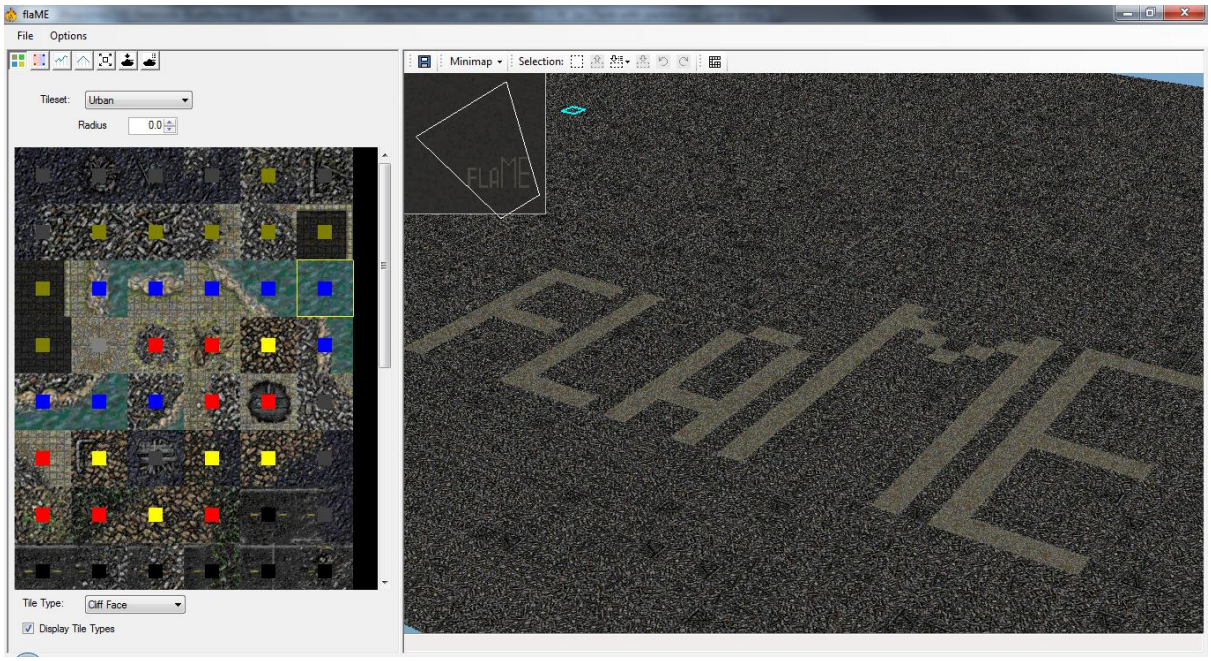

flaManual

A manual for flail13's Warzone 2100 map editor, flaME

Written by BlueMaxima

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Letter from the Editor (BlueMaxima)

Well well well, look who needs me again. I help you learn how to play Warzone the first time around, and now you need me again to help you make MAPS!

Haha, I kid, I kid, I do this for the fun of getting new people into Warzone, and for myself to get better at documentation writing.

I'd like to say this: Please read the guide front-to-back, don't just skip to the 'making your first map' tutorial, because it might be confusing.

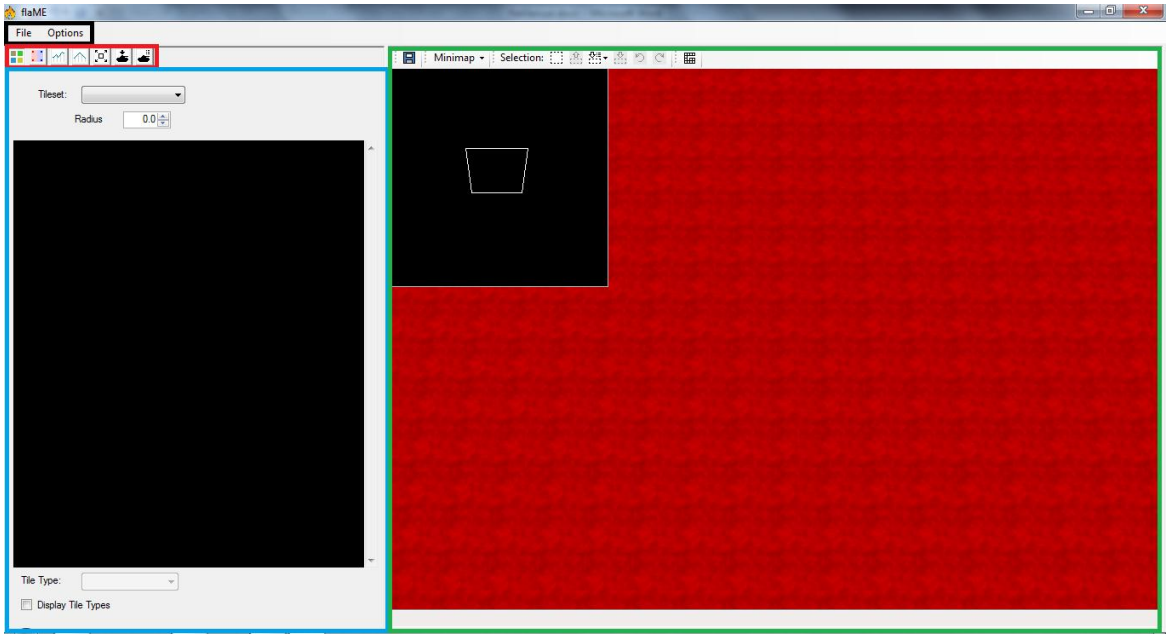
And one other note: If something doesn't make sense to you from this guide, just fiddle around and see if you can figure it out yourself. ☺

Otherwise, have fun! Scat me if you want me, you can catch me if you can!

