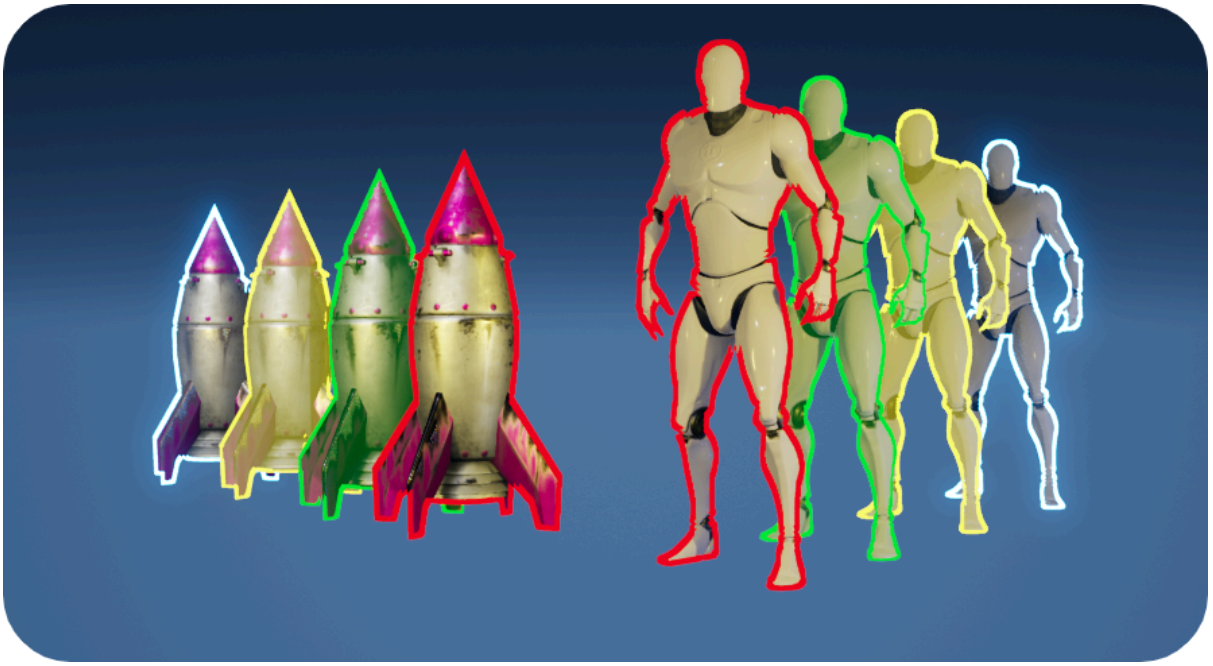
OutlineMaker

Powerful outline material



Version 1.06

Available in the Unreal Engine Marketplace

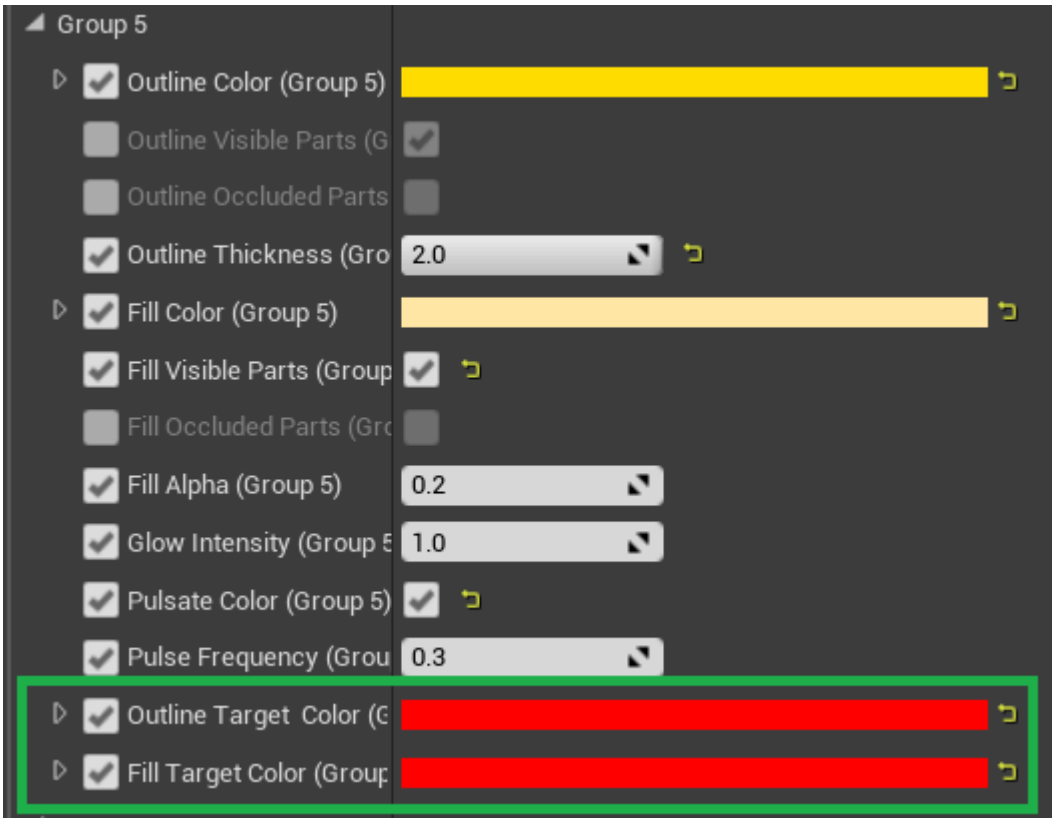
Changelog

Version 1.06

[FIX] Android float precision issue

Version 1.05

[ADD] Added the possibility to set the target color when using the ‘pulsate’ effect:



Result:

Version 1.04

[MOD] Modified the “**extended**” material and respective material instance, which now contains **32 groups**. Use it if you need more than the 6 presets of the default material. If you know for sure that 6 presets are enough, use the default material since it’s slightly more efficient.

Version 1.03

[FIX] Fixed minor issue in the example map, which caused the pawn to be unable to move sometimes.

Version 1.02

[ADD] Added support for UE version 4.24 (valid until 4.27).
[ADD] Added an “**extended**” material and respective material instance, which now contains **16 groups**. Use it if you need more than the 6 presets of the default material. If you know for sure that 6 presets are enough, use the default material since it’s slightly more efficient.

Version 1.01

[ADD] Added mobile support.

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Introduction

This is the manual for OutlineMaker material. It will cover its installation and usage. This document should be used along with the example project, which you can download at this link:

Packaged example (built with UE 4.22 for Windows 64 bit, doesn't require OutlineMaker).

Features:

- Flexible material: each part can be customized without affecting the others.
