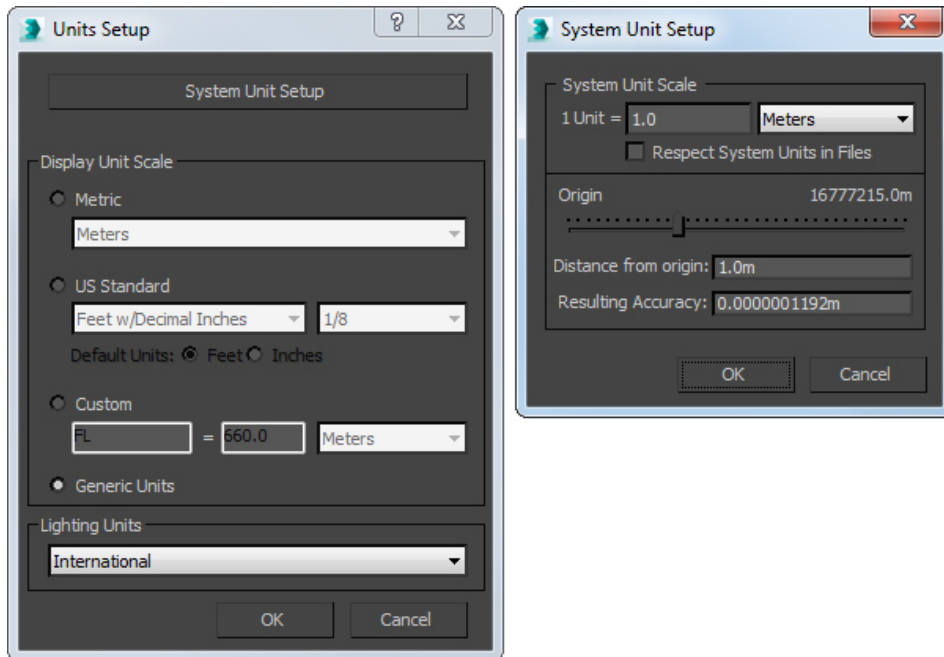# Iray+ for 3ds Max
HDRI & Backplate Demo

This demonstration walks through the typical workflow of adding and matching backplates, cameras and environments in Iray+ for 3ds Max.

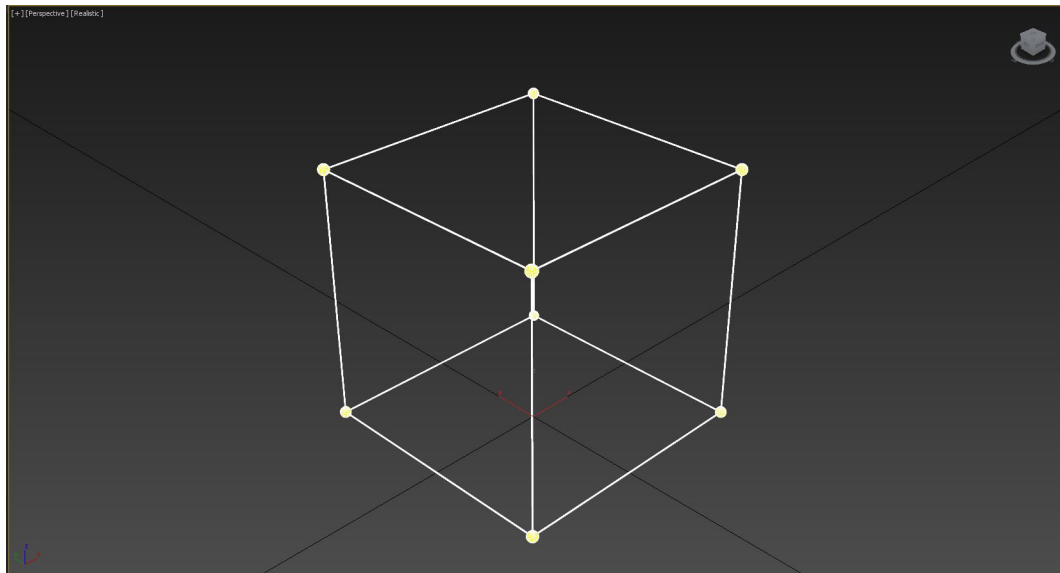This document requires that the following files are available:

