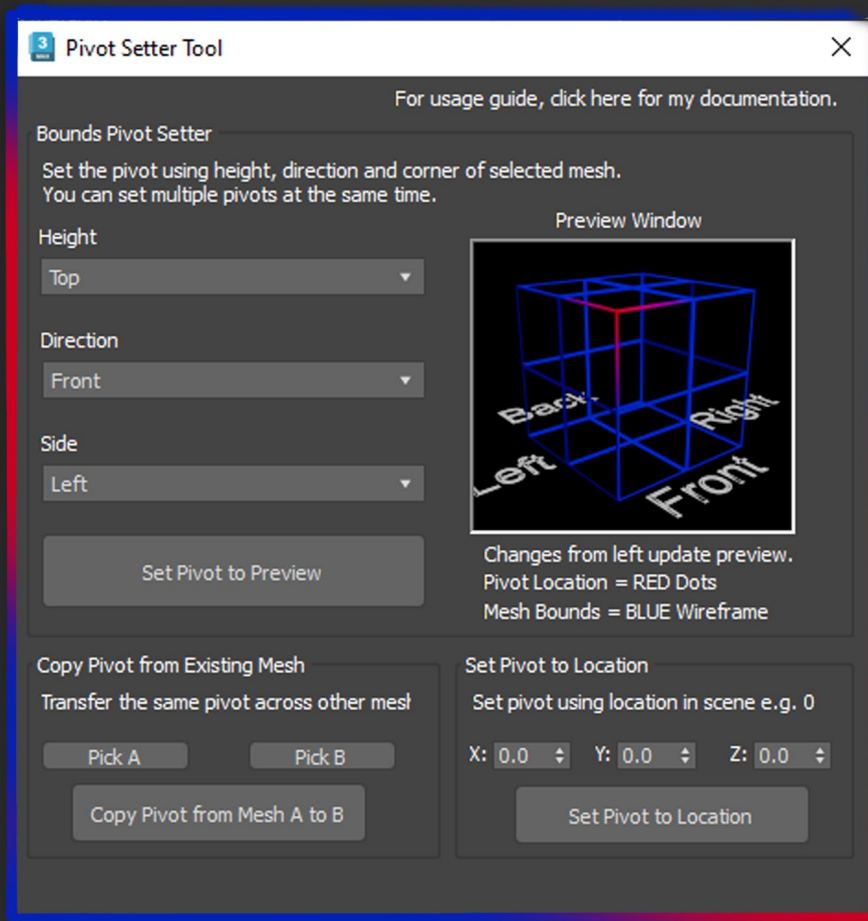


**Pivot Set Multiple
Meshes**

**Transfer Old Pivot
to New Mesh**

**Set Pivot to
Custom Scene
Location**



Pivot Setter Tool

By Jesse Olchawa

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How to Setup

1.0 Running the script

Download the .MS (Maxscript) file to a easy to access location e.g. Desktop. To run the script there are two main ways:

- The first being a simple drag and drop into the centre of 3DSMax.
- The second is on the very right side of the screen, select **Utilities > Maxscript > Run Script**. You can now **select the .ms file and run it**. A window will now appear.

