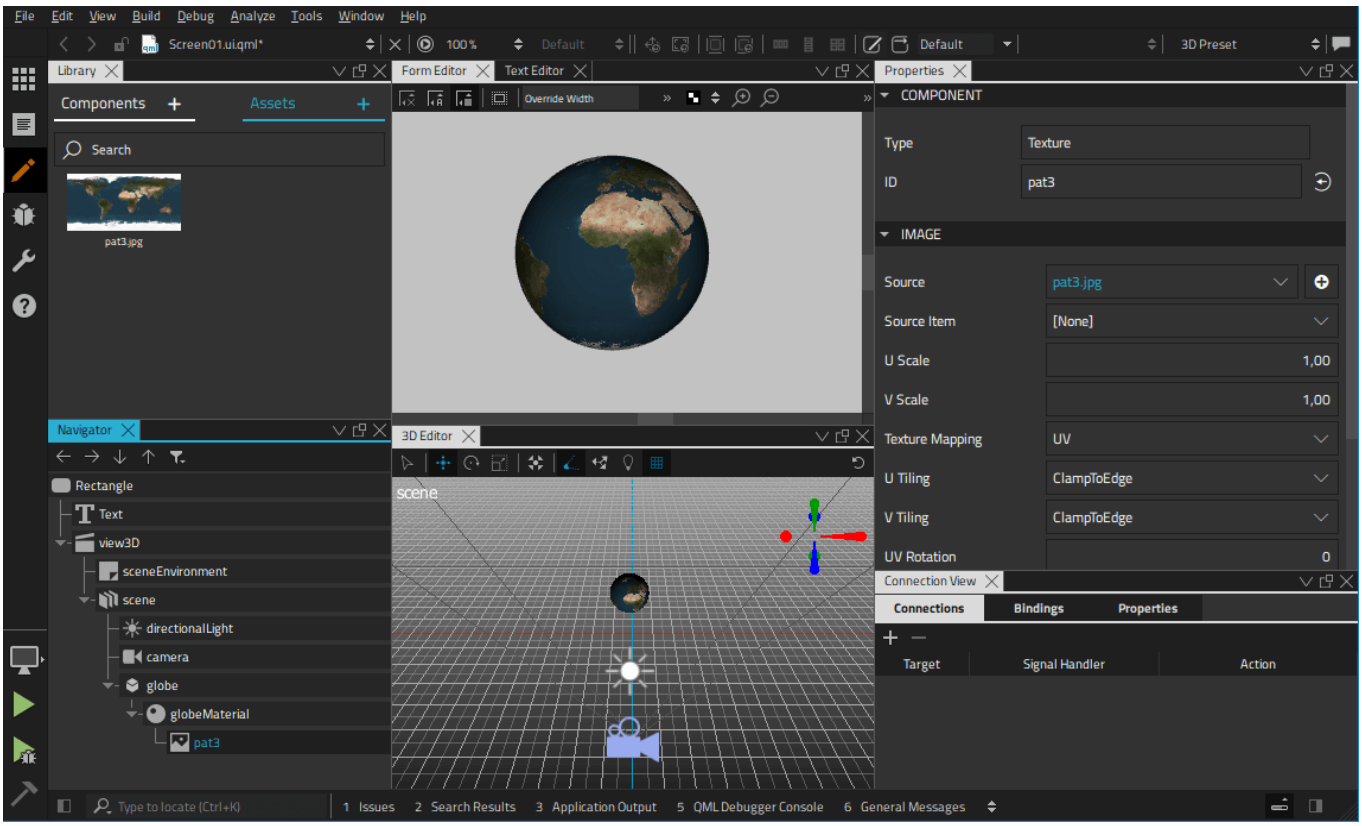
Textures

You can use the **Texture** component to attach textures to materials. You specify an image to use as the source file for the **Texture**, and also define how it is mapped to meshes in a 3D scene.



Selecting the Mapping Method

To specify the method of mapping to use when sampling a texture, select **UV**, **Environment**, or **LightProbe** in the **Texture mapping** field.

UV mapping is the process of projecting 2D images to the surface of a 3D model for texture mapping. The letters *U* and *V* denote the axes of the 2D texture because x, y, and z are already used to denote the axes of the 3D object in the model space. You can paint the polygons that make up a 3D object with color and other surface attributes from a UV texture map. Pixels in the image are assigned to surface mappings on the polygon. Usually this is done by programmatically copying a triangular piece of the image map and pasting it onto a triangle on the object.

