

Morrowind effect looks not good

eg.: spell effect (fireball), object (burning torch), creature (flame atronach burn)

Want to make better Morrowind effect

What is a Morrowind effect

Morrowind effect is a kind of information you can make, and store, in limits of file format called ".NIF"
The ".NIF" file is run by Morrowind.exe, to show the information on your monitor, to project into eyes, so 'brain.exe' can process it
If the information you originally put in the ".NIF" is enough to mesmerise 'brain.exe', it considers it a good Morrowind effect

Why is file format ".NIF"?

".NIF": Year is 1996, and we want realise Morrowind fantasy world as a '.exe' program.
Gaming industry says, to make Morrowind.exe, best technology available is a 'game engine' called 'Netimmerge'.
Game engine 'Netimmerge' needs to store information in a file, and they called it 'Netimmerge File' - ".NIF"

What kind of information can a ".NIF" store?

3D geometry, and 'other text-like data' which the game engine can 'read', to create interesting effects with 3D geometry

animation - add 'time' to '3D geometry' or 'other text data', with 'Controllers'

change 'vertex coordinates'='shape of mesh'
change 'center position' of 3D mesh
change 'texture file path'
change 'transparency of mesh'
change 'any random thing'

over time (NiGeomMorphController)
over time (NiKeyframeController)
over time (NiFlipController)
over time (NiAlphaController)
over time (name of controller)

For complex animations like character movement, time data and controllers can be stored in a separate ".NIF" file -> but for MW, it receives ".KF" extension instead (so ".NIF"=".KF", for example you can rename .KF file to .NIF and see the same in Nifscope (bunch of controllers with time data, and referencing nodes)

texture - mainly color data in a file (instead of .jpg/.png/.tga or .dds"...)
- specify external texture file path (but its even possible to store color data inside NIF)
- game engine stretches color data in 'texture file' on 3D surfaces defined by vertex points

visual trick information - various 'properties' that can be added on 3D mesh to show them funny

change 'color' of 3D mesh (NiMaterialProperty)
change 'scale/position/rotation' of 3D mesh (NiNode)
change 'transparency behaviour' of 3D mesh (NiAlphaProperty)
change 'viewpoint-based orientation' of 3D mesh (NiBillboardNode)
change 'any random thing' (name of property)

unknown random things
possibly documented in the illegal original Netimmerge 4 game engine documentation lingering somewhere on internet among morrowind modders, or good choice is 'Notes for Modmakers', or all other modmaker sources or black market

bunch of (x,y,z) coordinate points (vertices), that can be grouped to form edges, surfaces (shapes like a plane, cube, sphere, landscape, longsword)

particle system - system of particles

"a particle" is a plane mesh (as it is easy to process for computer as it can be defined by 4 vertex point)
plane mesh is always rotated to face camera, so when viewed from far, it looks like a piece of sand particle
"system" - control of animation of many particles (so place 5000x pieces of sand, and give them sandstorm movement with 'ParticleSystemController')

you can add texture, or visual trick information to all "particles" at once (same way you'd add them to a single plane mesh)
so you have 5000x pieces of sand, animated by a ParticleSystemController, it'll give interesting effect

What is the limit of: what kind of information can a ".NIF" store?

