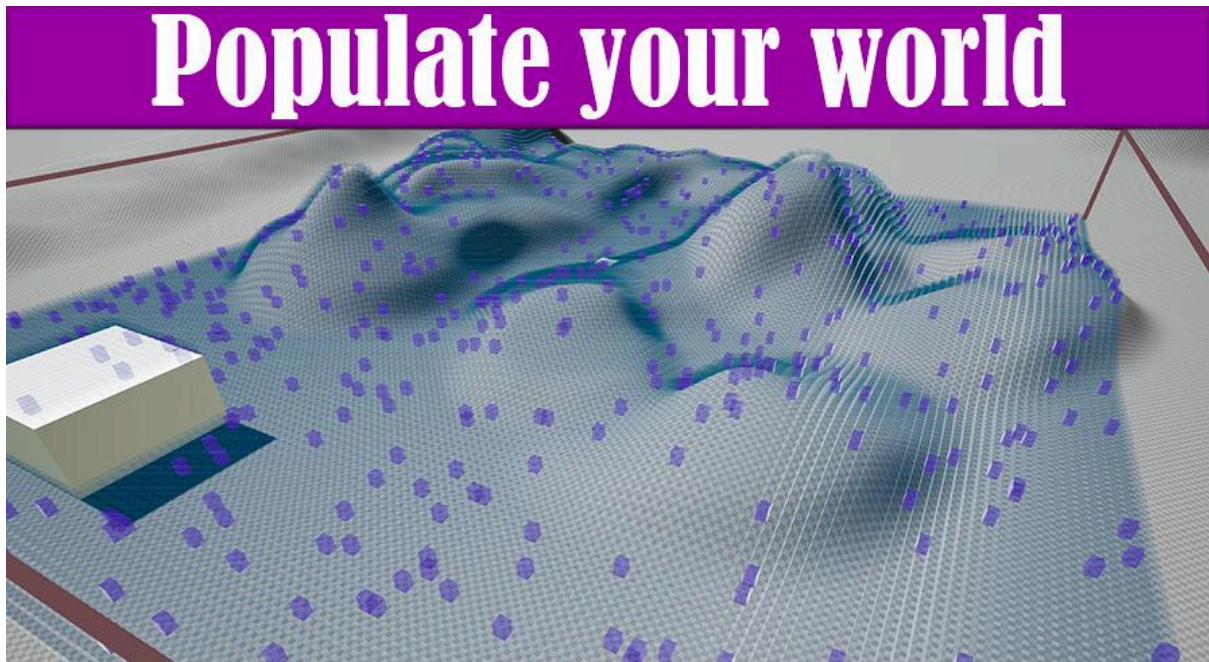# Population Control - Lite

Population Control is a universal NPC spawner that will completely solve all issues with the NPC spawning in the world. It can work both on small sizes, such as rooms in houses, and on huge spaces. The system keeps track of each spawned NPC and if he was destroyed then she can spawn him again after the right time. The system is very easy to use. The system can work together with World Director NPC and World Director PRO, this completely closes the issue of spawn, respawn and optimization of the NPC. Together with World Director NPC or PRO, the whole world is populated in a few mouse clicks and it will always be alive and optimized.

The following features are supported:
1. The calculation of the spawn occurs directly in the editor, you can see where and how much the NPC will spawn.
2. You can spawn flying NPCs.
3. Can be spawned taking into account NavMesh.
4. You can specify blocking zones for spawn.
5. Prohibit spawn if the player is close to the spawn point (That would not be spawn in front of the player)

6. The size of the spawn box point can be changed (the spawn inside the box point is random).
7. You can configure each NPC separately, the respawn time, the number of NPCs, the distance to the spawn (for example, small NPCs spawn when you get closer, and large NPCs can be spawned with large distances).
8. Ability to despawn those who are too far away.
9. Search for another spawn point if a collision occurs.
10. You can select a list of supported collisions.
11. Support for multiplayer.

