# Stylized Godrays instruction

## Getting started

1. Go to Assets/TheLazzyKnight/Stylized Environment VFX/Resources and relocate Gizmos folder to Assets folder. New path for this folder has to look like this: Assets/Gizmos.

2. Go to assets/TheLazzyKnight/Stylized Environment VFX/Prefabs. Drag and drop the WindDirector to your scene.

3. Click on your MainCamera in the scene then go to the inspector and find the “Rendering” tab. Then find the “Depth Texture” property and turn it on. This setting helps particles to fade smoothly when it intersects objects like walls, ground etc. Use this setting for every camera from which the player will see particles.

4. Go to Assets/TheLazzyKnight/Stylized Environment VFX/VFX. Drag and drop all effects you need to your scene and change properties in the inspector as you wish.

5. Select all VFX in your scene you want to be controlled by the WindDirector. Go to inspector, click on the “Tag” tab and choose WindDirected.

6. Left click on the WindDirecor, go to the inspector and click “Update effects” button.

   Now wind in all effects is controlled by the WindDirector. You can change wind direction by rotating the WindDirector gizmo and also change wind force by changing the Force property in the WindDirector.

# VFX properties

## *WindTrails*

**COLORING**

**Trails Texture** - determines which texture will be used for the trails.

**Color & Transparency** - determines color and base transparency of the trails.

**Transparency Difference** - the higher this parameter the more alpha random will be applied to the trails.

## SPAWN&SIZES

**Spawn Volume** - determines the boundaries and center of the box where trails will be spawned.

**Particles Rate** - sets the number of trails to be spawned per second.

**Culling Box** - determines the boundaries and center of the culling box. If no one pixel of this box is visible for the camera, then the particle system will disappear.

Increase the boundaries if your particles abruptly disappear.

The boundaries should not be less than SpawnVolume boundaries.

**Trail Width** - determines the width of the trails.

**Trail Length(min/max)** - determines the length of the trails that will be randomly chosen between min and max value.

**Trail Distance(min/max)** - determines the approximate distance in meters the trail will go from its spawn position that will be randomly chosen between min and max value.

## WAVING

**Amplitude Y** - determines how high the trails can deviate from Y axis position in WindDirector space.

**Amplitude Z** - determines how wide the trails can deviate from Z axis position in WindDirector space.

**Waving Frequency** - the higher this value the more frequent trails will change their direction on Y and Z axes in WindDirector's space.

**Waving Frequency Random** - the higher this value the more randomized frequency will be. 0 means no randomization and the trails will change their amplitude with the same frequency.

**Trail Distance (min;max)** - determines the approximate distance in meters the trail will go from its spawn position that will be randomly chosen between min and max value.

## WIND

**Wind Rotation** - basically the wind blows towards X direction in WorldSpace. This parameter changes wind direction based on rotation values. This parameter is configured by the WindDirector if it's on your scene.

**Wind Force** - determines the force of the wind. The higher this value the stronger the wind blows. This parameter is controlled by the WindDirector if it's on your scene, so DO NOT change it manually to change the force in this particular VFX change WindForceMultiplier instead.

**Wind Force Multiplier** - multiplies the WindForce parameter. If you want to slow down the wind for these particular VFX make this value less than 1(up to zero). If you want to speed up the wind, make this value more than 1. One means no changes for the original wind force.

## ADVANCED

**FadeIn Time (min;max)** - determines how fast(in seconds) after trail spawn it will reach its width. The value will be randomly chosen between min and max value.

**Fade Out Time (min;max)** - determines how fast before its die(in seconds) the trail will start to fade out from its width to zero thickness. The value will be randomly chosen between min and max value.

**Camera Fade** - the X value determines how far from the camera the particles will start to fade, while the Y value determines the distance from the camera that particle will finally fade.

## COLORING

**Fluff Texture** - determines which texture will be used for the fluff.

**Color & Transparency** - determines color and transparency of the fluff.

**Hue Difference** - the higher this parameter the more hue difference will be applied to the fluff particles.

## SPAWN&SIZES

**Spawn Volume** - determines the boundaries and center of the box where particles will be spawned.

**Culling Box** - determines the boundaries and center of the culling box. If no one pixel of this box is visible for the camera, then the particle system will disappear.

Increase the boundaries if your particles abruptly disappear.

The boundaries should not be less than SpawnVolume boundaries.