- Designed for performance: the material was explicitly made to be lightweight. Thousands of actors can have outlines simultaneously with little performance drop.
- Outline only visible parts, or only hidden parts, or both! Fill only visible parts, or only hidden parts, or both! Mix with outlines for an increased effect.
- Change colors, glow intensity, outline thickness and fill percentage for each outline/fill.
- Enable a customizable "pulse" to make the outline/fill more dynamic.
- 6 presets available, but more can be added (email me with the request and I'll update the material right away for you).
- Correct depth computation among outlines belonging to different presets.

Content

OutlineMaker provides a PostProcess material called ***PP_Outline*** and a default Material Instance called ***PPI_OutlineInstance***, derived from PP_Outline.

From version 1.02, an ***PP_OutlineExtended*** and ***PPI_OutlineInstanceExtended*** have been introduced, which allow you to use up to 16 presets. In all other aspects the materials behave exactly the same.

Installing OutlineMaker

In this section, I'll quickly show you how to install OutlineMaker using the Epic Games Launcher. Once you've purchased OutlineMaker, please ensure that you restart the launcher. This will ensure that your Vault refreshes, and it should show OutlineMaker now. As for the Vault, this is located at the bottom of your Library tab (UNREAL ENGINE > Library > Scroll Down). Once you're in here, search for "OutlineMaker",

and press the "**Add To Project**" button. This will bring up a popup asking you in which project you'd like to add OutlineMaker to.

