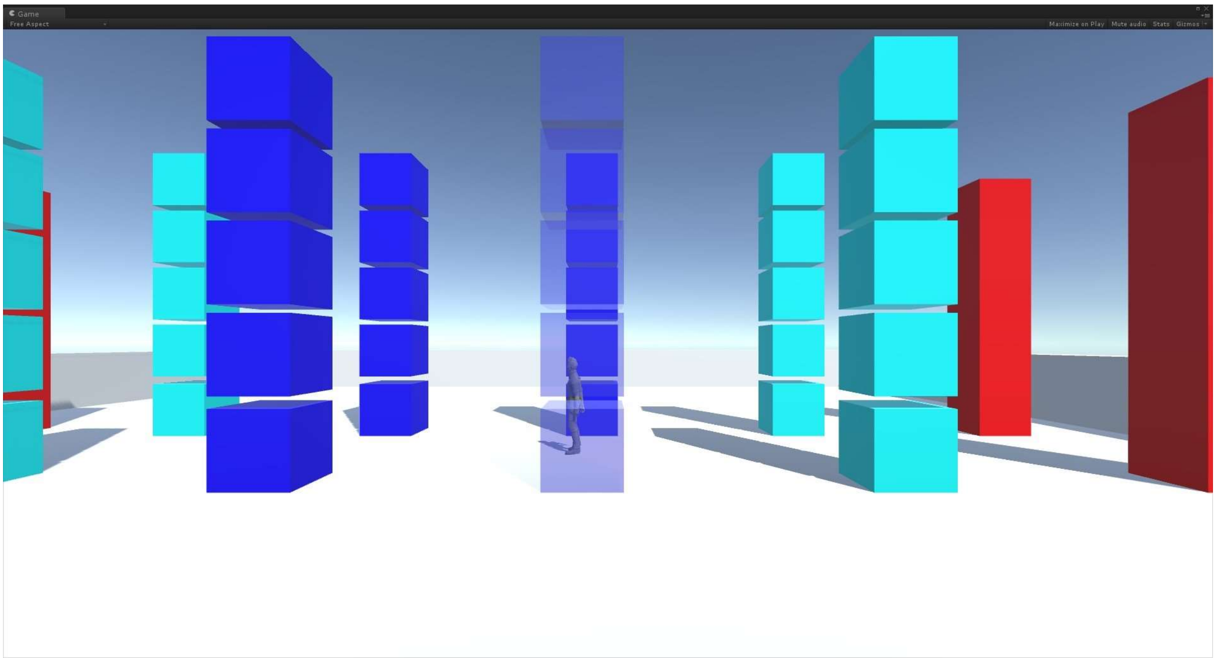
See Through Manual



Version 1.0.5

January 2024

Thank you for buying the See Through asset. This asset allows you to fade away objects that are obscuring the line of sight between a source (mostly a camera) and a target.

See Through allows you to fade objects when they are in line of sight the camera (or any other object) and its target.

Works with all kind of assets including SpeedTree and legacy trees. Objects can be linked together so an uniform fading is accompliced even if only one part of a complex object is obscuring the line of sight.

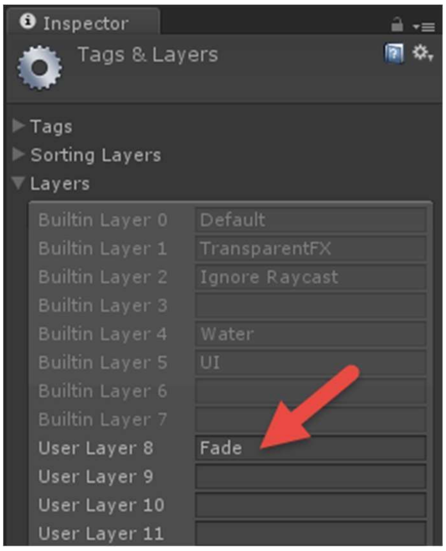
When playing 3th person games (like Diablo, Assasins Creed, etc) you'll notice that when the player gets obscured by any other object those are fading away so you will always see what happens to your game character. As I'm building a game Thyr which has that special camera setup I build the See Through system to allow my players never to lose their characters and can see whatever action is going on. Some screenshots and a part of the video do show the See Through asset in action while running in Thyr, those assets are NOT included in this package.

I'm hoping this asset will be of any value and save you (and your team) some effort allowing you to focus on your actual gameplay mechanics.

In case of any question, trouble and/or feature request please contact me at support@cygnusprojects.com.

