

00 - Model Cleanup And Preparation



When you download a model, it's possible you won't be able to just export it to fbx and everything will just work with PrimeEngine Fbx parser. There are certain "cleanup" steps potentially required to make the model behave well with Fbx Exporter + PE Fbx Parser.

Triangulation

You should triangulate the mesh, by doing Mesh->Triangulate. Alternatively you can specify triangulate checkbox when exporting fbx.

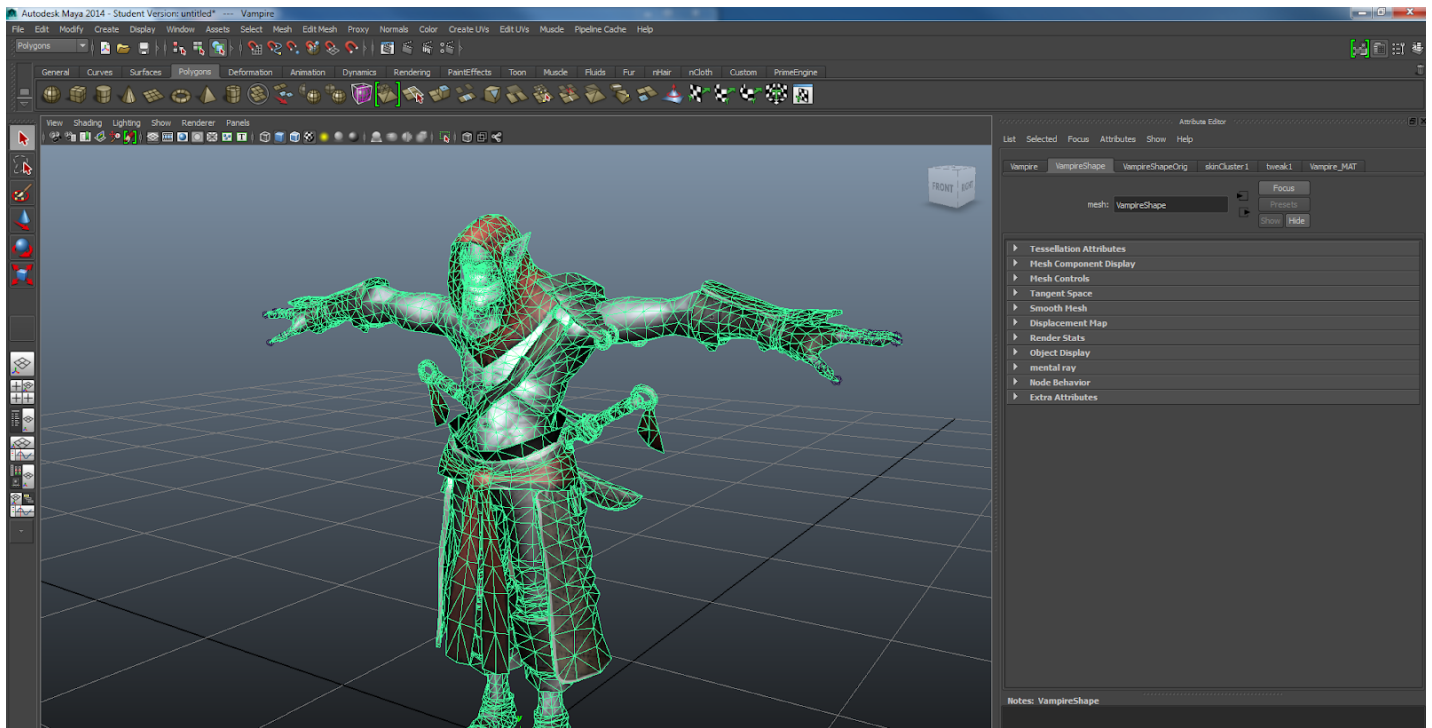
UV-set Cleanup

Some models you will download (especially from Mixamo) will have a lot of UV-sets on the model. One per texture. In case of Mixamo they will be all storing the same values, so they should all be consolidated to one. Note, the engine can support multiple UV-sets, and PE Fbx Parser can deal with multiple UV-sets too, but up to only a couple. Usually models don't need multiple UV-sets in general. So the point here is that if UV-sets store same values, all UV-sets except for one have to be deleted and all textures linked with first UV-set. Even if the exporter/engine supported multiple UV sets, in this case it would just use extra memory and performance, so it is always a good idea to get rid of duplicate UV-sets. If the model truly needs multiple UV-sets, like a shadow map is applied to model in a different way than diffuse map, then some work might be required to get the engine to work with it properly.

