Getting Started in EditorVR

Unity

[doc version 2]

Quick links:

- [Download Unity build (experimental)](#)
- [Download EVR package](#)
- [Dedicated forums](#)

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Experimental Status

It's important to note that EditorVR is an experimental feature. As such, there is no formal support (e.g. FogBugz, support@unity3d.com, Premium Support, etc.) offered, so please do not use these channels. **Instead, take your questions, suggestions, and comments to our dedicated forum.**

To help ensure you have a good experience, and to help us answer your questions (hey, we're a small team!), we encourage you to try it out first with a small VR-ready scene. Use life-sized objects, nothing too big or small. Dive in and have fun just playing around, instead of trying to use your existing project.

As with any experimental/preview/alpha/beta build, it is always a good idea to make a backup of your project before using the build.

Experimental means this:
- Namespaces, classes, software architecture, prefabs, etc. can change at any point. If you are writing your own tools, then you might need to update them as these things change.
- There won't always be an upgrade path from one release to the next, so you might need to fix things manually, which leads to the next point...
- Stuff can and will break (!)
- There's no guarantee that this project will move out of experimental status within any specific timeframe.
- As such, there is **no guarantee** that this will remain an actively supported project.

For Tool/Workspace Developers

This experimental release of EditorVR is targeted at developers who want to customize EVR, or work on building their own tools. To get started, take a look at our companion document Extending EditorVR.

Downloading EditorVR (EVR)

EditorVR requires two components:
- A custom build of the Unity Editor, which you should install to a separate directory from your main Unity build (otherwise you may overwrite a default installation).
- An EditorVR Unity Package, which you need to import into your project.

These files will continue to be updated. Check the EditorVR forum for announcements about updates.

How To Add EVR to Your Project

- (Optional safeguard) Make a copy of your project
- Launch the Experimental build of Unity for EditorVR
- Open your project
- Import the EditorVR.unitypackage into your project via **Assets** > **Import Package** > **Custom Package…**
- You will likely see this dialog box. Click **Apply** once:
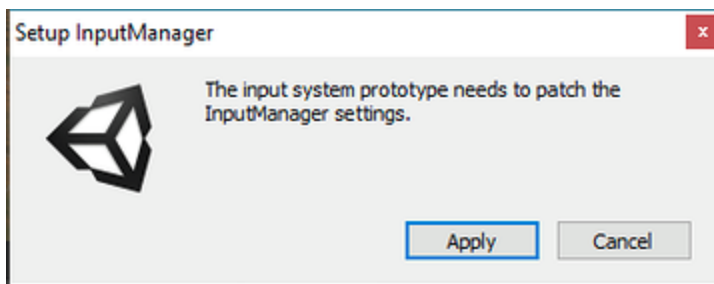
- You need to set up your default VR platform in **Edit** > **Project Settings** > **Player**. If you want to use Oculus Rift + Touches, then Oculus must come first, before OpenVR.
- If you are using Oculus Rift + Touches, please download the Oculus Utilities for Unity and import them into your project.
- If you are using the Vive, please download the SteamVR plugin from the Unity Asset Store and import it into your project.
- If you are using older hardware, you can try using your Oculus DK2 with Sixense Hydras. You'll need to download the Sixense plugin from the Unity Asset Store and import into your project.
- To start EVR, go to **Windows** > **EditorVR** (or press Ctrl-E on your keyboard), then put on your headset.
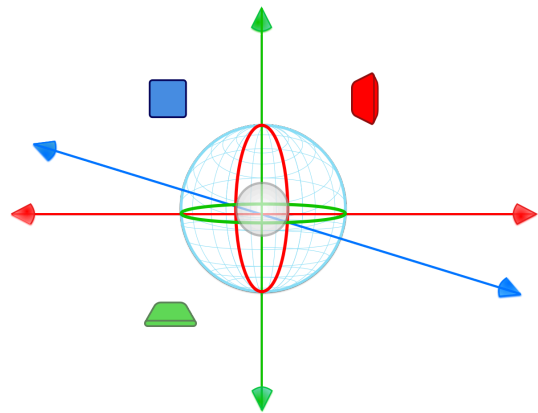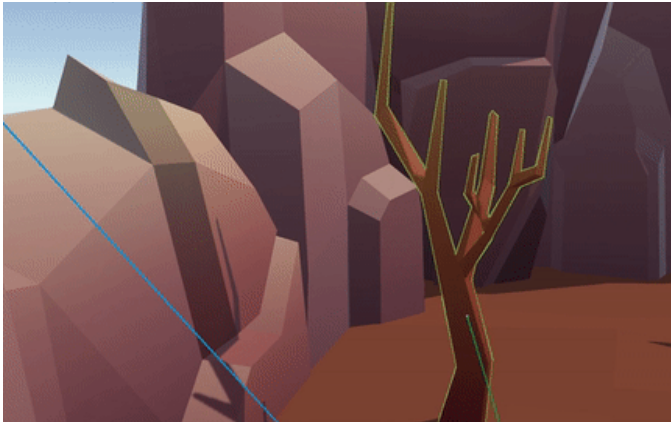
Selection

