TilePlus Painter

Contents

Overview

The Tile+Painter (T+P) is a different sort of Tilemap painting tool. It's brushless and designed for single tile operations but can also paint special Tilemap archives containing any arbitrary number of tiles in a single operation.

T+P is an editor window with three modes: **Paint**, **Edit**, and **GridSelection**.

In **Paint** mode, T+P presents lists of Tilemaps, and lists of Tile Sources (including Unity Palettes, archived Tilemaps, and a History stack) rather than a Palette and Brushes. Select a map in the first list and a source in the second, then a third list presents the tiles available to paint.

Edit mode is similar. Click on a Tilemap in the leftmost list and the center list displays all the tiles on that Tilemap. Click on an individual tile, or Pick one from the scene, and you can edit it.

GridSelection mode comprises utilities for creating, managing, viewing, and using Grid Selections.

In Paint or Edit modes, action buttons choose Painting, Erasing, Moving, and so on.

If you have existing Palettes, T+P can use those as sources of tiles to Paint. You can also poke tiles into a History Stack by picking or context-clicking on a tile Asset in the Project Folder and use that as a Tile source.

If your Tile asset has an InstancedGameObject you can even Paint *just the GameObject*. It's an easy way to paint prefabs aligned to a Tilemap grid.

Since T+P is based on the Tile+Toolkit, you can paint 'Tilemap Archives' (formally known as **TileFab** and **Bundle** assets) just as easily as any single tile. The TilePlus User Guide explains how to create these special assets right within your scene.

Please read the FAQ at the end of this document, it may answer questions that you have.

Tile+Painter Tool

This appears in the Unity toolbar when a Tilemap is selected. If you click on the toolbar button the Tile+Painter window will open if it isn't already open. It functions similarly to the Tile Palette toolbar button which will also appear when a Tilemap is selected. You don't need to use it if you don't want to.