- moofeCube.fbx
- /backplates folder
- /hdri folder

Scene setup

1. Open 3ds Max
2. Configure Unit Setup from the toolbar, **Customize > Units Setup** and set Display Units to **Generic** and System Unit Setup to **Meters**
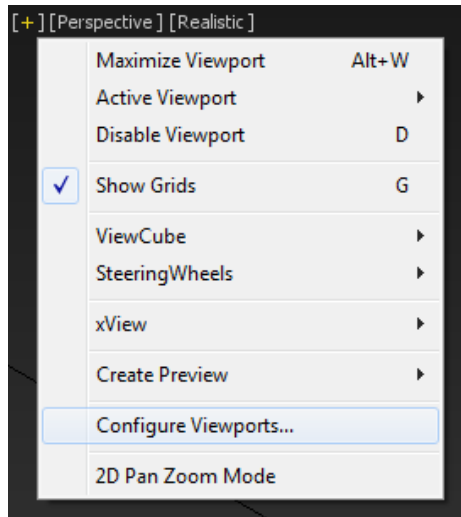

3. From the 3ds Max ribbon select **Import > Import** and choose **moofeCube.fbx** from the project folder. The cube in the model is 1m × 1m.
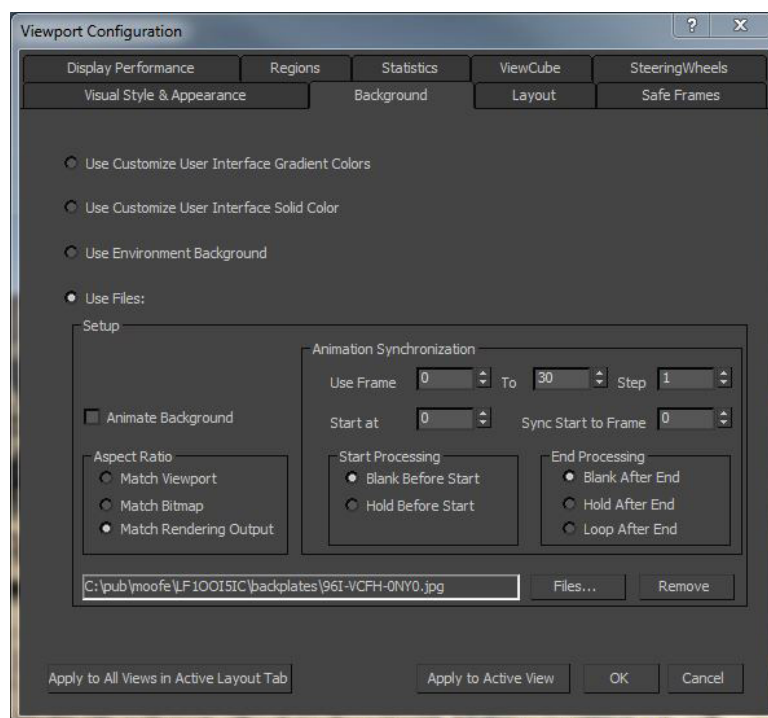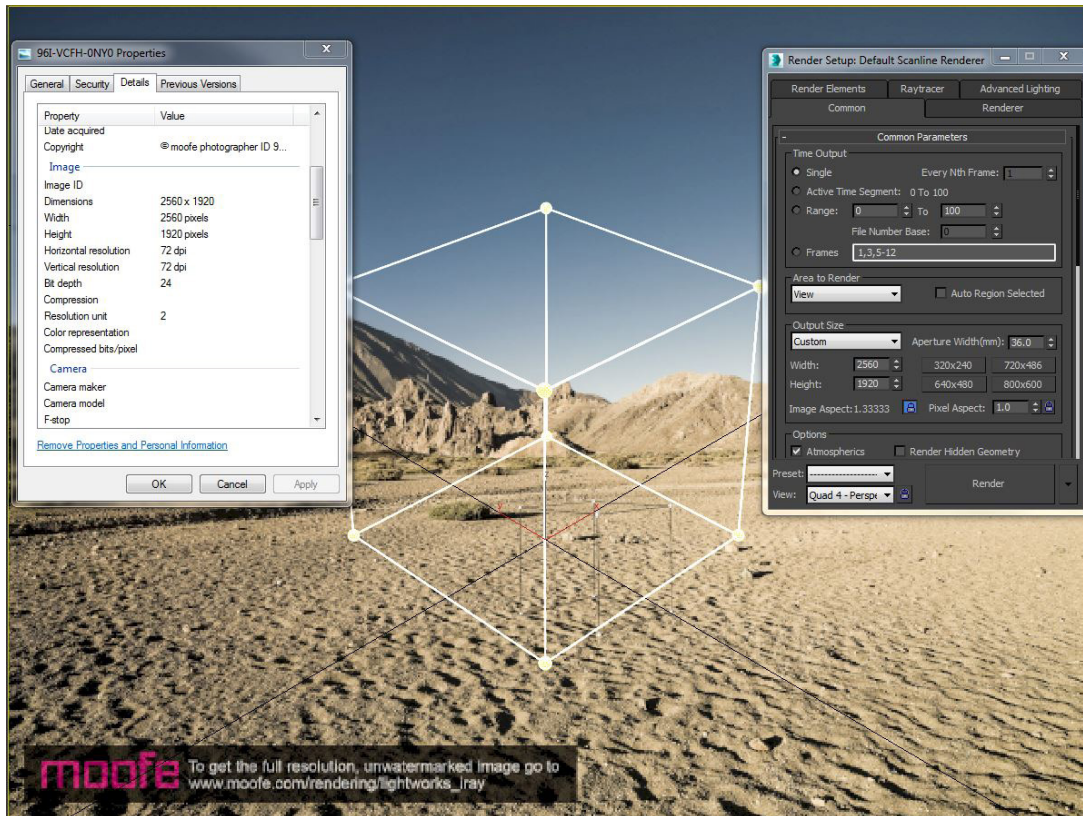

