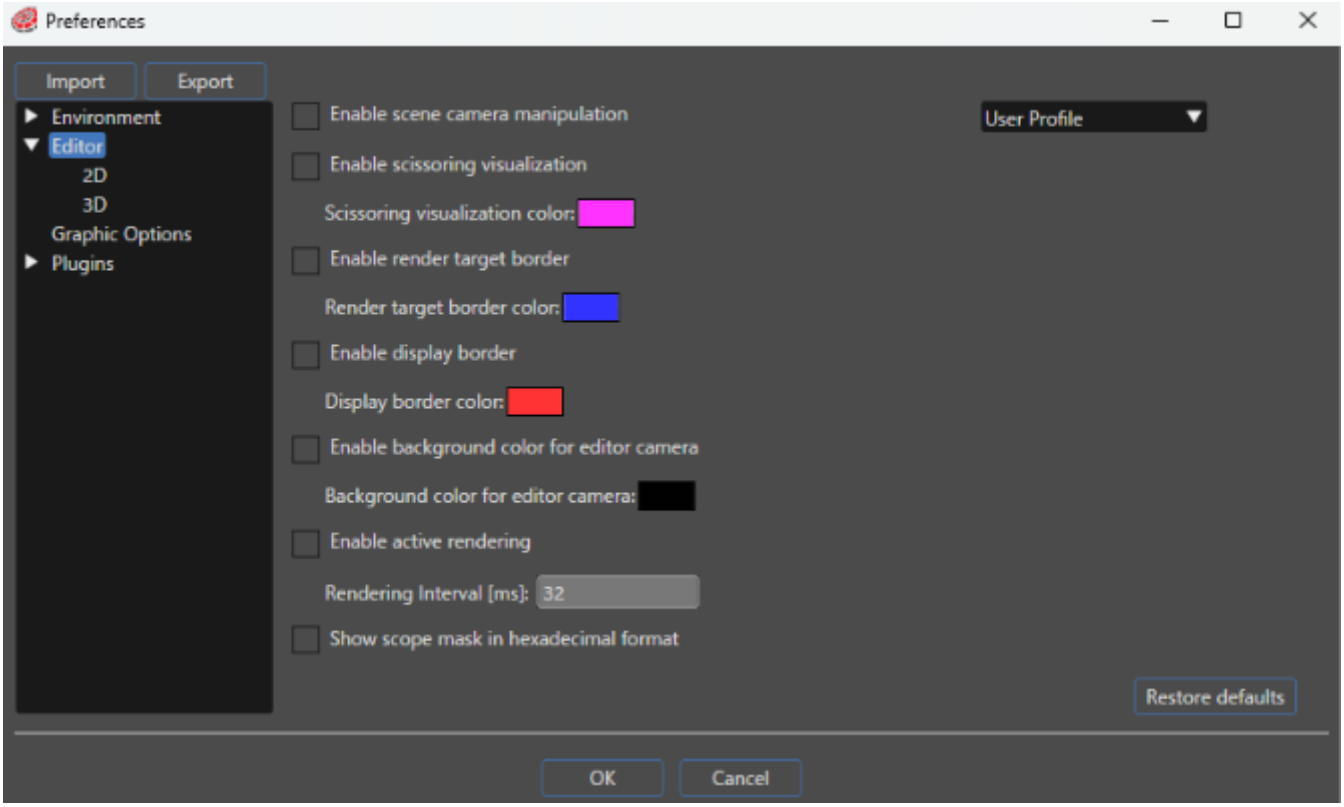
Editor Options

- General Options
- 2D Editing Helpers
- 3D Editing Helpers

General Options

Editor General Options

General Editor options can be found in "File" > "Preferences" section "Editor".

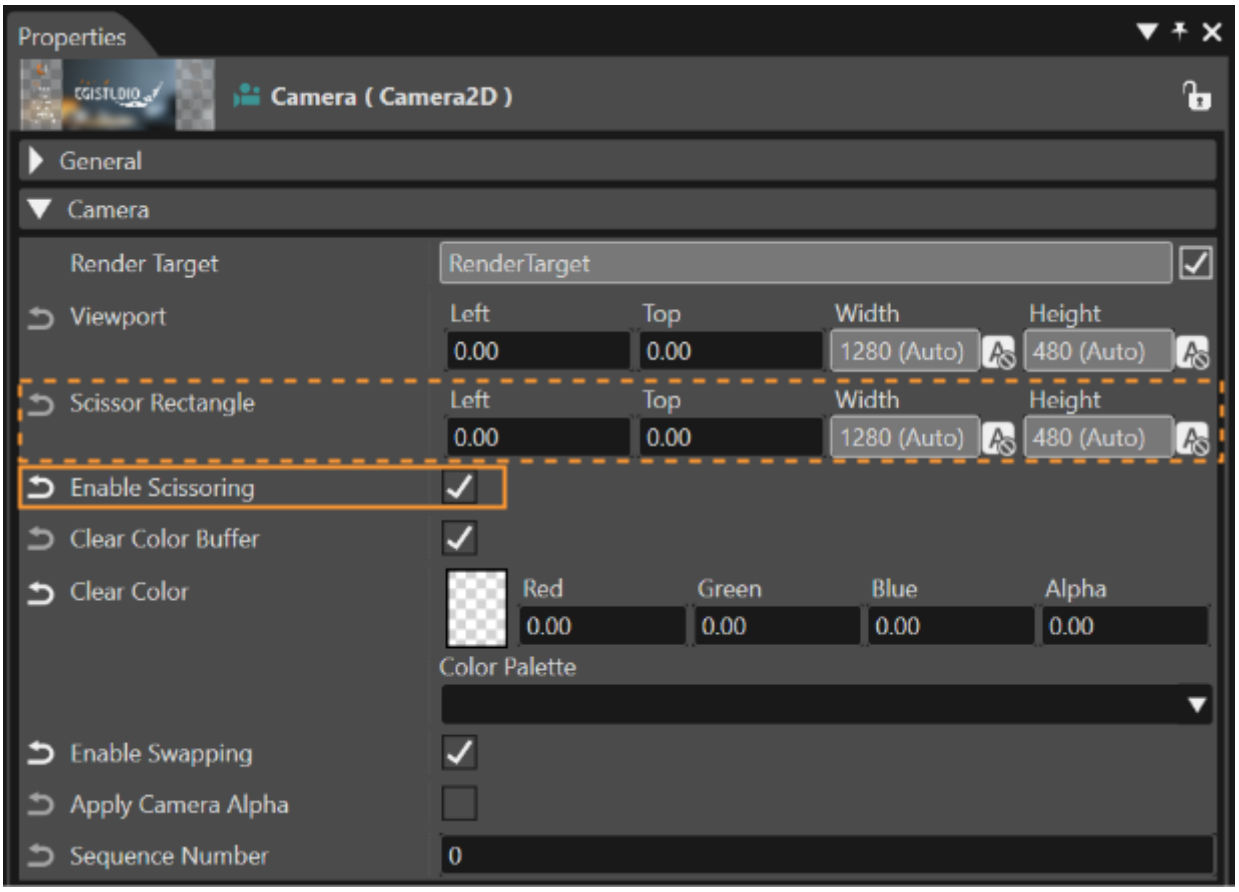


Enable scene camera manipulation

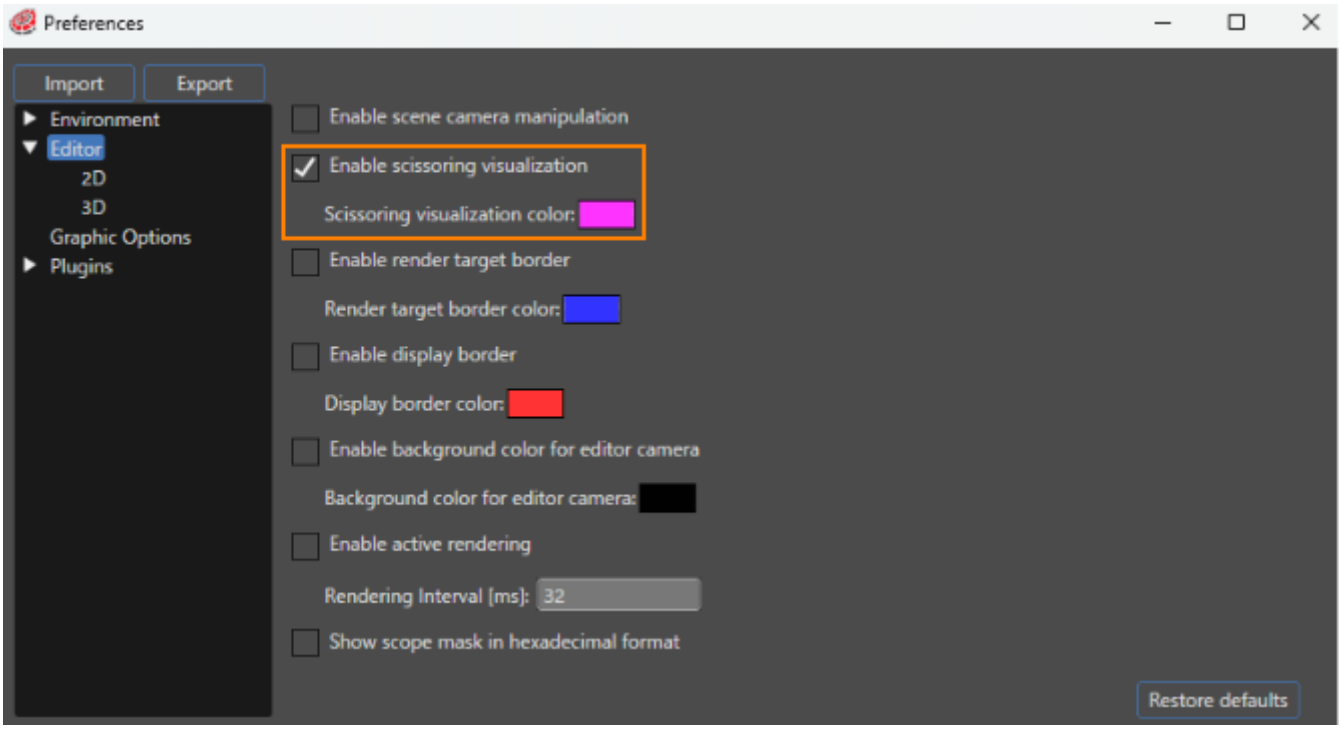
"Enable scene camera manipulation" enables the manipulation of the scene's cameras via the Scene Render panel. The cameras can be manipulated via navigation panel or using the appropriate shortcut commands (hot keys) combined with mouse operations when a scene camera is selected from the scenes combobox' from Toolbar.

