Introduction to PHP

linux.conf.au

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The Good Old Days

Handling simple data coming from a form took something like this to do in C:

```
#include <stdio.h>
#include <stdlib.h>
#include <ctype.h>
#include <string.h>

#define ishex(x) (((x) >= '0' && (x) <= '9') || ((x) >= 'a' &&
                   (x) <= 'f') || ((x) >= 'A' && (x) <= 'F'))

int htoi(char *s) {
    int     value;
    char    c;

    c = s[0];
    if(isupper(c)) c = tolower(c);
    value=(c >= '0' && c <= '9' ? c - '0' : c - 'a' + 10) * 16;

    c = s[1];
    if(isupper(c)) c = tolower(c);
    value += c >= '0' && c <= '9' ? c - '0' : c - 'a' + 10;

    return(value);
}

void main(int argc, char *argv[]) {
    char params, data, dest, s, *tmp;
    char name, age;

    puts("Content-type: text/html\r\n");
    puts("<html><head><title>Form Example</title></head>");
    puts("<body><h1>My Example Form</h1>");
    puts("<form action=\"form.cgi\" method=\"GET\">");
    puts("Name: <input type=\"text\" name=\"name\">");
    puts("Age: <input type=\"text\" name=\"age\">");
    puts("<br><input type=\"submit\">");
    puts("</form>");

    data = getenv("QUERY_STRING");
    if(data && *data) {
        params = data; dest = data;
        while(*data) {
            if(data=='+') dest=' ';
            else if(data == '%' && ishex((data+1))&&ishex(*(data+2))) {
                *dest = (char) htoi(data + 1);
                data+=2;
            } else dest = data;
            data++;
            dest++;
        }
        *dest = '\0';
        s = strtok(params,"&");
        do {
            tmp = strchr(s,'=');
            if(tmp) {
                *tmp = '\0';
                if(!strcmp(s,"name")) name = tmp+1;
                else if(!strcmp(s,"age")) age = tmp+1;
            }
        } while(s=strtok(NULL,"&"));

        printf("Hi s, you are s years old\n",name,age);
    }
    puts("</body></html>");
}
```

The Perl alternative

Perl became an obvious choice because it was made for text processing. The same thing in Perl using CGI.pm:

```
use CGI qw(:standard);
print header;
print start_html('Form Example'),
    h1('My Example Form'),
    start_form,
    "Name: ", textfield('name'),
    p,
    "Age: ", textfield('age'),
    p,
    submit,
    end_form;
if(param()) {
    print "Hi ",em(param('name')),
        "You are ",em(param('age')),
        " years old";
}
print end_html;
```

Much easier both to read and to write, at least to people with a bit of a programming background.

The PHP Approach

PHP has an HTML-centric approach. The same script in PHP became:

```
<html><head><title>Form Example</title></head>
<body><h1>My Example Form</h1>
<form action="form.phtml" method="POST">
Name: <input type="text" name="name">
Age: <input type="text" name="age">
<br><input type="submit">
</form>
<?if($name):?>
Hi <?echo $name?>, you are <?echo $age?> years old
<?endif?>
</body></html>
```

A block of raw HTML followed by the minimum amount of logic possible.

Solution

A good solution should

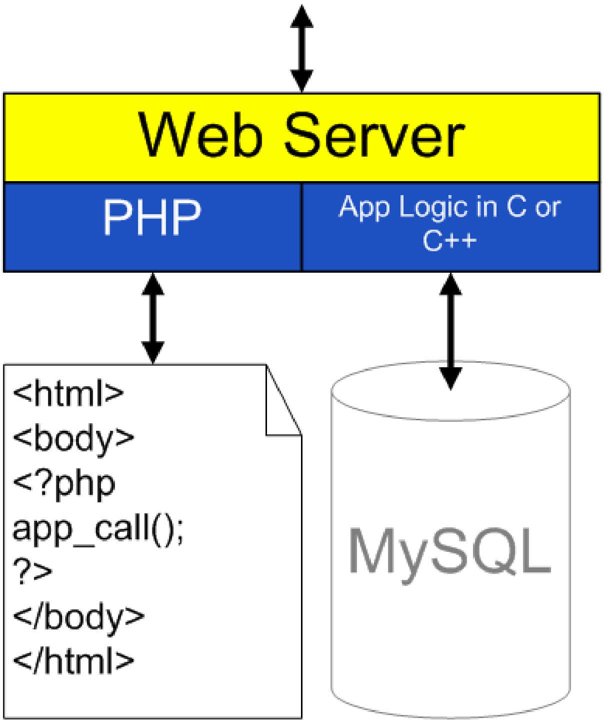
- Have a shallow learning curve
- Instant gratification
- Build on what you know
- Great documentation
- Solve the simple problem easily
- Eliminate tedium
- Be able to solve even the most complex problem
- Be secure
- Use/borrow existing technology
- Work everywhere

Bonus

- Be Free
- Teach the basics by not hiding the problem

The PHP Way

PHP was created as a framework for writing web applications in C or C++ and making it easy to expose the business logic of these applications to a powerful presentation-layer templating language.



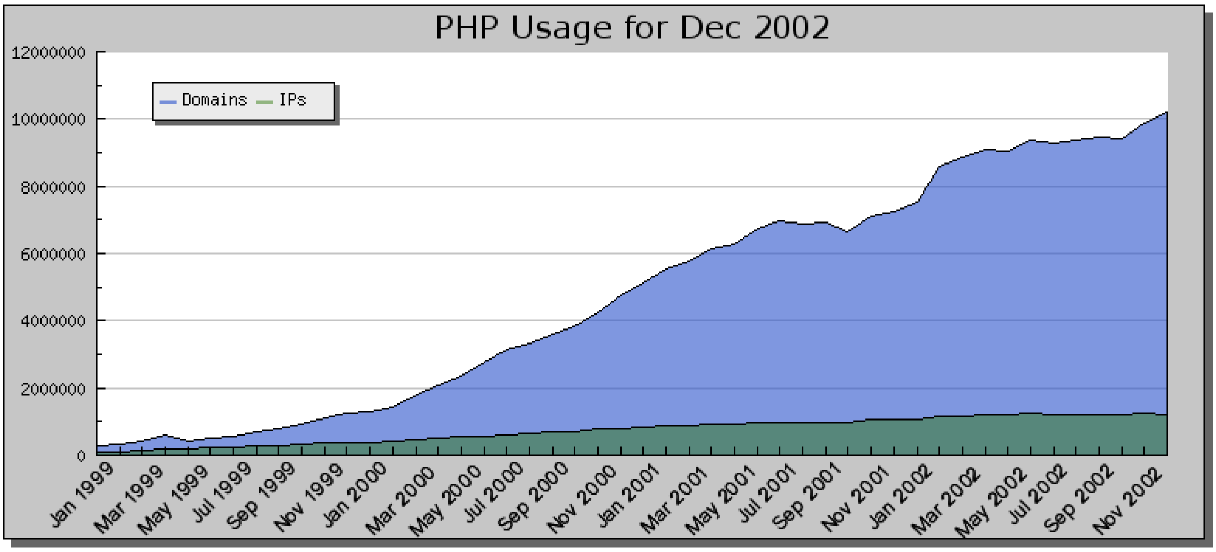
```
<html>
<body>
<?php
app_call();
?>
</body>
</html>
```

Most people don't really use PHP this way. Over the years the templating language improved both in scope and performance to the point where entire web apps could be written in it.

PHP Usage Growth

December 2002 Netcraft Report

- 35,543,105 Domains queried
- 10,197,643 Domains. 1,222,949 IP addresses
- PHP installed on 28.7% of all domains



Source: Netcraft

Decemeber 2002 Apache Module Report

- 5,339,636 Apache Servers surveyed
- 2,535,052 (47.48%) PHP
- 1,469,702 (27.62%) OpenSSL
- 1,414,225 (26.49%) mod_ssl
- 1,342,156 (25.14%) mod_perl
- 1,077,547 (20.18%) Frontpage
- 267,268 (5.01%) DAV
- 222,598 (4.17%) mod_throttle
- 153,101 (2.87%) AuthMySQL
- 137,720 (2.58%) mod_auth_pam
- 129,079 (2.42%) ApacheJServ

Source: SecuritySpace.com

PHP Releases

June 8, 1995	PHP Tools 1.0
Oct 17, 1995	PHP/FI 1.92
Mar. 16, 1996	PHP/FI 1.99k
June 12, 1996	PHP/FI 2.0b1
June 16, 1997	PHP/FI 2.0b12
Oct. 29, 1997	PHP 3.0a1
Nov. 12, 1997	PHP/FI 2.0
Dec. 8, 1997	PHP 3.0b1
Jan. 9, 1998	PHP/FI 2.0.1
June 6, 1998	PHP 3.0
July 4, 1998	PHP 3.0.1
Mar. 1, 1999	PHP 3.0.7
July 19, 1999	PHP 4.0b1
Jan. 1, 2000	PHP 3.0.13
Oct. 21, 2000	PHP 3.0.18
May 22, 2000	PHP 4.0
June 28, 2000	PHP 4.0.1
Aug. 29, 2000	PHP 4.0.2
Oct. 11, 2000	PHP 4.0.3
Dec. 19, 2000	PHP 4.0.4
Apr. 30, 2001	PHP 4.0.5
June 23, 2001	PHP 4.0.6
Dec. 10, 2001	PHP 4.1.0
Dec. 26, 2001	PHP 4.1.1
Feb. 27, 2002	PHP 4.1.2
Apr. 22, 2002	PHP 4.2.0
May 13, 2002	PHP 4.2.1
July 22, 2002	PHP 4.2.2
Sep. 6, 2002	PHP 4.2.3
Dec. 27, 2002	PHP 4.3.0
2003?	PHP 5.0

group@php.net

- Thies Arntzen (Germany, Digital Collections)
- Stig Bakken (Norway, FAST Search & Transfer)
- Shane Caraveo (Canada, ActiveState)
- Andi Gutmans (Israel, Zend Technologies)
- Rasmus Lerdorf (US/San Francisco, Yahoo!)
- Sam Ruby (US/North Carolina, IBM)
- Sascha Schumann (Germany)
- Zeev Suraski (Israel, Zend Technologies)
- Jim Winstead (US/Los Angeles, MySQL AB)
- Andrei Zmievski (US/Boston, FAST Search & Transfer)

