







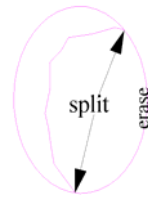


- 9 Right click **Copy**  then select **Copy to Layer**. Select our oval path then copy it to the **HILLS** layer.
- 10 Click the **Layers** indicator. With **HILLS** as the current layer, click both **Freeze All** and **Hide All**.
- 11 Right click **Explode**  then select **Path to Poly**. Select the oval path,
- 12 Click **Change Fill Style**  then select the oval. Change the oval to **Solid**.
- 13 Click **Change Color**  then select the oval. Change the oval to color **43**.
- 14 Click the **Layers** indicator, then select **SKETCH** as the current layer. Click both **Freeze All** and **Hide All**.
- 15 Right click **Copy**  then select **Copy to Layer**. Select our oval path and fractal path then copy them to the **HILLS SHADING** layer.
- 16 Click the **Layers** indicator. With **HILLS SHADING** as the current layer, click both **Freeze All** and **Hide All**.
- 17 Click **Split**  then split the oval near where it is crossed by the fractal path.
- 18 Click **Erase**  then erase the path that we split out of the oval.
- 19 Use **Trim To**  to neaten up those intersections that we created when we split the oval.
- 20 Right click **Explode**  then select **Combine Paths**. Combine the paths into a crescent for our hill shading.
- 21 Click **Change Fill Style**  then select the crescent. Change the oval to **Solid**.
- 22 Right click **Explode**  then select **Path to Poly**. Select the crescent.
- 23 Click **Change Color**  then select the crescent. Change the crescent to color **42**.
- 24 Click the **Layers** indicator. Select **HILLS FILL** as the current layer then click **Show All**.
- 25 Click the **Fill Style** indicator, then set the fill to **Solid**.
- 26 Click the **Line Width indicator**. Change the current line width to **.06**. We need to draw the down sloping contour lines.
- 27 Click the color indicator then select color 38 (med brown).
- 28 Click **Fractal Path**  then **draw contour lines** around the base of our hill.
- 29 Click the **Layer** indicator, then click **Thaw All**.
- 30 Click **Erase**  then select all the entities that make up our hill. Right click, scroll down to **Combine** then select **And**. Right click, then select **Color**. Select fuchsia (or whichever bright color you made your skeleton). Right click, **Do it**.



Draw Contour Lines

These are a little different than the mountains. Just make little hatch lines around the base of the hill. Don't worry about making them perfect. They don't have to be evenly spaced nor do they have to exactly start or end in perfect alignment.

When you do hills like this in your map, keep in mind that you don't have to create many of them. One each of an oval one, a round one and a kidney shaped one could meet all your needs. By copying the hills and scaling them slightly larger or smaller, you can drop several into your drawing

Rivers

I'm not going to spend time doing rivers. I'll give this to you in a nutshell.

Follow the instructions for creating the river as demonstrated in the tutorials in Rivers, Settlements and Roads starting on page 30. Once you have a completed river network, use

The ACT command launches a hotspot at the specified location. To add the link to the info file, you can either manually add a link using **Link with File**, at the coordinates **-.5,-.5,0,0** and place it on the **HIDDEN LINKS** layer, or use the following macro:

```
MACRO LINKI
GFNO iname
IFERR lilink
GL comm OPENDOC
APND comm fname
APND comm;
GO 2ilink
:lilink
EXITM
:2ilink
GOLAYER HIDDEN LINKS
ACTIONM comm.
-.5,-.5;0,0;
ENDM
```

This places a link to the selected file in the correct place on the map. When you use **INFO**, it will show the info file to which you have linked.

Examples of Hotspot Use in ProFantasy Maps

In CC2 Pro, look at the files in **Examples\Links** folder. Here you'll find linked together files with buttons. Each file has an arrow pointing at the correct level. These are simple map links. If you have Character Artist Pro, click **New** then select the **Counter Monster** template. You'll need to erase the buttons themselves. **Edit** at one of the lower buttons to look at the hotspot text. These lines set the current symbol x and y scale, by placing a dummy symbol already in the drawing, then removing it with **UNDO**.

```
SYMBOL;button;0.7;0.65;-100,-100;
UNDO
```

If you have Dioramas Pro, look at any template. On these, you'll find hotspots for printing at a specific scale. Note **PRINTSM**.

```
PRINTSM;22.50000,157.50000;15.00000mm;5;8.00000;
```

