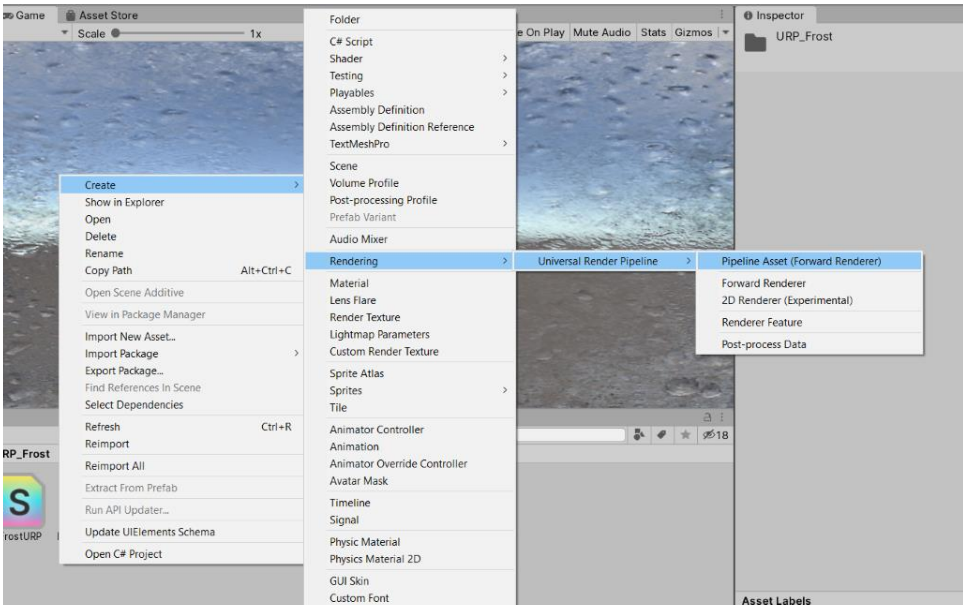
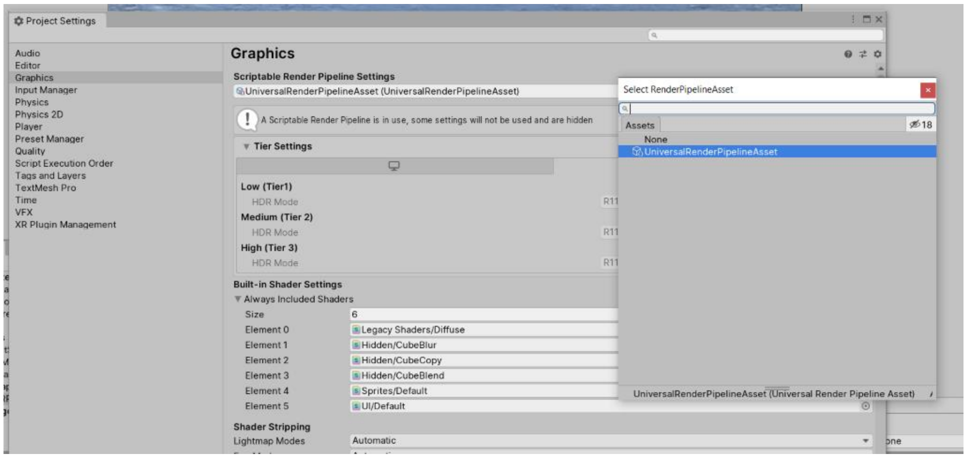
FAST MOBILE DOF BLUR BLOOM URP

How to setup URP(if you have already configured urp for your scene skip this part):

1. Firstly install the URP package to your project. Go to **Windows->Package Manager.** In the list find the LightweightRP and install it.
2. Firstly we need to create the Pipeline Asset. For that press **RightClick->Create->Rendering->UniversalRenderPipeline->PipelineAsset**



3. Go to **Edit->ProjectSettings->Graphics.** In the Scriptable Render Pipeline Settings, drag and drop the pipeline asset that we created in previous section



