

Light Probe Workflow

Reflection Probe Theory

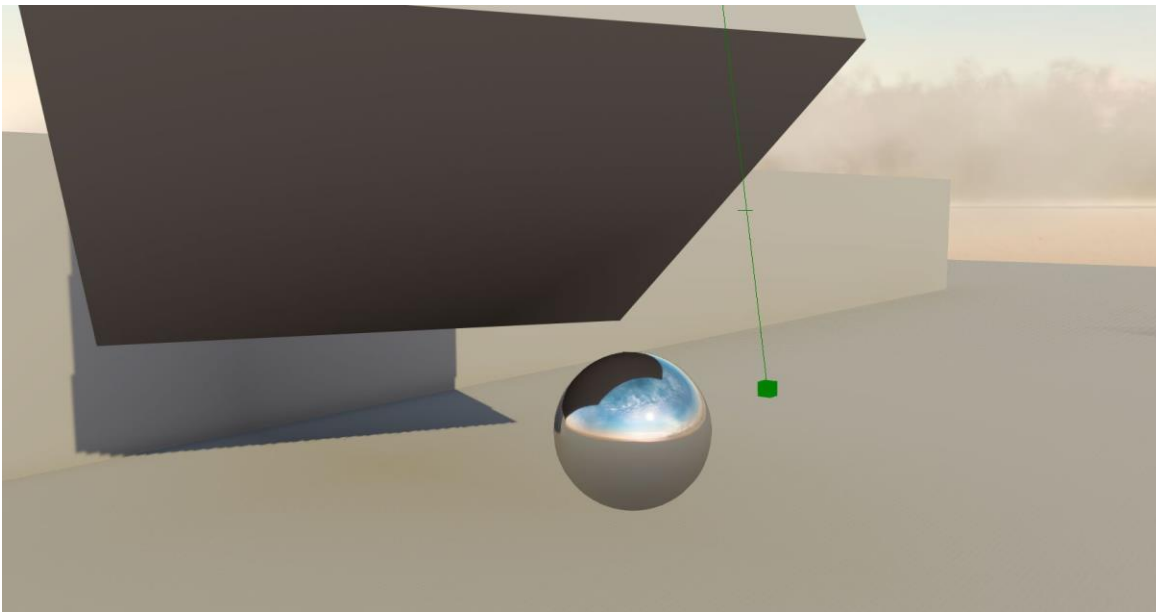
In general it is important to have almost every surface in your level covered with some sort of probe. The global probe is intended as a catch-all for areas that do not have a local probe. The global probe doesn't quite look as good as the local probes so we try to avoid using it at close distances unless you're in a very non-shiny environment, like an open field.

Global Probe Workflow:

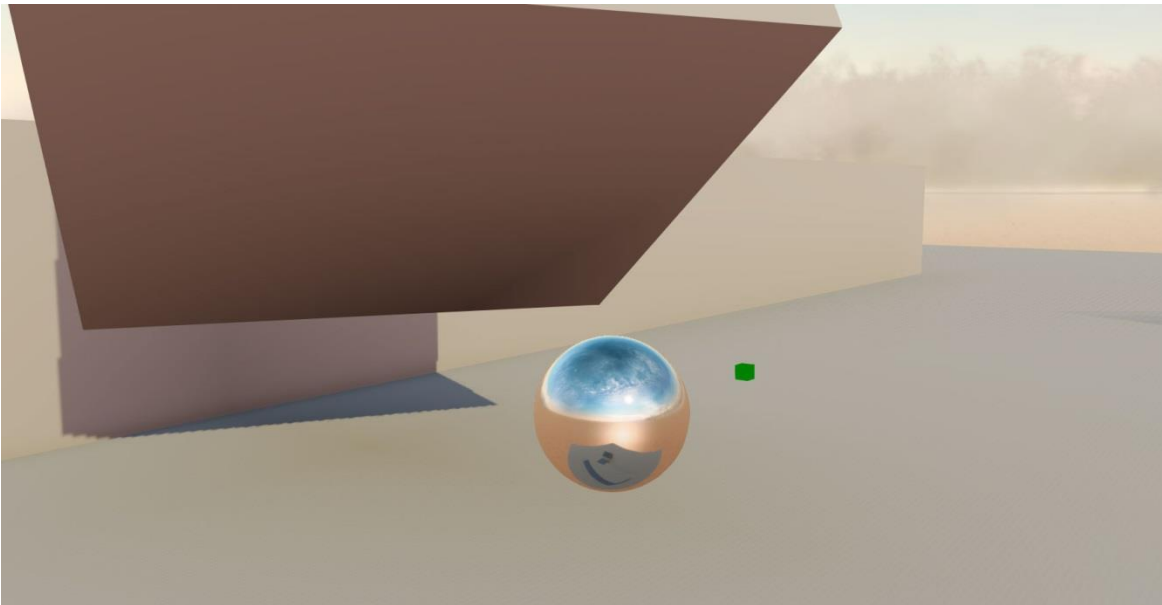
When you create a sun-volume a global probe is created at the center of the sun-volume. All reflections and bounce lighting are generated from this global probe unless you override areas with a local probe. The global probe has lower priority than the local probes so you won't see blending except on the blended edges of the local probes

If you do not like the location of the global probe you can move it by targeting another object. In the example below the sun volume is targeting an info_null. I have placed a chrome sphere next to it so you can see the difference in the reflection.

