

FANTASY KINGDOM SPAWNER PACK

By Procedural Worlds

Fantasy Kingdom Spawner Pack is a GeNa Pro and Gaia Pro Spawner kit for POLYGON Fantasy Kingdom by Synty Studios.

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About Procedural Worlds

Powerful, simple, beautiful. Friendly tools, gorgeous games!

Procedural Worlds empowers artists and developers to bring their vision to life by making it easy to create beautiful worlds. Leverage the latest procedural generation techniques to take the pain out of creating stunning environments and focus on creating amazing games.

NEW – Canopy community site

[Canopy](#) is our new community site for all Procedural Worlds Tools with support forums, knowledge base library, tutorials, and much more.

[Register with Canopy](#) to receive FREE stamp packs for Gaia and get the best out of Ambient Sounds.

The only end to end environmental generation and delivery suite:

[Gaia Pro 2021](#) - A world generation system for creating, texturing, planting and populating scenes from low poly mobile, VR and through to high end desktop.

[GeNa Pro](#) - A sophisticated localised level design tool that augments Gaia's broad-brush strokes, by working intuitively to give fine grained control.

[SECTR](#) - A suite of performance-enhancing tools that enable open world streaming, massive mobile games and includes the latest techniques in audio occlusion and propagation.

[Ambient Sounds](#) - Lets you configure music and sounds to create a unique atmosphere for each region in your game, which can react to changes in your gameplay instantly.

[Pegasus](#) - A cut scene and fly through creator that makes it easy to show off gorgeous environments and drive characters through scenes with localised avoidance and Mecanim animation support.

Spawner Packs – You can save time by using our pre-configured Procedural Worlds Spawner packs (PWS). The packs contain configurations for our tools Gaia and GeNa, and are designed to work with popular asset packs from the Unity Asset Store. Currently available:

[PWS – POLYGON Fantasy Kingdom - Spawner Pack](#)

[PWS – POLYGON Nature - Spawner Pack](#)

Micro Biomes - Let us inspire you with our new Micro Biome series where we put together groups of matching assets that cover one specific aspect of environmental design and release them in targeted high quality packs:

[Micro Biomes – Fields of Color](#)

Introduction

Thanks for purchasing the Fantasy Kingdom Spawner Pack!

The Fantasy Kingdom Spawner Pack helps you to create awesome environments out of the modular POLYGON Fantasy Kingdom pack from Synty Studios.

We automate the generation and placement of many of objects and structures provided by Synty and then use GeNa Pro to generate completely new and unique structures for you.

Be sure to check out the GeNa Decorators directory for examples of how you can use the GeNa Pro decorator system to add even more procedural capability to your system.

NOTE: This document will provide some advice on how to start, however for a more detailed understanding of Gaia Pro / Gaia Pro 2021, and GeNa Pro you can read the documentation provided with them and check out the articles and tutorials in the [Canopy Library](#).

Installation

Ensure that you have installed the following packages from the Unity asset store before installing the Fantasy Kingdom Spawner Pack. This will ensure that all object references are correctly maintained.

[POLYGON Fantasy Kingdom - Low Poly 3D Art by Synty | 3D Fantasy | Unity Asset Store](#)

[Gaia Pro 2021 - Terrain & Scene Generator | Terrain | Unity Asset Store](#)

[GeNa Pro - Terrains, Villages, Roads & Rivers | Terrain | Unity Asset Store](#)

Then install the Fantasy Kingdom Spawner Pack from Procedural Worlds. It will be installed into the following directories.

- Procedural Worlds

 - Content Packs

 - Synty

 - Fantasy Kingdom

 - Content Resources: Resources used by the pack.

 - Prefabs: Prefabs base for many procedural structures.

 - GeNa Decorators: GeNa decorator examples.

 - Documentation: Fantasy Kingdom Pack documentation.

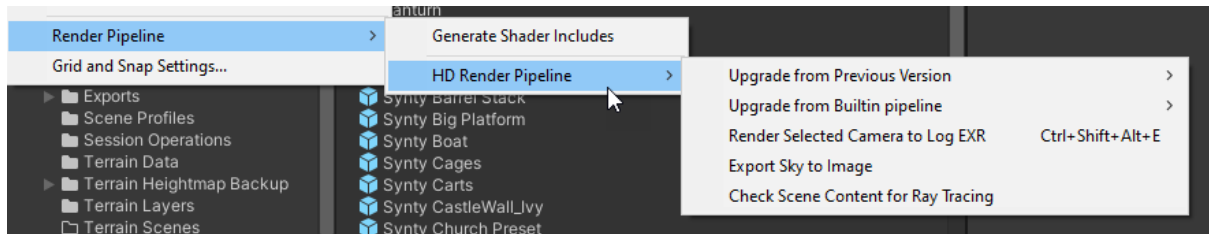
 - Gaia Biomes: Gaia Pro Biome and Spawners.

 - GeNa Masks: Handy masks for GeNa Terrain Flatteners.

 - GeNa Spawners: GeNa Pro spawners, categorized

Note: When installing into URP or HDRP you will also need to run the render pipeline upgrade wizard to upgrade the Synty assets to that pipeline. The location of this varies between Unity versions and pipelines.

Edit / Render Pipeline...



Tutorials, Chat, Support

Canopy Community Site (Support Forum, Tutorials and more): [Canopy](#)

Website: <https://www.procedural-worlds.com/>

Tutorials: https://canopy.procedural-worlds.com/library/content-packs/28_pws-polygon-fantasy-kingdom-spawner-pack/61_tutorials/

Community Discord: <https://discord.gg/TggjONN>

Support: <https://www.procedural-worlds.com/support/>

Using the Fantasy Kingdom Spawner Pack

Typical Workflow

The Fantasy Kingdom Pack is designed to be used with Gaia and GeNa.

A typical workflow would be to

1. Create a Unity terrain with Gaia using the Synty Fantasy biome;
2. Populate it with GeNa;
3. Optionally finish it off with a full Biome Spawn with Gaia;
4. Optionally convert the Unity terrain to a low poly mesh terrain with Gaia.

Please note: While this is a suggested workflow you do not need to follow it. With GeNa Pro you can quickly add enhance any Unity scene. Most of the spawners will work on both Meshes and Unity terrain, however you will lose access to some features such as terrain flattening as this only works with Unity terrains.

Asset Layout

Here is a brief overview of the more important content directories.

Gaia Biomes:

Gaia Pro Biome and Spawners.

GeNa Spawners / Battle:

Some battle related spawners.

GeNa Spawners / Buildings - Dynamic:

These are very sophisticated dynamic building spawners. The buildings spawned in this way are made of out of modular part and can be easily modified and entered.

GeNa Spawners / Buildings - Fixed:

These building spawners mostly spawn the preconfigured buildings that come with the Synty Pack. They will still generally be quite flexible as all relevant variations were included in their construction.

GeNa Spawners / Interior:

A simple interior spawner.

GeNa Spawners / Kingdom:

The Synty Kingdom demo scene, easily spawnable into your scene.

GeNa Spawners / Misc - Spline:

These spawners can either be used stand-alone or along a spline.

Note: Many of the other GeNa spawners can also be used along a spline.

GeNa Spawners / Physics:

Some simple physics-based spawners. These spawners simulate Physics in the editor. Both fun to play with and quite useful.

GeNa Spawners / Plants / Prefabs:

A range of plant spawners set up to be painted onto a terrain or mesh.

Note: These spawners will spawn the plants as prefabs, so the game object count can get very large very quickly, and too many game objects in Unity will kill your performance. Gaia Pro 2021 will allow you to convert and render these as instanced indirect objects in its next major release (at the time this was written), and you will get orders of magnitude better performance.

GeNa Spawners / Plants / Terrain Trees:

A range of plant spawners set up to be painted onto a terrain as terrain trees.

GeNa Spawners / Props:

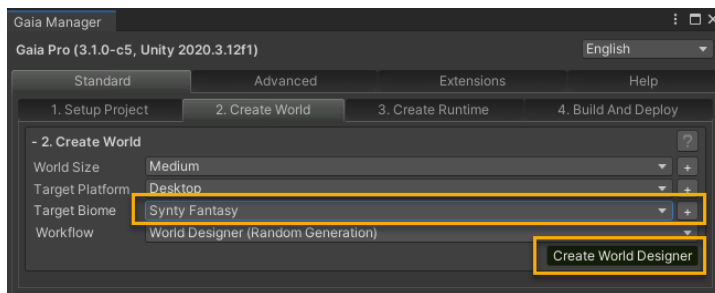
A range of fun props to spawn into your scene. In many cases they will include variations and you can iterate through these variations.