*.php.net

www.php.net

www.php.net is the center of all things PHP.

talks.php.net

Many talks given around the world at conferences and user group meetings are collected here.

news.php.net

A web interface for the mailing lists, or you can connect to it via an NNTP news reader.

pear.php.net

The PHP Extension and Application Repository site.

bugs.php.net

This is the bug tracking system. If you think you have found a bug, go here and check to see if it has already been reported, if not, report it here.

qa.php.net

The PHP Quality Assurance team coordinate their efforts through this site.

cvs.php.net

PHP uses CVS for source code revision control. Point your web browser at this site for a web view of the files in CVS, or use a CVS client and connect directly via the pserver protocol.

bonsai.php.net,lxr.php.net

These sites are closely related to cvs.php.net in that they provide information about the PHP source code.

gtk.php.net

Home of the PHP-GTK project.

smarty.php.net

The home of the Smarty template engine for PHP.

snaps.php.net

Snapshot builds directly from CVS generated every couple of hours are available here.

php.net Tips

Quick manual lookup

To quickly look up a PHP function go to php.net/strlen

Manual Notes

At the bottom of every page of the online manual you will find user-contributed notes. There is usually a lot of good information (and some bad) in these notes.

Searching

The search box at the top of the page can be used to search the manual, entire site, mailing lists or the bug database.

short cuts

Use Alt-S to move your cursor to the search box quickly, or on the manual pages you can use Alt-L to jump to the function lookup field.

Show me the code!

Every page of the site has a show source link at the bottom so you can see the PHP source behind that page.

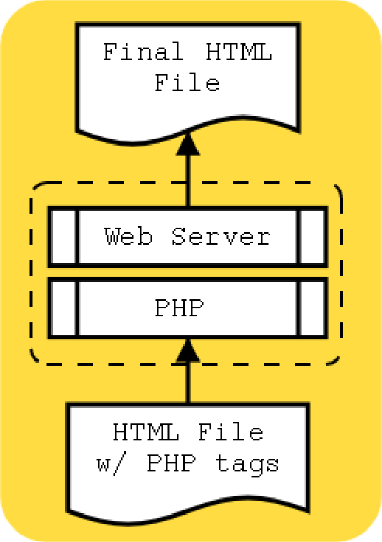
Use a mirror

In the bottom right corner you will find a mirror sites link. Please choose a mirror near you. As a general rule, each country will have a number of mirror sites named <country_code>.php.net. For example, de.php.net, de2.php.net, kr.php.net, kr2.php.net.

Server-Side

PHP is a Server-side language

Even though it is embedded in HTML files much like the client-side Javascript language, PHP is server-side and all PHP tags will be replaced by the server before anything is sent to the web browser.



So if the HTML file contains:

```
<html>
<?php echo "Hello World"?>
</html>
```

What the end user would see with a "view source" in the browser would be:

```
<html>
Hello World
</html>
```

Embedding PHP Tags

The 4 available tag styles

```
<html>
<body>
<? echo 'Short Tags - Most common' ?>
<br />
<?php echo 'Long Tags - Portable' ?>
<br />
<= 'ASP Tags' >
<br />
<script language="php">
 echo 'Really Long Tags - rarely used';
</script>
<br />
</body>
</html>
```

Output:

```
Short Tags - Most common
Long Tags - Portable


Really Long Tags - rarely used
```

Language Basics

Variables and Expressions

```
<?php
    $foo = 1;
    $bar = "Testing";
    $xyz = 3.14;
    $foo = $foo + 1;
?>
```

Arrays

```
<?php
    $foo[1] = 1;
    $foo[2] = 2;
    $bar[1][2] = 3;
?>
```

Functions

```
<?php
    phpinfo();
    foo();
    $len = strlen($foo);
?>
```

Control Structures

```
<?php
    while($foo) {
        ...
    }
?>
```

Output

```
<?php
    echo $foo;
    printf(".2f",$price);
?>
```

Switching Modes

Syntax and switching modes

```
<? if(strstr($_SERVER['HTTP_USER_AGENT'],"MSIE")) { ?>
<b>You are using Internet Explorer</b>
<? } else { ?>
<b>You are not using Internet Explorer</b>
<? } ?>
```

Output:

```
You are not using Internet Explorer
```

Form Handling

Traditional Form Handling

```
<form action="<?=$PHP_SELF?>" method="POST">
Your name: <input type=text name=name><br>
You age: <input type=text name=age><br>
<input type=submit>
</form>
```

Output:

```
Your name:
You age:
```

Receiving Script

```
Hi <?echo $name?>.
You are <?echo $age?> years old.
```

Register Globals

Some feel that automatically populating the symbol table with user-supplied data can lead to insecure programs, which to some extent is correct. To combat this the register_globals setting is off by default in PHP 4.2 and later.

```
Hi <?echo $_POST['name'] ?>.
You are <?echo $_POST['age'] ?> years old.
```

Basic Data Types

Numbers (integers and real)

```
<?php
    $a = 1234;
    $b = 0777;
    $c = 0xff;
    $d = 1.25;
    echo "$a $b $c $d<br />\n";
?>
```

Output:

```
1234 511 255 1.25
```

Strings

```
<?php
    $name = 'Rasmus $last'; // Single-quoted
    $str  = "Hi $name\n";   // Double-quoted
    echo $str;
?>
```

Output:

```
Hi Rasmus $last
```

Booleans

```
<?php
    $greeting = true;
    if($greeting) {
        echo "Hi Carl";
        $greeting = false;
    }
?>
```

Output:

```
Hi Carl
```

Dynamic Typing

- Don't have to declare types
- Automatic conversion done

```
<?php
    echo 5 + "1.5" + "10e2";
?>
```

Output:

```
1006.5
```

Arrays

Ordered Arrays

```
<?php
    $a[0] = 1;
    $a[1] = "foo";
    $a[]  = 1.57;
?>
```

Associative arrays

```
<?php
$catch_it['cat'] = "mouse";
$catch_it['dog'] = "cat";
?>
```

Manipulating

- Sorting: sort(), rsort(), ksort(), usort(), array_multisort()
- Traversal: reset(), end(), next(), each(), current(), key(), array_walk()
- Advanced: array_diff(), array_intersect(), array_merge(), array_merge_recursive(), array_slice(), array_splice() and lots more...

Common Operators

- Math ops: + - * / %
- Logical: || && ! and or xor
- Bitwise: & | ^ ~ << >>
- String: . .=
- Assignment: = += -= *= /= |= ^= etc.
- Increment/Decrement: ++ --
- Comparison: == === != <> !== < > <= >= ?:

Some Examples

```
<?php
    $a = 254 + 1;
    echo $a   . "<br />";
    echo --$a . "<br />";
    echo ($a & 1) . "<br />";
    echo ($a & 127) . "<br />";
    echo ($a >> 1) . "<br />";
?>
```

Output:

```
2552540126127
```

User Defined Functions

Typical User Defined Function

```
<?php
function log_data($user, &$data) {
 mysql_query("INSERT INTO userdata VALUES ('".
            uniqid()."', '$user', '$data')");
}
?>
```

Pass-by-reference

```
<?php log_data($PHP_AUTH_USER, $data); ?>
```

Default values

```
<?php
function head($title="Default Title") {?>
    <HTML><HEAD><TITLE>
    <? echo $title ?>
    </TITLE></HEAD><BODY><?
}

head();
?>
```

Looping Constructs

While

```
<?php
    $i = 0;
    while($i++ < 10) {
        echo $i . " ";
    }
?>
```

Output:

```
1 2 3 4 5 6 7 8 9 10
```

Do While

```
<?php
    $i = 0;
    do {
        echo $i . " ";
    } while($i++ < 10);
?>
```

Output:

```
0 1 2 3 4 5 6 7 8 9 10
```

For

```
<?php
    for($i=0; $i<10; $i++) {
        echo $i . " ";
    }
?>
```

Output:

```
0 1 2 3 4 5 6 7 8 9
```

Break/Continue

```
<?php
    for($i=0; $i<10; $i++) {
        if($i==5) continue;
        if($i==8) break;
        echo $i . " ";
    }
?>
```

Output:

```
0 1 2 3 4 6 7
```

Note that break and continue can take a level argument that tells them how many levels to break or continue out of.

