

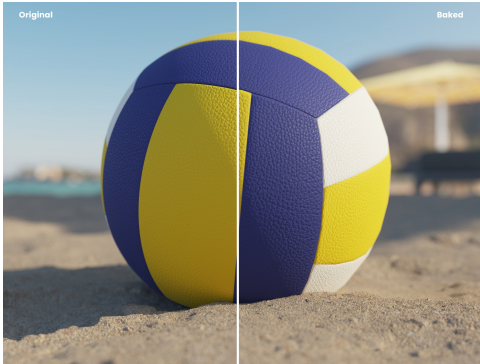
Basic Texture Baking with V-Ray

This page provides a tutorial for texture baking with V-Ray.

Overview

Rendering to texture, or "texture baking," creates texture maps based on an object's appearance in the rendered scene. The advantage of using baked textures is that real-time display is much faster. These textures are ideal for displaying the textured object rapidly on Direct3D devices such as graphics display cards or game engines.

For the purpose of this tutorial, we use a simple scene with a volleyball geometry.



Part I: Set Scene for Baking

In the first section, we set up and adjust the scene settings.

- **Set up materials**

Check if the current materials are assigned accordingly and the object's UVs are neatly unwrapped.

- **Set up object**

In our case we have 2 volleyball meshes - one high poly mesh and one low poly mesh.

The low poly mesh has a **Projection** modifier added in advance from the Command panel > Modify panel. The high poly mesh is selected as a Reference Geometry for the Projection.

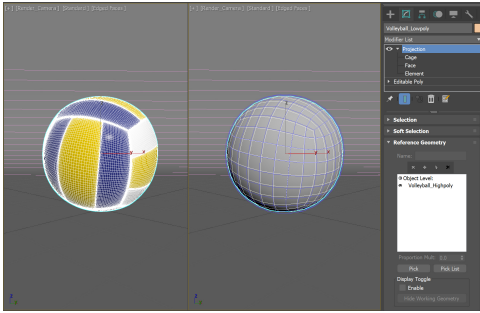
- **Render Settings**

To speed up rendering, optimize the scene by lowering **Noise threshold** and **Max. subdivs** to acceptable values that don't significantly lower the final render quality.

Render the scene.

In some cases, lighting is also baked into the texture. To bake the lights into the texture, position them and set their values to match the final lighting setup where the baked textures will be used.

When baking only maps without lighting information, it is recommended to turn off the scene lights to significantly speed up the rendering.



Part II: Texture Bake

In this section, we adjust the settings for texture baking.

Select the low poly mesh. Then use either of the following texture baking tools.

Always use **V-Ray Bake** elements for texture baking with V-Ray.

Part III: Setting Scene with Baked Textures

Now we add the baked textures back into the scene.

◦ Load Shell Material

Open the Material Editor (M) and choose an empty slot.

Click on the **Get Material** icon to open the Material/Map Browser.

Select **Browse From:Scene**. Notice that there is new material. It is a Shell Material and contains both the original V-Ray Material and the new Baked Material with the baked maps in it, as we specified in the earlier steps.

Drag the new materials into the Material Editor.

◦ Edit Shell Material Parameters

In the new Shell Material Parameters, choose the **Baked Material** for both Viewport and Render. This simply means that if we do a fresh render (F9), the objects use their baked material (VRayMtl). In addition, the objects use the baked material in all the viewports, too.

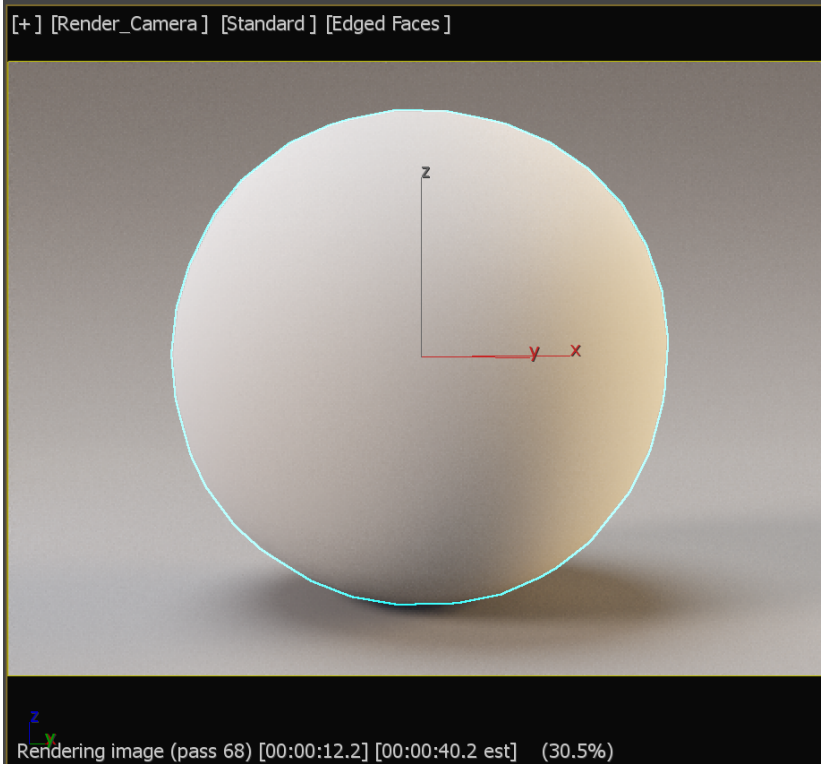
Also plug the Normal map to a V-Ray Normal Map node and set the Bump of the baked material to 100 from the default 30 to match the strength of the original material.

◦ Render with Baked Materials

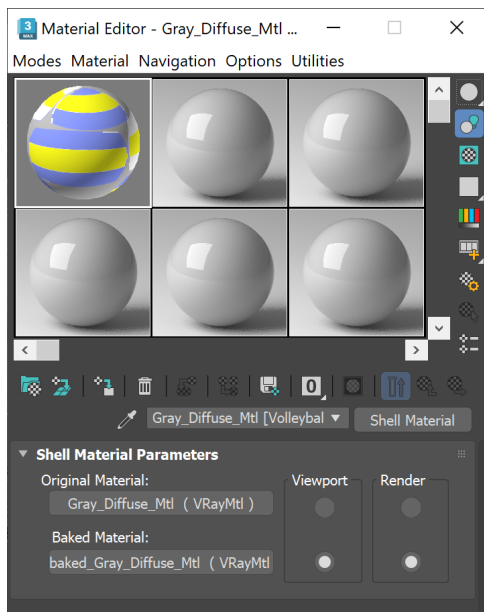
Render in the VFB.

If lights are baked into the textures, open the V-Ray Light Lister and switch off all the lights in the scene before rendering. In the V-Ray Settings, turn GI, Environment, and Default Lights off.

If rendering in Viewport, don't forget to enable **Show Realistic Material in Viewport** option from the Material Editor. Otherwise, the mesh renders white.



If baking a V-RayBumpNormal map, don't forget to link the baked result to a V-RayNormal map. Otherwise, the texture is inverted.



Result Render





Notes

- Please note that it is not recommended to bake camera dependent textures such as Falloff.
- If multiple objects share the same material and UV space without overlapping, these may be composited together in an image editing program.