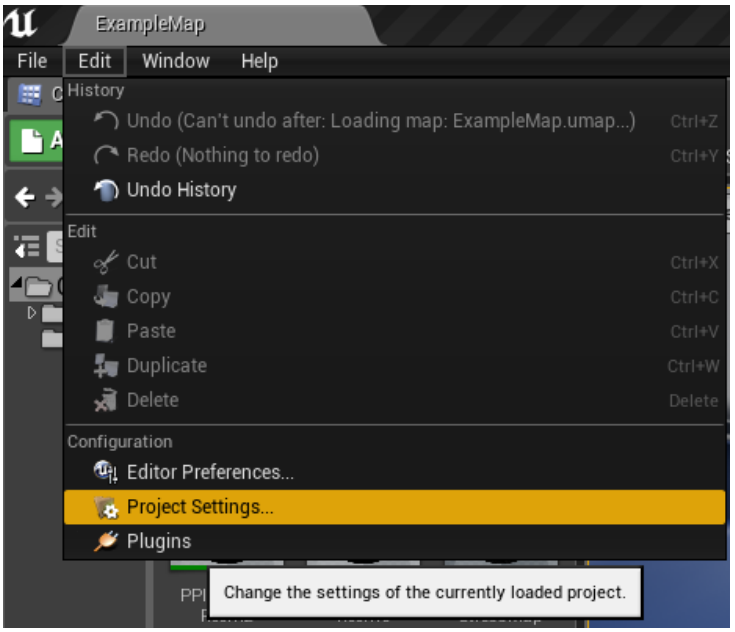
Now open the project. There will be an "OutlineMaker" folder inside your Content folder. There you will find the main material and the example content.

Using the Outline material

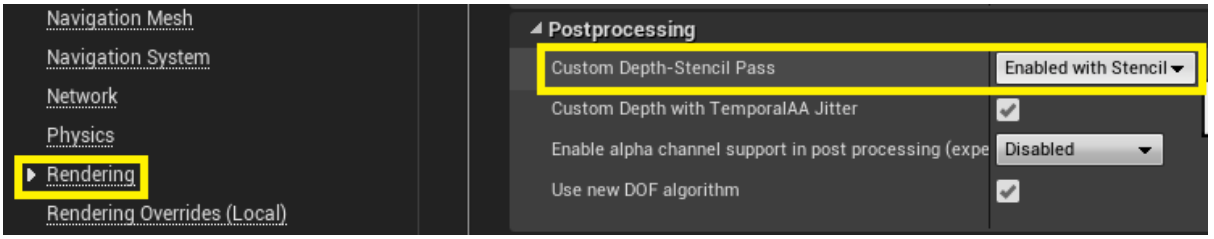
Now that you've installed and enabled OutlineMaker for your project, it's time to learn how to use it.

First of all, you have to enable the Stencil Buffer in your project. To do so, follow these steps:

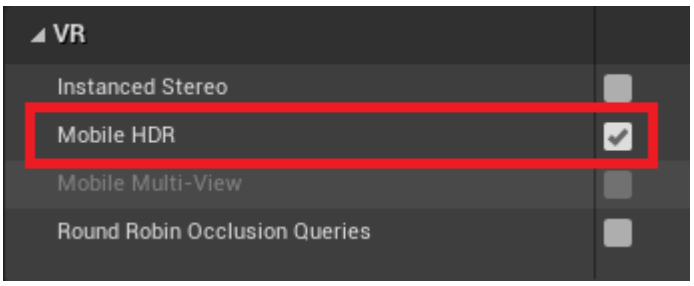
1. Open the **Project Settings**:



2. Open the "**Rendering**" category, then scroll down to the **Postprocessing** section and make sure that **Custom Depth-Stencil Pass** has been set with *Enabled with Stencil*:

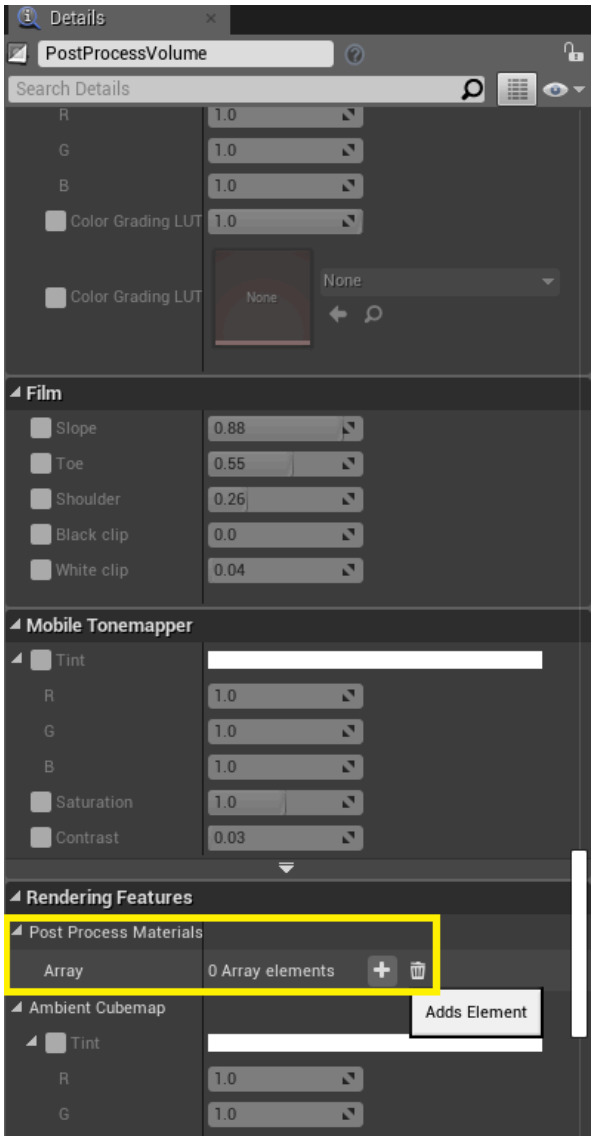


3. **[Only if you intend to use it for Mobile setup]** Enable **Mobile HDR** in the "**Rendering**" section:

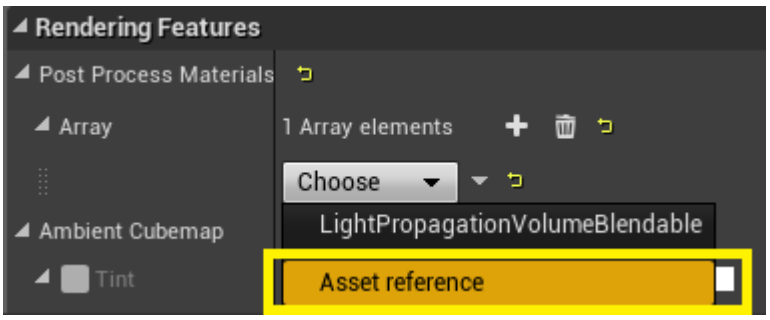


Now you're ready to add the material to your level:

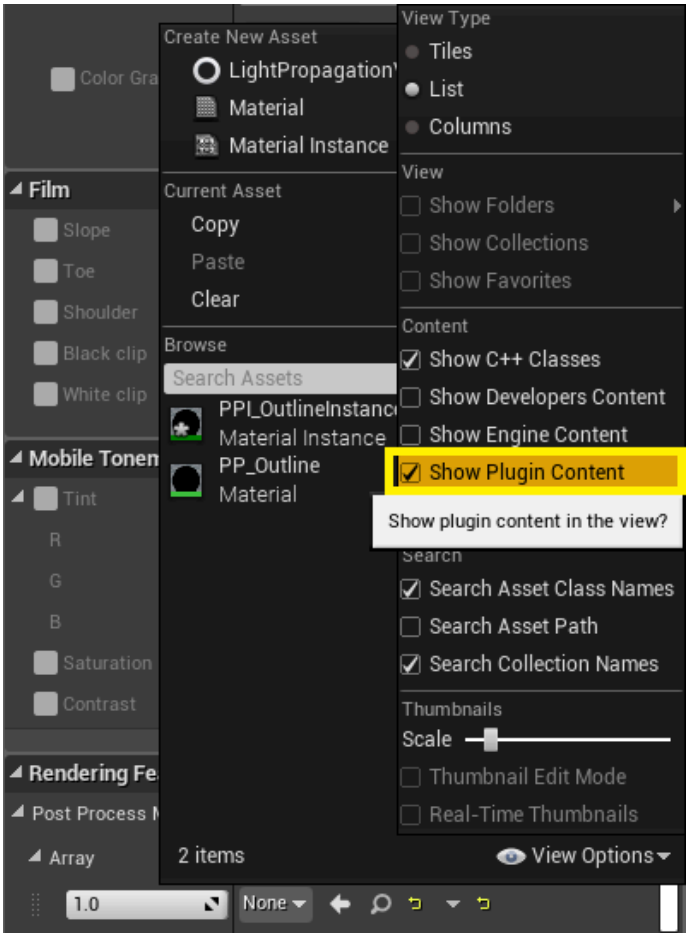
1. Add/select a **PostProcessVolume** in the level (it can be added from *Modes* -> *Places* -> *Volumes*). In the **Details** panel look for **Post Process Materials** (might be called *Blendables* in older engine versions):



2. Click on the **Add** button. Then, on the combobox select **Asset Reference**:



3. To find the material, look for the **PPI_OutlineInstance** material and select it (otherwise, you could simply drag & drop the material from the content browser):



NOTE: if you don't want to directly use the OutlineMaker material, or if you need several instances, you can create a new Material in the content browser and put the **PP_Outline** material as parent.