GeNa Spawners / Rocks:

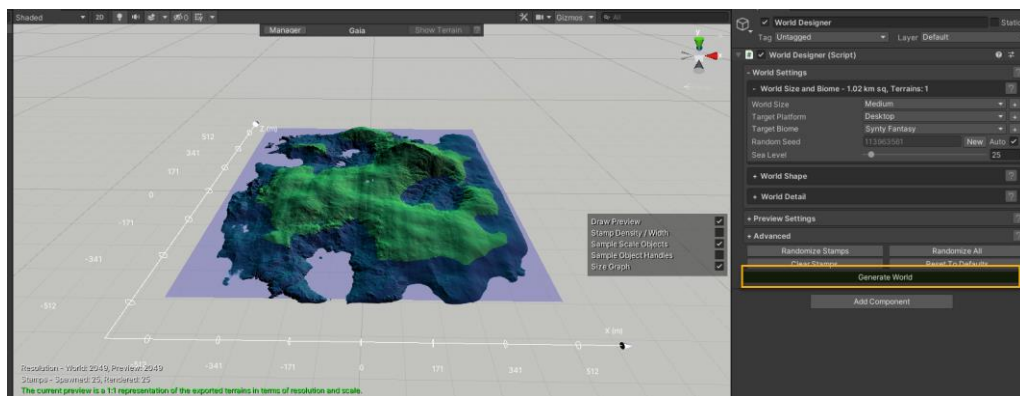
A range of rocks to spawn into your scene. You can paint them in manually or spawn them along splines.

World Creation with Gaia Pro

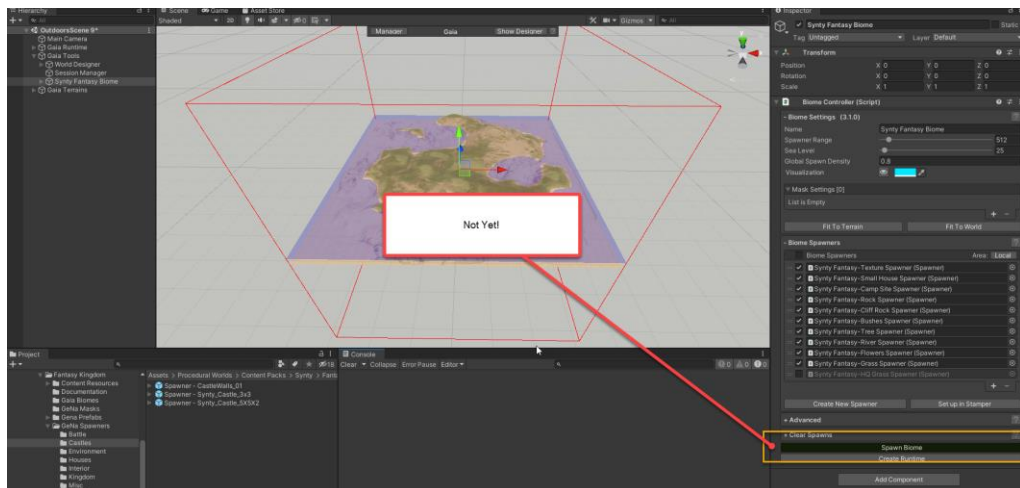
In this example I will create a base world with Gaia Pro 2021.



Select Synty Fantasy as the Target Biome and generate a base world either manually or with the World Designer. We will use the World Designer.



When you are happy with your preview hit Generate World.

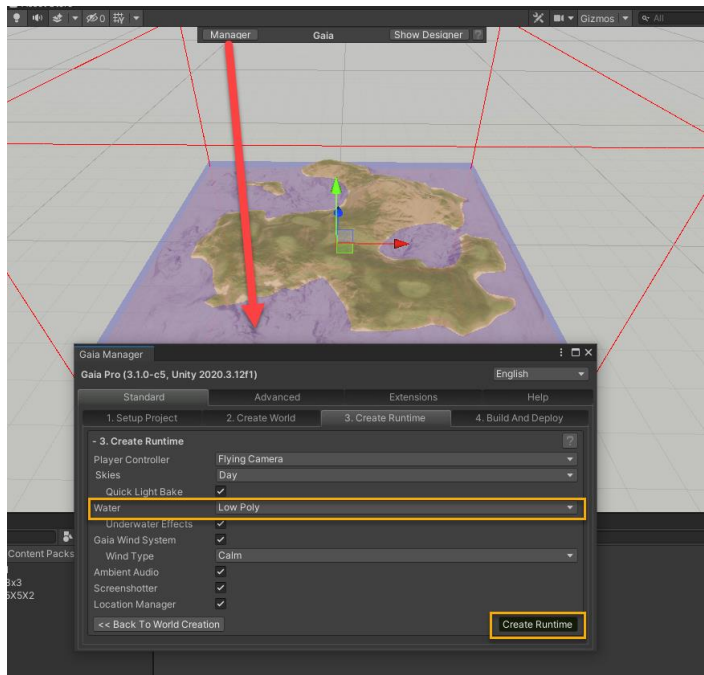


This will create and texture your terrain, and when it is complete it will select the biome object and present you with the option to Spawn the full Gaia Biome.

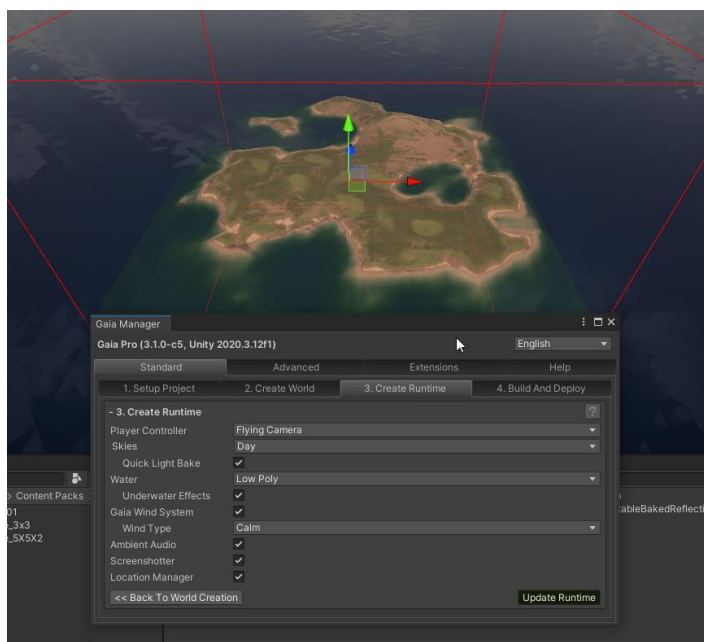
Do not do this yet – it is far easier to work on a clean terrain than on one that has already been filled with content. You can *optionally* do this at the end if you still think you need more content in your scene.

The next optional step is to add the Gaia runtime into your scene. Gaia runtime sets up lighting, post fx, water, camera etc. You do not need it, but it makes the development experience nicer. You can remove it later as desired.

Click on the Manager button to open the Gaia Manager. Select Low Poly on the water if you would like a low-poly style for your water, and then hit Create Runtime.



Magic happens...



