

# UDK Basics – Maya Export/UDK Import/Viewport and placing content

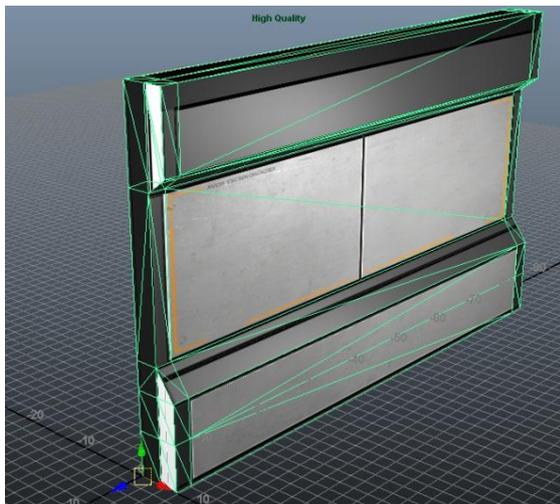
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In this tutorial I will explain some of the problems you need to look out for when transferring your meshes made in Maya, over to UDK. Hopefully this will help other people to avoid the issues I have had in the past. I will also go over Maya and UDK grid options and how to align both programs to use the same grid for a modular workflow

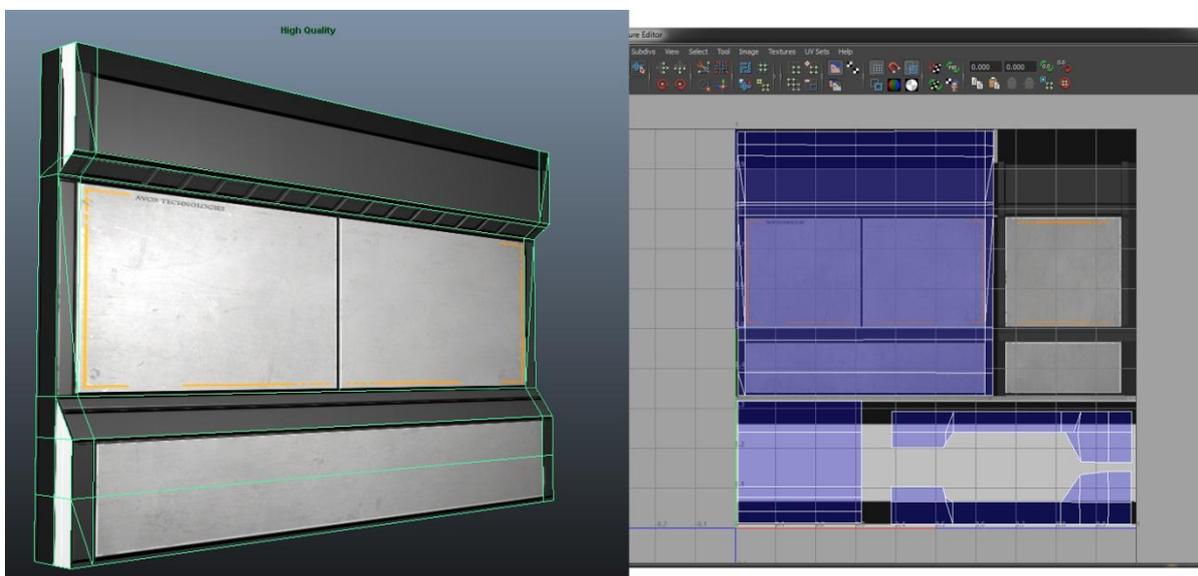
Please note that this tutorial assumes you know the basics of Maya modelling, unwrapping and exporting.

## Preparing the model for export

The first thing to note in UDK is that it does NOT export the pivot point with the object. Your object needs to be centred on the grid in Maya in 0,0,0 world space. If you want your pivot point on the corner, you need to position the model on the corner and move the pivot point to where you want it



For a model to work in UDK there are a few things that need to happen so that UDK is able to light it properly. For this example I'm going to be using a modular wall piece I have created, unwrapped and textured. This model currently has one UVset which the unwarp and texture are on.



