Storm Generator Plugin

Hi,

Thanks for your participation for testing the beta 1 of the "Storm Generator Plugin"! Your help is highly appreciated.

For this first version, the setup is quite long but if you follow this setup guide you will not get any trouble while doing it. I hope in the further versions, the setup will be easier to do. There is a debug log which will help you debug potential errors when trying to implement the plugin. Those are printed to the screen and in the "Output Log". If you don't see it, find the "Window" tab on the top of UE's window, and click on "Output Log" to open this window.

For a demo, head over the folder "Maps" and open the "DemoMap". Make sure that in the world settings the "Game Mode Override" is set to "GM_Storm". You just need to press play and see the magic happening!

This plugin has been designed for a multiplayer game; it will not work in single player mode without a server (**it needs to be in dedicated server**).

Other Infos

- o Plugin version: 0.1.0
- o Released date: July 9th, 2023.
- o Supported UE Versions: 5.2
- o Made by Maxime CORDELLA, all rights reserved.
- o **Contact:** contact@universjeux.info or using the built-in editor utility widget for sending feedback.

I] Requirements

This plugin requires the setting "**Generate Navigation Only Around Navigation Invokers**" set to "True" in the project settings. This plugin hasn't been optimised without this setting activated. Some features could break if it is not set.

This plugin also requires two other plugins to be installed an enabled. "**BlueprintJson**" and "**HttpBlueprint**" (installed by default in new UE5 versions). They are both free and available on the Unreal Engine's Marketplace.

II] Make your own

Actors in the world

Let's say you want to implement this system into your map. The first thing you need to do is to drag and drop the "BP_Storm" blueprint into your map. It will automatically place at position 0,0,0 of your world.

You will also need a "Nav mesh bounds volume" placed inside your world. Drag it from the "Place actor" panel and size it in the way that it covers the entirety of your world. This volume will give the ability to the storm to move to other positions than the world's origin (aka 0,0,0).

