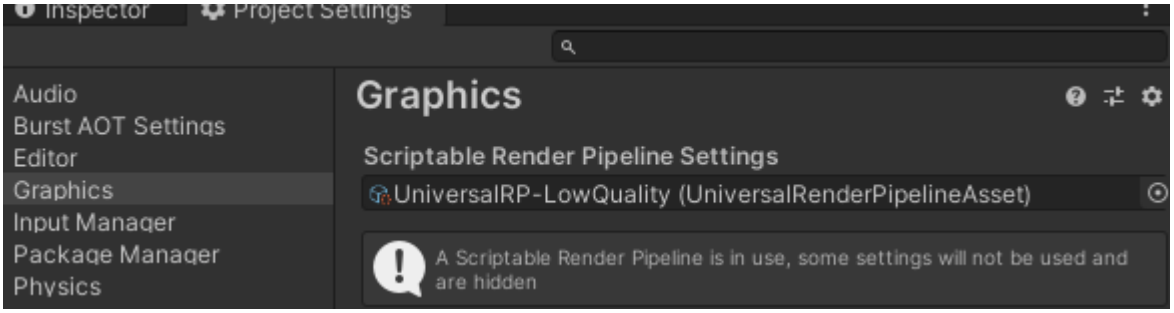
# BulletFury

*Documentation*

# Getting Started

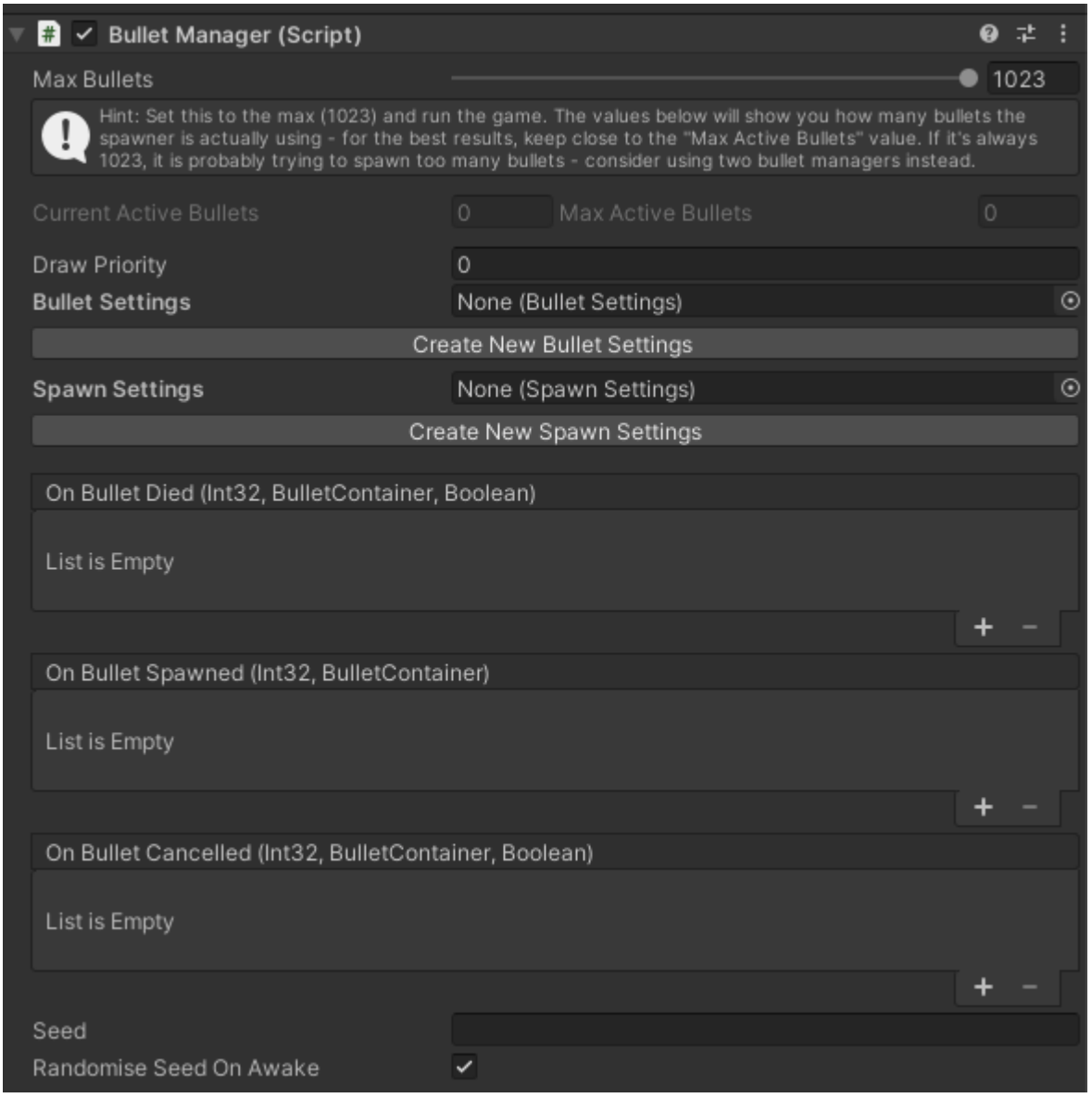
You'll need to install the Universal Render Pipeline (note: lightweight render pipeline will not work), and make sure the scriptable render pipeline has a pipeline asset assigned:




A window should appear that prompts you to do this, once it has been done it will have a button to add the correct render feature. **Without the render feature, bullets will not be drawn.**

# Bullet Manager

This asset revolves around the “Bullet Manager” component. Attach it to a gameobject, and you should see the following:




There are a few things to note here:

- **Max Bullets**: this controls how many bullets are rendered. 1023 is the max, if you need more you’ll need to use more bullet managers - this is a hard limit with the bullet rendering tech.