UV mapping is used by default for diffuse and opacity maps. It sticks the image to the mesh, so that a particular same portion of the image always appears on a particular vertex, unless you animate the UV properties.

Light probe mapping is used by default for HDRI sphere maps of light probes. For more information about light probes, see Using Highlights and Reflections.

To use image data from a file, specify the path to the file in the **Source** field. To use a 2D Qt Quick QML type as the source, specify the type in the **Source item** field. The type is rendered as an offscreen layer. If you specify the source item, any image you might specify as a source is ignored.

> **Note:** Currently, there is no way to forward input events to the Item used as a texture source.

UV Scaling

The **U scale** and **V scale** properties define how to scale the U and V texture coordinates when mapping to a mesh's UV coordinates.

Scaling the U value when using horizontal tiling specifies how many times the texture is repeated from left to right, while scaling the V value when using vertical tiling specifies the repetition from bottom to top.

To control how the texture is mapped when the U scaling value is greater than 1, set the horizontal tiling mode in the **U tiling** field. To control how the texture is mapped when the V scaling value is greater than 1, set the vertical tiling mode in the **V tiling** field.

To specify that the texture is not tiled, but the value on the edge is used instead, select **ClampToEdge**. To repeat the texture and mirrored it over the x or y axis, select **MirroredRepeat**. To repeat the texture over the x or y axis, select **Repeat**.

Setting UV Transform Properties

To offset the U coordinate mapping from left to right, set the position of the component in the **U position** field. To offset the mapping from bottom to top, set it in the **V position** field.

Specify the U and V pivot point in the **U pivot** and **V pivot** fields.

To rotate the texture around the pivot point, specify rotation as degrees in the **UV rotation** field. A positive value indicates clockwise rotation.

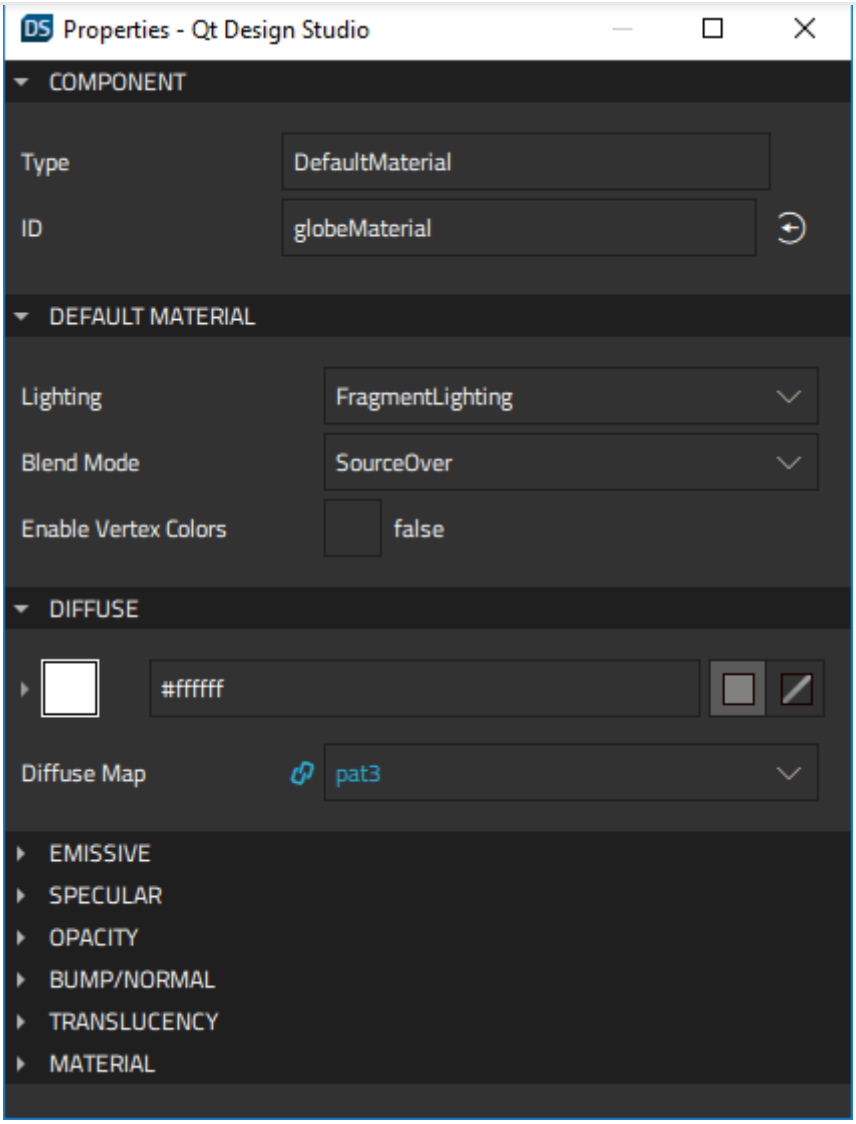
For more information about rotating and pivoting components in the local coordinate space, see Managing 3D Transformations.

