ArchVizPRO PHOTOSTUDIO HDRP

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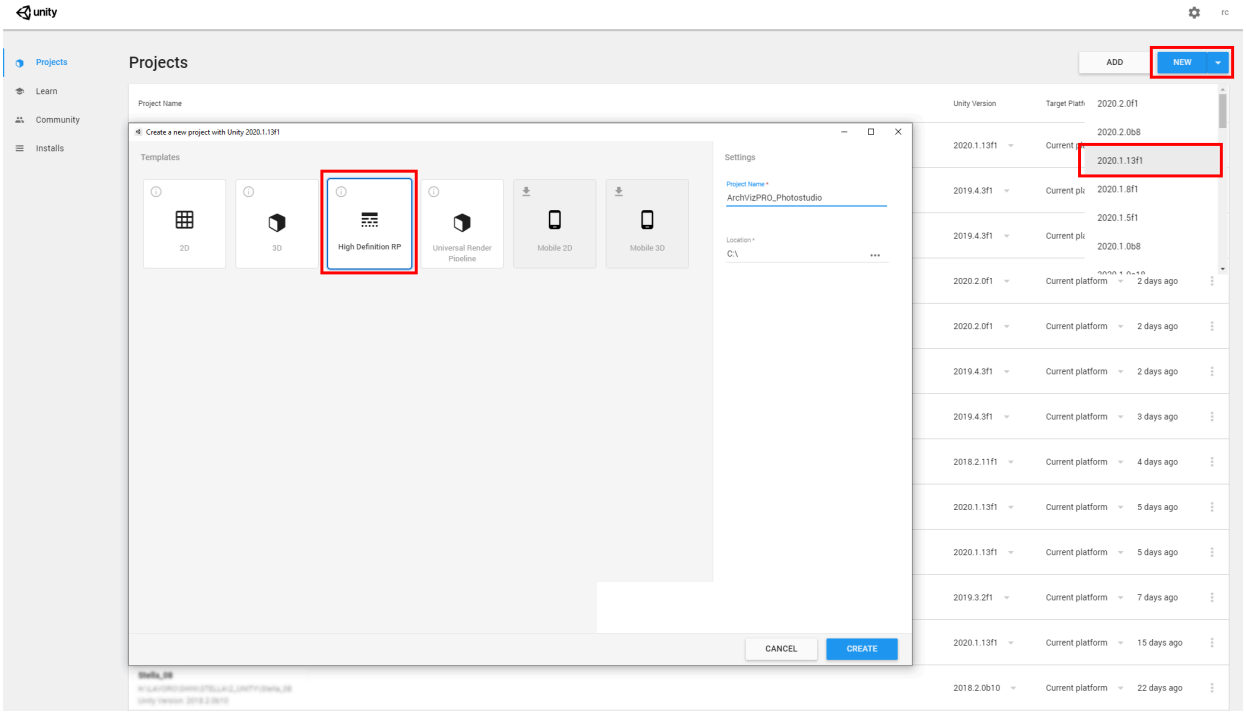
Quick Project Setup

