

NAME

`rt pict` - generate a RADIANCE picture, hyperspectral image, or layers using `rtrace`

SYNOPSIS

```
rt pict -n nproc [ -co ][ -o[vrxlLRXnNsmM] out_dir ][ -d ref_depth/unit ] [ rpict options ] [ @file ]
octree
```

DESCRIPTION

Rtpict is a script that generates a picture or hyperspectral image from the RADIANCE scene given in *octree* and sends it to the standard output, or to a file specified with the `-o` option. Most options and defaults are the same as *rpict(1)*, although a few options are silently ignored, and the *rtrace(1)* `-co` boolean switch is supported. Options incompatible with multi-processing may generate an error.

The *rtrace* tool is called with *vwrays(1)* to perform the actual work. This enables the `-n` option for multi-processing on platforms that support it. If the `-n` option is not specified or is set to 1, then *rpict* is called directly. There is no benefit in setting the number of processes to anything greater than the number of virtual cores available on your machine. Also, it is very important to set the `-af` option if an irradiance cache is being generated; otherwise, your speed-up will be far from linear.

If the `-o` option has additional characters corresponding to output types from *rtrace*, it must be followed by the name of a directory that either exists or will be created to contain image layers, one per output type. The supported types are listed below, and do not include types that are useless or have no convenient representation. The table below shows the correspondence between output type and file name in the specified directory:

v	radiance.hdr
r	r_refl.hdr
x	r_unrefl.hdr
l	d_effective.dpt
L	d_firstsurf.dpt
R	d_refl.dpt
X	d_unrefl.dpt
n	perturbed.nrm
N	unperturbed.nrm
s	surface.idx
m	modifier.idx
M	material.idx

Different encodings are associated with different data types. Color data (from the 'v', 'r', and 'x' types) will be converted to a flat RGBE picture by *pvalue(1)*, unless the `-co+` option is specified and `-cs` is greater than 3. In this case, a hyperspectral image will be generated for each of the value types, converted by *rcomb(1)* and with its suffix set to ".hsr" rather than ".hdr". Distances (from the 'l', 'L', 'R', and 'X' types) will be converted to a 16-bit representation by *rdepth(1)*, and the `-d` option should be used to assign the reference (median) depth and world units, which applies to the overall scene. Surface normals (from the 'n' and 'N' types) will be converted to a 32-bit representation by *rnorm(1)*. Finally, identifiers (from the 's', 'm', and 'M' types) will be converted to a 16-bit index format by *rident(1)*.

If the `-i` option is used to turn on irradiance output, then the picture associated with the 'v' type will be renamed *irradiance.hdr* or *irradiance.hsr* and some other output types become irrelevant (i.e., 'r', 'x', 'R', and 'X'). If one or more of the associated output files already exists in the destination directory, an error will be printed and the command will abort.

EXAMPLES

To render a scene with four processes:

```
rt pict -n 4 -vf mypers.vf -ab 1 -af scene.amb scene.oct > scene_pers.hdr
```

To render radiance, first surface distance, and normals in a layered image:

```
rtpict -n 8 -vf fish.vf @render.opt -ovLn fisholay scene.oct
```

To render a hyperspectral irradiance image with 18 spectral samples:

```
rtpict -vf inside.vf -i+ -cs 18 -co+ scene.oct > scene_inside.hsr
```

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SEE ALSO

getinfo(1), mkpmap(1), oconv(1), pfilt(1), pvalue(1), rad(1), rcode_depth(1), rcode_norm(1), rcode_ident(1), rcomb(1), rcrop(1), rmtxop(1), rpiece(1), rpict(1), rsplit(1), rtrace(1), rvu(1), rxpiece(1), vwrays(1)