


# Image File Formats

## File Format Options


The following file formats are supported for saving rendered images and depth maps.

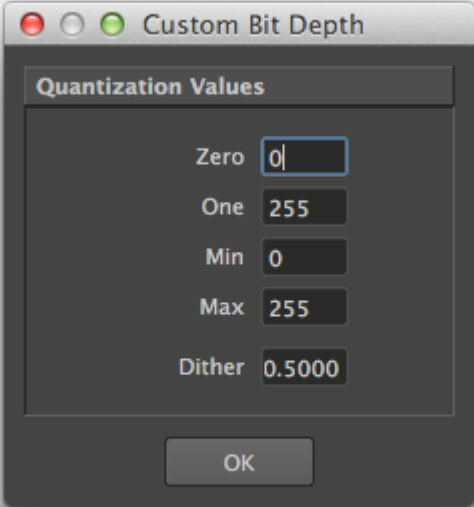
Name	Extension	Description	Bit Depth	Multi-Layer Support
TIFF	.tif	TIFF format.	8-bit integer 16-bit integer 32-bit float	Yes (Layers can have different data types.)
OpenEXR	.exr	The Open EXR format. OpenEXR is a high dynamic-range (HDR) image file format developed by Industrial Light & Magic.	16-bit float 32-bit float	Yes
OpenEXR (deep) *	.exr	The Open EXR "deep" image format (introduced in Open EXR 2.0). Each pixel can contain multiple values at different depths.	16-bit float 32-bit float	Yes
JPEG	.jpg	JPEG format.	8-bit integer	No
IFF	.iff	Interchange file format. Note that only RGB or RGBA images are supported.	8-bit integer	No
ZFile	.z	Depth map file. To produce this kind of file, the AOV should be set to 'z'.	32-bit float	No
BMP	.bmp	The BMP file format, also known as "bitmap image file".	8-bit integer	No
Encapsulated PostScript	.eps	Encapsulated PostScript format.	8-bit integer	No
PhotoShop Document	.psd	Adobe PhotoShop image format.	8-bit integer	No
Radiance	.rad	Radiance format.	32-bit float	No
null	--	Doesn't output any data.	--	N/A
Mipmap TIFF	.tdl	Mipmap TIFF, suitable to be used as a texture map without the need of converting it with tdlmake.	8-bit integer 16-bit integer 32-bit float	No
Softimage PIC	.pic	Softimage's PIC format.	8-bit integer	No
PNG	.png	PNG format.	8-bit integer 16-bit integer	No
Shadow Maps Formats				
Shadow Map	.shw	Depth map in TIFF format. AOV has to be set to 'z'.	32-bit float	--
Deep Shadow Map *	.dsm	Deep Shadow Map. AOV should be set to "rgba".	32-bit float	--

 For the format names marked with a \*, the filtering specified in the [Quality: Sampling](#) group of rendering attributes is ignored. Instead, a 'box' pixel filter with a width of 1 x 1 is used.

## Bit Depth Options

The bit depth option menu next to the Image Format attributes specifies how many bits to use per layer component. The available bit depths varies depending of the file format selected (i.e. TIFF, EXR, etc...).

 Some image formats have specific requirements as to what bit depths are supported. Refer to [Image File Formats](#).

Option	Description
8 bit integer	The image will use 8 bits integer values for each component, with values ranging between 0 (black) and 255 (white). This corresponds to a quantization of 0, 255, 0, 255 for zero, one, min and max, respectively, and a dither value of 0.5. This is the default value.
16 bit integer	The image will use 16 bits integer values for each component, with values ranging between 0 (black) and 65535 (white). This corresponds to a quantization of 0, 65535, 0, 65535 for zero, one, min and max, respectively, and a dither value of 0.5.
16 bit float	The image will use 16 bits float values for each component. Currently, only the 'exr' driver supports this format. This corresponds to a quantization of 0, 0, 0, 0, and a dither value of 0 (identical to '32 bit float'); the display driver receives a pixel type specification through an option.
32 bit float	The image will use 32 bits float values for each component. This corresponds to a quantization of 0, 0, 0, 0, and a dither value of 0.
Custom...	<div>A screenshot of a 'Custom Bit Depth' dialog box. It has a title bar with standard window controls and the text 'Custom Bit Depth'. Inside, there's a section titled 'Quantization Values'. Below this, there are five rows, each with a label and a text input field: 'Zero' with '0', 'One' with '255', 'Min' with '0', 'Max' with '255', and 'Dither' with '0.5000'. At the bottom is an 'OK' button.</div> <p>All images are rendered internally in 32-bits float format. Quantization is the process of assigning integer values to these floating-point values. Some usual preset values are available in the Bit Depth attribute. If they do not include the needed variation, it is possible to specify custom quantization values by selecting this menu entry. Upon selection, a dialog pops up, displaying the current bit depth settings. It allows specification of values for <i>Zero</i>, <i>One</i>, <i>Min</i>, <i>Max</i> and <i>Dither</i> amplitude. <i>Zero</i> is the black point, while <i>One</i> is the white point. These two values can be different from the <i>Min</i> and <i>Max</i> values if you need to have under-exposed or over-exposed values. An example set of values for 12 bits output with standard dithering would be: 0, 4095, 0, 4095, 0.5 An example set of values for 16 bits output with a white point at 4K that prevents over-exposed pixels from being clamped to the white value, would be: 0, 4095, 0, 65535, 0.5</p>
Other Custom entries	The option menu will also list all custom bit depths defined for all of the current image layers.