

# **Prefab Brush+ 1.3.X Documentation**

Thank you for purchasing Prefab Brush+, this documentation should get you started in using the tool to populate your environments.

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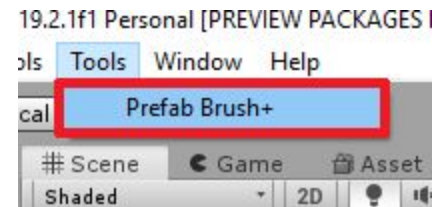
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## Quick Start

To open the Prefab Brush+ go to the menu bar found at the top of your Unity editor and click on the 'Tools' menu.

Once the drop down menu has opened go to 'Tools>Prefab Brush+' and click to open the Prefab Brush window.



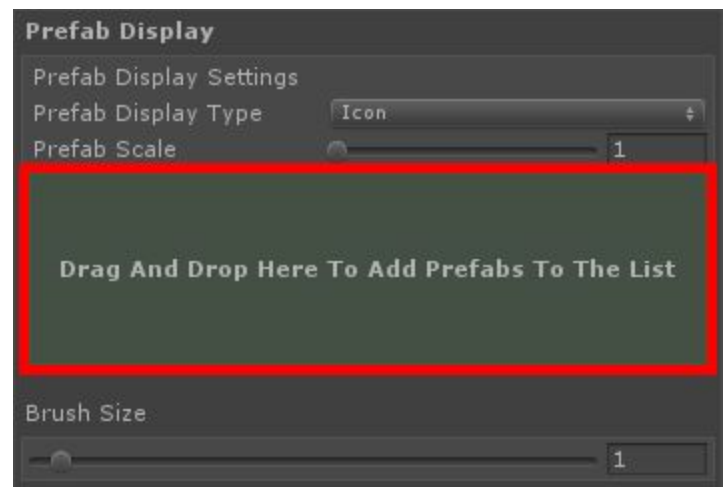
Next dock the window to your preferred position in the editor. Click on the tab in the top left of the Prefab Brush window and drag it around the editor to dock.

The Prefab Brush was designed to be docked next to or in the same space as the Inspector window.

Once you have your window docked you can begin to set up your brush. Make sure you have the 'Prefab Paint Brush' tab selected (It will be green if selected) and then find the prefabs you wish to paint in the 'Project' window.

To add prefabs to the brush simply drag one or more prefabs from the 'Project' window into the green box that says 'Drag And Drop Here To Add Prefabs To The List'. Once you have dropped them into the box it should now display those prefabs as icons.

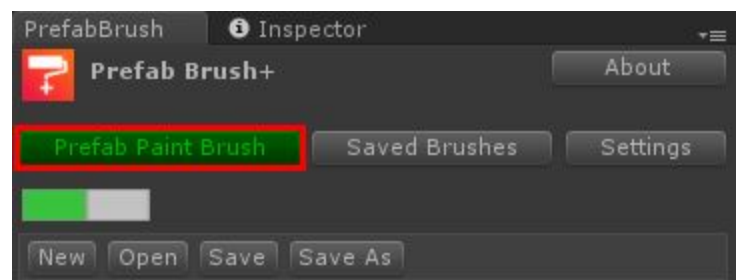
Now you should be able to paint the prefabs into your scene. You just need to make sure the mesh you are trying to paint on has a collider. If your having issues with the brush not painting or painted objects stacking; first double check there are colliders on the surface your painting on then look into the 'Layer To Brush' and 'Tag To Brush' settings.



## Using Tabs

The Prefab Brush+ has several windows that you navigate through using the tabs at the top of the window. As of 1.3.0 these tabs are 'Prefab Paint Brush', 'Saved Brushes', 'Settings' and 'About'.

To open the tabs simply click on them, the selected tab will then highlight green whilst the rest of them will be grey.