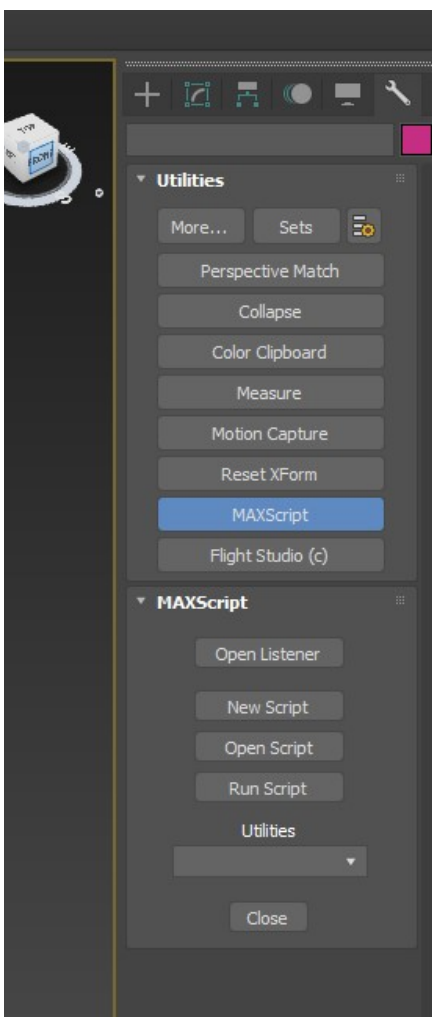


Figure 1.01 Utilities Tab in 3DSMax

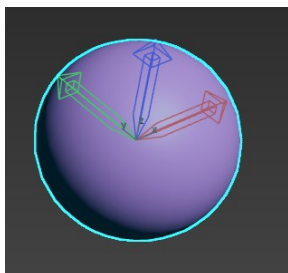


Figure 1.04 Pivot Mesh Gizmo

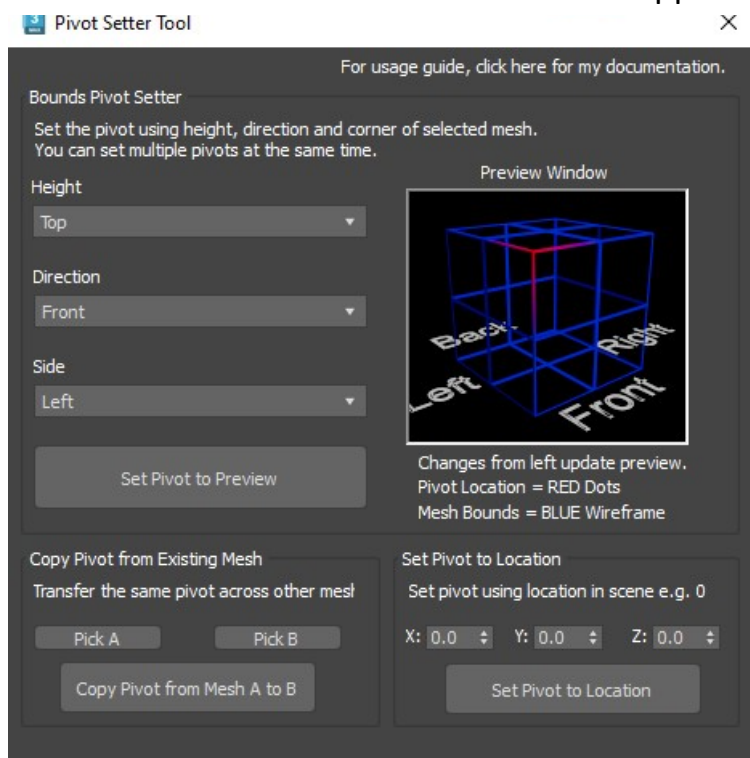


Figure 1.02 Screenshot of tool

1.01 Viewing Pivot Changes

To see the pivot of selected meshes, enable the view mode by clicking on the very right **Hierarchy Icon > Affect Pivot Only**.

This will display the gizmo.

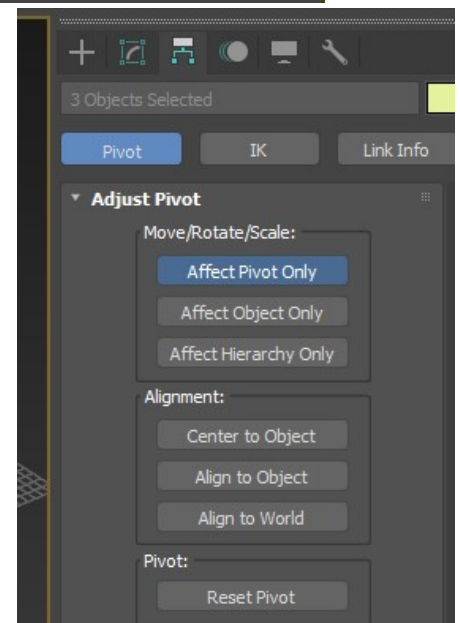
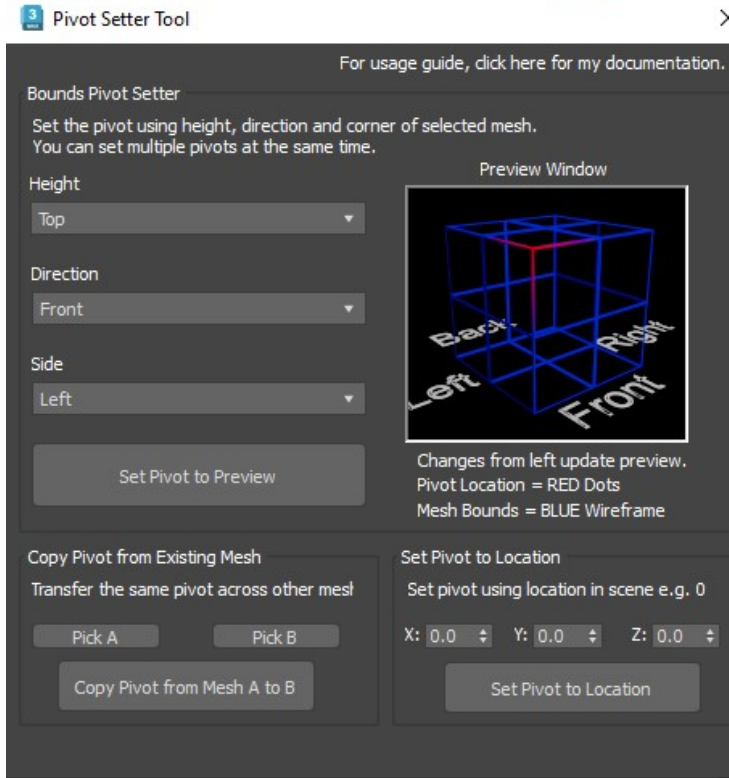


Figure 1.03 Affect Pivot Option

Tool Categories

2.0 User Interface



This tool can set mesh pivots in 3 ways:

- 1) **Bounds Pivot Setter** — this uses the location of a mesh such as the bottom, front, left corner to set a pivot.
- 2) **Copy Pivot from Existing Mesh** — by picking two meshes you can transfer a pivot location from A to B.
- 3) **Set Pivot to Location** — for setting the pivot at a station location in the scene such as the origin (0,0,0)

Warning: Pivots will be applied to **ALL** selected meshes whilst using modes 2 & 3

Figure 2.01 Selecting meshes in viewport

2.1 Recommendations via Mesh Type

The following are guidelines to help pick a mode when changing pivot points.

- **Modular Walls, Ceilings or Floors** — by using **Bounds Pivot Setter** > Set dropdowns to **Bottom, Front, Left** to snap pivots to that edge or Copy Pivot between pieces.
- **Small Meshes** — by using **Bounds Pivot Setter** > Set dropdowns to **Bottom, Middle, Middle** to centre the asset to the ground.
- **Level of Detail (LOD)** - by using **Copy Pivot from Existing** select LOD00 or **Set Pivot to Location** and select all LODS.

Caution: Ensure LOD meshes share the same pivot for proper loading in engine!

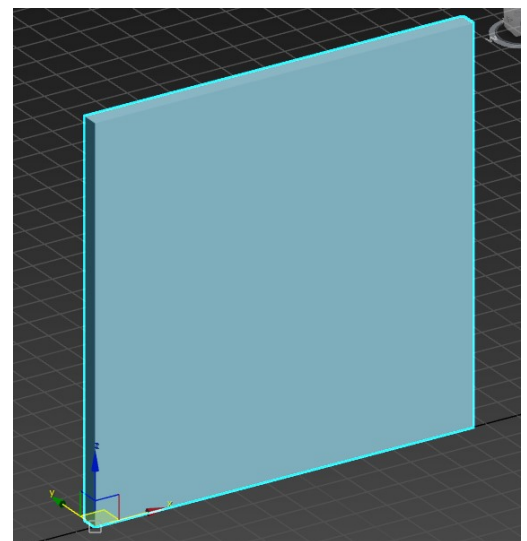


Figure 2.02 Modular wall with side pivot

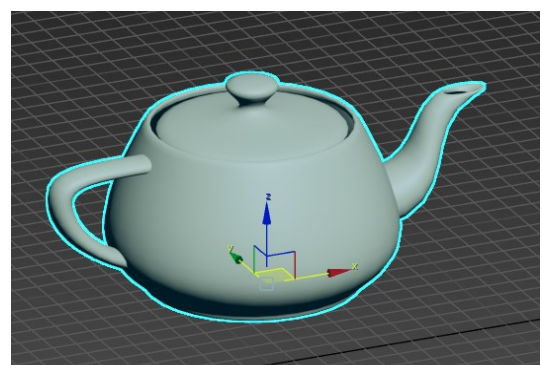


Figure 2.03 Teapot centred pivot to surface

Bounds Pivot Setter

3.0 Selecting Angle and Height

This mode works by using 3 dropdowns to select a area on a mesh such as a corner.

To use the mode:

- 1) **Select Height** — for meshes that interact with the ground set to Bottom.
- 2) **Select Face** — the direction facing the viewport thumbnail
- 3) **Select Side**—the corners of a mesh

Each dropdown will refresh the thumbnail preview. To confirm press the Set Pivot to Preview button.