Letter from the Producer (flail13)

Since flail13 is an evil person who doesn't want to include his fine words in here, you are to forget he ever made flaME.

Basic Interface



A shot of the basic interface for flaME.

Key:

BLACK rectangle:	File and Options menus.	GREEN rectangle:	The map view. Minimap and other options in the top and top left respectively.
RED rectangle:	The “Pane” selector.	BLUE rectangle:	The current “Pane” selected.

File and Options Menus:

These are your basic menus for saving and opening maps, and configuring a couple of options within flaME.

File menu:

New Map: Creates a new map in flaME.

Open: Opens maps in any type (flaME format, WZ format, LND format)

Save: Saves into several types and formats:

- save as a flaME format map
- save the map's LND format,
- save the tile types for import later (.TTP extension) (tile types will be covered later)
- save the minimap as a picture (bitmap/BMP),
- save the heightmap as a picture (bitmap/BMP) (heightmaps will be covered later).

Import: You can import:

- a heightmap picture (bitmap/BMP) (heightmaps will be covered later)
- or saved tile types (.TTP extension) (tile types will be covered later).

Compile Map: Save the map as a .WZ map, ready for importing into Warzone 2100 (this is covered at the end of 'make your first map').

Close: Close flaME.

Options menu:

Undo Limit: Use this option to select how many actions are kept in memory (and therefore can be reversed). If your computer does not have much RAM, it is recommended to turn this to 128. Otherwise, the default limit should be fine.

Autosave: flaME contains an Autosave function designed to recover maps from the program crashing. Using this menu: you can

- Enable or disable Autosave (if you are running off a flashdrive this may be a good thing to do),
- Change how much time needs to pass or how many changes need to be made to trigger a save, and
- Open the Autosave folder to recover a saved map.

Basic Controls:

Moving around the Map View:

flaME's Map View (a 3D representation of the current map) can be navigated in all directions. Below are a series of controls on how to control your camera. Please note that the mouse must be hovering over the map view to have any affect with these controls.

F1: Change between normal and alternate camera controls.
W: Move forward.
A: Move to the left.
S: Move backward.
D: Move to the right.
E: Move upwards.
C: Move downwards.
Numpad 4: Move counter-clockwise / twirl counter-clockwise (alternate)
Numpad 6: Move clockwise / twirl clockwise (alternate)
Numpad 8: Move the camera angle down.
Numpad 5: Move the camera angle up.
Numpad 7: Move the camera left (alternate)
Numpad 9: Move the camera right (alternate)
Mouse Wheel Up: Zoom in.
Mouse Wheel Down: Zoom out.
F: Move faster.
R: Move slower.
Backspace: Reset the zoom, pitch and facing direction of the camera. Position will not be affected.
Mouse Click (Minimap only): Will zoom to the area clicked.
Ctrl+1 to 0: Set the draw distance – higher means you can see farther. Higher draw distance may cause sluggish performance.
F5/F6/F7/F8: Toggle Terrain/Grid/Units/Lighting
/: Increase field of view
*: Decrease field of view

Other Controls:

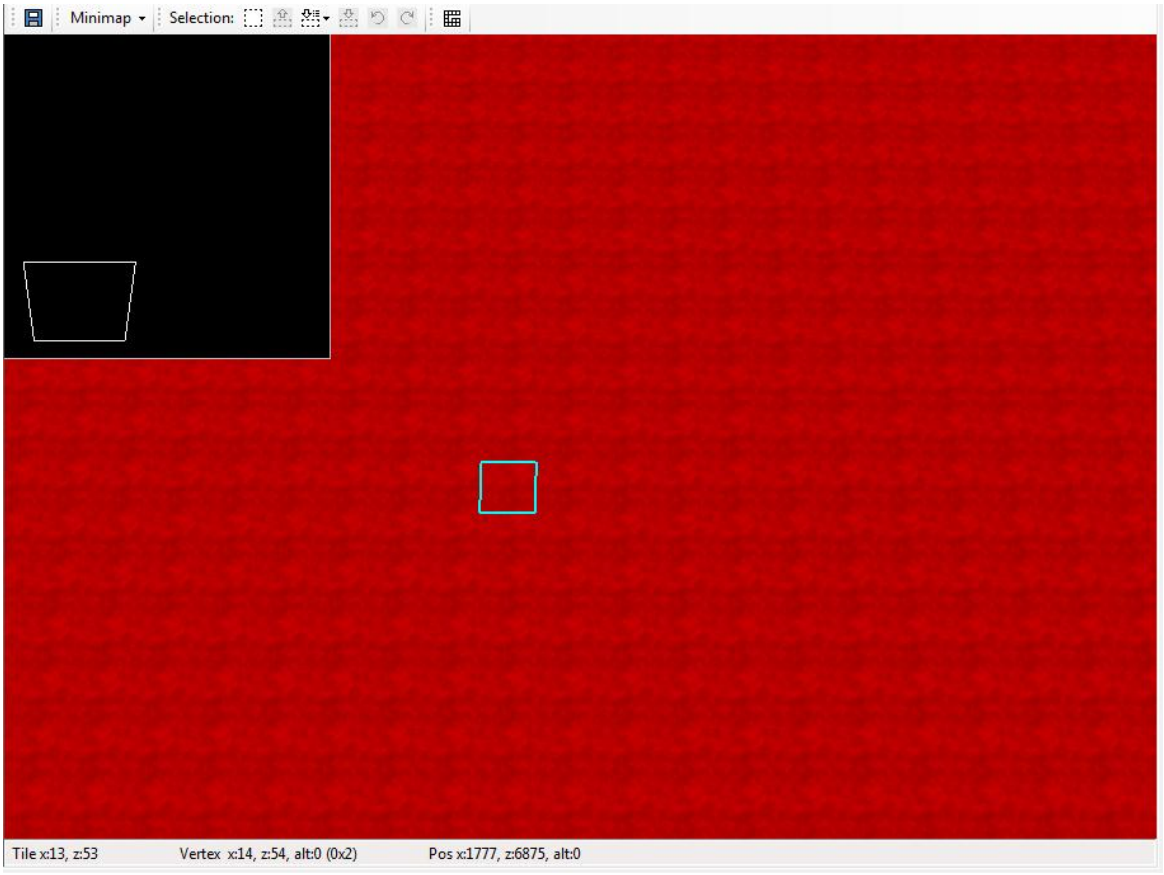
flaME is almost completely mouse controlled (other than the Map View controls). These controls will be explained throughout their respective sections.

