Dynamic Loading Kit
First Time Setup

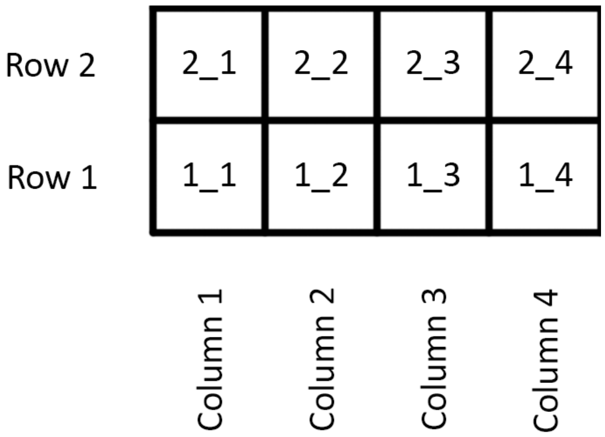
By Kyle Gillen
(Last Updated 9/15/16)

Create Object Group - General

- Start by creating your first object group.
- This object group is the collection of objects that will serve as the foundation of your world.
- It is usually a group of sliced Terrain, but any Game Object is allowed, including empty game objects and meshes.
- Each object in the group must follow correct naming convention, as specified by the Naming Convention asset you are using. If no naming convention asset is used, the default naming convention should be followed, which is:
  - GroupName_Row_Column (2D Worlds such as Unity Terrains)
  - GroupName_Layer_Row_Column (3D Worlds)
  - Every object in the group will have the same "GroupName," which can be a combination of letters, numbers, symbols or spaces.
  - The GroupName must be followed by an underscore (_), and then Row_Column (2D World) or Layer_Row_Column (3D World).
- The Terrain Slicing Tool will yield an object group that follows this naming convention. For more information on the Naming Convention asset, please see the Naming_Convention.pdf quick guide.

Create Object Group - Naming

- The Row, Column, and Layer is a number that denotes the object's index in the group. The first object (the one with the smallest x, z, and y position) will have a row, column, and layer value of either 0 or 1 (or just a row and column value of 0 or 1 for 2D worlds).
- Assuming a GroupName of "World" the objects in the group to the right would have the following names:
  - World_1_1, World_1_2, World_1_3, World_1_4, World_2_1, World_2_2, World_2_3, and World_2_4.



Row 2	2_1	2_2	2_3	2_4
Row 1	1_1	1_2	1_3	1_4
	Column 1	Column 2	Column 3	Column 4

Special Note: No leading 0's are allowed before the row, column, or layer number!

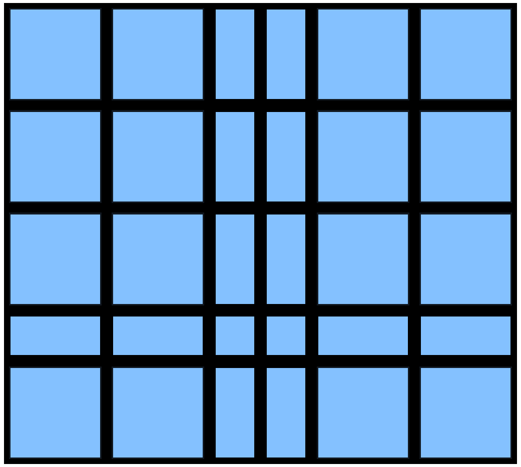
Object Hierarchy

- Each object in your group can have any number of children, grandchildren, great-grandchildren, etc.
- Only the top level object needs to follow the naming convention you are using.
- This object is known as the “Root Object” (sometimes “Cell Object”).
- The hierarchies of each root object within the same group need not be the same.
- In general, the performance overhead of loading/unloading each root object increases as the number of children, grandchildren, etc. increases. This can be mitigated with some advanced components and techniques, which are discussed in the full guide.

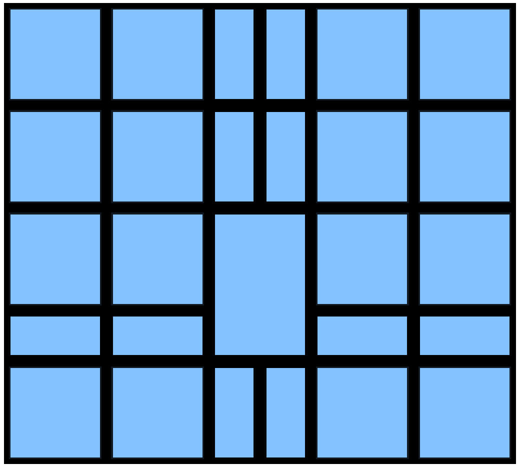
Group Dimensions

- The Dynamic Loading Kit works on a grid based system.
- Objects in the same layer must all have the same height, objects in the same row must all have the same length, and objects in the same column must all have the same width.
- To be clear, an object group can have layers of differing heights, rows of differing lengths, and columns of differing widths.

Valid Group

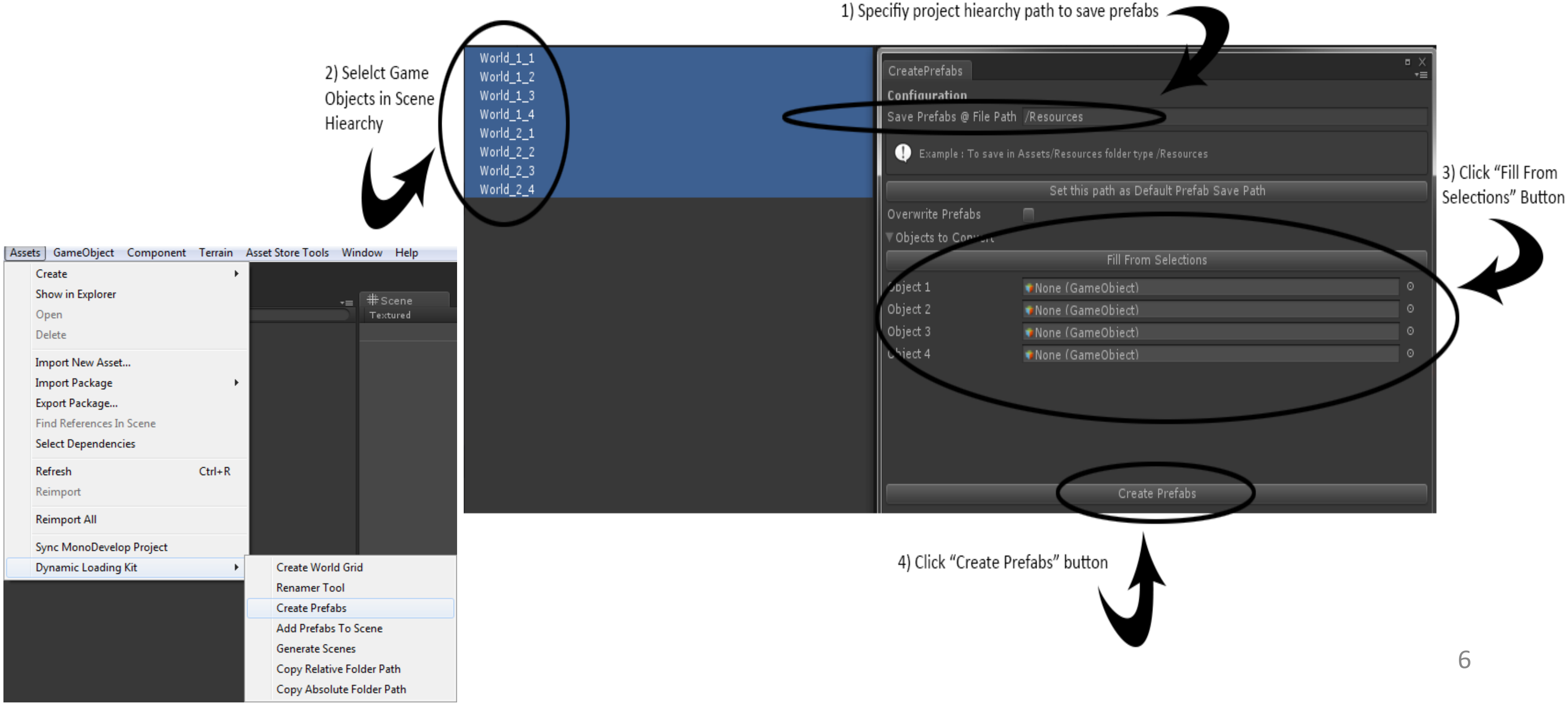


Invalid Group



Create Prefabs

- After creating your object group, you should create prefabs for your object group.
  - The easiest way is to use the Create Prefabs tool, found under Assets -> Dynamic Loading Kit -> Create Prefabs



1) Specifiy project hiearchy path to save prefabs

2) Selelct Game Objects in Scene Hiearchy

3) Click "Fill From Selections" Button

4) Click "Create Prefabs" button

Save Prefabs @ File Path /Resources

Example : To save in Assets/Resources folder type /Resources

Overwrite Prefabs □

Object 1 None (GameObject)
Object 2 None (GameObject)
Object 3 None (GameObject)
Object 4 None (GameObject)

Scenes – Why Bother?

- Required when using Asynchronous Scene Loading (Unity 4 Pro or Unity 5 Pro/Personal only) or non Asynchronous Scene Loading.
- Either scene loading technique can be used to avoid out of memory issues when building your project.
- Asynchronous Loading (via the Async Scene Loader component) has the lowest performance overhead. If you're using Unity 5, there is no reason NOT to use this method.
- If using Unity 4 Indie, try the Prefab Loader component first (uses the Instantiate method). Only switch to the regular Scene Loader component (which using non Asynchronous Scene Loading) if you experience out of memory issues.

Scenes – Fixed or Dynamic?

- Before creating your scenes, you should determine whether your scenes are fixed/static or dynamic.
- A fixed/static scene is one where the root object remains in it's default position after being loaded.
- To determine this, ask yourself the following questions:
  - Will I be using the scenes to create an endless world?
  - Will I be using the scenes to create an origin centered world?
  - Will I be using the scenes to create multiple worlds with different origins?
- If you answered "yes" to any of those questions, then your scenes are not fixed/static, as they will need to be moved by the Dynamic Loading Kit **after** being loaded.
- Note that this is an all or nothing proposition. It is not possible to have some scenes fixed/static while others are dynamic **within the same group**.

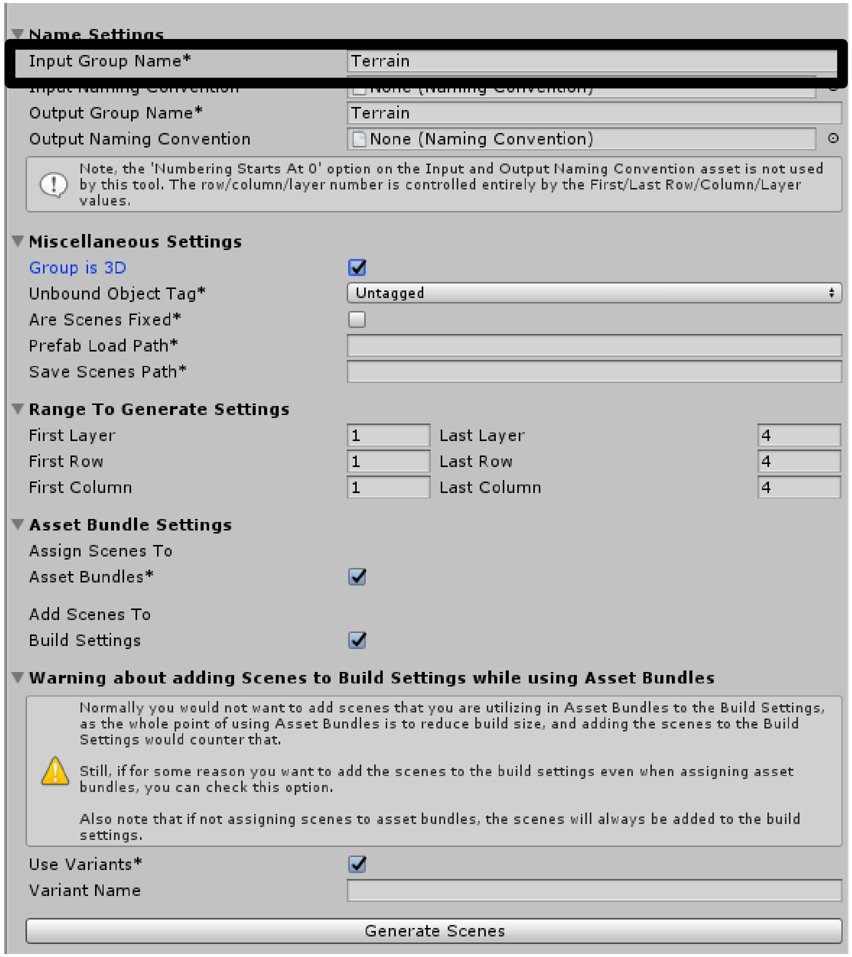
Create Scenes – Scene Generation Tool

- Tool can be used in 90% of cases to create your scenes.
- Requires that your cell object group be in prefab form. All prefabs must be in the same folder!
- Access tool in two ways:
  - In top menu bar: Assets -> Dynamic Loading Kit -> Create Scene Generation File
  - Right click a folder in Project Hierarchy and select Dynamic Loading Kit -> Create Scene Generation File

Note, previously the tool came in the form of a standalone editor window. To remain consistent with the rest of the kit, I converted the tool to a Scriptable Object Asset, which allows for easier saving of settings (among other things).

Create Scenes – Scene Generation Tool

The name common to all prefabs in the cell object group you will use to generate the scenes.



▼ Name Settings

Input Group Name*	Terrain
Input Naming Convention	None (Naming Convention) ⊙
Output Group Name*	Terrain
Output Naming Convention	None (Naming Convention) ⊙

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

▼ Miscellaneous Settings

Group is 3D	☑
Unbound Object Tag*	Untagged
Are Scenes Fixed*	□
Prefab Load Path*	
Save Scenes Path*	

▼ Range To Generate Settings

First Layer	1	Last Layer	4
First Row	1	Last Row	4
First Column	1	Last Column	4

▼ Asset Bundle Settings

Assign Scenes To Asset Bundles*	☑
Add Scenes To Build Settings	☑

▼ Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

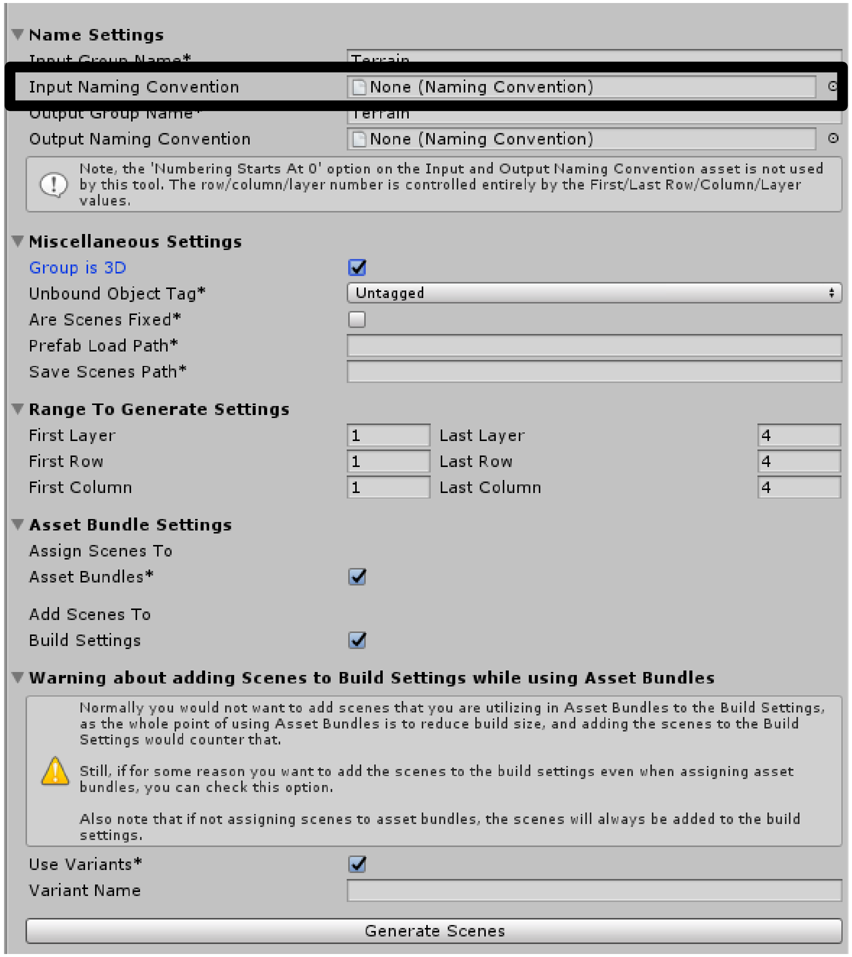
Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

Use Variants*	☑
Variant Name	

Create Scenes – Scene Generation Tool

The naming convention that your prefab group follows. If the group follows the default naming convention, you can leave this field blank.