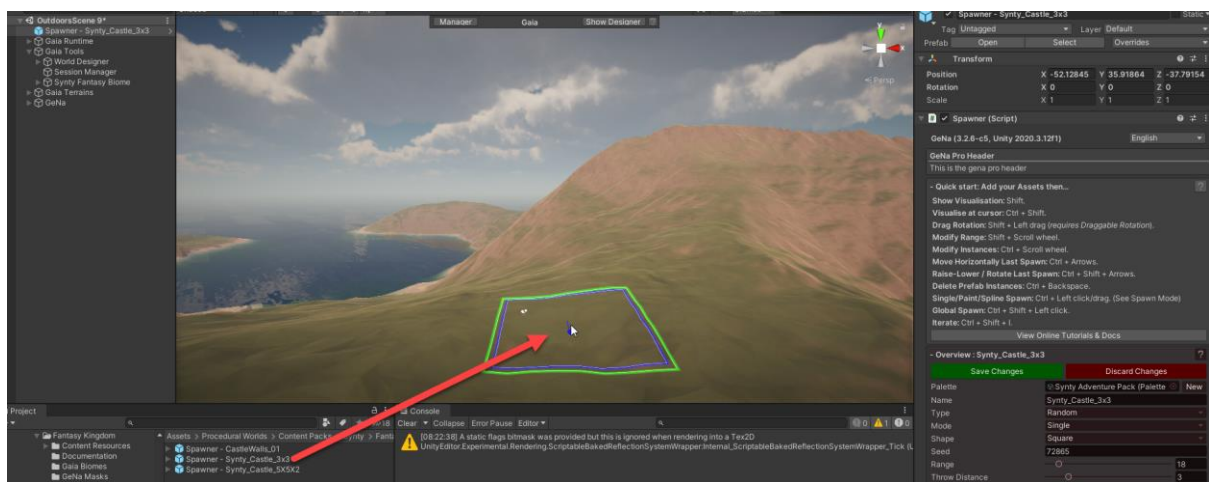
And you can now press play to survey your new scene. A cool trick is to hit F11 to go into Photo Mode with Gaia Pro 2021 where you can play with lighting, post fx etc.

World Population with GeNa Pro

Spawning

To use the GeNa spawners, drag the GeNa spawner prefab into your scene. Hit Shift+Left Mouse click to sample your terrain. GeNa will also give you a visualization of where the structure will be spawned.

GeNa will child any prefabs or splines it spawns into your scene underneath the terrain of the scene it was spawned on. This is so that things like Gaia's Terrain streaming system can manage object loading and unloading correctly.



Hit Ctrl+Left Mouse click to spawn at that location.



Iterating

Many of the GeNa spawners offer multiple variations on the same basic structure, so you can have fun 'iterating' the spawn result until you get the one you want.

To do this, first hit Ctrl+Left Mouse click to spawn, and then without de-selecting the spawner Iterate the spawn by hitting Ctrl+Shift+I to get another version of it. Keep Iterating until you get what you want.

GeNa will switch the visualizer off while you are doing this in order to make it easier to see the final result.



Undo

You can undo any GeNa spawn or spline operation by hitting Ctrl+Z.

Fixed Rotation Spawning

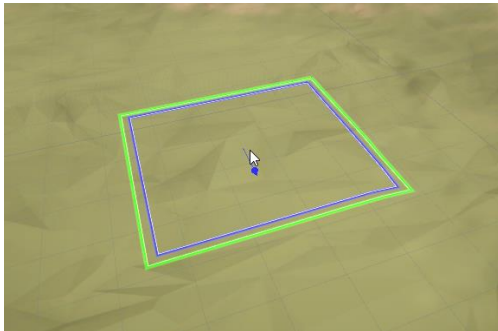
Some GeNa spawners are set up to operate in Fixed Rotation mode. Fixed rotation allows you to change the direction that the object will spawn.

Fixed Rotation is indicated with a blue arrow that shows the direction that the object will be rotated in when it is spawned.

Hold the left Shift key, and click and drag the mouse to change the direction that the object will spawn in. The blue direction pointer will update to show you the new direction.

When you have selected your rotation then spawn as usual with the Ctrl+Left Mouse click.

This technique enables precise orientation of your structures easy to achieve. It is also very useful when used in conjunction with splines.

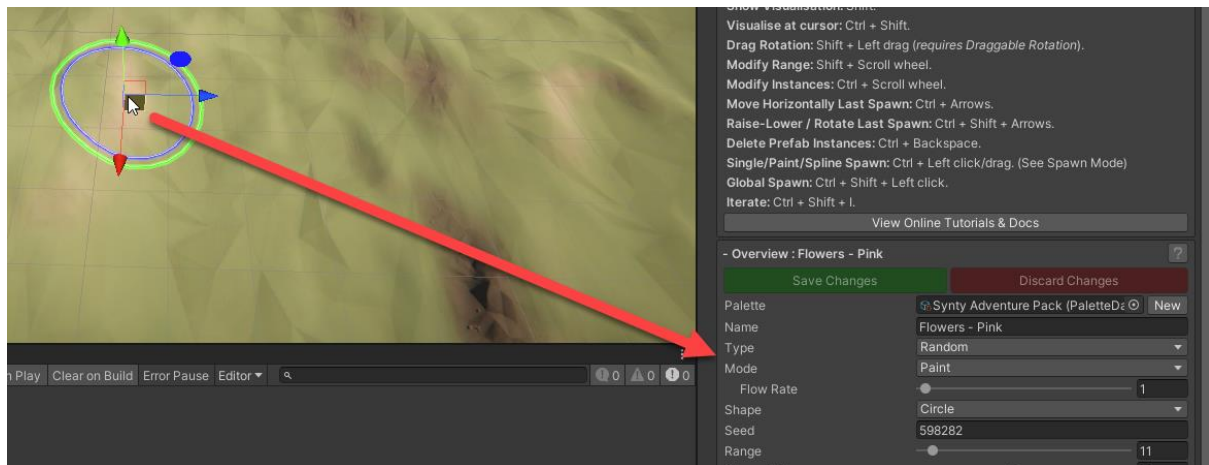


Paint Mode

Some GeNa spawners are set up to operate in “Paint Mode”.

With these spawners you can hit Ctrl + Left Mouse Click to spawn, and then drag your mouse to continue to “Paint” your objects into your scene. The flow rate is the distance in meters that you need to move before the next spawn iteration is executed.

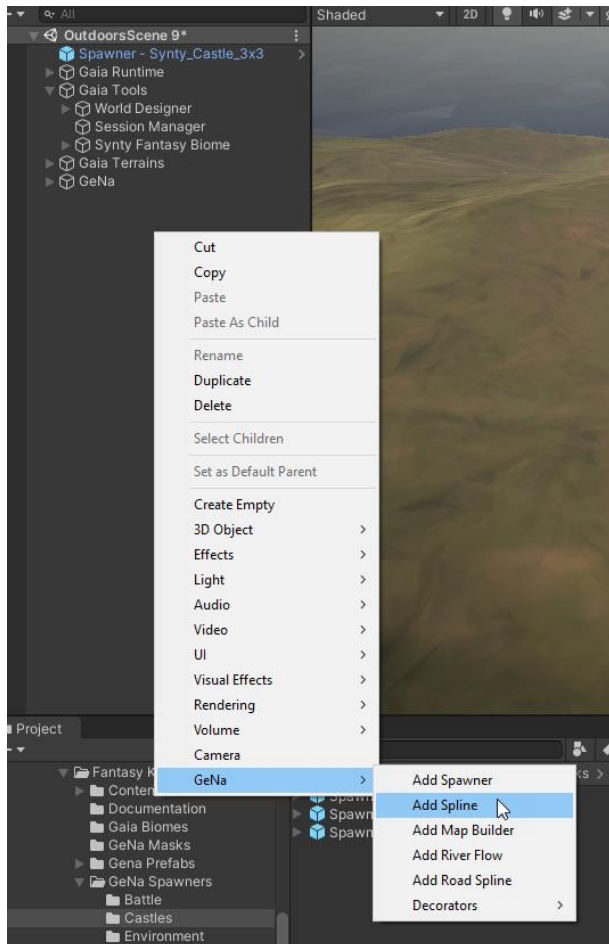
If you do not like what it did, you can then hit Ctrl+Shift+I to Iterate and get another version of the paint operation, or Ctrl+Z to undo it.



Splines

Paths, walls, hedges, and other interesting path-based effects can also spawned along GeNa Pro Splines.

To add a spline to the scene right click in the hierarchy and select “GeNa -> Add Spline”



Hit Ctrl+Left Mouse click to add nodes to the spline.

