



Debugging PHP with Xdebug

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<http://pres.derickrethans.nl/xdebug-lt>

?

```
[derick@localhost derick]$ cat recursive.php
<?php
    function a() {
        a();
    }

    a();
?>
[derick@localhost derick]$ php recursive.php
Segmentation fault
```

- o Protects against infinite recursion
- o Colored `var_dump()`
- o Stacktraces
- o Functiontraces
- o parameters to functions
- o function/methodname, classname
- o file:line locations
- o memory allocation
- o Profiling
- o Script execution analysis
- o "Remote" debugging

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

```
xdebug.max_nesting_level=4
```

```
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
```

Warning: <code>chdir()</code> [function.chdir]: No such file or directory (errno 2) in <code>/dat/docs/magazine/phpa/code/xdebug/listing2.php</code> on line 34		
Call Stack		
#	Function	Location
1	{main}()	/dat/docs/magazine/phpa/code/xdebug/listing2.php:0
2	<code>change_dir('foo123')</code>	/dat/docs/magazine/phpa/code/xdebug/listing2.php:37
3	<code>chdir('/foo123')</code>	/dat/docs/magazine/phpa/code/xdebug/listing2.php:34

Notice: Undefined variable: e in /home/httpd/html/crap/xdebug-local-scope.php on line 7		
Call Stack		
#	Function	Location
1	{main}()	/home/httpd/html/crap/xdebug-local-scope.php:0
2	a()	/home/httpd/html/crap/xdebug-local-scope.php:10
Variables in local scope		
Variable	Value	
\$d =	object (stdClass)	
\$a =	5	
\$c =	array 0 => 5 1 => 36	
\$b =	6	

```
; enable showing local vars in error messages  
xdebug.show_local_vars=1
```

```

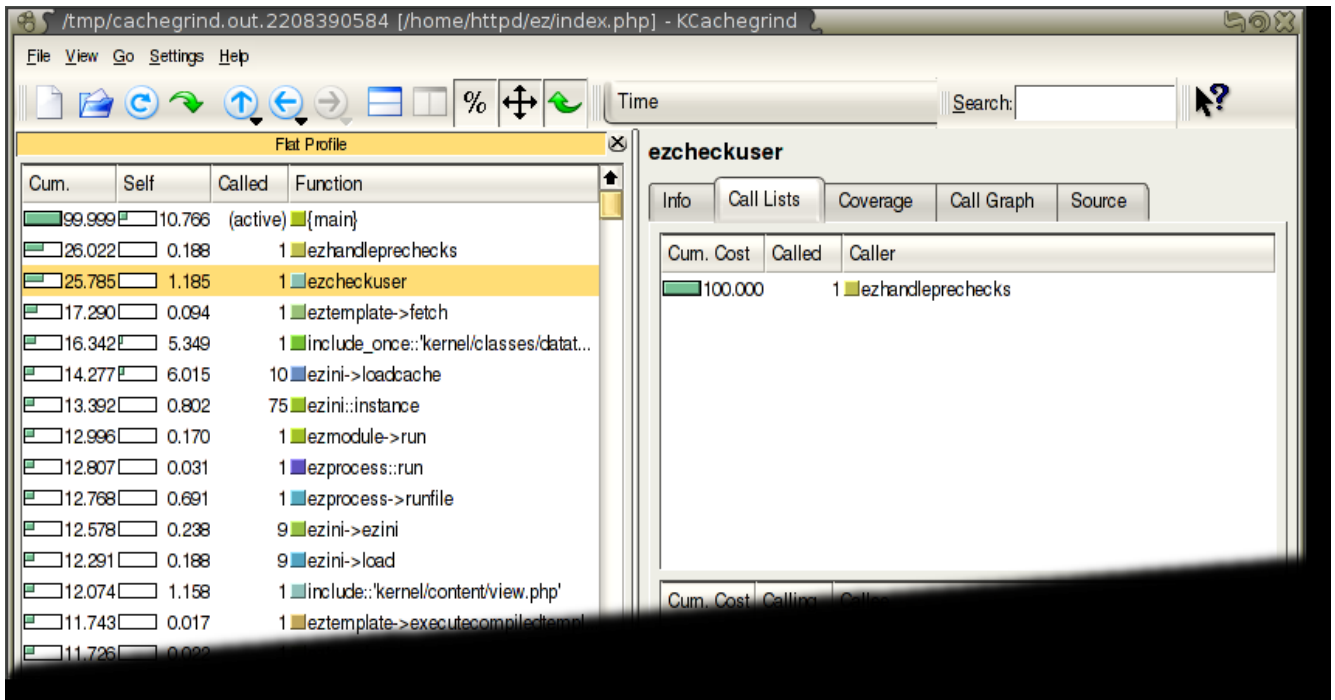
[derick@kossu] - mc - /dat/ez.no-33/var/ezno
TRACE START [2004-06-03 13:52:21]
0.0032 235760 -> {main}() /dat/ez.no-33/index.php:0