If you have City Designer Pro, open a city map, then click **Create Index**. Place the index then do **View >> Show Hyperlinks**. Each link is just a **Zoom Window** to the location of the text. For example: **ZWIN;100,230;150,240;**

Ensuring Portability

To ensure your drawings are portable you need to take the following steps:

- Store the file and all necessary support files in their own folder or subfolders.
- Ensure that the person to whom you are exporting has the same fonts as you (see the list of default Windows fonts in the text box on page 44) and use Explode Text on any font the target system does not have (see page 91).
- When you insert a bitmap or non-embedded CC2 Pro file using Insert File, do it from the same folder you are keeping the drawing. Make sure "Use relative path" is checked. Save the drawing in that folder before you insert file references, so that CC2 Pro can work out the relative path.
- Likewise, if you have added any bitmap fill styles, make sure that the bitmap file path is defined in relative terms (eg if you are using the file mybitmap.bmp and you have saved it in a subfolder of the drawing folder called Tilesmake sure the fill path in the fill style

PRINTSM

See the Macro Command Reference list on page 152 for details of PRINTSM.

DD Pro introduces a command that will automatically re-order layers to suit. This command generally works with default layer use (e.g., doors on the **WALL FEATURES** layer; walls on the **WALLS** layer; etc.), so some manual fronting may be necessary in unusual situations.

19 Select **Dungeon** menu >> **Order Dungeon Layers**.

The objects in the drawing are fronted according to which layer they are on. The walls are now correctly in front of the stairs.

Traps

No dungeon would be complete without a handful of fiendish devices to protect it. Our dungeon is no exception.

DD Pro provides a number of mechanical and magical traps to catch the unwary adventurer. By default, these are placed on the **TRAPS** layer which, in the same way as we have already shown with the **SECRET** layer, can be hidden when producing maps to show the ignorant....

To use our version, do **File** menu >> **Open**, then select **DD Pro Tutorial 15.FCW** from CC2 Pro's **Tutorials\Dungeons** folder.

1 Click **Traps**

The current layer is set to **TRAPS**, and the Catalog Window fills with symbols from **Traps.FSC**.

2 Zoom to the corridor down from the easternmost stairs.

The builders of this dungeon don't like people wandering down the staircase willy-nilly. So, they've put a fire trap to catch intruders using this entrance.

3 Click **Fire Blast** symbol

The new symbol is attached to the cursor.

4 **Press**

5 Right-click.

You see the Symbol Parameters dialog box. Change the **X and Y** scale parameter to **0.5**, then press the **More** button.

The fire trap symbol was too big to fit into the corridor, so we've had to scale it down.

6 Place the fire trap at the end of the corridor.

We now have a fire trap at the bottom of the stairs, ready to char any unwanted intruders.

7 Zoom into the western dungeon section.

The fire trap is not the only fiendish device here.

8 Click Spring Spear symbol

The Spring Spear symbol replaces the Fire Blast as the current symbol attached to our cursor, but it is half-size because of the parameters we set for the fire trap.

9 Right-click to bring up the Symbol Parameters dialog box. Press the **Set Normal** button, then the **More** button.

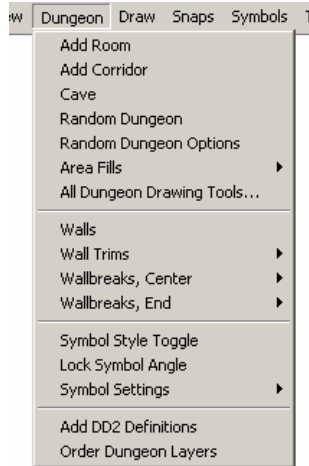
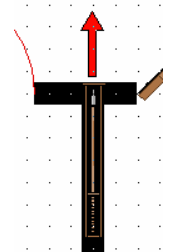
10 Press

This restores the vertical alignment we need.

11 Right-Click **Grid** button, then select **1' Grid, 2 Snap**.

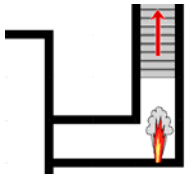
12 Place the spear trap so that the arrow portion of the symbol, which shows the direction in which the trap attacks, protrudes from the wall.

The corridor now harbors a short, sharp shock.




Press 

Because the symbol is normally aligned horizontally, and we want it to point vertically towards the staircase, we need to rotate it.

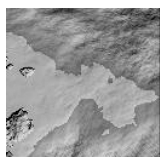


1 Grid, 2 Snap

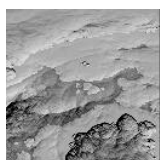
We are going to place the spear trap within a section of wall, so we need to change to a grid setting that will allow this.