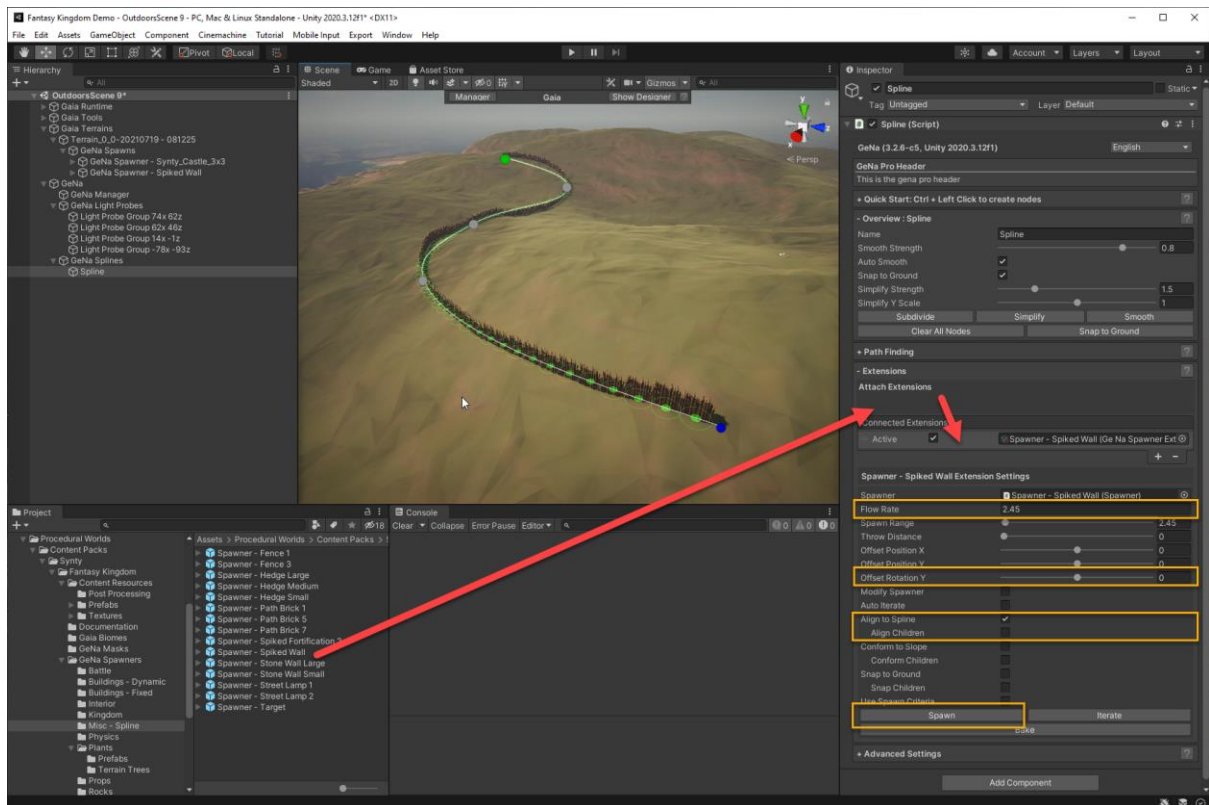


Drag and drop a spawner onto the spline.

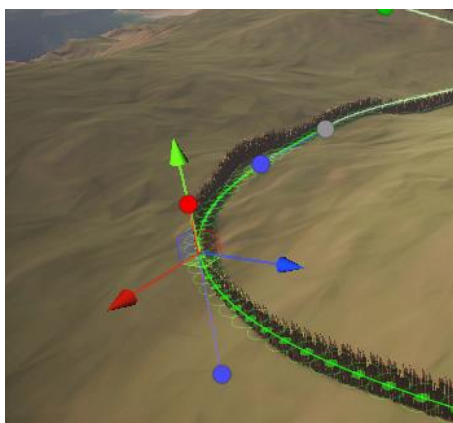
Adjust the flow rate – this controls the distance between spawns.

Click align to spline – optional but is often used in conjunction with Offset Rotation Y to change the angle of the objects along the spline. You can experiment with these settings to get the look you want.

Hit the spawn button to spawn along the spline.



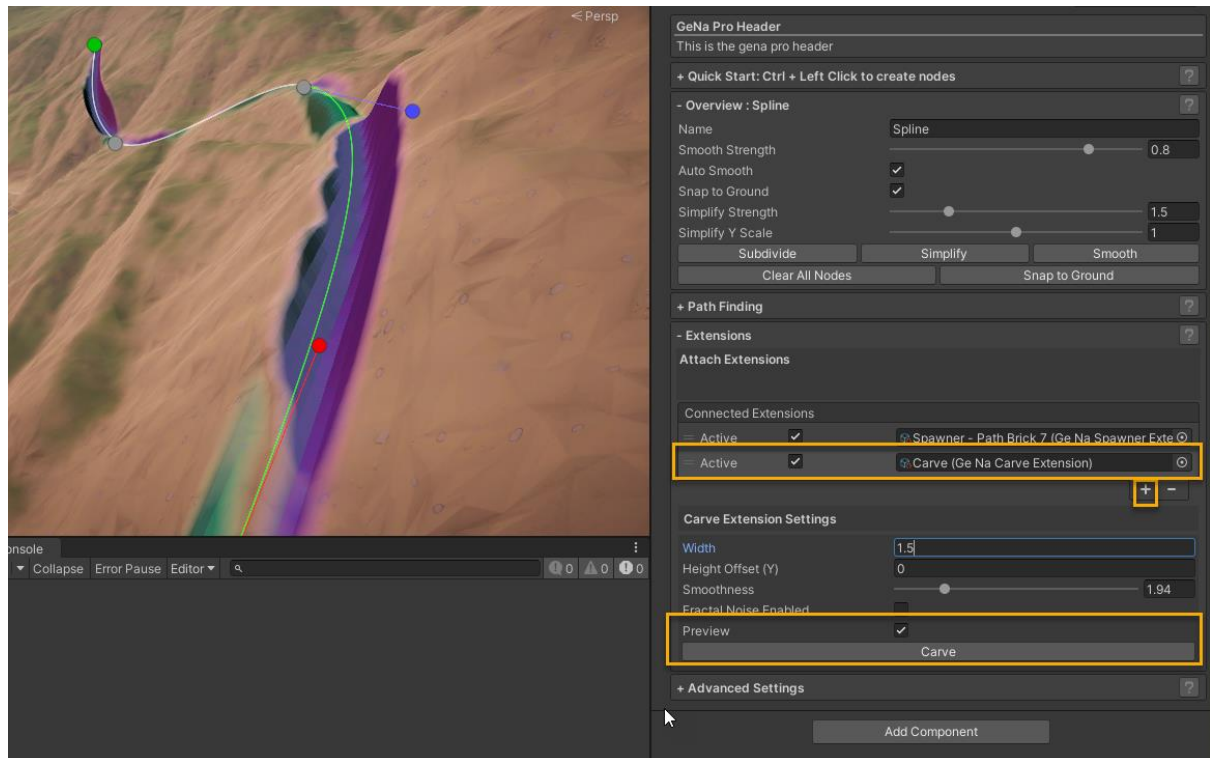
You can further refine this at by clicking on the spline nodes and modifying them (note – only works with prefab spawns). If you are unhappy with more permanent spawn types such as terrain trees, texturing or carving then hit Ctrl-Z first.