The ".NIF" file's version is can tell something about this limitation

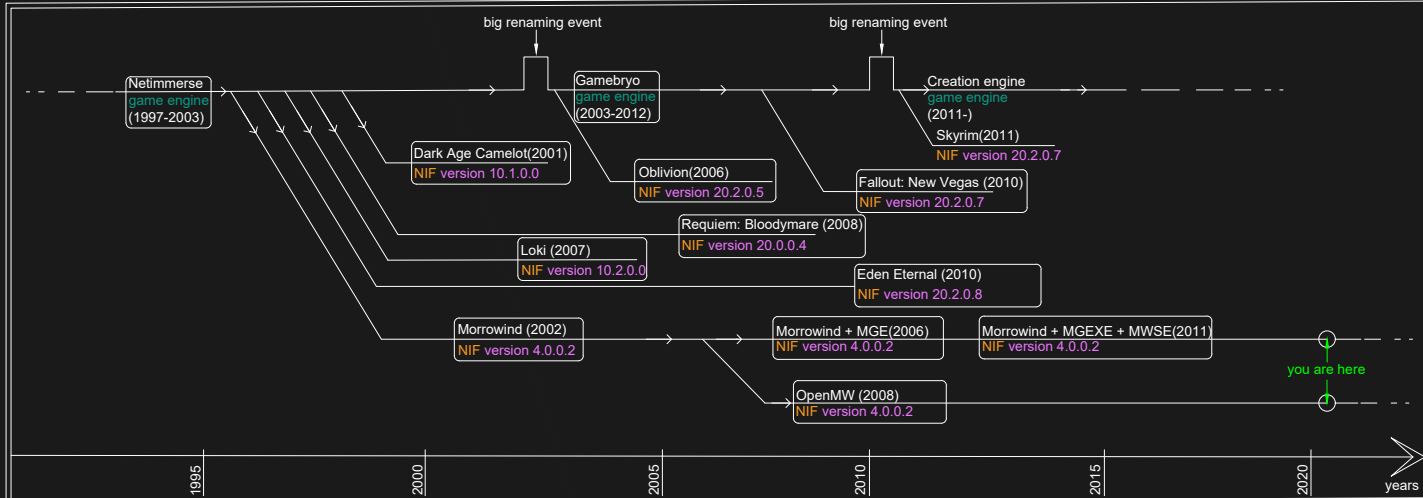
The version of a ".NIF" file = the version of the game engine the game uses. (for Morrowind, it is Netimmerge File Format, Version .version 4.0.0.2)

In a Morrowind .NIF file, with version 4.0.0.2, you can only store information, which can be understood by Morrowind.exe's game engine

Morrowind.exe will crash, if it tries to run a .NIF file with different version, or have alien information

Why do different games use .NIF files with different version?
(Morrowind, Oblivion, Fallout, Skyrim, DarkAgeCamelot,Loki...)

programmers at Netimmerge had to tell how to use their 'game engine product' to like 30x 'game maker' companies at the same time
Each 30 'game maker company' needed slightly different 'game engine' to make their imagined world in a .exe
-> so it was needed to create newer 'different game engine versions' for each of them
->for each 'different game engine versions', different information storing '.NIF versions' had to be made

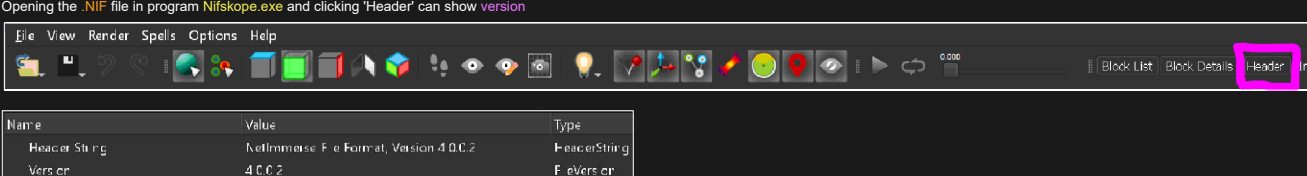


-> The .NIF file species survived many games and game engines with different versions
-> incompatibility between NIF versions - (2011 Skyrim.exe / 2006 Oblivion.exe / 1996 Morrowind.exe / other games can't understand each other's NIF version)
-> possibility to learn from other games NIF files

very inaccurate and incomplete

How to check a ".NIF" file's version?

Opening the .NIF file in program Nifscope.exe and clicking 'Header' can show version



What is Nifscope.exe?

To directly edit and organize information stored in a .NIF file, a currently available program is Nifscope.exe

Were original Morrowind .NIF files made by using Nifscope.exe?

no
Step 1.: Game artists at Bethesda made things in modeling/effect/animation programs like 3dsMax
Step 2.: Game engine creator company (Gamebryo) made a 'NIF exporter plugin for 3DSmax' for game maker company (Bethesda)
Step 3.: With the exporter plugin, 3DsMax can extract information and write it in a .NIF file, which Morrowind.exe can read

Why does an original Morrowind .NIF file look like a total mess when opened in Nifscope.exe?