0.0036 235840 -> microtime() /dat/ez.no-33/index.php:34
0.0037 235856 -> ob_start() /dat/ez.no-33/index.php:35
0.0037 278880 -> error_reporting(2047) /dat/ez.no-33/index.php:74
0.0084 611512 -> include_once(/dat/ez.no-33/lib/ezutils/classes/ezdebug.php) /dat/ez.no-33/index.php:77
0.0106 766520 -> include_once(/dat/ez.no-33/lib/ezutils/classes/ezsys.php) /dat/ez.no-33/lib/ezutils/cl
0.0106 766568 -> define('EZ_SYS_DEBUG_INTERNALS', FALSE) /dat/ez.no-33/lib/ezutils/classes/ezsys.php:
0.0107 765856 -> define('EZ_LEVEL_NOTICE', 1) /dat/ez.no-33/lib/ezutils/classes/ezdebug.php:85
0.0107 765872 -> define('EZ_LEVEL_WARNING', 2) /dat/ez.no-33/lib/ezutils/classes/ezdebug.php:86
/tmp/trace.2043925204.xt [R0] 2,1 Top
0.0456 1698456 -> eztextcodec::internalcharset() /dat/ez.no-33/lib/ezil8n/classes/eztextcodec.php:581
0.0456 1698456 -> ezcharsetinfo::realcharsetcode('iso-8859-15') /dat/ez.no-33/lib/ezil8n/classes/eztex
0.0457 1698424 -> ezcharsetinfo::aliastable() /dat/ez.no-33/lib/ezil8n/classes/ezcharsetinfo.php:212
0.0457 1702584 -> is_array(array('ascii' => 'us-ascii', 'latin1' => 'iso-8859-1', 'latin2' => 'is
0.0461 1702664 -> strtolower('iso-8859-15') /dat/ez.no-33/lib/ezil8n/classes/ezcharsetinfo.php:213
0.0500 1966816 -> include_once(/dat/ez.no-33/lib/ezlocale/classes/ezlocale.php) /dat/ez.no-33/index.php:24
0.0501 1966904 -> define('EZ_LOCALE_DEBUG_INTERNALS', FALSE) /dat/ez.no-33/lib/ezlocale/classes/ezlocale
0.0501 1965888 -> ezini::instance() /dat/ez.no-33/index.php:246
0.0502 1966224 -> get_class(class ezini { var $Charset = 'iso-8859-1'; var $BlockValues = array ('Databa
0.0510 1966840 -> ezini->variable('RegionalSettings', 'Debug') /dat/ez.no-33/index.php:247
/tmp/trace.2043925204.xt [R0] 349,5 1%