There are **two** kinds of selection: **direct selection** and **ray selection**.
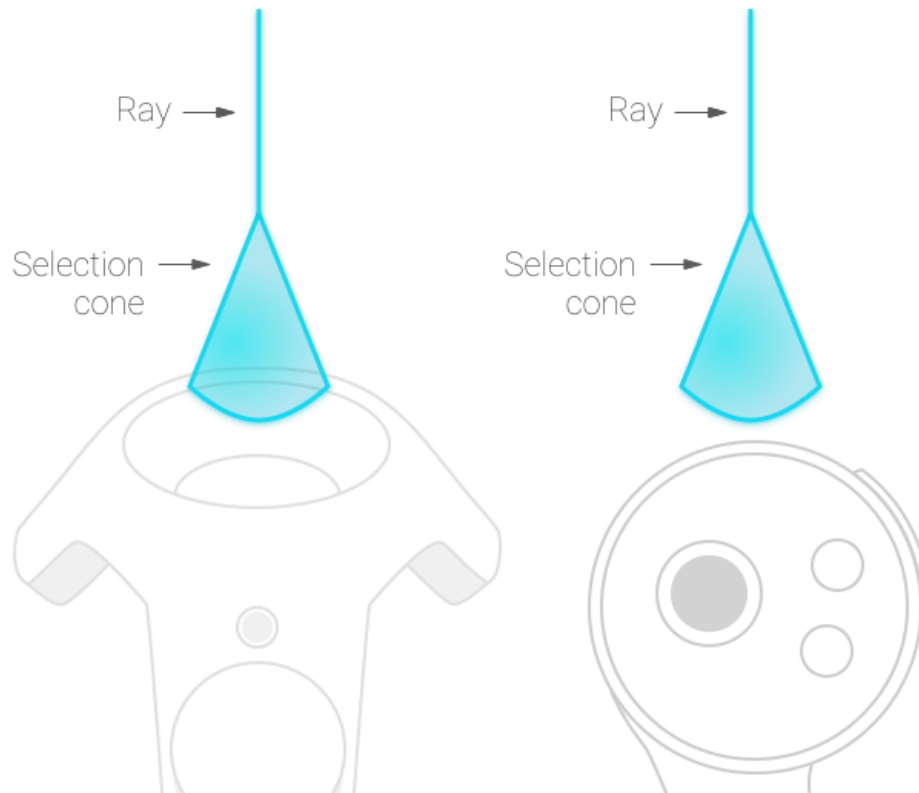
- **Direct selection** allows you to grab any object within arm's reach. Dip the **blue selection cone** at the end of your controller into an object for direct selection and pull the primary trigger (usually under your index finger).

- **Ray selection** allows you to move objects further than arm's distance away. When objects are selected with the ray, the Manipulator Gizmo comes up.

Multiple select: select while squeezing the secondary trigger (or grips on Vive). In this context this trigger is used as a 'shift/cmd' modifier.

The Manipulator Gizmo

Select a plane or axis of the Manipulator Gizmo to move the object along that path, or select the **free selection sphere** in the center to move the object freely.
The three types of movement are:

- Plane movement
- Axis movement
- Free selection sphere: move the joystick (Rift) or thumbpad (Vive) back and forth along the Y-axis to move the object closer or further away.

Menus

- **Main Menu:** Accessed by selecting the ubiquitous Unity button at the bottom of each controller. To select the button, point at it with the controller in your other hand, and pull the trigger. This opens up a menu for the hand you are selecting with. Please note, some tools are single-handed.


- The Main Menu is the 3D equivalent of the Unity menu bar: it allows you to access Tools, Workspaces, Settings, etc. in EVR.
  - To open the Main Menu on either hand, activate the Unity button with the ray from the other hand by pulling on the primary trigger.
  - Close the menu the same way: click the Unity button with the ray from the other hand.
  - Swipe your thumb across the thumbad (Vive) or flick the joystick (Touch) to rotate the menus on the hand that has the menu.
  - Scroll a window by pointing at it with the ray and using the thumbpad (Vive) or joystick (Touch) while over the menu.
  - Some menu buttons can open sub-menus (e.g. snapping settings). Click on the title text to navigate back to the parent menu.

- **Pinned tool button:** The last tool you selected for a specific hand displays below the Unity button on your controller. You can use it to toggle off/on the tool without having to re-open the Main Menu.

- **Radial menu:** The radial menu appears when objects are selected, or certain actions can be taken. It is the equivalent of a 2D contextual menu.
  - The radial menu hides when there is no object selected, so to get rid of it you would deselect by pointing the ray over empty space and pulling the trigger.
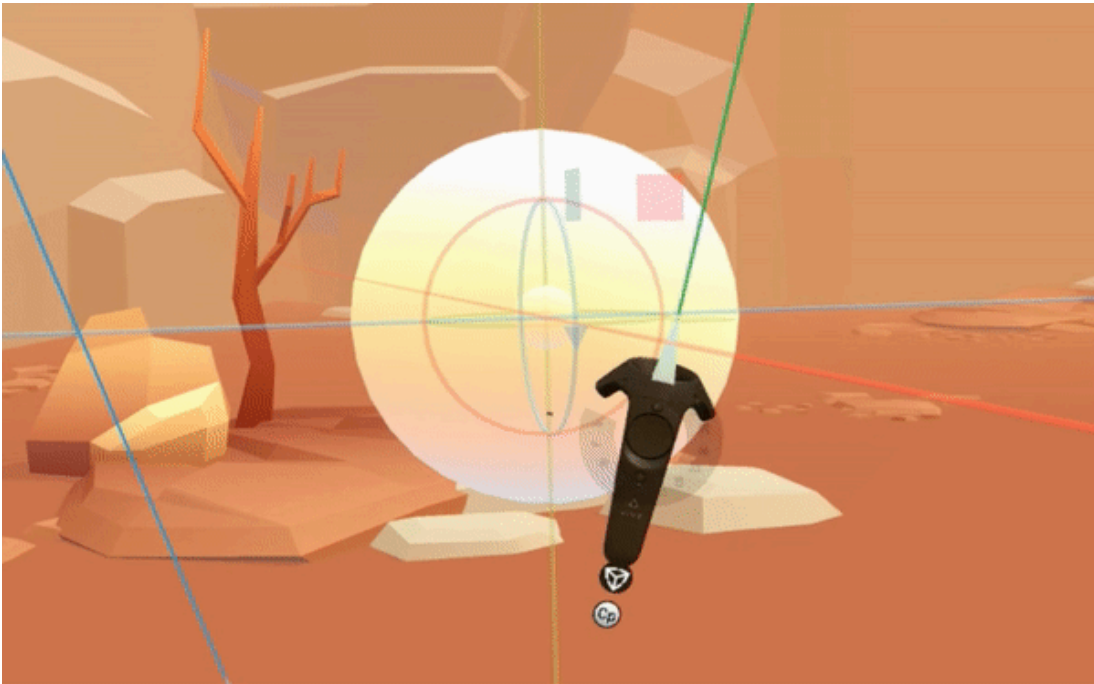
- ○ Available actions in order from top to bottom with the latest version of EVR:
  - ■ Redo
  - ■ Undo
  - ■ Clone
  - ■ Cut
  - ■ Copy
  - ■ Paste
  - ■ Delete
  - ■ Select Parent (move up hierarchy)
  - ■ Lock / Unlock
  - ■ Change Pivot (Center vs. Origin)
  - ■ Change Rotation Pivot (Local vs. Global)