There are two controls nobody can live without though:

Undo and Redo:

Ctrl+Z: Undo
Ctrl+Y: Redo

The Map View:



The default Map View. Note the coordinate bar down the bottom, the buttons in the top left, and the big black square (the minimap) right below the buttons.

The Map View is your way of seeing your current map in progress. It displays the terrain, textures of said terrain, the heights of said terrain, units and features. To move around this world, use the controls stated in the last chapter.

The big black square in the top left is your minimap. It's a 2D representation of your map so far – it displays the textures, heights and units currently on the map. Note the white 'cone' – it's a representation of where your camera is on the map currently, and where it can see on the map.

- Textures are displayed in roughly the same colour as the textures themselves.
- Units and structures are displayed coloured squares. Please note that different player's structures aren't displayed as different colours, they are all the same.
- Height is displayed as white "blobs" – the whiter the area, the higher it is. See the Land Modifier pane section for more information.

The buttons directly above, from left to right, do the following:

- The first button saves your map. Convenience at best.
- The second button (Minimap) shows a drop-down menu which allows you to check if you want to display units, terrain or height in your minimap. The final option (which is a number) displays how big your minimap is on the screen. I recommend the default, but see what works for you.

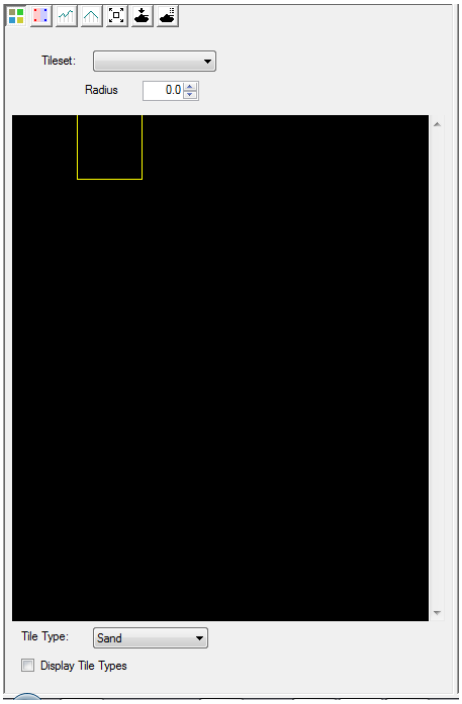
- The next six buttons after ‘Minimap’ allows you to use a selection tool to select parts of terrain, copy them and paste them in other areas. The third button, if the arrow is clicked, shows a drop-down menu where you can select heights, textures, units for pasting, and delete units that are already there. The two buttons after that are to rotate the current selection clockwise and anti-clockwise.

  Using the Selector is easy – click it, then click on the Map View to select the top-left cell, move the mouse until the square/rectangle encases everything you want to select, and click again. Then you can use the other buttons to copy, paste, and rotate away.

  Please note that switching Panes will lose your selection rectangle!
- The final button is to show Gateways. See the Gateways section to learn how to make them.

The bar down the bottom shows the current coordinates of your mouse cursor, including the tile, vertex and actual position your mouse is hovering over.

The Panes



The Pane View. The “Terrain Viewer” Pane is currently selected but no tileset has been selected.

The above view is where you’ll be spending most of your time in flaME. It contains most of the tools you will require in making your maps.

I won’t go into the Pane View here because the seven panes are completely different in style, however, there is one bit in common between them all.