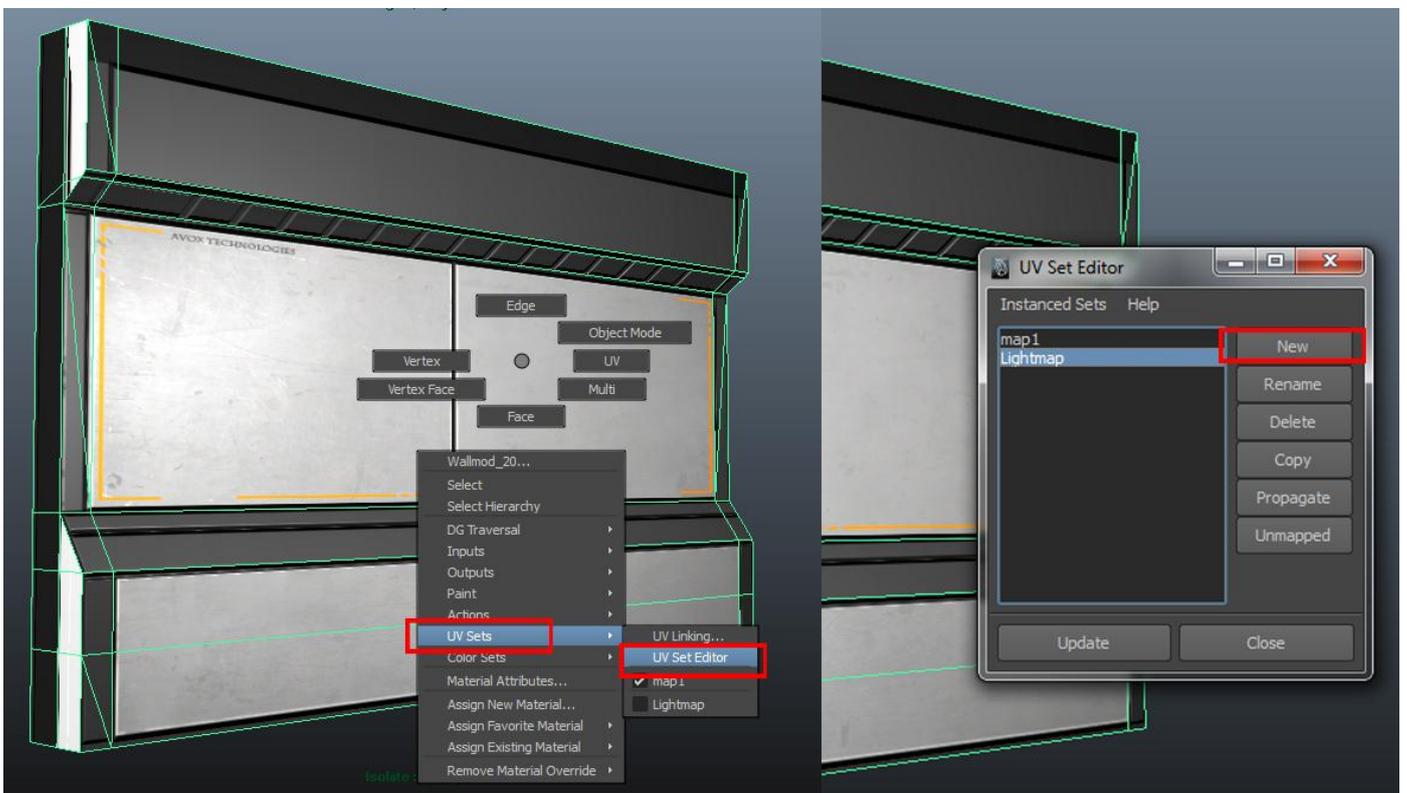
UDK uses mostly baked lighting to light scenes with some occasional expectations which use dynamic light. Dynamic light however is more expensive to run and baked lighting is preferred.

When you build your light in UDK, you need a second UVset on your model or the program gives you funky shading errors.