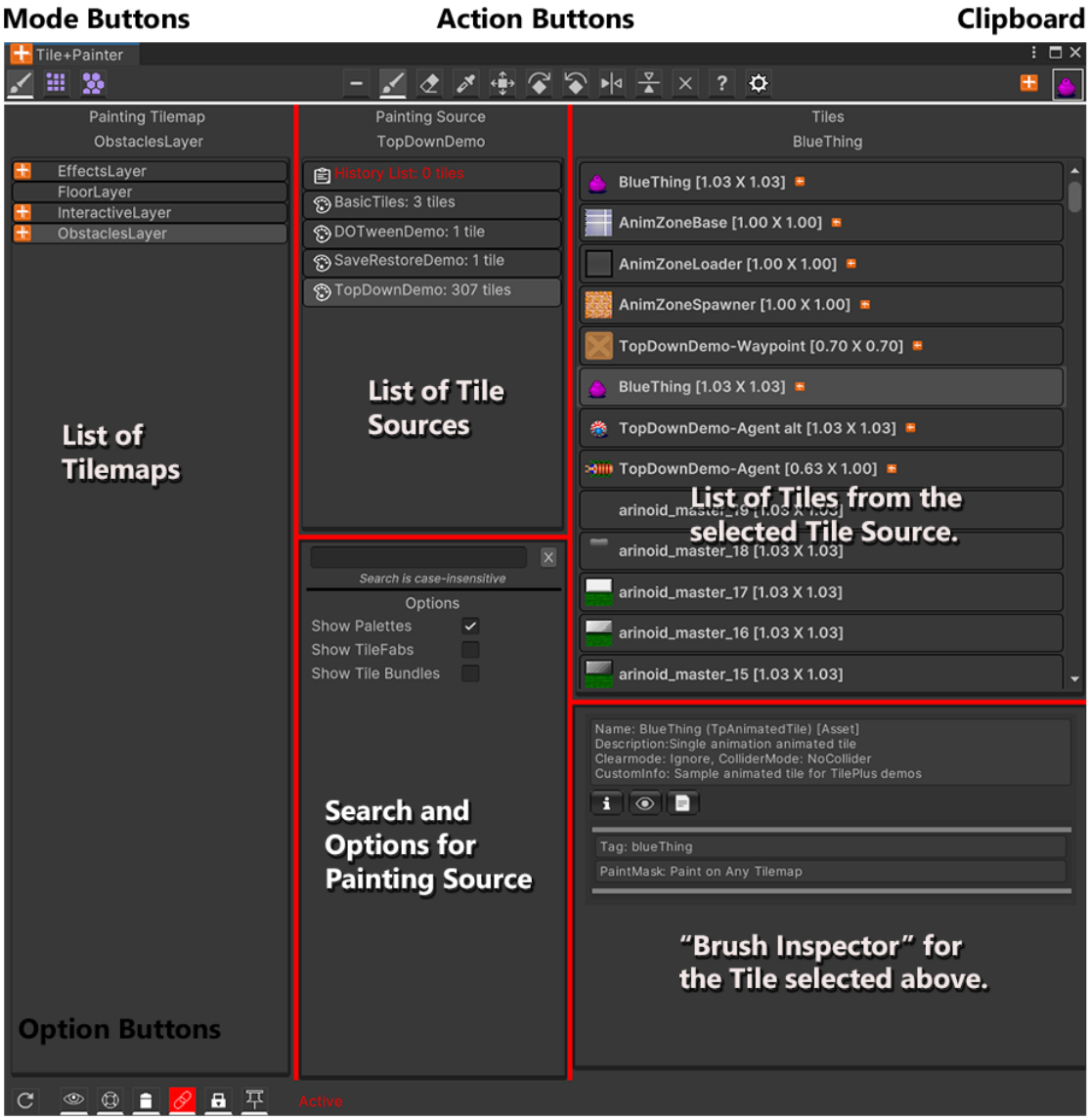
Nomenclature Note

The word "**tile**" refers to *any* tile. **Tile** refers to *normal Unity tiles*. **TilePlus or TPT** tiles are *TilePlus Toolkit tiles*, and **TileBase** tiles (those that derive from the TileBase class rather than the Tile class) are *specialized tiles such as Rule tiles*. **TilePlus** tiles are referred to as **TPT** tiles for brevity. The reason for this note will become apparent as you read through this document.

Shortcut Viewer

The Tileplus/Shortcut Viewer menu item displays a dockable window containing the Tile+Painter shortcuts. This window also has its own shortcut, default value is ALT+6. It's handy when learning.

Tile+Painter Window



Mode Buttons

T+P has three modes: **PAINT, EDIT,** and **GRID**. These correspond to the Paintbrush, Tilemap, and Grid toolbar buttons at the top-left of the window. *Notice that the bottom of the active button is highlighted*.

In **PAINT** mode you select a Tilemap in the left column, a source of tiles in the center column, then choose a single tile from the right column. The **PAINT** action button (Paintbrush icon) will automatically activate, and you can then place a tile on the Tilemap that you'd selected in the left column by positioning the cursor and clicking the mouse as usual.

EDIT mode works similarly except the center column shows all the tiles on the Tilemap selected in the left column and the rightmost column displays the tile's fields for TilePlus tiles or generic information for other tile types.

GRID mode is used to manage Grid Selections.

The default shortcut to change modes is ALT+E.

The red splitter bars can be used to arrange the different panels in any way that you like. For unknown reasons, Unity sometimes either resets them or places them in odd places after a scripting reload. Use the Refresh button in the lower-left corner to rebuild the window if that happens.

Action Buttons

These toggles are active in **Paint** or **Edit** modes, but most are *disabled* in **GridSelection** mode.

Off	Disengage T+P, cancels Move operation.	ALT+O
Paint	Paint the tile in the Clipboard. Not available in EDIT mode.	ALT+B
Erase	Erase a tile	ALT+D
Pick	Copy a tile from a Tilemap to the Clipboard or History Stack	ALT+I
Move	Move a tile on the same Tilemap or to another Tilemap.	ALT+M
Rotate CW	Rotate the sprite of a tile CW.	ALT+R
Rotate CCW	Rotate the sprite of a tile CCW.	ALT+T
Flip X	Flip the sprite of a tile on the Y axis.	ALT+X
Flip Y	Flip the sprite of a tile on the X axis.	ALT+C
Reset Transform	Reset the transform of a tile (remove rotation/flip, restore size)	ALT+Z
Help	Displays some basic information.	None
Settings	Tile+Toolkit and Tile+Painter settings.	None

Special Action Buttons

The Rotate, Flip, and Reset Transform actions have **two** uses:

1. Click on the button, then click on tiles in the Scene to Rotate, Flip, or Reset.
2. While the PAINT action button is selected, use the *shortcut* (not the button) to Rotate, Flip, or Reset the transform of the Tile that you want to paint while it is being previewed, that is, just before you click the mouse to paint the Tile. This also works during Move after you've picked a Tile.

It's important to recognize the difference: the first live-edits tiles in the Tilemap **after** they're placed. The second changes the transform of a tile **while it's being previewed *prior* to clicking** on the Tilemap location where you want to place it.

The second use, above, is how the Unity Palette deals with Rotations and Flips. The first use lets you change the transform of a tile without having to use an Inspector. E.G., Select the Rotate CW action button. If you click on a Tile while that Action button is selected the Tile's sprite will rotate CW.

These transform-modifying actions only work on tiles that are, or derive from, Unity Tiles (this includes all Tile+Toolkit tiles). Any tiles that derive from TileBase do not have a transform property. For example, these actions can't work on Rule tiles or 2D Tilemap Extras' AnimatedTiles since they derive from TileBase rather than Tile.

Modifying a tile transform during preview changes the small icon next to the clipboard to the Transform icon as an indicator.

Chunk Snapping Effect

When the Chunk Snapping toggle is ON in Settings then only the Paint and Erase tools can be used in Paint or Edit modes. See the section on Chunk Snapping later in this document.

Custom Transforms

Also check out the "Custom Transforms" section later in this document. This works in scenario 2 above: if you use the Custom Transform shortcut (default is ALT+V), then the tile about to be painted has a transform applied to it from a list of transforms that you create. This can be reverted using the Reset Transform shortcut shown above.

The Clipboard

The Clipboard is in the upper-right corner of the Painter window. It shows what will be Painted when you use the Brush tool or what's shown in the Selection Inspector in Edit mode.

The Clipboard comprises two elements:

- Clipboard Content: The sprite of the Picked or Selected tile or special icons for TileFabs and Bundles.
- Clipboard Icon: X is empty, or a TilePlus Icon for TPT tiles, a Scriptable Object Icon for normal Unity Tiles, or special icons for TileFabs and Bundles.
    - If the tile was picked from the scene and you use the Rotate or Flip Shortcuts or Action Buttons, or the Custom Transform function, then the small icon will change to the Unity Transform icon.