How to set up the system

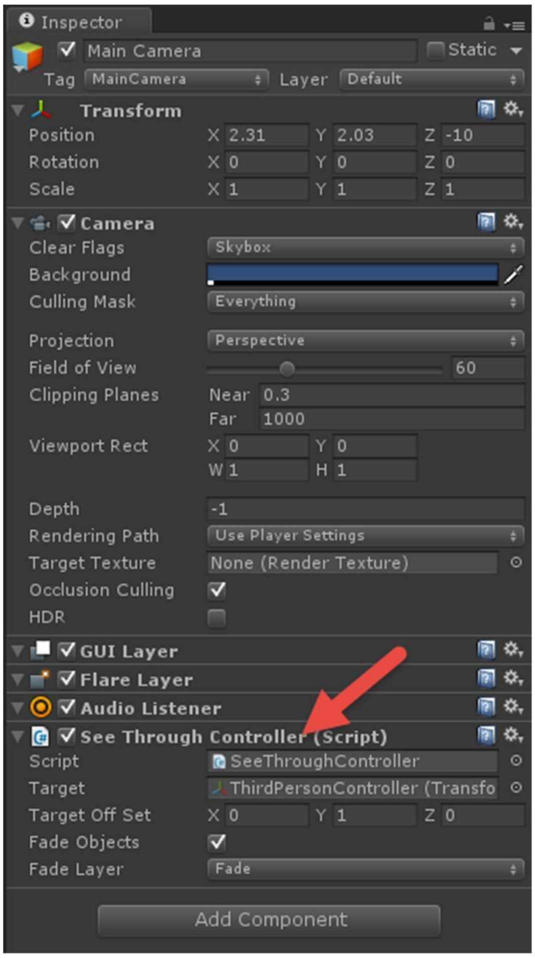
Specify a layer you want to use for determining which object you want to see through.



Builtin Layer 0	Default
Builtin Layer 1	TransparentFX
Builtin Layer 2	Ignore Raycast
Builtin Layer 3	
Builtin Layer 4	Water
Builtin Layer 5	UI
Builtin Layer 6	
Builtin Layer 7	
User Layer 8	Fade
User Layer 9	
User Layer 10	
User Layer 11	

Make sure you assign this Layer to the game objects you want to be part of the see through system.

Add the see through controller script to your camera.



Tag MainCamera Layer Default

▼ Transform

Position	X 2.31	Y 2.03	Z -10
Rotation	X 0	Y 0	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

▼ ☑ See Through Controller (Script)

Script	SeeThroughController
Target	ThirdPersonController (Transfo
Target Off Set	X 0 Y 1 Z 0
Fade Objects	☑
Fade Layer	Fade

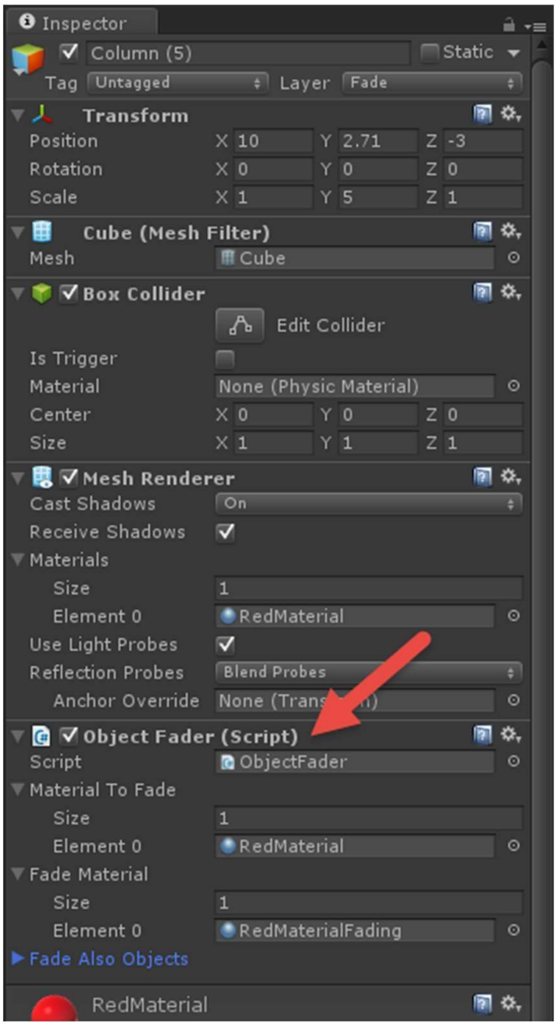
Assign the target object to the Target field of the component, in this case the standard ThirdPersonController. As the target will probably be the feed position of the character you can set a Target Offset. In this case we used a Y-value of 1 meter (the hips of the character).

Within version 1.0.3 I added support for orthographic camera's, no special setting has to be checked as the system will fetch the camera settings.

Added a new example script and scene in 1.0.4 to demonstrates how to use SeeThrough when instantiating the target object (fi player).

The Fade Object flag must be checked to perform the actual See Through calculations. Also make sure you assign the newly created Layer to the Fade Layer field.

For the system to work you need to assign the Object Fader script to any object you want to be able to fade. Make sure those game object do have a collider component as well.



