Crux 2.0 Documentation



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Discord

The Basics

properly spawn your objects. When using a Unity terrain, the texture at the spawning position is used to determine what biome to pick objects from. When this happens, Crux will randomly spawn objects according to that specific biome, as well as other global and individual object conditions. When the spawned

objects hit Crux's despawn radius, they will be despawned and put back into

Crux is a runtime procedural AI spawner capable of spawning AI dynamically

across terrains according to customized biomes and conditions. Individual Scriptable Objects are used for storing all the information that Crux needs to

Crux's object pool. The total number of objects are always tracked to ensure a well-balanced population. This is also done for performance reasons which allow games to feel populated with more complex objects, such as AI, without having to have 100's of AI running in the background. Testing the Demo Scenes It is recommended that you give the demo scenes a try as these can give you a better idea with how Crux works and functions. When trying the demo scenes, you will see that Crux spawns AI, and objects, procedurally within a certain range of the player.

System. This will create a brand new Crux system for you to work with. Once you've done this, follow the video tutorial below. It covers assigning a player to the Crux system, creating multiple biomes, and creating custom Crux Objects that the system will spawn.

To create your own Crux System, go to Window>Crux>Create>Create New Crux

only the first biome will be used.

Biome List

Biome Name

Plains Biome Icon

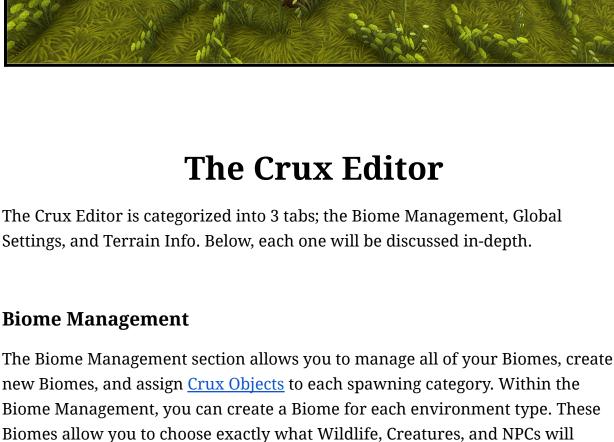
Plains Biome Editor Color

Plains Biome Texture Options

The Biome Name defines the name of this Biome

Creating your Own Crux System

GETTINU STARTED



Biome Management The Biome Management section allows you to manage all of your Biomes, create new Biomes, and assign objects to each spawning category. Below you can create a Biome for each environment type. These Biomes allow you to choose exactly what Wildlife, Creatures, and NPCs will spawn according to the textures for the environment.

spawn according to the textures for the environment. Note: Textures are not used

method for getting the texture at a position of a mesh. When using Mesh Terrains,

when using Mesh Terrains. This is because Unity doesn't have an efficient

Create Biome Create New Biome will create a new Biome. You will need to assign the textures from your terrain that defines the newly created Biome. Create New Biome

A list of all created biomes. You can select each biome to adjust its settings and define its textures.

Plains

The Texture Options allow you to pick which textures define a Biome. When the system detects these textures, it will spawn an object accordingly.

The Create New Biome button allows you to create a new biome that you can customize as need with custom set textures and objects. For a detailed

A list of all biomes the current Crux system has. The name of each biome

The section that allows you to control what textures determine the biome.

Biome Objects Options section to be spawned, given that they are present

Any textures that are added to this section will allow objects from the

guide on creating a biome, see the <u>Creating a Biome</u> section.

can be customized at the top of each biome.

Desert

Add Texture

Biome List

Texture Options

Create Biome

on your Unity Terrain. Note: Textures are not used when using Mesh Terrains. This is because Unity doesn't have an efficient method for getting the texture at a position of a mesh. When using Mesh Terrains, only the first biome will be used. **Biome Object Options**

creatures that can attack your player or wildlife that can flee when your

player gets near them. The last tab, is the NPC tab. This tab can also be used

for anything and is designed for objects or AI. Spawnable objects can be good if you want your player to wander around looking for objects that don't always appear in the same spot or only spawn on in a certain biome.

Global Settings The Global Settings has an additional 3 tabs. These tabs will be broken into 3 Global Settings Spawning Options Documentation Spawn ID Options Player Settings

Use Object Detection Controls spawning objects by checking the area for previously spawned objects of the appropriate layer. This is to avoiding spawning new objects too close to previously spawn objects and keeps objects evenly distributed. This layer can be any layer that is desired other than the Default layer. If the Default layer is used, this feature will be disabled. Layer Detection Layers

for the player, and more.