## Brush Settings

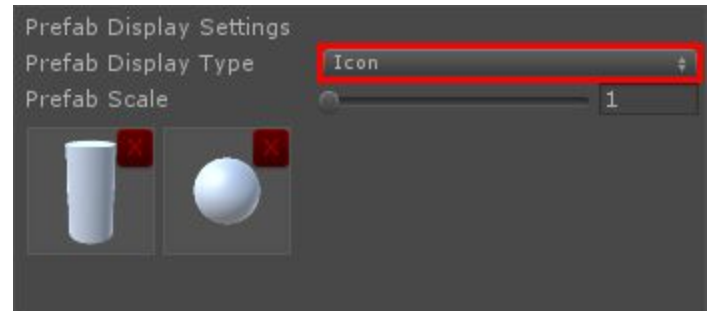
In the 'Prefab Paint Brush' tab there are two sections, the 'Brush settings' section and the 'Object Settings' section.

The Brush settings section holds all the interfaces for changing how the brush works. This includes the prefabs and the filters for deciding when and where they get brushed.

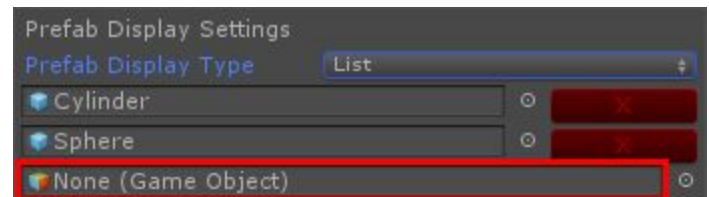
### Prefab Display

The 'Prefab Display' shows the prefabs that are loaded into the active brush. This can be displayed in two different ways, icon display and list display. You can switch between these two views via the drop down menu labeled 'Prefab Display Type'

To add prefabs to the brush when in icon display mode just drag one or more prefabs from the 'Project' window to the green box that says 'Drag And Drop Here To Add Prefabs To The List'. If you want to then remove the prefabs click on the red X button in the top right of the icon.



To add or replace prefabs in the list display mode, drag a prefab from the 'Project' window to the empty GameObject field or to replace an existing prefab drag over the prefabs field. To remove a prefab from the list click the red X button to the right of the field.



If using the icon display you will see a slider below the display type menu. This is used to change the display size of the icons in the window above.

### Paint Type

There are two paint types available in Unity 2017 and above, 'Surface' and 'Physics'.



- The 'Surface' type will paint objects directly onto a surface using the parameters defined.
- The 'Physics' type on the other hand will spawn the objects at the defined height, attach a rigidbody to them and simulate physics to place them.
- The 'Single' type will change the PrefabBrush to only place prefabs on a single click. If you keep the left mouse button held when using 'Single' you can also modify the prefab. You can scale, rotate and move the prefab by changing the Tools options found in the top right of Unity (Hotkeys: W:Move E:Rotate R:Scale).

### Ignore Options

As of 1.3.9 Prefab Brush+ now has two 'Ignore Options'. These allow you to ignore certain types of colliders in the scene on a raycasting level.

- The 'Ignore Trigger Colliders' option tells the brush to ignore any triggers and paint on the next available surface.
- The 'Ignore Prefabs from Brush' options tell the brush to ignore the surface of any prefabs that match the prefabs in the loaded brush. The brush will then paint on the next available surface, this is a good alternative to using tags and layers to stop painting on recently painted objects.



### Brush Size

The 'Brush Size' slider is used to change the size of the brush area in the scene.

### Paint Delta Distance

The 'Paint Delta Distance' slider is used to determine how far the brush strokes have to travel before a new prefab is spawned. Use this to choose how densely the prefabs are painted.

### Layer To Brush

'Layer To Brush' is a filter, filters are rules that have to come back as true for the brush to run. In this case if the surface you are trying to paint onto has any of the layers defined in the mask, the brush will allow prefabs to be painted onto that surface.

To enable 'Layer To Brush' tick the toggle box, then define which layers you want to check for in the layer mask that is now visible.



