

Model Export

HPL3 mainly uses [Collada](#) for importing models into the engine binary format, so this guide will only be about the Collada format (.dae). First of there will be some general information that concerns all 3d modelers. After that there will be some more specifics for the mayor packats

General

Setup

Units

Before doing any modelling, make sure that the units are properly set up. It is recommended that 1 unit equal 1 meter. It is also okay that 1 unit = 1 centimeter, but then a 1 meter high object needs to be 100 units high and so on. The engine will automatically adjust any data according to how the units are set up.

When working with animated objects the unit scale must be the same for the mesh and the animation. If they are different the animation will scaled incorrectly, causing the mesh to expand or shrink when animated.

Modelling

Setting Material

Always set the diffuse texture of the editor-material to have the same name as the engine-material (.mat) you want it to have. This is best accomplished by always letting the diffuse texture for the material have the same name as the engine-material (e.g. "dirt_road.dds" and "dirt_road.mat"). What happens when the model is loaded is that the engine checks the diffuse texture for the current submesh and then replaces the extention (eg ".dds", ".tga", etc) with ".mat" and then tries to load a material with that file name.

Note: When using the modelviewer, it will automatically create the ".mat"-file if one does not exist, and thus an engine-material does not need to be created by hand if the names of the texture are set up as described [here](#).

Multiple Materials

In order to have a mesh with multiple material you must have several submeshes (or whatever the name of discrete objects in the editor) each with its own material and with different names of the diffuse texture. For example say you are making a character that requires a two materials, one for the hair and one for the body. You then first need to make sure that the hair and body are separate submeshes, then give each one their own material. The body's material can then have the diffuse map: "character_body.dds" and the hair's material can have "character_hair.dss". The engine will now use two different materials to load this character.

Note that this is the only way to go about! It is not possible to have polygon-IDs or whatever tricks the editor might have. One submesh can only have one material!

Animation

Maya

Setup

Collada exporter settings

Here is how the export tool should be set up:



(Click for large version)

Note: If you are using a newer exporter there could be issues with scaling, especially with detail meshes. Solution is to set the units to "Centimeters".

Modelling

Material fails to export

If the model gets exported without any material check if any of this helps:

- 1) Check so that "initialshadingGroup" has not been connected to the model. If it has been, then simple set the same material to the model again and the problem will go away.
- 2) Check so that two materials have not been set on the same mesh. For having a mesh with multiply material see [General/Modelling/Multiple Materials](#)

Animation

Looped animations

It is preferred if looped animations are exported so that they have the same keyframe at the first and last position. This will guarantee that they are looped correctly.

3DS Max

Modelling

Animation

Modo

Modelling

Mesh Setup

Every submesh in the scene need to have its own mesh layer and material for the texture and properties to be exported correctly.

Triangulate

The export tool does not triangulate the mesh autoatically so before exporting, you must enter geometry/polygon/triple in order for everything to be triangulated.

Unit Setup

It is important to have your grid/units set up correctly so that the scale of the meshes you create are 1:1 with that of the game's unit size.

To do this, navigate to the System drop-down>Units:

Unit system: Game Units
Default unit: Game Units
Meters per Game Unit: 1.0
Coordinate System: Up=Y

Animation

Exporting a skeletal mesh without animations:

It is usually advisable to do this so that animations are seperate in their own .dae_anim files. To do this, rig and skin your mesh as normal, simply make sure the skeleton and mesh items are visible in the layers.

There are some important settings to apply before you export.

Go to system drop-down>preferences>Collada I/O:

- Save hidden items: OFF
- Save Cameras: OFF
- Save lights: OFF
- Save Locators: ON
- Save Vertex Normals/UV Texture Coordinies/Vertex Colors/Vertex Weights: ON

- Save Animation: OFF
- Sample Animation: OFF
- All profile options: OFF

Exporting a skeletal animation:

When the animation for your mesh is complete, the first thing to do is hide the mesh item, only have the bones visible in your layer stack, as there's no need for the mesh to be present in the exported file (since you exported the rigged mesh in a separate .dae in the previous step).

- Now you need to bake your animations. To do this go to the animate drop-down>Bake>input your start and end frames>ok.
- Go to Item drop down>Transform>Purge unused transform, mode: All, type: All. This ensures over-rotation of bones don't occur.
- Go to system drop-down>Preferences>Collada I/O:
Up axis: Change this to X, Y or Z if you experience your mesh being rotated 90 degrees on playing of animation. Can be changed back to Y when finished exporting animation.
Save hidden items: OFF
Bake Matrices: ON
Save Animation: ON
Sample Animation: OFF
All profile options: OFF
- File drop-down>export: Export as collada .dae, then rename so the extension is .dae_anim. You may need to change your Windows folder settings to show extensions if you can't see them.

Blender

Modelling

Triangulate

Currently you have to triangulate the model before it can be exported, there is no export only triangulate.

Animation

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