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# I Do Not Need a Debugger

- `printf()`, `var_dump()` and `echo` are good enough
- Xdebug: Open Source debugger for PHP
- It's about 4 years old
- Version 2 will be out "soonish"
- Even works on Windows

# Installing Xdebug

With PEAR:

- `pear install xdebug-beta`

Without PEAR:

- `wget http://xdebug.org/files/xdebug-2.0.0beta5.tgz`
- `tar -xvzf xdebug-2.0.0beta5.tgz`
- `cd xdebug-2.0.0beta5`
- `phpize`
- `./configure`
- `make`
- `make install`

# Installing Xdebug

- in php.ini add: `zend_extension=/full/path/to/xdebug.so`
- Use `zend_extension_ts` for threaded compiles of PHP (Windows build f.e.)
- Use `zend_extension_debug` for debug builds of PHP

# Installing Xdebug

- `--enable-versioning` prevent Xdebug from loading
- Zend's extensions (optimizer, debugger, cache) prohibit Xdebug (and other non-Zend zend-extensions) from loading

# Protection

- Stack overflow in PHP
- Infinite recursion

Xdebug protects with:

```
xdebug.max_nesting_level=4
```

**Fatal error:** Maximum function nesting level of '4' reached, aborting!  
in **/home/httpd/html/test/xdebug/infinite.php** on line **3**

Call Stack		
#	Function	Location
1	{main}()	/home/httpd/html/test/xdebug/infinite.php:0
2	a()	/home/httpd/html/test/xdebug/infinite.php:6
3	a()	/home/httpd/html/test/xdebug/infinite.php:3
4	a()	/home/httpd/html/test/xdebug/infinite.php:3

# Help By Error Messages

**Warning:** fopen(ezcmaintest) [[function.fopen](#)]: failed to open stream: No such file or directory in /home/httpd/html/test/ezc/dr\_mail\_test.php on line 147

... is kinda useless.

**Warning:** fopen(ezcmaintest) [[function.fopen](#)]: failed to open stream: No such file or directory in /home/httpd/html/test/ezc/dr\_mail\_test.php on line 146

## Call Stack

#	Function	Location
1	{main}()	/home/httpd/html/test/ezc/dr_mail_test.php:0
2	ezcSingleFileSet->__construct('ezcmaintest' (length=11))	/home/httpd/html/test/ezc/dr_mail_test.php:184
3	<a href="#">fopen</a> ('ezcmaintest' (length=11), 'r' (length=1))	/home/httpd/html/test/ezc/dr_mail_test.php:146

## Variables in local scope (#2)

Variable	Value
\$file =	'ezcmaintest' (length=11)

# Debugging With Request Variables

Warning: *fopen(ezctest) [function.fopen]: failed to open stream: No such file or directory in /home/httpd/html/test/ezc/dr\_mail\_test.php on line 149*

## Call Stack

#	Function	Location
1	{main}()	/home/httpd/html/test/ezc/dr_mail_test.php:0
2	ezcSingleFileSet->__construct()	/home/httpd/html/test/ezc/dr_mail_test.php:187
3	<a href="#">fopen</a> ()	/home/httpd/html/test/ezc/dr_mail_test.php:149

## Dump \$\_GET

\$\_GET['user'] = 'derick' (length=6)

\$\_GET['password'] = 'hemmelig' (length=8)

```
xdebug.dump.GET=*
```

```
xdebug.dump.POST=username,password
```

Also for: COOKIE, ENV, FILES, REQUEST, SERVER and SESSION



```
array
  0 => null
  1 => 3.1415926
  2 =>
    array
      'dutch' =>
        object(locale)[1]
          public 'lang' => 'nl'
          public 'variation' => 'NL'
          public 'charsets' =>
            array
              0 => 'iso-8859-1'
              1 => 'iso-8859-15'
          private 'mb_supported' => false
          private 'self' =>
            &object(locale)[1]
          protected 'id' => 1
```

