Low Poly **Modular Terrain Pack** v1.1

LMHPOLY

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CONTACTS

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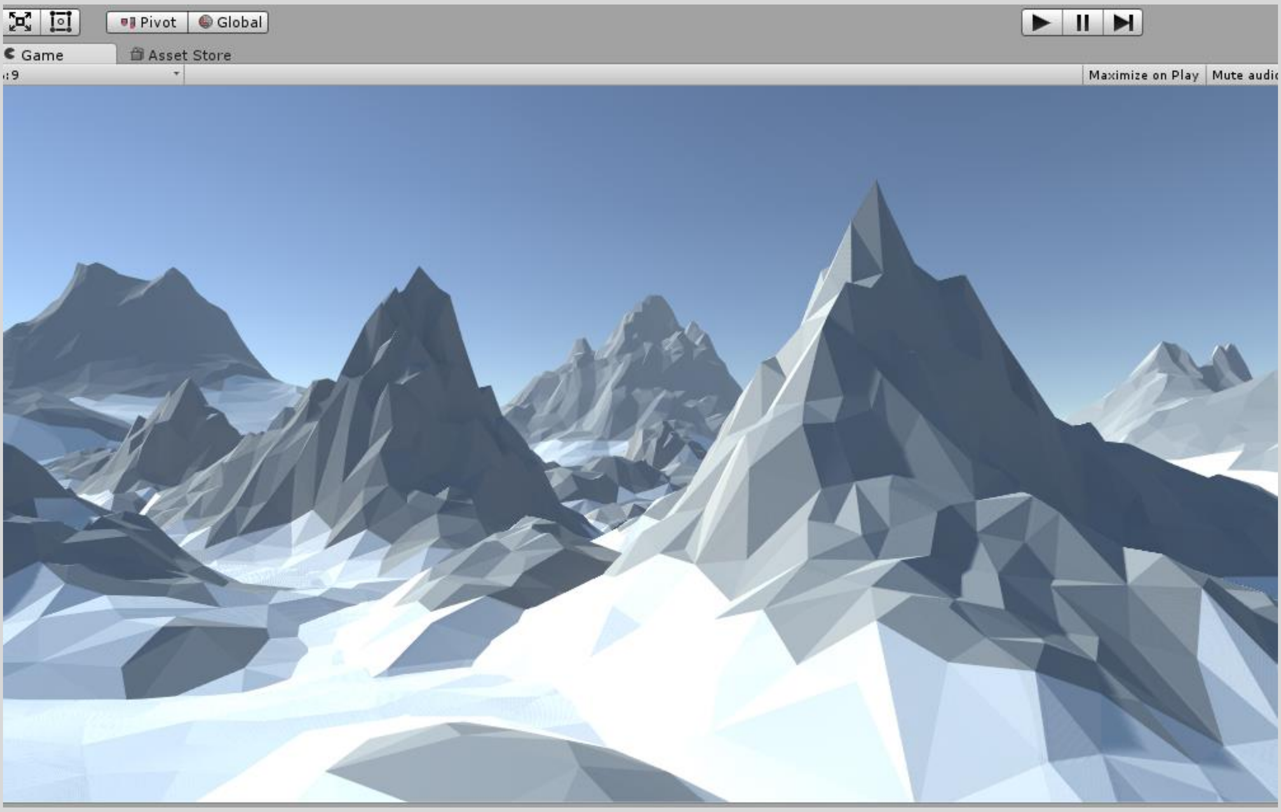
https://twitter.com/lmhpoly

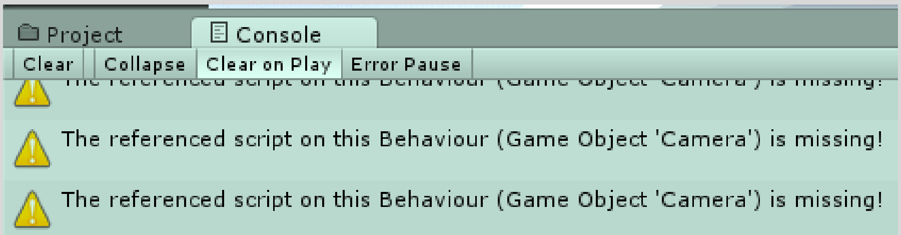
CONTENT

DEMO SCENES

Now as you have imported the whole “**Low Poly Modular Terrain Pack**” to your Unity project, go to **Low Poly Modular Terrain Pack** > **Demo** > **Demo_Scenes** and Open any Demo Scene (*here is a Demo_04 example*). The scene should look like this inside **Game** view without any image effects:



If you press **Play**, you will get a message, something like this:



The referenced script on this Behaviour (Game Object 'Camera') is missing!

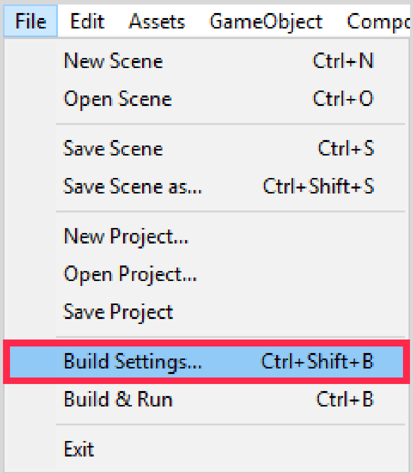
The referenced script on this Behaviour (Game Object 'Camera') is missing!

This is because all **Demo** Scenes use **Post-Processing** Image effects applied to all **Cameras** and those effects are not included in the pack! You just need to download them and import into your project. Follow steps below to setup Demo Scenes!

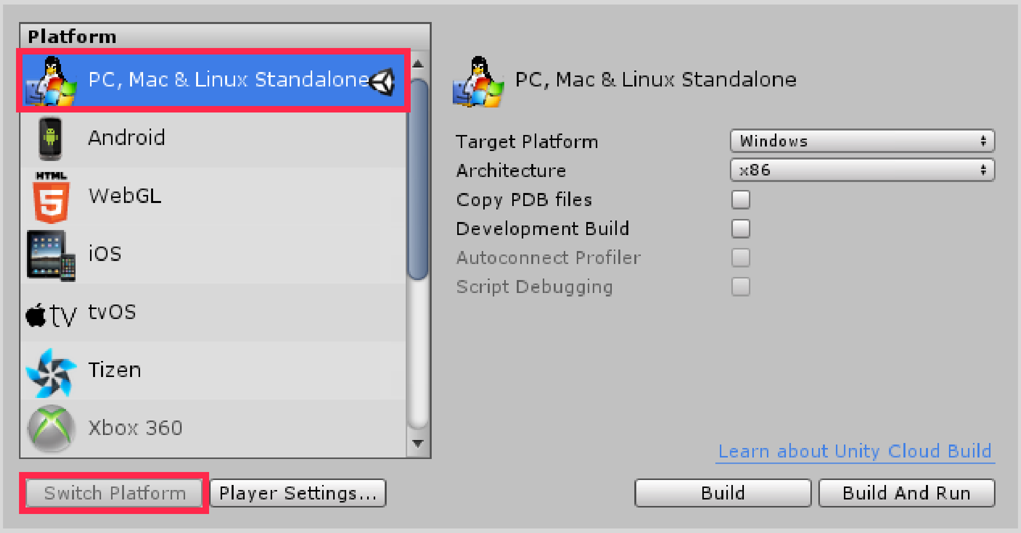
HOW TO SETUP DEMO SCENES IN UNITY 5.0.0 – 5.5.3 VERSIONS (For PC)

1. Make sure you are using **PC, Mac & Linux Standalone!**

Go to **File > Build Settings**



Select **PC, Mac & Linux Standalone** and hit **Switch Platform** button.



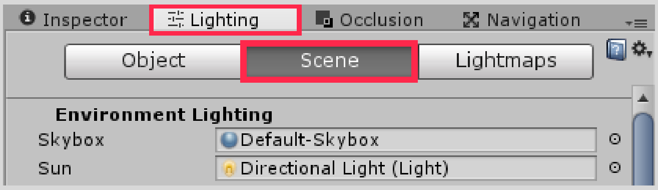
PC, Mac & Linux Standalone

Target Platform: Windows
Architecture: x86
Copy PDB files □
Development Build □
Autoconnect Profiler □
Script Debugging □

2. **Clean GI Cache** (*Optional – needed if you have some light baking errors*)

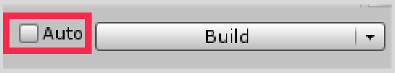
Before you go to the next step you need to Disable **Auto** build/bake feature.

You can find it in **Lighting** and select **Scene** tab. (*If you don't have Lighting tab go to Window > Lighting*)



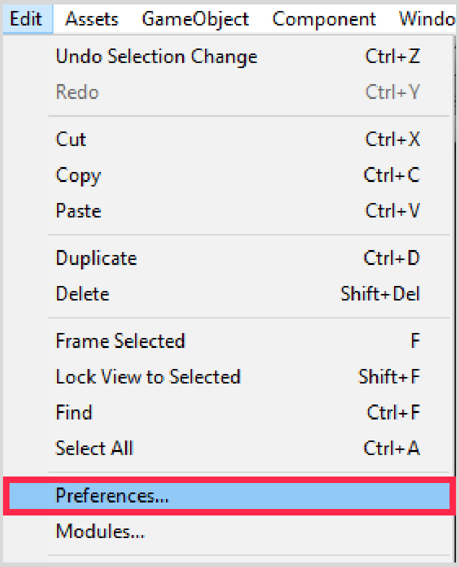
Environment Lighting
Skybox: Default-Skybox
Sun: Directional Light (Light)

At the bottom you will see this:

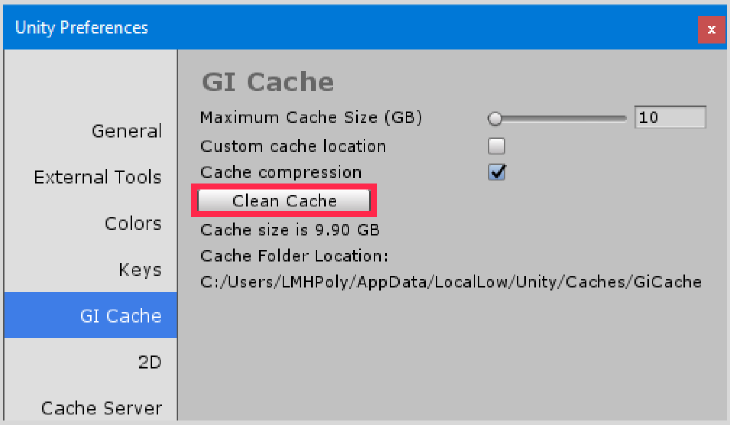


Uncheck **Auto**.

Go to **Edit > Preferences**



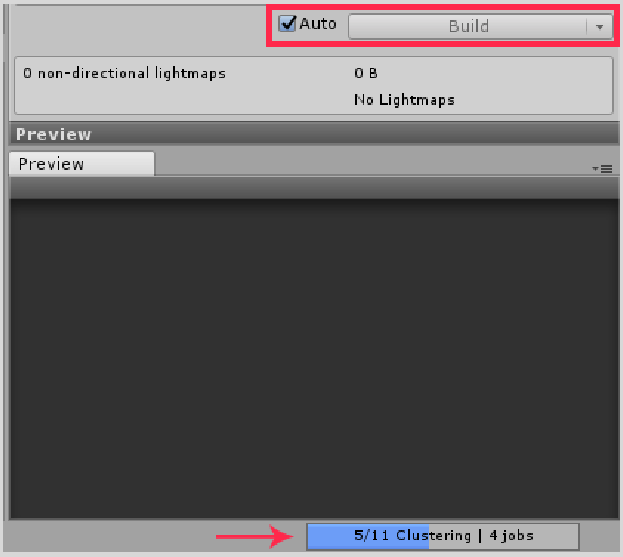
Select **Gi Cache** tab



GI Cache
Maximum Cache Size (GB) 10
Custom cache location ☐
Cache compression ☑
Cache size is 9.90 GB
Cache Folder Location:
C:/Users/LMHPoly/AppData/LocalLow/Unity/Caches/GiCache

Press **Clean Cache** button!

Enable **Auto** build/bake feature



☑ Auto | Build

0 non-directional lightmaps | 0 B
No Lightmaps

Preview

Preview

5/11 Clustering | 4 jobs

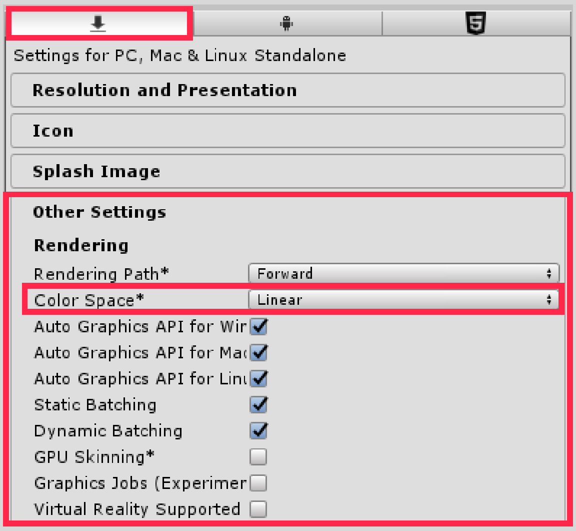
and wait until build is done (blue loading bar at right bottom corner).

-If you get some errors, try to change **Realtime resolution** to other value. For all my scenes I used 0.5. You can try lower or even bigger values like 0.3 or 1.0

3. Make sure that **Color Space** is set to **Linear.**

To do that go to **Edit > Project Settings > Player**

In the **Other Setting** tab, you will find **Color Space** set it to **Linear**.



Settings for PC, Mac & Linux Standalone

Resolution and Presentation

Icon

Splash Image

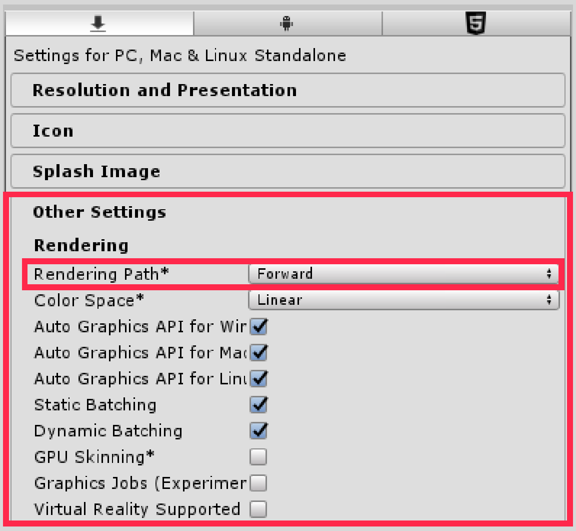
Other Settings

Rendering

Rendering Path* | Forward
Color Space* | Linear
Auto Graphics API for Wir ☑
Auto Graphics API for Mac ☑
Auto Graphics API for Linu ☑
Static Batching ☑
Dynamic Batching ☑
GPU Skinning* □
Graphics Jobs (Experimer □
Virtual Reality Supported □

4. Make sure that you are using **Forward Rendering**. (If you don't see this setting *in newer Unity 5 versions you don't need to change it – it's set to Forward by default!*)

You can find it in the same **Other Settings** tab as described before. Set **Rendering Path** to **Forward.**



Settings for PC, Mac & Linux Standalone

Resolution and Presentation

Icon

Splash Image

Other Settings

Rendering

Rendering Path* Forward

Color Space* Linear

Auto Graphics API for Wir ☑

Auto Graphics API for Mac ☑

Auto Graphics API for Linu ☑

Static Batching ☑

Dynamic Batching ☑

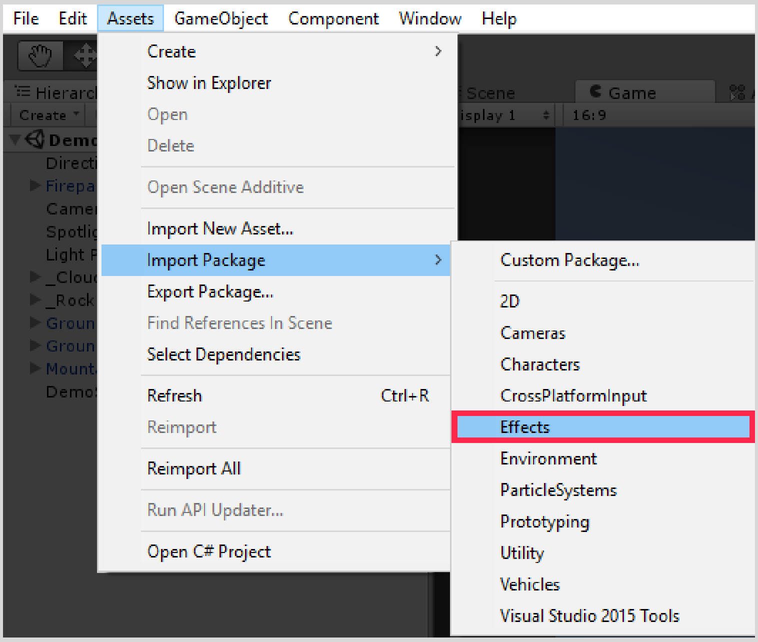
GPU Skinning* □

Graphics Jobs (Experimer □

Virtual Reality Supported □

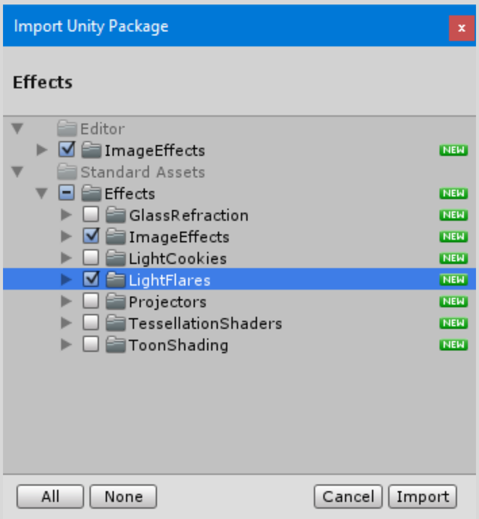
5. **Import Image Effects from "Standard Assets" package.** This needs to be done because of every Demo Scene Camera use image effects like (*DOF*, *Color Correction and so on*).

Go to ***Assets > Import Package > Effects***



-If there are no **Effects** package to import, you need to download [Standard Assets]() for your Unity build and install it!

Select only these folders:



Import Unity Package

Effects

- Editor
  - ☑ ImageEffects NEW
- Standard Assets
  - ⊟ Effects NEW
    - □ GlassRefraction NEW
    - ☑ ImageEffects NEW
    - □ LightCookies NEW
    - ☑ LightFlares NEW
    - □ Projectors NEW
    - □ TessellationShaders NEW
    - □ ToonShading NEW

- ***Editor*** (and everything that's inside that folder)

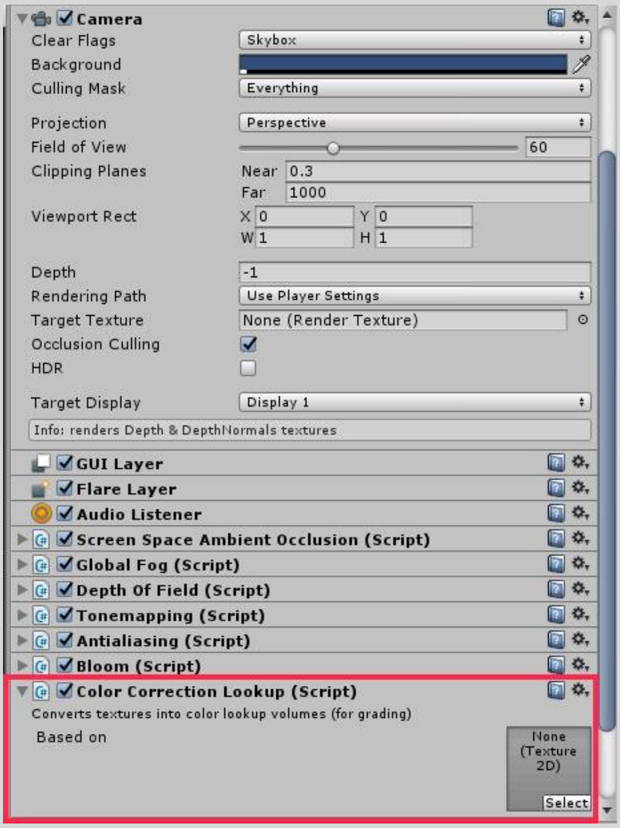
Inside ***Standard Assets > Effects*** select:

- ***Image Effects***
- ***LightFlares***

*And **Import.***

After that, you will see all camera effects working like it should.