Inspector

☑ Column (5) □ Static

Tag Untagged Layer Fade

Transform

Position X 10 Y 2.71 Z -3

Rotation X 0 Y 0 Z 0

Scale X 1 Y 5 Z 1

Cube (Mesh Filter)

Mesh Cube

☑ Box Collider

Edit Collider

Is Trigger □

Material None (Physic Material)

Center X 0 Y 0 Z 0

Size X 1 Y 1 Z 1

☑ Mesh Renderer

Cast Shadows On

Receive Shadows ☑

Materials

Size 1

Element 0 RedMaterial

Use Light Probes ☑

Reflection Probes Blend Probes

Anchor Override None (Trans[illegible]n)

☑ Object Fader (Script)

Script ObjectFader

Material To Fade

Size 1

Element 0 RedMaterial

Fade Material

Size 1

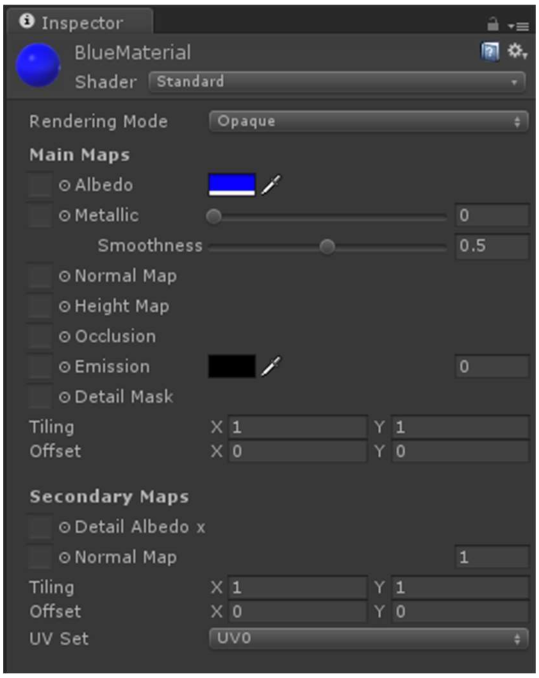
Element 0 RedMaterialFading

Fade Also Objects

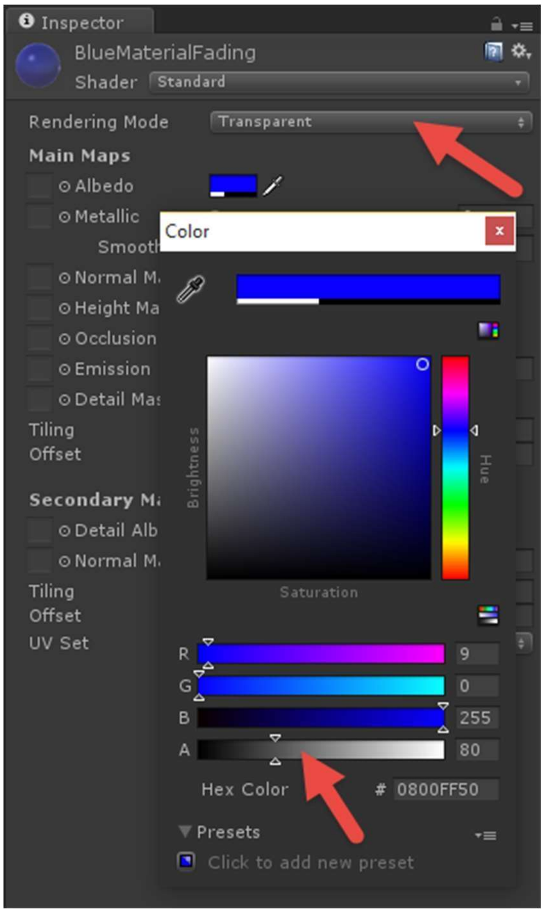
RedMaterial

The actual fading works by swapping out materials with their replacement materials. This allows you have full control on how things are looking when you look through them. In the Material To Fade section you specify the materials of the asset you want to be replaced. Within the Fade Material you assign their corresponding fading (see through) material.

Let's look at the materials first. Here you see a common Unity 5 material (used within our demo)


Inspector
BlueMaterial
Shader Standard
Rendering Mode Opaque
Main Maps
Albedo
Metallic 0
Smoothness 0.5
Normal Map
Height Map
Occlusion
Emission 0
Detail Mask
Tiling X 1 Y 1
Offset X 0 Y 0
Secondary Maps
Detail Albedo x
Normal Map 1
Tiling X 1 Y 1
Offset X 0 Y 0
UV Set UV0

