

Professor Briggs

DIG4206C

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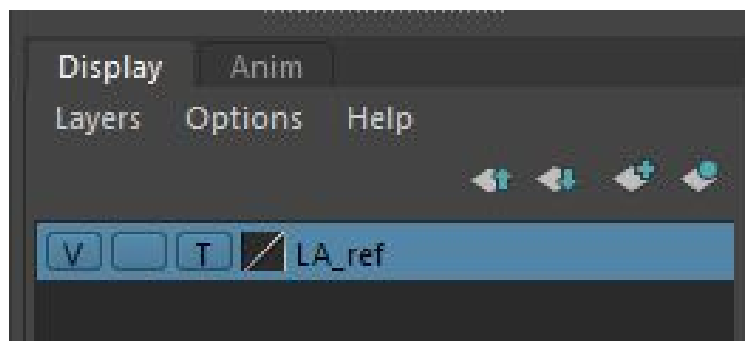
Setting up and Troubleshooting an Environment File

There are countless small details that can drastically affect an environment file and its continued performance. In this document I will be meticulously detailing many of these individual components, and any of the tell-tale signs of their malfunction that I've come across. In this way you will be able to rest easy knowing that your team will have a functional and efficient final environment file when it comes time to render.

So you're finally ready to begin the creation of the final environment file for your film, but where do you start? No doubt there are a myriad of issues that stemmed from the original Primitive and Layout Environments that you'd like to avoid this time around. Well first we need to establish that you in fact have a clean, fresh file to work from. This will allow us to rule out many of the possible issues that can inadvertently stem from mistakes in the initial set up. In addition you want to keep in mind that you not only create an environment which looks good and makes sense, but also one that retains as much of the input from the art directors, and camera placements from layout as possible.

Setting up an Environment File

Assuming you have a blank file set up with a project folder and the correct directory, you can begin by actually adding assets. To place them as quickly and efficiently as possible into the scene, I recommend you use the layout environment as a reference, both figuratively and literally. Save out the layout as an .ma file, or if that file is especially bad in terms of nodes/materials/namespaces ect., you may want to export it. Reference that file into the environment. Create a group node called something along the lines of “ref.” Then select the group and go to layers. Click on the “Create a new layer and assign selected objects” button which looks like a rectangle with a blue circle on it to add to new layer with the reference attached. Name the layer appropriately. This allows you to have a perfect reference of the older environment to work from without having any of the poor set up or gunk that would come with actually importing any of that file. If you want to get extra fancy, I recommend clicking on the third button on your layer and setting it to “T” for templated, which essentially gives you an unselectable wireframe. For even more added convenience you can select the group which turns the “T” wireframe to an easily viewable salmon color. This works best when hitting alt b to change the background color to black.



Now that the file is set up in a beautiful and clean manner, it's time to begin referencing in and placing all the assets. Here is where the tricky part comes in. You've set up the file well, you ensured no garbage from the older layout file came in, and the outliner is cleanly grouped and accurately named. If at this point you are asking as to why everything is still messed up and in complete chaos, then continue reading. Written below are all of the issues I've run across, and the processes used to determine what is wrong and why. Also something to keep in mind, the solution to fixing the final environment may seem as easy as just sending all the assets back to have them fixed, but if you yourself aren't sure of what is wrong with them, how will you ever be able to properly explain to whom it concerns what needs to be adjusted. These following points precisely describe both the signs and steps required to solve many of the unique environment problems so you can properly relay that information.