Name Settings

Input Group Name* Terrain

Input Naming Convention None (Naming Convention)

Output Group Name* Terrain

Output Naming Convention None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

Miscellaneous Settings

Group is 3D ☑

Unbound Object Tag* Untagged

Are Scenes Fixed* □

Prefab Load Path*

Save Scenes Path*

Range To Generate Settings

First Layer	1	Last Layer	4
First Row	1	Last Row	4
First Column	1	Last Column	4

Asset Bundle Settings

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

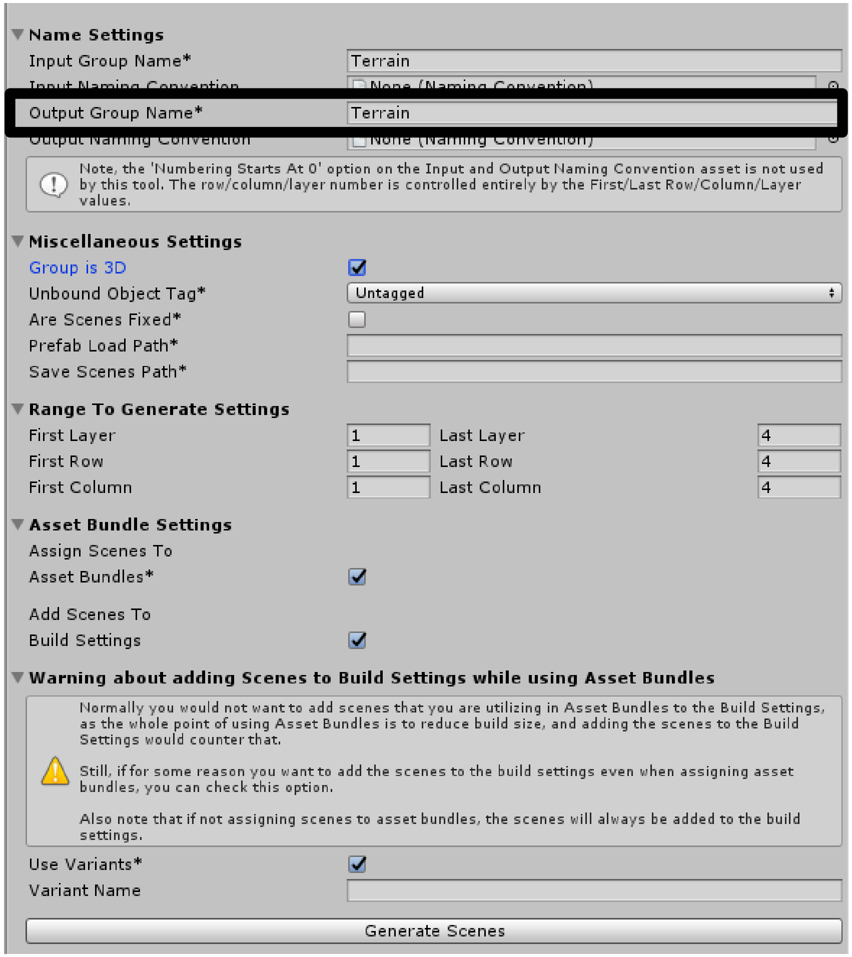
Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

Use Variants* ☑

Variant Name

Create Scenes – Scene Generation Tool

The shared group name to use for the generated scenes (and root objects in each scene).



Name Settings

Input Group Name* Terrain

Input Naming Convention □ None (Naming Convention)

Output Group Name* Terrain

Output Naming Convention □ None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

Miscellaneous Settings

Group is 3D ☑

Unbound Object Tag* Untagged

Are Scenes Fixed* □

Prefab Load Path*

Save Scenes Path*

Range To Generate Settings

First Layer 1 Last Layer 4

First Row 1 Last Row 4

First Column 1 Last Column 4

Asset Bundle Settings

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

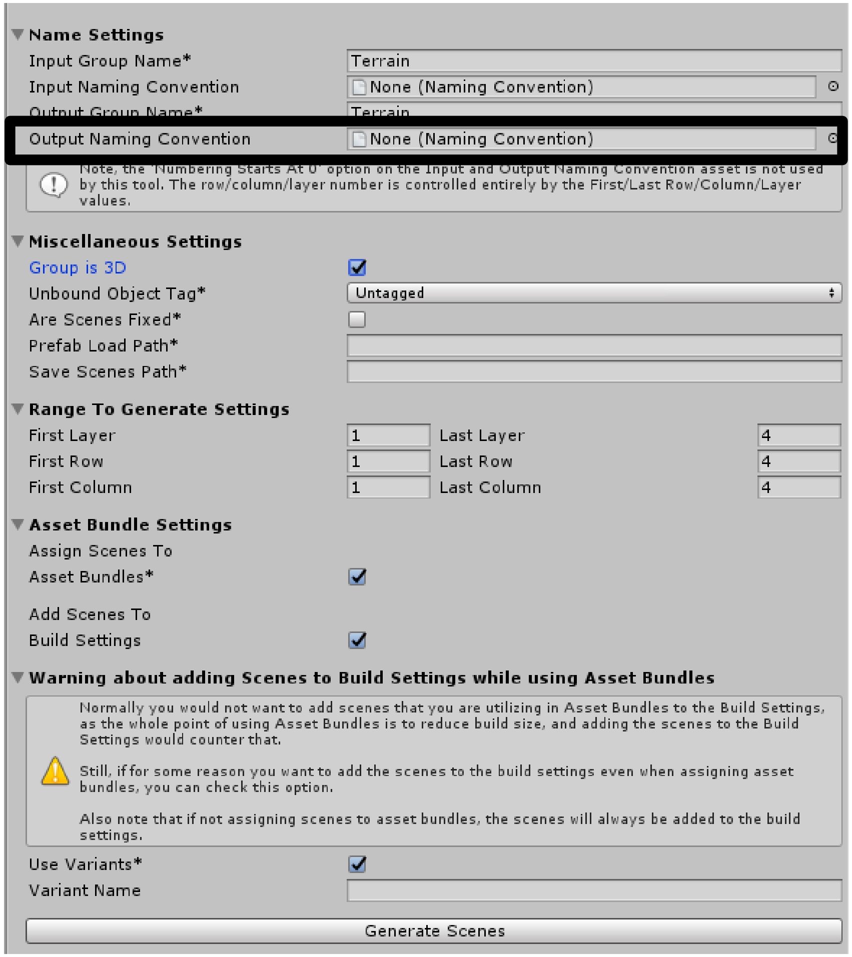
Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

Use Variants* ☑

Variant Name

Create Scenes – Scene Generation Tool

The naming convention to use to generate the scene names and root object names. Leave blank to produce scenes/root objects that follow the default naming convention.



Name Settings

Input Group Name* — Terrain

Input Naming Convention — None (Naming Convention)

Output Group Name* — Terrain

Output Naming Convention — None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

Miscellaneous Settings

Group is 3D ☑

Unbound Object Tag* — Untagged

Are Scenes Fixed* ☐

Prefab Load Path*

Save Scenes Path*

Range To Generate Settings

First Layer	1	Last Layer	4
First Row	1	Last Row	4
First Column	1	Last Column	4

Asset Bundle Settings

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

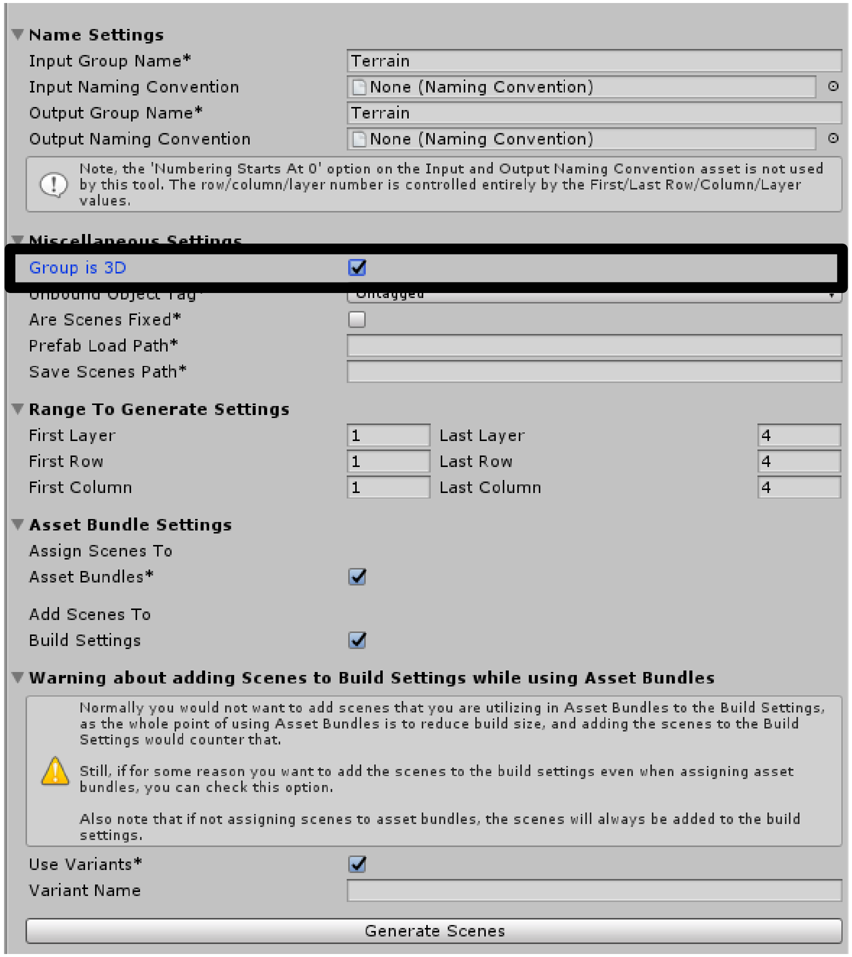
Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

Use Variants* ☑

Variant Name

Create Scenes – Scene Generation Tool

Is the group three dimensional? Most groups (including groups made of Unity Terrains) are two dimensional, so you'll likely need to leave this option **unchecked**.



Name Settings

Input Group Name*: Terrain

Input Naming Convention: None (Naming Convention)

Output Group Name*: Terrain

Output Naming Convention: None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

Miscellaneous Settings

Group is 3D ☑

Unbound Object Tag*: Untagged

Are Scenes Fixed* ☐

Prefab Load Path*:

Save Scenes Path*:

Range To Generate Settings

First Layer	1	Last Layer	4
First Row	1	Last Row	4
First Column	1	Last Column	4

Asset Bundle Settings

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

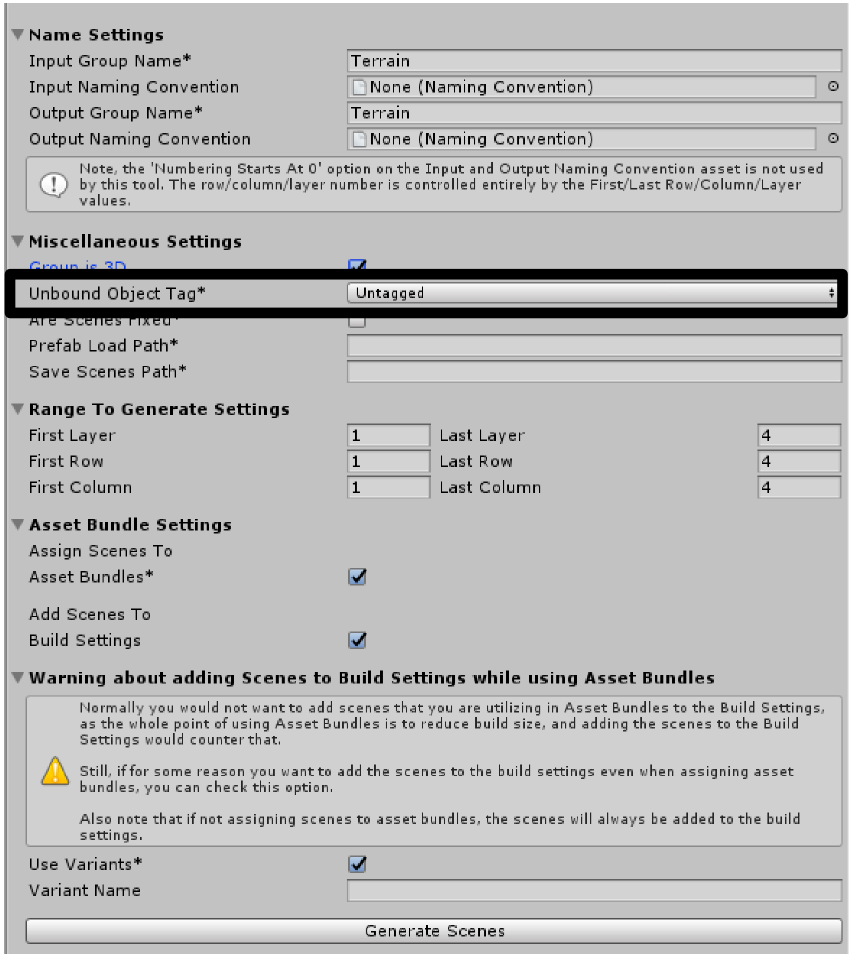
Use Variants* ☑

Variant Name:

Create Scenes – Scene Generation Tool

The Unity Tag that will be assigned to the root object within each scene that is generated by this tool.

It's best to use a tag that won't be used by anything else. You can call the tag whatever you'd like.



▼ Name Settings

Input Group Name*: Terrain

Input Naming Convention: None (Naming Convention)

Output Group Name*: Terrain

Output Naming Convention: None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

▼ Miscellaneous Settings

Group is 3D ☑

Unbound Object Tag*: Untagged

Are Scenes Fixed* □

Prefab Load Path*:

Save Scenes Path*:

▼ Range To Generate Settings

First Layer	1	Last Layer	4
First Row	1	Last Row	4
First Column	1	Last Column	4

▼ Asset Bundle Settings

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

▼ Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

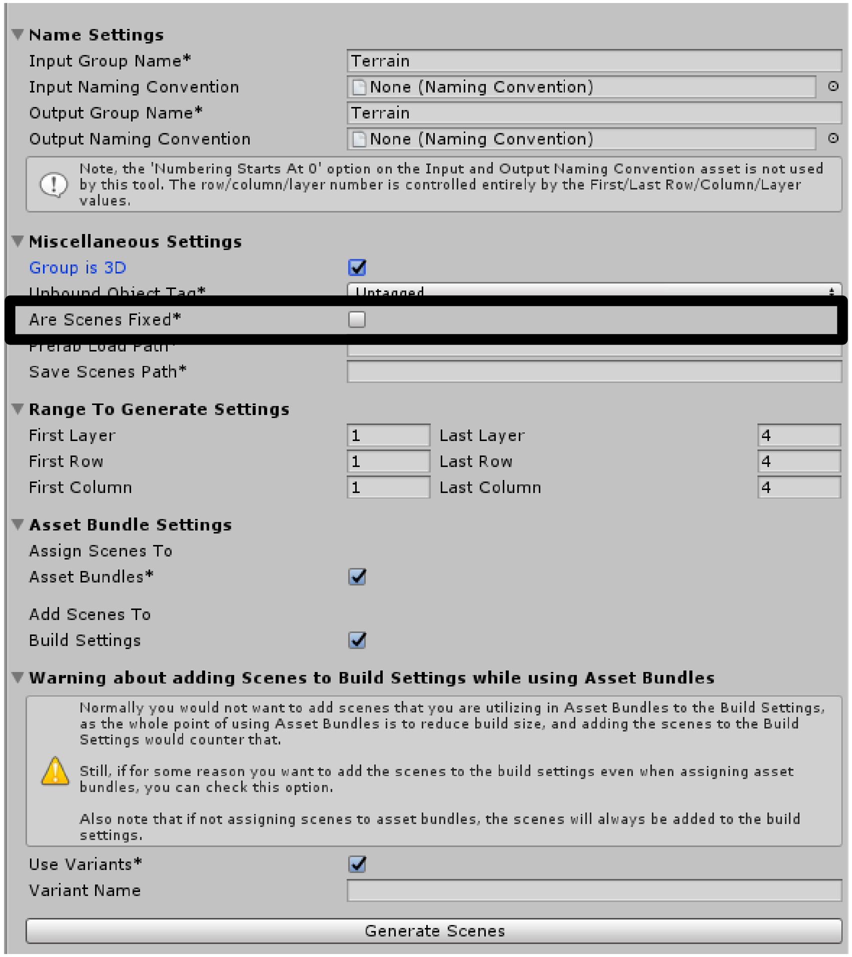
Use Variants* ☑

Variant Name:

This tag is used to efficiently find the root object in each scene when that scene is loaded.

Create Scenes – Scene Generation Tool

Are the scenes fixed/static? See Fixed or Dynamic? page for more info.



Name Settings

Input Group Name* Terrain

Input Naming Convention None (Naming Convention)

Output Group Name* Terrain

Output Naming Convention None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

Miscellaneous Settings

Group is 3D ☑

Unbound Object Tag* Untagged

Are Scenes Fixed* □

Prefab Load Path*

Save Scenes Path*

Range To Generate Settings

First Layer	1	Last Layer	4
First Row	1	Last Row	4
First Column	1	Last Column	4

Asset Bundle Settings

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

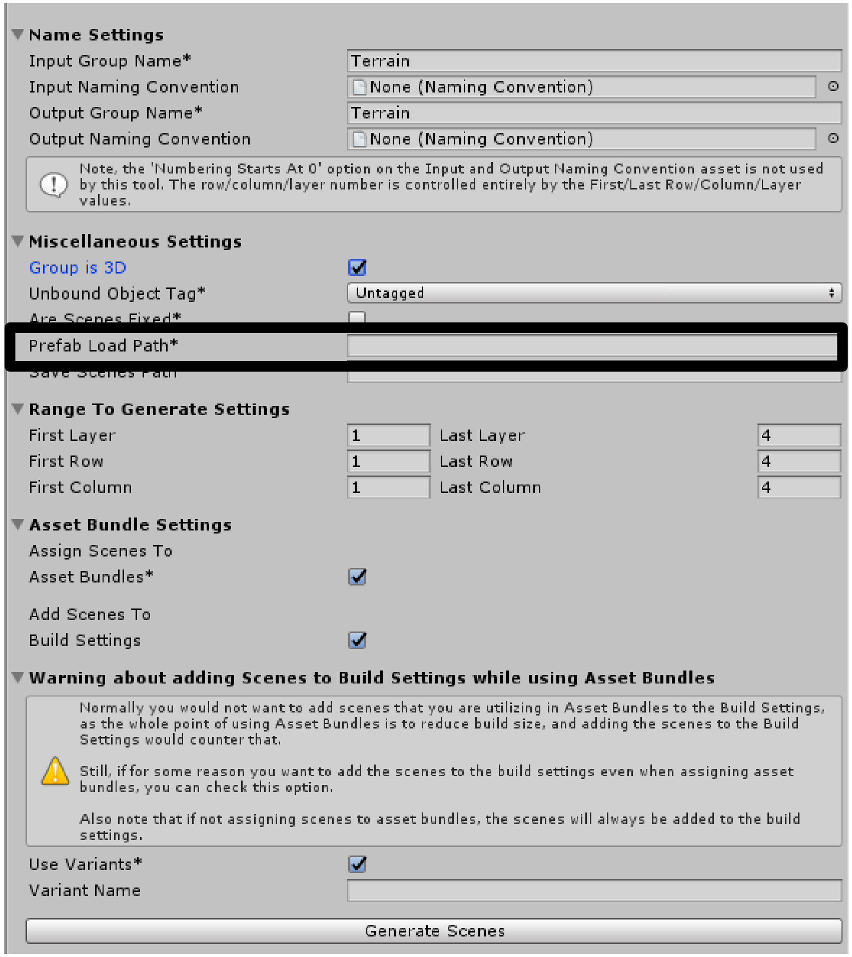
Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

Use Variants* ☑

Variant Name

Create Scenes – Scene Generation Tool

The path, relative to the Assets Folder, where the prefabs that the tool will use to generate the scenes are stored.



