



Getting Started

This guide assumes you have just installed the package & have no knowledge of the system, but at least some knowledge of Unity. If your worried about setup, don't be, there is none to speak of, you can start right away.

We'll start by creating a simple decal and run through using it. It's important to note that all projections within this package, be they decal, eraser or pulse, project onto other geometry. So if your starting in one of your own scenes, great! If your in an empty scene, you'll need to populate it with a few primitives so we have something to work with.

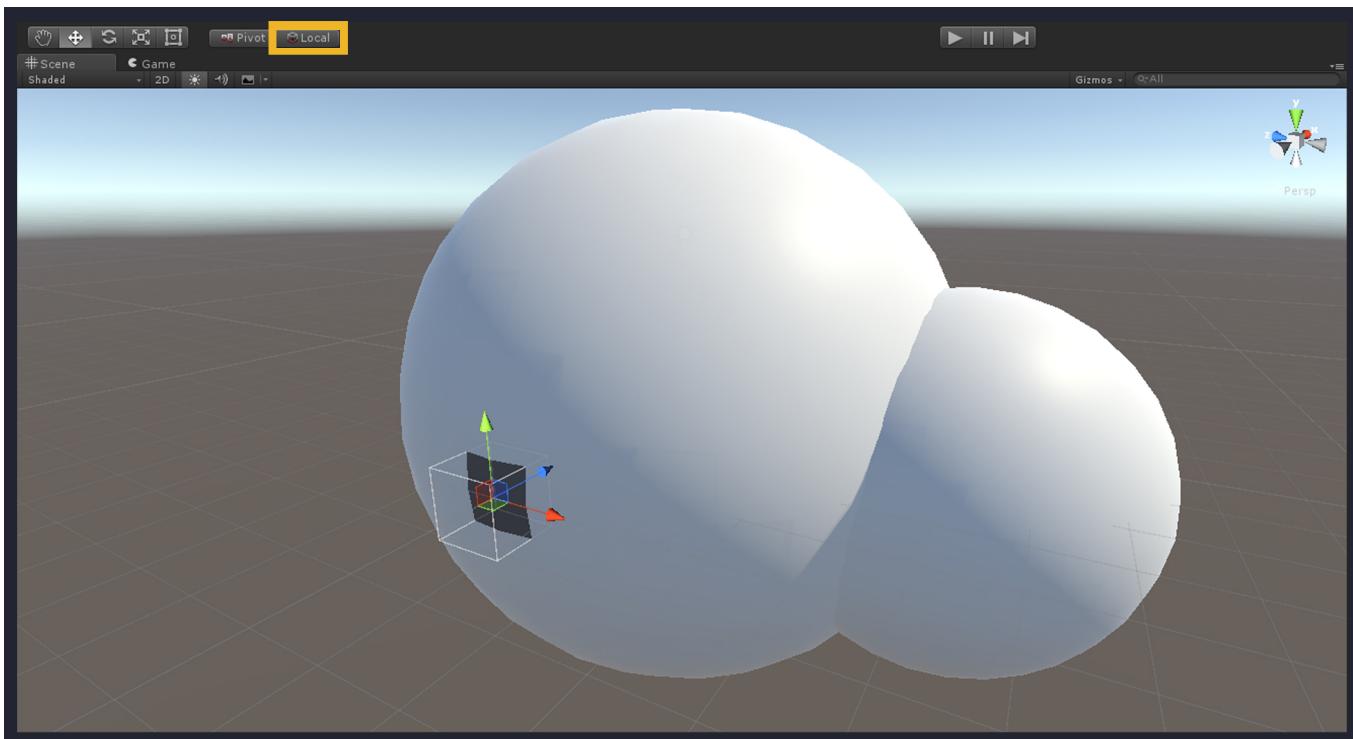
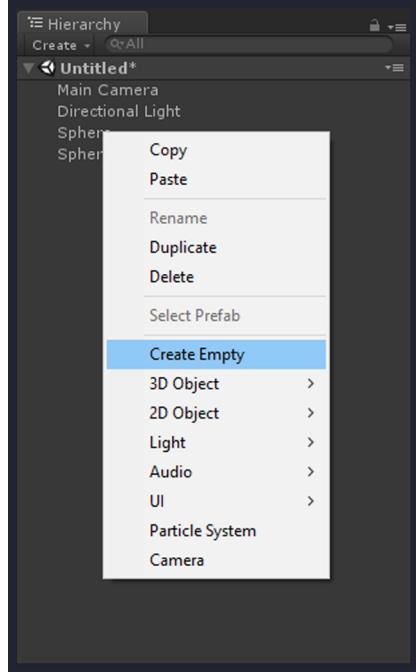
Okay, now that we have a scene to work with, lets create a decal. This is really simple, just create an empty gameObject (Right click in an empty part of the heirarchy tab, Create Empty) & add a decal component to it.