Enable scissoring visualization

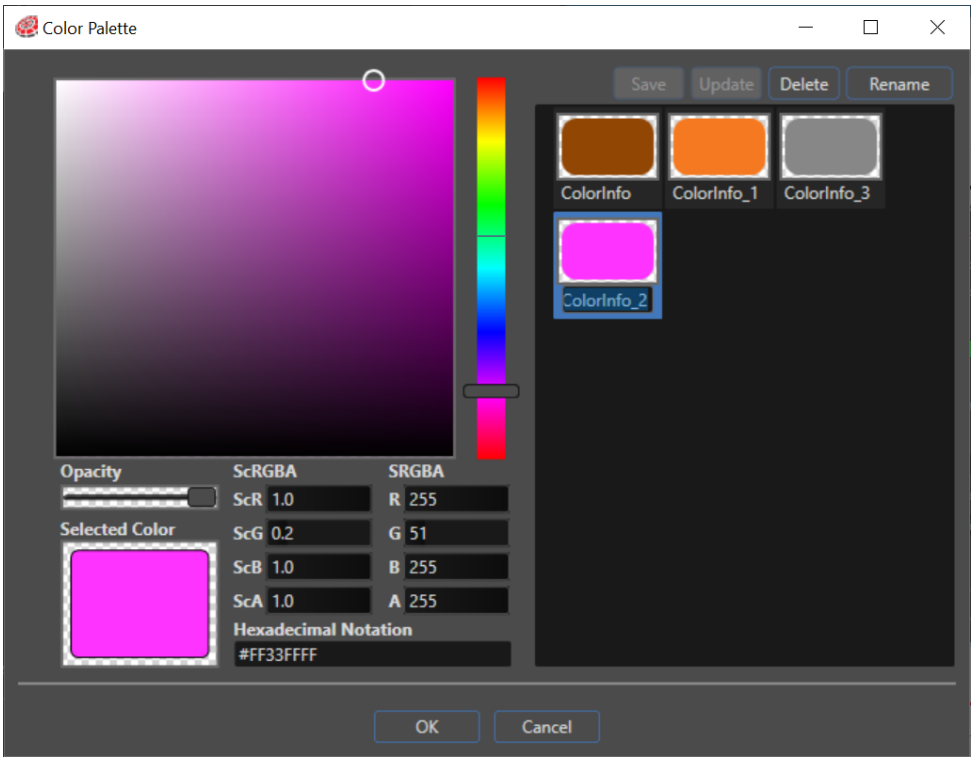
By using this feature all the pixels which are outside of the intersection area of the viewport and scissor rectangle can be clipped. After the activation of this feature the scissor rectangle's values have to be defined. This rectangle specifies a region within the Camera's RenderTarget. The rectangle's width and height values must be greater than 0. These values can be set on the Camera's Properties panel.



By using the "Scissoring visualization color" a desired color can be chosen and its transparency can be set.



The chosen color can be saved to keep its info.

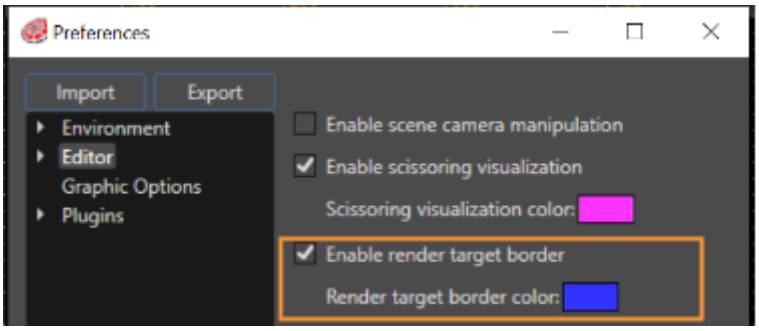


This feature allows the visualization of the scissoring rectangle in the display window as in the next figure.



Enable render target border

By checking the "Enable Render Target Border" box (which is available in Preferences > Editor, General Selection), the border of a render target can be colored. Any desired color can be chosen in the Color Palette.

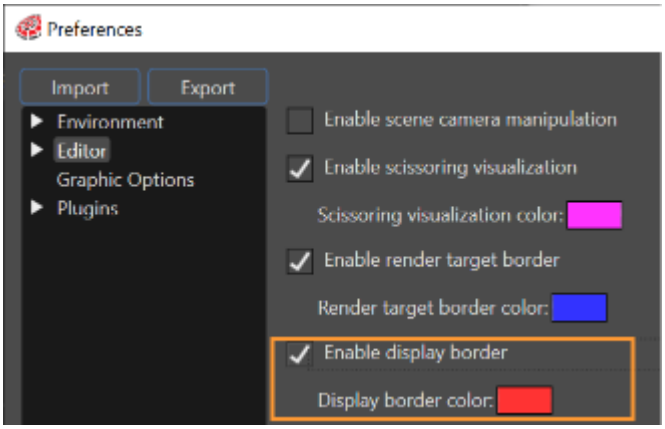


In this way, it is possible to see the borders of the RenderTargets graphically as colored rectangles.



Enable display border

It is possible to visualize the Display border by enabling this feature. In Preferences dialog - Editor, the "Enable display box" should be checked. By using the "Display border color" a desired color can be chosen and its transparency can be set.



After this feature is enabled, the borders of the display can be graphically seen as a colored rectangle.



Enable background color for editor camera

If enabled, you can set the background color of the Editor Camera to any color. Click Background color for editor camera to open the color palette dialog and select the desired color.

