



Floating Island Generator

By Jesse Olchawa

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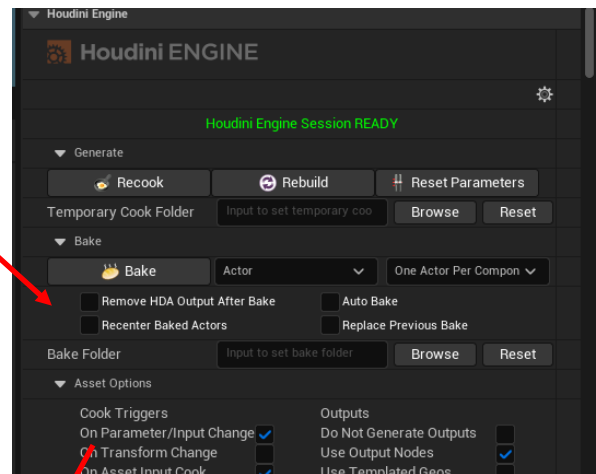
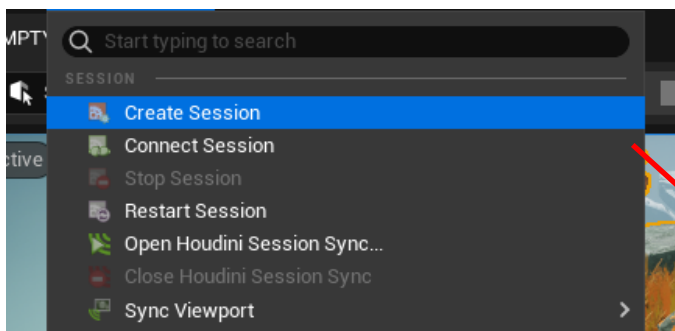
Getting Started

Tool Usage:

This tool is designed to easily create floating islands with toggleable seasonal variations. Ensure you have imported the HDA and all preliminary shaders before starting.

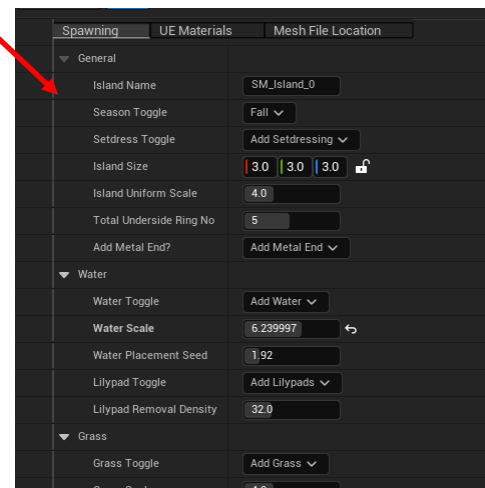
Usage in Level:

Drag the HAD into the level, ensure you have a Houdini session connected to begin generating. The default parameters will create a 3 metres by 3 metres playable space on top with 5 rings below.



From here you can adjust any setting below to fine tune island generation, randomise seeds and adjust scale.

Once satisfied, bake your result into a final static mesh actor.

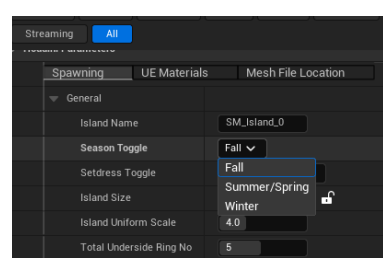


Top Tip: Try adjusting the seasons to make variations that match your existing visual result!

Seasonal Variants

Swapping Seasons:

Swapping seasons is easy to do, simple adjust the dropdown to the chosen season. This will keep seed values and primary rock and tree set dressing intact. However grass cards, flowers and water will be affected in the way they spawn/look.



**Fall—Default
Season**



Summer/Spring

Winter



Common Problem



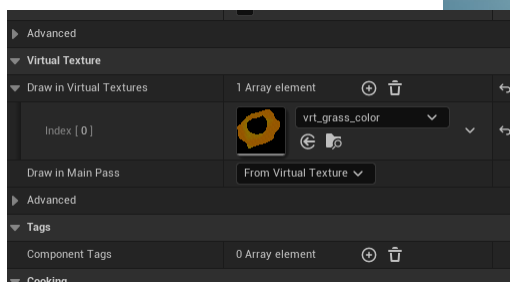
A common problem when working with HDAs is that the shader for computing snow/overlapping effects on the stone will not apply correctly until you save the level. So be sure to click CTRL+S to save to see the final result after shaders have been successfully computed.

Adjusting Grass

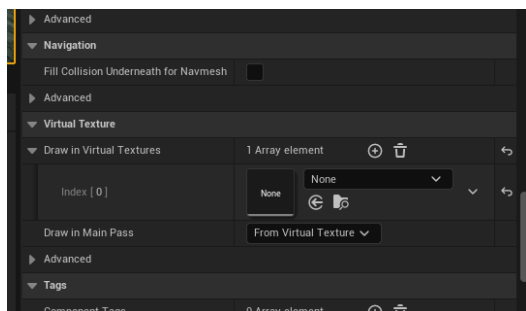
After swapping between seasonal variations, you can further fine tune the material instances by editing their exposed parameters. **Don't forget to make a material instance to not overwrite the master copy when working on adjusting materials!**

Adjusting Grass Cards:

Grass cards are driven by RVTS in the level to pickup the floor color. For better transitions between colours, ensure you have a RVT volume in the level for sampling colour data and also have it picking up data from the mesh in world. The grass will change color if you adjust the tiling grass below. If this fails, you can still overwrite the color info on the grass card material instance itself.