- **Draw Priority**: if this has a higher value, bullets drawn by the manager will be drawn *on top of* bullets drawn by other managers.
- **Bullet Settings**: this controls the properties of the bullets - more on this later. Pressing the button will create a new Bullet Settings file - Assets/New Bullet Settings.asset.
- **Spawn Settings**: this controls how bullets are spawned, including spawn rate, quantity, bursts, etc.
- **Events**: there are several events that can be listened to, to help do various things when bullets are created/destroyed/cancelled
- **Seed**: used for randomisation. Set a seed here to ensure randomised bullet patterns use the same random seed.

## API

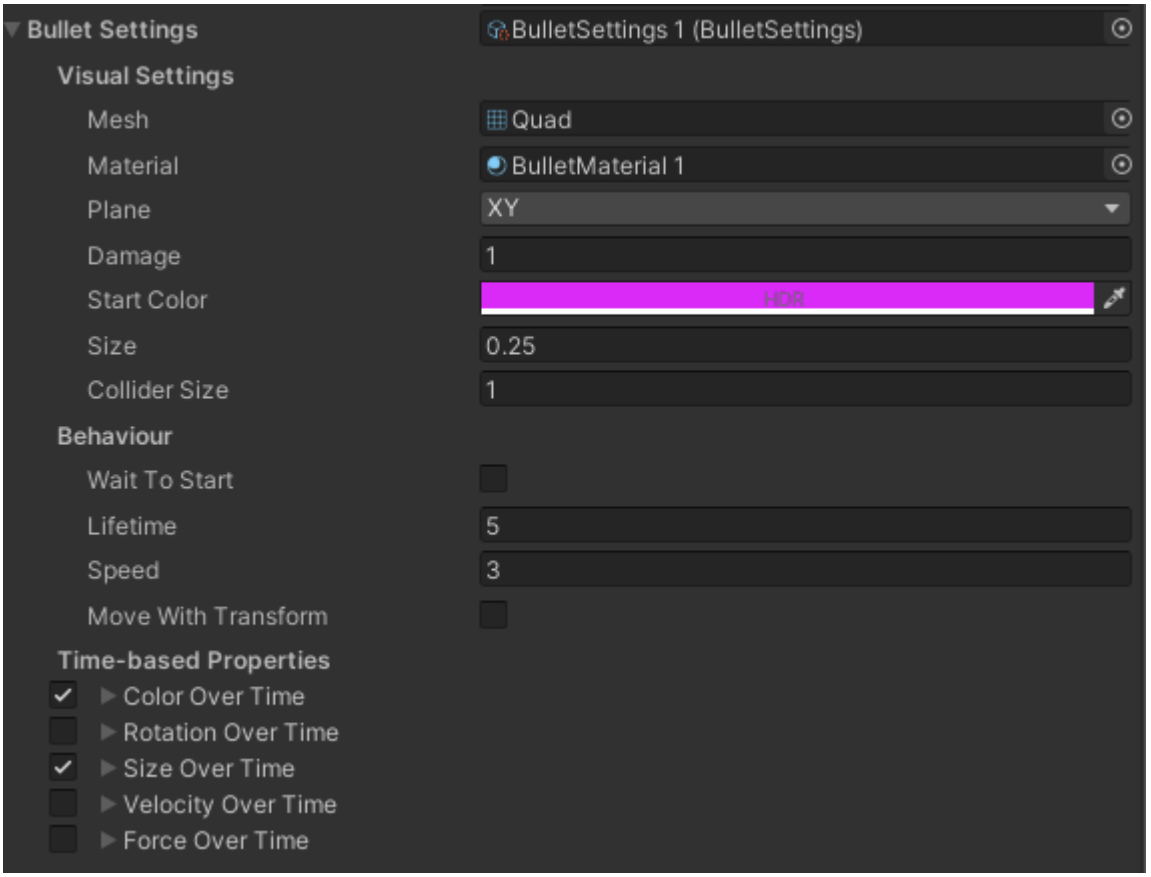
### Spawning

```
bulletManager.Spawn(transform.position, forward: bulletManager.Plane == BulletPlane.XY ? transform.up : transform.forward);
```

To create bullets, use `bulletManager.Spawn` - passing through a position and forward direction. This will usually be `transform.position` and transform.up (in the X-Y Plane)/`transform.forward` (in the X-Z plane).