Enable Active Rendering

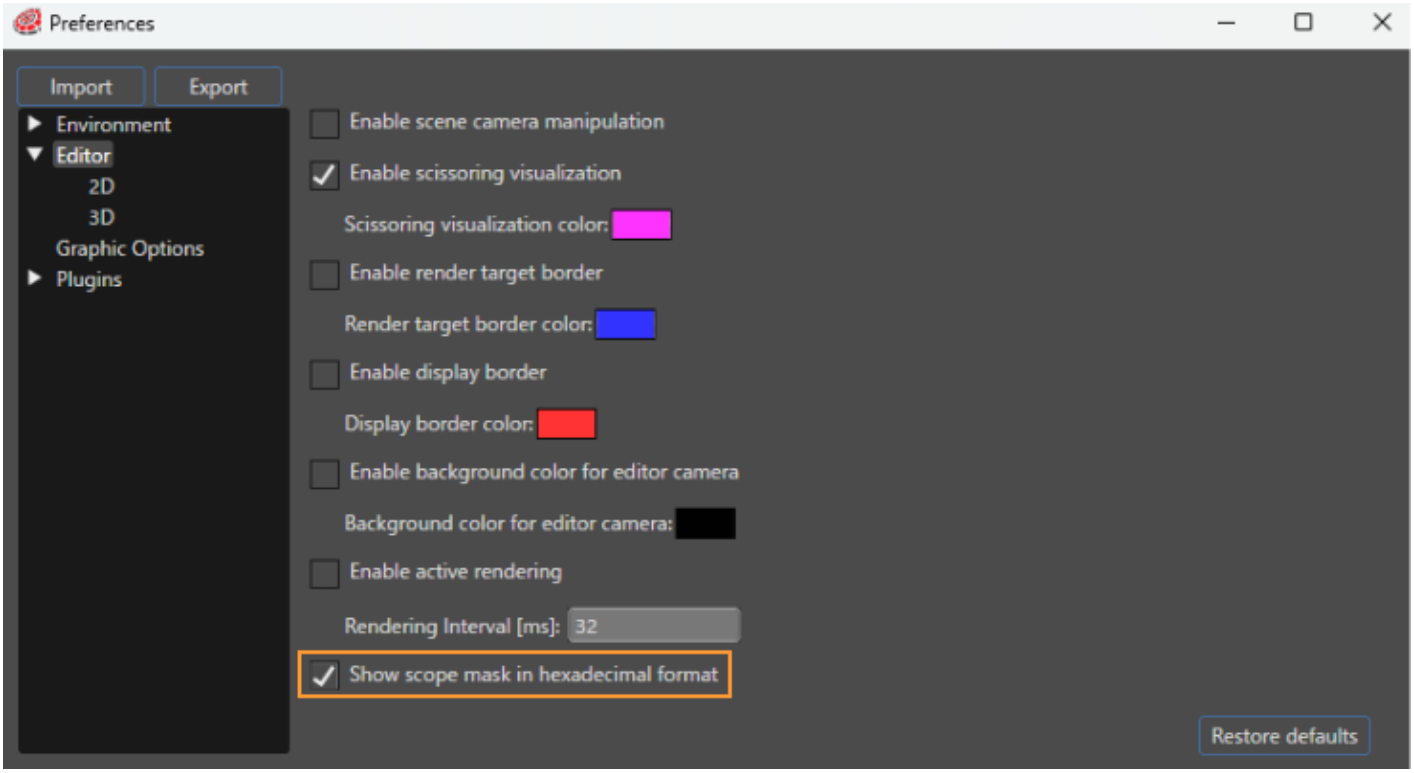
This feature is to provide continuous rendering means in SceneComposer so that widgets get a regular update trigger in order to provide a convenient and friendlier development environment for development purposes . This feature can be activated/ deactivated from the "File" > "Preferences" dialog section Editor option or from the button ActiveRendering from the Toolbar.



When the ActiveRendering option is enabled, SceneComposer will start an internal repeatable timer with a configurable timeout (default value = 250ms) given in milliseconds by the value of option "Rendering Interval". Every time this timer expires SceneComposer calls RenderScene in SCHost which performs the rendering of the current content. This will trigger the update method for all widgets within all loaded scenes.

Show Scope Mask in Hexadecimal Format

The option "Show scope mask in hexadecimal format", when it is enabled, ensures that the values for Scope property will be displayed in hex in the Properties panel. This option is available in the Preferences dialog opened from "File" > "Preferences" menu, section Editor.

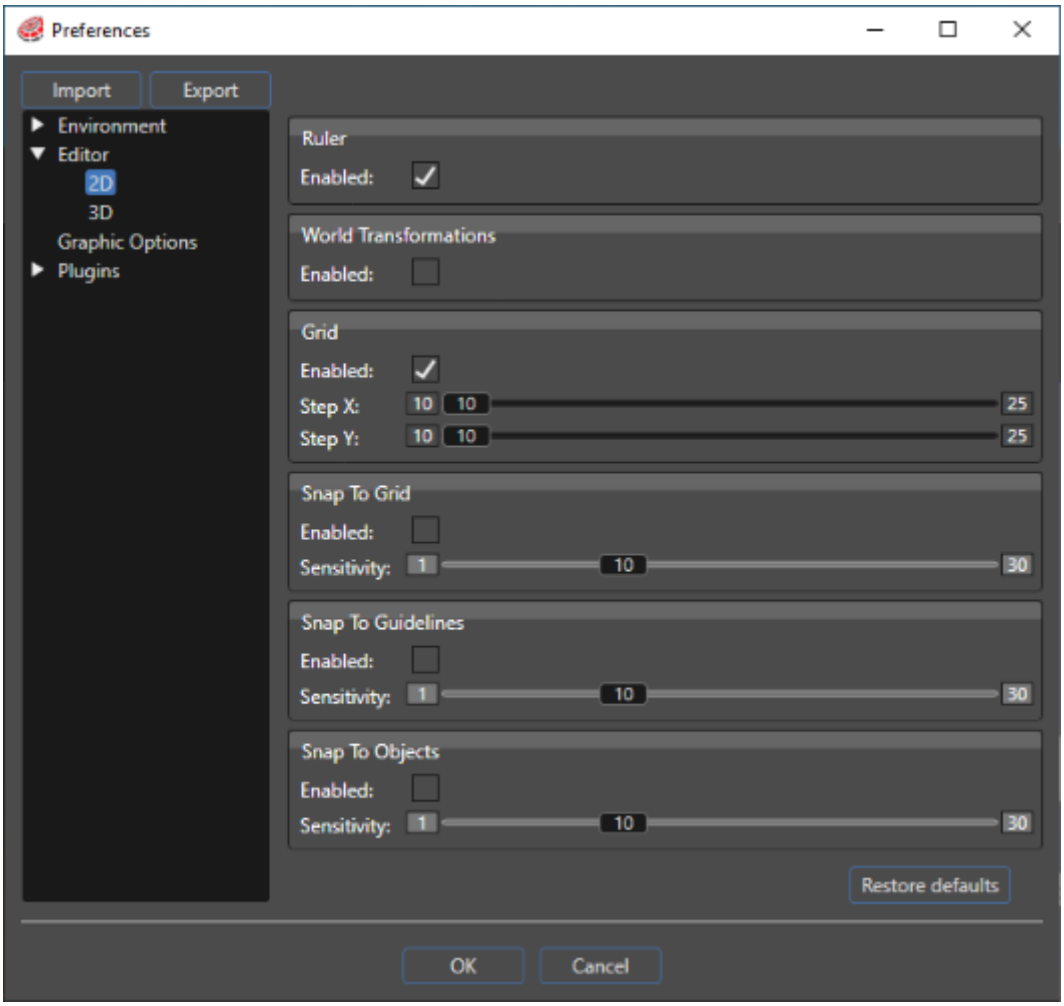

Preferences
Import
Export
Environment
Editor
2D
3D
Graphic Options
Plugins
Enable scene camera manipulation
Enable scissoring visualization
Scissoring visualization color:
Enable render target border
Render target border color:
Enable display border
Display border color:
Enable background color for editor camera
Background color for editor camera:
Enable active rendering
Rendering Interval [ms]:
32
Show scope mask in hexadecimal format
Restore defaults

2D Editing Helpers

2D Editing Helpers

The SceneComposer offers a set of editing helpers that allow editing 2D scenes as simple and intuitive as possible.

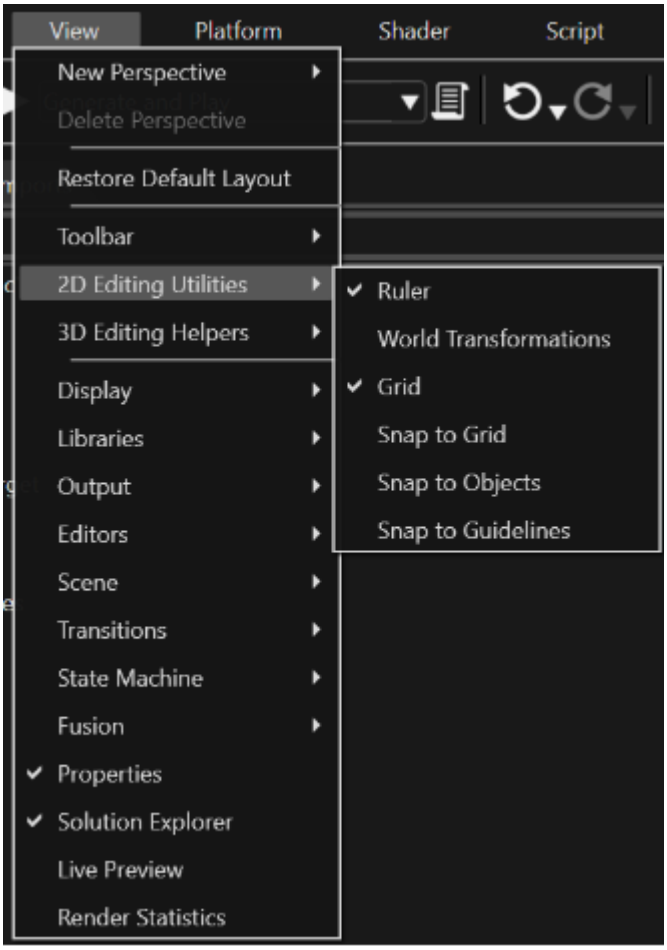
All editing aids which have a visual presentation are configurable so that the user can disable them easily if not desired. This can be done from the dialog that opens from "File" > "Preferences" menu under the "Editor" node, the "2D" option.



In 2D scenes, SceneComposer offers the following entries in the 2D section of Editor-Preferences:

- Ruler
- World Transformations
- Grid
- Snap to Grid
- Snap to Guidelines
- Snap to Objects

You can also find some 2D Editing Aids in the "View" menu in section "2D Editing Utilities".



