

## Referencing Tips & Tricks

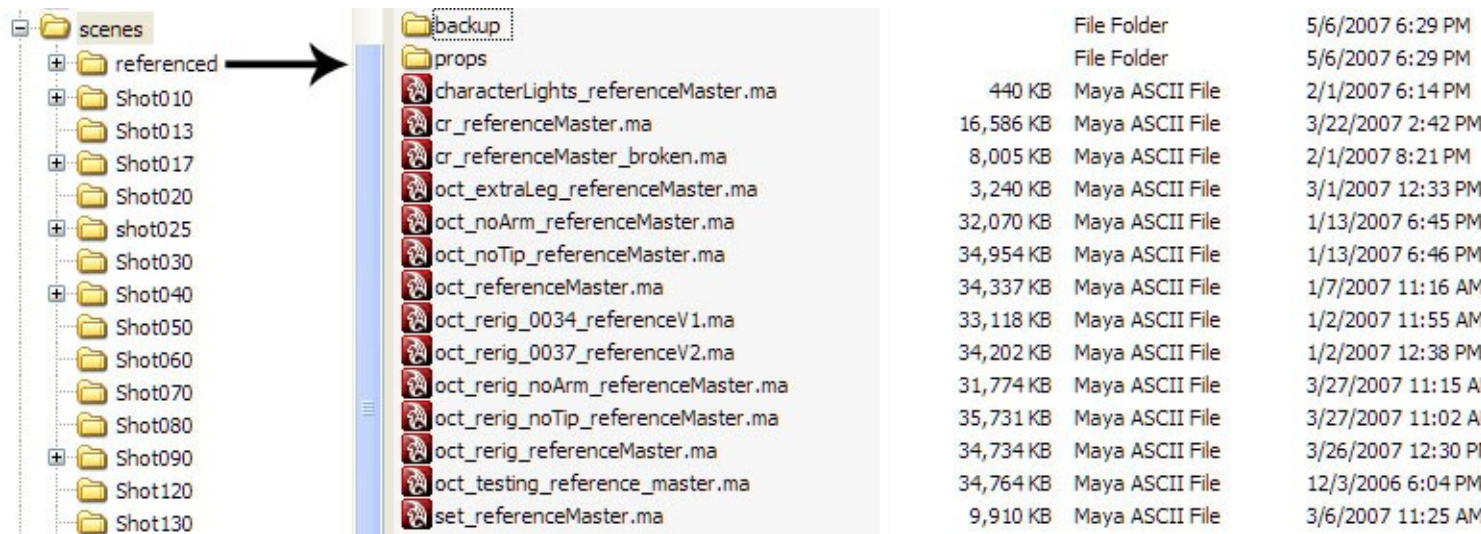
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2007-10-10 v1.3

### File Structure

Referencing is all about organization. The first thing to do is draw out how your file structure will be set up. This is the directory structure that worked for me:

```
/scenes
  /reference
    /char
      char1_master.ma
      char2_master.ma
    /props
      prop1_master.ma
      prop2_master.ma
  /backup
    /char
      char1_2007_09_23.ma
    /props
      prop2_2007_10_01.ma
      prop2_2007_10_03.ma
  /shot10
  /shot20
  /shot30
```



In the scenes directory is a folder named reference. In that folder are folders for characters and props. These folders are for the master files only. Before modifying a master file, copy it to the appropriate backup folder and append the date to the file name. This way, if things get messed up, you can easily go back and use the old file.

Individual folders will be used for the multiple versions of the scene files for each shot.

Aside:

I named my shots on 10's so that I could add new shot numbers in between shots instead of appending letters to shot names. It is also helpful to use shot numbers instead of descriptive names. When somebody is helping troubleshoot a file, it is easier to troubleshoot if the file is named shot25.ma instead of grabbinghisfoot.ma.

Referencing creates a reference path to the file being referenced. Unfortunately, this path is hard coded. This is why you should **ALWAYS** work off the scratch drive. When you create a reference, it will be referenced to the file you select. Make sure that file is on D: and not in your homespace. I can't stress enough how important this step is. Always copy your reference and scene files to the scratch before you start working.