**Please note that UDK uses your second UV set as a lightmap by default. You can change this in UDK (per model) by going into the static mesh settings and changing the 'Light map coordinate index' UDK sees your first uvset as '0' and your second uvset as '1', while Maya sees your first uvset as 1 and your second as 2. Keep this in mind when changing the settings.**

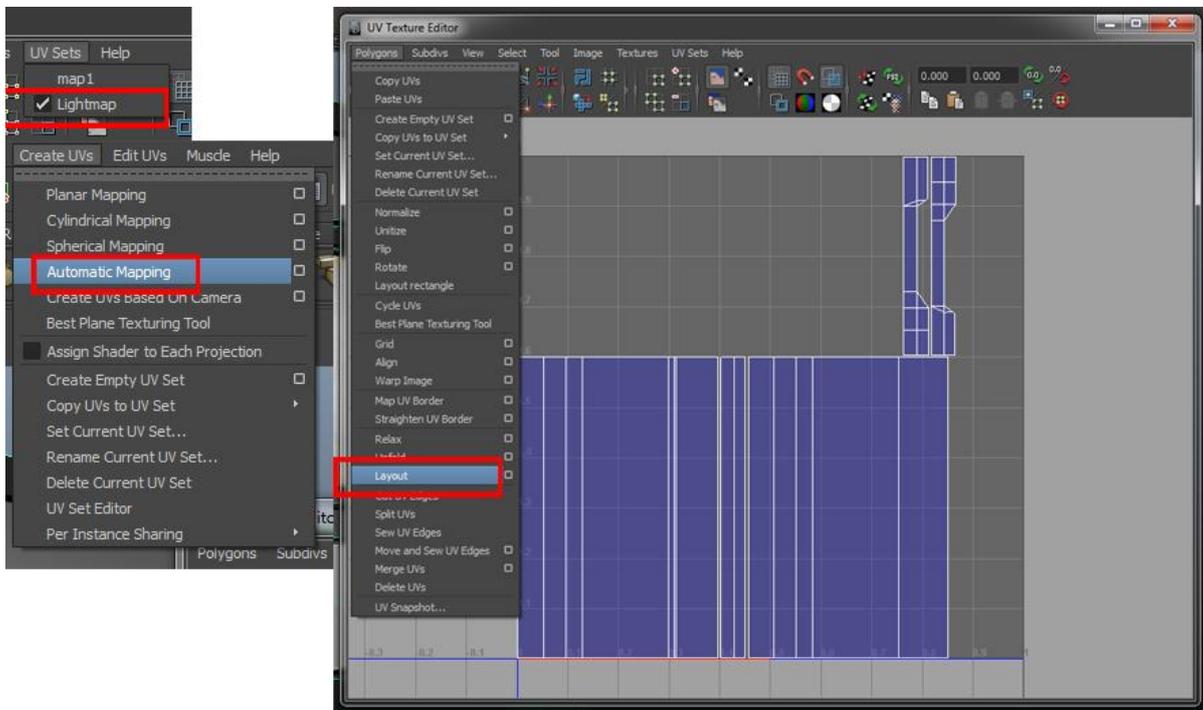
To create a second UVset on your model in Maya, hold the right mouse button over your model and go to the **UVset>UVset editor**.

This will open a dialog box showing your Uvsets. The default is named Map1. Hit new and name your new UVset 'Lightmap'



Next go into your Uv texture editor located in the **polygons menu>Edituvs>Uv texture editor**. In the editor, go to the uvsets tab and select lightmap. This switches the Uvs to your second uvset which is your lightmap in UDK.

You can then use automatic unwrap and 'layout' to quickly create the uvs for your lightmap. The automatic settings generally do a good enough job.



