

OpenEXR CLI Tools

This document accompanies the pre-built OpenEXR CLI (Command Line Interface) tools provided as a convenience by fnord software. They are utilities written by Industrial Light and Magic and included in the open source OpenEXR library. Nothing in the package is fnord intellectual property. If you would like to get the source code and build the tools yourself, visit OpenEXR.com. For more legal disclaimers, see the end of this document.

Some ILM documentation for **exrdisplay** and **playexr** can be found [here](#) and [here](#). Sample EXR files can be found on the OpenEXR [downloads](#) page.

The Tools

Image display tools:

exrdisplay	View a single EXR file on screen. Includes a myriad of options for displaying different aspects of the file and controls for adjusting exposure and other viewing parameters. Also a good demonstration of certain EXR features such as colorimetry and display window. If you suspect a program is not displaying a file correctly, compare it with this.
playexr	Play an EXR file sequence in real time, if possible. Includes some keyboard playback controls and the ability to adjust exposure in hardware as the image plays.

Other tools:

exr2aces	Conforms a regular EXR to the Academy Image Interchange Framework , which is an EXR file with more restricted parameters.
exrenvmap	Converts environment maps between six cube faces and a single latitude-longitude map.
exrheader	Prints the attributes stored in an EXR file's header. Every EXR has a list of channels, file dimensions, file compression, etc. But they can also contain any number of optional attributes from color space information to informative text descriptions to camera matrix transforms.
exrmakepreview	EXRs can include a small preview image for applications to quickly display the image contents. This utility will add one, although I'm not sure if any applications actually read them outside of ILM.
exrmake tiled	Most EXR files are organized as single array of scanlines, but they can also be arranged into a series of tiles. Tiled images can also include multiple resolutions. These features can save certain programs (particularly 3D renderers) from loading the entire image when perhaps they only need to use part of it to texture a far-off polygon. Anyway, this tool can create a tiled image from a scanline one.
exrmultiview	Takes a stereo pair of EXR images and merges them into a single image following the EXR stereo specification.
exrstdattr	Add or edit standard EXR attributes.

Installation

These are all command-line tools, so they are usually run by typing their name in a command shell (Terminal on Mac, Command Prompt on Windows) followed by an EXR file as an argument. You can put them anywhere you want on your system, but you might want to put them somewhere the shell will always see them, like `/usr/local/bin` on a Mac. Or you can configure your shell to see another path you want to leave them in. Details on how to do so are *well* beyond the scope of this document.

Most of the utilities included will stand on their own, not requiring any external DLLs or Frameworks to run. The exception is **playexr**, which relies on nVidia's **Cg Runtime Libraries**, also included in the archive. On Windows, the DLLs can be left in the same directory as `playexr`, or you can move them to a system-wide DLL directory. On Mac OS X, it's probably easiest to copy `Cg.framework` to `/Library/Frameworks`.

Documentation

All these tools must be run from a command-line. Double-clicking them won't do anything useful. Here are some sample command lines:

```
exrdisplay Desktop/explosion.exr
```

```
playexr Desktop/animation/car.%.exr 1 100
```

```
exrmaketiled -t 8 8 Desktop/scanline.exr Desktop/tiles.exr
```

One thing I'll point out right now is that `playexr` unfortunately doesn't work with sequences that have leading zeroes. So you need a sequence of `car.1.exr`, `car.2.exr`, not `car.0001.exr`, `car.0002.exr`, etc.

To get full documentation for each utility, run it without passing any arguments to it.

Nerd Info

The programmers in the audience may notice that these very small utilities are actually quite large because they each contain the entire OpenEXR library. Static linking in programmer parlance. This lets them run without any dependence on DLLs or Frameworks being properly installed (except for playexr, which relies on nVidia libraries that are only available as DLLs). This is how I personally prefer things. If you prefer to use DLLs I encourage you to download the source and build them that way yourself.

Credits

Let's give a shout out to the authors, shall we?

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