Name Settings

Input Group Name* Terrain

Input Naming Convention None (Naming Convention)

Output Group Name* Terrain

Output Naming Convention None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

Miscellaneous Settings

Group is 3D ☑

Unbound Object Tag* Untagged

Are Scenes Fixed* □

Prefab Load Path*

Save Scenes Path

Range To Generate Settings

First Layer	1	Last Layer	4
First Row	1	Last Row	4
First Column	1	Last Column	4

Asset Bundle Settings

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

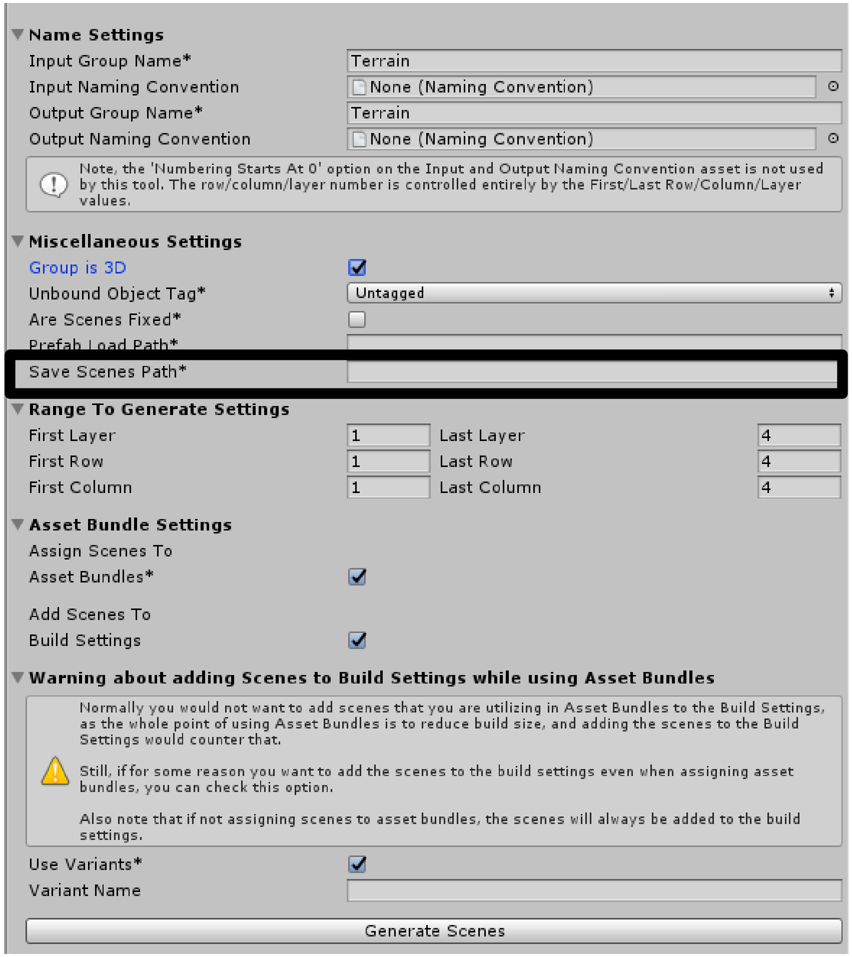
Use Variants* ☑

Variant Name

Create Scenes – Scene Generation Tool

The path, relative to the Assets Folder, where you want to save the scenes.

For example, /Scenes will save the scenes in a folder called Scenes directly underneath the Assets folder (the folder will be created automatically if it doesn't exist).



Name Settings

Input Group Name* Terrain
Input Naming Convention None (Naming Convention)
Output Group Name* Terrain
Output Naming Convention None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

Miscellaneous Settings

Group is 3D ☑
Unbound Object Tag* Untagged
Are Scenes Fixed* □
Prefab Load Path*
Save Scenes Path*

Range To Generate Settings

First Layer	1	Last Layer	4
First Row	1	Last Row	4
First Column	1	Last Column	4

Asset Bundle Settings

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

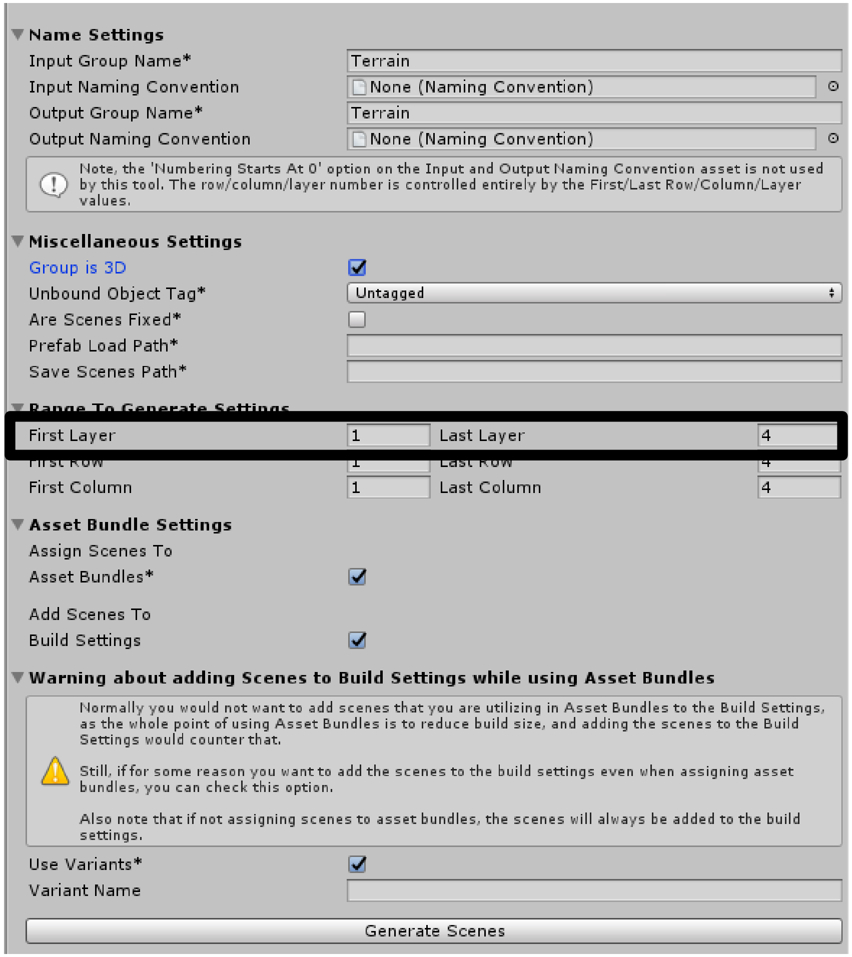
Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

Use Variants* ☑
Variant Name

Create Scenes – Scene Generation Tool

Defines the range of layers to create scenes for (from first layer [inclusive] to last layer [inclusive]).

These fields are only displayed if "Group is 3D" is checked.



▼ **Name Settings**

Input Group Name* Terrain

Input Naming Convention None (Naming Convention)

Output Group Name* Terrain

Output Naming Convention None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

▼ **Miscellaneous Settings**

Group is 3D ☑

Unbound Object Tag* Untagged

Are Scenes Fixed* □

Prefab Load Path*

Save Scenes Path*

▼ **Range To Generate Settings**

First Layer 1 Last Layer 4

First Row 1 Last Row 4

First Column 1 Last Column 4

▼ **Asset Bundle Settings**

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

▼ **Warning about adding Scenes to Build Settings while using Asset Bundles**

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

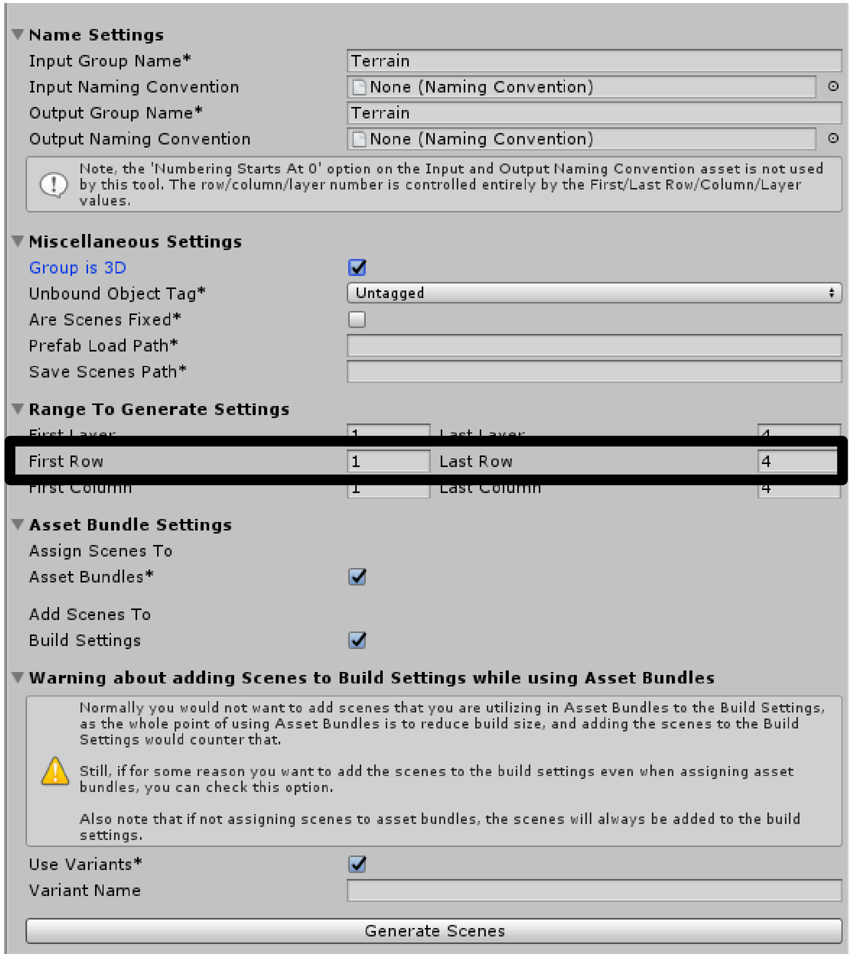
Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

Use Variants* ☑

Variant Name

Create Scenes – Scene Generation Tool

Defines the range of rows to create scenes for (from first row [inclusive] to last row [inclusive]).



Name Settings

Input Group Name* Terrain

Input Naming Convention None (Naming Convention)

Output Group Name* Terrain

Output Naming Convention None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

Miscellaneous Settings

Group is 3D ☑

Unbound Object Tag* Untagged

Are Scenes Fixed* □

Prefab Load Path*

Save Scenes Path*

Range To Generate Settings

First Layer 1 Last Layer 4

First Row 1 Last Row 4

First Column 1 Last Column 4

Asset Bundle Settings

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

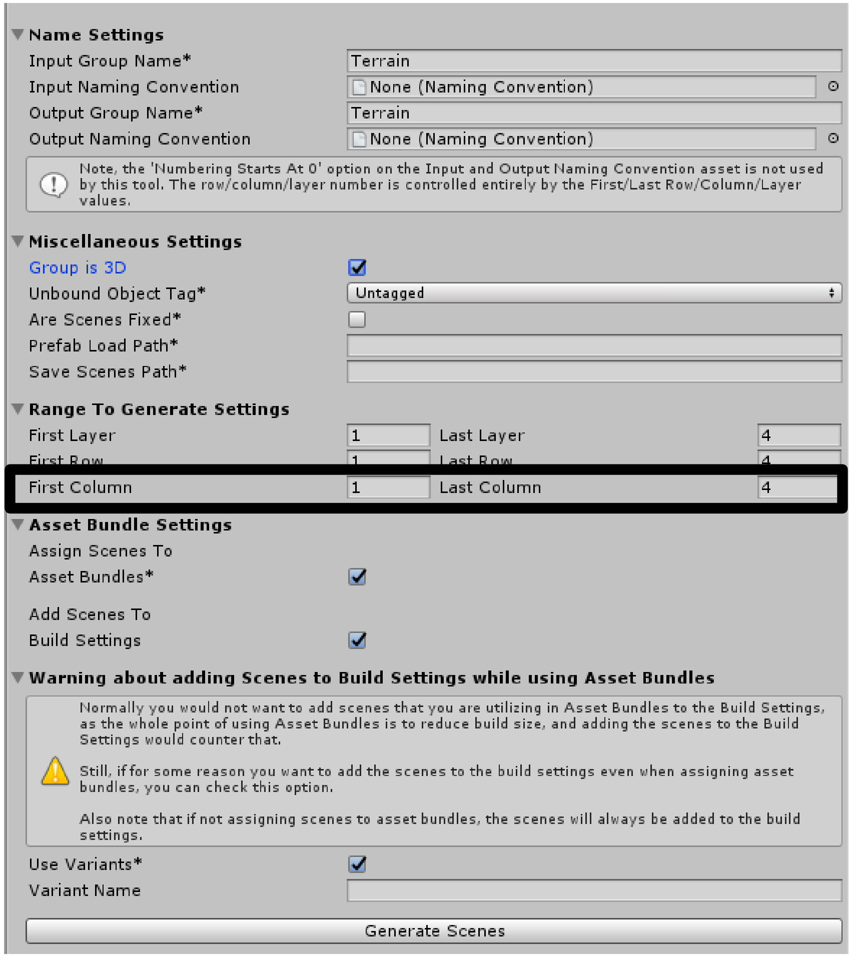
Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

Use Variants* ☑

Variant Name

Create Scenes – Scene Generation Tool



Name Settings

Input Group Name* Terrain

Input Naming Convention None (Naming Convention)

Output Group Name* Terrain

Output Naming Convention None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

Miscellaneous Settings

Group is 3D ☑

Unbound Object Tag* Untagged

Are Scenes Fixed* □

Prefab Load Path*

Save Scenes Path*

Range To Generate Settings

First Layer 1 Last Layer 4

First Row 1 Last Row 4

First Column 1 Last Column 4

Asset Bundle Settings

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

Use Variants* ☑

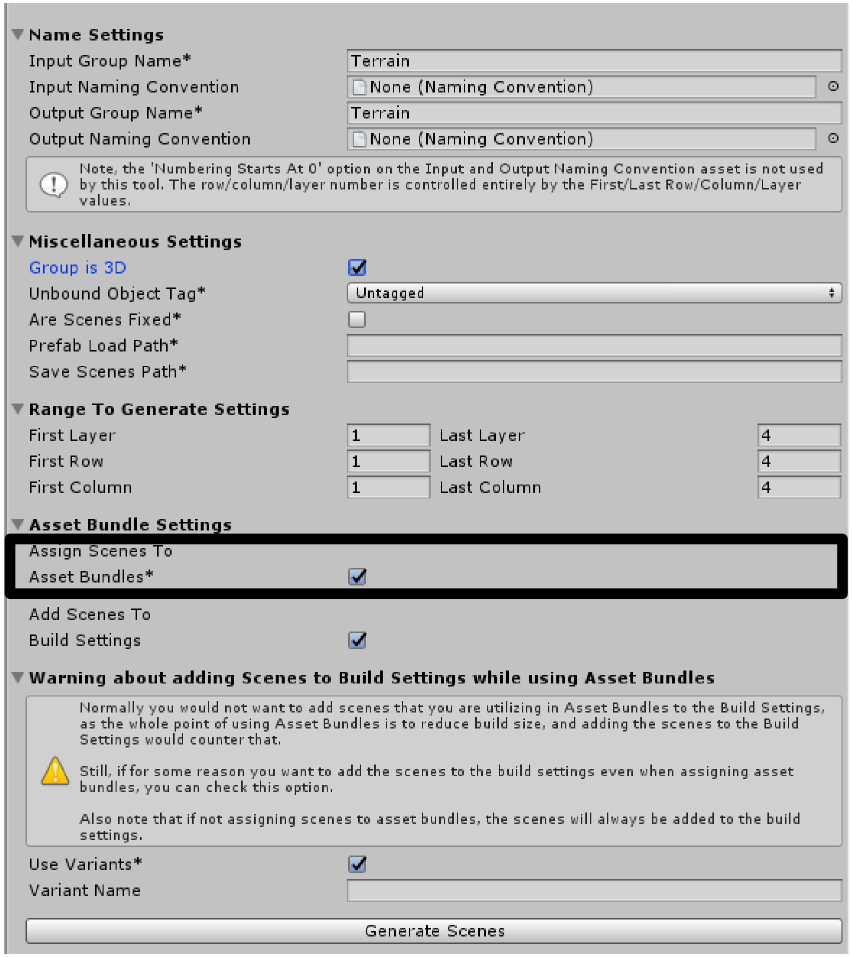
Variant Name

Defines the range of columns to create scenes for (from first column [inclusive] to last column [inclusive]).

Create Scenes – Scene Generation Tool

If checked, each scene will be assigned to an asset bundle of the same name (but with a lowercase first letter, as required by Asset Bundle naming conventions).

