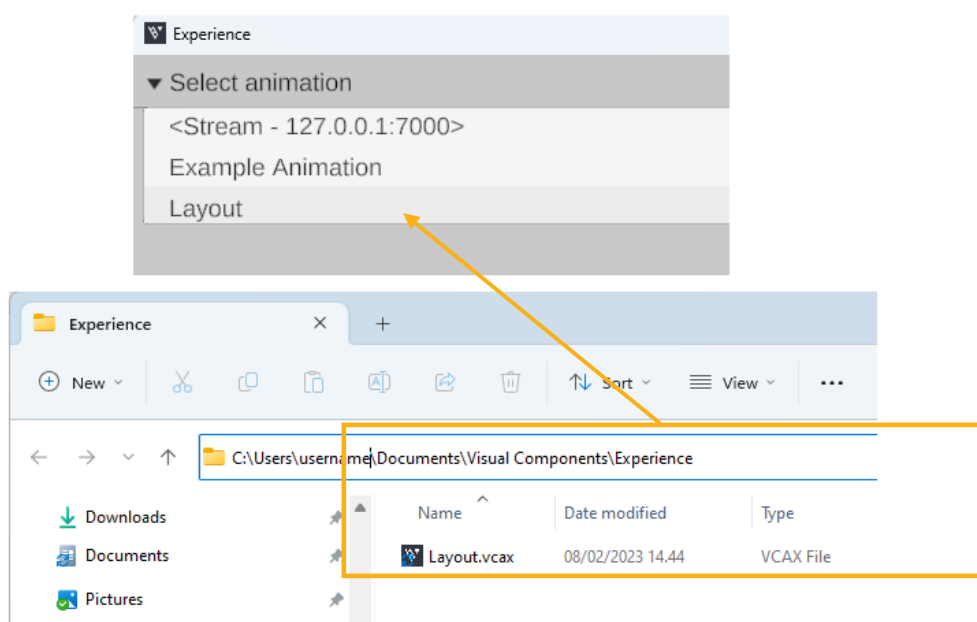


3. Click Select animation and select an animation to load it in the scene.



Tip: Add your VCAX files (see [Supported file types](#)) to the following folder to list them under Select animation:

C:\Users\%username%\Documents\Visual Components\Experience

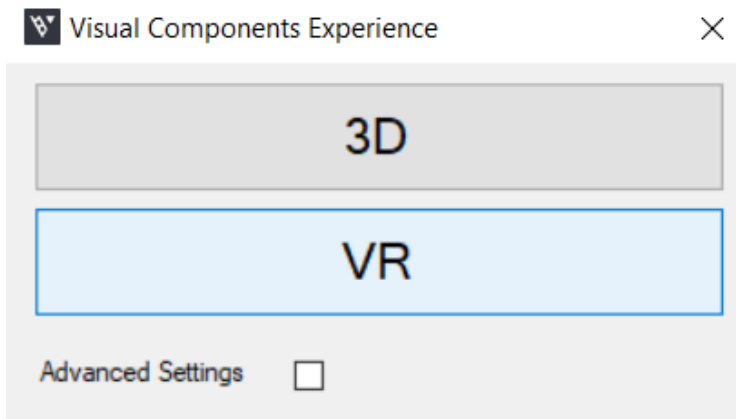


4. Do any of the following as needed:

- 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.

Use the Virtual Reality mode

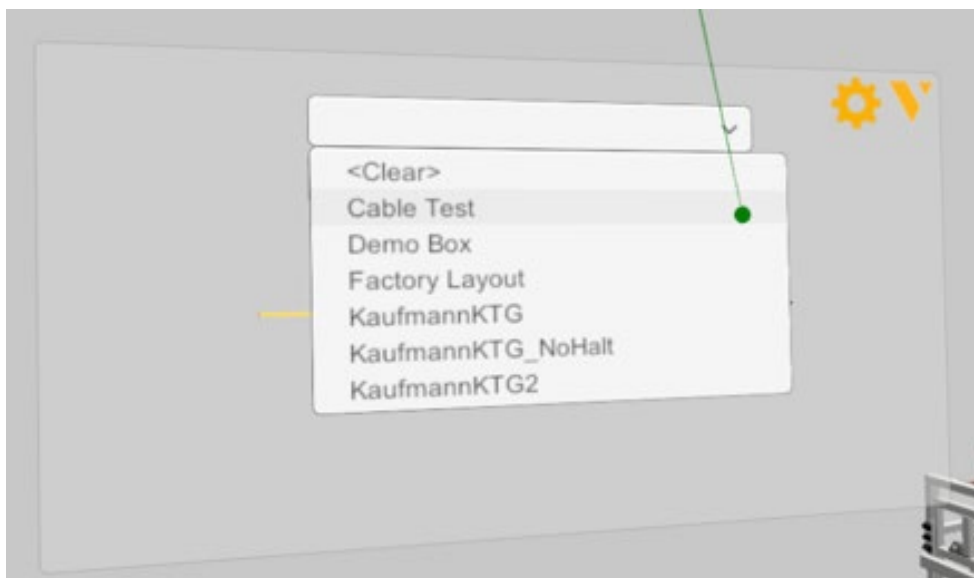
1. Run SteamVR, and then connect your headset and joystick(s).
2. Run Visual Components Experience.
3. Click VR.



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

Tip: Add your VCAX files (see [Supported file types](#)) to the following folder to list them under Select animation:

C:\Users\%username%\Documents\Visual Components\Experience



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.

<https://academy.visualcomponents.com/lessons/streaming-simulation-to-vr/>

For details on using interactive VR, check out the Academy tutorials. Components that enable interactive VR are found in the 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 the IP-address is 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.

