

NordLake by OliVR

(version 0.2 alpha)

1.1. Introduction

1.2. Workflow

2.0 Initializing NordLake

-2.1 Baking Depth Maps

-2.2 Painting Flow Maps

-2.3 Setting up shader settings

-2.4 Publishing NordLake

1.1. Introduction

NordLake is an ultra optimized water system made to surpass problems of rendering visually realistic water in modern stereoscopic VR applications. It is based on few shaders and a baking system that feeds all shader materials with necessary data. Main problem with existing water systems in VR is that if you want to support reflection and refraction you have to render 2 additional cameras for every eye. This can have huge impact on VR performance. NordLake bakes some of this data into textures and frees many of your graphics card and CPU cycles.

- Ultra fast rendering in VR.
- PBR shading
- Doesn't use transparencies assuring correct functioning with many image effects like Ambient occlusion, Screenspace reflections, other transparency based effects like sky systems and fogs.
- Support integration for unity terrain system and arbitrary meshes.
- Baked refraction with stereoscopic support
- Integrated baker into editor
- Support for water flowmaps (with an integrated flow map painter)
- Supports HDRI rendering
- Uses one single drawcall for one water surface.
- Supports Enlighten GI and unity baked shadows.
- Compatible with all effects and plugins that use transparency.
- All shaders are ShaderForge compatible.

ALPHA NOTICE: Before starting please set your project to Linear lighting workflow. Baking scripts doesn't work correctly in Gamma mode for now.

1.2. Workflow

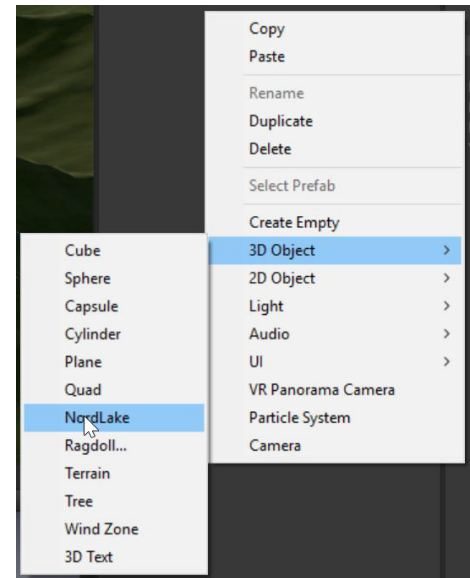
- Add NordLake surface to your scene
- Associate this surface to your terrain (optional) or mesh
- Bake Depth maps
- Paint Flow maps with integrated flowmap painter (optional)

TIP: For best visual quality set your project to use Linear lighting, deferred shading, and HDRI rendering

2.0 Initializing NordLake

-Add a NordLake surface to your scene by right clicking in scene view and selecting 3D Object/NordLake. This will create NordLake surface with all necessary scripts.

-Place water surface over your unity terrain where you want it to appear. NOTE: In this Alpha release a water surface has to be rectangular. Scale this surface to your liking by maintaining proportions.



2.1 Baking Depth Maps

NordLake uses prebaked depth maps for refraction and shore modelling purposes by assuring correct stereoscopy in only one rendering pass.

-Set baking resolution for a depth texture. (this size depends a lot of a size of terrain)
-Set maximum depth for texture (smaller max depth gives better depth texture quality). Experiment with settings to achieve a best result with smaller textures and depths. Default values are a good starting point.

2.1 Painting Flow Maps

This part of workflow is still in works. For now it's functioning depends a lot of a scale of your world and lake. This is something that will be addressed in the future.

2.2 Publishing NordLake

After your baking and flowmaps are done, you can delete NordLake scripts and use only materials with baked textures.