

Floating 2D data over the 3D scene

If you use a 3D scene to help your customer understand your product, you can float additional 2D information over the scene, like stickers on a window.

Discover how to show both 2D information and 3D objects at the same time, using hotspots. Build both a static hotspot... which doesn't move, and a dynamic hotspot that follows an object in the scene. Display simple information in the hotspot, like an image, or complex interactive information, such as part of your configurator itself, inside the hotspot. And change the hotspot while the scene is running by using Snap rules.

Objectives

- Options for showing 2D data in a 3D scene
- Static hotspots
- Dynamic hotspots
- Modifying your Hotspots in Realtime with Snap

Options for showing 2D Data in a 3D scene

You can show both 2D information and 3D objects at the same time, using hotspots.

First, an overview. This course discusses hotspots, which are like stickers on a window. They are purely 2D information, floating in front of a 3D scene.

But you have other options. Other courses can show you how to create other ways of showing 2D information not floating in front of the scene, but within the scene itself. And you can create annotations and dimensions. Each of these techniques can display 2D text, but that text is part of the scene itself.

Decide which method is best for your goals. If you want a clear separation between the 2D information and the 3D scene, or if you want the 2D information to be interactive (like a clickable part of your configurator floating over the scene), then use hotspots.

Static Hotspots

The most basic hotspot is a static hotspot: one that remains in one place, no matter how your customer moves about the scene.

Let's create a static hotspot to place a logo in the corner of the scene.

In the scene editor, click on the rules tab. This is where you define all the parts of the scene which are not in 3D, like rules, hotspots, and such. Create a new hotspot by selecting the hotspots folder, and clicking the plus sign.

Hotspots have many properties, organized into these expanders. The documentation explains each of these properties in detail, so we'll focus on just the properties we need for a static hotspot.

First, define the hotspot itself.

Give it a name. Since we want the logo always shown, set it to visible... open... and impossible to close. Next, the Target section describes how our hotspot would move to follow a target mesh in the scene. But movement is not what we want for our static hotspot, so uncheck "add target".

The Source section specifies what 2D information is shown within the hotspot. Here, we want an image from the media folder as our source. Click the camera icon to select a media element.

The Tooltip is a subtle invitation for the user to click the hotspot when their mouse gets close to it. Our logo hotspot is not interactive, so no tooltip is needed.

Finally, in the Popup section, we define the position and size of the hotspot. The popup should be manually positioned, because we didn't specify a target. Since we chose a manual position, new choices appear. Note that most are set to "auto". Therefore, we need to set only the parameters we want to control, and the rest will set themselves. Here, we want our logo in the lower-left corner. So, we make only two changes: set both "popup bottom" and "popup left" to twenty-five px. This means twenty-five pixels from the bottom and left edges. Spelling is important here: no spaces should be used.

We also want to be sure the logo is sized correctly. Set either the width or the height, but not both. Let the scene handle that other dimension automatically. Here, we will set the width of our logo to 5%, or five percent of the overall width of the viewer. Run the scene: you'll see the logo image appear in the hotspot, positioned and sized as you defined. Note that since we used a .png image file with transparency in our hotspot, the scene shows through the transparent parts of the image.

Dynamic Hotspots

You can create a dynamic hotspot, which will always follow a target in the 3D scene. This is a useful technique to let your customer adjust part of the configurator, without leaving the scene.

If you want a dynamic hotspot, you have two choices for the 3D target. One choice is to have the hotspot use a mesh as the target. This technique is fine for small meshes, but doesn't give you much control over the position on larger meshes. Another choice is to have the hotspot use a connector as the target. Connectors are invisible, precise points in space you can add to any mesh. A hotspot using a connector as its target can be positioned accurately.

In our example, we want to have a hotspot to adjust the size of the window. For the precise control we want, a connector is the ideal target.

First create the connector, and then build a hotspot to use it. To create a connector, select the mesh you would like to call attention to. Here, we want to adjust the size of the window. So we select the window mesh. In the properties column of that mesh, look for the connectors section. Open it, and create a new connector on this mesh.

You'll see a new yellow and blue sphere appear in the middle of the mesh. This is the new connector. The yellow and blue colors on the connector, and the arrow pointing out of it, are useful for other purposes, described in the documentation. For our purposes, the connector is just a point in space that our hotspot will follow.

Name the connector, so it's easy to adjust in the future with Snap.

Use one of the gizmo buttons in the connector properties to position the connector where you like. You can use the move gizmo to move it anywhere in the scene, or let the scene do the work! Use the select gizmo to position it perfectly on any surface of the mesh. Just click the select button, click the part of the mesh where you want the connector to be, and click "done".

Sometimes the connectors in a scene can be too small to see. Or too big to position easily. Use the connectors button in the menubar to change the display size of the connectors while you work, so they are easy to locate. Don't worry: this size is just for you, the scene designer. When you run the scene, connectors are invisible.

We have created our connector. Let's use it as a target for our hotspot!

Click the Rules tab, and create a new hotspot by selecting the hotspots folder, and clicking the plus sign. Give this hotspot a name. We want this hotspot hidden at first, but available for the user to open and close when they want it.

So, make the hotspot visible... not open at first... and allow the user to close it.

In the Target section, Ensure "add target" is selected, so you can choose the target node. Select the name of the connector you just created as that target node. You can see the target shape, size, and color options. For now, we will simply accept the defaults of a small blue circle.

The Source section defines what appears within the hotspot. We want a part of our configurator UI to appear here, so we will select a configurator element: the "winWidth" field. You can include any element from your configurator's UI within a hotspot.

In the tooltip section, ensure "show tooltip" is selected. Without this subtle visual clue, your customer may not even know this closed tooltip is there to open it.

In the popup section, you can specify how the 2D hotspot follows the 3D target. Here, we will accept the defaults. Specifics about those popup options, along with other features of hotspots like animations, are described in the documentation.

Save and run the scene: you'll see a small blue circle positioned at the connector. Bring your mouse closer to the blue circle without clicking: you'll see a thin tooltip appear. Click the tooltip: you'll see the hotspot open, and the source configurator element appear. In this case, it's the field to select the size of the window.

Interact with the configurator element. It behaves exactly as though it were on the configurator page. If you change a field value, as we are here, the rule cycle runs and the scene updates as part of the rule cycle. Our window mesh in the scene changes size, to match the width we selected in the configurator.

Click anywhere outside the hotspot to release it.

Modifying your Hotspots in Realtime with Snap

Hotspots are a big help to your customer. Remember you can easily control them with Snap.

For example, let's say your configurator has some hotspots to control various components. There are targets, like the small blue circle, which show you user where those hidden hotspots are.

What if there are lots of targets, and you want to let your user turn them all on (to edit the product), or turn them all off to get a better look without distractions?

Snap can help you. Remember, the properties of a hotspot are set at design time, but Snap can adjust them during run time. To show or hide hotspots, we want to turn the "visible" property on or off.

First, create a scene rule that sets the visibility of all hotspots to that value.

Now your user can turn the hotspots on or off as they like.

Here, we used Snap to adjust the “visible” property of hotspots. We can just as easily change other properties, such as the source of the hotspot, the target it follows, or the color or shape of the visible marker your customer sees.

Recap

You discovered how to show both 2D information and 3D objects at the same time, using hotspots. You built a static hotspot that doesn’t move, and a dynamic hotspot that follows a general mesh or a specific connector in the scene. You sourced your hotspots with both simple information, like an image, or complex interactive information, like a configurator field. And you changed the hotspot while the scene is running by using Snap rules.

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