The border of the Clipboard Content box is one of several colors depending on the situation:

- Null tiles or no tile: Black
- Bundle or TileFab: Yellow
- All other tiles: Red if Picked from a Scene, otherwise White.

Click on the Clipboard image to clear the Clipboard. CTRL+Click moves the Clipboard's tile to the History Stack.

Option Buttons

The buttons at the bottom of the window are used to refresh the window and to toggle various options.

Refresh	Rescan all Tilemaps, delete and rebuild window contents.
Update in Play	When ON, inspectors update in Play mode.
AutoSave	When ON, auto-save the scene if TPT tiles are modified.
Confirm Deletions	When ON, deleting tiles requires confirmation.
Editor Selection Sync	When ON, selecting a Tilemap in the hierarchy selects it in the T+P window, and vice versa. This is backlit RED when the T+P 'tool' is activated. See below.
Overwrite Protection	When ON, tiles cannot be overwritten when Painting. Ignored in certain situations.
Pick-to-Paint option	When ON in PAINT mode, a PICK will automatically change to PAINT.

You might notice the word "Active" in red next to the Pick-to-Paint option button. Active means that the Painter is active in the Scene. If Drag-lock is ON (Ctrl is held down when Painting or Erasing) then that's also shown here.

List of Tilemaps

The list of Tilemaps in the left column updates automatically when you add or delete Tilemaps in the editor or load/unload scenes. If there's more than one scene in the hierarchy then the Tilemaps list prepends the name of the scene to the name of the Tilemap so that you can tell what's going on. The list is sorted alphanumerically or by Sorting layer and order in layer.

If the Tilemap has any TPT tiles, then the TilePlus gizmo icon is displayed on the same line as the Tilemap name. If the Tilemap is in a Prefab, then the Prefab icon is shown.

All Actions which affect a Tilemap require a Tilemap selection. Except for Off, Help, and Settings, the function buttons are disabled if there's no Tilemap selection. Off, Help, and Settings are always active.

The center and right columns change depending on the selected Mode.

Help

The Help button presents a reminder of what the Action and Options buttons do. Click it again to close it.

At the top of this panel, you'll find a button which opens the Shortcuts Viewer editor window. This dockable window displays all the Painter shortcuts that you'd see if you opened the Unity Editor shortcut configuration.

Settings

This displays settings for the Tile+Painter editor window (some of which are duplicated by the Option buttons at the bottom of the window), along with the TilePlus Toolkit options as also seen in the TilePlus Configuration window. If any TileBase-tile plugins are installed, they'll be mentioned near the top of the display.

Please note that some of the options in the Toolkit settings section require clicking the RELOAD button to take effect. This isn't the same as the Refresh Option button at the bottom of the window.

You can slide the red splitter bar to expose as much of either section as you like.

Chunk-Style TileFab Snapping

There are three settings related to Chunk Snapping. Please see the "Advanced TileFab Use" document for more information. Please note that if the Chunk Snapping toggle is on then the only Tools that can be activated are Paint and Erase. Also, the Painting Source List only shows the History List and TileFabs that are:

- Chunks – and
- Match the Chunk Size choice that you made in Settings.

Note that when the Chunk Snapping toggle is on, TileFabs will always show in the center column even if the Show TileFabs checkbox is off in the center column's Options subpanel.

When you toggle Chunk Snapping off, the Settings pane will close. This is by design as a refresh needs to occur.

Mouse Cursor

When using an Action that affects the scene the mouse cursor is accompanied by a marquee that highlights the selected position. The Grid Position of the cursor is also displayed, along with textural hints about the operation. Certain actions have optional functions controlled by the CTRL, SHIFT, or ALT keys. The Chunk Snapping settings also affect the display.

Paint Mode

In Paint mode (the image a few pages back) the *center column* displays sources of tiles for painting. After selecting a source, the *right column* displays the contents of the selected source.

List of Tile Sources

The center column is a resizable split view. The top part displays all possible tile sources for paintings. This can be any Palettes that you've created, TileFabs, Bundles, and the History Stack. Painting on a Tilemap also requires a selection from this list, and then selection of an individual tile to paint.

The bottom part of the split is a search field and option toggles. These let you easily shrink or expand the number of sources in the Painting Source column.

If you want to omit a certain Palette from the list, change its GameObject's layer to anything other than default. To omit a TileFab or Bundle, set its IgnoreInPainter field to true in an Inspector.

History Stack

The non-persistent History Stack operates in conjunction with the Clipboard and the Pick tool.

- CTRL-click on the Clipboard image to add the Clipboard tile to the top of the History Stack.
- CTRL-click when using the Pick tool, the picked tile is added to the top of the History Stack.
- Select one or more tile assets in the Project folder, then:
    - Right-click and use the context menu item '*Add To Painter History*.'
    - Use *Assets/Add To Painter History*.

You can use the History Stack just like any other Tile Source; it's basically a temporary Palette. The History Stack is cleared when the Refresh option button is clicked. It's not saved anywhere. If you find that you're copying the same things into the History Stack repeatedly just make a new Palette with those tile assets.

List of tiles from Selected Tile Source

The right column is also a resizable split view. The top part of the split lists the tiles from the Source selected in the center column.