The radial menu contents change depending on what you have selected and what actions are available. The illustration here shows an example of two new buttons being added to the menu.

- ● The radial menu is selectable in two ways: by using the thumb pad or joystick, or by selecting with the ray on the other hand.
- ● When an item is locked, hover over the object for a few seconds until the radial menu comes back up and then select the unlock button. You can select and unlock objects using the [Locked Objects workspace](#).
- ● **Known issues:**
  - ○ Undo/redo do not record all change history yet.

Snapping

Snapping can be enabled or disabled by using the section on the main menu labeled 'Snapping'. Here, you can direct how the mode will function, i.e. snap via pivot or bounds, via direct selection or manipulator, snap to ground or surfaces, etc.

By enabling 'Bounds', objects can snap to each other by directly selecting them and stacking them on top of one another.

By enabling 'Pivot', objects can snap to a surface by selecting an object via the free selection sphere (center of the [manipulator gizmo](#)), and navigate the object to the desired surface.
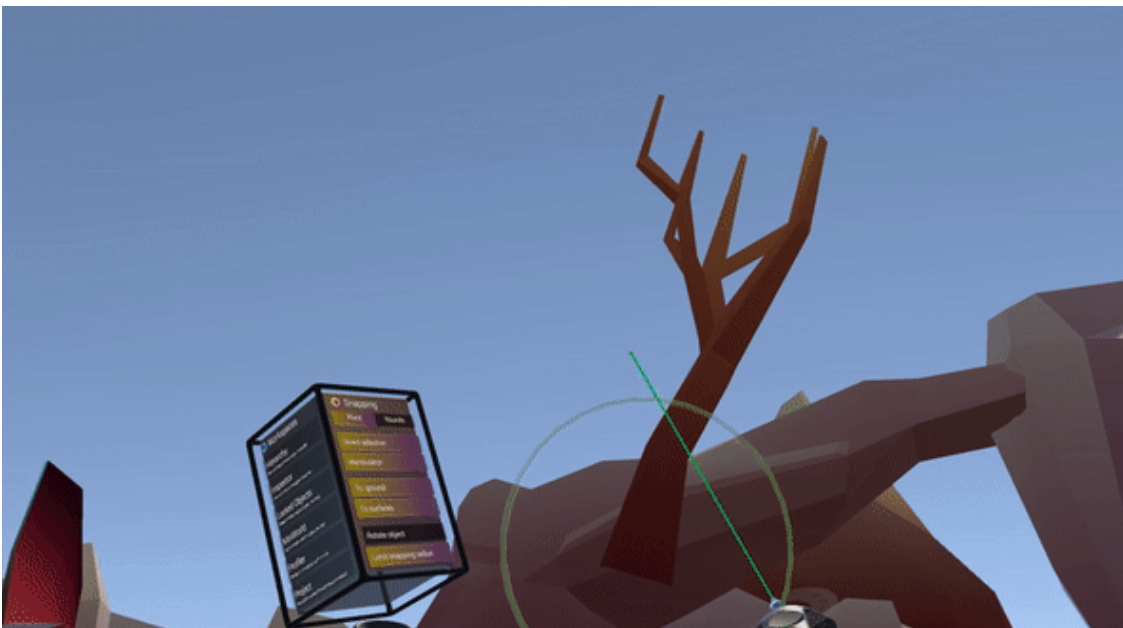

By enabling 'Rotate object', objects will automatically rotate to their root orientation when snapped to a surface.

Tip: You can also enable 'Limit snapping radius' for further controlled placement of objects.

Workspaces

Workspaces are the equivalent of 2D windows in VR. You can open various workspaces using the Main Menu.