Now when you walk inside the PostProcessVolume your Outline material will be used on all objects that have Custom Depth enabled. In the following section I'll explain how to enable it on any object.

Tip: if you'd like the Outline material to work on every level, it might be easier to add to your main Pawn/Character actor a PostProcess component with the Outline

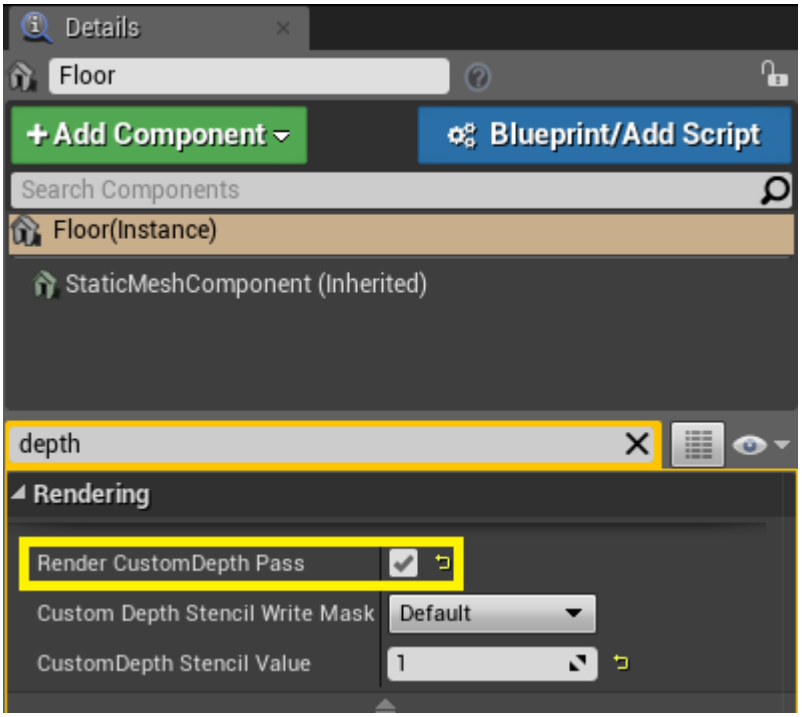
material in it, so that you don't have to add it to every level manually.

Adding outlines to objects

You can either activate outlines manually on an object of your scene, or programmatically from Blueprints or C++.

Manually:

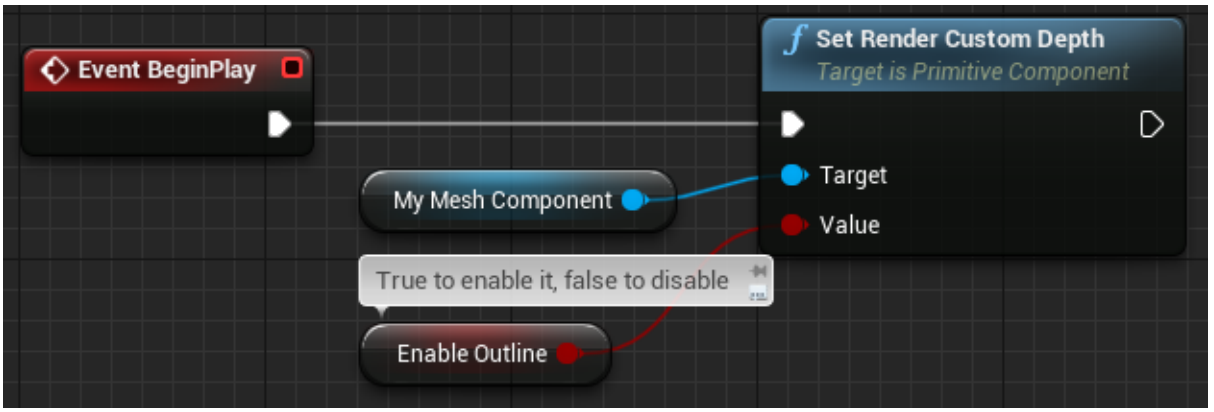
1. Select an **Actor** with a **Mesh Component.** In the **Detail** panel, find **Render CustomDepth Pass** in the Rendering section and check it. Now set a **CustomDepth Stencil Value** between 1 and 6 (or up to 16 if you're using the *extended* version of the material):