Graphics

Scriptable Render Pipeline Settings

UniversalRenderPipelineAsset (UniversalRenderPipelineAsset)

A Scriptable Render Pipeline is in use, some settings will not be used and are hidden

Tier Settings

Low (Tier1)
HDR Mode R11

Medium (Tier 2)
HDR Mode R11

High (Tier 3)
HDR Mode R11

Built-in Shader Settings

Always Included Shaders

Size	6
Element 0	Legacy Shaders/Diffuse
Element 1	Hidden/CubeBlur
Element 2	Hidden/CubeCopy
Element 3	Hidden/CubeBlend
Element 4	Sprites/Default
Element 5	UI/Default

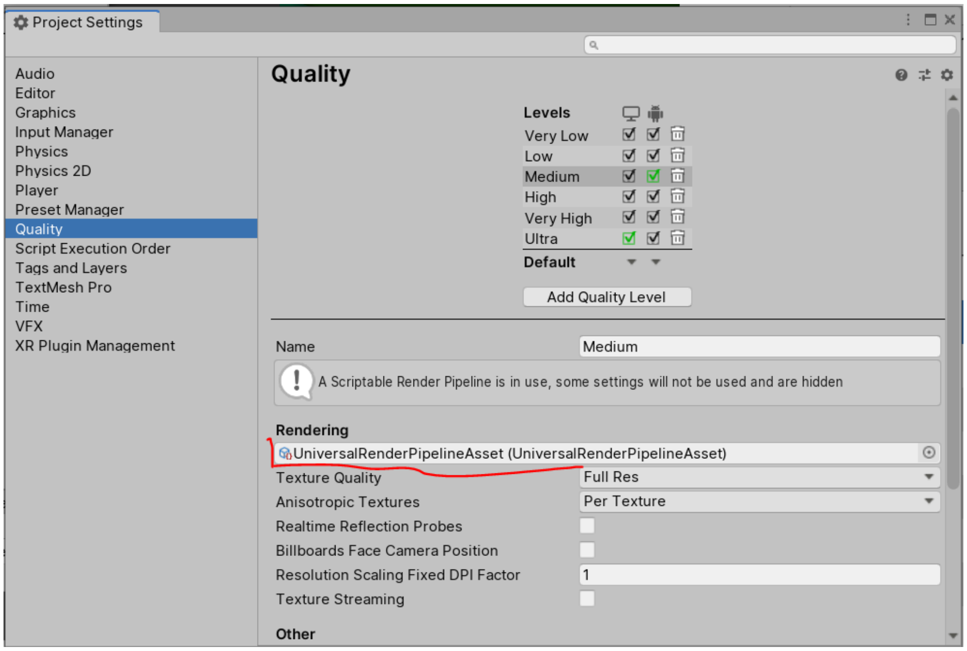
Shader Stripping

Lightmap Modes Automatic

None
UniversalRenderPipelineAsset

UniversalRenderPipelineAsset (Universal Render Pipeline Asset)

4. Go to **Edit->Project Settings->Quality.** In rendering section drag and drop the pipeline asset you created



Quality

Levels		
Very Low	☑	☑
Low	☑	☑
Medium	☑	☑
High	☑	☑
Very High	☑	☑
Ultra	☑	☑
Default		

Name Medium

A Scriptable Render Pipeline is in use, some settings will not be used and are hidden