Mixamo Example

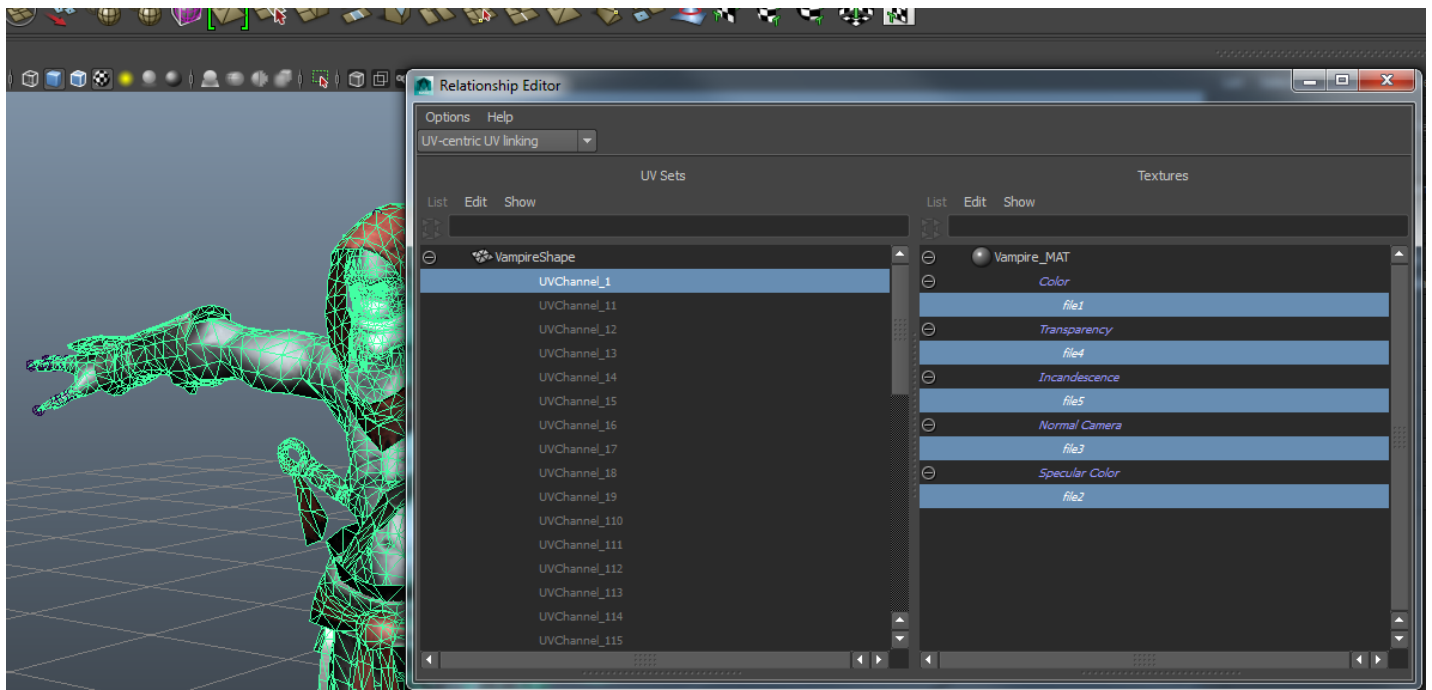
Here's an example from Mixamo model and steps to clean it up.