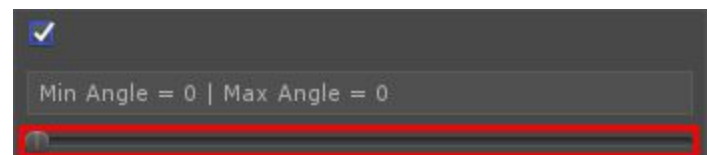
### Tag To Brush

'Tag To Brush' is a filter, filters are rules that have to come back as true for the brush to run. In this case if the surface that you are trying to paint onto has any of the tags defined in the mask, the brush will allow prefabs to be painted onto that surface.

To enable 'Tag To Brush' tick the toggle box, then define which tags you want to check for in the tag mask that is now visible.

### Slope Angle To Brush

Like the tag and layer to brush options 'Slope Angle To Brush' is also a filter. To enable 'Slope Angle To Brush' tick the toggle box. You should now see a min max slider. Use this to define the range of angles that you want to paint on. By default it is set to min 0 and max 0, this will force the brush to only paint on perfectly flat surfaces.



## **Object Settings**

### Offset Center Of Prefab

The 'Offset Center Of Prefab' is used to offset the center point of the prefabs that are painted into the scene. The Vector3 defined in the field is added onto the initial position in world space.



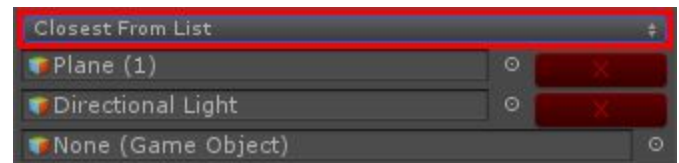
### Offset Rotation Of Prefab

The 'Offset Rotation Of Prefab' is the same as the 'Offset Center Of Prefab' but instead it changes the rotation of the painted prefab using the Vector3 defined in the field.

### Brushed Objects Parent Settings

In order to keep the scene nice and tidy, Prefab Brush+ allows you to define a gameobject to be used as a root to all of the painted prefabs.

To select a parenting setting click on the drop down menu and select the type of parent you wish to use.

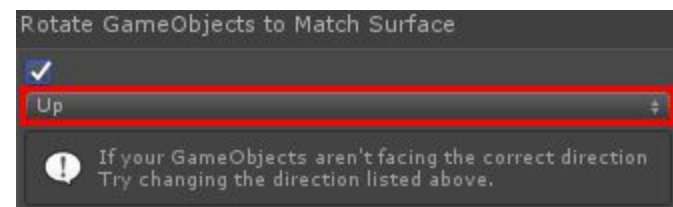


- **Surface** will set the parent to the surface that the prefab is painted on.
- **Single Parent** will set the object defined in the field now visible as the parent for all prefabs painted.
- **Closest From List** will go through all of the parent objects defined in the list field now visible. It will then find the one closest to the painted prefab and use that as the parent.
- **Round Robin** will go through and evenly distribute the painted prefabs to the parent objects defined in the list field.

### Rotate GameObject to Match Surface

'Rotate GameObject to Match Surface' when enabled will rotate the painted prefab to match the surface normal that it was painted on.

To enable it, tick the toggle box, then select the local axis of the prefab that you want to be the local "up" direction.

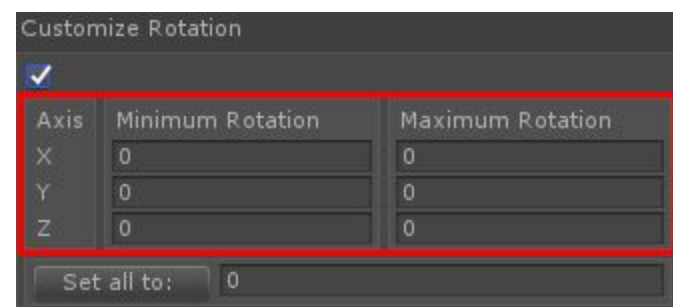


### Customize Rotation

'Customize Rotation' will randomly rotate the painted prefab along its axis using the range that you define.

To enable 'Customize Rotation' tick the toggle box and then define the range that you want the prefab to rotate within.