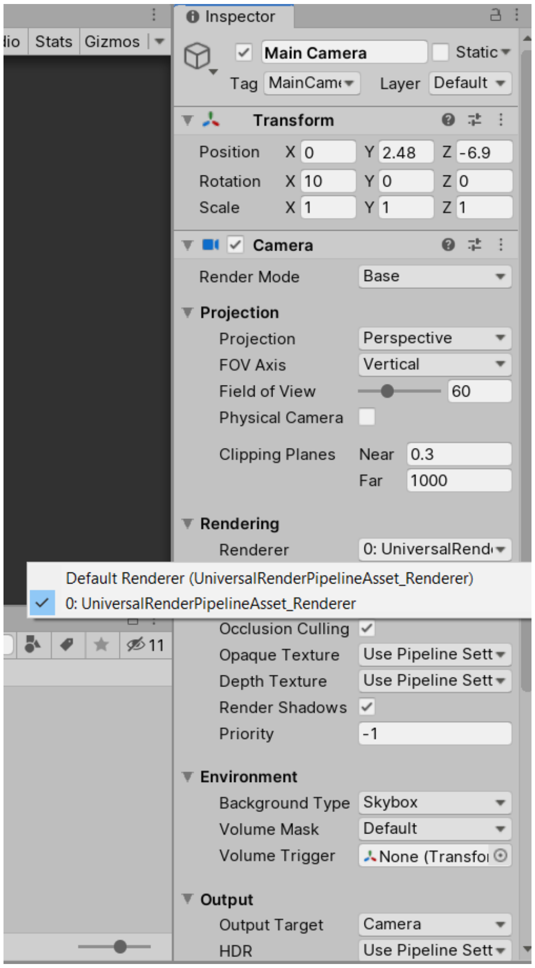
Rendering

UniversalRenderPipelineAsset (UniversalRenderPipelineAsset)

Texture Quality	Full Res
Anisotropic Textures	Per Texture
Realtime Reflection Probes	□
Billboards Face Camera Position	□
Resolution Scaling Fixed DPI Factor	1
Texture Streaming	□

Other

5. Go to your camera object and in **Rendering** settings pick for **Renderer** the pipeline asset you created



☑ Main Camera ☐ Static

Tag MainCam Layer Default

Transform

Position X 0 Y 2.48 Z -6.9

Rotation X 10 Y 0 Z 0

Scale X 1 Y 1 Z 1

☑ Camera

Render Mode Base

Projection

Projection Perspective

FOV Axis Vertical

Field of View 60

Physical Camera ☐

Clipping Planes Near 0.3 Far 1000

Rendering

Renderer 0: UniversalRend

Default Renderer (UniversalRenderPipelineAsset_Renderer)

