LightSettingManager v.1.3

Content

Installation

Import the LightSettingManager package into Unity3D and open the new menu entry in the "Window" menu called „LightSettingManager".

Setup

Click on the menu entry called "Window" and click on "LightSettingManager". A new Window will open. If your scene has no LightSettings object click on "Create LightSettings Object". This Object contains all settings and allows changing light settings at runtime.

Light settings

A light setting is a combination of all light and render settings, illuminating materials and light maps. The LightSettingManager allows at editor mode to load and save different light settings for one scene. In play mode the light settings can be changed anytime.

Workflow

Create your scene

At first create your scene and place objects, lights, textures as you like. Prepare your scene for the beast light mapping (give objects LightMap uv's, optimize atlas sizes etc.).

If you are done with this step, start the LightSetManager and create the LightSettingObject.

Set up all lights, render settings

Within the LightSettingManager you can easily select all lights and change their settings. Also the render settings can be changed here directly.

Create Lightmaps

If you already prepared your scene for lightmapping start with pressing "Bake" and generate a first light map. Save the new lightmaps to a lightmap ID. You can have multiple lightmaps for your scene and may choose which one is used in a light setting.

Light emitting materials

Light emitting materials can be changed to generate a new lightmap afterwards. With only a few clicks your material settings fit to the entire scene.

Adjustments

After rendering the final lightmap you may want to change the render settings again to finalize the light setting. Save your work and add another LightSetting.

Animations

Animate your scene with the available LightSettings to create cool lightning effects. Combine sound effects to your light animation to bring more life to it. Think about two light settings with a lightning and thunderbolt and a corresponding sound file all together in a LightSetting animation.

Details

Documentation

`LightSettingManager v.1.2.0 by rab-software` `Documentation`

The first line will always be visible to you. Here you have direct access to the latest documentation file and examples available on our website. We will add new features to the LightSettingManager in the future so the version number will help if you look for some new features. Check the Unity Asset store to keep your version up to date.

Button Color Codes (v.1.2)

We use colored buttons to give a better visual GUI experience within this tool and to signal which action has effects on the data structure.

- Green Button
    - These functions are harmless. No data is changed or the change can be taken back easily without much work (e.g. changing animation step ordering)
- Blue Buttons
    - Here new Scripts are created or some temporary data will be created (e.g. a new light mapping). The existing data stored in other scripts is not changed.
- Red Buttons
    - Be aware that these functions will change data in the scripts or even files will be overwritten. There is no way of getting back to the old data version.
    - Delete Buttons are a little special. *LightSettingIDs*, *AnimationIDs* and *LightMapIDs* are not deleted - the scripts are only marked as "deleted". You can manually bring those scripts back if you uncheck deleted in the script itself.
- Yellow Buttons
    - All selected objects are marked with yellow buttons in each list of objects.

Most operations will change the GameObjects in your scene – don't forget to save the scene itself!

LightSettings

LightSettings
ADD SAVE DELETE
LightSetting IDs: 0 1 2 3
Monday morning, 6 a.m.
Use LightMapID: 0   0 1 2 3
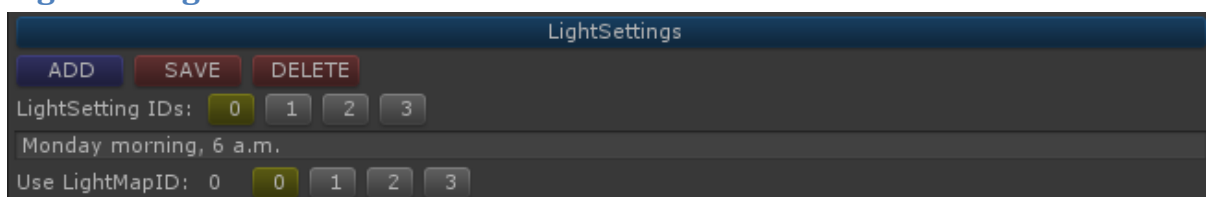
Manipulate light settings

This element is used to create, save and delete light settings as well as choosing a light setting. Click on the light setting ID to select it. Selected IDs have yellow backgrounds to show the actual selection.