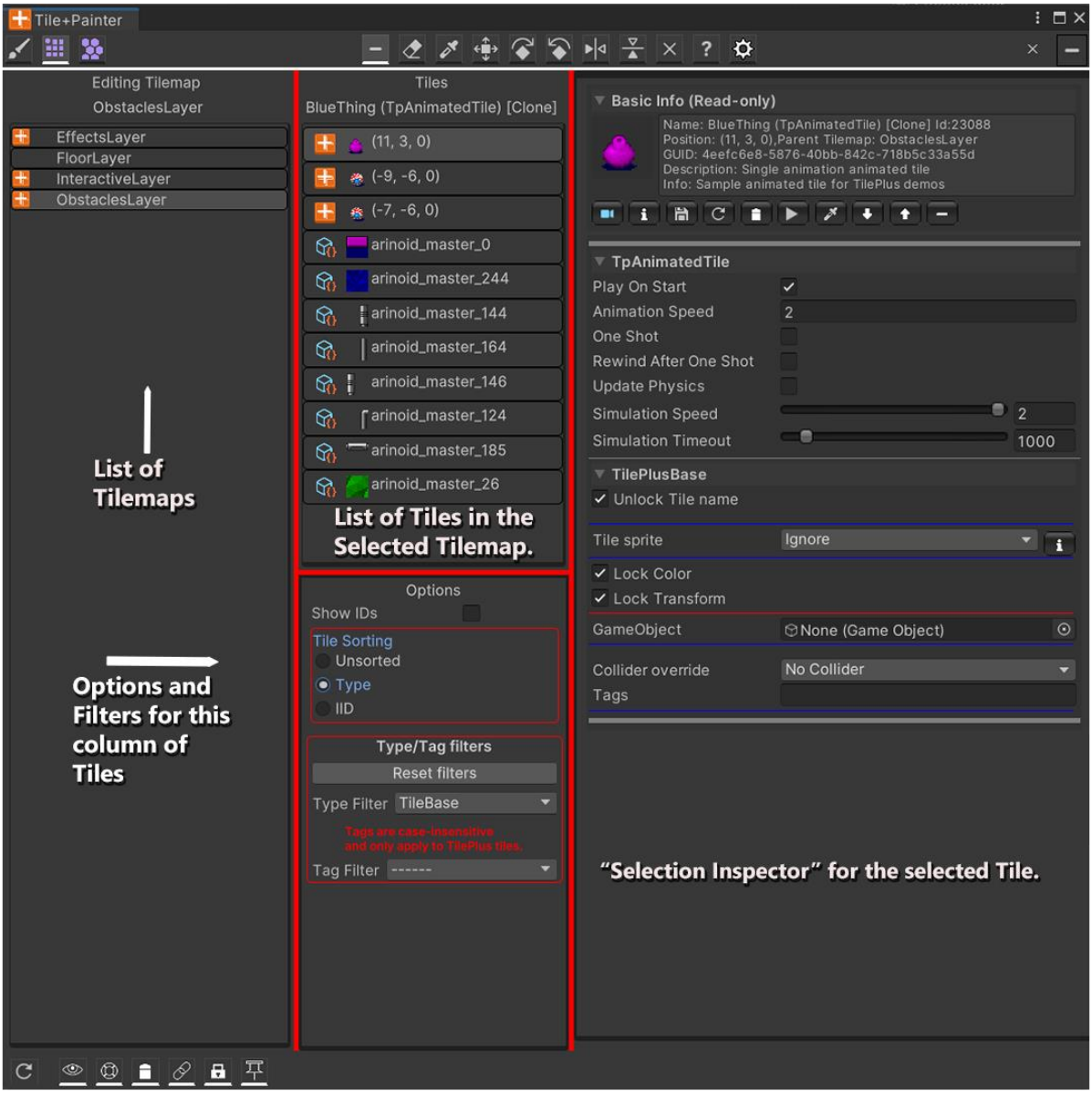
When you click on a tile in the List, that tile is placed in the Clipboard and information about the tile is displayed in the bottom part of the view. The Clipboard content is ALWAYS what will be painted when using the Paint tool.

The bottom part of the view is called the Brush Inspector since it's essentially the same as the Brush Inspector seen in the bottom part of the Unity Tile Palette when using the Tile+Brush. This shows information about whatever tile is selected in the top part of this right-hand column.

If the Source is a TileFab or Bundle, then there's only one choice since these are assets and not lists of tiles. Hence, this single item is pre-selected in the right column and pre-placed in the Clipboard.

Please read the section on Bundles and TileFabs before you try to paint them.

Edit Mode



The *left column* still displays a list of Tilemaps. When you select a Tilemap in the *left column* then the *center column* will display the tiles in that map along with a **Tile-type icon**, a **thumbnail** image of the tile's sprite, and the **position**, followed optionally by the tile's Instance Id (TilePlus tiles only).

When you select a tile in the *center column*, the *right column* shows an appropriate selection inspector, and the tile in the scene will be highlighted for a time determined by the "Highlight Time" setting. The highlighting does not occur if any Action button is selected and that action type affects the scene (anything aside from Off, Help, or Setup). If you want to highlight the same tile again, double-click on it or press ENTER while it is selected.

Tile-type icons

- TilePlus tile: The TilePlus gizmo icon is displayed.
- Tile (or TileBase): The Tile icon is shown.

Tilemap List Options

The bottom part of the center column has display, sorting, and filtering options.