### Preparing Files for Referencing

Reference master files should not have ANY keyframes set in the file. DO NOT key the character at -20, -10, 0 like we have previously been told. Setting Keys will cause the characters channels to become locked when you import your character into your shot. Set Driven Keys are excluded from this and can be keyed.

Make sure the file is clean before using it as a reference. Group all the nodes under a char\_master node for cleanliness.

### Starting to Reference

Create a new scene. Save it in the appropriate scene folder.

/scenes/shot10/shot10\_v1.ma

Lets say this scene will need a character and a prop. Go File>Create Reference>Option Box. This is the most important part of referencing. Read the Help page on the different options for this option box. It is very important that you understand what the different options are. I will go over some of them that are helpful.

General Options>Deferred  
Keep this off.

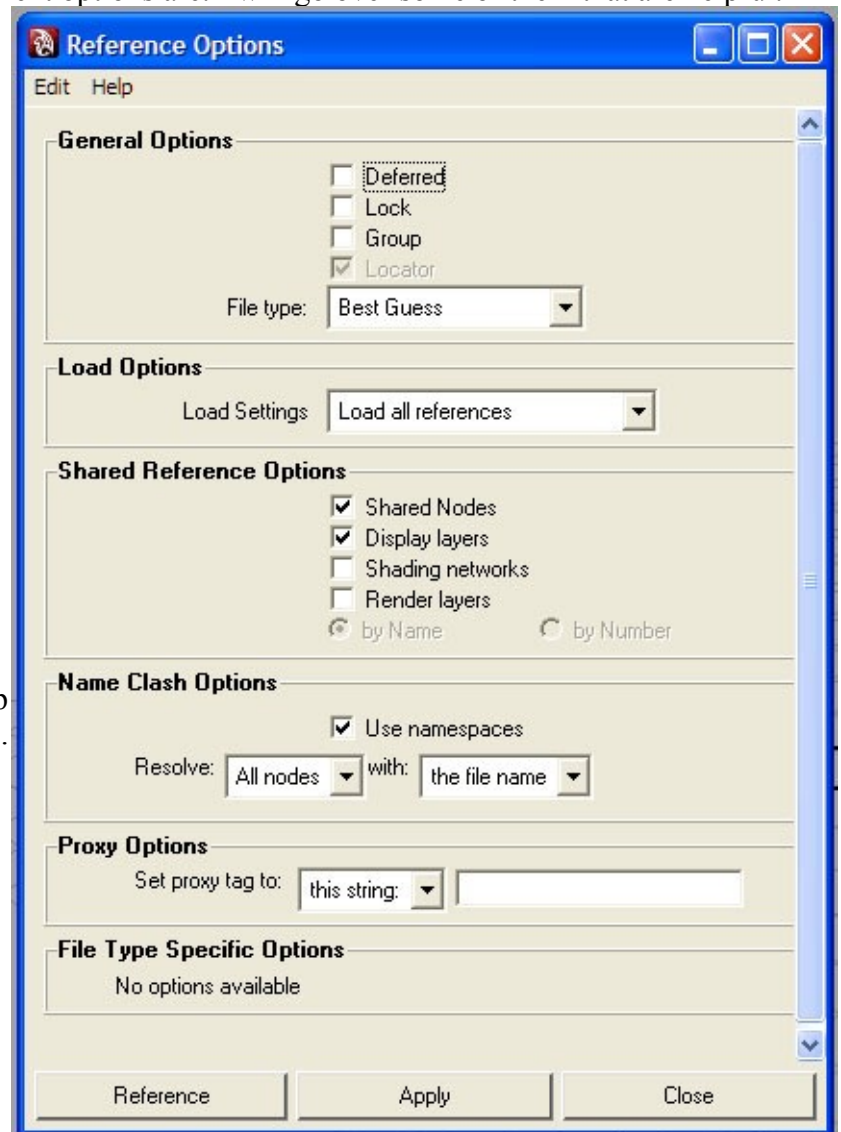
General Options>Group  
This will group the referenced file under a single group. Your character should be under a single group in the master file already, so this is up to you.