✓ 0: UniversalRenderPipelineAsset_Renderer

Occlusion Culling ☑

Opaque Texture Use Pipeline Sett

Depth Texture Use Pipeline Sett

Render Shadows ☑

Priority -1

Environment

Background Type Skybox

Volume Mask Default

Volume Trigger None (Transfo

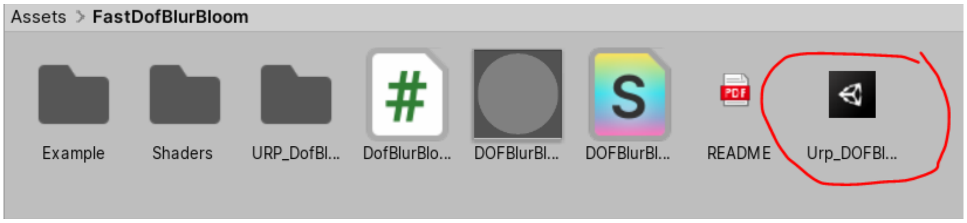
Output

Output Target Camera

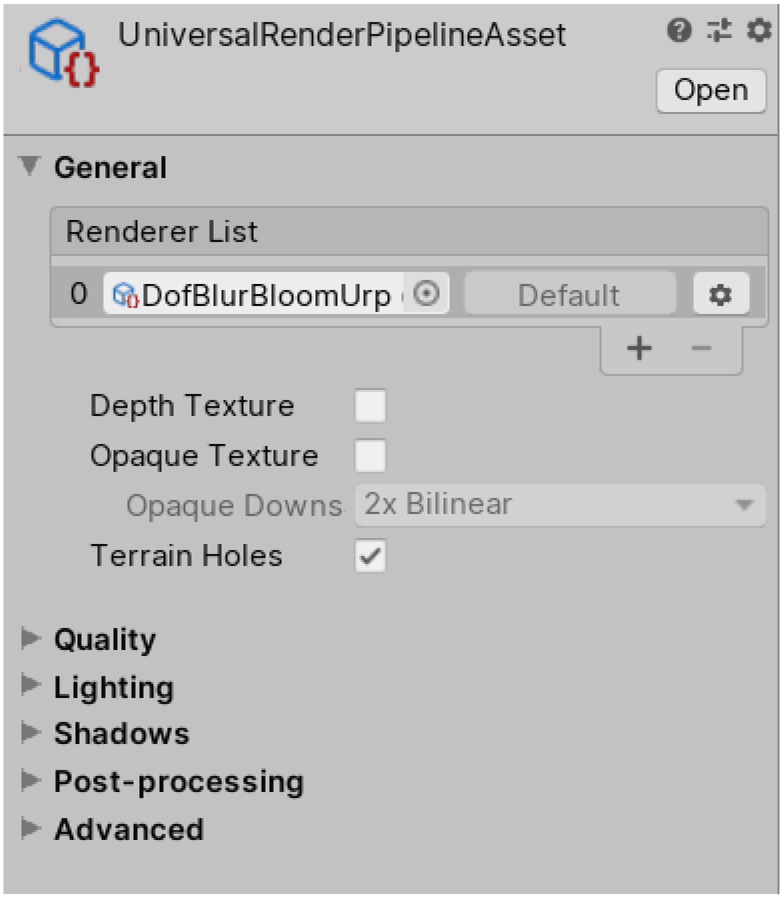
HDR Use Pipeline Sett

How to apply URP Fast Mobile DOFBlurBloom:

1. **Firstly import the package URP_DofBlurBloom which is included in the asset**



2. **Open the settings of the URP pipeline asset. In the General tab for RenderType pick the Custom and pick the DofBlurBloomUrp**