Note that this does not create Asset Bundles, it merely assigns them in the inspector so that they can be generated at a later time.



Name Settings

Input Group Name*: Terrain

Input Naming Convention: None (Naming Convention)

Output Group Name*: Terrain

Output Naming Convention: None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

Miscellaneous Settings

Group is 3D: ☑

Unbound Object Tag*: Untagged

Are Scenes Fixed*: □

Prefab Load Path*:

Save Scenes Path*:

Range To Generate Settings

First Layer	1	Last Layer	4
First Row	1	Last Row	4
First Column	1	Last Column	4

Asset Bundle Settings

Assign Scenes To Asset Bundles*: ☑

Add Scenes To Build Settings: ☑

Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

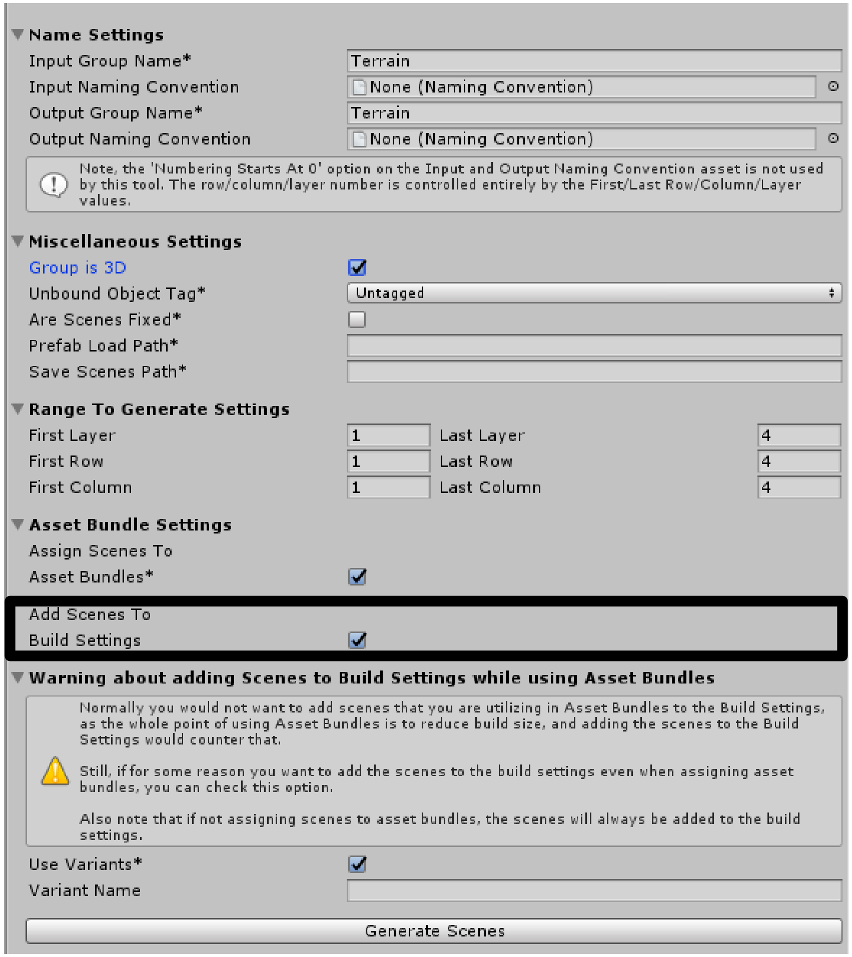
Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

Use Variants*: ☑

Variant Name:

Create Scenes – Scene Generation Tool



▼ **Name Settings**

Input Group Name* Terrain

Input Naming Convention None (Naming Convention)

Output Group Name* Terrain

Output Naming Convention None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

▼ **Miscellaneous Settings**

Group is 3D ☑

Unbound Object Tag* Untagged

Are Scenes Fixed* □

Prefab Load Path*

Save Scenes Path*

▼ **Range To Generate Settings**

First Layer	1	Last Layer	4
First Row	1	Last Row	4
First Column	1	Last Column	4

▼ **Asset Bundle Settings**

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

▼ **Warning about adding Scenes to Build Settings while using Asset Bundles**

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

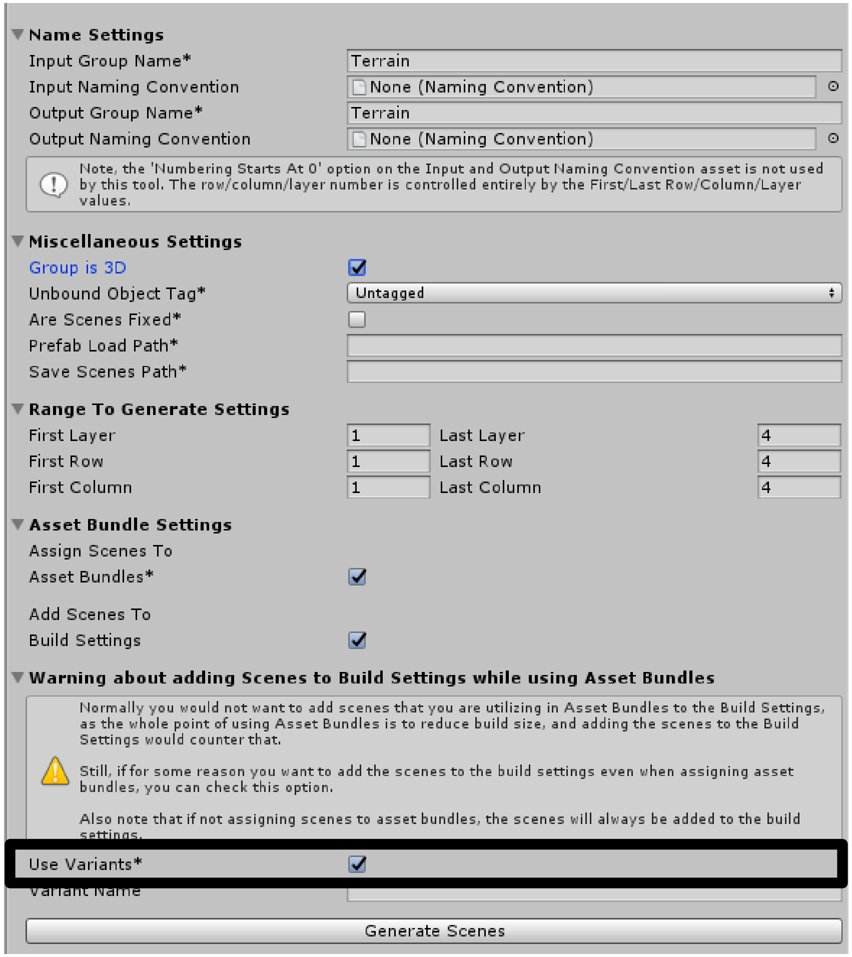
Use Variants* ☑

Variant Name

By default, when the "Assign Scenes to Asset Bundles" option is checked, scenes will not be added to build settings (normally they are).

You can override this behavior by checking "Add Scenes to Build Settings" (see message).

Create Scenes – Scene Generation Tool



▼ Name Settings

Input Group Name*	Terrain
Input Naming Convention	None (Naming Convention) ⊙
Output Group Name*	Terrain
Output Naming Convention	None (Naming Convention) ⊙

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

▼ Miscellaneous Settings

Group is 3D	☑
Unbound Object Tag*	Untagged
Are Scenes Fixed*	☐
Prefab Load Path*	
Save Scenes Path*	

▼ Range To Generate Settings

First Layer	1	Last Layer	4
First Row	1	Last Row	4
First Column	1	Last Column	4

▼ Asset Bundle Settings

Assign Scenes To Asset Bundles*	☑
Add Scenes To Build Settings	☑

▼ Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

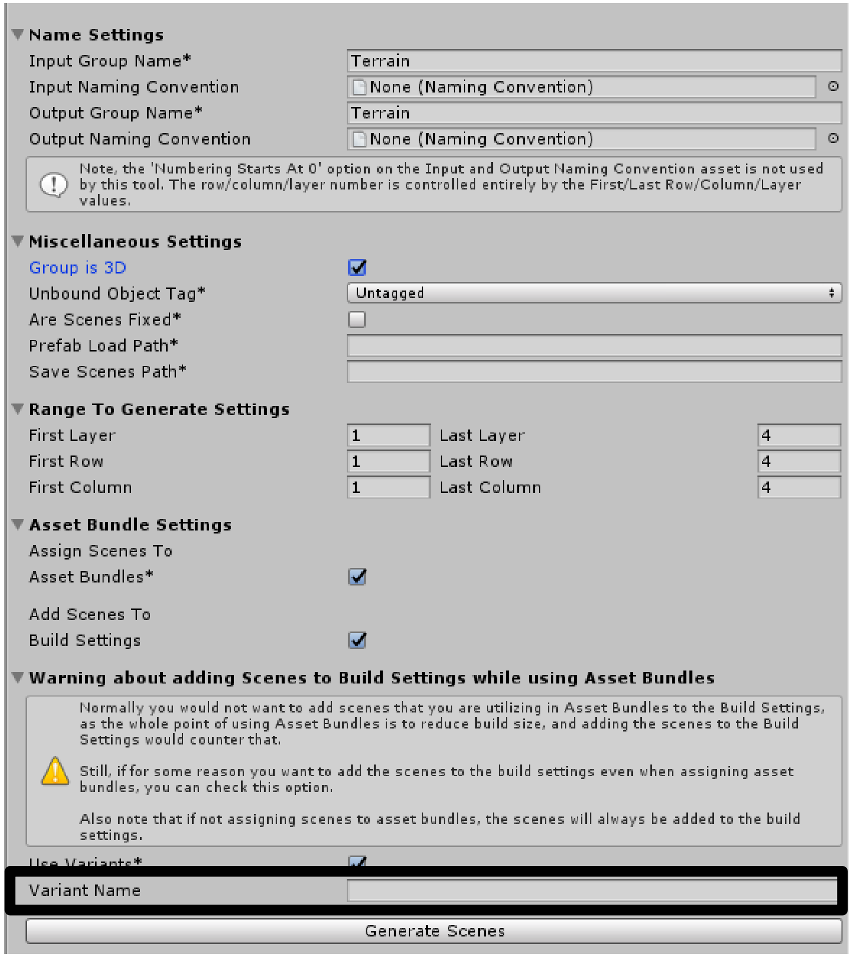
Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

Use Variants*	☑
Variant Name	

If using Asset Bundles and variants, check this option.

Create Scenes – Scene Generation Tool



Name Settings

Input Group Name* Terrain

Input Naming Convention None (Naming Convention)

Output Group Name* Terrain

Output Naming Convention None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

Miscellaneous Settings

Group is 3D ☑

Unbound Object Tag* Untagged

Are Scenes Fixed* ☐

Prefab Load Path*

Save Scenes Path*

Range To Generate Settings

First Layer	1	Last Layer	4
First Row	1	Last Row	4
First Column	1	Last Column	4

Asset Bundle Settings

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

Use Variants* ☑

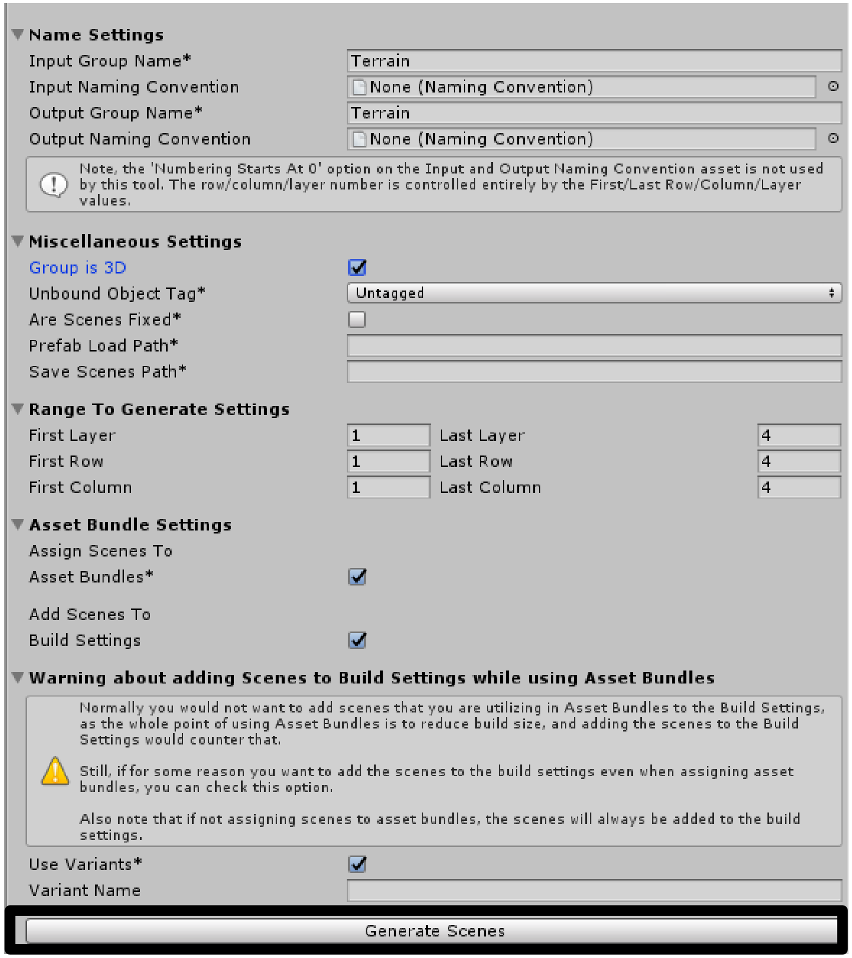
Variant Name

If using Asset Bundles and variants, choose the variant to assign these scenes to.

Create Scenes – Scene Generation Tool

Press to Generate the Scenes!

Note, the currently opened scene will be saved at the beginning of this process and then restored after. If you haven't saved this scene before, you will be prompted to do so.



Name Settings

Input Group Name* Terrain

Input Naming Convention None (Naming Convention)

Output Group Name* Terrain

Output Naming Convention None (Naming Convention)

Note, the 'Numbering Starts At 0' option on the Input and Output Naming Convention asset is not used by this tool. The row/column/layer number is controlled entirely by the First/Last Row/Column/Layer values.

Miscellaneous Settings

Group is 3D ☑

Unbound Object Tag* Untagged

Are Scenes Fixed* □

Prefab Load Path*

Save Scenes Path*

Range To Generate Settings

First Layer 1 Last Layer 4

First Row 1 Last Row 4

First Column 1 Last Column 4

Asset Bundle Settings

Assign Scenes To Asset Bundles* ☑

Add Scenes To Build Settings ☑

Warning about adding Scenes to Build Settings while using Asset Bundles

Normally you would not want to add scenes that you are utilizing in Asset Bundles to the Build Settings, as the whole point of using Asset Bundles is to reduce build size, and adding the scenes to the Build Settings would counter that.

Still, if for some reason you want to add the scenes to the build settings even when assigning asset bundles, you can check this option.

Also note that if not assigning scenes to asset bundles, the scenes will always be added to the build settings.

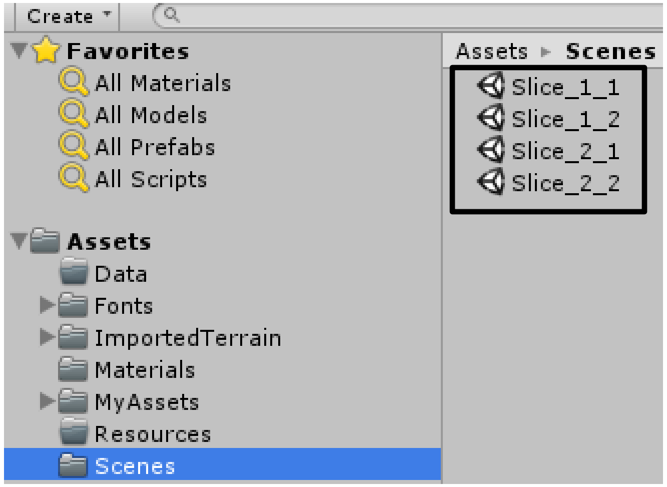
Use Variants* ☑

Variant Name

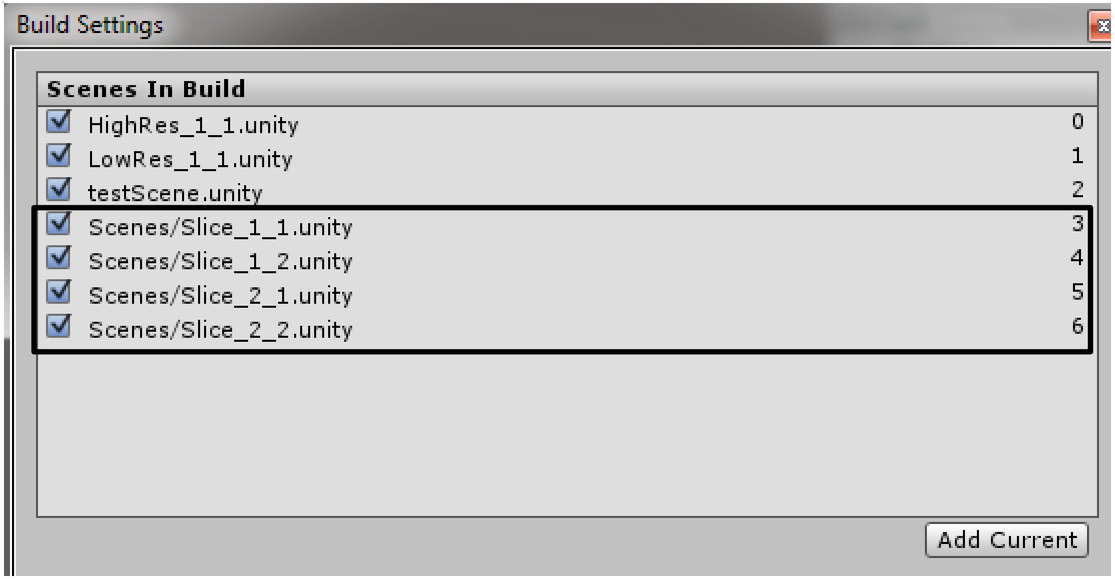
Generate Scenes

Create Scenes – Scene Generation Tool

- After using the tool, examine the scene output folder you specified as well as the Build Settings Menu (File-> Build Settings). You should see the same number of scenes as there are prefabs in your object group.



