

## 3D Studio Max to DIF Pipeline

(Condensed Version\*)  
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The Max to DIF pipeline once setup, is quite simple although it does require quite a few steps to get from Max to the final DIF format. The DIF format is very picky about what it allows you to do, and this can cause some real issues. But once you get used to the limitations they can be pushed quite a bit.

The basic pipeline is, 3D Studio Max ---> .3ds ---> DeleD 3D Editor ---> .map ---> map2dif\_plus ---> .dif

### Intro to DIF

The DIF format is basic BSP technology. Begin by thinking about Lego! Lego is modular and everything you build has a base built from blocks. DIFs expect the same from you, everything is built from cubes. The cubes we make in Max eventually get exported and are technically known as brushes. We use cubes because they remain convex at all times. (this means that all the faces, of the mesh, must point out away from each other.)

### Modeling & Texturing

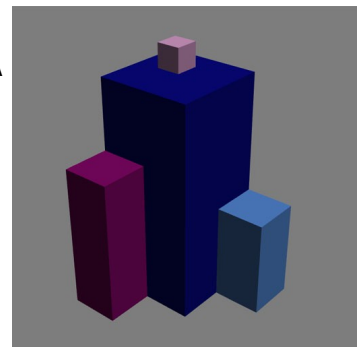
To create complex shapes (where a face would normally be extruded) the method involves creating a new cube and matching its position to appear seamless with the main cube. (See image to the right. Each differently coloured cube is its own physically independent object.) A multitude of complex buildings and even terrain can be generated with careful thought and planning.

Texturing also has to be done quite carefully; it is preferable to only use the UVW Map modifier, and map each face following a specific axis using the planar projection. The 'Face Mapping' option can also be used to great effect. Do not expect to be able to work with the Unwrap UVW Modifier.

All textures must be imported into a single material library or Multi/Sub-Object material and applied to the mesh at a polygon level in the Edit Mesh Modifier.

Also remember to only use .jpg files which conform to an 8.3 naming structure. (8 Characters and the Extension, e.g. 12345678.jpg, or B01bul01.jpg) This is due to the step of exporting to 3DS. The 3DS format only supports the 8.3 naming structure and the .jpg is used because DeleD only allows .jpg files.

NOTE: Before export to .3ds, all the cubes that you wish to have in a specific .dif must be selected. They **MUST** have their pivots centered and have their XForm reset.





## DeleD 3D Editor

DeleD is then used to convert the .3ds file into a .map for use with the Torque map2dif converter.

When importing the .3ds files you will be asked a few 3DS Import Options:

- Scale Factor = 1
- Import UV Coordinates & Textures should be ticked
- Leave Report Blank

DeleD will then import your brushes and all texture details ready for export using their Torque Exporter. This is then setup to export the .map file. We do not use it to run any conversion tool. Here are the settings

- File name – Setup to export to your HDD
- Texture Folder – Leave Blank
- Scale = 1
- Slice into convex brushes = Blank (We have modeled everything in convex brushes to begin with)
- Lighting Scale = 256 (This is the setting we used, although it may vary depending on the scale of your world)
- Include debugging information – Ticked (This is handy if anything goes wrong)
- Ambient color = White

Hit OK to export the file out. U should now have a Torque complaint .map file ready for conversion to .dif.

NOTE: The above settings will get stored the first time you use the exporter and should not need to be reset again.

## map2dif\_plus

This is the simplest of all steps, simply drag your .map onto the 'map2dif\_plus.exe' and it will do its thing generating a .dif file for you. Remember to then place the .dif and the textures which will have to remain in the 8.3 naming system into the engine together.

\* This is a condensed version, or intro to our Max to DIF Pipeline, I hope to at some point be able to sit down and take the process much further. - 2007  
<http://www.greatgameexperiment.com/user/byder>

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