# How Much Time Does It Take

```
<pre>
<?php
ini_set('include_path', '/home/httpd/ezcomponents/trunk');
require_once 'Base/src/base.php';

function __autoload( $className )
{
    ezcBase::autoload( $className );
}

$config = ezcConfigurationManager::getInstance();
$config->init( 'ezcConfigurationIniReader', dirname( __FILE__ ) . '/examples' );

echo "Time Index: ", xdebug_time_index(), "\n";
$password = $config->getSetting( 'settings', 'db', 'password' );
echo "The password is <$password>.\n";
echo "Time Index: ", xdebug_time_index(), "\n";
?>
```

# How Much Memory Does It Use

```
<pre>
<?php
require 'ezc_mail_setup.php';
error_reporting(E_ALL);

$parser = new ezcMailParser();
$set = new ezcSingleFileSet( dirname(__FILE__).'/ezcmailtest.mail' );
echo "Memory: ", xdebug_memory_usage(), " bytes\n\n";

$mail = $parser->parseMail( $set );
foreach( $mail as $mailPart )
{
    echo "From: {$mailPart->from->email}\n";
    echo "Subject: {$mailPart->subject}\n";
}
unset( $mail );

echo "\nMaximum Memory: ", xdebug_peak_memory_usage(), " bytes\n";
?>
```

```

mc - kossu.home.derickrethans.nl:~/j.pilot/Backup - [derick@kossu]
27.6247 17664184 -> ezcTemplateExpressionSourceToTstParser->__construct
27.6248 17664184 -> ezcTemplateSourceToTstParser->__construct() /Temp
27.6250 17664248 -> ezcTemplateSourceToTstParser->parseRequiredType() /
27.6251 17664248 -> is_string() /Template/src/parsers/source_to_tst/i
27.6252 17664248 -> is_object() /Template/src/parsers/source_to_tst/i
27.6252 17664248 -> ezcTemplateSourceToTstParser->parse() /Template/s
27.6253 17664248 -> ezcTemplateExpressionSourceToTstParser->parseCu
27.6256 17664248 -> ezcTemplateSourceToTstParser->findNextElement
27.6256 17664248 -> ezcTemplateCursor->atEnd() /Template/src/pa
27.6257 17664248 -> strlen() /Template/src/cursor.php:87
27.6258 17664248 -> ezcTemplateSourceToTstParser->skipWhitespac
27.6258 17664248 -> ezcTemplateCursor->atEnd() /Template/src/
27.6259 17664248 -> strlen() /Template/src/cursor.php:87
27.6260 17664248 -> ezcTemplateCursor->pregMatch() /Template/
27.6260 17664248 -> strlen() /Template/src/cursor.php:340
27.6261 17664248 -> substr() /Template/src/cursor.php:343
27.6262 17664760 -> preg_match() /Template/src/cursor.php:3
27.6263 17664392 -> strlen() /Template/src/parsers/source_to

/tmp/trace.2310770352.xt 1,4 All