Slice_1_1
Slice_1_2
Slice_2_1
Slice_2_2

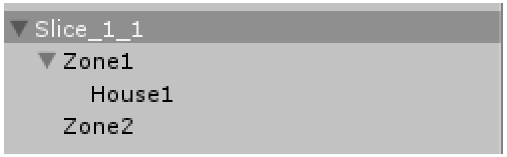


Scenes In Build

☑	HighRes_1_1.unity	0
☑	LowRes_1_1.unity	1
☑	testScene.unity	2
☑	Scenes/Slice_1_1.unity	3
☑	Scenes/Slice_1_2.unity	4
☑	Scenes/Slice_2_1.unity	5
☑	Scenes/Slice_2_2.unity	6

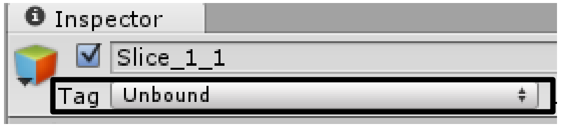
Create Scenes – Scene Generation Tool
Scene Anatomy

- If the “Are Scenes Fixed” option was checked when you generated the scenes, then opening each scene will reveal a scene hierarchy that mimics your prefab hierarchy.



```
▼ Slice_1_1
  ▼ Zone1
      House1
    Zone2
```

- Only the root object’s tag will have been changed.

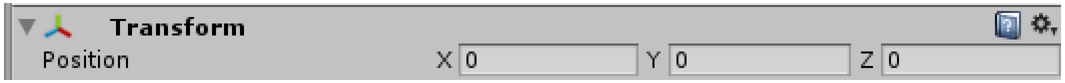


Inspector

☑ Slice_1_1

Tag: Unbound

- Also note that the position of the root object in the scene is the same as the prefab’s position.

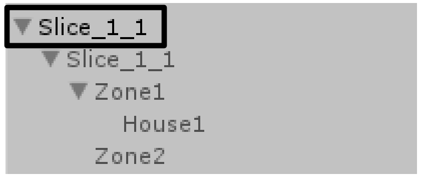


Transform

Position X 0 Y 0 Z 0

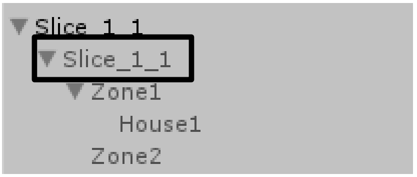
Create Scenes – Scene Generation Tool
Scene Anatomy

- If the “Are Scenes Fixed” option was not checked, then you’ll notice that your scene hierarchy differs from your prefab hierarchy.
  - A new empty game object has been created with the same name as your prefab. This new object is now the root object in the scene, and it’s tag has been set to the “Unbound Object Tag.”



```
▼ Slice_1_1
  ▼ Slice_1_1
    ▼ Zone1
        House1
      Zone2
```

  - The game object that was previously the root object has been parented to this new object. This game object has also been deactivated, which in turn results in the children parented to this object being deactivated. This game object’s tag has not been changed.



```
▼ Slice_1_1
  ▼ Slice_1_1
    ▼ Zone1
        House1
      Zone2
```

  - The rest of the hierarchy beneath the original root object remains the same. This setup provides for optimal performance when moving the root object (achieved by deactivating the terrain or other “main” object), while still allowing the objects to be found by the scene loader components (by adding a new empty root object that is active). The original root object is activated **only after** the new root object has been positioned correctly, which in turn activates any children whose active self property is true.

Create Scenes – Manual Method

1) Determine whether your scenes are fixed/static or dynamic (see Fixed or Dynamic? Page for more info).
2) Create a new scene.
3) Remove the Main Camera and Directional Light (Unity 5). Optionally, you can leave the directional light in for future editing of the scene, but make sure it is in a deactivated state before using the scene with the Dynamic Loading Kit. If each scene has its own lighting, things will get out of whack quickly.

Create Scenes – Manual Method

4) If your scenes are fixed/static:
    1) Add your main game object to the scene. This is the root object which will potentially define the dimensions of the scene. It will most likely be a terrain, but really can be any game object.
    2) Change this game object's tag to whatever tag you've set up to be your "Unbound Object Tag" (create this tag up now if you haven't already).
    3) Modify the name of this root object to match whatever naming convention you are using.
    4) Parent any other game objects you want in the scene to the root object. The hierarchy doesn't matter as long as the root object is the only top level object.
    5) Save the scene with the same name you set the root object to in step 3.

Create Scenes – Manual Method

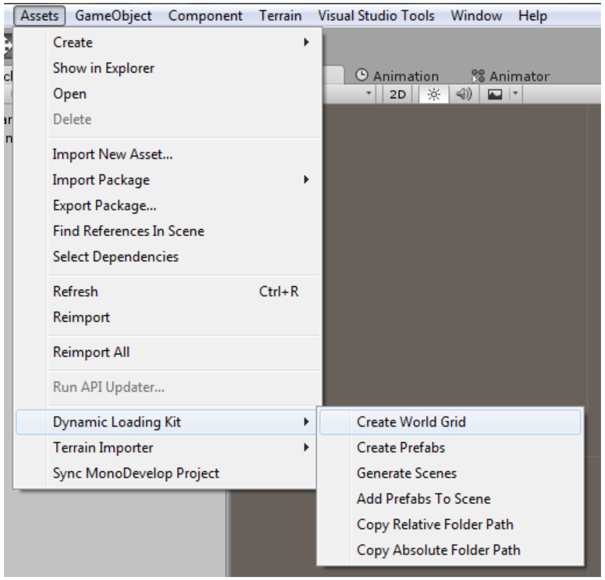
5) If your scenes are not fixed/static (aka dynamic):
    1) Create an empty game object to serve as the root object.
    2) Change this game object's tag to whatever tag you've set up to be your "Unbound Object Tag" (create this tag up now if you haven't already).
    3) Modify the name of this root object to match whatever naming convention you are using.
    4) Add your main game object to the scene. This is the main object which will potentially define the dimensions of the scene. It will most likely be a terrain, but really can be any game object. Optionally, you can change this object's name.
    5) Parent the object from step 4 to the root object created in step 1.
    6) Parent any other game objects you want in the scene to the object added in step 4. The hierarchy doesn't matter as long as the root object (from step 1) is the only top level object, and the object added in step 4 is the only second from the top object (that is, all additional objects must be children, grandchildren, etc. of the object from step 4.
    7) Deactivate the object from step 4 (check box at top of inspector).
    8) Save the scene with the same name you set the root object to in step 2.

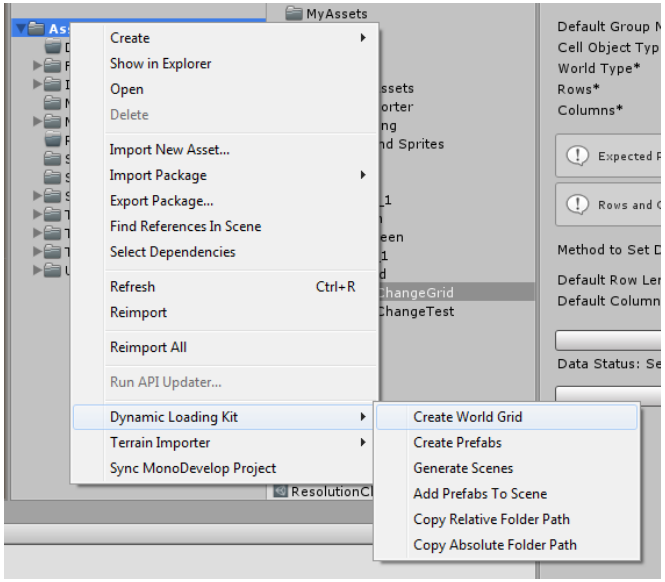
Create Scenes – Manual Method: Positioning

- The position of the root object in the scene does not matter if the scenes are dynamic, since the position will be changed by the Dynamic Loading Kit post load.
- For fixed/static scenes, however, it is important that you position the root object correctly.
  - The root object in the first scene (1_1, _0_0, etc.) should be at whatever origin you want your world to be at, where the origin is the bottom left most point of the world. Typically this will be 0, 0, 0, but in some cases you may want the world to be at a different location (usually when using multiple worlds in the same scene, and a different world has an origin of 0, 0, 0).
  - Additional root objects should be placed with the preceding scene's dimensions and position in mind. If scene 1_1 is at x = 0 and z = 0 and has a width of 100 and length of 200, then the root object in scene 1_2 should be at x = 100 and z = 0, while the root object in scene 2_1 should be at x = 0, z = 200.
  - If the pivot point of your root object is not in the bottom left corner, you will need to manually offset the object's position so it is loaded at the correct spot.

Create World Grid

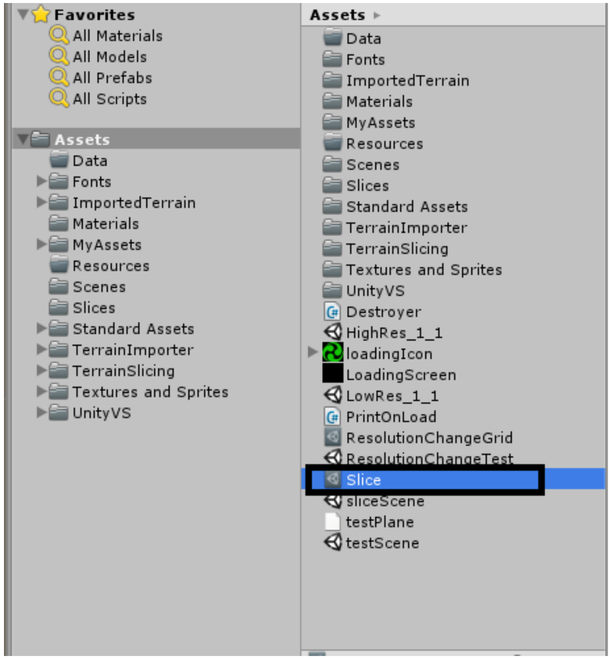
- The World Grid stores the data that defines your object group.
- It is a physical asset you create in the project hierarchy (inherits from ScriptableObject).
- This allows you to reuse the grid in multiple scenes.
- Two ways to create:
  - Assets -> Dynamic Loading Kit -> Create World Grid
  - Right click a folder and select Dynamic Loading Kit -> Create World Grid





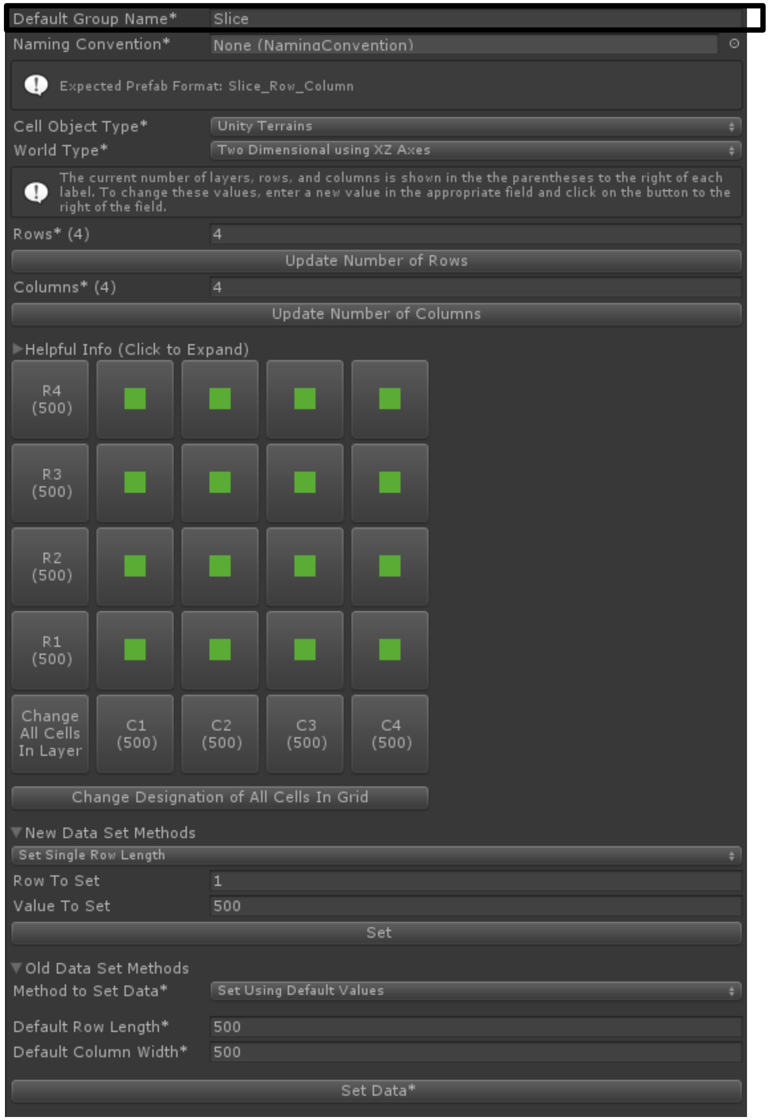
Create World Grid

- Both methods create the World Grid in the selected folder, or directly in the Assets folder if no folder is selected.
- After creation, you can and should rename the grid to whatever you want. The name is not used by the Dynamic Loading Kit in any way, so make is something meaningful to you (using the GroupName of the object group the grid represents is always a good idea).



World Grid Configuration

This is the default group name of the world grid. You can change this group name at runtime, but this is the initial name that will be used.



Default Group Name* Slice

Naming Convention* None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type* Unity Terrains

World Type* Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4) 4

Update Number of Rows

Columns* (4) 4

Update Number of Columns

Helpful Info (Click to Expand)

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

Change Designation of All Cells In Grid

New Data Set Methods

Set Single Row Length

Row To Set 1

Value To Set 500

Set

Old Data Set Methods

Method to Set Data* Set Using Default Values

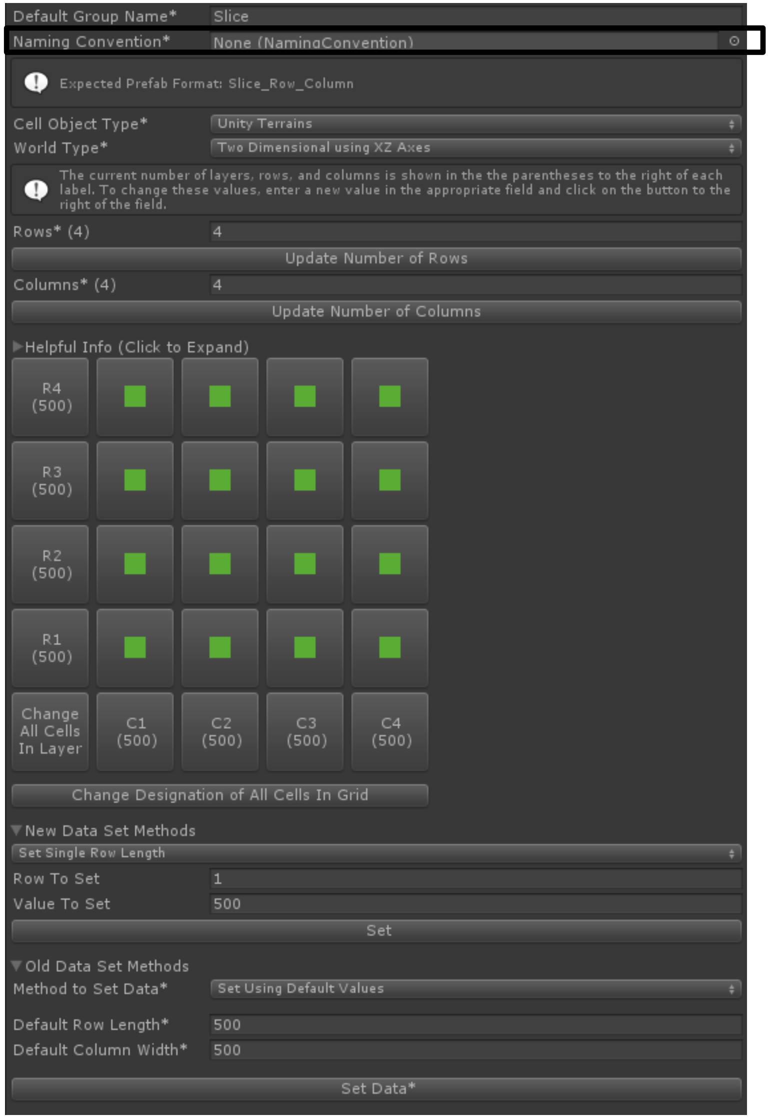
Default Row Length* 500

Default Column Width* 500

Set Data*

World Grid Configuration

This naming convention that defines the world grid. This is used by any Worlds that use this World Grid when loading objects at runtime. If your objects follow the default naming convention, you can leave this field blank.