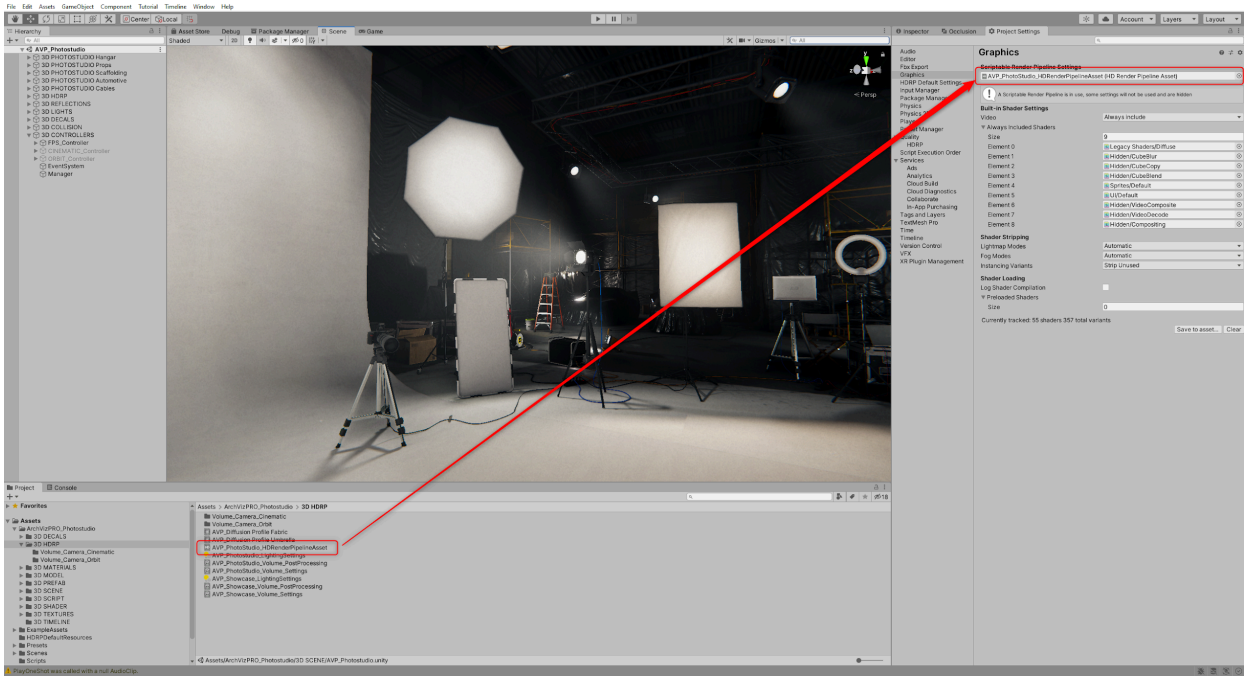
1) Open Unity Hub and create a new Unity 2021.3.4 (or higher) project with an High_Definition_RP Template.



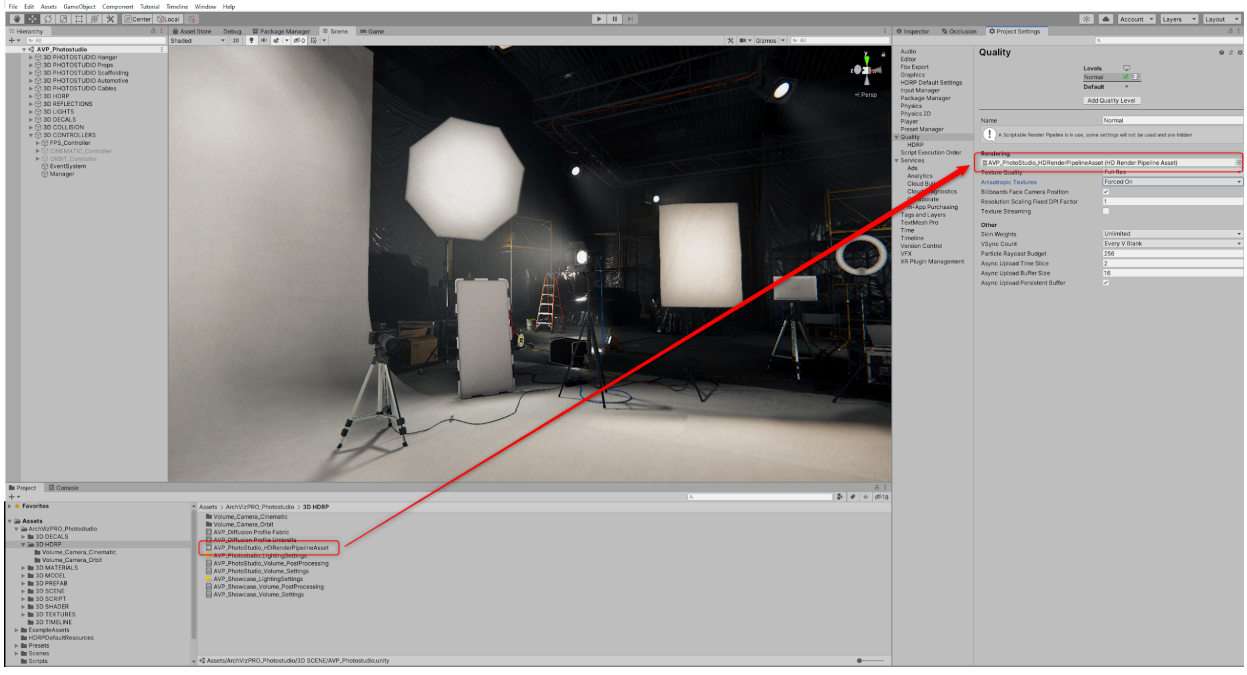
2) Download and import [ArchVizPRO_Photostudio HDRP] from Asset Store.
If prompted about Unity Package Manager dependencies choose “Install/Upgrade”.