```

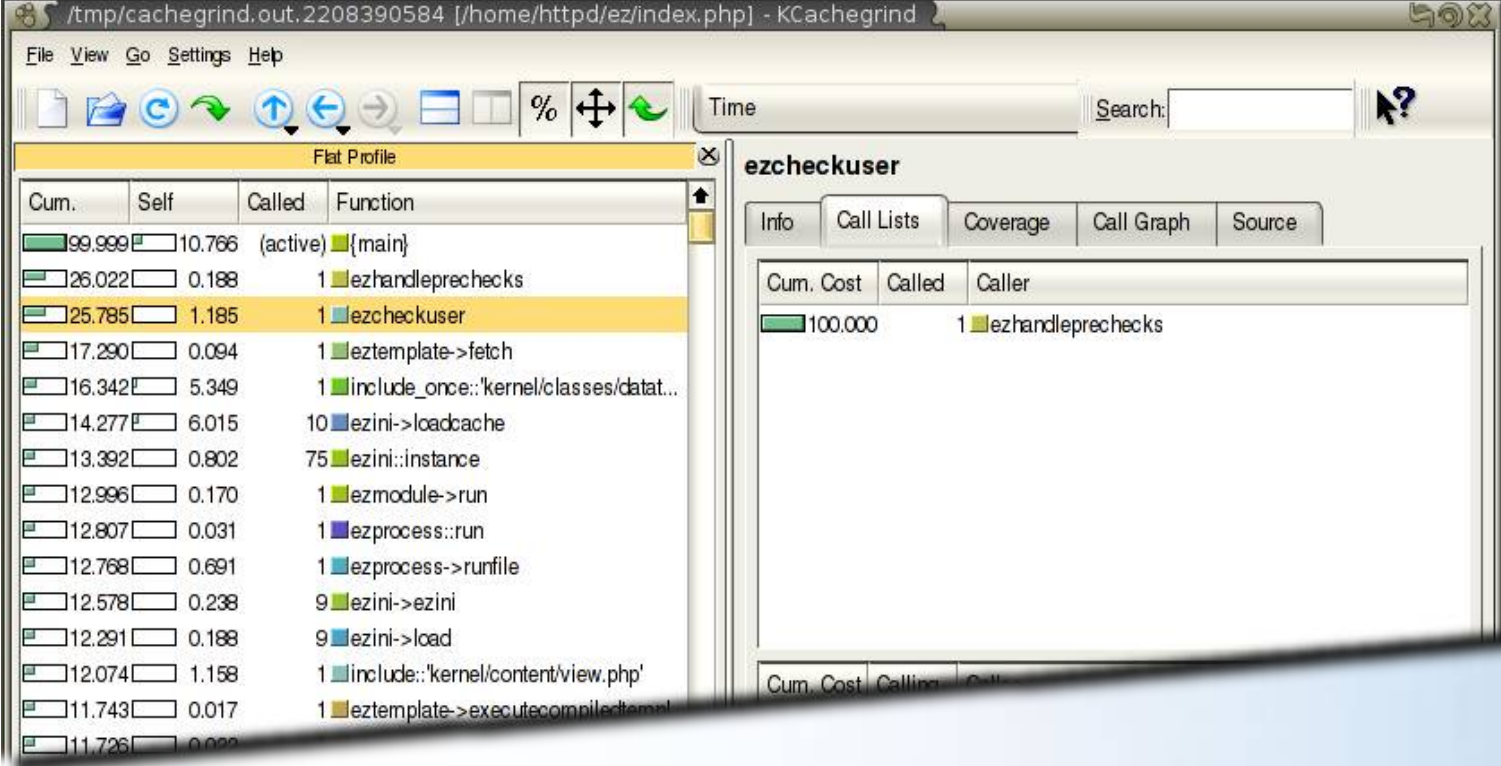
# What Code Do I Use

```
34 public function __construct()
35 {
36     $args = func_get_args();
37     parent::__construct( array() );
38     foreach ( $args as $part )
39     {
40         if ( $part instanceof ezcMailPart )
41         {
42             $this->parts[] = $part;
43         }
44         elseif( is_array( $part ) ) // add each
45         {
46             foreach ( $part as $array_part )
47             {
```

# How Many Functions

```
<?php  
echo xdebug_get_function_count();  
?>
```

```
<?php  
echo xdebug_get_function_count();  
?>
```