Workspaces can be moved, resized, or rotated. To move or rotate, put the selection cone inside the front face of the workspace, then select by pressing down on the secondary trigger (Rift) or the grips (Vive). **Make sure you're grabbing the face, not the scale or view UI.**
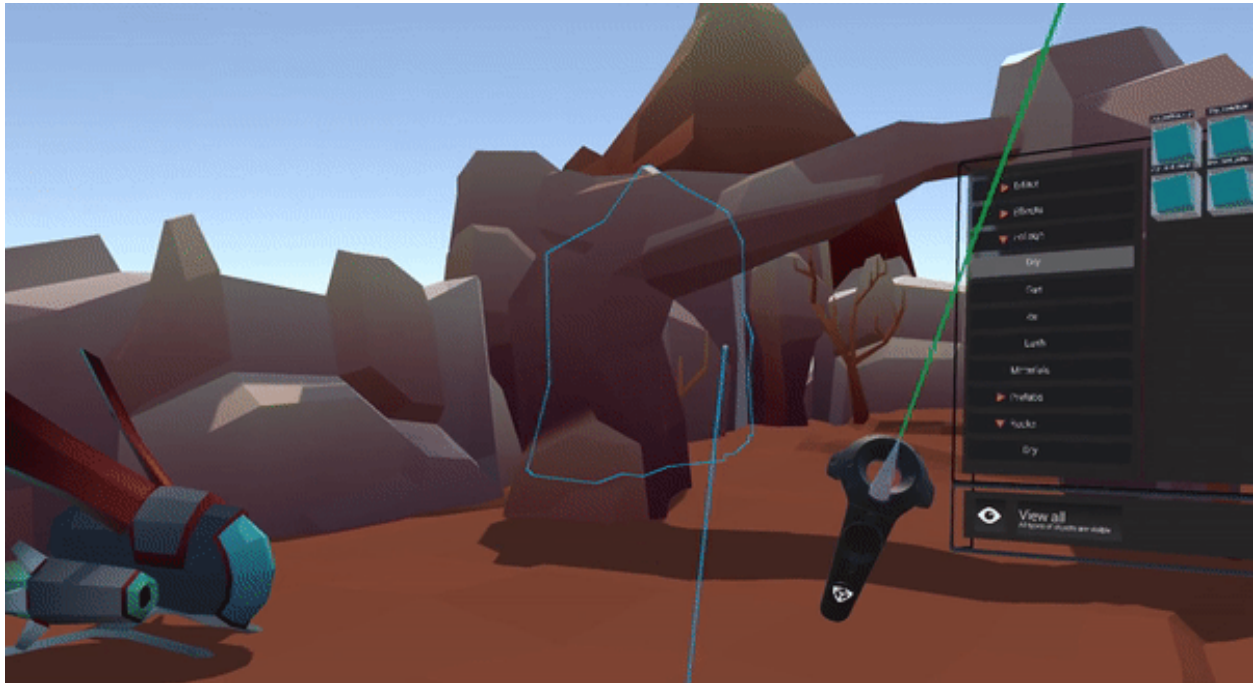

To resize, hold the controller near an edge until the resize arrows show, then hold down the secondary trigger (Rift) or the grip button (Vive).
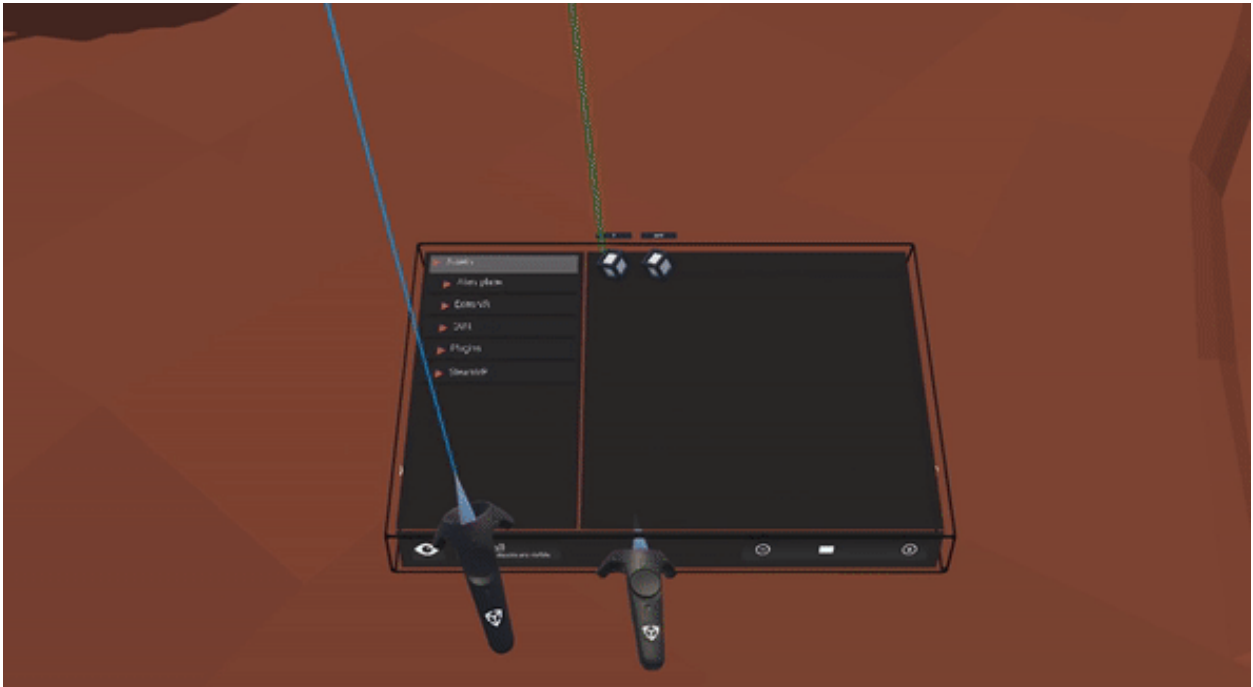
To close a workspace, click the [X] on the left hand side of a workspace.

To scroll, either dip the selection cone directly in the pane, or use the ray or thumbpad.