# Bullet Settings

The bullet settings asset controls the bullet visuals and properties.



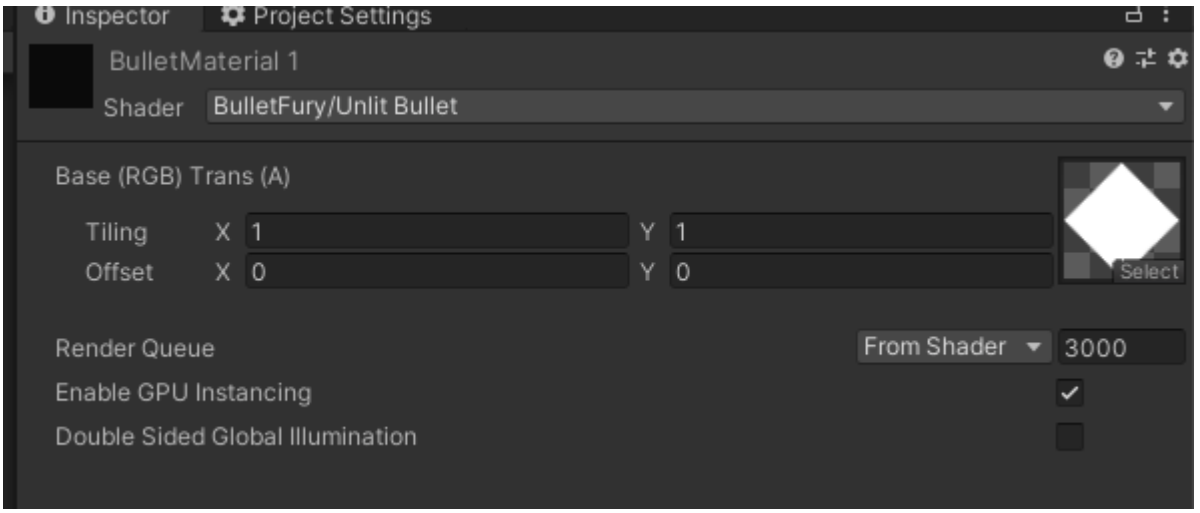

The settings themselves should be fairly self explanatory - though there are a couple of things to note.

## Mesh

If you're using 2D bullets, use the "Quad" Mesh here, it should be available if you click the little target icon.

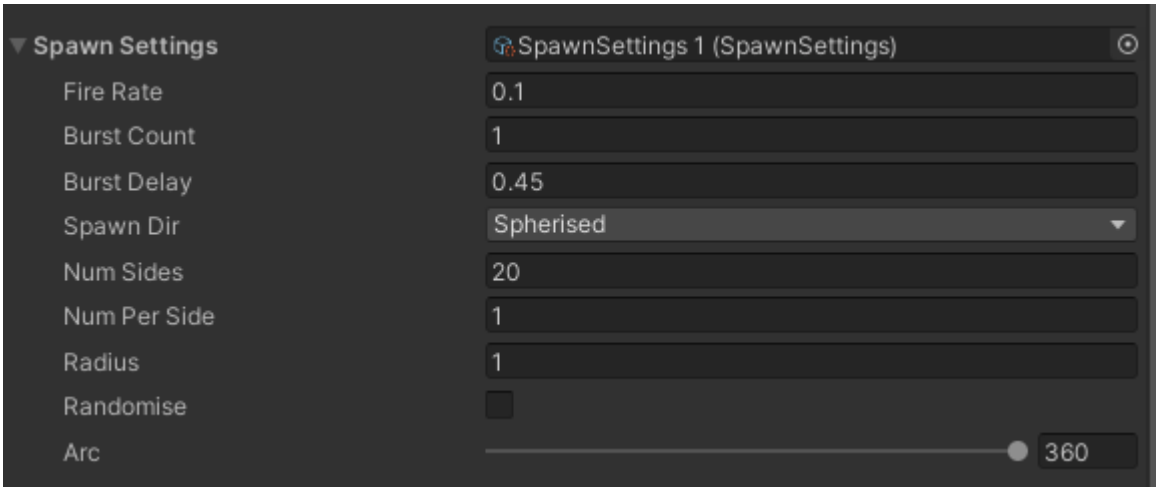
## Material

You will **need** to use the "**BulletFury/Unlit Bullet**" shader for your material, and **enable GPU Instancing**. Without this, your bullets won't be visible!


Inspector
Project Settings
BulletMaterial 1
Shader
BulletFury/Unlit Bullet
Base (RGB) Trans (A)
Tiling
X 1
Y 1
Offset
X 0
Y 0
Select
Render Queue
From Shader
3000
Enable GPU Instancing
Double Sided Global Illumination

# Spawn Settings

The spawn settings asset controls how the bullets are spawned. It can also be used elsewhere for any other types of spawning (e.g. enemies, collectibles, etc).



# Collision

Use the BulletCollider component to get collisions between objects and bullets. This system **does not interact with Unity's physics system.** This is intentional, it is a multithreaded custom physics simulation. It currently supports spheres, axis-aligned boxes and oriented boxes.