3) Open Assets\ArchVizPRO_Photostudio\3D SCENE\AVP_Photostudio. You should see the scene in the next screenshot.

4) Go to Edit/Project Settings/Graphics and assign the **AVP_PhotoStudio_HDRenderPipelineAsset** in Scriptable Render Pipeline Settings.



5) Go to Edit/Project Settings/Quality and assign the **AVP_PhotoStudio_HDRenderPipelineAsset** in Rendering.



6) Go to Edit/Project Settings/Graphics and assign the **AVP_HDRenderPipelineGlobalSettings** in HDRP Global Settings.

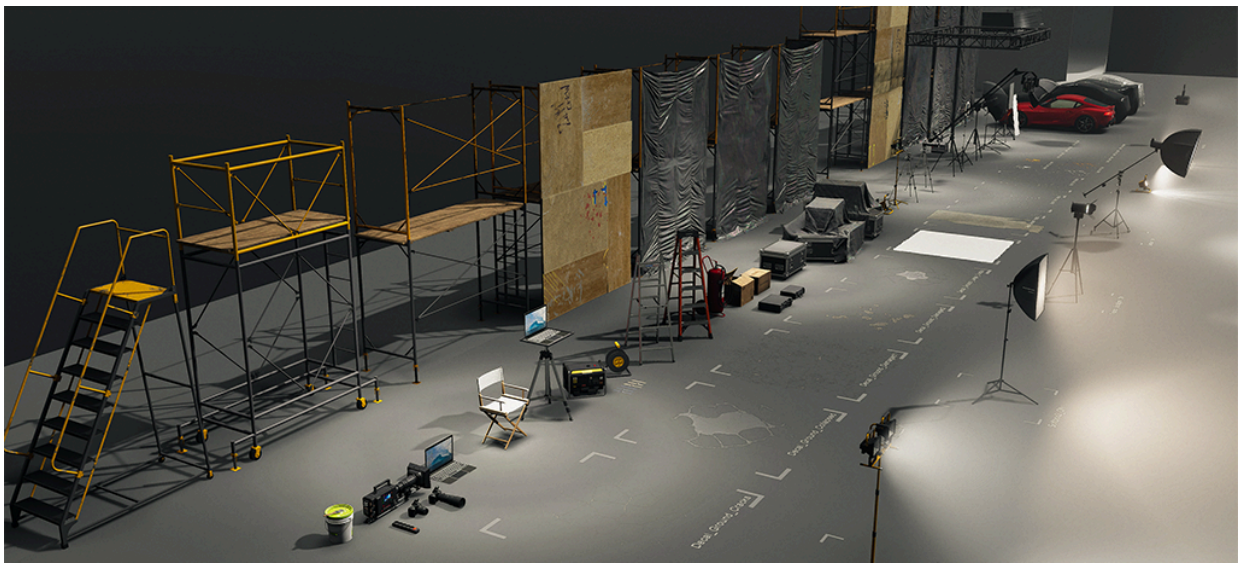
Scenes Overview

Scenes are located at Assets\ArchVizPRO_Photostudio\3D SCENE :

AVP_Photostudio:

Setup optimized for Pc Standalone.
Key **1**: First-Person Mode
Key **2**: Timeline cinematic animation
Key **3**: Orbit Mode
Key **WASD**: Move character
Key **Left Ctrl**: Crouch
Mouse: Look

AVP_Showcase:



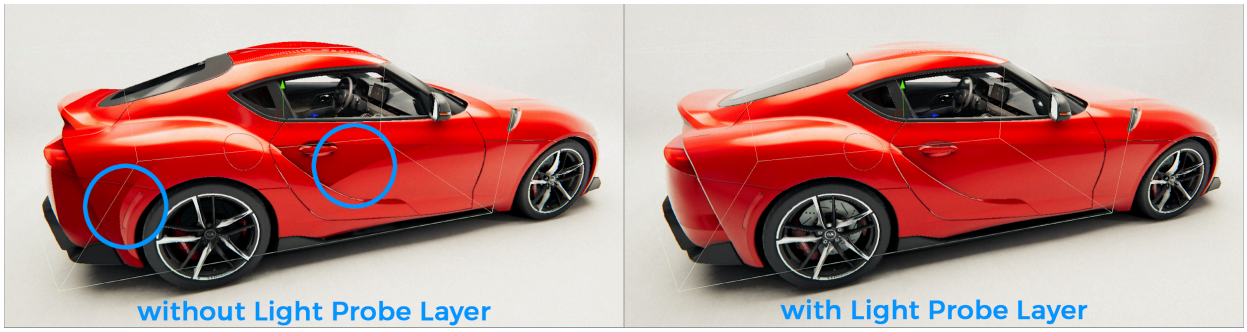
All prefabs that are used in the Photostudio in a clean scene.

HDRP Settings

LIGHT LAYERS:
To improve performance and appearance, the project takes advantage of Light Layers. The interior of the car uses a separate layer (Light Layer 1) for the Lights and Reflections Probes.

Environment: **Light Layer default**
Car_Exterior: **Light Layer default**
Car_Interior: **Light Layer 1**

Without Light Layer, the Reflections Probe of the interior of the car influence also the exterior. To avoid this, the interior of the car is set to Light Layer1, instead of Light Layer default. The reflection probes of the interior are set to Light Layer 1 too.



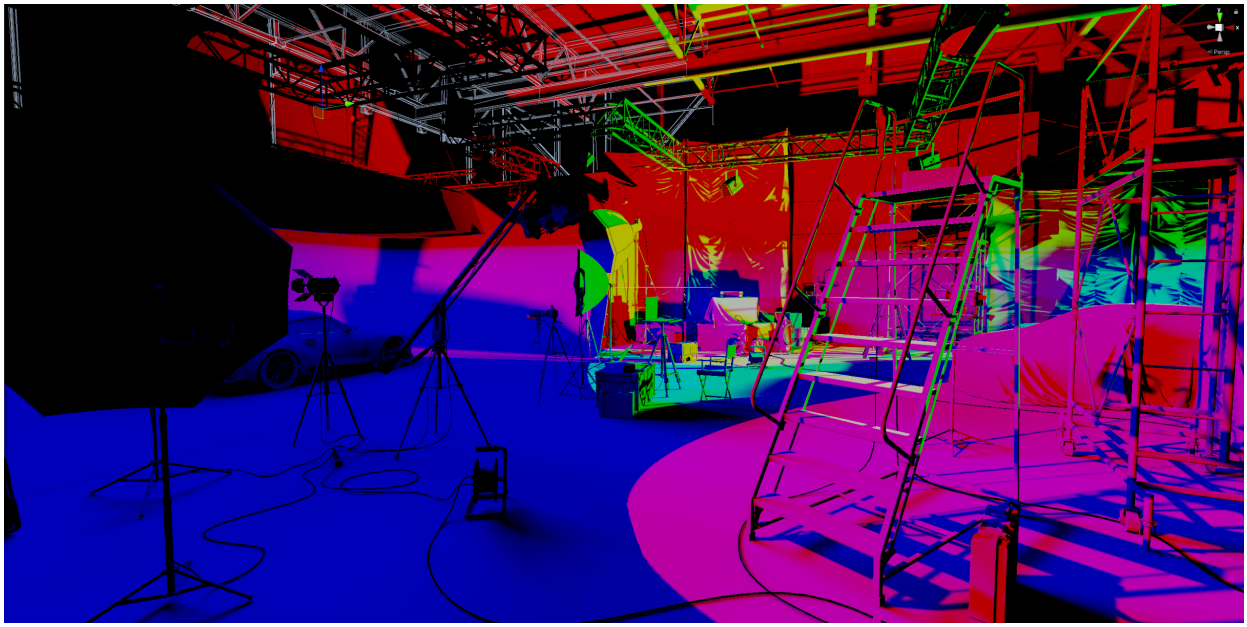
Progressive Lightmapper

ArchVizPRO Photostudio uses Progressive GPU as the main baking engine.
It's tested to work with a GTX 1070 (8Gb VRAM) and it takes less than 1 hour to bake.