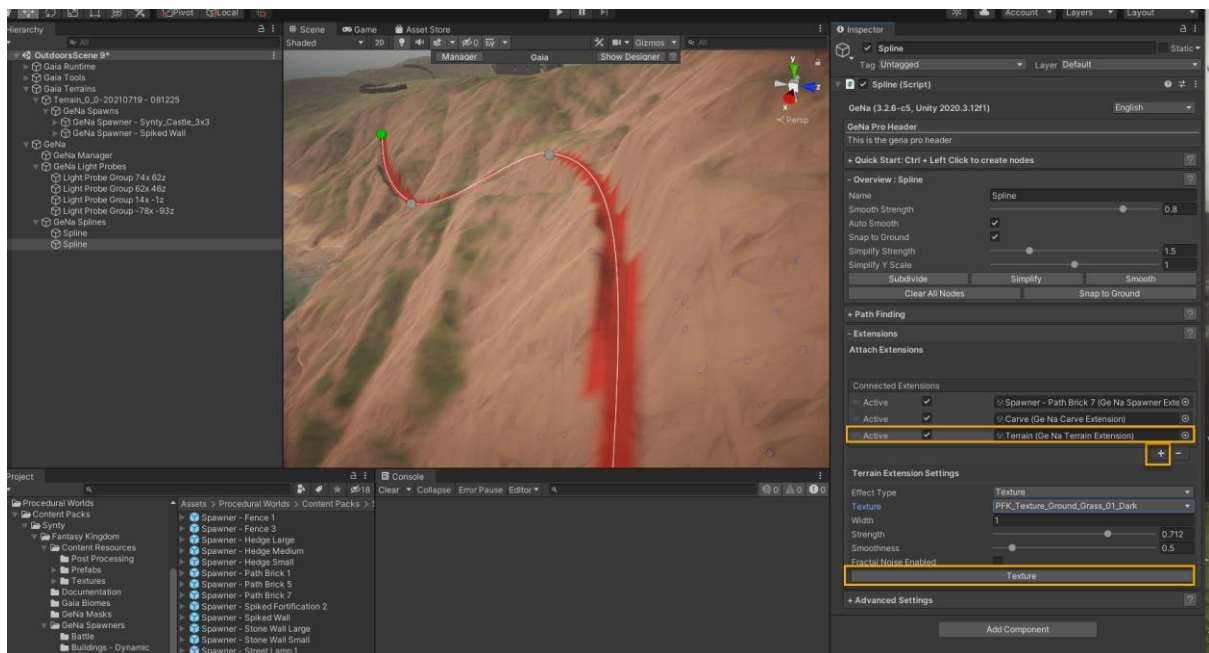
Using Spline Extensions

GeNa Pro allows you to mix and match as many spline extensions as you like. I prefer to build on them one at a time, and then bake the result when I am done. Baking is the process of finalizing the operation being performed by the extension. In general you want to do this when you are comfortable that you are done.

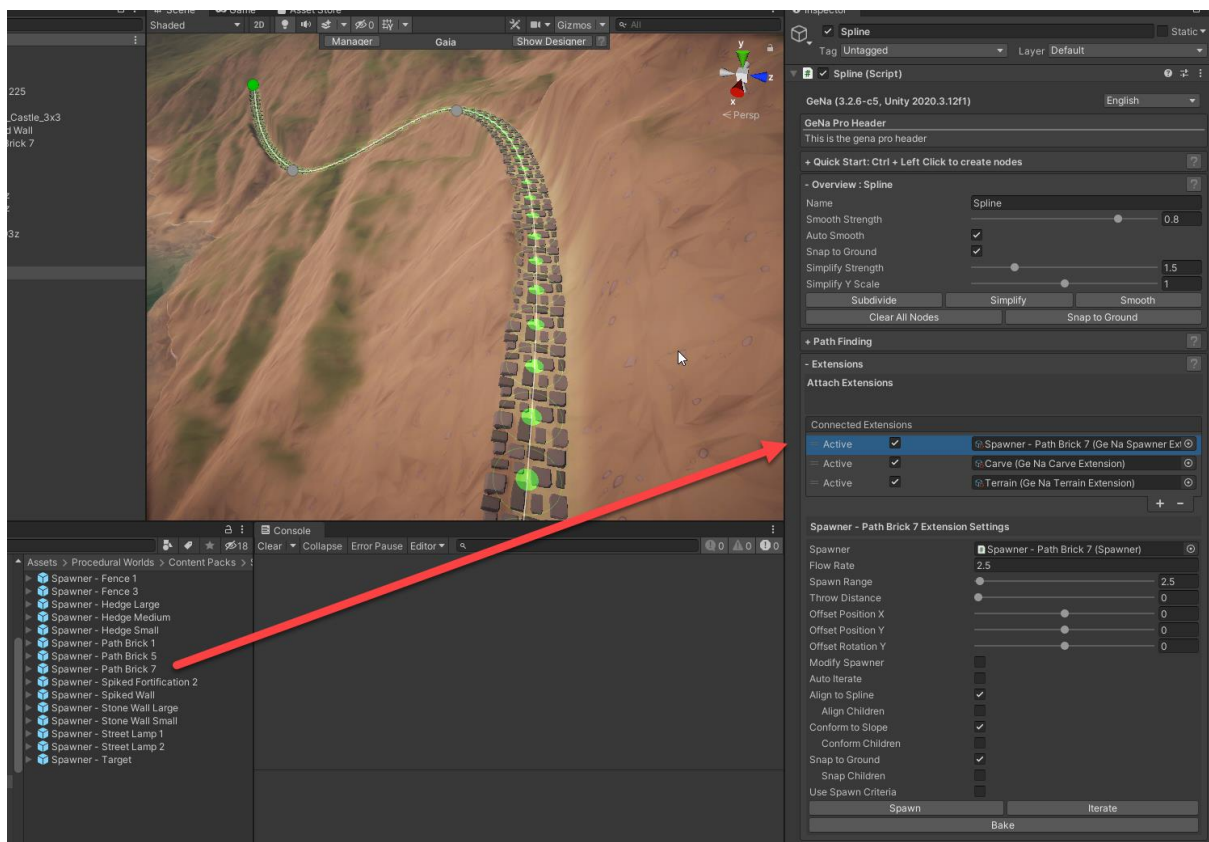
To carve and flatten the terrain along a spline, for example when creating a road. Use carve extension.



To texture the terrain along a spline.



And finally, to add our brick road.

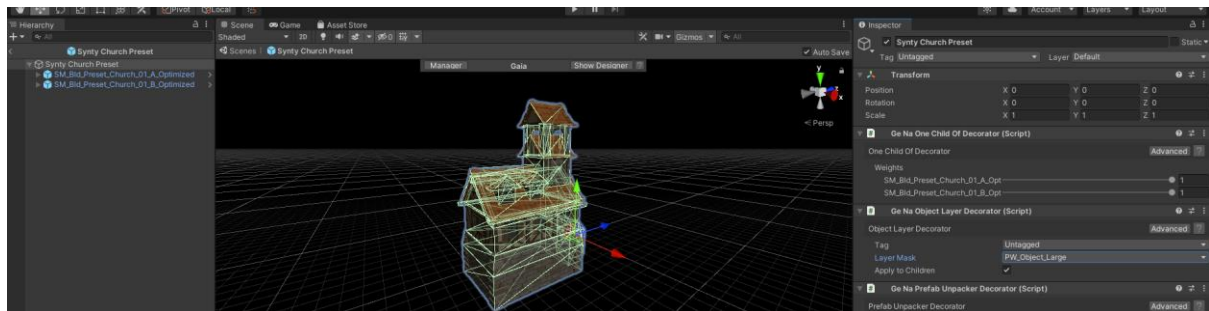




GeNa Decorator System

GeNa comes with an exceptionally powerful decorator system, and this allows you to exert a high degree of control over how your content is spawned into your scene.

You see how many of the spawners were configured by looking at them in Procedural Worlds/Content Packs/Synty/Fantasy Kingdom/Content Resources/Prefabs/GeNa Decorators.