Show IDs: if checked, tile Instance IDs are shown next to their position. For TilePlus tiles this is the ID of the clone instance in the scene. For all others, this is the ID of the Asset in a Project folder.

Sorting: Choose None, by Type, or by Instance ID.

Filtering

- **Filter by Type**: Choose *TileBase* for ALL tiles. Choose *Tiles* for all tiles derived from Tile (most normal Unity tiles and all TilePlus tiles; but NOT Rule Tiles or other Tiles deriving directly from TileBase rather than Tile).
    - TPT tile types are added to this list automatically. Those deriving directly from TileBase require a simple plug-in. One is already provided for Rule tiles.
- **Filtering by Tag:** this is only used for TPT tiles (since others don't have tags).

The filters are not persistent and automatically reset when appropriate. The filters are ANDed, that is, both the Type filter and the Tag filter are used. Internally, the Tag filter runs first (only for TPT tiles). When the number of tiles in the list is greater than the Settings value: *Max # Tiles to display* the list is truncated, the labels change color, and filtering isn't used.

Selection Inspector Variants

For **TPT** tiles you'll see the same Selection Inspector as seen when using the Tile+Brush. Editing these never affects the original TPT tile asset in the Project folder.

Tile tiles (i.e., normal Unity Tile assets) are assets, so you can only open an Inspector on the asset. Listing all the positions for a Tile might make the list thousands of items long which would be useless. To edit a particular Tile, use the **Pick** tool to edit the Tile at a particular position. Then you can:

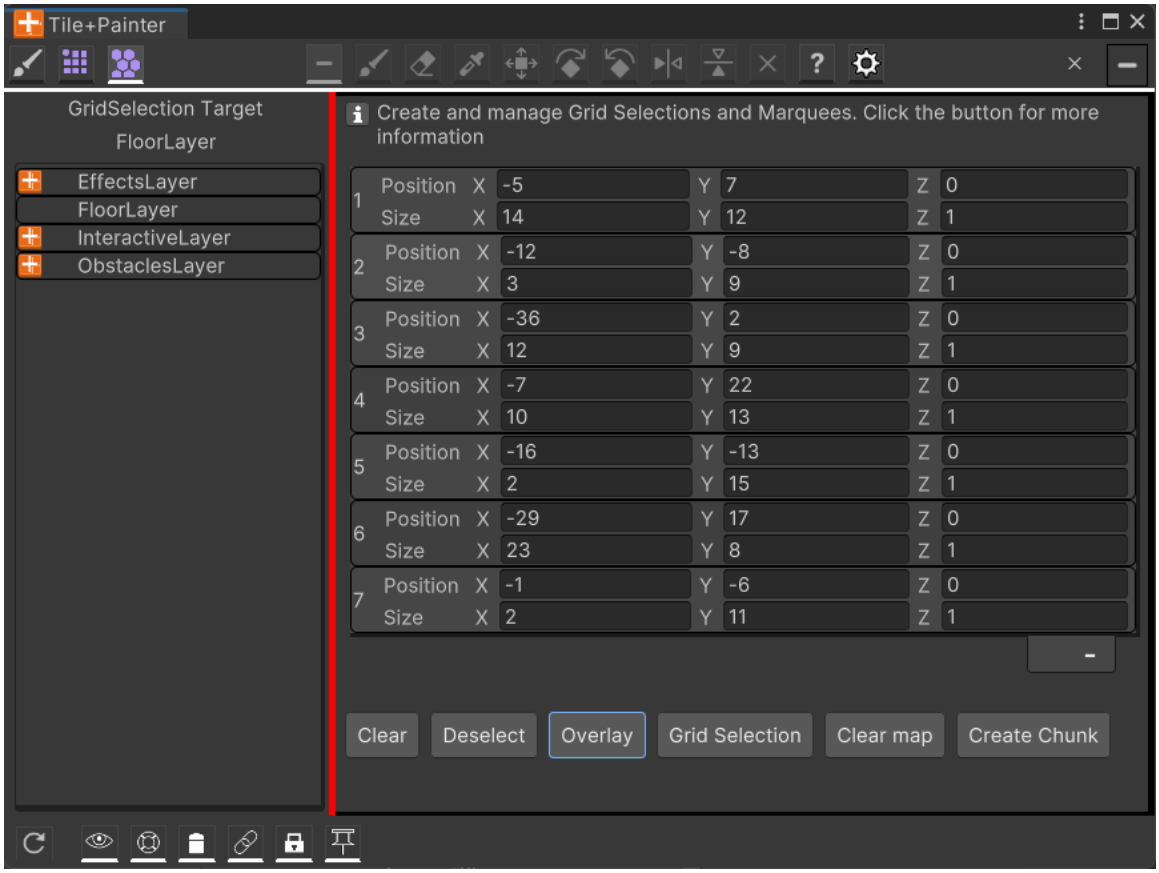
- See a preview of the Tile's Sprite.
- Focus on the selected Tile.
- Inspect the selected Tile.
    - This action opens a **Unity Inspector** on the Tile **ASSET**.
    - This is the **Tile asset in the Project**, so be careful!
- Change the Lock Color or Lock Transform flags.
- Change the two GameObject-related flags.
- Change the Color if Lock Color is unchecked.
- Change the Transform if Lock Transform is unchecked.

If you change the flags, Color, or Transform: The Asset *is not affected* since these changes only affect the Tilemap at the Tile's position.

To reiterate: changes in this inspector *do not* affect the original Tile asset in your Project folder. The only time that that could happen is if you open the asset in a Unity Inspector as mentioned above.

TileBase tiles (i.e., Rule tiles and the like) just show the tile sprite (from the plugin) and allow you to open an inspector on the TileBase tile asset (again, this is in the Project). If you want to edit the values at the Tilemap position, use the Pick tool at that position. However, results may not be what you expect when using Rule tiles.

Grid Selection Mode



This pane is used to organize Grid Selections. When this panel is open you can capture Grid Selections with the Unity Palette or from within Painter, to clear Tilemap areas, or to create TileFab chunks. What you see in the list is the BoundsInt from a Grid Selection, which is all that's needed to create a new one on demand.

To capture a Grid Selection from the Painter, first select a reference Tilemap in the left column. This selection determines the GridLayout used when composing the visible Marquee. Then hold down the Marquee Drag shortcut key (default is ALT+5), click the mouse and drag out the size that you want. When you release the mouse button a new Grid Selection is created: you can see in the list as shown above and, in the Inspector, where the Grid Selection should appear.

If you don't like the Grid Selection just release the shortcut key before you release the mouse button, and the Grid Selection is discarded. The Grid Selection will also be discarded if the size of the Grid Selection is evaluated to 0.

To use one of the items in the list, click on it to select it. When a selection exists and there's a valid Tilemap selection in the left column, then the **Overlay** and **Grid Selection** buttons become enabled.

Overlay displays the selection in the Scene view. **Grid Selection** also creates a new Grid Selection.

The selection will remain visible until the active tool changes (e.g., you change to the Palette or some other Tool like the Unity Move or Rotate tools) or a new Selection or GridSelection is created.

Some of the more obvious uses of this feature include using the same Grid Selection repeatedly when creating TileFabs, when creating Templates for use with the TpZoneLayout component, and the Tools/TilePlus/Clear Selected Tilemaps utility function.

One ends up using the Palette over and over just to create the same selection, so this can become a very handy workflow shortcut.

The **Overlay** button is handy when using the Painter and you want to define an area that you want to draw in for creating Templates or just as a guide.

Only one overlay can be shown at a time and the items in the list are intentionally not editable.

Clear map uses the active Grid Selection to invoke the Clear Selected Tilemaps menu function.

Create Chunk uses the active Grid Selection to invoke the Bundle Tilemaps menu function.

These last two buttons are conveniences only. Note that they are disabled unless there is an active Grid Selection, either from the Palette or from this tool. From this pane you can click **Grid Selection** to create one from the area defined by the selection in the list.

Please see the “Known Issues” section at the end of this document for a note about how Tilemaps whose world origin isn’t (0,0,0) can affect this tool.

Workflow

Paint

The Paint action button is only available in Paint mode.

1. Select a Tilemap to paint on in the left column.
2. Select a source of tiles from the center column: a Palette, the History List, a TileFab, or a Bundle.
3. Select a specific tile in the right column (not needed for TileFabs or Bundles).
4. Move the mouse to the painting position.
5. Click to Paint.

Overwrite Protection: this prevents you from accidentally replacing a tile. This is controlled in the Settings panel, or you can toggle this on/off with an option button at the bottom of the window.

- Active: “Protected” is displayed when a tile is under the cursor position. Hold the ‘1’ key to temporarily unprotect.
- Inactive “Will Overwrite” is displayed when a tile is under the cursor position. Hold the ‘1’ key to temporarily protect.

TPT tiles also have inclusion and exclusion lists that specify which Tilemap or Tilemaps are allowable to paint on for a specific type of tile. See the TilePlus Toolkit documentation for more information.

- ***Overwrite protection is ignored when painting TileFabs or Bundles.***
- ***Locked tiles can’t be painted nor added to the History Stack***

Click on the mouse to paint a single tile. **Shift-Dragging** will repeatedly paint the same tile. **Ctrl-dragging** repeatedly paints on a single row or column. You can use the six transform-modifying shortcuts prior to clicking. *Transform modifications and Shift/Ctrl-dragging **can’t** be used with TileFabs or Bundles.*

Paint Tool and Grid Selection

Recall from the Grid Selection Mode discussion that you can *hold down the Marquee Drag shortcut key (default is ALT+5), click the mouse and drag out the size that you want*.

This also works when using the Paint tool. If the selected tile for painting is not a TPT clone tile, then dragging a Marquee will fill the resultant Grid Selection with the selected tile if the Marquee Drag Shortcut key is held down when the mouse button is released. Overwrite protection is not used.

If there’s an existing Grid Selection in the Scene View (including a Grid Selection that was made active from the Grid Selection pane) then clicking the mouse within the Grid Selection will fill that Selection area with the selected tile (if the tile is not a TPT clone tile).

The case of a TPT clone tile being unpaintable in this fashion will only occur if the selected tile (i.e., the one in the clipboard) is a ‘pick’ of a TPT clone tile in the scene.

A Grid Selection made while using the paint tool is added to the list of Grid Selections in the Grid Selection pane.

I Just Want to Paint a GameObject!

If the ALT key is held down when the mouse is clicked and the tile (a TPT or Unity Tile) that you're painting has a non-null `GameObject` field, then that GameObject will be painted instead of the tile. It will be parented to the selected Tilemap and placed in the center of the cell. Shift- or Ctrl-dragging are available as well (but you need to do Alt+Shift-Drag or Alt+Ctrl-Drag).

Note: The prefab's Layer will be set to that of the Tilemap's GameObject.

Erase

1. Select a Tilemap in the left column.
2. Click on a tile to delete.

If Confirm-Delete is active, you'll be prompted about the deletion. To Drag-Erase, hold down either Shift or Ctrl, but note that Confirm-Delete is ignored.

Pick

Pick is used to copy a tile from a Tilemap to the Clipboard or History Stack. The Shift and Ctrl buttons act as options, as does the "Pick to Paint" option button at the bottom of the window (Pin icon).

1. Select a Tilemap in the left column.
2. Click on a tile to pick it and place it in the Clipboard.

In either Paint or Edit mode, hold **Ctrl** to place the picked tile in the History Stack rather than the Clipboard. If you hold Ctrl and Shift together the pick operation does not occur. Text at the cursor position shows the various pick options as you select them. Also read "Picking, the History Stack, and TPT tile cloning" elsewhere in this document.

Pick-to-Paint Mode

If the Pick-To-Paint option button is active, then the active tool will change to Paint right after you Pick. If you just want to copy to the Clipboard, then hold down **Shift** when you click.

If the Pick-To-Paint option button is inactive, then the active tool will not change. If you want to change to Paint right after you pick, hold down **Shift** when you click.

Note: Pick-to-Paint is only available when the window is in PAINT mode.

Move

Moves a single tile from one position to another.

This action has four sequential steps:

1. Click the Move tool button or use the shortcut key.
2. Select a Tilemap in the left column (Can be skipped if a Tilemap is already selected).
3. Picking step: Select the tile to move (you don't have to use the Pick tool, this is automatic).
4. Move: Repaint the tile.

After the first Move, you can continue to Pick/Move repeatedly.

To reset the step to Pick just click the Move button again. To cancel Move when Picking either click the button again or click the OFF button.

Note that neither Shift nor Ctrl affects the Pick operation when within a Move sequence. If the tile is a TilePlus tile, the Tilemap exclusions operate as usual when you repaint the tile. For all tiles, Overwrite Protection is active as well. You can use the five transform-modifying shortcuts prior to clicking during the Move phase (which is basically Painting).

Text at the cursor position shows “Move-Pick” during the Pick step.

The center and right columns of the window are disabled during all steps of the Move process to avoid inadvertent selections in those areas.

Changing Tilemap After Picking

If you change the Tilemap after the Pick, then you can move the tile to the new map.

If your tile has a GameObject or is a “Rule” tile then the results might be unexpected.

Rotate, Flip, and Reset Transform

These five actions operate on a single tile and require that a Tilemap is selected in the left column first.

Text at the cursor position reminds you which action is currently available.

Note that these actions affect the Tilemap when you select a tile with the mouse, but they affect the transform of the tile when applied during preview (while painting, which includes the Paint phase of a Move).

Reset Transform is also handy if you’ve modified the transform of a tile at a position in a Selection Inspector and you need a quick way to reset it.

Custom Transforms

Custom transforms are applied with a shortcut key, defaulting to ALT+V. This works in conjunction with an Editor window with the clumsy name of “Tile+Painter Transform Editor,” available from the Tools/TilePlus menu.

This window contains a list of tile Transforms; you can add, delete, and customize transforms. If applied during preview *(while painting, which includes the Paint phase of a Move)* then the item selected (or previously selected if the Transform Editor window is closed) is used to change the transform of the tile about to be painted to the one specified in the Editor window selection.

It’s not like Flip or Rotate: this just modifies the transform of the tile in Preview (that’s the one that also shows in the clipboard). If you select another tile to paint in the Tile+Painter the effect is lost until you apply it again.

The Reset Transform action or shortcut key can also be used to reset the transform.

The Clipboard’s icon shows the Transform icon  when the current tile’s transform has been changed.

Tip: Dock the Transform Editor

If you use it frequently, dock the Transform Editor to the left or right of Tile+Painter.

How Different Tile Types are Handled

T+P expects to encounter one of two basic tile varieties: Tile and TileBase. There's actually a big difference between the two.

A Tile has a sprite, a transform, and a Color. All tiles derived (subclassed) from Tile have these characteristics. However, a TileBase has none of those. Any tile that isn't derived from Tile needs special handling for accessing these properties so that icons and previews of the Sprite can be created.

For example, a Rule tile has a `m_DefaultSprite` *field* rather than a `Sprite` *property*. 2D Tilemap Extras' AnimatedTile is also derived from TileBase and has only a list of sprites but no Sprite property.

Plugins for TileBase *types*

Plugins for TileBase types are easy to create, and examples can be found in the Plugins/TilePlus/Editor/Painter/TpPainterPlugins Assets folder.

Basically, a plugin is a Scriptable Object asset which you place in an Editor folder (outside of the TilePlus plugin folder). It provides access to the missing properties (sprite, transform, Color).

Please create only ONE asset for each Type (C# Type). It does not have to be in an Editor/Resources folder, just in an Editor folder (so it doesn't become part of your build).

Plugins for basic Rule tiles and for the Unity AnimatedTile are already installed. The Rule Tile plugin works with the basic Rule tiles from Unity's 2D Tilemap Extras package.

If there's no plugin for a Type, then that Type of tile will not have any paint previews nor thumbnails in lists and inspectors. Hence, the plugins are a workflow convenience only.

