

# Advice on video libraries

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Hi,

I'm looking for some advice on video libraries. I'm in the process of writing a Linux library for a colleague of mine. This library is intended to run specialized cognitive psychology experiments, which involve the presentation of visual stimuli and the collection of responses via specialized input hardware. Part of what the library must do is to handle the video display, and the main requirement on that score is timing precision. I must be able to prepare a display (which could be pre-generated and stored as a TIFF or other graphics file) and switch the video display over to it instantly — or as near to instantly as the video hardware allows, meaning switching at the point of the vertical blank in the video display cycle. I must also know when that vertical blank occurs so as to be able to start a timer to get precise human reaction time data. In all of this, the order of precision is on the millisecond level, which is pretty sloppy by the standards of some sorts of data collection and industrial tools, but far more precise than I could get with, say, a C++ "cout" or C "printf()".

Anyhow, I'm considering four libraries, at least three of which seem, upon initial investigation, to support the necessary vertical blank timing interfaces:

- SVGAlib
- DirectFB
- SDL
- OpenGL

OpenGL is definitely overkill, but I know of at least one other psychological experiment-running program that uses it, so I'm pretty sure it's got the features I'd need. The SVGAlib and DirectFB documentation both mention the necessary vertical blank synchronization routines, but I don't know in practice if they'd work properly for my needs. I've just started looking at SDL on the advice of a friend of mine, but I don't yet know if it's even got the necessary vertical blank synchronization.

I don't need anything that's very fancy in terms of, say, 3D graphics or dynamic displays. Simply presenting a static image is fine. Ideally, I'd like to be able to support a wide variety of graphics modes and have a

## Advice on video libraries

good selection of video cards that are compatible. Simplicity of coding from C++ is desirable.

So, any suggestions on what might work well for me?

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