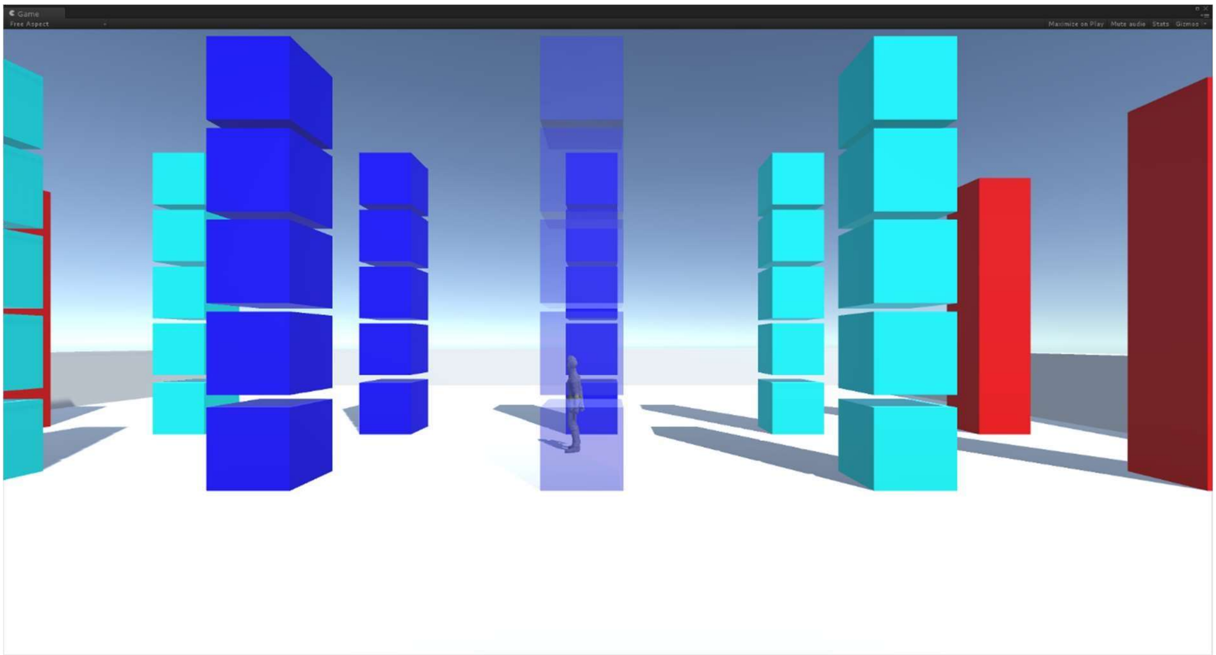
The common workflow we use is to duplicate the material and set its Rendering Mode to Transparent and the alfa setting for the Albedo color/texture.


Inspector
BlueMaterialFading
Shader Standard
Rendering Mode Transparent
Main Maps
Albedo
Metallic
Smooth
Normal M
Height Ma
Occlusion
Emission
Detail Mas
Tiling
Offset
Secondary M
Detail Alb
Normal M
Tiling
Offset
UV Set

Color
R 9
G 0
B 255
A 80
Hex Color # 0800FF50
Presets
Click to add new preset

As you can see it is very easy to set up this system. When you run a scene using the above workflow you will notice any game object that is obscuring the line of sight will have its material replaced.

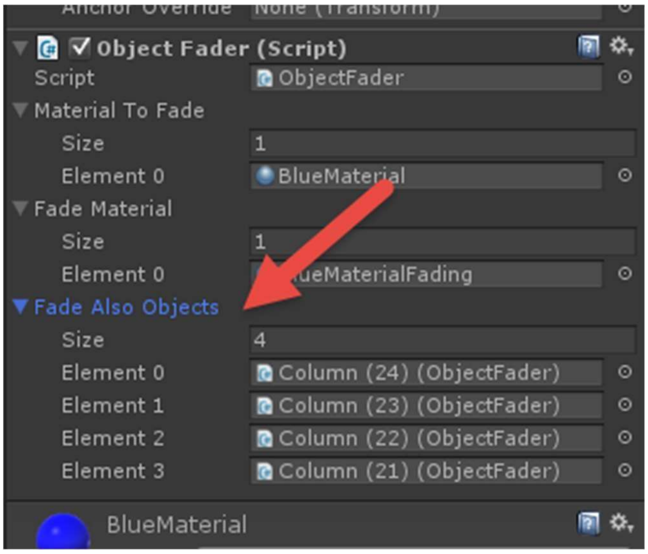
Linked Objects



In some case you want some other parts of your scene get the same treatment as the actual game object that is in the line of sight. This can be achieved by linking object together.

As you can see in the picture although Ethan is only obscured by the lower part of the column the full column is transparent.

Looking at one of the game object making up the column you will notice this kind of setup:



Anchor Override None (Transform)

☑ Object Fader (Script)

Script: ObjectFader

Material To Fade
- Size: 1
- Element 0: BlueMaterial

Fade Material
- Size: 1
- Element 0: ueMaterialFading

Fade Also Objects
- Size: 4
- Element 0: Column (24) (ObjectFader)
- Element 1: Column (23) (ObjectFader)
- Element 2: Column (22) (ObjectFader)
- Element 3: Column (21) (ObjectFader)

BlueMaterial

To make this work you first must have assigned all game objects with an Object Fader script and specified their material sections.