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Adding Backplates

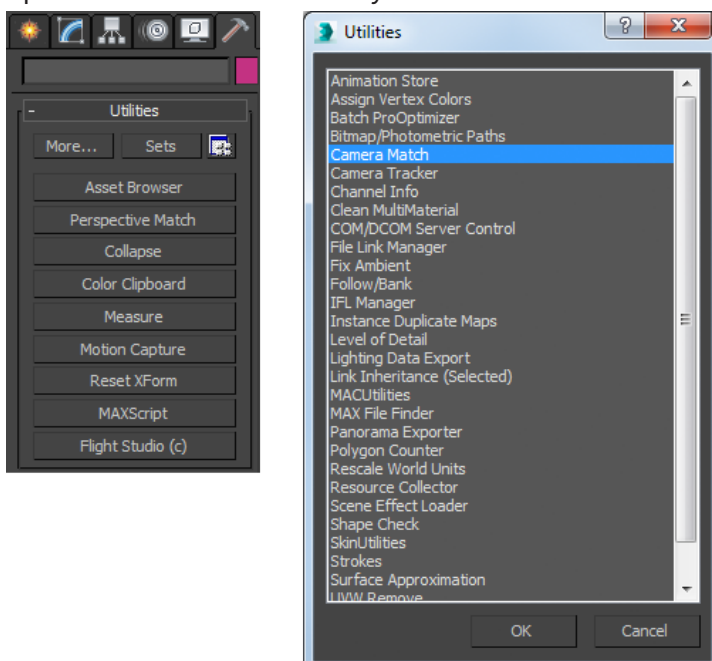1. In your viewport, select the **[+]** button and choose **Configure Viewports**