Always save the light setting if you changed some elements. You will always see your changes directly in the editor but if they are not saved in the LightSettingObject they are lost.

If you delete a light setting it will not be deleted – it is just deactivated (for manually reactivation).

Enter a note

Leave a short note for your light setting. It always helps if you look at it tomorrow…

Choose the lightmap

If you have generated a lightmap for your scene you can choose a lightmap for your lightsetting by clicking on the LightmapID.

You can use the same lightmapping in multiple light settings or create a new lightmap for each light setting.

Lights

Here you find all scene lights in a short list. This list allows the direct manipulation of each light source. Not all values of a light can be changed here, but these values are stored in the light setting.

Selecting Lights

To select a light simply click on the name to select the light in the inspector. Here you can adjust all other settings but they are not stored in the light setting. Changes here (e.g. shadow types…) will act as a "global" setting for each light setting.

Light Filtering

In a big scene with many lights you like to know that there is a light filter. If you activate the "show filter" toggle you can filter lights on these details:

- Name (just enter a few letters)
- On (show only enabled lights)
- Light (Directional, Point, Spot)
- Type (Static, Dynamic)

If you name your lights in a scene after some naming convention you should find each light in a matter of seconds. On this way you can also create groups of lights (use the name filter).

RenderSettings
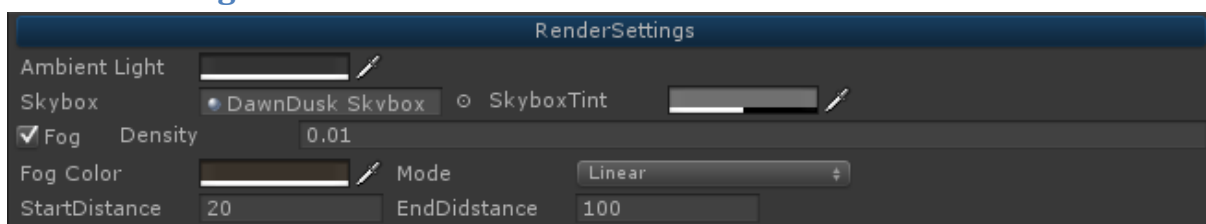
Change the render settings directly in this element.

Ambient Light

All dynamic objects in your scene are lighted by ambient light. If you use a lightmap the ambient light is calculated into the maps from your static objects.

Skybox settings

Choose a skybox and manipulate the SkyboxTint color of the skybox material.

Fog

Adjust all fog settings to integrate fog perfectly into your scene.

Self Illuminating Materials

Materials using the "Self-Illumin"-shader family can emit light into a scene and influence the LightMappings. This List shows all materials and objects plus some of their properties.

Material/Object Selection

To select a material in your scene simply click on the material name button in the material column. If you want to select the object in your scene using that material, click on the button in the object column. Selected objects are highlighted – if a material is used on multiple objects, all material buttons are highlighted as it is the same material (see picture).

Textures (v.1.1)

If a material uses a texture for the light emission it is shown in the column texture. In each light setting the main and emission texture is separately saved. This allows texture changes for light emitting objects (turn on/off a Display) and influence the light mapping.

Emission color (v.1.1)

If a material uses an emission texture the color information from the texture is used else you can set the emission color. The strength of the emission can be changed directly using the emission slider.

Please note that this change is applied to all objects using this material. If you like to change the emission of a single object, copy the material before and assign the copy to that object.