Default Group Name* Slice

Naming Convention* None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type* Unity Terrains

World Type* Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4) 4

Update Number of Rows

Columns* (4) 4

Update Number of Columns

Helpful Info (Click to Expand)

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

Change Designation of All Cells In Grid

New Data Set Methods

Set Single Row Length

Row To Set 1

Value To Set 500

Set

Old Data Set Methods

Method to Set Data* Set Using Default Values

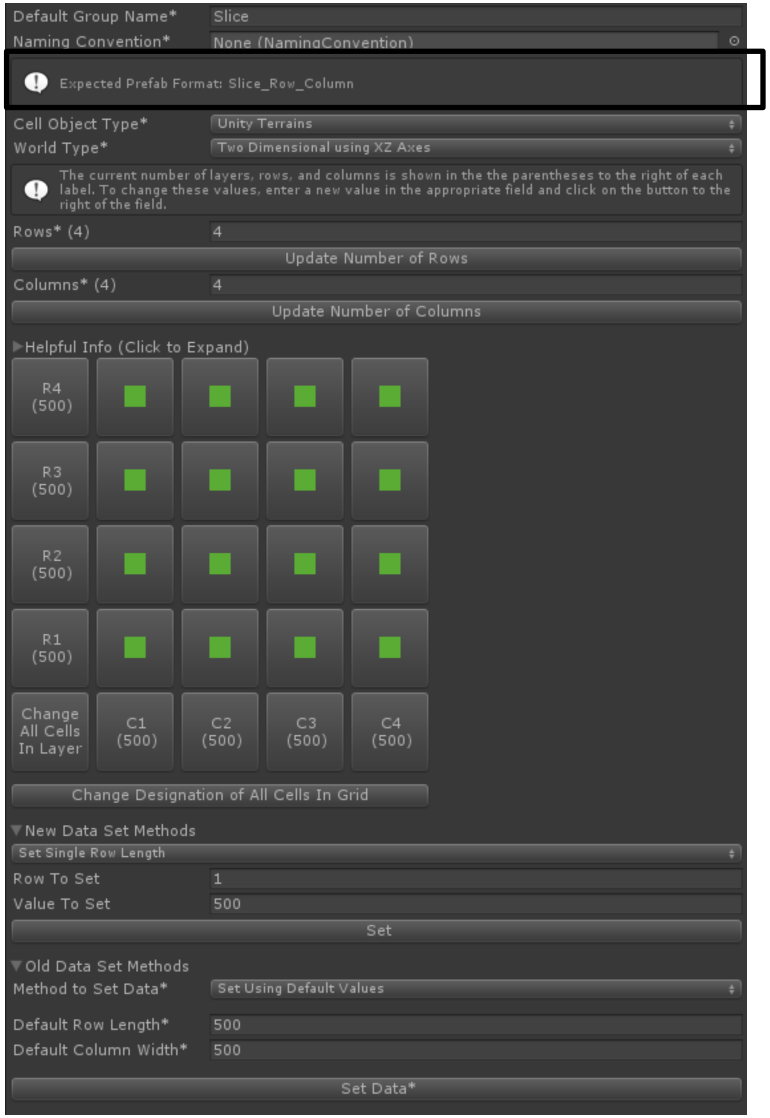
Default Row Length* 500

Default Column Width* 500

Set Data*

World Grid Configuration

This is the expected format of your prefabs/scenes, based on the Default Group Name and Naming Convention provided.



Default Group Name*: Slice

Naming Convention*: None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type*: Unity Terrains

World Type*: Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4): 4

Columns* (4): 4

Helpful Info (Click to Expand)

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

New Data Set Methods

Set Single Row Length

Row To Set: 1

Value To Set: 500

Old Data Set Methods

Method to Set Data*: Set Using Default Values

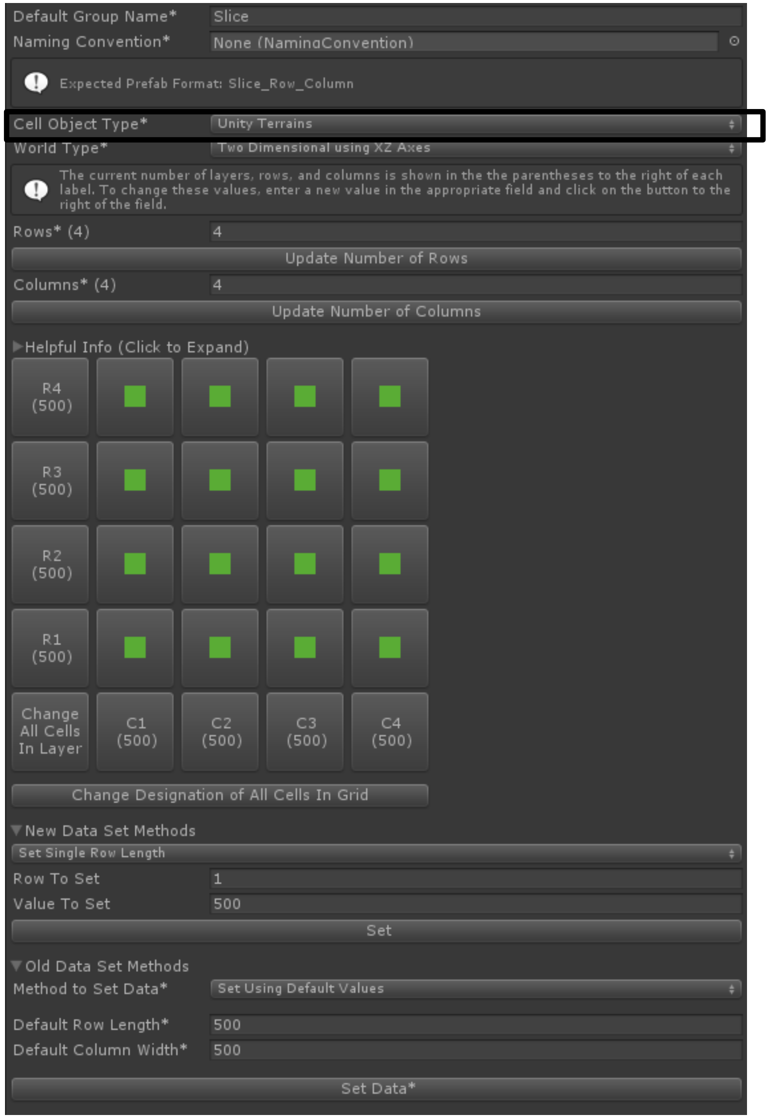
Default Row Length*: 500

Default Column Width*: 500

World Grid Configuration

The type of objects in your group. This only applies to the main objects, not additional object groups. If using Unity Terrains, this must be set to “Unity Terrains”, so that the terrains are properly neighbored at runtime.

Otherwise, set it to one of the other two options (it only matters which of these two options you choose when using the old Set Data Using Prefab method, so in general either option will work).



Default Group Name* Slice

Naming Convention* None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type* Unity Terrains

World Type* Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4) 4

Columns* (4) 4

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

Set Single Row Length

Row To Set 1

Value To Set 500

Method to Set Data* Set Using Default Values

Default Row Length* 500

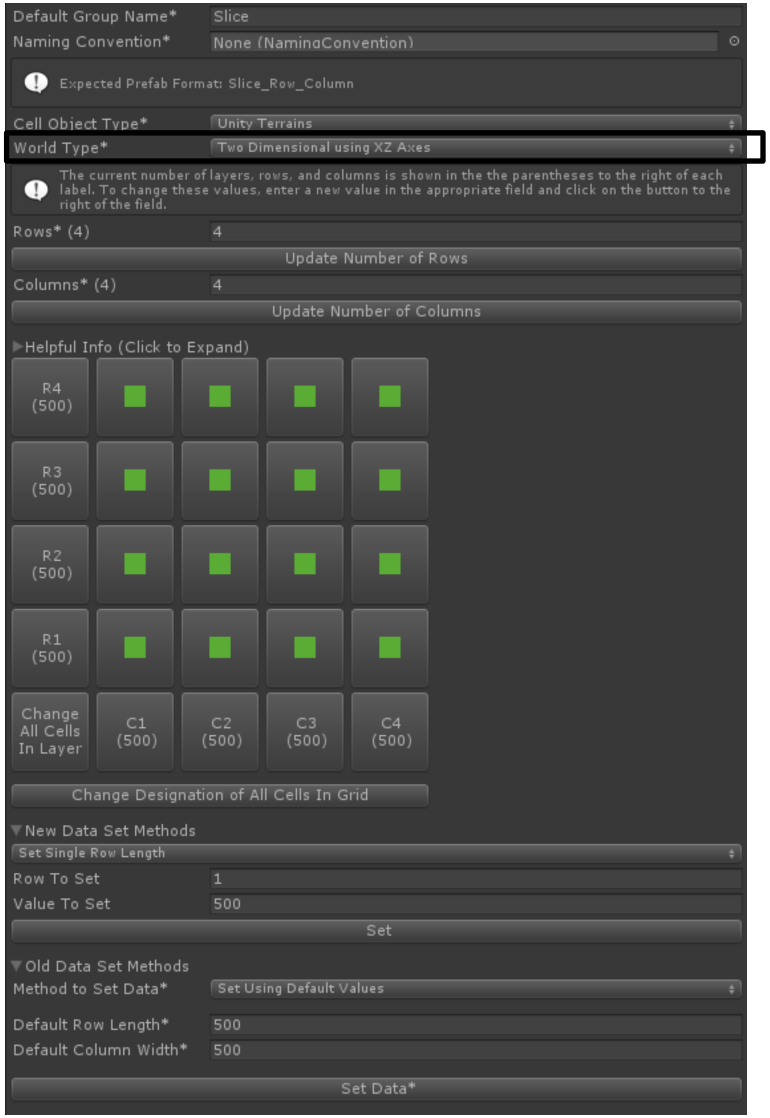
Default Column Width* 500

World Grid Configuration

The type of world this world grid represents. Unity Terrains can only exist on the X and Z axes, which is why you'll only see an option for "Two Dimensional using XZ Axes" when the Cell Object Type is set to "Unity Terrains."

If the Cell Object Type is set to something other than Unity Terrains, you'll be able to set this to 2D using XY axes, or 3D.

This option tells the kit what axis the rows of the world grid should be loaded on (columns are always loaded on the x axis, while layers are always loaded on the y).



Default Group Name* Slice

Naming Convention* None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type* Unity Terrains

World Type* Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4) 4

Columns* (4) 4

Helpful Info (Click to Expand)

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

New Data Set Methods

Set Single Row Length

Row To Set 1

Value To Set 500

Old Data Set Methods

Method to Set Data* Set Using Default Values

Default Row Length* 500

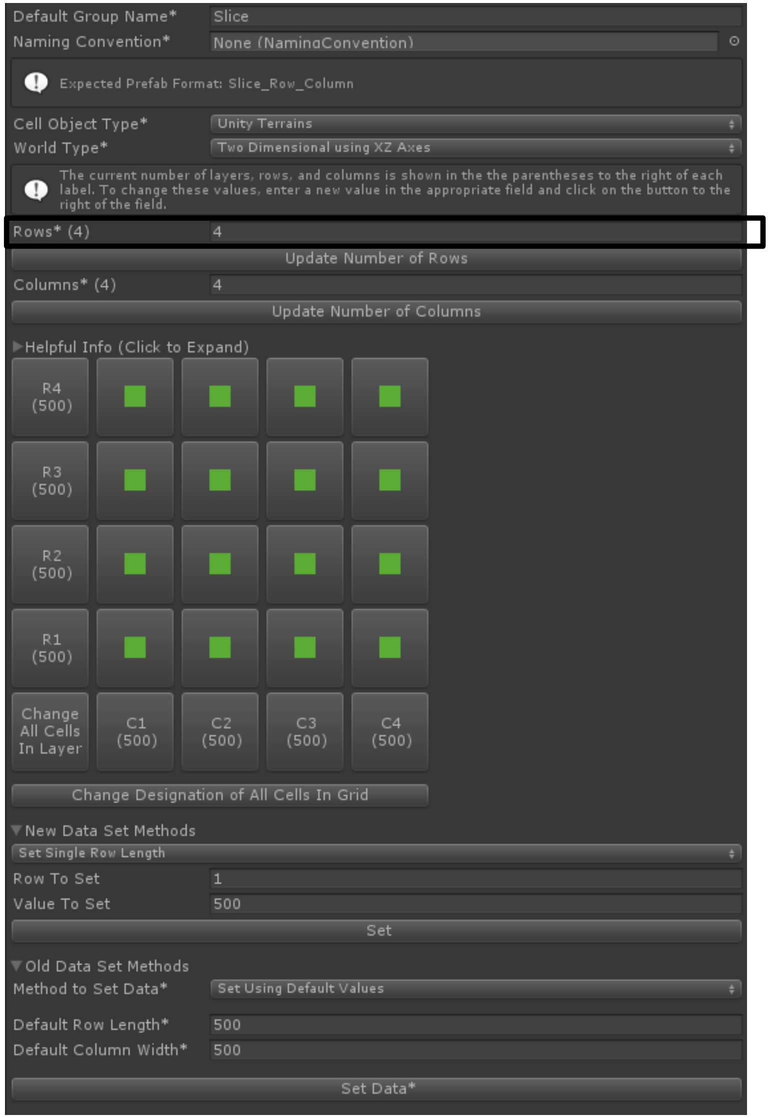
Default Column Width* 500

World Grid Configuration

The current number of Rows in the World Grid can be seen in the parenthesis to the Right of the “Rows*” label.

To change the number of rows, enter a new value in the field to the right and press the “Update Number of Rows” button.

This changes the grid below (the one with the green squares in the picture), which is a visual representation of your world grid.



Default Group Name* Slice

Naming Convention* None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type* Unity Terrains

World Type* Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4) 4

Update Number of Rows

Columns* (4) 4

Update Number of Columns

▶Helpful Info (Click to Expand)

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

Change Designation of All Cells In Grid

▼New Data Set Methods

Set Single Row Length

Row To Set 1

Value To Set 500

Set

▼Old Data Set Methods

Method to Set Data* Set Using Default Values

Default Row Length* 500

Default Column Width* 500

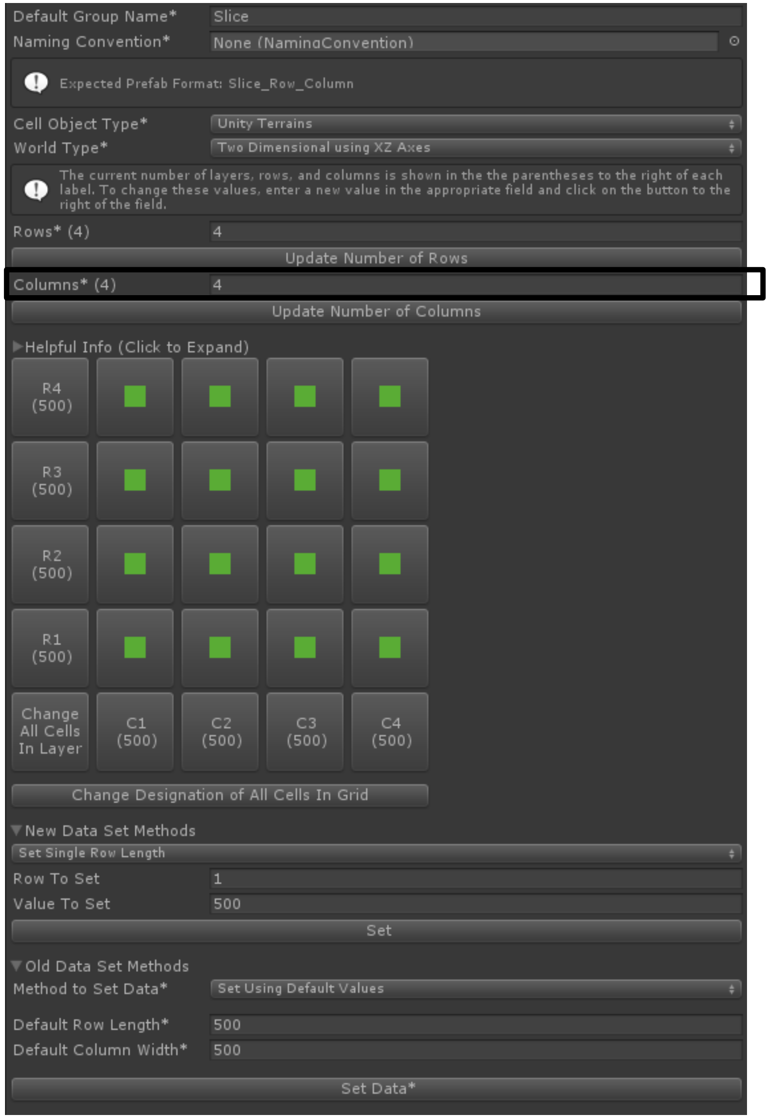
Set Data*

World Grid Configuration

The current number of Columns in the World Grid can be seen in the parenthesis to the Right of the “Columns*” label.

To change the number of column, enter a new value in the field to the right and press the “Update Number of Columns” button.

This changes the grid below (the one with the green squares in the picture), which is a visual representation of your world grid.