LOW RAM
With a minor amount of VRAM decrease Lightmap Size and Lightmap Resolution, or you will fall back to Progressive CPU.
To increase available VRAM, a trick is to set in Project Settings/Quality:
Texture Quality = Quarter Res
Once the bake is finished bring back textures to Full Res

SHADOW MASK:

The project uses Shadowmask for the main lights.



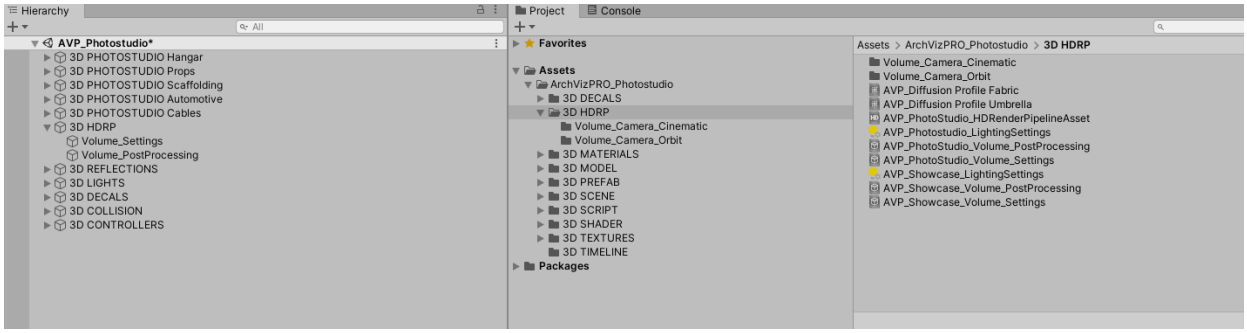
Shader Graph

Custom shaders are made in Shader Graph.
They are located in Assets\ArchVizPRO_Photostudio\3D SHADER\Graphs.
Note, some shader needs Subgraphs, they are located in Assets\ArchVizPRO_Photostudio\3D SHADER\Subgraphs.

AVP_CarbonFiber: A StackLit Master shader that mimics Carbon Fiber materials.
AVP_CarPaint: A StackLit Master shader is used for the Car paint.
AVP: Fabric_Rim_Detail: A Fabric Master shader used for clothes.
AVP_GlassDirt: A transparent StackLit Master shader used for the Glasses.
AVP_Metal: A Lit Master shader used for metals.
AVP_PartileUnlit: A shader compatible with Particle System.
AVP_PlasticDirt: A StackLit Master shader is used for the Plastic.
AVP_PlasticNormal: A StackLit Master shader is used for the Plastic.

