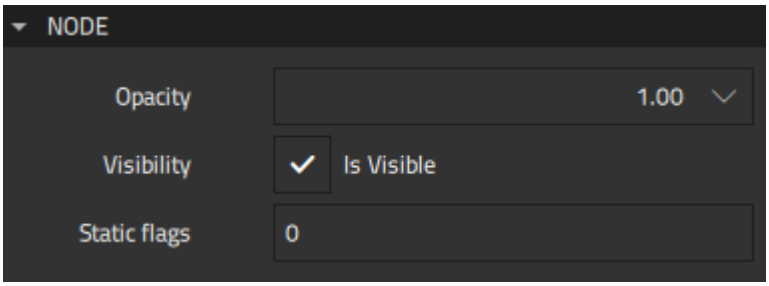
Node

You can set properties for 3D components that are based on the **Node** component in **Properties** > **Node** and **Transform**.

Setting Node Opacity and Visibility

You can set the opacity and visibility of 3D components that are based on the **Node** component in **Properties** > **Node**.



All components have an **Opacity** value applied to them. The opacity of 100 makes a component fully opaque, while the opacity of 0 prevents a component from rendering at all.

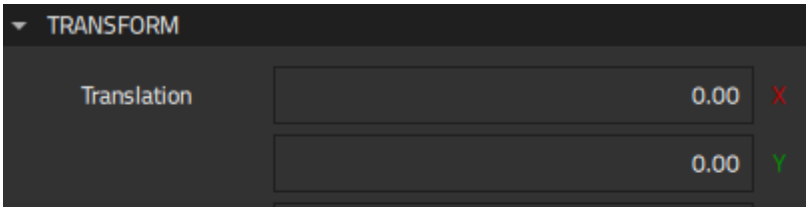
Just as modifying the position or rotation of a parent component affects all child components, opacity is multiplicatively cumulative through the transform hierarchy. A cube that is 50% opaque inside a group that is 80% opaque renders with an equivalent apperance of 40% opacity (`0.8 * 0.5 = 0.4`). Setting the opacity of a group to 0 prevents any descendants within the group from rendering.

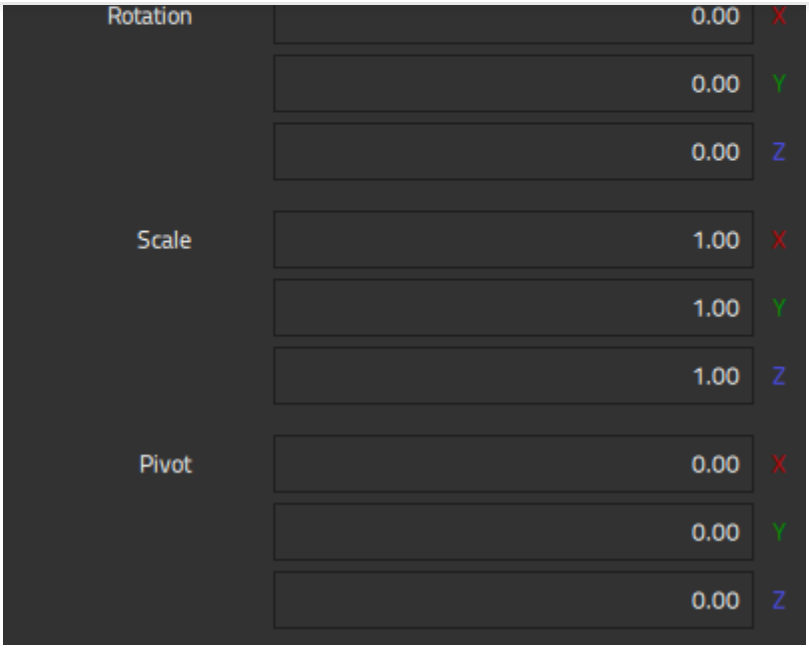
The **Visibility** property provides an alternative way to hide and show components. It is useful when you want to show a component in a particular state, but hide it in another state, for example.

The **Static flags** property is currently not used.

Managing 3D Transformations

You can manage 3D transformations for components that are based on the **Node** component in **Transform**.





The value of the **Translation** property contains the position translation of the component in the local coordinate space established by the parent component. The **Orientation** property specifies whether the left-handed or right-handed coordinate system is used.

In the y-up left-handed coordinate system, increasing the value of x moves the component to the right, as seen from the default camera location, whereas increasing the value of y moves the component up. Increasing the value of z moves the component away from the camera.

The value of the **Rotation** parameter sets the local rotation of the component in the space established by the parent component. The **Rotation order** property specifies whether the left-handed or right-handed (the values with *r*) rotation about the x, y, and z axes is applied, and the order in which the rotation is applied on each axis.

The value of the **Scale** property sets the local scale of the component in the space established by the parent component. An odd number of negative scale values causes the component to render *inside-out*, which cannot be seen due to backface-culling.

The value of the **Pivot** property sets the local pivot offset for the component. You can think of the pivot as offsetting the geometry for the component away from the origin, allowing a component to rotate and scale around a point other than its local origin. Pivot values are applied before scaling and rotation values.

A line is drawn in the **3D** view from the pivot point to the center of the component to provide a visual connection between them.

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