Scene Design Helpers

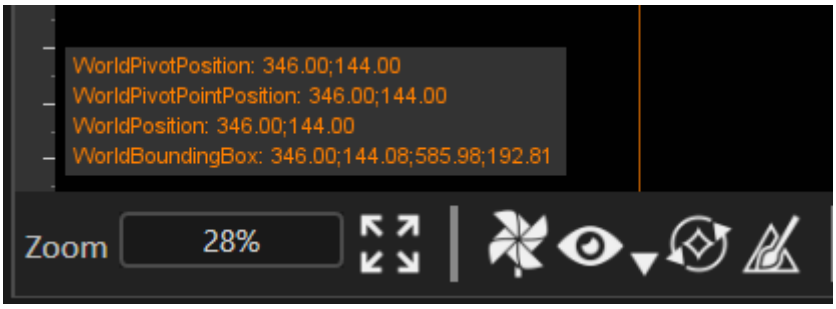
Rulers

Rulers provide a sense on the world space that the camera viewport bounds; display measuring points and their corresponding values (numbers).

- Two rulers are drawn: one on the top of the rendering panel another on the left side of the rendering panel.
- They will be drawn always having a fixed position and orientation in space.
- The rulers will be attached to a 2D camera and they will always measure the space that the camera viewport bounds regardless of the camera orientation.
- The rulers' starting coordinates for vertical and horizontal ruler will be the camera top-left viewport world space point.
- In order to enable this editing helper, check the property "Enable Ruler" from the "Editor - 2D" section of Preferences dialog.

World Transformations

To use the **World Transformations**, enable this option and select an object in the Scene Editor Window. Now,a tooltip is displayed in the lower left corner of the Scene Editor that shows absolute coordinates and sizes.



The following values are displayed:

- **WorldPivotPosition**: horizontal value, vertical value
- **WorldPivotPointPosition**: horizontal value, vertical value
- **WorldPosition**: horizontal value, vertical value
- **WorldBoundingBox**: horizontal value, vertical value, width, height

---

Snapping

Grid

Grid represents a collection of points (1px) laid at a configurable step size for each axis (step in pixels for x or for y).

- The grid is enabled by checking the checkbox "Enable" from the section Grid, in the "Preferences" > "Editor - 2D" dialog.
- The steps X and Y are configurable using the slides controls "Step X" and "Step Y". Default step is 10(x)/10(y).
- The grid is rendered in the background.

Snap to Grid

Snap to grid enables an object to become aligned to the grid when being translated.

- Snapping is enabled for the object relative to the upper-left point of its bounding box.
- To enable this feature check the checkbox "Enable" from the section "Snap To grid" and configure the desired sensitivity (the range is the distance to guideline where the object sticks to the point).

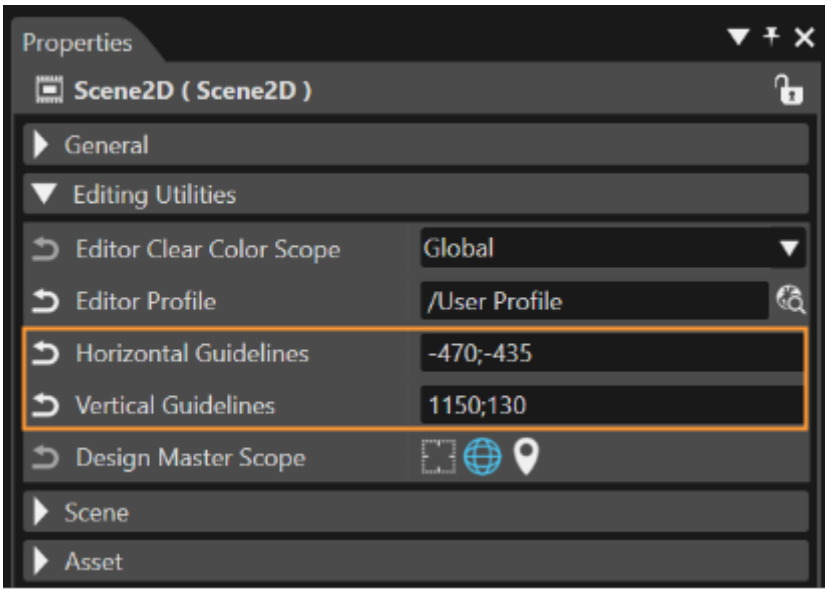
Snap to Guidelines

Snap to guidelines enables an object to be aligned to a guideline when being translated. A guideline represents a simple line, locked to a predefined world-space coordinate value.

- Snapping to guidelines is configurable; it can be enabled or disabled by checking the checkbox "Snap to guidelines" from the "Preferences - Editor - 2D" dialog.
- Also the snapping sensitivity - the range (distance to guideline) where the object sticks to the guideline - can be configured using the slide control "Sensitivity".

Guidelines

- Guidelines are created in SceneComposer by click and drag from the ruler. In order to be removed, a guideline is dragged outside the view.
- Multiple guidelines can be drawn in a scene and they are bound to a scene and not camera viewport.
- The configured guidelines are visible and editable in the scene's properties.



Snap to Objects

Snap to objects enables an object to be aligned to another object's rendering area when being translated. The rendering area is the area that bounds the vertices of the bounding box of the object.

- An object will be snapped to the closest other object in its proximity.
- Snapping is available for RenderNodes objects only.
- A render node is in the proximity of another object (thus will be snapped) if one of the four points of its bounding box is in the proximity of the rendering area of the other object (rendering area is always a not-rotated rectangle and it bounds the points of the bounding box).
- The snap feature can be activated/deactivated by checking/unchecking the checkbox "Enable" from the section "Snap to objects" and the proximity range is configurable using the slide control "Sensitivity".

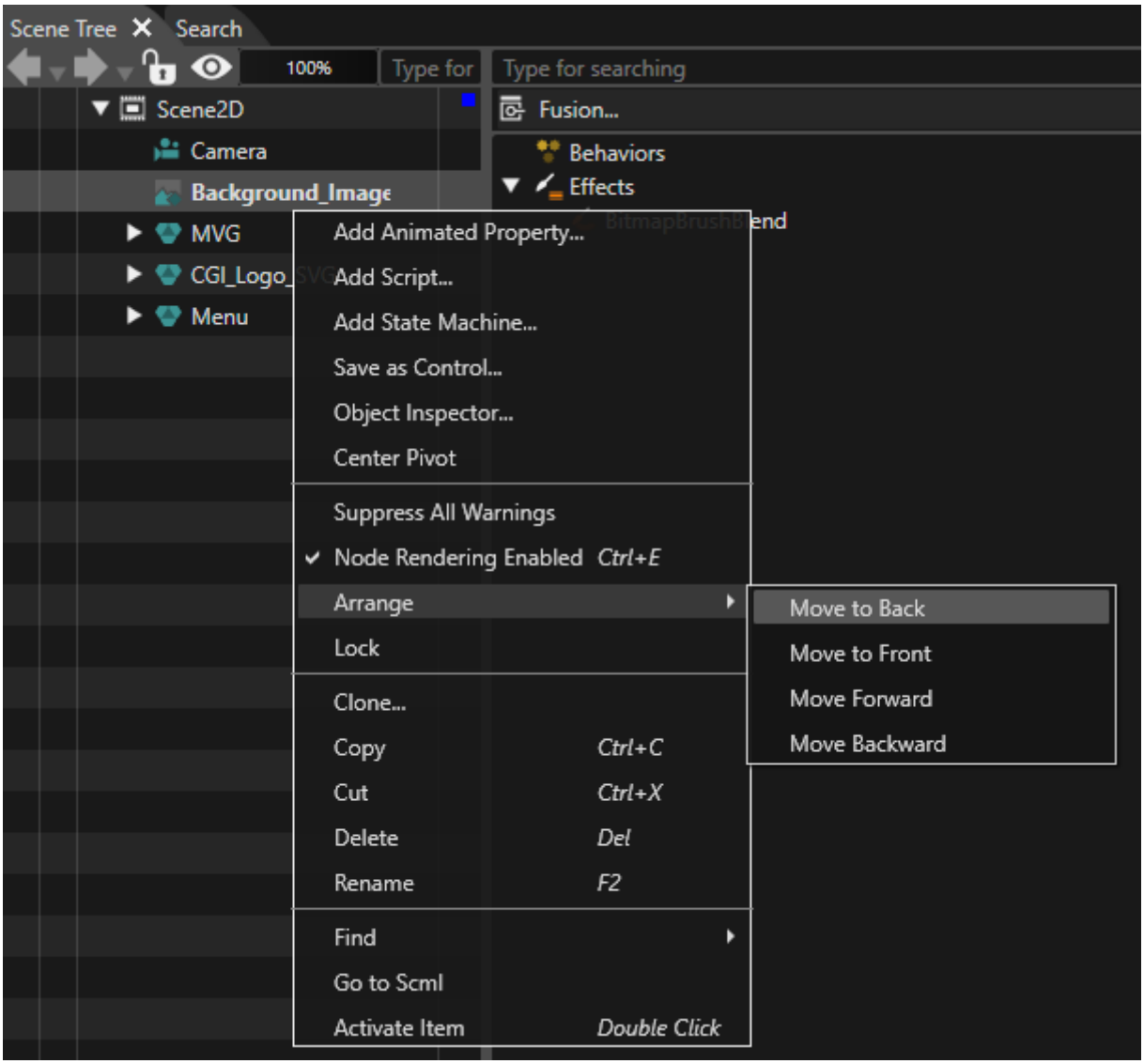
Positioning

Move to back/front, move back/front

This feature allows the user to manipulate objects such that they can be placed on top-most level, or sent to background. Layering is done through a property called DepthValue, in a range of 0..255.