UniversalRenderPipelineAsset

Open

General

Renderer List

0 DofBlurBloomUrp Default

Depth Texture □

Opaque Texture □

Opaque Downs 2x Bilinear

Terrain Holes ☑

Quality

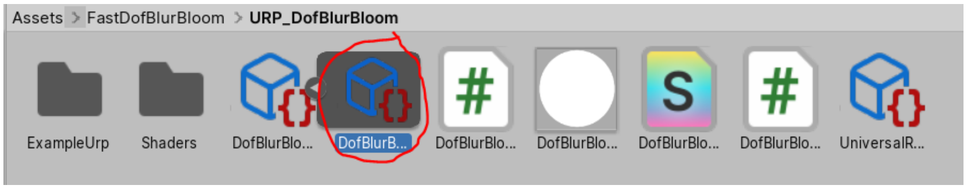
Lighting

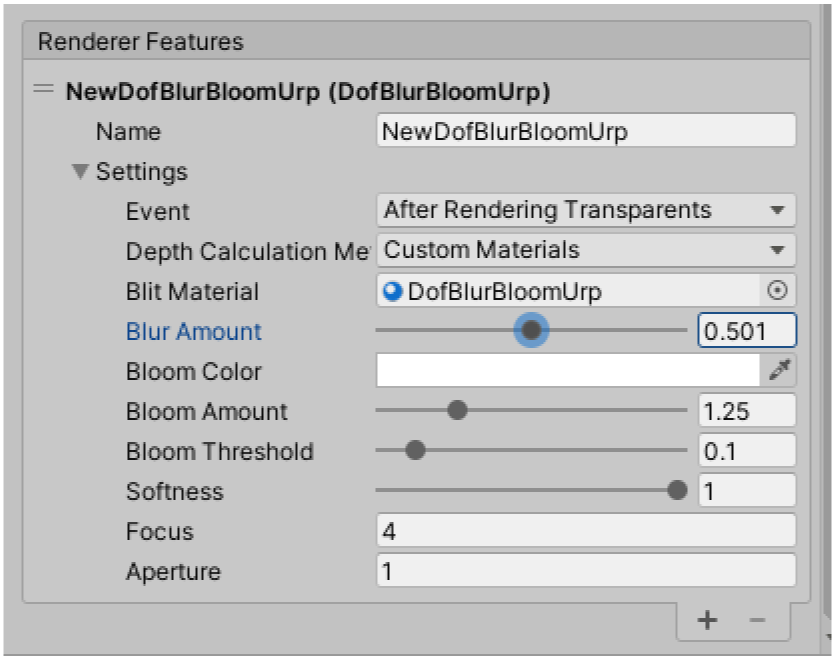
Shadows

Post-processing

Advanced

3. **That is pertty much it. To change the parameters go to the URP_ DofBlurBloom folder. Find DofBlurBloomUrp, extend it and select DofBlurBloomUrp Pass. You will se in the inspector the parameters of it.**



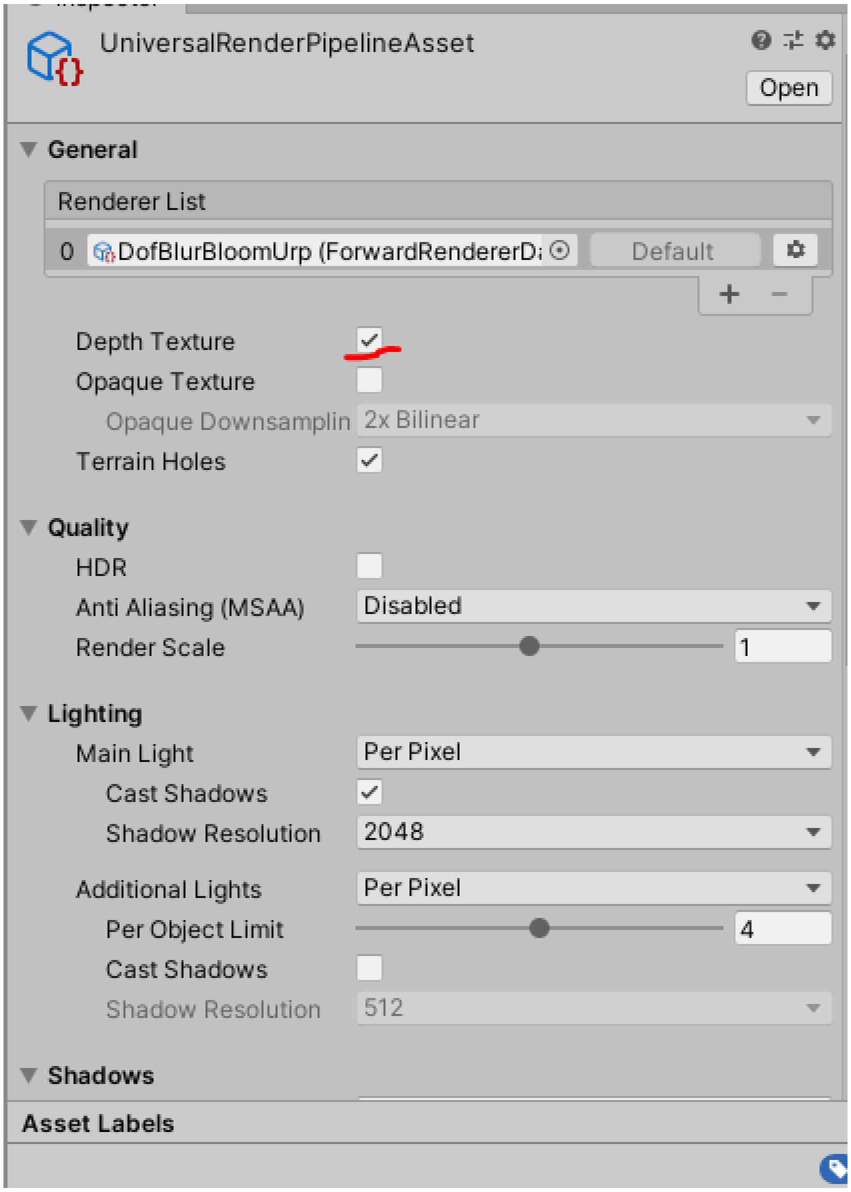


Renderer Features

NewDofBlurBloomUrp (DofBlurBloomUrp)

