

Converting MDL Models Into MDB Model Files Using Blender

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Introduction

The following brief tutorial shows the steps I used to convert .MDL model files extracted from the *Neverwinter Nights* game and converting it into the .MDB format used in *Neverwinter Nights 2*. It does not cover how to install and use the *Blender MDB Import/Export Plugin* as that is covered elsewhere.

Preparation

I used the following tools for this tutorial:

- [NWN Explorer Reborn](#)
- [DDSTools](#)
- [NWN Carottes](#)
- [Blender 2.69](#)
- [Blender MDB Import/Export Plugin](#)¹

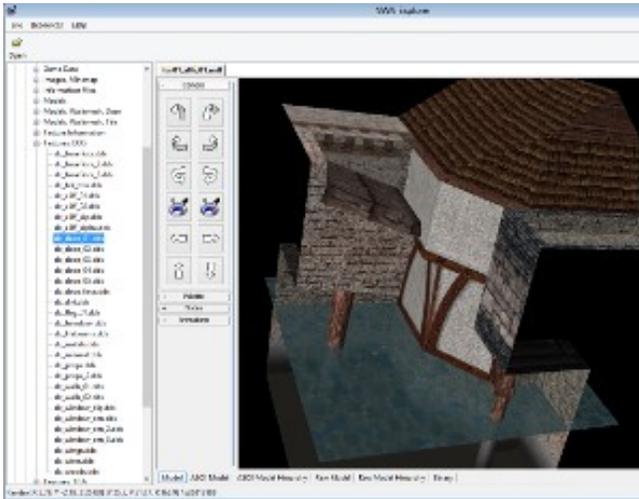
After downloading and unpacking the compressed folders, you'll want to modify the Properties of the *NWN Explorer Reborn* and *NWN Carottes* utilities so that they will run in compatibility mode for Windows XP (Service Pack 3).

Extracting an .MDL Model File

The .mdl files and the associated texture files that come with the *Neverwinter Nights* game can be accessed using *NWN Explorer Reborn*. When the tool starts up, a set of folders will appear along the left side, which you can open and browse. To view a model, left click to select the .mdl entry, then right click and choose 'View'. Initially, the model will appear with a top-down view, which you can then translate and rotate around using the icon controls.

1 To import .MDL files, you'll need version 2.6.2 or

subsequent of the plug-in.



Browsing with NWN Explorer Reborn

If you have downloaded a hak file, the contents can be browsed with *NWN Explorer Reborn* by copying it to the hak folder under your My Documents.² You can find a specific model or texture using the 'Search...' option under the 'Resources' menu.

A selected .mdl file can be extracted using the pop-up menu by picking 'Export'. For the .dds files, you can export them as the highest resolution .tga (Targa) files by selecting 'Export TGA'.

The *Neverwinter Nights* .DDS file contains .dds format images, but it is in a special format that requires a tool to extract. The contents can be unpacked by using the command-line utility *DDSTools*. Here are the steps I use for Windows:

- Launch the *Command Prompt* utility
- Drag and drop the *DDSTools.exe* binary file into the *Command Prompt* window
- Type a space, '-d', then another space.