You can use the 'Set all to' button to set all the values to the one defined in the field next to the button.



### Customize Scale

'Customize Scale' will randomly scale the prefab that you paint. To enable this feature go down to the 'Customize Scale' section and click on the drop down box that says 'none'. You should see a few options for how you can scale the prefab...

- **Single Value** This option will take a min and max scale value and create a single ratio for all axis to be modified with.

- **Multiple Axis** Using multi axis will give you control over all axis' scale with a min and max value. This is useful for features such as ranging tree heights.

Select one and your painted prefabs should start to scale based on the settings you set.

In addition to these options there are also 2 options for how the scale will be applied to the prefab...

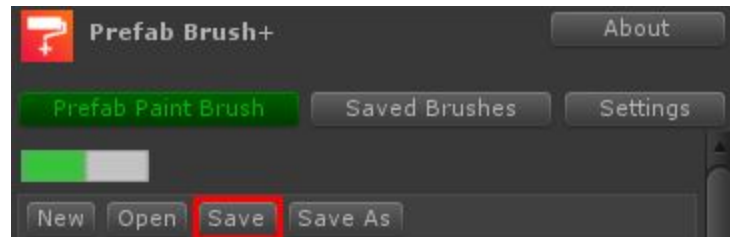
- **Set** This option will set the scale that prefab brush generated to the current scale of the prefab regardless to what the prefabs scale was.
- **Multiply** This option will multiply the original prefab scale by the new scale values the prefab brush generated.

## Saving And Loading

Your brushes can be saved and loaded to scriptable objects that are stored within the 'Project' folder. This means you can edit them outside of the Prefab Brush+ window and also commit to version control.

### Save

To save your current brush data click the 'Save' button found at the top of the 'Prefab Paint Brush' or 'Saved Brushes' tabs. If the active brush data is not part of an existing saved file the 'Save' button will ask you to save the data as a new save file. Otherwise the brush will just save over the previous data

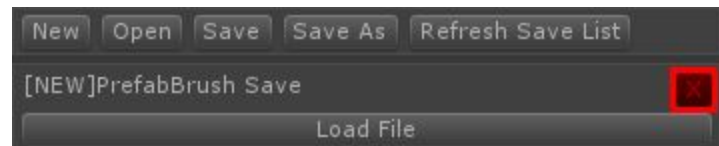


### Open

To open a existing save click on the 'Open' button or go to the 'Saved Brushes' tab. You should see a list of save files with a 'Load File' button underneath. If the 'Load File' button is highlighted green means that saved file is already loaded. If you click the 'Load File' button it will load the file.

### Delete

To delete a save file go to the 'Saved Brushes' tab and click the red X found in the top right of the saved file item.

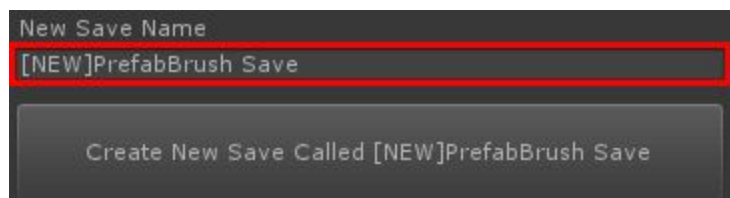


### Save As

You can use the 'Save As' button to save the active brush data to a new file.

### New

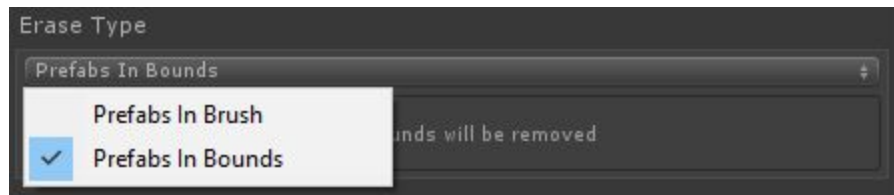
If you want to make a fresh save file then click the 'New' button, this will then prompt you to give the file a name and save it.