-Select **Camera** and make sure that **Color Correction Lookup (Script)** is working. Try to **disable/enable** it and see if colors change in the **Game** view!



☑ Camera

Clear Flags	Skybox
Background	
Culling Mask	Everything
Projection	Perspective
Field of View	60
Clipping Planes	Near 0.3 Far 1000
Viewport Rect	X 0 Y 0 W 1 H 1
Depth	-1
Rendering Path	Use Player Settings
Target Texture	None (Render Texture)
Occlusion Culling	☑
HDR	□
Target Display	Display 1

Info: renders Depth & DepthNormals textures

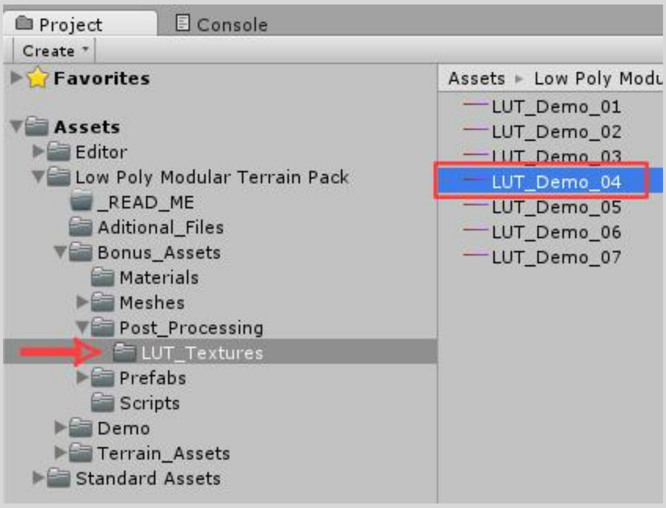
- ☑ GUI Layer
- ☑ Flare Layer
- ☑ Audio Listener
- ☑ Screen Space Ambient Occlusion (Script)
- ☑ Global Fog (Script)
- ☑ Depth Of Field (Script)
- ☑ Tonemapping (Script)
- ☑ Antialiasing (Script)
- ☑ Bloom (Script)
- ☑ Color Correction Lookup (Script)

Converts textures into color lookup volumes (for grading)

Based on None (Texture 2D)

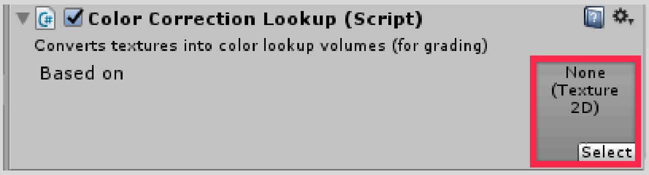
If it's not changing go to **part 6** if it's changing skip part 6!

6. At the **Project** tab go to **Assets > Low Poly Modular Terrain Pack > Bonus_Assets > Post-Processing > LUT_Textures**



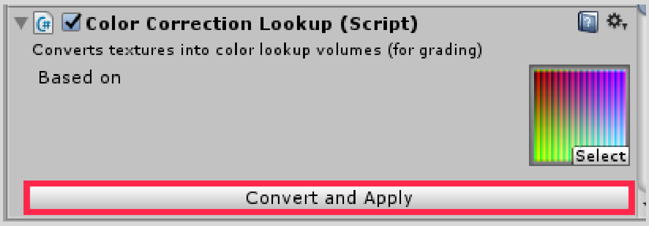
Grab and drag **LUT_Demo_04** texture file (this means that it's for Demo_04 Scene)

to Camera **Color Correction Lookup (Script)** blank square where it says **None (Texture 2D).**



Converts textures into color lookup volumes (for grading)

And press **Convert and Apply** button.



Converts textures into color lookup volumes (for grading)

That's it. Now you have all camera effects working.

Do it for every Demo Scene if needed!

-For Low-End PC's if you hit play and it lags, try disabling image effects one by one on the camera!

Now your scene should look like this (Demo_04):

Press Play and Enjoy!

If you have any questions, please send me an e-mail.

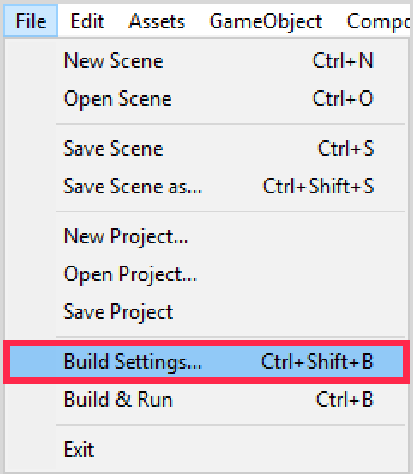
E-mail: justinas@lmhpoly.com

Website: http://lmhpoly.com/contact/

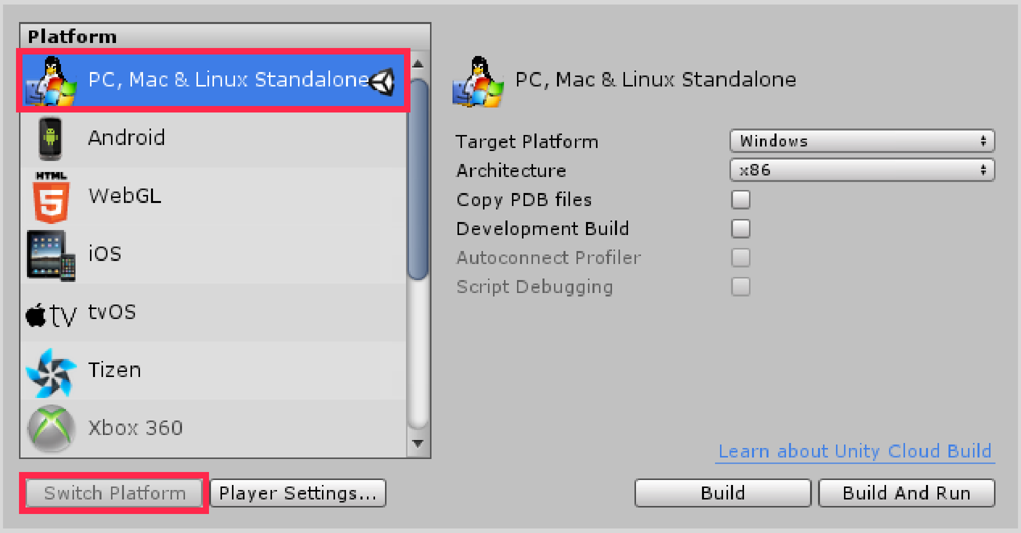
HOW TO SETUP DEMO SCENES IN UNITY 5.6.0 AND UP VERSIONS (For PC)

1. Make sure you are using **PC, Mac & Linux Standalone!**

Go to **File > Build Settings**



Select **PC, Mac & Linux Standalone** and hit **Switch Platform** button.



PC, Mac & Linux Standalone

Target Platform: Windows

Architecture: x86

Copy PDB files □

Development Build □

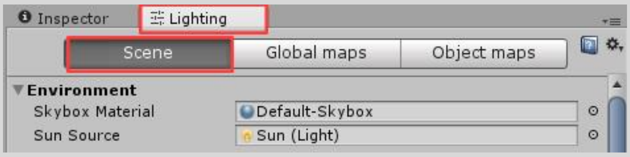
Autoconnect Profiler □

Script Debugging □

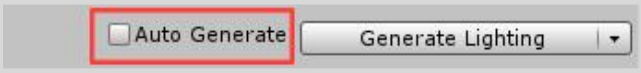
1. **Clean GI Cache** (*Optional – needed if you have some light baking errors*)

Before you go to the next step you need to Disable **Auto Generate** feature.

You can find it in **Lighting** and select **Scene** tab. (*If you don't have Lighting tab go to Window > Lighting > Settings*)

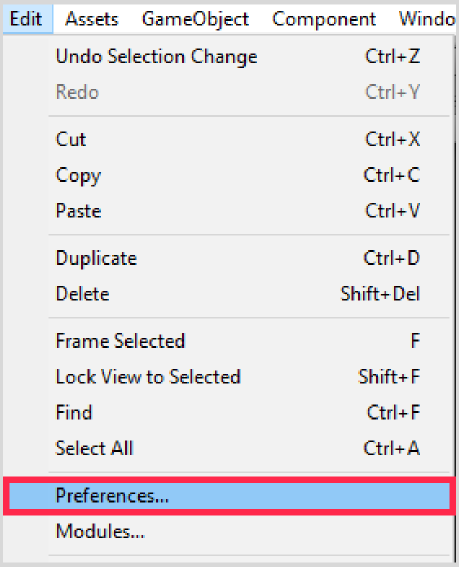


At the bottom you will see this:

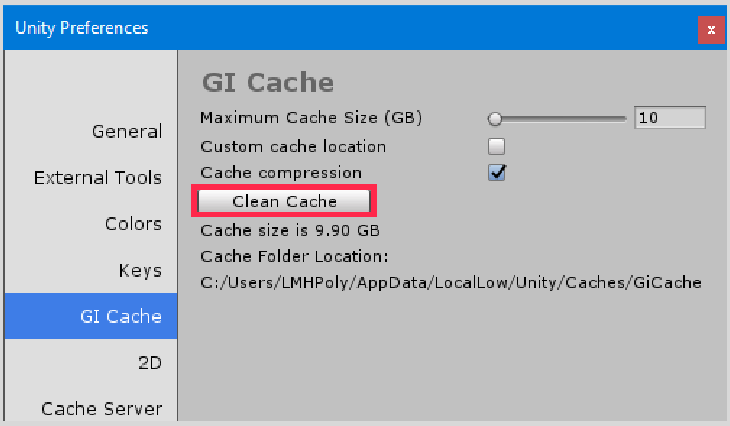


Uncheck **Auto Generate**.

Go to **Edit > Preferences**



Select **Gi Cache** tab



GI Cache

Maximum Cache Size (GB) 10

Custom cache location □

Cache compression ☑

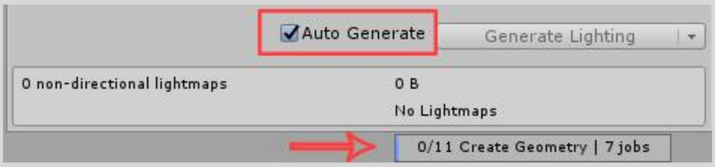
Cache size is 9.90 GB

Cache Folder Location:

C:/Users/LMHPoly/AppData/LocalLow/Unity/Caches/GiCache

Press **Clean Cache** button!

Enable **Auto Generate** feature



☑ Auto Generate | Generate Lighting

0 non-directional lightmaps — 0 B — No Lightmaps

0/11 Create Geometry | 7 jobs

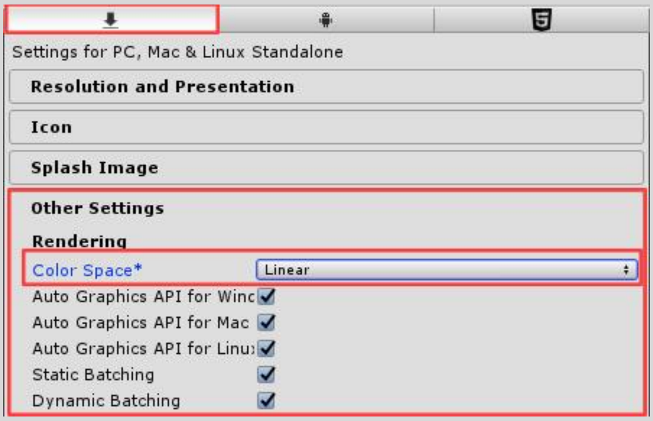
and wait until build is done (blue loading bar at the right bottom corner).

-If you get some errors, try to change **Realtime resolution** to the other value. For all my scenes I've used 0.5. You can try lower or even bigger values like 0.3 or 1.0

2. Make sure that **Color Space** is set to **Linear.**

To do that go to **Edit > Project Settings > Player**

In the **Other Setting** tab, you will find a **Color Space** set it to **Linear**.



Settings for PC, Mac & Linux Standalone

Resolution and Presentation

Icon

Splash Image

Other Settings

Rendering

Color Space* — Linear

Auto Graphics API for Winc ☑

Auto Graphics API for Mac ☑

Auto Graphics API for Linu: ☑

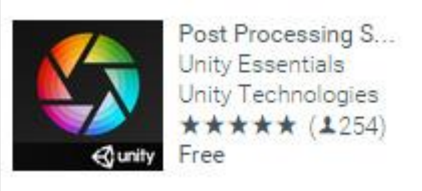
Static Batching ☑

Dynamic Batching ☑

3. **Import Post Processing Stack.** This needs to be done because of every Demo Scene Camera use image effects like (*DOF*, *Color Correction and so on*).

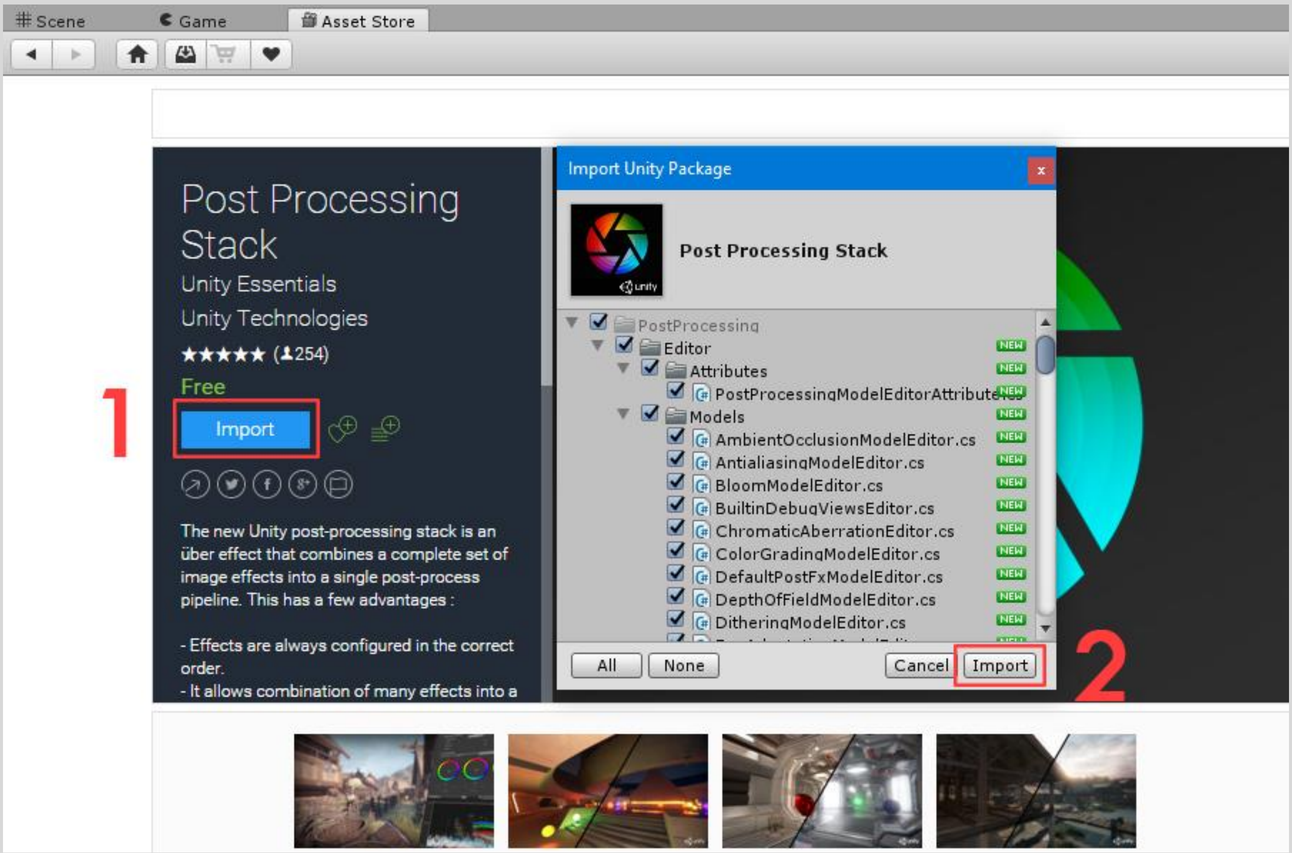
Go to ***Window > Asset Store***

Search for **Post Processing Stack:**



Post Processing S...
Unity Essentials
Unity Technologies
★★★★★ (254)
Free

Download and **Import** it to your project



Post Processing Stack
Unity Essentials
Unity Technologies
★★★★★ (254)
Free

The new Unity post-processing stack is an über effect that combines a complete set of image effects into a single post-process pipeline. This has a few advantages :

- Effects are always configured in the correct order.
- It allows combination of many effects into a

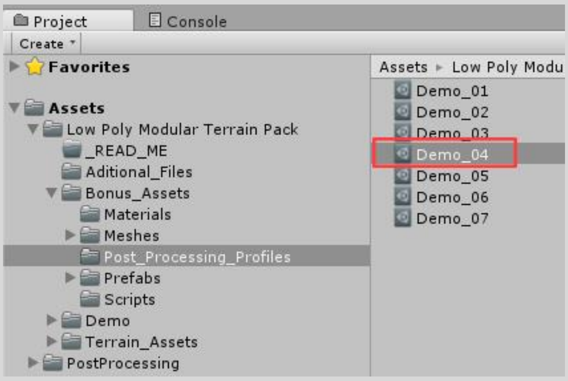
Import Unity Package — Post Processing Stack:

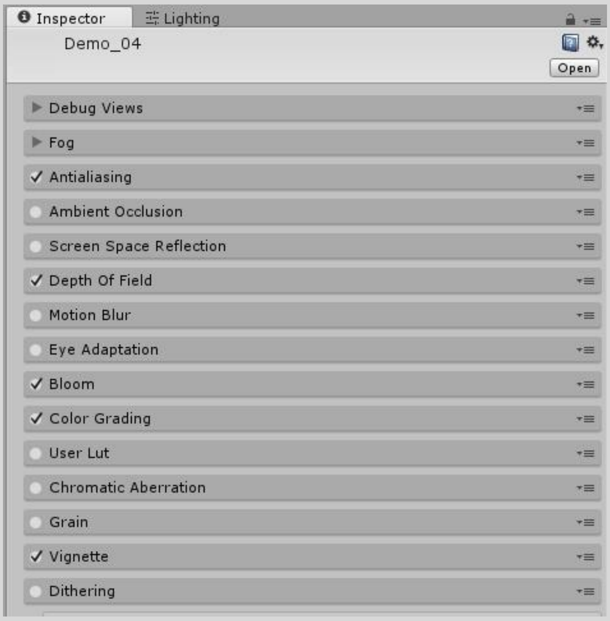
- ☑ PostProcessing
  - ☑ Editor NEW
    - ☑ Attributes NEW
      - ☑ PostProcessingModelEditorAttribute.cs NEW
    - ☑ Models NEW
      - ☑ AmbientOcclusionModelEditor.cs NEW
      - ☑ AntialiasingModelEditor.cs NEW
      - ☑ BloomModelEditor.cs NEW
      - ☑ BuiltinDebugViewsEditor.cs NEW
      - ☑ ChromaticAberrationEditor.cs NEW
      - ☑ ColorGradingModelEditor.cs NEW
      - ☑ DefaultPostFxModelEditor.cs NEW
      - ☑ DepthOfFieldModelEditor.cs NEW
      - ☑ DitheringModelEditor.cs NEW

After that, you will see all camera effects working like it should.