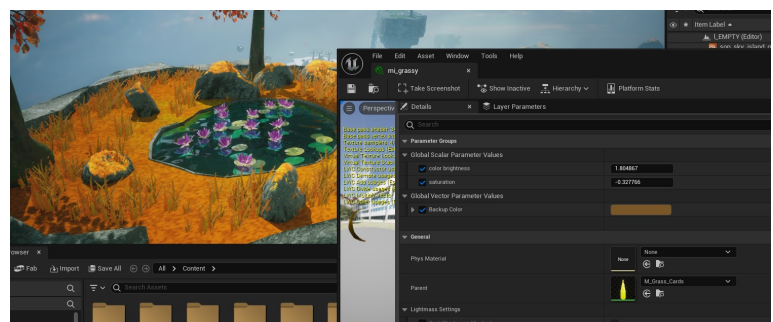
Working RVT Color



Missing RVT Color



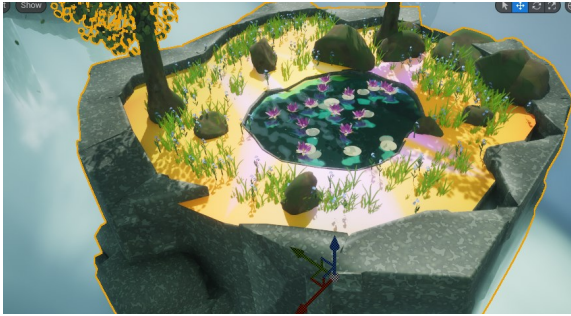
Material Instance Backup Color parameter can be used to adjust values in both cases to fine tune visual outlook.



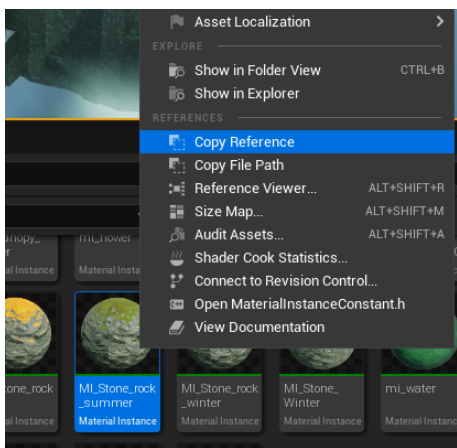
Fixing Missing Data

If your repository has changed the local location of any materials/meshes this H.DA has been setup with they make break and not be assigned properly. Here's how to fix it.

Instructions:



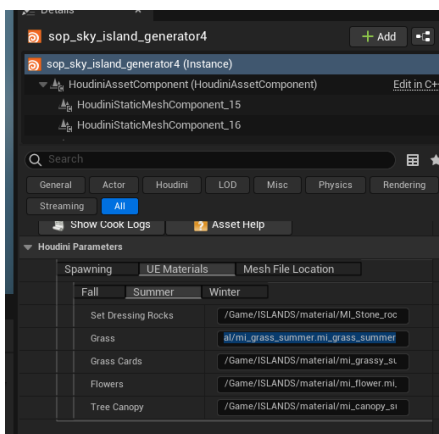
1) Locate the asset in content browser and right click it to select the copy asset reference option. Paste this into a notepad file to check it is the correct asset.



2) In the notepad/text editor remove all data before / Game as this will need to be discarded for referencing.

```
File Edit Format View Help
before: /Script/Engine.MaterialInstanceConstant'/Game/ISLANDS/material/MI_Stone_rock_summer.MI_Stone_rock_summer'
after: /Game/ISLANDS/material/MI_Stone_rock_summer.MI_Stone_rock_summer
```

3) Go back to the tool in level and paste this edited reference into the reference tab under the correct affected season and the mesh/mat it is affecting.



4) Your issue should now be resolved at the next cook of the asset as it refreshes the references on the affected models/materials.



Optimisation

Current Optimisation

The largest cost of these islands are mesh memory due to their density of set dressing on top. Fortunately Unreal has really good foliage instancing optimisations, so ensure that the logic continues to instance these actors and anything that would fall under foliage specifically. Here is a comparison of memory cost with, and without instancing.



Without Instancing

500mb Memory Cost

After Instanting

81mb Memory Cost



Future Considerations:

For optimising it further, I would recommend using polyreduce to create static loads for the terrain portion or if using nanite workflows, toggle nanite on to work for the rocky terrain. This will help reduce cost at a distance which the sky islands will always have, however the shaders should still remain intact as long as the UVS and vertex data is not affected.

You can also instance islands if you create a variety of artists to work with to populate the sky with more dense and detailed accessible hero islands and smaller/empty background islands for better visual compositions.