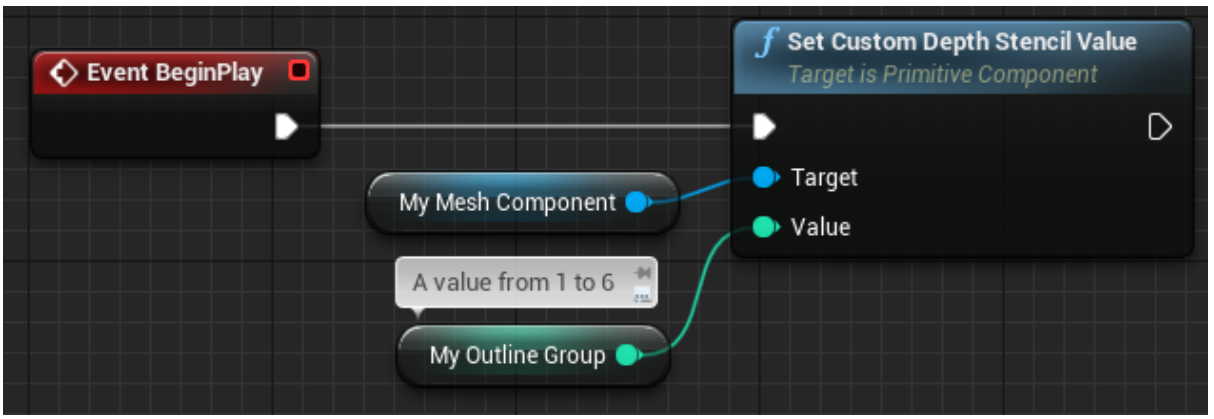
From Blueprints:

1. Get a reference to the MeshComponent you want to outline. Create a **Set Render Custom Depth** node. Pass a value of *true* or *false* to enable/disable

outlines:



2. By default, the selected stencil value will be **0**, which is a special value (as described in the following section) and doesn't correspond to an outline group. To add a group, create a **Set Custom Depth Stencil Value** node and pass a value between 1 and 6 (or up to 16 if you're using the *extended* version of the material).