2. In the **Background** Tab, select the **Use Files** radio button
3. Select the **Files...** button and add the **96I-VCFH-0NY0.jpg** backplate
4. Select **Apply to Active View**, the image should appear in your viewport
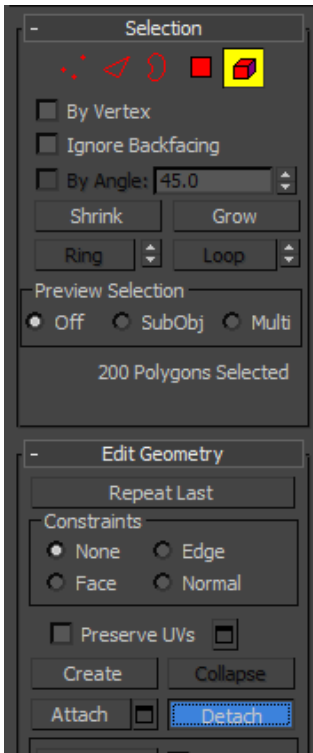
5. Find the info of the pixel dimensions of the backplate in the viewport (2560px × 1920px)
6. Set these dimensions in **Render Setup > Common > Common Parameters > Output Size** and lock **Image Aspect**
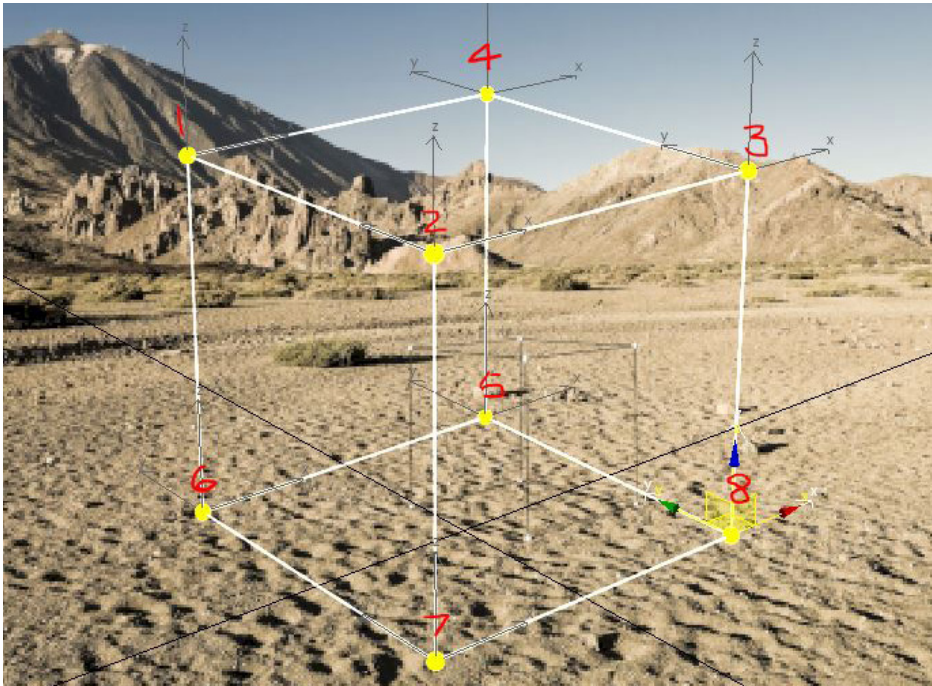

7. Enable **Safe Frames** in **viewport options** (or use keyboard shortcut **Shift+ F**). The viewport and backplate will now match.
8. Open the **Camera Match** utility from **Create Panel > Utilities Tab > More...**
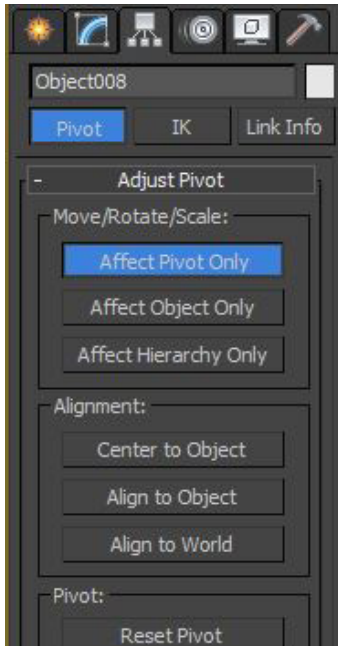
9. **Left click** then **Right click** on the **Snaps Toggle** and select **Pivot** as the only snap

10. Select the cube, open the **Modify** panel and enable the **Element** selection
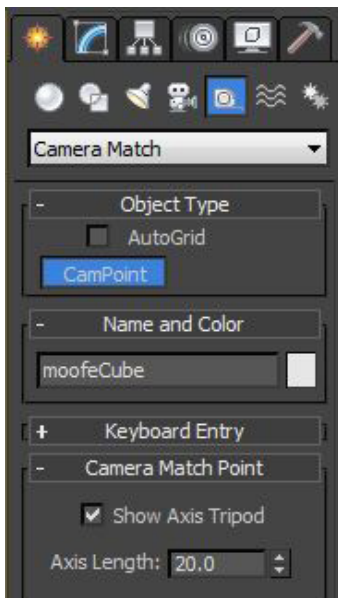