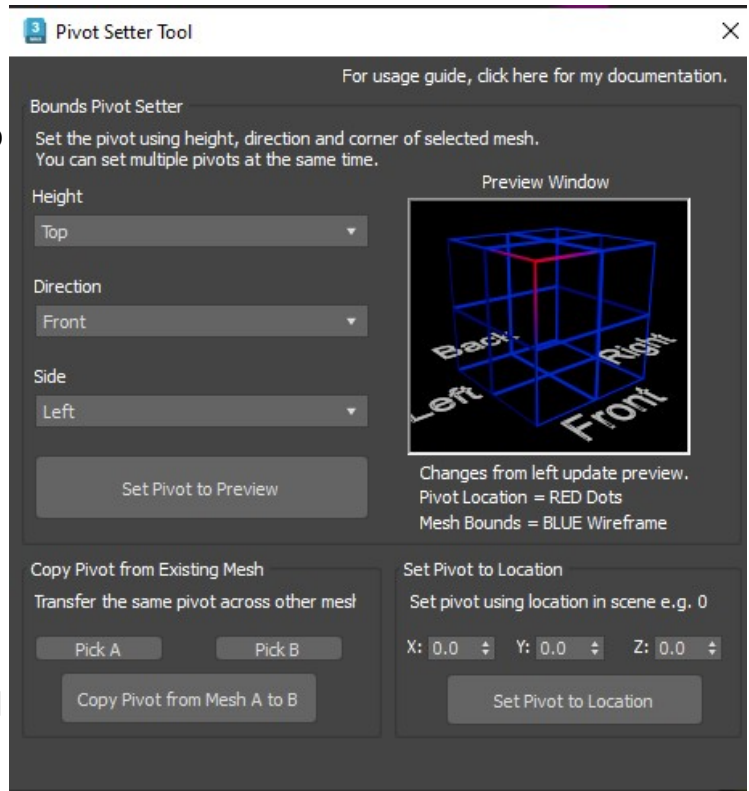


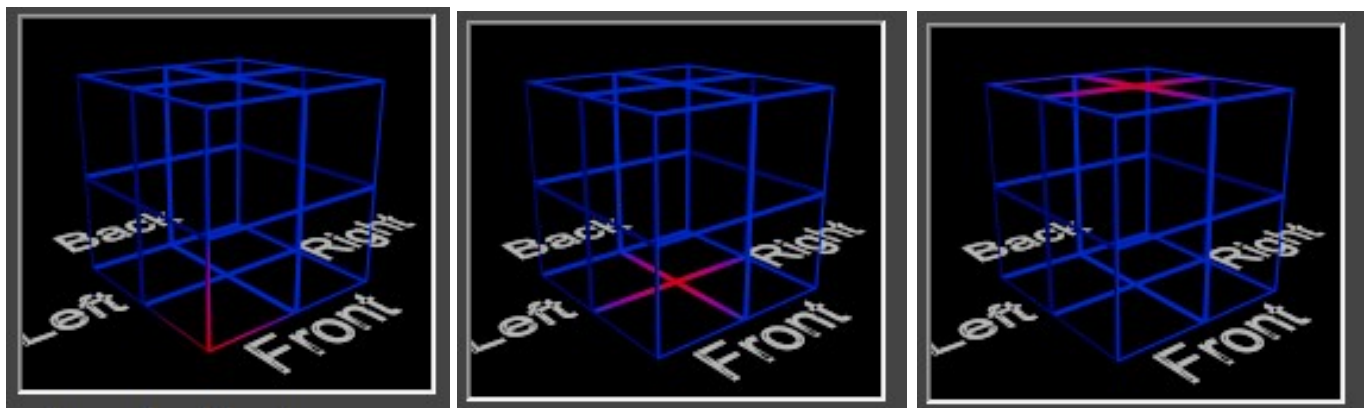
Figure 3.01 Selecting mesh to analyse

Warning: This mode sets pivot to ALL selected meshes. These meshes will be set to their bounds. To copy the exact pivot of one mesh use another mode.