Spawn ID Options

Spawning Options The Spawning Options control all of the Global Spawning settings such as spawning distances, which layers can be spawned on, what object is used

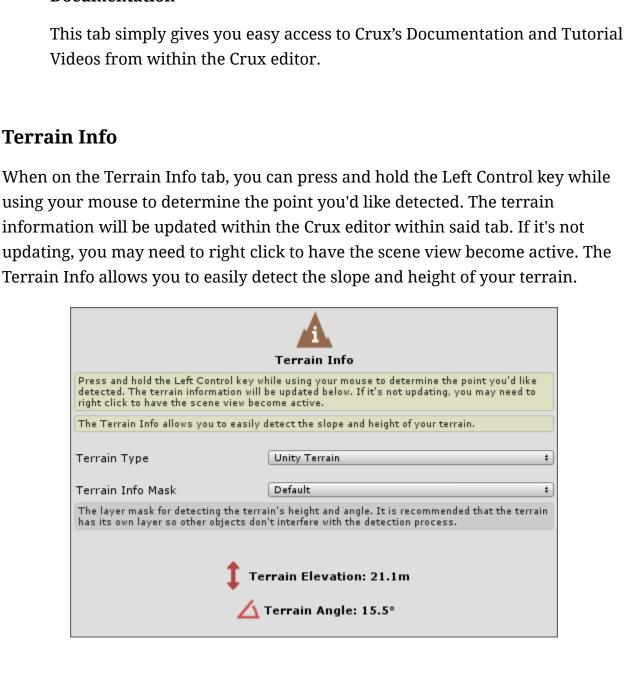
Spawn ID. A Spawn ID is created when you create a Crux Object.

The Spawn ID Options controls whether or not Crux's Spawn By ID feature is enabled. This feature allows users to spawn any object according to its

Water

Yes

The layers that Crux will use when using Layer Detection Spawning.



Crux Objects

Crux Objects are Scriptable Objects. Think of these as miniature editors that allow you to customize your spawnable object and store the information in an external

> ${\sf Crux}$ ${\sf Object}$ allow you to individually customize the spawnable object's conditions, rarity tier, information, population amounts, and more. Forest Guardian (Common)

> > Hide Model Preview

Info

The name of the object that is spawning. This name will be applied when it's created.

No Controls whether or not this $Crux\ Object\ will\ use\ a\ custom\ icon.$ If no is selected, the default icon will be used instead.

> Spawn ID: LZS891 Regenerate Spawn ID

> > Settings

The Y position offset for spawning this object. This is useful if your AI's transform is off and is spawning too high or low.

To create a Crux Object, see this section of the Crux Getting Started Tutorial.

The chance to spawn, if the necessary conditions are met for a successful spawn.

Object to Spawn

Use Crux Object Icon

Min Spawn Height

Creating a Custom Crux Object

The Game Object that will be spawning.

Forest Guardian (Common)

Forest Guadian Common

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file. Crux Objects allow you to individually customize the spawnable object's

conditions, rarity tier, information, population amounts, and more.

GETTING STARTED

Crux API

Crux handles most needed functionality, however, there are a couple public

To create custom biome, see this section of the Crux Getting Started Tutorial.

functions that may need to be accessed. Crux has a global reference so all that's needed to access the Crux System is using Crux.CruxSystem.Instance. //Removes and despawns the gameobject from Crux. Crux.CruxSystem.Instance.RemoveObject(GameObject ObjectToRemove) //Spawns an object using the Crux Object's Spawn ID. Crux.CruxSystem.Instance.SpawnByID (string SpawnID)

The Biome Object section has 3 tabs, one for each category of AI. Any Crux Object can be used for any category. How you do this is entirely up to you. Typically, the Animal and Creature categories are used for AI such as

Within these tabs, you may have realized that the objects that are listed are Crux Objects. Crux Objects are an easy and more efficient way for handling spawnable objects. See the <u>Crux Objects</u> section, for more information on Crux Objects.

Controls the type of method that Curx uses to get your player. Player Transform Type Stardard The Player Transform Type is the transform that Crux will use as a reference point for spawning objects. Player Transform Crux Demo Player (Transform) The Standard Player Transform Type will allow you to manually set the player transform. Spawning Settings Controls the type of spawning techniques Crux will use. Default Terrain Spawning Layer The layer mask used for spawning on the terrain. This should be the layer that your terrain is using. This feature is also useful to exclude layers that you do not want to be spawned on such as in water or on rocks. Note: The Terrain Info also uses this layer. Stardard Spawn Type The Standard Spawn Type option will simply spawn objects around the player. They will remain active as long as they don't leave Crux's despawn radius. This option is helpful for those who want objects to continue to be active even though they might not be visible or near the player.

Documentation

Biomes

Biomes are a customizable section within the Crux editor that allow you use

from said biome using certain conditions from the Crux Object.

Creating a Custom Biome

textures to define the biome. When picking a spawning position, Crux looks up the texture from that specific location to determine what biome it should use to spawn objects. Once it has found the proper biome, it will then spawn objects

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