TressFX Maya Exporter

TressFX is designed to be compatible with your favorite hair modeler. All modeling is done within the modeling system of your choice, as long as you can turn them into curve primtives at the end. We've used Shave and a Haircut, XGen and the 3ds Max native hair modeler, although the 3dS Max plugin is not included in this release.

In this document, we describe how to export your hair geometry as a .tfx file through our exporter for Maya, beginning with instructions on how to install the plugin.

Installation

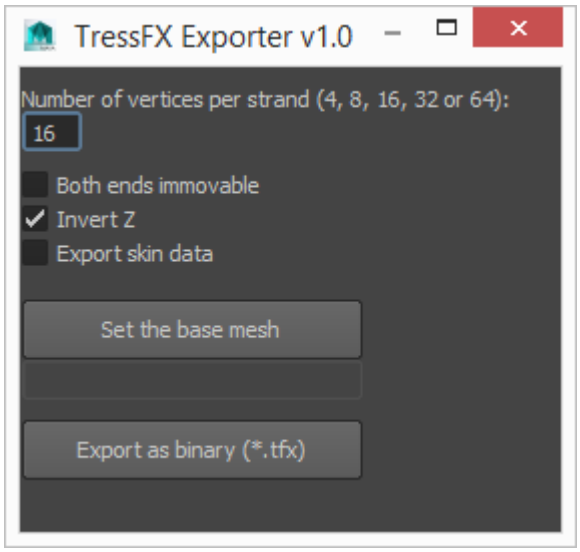
The Maya TressFX exporter is a single python file located in the following location: AMD_TressFX_Tools\MayaPlugin\src\TressFX_Exporter.py.

To enable this plugin, follow these steps:

1. Copy TressFX_Exporter.py into Maya's python script folder such as C:\Users\USER_NAME\Documents\maya\scripts
2. Launch Maya.
3. Open Script Editor and run the following lines in Python tab.

```
import TressFX_Exporter
reload(TressFX_Exporter)
TressFX_Exporter.UI()
```

4. This will bring up the TressFX Exporter window as below.



5. (Optional) The launch code can be shelved into Maya's toolbar so that user can launch it by clicking the toolbar button.

Exporting

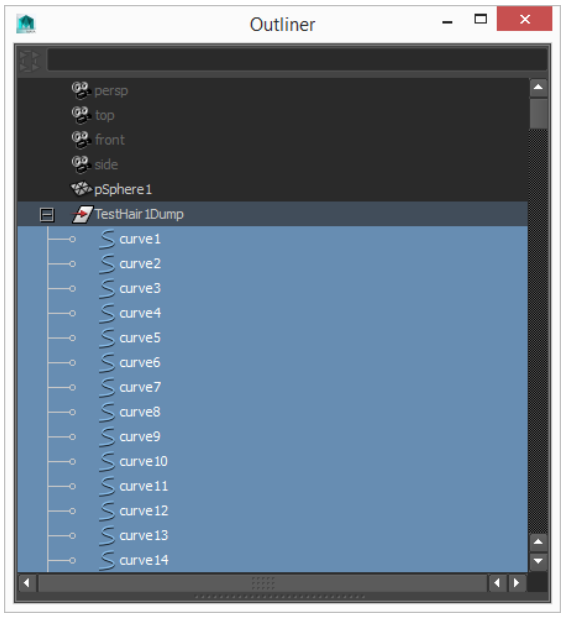
As mentioned, you are free to use any hair modeling tool that creates NURBS curves (splines).

There are two different procedures for exporting, based on whether or not mesh information is used during export.

Exporting .tfx Only

If the hair is going to be rigidly transformed, not skinned, then you only need to export what we call the ".tfx" file.

1. Select NURBS curves you wish to share common physics parameters and traits listed in the exporter (vertices per strand and whether both ends are immovable)



You must select the actual curve nodes only. Trying to export through parent nodes, for example, will fail. This will be fixed in a future version.

2. Make sure the "Export skin data" box is **not** selected.
3. Choose "Both ends immovable" if you want the tip of the hair to not simulate (completely driven by animation), similarly to how the root does not move. See the relevant section below for an explanation.
4. Choose "Invert Z" if your Z is pointing in the opposite direction as Maya (true for cases like the Viewer we provide, which uses a left handed coordinate system).
5. Hit the "Export as binary button"
6. You should be prompted with a file dialogue. Choose a place and name for the file, and hit "save".
7. A progress bar will appear while the data is exported.

Repeat this process for each group of hairs that will share the same physics parameters.

Exporting .tfx and .tfxskin

For support of fur, we extract some information from the mesh, and the process is a bit different. By "fur" we mean the mesh will be deformed through skinning, and the hair may, optionally, be colored through a texture. The process for this is different as follows:

1. Select the mesh object to which you will attach the fur (the "base mesh")
2. Click the "Set the base mesh" button. You should see the mesh's name appear beneath the button.
3. Make sure the "Export skin data" box is checked.
4. Select the nurb curves as described above, options you want, and hit "Export as binary"
5. You will go through the tfx save process as described above, including the progress bar.
6. Then, you will be prompted to stave the tfxskin file, and go through a progress bar again.

Explanation of Options

Number of vertices per strand

This sets the number of vertices that will be exported for each strand of hair. These vertices are sampled from the NURB curve, and do not need to correspond to the number of points in the NURBS curve. They do need to be a power of two, and there must be at least 4. Note that the number of vetices has some effect on the stiffness. Less vertices translates to more stiffness, so keep this in mind when choosing physics parameters.

Both ends immovable

See the ponytail image below. We've selected the "guide_hair_pull" section. Note that it only extends to the hair band. The hair beyond the band is another set of NURBS curves, and considered another section.

For the selected section of hair, you would want the roots of the hair to stay attached to the scalp, and the other ends to stay attached to the band (which in this case, we treat as immovable). This is a case where we want "both ends immovable".

Invert Z

Coordinates are Maya coordinates by default. Selecting this option will negate the z coordinate, which is what we do in our viewer, which has a left handed coordinate system.

Export skin data

Choose this option if you want the exporter to export skinning and UV information for the hair. Selecting this option means you must also set the base mesh (described next) and you will be exporting a tfxskin file in addition to the tfx file when exporting.

Set the base mesh

Sets the mesh from which skinning and UV information is extracted when exporting the tfxskin file.

Export as binary (*.tfx)

Export the currently selected hairs as a tfx file. If you have "export skin data" checked, you will also be prompted to save a corresponding tfxskin file.