For each of those game object you have to drag and drop its linked objects within the Fade Also Objects section. Make sure you don’t specify the current game object here. And that’s it, your objects will be linked together.

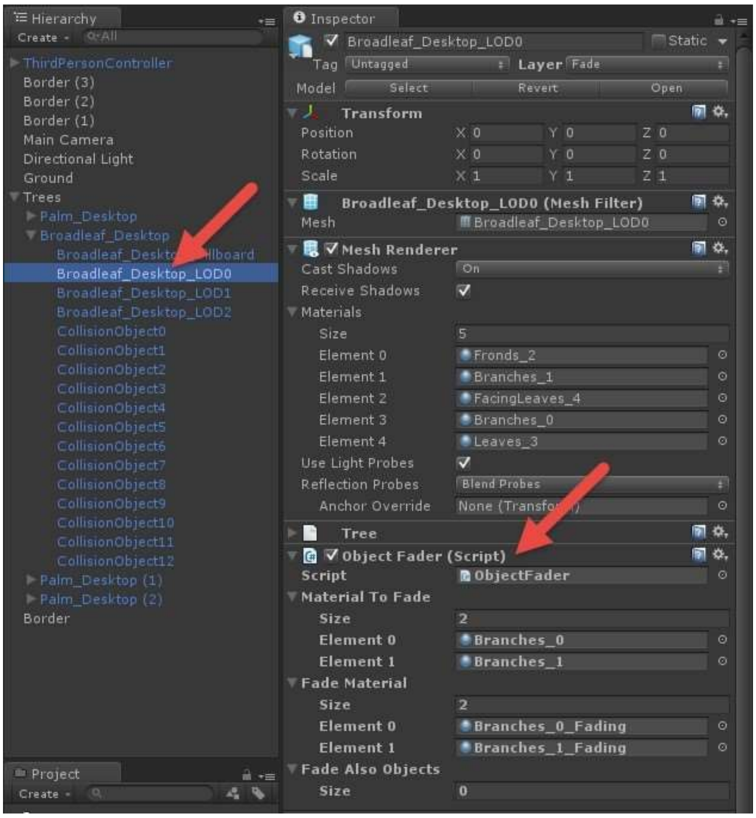
Special cases

SpeedTree assets.

Note 1.0.5: as Unity isn't allowing publishers to redistribute the free SpeedTree assets the demo scene will not work properly unless you are adding the Broadleaf, Conifer and Palm tree within the asset. However this isn't blocking the usage of the package in case of SpeedTree usage. The guidance below still stands.

In case you want your Speedtree assets to fade when in line of sight you have to use a special approach.

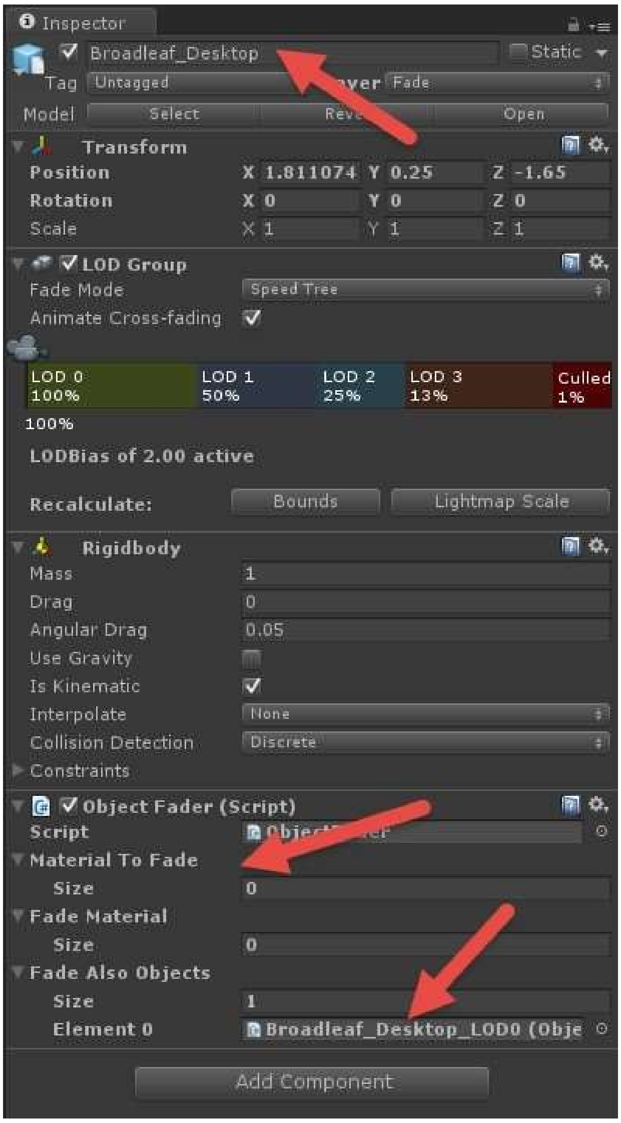
Firstly add an Object Fader script to the LOD0 component of your Speedtree. Setup the material sections like before. In case you want to know how to create a fade material see please read further.