Tip: If a workspace is far away, point at the face and double-click the secondary trigger (Rift) or grip buttons (Vive) to 'call' it to you!
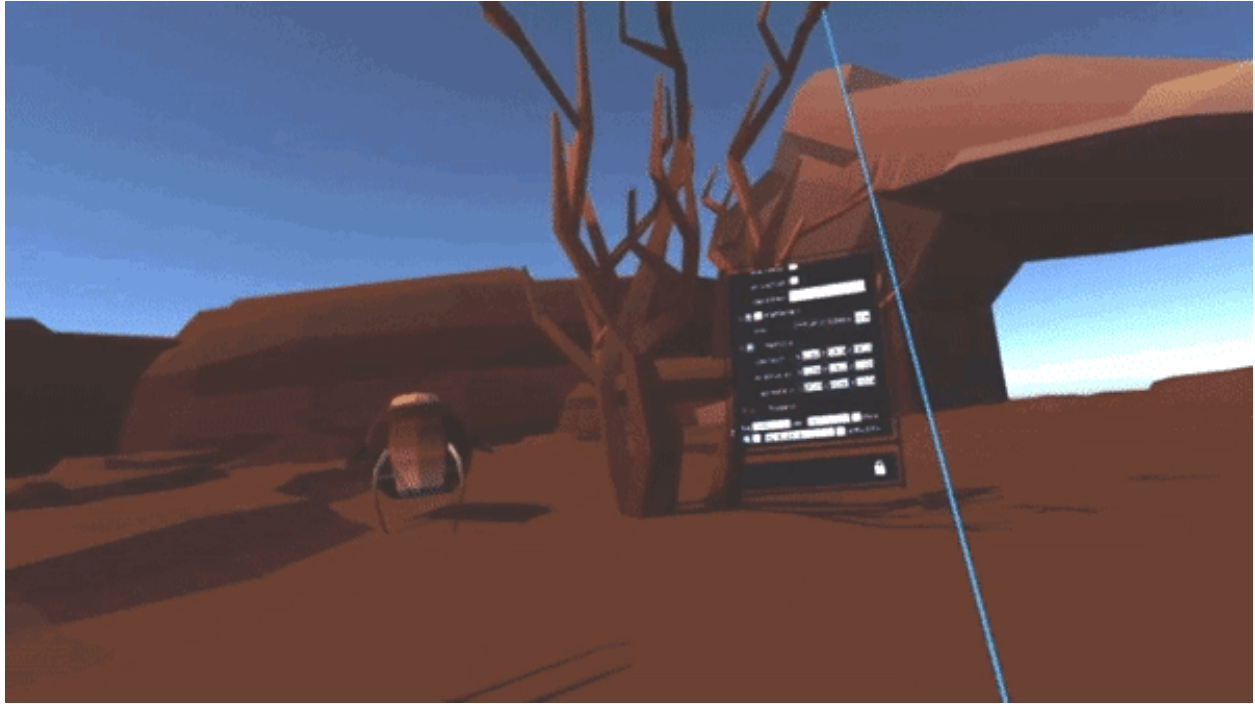
Here is the list of current workspaces that come as defaults:

- **Console:** View errors, warnings and other messages
- **Hierarchy:** View all GameObjects in your Scene(s)
- **Locked Objects:** View all locked GameObjects in your Scene(s)
- **Inspector:** View and edit GameObject properties
- **MiniWorld:** Edit a smaller version of your Scene(s)
- **Profiler:** Analyze your project's performance
- **Project:** Manage the Assets that belong to your project
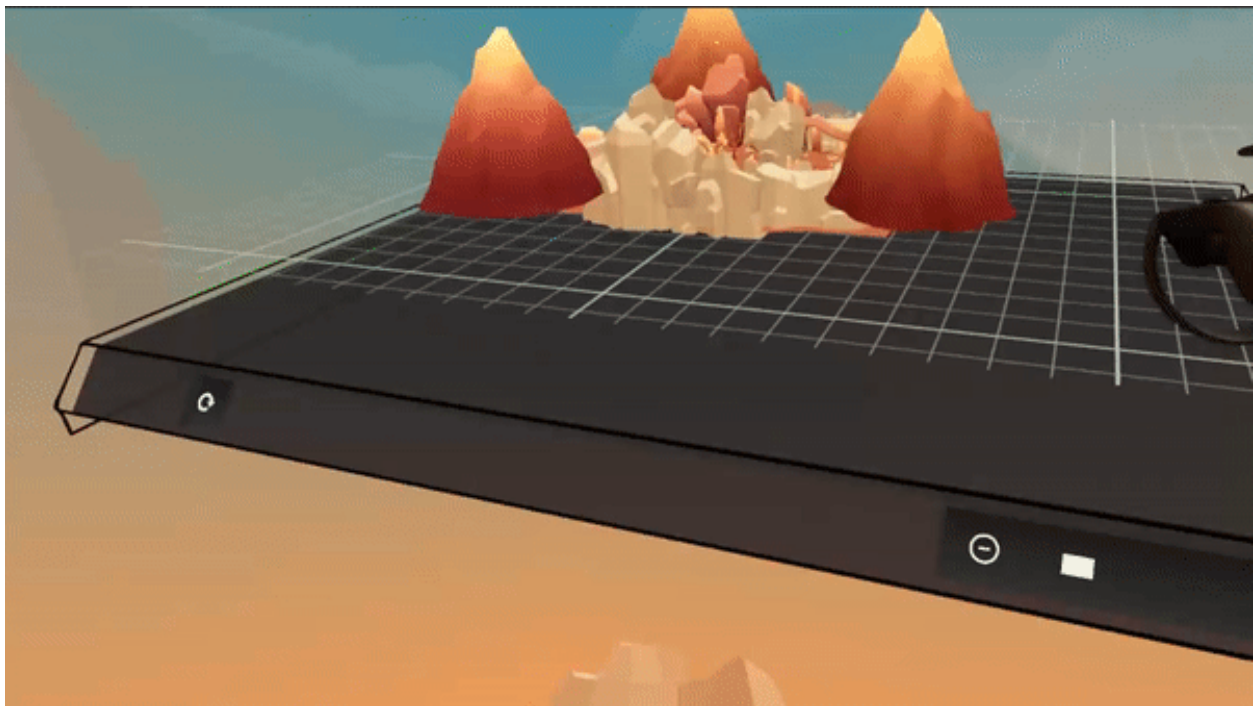
Using the MiniWorld

The MiniWorld is a workspace that shows the exact same scene you're already in, but smaller. It's very useful for moving large objects or rearranging a lot of life-sized objects quickly.