- ✓ The **Circumference** or **Diameter** (depending on the option selected from the drop-list) sets the size of the world. If Circumference is selected, the value is the distance around the world at the equator. If Diameter is selected, the value is the distance through the north and south poles. All worlds are assumed to be perfectly spherical, not an oblate spheroid like the earth.
- ✓ The **World Seed** is the world number to generate. It sets the random number seed for the internal generators. Values for this seed can range from negative 2,147,483,648 to positive 2,147,483,647. Click on  to randomly allocate this value.
- ✓ **Method** selects the way in which the world altitude will be computed. The two options are available--**Ridged Multifractal and Brownian Noise**. Ridged Multifractal is composed of many ridges at different scales. Brownian Noise is basically just random noise at different scales without any particular structure.

Ridged Multifractal and Brownian Noise



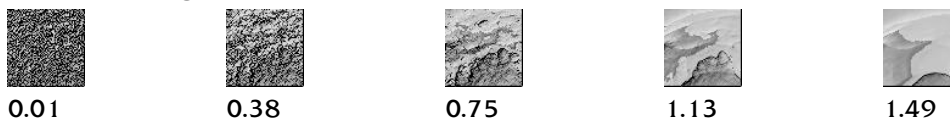
Ridged Multifractal



Brownian Noise

The small button next to the **Method** drop list will bring up a dialog that can be used to set parameters for each type of computation method. Each computation method has its own set of parameters that can be adjusted.

The **Roughness** slider controls the level of roughness in a surface. This value is roughly the fractal dimension of the surface. The sequence below shows how Roughness affects the surface from high (0.01) to low (1.49):



- ✓ **Percent Sea** sets the rough amount of sea that will be found on the map.
- ✓ **Land Size** sets the size of the land masses. The sequence below shows how the changing the setting changes the land mass size:

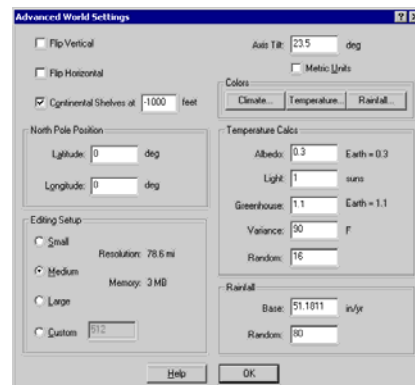


The smaller the land size setting, the more continents (or islands) you will get. A value of around 1.6 usually provides good results.

- ✓ If checked, **Apply to Current World** will apply any changes in the world parameters to the current world, preserving any terrain editing. If unchecked, all editing will be lost.
- ✓ Click **Advanced** button to access the **Advanced World Parameters** dialog box (see below).
- ✓ Click **Fractal Globe** button to access the **Fractal Globe** dialog box. This dialog box can be used to change the fractal evaluation size (similar effect to Land Size) as well as the center of evaluation. Each center of evaluation gives a unique world; moving the world center over each possible set of values will result in roughly 2^{48} (about 281,500,000,000,000) worlds, each differing slightly from the next.
- ✓ **OK** accepts any changes made to the world settings and creates a new world with those settings.
- ✓ **Cancel** discards any changes and keeps to the current world.
- ✓ **Help** gets help for this dialog.

Advanced World Parameters

These settings allow you to affect the way in which the world is calculated. You may also change climate coloration, the location of the northernmost pole, axial tilt, etc.



Adding Rivers

Water Flow

Due to the way the process is defined, a river will stop flowing when it hits water, so a small lake can absorb the entire output of a large river. In that case, it's best to fill in the small lake and rerun the rivers tool.

Zoom In

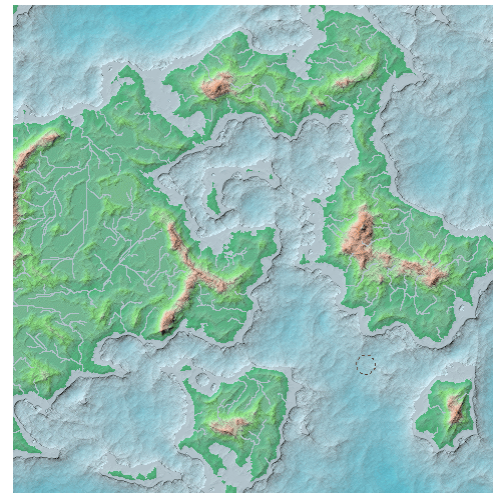
This behavior can be controlled on the **Edit>>Preferences** dialog via the **Top-Level River Importance** value. The default value of 0.001 will show only the rivers with the largest flow at the largest zoom level. Setting this value to 100 will always show all rivers. Always showing all of the rivers may result in a drawing slowdown if many rivers have been computed, however.

