

EB GUIDE tutorial

Importing a 3D graphic

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1. Tutorial: Working with a 3D graphic

EB GUIDE Studio offers the possibility to use 3D graphics in your EB GUIDE model.

The following instructions guide you through the process of adding a 3D graphic to your EB GUIDE model. The instructions show you how to import a 3D graphic and how to modify the appearance of the imported 3D graphic using widget features. For best results, work through the following steps in order presented.

NOTE



3D graphic

To create a 3D graphic file, use third-party 3D modeling software.

Only the OpenGL ES 2.0 and DirectX 11 renderers can display 3D graphics. The supported 3D graphic formats are COLLADA (.dae) and Filmbox (.fbx). For best results, use the Filmbox format.

To be able to apply textures to a mesh, a 3D object needs to have texture coordinates. To add texture coordinates, use third-party 3D modeling software.

Approximate duration: 15 minutes.



Importing a 3D graphic

The following instructions guide you through the process of importing a 3D graphic file to EB GUIDE Studio project.

Prerequisite:

- The content area displays the **Main** state machine.
- The **Main** state machine contains an initial state and a view state.
- The initial state has a transition to the view state.
- A 3D graphic file is available.

Step 1

In the content area, double-click the view state.

The view is displayed in the content area.

Step 2

Drag a scene graph from the **Toolbox** into the view.

The view displays the empty bounding box.

Step 3

Rename the scene graph to `My3DGraphic`.

Step 4

In the **Properties** panel, click **Import file**.

A dialog opens.

Step 5

Navigate to the directory where the 3D graphic file is stored.

Step 6

Select the 3D graphic file.

Step 7

Click **Open**.

The import starts. The **Import successful** dialog is displayed. Here you have the possibility to check the import log file.

Step 8

Click **OK**.

The view displays the 3D graphic. The navigation area displays the imported widget tree with the scene graph as a parent node. `My3DGraphic` contains a `RootNode` that has at least one mesh with material, camera and several other child widgets depending on the content of your 3D graphic file.



Adding widgets

The following instructions guide you through the process of adding an additional light source to your 3D graphic.

Prerequisite:

- You completed the previous instruction.

Step 1

In the navigation area, expand `RootNode`.

Step 2

Drag a directional light from the **Toolbox** to `RootNode`.

You added a directional light to `My3DGraphic`. The directional light has the same transformation properties in the 3D scene as `RootNode`.

Step 3

To add the light source and place it with default widget properties different from the `RootNode` scene graph, do the following:

Step 3.1

Drag a scene graph node from the **Toolbox** to `RootNode`.

Step 3.2

Rename the scene graph node to `MyLight`.

Step 3.3

Drag a directional light from the **Toolbox** to `MyLight`.

You added a directional light to `My3DGraphic`. To change the placing of the directional light, change the properties of `MyLight`.



Changing meshes

Prerequisite:

- You completed the previous instruction.
- The `$GUIDE_PROJECT_PATH/<project name>/resources/<3D graphic name>` directory contains an additional `.ebmesh` file.

Step 1

In the navigation area, click `Mesh 1`, and go to the **Properties** panel.

Step 2

Select an `.ebmesh` file from the `mesh` drop-down list box.

The view displays the scene graph with the new mesh.



Changing textures

The following instructions guide you through the process of adding and modifying textures of your 3D graphic.

Prerequisite:

- You completed the previous instruction.
- The `$GUIDE_PROJECT_PATH/<project name>/resources/<3D graphic name>` directory contains a `.png` or `.jpg` image file.

Step 1

In the navigation area, click the material, and go to the **Properties** panel.

Step 2

In the **Widget feature properties** category, click **Add/Remove**.

The **Widget features** dialog is displayed.

Step 3

Under **Available widget features**, expand the **3D** category, and select a texture widget feature, for example **Diffuse texture**.

Step 4

Click **Accept**.

The related widget feature properties are added to the material and displayed in the **Properties** panel.

Step 5

In the **Properties** panel, select an image from the `diffuseTexture` drop-down list box.

The view displays a scene graph with the new texture.

NOTE**Usage of 3D widget features**

This instruction is valid for the following widget features from the category **3D**:

- ▶ **Ambient texture**
- ▶ **Emissive texture**
- ▶ **Light map texture**
- ▶ **Normal map texture**
- ▶ **Opaque texture**
- ▶ **Reflection texture**
- ▶ **Specular texture**

**Displaying 3D object several times**

The following instructions guide you through the process of adding an additional camera to be able to display the 3D object of your 3D graphic several times. You will be able to have different points of view of the same object.

Prerequisite:

- You completed the previous instruction.

Step 1

In the navigation area, click `My3DGraphic` and go the **Properties** panel.

Step 2

Enter 800 in the `width` text box and 480 in the `height` text box.

The `My3DGraphic` scene graph has the size of the view.

Step 3

In the navigation area, expand `RootNode` and `Camera001`.

Step 4

Click `Camera 1` and go to the **Properties** panel.

Step 5

In the **Widget feature properties** category, click **Add/Remove**.

The **Widget features** dialog is displayed.

Step 6

Under **Available widget features**, expand the **3D** category, and select **Camera viewport**.

Step 7

Click **Accept**.

The related widget feature properties are added to `Camera 1` and displayed in the **Properties** panel.

Step 8

In the navigation area, go to `RootNode`.

Step 9

Drag a camera from the **Toolbox** to the scene graph node `Camera001`.

You added a second camera.

Step 10

Click `Camera 2` and go to the **Properties** panel.

Step 11

In the `nearPlane`, `farPlane` and `fieldOfView` text boxes enter the same values that `Camera 1` has.

Both `Camera 1` and `Camera 2` have the same viewing position.

Step 12

In the **Widget feature properties** category, click **Add/Remove**.

The **Widget features** dialog is displayed.

Step 13

Under **Available widget features**, expand the **3D** category, and select **Camera viewport**.

Step 14

Click **Accept**.

The related widget feature properties are added to `Camera 2` and displayed in the **Properties** panel.

Step 15

In the **Properties** panel, enter `100` in `viewportX` and `viewportY` text boxes.

In the view, the 3D object is displayed two times with different x-coordinate and y-coordinate.