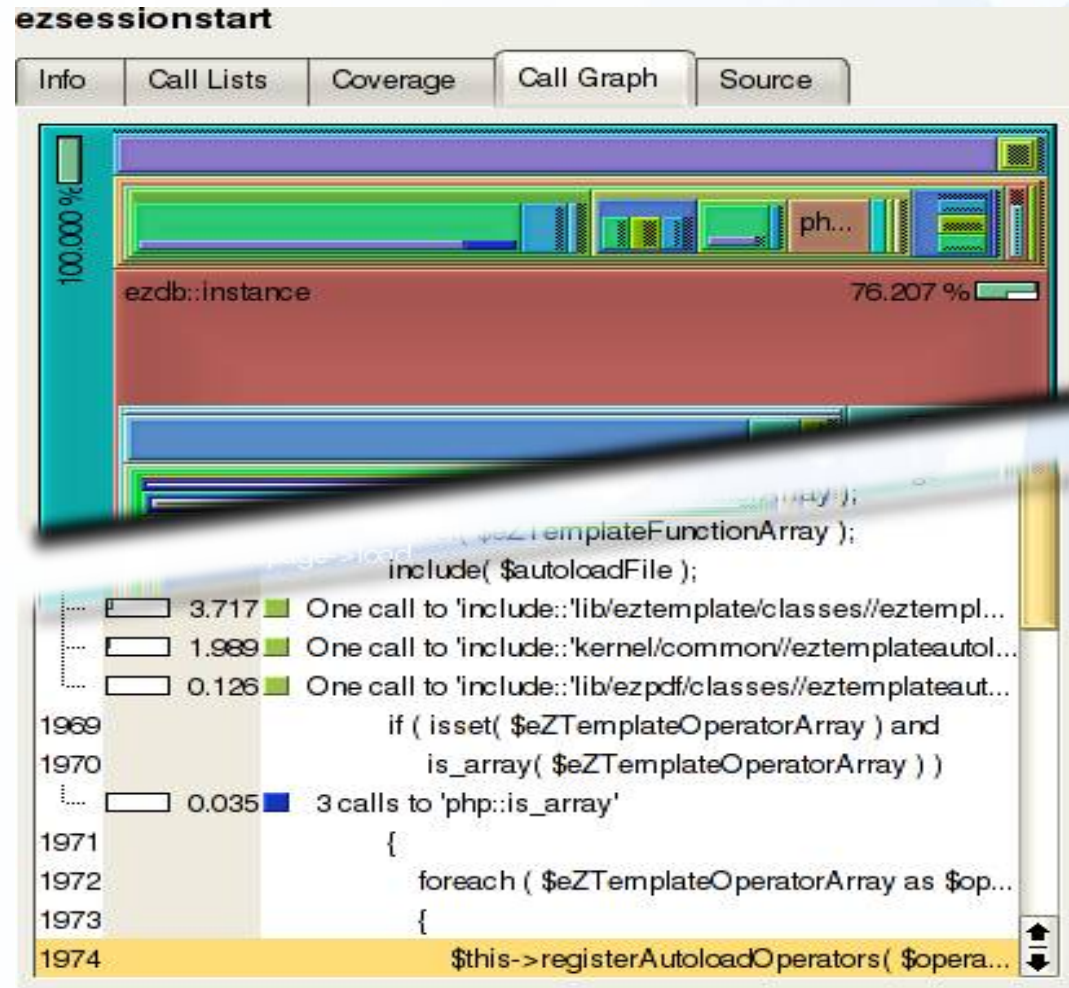
The screenshot shows the KCacheGrind application window. The main window displays a 'Flat Profile' table with the following data:

Cum.	Self	Called	Function
99.999	10.766	(active)	{main}
26.022	0.188	1	ezhandleprechecks
25.785	1.185	1	ezcheckuser
17.290	0.094	1	eztemplate->fetch
16.342	5.349	1	include_once::'kernel/classes/datat...
14.277	6.015	10	ezini->loadcache
13.392	0.802	75	ezini::instance
12.996	0.170	1	ezmodule->run
12.807	0.031	1	ezprocess::run
12.768	0.691	1	ezprocess->runfile
12.578	0.238	9	ezini->ezini
12.291	0.188	9	ezini->load
12.074	1.158	1	include::'kernel/content/view.php'
11.743	0.017	1	eztemplate->executecompiledtempl
11.726	0.022		

The secondary window, titled 'ezcheckuser', shows call lists with the following data:

Cum. Cost	Called	Caller
100.000	1	ezhandleprechecks

```
xdebug.profiler_enable=1           ; enable profiler
xdebug.profile_output_dir=/tmp     ; output directory
xdebug.profile_output_name=crc32   ; file extension
```





# Analyzing Running Scripts

- DBGp, common Debugging protocol
- Cross-language: PHP, Python, Perl...
- Supported in Xdebug 2
- Clients: Komodo, Maguma Workbench, TruStudio (PHP Eclipse Plugin) and many other smaller ones

Let's demo this...



Xdebug site: <http://xdebug.org>

DBGp specification: <http://xdebug.org/docs-dbgp.php>

Questions?: [derick@xdebug.org](mailto:derick@xdebug.org)