Linked to an info_null



Not linked



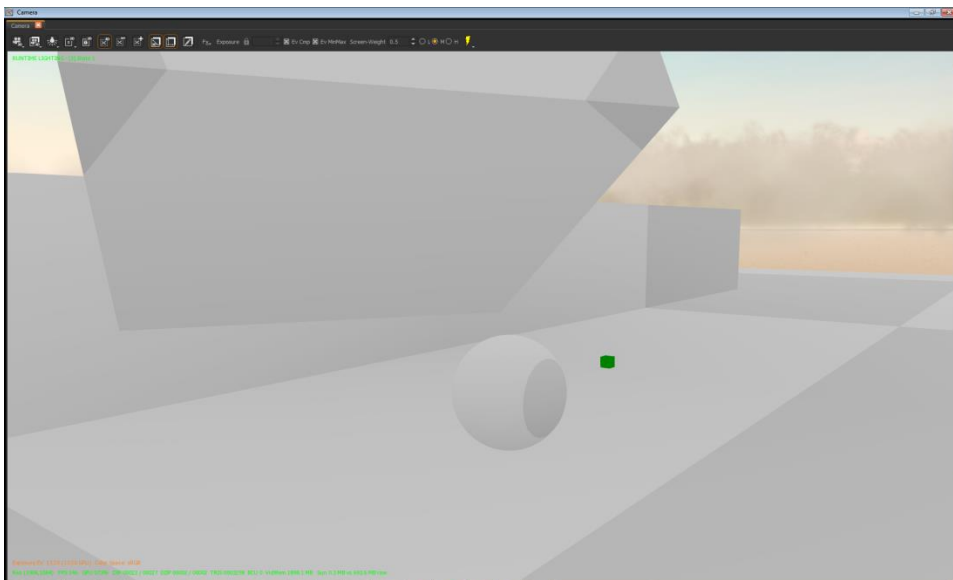
Not the reflection image on the sphere, one is seeing the underside of the cube and the other is seeing a lot more sky. The colors reproduced in the scene are very different too.

Its very important to place the global probe in an ideal average location for each sun-volume. Think about the global probe as a very good average of your lighting for the whole map. Problems can occur when the global probe's position is buried inside of geometry or at too high of an altitude. You can see in my example how the bounce color is very very different.

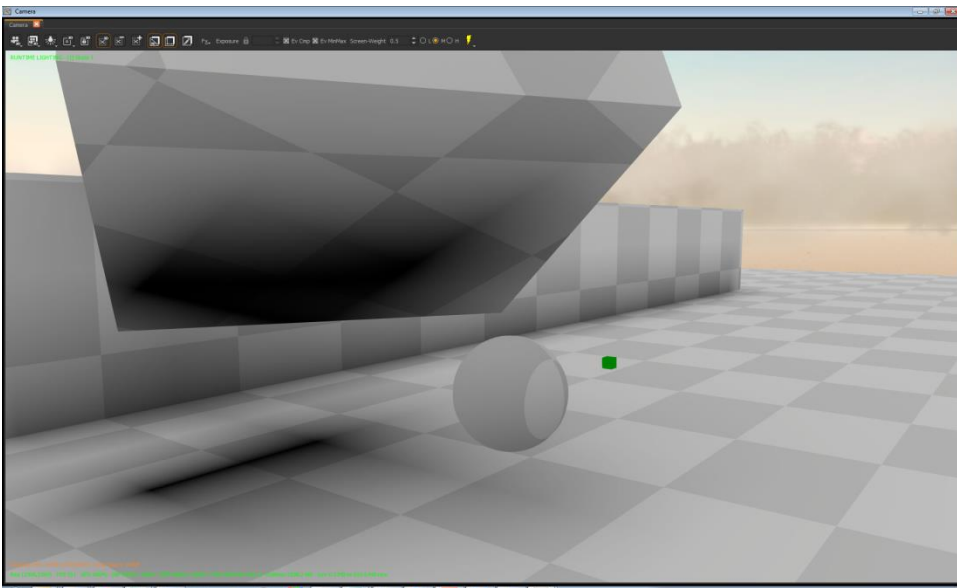
Global probe occlusion points:

The global probe has its own 3d texture for occlusion. This can be thought of as a 3d light map or a point-cloud contained within the sun volume. Without the grid everything in the sun volume would roughly get the same bounce lighting. The grid was added to create some shading and occlusion within the bounce lighting and reflections. In the example below you can see low vs high resolution displayed through the probe blends debug display in radiant.

Low



High



The density can be set on the sun volume:

Property	Value
<input type="checkbox"/> Core	
grid_density	64
min_occlusion	0.00
origin	{ 0, 0, 0 }
previewShadows	<input type="checkbox"/> False
shadowBiasScale	1.00
shadowSplitCount	3
shadowSplitDistance	3,000.00
ssi1	mp_sector
ssi2	default_day_clear_1600
ssi3	
ssi4	
transitionTime	0.00

The grid density does not affect performance but it does eat more memory as you increase density.