3.1 Quick Reference

Some quick reference settings and their outcomes:

Figure 3.02 Various example thumbnail results



Modular Piece Corner:

Height > Direction > Side
Bottom > Front > Left

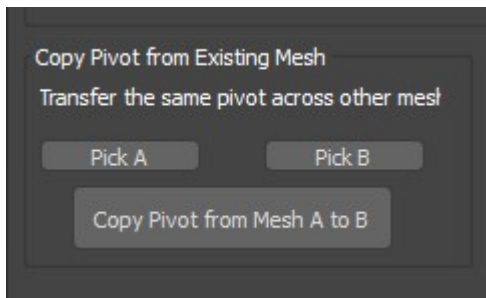
Centred to Floor

Height > Direction > Side
Bottom > Centre > Middle

Top Ceiling

Height > Direction > Side
Top > Centre > Middle

Copy Pivot from Existing



4.0 Selecting Mesh to Copy

To use this mode, **pick meshes A and B**. Once picked the **names of the meshes will update** on the buttons. You are now able to **press the Copy Pivot button** below to transfer Mesh A's pivot location to Mesh B

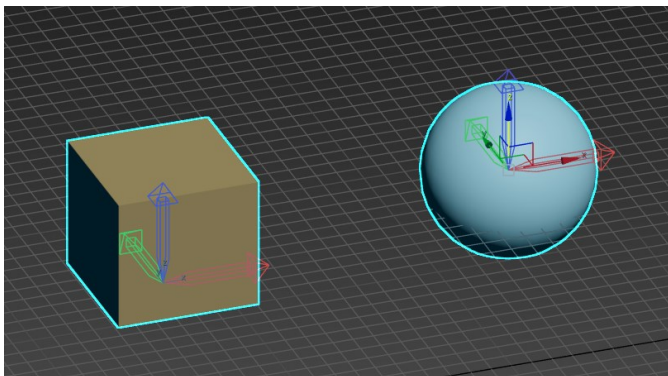


Figure 4.01 Before cube pivot to sphere transfer

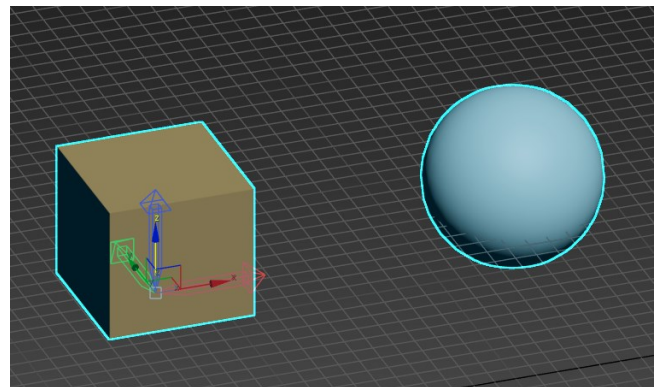
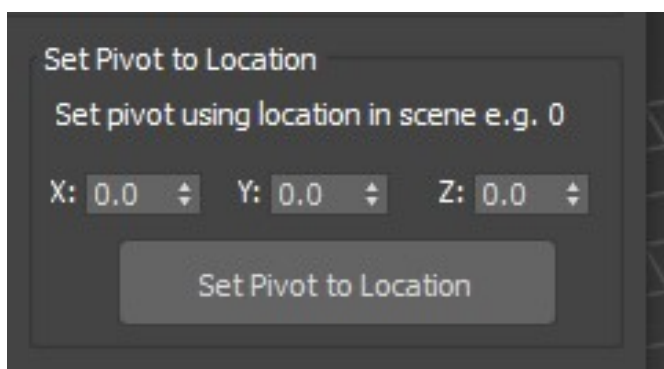


Figure 4.02 After cube pivot to sphere transfer

Set Pivot to Location

5.0 Setting Pivot Location

To use this mode, select all meshes that you wish to change the pivot of then enter **values to the X, Y, Z boxes**. To apply the pivot, **press the Set Pivot to Location button**.



Don't forget to reset the location of your mesh in the scene after resetting the pivot for exporting to engines such as **Unreal Engine**