Hierarchy
Create All
ThirdPersonController
Border (3)
Border (2)
Border (1)
Main Camera
Directional Light
Ground
Trees
Palm_Desktop
Broadleaf_Desktop
Broadleaf_Deskt llboard
Broadleaf_Desktop_LOD0
Broadleaf_Desktop_LOD1
Broadleaf_Desktop_LOD2
CollisionObject0
CollisionObject1
CollisionObject2
CollisionObject3
CollisionObject4
CollisionObject5
CollisionObject6
CollisionObject7
CollisionObject8
CollisionObject9
CollisionObject10
CollisionObject11
CollisionObject12
Palm_Desktop (1)
Palm_Desktop (2)
Border
Project
Create

Inspector
☑ Broadleaf_Desktop_LOD0 □ Static
Tag Untagged Layer Fade
Model Select Revert Open
Transform
Position X 0 Y 0 Z 0
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1
Broadleaf_Desktop_LOD0 (Mesh Filter)
Mesh Broadleaf_Desktop_LOD0
☑ Mesh Renderer
Cast Shadows On
Receive Shadows ☑
Materials
Size 5
Element 0 Fronds_2
Element 1 Branches_1
Element 2 FacingLeaves_4
Element 3 Branches_0
Element 4 Leaves_3
Use Light Probes ☑
Reflection Probes Blend Probes
Anchor Override None (Transfo)
Tree
☑ Object Fader (Script)
Script ObjectFader
Material To Fade
Size 2
Element 0 Branches_0
Element 1 Branches_1
Fade Material
Size 2
Element 0 Branches_0_Fading
Element 1 Branches_1_Fading
Fade Also Objects
Size 0

Secondly add an Object Fader script to the root of the Speedtree asset. Important is to leave the material sections empty and link the LOD0 gameobject within the Fade Also Objects sections. This will pass the fade request of the SpeedTree collisions to the LOD0 object.



Inspector

☑ Broadleaf_Desktop □ Static

Tag Untagged ayer Fade

Model Select Reve Open

Transform

Position X 1.811074 Y 0.25 Z -1.65

Rotation X 0 Y 0 Z 0

Scale X 1 Y 1 Z 1

☑ LOD Group

Fade Mode Speed Tree

Animate Cross-fading ☑

LOD 0	LOD 1	LOD 2	LOD 3	Culled
100%	50%	25%	13%	1%

100%

LODBias of 2.00 active

Recalculate: Bounds Lightmap Scale

Rigidbody

Mass 1

Drag 0

Angular Drag 0.05

Use Gravity □

Is Kinematic ☑

Interpolate None

Collision Detection Discrete

Constraints

☑ Object Fader (Script)

Script Objec er

Material To Fade

Size 0

Fade Material

Size 0

Fade Also Objects

Size 1

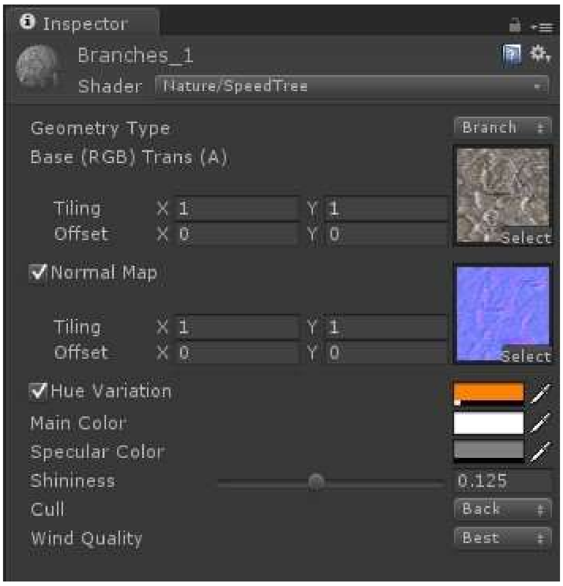
Element 0 Broadleaf_Desktop_LOD0 (Obje

Add Component

Don’t forget to assign your complete tree (root and underlying objects) to the proper layer.

How to create a fade material for SpeedTree.