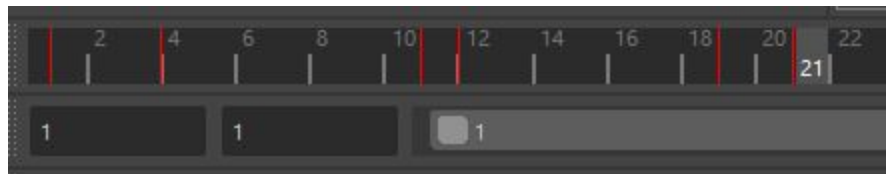
Troubleshooting an Environment File

Inspect the Viewport for Rogue Objects

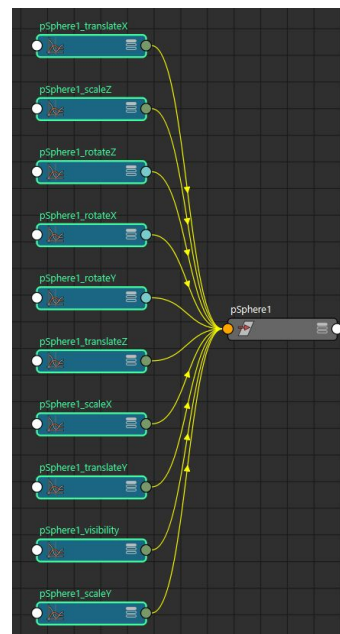
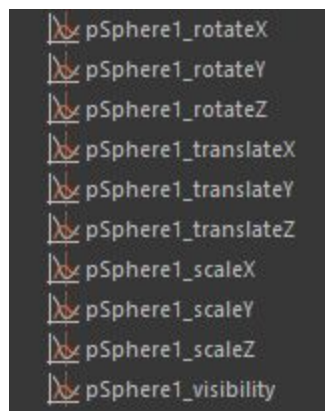
- Are there objects out of place?
 - It may be a double transformation
 - Does the object have zeroed out transformations in the channel box?
 - You may have frozen the object in the environment file
 - Does the object's position seem to shift constantly when opening the file?
 - The object may still have transformations on the original file

- It may be a pivot issue
 - Does the object have a non-centered pivot in the environment?
 - You may have moved the pivot
 - Does the object have a non-centered pivot in the original file?
 - The modeler may have forgotten to center it before submitting
 - Does the object have a baked pivot?
 - It may have been baked in the original file
- It may be a key

- Highlight the object and scan for keys (the red lines) on the timeline



- Highlight the objects vertices/edges/faces and scan the timeline
- Uncheck DAG objects only and scan for keys in the outliner (squiggly orange and grey line on a right angle)
- Highlight object and open node editor. Scan for keys in the nodes



Look at the layers

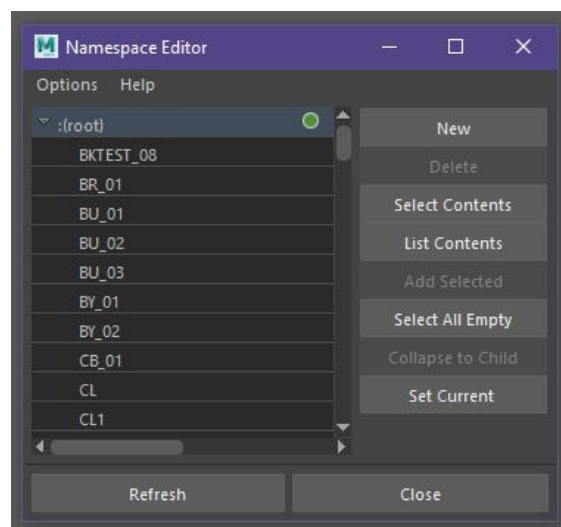
- Are there any additional layers that were not present before?
 - Can you remove them?
 - Yes > You may have added it by mistake
 - No > A referenced asset came with the layer

Look at outliner

- Are there any of the following?
 - Cameras
 - Image Planes
 - Lights
 - Sets
- The original asset file must be opened and have the extraneous objects deleted