Name	NewDofBlurBloomUrp
Settings	
Event	After Rendering Transparents
Depth Calculation Me	Custom Materials
Blit Material	DofBlurBloomUrp
Blur Amount	0.501
Bloom Color	
Bloom Amount	1.25
Bloom Threshold	0.1
Softness	1
Focus	4
Aperture	1

4. **Depth Calculation method has two options. Depth which uses depth texture and Custom materials which require to use the custom materials. If you picked thi method do not forget to tick the checkbox DepthTexture in the pipeline asset**



UniversalRenderPipelineAsset

General

Renderer List

0 DofBlurBloomUrp (ForwardRendererDa Default

Depth Texture ☑

Opaque Texture □

Opaque Downsamplin 2x Bilinear

Terrain Holes ☑

Quality

HDR □

Anti Aliasing (MSAA) Disabled

Render Scale 1

Lighting

Main Light Per Pixel

Cast Shadows ☑

Shadow Resolution 2048

Additional Lights Per Pixel

Per Object Limit 4

Cast Shadows □

Shadow Resolution 512

Shadows

Asset Labels

5. If you picked Custom materials you dont need Depth Texture, so disable it. In this mode all objects in your scene should have only materials from SupGames/DOFBlurBloomUrp:
    a. UnlitUrp
    b. DiffuseUrp
    c. SpecularUrp
    d. Bumped DiffuseUrp
    e. Bumped SpecularUrp
    f. TransparentUrp (Cutout)

PARAMETERS

- **DEPTH CALCULATION METOD – Has two options:**
    - **Depth -** depth data calculated from the camera depth texture
    - **Custom materials –** depth data is stored in the custom materials. So for observing the depth of field effect you must use only custom materials in this mode. **This approach is much faster than depth mode and the difference may be noticed in the low end devices.**
- **BLUR AMOUNT –** level of blur on your scene
    - **Try to keep Blur amount values as low as possible, it will boost your performance.** Here is the scheme of passes according to blur amount or bloom diffuse:
        - **0 – 0.25 1 pass**
        - **0.26 - 0.5 2 passes**
        - **0.51 - 0.75 3 passes**
        - **0.76 - 1 5 passes**
- **BLOOM COLOR –** color of the bloom effect
- **BLOOM AMOUNT –** amount of bloom applied to final image
- **BLOOM THRESHOLD –** threshold of the bloom in the image. Keeps bright parts.
- **BLOOM SOFTNESS –** softness of the thresholded part.
- **FOCUS –** focus distance of the camera. Zone where final image were not be blurred
- **APERTURE** – value which determines the level of DOF. Determines the area from the focus point which won't be blurred. Less the value of the aperture, more area would be focused.

SHADERS

- **DOFUrp – The fastest depth of field shader in the Asset Store.** Runs at **46-55** fps on low-end device (Meizu M2 note)
- **UnlitUrp –** Modified and optimized version of standart mobile Unlit shader.
- **DiffuseUrp** - Modified and optimized version of standart mobile Diffuse shader.

- **SpecularUrp -** Modified and optimized version of standart mobile Specular shader.
- **Bumped Diffuse Urp -** Modified and optimized version of standart mobile Bumped Diffuse shader.
- **Bumped Specular Urp-** Modified and optimized version of standart mobile Bumped Specular shader.
- **TransparentUrp**- Modified and optimized version of standart Cutout shader.

All the testing was made on low-end mobile device Meizu M2 Note in the scene containing:
-101 **different gameObjects**,
-101 **different Materials**,
-51 **different Textures**,
-1 **Directional Light(realtime)**,
-**approximately 45k polygons**