11. **Detach** the sphere corners on the cube one by one following the order in the image below, naming each one CamObject1, CamObject2 etc. until they are all separate objects
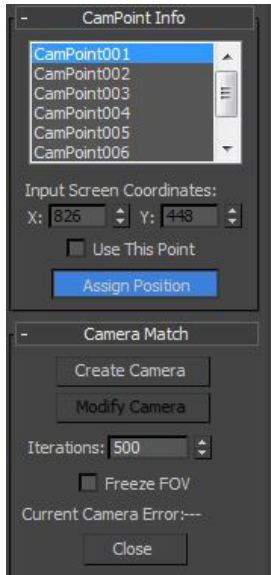
12. Open the **Hierarchy** panel and enable **Affect Pivot Only,** select each sphere in turn and select **Center to Object**, each sphere should now have its own pivot point.

13. Open the **Camera Point** tool from **Create Panel > Helpers > Helpers Dropdown > Camera Match**

14. Carefully click in each sphere with the **Cam Point** tool in the order they are named, this will create 8 CamPoints (one point for each sphere)

15. Turn off the snap toggle, and go to **Utilities > Camera match.** Each Cam point should be in the table.
16. Select the first Cam Point in the table, click **Assign Position** and assign its position in the viewport's backplate cube in the same order you created them
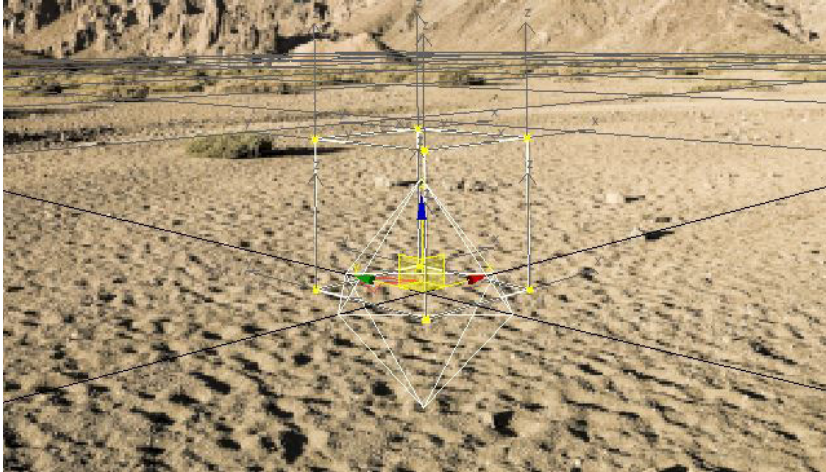

