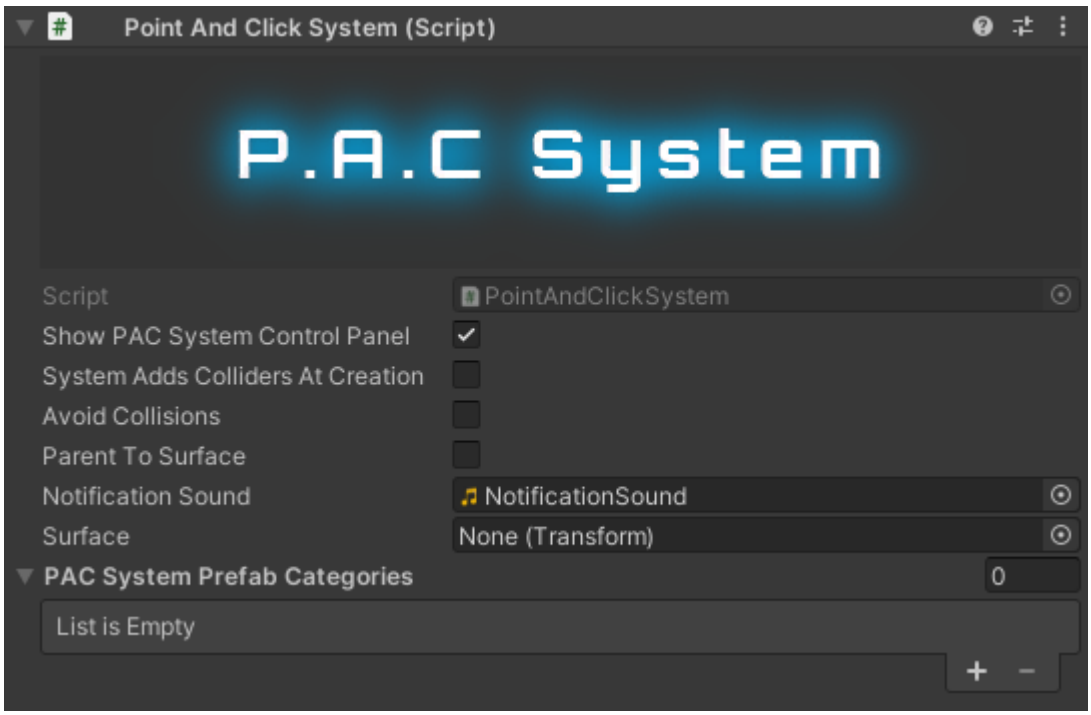
Orbitami Entertainment

PAC System Free Edition Overview

In this guide we will cover an overview for the PAC System Free Edition. The PAC System is a point and click style prefab placement system designed to assist developers in building 3D scenes for their Unity application or game. It's an easy to use and fast placement system to save the developer a lot of time when it comes to scene object placement, as well as, referencing the objects placed in the scene. The PAC System has been designed with some backend AI to assist the developer when using the system. The backend AI can prevent certain key naming conventions from being mispelled, or sometimes even provide an auto resolution to help make integration into your project and workflow as seamless as possible.

PAC System Setup and Implementation (First Steps)

Once you have purchased and imported the PAC System into your Unity project, the first thing to do is navigate to "**Assets/Orbitami Entertainment/PAC System/Add To Scene**". The PAC System will add itself to the scene. Locate the option "**Show PAC System Control Panel**" in the inspector and check the box to display the PAC System Control Panel.



System Adds Colliders At Creation: This feature will create a collider for your prefab if the prefab doesn't already have one. If your prefab has a mesh filter component then the system will add a mesh collider, otherwise the system will add a box collider to the prefab.

Avoid Collisions: This feature prevents objects that the PAC System creates from colliding with each other during creation. This includes objects in the scene that already exist that were created with the PAC System, as well as objects of the same type during creation.

Parent to Surface: This feature will parent the objects to the referenced surface. The surface reference is under the notification reference.

Notification Sound: The system will automatically reference this audio clip. Included with the asset there is an audio file located at path: **Assets/PACSystem/Audio/NotificationSound.wav**.

If this file is removed the system will throw an error. You can re-import the asset to re-import the audio clip file.However, if you want to use a custom audio clip file simply drag the audio clip file you wish to use into the inspector for the "Notification Sound" reference. This sound lets the developer know to view the current system notification window in regards to when an error happens within the PAC System.

Surface:

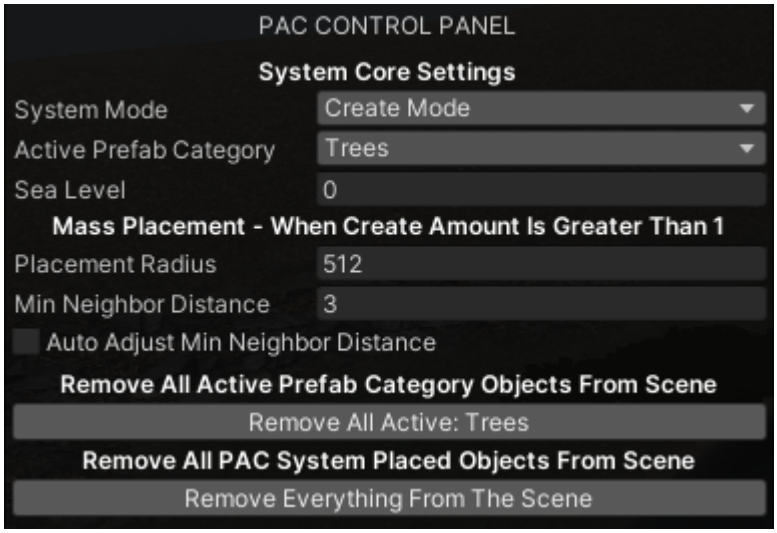
The surface reference is needed when using the option parent to surface, or avoid collisions. If a surface is not assigned when using these options the system will throw an error and notify you.