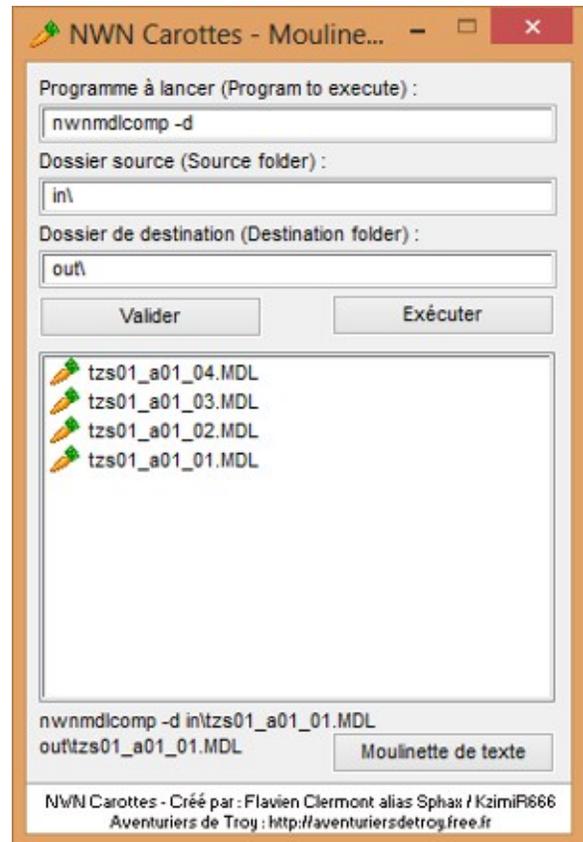
² If the models and textures are delivered in a .hak file, you can instead use *Tanita's NWN2Packer* tool to extract them.

- Drag and drop the .DDS file
- Press return

A set of .tga files will be created in the same folder as the .DDS file, which contain the bitmap in different resolutions. The highest resolution (512 × 512 pixels) is given a zero at the end, so the others can be deleted and the zero removed. This will give you the required .tga file.

Converting .MDL to ASCII Format

The .MDL files can appear in either an ASCII or binary format. To import it into *Blender* using the *Blender MDB Import/Export Plugin*, any binary .MDL files will first need to be converted into ASCII. A method of doing is with *NWN Carottes*.



Converting .MDL files to ASCII

The GUI interface for this tool is written in French, but it is easy to use even if you don't understand the language. Just perform the following steps:

- Copy the .MDL files to the 'in' folder under the directory where you installed NWN Carottes.exe
- Launch the tool and select 'Valider' to show a list of files in the 'in' folder
- Select 'Exécuter'

The ASCII format .MDL files should appear in the 'out' folder. If any of the .MDL files were already in ASCII format, then they will not be copied to the 'out' folder.

Importing an .MDL Model into Blender

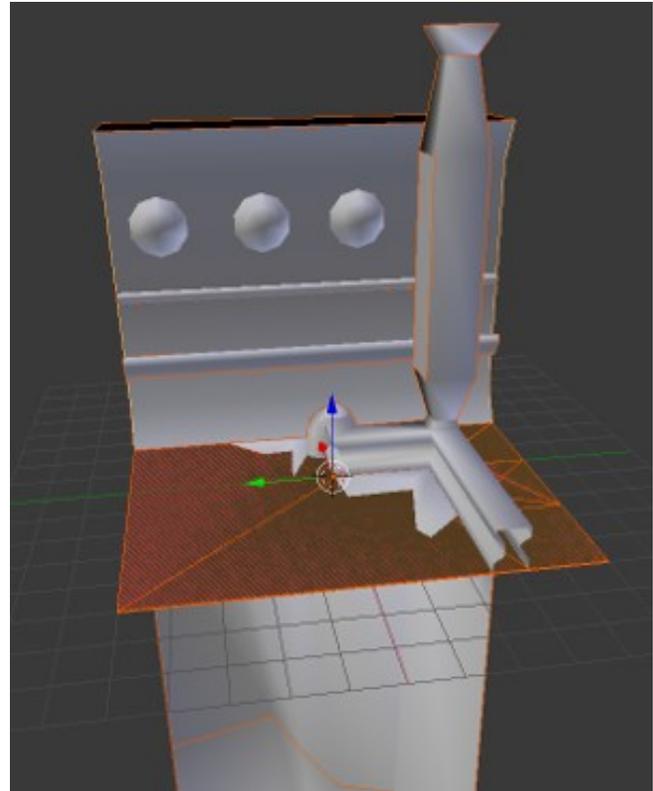
Before you import an ASCII .MDL model into *Blender*, you will need the model's texture files. You will need to find any 'node trimesh' entries in the .MDL file, then look for the associated 'bitmap' entries. The latter are followed by the texture file prefix. Here's an example:

```
...
shininess 10
bitmap tjt01_water01
render 1
...
```