When you want to create a special fade material for SpeedTree you first have to import the actual tree into your scene. Goto the LOD0 object and click on the material within the mesh renderer. Unity will guide you to the location of that specific material. For instance:



Inspector

Branches_1

Shader Nature/SpeedTree

Geometry Type: Branch

Base (RGB) Trans (A)

Tiling X 1 Y 1

Offset X 0 Y 0

☑ Normal Map

Tiling X 1 Y 1

Offset X 0 Y 0

☑ Hue Variation

Main Color

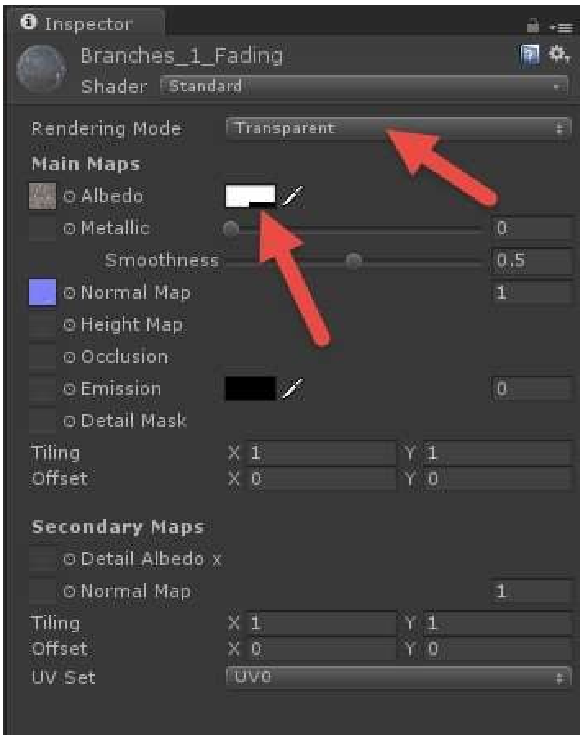
Specular Color

Shininess 0.125

Cull: Back

Wind Quality: Best

Duplicate this material and change it to a standard Unity material asset:



Inspector

Branches_1_Fading

Shader Standard

Rendering Mode: Transparent

Main Maps

Albedo

Metallic 0

Smoothness 0.5

Normal Map 1

Height Map

Occlusion

Emission 0

Detail Mask

Tiling X 1 Y 1

Offset X 0 Y 0

Secondary Maps

Detail Albedo x

Normal Map 1

Tiling X 1 Y 1

Offset X 0 Y 0

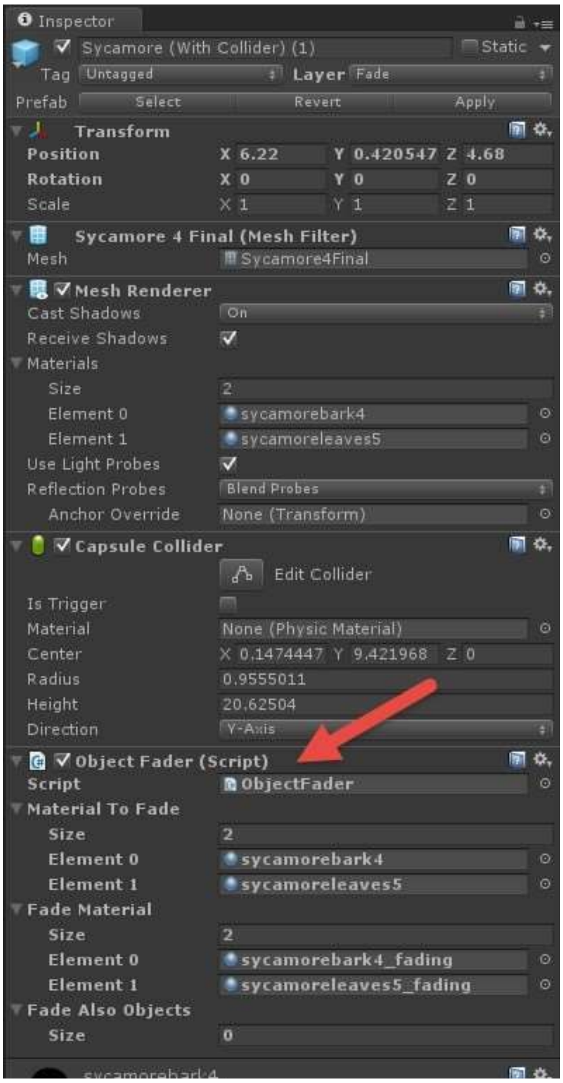
UV Set: UV0

Now you can use this newly created material as fade material for your SpeedTree.

Legacy Trees

When dealing with legacy trees you can use the same approach as stipulated within the SpeedTree section.

The only difference is that you don't have any underlying game objects for LODs. Add an Object Fader script to your tree asset and assign the materials (also make sure you assign the proper Layer).