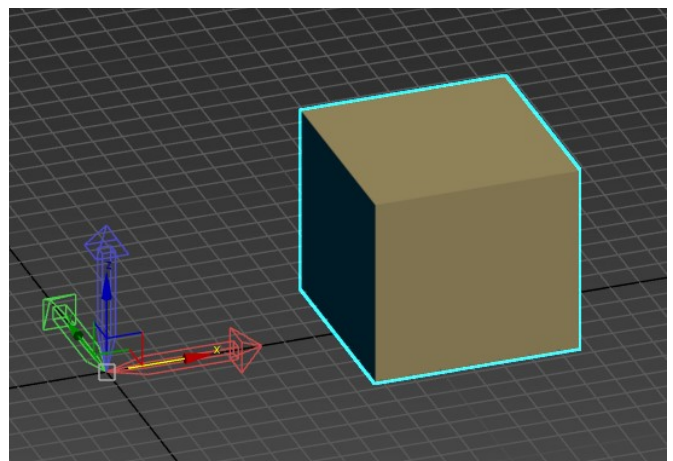
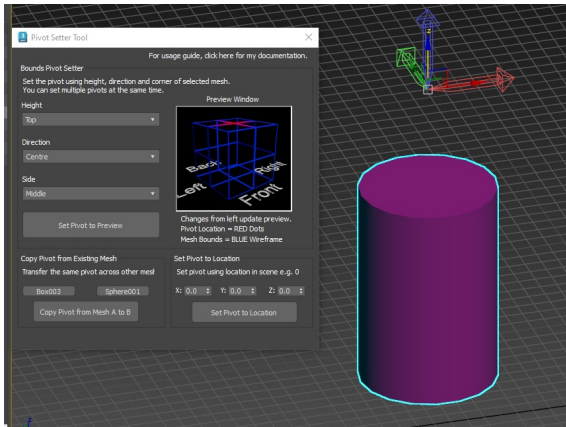


Figure 5.01 Cube pivot is offset to 0,0,0

Problems



6.0 Bounds Locations are Off

Reset your XForm and ensure there is no floating geometry extending the mesh bounds for more accurate results. Detaching the mesh may also help.

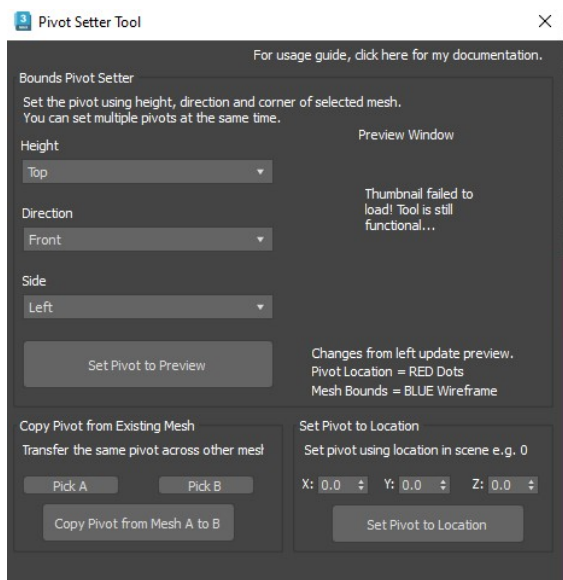


Figure 6.02 Tool thumbnail failed to render

6.1 Thumbnail Preview Failed to Load

In the unlikely case of setup failure, the script will not render a preview thumbnail cube and display the result on the left instead. This does not affect the usage of the tool so it can be disregarded.

6.2 Export Pivot is Incorrect

Once importing into engine, you may notice the mesh being off centre in the world. This is due to transform data no longer being zeroed after making pivot adjustments. Zero it using the buttons below (location)

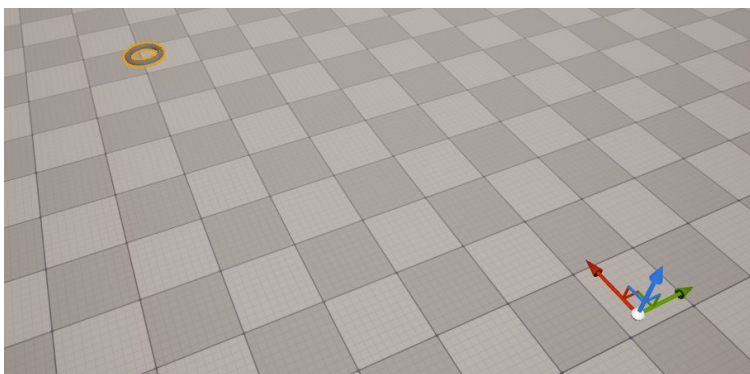
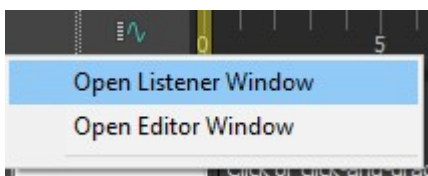


Figure 6.03 Unreal Engine Mesh pivot is offset heavily



Any further issues open the bottom left pink box with a right click to view the **Listener Window**.

Error messages are printed out here.