

# **dyncall** and **dynports**



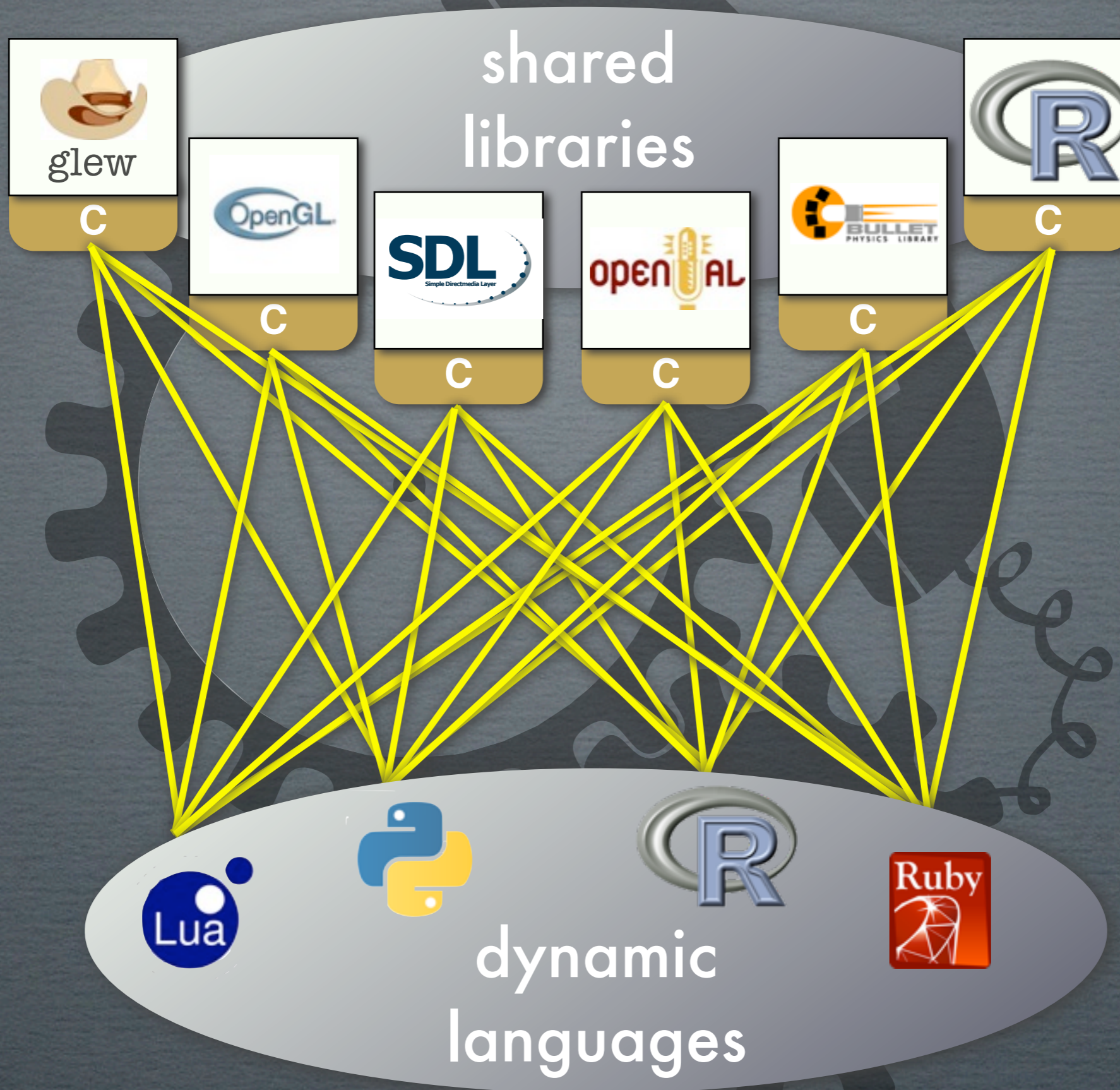
*Dynamic binding of  
shared libraries  
- multiplatform!*