If you edit the scriptable objects directly then make sure you click the 'Refresh Save List' button to update the UI to the changes that you made.

## Erase Brush

The erase brush is a tool used to remove prefabs in the scene. Be careful when using this tool, make sure you have read through all the settings and use the appropriate ones to ensure no loss of work.



### Erase Detection Types

#### 1. Collision

Collision based detection uses the physics engine to detect when an object is within the radius of the brush stroke. As a result any object you wish to erase needs to have a collider of some sort attached to it. For objects such as grass (that might not have colliders) look at using the distance based detection.

#### 2. Distance

Distance based detection loops through all of the objects in the hierarchy and finds which objects are within the radius of the erase brush. This works for all active objects in the scene. Be careful though as objects such as the cameras, reflection probes, game managers and any other kind of non environmental object could be erased. I suggest using the 'Prefabs In Bounds' erase type as well as tag/layers checks when possible to avoid this.

### Erase Types

#### 1. Prefabs In Brush

The first one is 'Prefabs In Brush', this setting will only remove prefabs that are defined in the paint list on the active save file.

**As of version 1.3.8 there is now an option called 'Only erase prefabs selected in brush'. Setting this to true will only allow Prefab Brush to remove the prefabs that are both listed and selected in the paint section.**

#### 2. Prefabs In Bounds

The second setting is 'Prefabs In Bounds', this setting will remove any prefab that fully fits in the bounds on the remove brush. Something to keep in mind is that when using this setting the brush bounds are square rather than circle.

### Eraser size

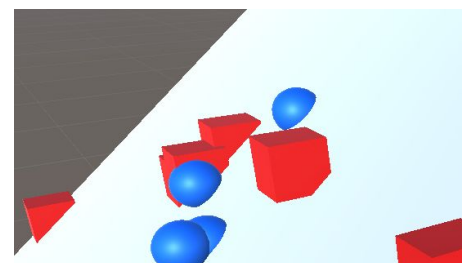
This acts the same as the 'Brush Size' slider found in the 'Brush Settings'.

### Tag To Erase

'Tag To Erase' is mostly similar to 'Tag To Brush' except instead of checking for the tag on the surface you are painting, it will check the object that you are trying to erase for the tag.

### Layer To Erase

'Layer To Erase' is mostly similar to 'Layer To Brush' except instead of checking for the layer on the surface you are painting, it will check the object that you are trying to erase for the layer.



### Slope Angle To Erase

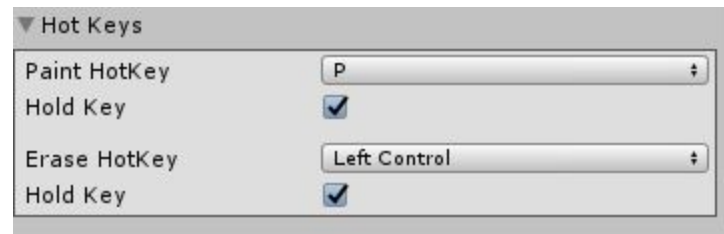
This feature allows you to define an angle which is required for the erase function to happen. This checks the first surface that the erase raycast hits and it's angle, rather than the surface the object is one. As a result if erasing over a small cube that is flat and on a slope with will treat that as a flat surface.

In the example image if you were to have the center of the brush over the white surface with 'Slope Angle To Erase' set to "0" the surrounding objects will not be erased. If the center of the brush was over the cube with the same settings then the surrounding objects will be erased.

## HotKeys

You can configure hotkeys to be used to swap what type of brush you are using. As of this version you can only swap between the 'Prefab Paint Brush' and 'Prefab Erase Brush'.

At the bottom of the 'Prefab Paint Brush' tab you will see a 'Hot Keys' foldout. Here you can find the keycodes for the two hotkeys and an option to only swap when the key is held. Please remember that Unity Editor blocks the use of some of these keycodes, so if they seem unresponsive then please try a different keycode.



## Settings

The settings tab will show any options that do not get saved in the brush file. It also shows debug information that are used to help troubleshoot issues with Prefab Brush+.