Nested Loops

```
<?php
    $done = false;
    while(!$done) {
        for($i=0; $i<10; $i++) {
            if($i==8) break 2;
            echo $i . " ";
        }
    }
```

```
?>
```

Output:

```
0 1 2 3 4 5 6 7
```

OO Programming

Class Definition

```
<?php
  class Cart {
    var $items;
    function add_item($artnr, $num) {
        $this->items[$artnr] += $num;
    }
  }
?>
```

Inheriting a class with a Constructor

```
<?php
  class NamedCart extends Cart {
    var $owner;
    function NamedCart($name) {
        $this->owner = $name;
    }
  }
?>
```

Invocation

```
<?php
  $cart = new NamedCart("PenguinGear");
  $cart->add_item(170923, 2);
?>
```

Static Method calls

```
<?php
  class foo {
    function bar() {
        echo "bar() called";
    }
  }

  foo::bar();
?>
```

Output:

```
bar() called
```

Calling methods in your parent class

```
<?php
  class foo2 {
    function foo2() {
        echo "Constructor for foo2";
    }
  }

  class bar extends foo2 {
    function bar() {
        echo "Constructor for bar<br />";
        $name = get_parent_class($this);
        parent::$name();
    }
  }

  $a = new bar();
?>
```

Output:

```
  Constructor for barConstructor for foo2
```

Date/Time Functions

Simple Date Display

```
<?php echo date("M d, Y H:i:s", time()); ?>
```

Output:

```
Jan 22, 2003 05:38:02
```

How old is CArL?

```
<?php
  $birth = mktime(13,26,0,3,6,2002);
  $weeks = (int)((time() - $birth)/(7*86400));
  $days = (int)((time() - $birth)/86400) - $weeks*7;
  $hours = (int)((time() - $birth)/3600) - $days24 - $weeks7*24;
  $mins = (int)((time()-$birth)/60) - $hours60 - $days2460 - $weeks72460;
  if($weeks>0) $str = "$weeks weeks, ";
  if($days>0) $str .= "$days day";
  if($days>1) $str .= "s";
  if($hours == 1) $str .= " $hours hour and";
  else $str .= " $hours hours and";
  if($mins == 1) $str .= " 1 minute";
  else $str .= " $mins minutes";
  echo "CArL is now $str old";
?>
```

Output:

```
CArL is now 45 weeks, 6 days 16 hours and 12 minutes old
```

Calendar Conversions

Converts between calendars (Julian, Gregorian, Mayan, etc)

String Manipulation

substr

```
<?php
 $str = "Fast String Manipulation";
 echo substr($str,0,4) . substr($str,-9);
?>
```

Output:

```
Fastipulation
```

explode

```
<?php
 $a = explode(":", "This:string:has:delimiters.");
 while (list(,$value) = each($a)) {
     if (strcmp($value, "has") == 0) {
         echo "had ";
     } else echo $value." ";
 }
?>
```

Output:

```
This string had delimiters.
```

Regular Expressions

Posix Style

```
<?php
echo ereg_replace('will be ([[:alpha:]]+)',
             'has been \1',
             'This string will be modified.');
?>
```

Output:

```
This string has been modified.
```

Perl Style

```
<?php
echo preg_replace('/will be ([\w\s]+)/',
          'has been \1',
          'This string will be modified.');
?>
```

Output:

```
This string has been modified.
```

Encoding Strings

HTML

```
<?php echo htmlspecialchars("This & that are <problems>.");?>
```

Output:

```
This &amp; that are &lt;problems&gt;.
```

Base64

```
<?php
 $encoded = base64_encode("A rose by any other name...");
 $decoded = base64_decode($encoded);
 echo "$encoded<br />$decoded";
?>
```

Output:

```
QSByb3NlIGJ5IGFueSBvdGhlciBuYW1lLi4uA rose by any other name...
```

Others

MD5, DES, TripleDES, Blowfish, 3-WAY, SAFER-SK64, SAFER-SK128, TWOFISH, TEA, RC2, GOST in CBC, OFB, CFB and ECB cipher modes as well as RC6 and IDEA

Reading a File

readfile()

```
<PRE><?php readfile("/proc/cpuinfo")?></PRE>
processor    : 0
vendor_id    : GenuineIntel
cpu family    : 6
model        : 8
model name    : Pentium III (Coppermine)
stepping    : 3
cpu MHz        : 696.988
cache size    : 256 KB
fdiv_bug    : no
hlt_bug        : no
f00f_bug    : no
coma_bug    : no
fpu        : yes
fpu_exception    : yes
cpuid level    : 2
wp        : yes
flags        : fpu vme de pse tsc msr pae mce cx8 sep mtrr pge mca cmov pat pse36 mmx
fxsr sse
bogomips    : 1389.36
```

And a new PHP 4.3.0 Function

file_get_contents()

```
<?php
    $contents = file_get_contents("/proc/cpuinfo");
    $contents = trim($contents,"\n");
    echo nl2br($contents);
?>
```

Output:

```
processor    : 0
vendor_id    : GenuineIntel
cpu family    : 6
model        : 8
model name    : Pentium III (Coppermine)
stepping    : 3
cpu MHz        : 696.988
cache size    : 256 KB
fdiv_bug    : no
hlt_bug        : no
f00f_bug    : no
coma_bug    : no
fpu        : yes
fpu_exception    : yes
cpuid level    : 2
wp        : yes
flags        : fpu vme de pse tsc msr pae mce cx8 sep mtrr pge mca cmov pat pse36 mmx
fxsr sse
bogomips    : 1389.36
```

C-Like File Functions

Reading from a file

```
<?php
    $file = fopen("sample.txt", "r");
    while (!feof($file)) {
        echo fgets($file), "<BR>";
    }
?>
```

Reading from a URL

```
<?php $file = fopen("http://www.php.net/file.txt", "r"); ?>
```

Writing to a file

```
<?php
    $file = fopen("agent.log", "a");
    fputs($file, $HTTP_USER_AGENT."\n");
?>
```

Variable Scope

Global Scope

The global scope spans all included files. That is, $foo will be visible in file.php.

```
<?php
    $foo = 1;
    include 'file.php';
?>
```

Function Local Scope

If you wish to access a global variable from within a function, you have to use the global keyword to tell the function that it should use the variable from the global scope instead of the function's own local scope.

```
<?php
function bar() {
    global $foo;

    echo $foo;
}

$foo = 1;
bar();
?>
```

Output:

```
1
```

Static Variables

```
<?php
function bar2() {
    static $i=0;
    return ++$i;
}
echo bar2()."<br>\n";
echo bar2()."<br>\n";
?>
```

Output:

```
1
2
```

register_globals

PHP automatically creates global variables containing data from a variety of external sources. This feature can be turned off by turning off the register_globals setting. With register_globals you can access this data via a number of special associative arrays listed below.

$_GET['foo']='bar'

```
http://www.php.net/index.php?foo=bar
```

$_POST['foo']='bar'

```
<form action="script.php" method="POST">
<input type="text" name="foo" value="bar">
</form>
```

$_COOKIE['foo']='bar'

```
<?php
    SetCookie('foo','bar');
?>
```

$_REQUEST['foo']='bar'

```
<?php
    SetCookie('foo','bar');
?>
```

$_SERVER

Special variables set by your web server. You can get a list of what is set by running this code on your server:

```
<?php
foreach($_SERVER as $key=>$val) {
    echo '$_SERVER['.$key."] = $val<br>\n";
}
?>
$_SERVER[DOCUMENT_ROOT] = /home/rasmus/phpweb
$_SERVER[HTTP_ACCEPT] = text/xml,application/xml,application/xht...
$_SERVER[HTTP_ACCEPT_CHARSET] = ISO-8859-1,utf-8;q=0.7,*;q=0.7
$_SERVER[HTTP_ACCEPT_ENCODING] = gzip,deflate,compress;q=0.9
$_SERVER[HTTP_ACCEPT_LANGUAGE] = en-us,en;q=0.5
$_SERVER[HTTP_CONNECTION] = keep-alive
$_SERVER[HTTP_COOKIE] = PHPSESSID=b51bcbca3094d7ae5b48c53a8786b4...
$_SERVER[HTTP_HOST] = localhost
$_SERVER[HTTP_KEEP_ALIVE] = 300
$_SERVER[HTTP_REFERER] = http://localhost/pres2/index.php/PHP
$_SERVER[HTTP_USER_AGENT] = Mozilla/5.0 (X11; U; Linux i686; en-US; ...
$_SERVER[PATH] = /usr/local/bin:/bin:/usr/bin:/usr/sbin:/...
$_SERVER[REMOTE_ADDR] = 127.0.0.1
$_SERVER[REMOTE_PORT] = 1104
$_SERVER[SCRIPT_FILENAME] = /home/rasmus/phpweb/pres2/show.php
$_SERVER[SERVER_ADDR] = 127.0.0.1
$_SERVER[SERVER_ADMIN] = rasmus@lerdorf.com
$_SERVER[SERVER_NAME] = localhost
$_SERVER[SERVER_PORT] = 80
$_SERVER[SERVER_SIGNATURE] = Apache/1.3.28-dev Server at localhost Po...
$_SERVER[SERVER_SOFTWARE] = Apache/1.3.28-dev (Unix) PHP/4.3.1-dev
$_SERVER[GATEWAY_INTERFACE] = CGI/1.1
$_SERVER[SERVER_PROTOCOL] = HTTP/1.1
$_SERVER[REQUEST_METHOD] = GET
$_SERVER[QUERY_STRING] =
$_SERVER[REQUEST_URI] = /pres2/show.php/perth1
$_SERVER[SCRIPT_NAME] = /pres2/show.php
$_SERVER[PATH_INFO] = /perth1
$_SERVER[PATH_TRANSLATED] = /home/rasmus/phpweb/perth1
```

```
$_SERVER[PHP_SELF] = /pres2/show.php/perth1
$_SERVER[argv] = Array
$_SERVER[argc] = 0
```