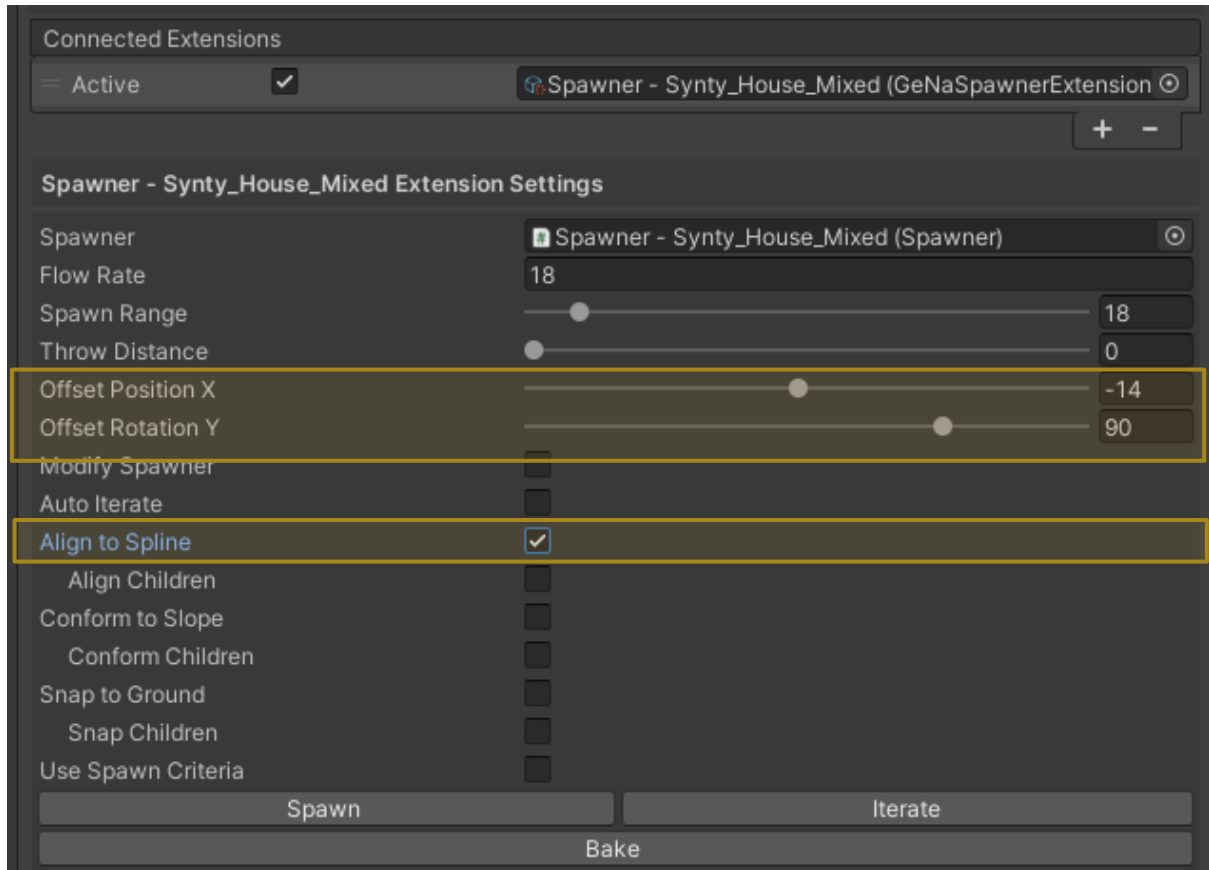
To use this prefab, drag it onto a spawner. GeNa will unpack the prefab, randomly choose to spawn only one of the children, and will put that child onto the PW_Object_Large layer.

Study how these were configured and use the ideas to set up your own content decorators.

For more information on Decorators, please read the GeNa Documentation.

Other Spline Examples

In this example we will position and rotate houses so that they face the spline as though it were along a road.



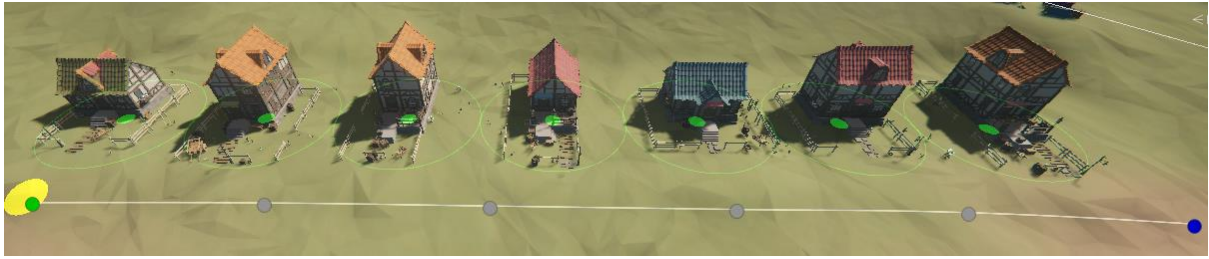
Ctrl+Left click to add spline points onto the terrain where the houses should spawn:



Click on the Spawn button in the Spawner Extension of the Spline:



You can iterate the random look of the houses using the Iterate button.



Example usage of the spawner to create a path along a spline.

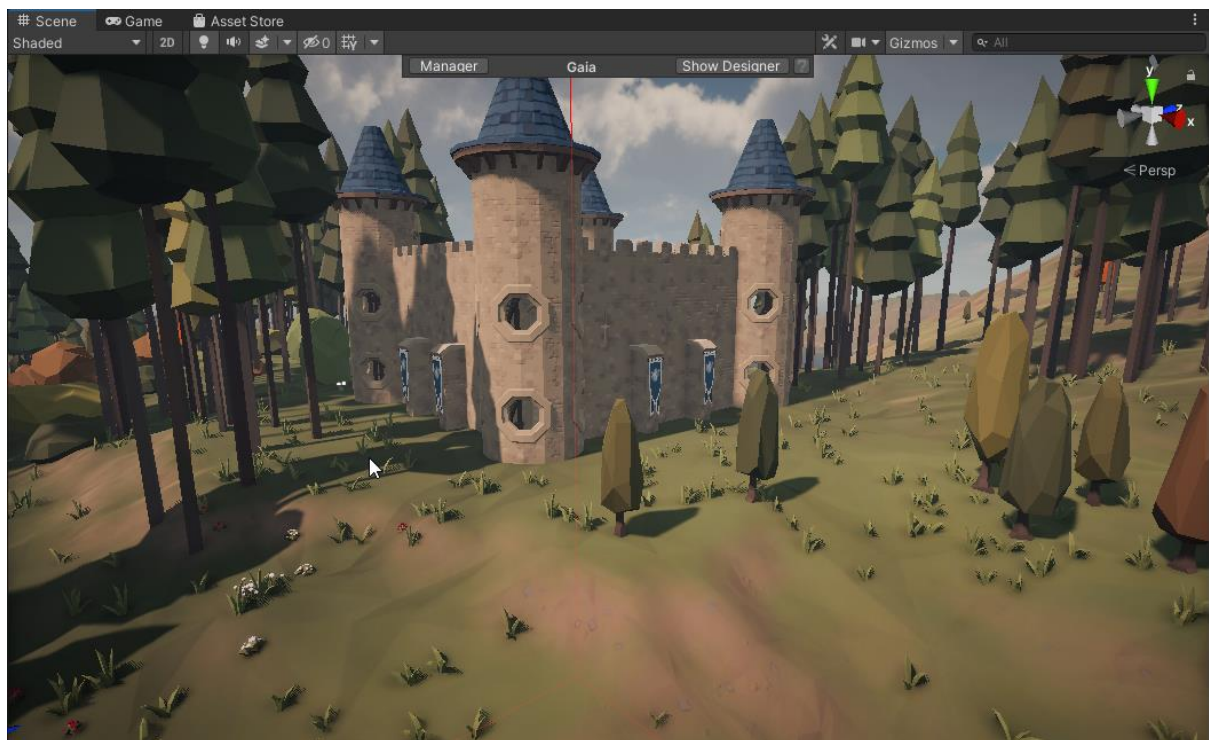
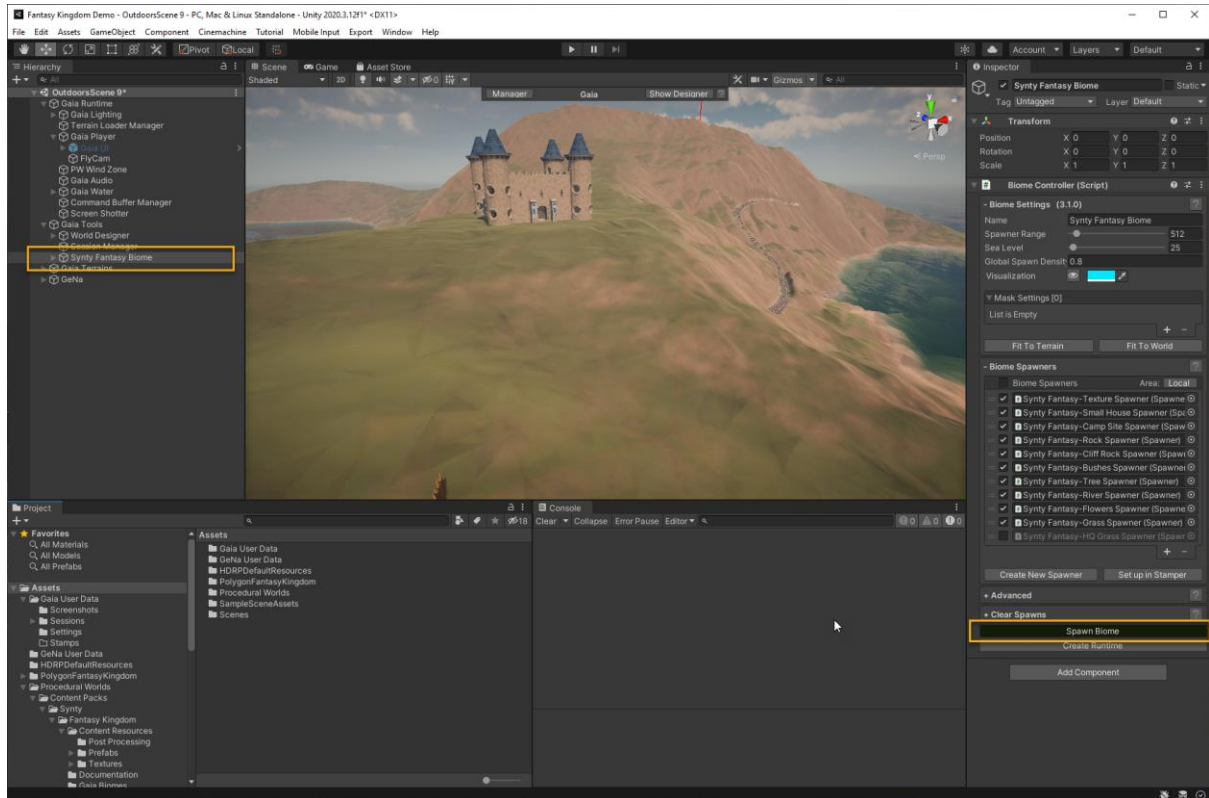