**Particles Rate** - sets the number of particles to be spawned per second.

**Particle Size (min;max)** - sets random size value for the particles between min and max value.

**Trail Length (min;max)** - determines the length of the trails that will be randomly chosen between min and max value.

**Particle Width Difference** - the higher this value the more difference will be applied to particles width.

## MAIN

**Particle Weight** - determines the weight of a particle. The higher the weight the faster a particle will fall.

NOTE! Too low values can lead to incorrect simulation. To make sure simulation works right, raise the WindForceMultiplier to a really high value. If the wind has no effect on the particles, raise weight a little till the wind will have effect on the particles. Then return the WindForceMultiplier to its previous value.

NOTE! Particle size also takes part in the final weight calculation!

**Lifetime (min;max)** - determines lifetime of the particle that is randomly chosen between min and max value.

**Angular Rotation Force** - sets maximum force for particle rotation along its Z axis.

**Turbulence intensity** - the higher this value the stronger turbulence will push particles apart.

**Turbulence frequency** - the higher this value the more often turbulence will change direction of the particle.

**Slow down coefficient** - if the particles move faster than you want this parameter can slow down all simulation. The higher the value the slower simulation will be.

## WIND

**WindRotation** - basically the wind blows towards X direction in WorldSpace. This parameter changes wind direction based on rotation values. This parameter is configured by the WindDirector if it's on your scene.

**WindForce** - determines the force of the wind. The higher this value the stronger the wind blows. This parameter is controlled by the WindDirector if it's on your scene, so DO NOT change it manually to change the force in this particular VFX change WindForceMultiplier instead.

**Wind Force Multiplier** - multiplies the WindForce parameter. If you want to slow down the wind for these particular VFX make this value less than 1(up to zero). If you want to speed up the wind, make this value more than 1. One means no changes for the original wind force.

## ADVANCED

**Camera Fade** - the X value determines how far from the camera the particles will start to fade, while the Y value determines the distance from the camera that particle will finally fade.

## *Dust*

### COLORING

**Dust Texture** - determines which texture will be used for the dust.

**Color & Transparency** - determines color and transparency of the dust.

### MAIN

**Spawn Volume** - determines the boundaries and center of the box where particles will be spawned.

**Culling Box** - determines the boundaries and center of the culling box. If no one pixel of this box is visible for the camera, then the particle system will disappear.

Increase the boundaries if your particles abruptly disappear.

The boundaries should not be less than SpawnVolume boundaries.

**Particles Rate** - sets the number of particles to be spawned per second.

**Particle Size (min;max)** - sets random size value for the particles between min and max value.

**Particle Width Difference** - the higher this value the more difference will be applied to particles width.

**Lifetime (min;max)** - determines lifetime of the particle that is randomly chosen between min and max value.

**Angular Rotation Force** - sets maximum force for particle rotation along its Z axis.

**Turbulence intensity** - the higher this value the stronger turbulence will push particles apart.

**Turbulence frequency** - the higher this value the more often turbulence will change direction of the particle.

**WIND**

**Wind Rotation** - basically the wind blows towards X direction in WorldSpace. This parameter changes wind direction based on rotation values. This parameter is configured by the WindDirector if it's on your scene.

**Wind Force** - determines the force of the wind. The higher this value the stronger the wind blows. This parameter is controlled by the WindDirector if it's on your scene, so DO NOT change it manually to change the force in this particular VFX change WindForceMultiplier instead.

**Wind Force Multiplier** - multiplies the WindForce parameter. If you want to slow down the wind for these particular VFX make this value less than 1(up to zero). If you want to speed up the wind, make this value more than 1. One means no changes for the original wind force.

**ADVANCED**

**Camera Fade** - the X value determines how far from the camera the particles will start to fade, while the Y value determines the distance from the camera that particle will finally fade.

## *Leaves*

**COLORING**

**Leaves Texture** - determines which texture will be used for the leaves.

**Color & Transparency** - determines color and transparency of the dust.

**Hue Difference** - the higher this parameter the more hue difference will be applied to the particles.

## MAIN

**Spawn Volume** - determines the boundaries and center of the box where particles will be spawned.

**Culling Box** - determines the boundaries and center of the culling box. If no one pixel of this box is visible for the camera, then the particle system will disappear.

Increase the boundaries if your particles abruptly disappear.

The boundaries should not be less than SpawnVolume boundaries.

**Particles Rate** - sets the number of particles to be spawned per second.

**Particle Size (min;max)** - sets random size value for the particles between min and max value.

**Particle Width Difference** - the higher this value the more difference will be applied to particles width.

**Lifetime (min;max)** - determines lifetime of the particle that is randomly chosen between min and max value.

**Angular Rotation Force** - sets maximum force for particle rotation along its Z axis.

**Turbulence intensity** - the higher this value the stronger turbulence will push particles apart.

**Turbulence frequency** - the higher this value the more often turbulence will change direction of the particle.

## WIND

**Wind Rotation** - basically the wind blows towards X direction in WorldSpace. This parameter changes wind direction based on rotation values. This parameter is configured by the WindDirector if it’s on your scene.

