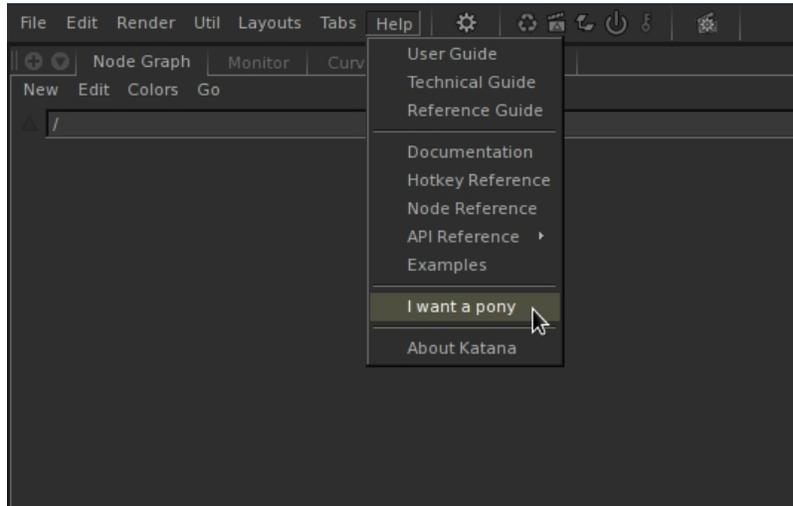
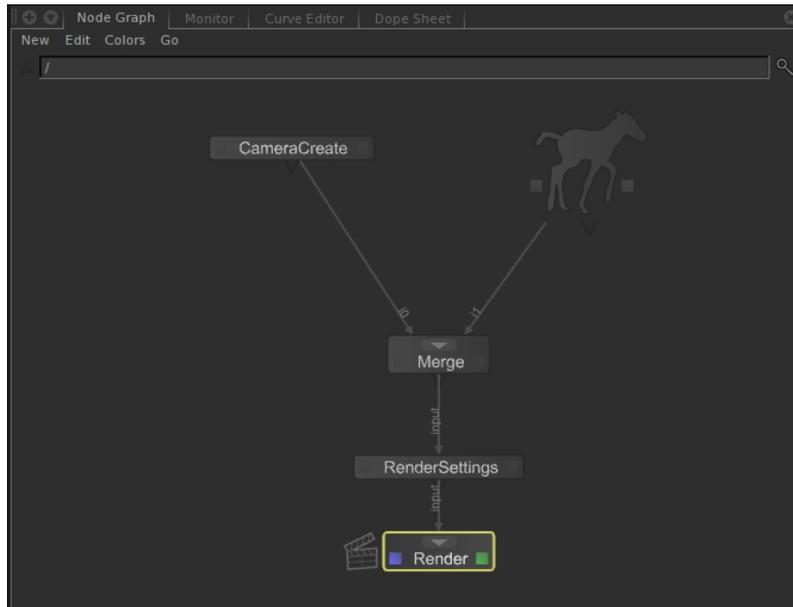


Camera & Geometry

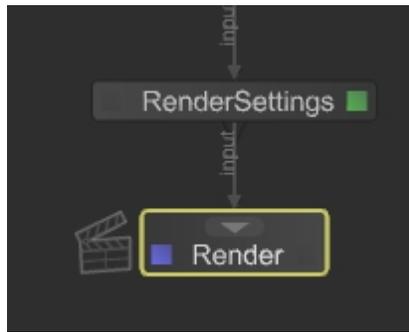
The creators of Katana were nice enough to provide us with a built-in test mesh. Everybody likes ponies, so they made it easy to get one. Choose **Help > I want a pony**.