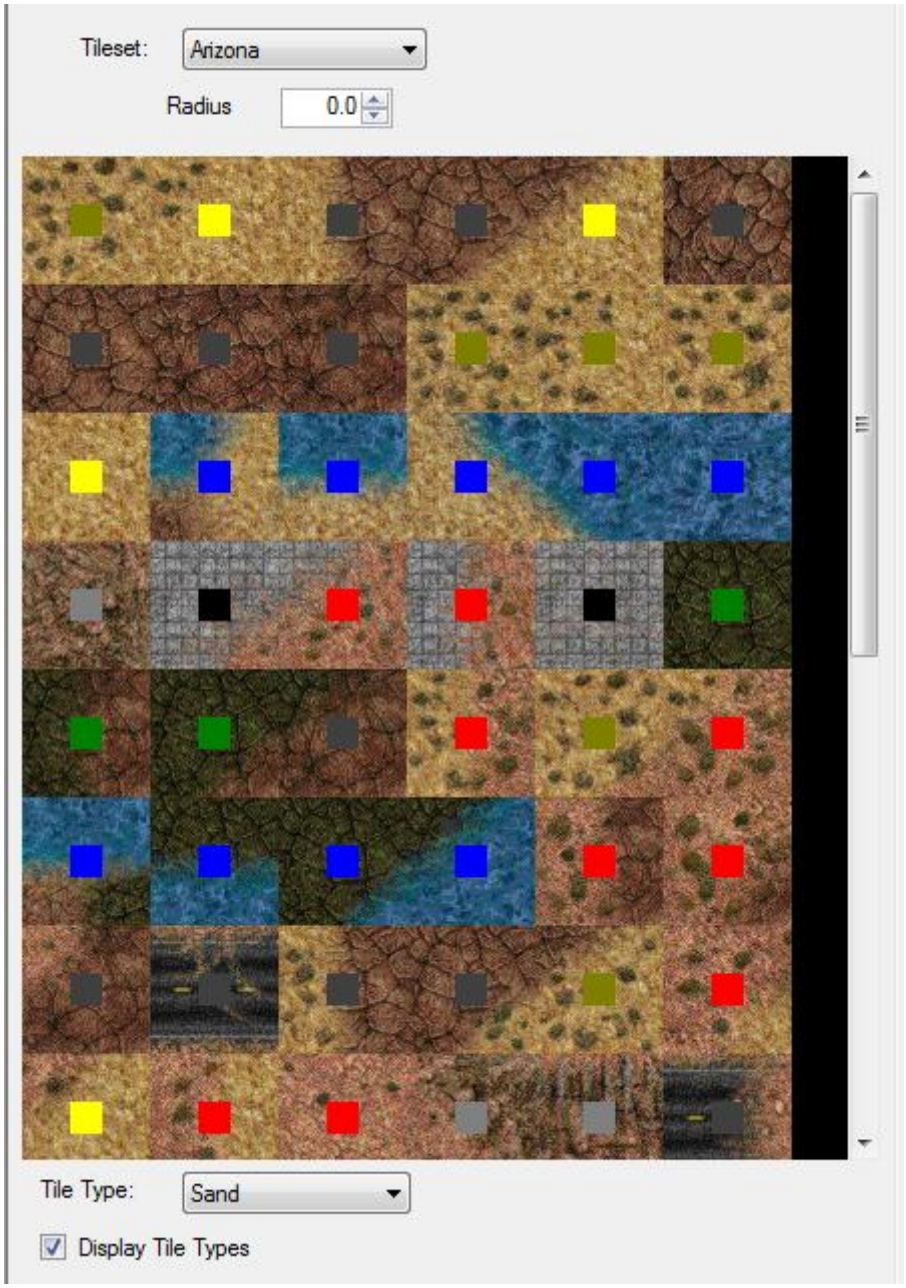
Pane Selector

The above picture is the Pane Selector, at the top-left of the Pane View, below the File and Options menus. This is your way of navigating through the Panes. The Panes have no official names, but the following seven names is how I will refer to them in this guide:

- Terrain Viewer Pane
- Terrain Painter Pane
- Land Modifier Pane
- Triangle Setter Pane
- Map Modifier Pane
- Object Placement Pane
- Object Detail Pane

Each pane has its own use in flaME, and each pane will be covered through this guide.

Terrain Viewer Pane



The Terrain Viewer Pane. The current tileset selected is Arizona, and Display Tile Types is selected.

This pane contains a view of all the tiles in the current tileset you have selected. It is recommended to select a tileset before doing ANYTHING ELSE in flaME. The Tileset drop-down box at the top selects a tileset; either Arizona, Urban or Rocky Mountains (the settings for Alpha, Beta and Gamma respectively). Please note that while you can change tilesets midway through making a map, you will lose your current textures done on your map, but heights and objects placed will remain the same.