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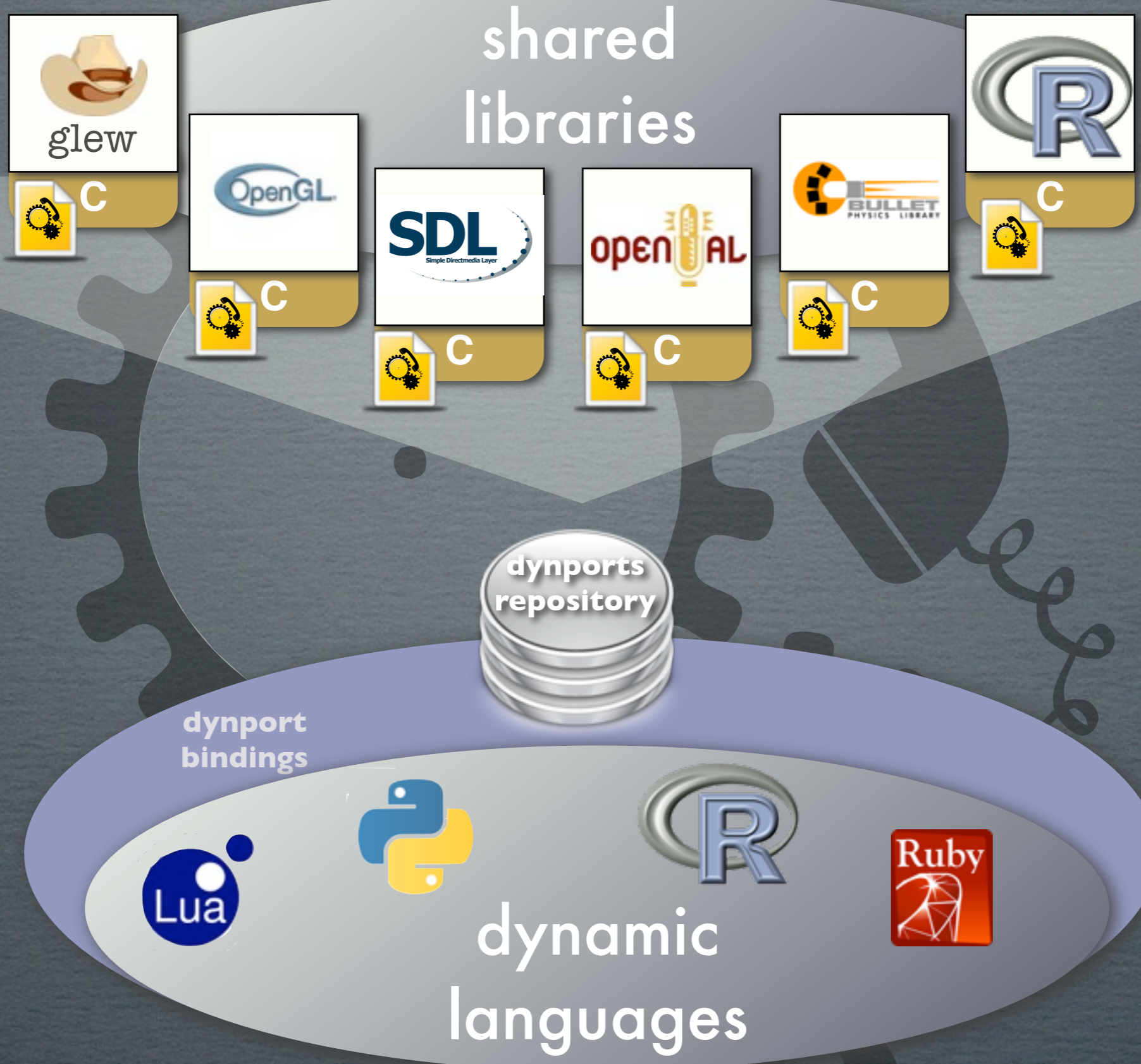
26C3 - Here be Dragons, Lightning Talks, Berlin, Germany.