Inspector

☑ Sycamore (With Collider) (1) □ Static

Tag Untagged Layer Fade

Prefab Select Revert Apply

Transform

Position X 6.22 Y 0.420547 Z 4.68

Rotation X 0 Y 0 Z 0

Scale X 1 Y 1 Z 1

Sycamore 4 Final (Mesh Filter)

Mesh Sycamore4Final

☑ Mesh Renderer

Cast Shadows On

Receive Shadows ☑

Materials

Size 2

Element 0 sycamorebark4

Element 1 sycamoreleaves5

Use Light Probes ☑

Reflection Probes Blend Probes

Anchor Override None (Transform)

☑ Capsule Collider

Edit Collider

Is Trigger □

Material None (Physic Material)

Center X 0.1474447 Y 9.421968 Z 0

Radius 0.9555011

Height 20.62504

Direction Y-Axis

☑ Object Fader (Script)

Script ObjectFader

Material To Fade

Size 2

Element 0 sycamorebark4

Element 1 sycamoreleaves5

Fade Material

Size 2

Element 0 sycamorebark4_fading

Element 1 sycamoreleaves5_fading

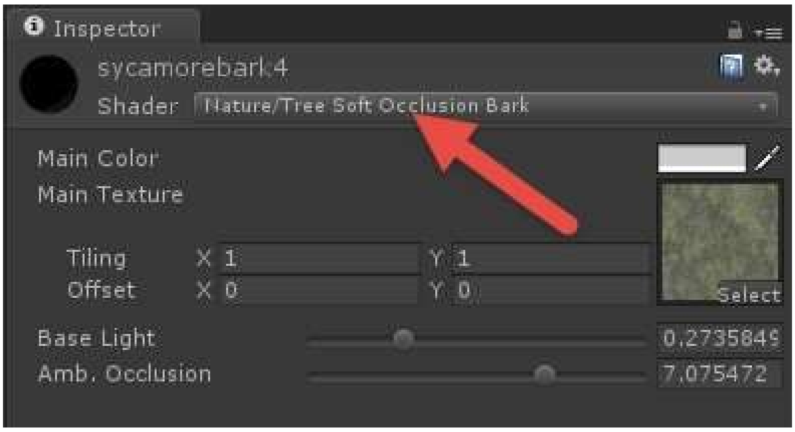
Fade Also Objects

Size 0

sycamorebark4

How to create a fade material for legacy trees.

Bring your tree within your scene and select the material within the mesh renderer.



Inspector

sycamorebark4

Shader Nature/Tree Soft Occlusion Bark

Main Color

Main Texture

Tiling X 1 Y 1

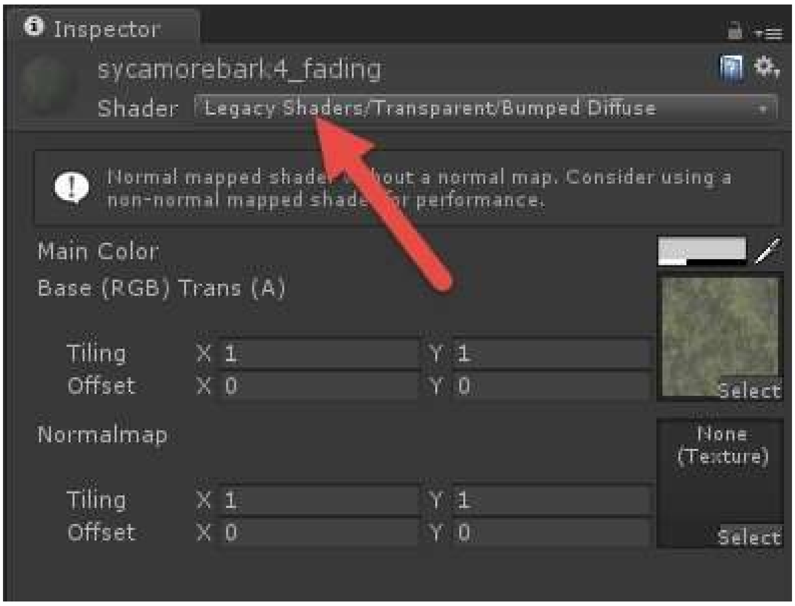
Offset X 0 Y 0

Select

Base Light 0.2735849

Amb. Occlusion 7.075472

Duplicate the material and change it to a default Unity material:



Inspector

sycamorebark4_fading

Shader Legacy Shaders/Transparent/Bumped Diffuse

Normal mapped shader hout a normal map. Consider using a non-normal mapped shade r performance.

Main Color

Base (RGB) Trans (A)

Tiling X 1 Y 1

Offset X 0 Y 0

Select

Normalmap

None (Texture)

Tiling X 1 Y 1

Offset X 0 Y 0

Select

Needless to say you can choose however whatever shader you want.

Trouble shooting

No material is swapped when in the line of sight. What can be wrong?

- Make sure the game object has a collider assigned
- Make sure you have specified a special layer and assigned that layer to the game object and to the See Through Controller script.
- Is the Fade Objects checkbox checked within the See Through Controller script?
- Does the game object have the Material To Fade and Fade Materials sections assigned? And do the materials match up? Same amount of materials in both sections? Also make sure the place within those sections do match up so a Solid material on the first place has its corresponding fading material on the first place in the Fade materials section.

Can’t get it right?

- Please contact us at support@cygnusprojects.com explaining all steps you have done so we can try to get it reproduced and help you the most in get it fixed.