Check for Naming Inconsistencies

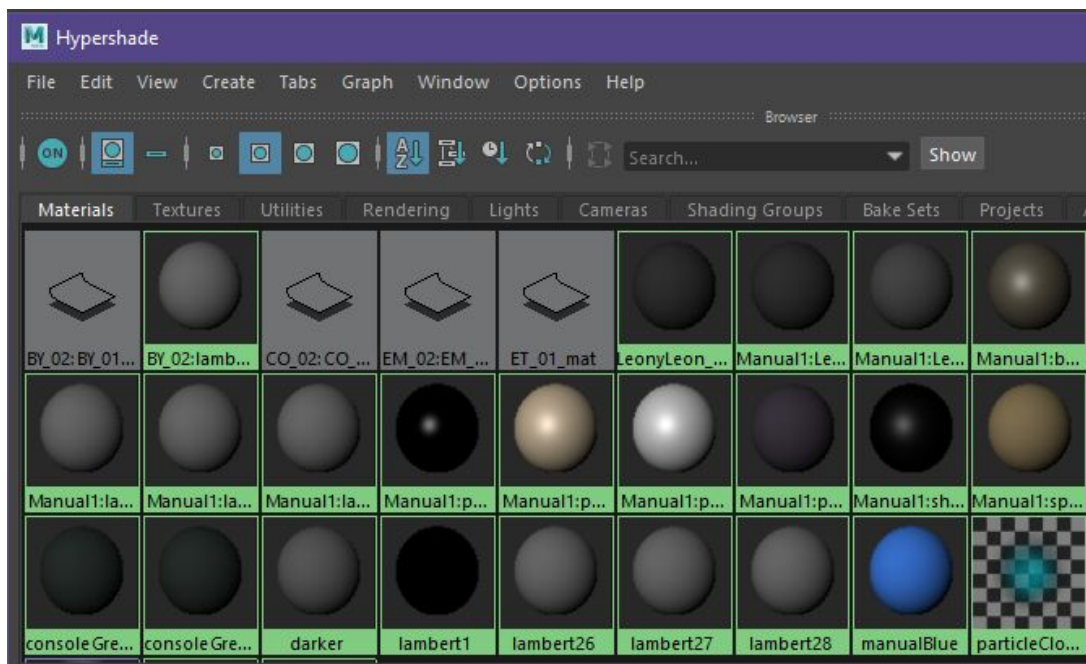
- Are there objects in the outliner with higher increments in the namespace than expected?
 - You may have extra or unused namespaces



- Click on Windows on the main taskbar at the top. Hover over General Editors and select Namespaces Editor. Choose the name that is causing issues, click on Delete, and then choose Merge with Root.

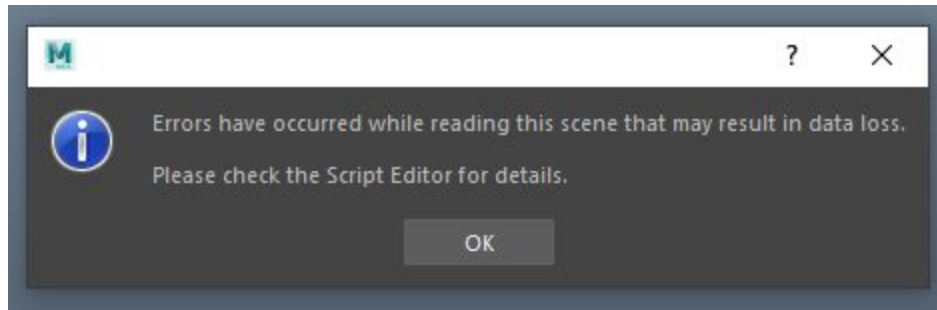
Check all Objects for Extraneous Materials/Misplaced Textures

- Are there any objects with strange colors or reflectivity in the viewport?
 - Select the object and go to Windows in the top taskbar. Hover over Rendering Editors and click Hypershade.
 - If there is anything but the default lambert and pxr disney materials, delete



- Attempt to render the scene
 - If the render is fine, it may be a viewport issue