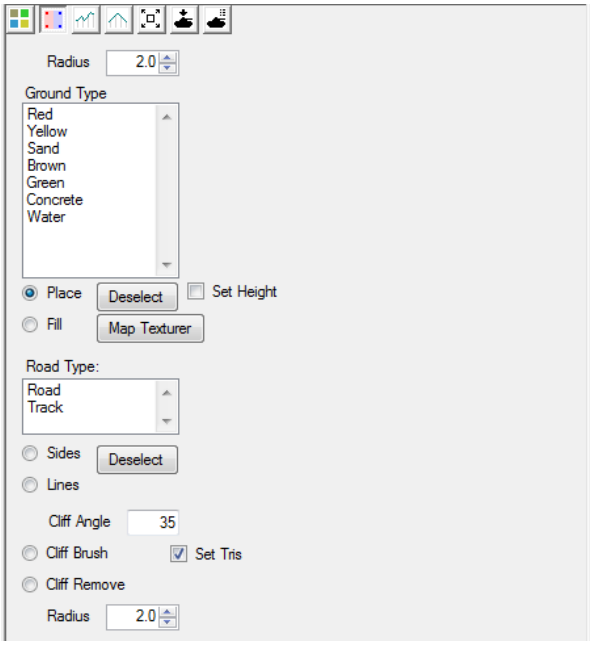
The big box in the middle of the pane shows every texture in the current tileset. Click a texture to select it. While I call this the Terrain Viewer pane, it has a secondary function: you can place these textures on the map. After you've clicked to select a texture, click the Map View to place the terrain down. You can use the Radius box above the texture box but below the Tileset box to make a bigger paintbrush, so to speak.

To rotate the textures you have placed, hover over them in this mode and use the < and > buttons. To ‘mirror’ the texture horizontally, use the \ (or Backslash key).

The Tile Type box shows the current tile type and allows you to change the current tile type of the selected texture. Tile Types, in Warzone gameplay, affect the speed of units on them. Every texture has a Tile Type. For example, you’ll be fastest on Road, slower on Gravel or Sand, water can only be traversed by Hover vehicles, et cetera. Each Tile Type is represented by a colour, which can be displayed by clicking the Show Tile Types checkbox below the Tile Type drop-down box.

Tile Types can be exported and imported for later maps. Return to the “File and Options Menus” section to learn how.

Terrain Painter Pane



The Terrain Painter pane.

The Terrain Painter pane is useful for painting several different types of terrain, painting cliffs, roads and tracks.

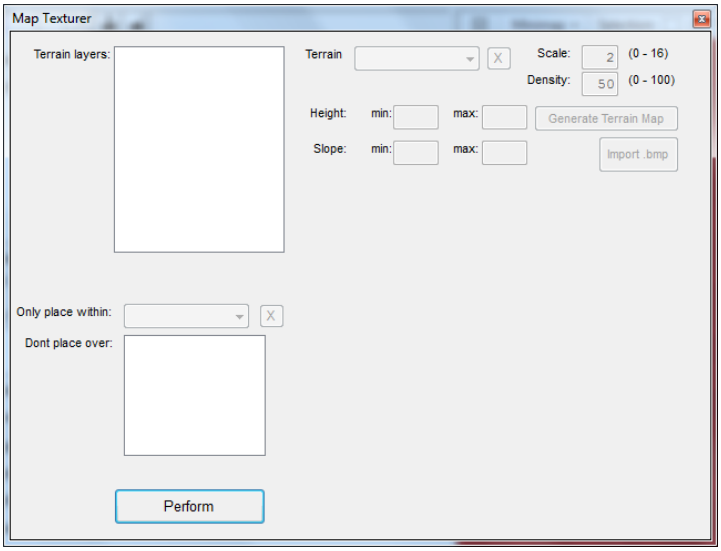
The Ground Type option allows you to pick a type of ground to place in the world (these vary among tilesets). Clicking one, then clicking one of the modes below it ("Place" to only put textures in the mouse cursor area, or "Fill" to fill the whole clicked area with textures, think of the Fill Bucket in Paint) then clicking in the Map View will place the textures in the map. You can use the Radius box (in Place mode only, has no effect on Fill) to change the size of the brush. Deselect deselects the currently selected texture type.

Road Type allows you to paint roads into the game. Using Sides then the map will build roads automatically based on the sides of textures you click, using Lines requires two clicks – the start and the end of the road. Experiment with them if you have time.

Please note that roads can only be made on certain textures, otherwise, you'll receive the red 'empty' texture and there will be a random texture in your map in-game. You can select a texture as a road texture by changing its Tile Type (see Terrain Viewer Pane section for details). Generally, the Texture Viewer brush can be used easier than this.

You need Cliffs in order to make un-ascendable heights in Warzone – vehicles and buildings will go anywhere without them. The rest of the tools in this Pane are designed to help you make cliffs. The Cliff Angle box shows how much of an angle is needed to make an area unclimbable. The Cliff Brush allows you to paint on the cliffs just like painting textures, and the Cliff Remove tool allows you to remove the cliffs just as easily. The Radius option below these two tools allows you to expand the brush. Just like roads though, Cliffs have their own special Tile Type, and a texture needs the Cliff Face Tile Type in order for this tool to work correctly. See the Terrain Viewer Pane section for more details.

Map Texturer



The empty Map Texturer window.

The Map Texturer is a tool designed to help you detail the textures on the terrain to give your map a more professional look. Open the Map Texturer by clicking the Map Texturer button in the Terrain Painter pane.

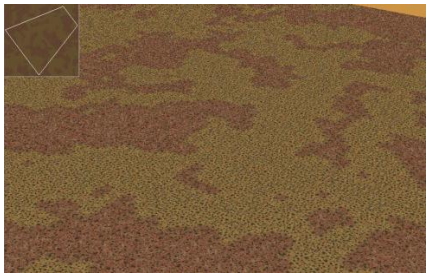
To create a new texture layer, click inside the Terrain Layers box and press the Insert key. Select the Terrain type by clicking the drop down box. (It's not possible to completely delete layers – use the X button next to it to remove the layer type and make the layer invisible).

