



Introduction to JanusVR Lesson 3

HOW TO ADD AN IMAGE TO A ROOM



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This instructional guide is designed to teach some of the fundamental skills needed to create virtual reality spaces using JanusVR.

This third lesson explains how to display an image, and builds on the room made in previous two lessons

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1. Defining the Asset name and location

To add assets to a 'Room', a name attribute (id=" ") and a location attribute (src=" ") need to be specified in the 'Assets' section.

'Assets' includes content such as text, images, 3d models, videos etc.

In this example we have specified an image as the 'Asset', set the 'id' for our image as 'hello_world', and the 'src' as the URL for an image hosted on Imgur.

```
<html>
<head>
<title>Hello World!</title>
</head>
<body>
<FireBoxRoom>
<Assets>
<AssetImage id="hello_world" src="http://i.imgur.com/yLxgtkE.png" />
</Assets>
<Room use_local_asset="room_plane">
<Text pos="0 2 4" xdir="-1 0 0" ydir="0 1 0" zdir="0 0 -1" col="red" scale="2 2 2"
>Hello World!</Text>
</Room>
</FireBoxRoom>
</body>
</html>
```

That is all the assets we need to specify for this example, now we can place the image in the 'Room'.

2. Adding the Object to the Room

The 'Room' tag is where we define the position, size, orientation etc. of the 'Assets' defined in the previous section.

The name of the asset (as specified in the previous section) that we are adding to the virtual space is 'hello_world' (Id=" ")

The position of the image in the room (pos=" ") is 8 metres forward from the centre of the room (which is the default entrance position), and 1.5 metre above the ground.

The orientation of the image (xdir, ydir and zdir) is rotated 180 on the y-axis so the image faces you when you first enter the room.

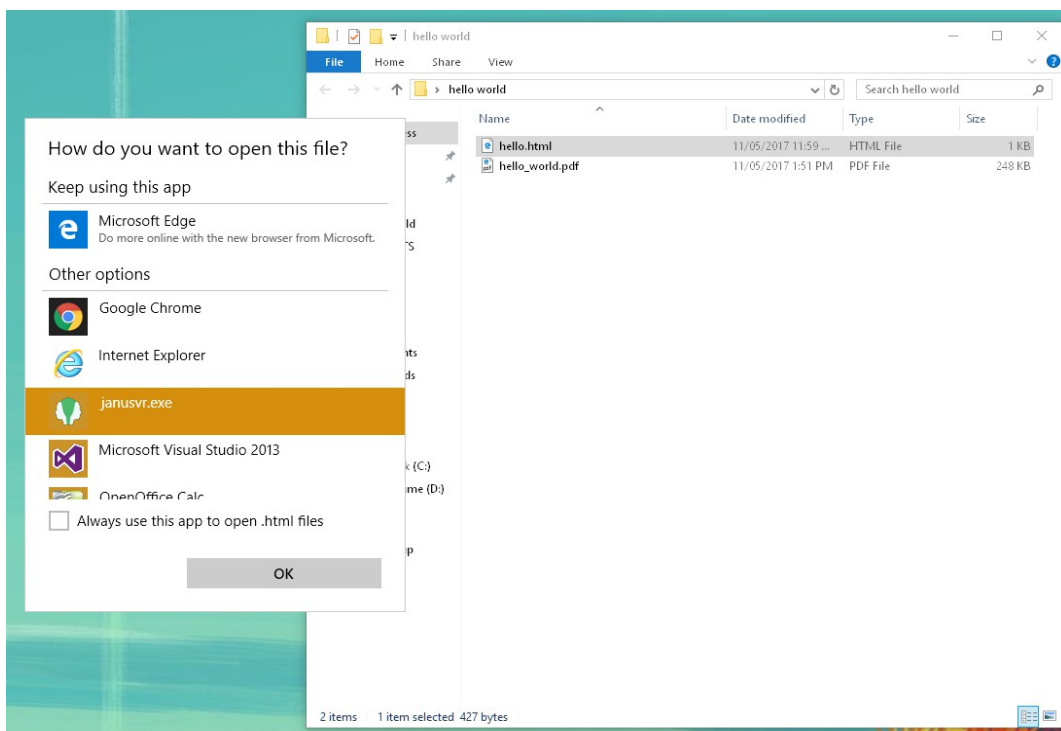
```
<html>
<head>
<title>Hello World!</title>
</head>
<body>
<FireBoxRoom>
<Assets>
<AssetImage id="hello_world" src="http://i.imgur.com/yLxgtkE.png" />
</Assets>
<Room use_local_asset="room_plane" >
<Text pos="0 2 4" xdir="-1 0 0" ydir="0 1 0" zdir="0 0 -1" col="red" scale="2 2 2"
>Hello World!</Text>
<Image id="hello_world" pos="0 1.5 8" xdir="-1 0 0" ydir="0 1 0" zdir="0 0 -1" />
</Room>
</FireBoxRoom>
</body>
</html>
```

3. Viewing your Room

Save the file on your local drive as a .html.