The following operations are available:

- **Move back**: increase depth value by 1
- **Move front**: decrease depth value by 1
- **Move to back**: set depth value to 255
- **Move to front**: set depth value to 0



You can manipulate these values from the context menu, or by setting the value of property DephValue from Properties panel.

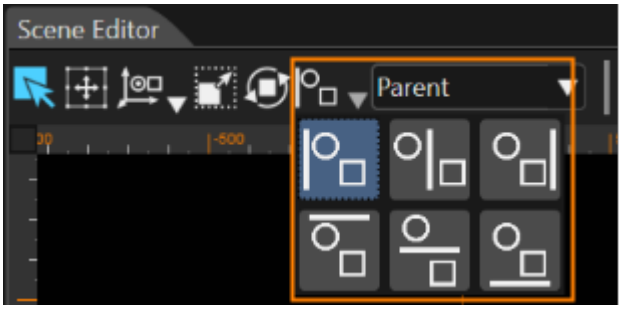
- Candera 2D doesn't specify a rule for rendering objects that have the same depth value.
- There might be X objects with depth value 0 (top-most), but only one object of those ones is rendered topmost.
- Conflicts at the interval end (0 or 255) have to be handled.

Object alignment (top, middle, bottom, left, center, right / relative to other objects)

This feature enables automatically re-positioning of objects such that they are aligned on a specific criterion. Only render nodes and groups are eligible for alignment and this feature applies to a selection consisting of at least 2 render nodes and/or groups.

> First selected object serves as reference for alignment.

The object alignment feature is available for the 2D scenes by selecting the appropriate button from the Toolbar. Each button corresponds to a criterion of alignment.

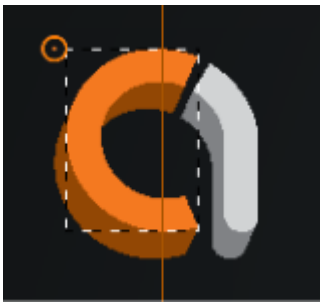


Available criteria

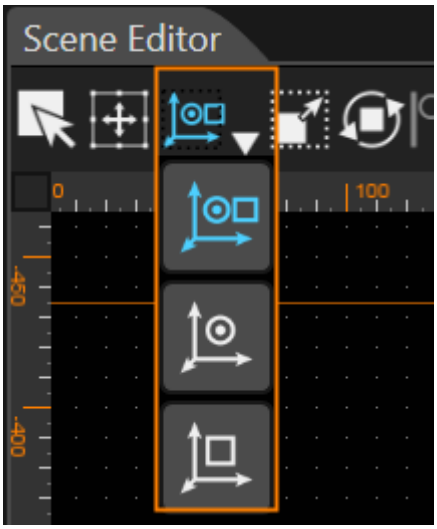
- **Top/bottom alignment**: the selected objects (excluding the reference one) will be positioned such that the top/bottom side of their rendering area is aligned to the top/bottom side of the first object's rendering area.
- **Left/right alignment**: the selected objects (excluding the reference one) will be positioned such that the left/right side of their rendering area is aligned to the left/right side of the first object's rendering area.
- **Center alignment**: the selected objects (excluding the reference one) will be positioned such that their rendering area's geometric center is aligned to the geometric center of the first object's rendering area.
- **Middle alignment**: the selected objects (excluding the reference one) will be positioned such that their rendering middle is aligned to the middle of the first object's rendering area

Geometric center localizer

For all selected objects (render nodes, groups, cameras) the geometric center (center = (0, 0) point in the local coordinate system) will be displayed as an image of a small dimension consisting of a circle and a dot in the center of the circle. It represents the pivoting point for rotation or translation transformation.



Three translate operations can be selected from the transformation combobox:

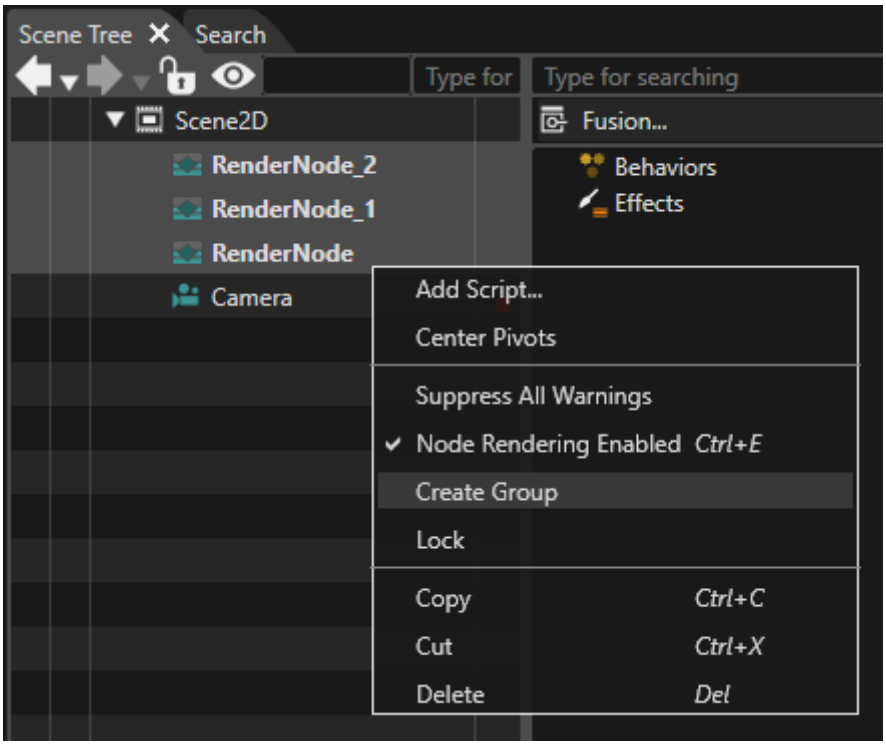


- **"PivotAndObject"**: moves the object and its pivot
- **"PivotOnly"**: moves only the pivot, the object remains on the same position
- **"ObjectOnly"**: moves only the object, the pivot's position remains unchanged

> After choosing the "PivotOnly" option for translate mode, the pivot will move only if the user starts dragging it inside the area delimited by the borders of the object.

Groups

For grouping elements on the same level add a group to the selected objects as parent if they are on the same level. From the SceneTree panel, keep Ctrl key pressed and select more objects. On the last object that is desired to be part of the group press right click and select the option "Create group" from the context menu.