River

FT has a habit of displaying perfectly straight segments of lines from about -180 to -90 longitude on the map when shown in the equirectangular projection. Using a different projection or ensuring that the -180 longitude line is off the display edge will make these lines disappear.

The **Rivers** tool in FT Pro computes the directions and amounts of **water flow** in the world and then places rivers over the areas of highest flow.

Once a set of rivers have been computed, these rivers will be stored internally as vectors. To reduce the processing load during display, FT Pro's default display operation is to reduce the number of rivers actually shown onscreen depending on the zoom level. Only the rivers with the highest flow will be shown at the highest zoom level. As you **zoom in**, more rivers will be shown. This behavior can be controlled on the **Edit>>Preferences** dialog via the **Top-Level River Importance** value. The default value of 0.001 will show only the rivers with the largest flow at the largest zoom level. Setting this value to 100 will always show all rivers. Always showing all of the rivers may result in a drawing slowdown if many rivers have been computed, however.



The vector **river** overlay may be shown and hidden using the **Tools>>Rivers>>Show River Overlay** and **Tools>>Rivers>>Hide River Overlay** commands.

The vector river overlay may be removed entirely by using the **Tools>>Rivers>>Clear River Overlay**.

Filling Basins

Not all rivers flow to the sea, but the vast majority do. To ensure that rivers will end up flowing to the sea in FT Pro, it is important to fill in the low spots that would prevent those rivers from getting to the ocean (they would get stuck in the low spots because FT Pro will not fill in the low spots with lakes unless you perform that step yourself).

Select **Tools >> Actions >> Fill Basins in Offset**.

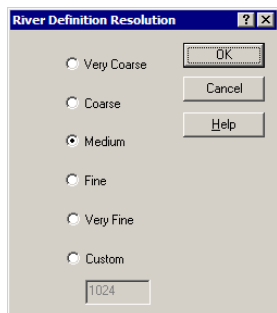
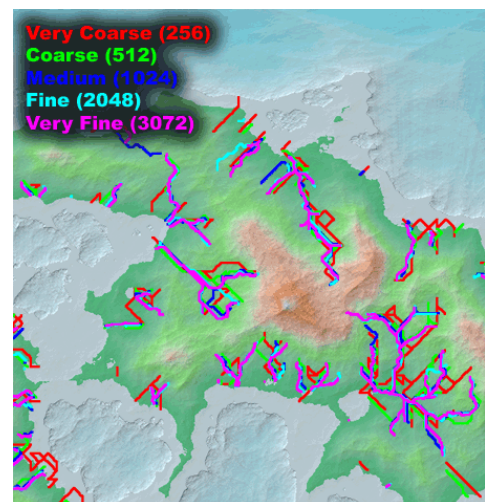
You see a progress dialog while FT Pro computes the world altitudes and then fills in the low spots that are not already occupied with water. If you would rather fill these low spots with water than land, use **Tools>>Actions>>Fill Basins as Lakes** instead.

Calculation resolution

FT Pro runs rivers on a discrete grid at a defined resolution. Although FT Pro can calculate your world altitudes to arbitrary resolution, it cannot run rivers at those same resolutions due to space and time constraints (not everyone has tens of gigabytes of memory and weeks of processing time to spare). The **River Definition Resolution** allows you to select the desired output resolution of the rivers.

Due to the nature of the discrete sampling of the world, rivers will run slightly differently depending on the chosen resolution. The image below shows an example of this difference for each of the default resolutions:

Notice how the higher resolution rivers give a better-looking pattern, while the lowest





- 9 Add the mountains and foothills symbols within the color 45 (tan) border.
- 10 Add the coniferous and deciduous forests within the areas you draw earlier, perhaps allowing a little of the color to show through.



You can add other symbols just as you would on any other overland map. Ralf has created a Dark Fantasy symbol set to supplement Symbol Set 2 which fits in nicely with maps like these. See his mapsandmore.com website for more information.

Thain
 This example was created using Symbol Set 1 and the drawing tools described on page 492
 Cartography by Ralf Schemmann, based on design by the Thain Bulider Team.