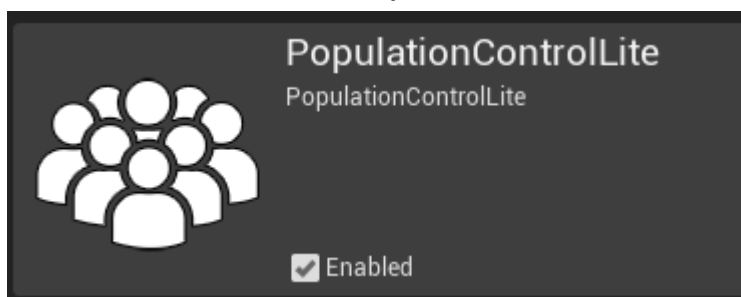**With multiplayer. All calculations take place on the server-side!**

Setup

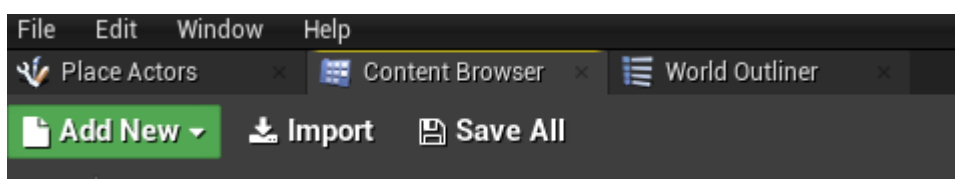1. Install plugin from Epic Store Launcher
2. Open your project
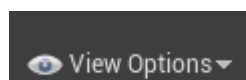
3. In the Edit menu, select Plugins.
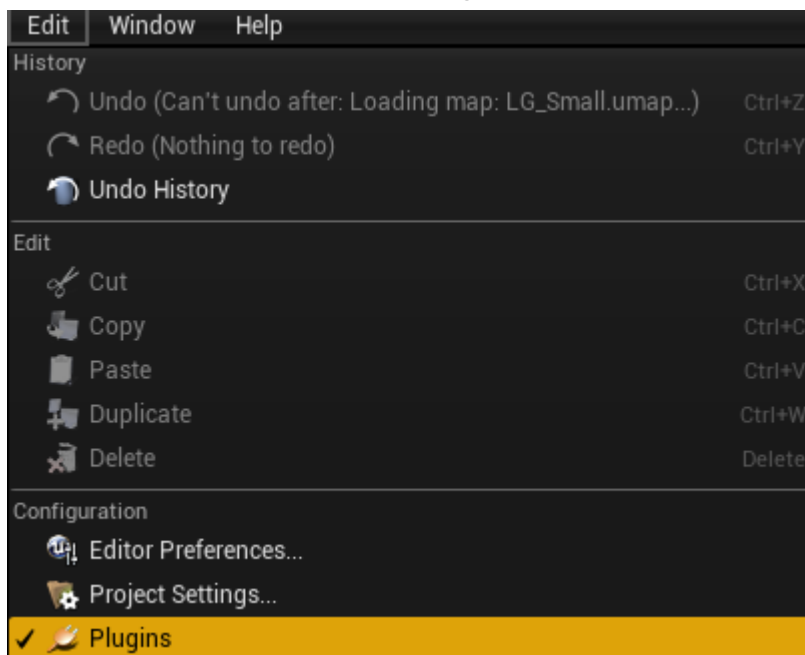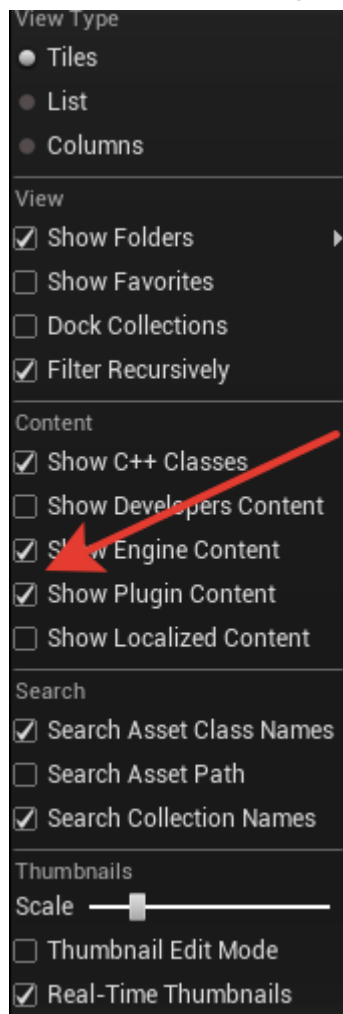

4. Find and enable the PopulationControlLite
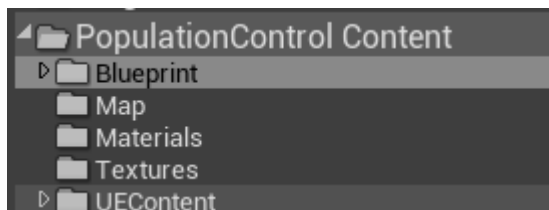

5. Select "Content Browser"

6. Select "View Options"

7. Select "Show Plugin Content" and "Show Engine Content"

8. Go to "PopulationControl Content\Blueprint"

9. Drag and Drop **BP_PopulationControlLiteSpawner** in your scene.

10. Select **BP_PopulationControlLiteSpawner** in the scene and choose the parameters you need.

Spawner Telemetry.