You can move objects in the MiniWorld using the selection cone (trigger). Read more about the difference between **ray selection** and the **selection cone** in the Selection section, above.

To move the MiniWorld view, dip your cone into the top-pane of the workspace (which initially displays the grid) and move it around using the secondary trigger (Rift) or the grip buttons (Vive).

If you lose where you are in the MiniWorld, you can select the Reset icon to get back to the root, or the button labeled 'Center on Player'.

Tips: Use the Refresh icon on the front of the MiniWorld to reset the view if you get lost, or use the Finder Arrow to find yourself on the board. Use the Reset button on the right side of a workspace to return the workspace to its original size.
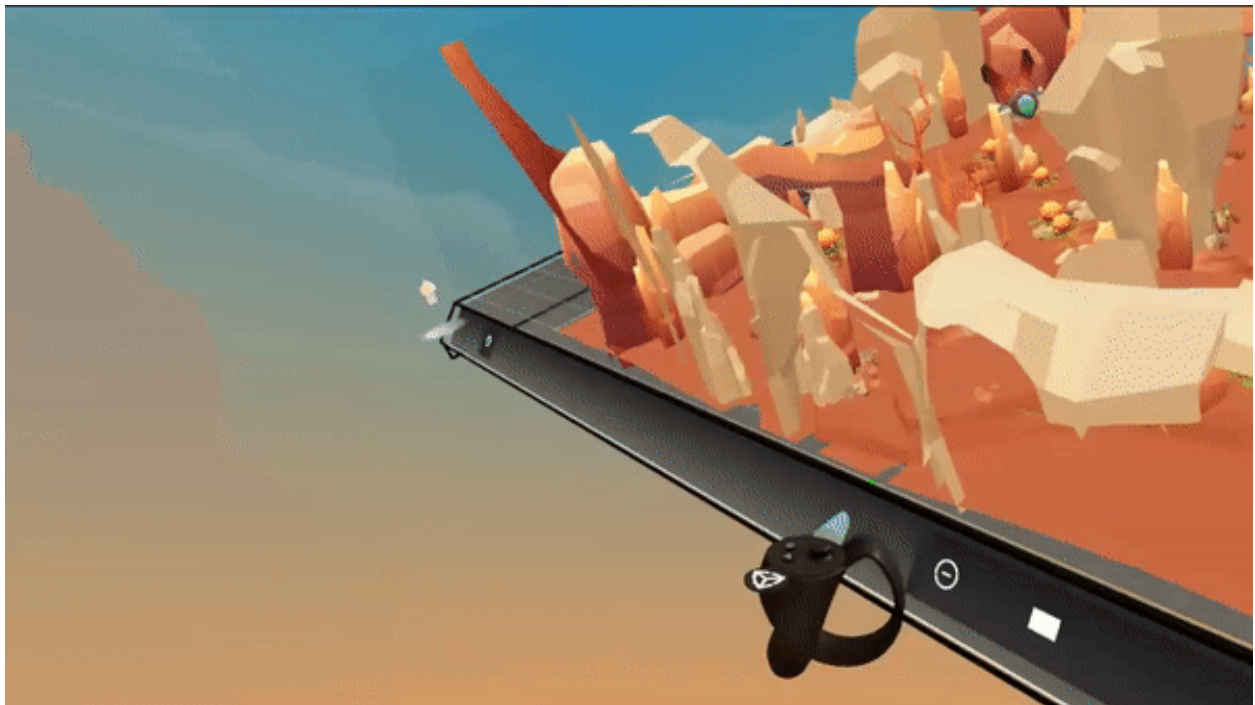
Known issues:
- The MiniWorld doesn't show all types of objects or lighting for performance reasons.
- You cannot grab small objects in the MiniWorld easily. If you can't grab something, try zooming in.

Using the Project Workspace

The Project workspace (see Unity documentation on the [Project view](#)) works much the same way it does in regular Unity: you can open and close folders, look at different types of Assets, drag them into the Scene, and filter by Asset type.

The left-hand side of the view shows folders, and the right-hand side shows Assets. **Prefabs and models aren't rendered in the Project view until you hover over them.** This is for performance reasons.

Drag objects out of the Project view to add them to the Scene. The bigger they are, the further away they instantiate from you. This is so they don't hit you in the face.

Known issues:
- We need to tweak where objects instantiate.

Using the Hierarchy

The Hierarchy (See Unity documentation on the [Hierarchy window](#)) shows which GameObjects are currently in your Scene. Click on an object in the Hierarchy to select the object in the Scene (Note: you may have to look around for it!).


Using the Inspector

The Inspector (See Unity documentation on the [Inspector window](#)) is used to view and edit the properties and settings of GameObjects, Assets, and other preferences and settings in the Editor.

When you select a GameObject in EditorVR, or from the Hierarchy Workspace, the Inspector displays the GameObject's components, including Transform, which exposes position, rotation, and scale values.