```

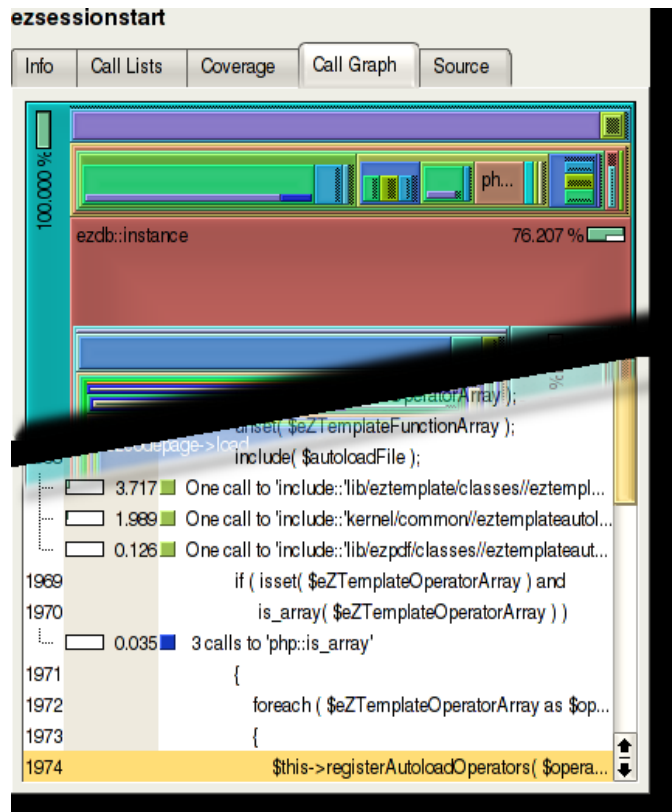
```

xdebug.auto_trace=1 ; enable tracing
xdebug.trace_output_dir=/tmp ; trace output directory
xdebug.trace_output_name=crc32 ; tracefile extension
xdebug.collect_params=0 ; parameter collection
xdebug.collect_includes=1 ; collecting includes
xdebug.extended_info=0 ; extended code generation
xdebug.show_mem_delta=1 ; memory difference

```

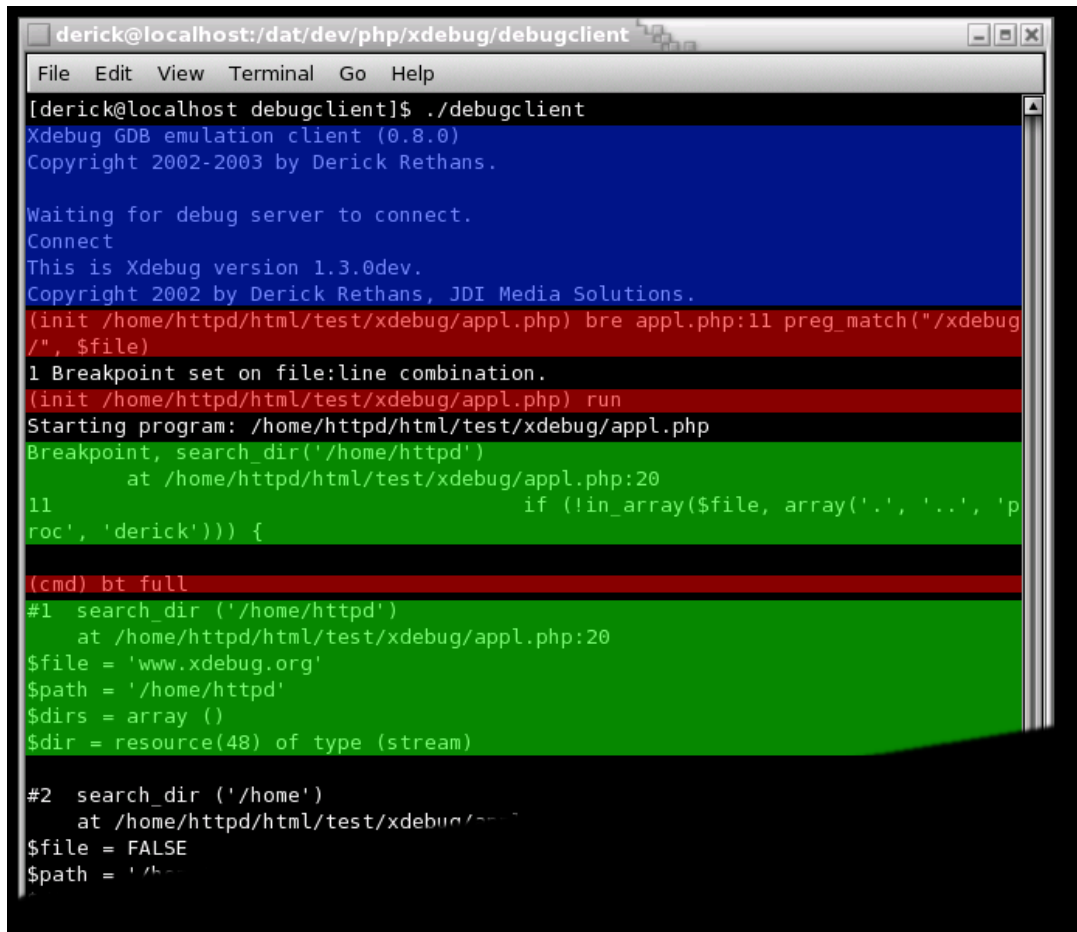


```
xdebug.profiler_enable=1           ; enable profiler
xdebug.profile_output_dir=/tmp      ; output directory
xdebug.profile_output_name=crc32    ; file extension
```