Applying Textures to Materials

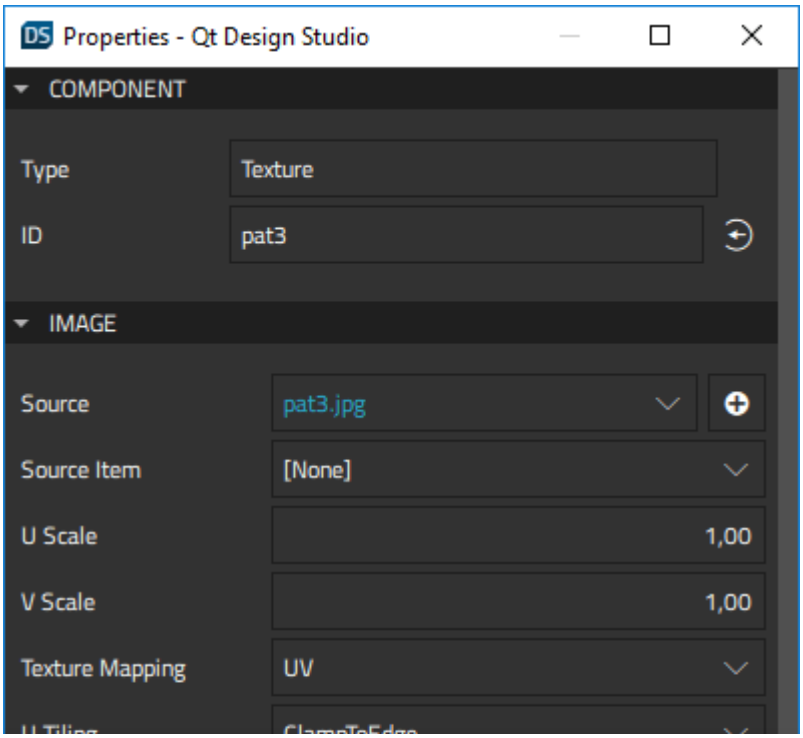
Drag-and-drop an image from Assets on a material to create a texture component. Dragging an image to a default or principled material opens a **Select Texture Property** dialog. You can select the property to attach the texture to in the **Set texture to property** field. For a custom material, you must assign the texture to a map. If the **Texture** component is not displayed in **Components**, you should add the **Qt Quick 3D** module to your project, as described in Adding and Removing Modules.

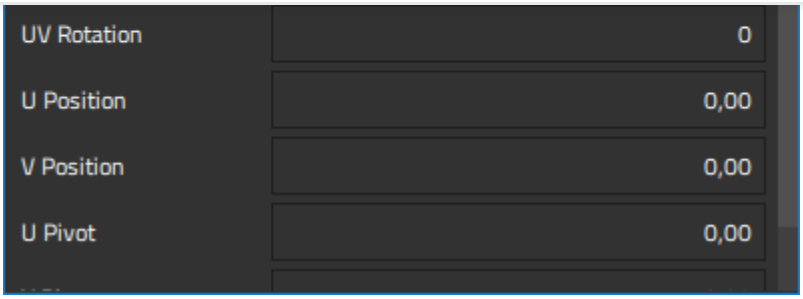
To use Texture components to apply textures to materials, drag-and-drop a Texture component from **Components** > **Qt Quick 3D** > **Qt Quick 3D** to a material component in Navigator. The new texture should now be visible in the 2D and 3D views.

> **Note:** If the colors in your texture are not visualized correctly, you should check the color in the **Diffuse** property of the material and try changing it to white (#ffffff).



To change the source file for the texture, select the **Texture** component in **Navigator**, go to the Properties view, and specify a new image to use in the **Source** field.





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3D Materials ›