

Extending PHP

How to mount a rocket launcher
on the back of an elephant.

Hi!

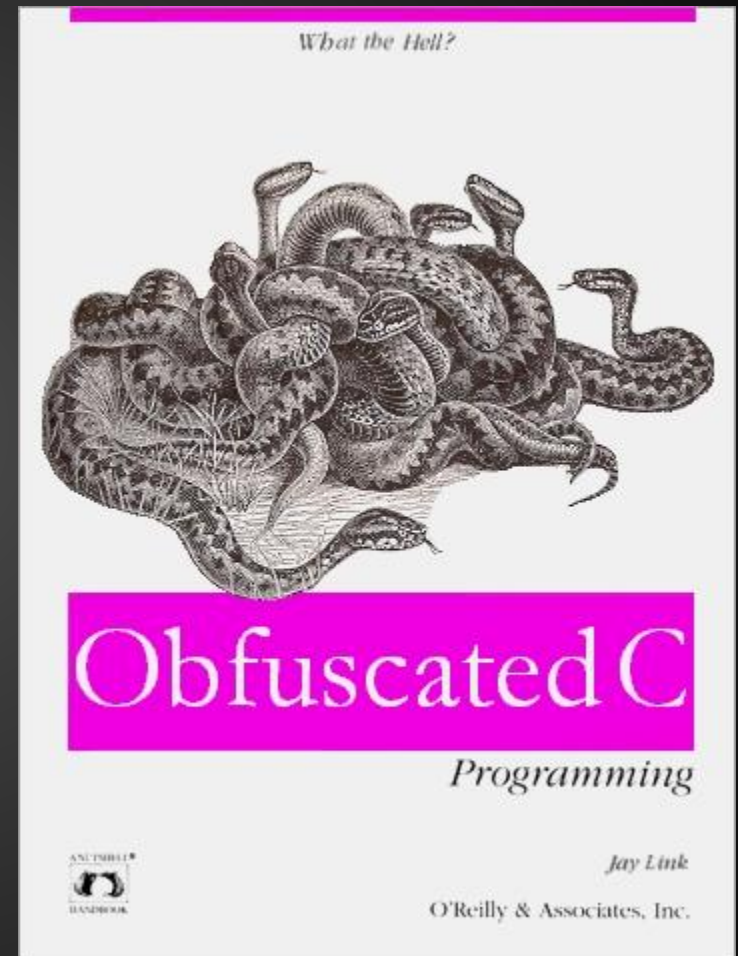
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Extending PHP

Why should I care?

- faster
- easier
 - every problem is already solved
 - that solution has a C-binding
- you get to write in a sane language for a change



Extending PHP

Why should I run away screaming?

- The API is weird
- The setup is weird
- The documentation is bad

- No-one will be able to run your code



Extending PHP

Why should I run away screaming?

- C
 - segfaults,
vulnerabilities,
resource leakage, ...
- though it's not like
we're writing
network code here
- oh wait, we are



Initial Setup

- `config.m4`
 - google keywords: *M4, GNU autotools, autoconf*
- `your-file.c, your-file.h, ...`
 - google: *Zend Engine, zval*
- `phpize`
 - comes with `php5-dev` (or `php-devel`)
 - google: *dirty hack, WTF?!*

Setup Demo

Hello World!



Pushing stuff to PHP

- magic (local) `zval *return_value;`

```
typedef struct {  
    zvalue_value value;  
    zend_uint    refcount__gc;  
    zend_uchar   type;  
    zend_uchar   is_ref__gc;  
} zval;
```


Pushing stuff to PHP, cont.

- set `return_value` to what you want to return
 - `ALLOC_INIT_ZVAL(zval *z), Z_TYPE_P(temp) = IS_INT; ...`
- or use the wrapper macros for those macros
 - `ZVAL_LONG(zval *z, long value)`
- or use the macro wrapper macro wrapper macro wrappers:
 - `RETURN_NULL()`
 - `RETURN_STRING(char *s, int make_copy)`

Return Value Demo



Getting stuff from PHP

- like `scanf()`

```
zend_parse_parameters(  
    ...  
    FORMAT_STRING,  
    var_a, var_b, var_c  
);
```

Arg-parsing Demo



Using system libraries

- test for existence
 - left as an exercise for the reader
- add includes
 - `PHP_ADD_INCLUDE(path)`
- add libraries
 - `PHP_ADD_LIBRARY(lib, var)`

Shared library Demo



Thank You!

Questions?