LightMaps
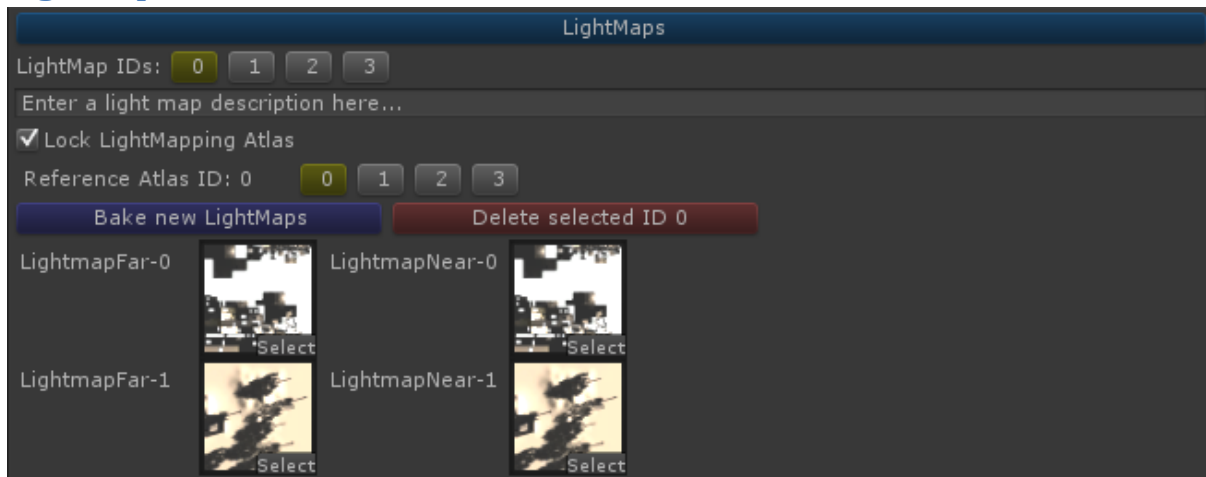
In this element you can organize different lightmaps for your scene.

Lightmap preparation

Before you start there are some things you need to do to use lightmaps:

- Static objects must be marked as static objects (in the inspector)
- Lights must be placed
- Prepare all settings in the LightMapping Inspector window from Unity
- Render a lightmapping (bake)

Create a lightmap

There are two ways to create a new lightmap for your scene. You can either use the build in lightmap inspector lightmap window or press the "Bake new lightmap" button on this element. There is no difference in both ways.

Generate a lightmap ID

If you already created a lightmapping for your scene you can add a new lightmap ID. Doing this will create a new folder in your asset structure named "RAB_LightMaps". In this folder another folder is created (named after your scene) and there again a folder with the lightmap ID is created. All lightmap textures will be moved to this new location allowing multiple LightMappings for one scene.

Important: If you change the scene name (by saving the scene under a new name) the LightSettingManager can no longer find your lightmaps. In this case you need to manually rename the scene folder.

Clear lightmaps

It may occur that your scene already uses lightmaps which are not stored in the lightmap folder of your scene. In this case you need to clear the used lightmaps and generate a new lightmap.

Overwriting Lightmaps

If you like to overwrite an ID select the ID first and render a new lightmap. If the render process is done you can click on "Overwrite ID". Otherwise you can create a new ID.

Selecting Lightmaps

Simply click on a LightMapID to use the lightmap in your scene.

Connecting Lightmaps to LightSettings

After the generation of LightMapIDs you can connect a LightMapID to a LightSetting by selecting the LightMapID in the LightSetting element (see image light settings).

Manipulate static objects (v.1.1)

This new feature allows static object manipulation. Move, rotate or scale objects to create more realistic environments (no location looks always the same).