Once we have our decal, we'll need to position it so that its bounds are colliding with another object. If you can't see the decal bounds, try setting it's position to origin (0,0,0) then looking towards the centre of your scene. Also make sure the decal component has not been collapsed, as this will hide the gizmo cube required to see it. Now position it so its intersecting with some geometry and point it towards the geometry. (The decal projects in the forward Z axis, so rotate it until the local blue arrow is facing the geometry)

You should now see your decal projecting onto another object! It's just a grey square at this stage, but within the decal component there are a ton of options to customise what's being projected. Take your time and explore each section. If your curious about what something does, press the little "i" button in the header of its section to show information. I recommend spending some time experimenting with the component.

If you want to move, rotate, resize or stretch the decal, manipulate it with the transform component like you would any other object. And If you want to create a new decal, instantiate one like you would any other object, it's that simple.

There are a ton of additional features like printers, positioners and pooling included in the system to help manage these things for you, but these are entirely optional, and decoupled from the core system. If you want to strike out on your own and build your own systems to manage instantiating, pooling and positioning decals at run-time you are free to do so. And if you just want to hand place decals in the scene and leave it at that, powers all yours.



Projection Blockers

By default, Dynamic Decals will render projections on all enabled cameras. If you have cameras that you know will never render any projections, or that you don't want to render projections, the projection blocker allows you to disable the system on these cameras. Simply attach it to any camera you don't want to render projections.

Even if a camera cannot see any projections, it will still check to see if any projections are visible. This comes at a small overhead so if you know a camera will never render any projections, you should attach a `projectionBlocker` component to it.

The Settings

The settings menu allows you to tune the system to your specific needs. It can be found under:

Window > Dynamic Decals

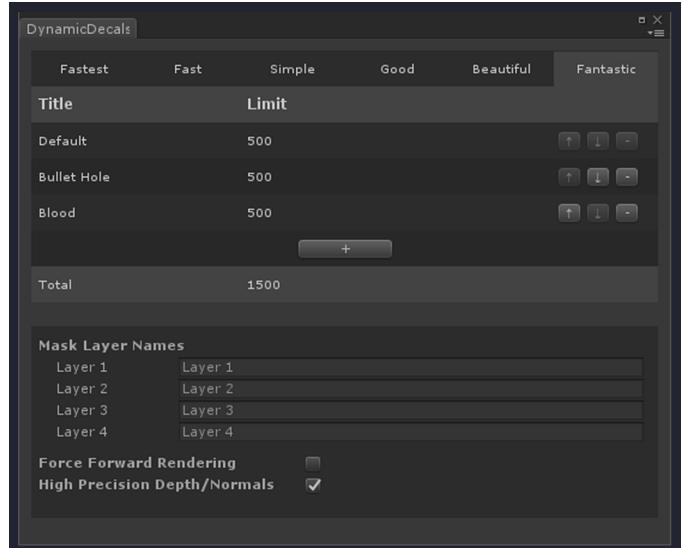
The top half of the window is dedicated to setting up pools to print decals into at run-time. Here you can add, rename, reorder and remove pools as you please. It's recommended to use different pools for different purposes, ie. if you use the system for both blood decals and bullet-hole decals, they should have separate pools. You can also adjust the pool limit for each pool, per quality level. To change which quality level you're adjusting, use the tabs at the top of the window. This allows you to tweak the system to get best performance on a range of devices.

The lower half of the window contains the remaining options relevant to the core of the system.

The mask layers are used throughout the system to mask which objects can be projected onto by decals. Here you can give them meaningful names.

The Force Forward Rendering option allows the system to run in a forward render loop whilst using Deferred Rendering. There are a few situations in which this is useful. If your decals are projection onto objects drawn in a forward render loop, you will need to draw after those objects to project onto them, forcing forward rendering allows just that. If your setup has a mix of cameras, some rendering in deferred, others forward, forcing forward rendering also allows the system to render decals correctly on both types of cameras simultaneously.

The High Precision Depth/Normals option is set on by default and only relevant to people using or forcing forward rendering. When enabled, the system will use a custom DepthTextureMode to render High-Precision Depth & Normals into separate buffers. If you are rendering any shadows at all this comes at essentially the same cost as low precision, so you may as well leave it enabled. If you're working on games without lighting, this will come at an additional cost, and is up to you whether or not you wish to enable it. It is suggested that unlit mobile games turn this option off, as the fidelity you lose won't be noticeable on mobile screens.



Other Resources

Once you're familiar with the decal component and the settings, you should start to familiarize yourself with the system as a whole.

Included within the package is a showcase scene and 6 demo scenes, each demonstrating different strengths and uses of the system. There's laser shows, camouflage, bullet holes & more, all using the in-built printers, positioners and pooling system included in the package. Check them out at your leisure.

Included within the package is also a full scripting reference, in PDF format. If you have access to the internet though, there is a more intuitive version hosted online at -

<http://www.llockhamindustries.com/documentation/dynamic-decals/>

There are also a few pages introducing various aspects of the system, like masking, pooling, printers & positioners. These can be found online at -

<http://www.llockhamindustries.com/tools/dynamic-decals/>