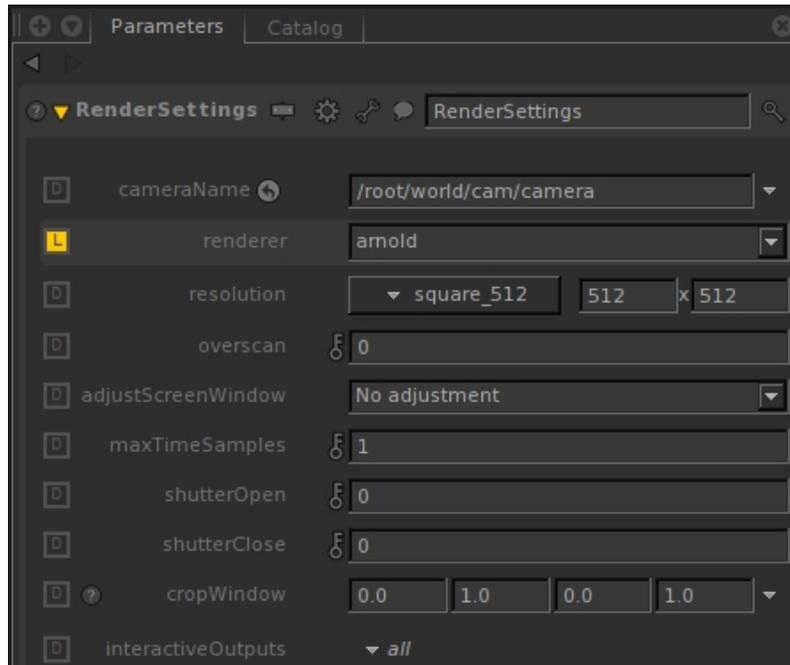
- You must then create a minimal set of nodes in order to render anything. Hit the **tab** key and start typing the name of a node to get a filtered list of nodes; hit **enter** to accept, and then click the mouse to place the new node. Create the following node types:
 - **CameraCreate**
 - **Merge**
 - **RenderSettings**
 - **Render**
- Form a node graph that looks like this by plugging outputs (bottom triangles) into inputs (top rectangles). Alternatively, hover over the node and press **`** (backtick) over both nodes in turn.



- Next, a note about the blue and green colored highlights on the nodes: blue corresponds to nodes that are viewed, e.g., the **Scene Graph** tab shows the state of the scene at the point that node is executed. If the **CameraCreate** node had the blue highlight clicked on, the only thing that would be in the **Scene Graph** would be the camera. If the **Merge** node has it, both the camera and the pony geometry are present. To set this click the left square or press **V** on the keyboard while hovering over the node. The green highlight indicates which node is being edited, and its parameters show up in the **Parameters** tab. To set this click the right square or press **E** while hovering over the node.

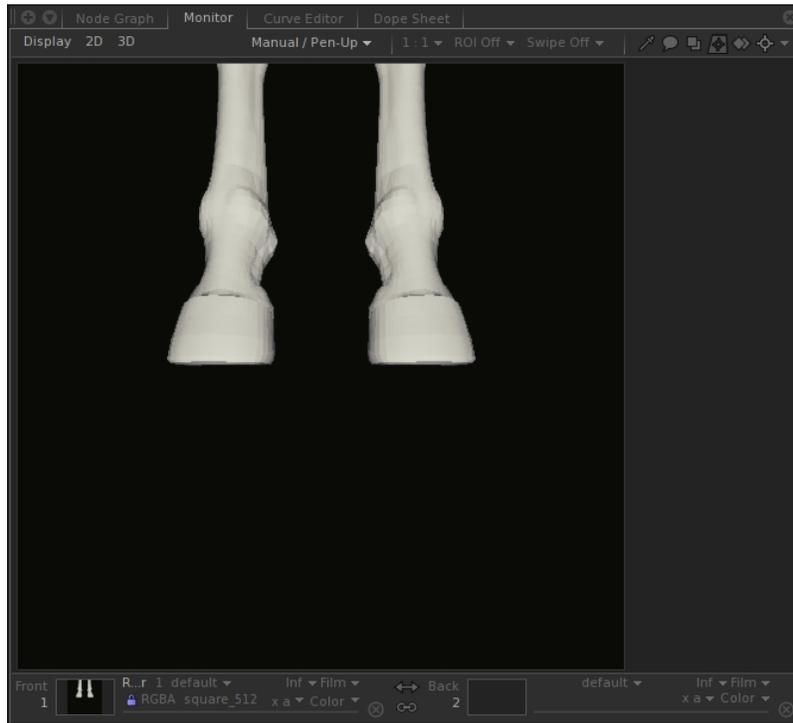


- Click the green highlight on for the *RenderSettings* node, and change *renderer* to Arnold:

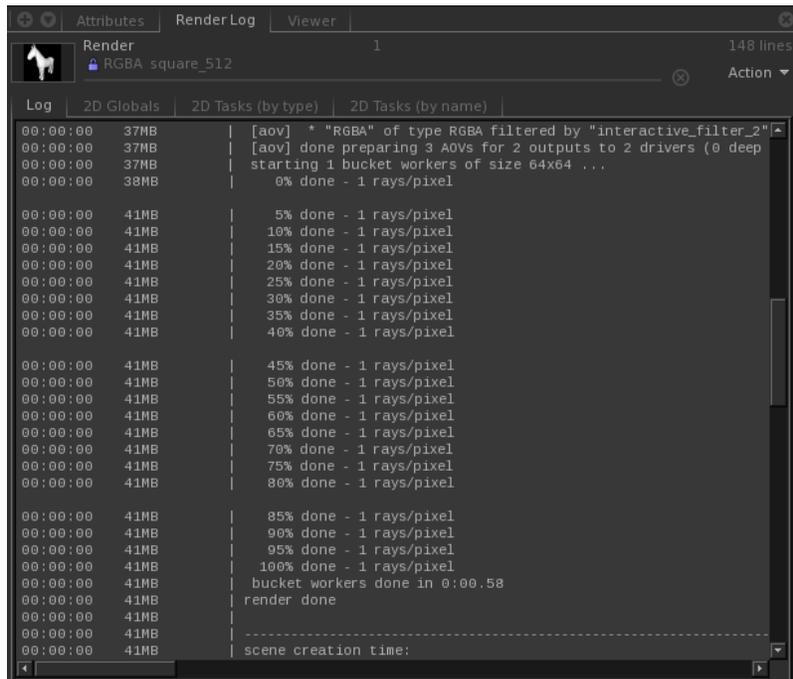


If Arnold is not an option in the *renderer* drop down, your `KATANA_RESOURCES` environment variable probably isn't pointed to the Arnold render resources, or Arnold itself is not available. Go back to the [installation](#) section to see how those are typically set up.

- Now click the blue highlight for the *Render* node, and then right-click the node to get a small contextual menu. Select **Preview Render**. Now, switch to the **Monitor** tab (at the top-left of the window, near the **Node Graph** tab you already see) to see the render actually going. Hit the **Home** key on your keyboard to get it to its real size, and you should see the pony's hooves:



You can see all of the console output from Arnold as it renders in the **Render Log** tab. When there are issues with the render, this is the first place you should look.



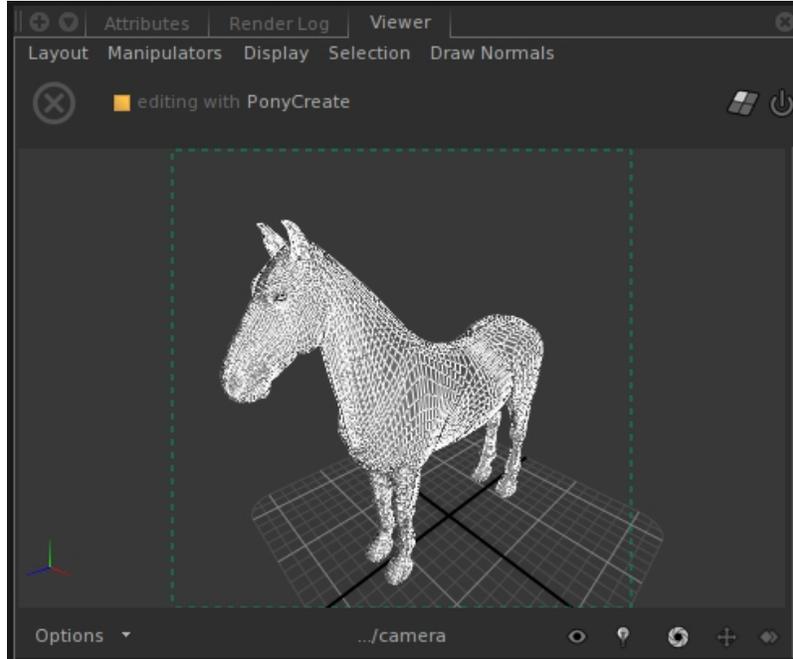
Refinement

The pony's feet are not that interesting, so now we have two tasks: make the pony smooth-shaded, and position the camera. For the first, go to the **Viewer** tab, and switch to the camera created with our **CameraCreate** node by clicking on the **perspShape** text. It will have a camera icon next to it, named `./camera`. Then, try moving the camera around with the mouse while holding the following buttons:

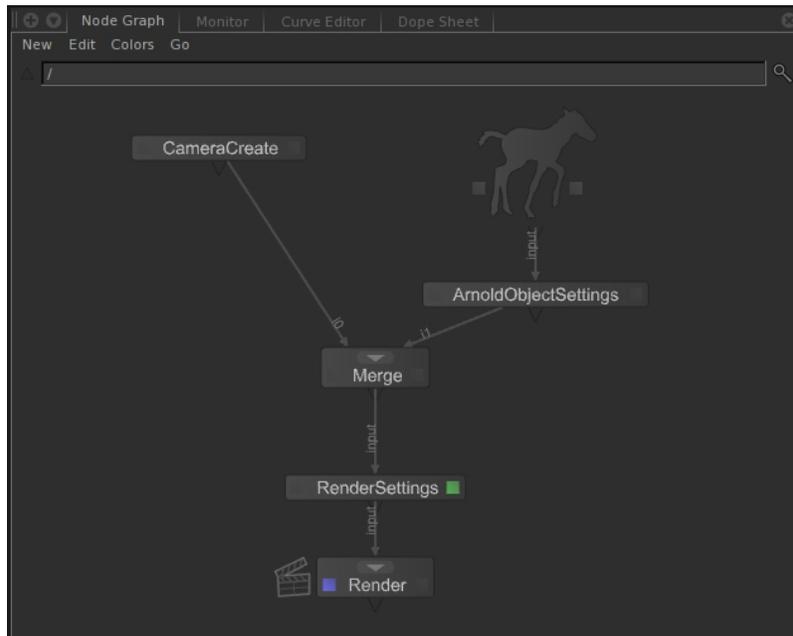
- Middle-mouse: pan left-right, and up-down
- Right-mouse: slide in and out

- Middle- and right-mouse simultaneously: rotate the view in Maya turntable fashion

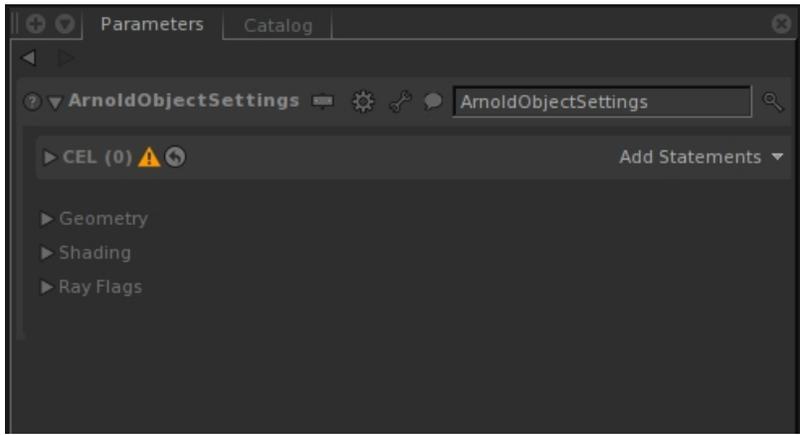
Try to get the pony centered in the view from various angles, and then zoom out and orient it something like this:



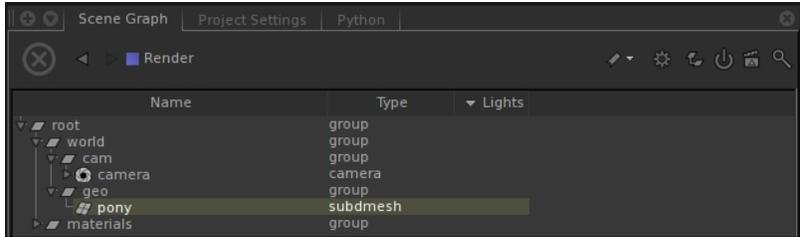
- Now, click back on the **Node Graph** tab, and hit tab to create a new node, of type **ArnoldObjectSettings**. You may drag the node (after it is placed) over the connection between the pony node and the **Merge** node to insert it along that connection:



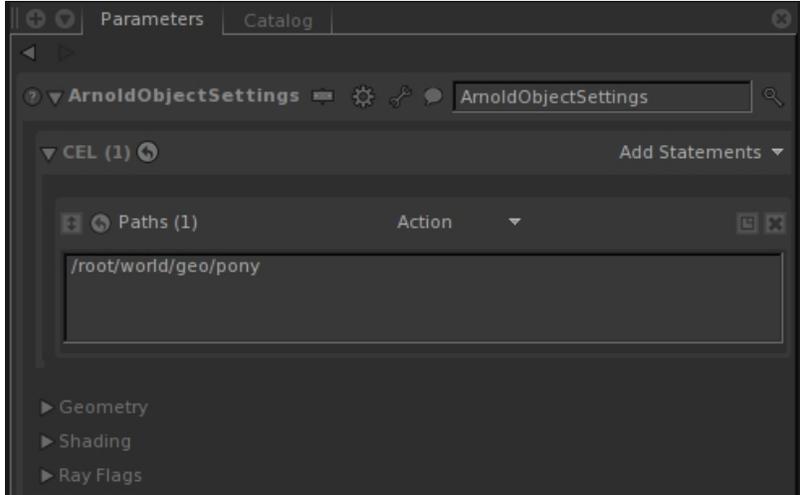
- Click on its green highlight to edit it. This node needs a scenegraph location to run on, done using a *CEL statement*.



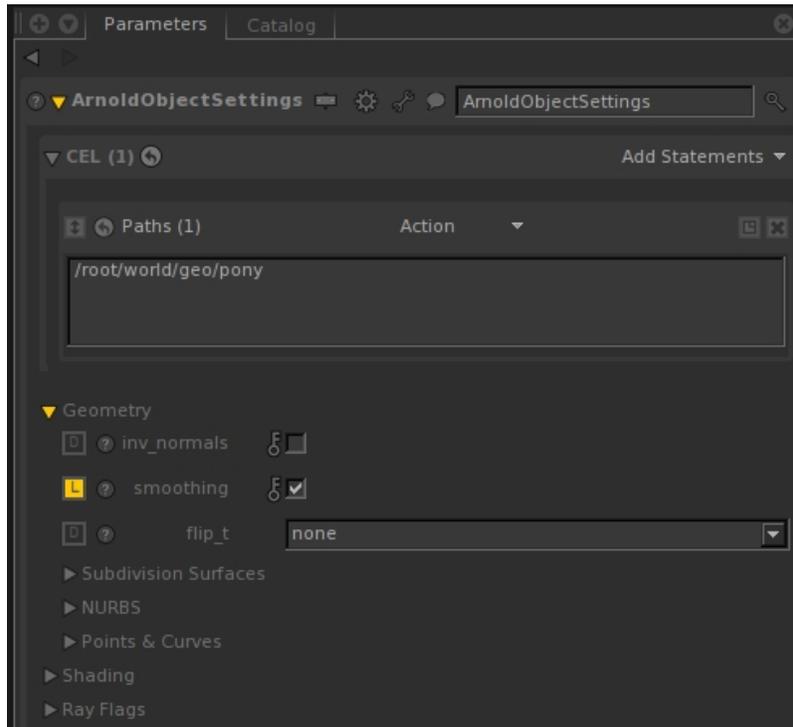
- In the **Scene Graph** tab, expand the scene graph until you see the pony (you may need to click the blue highlight on the pony node or further downstream nodes to see it):



- Now, middle-click the pony item and drag it up to the **Add Statements** text in the node properties, so that it adds it to the CEL list. You can also shift+middle-mouse drag the pony node itself from the **Node Graph** to the **Paths** area to get the same result:



- Now, expand the geometry parameters, and set the smoothing check box. Your final parameters should look like this:



- Click the blue highlight on the **Render** node, and right-click it to run the **Preview Render** again. Switch to the **Monitor** tab, and now you should have something like this:



Now go to [Part 2](#) to add shader networks and lights.