$_ENV

Environment variables that were present at server startup time. Note that environment variables created by PHP using putenv() will not be shown here, nor do they persist beyond the request.

```
$_ENV[MANPATH] = /usr/man:/usr/local/man:/usr/share/man
$_ENV[SUPPORTED] = en_US:en
$_ENV[SSH_AGENT_PID] = 807
$_ENV[HOSTNAME] = thinkpad.lerdorf.com
$_ENV[HOST] = thinkpad.lerdorf.com
$_ENV[TERM] = xterm
$_ENV[SHELL] = /bin/tcsh
$_ENV[GTK_RC_FILES] = /etc/gtk/gtkrc:/home/rasmus/.gtkrc-1.2-g...
$_ENV[WINDOWID] = 25165965
$_ENV[QTDIR] = /usr/lib/qt3-gcc3.2
$_ENV[BK_HOST] = mysql.com
$_ENV[USER] = root
$_ENV[GROUP] = rasmus
$_ENV[LS_COLORS] = no=00:fi=00:di=00;34:ln=00;36:pi=40;33:s...
$_ENV[SUDO_USER] = rasmus
$_ENV[GDK_USE_XFT] = 1
$_ENV[SUDO_UID] = 500
$_ENV[HOSTTYPE] = i386-linux
$_ENV[SSH_AUTH_SOCK] = /tmp/ssh-XXxaavQa/agent.795
$_ENV[SESSION_MANAGER] = local/thinkpad.lerdorf.com:/tmp/.ICE-uni...
$_ENV[PAGER] = /usr/bin/less
$_ENV[BK_LICENSE] = ACCEPTED
$_ENV[BK_USER] = rasmus
$_ENV[PATH] = /usr/local/bin:/bin:/usr/bin:/usr/sbin:/...
$_ENV[MAIL] = /var/mail/rasmus
$_ENV[PWD] = /home/rasmus
$_ENV[XMODIFIERS] = @im=none
$_ENV[EDITOR] = vi
$_ENV[LANG] = en_US
$_ENV[NPROMPT] = { [34;1m}t m:~>{ [0m%} >
$_ENV[SSH_ASKPASS] = /usr/libexec/openssh/gnome-ssh-askpass
$_ENV[SUDO_COMMAND] = /bin/tcsh
$_ENV[HOME] = /home/rasmus
$_ENV[SHLVL] = 5
$_ENV[OSTYPE] = linux
$_ENV[GNOME_DESKTOP_SESSION_ID] = Default
$_ENV[VENDOR] = intel
$_ENV[LOGNAME] = root
$_ENV[MACHTYPE] = i386
$_ENV[MOZILLA_XFT] = 1
$_ENV[VISUAL] = vi
$_ENV[LESSOPEN] = |/usr/bin/lesspipe.sh %s
$_ENV[SUDO_GID] = 500
$_ENV[DISPLAY] = :0
$_ENV[G_BROKEN_FILENAMES] = 1
$_ENV[COLORTERM] = gnome-terminal
$_ENV[XAUTHORITY] = /home/rasmus/.Xauthority
$ENV[] = /usr/sbin/httpd
```

$_FILES

Used for the RFC1867 file upload feature.

```
$_FILES['userfile']['name']
$_FILES['userfile']['type']
$_FILES['userfile']['size']
$_FILES['userfile']['tmp_name']
```

$HTTP_RAW_POST_DATA

When the mime type associated with the POST data is unrecognized or not set, the raw post data is available in this variable.

DB Abstraction

A database abstraction layer is bundled with PHP 4. In the example below, the only thing you would need to change to use a different database is the odbc word on the third line.

```
<?php
  require_once 'DB.php';
  $db = DB::connect('odbc://user:pw@host/mydb');
  $stmt = $db->prepare('SELECT * FROM comments');
  $result = $db->execute($stmt);
  while($row = $db->fetchrow($result)) {
     while($row as $field => $value ) {
        echo "$field: $value<br>\n";
     }
  }
  $db->disconnect();
?>
```

HTTP Headers

You can add headers to the HTTP response in PHP using the Header() function. Since the response headers are sent before any of the actual response data, you have to send these headers before outputting any data. So, put any such header calls at the top of your script.

Redirection

```
<?header('Location: http://www.php.net')?>
```

Setting a Last-Modified Header

```
<?header('Last-Modified: '.
      gmdate('D, d M Y H:i:s',getlastmod()).' GMT')?>
```

Avoid all Caching

```
<?php
Header('Cache-Control: no-cache, must-revalidate');
Header('Pragma: no-cache');
Header('Expires: Mon,26 Jul 1980 05:00:00 GMT');
?>
```

Cookies

Setting a Session Cookie

```
<? SetCookie('Cookie_Name','value'); ?>
```

Setting a Persistent Cookie

```
<? SetCookie('Cookie_Name','value',
             mktime(12,0,0,22,11,2002) ); ?>
```

Reading a Cookie

```
<? echo $Cookie_Name; ?>
```

```
<? echo $HTTP_COOKIE_VARS['Cookie_Name']; ?>
```

Deleting the Cookies

```
<? SetCookie('Cookie_Name',''); ?>
```

```
<? SetCookie('Cookie_Name','',
             mktime(12,0,0,22,11,1970) ); ?>
```

Other Optional Paramters

Path, Domain, and Secure parameters can also be set to restrict a cookie to a certain path, domain or in the case of the Secure parameter, limit the cookie to only be set if the request came in over an SSL connection.

A Simple Guestbook

Guestbook Example

A very simple guestbook example to illustrate basic file handling.

```
<html><head><title>My Guestbook</title></head>
<body>
<h1>Welcome to my Guestbook</h1>
<h2>Please write me a little note below</h2>
<form action="<?="$PHP_SELF#results"?>" method="POST">
<textarea cols=40 rows=5 name=note wrap=virtual></textarea>
<input type=submit value=" Send it ">
</form>
<?if(isset($note)) {
    $fp = fopen("/tmp/notes.txt","a");
    fputs($fp,nl2br($note).'<br>');
    fclose($fp);
  }
?><h2>The entries so far:</h2>
<? @ReadFile("/tmp/notes.txt") ?>
</body></html>
```

Output:

```
My Guestbook

Welcome to my Guestbook
Please write me a little note below




The entries so far:
```

SQL Example

PHP scripts that talk to databases all look similar to the code below. Connect to the database, select a database, send a query and loop through the results.

```
<?php
  mysql_pconnect("db.server.com","username","password");
  mysql_select_db("products");
  $result = mysql_query("SELECT * FROM details");
  if ($result) {
      echo "<TABLE>\n";
      echo "<TR><TH>Name</TH><TH>Description</TH></TR>\n";
      while ($a = mysql_fetch_array($result)) {
        echo "<TR><TD>$a[name]</TD>", "<TD>$a[descr]</TD></TR>";
      }
      echo "</TABLE>";
  } else {
      echo "<P>Nothing to see here.";
  }
?>
```

Database Support

SQL

- Adabas D
- Empress
- IBM DB2
- Informix
- Ingres
- Interbase
- Frontbase
- mSQL
- Direct MS-SQL
- MySQL
- ODBC
- Ovrimos
- Oracle (OCI7,OCI8)
- PostgreSQL
- Raima Velocis
- Solid
- Sybase
- DB++

Others

- dBase
- filePro (read-only)
- dbm (ndbm, gdbm, Berkeley db)

DB-driven Guestbook

SQL'izing the Guestbook Example

Recall our file-driven guestbook example from earlier. We are going to convert this into an SQL-driven guestbook by first creating a database, then a schema for the table where we will store the data and then we will modify the code.

```
<h1>Welcome to my Guestbook</h1>
  <h2>Please write me a little note below</h2>
  <form action="<? echo $PHP_SELF?>" method="POST">
  <textarea cols=40 rows=5 name="note"></textarea>
  <input type="submit" value=" Send it ">
  </form>
  <?
  if(isset($note)) {
     $fp = fopen("notes.txt","a");
     fputs($fp,nl2br($note)."<br>");
     fclose($fp);
  }
  ?>
<h2>The entries so far:</h2>
<? @ReadFile("notes.txt") ?>
```

Create a database

```
mysqladmin create mydb
```

Create a Schema

```
CREATE TABLE comments (
  id int(8) DEFAULT '0' NOT NULL auto_increment,
  comment text,
  ts datetime,
  PRIMARY KEY (id)
);
```

DB-driven Guestbook

SQL'izing the Guestbook Example

Here we add the necessary code to store our guestbook comments in an SQL database

```
<html><head><title>My Guestbook</title></head>
<body>
<h1>Welcome to my Guestbook</h1>
<h2>Please write me a little note below</h2>
<form action="<? echo "$PHP_SELF#results"?>" method="POST">
<textarea cols=40 rows=5 name="note" wrap=virtual></textarea>
<input type="submit" value=" Send it ">
</form>
<?
  mysql_connect('localhost');
  mysql_select_db('mydb');
  if(isset($note)) {
     $ts = date("Y-m-d H:i:s");
     mysql_query("insert into comments values
                  (0,'$note','$ts')");
  }
?>
<h2>The entries so far:</h2>
<? $result = mysql_query("select * from comments order by ts desc");
     while($row=mysql_fetch_row($result)) {
       echo $row[0] ." " . $row[1] . " " . $row[2] . "<br>\n";
     }  ?>
</body></html>
```

