

PHP Introduction

eZ Publish Summer Conference

August 22nd, 2003. Skien, Norway

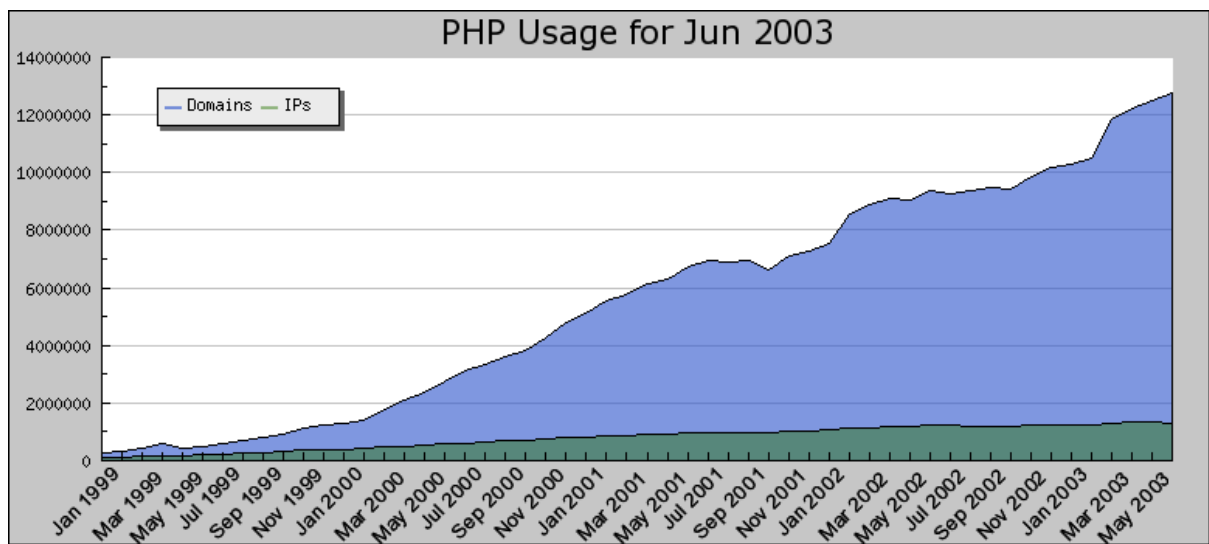
Derick Rethans <d.rethans@jdimedia.nl>

<http://pres.derickrethans.nl/ezcamp>

- o PHP: Hypertext Preprocessor
- o Started in 1997
- o Apache module
- o but also IIS, Iplanet, thttpd...
- o SQLite and MySQL integration
- o but also MSSQL, Oracle, PGSql...

June 2003 Netcraft Report

- o 40,936,076 Domains queried
- o 12,749,410 Domains. 1,317,425 IP addresses
- o PHP installed on 31% of all domains



Source: Netcraft

March 2003 Apache Module Report

- o 6,813,534 Apache Servers surveyed
- o 3,510,294 (51.52%) PHP
- o 2,075,828 (30.47%) OpenSSL
- o 2,007,598 (29.46%) mod_ssl
- o 1,486,868 (21.82%) Frontpage
- o 1,407,732 (20.66%) mod_perl
- o 401,097 (5.89%) DAV
- o 348,856 (5.12%) mod_throttle
- o 206,122 (3.03%) mod_jk
- o 175,924 (2.87%) AuthMySQL
- o 190,290 (2.79%) mod_log_bytes
- o 185,076 (2.72%) mod_bwlimited

Source: SecuritySpace.com

- o Open Source: Apache like BSD-style license
- o 732 developers
- o ~25 active (on PHP source)
- o Documentation in 26 languages
- o PHP 4.0.0 since May 2000
- o PHP 5.0.0beta1 in June 2003
- o PHP 4.3.3 in August 2003



- o PHP Extension and Application Repository
- o Commandline tool for maintenance
- o Dependency checking

```
[derick@kossu derick]$ sudo pear -v install Net_DIME
downloading Net_DIME-0.3.tgz ...
...done: 6,740 bytes
install ok: Net_DIME 0.3
```

```
[derick@kossu derick]$ sudo pear list-upgrades
Available Upgrades (beta):
=====
Package          Version  Size
DB                1.4.0   60kB
HTML_QuickForm   3.0Beta2 60kB
Net_SMTP         1.2.3   6.1kB
```

```
[derick@kossu derick]$ sudo pear list-all | head -6
All packages:
=====
Package          Latest  Local
apd              0.4p2
bcompiler        0.4     0.4
PHPDoc           0.1.0   0.1.0
```



- o PHP Extension Code Library
- o Shared extensions
- o Makes use of the 'pear' tool
- o Future home for all extensions

```
[derick@kossu nl]$ sudo pear -v install
http://files.derickrethans.nl/xdebug-1.2.0.tgz
downloading xdebug-1.2.0.tgz ...
...done: 58,608 bytes
28 source files, building
running: phpize
PHP Api Version      : 20020918
Zend Module Api No   : 20020429
Zend Extension Api No : 20021010
building in /var/tmp/pear-build-root/xdebug-1.2.0
running: /tmp/tmpXOqy3A/xdebug-1.2.0/configure
running: make
xdebug.so copied to /tmp/tmpXOqy3A/xdebug-1.2.0/xdebug.so
install ok: xdebug 1.2.0
```