Step 1: Preparing the object

Select a static GameObject in your scene you like to manipulate (you have to declare the object as static before). Open the LightSettingManager and find the new section "Manipulated Static Game Objects". If you press the "Create Manipulator" the selected GameObject gets the script "Static Manipulator Marker" and is ready for manipulation.
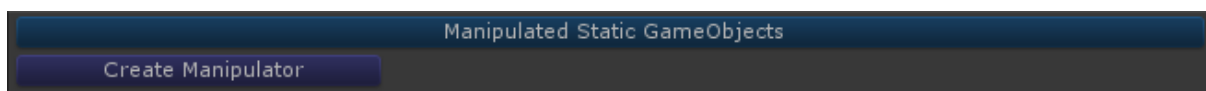

Your selected object now is ready to manipulate. All values (position, rotation and scaling) are saved in the attached script and are further referred as "Base Position". All changes you will do later are compared to these values to detect changes. The base position can be updated via "Update Base Position" if you like. You can always update this position to remember other values. Later you can reset the object to the stored values.

Step 2: Controlling the changes
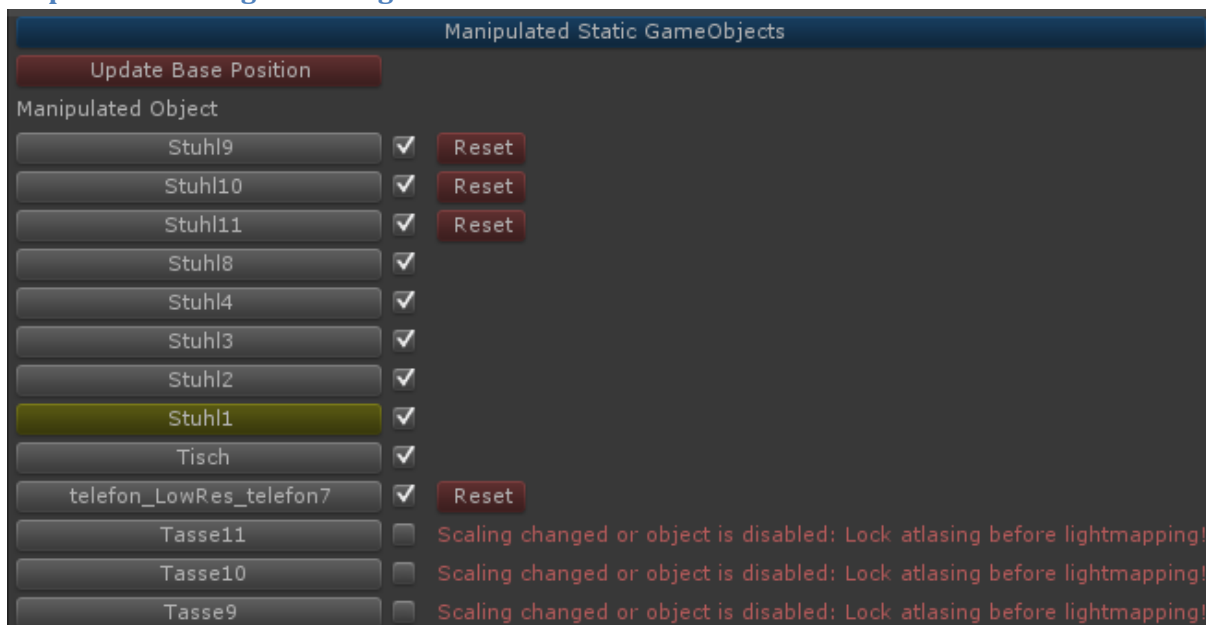
All objects in this list can be changed and are quickly selected with the buttons named after the objects. Start changing positions, rotations and scaling as you like. You can also disable or enable objects over the toggle. If you scale or deactivate an object there will be a warning as you can see in the picture above. The LightMapper atlasing is normally set to automatic, so if you scale an object the coordinates in the atlas won't fit any longer. You can set the atlas option in the LightMapping Menu under Bake or use the toggle in the LightMaps element. Further you have to select the reference atlas for the LightMap.
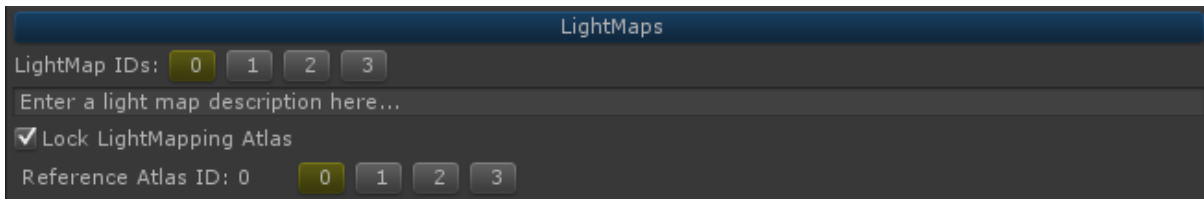
Remember to first generate a LightMap with automatic atlasing to place all objects in the LightMap (your reference atlas). If this is done you can lock atlasing and start scaling or disabling objects.