-For Low-End PC's if you hit play and it lags, try disabling Post-Processing effects one by one on the Post-Processing Profile settings!

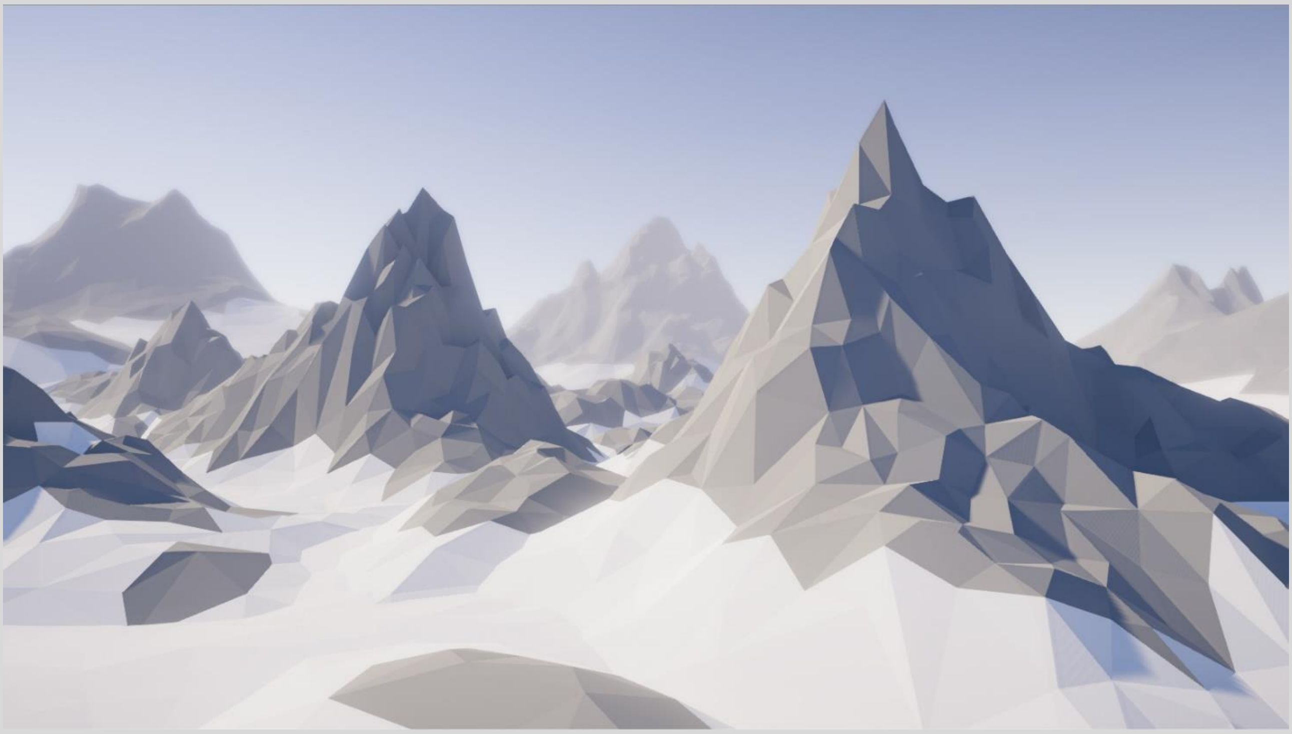
To edit **Post-Processing** Settings – go to **Low Poly Modular Terrain Pack** > **Bonus_Assets** > **Post_Processing_Profiles** and select **Demo** scene you want to edit Post-Processing effects for.





- ▶ Debug Views
- ▶ Fog
- ✓ Antialiasing
- ○ Ambient Occlusion
- ○ Screen Space Reflection
- ✓ Depth Of Field
- ○ Motion Blur
- ○ Eye Adaptation
- ✓ Bloom
- ✓ Color Grading
- ○ User Lut
- ○ Chromatic Aberration
- ○ Grain
- ✓ Vignette
- ○ Dithering

Now your scene should look like this (Demo_04):



Press Play and Enjoy!

If you have any questions, please send me an e-mail.

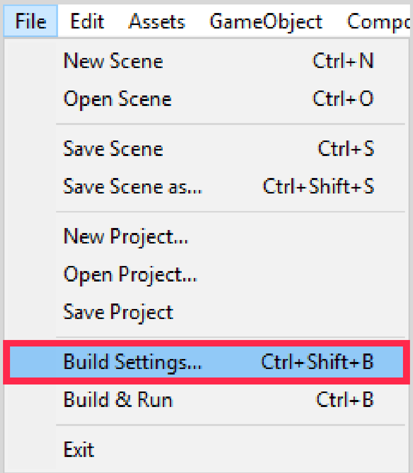
E-mail: justinas@lmhpoly.com

Website: http://lmhpoly.com/contact/

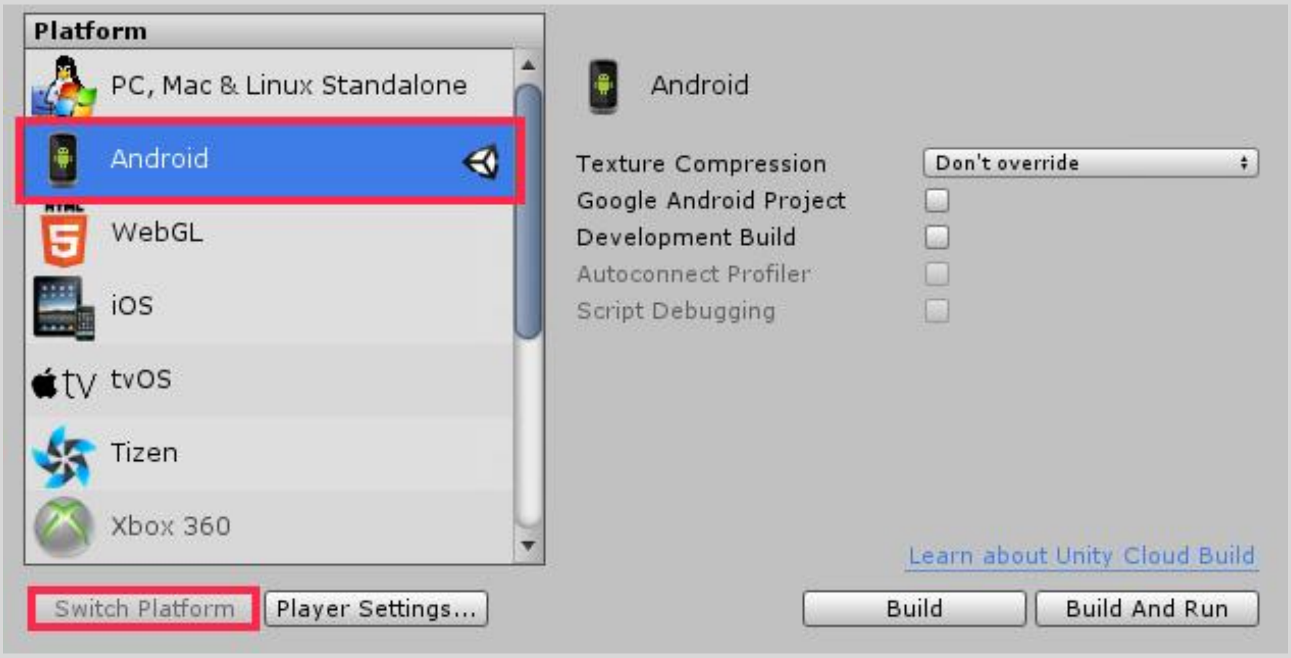
HOW TO SETUP DEMO SCENES IN UNITY 5.0.0 – 5.5.3 VERSIONS (For ANDROID)

1. Make sure you are using **Android** build!

Go to **File > Build Settings**



Select **Android** and hit **Switch Platform** button.



Android

Texture Compression: Don't override

Google Android Project ☐

Development Build ☐

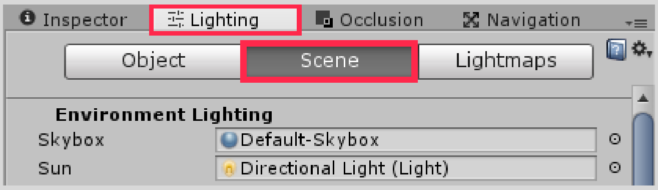
Autoconnect Profiler ☐

Script Debugging ☐

2. **Clean GI Cache** (*Optional – needed if you have some light baking errors*)

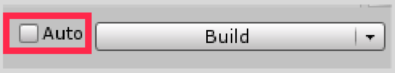
Before you go to the next step you need to Disable **Auto** build/bake feature.

You can find it in **Lighting** and select **Scene** tab. (*If you don't have Lighting tab go to Window > Lighting*)



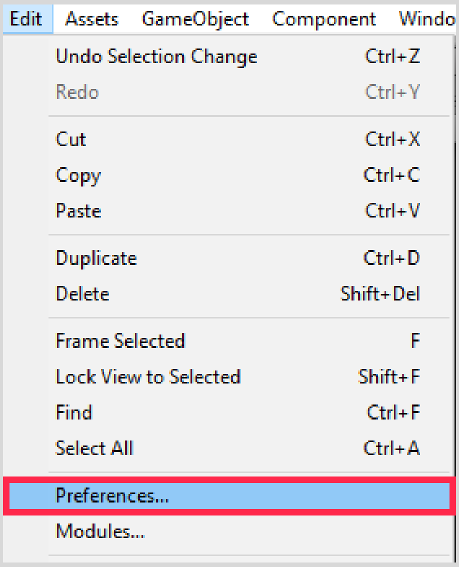
Environment Lighting
Skybox Default-Skybox
Sun Directional Light (Light)

At the bottom you will see this:

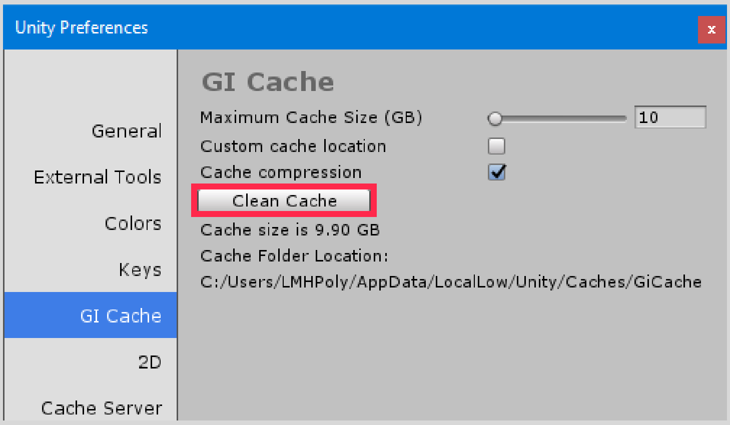


Uncheck **Auto**.

Go to **Edit > Preferences**



Select **Gi Cache** tab

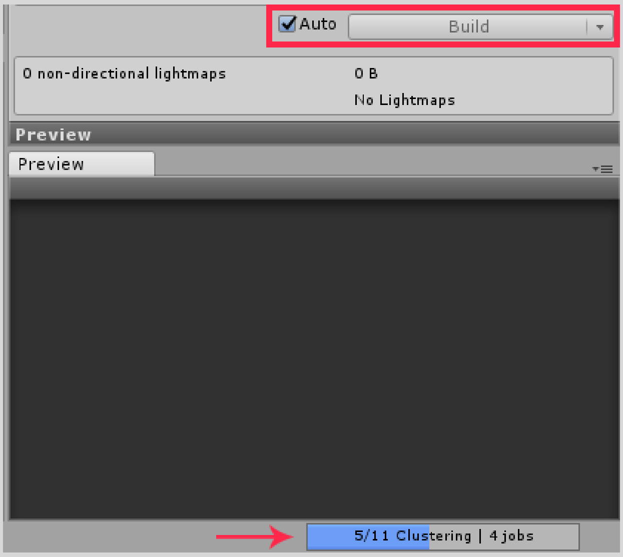


GI Cache

Maximum Cache Size (GB) 10
Custom cache location □
Cache compression ☑
Cache size is 9.90 GB
Cache Folder Location:
C:/Users/LMHPoly/AppData/LocalLow/Unity/Caches/GiCache

Press **Clean Cache** button!

Enable **Auto** build/bake feature



☑ Auto

0 non-directional lightmaps 0 B

No Lightmaps

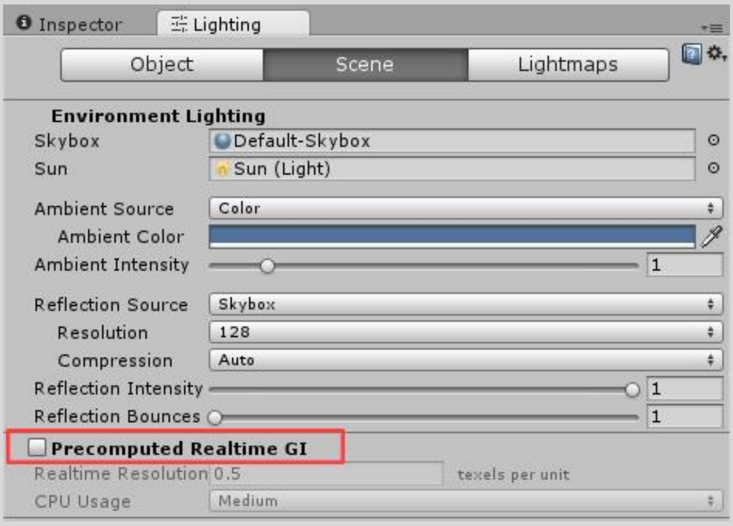
5/11 Clustering | 4 jobs

and wait until build is done (blue loading bar at right bottom corner).

-If you get some errors, try to change **Precomputed Realtime GI - Realtime resolution** to other value. For all my scenes I used 0.5**.** You can try lower or even bigger values like 0.3 or 1.0

3. Disable **Precomputed Realtime GI** (Optional – for a better performance)

You can find it in **Lighting** and select **Scene** tab.



Environment Lighting

Skybox: Default-Skybox

Sun: Sun (Light)

Ambient Source: Color

Ambient Color

Ambient Intensity: 1

Reflection Source: Skybox

Resolution: 128

Compression: Auto

Reflection Intensity: 1

Reflection Bounces: 1

□ **Precomputed Realtime GI**

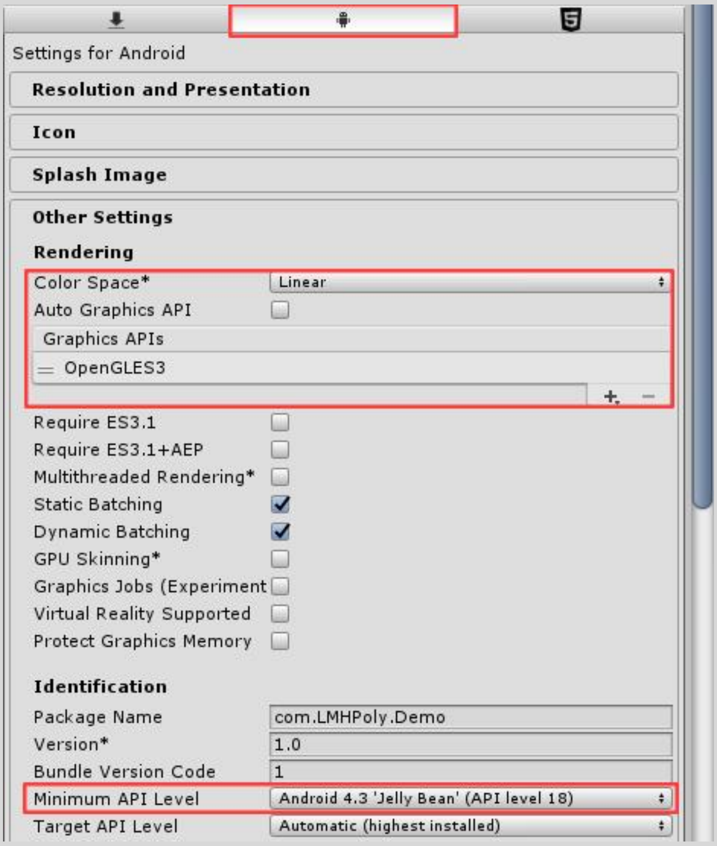
Realtime Resolution: 0.5 texels per unit

CPU Usage: Medium

4. Make sure that Color Space is set to **Linear** (*Works only on Unity 5.5 and up!*).

To do that go to **Edit > Project Settings > Player**

In the **Other Setting** tab, you will find **Color Space*** set it to **Linear**.



Settings for Android

Resolution and Presentation

Icon

Splash Image

Other Settings

Rendering

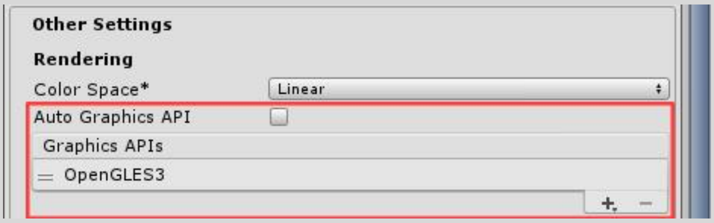
Color Space*	Linear
Auto Graphics API	☐
Graphics APIs	
OpenGLES3	
Require ES3.1	☐
Require ES3.1+AEP	☐
Multithreaded Rendering*	☐
Static Batching	☑
Dynamic Batching	☑
GPU Skinning*	☐
Graphics Jobs (Experiment	☐
Virtual Reality Supported	☐
Protect Graphics Memory	☐

Identification

Package Name	com.LMHPoly.Demo
Version*	1.0
Bundle Version Code	1
Minimum API Level	Android 4.3 'Jelly Bean' (API level 18)
Target API Level	Automatic (highest installed)

To use **Linear** Color Space, you need set **Minimum API level** to at least **Android 4.3** or higher!

Also, uncheck **Auto Graphics API** and remove all Graphic APIs from the list, leave only **OpenGLES3**.



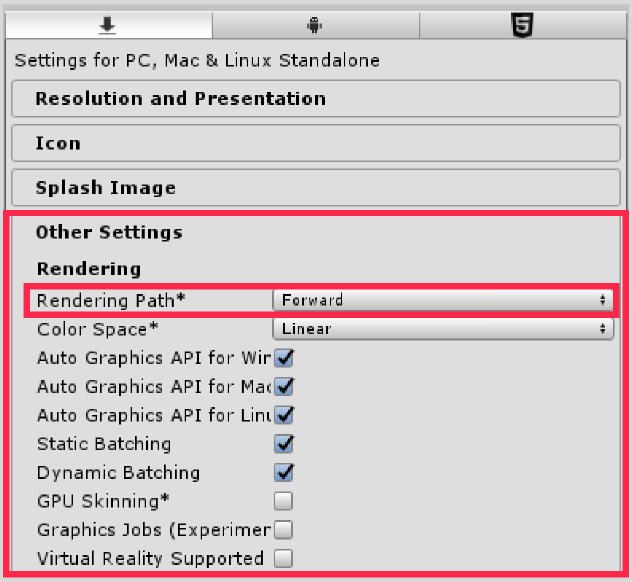
Other Settings

Rendering

Color Space*	Linear
Auto Graphics API	☐
Graphics APIs	
OpenGLES3	

5. Make sure that you are using **Forward Rendering**.

You can find it in the same **Other Settings** tab as described before. Set **Rendering Path** to **Forward.** (If you don’t see this option *in newer Unity 5 versions, you don’t need to change it – it’s set to Forward by default!*)



Settings for PC, Mac & Linux Standalone

Resolution and Presentation

Icon

Splash Image

Other Settings

Rendering

Rendering Path* Forward

Color Space* Linear

Auto Graphics API for Wir ☑

Auto Graphics API for Mac ☑

Auto Graphics API for Linu ☑

Static Batching ☑

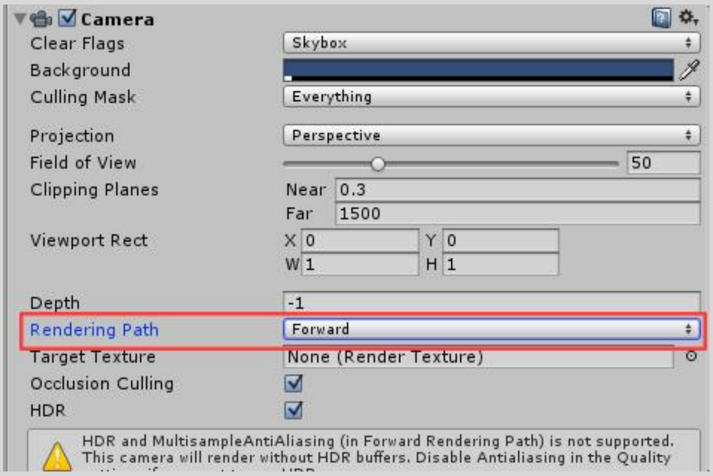
Dynamic Batching ☑

GPU Skinning* □

Graphics Jobs (Experimer □

Virtual Reality Supported □

Also, select the Camera in the Hierarchy and make sure that **Rendering Path** set to **Forward** or set to **Use Player Settings**.