## Exporting Content from Maya

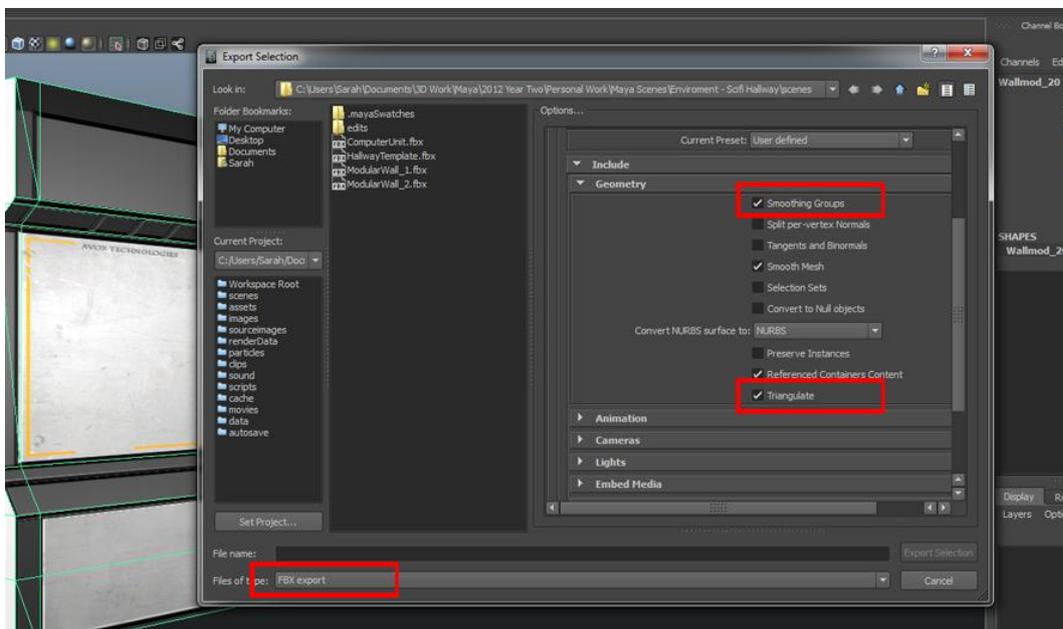
Now that you have a uvset for the lightmap we can export the object. There are some settings that need to be used for UDK understand the model. To export select the object and go to **File>Export Selection**

Firstly we need to export as an .FBX file. This is the file type UDK accepts.

Secondly under the geometry you need to turn on smoothing groups and triangulate.

If you don't turn on smoothing groups, UDK will not recognize hardened or soft normal and you will get an error when importing. (You don't NEED this on, but I'd recommend it)

Triangulate is a must or UDK will light your mesh with errors. Generally the auto triangulate in the export does a decent job of fixing these errors however occasionally you will find you need to go back and manually change the triangulation to fix errors. You can see how it will triangulate on export by doing so manually beforehand. Go to **Mesh>Triangulate**.