API Based Runtime Spawning

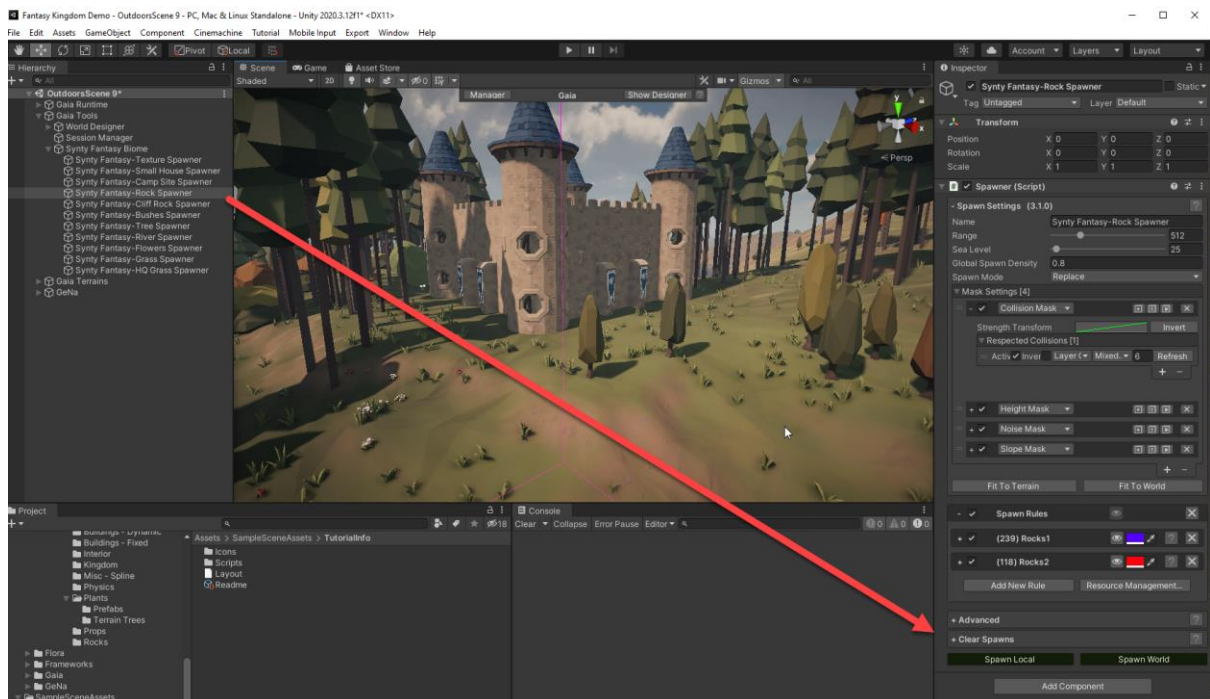
GeNa Pro can be controlled via API to spawn at runtime. Please check out the GeNa Pro documentation to learn more.

World Finalization with Gaia Pro

In some scenario's you will want to use Gaia Pro to finalize your world. To do this select your biome under Gaia Tools and hit Spawn Biome.



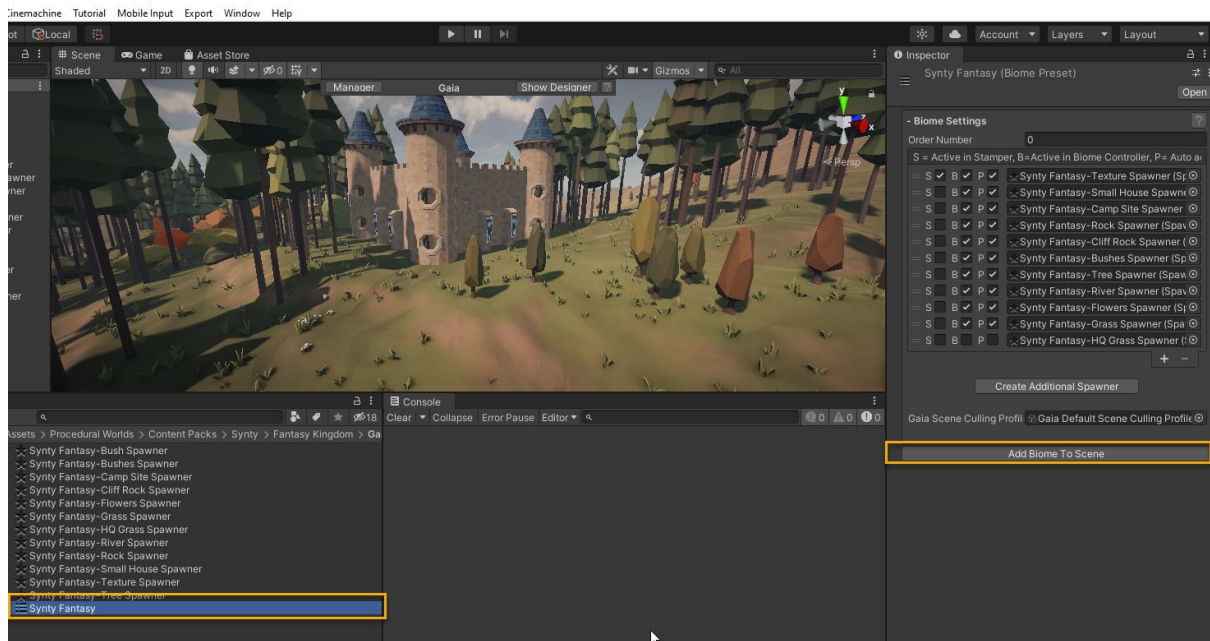
You can open out the individual biome spawners and just spawn the ones you want if you would prefer this instead of all of them.



It is also rather fun to mix and match styles! Here is the Gaia Alpine Biome mixed in with some GeNa houses!



NOTE: You can add Gaia biome's to your scene at any time by selecting the Biome and then clicking 'Add Biome To Scene'.



Mesh Based Terrain Generation

A powerful capability of Gaia Pro 2021 is its ability to convert your Unity terrain to a mesh and then to remove the original terrain completely.