PAC System Prefab Categories Array:

This is the array where prefabs to be used with the system are defined.

PAC System Settings and Features

Let's take a look at the different settings and features of the PAC System Free Edition control panel.



System Mode: This setting determines whether placing objects is permitted or not. To place objects in the scene the system requires the developer to hold *shift and press right click* while the mouse cursor is located in the scene view. Since this key assignment is similar to what is used by Unity for scene control, the system will need the "System Mode" set to "Create Mode" before the system is allowed to spawn any items.

Active Prefab Category: This is where you select which prefab type you want to use when placing objects in the scene. If there aren't any prefabs assigned in the inspector for the PAC System then the system will display " No System Prefabs Assigned" for this setting.

Sea Level: The sea level setting is very important, and by default it is set to 0. This is what ensures that the placement of objects in the scene is what you intend via the prefab type settings. Example: The height mode, and sea level mode within the prefab settings. **These settings are visible once there has been prefabs assigned in the inspector for the "PAC System Prefab Categories"**.

Mass Placement Settings:

Mass placement is automatically detected, and only used by the PAC System when the spawn amount for an item is greater than 1.

Placement Radius: This value is what the PAC System uses when mass placement is detected. The PAC System then will then use the point in which the developer clicked in world space and apply the placement radius to this point on the X and Z axis thus generating a field range of creation. For example, if the placement radius is set to 100, the PAC System will go 100 units from the point clicked on the X and Z axes in each direction. The result will be a creation field that is 200 by 200 with the point the developer clicked in the center. The PAC System will use this field range when randomly picking a position in world space.

Minimum Neighbor Distance: After the system has picked a random position from the creation field it will use the defined "Min Neighbor Distance" setting to determine if position that was randomly selected by the PAC System is too close to an already existing object placed by the PAC System in the scene. If the object is determined to be too close then the system will prevent the object from being instantiated. The "Min Neighbor Distance" is not a static value applied to each object when mass placing. It only makes sure that the object created is not closer to its neighbor than the defined "Min Neighbor Distance" amount. For example: A value of 0.1 will not place each object 0.1 units away from each other. It will just validate that the object is not less than 0.1 units away from its neighbor. So keep in mind that if the developer has assigned a create amount for an object of 1000, the final result of the creation may only yield 500 objects due to the other 500 objects being too close to a neighbor. This is to prevent object clipping and unwanted effects. A specific grid placement system will be implemented in the PAC System Professional Edition.

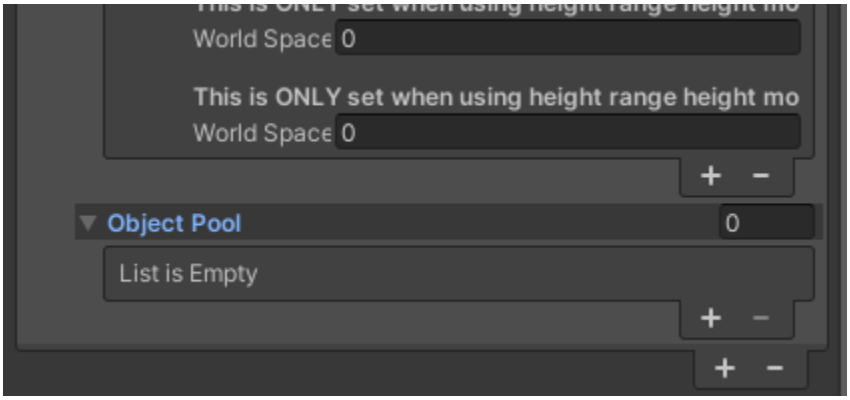
Auto Adjust Min Neighbor Distance: This is a feature, once checked true, will automatically adjust the "Min Neighbor Distance" to be 5% of the "Placement Radius".

Remove All Active Button: This feature will remove all of the objects in the scene for the selected active prefab category.

Remove Everything From The Scene Button: This feature will remove EVERYTHING from the scene that has been placed by the PAC System. You will be prompted to continue before removing everything from the scene.

Object Pools

Each prefab category has an object pool. When placing objects in the scene using the PAC System, the objects will be placed in their corresponding object pool for referencing at run time. **The object pools are hidden by default to increase system performance for Unity**. When arrays are above 5k elements, Unity can take a while for the UI redraw event.



That concludes the PAC System Free Edition overview. Please visit the Orbitami Entertainment YouTube channel for more information and help guide videos. Much Love, Orbitami Entertainment.

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