All Box Count - Total number of counted boxes.

Spawn Box Count - Number of spawn boxes. Inside these boxes, when the NPC spawns, a place for spawn will be searched (with a check of the navigation system if Check Nav Mesh For Spawn was selected in the NPC settings).

Npc For Spawn - Number of NPCs for spawn. The sum of all NPCs selected for spawn.

Spawner Status - Shows whether all settings were saved or not. Be sure to save the settings, otherwise they will only work in the editor. And they will not work if you build the game.

Cache Status - Shows whether the cache has been cleared. Clear the cache before building the project, this will reduce the amount of data from Population Control and increase the speed of saving your location.
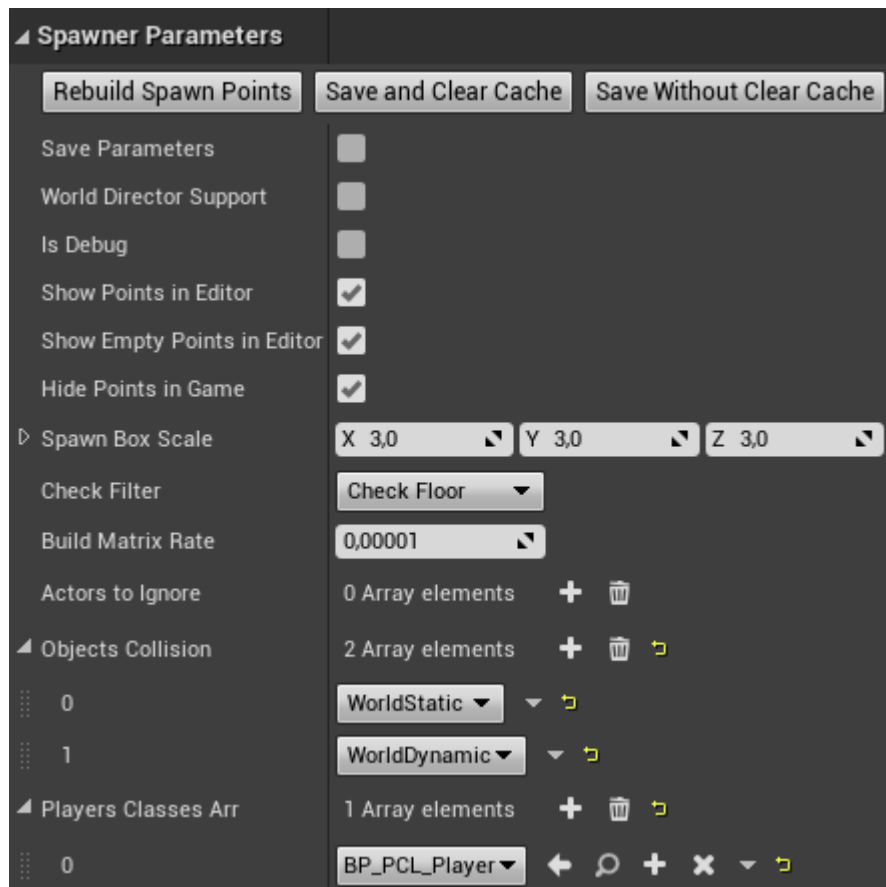
Spawner Parameters.

Rebuild Spawn Points Button - Click if you want to randomize the spawn points again. Always click this button if you have changed at least any parameters after saving Population Control.

Save and Clear Cache Button - After you have made all the changes, click this button to save. Note that if you clear the cache, this will reduce the amount of data when saving, but you will no longer be able to view spawn points (Show Points in Editor). This is done for optimization. To see spawn points again, turn on Show Points in the Editor and click Rebuild Spawn Points.

Save without Clear Cache Button - After you have made all the changes, click this button to save. This will not clear the instances showing spawn locations. Such saving is more suitable while you are developing your project.

Save Parameters - Enable this if you have finished configuring the Population Control System. We recommend using the **Save and Clear Cache Button** or **Save without Clear Cache Button** - these methods work faster.

World Director Support - Enable it only if you are going to use it together with the World Director NPC or World Director PRO system.