Tip: When you use the selection cone to directly select a value, a keyboard appears to allow you to edit the numerical values.
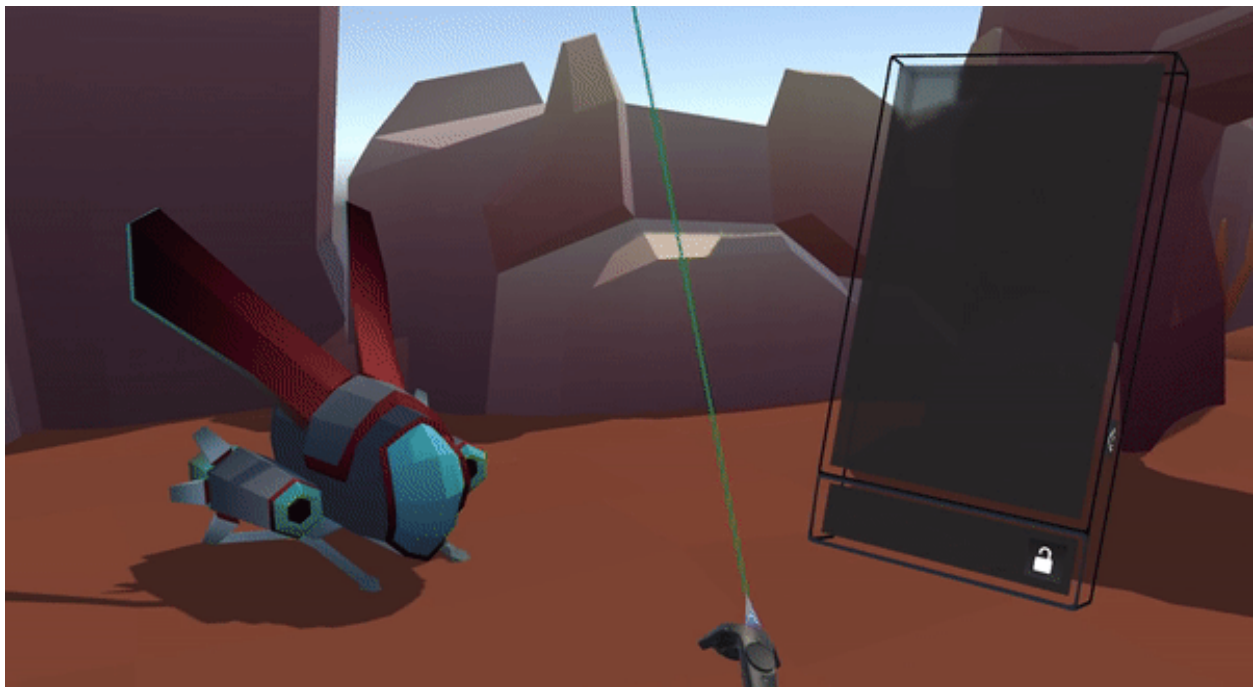
Known issues:
- The alphanumeric keyboard has not been enabled yet.

Locked Objects

The Locked Objects workspace shows a list of all of the locked GameObjects in the scene. Locked objects are not selectable by ray in the scene.

Tip: You can lock and unlock items from the hierarchy or directly from the radial menu by clicking on the lock icon. 🔒

Locomotion

Blink locomotion: To use Blink locomotion, use the **Menu** button on Vive, or the **B** button on Rift. Blink locomotion lets you quickly move around large spaces by pointing an arc where you want to go with the trigger. On release, you're zoomed to the new position. You can cancel blink locomotion *by pointing the arc up*.

Default: If you don't have anything selected, or any menu open, the joystick (Rift) and thumbpad (Vive) let you zoom around. While it can make some people sick, it's useful to have a quick way to turn yourself or move around a bit while standing at a desk. You can only move *or* rotate, not both at the same time (at least, not on the same controller).

Re-scaling the World

You can re-scale and rotate the world by holding down the secondary trigger (grip button on Vive) on both controllers, and pulling in/out.
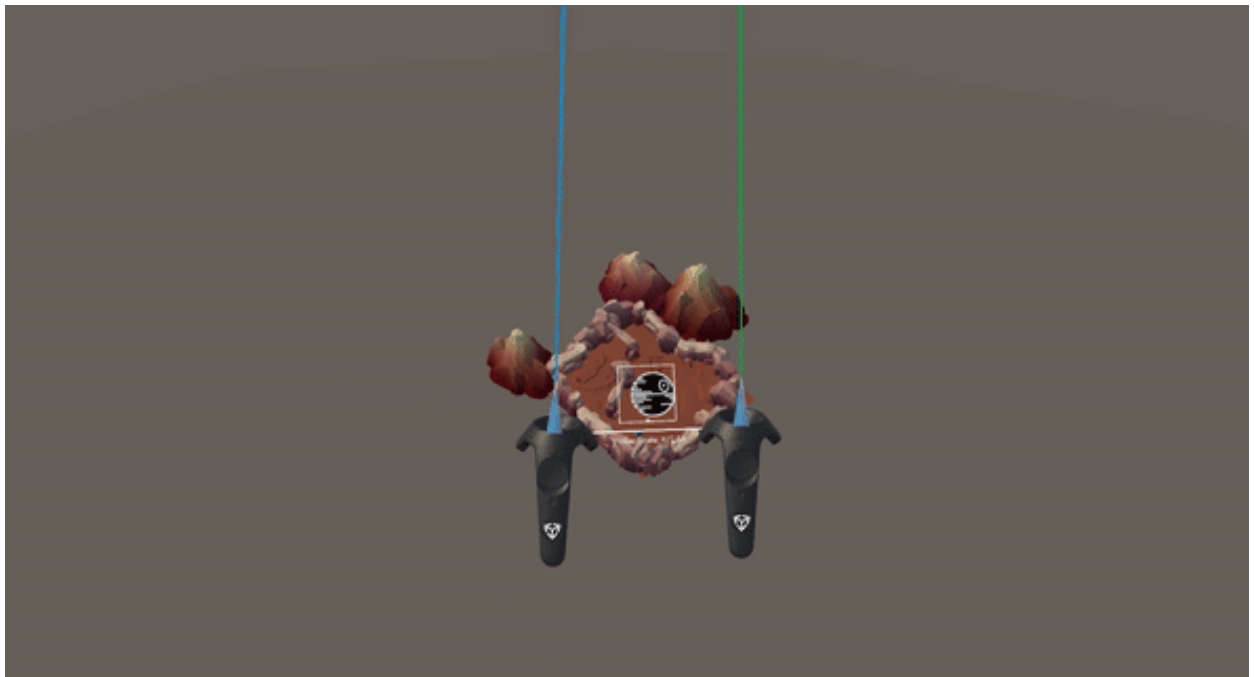
To move yourself from one point of the world to another, grab yourself in the MiniWorld (See the section on the [MiniWorld](#), above) and move yourself around.