- o Revamped Internals
- o Real Object Orientation
- o Exceptions
- o Improved Streams API
- o Bundled SQLite
- o New XML extensions based on libXML-2
- o SPL - Object Iterators and more

```
<?php
class OS {
    var $name;

    function OS($name) {
        $this->name = $name;
    }
}

function changeName($obj, $name) {
    $obj->name = $name;
}

$linux = new OS('linux');
changeName($linux, 'windows');
echo $linux->name;

? >
```

- o New type constructors: `__construct()`.
- o Finally destructors: `__destruct()`.



```
<?php
class Construction {
    var $area;
    function __construct($area) {
        $this->$area = $area;
    }
    function __destruct() {
        echo "Leaving {$this->area}\n";
    }
}

$c = new Construction('London');
$vegas = $c;
$vegas->area = "Las Vegas";

echo "\$c = NULL\n";
$c = NULL;
echo "\$vegas = NULL\n";
$vegas = NULL;
? >

$c = NULL
$vegas = NULL
Leaving Las Vegas
EOS
```

- o 'Strongest' access level
- o Can only be accessed/called from the same class
- o Force use of get()/set() functions to access properties

```
<?php
```

```
class Bedroom {
    private $action;

    function __construct() {
        $this->action = 'fun';
    }
}
```

```
$br = new Bedroom();
echo $br->action. "\n";
```

```
? >
```

```
Fatal error: Cannot access private property bedroom::$action in - on line 12
```

- o Only accessible/callable by the same, or an inherited class
- o Useful for 'packages'

```
<?php
class Bedroom {
    protected $action;

    function __construct() {
        $this->action = 'fun';
    }

    protected function peek() {
        echo $this->action. "\n";
    }
}

class Keyhole extends Bedroom {
    function peek() {
        echo $this->action. "\n";
    }
}

$kh = new Keyhole();
$kh->peek();

$br = new Bedroom();
$br->peek();           / Doesn't work /
? >
```

- o Property access handlers
- o In combination with private
- o As replacement for 'dynamic properties'

```
<?php
class OSses {
    private $names = array();

    public function __set($name, $value) {
        if (!in_array($name, array('windows', 'dos')))
            $this->names[$name] = $value;
    }

    public function getNames() {
        return $this->names;
    }
}

$osses = new OSses();
$osses->linux = 'rocks';
$osses->windows = 'blows';

var_dump($osses->getNames());
? >

array(1) {
    ["linux"]=>
    string(5) "rocks"
}
```

PHP 4:

```
<?php
  if (@mysql_connect('localhost', 'root', 'ut34Fb1Y:')) {
    if (@mysql_select_db('game')) {
      $r = mysql_query('SELECT * FROM news ORDER BY date DESC LIMIT 1');
      ...
    }
  }
```

PHP 5:

```
<?php
  try {
    mysql_connect('localhost', 'root', 'ut34Fb1Y:');
    mysql_select_db('game');
    $r = mysql_query('SELECT * FROM news ORDER BY date DESC LIMIT 1');
  } catch (Exception $e) {
    / Do recovery /
    exit();
  }
```



Example XML to parse:

```
<books>
  <book>
    <title>The Grapes of Wrath</title>
    <author>John Steinbeck</author>
  </book>
  <book>
    <title>The Pearl</title>
    <author>John Steinbeck</author>
  </book>
</books>
```

Expected output:

```
The Grapes of Wrath was written by John Steinbeck
The Pearl was written by John Steinbeck
```

```
<?php
$doc = domxml_open_file('book.xml');
$root = $doc->child_nodes();
$root = $root[0];
$books = $root->child_nodes();

foreach ($books as $book) {
    if (@$book->tagname == 'book') {
        $content = $book->child_nodes();
        foreach ($content as $elem) {
            if (@$elem->tagname == 'author') {
                $author = $elem->get_content();
            }
            if (@$elem->tagname == 'title') {
                $title = $elem->get_content();
            }
        }
        echo "{$title} was written by {$author}\n";
    }
}
? >
```

```
<?php
$books = simplexml_load_file('book.xml')->book;

foreach ($books as $book) {
    echo $book->title." was written by {$book->author}\n";
}
? >
```

- o **K.I.S.S.**
Keep It Simple Stupid

Before:

```
<security>
  <id>15</id>
</security>
```

Change the ID:

```
<?php
$s = simplexml_load_file('security.xml');
echo $s->id;
$s->id = 20;
simplexml_save_file($s, 'security.new.xml');
? >
```