Step 3: Render new LightMaps

Save your setting under a new LightSetID or overwrite the active one. Now start the baking of a new LightMap and save them under a new ID. Put all together into a LightSetting and save it again.

Switching LightMaps in game

Take a look into the sample scene on our website. This scene contains a script which checks for available light settings and provides buttons to change the actual setting. In short it uses this:

```
//Serch the GameObject named "RAB_LightSettings"
GameObject LightSets = GameObject.Find("RAB_LightSettings");
//get the control script
LightSettingControl LSC = LightSets.getComponent<LightSettingControl>();
//switch to a light set ID
LSC.LoadLightSetting(1);
```

Light Setting Animation Editor (v.1.2)
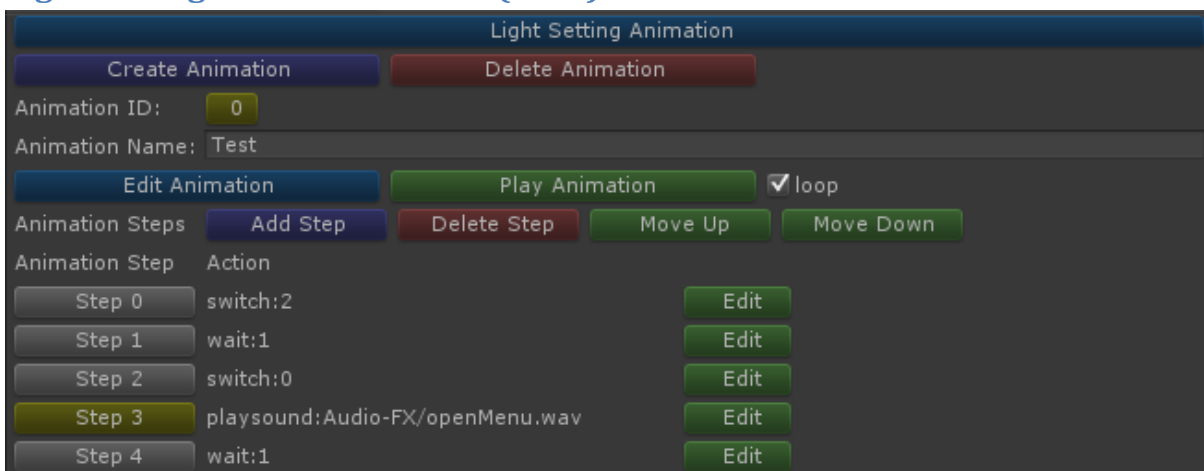
Once you have defined different LightSettings for your scene you can change them in your game at runtime. The new animation editor feature allows complex timed animations with different light settings.

Animation Preview in the editor

If there are already LightSettingAnimations in your scene you can preview the animation directly in the editor by pressing "Play Animation". Check the loop toggle if you like an endless animation. Stop the animation by clicking on the "Play Animation" button again.

Choose another animation by selecting another animation ID. You can assign a name to each animation to remember what the animation does.