Volume Settings

Post Processing setup is made using Volumes Profiles

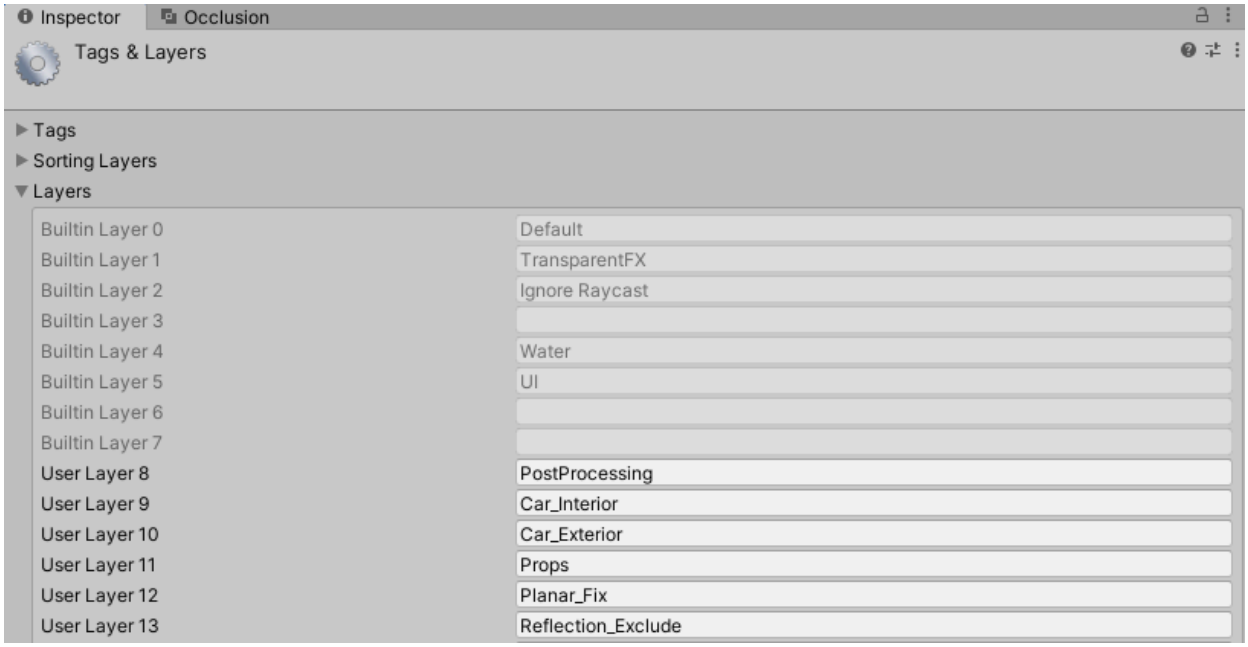


There are 2 Global Volume in scene Window/General/Hierarchy/3D HDRP:
Volume_Settings (Settings for Environment and Shadows)
Volume_PostProcessing (Settings for PostProcessing)

Note:
For Cinematic Cameras, an additional Volume is placed on each Camera.
This is for a fine tuning of the PostProcessing for each video shot.
For example to adjust exposure and DOF for each shot.

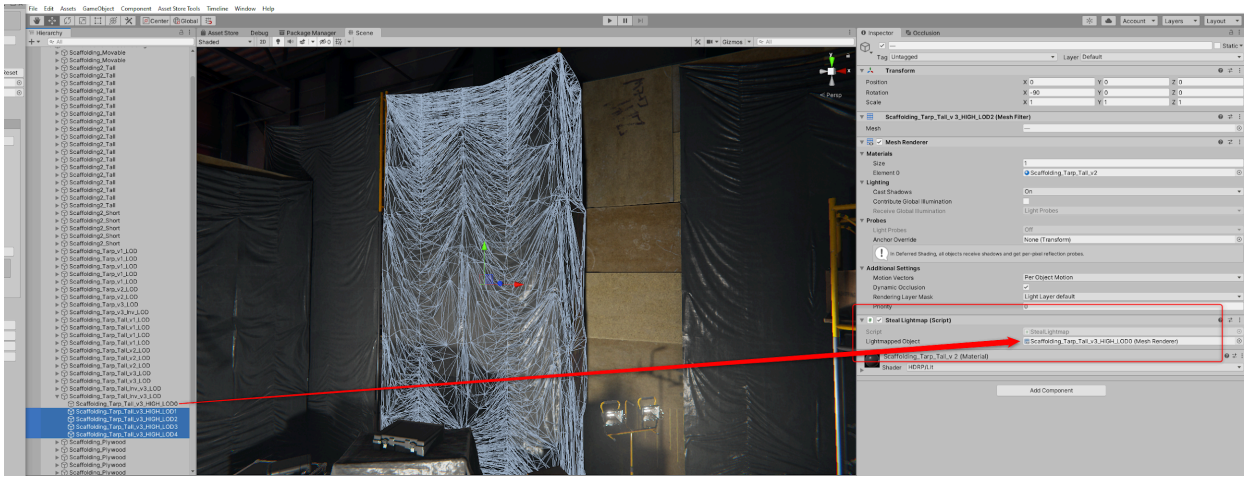
Layers

Camera and Reflection Probes use Layer exclusion to hide or show game object.
Usually, when importing from a package, layers names are hidden.
Restore them by adding names in empty fields as in this screenshot:



LOD

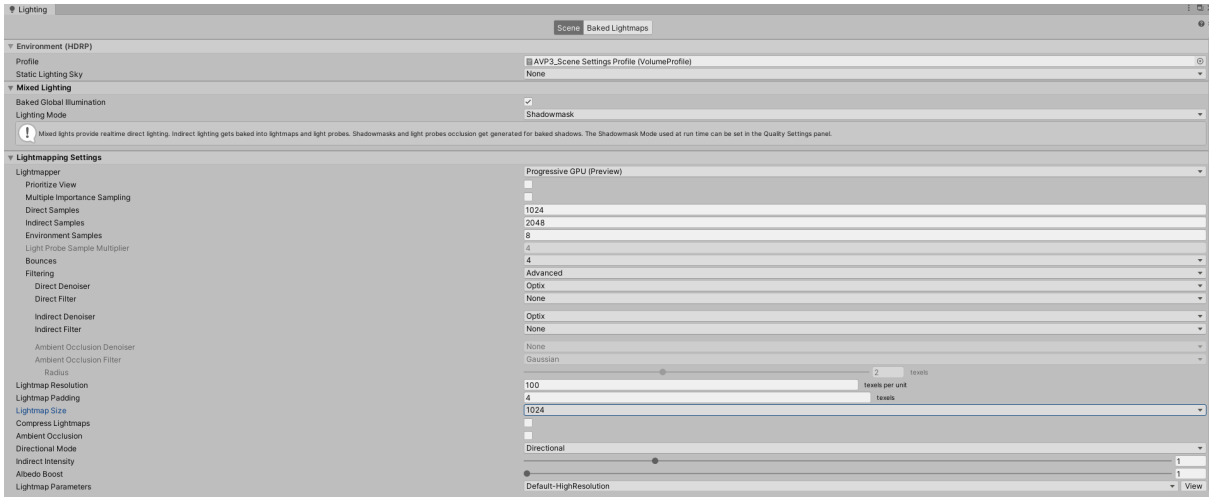
For some assets, LOD are used.
Since Progressive GPU still doesn't support LOD baking, a script "StealLightmap.cs" is used.
LOD0 must me **Static**
LOD1, LOD2, LOD3, etc.. must be **Dynamic** and with the StealLightmap.cs applied.



FAQ:

1) Progressive GPU fallback to CPU.

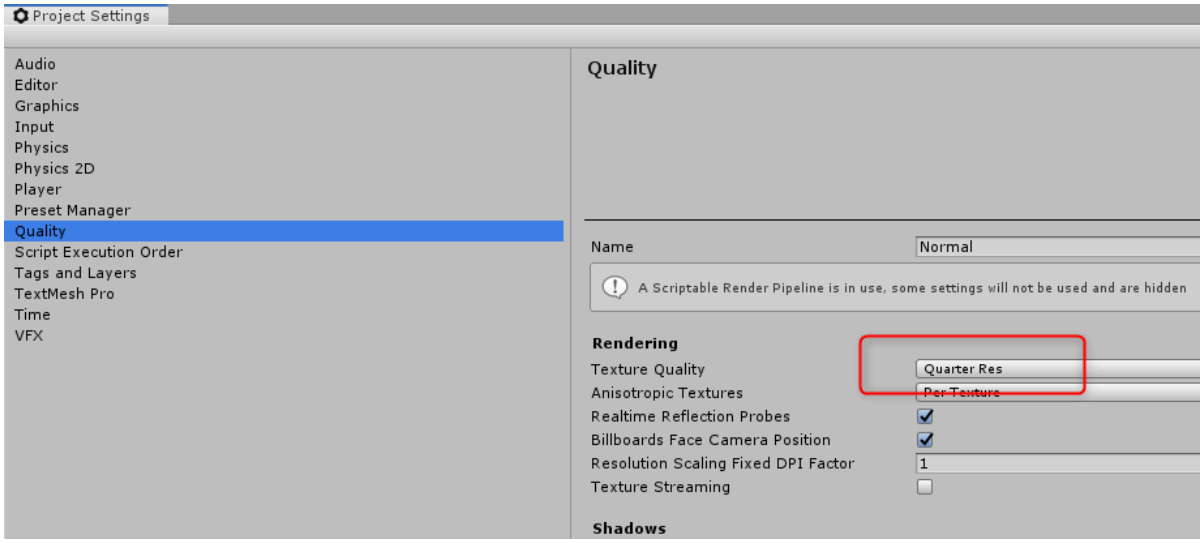
To bake the lightmaps at the current Lighting Settings you need at least 8 Gb of Vram.



