# INTRO TO GETTING 3D MODELS FROM VIDEO GAMES
# (TO A STANDARD 3D FORMAT)

This doc is for people who want to get 3d models from existing video games to formats they can later import in their 3d modeller or view in a 3d viewer. The reasons can be for learning purposes, modding, creating renders/animations/movies with the models, for reference, wanting to learn more about the 3d models of their favourite games, or just for fun.

There are two main ways to get model files from existing games and we will discuss both.
We will also talk about existing tools which will allow to convert the extracted models to other formats and edit (mod) them.

To better understand the two main ways to extract (convert) game models, we need to first understand how they are stored in the games.
If you have 3d modelling experience, this info might actually be new to you, if you are a programmer the information will be more familiar and easier to understand.

**1)** So how are model files stored in games? They are stored in **3d model files**. Just like image or audio (music) files we're all used to, 3d models are stored in their own files. The formats are divided into two general categories: **text-based** formats and **binary**.

**Text-based** files store the 3d information in ASCII text which you can view in a text editor. This is usually used for general-purpose 3d model formats because it allows to both view and edit the files in a 3d viewer/editor and in a text editor. Because such formats are encoded in ASCII text format, the files can get rather large and load slow. This is the reason why games usually use **binary** model formats. Binary formats don't use ASCII to store **all** the 3d information, which prevents us from viewing/editing them in a text editor, but makes them load fast enough and take little memory space for video games.
The latter type is the one you will encounter in most video games.

Whether the 3d format is text-based or binary, it is likely not a standard format used by 3d modellers, but a custom format created by the game's developers to prevent modification and theft of the art of the game, as well as meet the specific requirements of the game's engine.
This means that unlike music files or image files, there really isn't a standard format used by all games like mp3 or jpeg are.

But there are somewhat standard 3d formats which are supported by most 3d editors and viewers, but not games. Our goal is to convert a 3d model from a game to those formats. Hackers have created converters for many games in the last few years. Note that games using the same game engine or developed by the same studio often use the same 3d format, which allows to create one converter for many games at once.

There is one last thing to mention: even if you've got the game you want installed or (if it's a console game) it's files ripped from the disk/cartridge, you often won't get the 3d model files in a folder ready to be converted. Most games store 3d model files, as well as other files used by the game in game archive files. The problem is most of these archive files are not in standard format like zip or rar, but a custom one. Like with 3d formats, hackers have made hundreds of tools for many game archive formats in the last few years.

**2)** Instead of getting the 3d files from the games and converting them with a converter, there is another method of getting your model files which might not work 100% correctly, but is the only option if there isn't a converter for your game's 3d format.
3d games use GPUs to render their worlds. So at some point the contents of the model are loaded from the 3d file by the game engine and passed to the GPU for rendering. Hackers have made tools which allow to "snatch" those models from the GPU and save them in a standard 3d format on the hard drive.
If this works, why bother with finding a converter for your games and not just use this method for every game, you might ask.
Well, before passing the 3d model to the GPU, the game engine can do all sorts of stuff with it and each game engine is different.
So with this method you might not get t-posed models because the game engine transforms the 3d model's geometry before passing it to the GPU, or it might merge multiple pieces of a model to one which will need to be undone later in a 3d editor manually. In short, this method won't always give you 100% ready-to-use 3d models.

Programs which do this (called "rippers") are told the location of the executable of the game and when ran start the executable themselves and "inject" in to the game's code and look for GPU instructions. When pressed a specified button (ex. F10), the geometry currently inside the

GPU will be dumped to a 3d file in your hard drive.
While these programs work fine with console emulators, they won't allow you to get models from PS3 or Xbox 360 games (yet), as there are no emulators for them yet. In other words, if you want to get 3d models from a PS3/Xbox360 game, look for 3d converters, rippers won't help you then.

And BTW, if you have found a 3d format viewer for a game, but it doesn't allow to save to another format, try running a ripper on the viewer. That will usually give better results than running on the game itself.

Also note that some emulators have 3d rippers as emulator plugins.

## Converters (archive extractors (optional) + 3d format converters)

There are programs for extracting game archive files and programs for converting the 3d files to a standard 3d format. Some programs even support archive/3d formats from multiple games.
Some "programs" are actually import plugins for 3d modellers (editors) like 3ds max, Maya or Blender.

Here is a list of such programs. The supported games should either be in their web page or in the readme of the program dowload.

Noesis: http://oasis.xentax.com/
BRRES: http://spriters-resource.com/community/showthread.php?tid=15384
Yukes games 3dsmax importer: http://forum.xentax.com/blog/?cat=33
FatImporter: http://forum.xentax.com/blog/?p=422
SF4 explorer: http://forum.xentax.com/blog/?p=163
NG3/DOA5 noesis importer: http://forum.xentax.com/viewtopic.php?f=16&t=8867
DOA3,2U,4,X,X2 tools: http://forum.xentax.com/viewtopic.php?f=16&t=6392

# Rippers

3D Ripper DX: http://www.deep-shadows.com/hax/3DRipperDX.htm
NinjaRipper: http://cgig.ru/ninjaripper/
OGLE: http://superuser.com/questions/297000/software-to-capture-3d-geometry

## 3D viewers/converters for your exported files

Neosis: http://oasis.xentax.com/
XNALara: http://www.tombraiderforums.com/showthread.php?t=147100Blender: blender.org/
Blender: www.blender.org/

## Places to share converted/modded models

DeviantArt: http://xnalara-customized.deviantart.com/gallery/
Models-resource: http://www.models-resource.com/

## Places to ask for help

xentax.com