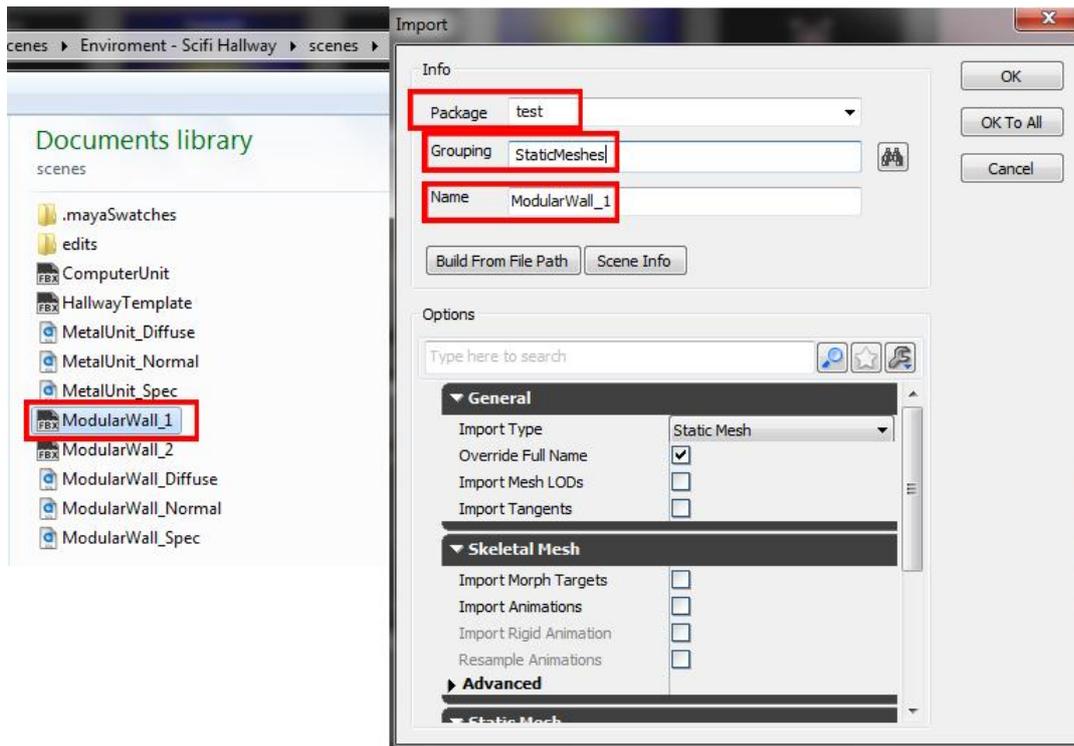
# Importing Content to UDK

Now that we have our wall exported as an .FBX its time to import it into UDK.

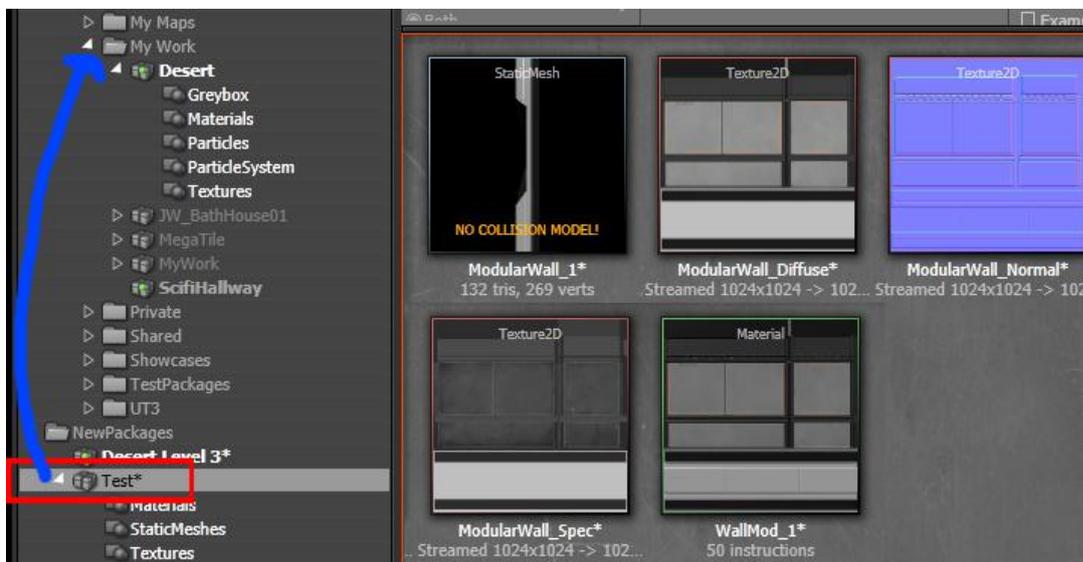
Open the UDK content browser and hit import on the bottom left corner. Navigate to where your .fbx mesh is and hit ok.

A dialog box will appear asking you to select the package and grouping for your mesh. For details on folder setup and packages, please see my tutorial 'UDK Basics – Content Browser and Folder setup'

For now I will create a new package named test, place the model in the static mesh group and keep its name the same. **Note that UDK refers to models as 'Static meshes'**



Now because I had textures attached to my model in Maya, UDK has also automatically imported those in and created sub groups for them. Note that this package appears under the 'new packages' section of the content browser until you save the package. When you save the package you can choose where to store it. In my case I will save it under the 'My Work' folder and it will appear under my Desert package.



In this case UDK has already gone ahead and created a material from the textures, but if this is not the case, you can import your textures the same way you did your model. Make sure to organize them into groups!