Press "P" to see where the storm will be able to move. Each time the storm moves, this green area will be updated.
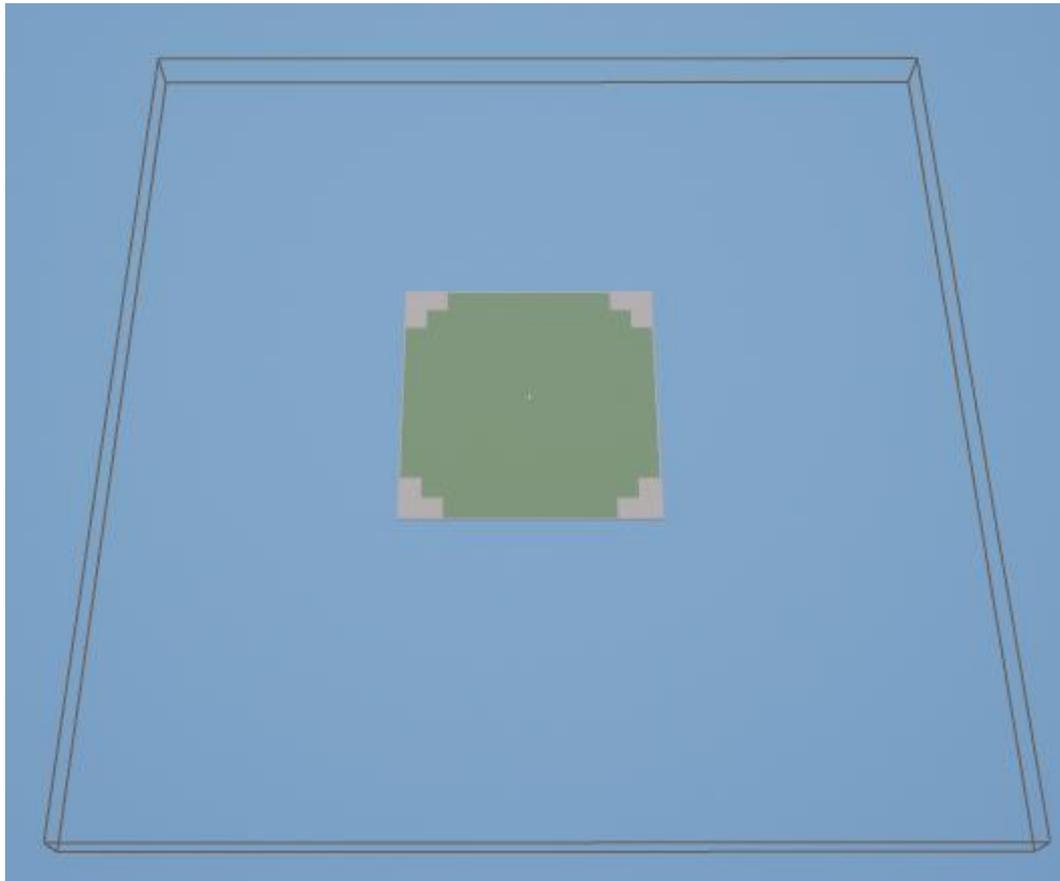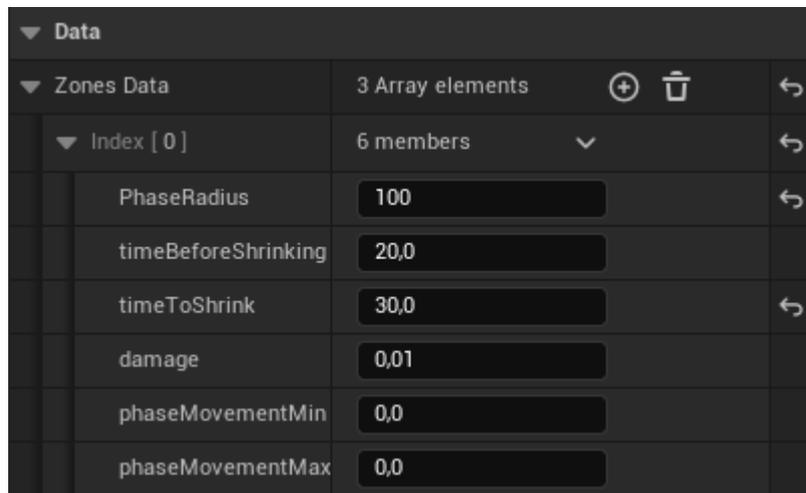

Change the settings

Let's say that the tile generation radius is not big enough and you want the storm to be able to move in a higher radius in one single time. Click on the "BP_Storm" component in your world and search in his components "**NavigationInvoker**". Increase here the "**Tile Generation Radius**" to a higher value. Make sure that the "**Tile Removal Radius**" is always higher than the "Tile Generation Radius" otherwise, your generation radius will be shrunk by the Removal Radius. Once you've changed the values, you will see the green sections updates.

Let's see the remaining settings. Go back and select the top element in the list called "**BP_Storm (Self)**". Here you will se a list of settings you can modify.
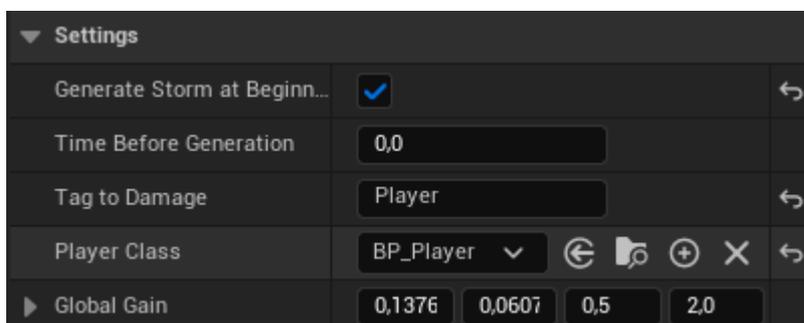
First, you have the "Settings" tab. Here you will be able specify weather if a storm should be generated when the game starts or the time (in secs) before it should happen, which actors can be damaged by the storm with the "**Player Class**" setting and specify their tag (if specific

ones should be damaged only) with "**Tag to Damage**". Leave this setting to "None" if all actors of this class should be damaged. Finally, there is the "**Global Gain**" setting which represents the color gain of the player's camera while he's out of the safe area. By default, it is a violet color highly pronounced.