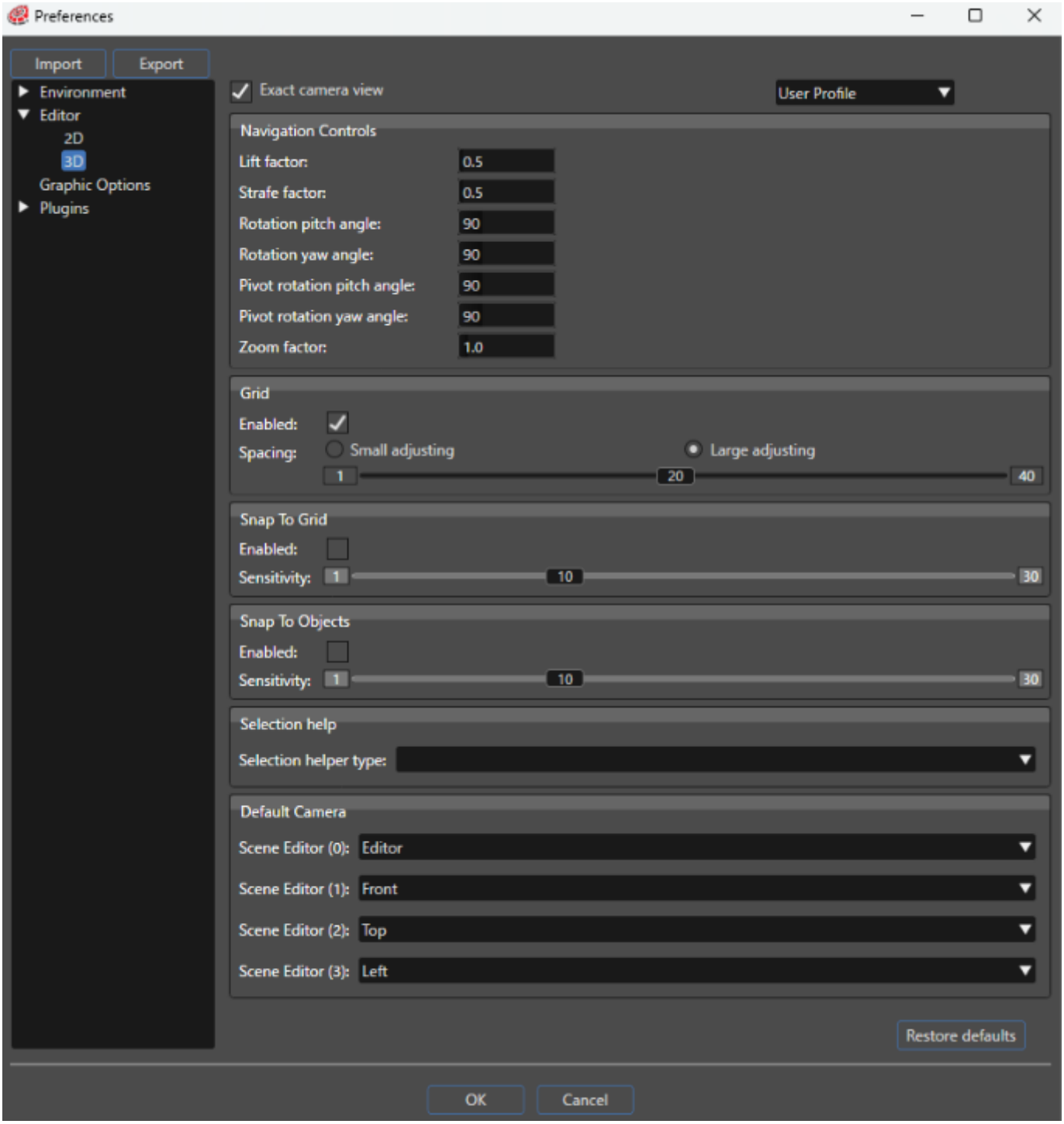

Scene Tree
Search
Type for
Type for searching
Scene2D
Fusion...
RenderNode_2
Behaviors
RenderNode_1
Effects
RenderNode
Camera
Add Script...
Center Pivots
Suppress All Warnings
Node Rendering Enabled Ctrl+E
Create Group
Lock
Copy Ctrl+C
Cut Ctrl+X
Delete Del

3D Editing Helpers

3D Editing Helpers

The SceneComposer offers a set of editing helpers that allow editing 3D scenes as simple and intuitive as possible.

All editing aids, which have a visual presentation, are configurable so that the user can disable them easily if not desired. This can be done from the dialog that opens from "File" - "Preferences" menu under the "Editor" node, the "3D" option.

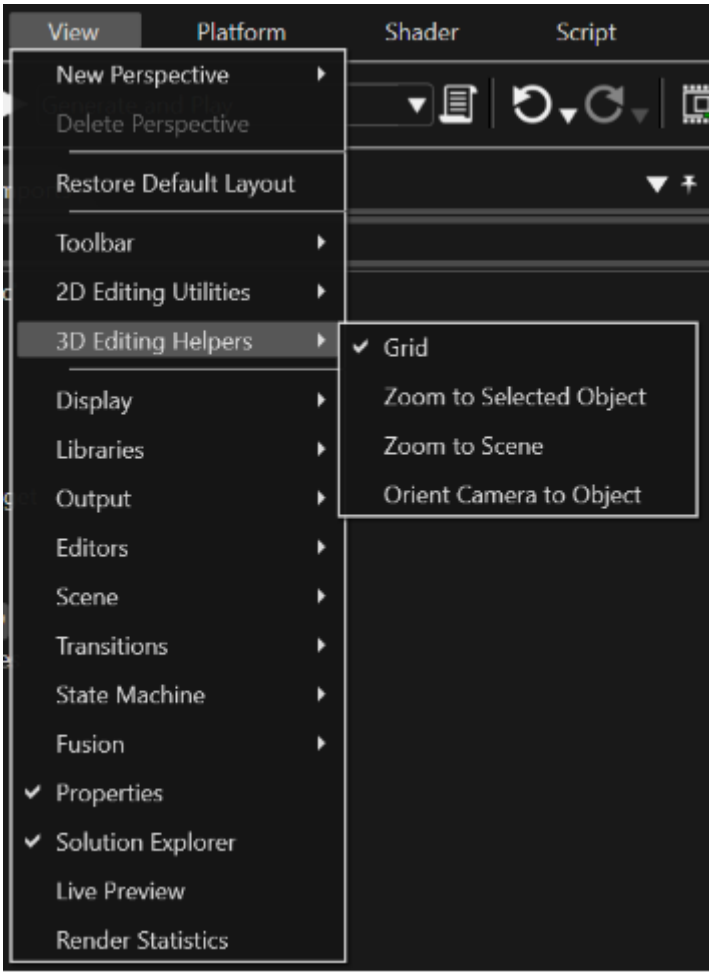


In 3D scenes, SceneComposer offers the following entries in the 3D section of Editor-Preferences:

- Navigation Controls
- Grid
- Snap to Grid
- Snap to Objects
- Selection help
- Default Camera

> For more details about Exact camera view, please refer to Other 3D Editing Aids.

You can also find some 3D Editing Aids in the "View" menu in section "3D Editing Helpers".



Navigation Controls

Lift factor

Lift refers to up and down moving and the lift factor represents a multiplication factor of moving up and down speed. 0 = no action.
The greater the value the faster the camera is moved. Example values: 1, 1.5, 2

Strafe factor

Strafe refers to sidewise moving and strafe factor represents a multiplication factor of sidewise moving speed. 0 = no action.
The greater the value the faster the camera is moved. Example values: 1, 1.5, 2

Rotation Pitch Angle

Rotation refers to rotation the camera around its position and rotation pitch angle represents the pitch rotation angle applied to the camera after 1 second at full rotation speed (mouse outside of the rotation button).

The angle is specified in Degrees.

Rotation Yaw Angle

Angle represents the Yaw rotation angle applied to the camera after 1 second at full rotation speed (mouse outside of the rotation button).
The angle is specified in Degrees.

Pivot Rotation Pitch Angle

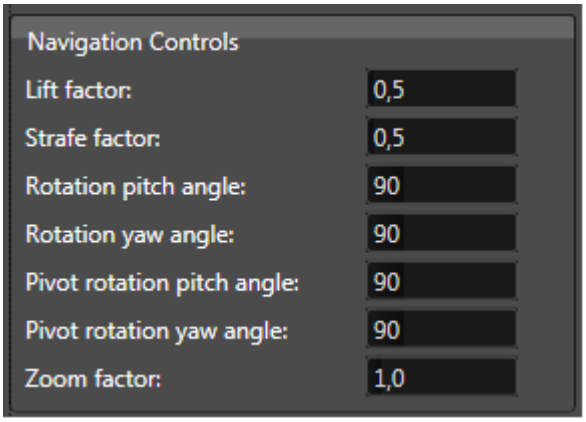
Pivot rotation refers to orbiting - rotation of the camera around a pivot point (a point in the scene) and pivot rotation pitch angle represents the pitch pivot rotation (orbiting) angle applied to the camera after 1 second at full rotation speed (mouse outside of the rotation button).
The angle is specified in Degrees.

Pivot Rotation Yaw Angle

Represents the Yaw pivot rotation (orbiting) angle applied to the camera after 1 second at full rotation speed (mouse outside of the rotation button).
The angle is specified in Degrees.

Zoom Factor

Zoom refers to moving camera forward / backward (perspective) or scaling the camera view (orthographic). The Zoom factor represents a multiplication zooming factor. 0 = no action.
The greater the value the faster the camera is zoomed. Example values: 1, 1.5, 2



Snapping

3D Grid

Enable 3D Grid option, when it is checked, enables the grid in a scene 3D. Grid represents a collection of points (1px) laid at a configurable step size.

- The grid is enabled by checking the checkbox "Enable" from the section Grid, in the "Preferences" - "Editor" - "3D" dialog.
- The grid is rendered in the background.

Snap to Grid

Snap to grid enables an object to become aligned to the grid when being translated.

- When snap to grid is enabled, the grid you set works as a magnet; when a selected object is moved, the grid points appear to pull on it when it approaches. This is useful for accurate placement of image elements.
- Snapping is enabled for all the global bounding box coordinates.
- To enable this feature check the checkbox "Enable" from the section "Snap to grid" and configure the desired sensitivity (the range is the distance to guideline where the object sticks to the point).

Snap to Objects

Snap to objects enables an object to be aligned to another object's rendering area when being translated. The rendering area is the area that bounds the vertices of the bounding box of the object.