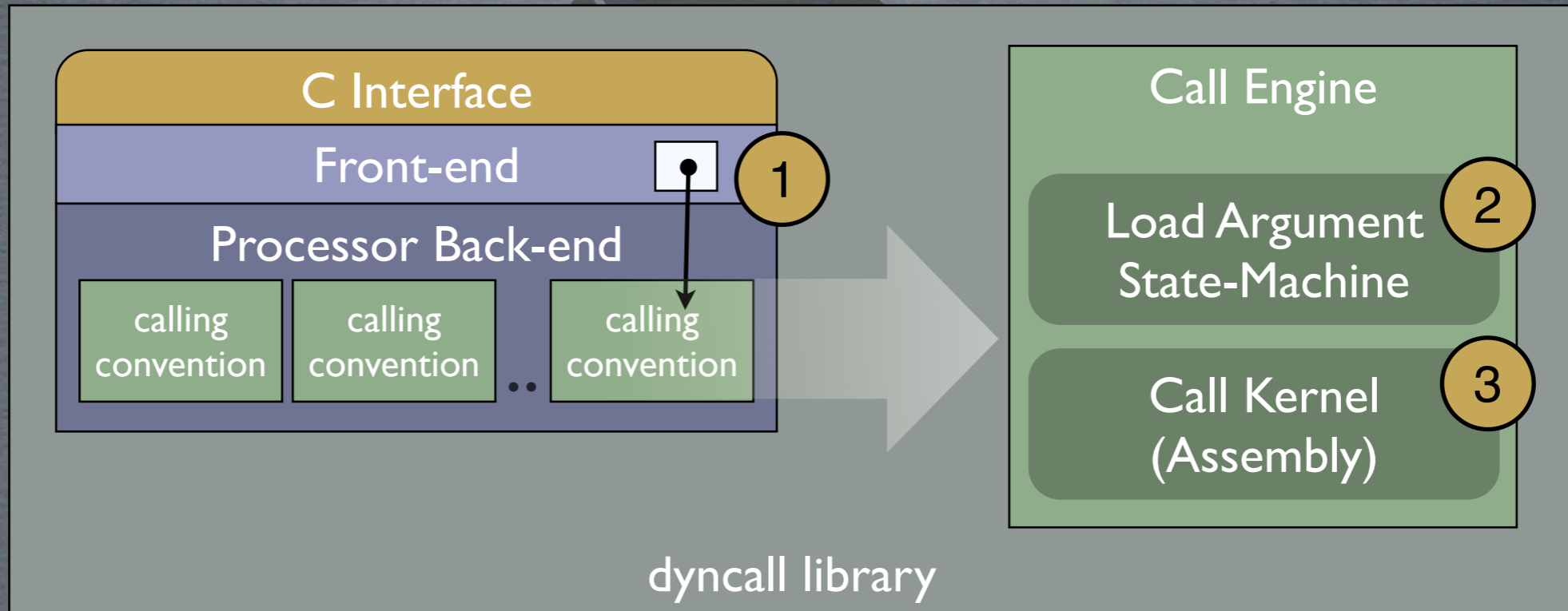
# binding shared libs with dynamic languages



# dynport concept



# dyncall library



# dynamic language dyncall interface

Example  
SDL Call:

```
SDL_Surface* SDL_SetVideoMode(int w, int h, int bpp, uint flags);
```

R & dyncall

```
ptr <- .dyncall(funaddr, "iiiI)p", 640L, 480L, 32L, 0L)
```

call signature  
(left-to-right order)

*argument types.. ' )' return type*

C type  
signatures

C Type	Signature Character
void	'v'
char, short, int, long, long long	'c', 's', 'i', 'j', 'l'
unsigned <i>integers (capitalized)</i>	'C', 'S', 'I', 'J', 'L'
float, double	'f', 'd'
<i>T*</i> (any C pointer)	'p' or '*' ...
const char* (C String)	'Z'
bool (c++), <code>_Bool_t</code>	'B'
struct/union C pointers	'* <' <i>typename</i> '>'

# dynports: binding whole shared libs



dynport tools

boost::wave

gccxml and xslt



Consts

```
SDL_KEYDOWN=2
SDL_KEYUP=3
SDL_GL_DEPTH_SIZE=6
SDL_GL_DOUBLEBUFFER=5
SDL_INIT_VIDEO=0x00000020
SDL_DOUBLEBUF=0x40000000
```

Calls

```
SDL_AllocRW()*<SDL_RWops>;
SDL_AudioInit(*c)i;
SDL_CDStop(*<SDL_CD>)i;
SDL_CondBroadcast(*<SDL_cond>)i;
SDL_CreateRGBSurface(IiiiiIIII)*<SDL_Surface>;
SDL_CreateRGBSurfaceFrom(*viiiiIIII)*<SDL_Surface>;
SDL_SetVideoMode(iiiI)*<SDL_Surface>;
SDL_PollEvent(*<SDL_Event>)i;
```

Structs

```
SDL_Rect{ssSS}x y w h ;
SDL_version{CCC}major minor patch ;
SDL_JoyBallEvent{CCCss}type which ball xrel yrel ;
SDL_JoyAxisEvent{CCCs}type which axis value ;
SDL_MouseButtonEvent{CCCCSS}type which button state x y ;
SDL_ActiveEvent{CCC}type gain state ;
```

**dyncall** library and bindings  
available open-source (BSD style)  
for **dynport** prototype see R bindings



## **Contact Information**

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<http://dyncall.org>