After:

```
<security>
  <id>20</id>
</security>
```

- 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

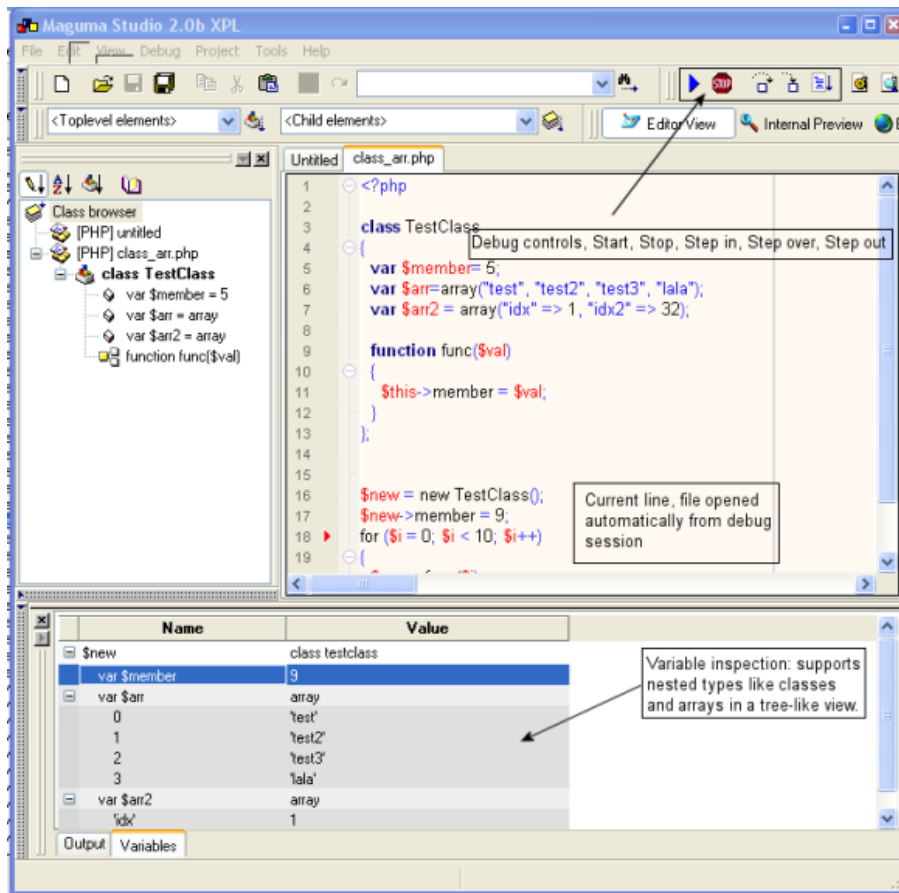
Updated error handler:

```
Warning: mysql_select_db() [function.mysql-select-db]: Can't connect to local MySQL server through socket '/var/lib/mysql/mysql.sock' (2) in /home/httpd/html/www.derickrethans.nl/html/xdebug/include/header.php on line 97
```

Call Stack		
#	Function	Location
1	{main}()	/home/httpd/html/www.derickrethans.nl/html/xdebug/updates.php:0
2	include(include/header.php)	/home/httpd/html/www.derickrethans.nl/html/xdebug/updates.php:1
3	mysql_select_db('blog')	/home/httpd/html/www.derickrethans.nl/html/xdebug/include/header.php:97

Updated var_dump() function:

```
array
  0 =>
    array
      0 => true
      1 => false
      2 => 3
    'tree' =>
      array
        0 => '4'
        1 => null
        2 => '6'
```



- o Bundled with PHP 5
- o Fast and easy interface to 'flatfiles'
- o SQL 99 subset
- o No daemon required
- o Enabled by default
- o Callbacks for normal functions and aggregation functions

```
<?php
function sqlite_starts_with($title, $char)
{
    $title = strtolower($title);
    $char = strtolower($char);
    if (!strlen($title) || !strlen($char)) {
        return FALSE;
    }
    return ($title{0} == $char{0});
}

$idx = sqlite_open("livedocs-en.sqlite");
sqlite_create_function($idx, 'STARTS_WITH', 'sqlite_starts_with');

$q = sqlite_query($idx,
    "SELECT title, id FROM idents WHERE STARTS_WITH(title, '$idx')");
if ($q) {
    while ($r = sqlite_fetch_array($q, SQLITE_NUM)) {
        list($title, $id) = $r;
        echo "$id: $title\n";
    }
}
? >
```



- o Published Bi-monthly
- o In shops in large part of europe
- o Focusses on professional PHP users
- o Reviews, User Questions, Inside Information, Databases, Development, XML, Internals

This presentation: <http://pres.derickrethans.nl/ezcamp>

International PHP Magazine: <http://www.php-mag.net>

PHP: <http://www.php.net>

SQLite: <http://www.sqlite.org>

e-mail: derick@php.net

Index

Introduction	2
PHP is Big!	3
PHP Project	4
PEAR	5
PECL	6
PHP 5.0	7
Objectmodel in PHP 4	8
Constructors/Destructors	9
Private	10
Protected	11
__set() and __get()	12
Exceptions	13
Parsing XML	14
DOMXML load	15
SimpleXML load	16
SimpleXML save	17
Xdebug	18
Replacement functions	19
Maguma Studio	20
SQLite	21
SQLite (example)	22
PHP Magazine	23
Resources	24