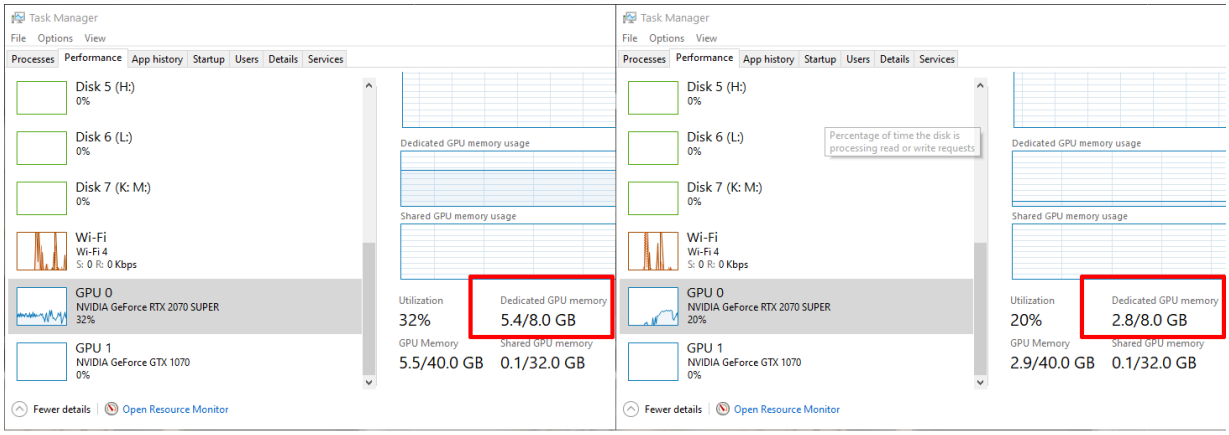
With a GTX 1070, 8 GB baking times are around 50 minutes at 120 Lightmap Resolution.

If you have **less than 8 GB of VRAM** available you have to:

- Go to Project/Settings and change **Texture Quality = Quarter Res**.



- Save, restart and reopen the project.



Texture Quality = Full Res **Texture Quality = Quarter Res**

With Quarter Res we have earned **2.6 GB** of available VRAM!

- Once the bake is finished bring back textures to Full Res

- if Lightmap Size is 2048 and still falls back to CPU, try to use 1024 or 512.

2) I have 2 video cards, can Progressive GPU take advantage of them?

It is possible to select one GPU for rendering the Scene and another GPU for baking lighting. If the automatic GPU assignment doesn't fit your needs, you can specify which graphics card to use for baking.

To see which GPU Unity currently uses for baking, in the Editor: In your Project, open the Lighting window. Next to Bake Performance, you can see the GPU.

To see the available GPUs in your machine:

1. Make sure you've selected the Progressive GPU light mapper in the Editor.
2. Generate the lighting in your Scene.
3. Open File Explorer, and navigate to the following path: *C:\Users\USER\AppData\Local\Unity\Editor*. Open the file called *Editor.log*.
4. In the file, search for the line *Listing OpenCL platforms*. This should jump to the part of the log with information about OpenCL devices. Here, you can see your available GPUs along with their corresponding platform and device indexes.

To select a specific GPU for baking:

To select a specific GPU for baking, enter this command at the command line (replace `platform` and `device index` with the relevant numbers):

`Unity.exe "-OpenCL-PlatformAndDeviceIndices" <platform> <device index>`

Your choice of assignment should depend on your needs while you're working on the Scene. If you assign the strongest GPU to either activity, this can incur a performance impact on the other activity. If you encounter issues, try re-assigning GPUs.

3) Baked Lightmap view is showing nothing

Rebake the scene. It’s a Unity bug, hope it will be fixed soon.

4)After Exiting Play Mode the Scene View is completely blank just gizmo showing
It's a Unity bug. A quick fix is right-click on any script (for example the script you find in 3D SCRIPT), and click reimport. This forces to recompile and should fix the problem.

5)When I move an object, the shadow is still there.
This is because the scene use BakedGI and the shadows are baked.
Use the Generate Lighting button in Windows/Lighting/Scene.

Contacts:

For any asset-related issue please contact me at ruggero.corridori@gmail.com
If you are interested in our services, write at info@oneirosvr.com