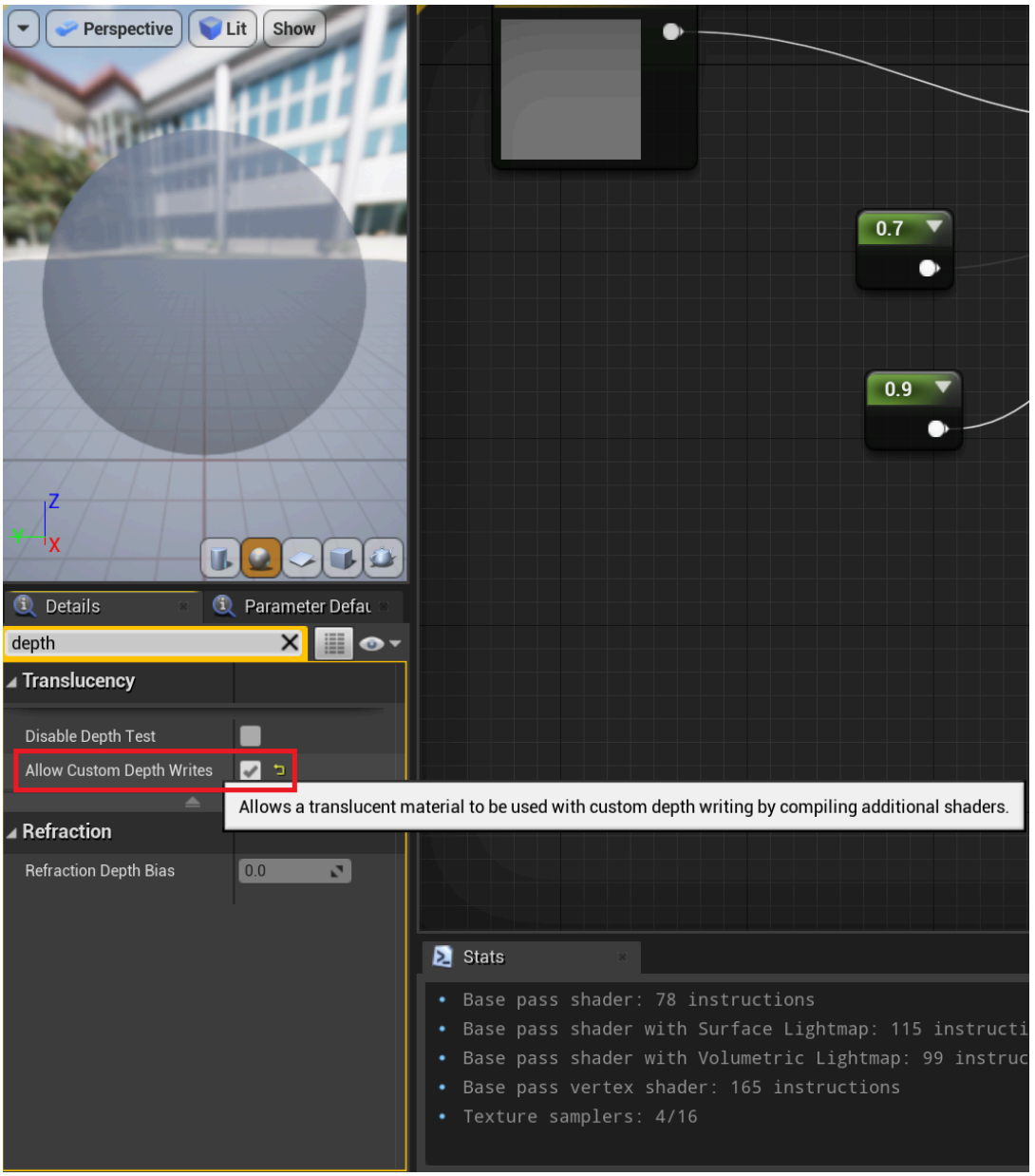


Adding outlines to *translucent/transparent* objects

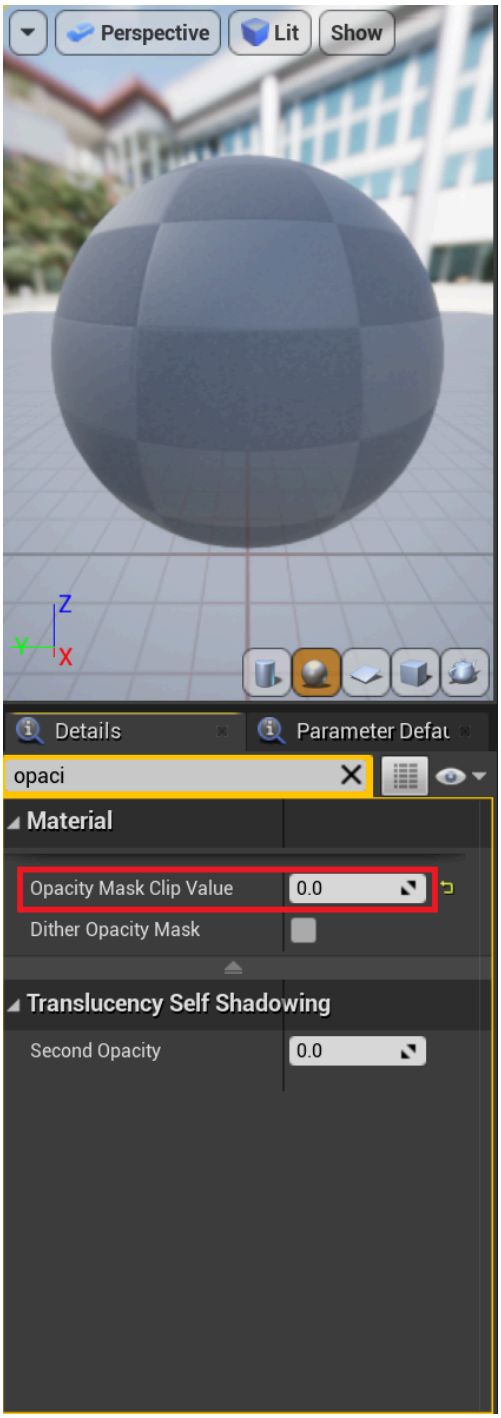
In order to make the outline work on translucent/transparent objects, a few steps have to be executed to let the custom depth buffer work with these type of materials.