☑ Camera

Clear Flags: Skybox

Background

Culling Mask: Everything

Projection: Perspective

Field of View: 50

Clipping Planes: Near 0.3, Far 1500

Viewport Rect: X 0, Y 0, W 1, H 1

Depth: -1

Rendering Path: Forward

Target Texture: None (Render Texture)

Occlusion Culling ☑

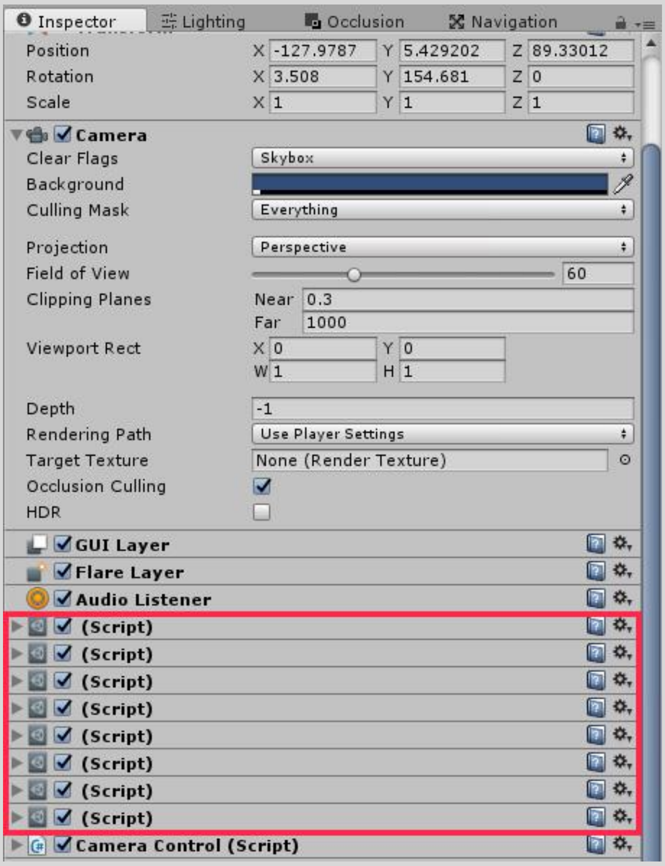
HDR ☑

HDR and MultisampleAntiAliasing (in Forward Rendering Path) is not supported. This camera will render without HDR buffers. Disable Antialiasing in the Quality

-Game will lag a lot on mobile if Rendering Path is set to Deferred!

6. Remove all Camera **Image Effects**!

Select **Camera** in Hierarchy and Remove all those **(Script)** components or just Disable them.



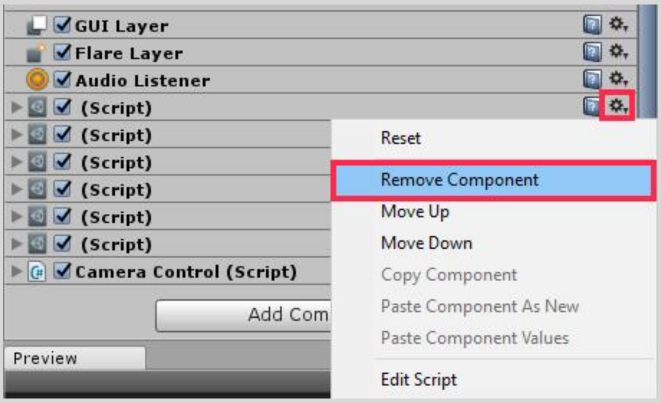
Position X -127.9787 Y 5.429202 Z 89.33012
Rotation X 3.508 Y 154.681 Z 0
Scale X 1 Y 1 Z 1

☑ Camera
Clear Flags: Skybox
Background
Culling Mask: Everything
Projection: Perspective
Field of View: 60
Clipping Planes: Near 0.3, Far 1000
Viewport Rect: X 0 Y 0 W 1 H 1
Depth: -1
Rendering Path: Use Player Settings
Target Texture: None (Render Texture)
Occlusion Culling ☑
HDR □

☑ GUI Layer
☑ Flare Layer
☑ Audio Listener
☑ (Script)
☑ (Script)
☑ (Script)
☑ (Script)
☑ (Script)
☑ (Script)
☑ (Script)
☑ (Script)
☑ Camera Control (Script)

-It show's all image effects as **(Script)** only if you don't have imported **Image Effects** from **Standard Assets** (I showed how to do it for PC build earlier).

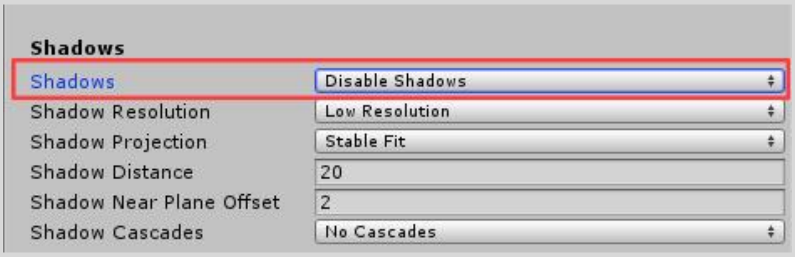
Do it by clicking on the gear icon and press **Remove Component.**



-Android don't support image effects which are added to the camera, and which ones work, they impact performance very much, so you need to disable them all.

7. Disable **Real-time Shadows** (*Optional – for a better performance*).

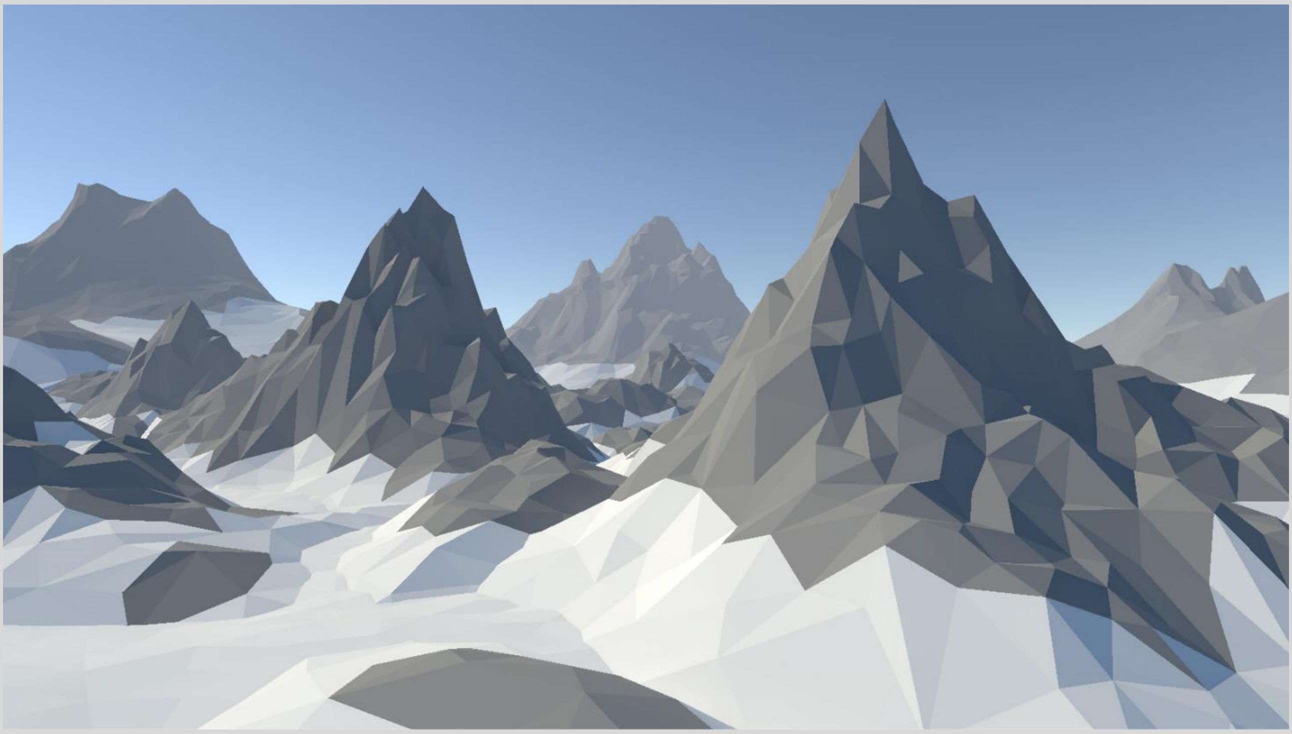
Go to **Edit** > **Project Settings** > **Quality**



Shadows

Shadows	Disable Shadows
Shadow Resolution	Low Resolution
Shadow Projection	Stable Fit
Shadow Distance	20
Shadow Near Plane Offset	2
Shadow Cascades	No Cascades

Now your *Demo_04* Scene should look like this.



So by Using **Unity 5.5** and up + new **Linear** lighting feature for **Android** and **iOS,** you can achieve much better results than using **Gamma** lighting!

This Demo_04 Scene and all other Demo Scenes was tested on Xperia Z Ultra (Runs at solid 60FPS) with all Images Effects removed, using Realtime GI, Linear Color Space, Forward Rendering Path and Real-time Low Resolution Hard Shadows.

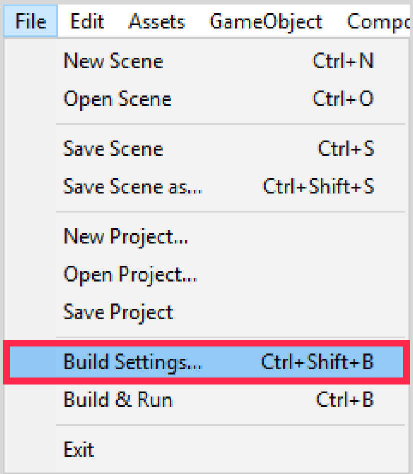
Now you can make **Android** build and test it on your own device!

-I don't have an **iOS** device, so I can't test it on that!

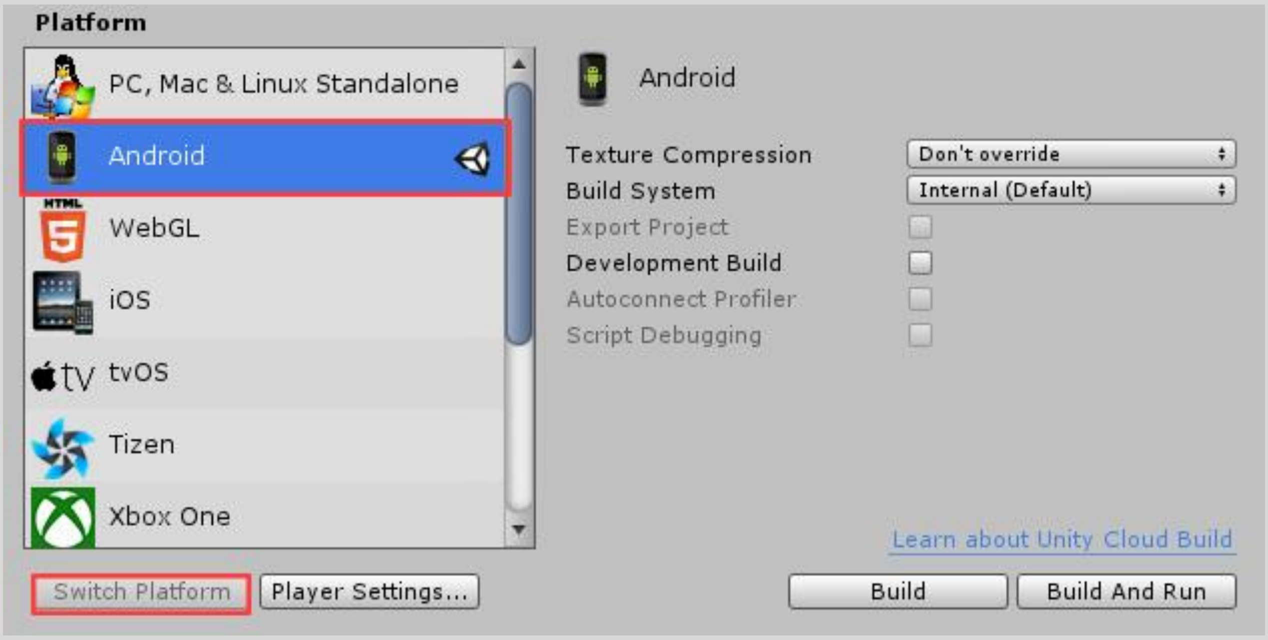
HOW TO SETUP DEMO SCENES IN UNITY 5.6.0 AND UP VERSIONS (For ANDROID)

1. Make sure you are using **Android** build!

Go to **File > Build Settings**



Select **Android** and hit **Switch Platform** button.

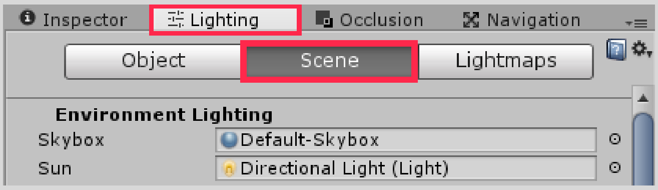


Texture Compression: Don't override
Build System: Internal (Default)
Export Project □
Development Build □
Autoconnect Profiler □
Script Debugging □

2. **Clean GI Cache** (*Optional – needed if you have some light baking errors*)

Before you go to the next step you need to Disable **Auto** build/bake feature.

You can find it in **Lighting** and select **Scene** tab. (*If you don't have Lighting tab go to Window > Lighting*)

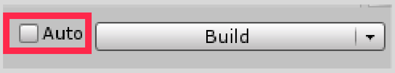


Environment Lighting

Skybox: Default-Skybox

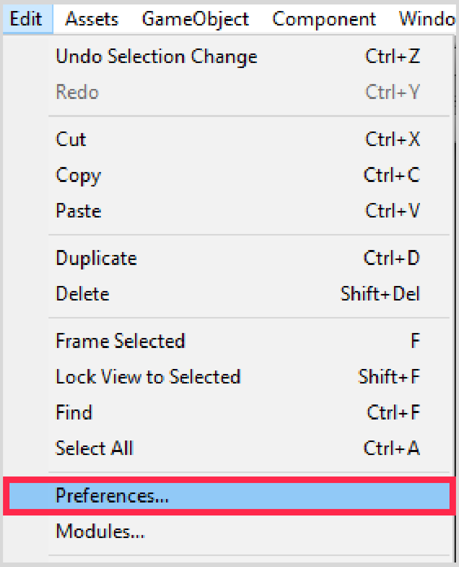
Sun: Directional Light (Light)

At the bottom you will see this:

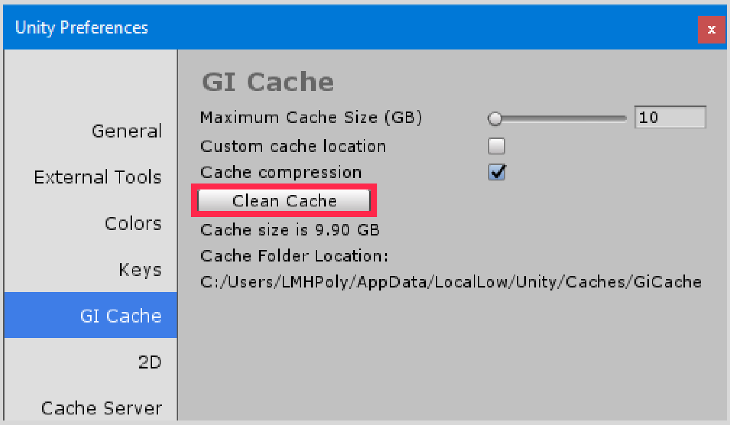


Uncheck **Auto**.

Go to **Edit > Preferences**



Select **Gi Cache** tab



GI Cache

Maximum Cache Size (GB) 10

Custom cache location □

Cache compression ☑

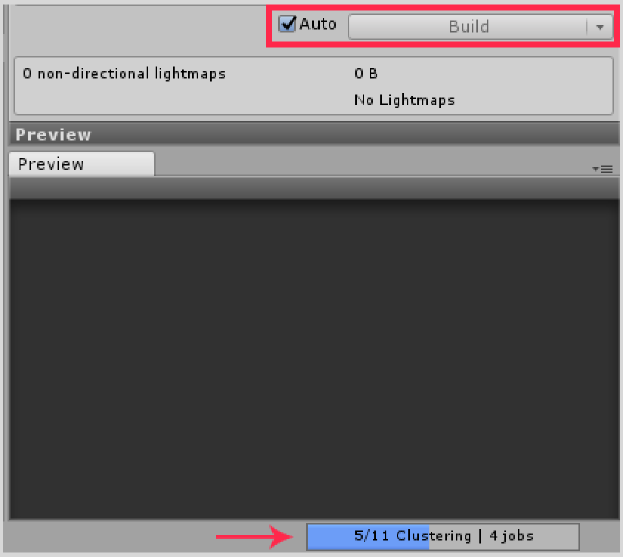
Cache size is 9.90 GB

Cache Folder Location:

C:/Users/LMHPoly/AppData/LocalLow/Unity/Caches/GiCache

Press **Clean Cache** button!

Enable **Auto** build/bake feature



☑ Auto   Build

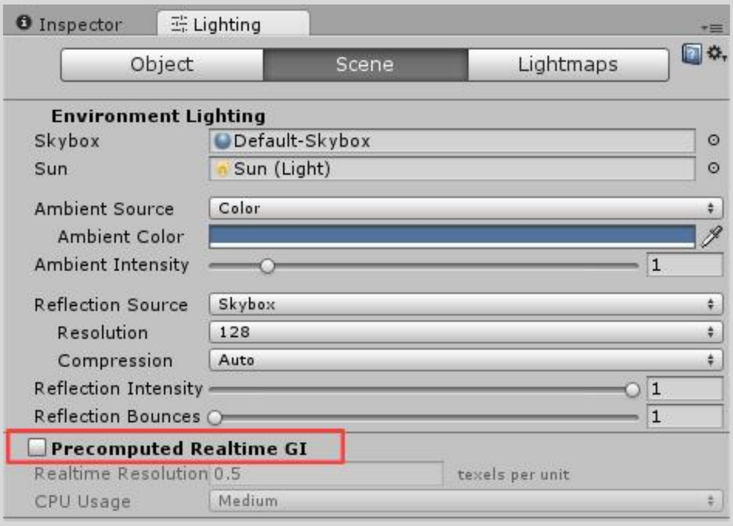
0 non-directional lightmaps   0 B
No Lightmaps

and wait until build is done (blue loading bar at right bottom corner).

-If you get some errors, try to change **Precomputed Realtime GI - Realtime resolution** to other value. For all my scenes I used 0.5. You can try lower or even bigger values like 0.3 or 1.0

3. Disable **Precomputed Realtime GI** (*Optional – for a better performance*)

You can find it in **Lighting** and select **Scene** tab.