- An object will be snapped to the closest other object in its proximity.
- Snapping is available for RenderNodes objects only.
- A render node is in the proximity of another object (thus will be snapped) if one of the eight points of its bounding box is in the proximity of the rendering area of the other object (rendering area is always a not-rotated rectangle and it bounds the points of the bounding box).
- The snap feature can be activated/deactivated by checking/unchecking the checkbox "Enable" from the section "Snap to objects" and the proximity range is configurable using the slide control "Sensitivity".

Positioning

Selection Help

There are three different types available for selection helper.

- Bounding box: when this option is selected, the user will be able to see the edges of the surrounding invisible bounding box.
- Region sphere:
  - Camera aligned bounding circle: on this mode the camera will always be oriented toward one bounding circle that will surround the bounding box of the selected object.

- Static gimbal: a circle for each axis - X, Y, Z will be displayed - not aligned to the camera.

> The bounding circle will be visible just if the "Radius" property under the "Bounding Local Shapes" section will be set at a value greater than 0.

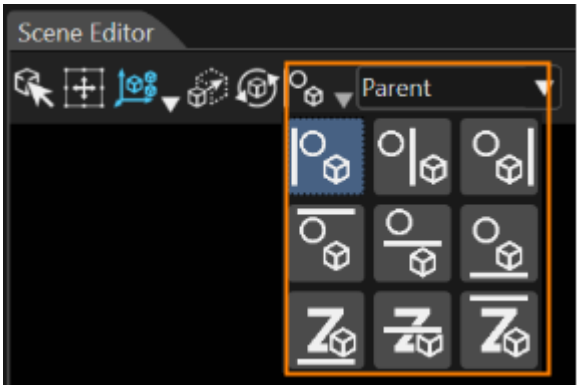
- Both previous types are available. All the modes available for the "Region sphere" type will be available, too.

Object alignment

Object alignment (X Min, X Mid, X Max, Y min, Y Mid, Y Max, Z min, Z Mid, Z Max / relative to other objects): this feature enables automatically re-positioning of selected objects such that they are aligned on a specific criterion.

> First selected object serves as reference for alignment.

- It could be very helpful to use any of the predefined orthogonal views (Front, Rear, Top, Bottom, Left, and Right) of the camera.
- The object alignment feature is available for the 3D scenes by selecting the appropriate button from the toolbar. Each button corresponds to a criterion of alignment.

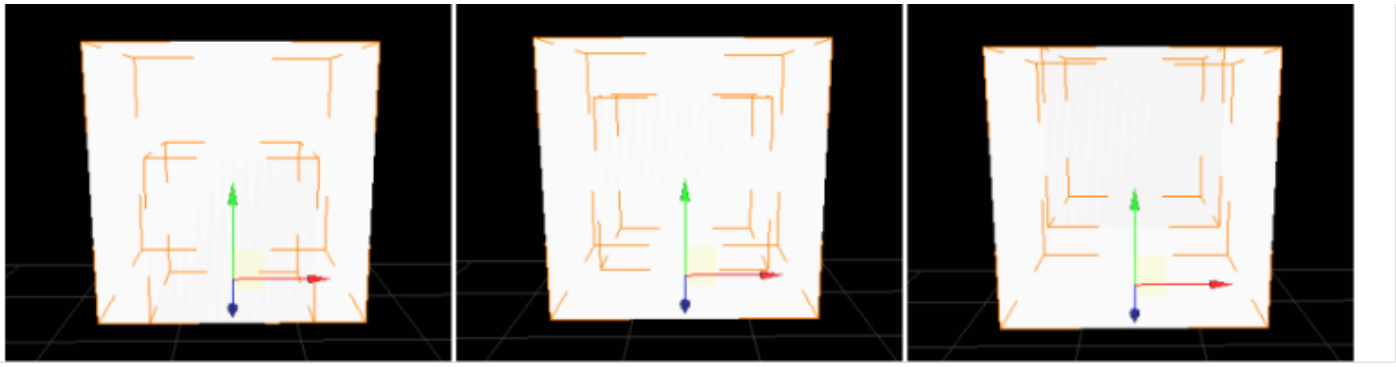


Available criteria

- **X Min alignment**: the selected objects (excluding the reference one) will be positioned such that the minimum point of the edge which corresponds to the X axis of their global bounding box is aligned to the minimum point of the edge which corresponds to the X axis of the first (reference) object's global bounding box.
- **X Mid alignment**: the selected objects (excluding the reference one) will be positioned such that the middle point of the edge which corresponds to the X axis of their global bounding box is aligned to the middle point of the edge which corresponds to the X axis of the first (reference) object's global bounding box.
- **X Max alignment**: the selected objects (excluding the reference one) will be positioned such that the maximum point of the edge which corresponds to the X axis of their global bounding box is aligned to the maximum point of the edge which corresponds to the X

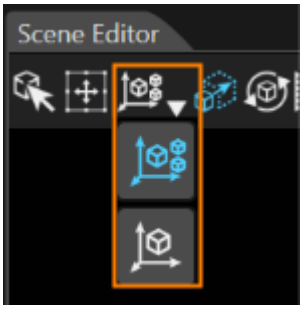
axis of the first (reference) object's global bounding box.

- **Y Min alignment**: the selected objects (excluding the reference one) will be positioned such that the minimum point of the edge which corresponds to the Y axis of their global bounding box is aligned to the minimum point of the edge which corresponds to the Y axis of the first (reference) object's global bounding box.
- **Y Mid alignment**: the selected objects (excluding the reference one) will be positioned such that the middle point of the edge which corresponds to the Y axis of their global bounding box is aligned to the middle point of the edge which corresponds to the Y axis of the first (reference) object's global bounding box.
- **Y Max alignment**: the selected objects (excluding the reference one) will be positioned such that the maximum point of the edge which corresponds to the Y axis of their global bounding box is aligned to the maximum point of the edge which corresponds to the Y axis of the first (reference) object's global bounding box.
- **Z Min alignment**: the selected objects (excluding the reference one) will be positioned such that the minimum point of the edge which corresponds to the Z axis of their global bounding box is aligned to the minimum point of the edge which corresponds to the X axis of the first (reference) object's global bounding box.
- **Z Mid alignment**: the selected objects (excluding the reference one) will be positioned such that the middle point of the edge which corresponds to the Z axis of their global bounding box is aligned to the middle point of the edge which corresponds to the X axis of the first (reference) object's global bounding box.
- **Z Max alignment**: the selected objects (excluding the reference one) will be positioned such that the maximum point of the edge which corresponds to the X axis of their global bounding box is aligned to the maximum point of the edge which corresponds to the Z axis of the first (reference) object's rendering area.



Pivot 3D

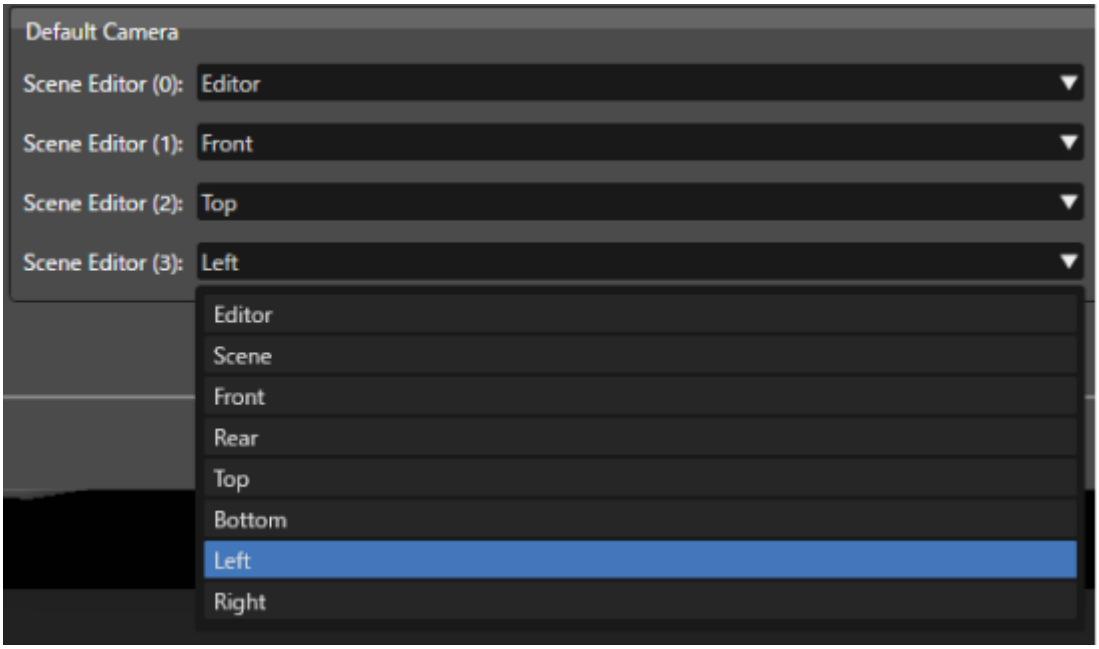
The translate mode is possible only for the selected object or for the selected objects and its children.