Is Debug - Enable it for the debug. the necessary information will appear in the upper-left corner of the screen.

Show Points in Editor - Show/Hide all points in Editor.

Show Empty Points in Editor - Show/Hide empty points in Editor.

Hide Points in Game - Show/Hide all points in Game. (for debug)

Spawn Box Scale - Scale for Spawn Box. The NPC will spawn at a random point in the box.

Check Filter - 1. **Horizontal** - without check floor (suitable for flying NPCs) 2. **Check Floor** - Check the surface inside the main box for a collision. 3. **Check Floor** + NavMesh - The calculation of spawn points will be only where there is a NavMesh.

Build Matrix Rate - The speed of building the grid for spawn.

Actors to Ignore - Actors excluded for the construction of the spawn matrix of the NPC.

Object Collision - The type of collision on which to build a spawn grid.

Players Classes Arr - Specify the character class used by the player.

NPC Parameters.

Add your NPC to NPC Parameters Arr

Class NPC - The class of your NPC.

Min and Max Spawn NPC - The minimum and maximum number of NPCs for randomness.

Correct Spawn UP - Sets the height adjustment of the spawn.

Is Can be Respawn - If you want the system to track NPCs and respawn after their destroyed.

Time to Respawn - Time for respawn. Starts its countdown if the NPC was destroyed.

Time to Respawn offset - The randomness of the respawn time.

Check Floor for Spawn - Turn it on if you need a floor check. Checks the floor before spawn.

Check NavMesh for Spawn - Spawn only if the Nav Meesh is active in the spawn location.

Actor Collision Handling Method - Specify the verification method for spawning the NPC.

Distance to Spawn - The distance between the player and the NPC spawn point or the last memorized NPC spawn position in order for the Population Control system to start spawning NPCs.

**Destroy Far Actors** - Turn it on to destroy NPCs that are far away from the player.

Distance to Destroy - If the distance to the player from the NPC is greater, the NPC is destroyed.

Only XY Distance Check - Calculate the distance without taking into account the height. (Suitable for flying NPCs.)

Prohibit Spawn Near Player - Prohibit spawn if the player is close to the spawn point (That would not be spawn in front of the player)

No Spawn Distance - The distance closer to which NPCs will not respawn.

11. To add exclusion zones, add the actor **BP_BlockZonePCL** to the scene and don't forget to click **Rebuild Spawn Points Button**
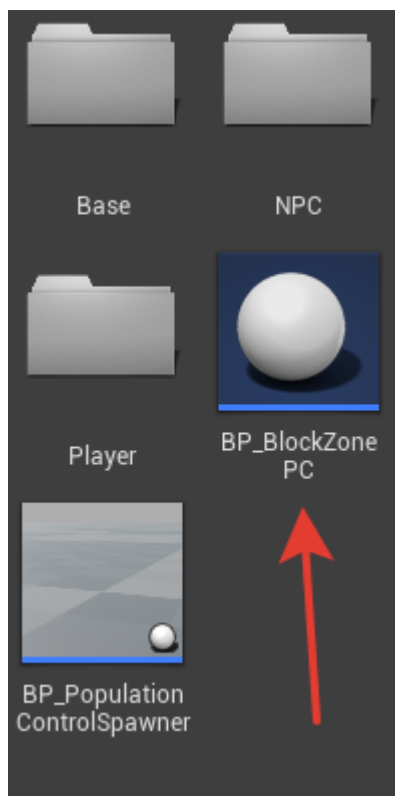
12. Enable **Save Parameters** if you have finished configuring the Population Control System. We recommend using the **Save and Clear Cache Button** or **Save without Clear Cache Button** - these methods work faster.
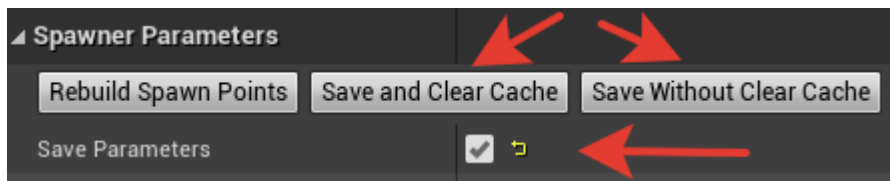
Everything is ready!

To play on the demo map "**PopulationCtrlDemo**", you must configure the character control buttons. These are the standard buttons for the Third Person Template. You can download file **DefaultInput.ini** and put to **"Your_Project\Config\"**

[**Population Control + World Director NPC/PRO documentation**](#)