**Wind Force** - determines the force of the wind. The higher this value the stronger the wind blows. This parameter is controlled by the WindDirector if it's on your scene, so DO NOT change it manually to change the force in this particular VFX change WindForceMultiplier instead.

**Wind Force Multiplier** - multiplies the WindForce parameter. If you want to slow down the wind for these particular VFX make this value less than 1(up to zero). If you want to speed up the wind, make this value more than 1. One means no changes for the original wind force.

## ADVANCED

**Camera Fade** - the X value determines how far from the camera the particles will start to fade, while the Y value determines the distance from the camera that particle will finally fade.

**LOD Distance** - sets the distance from the camera to emitter after which particles will reduce digitalization of mesh.

## *Fireflies*

## COLORING

**Firefly Texture** - determines which texture will be used for the firefly.

**Color** - determines color and transparency of the firefly.

**Hue Difference** - the higher this parameter the more hue difference will be applied to the particles.

**Brightness Difference** - the higher this parameter the more brightness difference will be applied to the particles.

**Flickering frequency** - determines how often particles will be flickering.

**Max flickering fading** - determines the maximum level of transparency a particle can achieve while fading.

## MAIN

**Firefly Size** - determines particle size.

**Random Size** - the higher this value the more difference will be applied to particles size.

**Lifetime (min;max)** - determines lifetime of the particle that is randomly chosen between min and max value.

**Speed** - determines how fast fireflies will fly.

**Radius** - determines in which radius fireflies will fly.

**Attraction force** - increase this parameter if your fireflies fly away from the Radius. It will increase attraction force.

## ADVANCED

**Camera Fade** - the X value determines how far from the camera the particles will start to fade, while the Y value determines the distance from the camera that particle will finally fade.

# *Fog*

## COLORING

**Fog Texture** - determines which texture will be used for the fog.

**Color & Transparency** - determines color and transparency of the fog.

**Hue Difference** - the higher this parameter the more hue difference will be applied to the fluff particles.

## MAIN

**Particle Size** - sets size value for the particles.

**Random Size Index** - sets the index to randomize particle size (0.1 means the smallest particle will be  10% smaller than "Particle size" parameter).

**Lifetime (min;max)** - determines lifetime of the particle that is randomly chosen between min and max value.

**Initial force** - sets initial velocity. Use this parameter in case you want to simulate fog running out of pipe or other objects.

**Turbulence intensity** - the higher this value the stronger turbulence will push particles apart.

**Turbulence frequency** - the higher this value the more often turbulence will change direction of the particle.

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## SPAWN

**Particles Rate** - sets the number of particles to be spawned per second.

**Box Volume** - determines the boundaries and center of the box where particles will be spawned.

**Switch to Sphere Volume?** - if this parameter toggled on the “Box Volume” settings doesn’t work anymore. In this case the Sphere Volume parameter works instead.

**Sphere Volume** - determines the boundaries and center of the sphere where particles will be spawned. This property doesn’t work if the “Switch to Sphere Volume?” parameter toggled off. In this case the Box Volume parameter works instead.

**Culling Box** - determines the boundaries and center of the culling box. If no one pixel of this box is visible for the camera, then the particle system will disappear.

Increase the boundaries if your particles abruptly disappear.

The boundaries should not be less than SpawnVolume boundaries.

## WIND

**WindRotation** - basically the wind blows towards X direction in WorldSpace. This parameter changes wind direction based on rotation values. This parameter is configured by the WindDirector if it's on your scene.

**WindForce** - determines the force of the wind. The higher this value the stronger the wind blows. This parameter is controlled by the WindDirector if it's on your scene, so DO NOT change it manually to change the force in this particular VFX change WindForceMultiplier instead.

**Wind Force Multiplier** - multiplies the WindForce parameter. If you want to slow down the wind for these particular VFX make this value less than 1(up to zero). If you want to speed up the wind, make this value more than 1. One means no changes for the original wind force.

## ADVANCED

**Fade in/out time (min;max)** - determines how fast(in seconds) after particle spawn and before die it will reach its maximum opacity. The value will be randomly chosen between min and max value.

**Rotation Index** - determines how particle rotation around the local Z axis is affected by wind force. The higher this value the more the particle rotates around Z. 0 means no rotation.

**Camera Fade** - the X value determines how far from the camera the particles will start to fade, while the Y value determines the distance from the camera that particle will finally fade.