Follow these steps:

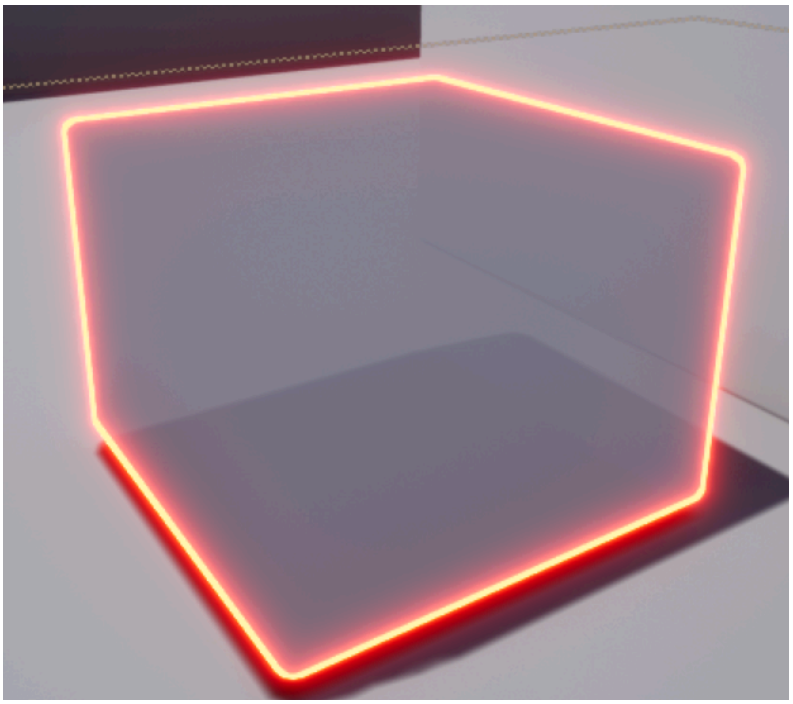
1. In your translucent material find the property "**Allow Custom Depth Writes**" and enable it:



2. Then, look for the property "**Opacity Mask Clip Value**" and bring it all the way to **0**:



That done, compile the material and you'll see it transparent and with the outline:



Presets customization

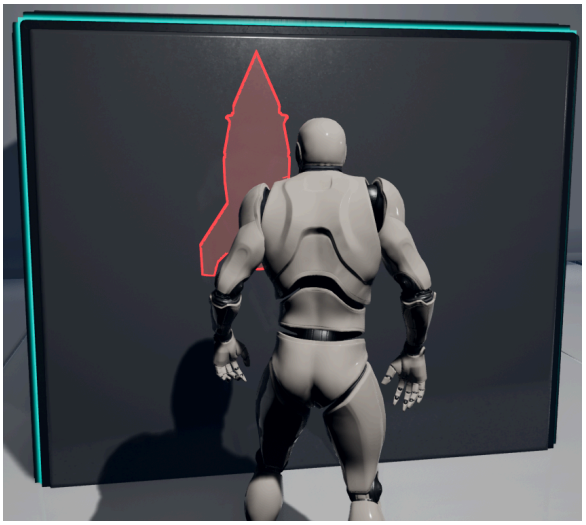
If you open the Material you have set in the PostProcessVolume, you can customize each group as you like. Experiment with all the parameters to find the look you need.

If by any chance you need more than 6 presets, please email me and I'll add as many as you like.

Some things to keep in mind

The stencil value **0** defines a special group, since any presets won't ever draw on it. It can be useful if you in your level you're using outlines on occluded objects and you want certain special objects to always be drawn on top of those outlines.

For example, in the picture below the rocket has an outline that is drawn when it's occluded, but we don't want it to be drawn even on top of our character. So, by giving the character a stencil value of 0, we make sure that it's always drawn on top of the rocket.



Outlines on top of outlines

The material was designed to allow multiple outlined objects belonging to different groups to be drawn on top of each other. However, objects belonging to the same group will share the outline (this can be viewed in the example project, in particular the **example 2.C**).

If you need to overcome this problem, the group number **6** is special in a way that if you give a stencil value greater than 6 to any object, it will share the same properties of group 6 **but** it will be considered as a different preset, thus allowing you to stack outlined objects with the same preset on top of each others.

Note: if you're using the *extended* version of the material (introduced in version 1.02), what explained applies to **group 16**.

Conclusion / Getting Help

This concludes the OutlineMaker documentation. Please feel free to reach out to me at "francesco.desogus9@gmail.com" if you have any further questions, suggestions or features you'd like to see.