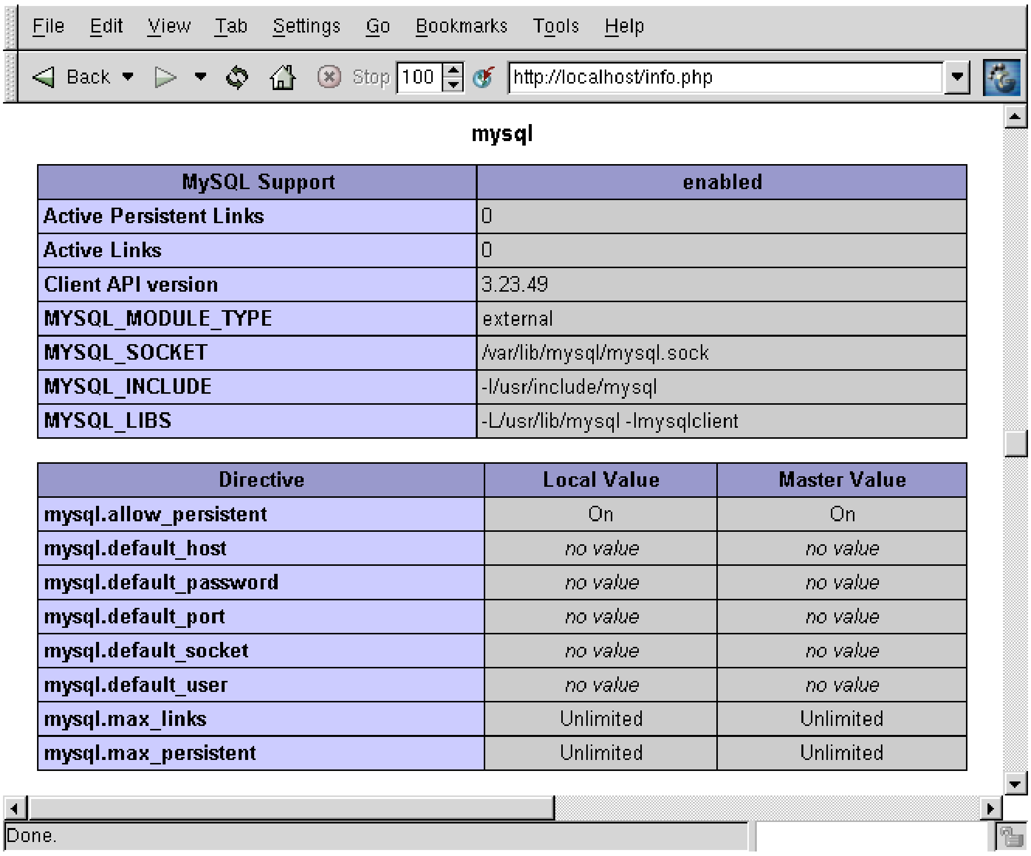
Output:

```
My Guestbook

Welcome to my Guestbook
Please write me a little note below




The entries so far:
```

Setup

Check your PHP Setup for MySQL support

```
<? phpinfo() ?>
```



mysql

MySQL Support	enabled
Active Persistent Links	0
Active Links	0
Client API version	3.23.49
MYSQL_MODULE_TYPE	external
MYSQL_SOCKET	/var/lib/mysql/mysql.sock
MYSQL_INCLUDE	-I/usr/include/mysql
MYSQL_LIBS	-L/usr/lib/mysql -lmysqlclient

Directive	Local Value	Master Value
mysql.allow_persistent	On	On
mysql.default_host	*no value*	*no value*
mysql.default_password	*no value*	*no value*
mysql.default_port	*no value*	*no value*
mysql.default_socket	*no value*	*no value*
mysql.default_user	*no value*	*no value*
mysql.max_links	Unlimited	Unlimited
mysql.max_persistent	Unlimited	Unlimited

If not enabled

Very rare since a MySQL client library is distributed with PHP and built into PHP by default. However, it is possible to build PHP without MySQL support. Some possible fixes:

```
apt-get install php-mysql

rpm -Uvh php-mysql-4.2.2-1.i386.rpm



./configure --with-mysql=shared,/usr
cp modules/mysql.so /usr/local/lib/php

extension_dir=/usr/local/lib/php
extension=mysql.so
```

Sanity Check

Make sure MySQL is running

```
prompt:~> mysqlshow
+-----------+
| Databases |
+-----------+
| mysql     |
| test      |
+-----------+
```

Or with the latest PHP

```
<? echo mysql_stat() ?>
```

Output:

```
Uptime: 51  Threads: 2  Questions: 25  Slow queries: 3  Opens: 12  Flush tables:
1  Open tables: 2 Queries per second avg: 0.490
```

Connecting to MySQL

The simple connection

```
<?
$conn = mysql_connect('localhost');
echo $conn;
?>
```

Output:

```
Resource id #96
```

Other variations

```
<?
mysql_connect('db.domain.com:33306','rasmus','foobar');
mysql_connect('localhost:/tmp/mysql.sock');
mysql_connect('localhost','rasmus','foobar',
              true,MYSQL_CLIENT_SSL|MYSQL_CLIENT_COMPRESS);
?>
```

Persistent Connections

The simple connection

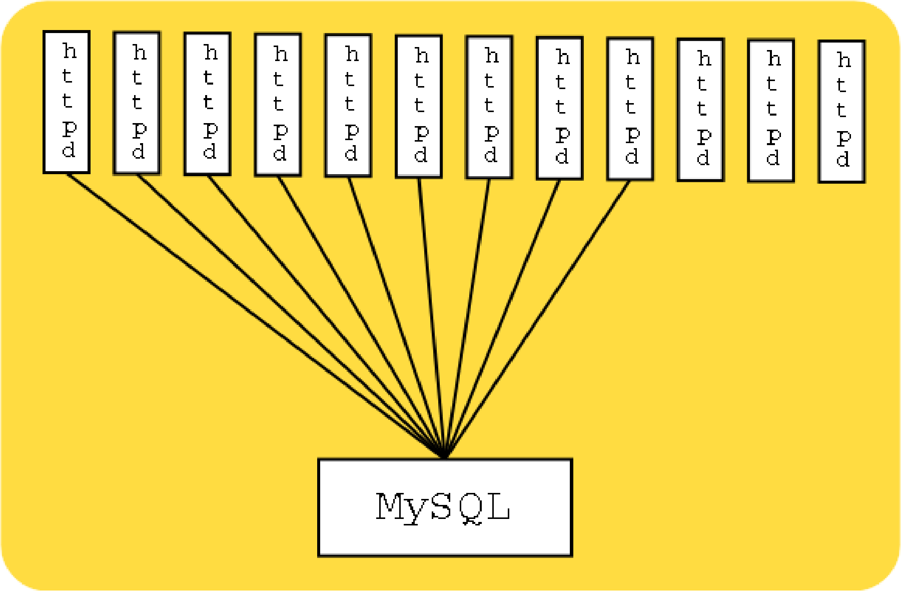
```
<?
$conn = mysql_pconnect('localhost');
echo $conn;
?>
```

Output:

```
Resource id #109
```

Caveats

- Watch out for multi-credential connections
- Make sure you match up max_connections and MaxClients



Creating a Database

Create a DB

```
<?
  mysql_connect('localhost');
  if(mysql_query("CREATE DATABASE foo")) {
    echo "Database foo created";
  } else {
    echo mysql_error();
  }
?>
```

Output:

```
Database foo created
```

Create a Table

```
<?
  mysql_select_db('foo');
  $result = mysql_query("CREATE TABLE users (
    id varchar(16) binary NOT NULL default '',
    Password varchar(16) NOT NULL default '',
    Name varchar(64) default NULL,
    email varchar(64) default NULL,
    ts timestamp(14) NOT NULL,
    PRIMARY KEY (id)
  )");
  if($result) {
    echo "Table created";
  } else {
    echo mysql_error();
  }
?>
```

Output:

```
Table created
```

Inserting Data

INSERT Query

```
<?php
function add_user($id, $pass, $name, $email) {
  $result=mysql_query("insert into users values
                     ('$id',ENCRYPT('$pass'),'$name','$email',NULL)");
  if($result) {
    echo "Row inserted<br />";
  } else {
    echo mysql_error()."<br />";
  }
}

mysql_connect('localhost');
mysql_select_db('foo');

add_user('rasmus','foobar','Rasmus Lerdorf','rasmus@php.net');
add_user('carl','carlspass','Carl AlexandeR Lerdorf','carl@lerdorf.com');
?>
```

Output:

```
Row insertedRow inserted
```

Selecting Data

SELECT Query

```
<?
  mysql_connect('localhost');
  mysql_select_db('foo');
  $result = mysql_query("select * from users");
  if(!$result) echo mysql_error();
  else {
    while($row = mysql_fetch_row($result)) {
        echo "$row[0] - $row[1] - $row[2] - $row[3] - $row[4]<br />\n";
    }
  }
?>
```

Output:

```
rasmus - vp3R9QUnlSE36 - Rasmus Lerdorf - rasmus@php.net - 20030122053803
carl - vpwyGFrDj80PE - Carl AlexandeR Lerdorf - carl@lerdorf.com -
20030122053803
```

mysql_fetch_array()

```
<?
  $result = mysql_query("select * from users order by id");
  if(!$result) echo mysql_error();
  else {
    while($row = mysql_fetch_array($result,MYSQL_ASSOC)) {
        echo "$row[id] - $row[Password] - $row[Name] -
              $row[email] - $row[ts]<br />\n";
    }
  }
?>
```

Output:

```
carl - vpwyGFrDj80PE - Carl AlexandeR Lerdorf -
              carl@lerdorf.com - 20030122053803
rasmus - vp3R9QUnlSE36 - Rasmus Lerdorf -
              rasmus@php.net - 20030122053803
```

Dealing with timestamps

Using DATE_FORMAT

```
<?
mysql_connect('localhost');
mysql_select_db('foo');
$result = mysql_query(
  "select id, email,
   date_format(ts,'W M D, Y %r') as d
   from users order by ts");
if($result) {
  while($row = mysql_fetch_assoc($result)) {
    echo "$row[id] - $row[email] - $row[d]<br />\n";
  }
} else {
  echo mysql_error();
}
?>
```

Output:

```
rasmus - rasmus@php.net - Wednesday January 22nd, 2003 05:38:03 AM
carl - carl@lerdorf.com - Wednesday January 22nd, 2003 05:38:03 AM
```

Changing Existing Rows

Using UPDATE

```
<?
  mysql_connect('localhost');
  mysql_select_db('foo');
  $result = mysql_query(
    "update users set email = 'babycarl@lerdorf.com'
     where id = 'carl'");
  if($result) {
    echo mysql_affected_rows();
  } else {
    echo mysql_error();
  }
?>
```

Output:

```
1
```

REPLACE INTO

You can also use REPLACE INTO to update a row if it exists and insert it if it doesn't.

