

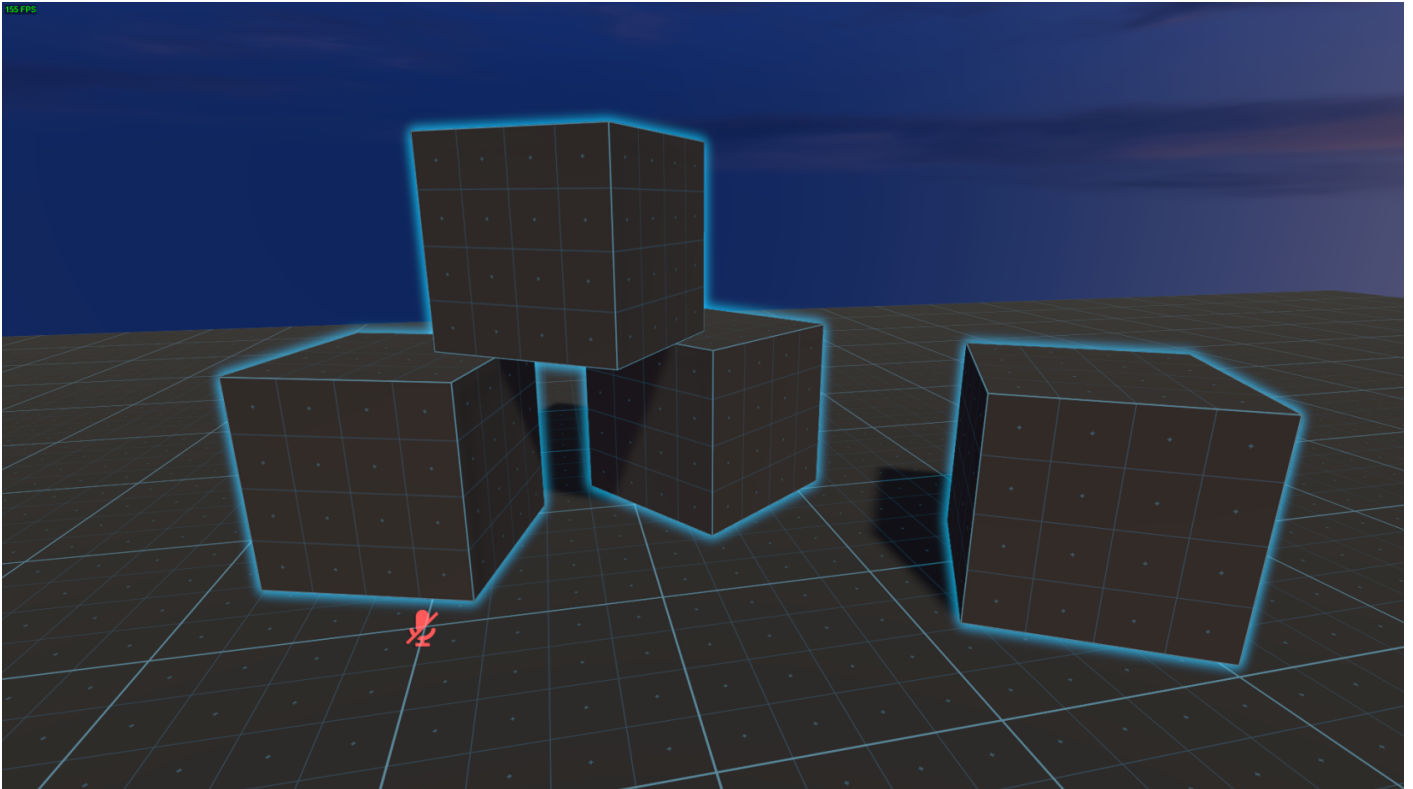
Varneon's VRChat World Development Handbook

Due to overflowing amount of information about VRChat world development in my head I tend to forget things easily. This book is a place where I will put most of that information in so it's available more easily for everyone, including myself.

- [Highlighting Objects from Udon](#)
- [Layers](#)

Highlighting Objects from Udon

If you are looking for a way to draw the user's attention to certain objects in your world, you can use the VRChat's native highlighting feature to set the highlighted state of any object or renderer.



NOTE: Hovering state changes on VRChat's interaction highlights will override the current state of the highlight set from Udon and vice versa.

```
// Highlights a GameObject using any renderer on the object if one exists
VRC.SDKBase.InputManager.EnableObjectHighlight(GameObject obj, bool enabled);

// Highlights a Renderer
VRC.SDKBase.InputManager.EnableObjectHighlight(Renderer r, bool enabled);
```

Layers

What are the different layers used for in VRChat? What special properties of some specific layers should you know?

Below I've listed the currently used (+ reserved) layers and their use cases based on experimentation using my layer inspection tools.

My layer research is currently ongoing and information on this page may still be incomplete!

Any object set to **19-21: reserved2-4** will be forced to **0: Default** on build (You can still manually force the layer during runtime)

No	Name	Visual elements	Notes
0	Default	- Avatar pedestals - Emojis	Default layer
1	TransparentFX		Used for Unity's Flare Assets
2	IgnoreRaycast		Ignored by Unity's Physics Raycasts if no layer mask is provided. Not ignored by VRChat's Physics Raycasts
3	reserved3		
4	Water	- Portals - Mirrors	

5	UI	• Remote camera lens • Player scanning highlight • Personal mirror visuals	Interactive objects on this layer can't be interacted with unless the menu is open Colliders of remote players exist on this layer
6	reserved6		
7	reserved7		
8	Interactive		Unused by Unity and VRChat
9	Player	• Remote players • Remote player chatbox	
10	PlayerLocal	• Local player without head	VRCMirrorReflection refuses to render this layer
11	Environment		Unused by Unity and VRChat
12	UiMenu	• Nameplates • Remote camera nameplate	
13	Pickup		Default pickup layer
14	PickupNoEnvironment	• Personal mirror collider (<i>regardless of whether grabbable or not</i>)	Colliders on this layer only collide with the 'Pickup' layer
15	StereoLeft		Unused by Unity and VRChat

16	StereoRight		Unused by Unity and VRChat
17	Walkthrough		Colliders on this layer won't collide with players
18	MirrorReflection	Complete local player (<i>shown in mirrors and cameras</i>)	Only layer that isn't rendered by the main camera (local player's sees the headless copy of themselves on layer 10) Colliders on this layer don't block VRChat raycasts
19	InternalUI (Previously "reserved2")	- HUD - Main menu - Camera UI - Camera lens - Cursor - Tooltips - Expression menu	Will render over everything
20	HardwareObjects (Previously "reserved3")		
21	reserved4		

Changelog

[2024-09-04]

- Added note about recently discovered personal mirror visuals on **UI (5)**
- Added note about recently discovered personal mirror collider on **PickupNoEnvironment (14)**