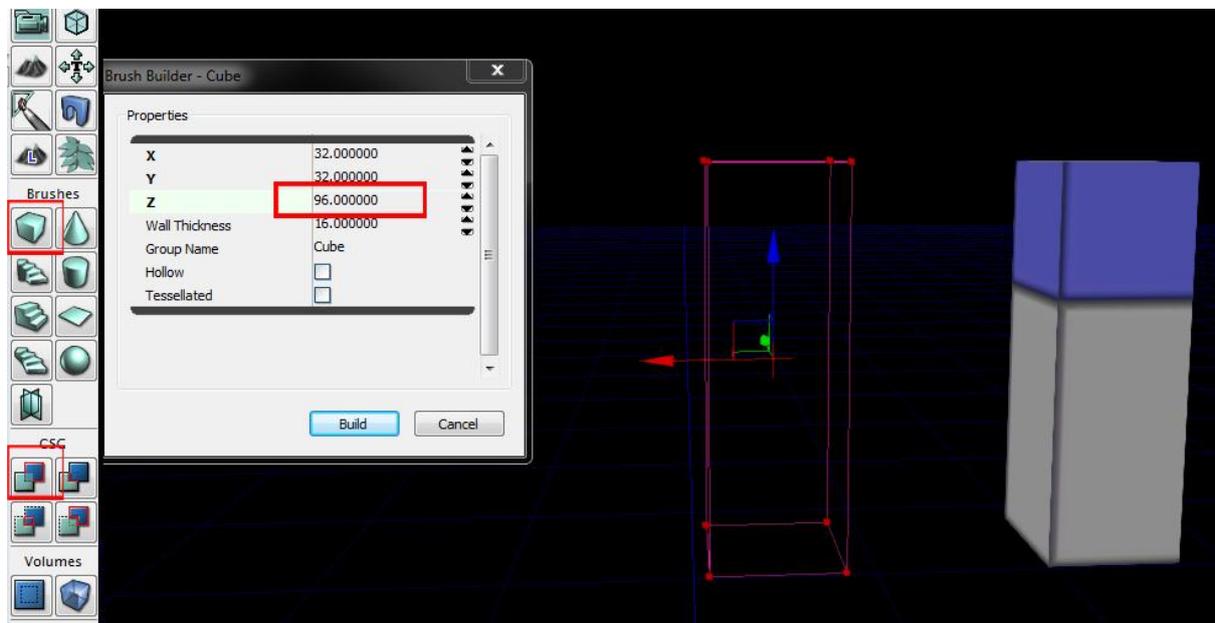
## Maya and UDK grid options – Modular workflow

When creating a modular environment it can be very helpful to make sure the Maya and UDK grid are the same size. Doing this ensures that your modular pieces will maintain a 1:1 ratio and easily snap together in UDK when you build your scene.

UDK uses UU (unreal units) as a form of measurement. Here are some basic measurements.

- Standard Character In UDK is 96 units high and 32 units for width/length.
- 16 units in UDK is equal to 1 foot.  $16 \times 6 = 96 = 6$  foot

To create a scale reference in UDK that you can export to Maya, simply locate your red builder brush, right click on the cube icon to bring up the brush properties and change the box size to 32x32x96. Then under the 'CSG' option create a BSP mesh by clicking 'CSG ADD'. This will create a scale reference in your viewport.



To export, right click on your newly created box and go 'Select surfaces>All adjacents'. This will make sure your entire mesh is selected. Then go to file>export>Selected Only' and export to desktop.

Import into maya and you have your scale reference. You can also create a cube in maya and change its height, width and length to 32x32x96. You will notice they are both the same size because UDK and Maya share the same scale.