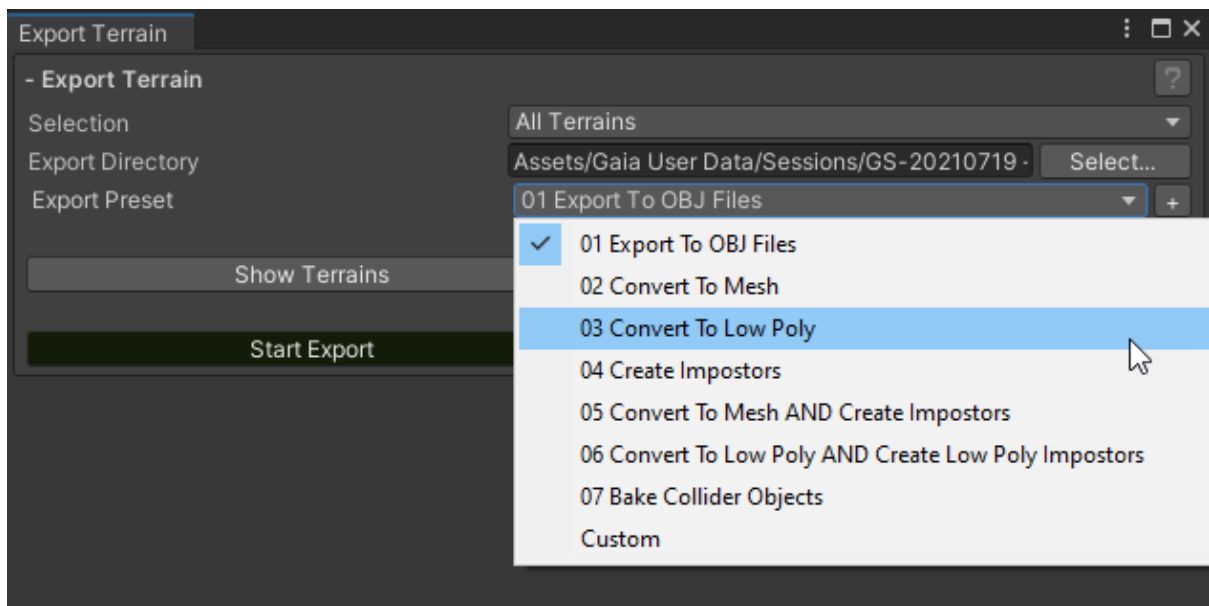
The upside of this is that meshes are generally much faster than Unity terrain, but you also lose the ability to render unity terrain grass and terrain trees.

The next major iteration of Flora (included with Gaia Pro) will add support for mesh-based grass and tree rendering and is orders of magnitude faster than Unity.

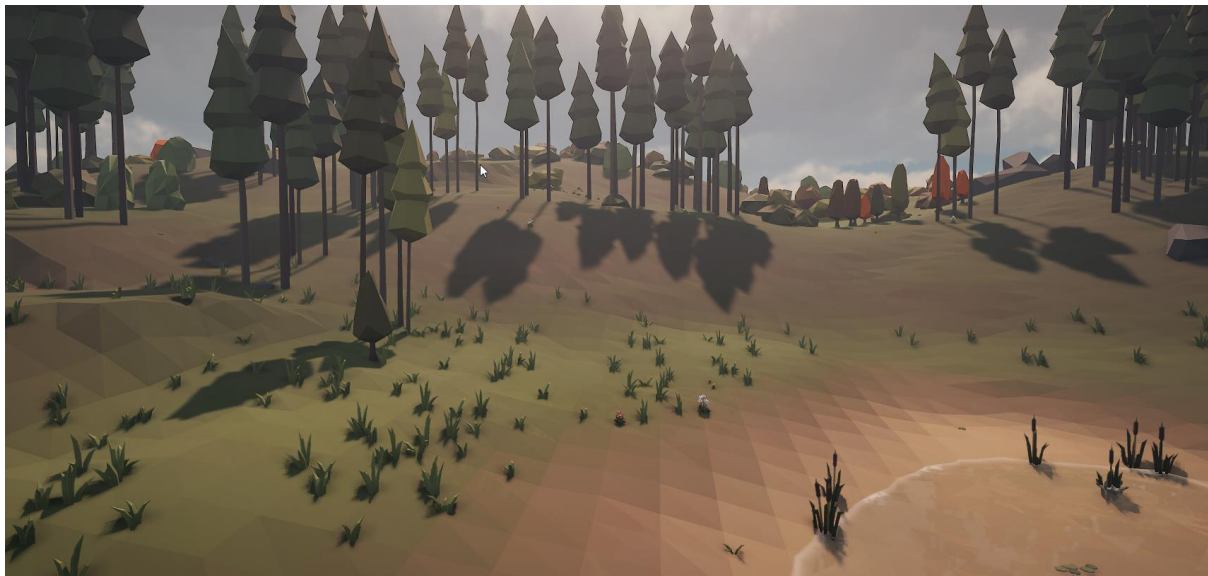
This would typically be done as one of the last things you do before finalizing your scene, as the GeNa spawners can flatten Unity terrain, but not flatten meshes (e.g., under buildings).

To convert your terrain to a mesh terrain, or a low poly mesh terrain.

1. Open Gaia Manager
2. Select Advanced Tab
3. Select Gaia Tools Foldout
4. Click on Terrain Mesh Exporter button.
5. Choose the option you want e.g., Low Poly Mesh.
6. Start the Export.



Here is an example low poly mesh export:



Scene Finalization

When you are finished creating your scene the following things can reduce the size of your build.

1. Remove Gaia Tools. They are used only for creating environments.
2. Bake and then remove all your GeNa splines.
3. Delete your GeNa spawners.

Spawner Examples

Castles

Spawner – Castle – 3x3



(A few of many variations obtained by iterating on the spawner using Shift+Ctrl+I)

Spawner – Castle – 5x5x2



(A few of many variations obtained by iterating on the spawner using Shift+Ctrl+I)

Spawner – Castle – Walls

Note, that castle walls should be placed before other objects are spawned that should be inside the walls, otherwise it may be difficult, to spawn the castle walls onto the ground afterwards.



Houses/Buildings

Spawner – Building – Mixed – Small - Yard



(A few of the variations obtained by using the spawner on a GeNa Pro Spline)

Spawner – Building – Mixed – Large - Yard



(A few of the variations obtained by using the spawner on a GeNa Pro Spline)

Spawner – Path Brick 7



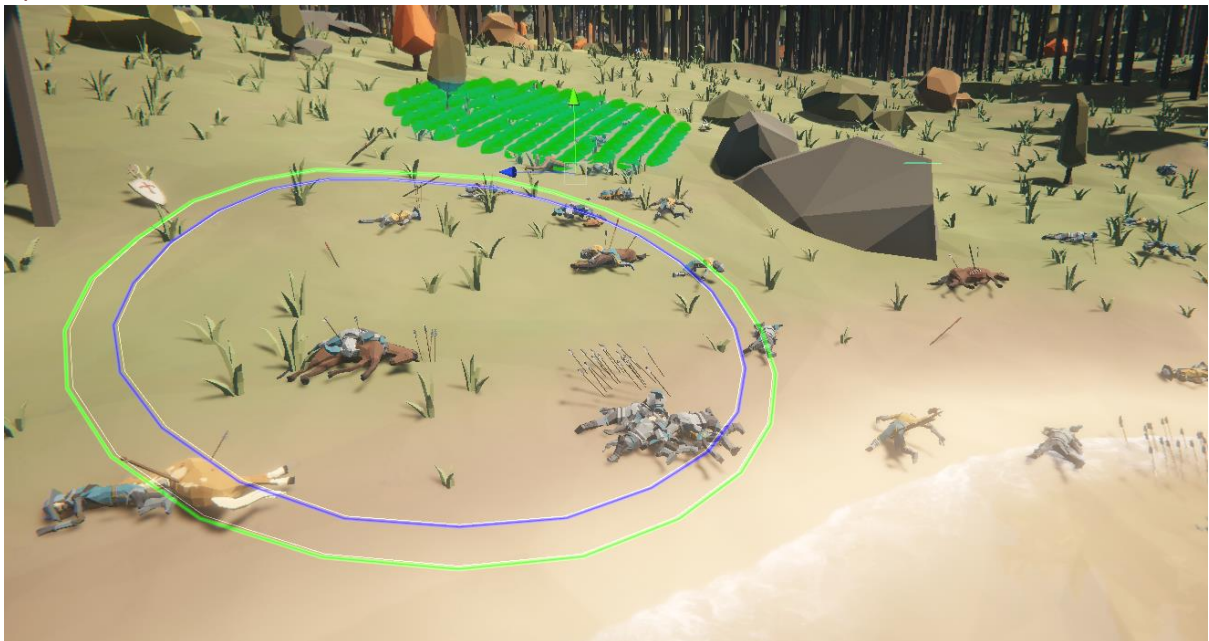
(Example usage of the spawner to create a path along a spline)

Spawner – Kingdom 01



We even took the Synty Demo Scene and made it into a spawner that can be spawned onto your own terrain.

Spawner – Death_01



(Spawning random carnage along the shore)

Gaia Pro Biome Examples

Synty Fantasy Biome