Environment Lighting

Skybox: Default-Skybox
Sun: Sun (Light)

Ambient Source: Color
Ambient Color
Ambient Intensity: 1

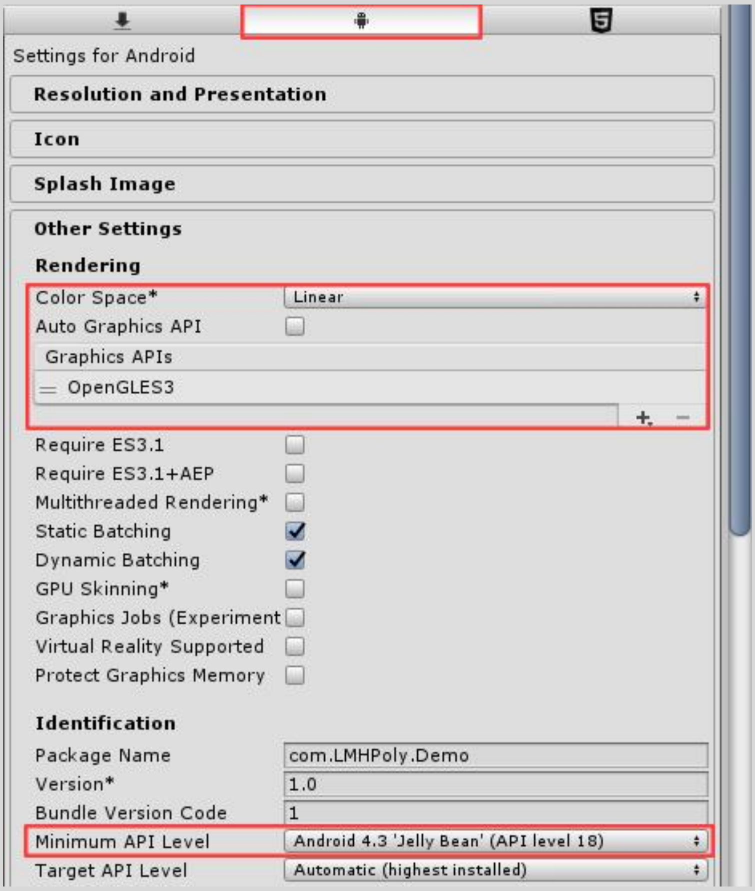
Reflection Source: Skybox
Resolution: 128
Compression: Auto
Reflection Intensity: 1
Reflection Bounces: 1

□ **Precomputed Realtime GI**
Realtime Resolution: 0.5 texels per unit
CPU Usage: Medium

4. Make sure that **Color Space** is set to **Linear**.

To do that go to **Edit > Project Settings > Player**

In the **Other Setting** tab, you will find **Color Space*** set it to **Linear**.



Settings for Android

Resolution and Presentation

Icon

Splash Image

Other Settings

Rendering

Color Space* Linear

Auto Graphics API □

Graphics APIs

OpenGLES3

Require ES3.1 □

Require ES3.1+AEP □

Multithreaded Rendering* □

Static Batching ☑

Dynamic Batching ☑

GPU Skinning* □

Graphics Jobs (Experiment □

Virtual Reality Supported □

Protect Graphics Memory □

Identification

Package Name com.LMHPoly.Demo

Version* 1.0

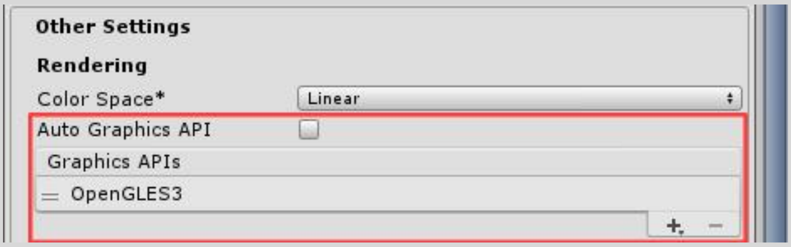
Bundle Version Code 1

Minimum API Level Android 4.3 'Jelly Bean' (API level 18)

Target API Level Automatic (highest installed)

To use **Linear** Color Space, you need set **Minimum API level** to at least **Android 4.3** or higher!

Also, uncheck **Auto Graphics API** and remove all Graphic APIs from the list, leave only **OpenGLES3**.



Other Settings

Rendering

Color Space* Linear

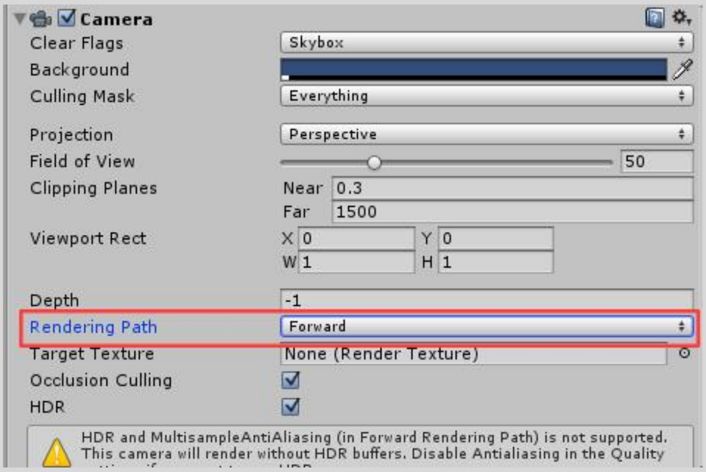
Auto Graphics API □

Graphics APIs

OpenGLES3

5. Make sure that you are using **Forward Rendering**.

select the **Camera** in the **Hierarchy** and make sure that **Rendering Path** is set to **Forward.**



☑ Camera	
Clear Flags	Skybox
Background	
Culling Mask	Everything
Projection	Perspective
Field of View	50
Clipping Planes	Near 0.3 Far 1500
Viewport Rect	X 0 Y 0 W 1 H 1
Depth	-1
Rendering Path	Forward
Target Texture	None (Render Texture)
Occlusion Culling	☑
HDR	☑

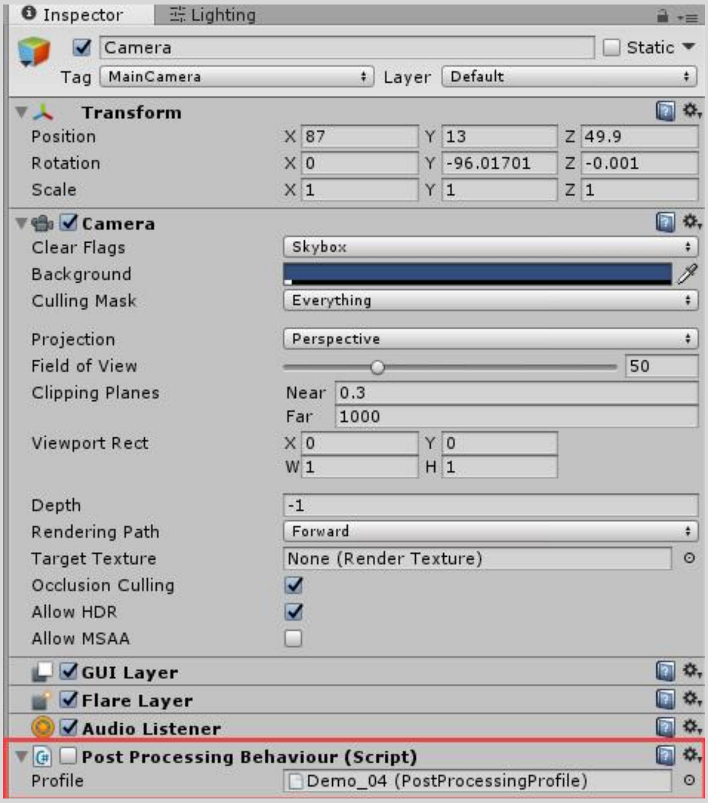
HDR and MultisampleAntiAliasing (in Forward Rendering Path) is not supported. This camera will render without HDR buffers. Disable Antialiasing in the Quality

-Game will lag a lot on mobile if Rendering Path is set to Deferred!

6. Remove or Disable **Post-Processing** Effects from the Camera (*If you want to use Post-Processing effects, skip this step and go to the next **step 7***)!

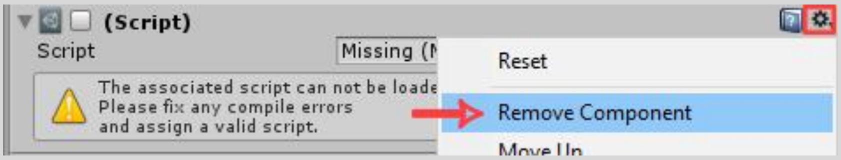
Select a **Camera** in the **Hierarchy** and Remove **Post Processing Behaviour (Script)**.

-You will get a message "*Missing (Mono Script)*" where it says **Profile** if you don't have imported **Post Processing Stack** from Unity Asset Store!



☑ Camera	□ Static
Tag MainCamera	Layer Default
Transform	
Position	X 87 Y 13 Z 49.9
Rotation	X 0 Y -96.01701 Z -0.001
Scale	X 1 Y 1 Z 1
☑ Camera	
Clear Flags	Skybox
Background	
Culling Mask	Everything
Projection	Perspective
Field of View	50
Clipping Planes	Near 0.3 Far 1000
Viewport Rect	X 0 Y 0 W 1 H 1
Depth	-1
Rendering Path	Forward
Target Texture	None (Render Texture)
Occlusion Culling	☑
Allow HDR	☑
Allow MSAA	□
☑ GUI Layer	
☑ Flare Layer	
☑ Audio Listener	
□ Post Processing Behaviour (Script)	
Profile	Demo_04 (PostProcessingProfile)

Do it by clicking on the Gear Icon and press **Remove Component.**



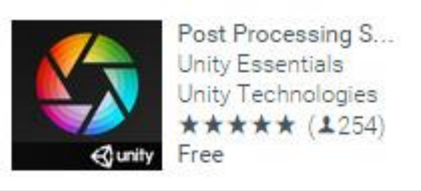
The associated script can not be loade
Please fix any compile errors
and assign a valid script.

-All Post-Processing image effects eat a lot of mobile performance, so it's the best to remove them all.

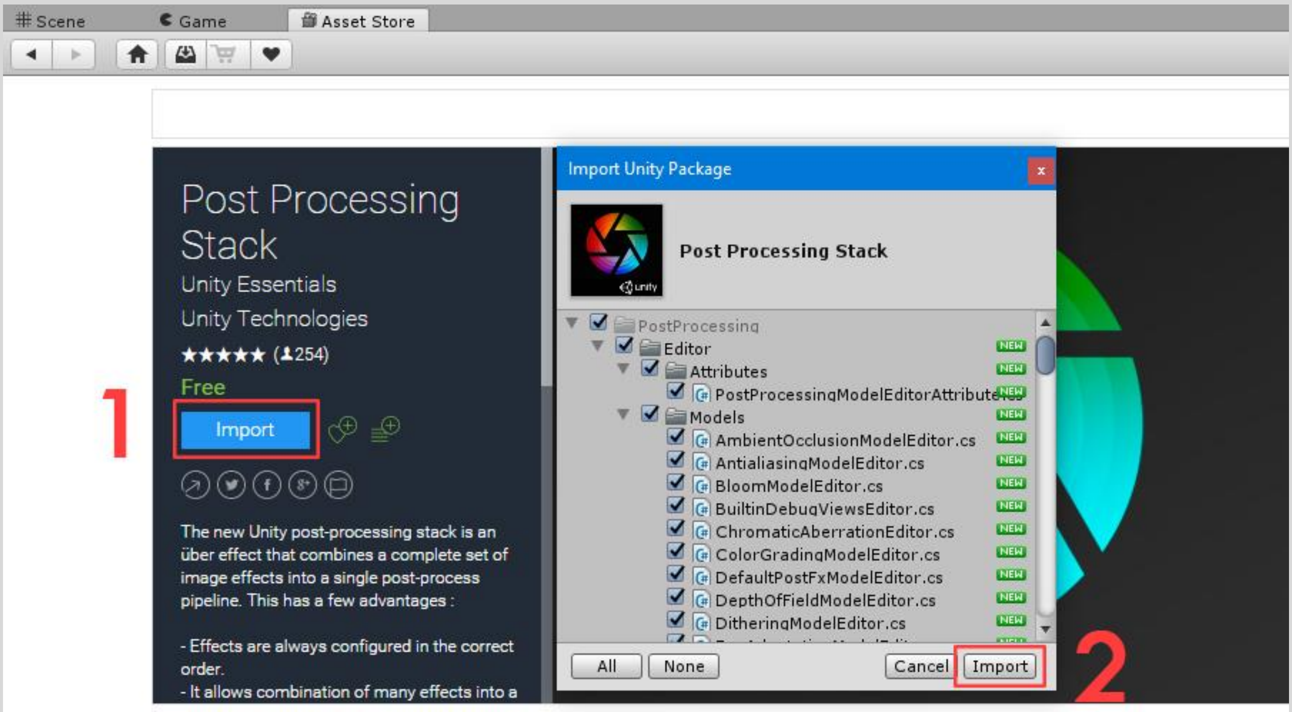
7. **Import Post Processing Stack** (*Optional – Big performance hit for mobile devices*). If you leave **Post Processing Behaviour (Script)** on the Camera and want to use those effects, you need to do this.

Go to ***Window > Asset Store***

Search for **Post Processing Stack**:



Download and **Import** it to your project

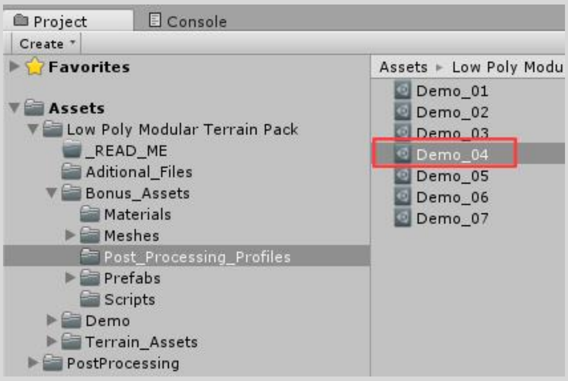


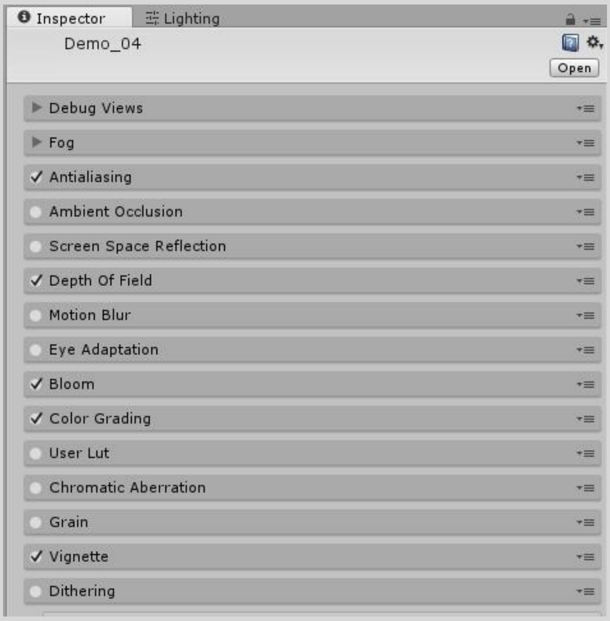
The new Unity post-processing stack is an über effect that combines a complete set of image effects into a single post-process pipeline. This has a few advantages :

- Effects are always configured in the correct order.
- It allows combination of many effects into a

After that, you will see that all Camera Effects working like it should.

To edit **Post-Processing** Settings – go to **Low Poly Modular Terrain Pack** > **Bonus_Assets** > **Post_Processing_Profiles** and select **Demo** scene you want to edit Post-Processing effects for.



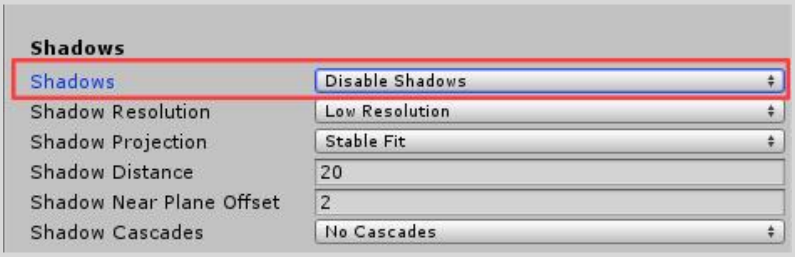


▶ Debug Views
▶ Fog
✓ Antialiasing
○ Ambient Occlusion
○ Screen Space Reflection
✓ Depth Of Field
○ Motion Blur
○ Eye Adaptation
✓ Bloom
✓ Color Grading
○ User Lut
○ Chromatic Aberration
○ Grain
✓ Vignette
○ Dithering

Uncheck all effects, and try them one by one to see which one impact mobile performance the most.

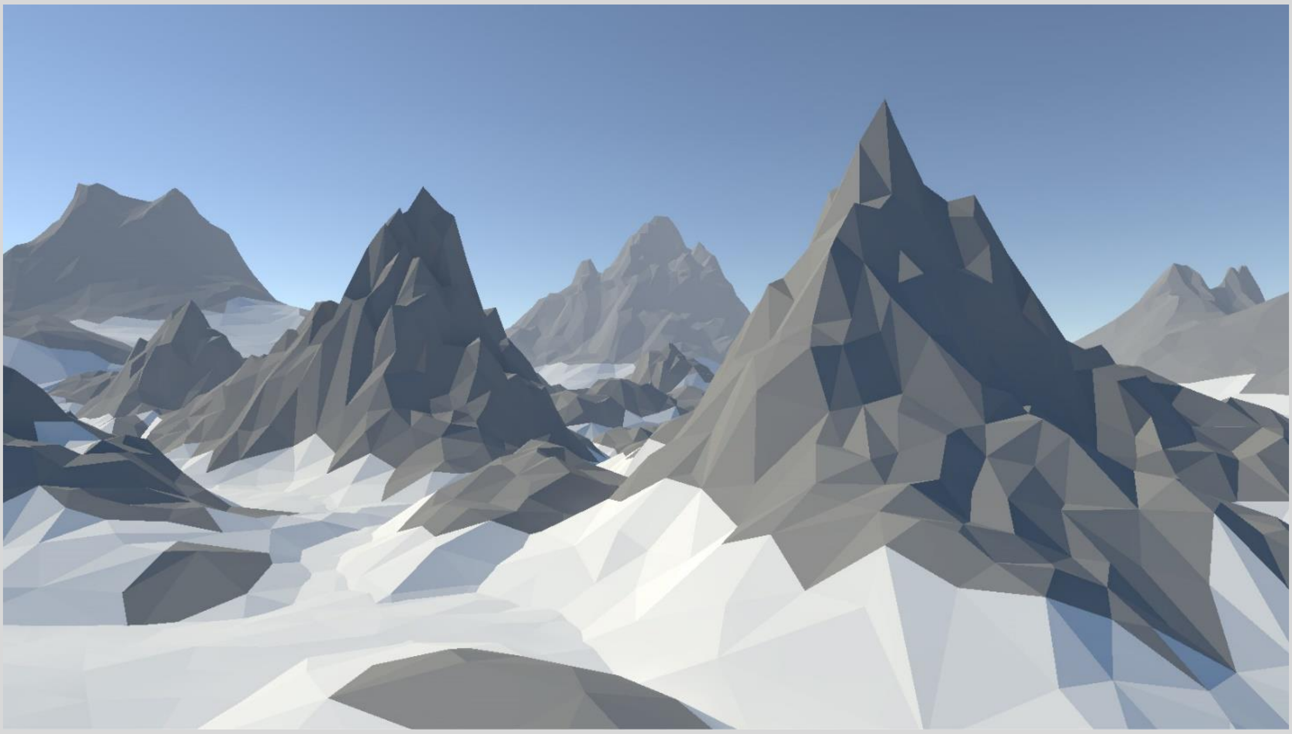
8. Disable **Real-time Shadows** (*Optional – for a better performance*).

Go to **Edit** > **Project Settings** > **Quality**



Shadows	Disable Shadows
Shadow Resolution	Low Resolution
Shadow Projection	Stable Fit
Shadow Distance	20
Shadow Near Plane Offset	2
Shadow Cascades	No Cascades

Now your *Demo_04* Scene should look like this.