Address all windows, warnings, errors, and pop ups



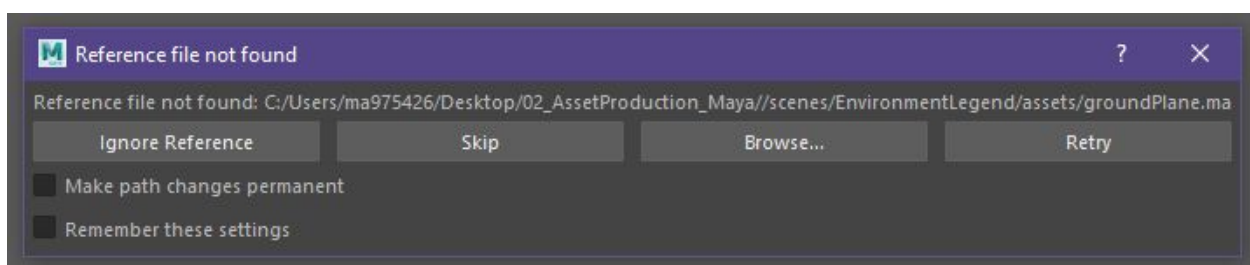
- Is there a red or yellow bar on the script editor bar on the bottom right?
 - Open the script editor to analyze and ascertain what is causing the warning/error



- Does one or multiple pop ups appear when you open the file asking to confirm that this is a student version?
 - At least one of the reference assets have student versions on them
 - Open the .ma file in notepad and delete the line with student version

Is the file able to be saved, exported, and referenced without issue?

- Cannot save in .ma file format or export in obj
 - In Windows on the top taskbar Select Optimize Scene File. Check Unknown Nodes and click Optimize
- Warning that a referenced object wasn't found correctly
 - Name changed or was mistakenly misspelled
 - Directory is wrong, either in original file or you didn't set your project



Secret Techniques

Finally we come to the trifecta of last resorts. Nothing has helped you up to this point, and a particular aspect, whether it be an asset or a an entire layout file is simply refusing to cooperate. We have developed three Secret Techniques for the absolute worst case scenarios. I must reiterate, these are last resort measures, and under normal circumstances should not be needed in general use or clean up.

1) If you understand what is the problem area, you can check for extraneous information in the node editor and start deleting strategically . . . or haphazardly.

- Occasionally shading groups may be created that at some point either create loops or are left floating after being disconnected. This type of occurrence is not that uncommon, and is not exclusive to just shading groups. It can affect a large variety of both necessary, and superfluous nodes.
 - Click on Windows on the main taskbar and scroll down. Select Node Editor. A window will appear that features a node attributed to the one you selected. Hover over the icons beneath the main taskbar until you see a square with two right facing, equilateral triangles on each side. Click on it. This should expand the node tree and allow you to see every node that is directly connected to the object. At this point unless you are very familiar with the inner workings of nodes or the attributes attached to your object, the best course of action is to start trial and error

deleting nodes that seem out of place or are creating cycles (connecting back to the node previous).

2) **You can attempt to export the file as an obj.**

- This will save the object in a more raw form and will by default remove much extraneous information. Bear in mind if this is done certain attributes will be lost, which can include texture directories, history, and any animation.
 - Select the object you wish to export, then click on File in the top taskbar and click on Export Selection. Type in an appropriate name and click on Export Selection.

3) **The Manual Massacre**

- Behold, the most powerful and risky technique in our arsenal, almost guaranteed to affect the problem area, whether for better or worse.
 - Go to the Outliner window and click on the Display button beneath it. Uncheck the first option which should be “DAG Objects Only.” Highlight everything beneath the defaultObjectSet. Press delete. Voila. If done correctly, your outliner, and if you’re incredibly lucky your viewport, will be much cleaner.

The reason behind the madness is that Maya does not allow the user to delete any of the necessary non DAG only objects. Bare in mind though, necessary is a very arbitrary word. In many cases more than a few of those deleted objects served specific purposes that may not be immediately apparent. That is why this is the absolute last resort. Though its effects are unquestionable, the hidden repercussions are not well documented and could be more trouble than they are worth down the line. The greatest use of this technique is to by trial and error ascertain the exact objects that may be negatively influencing your scene, thereby giving you a better idea of the overall problem.



If your file is still not cooperating or is unresponsive after all that, then you very well may need to start from scratch. Nothing is cleaner than a clean slate, as much as that may suck to hear. Good luck.