If you add a plugin yourself, you might need to perform a scripting reload for the plugin to be recognized. This can be done in T+P via the Setup panel (Gear icon) "Global TilePlus Toolkit Settings" section: click the Reload button at the bottom of the scrollable view. If done correctly, the plugin's name should appear near the top of the Setup panel.

TileFabs and Bundles

The TilePlus User and Programmer's Guide explain these, but briefly, a Bundle (TpTileBundle) asset is an archive of a single Tilemap and a TileFab is a collection of Bundle assets.

A Bundle asset can be painted like any other tile asset, and you can see the preview as you move the mouse pointer. Painting one of these will overwrite any tiles on whatever map is selected in the Tile+Painter.

Using a TileFab is a bit trickier: if you examine one (examples can be found in TilePlusExtra's TopDownDemo project) you'll see that each Tilemap in the collection has a specification for the name of a Tilemap or a tag: these are taken from the GameObject parent of the Tilemap component.

The idea is that when you paint a TileFab you're really painting on at least one, but more likely several Tilemaps at the same time with each Bundle referenced by a TileFab corresponding to a particular Tilemap.

However, the Tile+Painter *has no way of knowing which Bundle is for a particular map in your scene*. And you probably don't want it to guess! Furthermore, the TileFab may have four Bundles, but your scene may have more or fewer than that.

If you select a TileFab in the center column when the window is in Paint mode, you'll be presented with the names and tags specified in the TileFab. It's up to you to ensure that they exist. Mismatches are just omitted from previews and Painting.

For example, if you have Scene Tilemaps named A and B but your TileFab has a collection of four Bundle assets with Tilemaps A, B, C, and D then only A and B will be previewed or painted. C and D will be ignored and neither previewed nor painted. If your scene only has Tilemaps named X and Y, then nothing will be previewed or painted.

So, the names or tags must match.

If you're using Chunk-Style TileFabs, please see the "Advanced TileFab Use" document's section on **Chunk Snapping**.

Changing Shortcuts

If you use the Shortcut Manager to change any of the Tile+Painter shortcuts, use the Refresh button to refresh the Action button shortcut hints seen when viewing their Tooltips.

Default Shortcuts

Command	Shortcut
Open Tile+Painter	Alt+1
Painter: Toggle Mode	Alt+E
Painter:Paint	**Alt+B**
Painter:Move	Alt+M
Painter:Erase	Alt+D
Painter:Pick	Alt+I
Painter:RotateCW	Alt+R
Painter:RotateCCW	Alt+T
Painter:Flip X	Alt+X
Painter:Flip Y	Alt+C
Painter:Reset Transform	Alt+Z
Painter:Deactivate	**Alt+O**
Painter: Apply Transform	Alt+V
Open Tile+Painter Transform Editor	Alt+3
Overwrite protection override	1
Open System Info	Alt+2

Editor Selection Sync

This option synchronizes changes in Tilemap selection between the T+P and the Hierarchy window. When ON, clicking on a Tilemap in the Hierarchy selects the same Tilemap in T+P, and vice versa. This is usually desirable, but if not, use the option button to turn this off.

Picking, the History Stack, and TPT tile Cloning

TPT tiles require special handling when picking a tile from the scene and painting it, or if a TPT tile is picked from the scene, poked into the History Stack, and subsequently painted on a Tilemap.

Why is this? TPT tiles are cloned from the original TPT tile asset located in a Project folder somewhere. This allows each TPT tile to be its own instance in the Scene. When picked, the clone tile is what's picked.

If that clone tile were to be repainted, any tile positions with that clone would have the same instance as the original clone. Changes to any of the clones' fields would affect all of them. Hence, we re-clone the TPT tile, creating a fresh copy. This is all handled transparently but you will see messages about this in the inspectors.

None of what's mentioned in this paragraph affects any Tile or TileBase tiles; they're never cloned.

Chunk Snapping

This is a special mode that's useful for painting TileFab "Chunks" aligned to a grid equivalent to the size of the Chunk. Chunks are a specific sort of TileFab that's always square and of even dimensions (4x4, 8x8 … 64x64 etc.). It's activated by the Chunk Snapping toggle in the Settings pane.

If you were to use Chunks of identical size, then you could define a virtual grid that's a multiple of the Tilemap cell size. For example, assuming a Tilemap cell size of one unit and a 16 x 16 chunk of tiles, this virtual grid is 16 units x 16 units.

When Chunk Snapping is on via the corresponding toggle on the Tile+Painter Settings panel, only Paint and Erase can be used.

Chunk Snapping supports rapid placement of Chunks by presenting a Scene-view marquee the size of a Chunk. The marquee changes color when the mouse pointer is aligned with this virtual grid. If the Paint Tool is active, clicking anywhere in the Chunk area (highlighted with a solid marques) will paint the Chunk aligned with the virtual grid.

Chunk Snapping mode is useful when creating Zone Layout templates.

It's easier than it sounds. Please see the Advanced TileFab Use document for more information on Chunk Snapping and templates.

About The Warning In the Settings Pane

The Painter settings pane told you to look here before turning on Chunk Snapping. Good on you for looking here before clicking it on anyway!!

There's nothing bad: just know that when this checkbox is turned on you can only Paint and Erase TileFabs. Read more about this in the **Advanced TileFab Use** document.

FAQ

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 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. Note: in this state the center column text is a different color.

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.

Known Issues

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).