There are 2 ways to see the room you have just made:

- i. Right click on the file and select 'open with' (Windows), select 'Choose another app' – scroll down and find JanusVR.
- ii. Start JanusVR and press 'Tab' – type or copy/paste the local file path for the .html file (c:\helloworld\hello.html for example). To paste a link in JanusVR desktop mode press 'Tab', click on input box and press Control-V



You now know how to display an image in a JanusVR room.

The next section has some exercises to help you get more familiar with displaying an image, and a list of all the options for loading and displaying images. Have fun!

Exercises:

Change the src="" to see different images displayed in room, try an animated .gif or a 3D image!

Swap:

```
<AssetImage id="hello_world" src="http://i.imgur.com/yLxgtkE.png" />
```

To:

```
<AssetImage id="hello_world" src="http://www.gifbin.com/bin/20052777.gif" />
```

Or an over/under 3d image:

```
<AssetImage id="hello_world"  
src="https://i.ytimg.com/vi/dRiLoajFaoQ/maxresdefault.jpg" ou3d="true" />
```

Change the size of the image by adding the scale="" attribute , if no size is specified the default scale is "1 1 1"

Original:

```
Image id="hello_world" pos="0 1.5 8" xdir="-1 0 0" ydir="0 1 0" zdir="0 0 -1" />
```

Add:

```
Image id="hello_world" scale="2 3 2" pos="0 1.5 8" xdir="-1 0 0" ydir="0 1 0"  
zdir="0 0 -1" />
```

Defining Images as an Asset

Supported formats include PNG, JPG and GIF and many others. Images with a transparency layer (such as with the PNG format) are also supported.

The list of attributes are:

- **id** - id of the AssetImage
- **src** - location of the image file
- **sbs3d** (default "false") - when set to true, the image is treated as a SBS (side-by-side) formatted image. By default, the left eye will see the content on the left and the right eye the content on the right. Set the reverse3d attribute to true if you want to flip which side goes to each eye.
- **ou3d** (default "false") - when set to true, the image is treated as an UO (under-over) format video. By default, the left eye will see the content on the top and the right eye the content on the bottom. Set the reverse3d attribute to true if you want to flip which side goes to each eye.
- **reverse3d** (default "false") - flips which half of the image is shown to each eye, when either sbs3d or ou3d are set to true.
- **tex_clamp** (default "false") - whether to perform texture clamping (GL_CLAMP_TO_EDGE), or allow textures to repeat (GL_REPEAT)
- **tex_linear** (default "true") - if true, textures have bilinear filtering applied (GL_LINEAR). If false, a nearest sampling method (GL_NEAREST) is used which gives textures a pixellated look
- **tex_compress** (default "false") - if true, uses hardware-supported texture compression on the image texture (GL_COMPRESSED_RGBA).

<http://www.janusvr.com/guide/markuplanguage/index.html#assetimage>

Displaying an image in a Room

An Image is represented in 3D as a rectangular shape with thickness 1/10 of the maximum width or height. The appearance is much like art done on canvas wrapped around a wooden frame.

The dimensions are such that the aspect ratio of the image is preserved. Transparent images are supported and can be used to interesting effect.

The list of attributes are:

- **id** - set to the id of an AssetImage
- **pos** (default "0 0 0") - specify the position (anchor point is centered horizontally and vertically)
- **fwd** (default "0 0 1") - specify the orientation (or use xdir, ydir, zdir, defaults "1 0 0", "0 1 0", "0 0 1")
- **col** (default "#ffffff") - specify the colour (the attribute can be formatted as "R G B" where $0 \leq R, G, B \leq 1$, #RRGGBB where RR,GG,BB are hexadecimal values between 0 and 255, and SVG colour names e.g. "purple", "forestgreen")
- **scale** (default "1 1 1") - scale the object along each of its x (horizontal), y (vertical) and z (forward) axes
- **locked** (default "false") - if "true", prevents modification of attributes
- **lighting** (default "true") - if "true", uses the default shading which includes diffuse and specular components

<http://www.janusvr.com/guide/markuplanguage/index.html#image>