

The logo features the letters 'SDL' in a large, bold, blue serif font. The letters are set against a dark blue background with a glowing, circular, ripple-like pattern. A horizontal blue line is positioned below the letters.

SDL

Simple DirectMedia Layer

SDL ??? What's that ?

- Cross-platform multimedia development library for games (thats what we talk about), demos, MPEG players.... anything multimedia you can think of.
- SDL is available on Linux (obviously), several Unices, Windows, BeOS, MacOS X
- SDL is written in C, but works with C++ natively, and has bindings to several other languages, including Ada, Eiffel, Java, Lua, ML, Perl, PHP, Pike, Python, and Ruby. Phew !

Who uses it

- Well, who doesn't?
- Just about every game
- Tuxracer, Chromium, glTron
- All the Loki games (Civilization: Call To Power, HOMM3, Myth II, SMAC, SoF, Tribes)
- Insert your favourite game here (and it better not be Adventure)

Why SDL

- It's very light-weight, simple, and has a clean API
- It's portable to several Oses
- Its simple.

Initialization

- Basic initialization is done by `SDL_Init()`
- Takes as argument the subsystems to initialize like
 - `SDL_Init(SDL_INIT_AUDIO | SDL_INIT_VIDEO);`
 - `SDL_Init(SDL_INIT_EVERYTHING)`
- Returns a flag indicating success of the operations
- Subsystem initialization can also be done by `SDL_InitSubsystem()`

Init Stuff

```
/* These are the flags which may be passed to SDL_Init()  
-- you should  
specify the subsystems which you will be using in your  
application.
```

```
*/
```

```
#define SDL_INIT_TIMER 0x00000001
```

```
#define SDL_INIT_AUDIO 0x00000010
```

```
#define SDL_INIT_VIDEO 0x00000020
```

```
#define SDL_INIT_CDROM 0x00000100
```

```
#define SDL_INIT_JOYSTICK 0x00000200
```

```
#define SDL_INIT_NOPARACHUTE 0x00100000 /* Don't catch  
fatal signals */
```

```
#define SDL_INIT_EVENTTHREAD 0x01000000 /* Not supported  
on all OS's */
```

```
#define SDL_INIT EVERYTHING 0x0000FFFF
```

Video

- After init, set the video mode like:
- `SDL_SetVideoMode(640, 480, 16, some_flags)`
- This sets a video mode of 640x480, 16 bpp
- The flags allow you to set various parameters like hardware acceleration, double-buffering, fullscreen and OpenGL modes, etc.
- Returns a pointer to an `SDL_Surface` structure, to which you can blit other surfaces

Blitting

- Blitting, or copying of surfaces to other surfaces is done using `SDL_BlitSurface()`
- You can select what part of the source you want to blit, and in which part of the destination you want it
- This is an important efficiency consideration, as blitting is expensive

Input handling

- SDL events can be polled or waited for using `SDL_PollEvent`, or `SDL_WaitEvent`
- Returns an `SDL_Event` structure with details filled in for the event
 - Keyboard
 - Mouse
 - Joystick
 - WM events

Libraries

- On its own SDL is just a simple graphics lib.
- For different purposes, we have different libs .. as extensions of SDL :
 - SDL_image
 - SDL_ttf
 - SDL_mixer
 - SDL_net
 - SMPEG

SDL_image

- SDL only has support for BMP.
- Use this to load other image format - JPG / GIF / PNG / TIFF ...

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SDL_ttf

- This library is a wrapper around the FreeType 1.2 library
- TrueType fonts (using freetype) can be loaded into SDL_Surfaces using SDL_ttf
- TTF_OpenFont(font_file, font_size);
- TTF_SizeText(font, text, width, height);
- TTF_RenderText_* functions
- Return SDL_Surface of rendered text
- * = Solid/Shaded/Blended

SDL_ttf ...

```
if(TTF_Init() < 0)
{
cerr<<"Unable to init TTF";
cerr<<SDL_GetError()<<endl;
SDL_Quit();
exit(2);
}

_font = TTF_OpenFont("arialbd.ttf",_fontSize);
if(_font == NULL)
{
cerr<<"Could not load font "<<endl;
exit(2);
}

TTF_SetFontStyle(_font,TTF_STYLE_NORMAL);
```

SDL_mixer

- No sound - no game
- SDL_mixer supports playing music and sound samples from the following formats:
 - WAVE/RIFF (.wav)
 - AIFF (.aiff)
 - VOC (.voc)
 - MOD (.mod .xm .s3m .669 .it .med and more) using included mikmod
 - MIDI (.mid) using timidity or native midi hardware
 - OggVorbis (.ogg) requiring ogg/vorbis libraries on system
 - MP3 (.mp3) requiring SMPEG library on system
 - also any command-line player, which is not mixed by SDL_mixer...

SDL_net

- You Wanna play againt me ????
- Provides APIs for Networked play

SMPEG

- Where is my ingame movie sequence ????