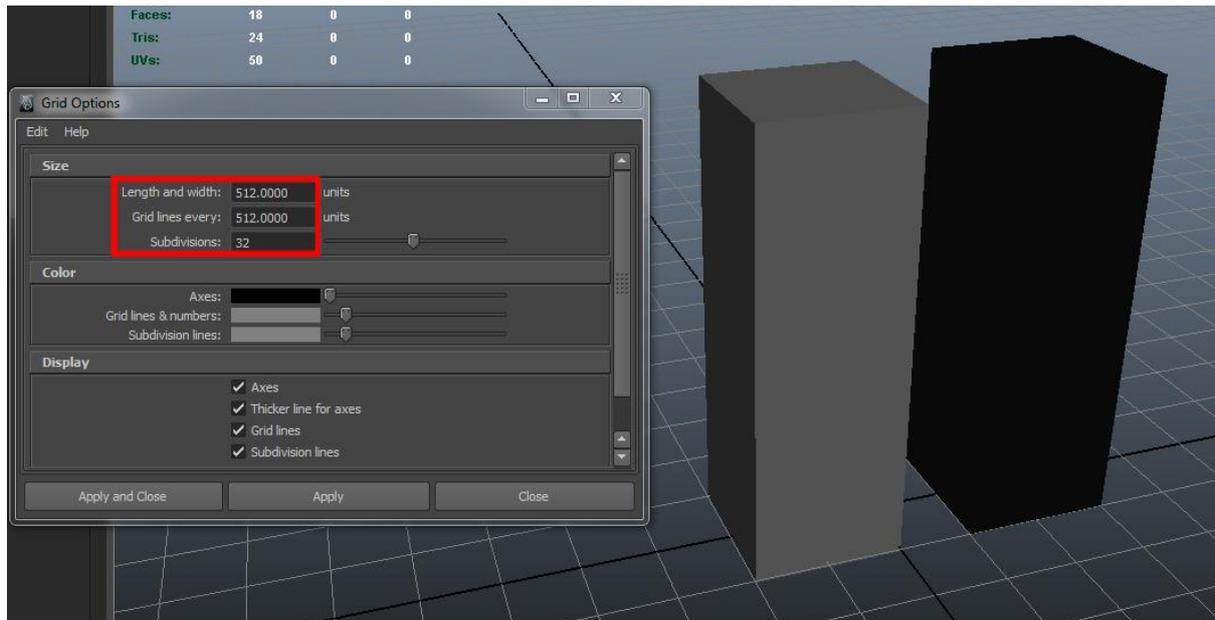
Now comes the important part – setting up the grid in Maya to match the grid in UDK. Firstly, make sure UDK is working in centimeters, then go to Display>grid>option box and change your grid settings to this

Length/width – 512.000

Grid Lines every – 512.000

Subdivisions – 32

You will now notice that your scale cubes fit inside a block of 4 squares, 2 length and 2 width. Each grid box is now 16 units.



In UDK we can make sure that the grid is also aligned to 16 units by changing the option box at the bottom right of the program. Make sure the box is also ticked. This will snap objects you move in the scene to a 16unit grid to make sure pieces align without overlap or gaps.



When building objects like walls or doors in Maya, use the scale reference and the snapping tools to align your edges to the grid to ensure everything snaps perfectly in UDK.

Here are some other grid settings you can use for maya and how to figure out the corresponding drag grid in UDK

Take the 'Grid lines every' number, which is 512 in this case, and divide by the 'subdivisions' which is 32. This will equal 16, and that is the number your UDK grid needs to be set at to match your maya grid. Always use multiples of 2, sticking to the classic 8, 16, 32, 64, 128, 256, 512 ad 1024. So if you want to use a grid size of 32 instead, we just have to take down our grid subdivisions in maya to 16, and change our grid in UDK to 32!

## Placing Content into the viewport

The UDK viewport is very simple to navigate. It uses general FPS controls to fly around the level.

Use W,A,S,D to move forward, back left and right. Hold right mouse to rotate the camera.

To place an object simply drag the mesh from the content browser straight into the viewport and UDK will drop the object there. To scale, move and rotate the object, select it and press spacebar to switch through the options. You can also drag your materials onto objects and UDK will automatically apply the material

To focus on an object, select it, right click and hit 'Go to actor'

You can add lights by holding L and clicking in the viewport

All objects have right click properties that you can edit. You can also use the right click menu to go straight to that object in the content browser

To quickly play your level, right click anywhere in the viewport and at the bottom go to 'Play from here' This will throw you in the level wherever you have clicked.

I hope this has been helpful! If you have any questions regarding my tutorial, or something has not been clearly explained, please don't hesitate to contact me.