So by Using **Unity 5.5** and up + new **Linear** lighting feature for **Android** and **iOS,** you can achieve much better results than using **Gamma** lighting!

This Demo_04 Scene and all other Demo Scenes was tested on Xperia Z Ultra (*Runs at solid 60FPS*) with Post-Processing Behaviour (Script) removed from the camera, using Realtime GI, Linear Color Space, Forward Rendering Path and Real-time Low Resolution Hard Shadows.

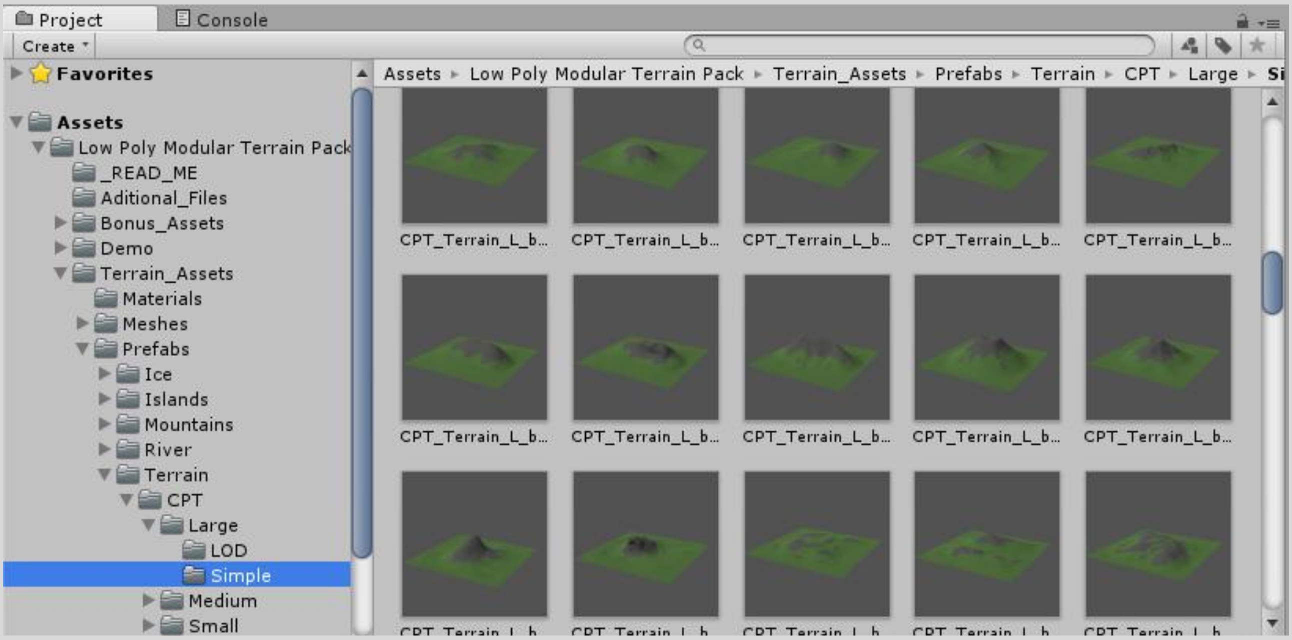
Now you can make **Android** build and test it on your own device!

-I don't have an **iOS** device, so I can't test it on that!

HOW TO USE “Low Poly Modular Terrain Pack”

If you don’t know what some names mean, go to **Page 41** for **Naming Conventions**!

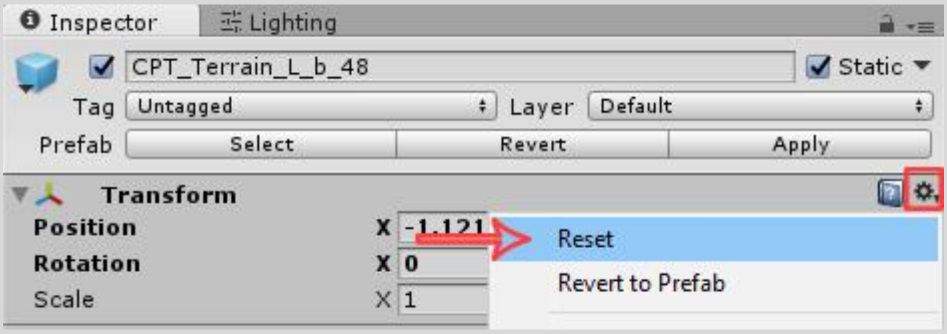
Go to **Assets > Low Poly Modular Terrain Pack > Terrain_Assets > Prefabs.** Here you can select what kind of Prefabs you want to use – **Ice, Islands, Mountains, River**, **Terrain** or **Water**. For example, open folder **Terrain,** you will see 3 types of the same Terrain. Open for example **CPT** folder. Now select what size Terrain you want for example **Large**. Select which version you want *(with LOD or without LOD)* for example, **Simple** *(without LODs)*. And here you can see a list of **Simple CPT_Terrain_Large** Prefabs:


Project | Console
Create
Favorites
Assets ▸ Low Poly Modular Terrain Pack ▸ Terrain_Assets ▸ Prefabs ▸ Terrain ▸ CPT ▸ Large ▸ Si

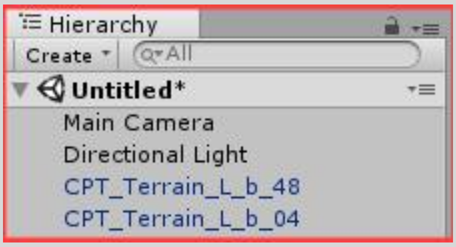
- Assets
  - Low Poly Modular Terrain Pack
    - _READ_ME
    - Aditional_Files
    - Bonus_Assets
    - Demo
    - Terrain_Assets
      - Materials
      - Meshes
      - Prefabs
        - Ice
        - Islands
        - Mountains
        - River
        - Terrain
          - CPT
            - Large
              - LOD
              - Simple
            - Medium
            - Small

CPT_Terrain_L_b... CPT_Terrain_L_b... CPT_Terrain_L_b... CPT_Terrain_L_b... CPT_Terrain_L_b...
CPT_Terrain_L_b... CPT_Terrain_L_b... CPT_Terrain_L_b... CPT_Terrain_L_b... CPT_Terrain_L_b...
CPT_Terrain_L_b CPT_Terrain_L_b CPT_Terrain_L_b CPT_Terrain_L_b CPT_Terrain_L_b

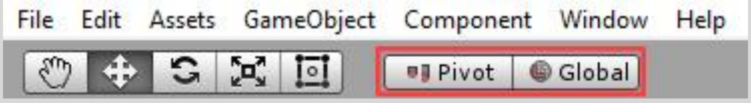
Select any Prefab you want, drag and drop it to your scene. With that Prefab selected, **Reset Transform** (*position to* 0,0,0) so it will sit on the Grid nicely.


Inspector | Lighting
☑ CPT_Terrain_L_b_48 ☑ Static
Tag Untagged Layer Default
Prefab Select Revert Apply
Transform
Position X -1.121
Rotation X 0
Scale X 1

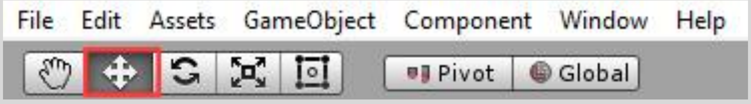
I recommend to drag and drop Prefabs straight to the **Hierarchy** tab, that way you don‘t need to **Reset Transform** because it should be at **Position 0,0,0**.


Hierarchy
Create All
Untitled*
Main Camera
Directional Light
CPT_Terrain_L_b_48
CPT_Terrain_L_b_04

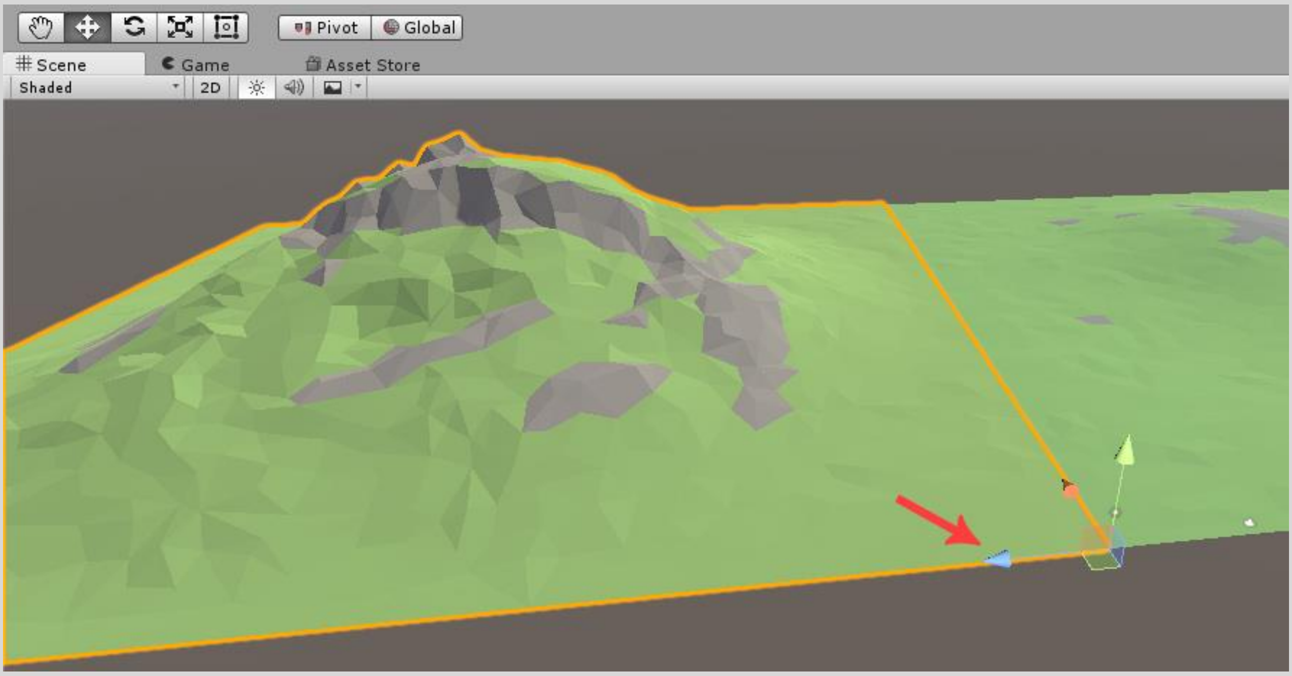
Set Tool Settings to **Pivot** / **Global**



Now add another Terrain Prefab to the Scene and with **Move Tool** selected

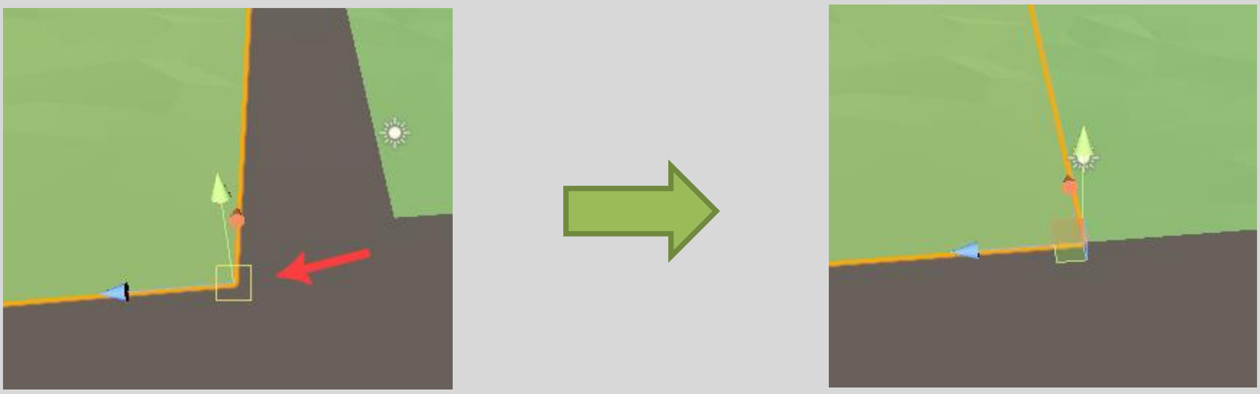


Hold **CTRL** + **Grab and Drag** the Transform **Arrow** to snap it to the **Grid**.



Large Terrain is 100m x 100m size, so you can easily change Position by 100 units to snap Terrain planes perfectly together.

Or you can snap Terrain planes by using **V**. Hold **V** and hover the mouse cursor on the Terrain corner, you will see a little yellow square (*it shows you which vertice of the mesh you are selected)*, now by holding **V** key, Press and Hold **LEFTMOUSE** and move it to the other Terrain plane corner to snap it.



Same for **Bonus Assets.**

Go to **Assets > Low Poly Modular Terrain Pack > Bonus_Assets > Prefabs**

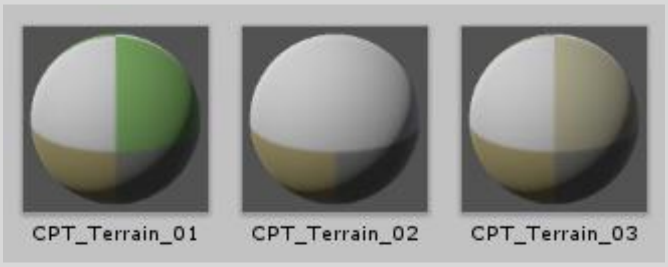
Select what you want and drag it to the scene.

How to Change Prefabs Color / Texture

CPT Terrain / Mountains

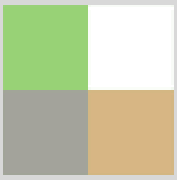
- **CPT** – Color Palette Texture (*All CPT Prefabs use 1 Material + 1 Color Palette Texture Atlas 64x64*)

Go to **Low Poly Modular Terrain Pack** > **Terrain_Assets** > **Materials** here you will find 3 materials which are used for **CPT** Prefabs:

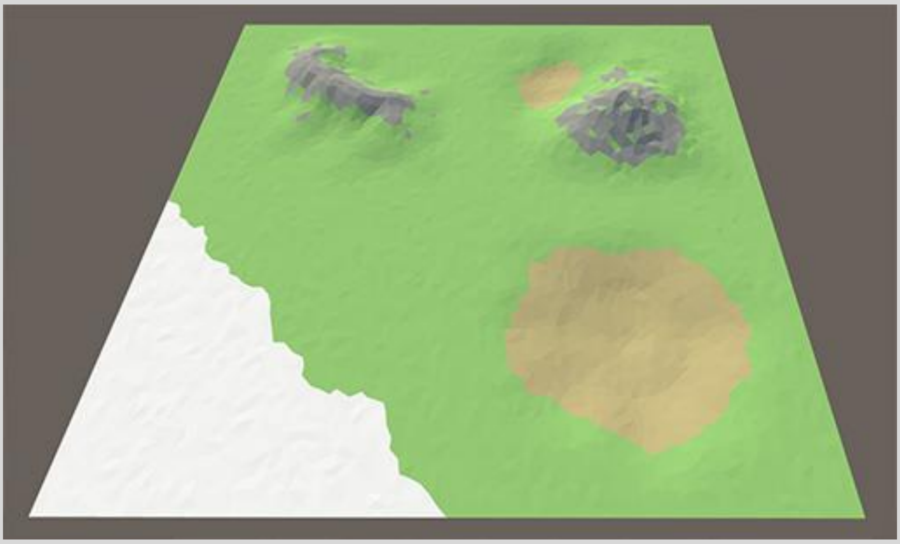


Originally **CPT_Terrain_01** are applied to all **CPT** Prefabs. To change the colors of **CPT** Prefabs you can apply one of these 3 Materials, or you can edit Texture colors itself.

Go to **Low Poly Modular Terrain Pack** > **Terrain_Assets** > **Textures** here you will find 3 textures, **CPT_Terrain_Texture_Atlas_01.png** is applied to **CPT_Terrain_01** Material. You can open this texture inside any image editing software and change the colors. There are only 4 colors on the texture:



These colors are used like this:

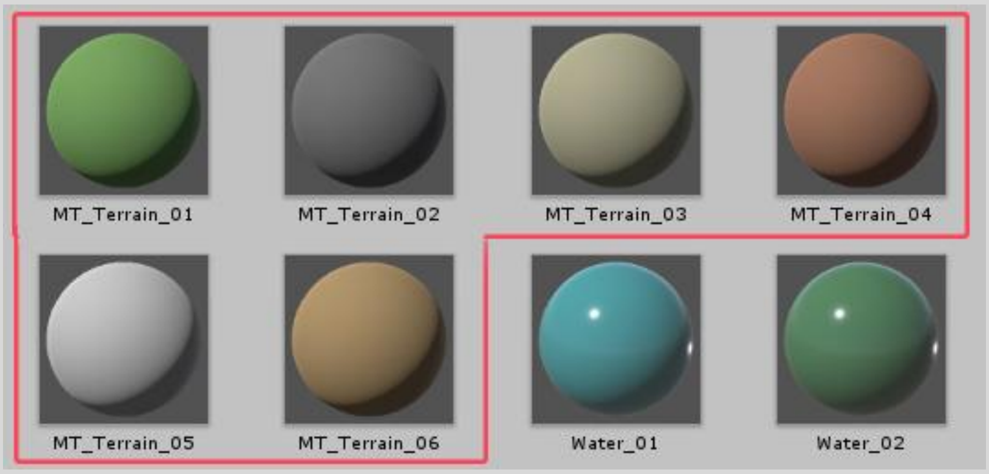


There are 3 high-resolution **.PSD** textures included to edit it more easily. Go to **Low Poly Modular Terrain Pack** > **Additional_Files** and here you will find the **CPT_ Textures.rar** file. Extract it, open any of 3 textures inside Photoshop or Gimp and edit it. Then save at small resolution like 64x64 and import to your Unity project.

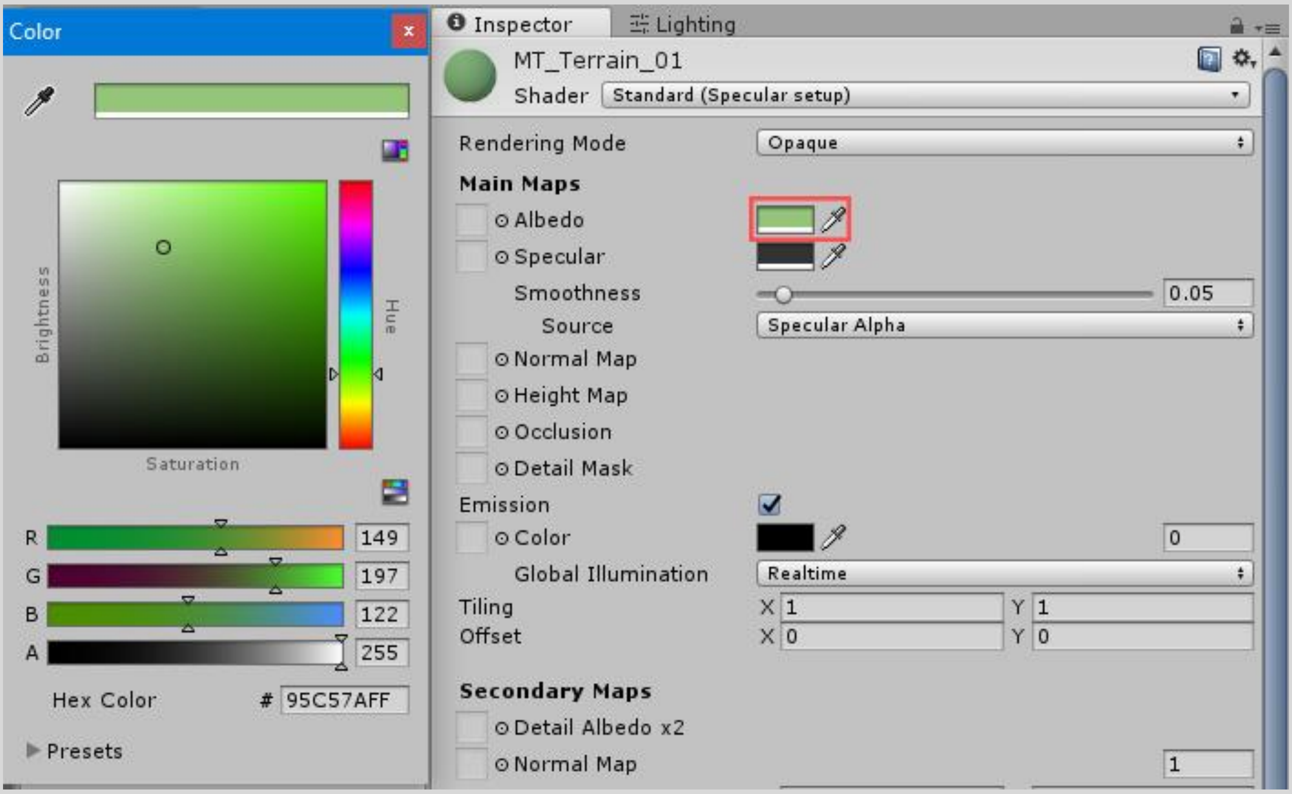
MT Terrain / Mountains

- **MT** – Material and Texture (All MT Prefabs use 1 Material. You can also add any seamless Texture to it!)

