01 - Maya to FBX

General

Use the fbx maya exporter to export an fbx file. I suggest to bake animation beforehand. The fbx exporter has an option to bake animation, but I don't trust it 100% so I usually just bake before exporting. You can store it anywhere, but I suggest somewhere in assets in.

For example we export AssetsIn/Maya/Soldier_12_11/SoldierBaked.mb into AssetsIn/Maya/Soldier/soldier.fbx

Maya Scene Requirements

There are certain rules that we want maya scene to conform

FPS

- Settings have to be set at 30 fps, this is what we assume in game. Any other fps will cause frame misalignment and will cause all kinds of weird issues

Units

- Set units to meters, not cm

Grid

Engine works in meters. I suggest setting Maya grid to meters and line each 1 segment. That way your view corresponds to debug render of engine:

Fbx Export Settings

There are certain settings you want to include and certain you want to exclude.

In general you only want to keep geometry and you want normals as well as tangents. Note that checking tangents doesnt mean the tangents will be exported. From what I have seen, if tangents (or maybe some other settings) don't exist in source file, they will not be generated.

Split Per-Vertex Normals

The FBX parser already automatically splits vertices when needed, so don't use this option

This option averages normals. Don't use this option since it will create different normals vs what your model already has

Tangents and Binormals

use this option only if you have assigned a bump (normal) map to maya material. Otherwise these tangents will not be generated

Triangulate

The mesh needs to be triangulated. If you did not manually triangulate the model, you an use this checkbox to allow exporter to do it for you. It is a good practice to have this on all the time. If you triangulated yourself, nothing will happen.

Units

PrimeEngine expects meters, so use meters

Scale Issues

When fbx is stored in meters, it is still stored as cm, and has some nodes in hierarchy that scale the whole thing. The exporter usually handles it, but in case you get some model in incorrect size, you can always scale vertices themselves, that will affect vertices individually.

So in case you see a model that is 100x times bigger than it should be, just change maya settings to cm to see grid in cm, and consider them as meters, go into vertex mode and scale model.