You can change the height the terrain will be applied over by typing in a minimum and maximum height. You have to use a height between 0 and 2550 (yes, you have to multiply the land height by 10). Slope works in the same way, but for cliffs.

The Scale and Density boxes in the top-right corner affect the amount the effect will be applied.

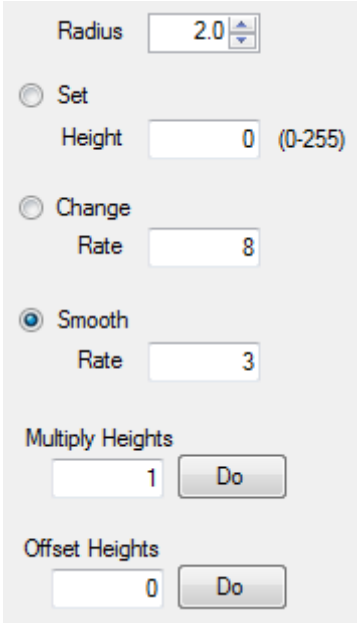
Clicking 'Generate Terrain Map' will give you a (randomized) simple black-and-white representation of the effect of the current layer. White areas are unaffected, black is. You can also load a bitmap file that has a black-and-white pattern for use. One or another, you need to do this before you can perform the job.

You can use the drop-down box in the bottom left (Only place within) to only place on top of a certain layer, and the list of checkboxes below it to say to NOT place over other layers. Click the 'Perform' button below this box to paint the terrain.



A finished effect of the Map Texturer.

Land Modifier Pane



The Land Modifier Pane.

The Land Modifier Pane is used to change the height of the land in your map.

Just for your information – the map height starts at 0 all across the map, which is the lowest point. 255 is the highest point.

The first tool is Set – type a number between 1 and 255, click an area and it will automatically become that height.

The second tool is Change – select it, select the Rate at which the land changes (higher = faster) and left-click to raise the land, right-click to lower the land.

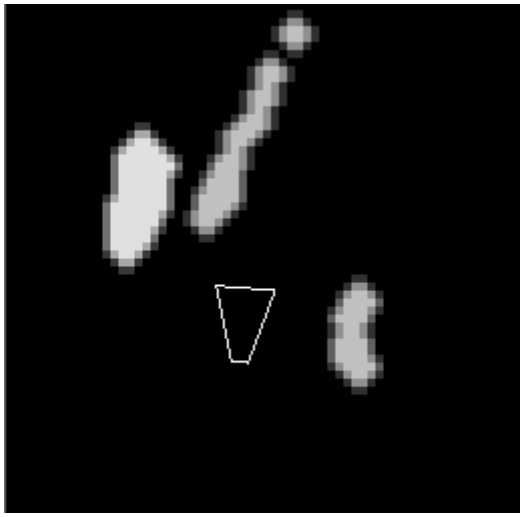
Both Set and Change use the Radius box at the top of the pane.

Smooth works fairly differently – it softens the land, making it more visually pleasing to the eye. Clicking its circle and clicking some land will automatically begin the process. It has its' own Rate box, which affects the rate at which it does its job. The Radius box has no effect.

The Heights Multiply box is pretty simple – enter a number (decimals are AOK), click Do, and the land height will be multiplied by the amount in the box.

Heights Offset is roughly the same principle. Typing a number into the box (negative numbers are OK, decimal numbers will be rounded) and clicking Go will lower the height or raise the height, depending on what's in the box.

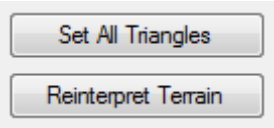
Since we have now covered this pane, I can explain Heightmaps. A heightmap is a black-and-white visual representation of the heights on a Warzone 2100 map. Jet black is a height of 0, brightest white is a height of 255. If you create a map with several heights in flaME, and turn off Show Units and Show Textures in the Minimap drop-down menu, you can see a heightmap of the current map.



A very simple heightmap. The cone is the camera in flaME.

Heightmaps can be exported and imported at will using the File menu's Save and Import options – please see the "File and Options Menus" section for more information.

Triangle Setter Pane

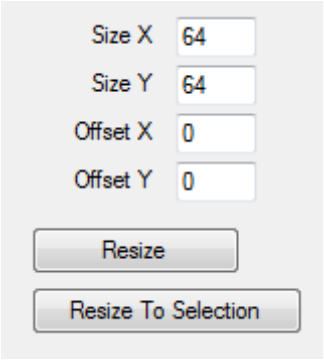


The Triangle Setter Pane.

Set All Triangles: Tiles that bend diagonally (such as at the top of cliffs) are bent in a different way in order to make them appear more visually pleasing. I can't really describe it here, use the Land Modifier Pane to make a few tall cliffs and hit the button to see for yourself!

Reinterpret Terrain: If you've just loaded a map, then the map has no terrain data. Every tile is like an individually placed texture. If you try to place a terrain type by it, they won't automatically join up, and roads won't join other roads, and so on. After clicking "Reinterpret Terrain", the program makes an estimate as to which terrain each vertex should have, which tiles are cliffs, and where the roads are, which fixes this problem.