Go to **Low Poly Modular Terrain Pack** > **Terrain_Assets** > **Materials** here you will find 6 materials which are used for **MT** Prefabs:



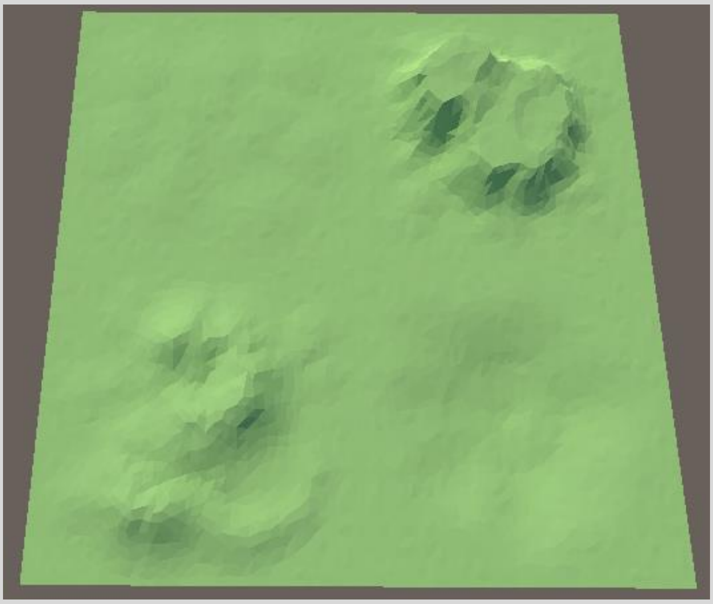
Originally **MT_Terrain_01** are applied to all **MT** Prefabs. To change the colors of MT Prefabs you can apply one of these 6 Materials, or you can just edit **MT_Terrain_01** material color:



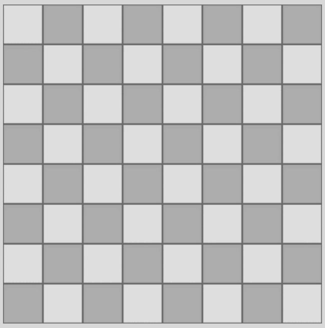
R 149
G 197
B 122
A 255
Hex Color # 95C57AFF

MT_Terrain_01
Shader Standard (Specular setup)
Rendering Mode Opaque
Main Maps
Albedo
Specular
Smoothness 0.05
Source Specular Alpha
Normal Map
Height Map
Occlusion
Detail Mask
Emission ☑
Color 0
Global Illumination Realtime
Tiling X 1 Y 1
Offset X 0 Y 0
Secondary Maps
Detail Albedo x2
Normal Map 1

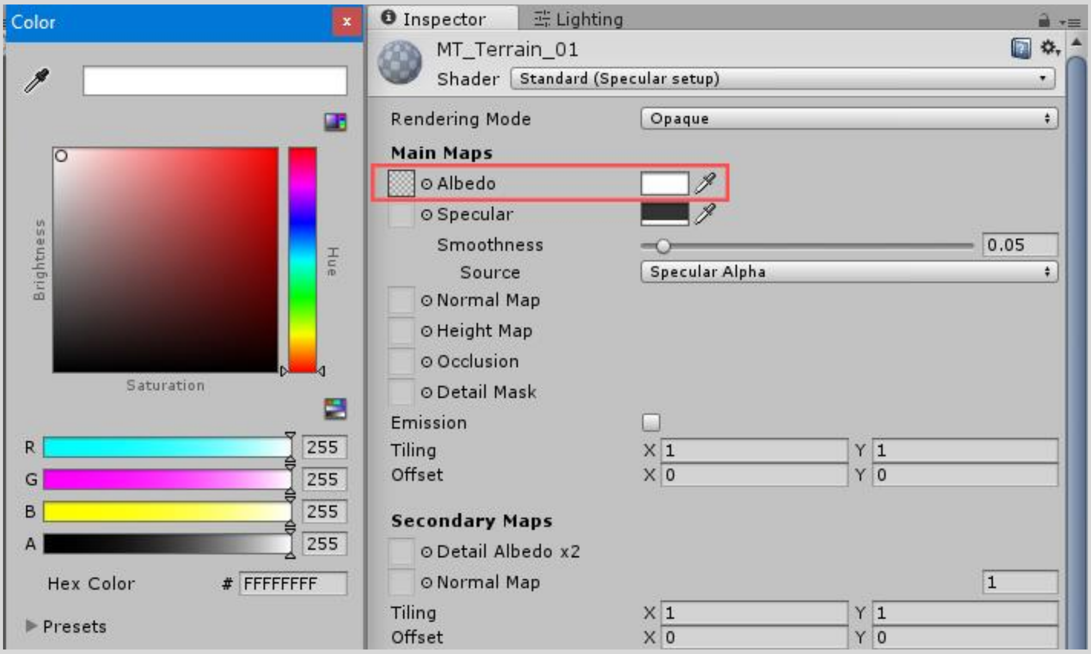
You can also apply any **Texture** to all **MT** Prefabs. Seamless textures are supported too. Here are 4 **MT_Terrain** Prefabs added to the Scene (*They use default **MT_Terrain_01** Material*):



Now I will apply a simple Grid Texture to the **MT_Terrain_01** Material:



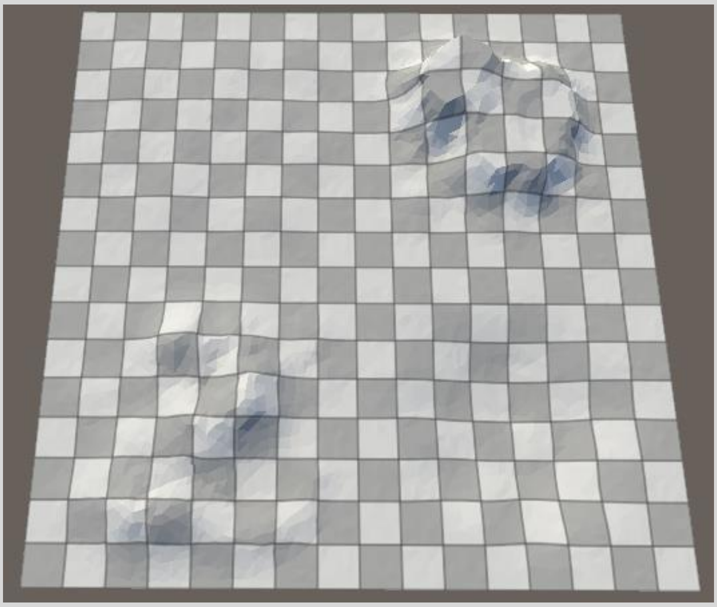
And change Material Color to White:



R 255
G 255
B 255
A 255
Hex Color # FFFFFFFF
▶ Presets

MT_Terrain_01
Shader Standard (Specular setup)
Rendering Mode Opaque
Main Maps
Albedo
Specular
Smoothness 0.05
Source Specular Alpha
Normal Map
Height Map
Occlusion
Detail Mask
Emission □
Tiling X 1 Y 1
Offset X 0 Y 0
Secondary Maps
Detail Albedo x2
Normal Map 1
Tiling X 1 Y 1
Offset X 0 Y 0

Now Terrain looks like this:

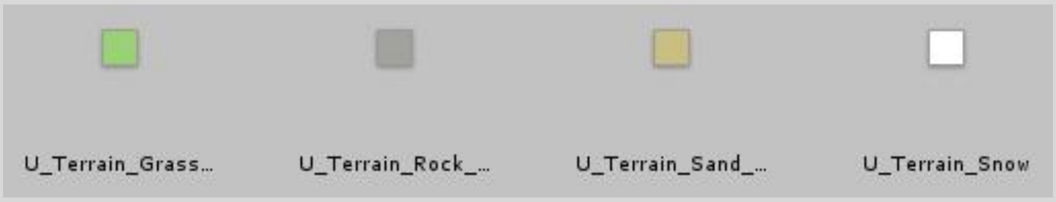


U Terrain

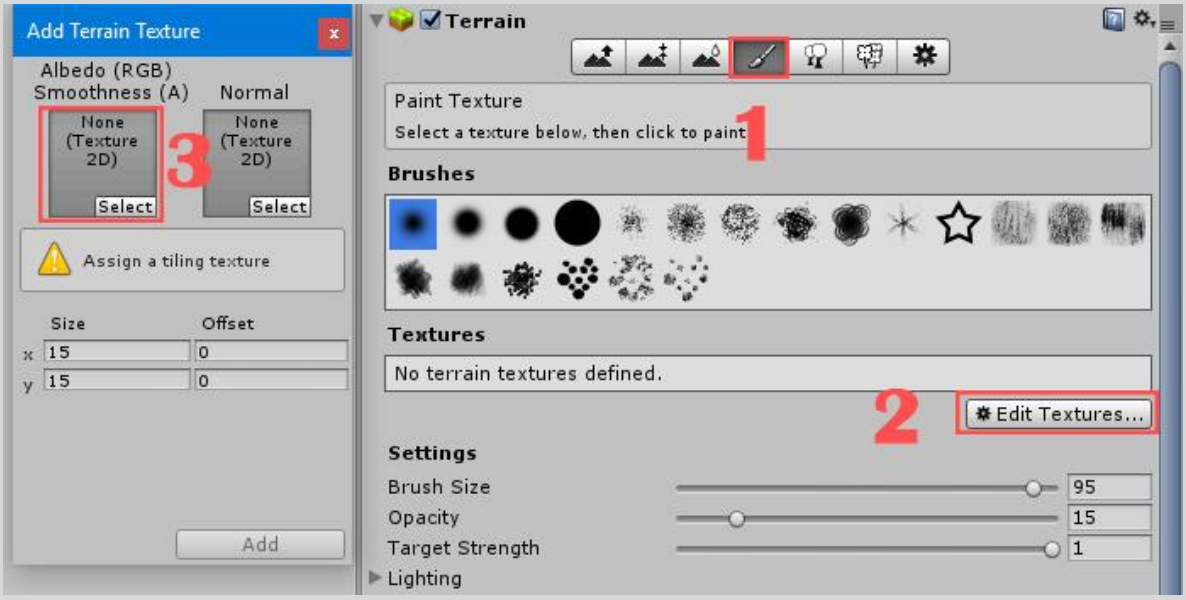
- **U** – Unity Terrain (You can edit the terrain shape, paint textures, draw grass, trees, etc)

U Terrain use the same Material as **CPT** Terrain by default!

By default U_Terrain is white and you can paint it using *U_Terrain...* textures located at **Low Poly Modular Terrain Pack** > **Terrain Assets** > **Textures**



To paint a Texture **- go to** Paint Texture **press on** Edit Textures **>** Add Texture **and select any texture you want to paint.**



Assign a tiling texture

Size Offset
x 15 0
y 15 0

Paint Texture
Select a texture below, then click to paint

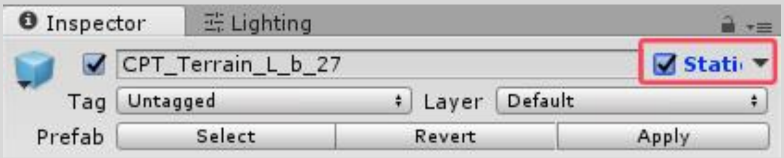
No terrain textures defined.

Settings
Brush Size 95
Opacity 15
Target Strength 1
Lighting

LIGHTMAP BAKING – UNITY 5.6

Realtime Global Illuminatic

All Prefabs are **Non-Static** by default and already has **Lightmap UVs**. You only need to enable **Static** for all Prefabs you want to bake Lightmaps for.

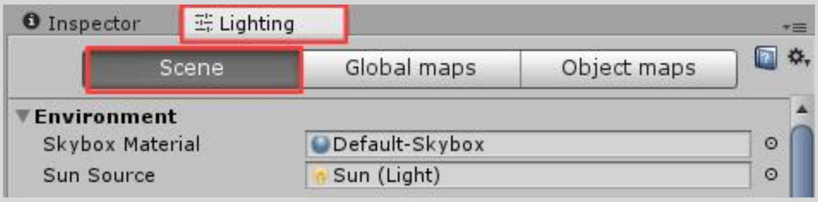

Inspector | Lighting

☑ CPT_Terrain_L_b_27 ☑ Stati

Tag Untagged Layer Default

Prefab Select Revert Apply

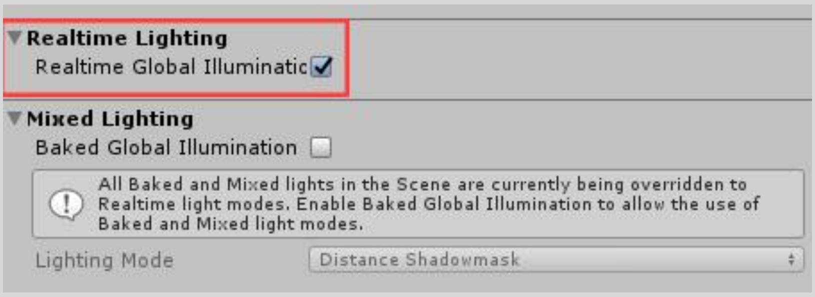
Then go to **Lighting** and open the **Scene** Tab. (*If you don't see Lighting tab go to Window > Lighting > Settings*).


Inspector | Lighting

Scene | Global maps | Object maps

Environment
Skybox Material: Default-Skybox
Sun Source: Sun (Light)

Enable **Realtime Global Illuminatic.** And Leave **Baked Global Illumination** Disabled.

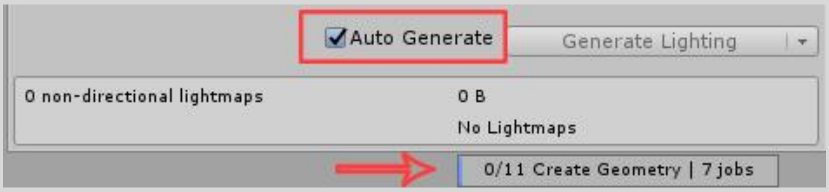

Realtime Lighting
Realtime Global Illuminatic ☑

Mixed Lighting
Baked Global Illumination □

All Baked and Mixed lights in the Scene are currently being overridden to Realtime light modes. Enable Baked Global Illumination to allow the use of Baked and Mixed light modes.

Lighting Mode: Distance Shadowmask

Enable **Auto Generate** / Generate Lighting at the bottom. And wait until Lightmap Data will be generated.


☑ Auto Generate | Generate Lighting

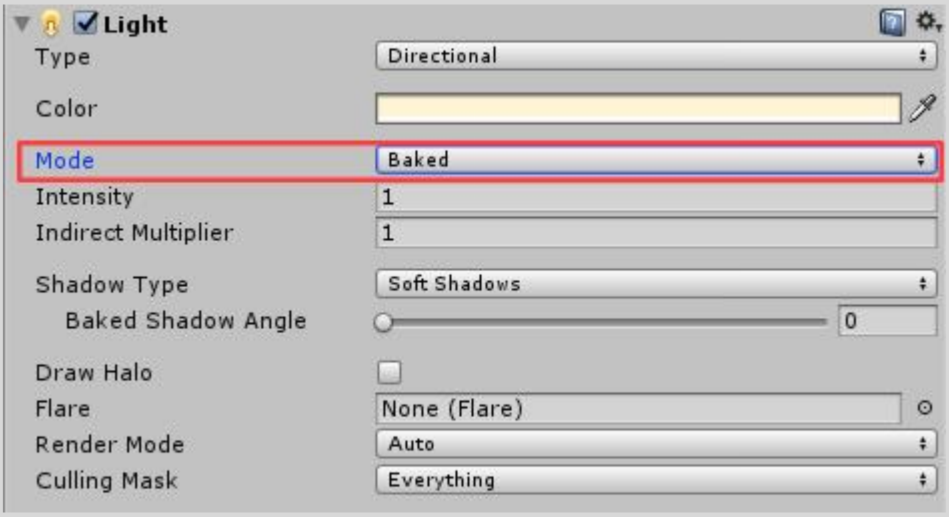
0 non-directional lightmaps 0 B
No Lightmaps

0/11 Create Geometry | 7 jobs

Or just use **Generate Lighting** button to Generate Lightmap Data when you really want/need instead of using **Auto Generate** feature.

Baked Global Illumination

Select **Directional Light** and Set Light **Mode** to **Baked.**



☑ Light

Type: Directional

Color

Mode: Baked

Intensity: 1

Indirect Multiplier: 1

Shadow Type: Soft Shadows

Baked Shadow Angle: 0

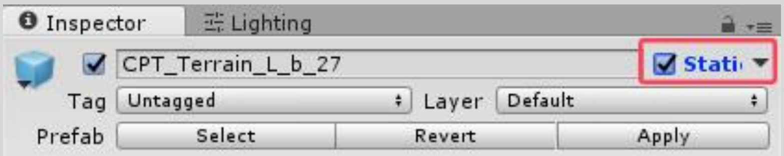
Draw Halo: □

Flare: None (Flare)

Render Mode: Auto

Culling Mask: Everything

All Prefabs are **Non-Static** by default and already has **Lightmap UVs**. You only need to enable **Static** for all Prefabs you want to bake Lightmaps for.

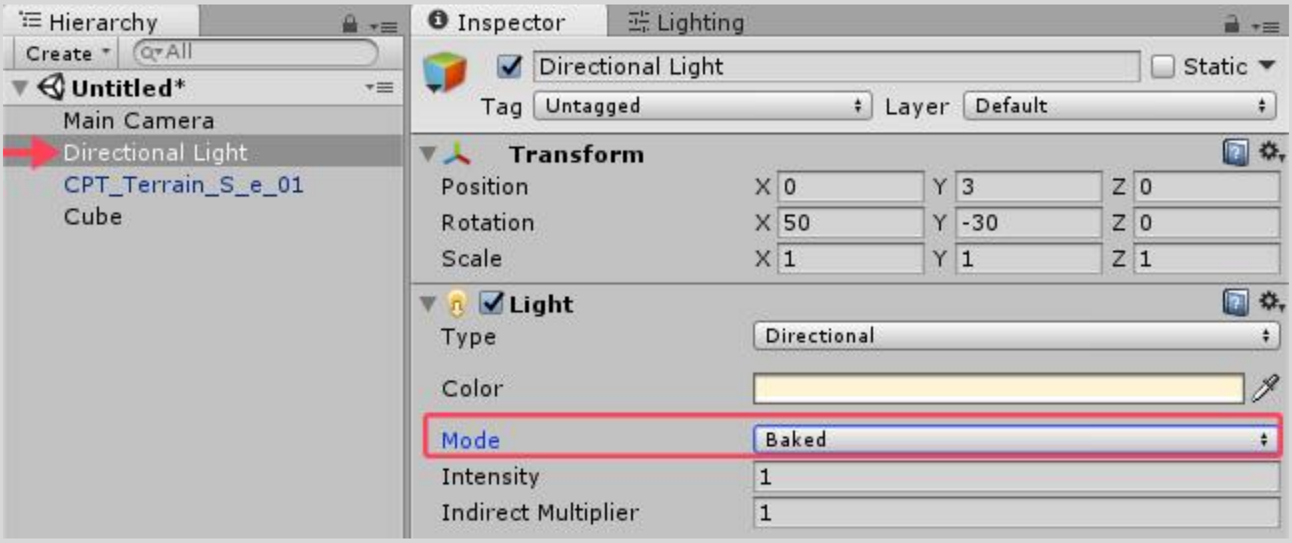


☑ CPT_Terrain_L_b_27 ☑ Stati

Tag: Untagged Layer: Default

Prefab: Select Revert Apply

Set **Directional Light** to **Baked**.