The original mixamo model is stored in AssetsIn/Maya/Vampire/MixamoSource/vampire-t-pose.fbx



Click on the model and go to Window->Relationship Editors->UV Linking->UV-Centric

It will pop up a window showing all UV sets in the file and all textures in the file. If you click on a UV set, it will highlight which texture it is linked to. Make sure that only one UV set is linked to all textures. To relink a texture to a UV set, just click on UV set and then click on the texture. Result should look like this:

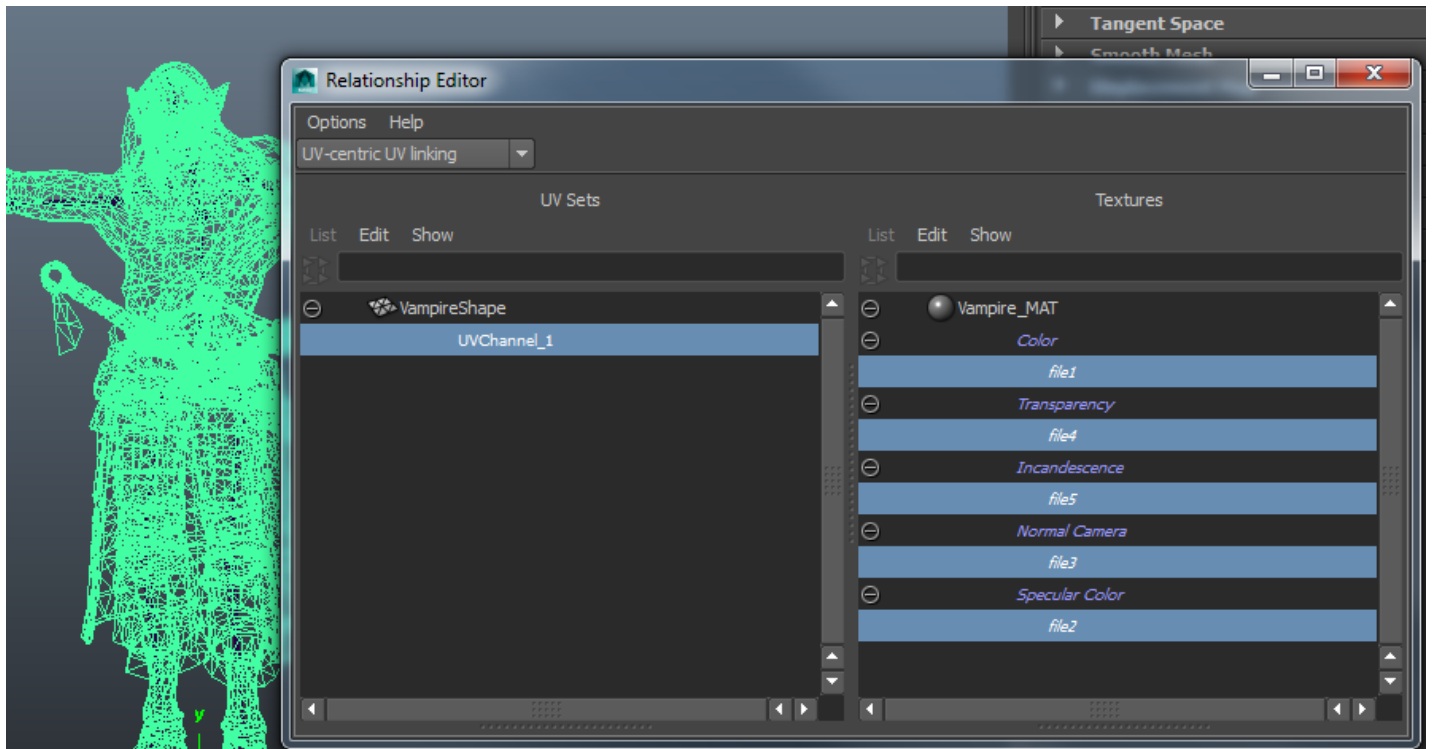


Then just delete all the other UV sets by clicking on them and going Edit->Remove UV Set

And the end result will be something like this:

One UV set in maya file. Now exporter won't be confused.

Save this maya file as your new source and use it for exporting. Keep the original fbx too, just in case.



Material Preparation

PrimeEngine materials are generated from maya materials. But they usually need additional tweaking, since PE shaders differ from maya shaders, and it is not easy to define rules for creating PE material from a Maya material, even simple material like Phong, since there could be different textures for RGB vs A, and other differences.

PrimeEngine material is a lua script. It sets up a table that is then read by engine.

A material consists of

- 1) auto-generated part, that is created based on Maya material properties.
- 2) user-defined overrides that can edit/append to auto-generated part:

Here's an example of a material: