*- My email is "**kripto289@gmail.com**"*
*- Discord channel **https://discord.gg/GUUZ9D96Uq***

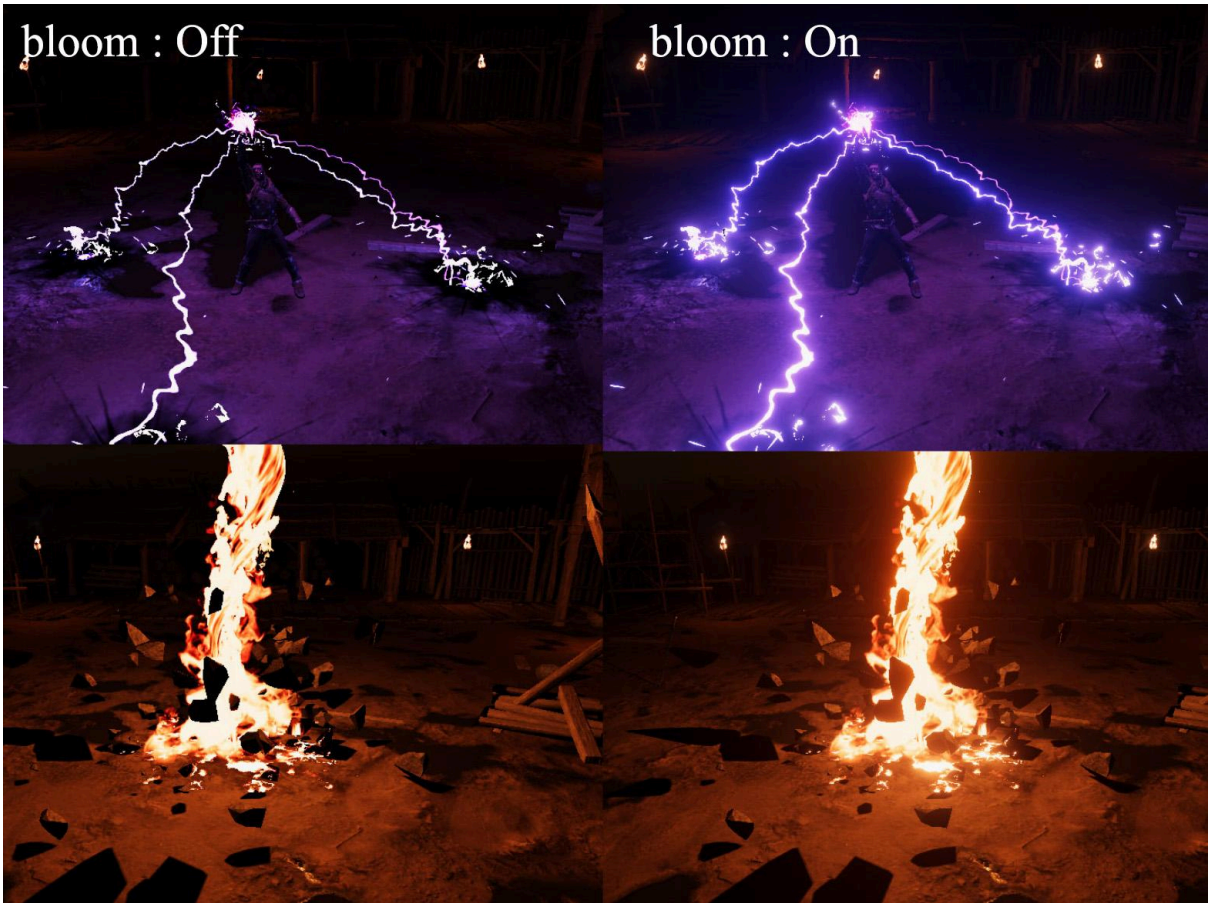
**If you are using the URP or HDRP** version, make sure (!) to install the URP/HDRP patches located in the folder 'Assets\KriptoFX\Magic Effects Pack v5\URP and HDRP patches.'
Otherwise, the effects will not display correctly!

## Scene settings:

> The effects are created using HDR colors and post-processing (bloom/ACES tonemapping). These two post-processes are very important for rendering realistic effects.

*Bloom is a real-world light phenomenon that can greatly enhance the perceived realism of a rendered image at a moderate performance cost. Bloom can be seen with the naked eye when looking at very bright objects against a much darker background. Even brighter objects cause additional effects (streaks, lens flares), but those are not covered by the classic bloom effect. Since our displays (TV, TFT, etc.) generally do not support HDR (high dynamic range), we cannot fully render very bright objects. Instead, we simulate the effects happening in the eye (retina subsurface scattering), on film (film subsurface scattering), or in front of the camera (milky glass filter). The effect may not always be physically accurate, but it helps indicate the relative brightness of objects or add realism to the LDR (low dynamic range) image shown on the screen.*

Example without bloom and with bloom.

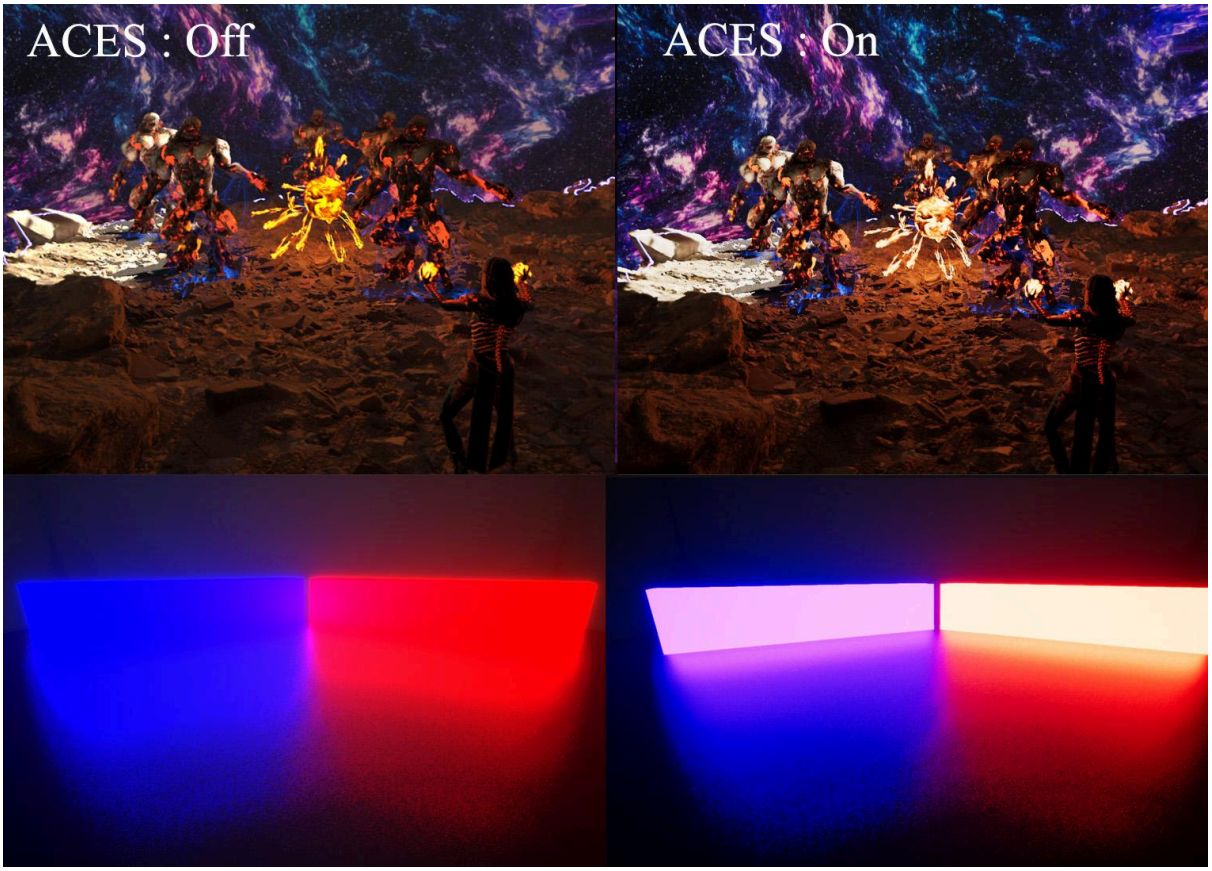



ACES tonemapping is used in AAA games and films and is included by default in Unity HDRP/Unreal Engine, etc.

*ACES tone mapping ensures the correct display of HDR (high dynamic range) colors on devices that don't support HDR colors.*

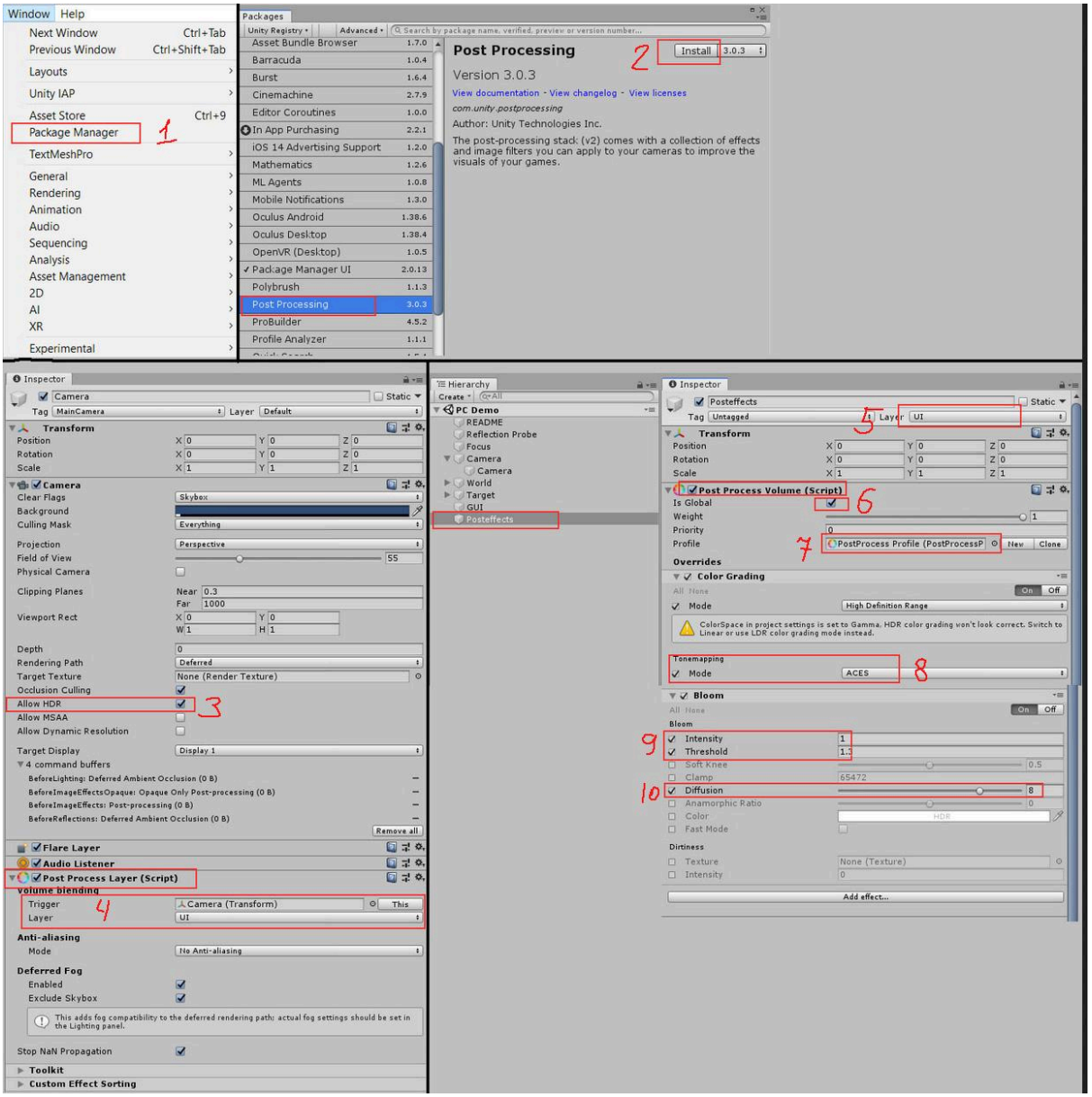
*Bloom with ACES behaves physically correctly, so that as the emissive power increases, the color becomes lighter, similar to how colored lights work in the real world. As the color gets tone-mapped, if the final color is bright enough to start saturating the film/sensor, it will become white.*

Example without ACES tone mapping and with.

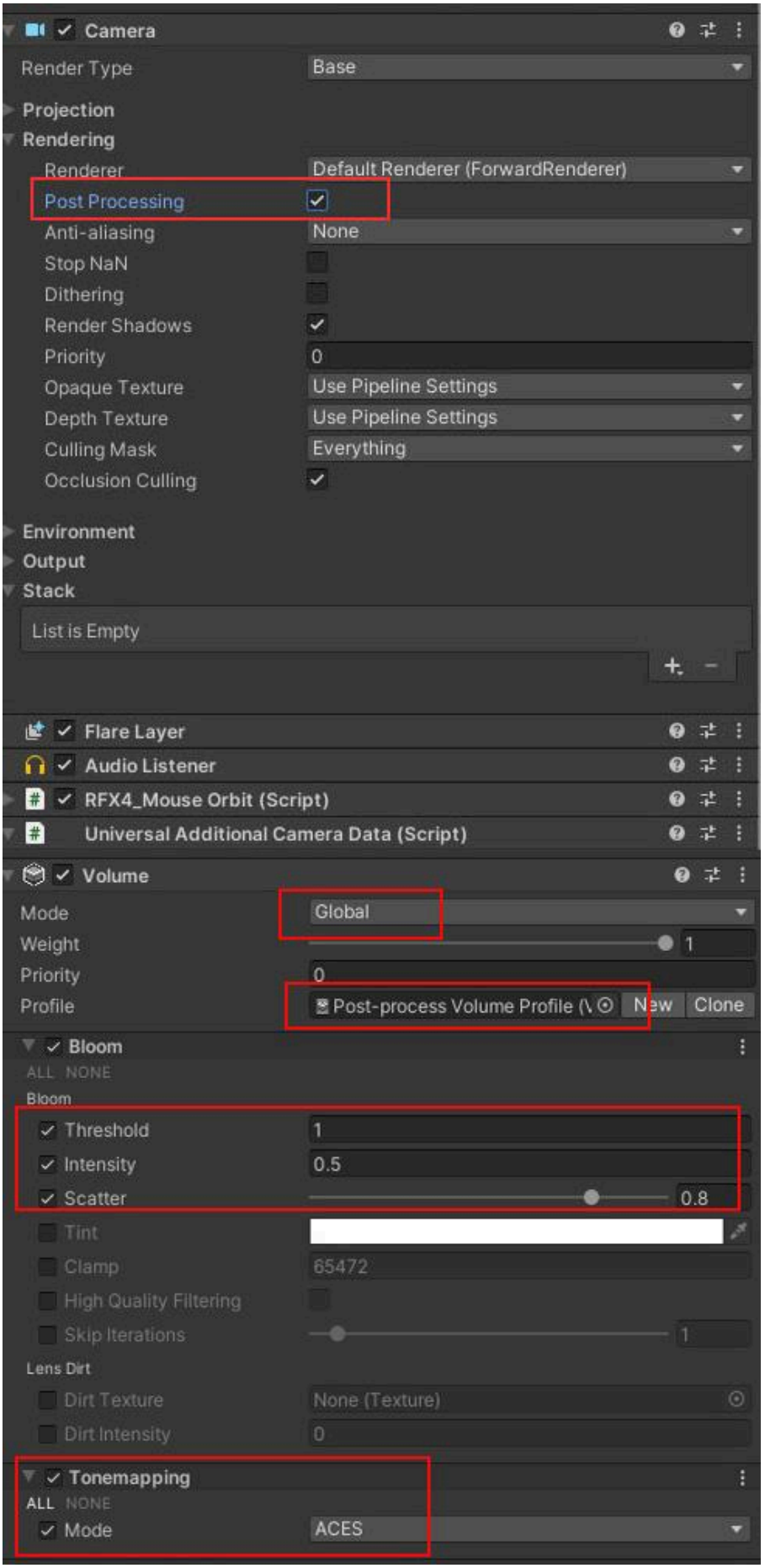