☑ Directional Light □ Static

Tag: Untagged Layer: Default

Transform

Position: X 0 Y 3 Z 0

Rotation: X 50 Y -30 Z 0

Scale: X 1 Y 1 Z 1

☑ Light

Type: Directional

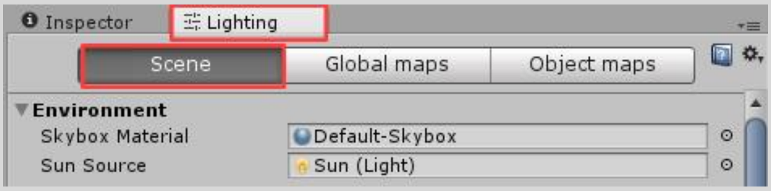
Color

Mode: Baked

Intensity: 1

Indirect Multiplier: 1

Then go to **Lighting** and open the **Scene** Tab. (*If you don't see Lighting tab go to Window > Lighting > Settings*).

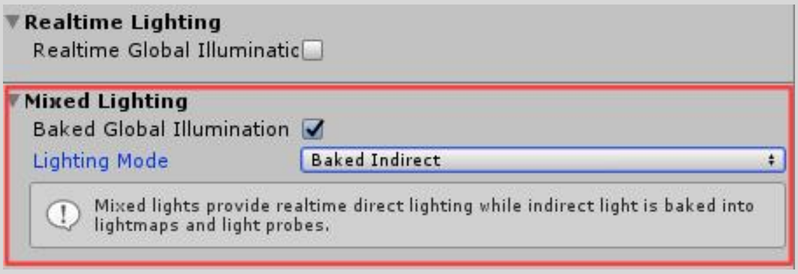


Environment

Skybox Material: Default-Skybox

Sun Source: Sun (Light)

Enable **Baked Global Illumination.** And Leave **Realtime Global Illuminatic** Disabled. Also, choose **Lighting Mode** you want to use.



Realtime Lighting

Realtime Global Illuminatic ☐

Mixed Lighting

Baked Global Illumination ☑

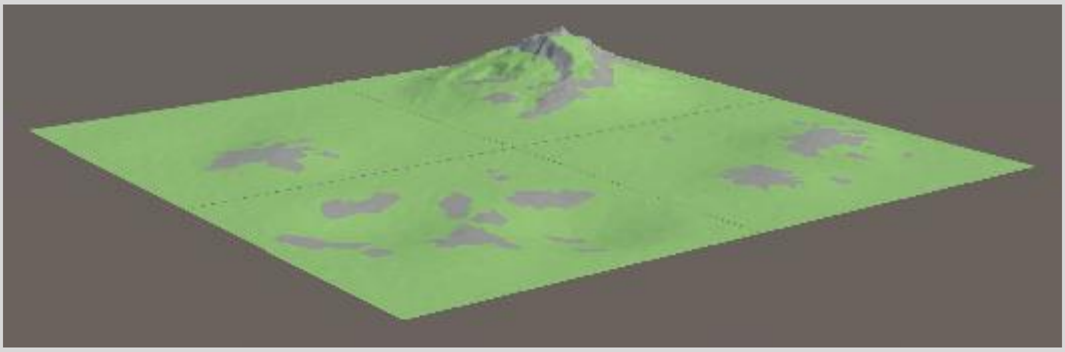
Lighting Mode: Baked Indirect

Mixed lights provide realtime direct lighting while indirect light is baked into lightmaps and light probes.

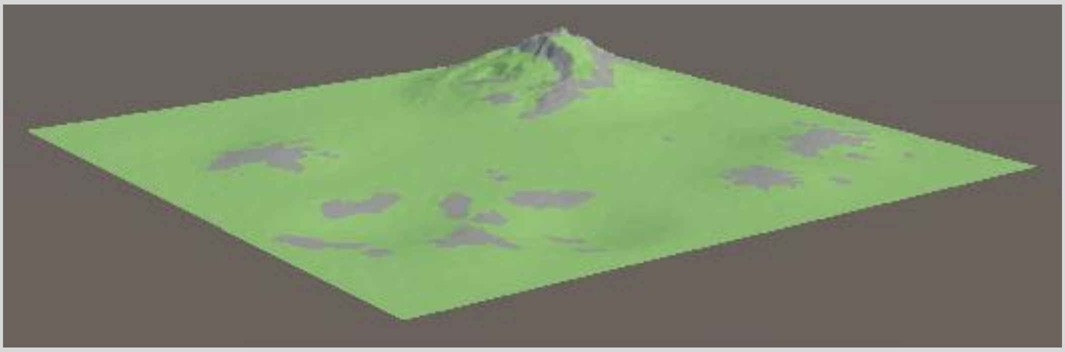
Now change some **Lightmapping Settings**. Of course, it depends on your platform you are making a game for, but I always Disable **Compressed Lightmaps** to get much better results with nice colors.

Most important parts are the **Lightmap Resolution** and **Lightmap Size**! It depends on what Terrain size you are using - Large, Medium, or Small. If you use too small **Lightmap Resolution**, you will get black seams between Terrain planes!

4 **Large** Terrain planes with Baked Lightmap using **Lightmap Resolution of 10**:

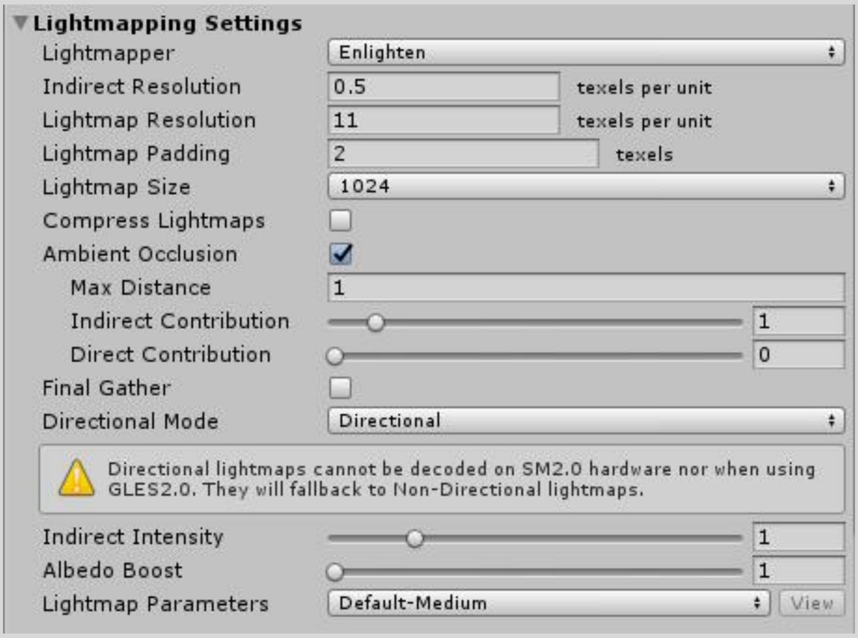


4 Large Terrain planes with Baked Lightmap using **Lightmap Resolution of 11**:



As you can see if I use **Lightmap Resolution of 10** I get black seams where Terrain planes meet, if I use **Lightmap Resolution of 11** or more I don‘t get any seams!

My Lightmap Settings for **Large Terrain**:



▼ Lightmapping Settings
Lightmapper: Enlighten
Indirect Resolution: 0.5 texels per unit
Lightmap Resolution: 11 texels per unit
Lightmap Padding: 2 texels
Lightmap Size: 1024
Compress Lightmaps: ☐
Ambient Occlusion: ☑
Max Distance: 1
Indirect Contribution: 1
Direct Contribution: 0
Final Gather: ☐
Directional Mode: Directional

⚠ Directional lightmaps cannot be decoded on SM2.0 hardware nor when using GLES2.0. They will fallback to Non-Directional lightmaps.

Indirect Intensity: 1
Albedo Boost: 1
Lightmap Parameters: Default-Medium

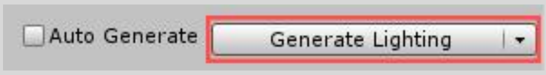
Best **Lightmap Resolution** Settings using **Lightmap Size** of **1024:**

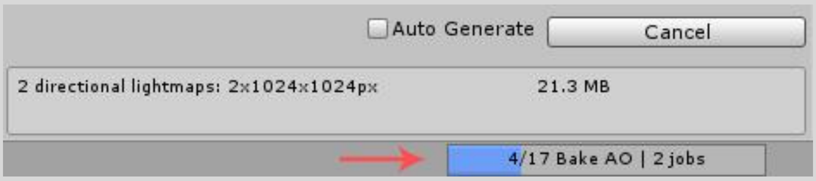
- **Large Terrain** – if you set Lightmap Resolution to 10 you will get black seams between Modular Terrain Planes. More than 10 is perfect without any seams *(11,12,13..20,40, etc).*
- **Medium Terrain** – if you set Lightmap Resolution to 20 you will get black seams between Modular Terrain Planes. More than 20 is perfect without any seams *(21,22,23..30,40, etc).*
- **Small Terrain** – if you set Lightmap Resolution to 40 you will get black seams between Modular Terrain Planes. More than 40 is perfect without any seams *(41,42,43..50,60, etc).*

Best **Lightmap Resolution** Settings using **Lightmap Size** of **512:**

- **Large Terrain** – if you set Lightmap Resolution to 5 you will get black seams between Modular Terrain Planes. More than 5 is perfect without any seams *(6,7,8..20,30, etc).*
- **Medium Terrain** – if you set Lightmap Resolution to 10 you will get black seams between Modular Terrain Planes. More than 10 is perfect without any seams *(11,12,13..20,30, etc).*
- **Small Terrain** – if you set Lightmap Resolution to 20 you will get black seams between Modular Terrain Planes. More than 20 is perfect without any seams *(21,22,23..30,40, etc).*

After you done setting up everything press on **Generate Lighting** button at the bottom. And wait until Lightmap Data will be generated.





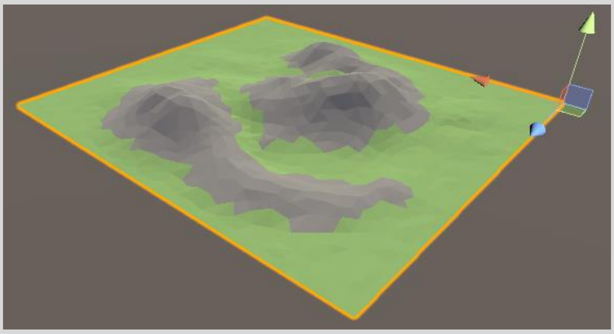
2 directional lightmaps: 2x1024x1024px 21.3 MB

4/17 Bake AO | 2 jobs

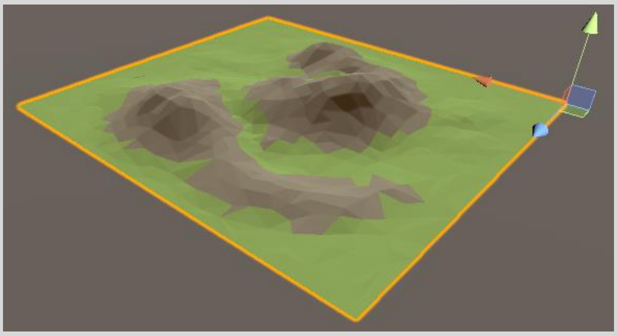
Baked Global Illumination For LOD Assets

If you bake LOD Prefab, only LOD0 will use Lightmap Data, LOD1 and LOD2 won't.

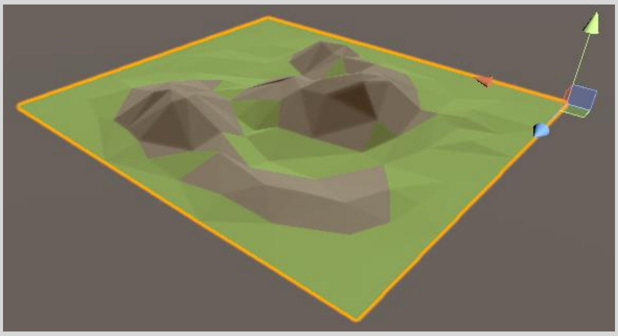
LOD0



LOD1

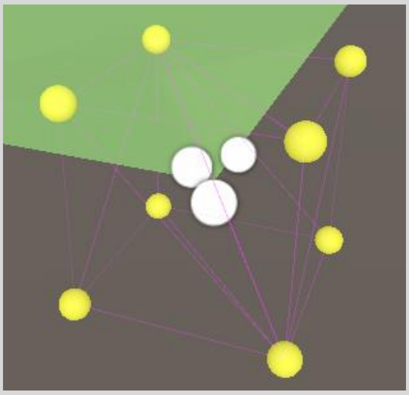


LOD2

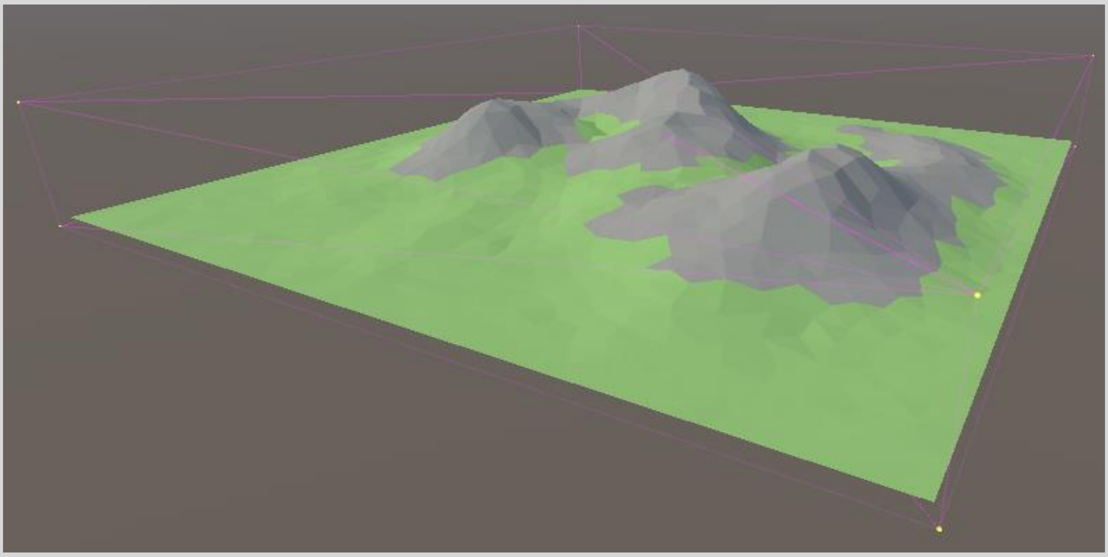


You can see that lighting and colors are slightly different, so when you use LODs in the game, you will clearly see when LODs change from LOD0 to LOD1.

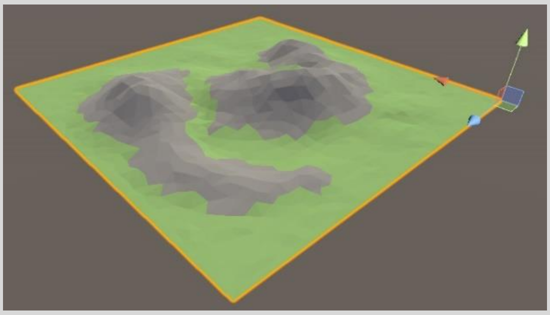
To fix this you will need to add **Light Probe Group** to your Scene!

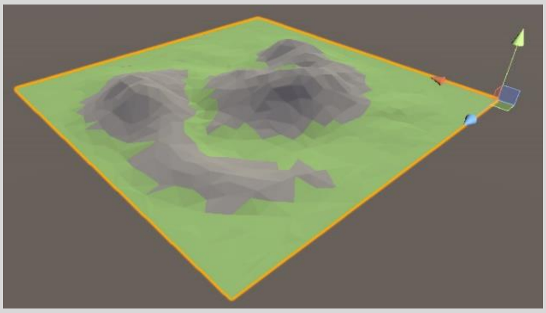


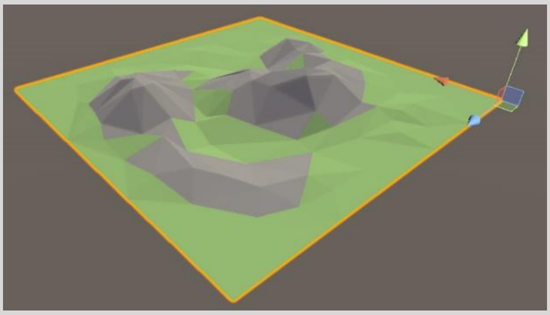
And move Light Probes around the Terrain just like that:



Now, all LODs use Lightmap Data! So no difference in lighting and color.







ADDITIONAL INFO

NAMING CONVENTIONS

Prefab name example: **CPT_Terrain_L_b_27**

- **CPT** – Color Palette Texture (*All CPT Prefabs use 1 Material + 1 Color Palette Texture Atlas 64x64*)
- **L** – Large 100m x 100m Terrain Size
- **b** – Just a Terrain type letter,
- **27** – Prefab number

The same Terrain Prefabs comes in 3 different types:

- **CPT** – Color Palette Texture (*All CPT Prefabs use 1 Material + 1 Color Palette Texture Atlas 64x64*)
- **MT** – Material and Texture (All MT Prefabs use 1 Material. You can also add any seamless Texture to it!)
- **U** – Unity Terrain (You can edit the terrain shape, paint textures, draw grass, trees, etc)

Almost all Prefabs come in 2 versions:

- **Simple** – Simple Mesh Prefabs
- **LOD** - Prefabs with 3 LOD levels: LOD0, LOD1, LOD2

Prefabs come in 4 Sizes:

- **H** – Huge ~500x500m
- **L** - Large 100m x 100m Terrain Size
- **M** - Medium 50m x 50m Terrain Size
- **S** - Small – 25m x 25m Terrain Size
- All sizes prefabs are unique and different – so Large terrain is not the same terrain as medium or small

Prefab name example: **Ice_H_BT_01**

H – Huge size

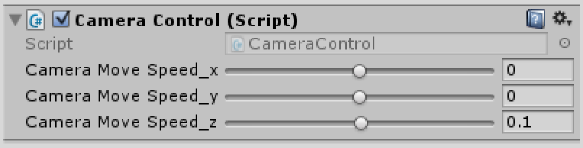
BT – With Bottom (ice has bottom faces and can be seen from both sides)

You can also find letter **R** at the end of the River part names. This means **Reversed**!

SCRIPTS

Almost every scene **Camera**, **Directional Light,** and **_Clouds**(*an empty game object which contains all clouds on the scene*) have movement controls.

For example, select the **Camera** and on **Inspector** scroll down to the bottom, you will see **ModularTerrainCameraControl (Script)** attached to it. Here you can control **Camera Movement Speed** using sliders.



☑ Camera Control (Script)

Script CameraControl

Camera Move Speed_x 0

Camera Move Speed_y 0

Camera Move Speed_z 0.1

Same with **Direction Lights** and **_Clouds**.

CONTACTS

If you have any questions, or suggestions please send me an e-mail.

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Website: http://lmhpoly.com/contact/

Follow me on **Twitter** to see what I’m working on right now:

https://twitter.com/lmhpoly

LMH POLY