This indicates that the 'tjt01_water01.tga' file needs to be in the same folder as the .MDL file for import.³

³ Alternatively, you can just import the model into *Blender*, then look for the image file names listed under

When you're ready, launch *Blender* and prepare a new work space. After selecting 'Neverwinter Nights 2 (.mdb)', you are presented with the import panel. Now you can navigate to the working directory and select the .MDL file and click on the 'Import from NWN2/NWN (.mdb/.mdl) button' at the upper right. Your model should now appear.



Imported .MDL file

The import/export plug-in will use the aabb (axis-aligned bounding box) entry in the .MDL file to generate the WALK, COL2 and COL3 objects—named with a '_W', '_C2', and '_C3' suffix, respectively. It seems to produce good results, but you may need to refine them.

each object. The objects that are missing their texture files will be shaded blueprint blue.

Warning: There is a difference between the way that textures are mapped in *Neverwinter Nights* compared to *Neverwinter Nights 2*. The former maps to mesh faces while the latter maps to mesh vertices. As a result, the import plug-in needs to remap the textures, which may not always line up. This results in some distortions to the texture, so you will need to perform some manual readjustment to compensate.

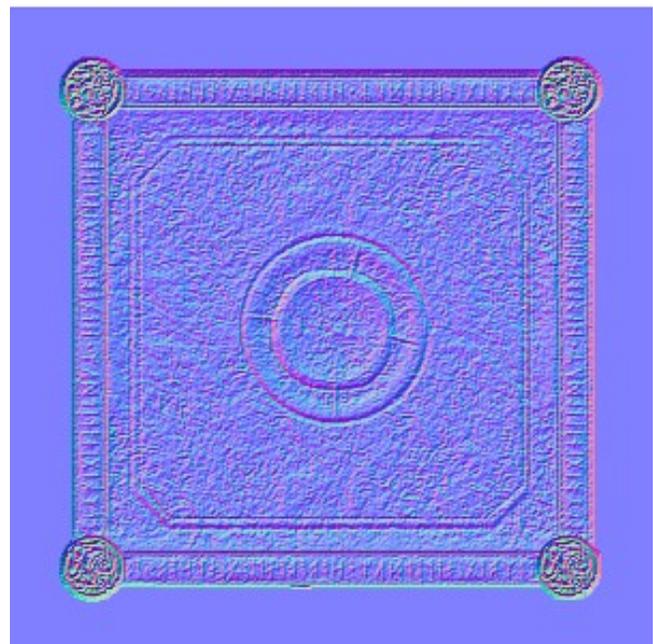
Tile sets in *Neverwinter Nights 2* are exactly 90% of the size of tiles in *Neverwinter Nights*. If you are importing a tile, then you should select all of the objects and scale them down by a factor of 0.9 on all axes.

Generating Normal Maps

A significant difference between the texture files in *Neverwinter Nights 2* compared to those in *Neverwinter Nights* is the addition of normal maps. These are image files that the game uses to give the surface texture its bumpiness. A method of generating this file is to use a graphics editor plug-in that will generate a normal map for you. The map is generated based upon the surface patterns of the image, such as the placement of light and darkness.

For the *GIMP* editor, I've used the *GIMP Normal Map* plugin and it gives pretty good results. The plugin provides a variety of options for controlling how the normal map is generated, as well as a viewing tool for seeing what impact it will have. Prior to using the plugin on an image, you may want to modify a copy of the texture file so that the resulting normal map is to your taste.

Once you have a normal map file generated, you will then need to attach it to the objects in *Blender* that use it prior to export. By convention, the normal map file is given the same prefix as the texture file with an '_n' attached.



An image file and a GIMP-generated normal map