Animation Editor

First create an animation script via "Create Animation" or/and click "Edit Animation" to show the animation steps of the selected animation.

Add some steps for this animation and press "Edit" to define the action which should be executed in the selected step. You have three actions available for each step:

- **Switch Light Setting**
    - o Will set the actual LightSetting to the ID you like (only use available LightSettingIDs!)
- **Wait**
    - o Sets an amount of seconds the animation will wait until the next step is executed
- **Play Sound**
    - o Plays a sound file from the **RESOURCES** directory.

If you like to change the order of some steps use the "Move Up" and "Move Down" buttons.

Playing Animations at runtime

If you like to start your prepared animations in your game just find the LightSettingControl Script and start the animation. You have some control over the speed of the animation and the loop state.

```
//Serch the GameObject named "RAB_LightSettings"
GameObject LightSets = GameObject.Find("RAB_LightSettings");
//get the control script LightSettingControl LSC =
LightSets.getComponent<LightSettingControl>();
//Start Animation ID
LSC.StartAnimation(0);

//Stop Animation
LSC.StopAnimation();
```

The following function parameters will control speed and loop-flag:

```
LSC.StartAnimation(int ID);
LSC.StartAnimation(int ID, float speed);
LSC.StartAnimation(int ID, float speed, bool loop);
```

- int ID
    - o Enter a valid AnimationID
- float speed
    - o Multiplicator for wait time, >1 slows down, <1 speeds up animation
- bool loop
    - o Animation will loop if loop == true

For playing sounds we need an audio source component. For the editor preview animation feature an audio source is added to the animation script. If you like to change the audio source for the animation (so the sound comes from the object you like) just set the m_AudioSource variable of the LightSettingControl script.

```
LSC.m_AudioSource = … enter your audio source component.
```

LightProbes (v.1.3)
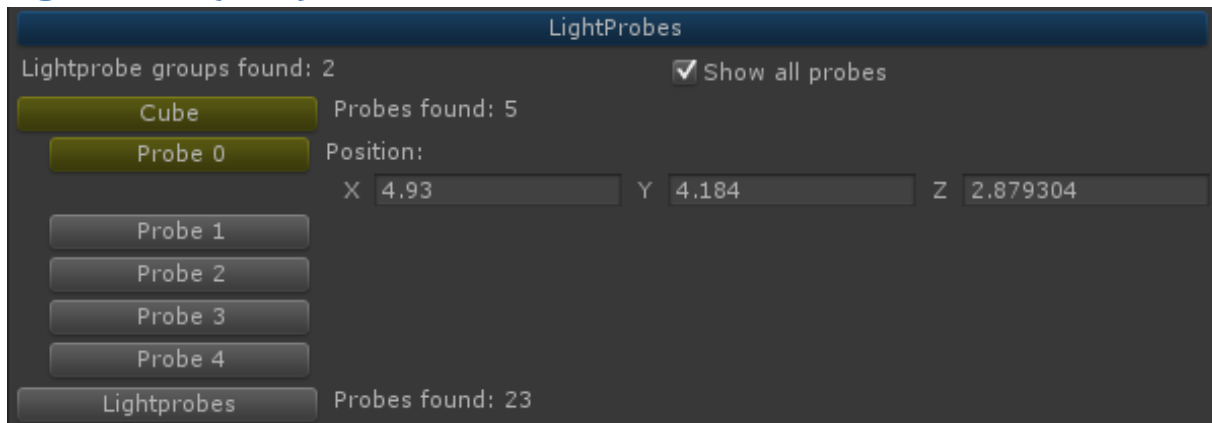
All GameObjects with the LightProbeGroup- component are listed in this new overview. You can easily click on the named buttons to select the corresponding GameObject. In the scene view you can now see all the probes in that LightProbeGroup.

If you select "Show all probes" you get the list of all probes in that group. Click on a probe number to see the exact coordinates of the selected probe. Just change the position of the probes via the vector edit field next to the button.