Object Placement

Assets

To place Assets:
- To open the **Main Menu**, select the Main Menu activator (the round Unity logo button) on your controller, then navigate to the **Workspaces** face on the **Main Menu**.
- Select the Workspace named **Project**; it will open up in front of you.
- The folder list is on the left, and Assets are on the right. You can open and close folders using the ray or the selection cone, or use the **View all** menu to see only certain types of Assets.
- To add Assets from your project to the active Scene, drag them out of the Workspace Asset grid (on the right side), and place them in the space surrounding you. This action is akin to dragging an item from the Project window into your Scene view or Hierarchy in the standard Unity editor.

- **Tip:** If you're a level designer, artist or director, and want to move fast, stick all the Assets you want in a folder up top for easy access.

- **Tip:** Drop objects behind your back to delete them!

- **Tip:** Remember, you can rotate the menu around using the thumbpad on Vive (click) or joystick on Rift (flick).

Primitives

We created a simple primitives creator to show off an example of a tool that can be built for EditorVR, but also to do simple interactive primitive creation.

In Main Menu, scroll to the 'Create' Section and select Primitive. Select **Cube**, **Sphere**, **Capsule**, **Cylinder**, **Plane**, or **Quad** with your ray or cone. To place, draw the object in the desired space.

After you are done with creation and would like to move back to selection, transforming, etc., turn off the tool by one of two means:

1. Navigate back to the main menu and select the tool again to toggle it using the [X] button on the top right hand corner of the pane.
2. Use the pinned tool button below the Main Menu button on your controller to toggle it on and off.

Other known issues

- Performance improvements are an ongoing priority
- Console + profiler can't be resized

Tips

- **Performance**
  - Turn off any auto-baking of lightmaps
  - Close workspaces as soon as you are done using them
  - Close UI windows in the Editor if you aren't using them. For peak performance, create a new layout that has no windows or only the console and name it something like "EVR" -- switch to it before running EVR

Anything unclear about this doc? Please submit a [doc issue](#) on [GitHub](#)!
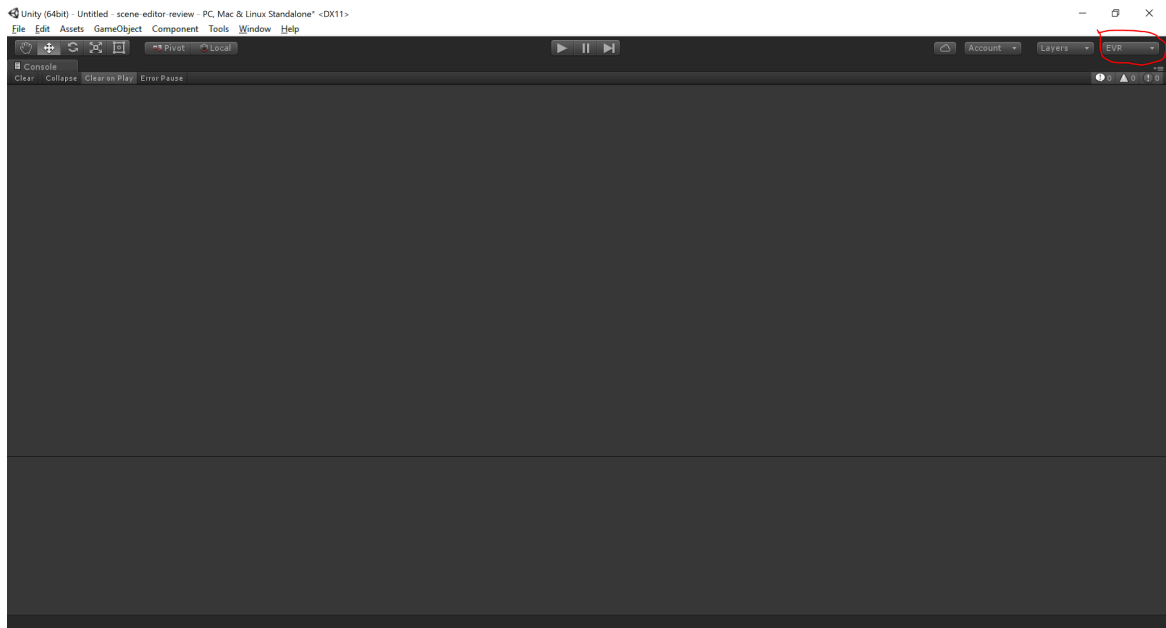
- **General usage**
  - Point at a workspace (without hovering over interactable UI) and double-click secondary trigger (grip on Vive) to 'vacuum' the workspace to you.
  - Drop items behind your back to dismiss them
  - Use the MiniWorld workspace or scale the world to move large objects around
  - Use the joystick or thumbpad to scroll on the menus & workspaces