Because the exporter plugin that originally wrote these .NIF files was only made to pump information in a .NIF file format, but not to make it look organized in Nifscope.exe

Is it possible to visually organize information content in .NIF without changing how the .NIF works in Morrowind.exe?

Yes, Nifscope.exe is very good for orgazing .NIF's content, to make it more understandable than an 'exporter-generated' Morrowind .NIF file

What are big limits of editing NIF files in Nifscope.exe?

-Nifscope.exe's 'preview render window' isn't reliable, shows many things wrong
-Nifscope.exe can't replace 3D modeling program to create meshes / complex animations from scratch
- Not everything can be reasonably edited in Nifscope (but still 90% of Morrowind things are ok)
-> best 'render window' to view a .NIF file is Morrowind.exe itself
-> need to learn both Nifscope and a 3D modeling/animation program to create .NIF you want

Why are Morrowind .NIF files easier to edit in Nifscope.exe than Skyrim .NIF files?

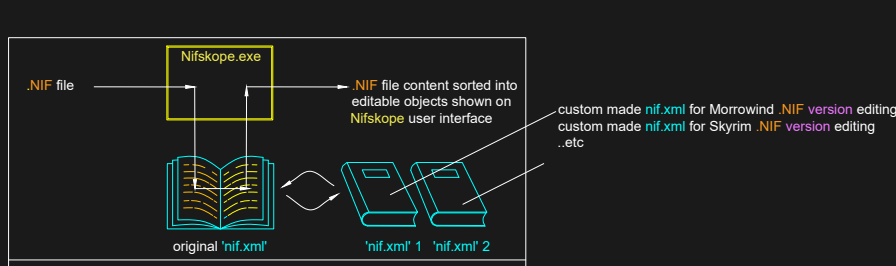
Skryim's game engine version is newer, and supports many new advanced technologies, but the exported .NIF information is too complicated to be reasonably edited and understood with Nifscope.exe
Morrowind's game engine version is older, and doesn't have many new advanced technologies, but the exported .NIF information is mostly reasonably edited and understood with Nifscope.exe
(so Morrowind .NIF is less advanced and more human-readable)

Does Nifscope.exe has versions? Which is best to edit Morrowind .NIF files?

Nifscope "2.0 Dev 6" (2020-07-09 -last "unofficial" release)
-higher chance to properly render elements used in newer NIF versions from other games. (in case you want to check how they work)
Nifscope "2.0 Dev 7" (2018-02-22 -last "official" release)
-recommended for MW
Nifscope "1.1.3" (2012-11-17)
- stable choice for Morrowind, as this 'old' version doesn't support many unnecessary features, that are only used in newer NIF versions
- may create some unique legacy NIF features better than Nifscope 2
- has uglier and less convenient UI than Nifscope 2
Nifscope "0.1->1.1.3" (version history in changelog.txt in Nifscope folder)

What is the ".nif.xml" file?

'nif.xml' is file located in same folder as Nifscope.exe
Nifscope.exe reads 'nif.xml' as a dictionary book.
With the help of 'nif.xml', when Nifscope.exe reads a NIF file, it can sort its contents into editable objects, which you will see on Nifscope user interface



Why is it good to replace the original 'nif.xml' file?

Original Nifscope.exe with original nif.xml is made to be able to open all the different versioned .NIF files of different games
problem 1.: Nifscope also shows unnecessary properties of Morrowind NIF versions, unused by Morrowind (so these are only confusing extra info)
problem 2.: Nifscope doesn't support all possibilities of Morrowind NIF versions (some properties are uneditable and crash, while they can work ingame)
solution: With 'nif.xml', Nifscope.exe can be customized for Morrowind .NIF editing:
1. unnecessary data can be removed from being shown
2. unsupported data can be made to work

Where can I get proper "nif.xml" file to optimize Nifscope.exe for editing Morrowind NIF files?

ask around on Morrowind Modding Community discord

(sry not finished yet, but maybe the test level, notes for modmakers can help to create nifs)