

TransformPro

v1.3.2



User Guide

CONTENTS

Getting Started.....	3
Inspector.....	4
Local / World Space	4
Core Transform Features	4
Reset	4
Preferences	5
Advanced Inspector	5
Nudges.....	5
Grounding.....	5
Create Colliders	6
Randomise.....	6
Look At.....	6
Gadgets	8
Scene Gizmo.....	8
Bounds Visualisation	8
Clipboard	8
Camera Cursor	8
Snapping.....	9
API	9

GETTING STARTED

The latest version of TransformPro has been split across two main interfaces.

The first is the Inspector. This replaces the default Transform inspector, as seen here:

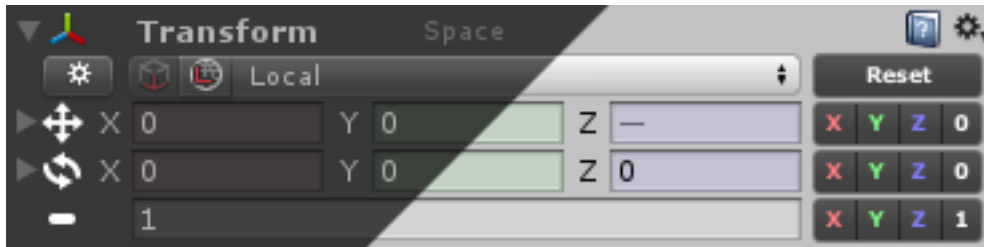


Figure 1: TransformPro Inspector (Both Personal and Professional skins shown)

"I can't see the TransformPro Inspector"

If you've downloaded TransformPro from the Asset Store but the inspector has not appeared, this usually indicates an existing asset is extending the inspector. Unity only permits a single inspector for a given component.

Open the Unity preferences from the Edit menu. Select the TransformPro item from the left side of the window. You should then see a warning near the top, reading "Conflicting asset detected". Click the "Output to Console" button next to it, and the name of the conflicting inspector(s) will be shown in the console.

Alternatively, you can search the solution for "[`CustomEditor(typeof(Transform))`"].

You can control which Transform inspector you see by commenting out the `CustomEditor` attribute for any assets you don't want to use the inspector for.

If you have any questions or trouble with this procedure, please use the [contact form](#) to get support. A fall-back

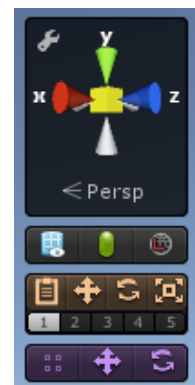
The new interface system is the SceneView based Gadgets system. These are visible underneath the Scene Gizmo, as seen on the right.

These gadgets can be quickly show and hidden using the spanner/wrench icon, just to the top left of the Scene Gizmo.

You will be able to customise these gadgets in an upcoming version, choosing which you can see, the order they appear in, and what extended features each presents.

These gadgets also provide scene drawing capabilities for systems such as the bounding visualisation and the upcoming visual grid.

We will go through using the individual Gadgets later.



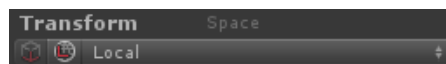
INSPECTOR

LOCAL / WORLD SPACE

TransformPro allows you to work in either local or world space. This choice affects all features and utilities, from the core Transform data through to the individual tools.

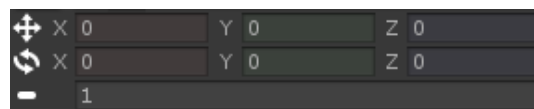
- Local space is the default system used by the Unity transform inspector. It means that the Position, Rotation and Scale values shown are all relative to the parent object. Objects without a parent are treated as relative to the scene origin, so effectively in world space.
- World Space means the core values are all relative to the scene origin.

You can adjust the space mode at the top of the transform Inspector.



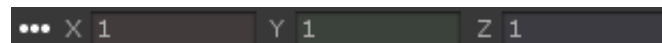
CORE TRANSFORM FEATURES

All the features of TransformPro revolve around editing the 3 main transform values – position, rotation and scale. The most basic feature is visualising and editing these numbers directly.



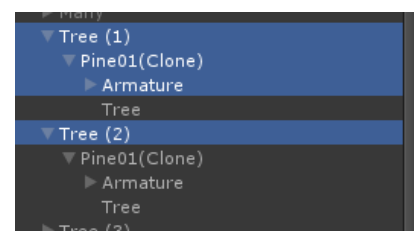
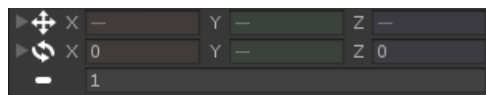
The first value is the position, the second the Euler rotation (measured in degrees), and the third the scale.