Below the "**Settings**" tab you have the most important tab the "**Data**" tab. It only contains one parameter called "**Zones Data**" which holds all the zones settings. Each entry represents a specific zone and all his times related with it. Let's analyse the array's structure:

- "**PhaseRadius**" corresponds to the zone's radius in meters (half of the diameter). Make sure that in your **Editor Preferences** the setting "**Measuring Tool Units**" is set to "**Meters**" in the Viewport category. Otherwise, all the following settings will have their settings in centimeters.
- "**timeBeforeShrinking**" corresponds to the time in seconds before the storm closes when a new safe zone is defined.
- "**timeToShrink**" corresponds to the time in seconds while the storm closes to the safe zone.
- "**damage**" corresponds to the damage applied to the player while he isn't in the safe area. This is a percentage, should be between 0 and 1.
- "**phaseMovementMin**" corresponds to the minimum radius in meters where this zone should be distanced from the previous one. (in active development, still have some bugs) If this setting is not set, the zone will be in the center of the previous one.
- "**phaseMovementMax**" corresponds to the maximum radius in meters where this zone should be distanced from the previous one. (in active development, still have some bugs) If this setting is not set, the zone will be in the center of the previous one.

Plugin integration

To be able to correctly execute this plugin, some interfaces need to be added to your own classes.

Game Mode

The first one is "**BPI_StormGameMode**". This interface should be added to your custom game mode class. Once it's done, you will need to implement the function "**Get PC Array"** inside your class. Double click on it and simply drag your Player Controller Array in it. It will be used for adding the widgets on the player screen.

You are new to multiplayer? No problem to create this array, simply right click on your Event Graph and search for "**Event OnPostLogin**". Create a new variable in your GameMode and name it what ever name you want; it will store all the player's player controllers which have joined the game. Make sure that his type is set to "**Player Controller Object Reference**", and it is an array. Back to the event, drag from it and search for "**Switch has authority**" node because we want to make sure that this script happens on the server to prevent cheaters getting access to this array. On the "**Authority**" execution pin, drag your newly created array and add the "**New Player**" coming from the event to the array with the add node. And you are done!

Player Controller

As for the Game Mode, a Blueprint Interface needs to be added to your custom Player Controller Class, it is called "**BPI_StormPC**". Add it to your custom Player Controller. Here, you will need to setup two different events, "**Update Storm Timer**" and "**Create Storm Widget**". Here is the code you will need to add to your graph for those events: https://blueprintue.com/blueprint/m45a3g0w/

Important note: If you use your own way to display damage taken by the player, you don't need to implement those events: "**Event Update Stats**" and "**Update Stats on Client**".

Player

Finally, the player also needs a new Interface "**BPI_StormPlayer**". The link for the corresponding code: https://blueprintue.com/blueprint/aenx73p5/ For "**getPlayerMaxHealth**" function simply drag the max health of the player in it.

You will also need to add at the end of your "**Event AnyDamage**" logic, this code : https://blueprintue.com/blueprint/dtnsf-6v/ to be sure that the statistics gets reflected in the user Interface. (This function will require the "W_Main" widget to be added on the player screen. Use this only if you use the built in user interface, if you handle the damage in your own one, you don't need to implement this function)

III] Feedback

Every feedback is appreciated to help developing new features and fixing bugs found. You can give feedback to this email address: contact@universjeux.info and say in the mail object that you are writing about this plugin. Please include which Unreal Version you are using and the plugin's version to help me figure out where is the problem. Or you can use the built-in Editor Utility Widget called "**W_Feedback**" to send it!

IV]Upcoming features in future releases

➔ Minimap feature with storm circles showing up
➔ New safe area masked in the playable world (removing the white cylinder being visible in the world)
➔ More personalization settings on each safe area
➔ Fix issues with area distances
➔ New design of the storm (specially on the post process when player is outside of safe area)