17. When all eight positions are assigned, select **Create Camera**
18. Press **C** on the keyboard to assign the camera to the active viewport. The cube in the viewport and the cube in the backplate should be matching. If not, you will need to adjust the lens on the camera so it matches the perspective of the original image
19. Repeat this process for all the backplates in the directory so you have a matching camera for each backplate.
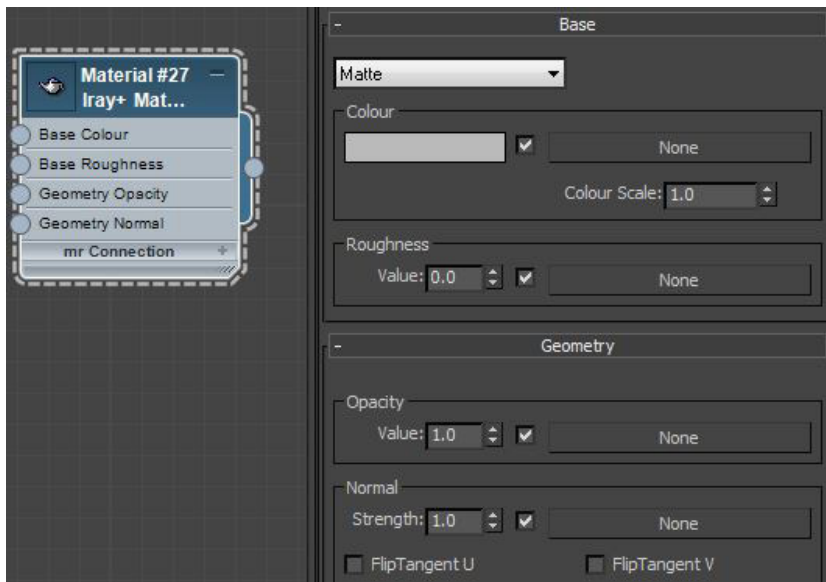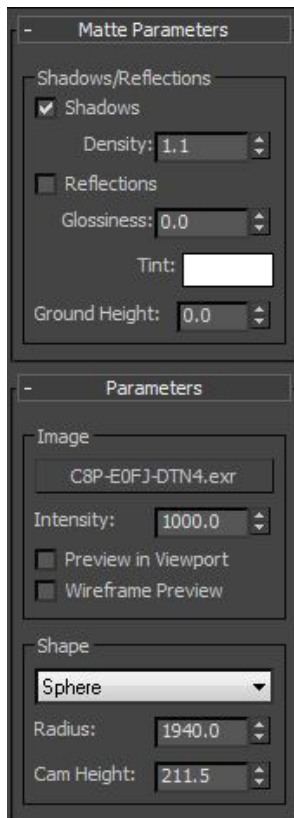
Matching Backplate and Environments

1. Change Snaps Toggle to **Grid Points**
2. Add an IBL from **Create Panel > Lights > Iray+ Dropdown > IBL** and snap it to the centre of your scene at **0, 0, 0.** Move the **IBL** in the **Z axis** to **-0.01**
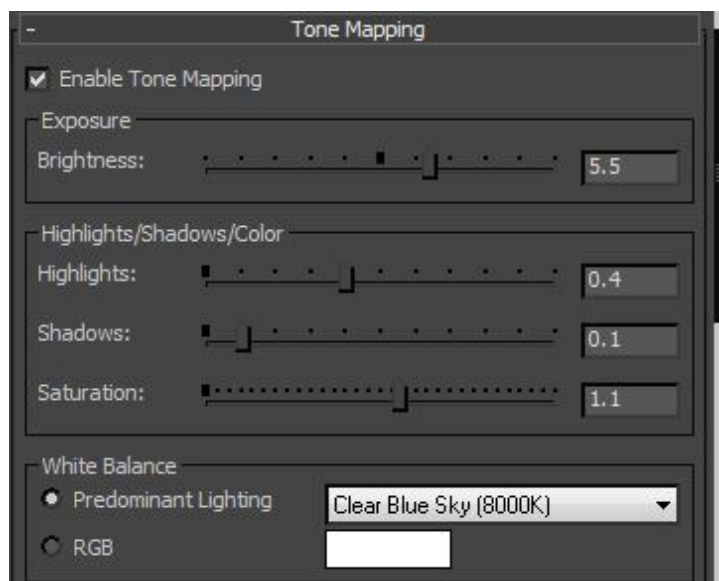

3. Create a ground plane of **10m × 10m** and set it length and width segments to **100**, snap this to the centre
4. In the Material Editor, add an **Iray+ Materia**l from **Materials > Iray+** and apply it to the ground plane
5. Assign a **Matte** preset to the Base layer of the Iray+ Material, add a bitmap to the **Colour** parameter and assign the backplate you are using in the viewport

6. Add a **Camera Map** modifier to the ground plane and pick the current camera
7. Add the matching **.EXR** of the backplate you are using to the IBL, ensure your IBL is set to **Sphere**
8. Go to **Rendering> Environment** and insert the backplate into **Environment map** slot
9. Adjust the parameters of the IBL to match the scene.
10. Open an **ActiveShade** window, the ground plane may appear black, increase the intensity of the IBL until it is visible. For the example scene set the intensity to **1400** lumens.

11. Open **Render Setup > Settings > Tone Mapping** and set the following parameters:
   - Brightness: **5.6**
   - Highlights: **0.4**
   - Shadows: **0.0**
   - Saturation: **1.0**
   - White Balance: **HSV = 153, 85, 15**
11. The Final Result should look like the image below, with no visible seams between your background and the ground plane.