Default Group Name*	Slice
Naming Convention*	None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type*	Unity Terrains
World Type*	Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4)	4

Update Number of Rows

Columns* (4)	4

Update Number of Columns

▶Helpful Info (Click to Expand)

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

Change Designation of All Cells In Grid

▼New Data Set Methods

Set Single Row Length

Row To Set	1
Value To Set	500

Set

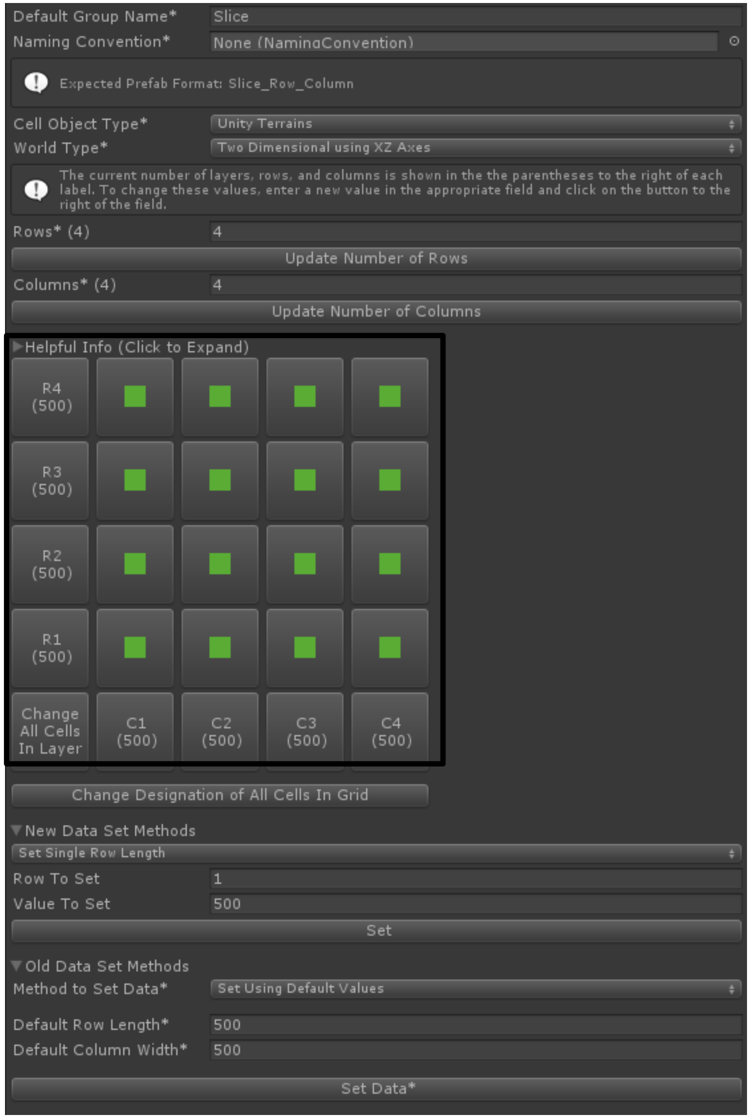
▼Old Data Set Methods

Method to Set Data*	Set Using Default Values
Default Row Length*	500
Default Column Width*	500

Set Data*

World Grid Configuration

This is a visual representation of your world grid in 4 x 4 sections. Each cell in the grid can be identified by the row (R1, R2) and column (C1, C2) it is on. When you have more than 4 rows or columns in your grid, a scroll bar is displayed, allowing you to scroll through the rows/columns.



Default Group Name* Slice
Naming Convention* None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type* Unity Terrains
World Type* Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4) 4

Columns* (4) 4

Helpful Info (Click to Expand)

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

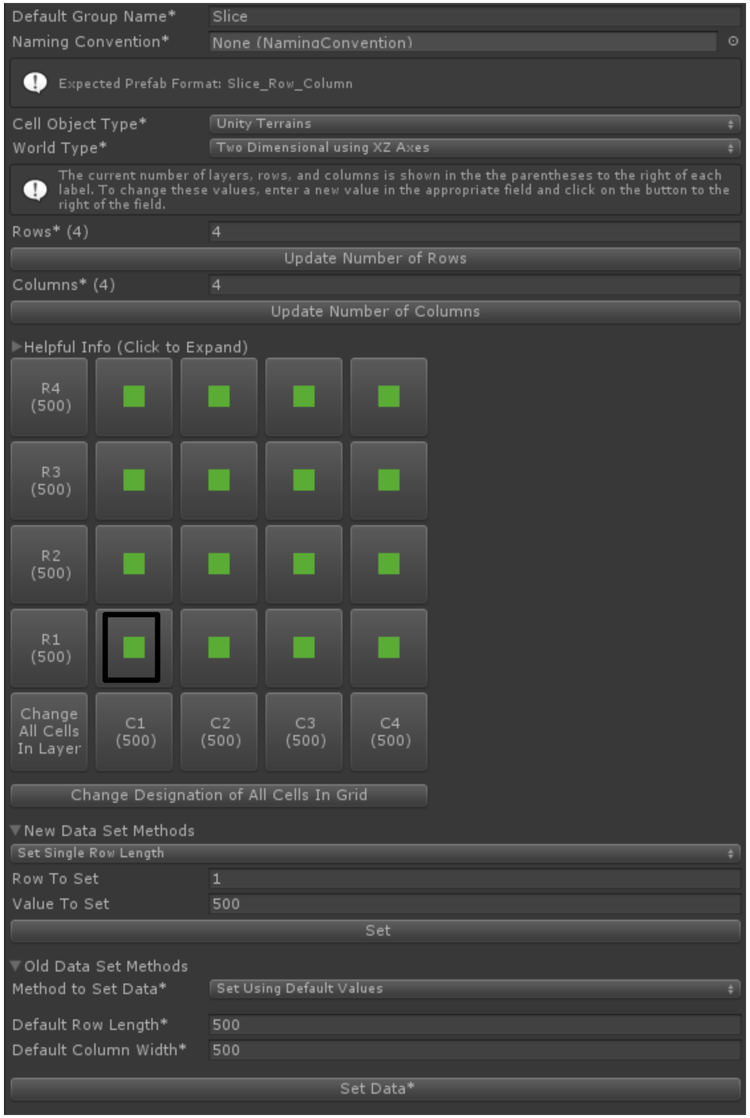
New Data Set Methods
Set Single Row Length
Row To Set 1
Value To Set 500

Old Data Set Methods
Method to Set Data* Set Using Default Values
Default Row Length* 500
Default Column Width* 500

World Grid Configuration

Each cell will have a red or green square. A green square indicates that the cell is not empty (i.e., that it has an object associated with it), while a red square indicates that the cell is empty.

You can change a cell from not empty to empty and vice versa by clicking on it.



Default Group Name* Slice

Naming Convention* None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type* Unity Terrains

World Type* Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4) 4

Update Number of Rows

Columns* (4) 4

Update Number of Columns

Helpful Info (Click to Expand)

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

Change Designation of All Cells In Grid

New Data Set Methods

Set Single Row Length

Row To Set 1

Value To Set 500

Set

Old Data Set Methods

Method to Set Data* Set Using Default Values

Default Row Length* 500

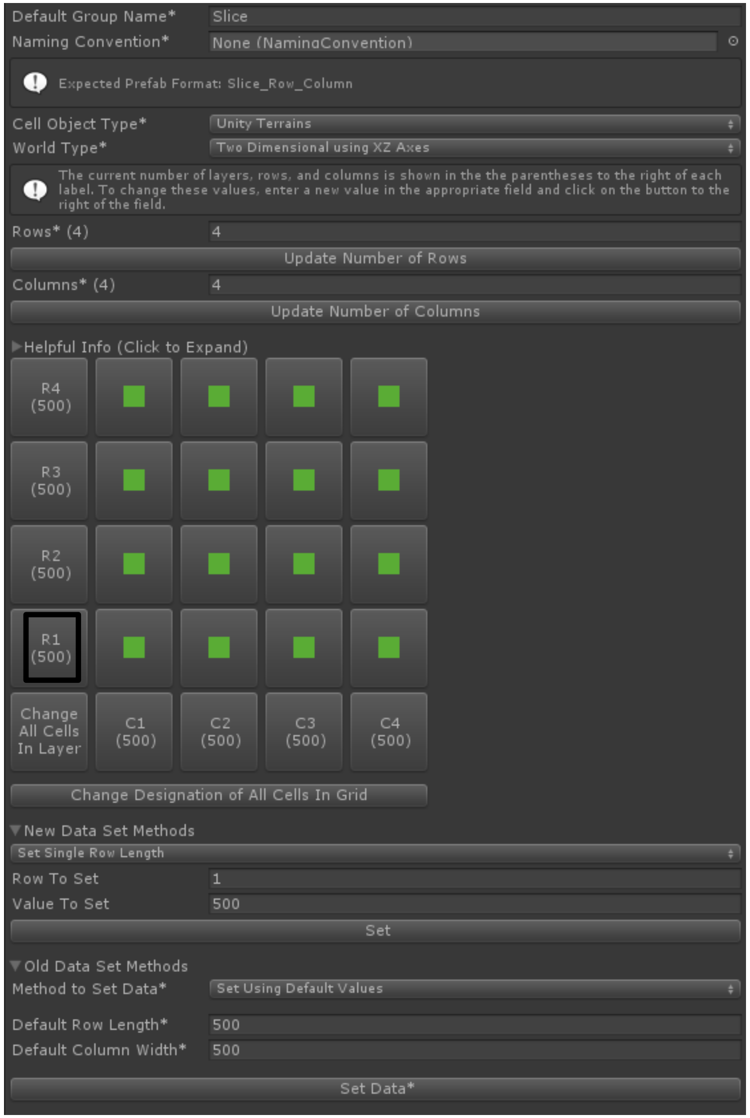
Default Column Width* 500

Set Data*

World Grid Configuration

Each row is also represented by its own button, which can be pressed to change that entire row's (including cells which are not currently being displayed) empty/not empty status. When pressed, if at least one cell on that row has a status of empty, all cells will be set to not empty; otherwise, all cells on the row will be set to empty.

The number seen in the parenthesis is the row length of each row.



Default Group Name*	Slice
Naming Convention*	None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type*	Unity Terrains
World Type*	Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4)	4

Columns* (4)	4

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

Set Single Row Length

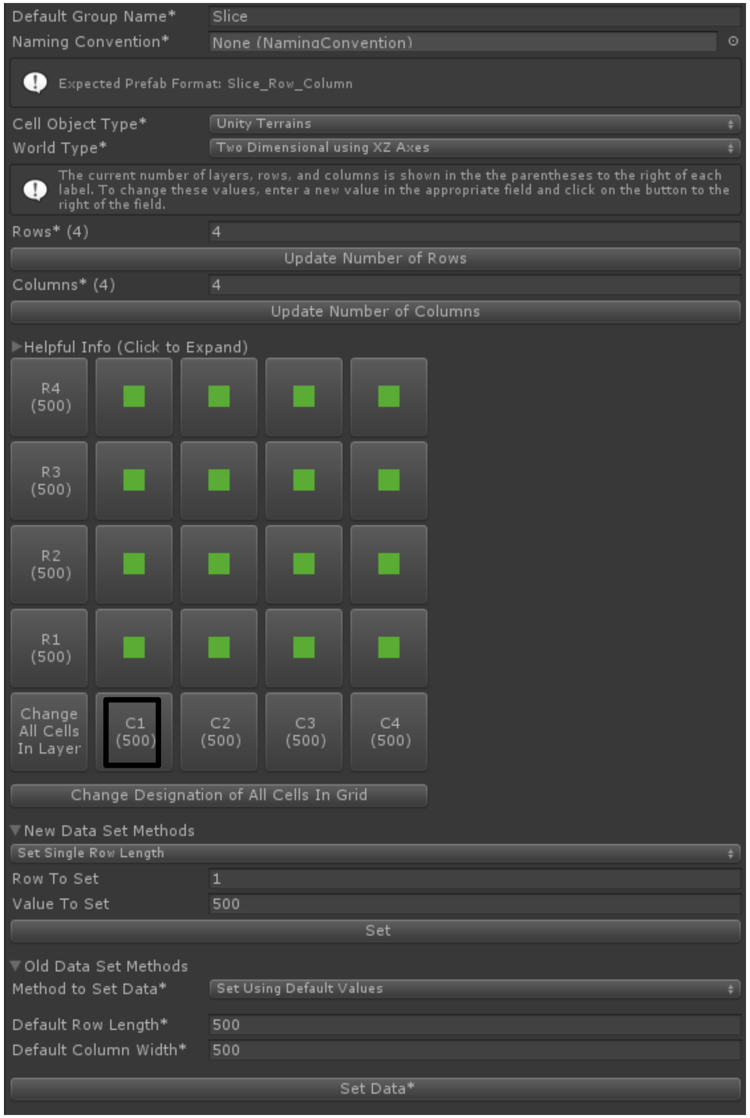
Row To Set	1
Value To Set	500

Method to Set Data*	Set Using Default Values
Default Row Length*	500
Default Column Width*	500

World Grid Configuration

Each column is represented by its own button, which can be pressed to change that entire column's (including cells which are not currently being displayed) empty/not empty status. When pressed, if at least one cell on that column has a status of empty, all cells will be set to not empty; otherwise, all cells on the column will be set to empty.

The number seen in the parenthesis is the column width of each column.



Default Group Name* Slice

Naming Convention* None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type* Unity Terrains

World Type* Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4) 4

Columns* (4) 4

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

Set Single Row Length

Row To Set 1

Value To Set 500

Method to Set Data* Set Using Default Values

Default Row Length* 500

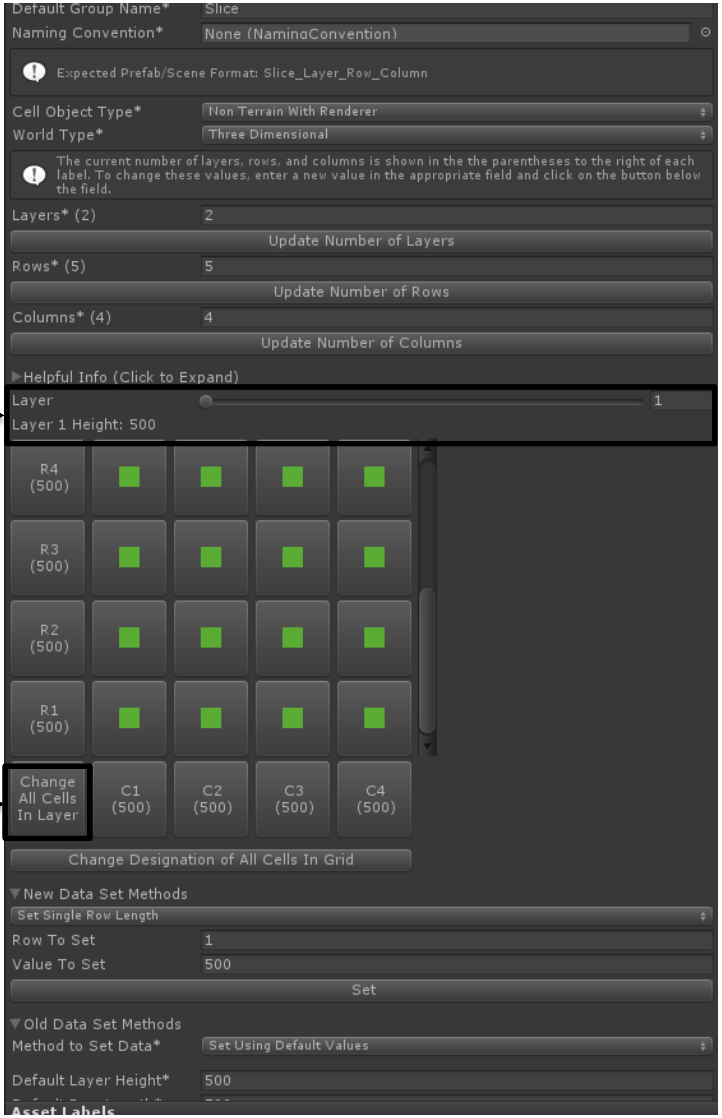
Default Column Width* 500

World Grid Configuration

Each 4x4 section represented in the visual grid shows cells from a single layer.

When the World Type is set to Three Dimensional, you will see additional options for changing the current layer that is shown, as well as the layer height of the current layer.

You can also change the empty/not empty status of all cells on a single layer by pressing the “Change All Cells In Layer” button.



Default Group Name* Slice

Naming Convention* None (NamingConvention)

Expected Prefab/Scene Format: Slice_Layer_Row_Column

Cell Object Type* Non Terrain With Renderer

World Type* Three Dimensional

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button below the field.

Layers* (2) 2

Update Number of Layers

Rows* (5) 5

Update Number of Rows

Columns* (4) 4

Update Number of Columns

Helpful Info (Click to Expand)

Layer 1

Layer 1 Height: 500

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

Change Designation of All Cells In Grid

New Data Set Methods

Set Single Row Length

Row To Set 1

Value To Set 500

Set

Old Data Set Methods

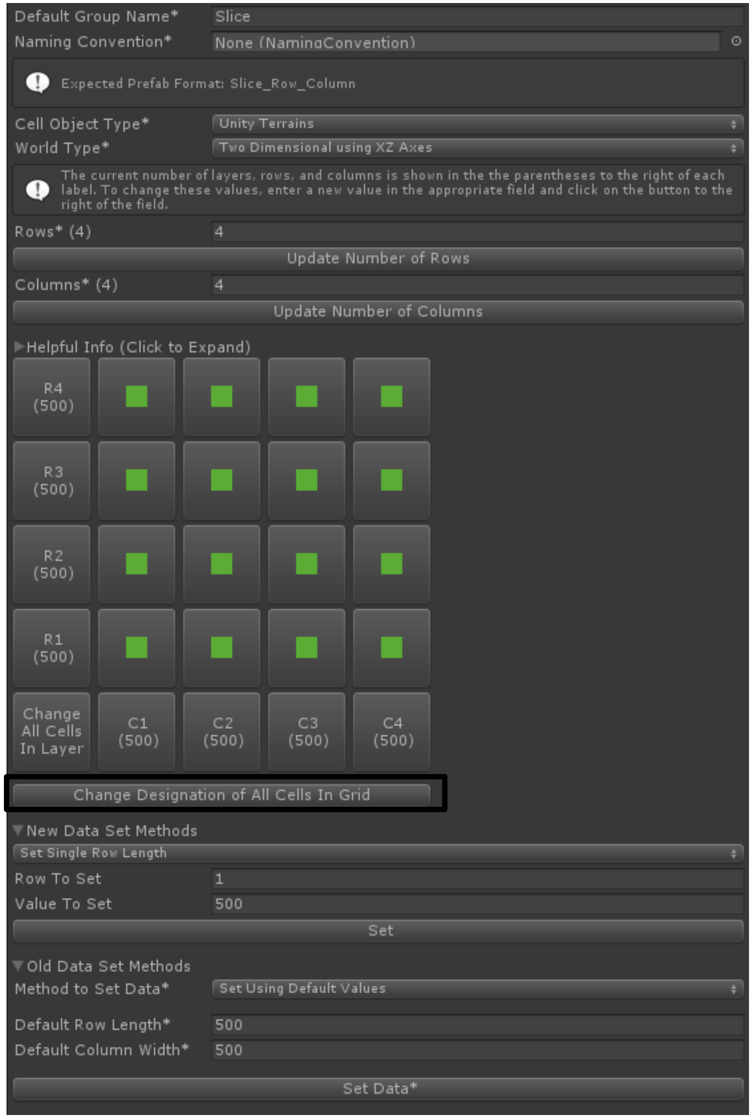
Method to Set Data* Set Using Default Values