Load Options>Load Settings  
Load All References will load all the references in the scene when it is opened. If you have multiple heavy characters in the scene, consider setting this to Load Default References. This will only load the references that were loaded the last time the file was saved. This can help speed up load times for heavy scenes.

Shared Reference Options  
Shared reference options can be a boon to file organization but can be tricky to figure out.

Shared Reference Options>Shared Nodes  
This will turn on the ability to share nodes. This is on by default.

Shared Reference Options>Display Layers  
This will share display layers between referenced files. For example, if both characters have the



display layer “Rig” then the display layer “Rig” will be shared between both referenced files. Think about if you want to share display layers or if you want to have separate layers for each character.

#### Shared Reference Options>Shading Networks

This will share shading networks. Read about the intricacies of this option in the help docs. I recommend keeping this off.

#### Shared Reference Options>Render Layers

Keep this off as well.

#### Name Clash Options>Use Namespaces

It is important to use namespaces so that all nodes are uniquely named. A *namespace* is a grouping of objects under a given name. Each item in a namespace is identified by its own name along with the namespace it belongs to. Read the help docs for further info on namespaces. Make sure Resolve is set to All Nodes, and with is set to The File Name. This will add the file name in front of the reference in the reference editor.

#### Proxy Options

I will cover this later. It is best not to set anything here right now.

Now that the options are set, go File>Reference and select the file you want to reference. Open the Reference Editor at File>Reference Editor. The file you just imported should be in there. The different view modes will help show exactly what is in each reference file.

Select the file reference. Above in the File Particulars is the unresolved name and the resolved name. The unresolved file name is the path to the file. The namespace can also be edited in the namespace box. Try to keep the namespace short. Use the check box next to the reference to load and unload the file.

### **Constraining References**

It is best to keep constraints off of referenced files. For example, if a character and a prop are referenced into a scene, create an empty node and parent the prop to the node. Then constrain the node to the character. This way, if the prop is not loaded in the scene, the constraints will still work. This also makes it possible to swap out the object being referenced.

### **Proxies**

Proxies can be very helpful for speeding up a heavy scene. For example, if the background is very heavy, create a low resolution version of the set. Maybe just a few cubes where objects are is enough to get the feel of the scene. If the original scene is town.ma, then save the loRes version as town\_loRes.ma in the same folder as the original.

In the Reference Editor, with the correct reference selected, go to Proxy>Add Proxy>Option box. Type loRes as the string to use. Click Proxy and select the loRes version of the file. Now go Proxy>Reload Proxy As and select loRes.

### **Children and Grandchildren References**

Referenced files are referred to as children of the master file. If there is a reference inside a reference, it is referred to as a grandchild. For simplicity, try to use only children references.

### **Preparing for Rendering on the Render Farm**

Because you will be referencing your files on D: the farm will not be able to use the references in the file. To solve this, open the Reference Editor and select all the references. Go File>Import Objects from Reference. This will import all the files into the scene. I like to save the scene as sceneName\_render.ma. This is the file that is sent to the farm. This way, you can always go back to that file in case any frames messed up.

Make sure to reopen the original file before continuing to work because when you Import Objects from

Reference you cannot undo. Never edit your sceneName\_render.ma file even if it has an error. Go back and correct it in your main scene file with your references and then repeat the steps above and save it again as your sceneName\_render.ma file.

### **Using Pose to Shelf with Referencing**

If p2s shelf buttons were set up before referencing was created, the buttons mel script need to be updated. Add the namespace to the button by editing the shelf and selecting the button.

Original: catch (`setAttr "charName\_fk\_ba\_lf\_loarm\_ctrl.rotateY" -68.`);

With Namespace: catch (`setAttr "namespace:charName\_fk\_ba\_lf\_loarm\_ctrl.rotateY" -68.`);

Save the script and move the the next button. If there is a lot of attributes, copy the mel into a text editor and do a find and replace.

### **Using Pose Library with Referencing**

Make sure Use Namespaces is checked on. Also check on Use Current Character Name. Hit the Get Namespace From Selection button. This will let you use saved poses that have been saved without a namespace. Also, in the Edit Options dialog box, add the name of the character.