# To activate Bloom and ACES in:

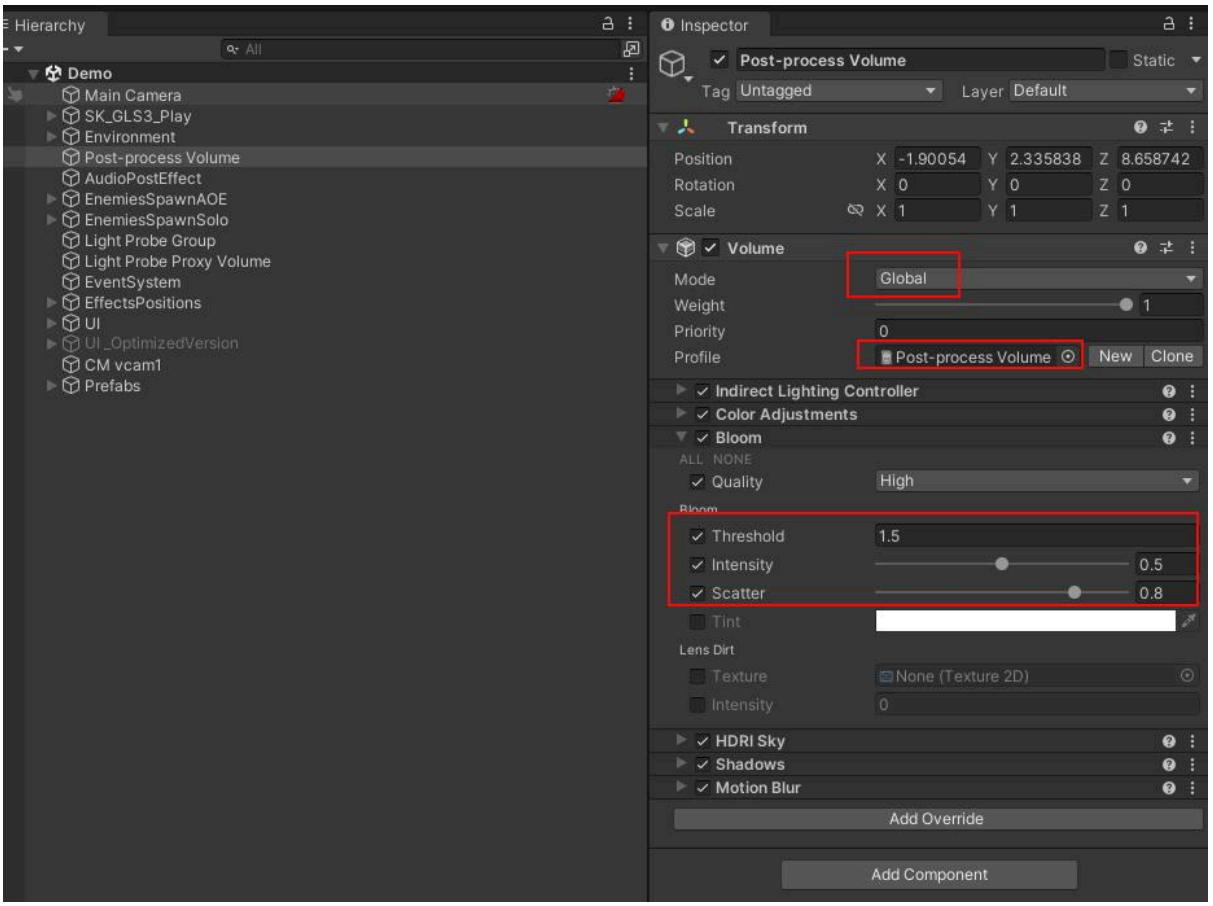
## **Standard** pipeline:



URP pipeline:



**HDRP** pipeline (It is necessary to adjust only bloom, ACES tonemapping is already enabled):




Also, keep in mind that HDRP pipeline developers include incorrect bloom settings out of the box for different versions, making everything look blurry and unrealistic. Therefore, I strongly recommend overriding the default bloom settings as shown in the image above. (For example, Unreal Engine uses a threshold >1 and scatter 0.9, whereas Unity HDRP uses a threshold of 0 and scatter 0.4).

# Effects using:

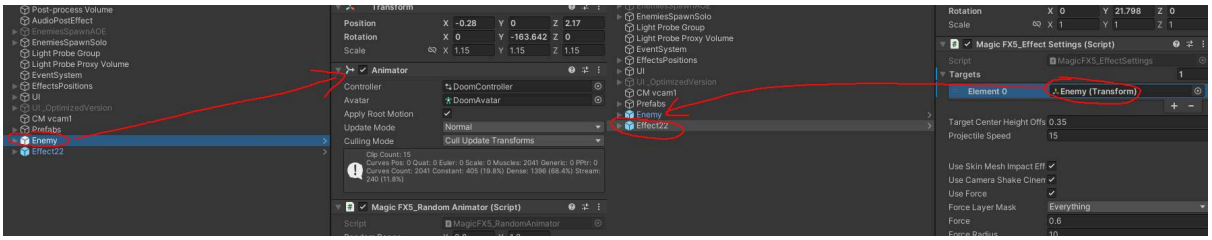
The effects have two types: projectiles aimed at a single target and AOE effects (affecting multiple targets at once).

For each effect's settings (target, projectile speed, camera shake, adding physical impulse, etc.), you can use the settings in MagicFX_EffectSettings. This script is already added to every prefab, so there's no need to add it yourself.

**To configure the projectile**, just place the prefab at the start position (for example, the character's hand position) and specify the target (effect prefab -> effect settings -> targets). Remember that the projectile only flies towards the first target in the list.

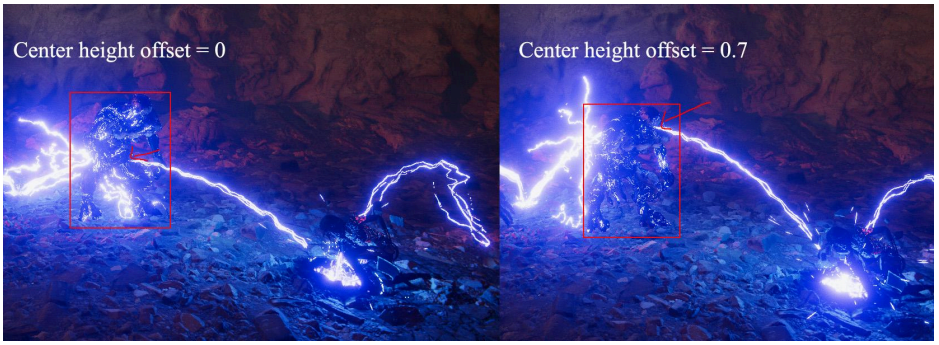
**To set up an AOE effect**, you can simply place the prefab at the starting position (but be sure it is at ground level/surface height, so the decals don't fall through or hover in the air!).
You can specify a list of targets the effect will interact with (e.g., for effects like character burning, levitation, shockwave, or being sucked into a black hole).
For some effects (e.g., portal chains), you must specify targets for interaction (to understand where to attach the chains).

**For correct interaction** (physics/Ragdoll/death animation/decals on characters, etc.) with characters using skinned mesh, you must specify the character root (with the animator).
Example:



**Effect settings** have several options:

-**Target center height offset**: Allows you to adjust the impact point of a chain lightning effect (e.g., if you want the lightning to strike higher than the target's center).




-**Use skin mesh impact effect**: Adds an effect material to the target upon collision (e.g., burning).


-**Use camera shake cinemachine**: Enables camera shake effects (e.g., from an explosion shockwave).

For the demo scene, I used the following settings (requires the Cinemachine package). (see the image “cinemachineSettings.jpg”).

-**Use force**: Allows applying a shockwave force on collision/explosion for some effects.

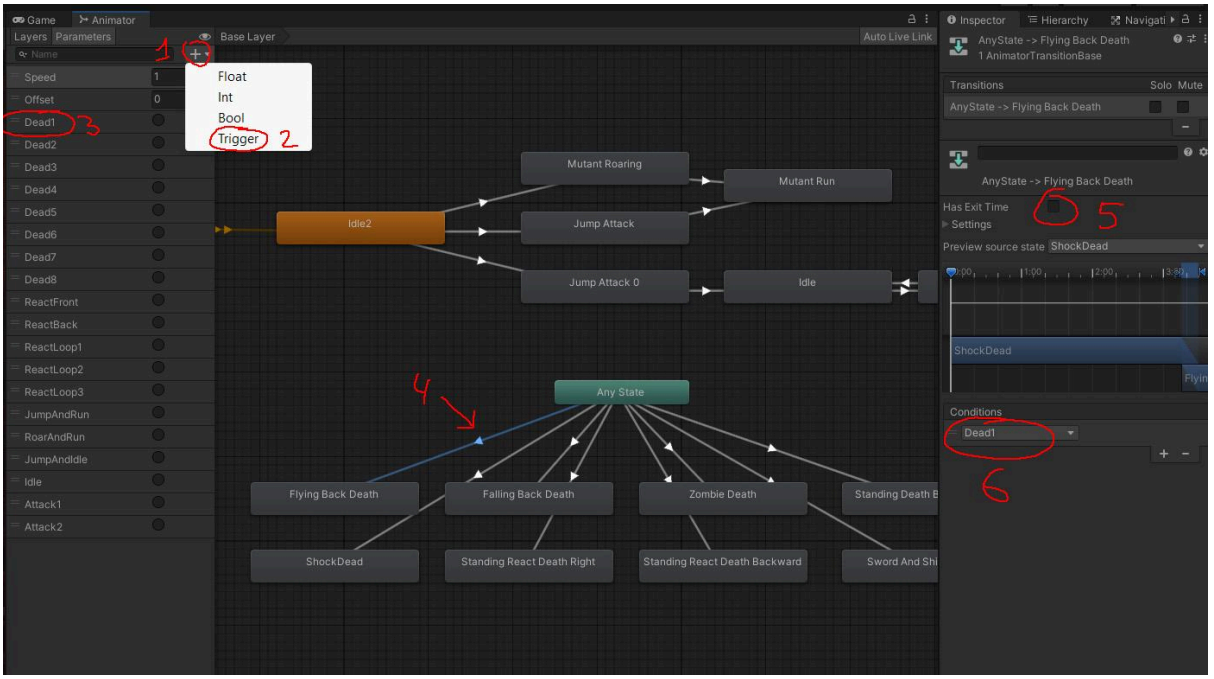
-**Use ragdoll force**: Enables using ragdoll physics for enemies in certain effects (e.g., chains/levitation). You need to add ragdoll to your target (enemy).

Example: https://learn.unity.com/tutorial/creating-ragdolls-2019#

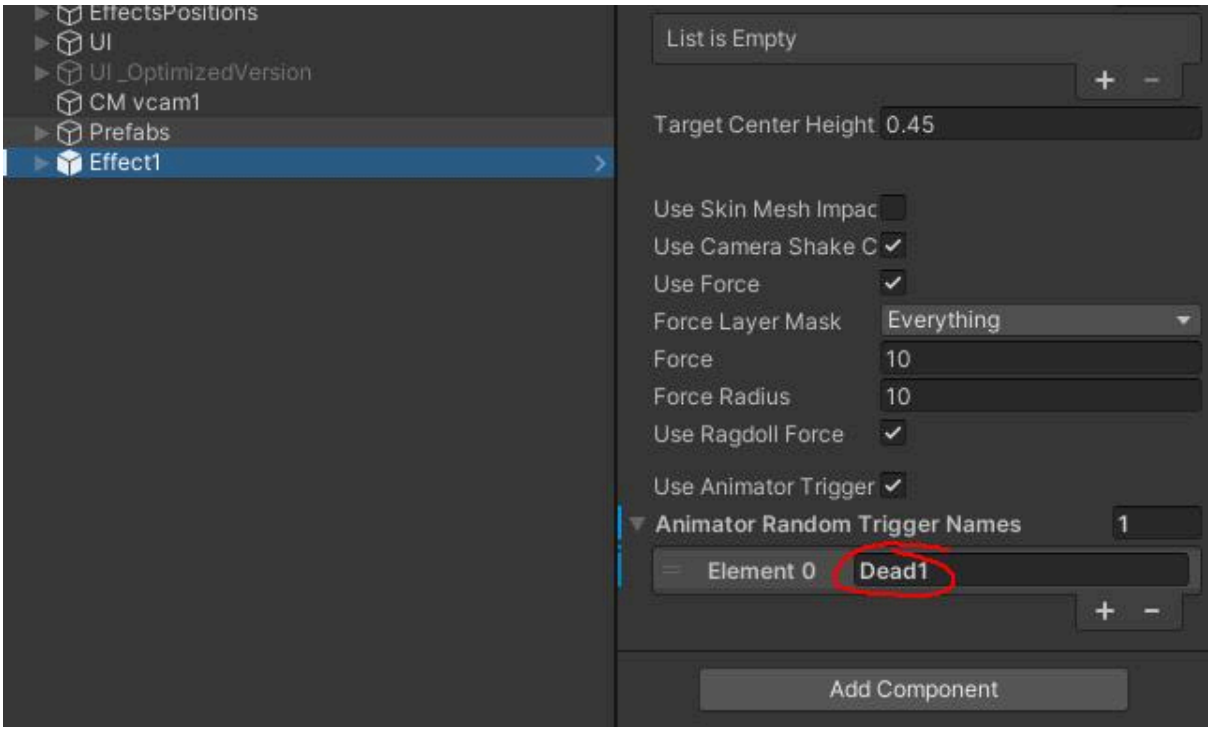
Also, remember that Ragdoll doesn't work correctly a second time after death, so you need to destroy the enemy after death and spawn a new one.

-**Use animator trigger after collision**: Automatically activates animation after impact (e.g., death animation after an explosion).

How to create an animation trigger named "Dead1"




Now you can use death animation after impact/explosion.




For more detailed settings, you can open the prefab and configure everything you want (the main scripts are located in the prefab -> root game object). Effects are also divided to parts(e.g., accumulation effect/explosion effect/etc).