Magic Quotes

Escaping troublesome characters

When you are inserting data into a MySQL database, certain characters have a special meaning and must therefore be escaped if you wish to insert these characters literally.

By default, PHP will escape these characters for you in any data coming from the user in GET, Post or Cookie data. This magic escaping is known as Magic Quotes and can be configured in your php.ini file by setting the magic_quotes_gpc directive.

The characters affected are \ ' " and NUL (char 0). If these characters appear in user-supplied data they will be escaped with a \ (backslash).

Some people prefer to turn this feature off and handle escaping data manually using the addslashes() function. There is a converse function, stripslashes(), which removes the backslash characters in an escaped string.

GD 1/2

Creating a PNG with a TrueType font

```
<?
Header("Content-type: image/png");
$im = ImageCreate(630,80);
$blue = ImageColorAllocate($im,0x5B,0x69,0xA6);
$white = ImageColorAllocate($im,255,255,255);
$black = ImageColorAllocate($im,0,0,0);
ImageTTFText($im, 45, 0, 10, 57, $black, "CANDY", $text);
ImageTTFText($im, 45, 0, 6, 54, $white, "CANDY", $text);
ImagePNG($im);
?>
```

```
<IMG src="txt.php?text=<?echo urlencode($text)?>">
```

```
!
```

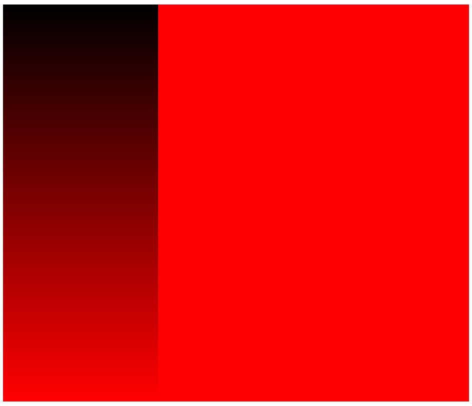
Colours

Color Handling

For images with an 8-bit indexed palette it can be tricky to manage colors.

```
<?
$im  = ImageCreate(300,256);
for($r=0; $r<256; $r++) {
    $col = ImageColorAllocate($im,$r,0,0);
    ImageLine($im, 0,$r, 100, $r, $col);
}
for($g=0; $g<256; $g++) {
    $col = ImageColorAllocate($im,0,$g,0);
    ImageLine($im, 100,255-$g, 200, 255-$g, $col);
}
for($b=0; $b<256; $b++) {
    $col = ImageColorAllocate($im,0,0,$b);
    ImageLine($im, 200,$b, 300, $b, $col);
}
Header('Content-Type: image/png');
ImagePNG($im);
?>
```

Output:



For paletted images the following functions can be useful:

- ImageColorClosest
- ImageColorExact
- ImageColorDeallocate

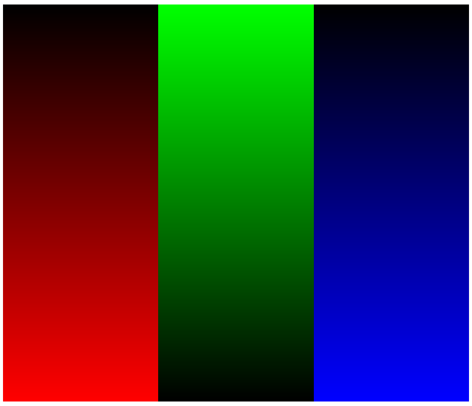
Colours

Colour Handling

For Truecolor images we have no such issues.

```
<?
$im  = ImageCreateTruecolor(300,256);
for($r=0; $r<256; $r++) {
    $col = ImageColorAllocate($im,$r,0,0);
    ImageLine($im, 0,$r, 100, $r, $col);
}
for($g=0; $g<256; $g++) {
    $col = ImageColorAllocate($im,0,$g,0);
    ImageLine($im, 100,255-$g, 200, 255-$g, $col);
}
for($b=0; $b<256; $b++) {
    $col = ImageColorAllocate($im,0,0,$b);
    ImageLine($im, 200,$b, 300, $b, $col);
}
Header('Content-Type: image/png');
ImagePNG($im);
?>
```

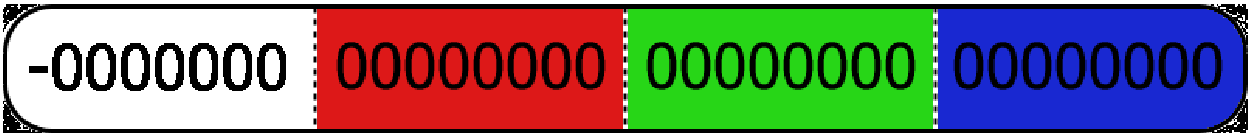
Output:



Truecolor Colors

Truecolor color handling

For Truecolor images the colors are actually simple 31-bit longs. Or, think of them as being composed of 4 bytes arranged like this:

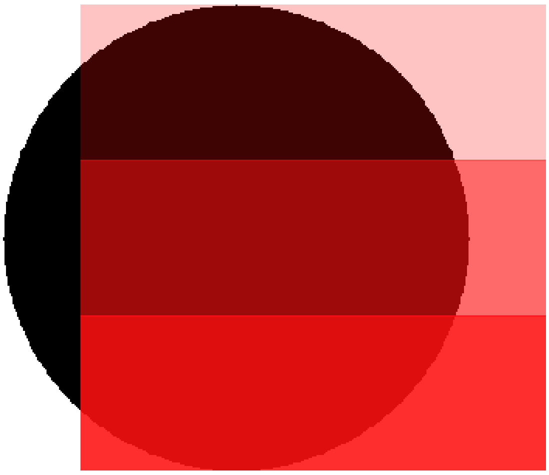


The highest or leftmost bit in the alpha channel is not used which means the alpha channel can only have values from 0 to 127. You can use the ImageColorAllocate() as with paletted images, but you can also specify the color directly.

For example:

```
<?
$im  = ImageCreateTruecolor(400,300);
ImageFilledRectangle($im,0,0,399,299,0x00ffffff);
ImageFilledEllipse($im,200,150,300,300,0x00000000);
ImageAlphaBlending($im,true);
ImageFilledRectangle($im,100,0,400,100,0x60ff1111);
ImageFilledRectangle($im,100,100,400,200,0x30ff1111);
ImageFilledRectangle($im,100,200,400,300,0x10ff1111);
Header('Content-Type: image/png');
ImagePNG($im);
?>
```

Output:



This example could also be written like this:

```
<?php
$im  = ImageCreateTruecolor(400,300);
$white = ImageColorAllocate($im,255,255,255);
ImageFilledRectangle($im,0,0,399,299,$white);
$black = ImageColorAllocate($im,0,0,0);
ImageFilledEllipse($im,200,150,300,300,$black);
ImageAlphaBlending($im,true);
$col = ImageColorResolveAlpha($im,0xff,0x11,0x11,0x60);
ImageFilledRectangle($im,100,0,400,100,$col);
$col = ImageColorResolveAlpha($im,0xff,0x11,0x11,0x30);
ImageFilledRectangle($im,100,100,400,200,$col);
$col = ImageColorResolveAlpha($im,0xff,0x11,0x11,0x10);
ImageFilledRectangle($im,100,200,400,300,$col);
Header('Content-Type: image/png');
ImagePNG($im);
?>
```

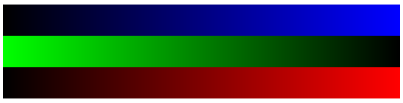
Truecolor Colors

Truecolor Color Handling

Given the nature of the way truecolor colors are constructed, we can rewrite our color testing strip using PHP's bitshift operator:

```
<?
$im = ImageCreateTrueColor(256,60);
for($x=0; $x<256; $x++) {
    ImageLine($im, $x, 0, $x, 19, $x);
    ImageLine($im, 255-$x, 20, 255-$x, 39, $x<<8);
    ImageLine($im, $x, 40, $x, 59, $x<<16);
}
Header('Content-Type: image/png');
ImagePNG($im);
?>
```

Output:



ImageColorAt

Using ImageColorAt()

```
<? $image = "presentations/slides/intro/php-tiny.jpg"; ?>
<img src="<?=$image?>"><br />
<?
    $im = imagecreatefromjpeg($image);
    $dx = imagesx($im);
    $dy = imagesy($im);
    for($y = 0; $y < $dy; $y++) {
        for($x=0; $x < $dx; $x++) {
            $col = imagecolorat($im, $x, $y);
            $rgb = imagecolorsforindex($im,$col);
            printf("<font color=#02x02x%02x>#</font>",
              $rgb['red'],$rgb['green'],$rgb['blue']);
        }
        echo "<br />\n";
    }
    imagedestroy($im);
?>
```

Output:

```
################################################################
################################################################
################################################################
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```

GD 1/2

CreateFrom and Bounding Box Math