The scale by default will show a single combined value for all three axes. To change it, click the long oval icon and it will change to three dots:



If a transform is selected which already has non-scalar scale values, this option will be engaged automatically.

TransformPro now supports full multi-editing for all features. If multiple objects are selected, the data which has multiple different values will show as dashes.



Editing any field will set those values to all inspected objects.

Only Tree (1) and Tree (2) are inspected.

The inspector picks Transforms using the same logic as the Unity default inspector, so only the uppermost shared parents of the current selection are used. This prevents changes to values cascading to child objects.

RESET

The Reset tools allow values to be quickly set back to the default transform values:

- Position {0, 0, 0}
- Rotation {0, 0, 0}
- Scale {1, 1, 1}



As with all the tools, Reset will respect the current space mode. This means that while using World space the object will move back to the scene origin. In Local space the object will be aligned with its immediate parent.

You can reset the various core components and axes individually. The large Reset button at the top resets the entire transform. Each row resets the component it sits directly alongside. The first three buttons allow you to reset each individual axis, then the right most button resets the entire component.

PREFERENCES

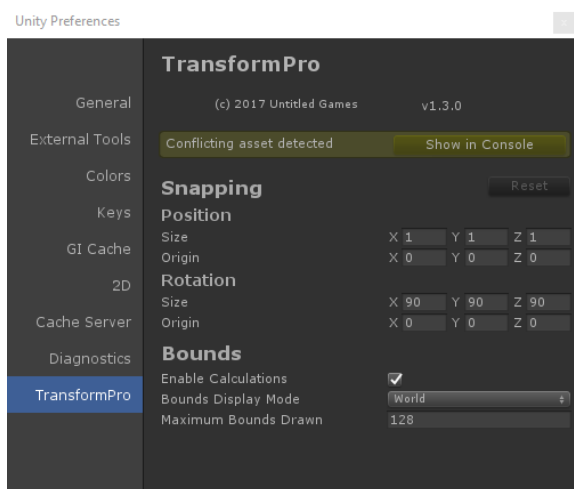


In the top left of the Transform Inspector you can open the preferences window.

Alternatively, you can access these settings via the Edit > Preferences menu item.

You can control the size and start position of the snapping grid from here, for both the position and rotation. Any changes to the grid are automatically saved.

You can also change settings relating to bounds calculations and visualisations. The bounds data is used by other systems such as the grounding. The Maximum Bounds Drawn field can be used to reduce the number of wire cubes drawn on low power machines.



ADVANCED INSPECTOR

Some sections of the inspector can be expanded to access extra tools.

NUDGES



The nudge buttons quickly move objects by predetermined amounts.

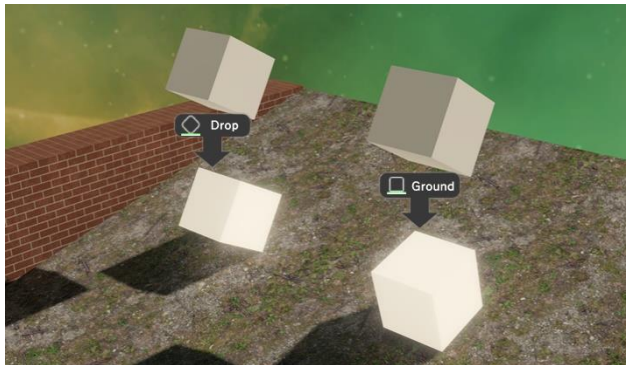
The position nudges move the object by multiples of the grid size. The rotation nudges adjust the Euler angle by pre-set degree amounts.

In the next version of TransformPro, these values will be configurable in the preferences.

If you **shift click** or **right click** on any of these buttons, the object will be cloned, and the nudge applied to the clone. The clone will retain the same name and parent transform. This enables rapid construction of buildings using modular level kits, for example.

GROUNDING

TransformPro provides tools to quickly and easily drop objects to the ground. These tools can be found on the right side of the advanced position controls.



The diamond shaped first icon is Drop, which will drop the object straight down, in its current orientation.

The square icon on the right is Ground, which will angle the object to the floor underneath the object and then drop it.

The latest version of TransformPro supports volume based grounding. Each type of native collider provided by Unity is specifically handled

to ensure shapes such as capsules and spheres find overhangs precisely.

Complex compound colliders are also now supported. This allows for objects with more complex collision shapes such as machines and skeletons to be grounded correctly.