- o Call graph
- o Area shows time spend
- o Stacked to show callees
- o Source annotations
- o Number of calls
- o Total time per function

- o PHP 3 debugger mode
- o Port of the old remote debug dump interface for PHP 3
- o Available in Xdebug 1.x and 2.x
- o GDB debugger mode
- o GDB like environment
- o Two output possibilities: text and XML
- o Available in Xdebug 1.3.x and 2.x
- o DBGp debugger mode
- o Language independent
- o Plain text in, XML out
- o Available in Xdebug 2.x



```
derick@localhost:/dat/dev/php/xdebug/debugclient
File Edit View Terminal Go Help
[derick@localhost debugclient]$ ./debugclient
Xdebug GDB emulation client (0.8.0)
Copyright 2002-2003 by Derick Rethans.

Waiting for debug server to connect.
Connect
This is Xdebug version 1.3.0dev.
Copyright 2002 by Derick Rethans, JDI Media Solutions.
(init /home/httpd/html/test/xdebug/appl.php) bre appl.php:11 preg_match("/xdebug
/", $file)
1 Breakpoint set on file:line combination.
(init /home/httpd/html/test/xdebug/appl.php) run
Starting program: /home/httpd/html/test/xdebug/appl.php
Breakpoint, search_dir('/home/httpd')
    at /home/httpd/html/test/xdebug/appl.php:20
11                                     if (!in_array($file, array('.', '..', 'p
roc', 'derick'))) {
(cmd) bt full
#1 search_dir ('/home/httpd')
    at /home/httpd/html/test/xdebug/appl.php:20
$file = 'www.xdebug.org'
$path = '/home/httpd'
$dirs = array ()
$dir = resource(48) of type (stream)

#2 search_dir ('/home')
    at /home/httpd/html/test/xdebug/appl.php:20
$file = FALSE
$path = '/home'
```

- o Input commands the same
- o option response_format 1
- o Output in 'proprietary' XML
- o Easier parsing for debug clients... but not for people

```
<xdebug><break><breakpoint><function><name>search_dir</name><params>'/home/httpd
www.xdebug.org/html/images'</params></function><file>/home/httpd/html/test/xdeb
g/appl.php</file><line>20</line></breakpoint><line file='/home/httpd/html/test/
debug/appl.php' no='11'>                                if (!in_array($file, arr
/('.', '..', 'proc', 'derick'))) {</line></break></xdebug>
```

- o Input commands as "command line parameters"

- o `property_get -n $foo -d 2 -i 81`

- o Output data as documented XML:

```
data_length
```

```
[NULL]
```

```
<response command="command_name" transaction_id="transaction_id"/>
```

```
[NULL]
```

- o Cross-language: PHP, Python, Perl...
- o Supported in Xdebug 2
- o Clients: Komodo, Maguma Workbench



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

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

Questions?: derick@xdebug.org

Index

Questions	2
How did it start?	3
Xdebug	4
Protection	5
New var_dump()	6
Stacktrace	7
Local variables	8
Execution trace to file	9
Profiling	10
Profiling	11
Remote Interfaces	12
GDB mode	13
GDB mode/XML	14
DBGp mode	15
Resources	16