Default Layer Height* 500

Asset Labels

World Grid Configuration

You can also change the empty/not empty status of every cell in the grid (on all layers) by pressing the “Change Designation of All Cells In Grid” button



Default Group Name* Slice
Naming Convention* None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type* Unity Terrains
World Type* Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4) 4

Columns* (4) 4

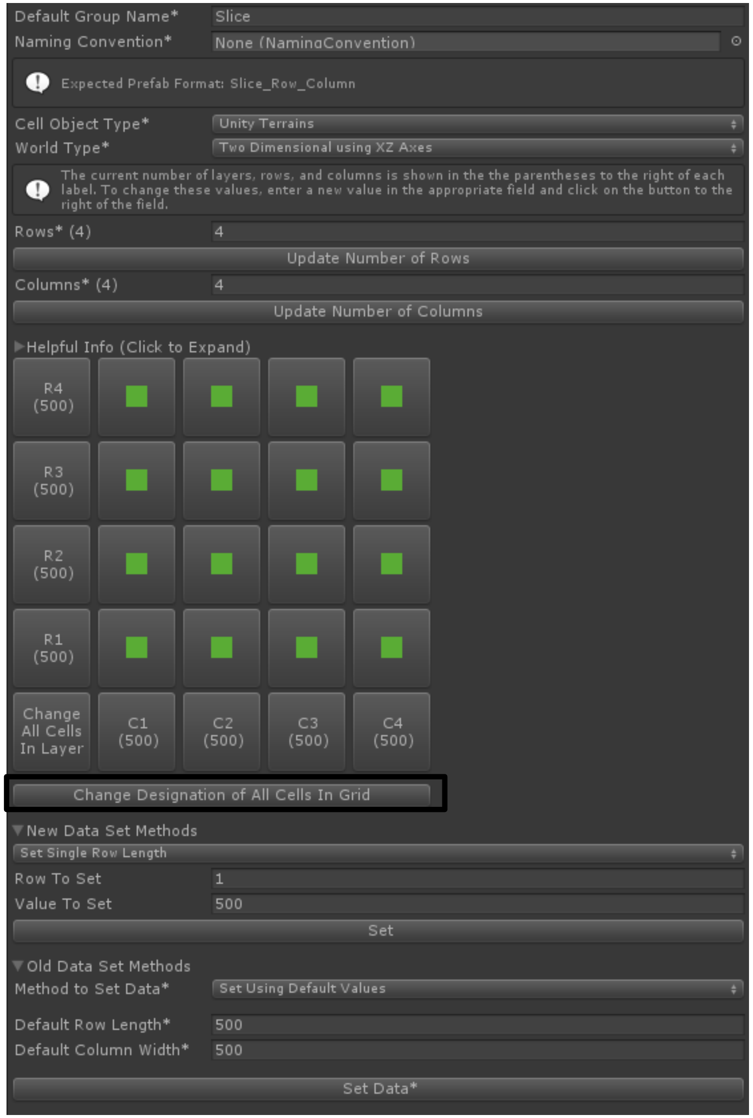
R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

Set Single Row Length
Row To Set 1
Value To Set 500

Method to Set Data* Set Using Default Values
Default Row Length* 500
Default Column Width* 500

World Grid Configuration

You can also change the empty/not empty status of every cell in the grid (on all layers) by pressing the “Change Designation of All Cells In Grid” button.



Default Group Name* Slice
Naming Convention* None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type* Unity Terrains
World Type* Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4) 4

Update Number of Rows

Columns* (4) 4

Update Number of Columns

▶Helpful Info (Click to Expand)

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

Change Designation of All Cells In Grid

▼New Data Set Methods
Set Single Row Length
Row To Set 1
Value To Set 500

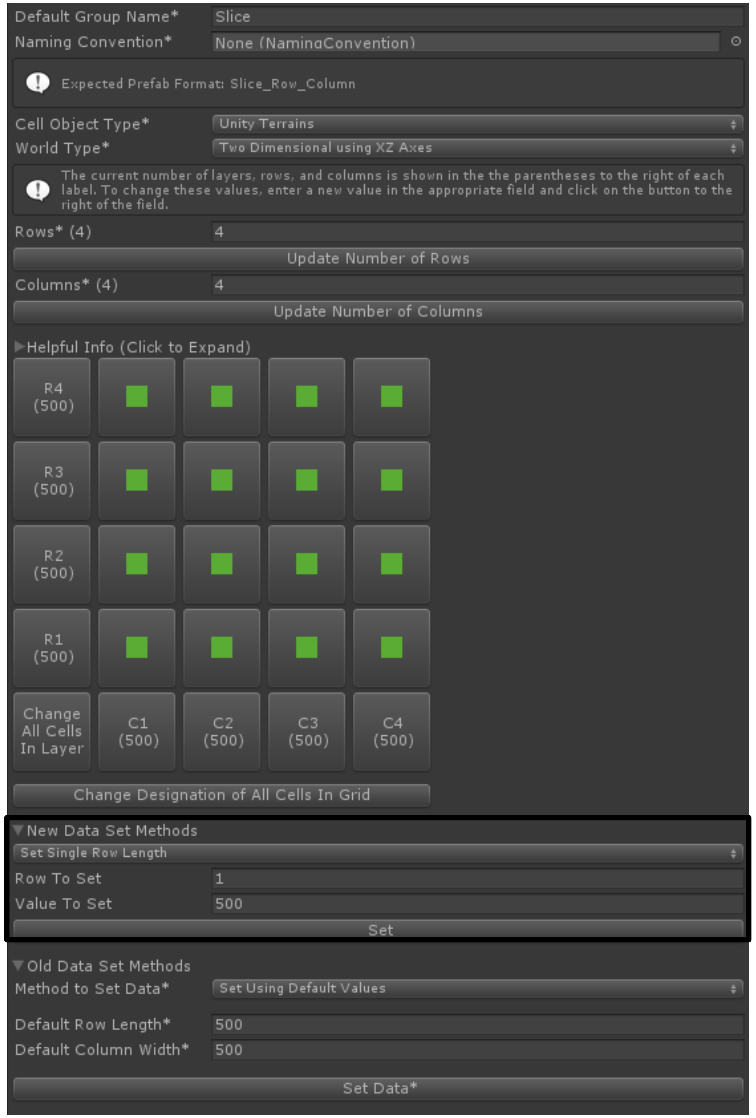
Set

▼Old Data Set Methods
Method to Set Data* Set Using Default Values

Default Row Length* 500
Default Column Width* 500

Set Data*

World Grid Configuration – New Data Set Method



Default Group Name* Slice

Naming Convention* None (NamingConvention)

Expected Prefab Format: Slice_Row_Column

Cell Object Type* Unity Terrains

World Type* Two Dimensional using XZ Axes

The current number of layers, rows, and columns is shown in the the parentheses to the right of each label. To change these values, enter a new value in the appropriate field and click on the button to the right of the field.

Rows* (4) 4

Update Number of Rows

Columns* (4) 4

Update Number of Columns

▶Helpful Info (Click to Expand)

R4 (500)	🟩	🟩	🟩	🟩
R3 (500)	🟩	🟩	🟩	🟩
R2 (500)	🟩	🟩	🟩	🟩
R1 (500)	🟩	🟩	🟩	🟩
Change All Cells In Layer	C1 (500)	C2 (500)	C3 (500)	C4 (500)

Change Designation of All Cells In Grid

▼New Data Set Methods

Set Single Row Length

Row To Set 1

Value To Set 500

Set

▼Old Data Set Methods

Method to Set Data* Set Using Default Values

Default Row Length* 500

Default Column Width* 500

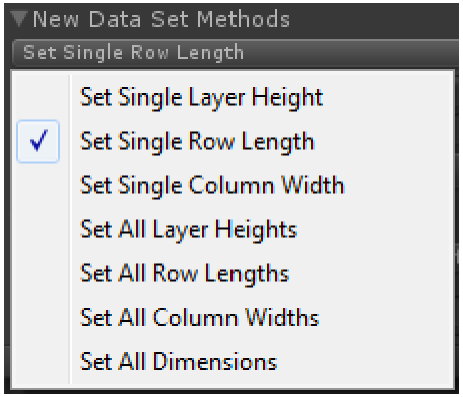
Set Data*

There is now a new way to set the dimensions of each row, column, and layer. The old methods are still available, but I think you'll find the new method easier to use.

World Grid Configuration – New Data Set Method

Click the drop down to see the possible options for what data you want to set. Basically, you can set the dimension of a single row/column/layer, the dimensions of all rows, all columns, all layers, or the dimensions of everything.

Click the Set Button when you're ready to set the dimension(s).



World Grid Configuration - Set Using Default Values

- Only use if every row in your group has the same value as every other row, and every column in your group has the same value as every other column (for instance, every row might have a length of 200 and every column a width of 300).
- These dimensions are defining the cells of the World Grid, not necessarily the dimensions of the objects that will be placed in those cells.
- However, in a majority of cases the dimensions should match the dimensions of your main “base” object (i.e. the Unity Terrain or mesh).
- In some cases, however, you may want the dimensions to be wider than the base object’s dimensions, to provide a sort of cushion between objects (note, this is not allowed when using Unity Terrains).
- If your objects have a renderer component or are Unity Terrain’s and you are not sure of their dimensions, you can try the Set Using Prefabs method instead.

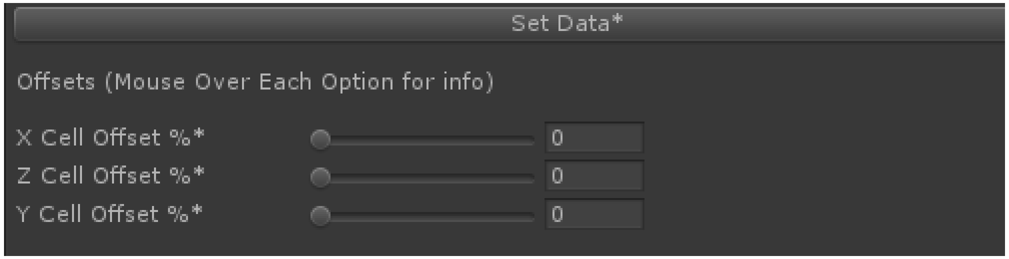
World Grid Configuration - Set Using Prefabs

- Can only be used when the Cell Object Type on the World Grid is set to Unity Terrain or Non Terrain With Renderer.
- Requires that your objects be in prefab form in the project hierarchy.
- Slower than Set Using Default Values method.
- Useful if your rows don’t all have the same length, or columns don’t all have the same width.

World Grid Configuration - Set Using Text Asset

- Should only be used if:
  - Using a Cell Object Type of Non Terrain Without Renderer and all rows don’t have the same value and/or all columns don’t have the same value, or
  - If Set Using Prefabs method fails or produces incorrect values.
- Create a Text Asset (easiest way is to create a .txt file outside Unity and then drag it into the project hierarchy).
- Examples files are provided in the following folder:
  - TerrainSlicing/OtherScripts/DynamicLoadingScripts
- example.txt and example3DWorld.txt

World Grid Configuration – Cell Offsets



Set Data*

Offsets (Mouse Over Each Option for info)

X Cell Offset %* 0

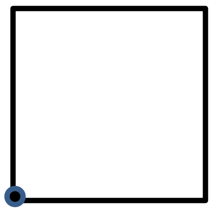
Z Cell Offset %* 0

Y Cell Offset %* 0

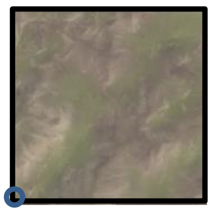
The final options you see on the World Grid are the cell offsets. These offsets are used to tweak the “spawn position” of the objects associated with the World Grid’s cells. More information can be found on the next page, though note that these offsets are not used when using fixed scenes and a Scene Loader component.

World Grid Configuration – Cell Offsets

- If you imagine a world grid cell to be a rectangle, the bottom left most point is the cell's pivot point. If we say that the cell's position is x=100, z = 200, we are really saying that the bottom left most point of the cell is at x = 100, z = 200.

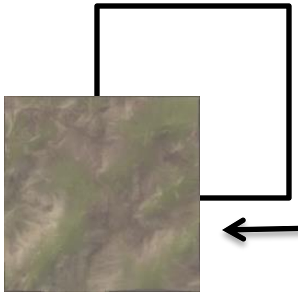


- With a cell offset of x = 0, and z = 0, when we load a prefab or scene, the root object is placed at the cell's position. For Unity Terrain and other objects which have a bottom left pivot point, this works great.



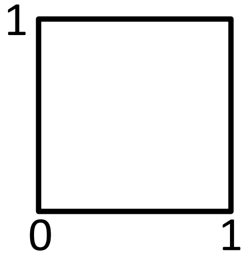
Create World Grid – Cell Offsets

- If the pivot of the object is not at the bottom left, however, loading the object at the cell’s position will result in the object not being fully in the cell. For example, imagine the pivot point is at the center of the object.



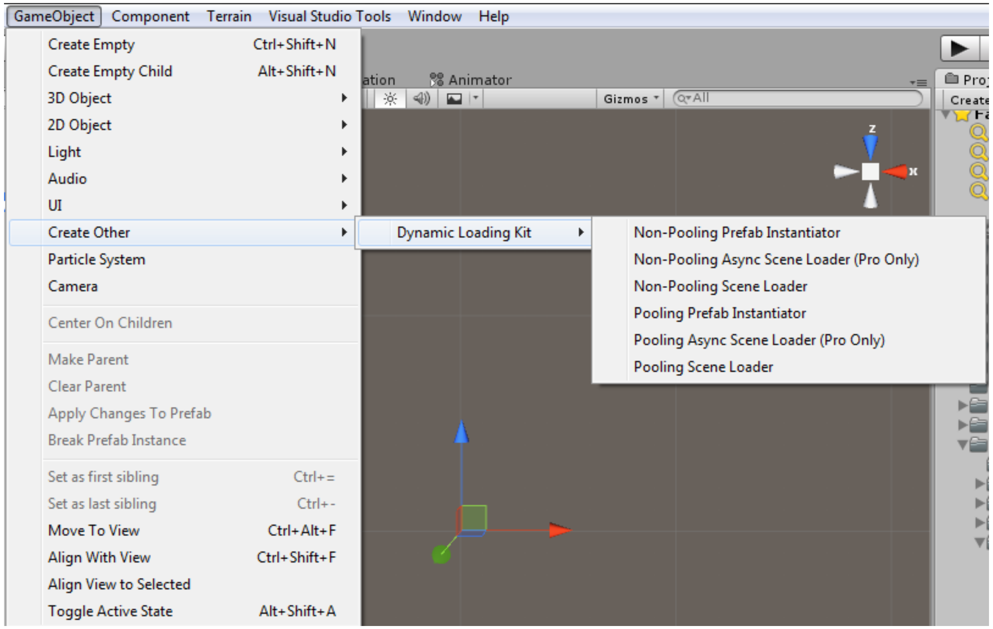
An offset of x = .5 and z = .5 will move the load position to the center of the cell, effectively centering this loaded object within the cell.

- To correct this, you can set an offset value on one more axis. The offset is a value between 0 and 1 and defines the position along that axis where the object will be loaded at.



Adding Components – Dynamic Loading Manager

- It is now time to add the components which will add the dynamic loading functionality to the scene.
- The easiest way to get started is to add one of the preconfigured “Dynamic Loading Manager” game objects.
- These can be found under GameObject -> Create Other -> Dynamic Loading Kit



Adding Components – Dynamic Loading Manager

- There are six different Dynamic Loading Managers, but in reality there is very little difference between them.
- All managers have the following components: Component Manager, World, Active Grid, Player Prefs Persistent Data Controller, and Boundary Monitor.
- All managers also have one of three Cell Object Loaders; a Prefab Instantiator, Scene Loader, or Async Scene Loader.
- All managers a Primary Cell Object Sub Controller; a Non Pooling Primary Cell Object Sub Controller or Pooling Primary Cell Object Sub Controller.
- The three choices of Cell Object Loader and two choices of Primary Cell Object Sub Controller fully account for the 6 different choices in managers (3 x 2). These two components are the only difference between the managers.

Components

- Quick Guides for each component will be added in the future. In the meantime, more information on each component can be found in the Full Guide or API (found @ http://deepspacelabs.net/dynamic_loading/api_documentation/documentation_main.html). In addition, each component's inspector options can be hovered over to see more detailed information about that option as well.
- Here are a couple things to be aware of:
  - Most components rely on other components (from the kit), which means there are references that need to be filled in the inspector. These references are automatically filled when creating a Dynamic Loading Manager object, but if you make changes or add components manually (remove a component and add a different type, for instance), you will need to manually define the references. A warning is displayed in the inspector if a reference needs to be filled.

Components

- As mentioned previously, the Async Scene Loader cannot be used with Unity 4 Indie.
- The Asset Bundle Loader and Async Prefab Instantiator can only be used with the Unity 5 version of the kit.
- In addition, to use the Asset Bundle Loader component you must download the Asset Bundle Manager package from the Asset Store (here), then enable Asset Bundle Integration via Assets -> Dynamic Loading Kit -> Enable AssetBundle Integration For Current Platform.
- You will need to do this for each platform you wish to build to.

Components

- The Player Prefs Persistent Data Controller is there mainly for testing/debugging. It is recommended that you use an alternative save/load solution (check the “Use Custom Save/Load Solution” option on the Component Manager if this is the case).
- You can also create your own Persistent Data Controller, but only if your save/load solution is key based (like Player Prefs). More information can be found in the full guide.
- The Pooling Primary Cell Object Sub Controller is very rudimentary. If you want to use pooling, I suggest creating your own sub controller.

Advanced Topics

- Quick guides for advanced topics such as using the API, using Cell Actions and Cell Object Destroyers, and creating custom components will be added in the future.
- In the meantime, refer to the full guide or contact me at kgillen@deepspacelabs.net (contact me for any other issues/questions/etc. as well), especially if you have suggestions for future quick guides.