If the object does not have any colliders, the renderers can be used to ground the objects. This uses the calculated local space combined bounding box to find the foot position.

Please note the SkinnedMeshRenderer component only provides rough bounds data for the default pose, and does not update with animation. To properly grounded a skinned mesh, appropriate colliders should be attached to the skeleton itself.

The current grounding system does not simulate gravity or any kind of center of mass. The object will be grounded by the first collision of any kind, even if the object would not be able to rest there during physics simulation. The next major update will contain a physics based "Settle" option to provide this functionality.

CREATE COLLIDERS



These tools create collider(s) using the current selection, and sets the size and center offset to fit their calculated bounds. The first button creates box colliders, and the second capsule colliders. The capsule colliders are configured to be "y-up" and to fit inside the bounds.

If multiple objects are selected, each will be given its own collider.

RANDOMISE

Currently you can only randomise the rotation of the object, using the same 3 axis / all axes set of buttons as reset. As with all tools, any random values generated will respect the currently selected space options.



The tool is particularly handy for randomising clutter objects. If you have selected multiple objects, each will get different random values.

The next version will extend these features to position and scale.

LOOK AT



This tool points the currently selected object, or objects, to the current clipboard position. The operation attempts to maintain a world space up orientation.

This tool can be handy for things such as pointing cameras and lights directly at objects.

GADGETS

The new UI provides access to common tools in the top right of the scene view.

Each section of the interface is modular, and provides various hooks into the Unity Editor.

SCENE GIZMO

The Scene Gizmo is a standard Unity control. TransformPro adds the spanner/wrench icon to the upper left which enables/disables all gadgets.

Currently this disables scene drawing operations such as bounding boxes as well as the gadget UI itself, but this will be configurable in the next version.



BOUNDS VISUALISATION



This gadget draws bounding boxes around the current selection. These completely encapsulate the outer extents of each object and all its children.

You can enable or disable renderer or collider bounds with the first two buttons. Renderer bounds are shown in blue and Collider bounds are shown in green.

The third button allows you to switch the visualisation between showing local and world space bounds. You can also enable the display of both bounds at once in the Preferences.

CLIPBOARD

The clipboard allows you to copy transform data from one or more objects and apply it to another(s).



The first button copies all parts of the selected transform. The next three copy the position, rotation and scale in turn.

If you **shift click** or **right click**, the buttons will paste instead of copy.



You can see the current clipboard position in the scene view, represented by the orange 3D Cursor. The arrow always points in the direction which will be up when the object is pasted.

The clipboard respects the current space mode, so you can recreate a local offset from one object to another, or copy the absolute world position.

3D Cursor

The new clipboard gadget provides 5 separate clipboards, accessed by the small numbers at the bottom of the gadget. Each clipboard is saved to the preferences.

If you have multiple objects selected when you copy transform data, the average position, rotation and scale will be copied to the clipboard. This can be useful for placing an object exactly between two others, or pointing multiple objects in towards a centre point.

CAMERA CURSOR

The new clipboard system provides the ability to set the clipboard cursor position using the mouse.

Use **control right click** within the scene view to set the position.

If the click hits a collider, the cursor will be moved to the surface both in position and orientation. If no collider is hit, the system checks for a hit against a flat plane at zero height. If this plane is not hit (for example when looking at the sky) the cursor is positioned a fixed distance from the camera.

SNAPPING

The final gadget in v1.3.0 are the snapping controls. These snap the currently selected objects to the configured grid. Snapping is an essential tool for working with modular levels.



The grid will be applied based on the current space settings.

The grid can be customised from the preferences. This includes not only the position unity size, but also the rotation snap size in degrees, per axis. You can also apply an offset to both grids here if required.

Local space snapping can be a little confusing at first. The orientation of the grid is dependent on the parent of the object, not the object itself. If you need to position a group of objects in a local grid they should always be grouped under a

TransformPro does not currently implement auto-snap, but it is on the roadmap for the next major version. Any auto-snap feature will be implemented into all tools.

API

All TransformPro features are available via the API.

Previously most API features were accessed via static methods and properties. This suited the editor well but meant a lot of switching of the selected transform at runtime, which in turn caused a lot of recalculation of bounds data.

The new API is instance based. You create a new instance of TransformPro, passing it the transform you want to manage. As with any instances, it's recommended to create these once and store the reference.

The Editor classes still expose static methods which apply the actions to the currently selected transforms.

Full API documentation is available here:

<http://transformpro.untitledgam.es/api>

Usage examples and a working demo scene are currently in development.