Map Modifier Pane



The Map Modifier Pane.

The Map Modifier Pane contains a few useful tools to work with.

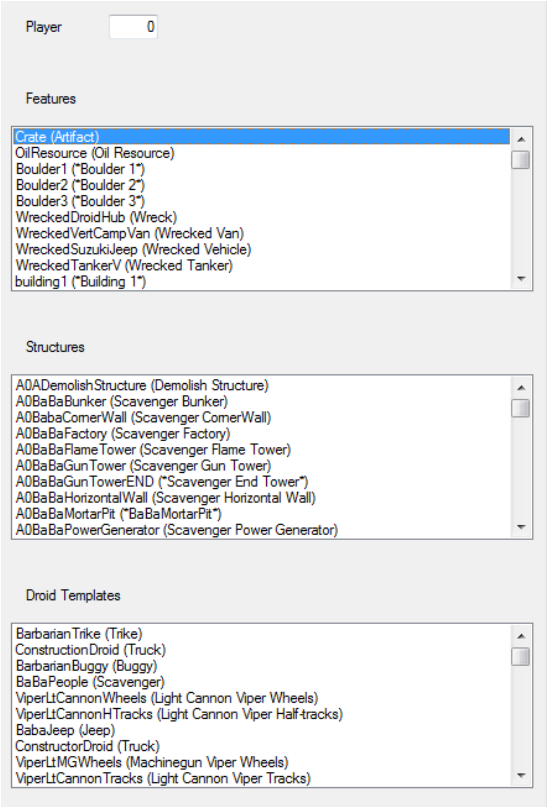
The Size X and Size Y factors are the size of your map. By default, this is 64, but Warzone can support as low as 1 and as high as 256 with any combo inbetween the two as map sizes. To resize the map, enter new values into Size X and Size Y, then click Resize.

Offset X and Y is useful when you want to move the entire map. Entering values and clicking Resize will move every height and object that many cells in that direction. Experiment and see.

Be careful using these both at once though – if you make the offset higher than the map size, the whole map will be moved off the Map View and deleted!

The final button is a possible useful tool to some people – selecting an area with the Selector tool and clicking this button will resize the map to your selection.

Object Placement Pane



The Object Placement Pane.

The Object Placement Pane is simple. The first box contains general features of the map (ruined buildings, environment objects, etc.) but don't forget it contains the Oil Resource and Artifacts! The second box contains structures of all players and the third contains every unit you could possibly have.

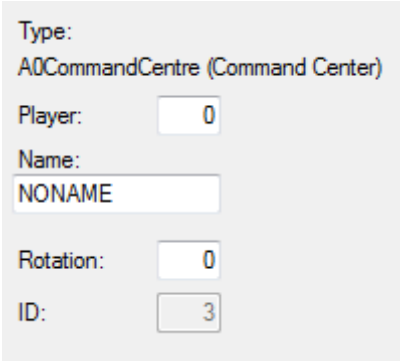
To place an object, click one and then click the map. The object will be placed on the map. While some objects aren't affected by this, such as Scavenger units and features, some require a value from 0 to 7 in the Player box – note that Player 0 in the editor is Player 1 in game (it's a stupid programming thing, you understand). Remember that you need to place at least a truck for each player and several oil derricks around the map to make a map playable. Don't worry if you select the wrong player at first – you can change it in the Object Detail Pane (see its section).

Note that if you put down Scavenger structures, you need to turn them on in-game with the Scavenger function in the Multiplayer/Single Player Skirmish screen.

Scavengers is in the red box.

And if you use Scavengers in the game, you can only have seven players max, not eight.

Object Detail Pane



The Object Detail Pane.

The Object Detail pane is a good way to see specific details of a unit or structure. Click a unit to make its details appear. You can also press Escape to go into unit select mode, but you'll need to open this tab manually.

You can also press M to move a selected unit to the mouse cursor, or press DELETE to delete the selected unit.

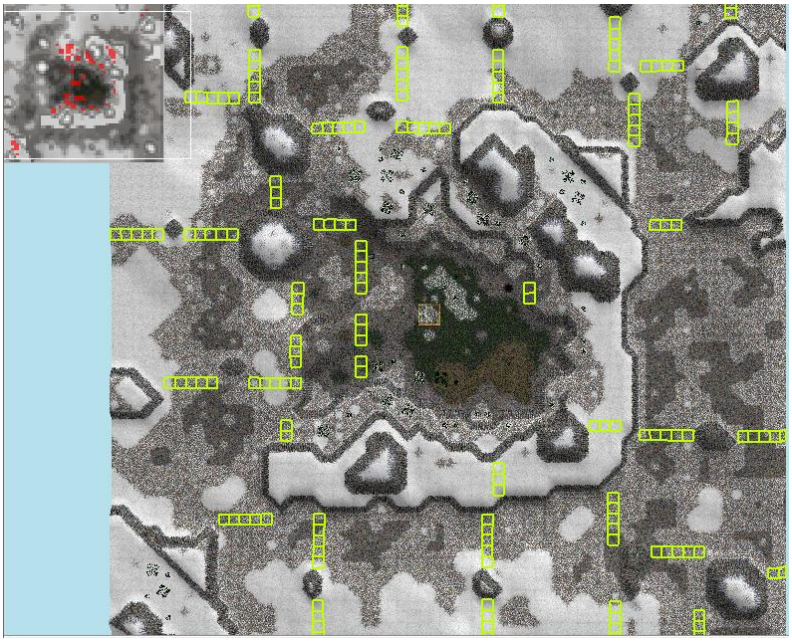
Type shows the type of the object you have selected – its in-game name, and then the name you know it by.

The Player box shows you the player the object belongs to – you can type a new number in there to change the player it belongs to.

The Name box allows you to name the object. It makes no difference in game, it's just for your convenience in flaME. The ID box is quite similar, it shows the unique number of the object.

The Rotation box shows the angle that the object faces. You can type a value in there in order to rotate the object to face in a new direction. You can also use the < and > keys to rotate the currently selected unit.

Gateways



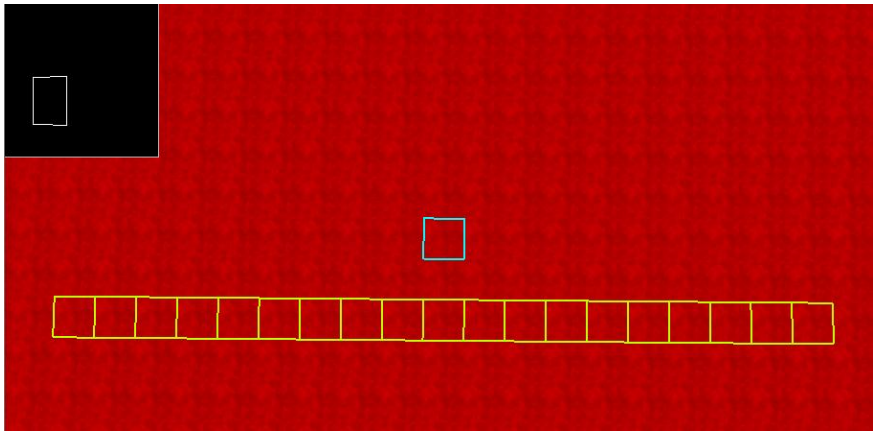
A level from the third campaign in flaME. The gateways are the yellow/greenish boxes.

Gateways are a special tile designation used by the game's AI. The AI uses them to build defences and chokepoints, arguably two of the most essential tactics in Warzone multiplayer. You aren't required to make gateways, but if you don't, the map will not be suitable for single-player skirmish.

To make a gateway, click this button in the Map View:

Gateway is in Red.

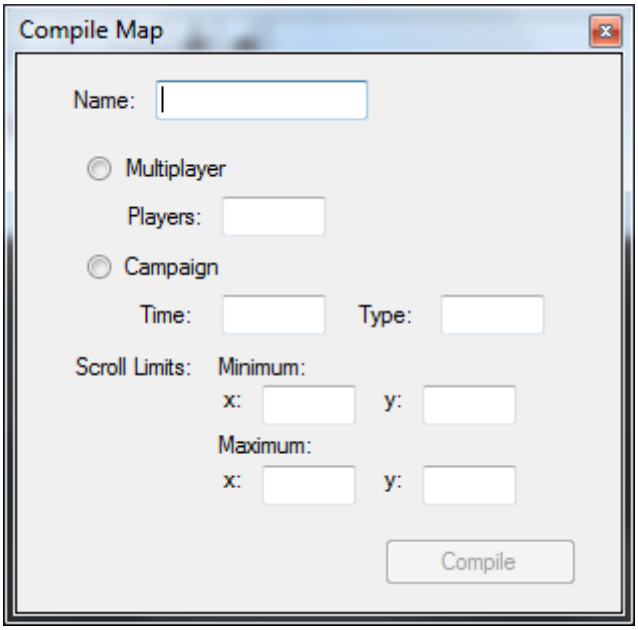
Then, to create a gateway, click one location, then make a straight line to another point and click again. Your gateway will be created on the map.



A gateway. The blue square is the cursor, the yellow squares are the gateway. (Note this is only one gateway though).

Deleting gateways is as simple as creating them. Hold the Shift button while clicking a gateway to delete it.

Compiling Your Map and Playing In Warzone



The map compile dialog.

OK, so your map is made and you're ready to play it. One more thing to go – compiling the map to work in Warzone!

Click File and then Compile Map to get into the Compile Map dialog as shown above. You'll need to give your map a name – type one into that box.

Then you need to pick if it's going to be a multiplayer or campaign map. If the map is a campaign map, and you have adequate knowledge of scripting, click the Campaign bubble and specify the time and type. If you want it to be a multiplayer map, click the Multiplayer bubble and type in the amount of players the map is meant for.

The Scroll Limits will keep you from scrolling to certain areas. These don't need to be filled out and in most cases will never need to be, but if you want you can experiment with it.

When you click Compile, you'll be taken to a file save screen. To make a map work in Warzone, you need to save it into a specific directory. Go to My Documents (or Documents for Vista/7 users) and find the Warzone 2100 folder. It will be "Warzone 2100 2.2" or "Warzone 2100 2.3" depending on your version.

Open this directory, then open the "maps" directory. Save your map in here, then open Warzone, open Single-Player Skirmish or Multiplayer, find your map and voila! You've saved and got your map into Warzone!