

Appendix and FAQ

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Appendix 1: About the Icon

Painter will try to create an icon for you when the Clipboard contains a multiple-selection Pick and you choose to create a Bundle or add the Pick to Favorites. A customized sprite packer is used to create a representative Icon (aka sprite) for the TpBundleTile.

This sprite packer scales all the selected tiles' sprite textures to be the same size and packs them into a Texture in the same relative positions as the Grid Selection. It's not a general-purpose sprite packer; the idea is to create something that gives you a visual cue for what will be painted.

- The output size ranges from 64 x 64 through 256 x 256 and may or may not be square.
- The packer takes a few seconds to operate due to importing activity. In some cases the delay can be significantly longer, depending on the state of the Unity Editor. See the FAQ for more information.

Note that if the source and/or sprite sheet texture isn't set to readable then Painter will temporarily set the texture to readable. If there's a code Exception (that is, a C# error appears in the console) then that texture might remain readable - there's no way to be sure without looking.

You can always screenshot one of these Bundles after you paint it on a Tilemap and create a sprite to be used as an Icon using an image editor. Notes:

- Tiles that are not based on Tile are not packed: no AnimatedTiles or Rule Tiles. This might change in the future. Null tiles or tiles without Sprites show as "?".
- If there are greater than 512 usable sprites to pack, then packing is not performed and "?" is used instead.

Appendix 2: TpBundleTiles

TpBundleTile is a standard Unity tile with an added reference to a Bundle.

When you paint this tile, the tile loads the bundle and deletes itself. It's essentially a proxy.

You can add this type of tile to a normal Unity Palette or to Painter's Favorites List. These can be automatically created when you use Painter's Grid Mode and click the Create Bundle button, or you can create one within the Editor's asset creation menu.

If you add an Icon to the Bundle later or want to change the Bundle's Icon, examine the TpBundleTile asset in an inspector: there will be a button that can be used to copy the Icon from the bundle to the TpBundleTile asset.

In Painter, when a TpBundleTile is being painted, the preview shows the Bundle rather than the tile's sprite. The Tile+Brush does not have this capability, and you'll see the tile's sprite until the Bundle is painted when you click the mouse button.

Please note that applying Custom Modifiers using the (default) shortcut ALT-V won't affect bundle tiles. However, if you examine a TpBundleTile asset you'll note that you can use a custom transform on every tile in the Bundle. This provides another good example of how to use filtering when loading Tile Bundles.

Appendix 3: Known Issues

Grid Snapping

Grid Snapping may not work correctly if your Tilemap's position isn't (0,0,0).

If you offset that by integers, e.g., (1,2,0) the system can usually compensate.

However, if you use fractional offsets from zero the forced use of integer math may round up or down unexpectedly.

When making Chunks or clearing Tilemap regions using the Grid Selection mode the best results are obtained with Tilemaps whose origin is (0,0,0).

Internal Palette math errors

Please note that on rare occasions the palette display may be blank and the console will have the following message:

```
Assertion failed on expression: 'math::all(math::isfinite(size))'
```

This is an error deep within the UiElements Palette component. Click on a different Palette item in the center column and switch back to the Palette that you want to use.

Edit Mode Multiple Selection error

When using Painter in Edit mode you can use multiple selection in the center column. When you do so, a special custom editor appears. If you use **SHIFT** to multiple-select, the multiple selection will occasionally appear and then be discarded about 1/2 second later. Oddly, this doesn't happen when **CTRL** is used to multiple select.

Sherlock Holmes is arriving next week along with Hercule Poirot, hopefully they can troubleshoot this problem!

FAQ

Can I use the Unity Tilemap Editor and TilePlus Painter at the same time?

In general, yes. It can be confusing to use them both at the same time though.

- The selection made in either window can be lost when you use the alternate window. Simply: when you switch windows you may have to re-select the individual tile or group of tiles again. (Pre-Unity6)
- It's possible to have drawing marquees and/or text in the Scene view for both windows which can be confusing. The system tries to avoid this but it might occur from time to time. Try using Painter's settings pane to change the Marquee color.
- Note that Painter won't draw in the Scene view if the "NONE" action button is selected.
- In Unity 6 a change was made to the UTE which increased the coupling between all instances of the Palette UI Toolkit component. Selections made on one will reflect on all other instances.
- If you change the brush on the UTE to the GameObject brush, or any custom brush that derives from GridBrushBase rather than GridBrush then when a selection is made on the UTE-style display in Painter you'll see this message in the console, and the Scene and Painter windows: Palette brush changed: try again!

There's no "Z Position" setting!

The functionality provided by the UTE's Z position setting can easily be duplicated by using a default modifier. See the "Custom Modifiers" section.

What does "Palette brush changed: try again!" mean?

This occurs when you try to use the UTE-style tile display in Painter, and you have an improper brush selected in the Unity Tilemap Editor. See above for more information. Just try again. It's no biggie!

I used the Reset menu item on the Tilemap component, and the Painter didn't refresh properly.

This is because the Reset menu item doesn't trigger any editor callbacks. Use the Refresh button in the lower left corner of the Painter window.

The Scene view shows “Locked/Prefab” when I’m trying to do anything to a prefab.

-or-

I see the following warnings about locked Tilemaps and Prefabs at the top of the rightmost column in EDIT mode.

- Please don't modify this locked tilemap in a Prefab editing context.
- This Tilemap is in a prefab. No editing possible!!

TilePlus tiles can’t be edited inside a prefab.

If you use the Make Prefab menu command and then try to examine or edit tiles in prefabs after dragging the new prefab into a scene or instantiating it programmatically, then that prefab and everything in it is not editable. This is for reasons outlined in the User Guide and Programmer’s Guide.

If this is hindering you, open the Settings tab and check “Allow Prefab Editing.” Please read the warnings about this in the TilePlus Toolkit User Guide before you do so.

Tile Filtering doesn’t really seem to work properly.

If the total number of TilePlus tiles to be shown in the center column exceeds the value set in the Settings Panel “Max # Tiles to Display” then the list is truncated, and filtering is disabled for performance reasons. You can just change the value.

Marquee Drawing Doesn’t Work Properly

In 2023.X at some point Unity added a shortcut that conflicts with the default Painter shortcut: Marquee Shortcut (the default is ALT+1). You can change the Painter Shortcuts in the Unity Shortcut editor or open the Unity shortcut editor, click the ALT button in the display, and right-click the 1 and 2 buttons in the keyboard picture to remove the Unity shortcuts.

I can only use Paint and Erase!

Un-check the “Chunk Snapping” toggle in the Settings pane.

When Tilemap sorting by Sorting Layer and Order is used, changing the values in the Renderer component doesn’t always re-sort the Tilemaps list.

This is because the Renderer does not always cause the Hierarchy Changed editor callback to be issued and Painter doesn't know that anything occurred.

What does “!2D” mean when I see it in the Scene View?

This means that the Editor isn't in 2D mode, and if so, text isn't drawn in the scene.

The Transform modifier shortcuts don't work.

This can occur if the tile asset (or placed TilePlus tile instance) has its Lock Transform setting ON. This is expected behaviour. Also see: I Can't Paint Modified Tiles.

When first opening Painter or when clicking “Use Unity Palette” Unity appears to freeze.

- Clicking I or F in the Clipboard area makes Unity appear to freeze
- Clicking on a Palette in the center column makes Unity appear to freeze
- You might get a popup window talking about “Importing” or how some module is causing a wait. This is normal. Similarly, when creating an Icon by clicking either the F or the I button in the Clipboard can cause lengthy import activity.

In both cases, what happens depends on the state of the Unity Editor, the size of any textures or atlases, the readable status of any textures or atlases, how many sprites have been created from a sprite sheet, and whether 'generate physics shape' is ON, among other things.

The worst offender is 'readable'. If the source texture isn't readable then a texture importer is used to make it readable, then later the same texture importer is used to make it unreadable again. This occurs only once per texture but for large textures with many divisions and/or sprites the process can take a while.

If appropriate, change the texture to readable to avoid the wait (this has implications for your project though).

If 'Informational' messages are set on in TilePlus' configuration then you'll see messages in the console about which assets had their readable flags set true and then restored to false. Usually those won't appear until the entire process is complete.

Another cause of 'freeze' is when very large palettes are examined using `Tilemap.GetUsedTilesCount`. This occurs when a palette item is displayed in the center column; the number of tiles shown on the list item is provided by that method. This can cause a problem with very large palettes since that method blocks execution.

The solution is crude: place the `TpNoPaint` component on the palette prefab's `GameObject`. The palette will not be queried for the number of used tiles and the issue vanishes.

I Can't Paint Modified Tiles

You used a transform-modifying action button or used the Painter Modifiers to change the transform or Color of a tile, but it can't be applied because the tile's Lock flags are set inappropriately. You would have seen a dialog box and/or console messages and/or editor window overlay messages like this (there are a few variations):

```
Modified tile can't be painted
```

```
This tile has the LockColor or LockTransform flags set but modifications to the transform or color were made. This is incompatible. Please see the FAQ: 'I Can't Paint Modified Tiles' in the Painter User Guide.
```

What's going on?

When you paint a tile on a Tilemap with either the Lock Transform or Lock Color flag bits set then any changes to the transform and/or color of a position in a Tilemap revert when the tilemap refreshes. Various Painter functions and actions can affect the value of color or transform at one or more positions on the Tilemap, but the tile asset itself isn't modified. Hence, when the Tilemap refreshes (a scene loads, a scripting reload occurs) the values for color and/or transform will revert your changes.

When can this occur?

- Action buttons used on already placed tiles or during preview: Rotate, Flip, Reset Transform. When used on placed tiles the warning message appears immediately. When used during preview, the warning message appears when the tile or multiple section is painted.
- When you use a Painter Modifier to change the color or the transform of a tile and then try to paint it.
- Grid Selection Mode: you use the Apply Mod button on an area.
- Move Action: when you pick a tile or selection and prior to painting use the Flip or Rotate shortcuts or apply a modifier with ALT+V.

Before these actions occur, the system checks to see if the tile flags will allow the modification. In other words, you can't modify the transform if the Lock Transform flag is set, and you can't modify the color if the Lock Color flag is set.

If you want to reset these flags, see the TilePlus User Guide section "Modifying Tile Flags" which shows how to use a menu command to change the Tile Flags on one or more tile assets. Very handy when you must make more than a few changes. You can use the "Focus on Asset" buttons in the bottom section of the right column to quickly select the asset when it's being inspected in Painter.

Note that placed TilePlus tiles are independent instances that are independent of the tile asset in the Project folder. If you get this warning message when trying to affect a TilePlus tile already painted on a Tilemap, you can change the flags by inspecting that tile in Painter's Edit mode.

Warning: Lock Color flags set!

May also be a warning about Lock Transform flags or mentioning Flipping/Rotating.

These are warnings that although Painter will perform the operation, the Lock Transform or Lock Color flags will thwart the changes. You'll see these warnings for single tiles or for a multiple selection where at least one tile has Lock Transform or Lock Color flags set.

Also see the FAQ I Can't Paint Modified Tiles.

Refresh button doesn't work

This is normal: The refresh button at the lower-left corner of the Painter window and the Painter window's context menu item "Refresh Tp System" have a short lockout and won't respond to a second click for a few seconds.