- "ObjectOnly": translate only object
- "ObjectAndChildren": translate object and its children

Default Camera

You can set the default camera for each Scene Editor (Scene Editor -0 through Scene Editor -3). The available default cameras are the Editor Camera, Scene Camera, and Orthogonal Cameras (Front/Rear/Top/Bottom/Left/Right).



> When the default camera is set to "Scene Camera", the first Camera node in the scene, in alphabetical order by name, is used. If the scene does not contain any Camera nodes, the Editor camera will be used instead.

Other 3D Editing Aids

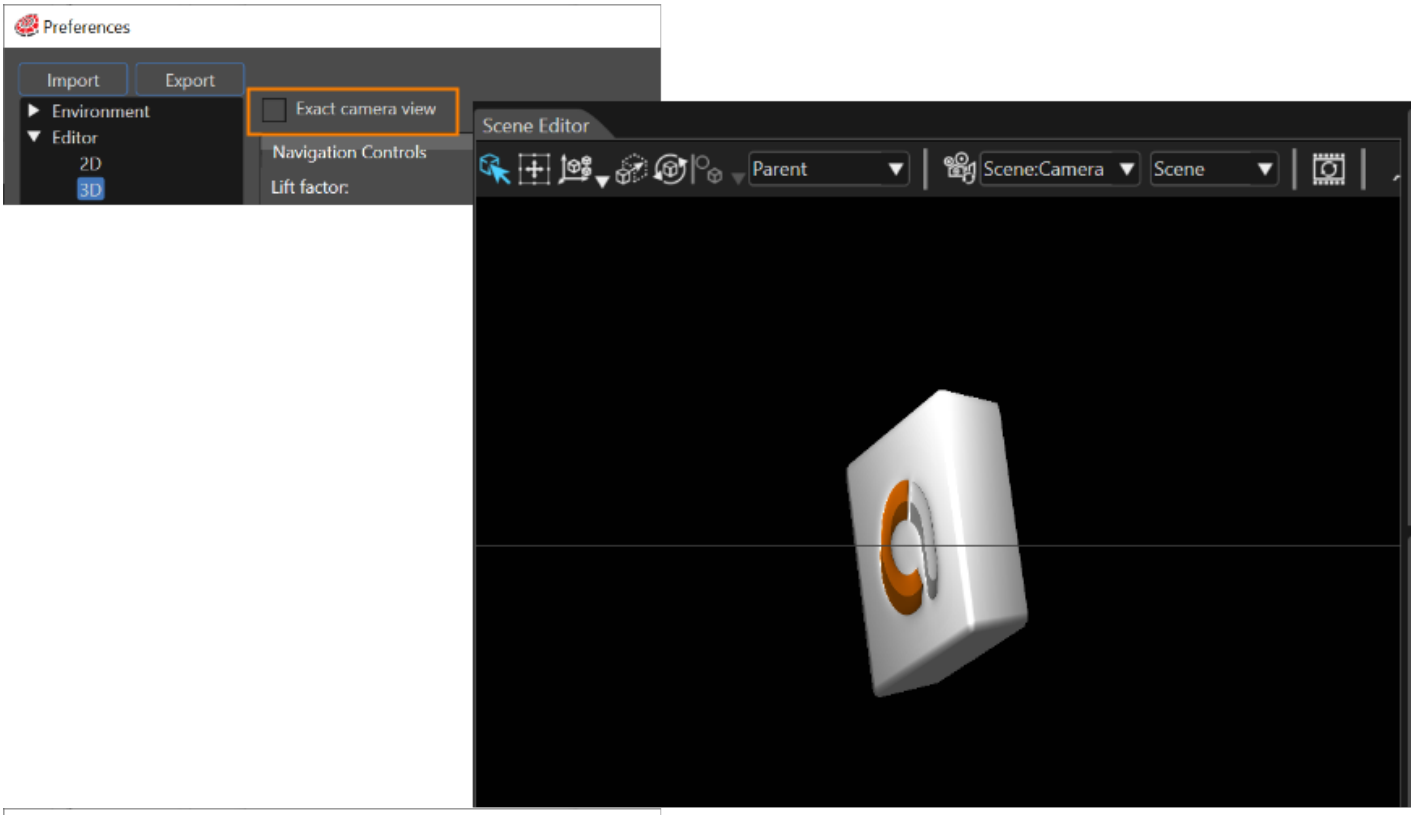
Other 3D editing helpers available in SceneComposer are:

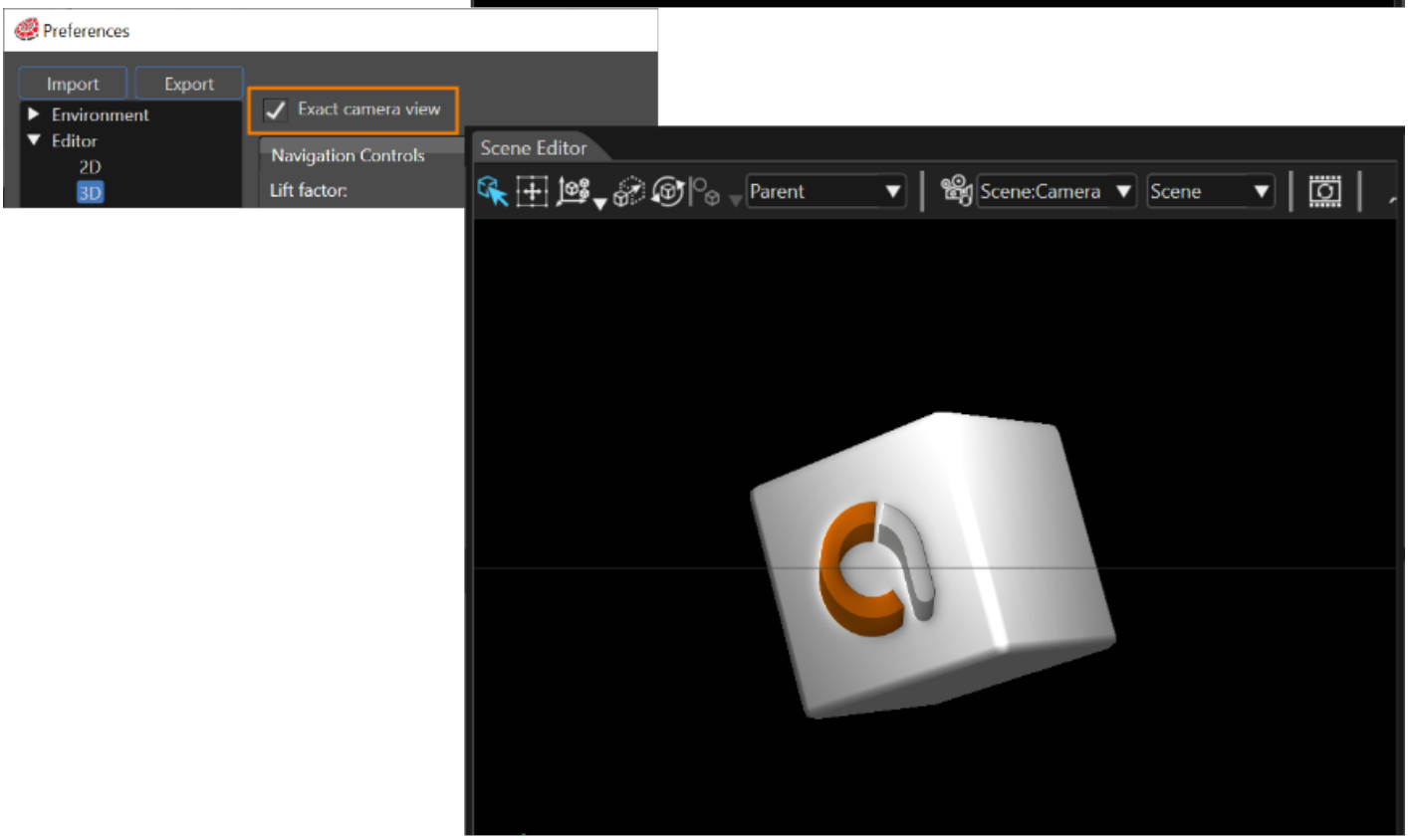
Exact Camera View in Scene Editor

"Exact Camera View" menu option will make the camera from the scene to ignore the current aspect ratio of the scene render.

- When Exact Camera View is disabled the view of the active camera is stretched on the available rendering surface.
- When Exact Camera View is enabled, SceneComposer makes additional computations on the camera so that the camera view image does not get distorted on the scene rendering panel.

- Using this mode may lead to different output compared to the rendering output on display (the display on which the camera renders).





Zoom to Selected Objects

Zoom to selected objects offers a shortcut command by using the "A" key for zoom operation on previous selected object. This functionality is available only in producer camera (perspective and

orthogonal camera).

Zoom to Scene

Zoom to scene offers a shortcut command by using the "F" key for zoom operation on the current scene. This functionality is available only in producer camera (perspective and orthogonal camera).

> "A" and "F" keys are activating the "Scene" or "Selection" option of the combobox from Toolbar.