```
<?
Header("Content-type: image/png");
$font = 'phpi';
if(!$si) $si = 66;
$im = ImageCreateFromPNG('php-blank.png');
$tsize = imagettfbbox($si,0,$font,$text);
$dx = abs($tsize[2]-$tsize[0]);
$dy = abs($tsize[5]-$tsize[3]);
$x = ( imagesx($im) - $dx ) / 2;
$y = ( imagesy($im) - $dy ) / 2 + 3*$dy/4;
$blue = ImageColorAllocate($im,0x5B,0x69,0xA6);
$white = ImageColorAllocate($im,255,255,255);
$black = ImageColorAllocate($im,0,0,0);
ImageAlphaBlending($im,true);
ImageTTFText($im, $si, 0, $x, $y, $white, $font, $text);
ImageTTFText($im, $si, 0, $x+2, $y, $white, $font, $text);
ImageTTFText($im, $si, 0, $x, $y+2, $white, $font, $text);
ImageTTFText($im, $si, 0, $x+2, $y+2, $white, $font, $text);
ImageTTFText($im, $si, 0, $x+1, $y+1, $black, $font, $text);
ImagePNG($im);
?>
```

```
<IMG src="txt2.php?text=<?echo urlencode($text)?>&si=<?echo $si?>">
```

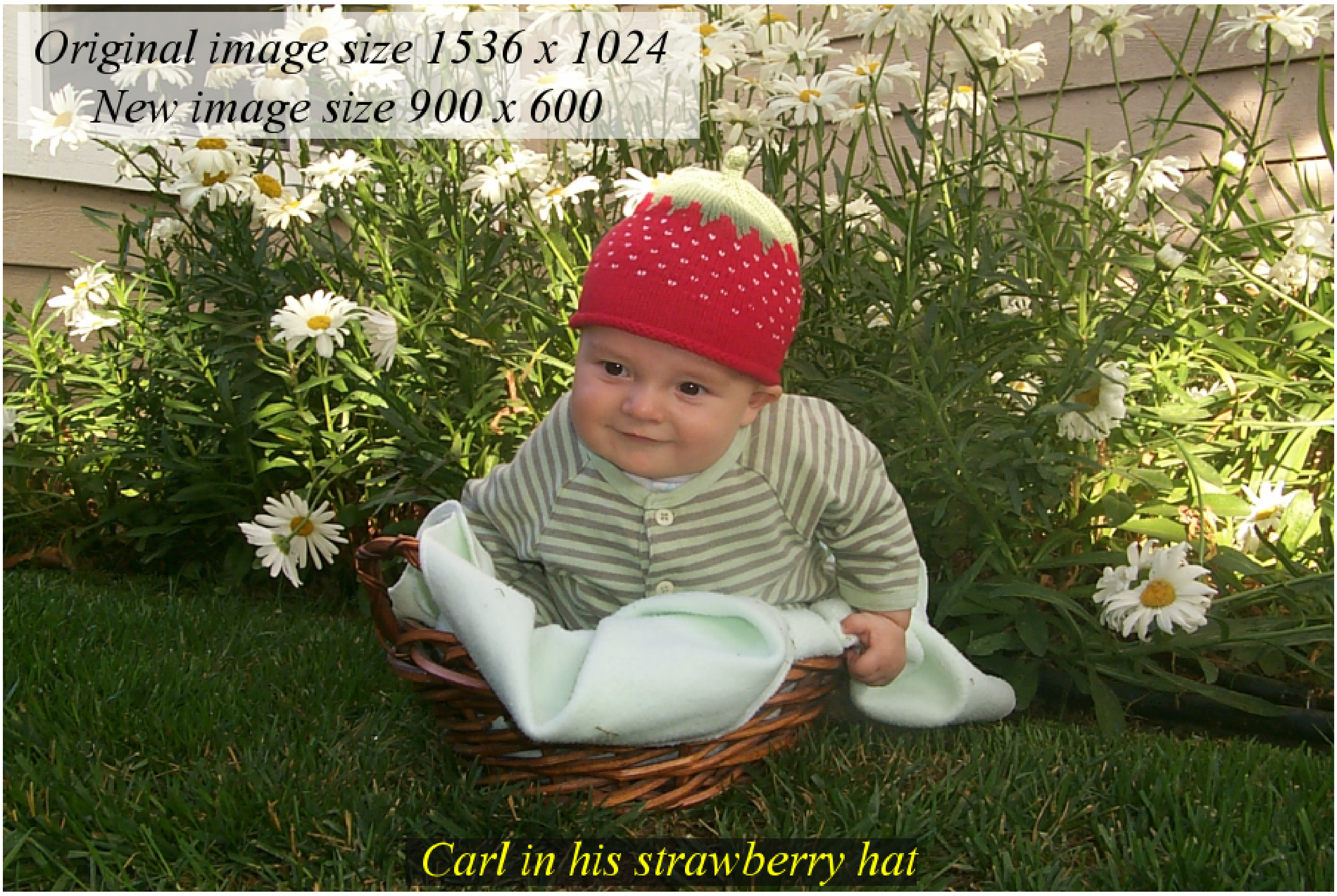
```
Text:  Size:  !
```

GD2

Scaling and the Alpha Channel

```
<?
Header('Content-Type: image/png');
$height = 600;
$txt = 'Carl in his strawberry hat';
$size = ImageTTFBbox(25,0,'timesi',$txt);
$txt_w = abs($size[2]-$size[0]);
$txt_h = abs($size[6]-$size[1]);
$bg = ImageCreateFromJpeg('img_resize.jpg');
$img_width = imagesx($bg);
$img_height = imagesy($bg);
$width = ($height)/$img_height * $img_width;
$sizing =  "Original image size $img_width x $img_height\r\n";
$sizing .= "     New image size $width x $height";
$im = ImageCreateTrueColor($width,$height);
ImageCopyResampled($im,$bg,0,0,0,0,$width,$height,$img_width,$img_height);
$white = ImageColorAllocate($im,255,255,255);
$black = ImageColorAllocate($im,0,0,0);
$col = ImageColorResolveAlpha($im,10,10,10,50);
ImageFilledRectangle($im,10,5,470,90,0x30ffffff);
ImageTTFText($im,25,0,20,40,$black,'timesi',$sizing);
ImageDestroy($bg);
$box = ($width-$txt_w)/2;
ImageFilledRectangle($im,$box-10,$height-$txt_h-30,$width-$box,$height-5,$col);
$yellow = ImageColorAllocate($im,255,255,10);
ImageTTFText($im,25,0,$box,$height-$txt_h-5,$yellow,'timesi',$txt);
ImagePNG($im);
?>
```

Output:



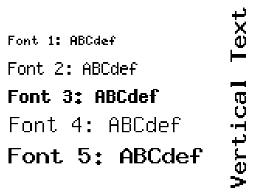
Text

Built-in Fonts

GD comes with 5 built-in fonts. They aren't all that useful.

```
<?
$im  = ImageCreate(175,125);
$white = ImageColorAllocate($im,255,255,255);
$black = ImageColorAllocate($im,0,0,0);
ImageString($im,1,10,20,"Font 1: ABCdef",$black);
ImageString($im,2,10,35,"Font 2: ABCdef",$black);
ImageString($im,3,10,53,"Font 3: ABCdef",$black);
ImageString($im,4,10,70,"Font 4: ABCdef",$black);
ImageString($im,5,10,90,"Font 5: ABCdef",$black);
ImageStringUp($im,5,150,118,"Vertical Text",$black);
Header('Content-Type: image/png');
ImagePNG($im);
?>
```

Output:



```
Font 1: ABCdef
Font 2: ABCdef
Font 3: ABCdef
Font 4: ABCdef
Font 5: ABCdef
```

TTF Text

TrueType Fonts

You can use any TrueType Font that includes a Unicode mapping table. Fonts such as Wingdings will not work.

```
<?
$im  = ImageCreate(600,7150);
$white = ImageColorAllocate($im,255,255,255);
$black = ImageColorAllocate($im,0,0,0);
$dir = opendir('/usr/share/fonts/truetype');
$y=30;
while($file = readdir($dir)) {
    if(substr($file,strrpos($file,'.'))=='.ttf') {
        ImageString($im,5,5,$y-20,substr($file,0,-4),$black);
        ImageTTFText($im,30,0,100,$y,$black, substr($file,0,-4),"ABCdéf123");
        $y+=40;
    }
}
Header('Content-Type: image/png');
ImagePNG($im);
?>
```

Output:

abalc	ABCdéf123
a_d_mono	□□□□□□□□
Adresack	□□□□□□□□
aggstock	ABCd f123
ariblk	**ABCdéf123**
arnari	*ABCdéf123*
arnar	ABCdéf123
bkant	ABCdéf123
Bookosbi	***ABCdéf123***
bookosb	**ABCdéf123**
Bookosi	*ABCdéf123*
Bookos	ABCdéf123
calist	ABCdéf123
comicbd	**ABCdéf123**
comic	ABCdéf123
coprgtb	**ABCDÉF123**
coprgtl	ABCDÉF123
courbd	**ABCdéf123**
courbi	***ABCdéf123***
couri	*ABCdéf123*
cour	ABCdéf123
dc_sans	ABC'D□'F□□□
dc_serif	ABC'D□'F□□□
dilate	abcdéf123
dirtydoz	□□□□□□□□
Dotmatrx	ABCdéf 123
dronecat	□□□□□□□□
earth	
EklektiO	ABCDÉF123
electroh	□□□□□□□□
Eroded2020	ABCD□F123
espek___	□□□□□□□□
Garabd	**ABCdéf123**
Garait	*ABCdéf123*

EXIF

Reading EXIF Headers from a JPEG

```
<?php
$data = exif_read_data('presentations/slides/intro/img_resize.jpg');
foreach($data as $key=>$val) {
    if(is_array($val)) {
        foreach($val as $k=>$v) {
            echo $key."[$k]: $v<br />\n";
        }
    } else
        echo "$key: ".@substr($val,0,40)."<br />\n";
}
?>
```

Output:

```
FileName: img_resize.jpg
FileDateTime: 1027351588
FileSize: 669158
FileType: 2
MimeType: image/jpeg
SectionsFound: ANY_TAG, IFD0, THUMBNAIL, EXIF
COMPUTED[html]: width="1536" height="1024"
COMPUTED[Height]: 1024
COMPUTED[Width]: 1536
COMPUTED[IsColor]: 1
COMPUTED[ByteOrderMotorola]: 0
COMPUTED[ApertureFNumber]: f/4.0
COMPUTED[FocusDistance]: 1.07m
COMPUTED[Thumbnail.FileType]: 8
COMPUTED[Thumbnail.MimeType]: image/tiff
COMPUTED[Thumbnail.Height]: 64
COMPUTED[Thumbnail.Width]: 96
Make: Eastman Kodak Company
Model: KODAK DC265 ZOOM DIGITAL CAMERA (V01.00)
Orientation: 1
XResolution: 150/1
YResolution: 150/1
ResolutionUnit: 2
YCbCrPositioning: 1
Exif_IFD_Pointer: 190
THUMBNAIL[ImageWidth]: 96
THUMBNAIL[ImageLength]: 64
THUMBNAIL[BitsPerSample]: Array
THUMBNAIL[Compression]: 1
THUMBNAIL[PhotometricInterpretation]: 2
THUMBNAIL[StripOffsets]: 1748
THUMBNAIL[Orientation]: 1
THUMBNAIL[SamplesPerPixel]: 3
THUMBNAIL[RowsPerStrip]: 64
THUMBNAIL[StripByteCounts]: 18432
THUMBNAIL[XResolution]: 72/1
THUMBNAIL[YResolution]: 72/1
THUMBNAIL[PlanarConfiguration]: 1
THUMBNAIL[ResolutionUnit]: 2
ExposureTime: 1/250
FNumber: 400/100
ExifVersion: 0200
DateTimeOriginal: 1999:01:31 04:17:59
ComponentsConfiguration: *
```

Fetching an embedded thumbnail

```
<?
Header('Content-type: image/tiff');
echo exif_thumbnail('p0004557.jpg');
?>
```

A PDF Invoice

```
<?php
$pdf = pdf_new();
pdf_open_file($pdf);
pdf_set_info($pdf, "Author","Rasmus Lerdorf");
pdf_set_info($pdf, "Title","Sample Invoice");
pdf_set_info($pdf, "Creator", "See Author");
pdf_set_info($pdf, "Subject", "Sample Invoice");

$sizes = array('a4'=>'595x842', 'letter'=>'612x792', 'legal'=>'612x1008');

if(!isset($type)) $type='letter';
list($x,$y) = explode('x',$sizes[$type]);

$items = array(array('Our special low-cost widget that does
everything','299.99'),
               array('Our special high-cost widget that does more','1899'),
               array('A blue widget','29.95'),
               array('And a red widget','49.95'),
               array('A yellow widget that makes noise','49.9'),
               array('And one that doesn\'t','999.95'),
              );

pdf_begin_page($pdf, $x, $y);

$im = pdf_open_jpeg($pdf, "php-big.jpg");
pdf_place_image($pdf, $im, 5, $y-72, 0.5);
pdf_close_image ($pdf,$im);

pdf_set_value($pdf, 'textrendering', 0); // fill

pdf_set_font($pdf, "Helvetica" , 12, winansi);
pdf_show_xy($pdf, 'Generic Evil Company Inc.',145,$y-20);
pdf_continue_text($pdf, '123 Main Street');
pdf_continue_text($pdf, 'Dark City, CA 98765');

pdf_set_font($pdf, "Helvetica" , 10, winansi);
pdf_show_xy($pdf, 'Helpless Customer Ltd.',20,$y-100);
pdf_continue_text($pdf, '2 Small Street');
pdf_continue_text($pdf, 'Little Town, ID 56789');

pdf_set_font($pdf, "Helvetica" , 10, winansi);
pdf_show_xy($pdf, 'Terms: Net 30',150,$y-100);
pdf_continue_text($pdf, 'PO #:  12345');

pdf_set_font($pdf, "Helvetica-Bold" , 30, winansi);
pdf_show_xy($pdf, " I N V O I C E ",$x-250,$y-112);

pdf_setcolor($pdf,'fill','gray',0.9,0,0,0);
pdf_rect($pdf,20,80,$x-40,$y-212);
pdf_fill_stroke($pdf);

$offset = 184; $i=0;
while($y-$offset > 80) {
    pdf_setcolor($pdf,'fill','gray',($i%2)?0.8:1,0,0,0);
    pdf_setcolor($pdf,'stroke','gray',($i%2)?0.8:1,0,0,0);
    pdf_rect($pdf,21,$y-$offset,$x-42,24);
    pdf_fill_stroke($pdf);
    $i++; $offset+=24;
}

pdf_setcolor($pdf,'fill','gray',0,0,0,0);
pdf_setcolor($pdf,'stroke','gray',0,0,0,0);
pdf_moveto($pdf, 20,$y-160);
pdf_lineto($pdf, $x-20,$y-160);
pdf_stroke($pdf);

pdf_moveto($pdf, $x-140,$y-160);
pdf_lineto($pdf, $x-140,80);
```

```
pdf_stroke($pdf);

pdf_set_font($pdf, "Times-Bold" , 18, winansi);
pdf_show_xy($pdf, "Item",30,$y-150);
pdf_show_xy($pdf, "Price",$x-100,$y-150);


pdf_set_font($pdf, "Times-Italic" , 15, winansi);

$offset = 177;
foreach($items as $item) {
    pdf_show_xy($pdf, $item[0],30,$y-$offset);
    pdf_show_boxed($pdf, '$'.number_format($item[1],2), $x-55, $y-$offset, 0, 0,
'right');
    $offset+=24;
    $total += $item[1];
}

pdf_set_font($pdf, "Times-Bold" , 17, winansi);
$offset+=24;
pdf_show_xy($pdf, 'Total',30,$y-$offset);
pdf_show_boxed($pdf, '$'.number_format($total,2), $x-55, $y-$offset, 0, 0,
'right');

pdf_end_page($pdf);
pdf_close($pdf);

$data = pdf_get_buffer($pdf);
header('Content-type: application/pdf');
header("Content-disposition: inline; filename=invoice.pdf");
header("Content-length: " . strlen($data));
echo $data;
?>
```

Ming-Flash

See http://www.opaque.net/ming/

```
<?
    $s = new SWFShape();
    $fp = fopen('php-big.jpg','r');
    $jpg = new SWFBitmap($fp);
    $w = $jpg->getWidth(); $h = $jpg->getHeight();

    $f = $s->addFill($jpg);
    $f->moveTo(-$w/2, -$h/2);
    $s->setRightFill($f);

    $s->movePenTo(-$w/2, -$h/2);
    $s->drawLine($w, 0);
    $s->drawLine(0, $h);
    $s->drawLine(-$w, 0);
    $s->drawLine(0, -$h);

    $p = new SWFSprite();
    $i = $p->add($s);

    for($step=0; $step<360; $step+=2) {
        $p->nextFrame();
        $i->rotate(-2);
    }

    $m = new SWFMovie();
    $i = $m->add($p);
    $i->moveTo(230,120);
    $m->setRate(100);
    $m->setDimension($w1.8, $h1.8);

    header('Content-type: application/x-shockwave-flash');
    $m->output();
?>
```

Output:

More Ming

Flash + RSS/XML

```
<?php
require 'XML/RSS.php';

$r =& new XML_RSS('slashdot.rdf');
$r->parse();

$allItems = $r->getItems();
$itemCount = count($allItems);
$width = 1000;
$m = new SWFMovie();
$m->setDimension($width, 70);
$m->setBackground(0xcf, 0xcf, 0xcf);

$f = new SWFFont("../../../fonts/Techno.fdb");

$hit = new SWFShape();
$hit->setRightFill($hit->addFill(0,0,0));
$hit->movePenTo(-($width/2), -30);
$hit->drawLine($width, 0);
$hit->drawLine(0, 60);
$hit->drawLine(-$width, 0);
$hit->drawLine(0, -60);
$x = 0;

// build the buttons
foreach($allItems as $Item) {

    $title = $Item['title'];
    $link = $Item['link'];

    // get the text
    $t = new SWFText();
    $t->setFont($f);
    $t->setHeight(50);
    $t->setColor(0,0,0);
    $t->moveTo(-$f->getWidth($title)/2, 25);
    $t->addString($title);

    // make a button
    $b[$x] = new SWFButton();
    $b[$x]->addShape($hit, SWFBUTTON_HIT);
    $b[$x]->addShape($t, SWFBUTTON_OVER | SWFBUTTON_UP | SWFBUTTON_DOWN);
    $b[$x++]->addAction(new SWFAction("getURL('$link','_new');"),
SWFBUTTON_MOUSEUP);
}


// display them
for($x=0; $x<$itemCount; $x++) {

    $i = $m->add($b[$x]);
    $i->moveTo($width/2,30);

    for($j=0; $j<=30; ++$j) {
        $i->scaleTo(sqrt(sqrt($j/30)));
        $i->multColor(1.0, 1.0, 1.0, $j/30);
        $m->nextFrame();
    }

    for($j=0; $j<=30; ++$j) {
        $i->scaleTo(sqrt(sqrt(1+($j/30))));
        $i->multColor(1.0, 1.0, 1.0, (30-$j)/30);
        $m->nextFrame();
    }

    $m->remove($i);

}
```

```
header('Content-type: application/x-shockwave-flash');
$m->output();
?>
```

Output:

Cool!

Super-cool Dynamic Image Generator

Want to be cooler than all your friends? Well here it is!

First, set up an ErrorDocument 404 handler for your images directory.

```
<Directory /home/doc_root/images>
    ErrorDocument 404 /images/generate.php
</Directory>')
```

Then generate.php looks like this:

```
<?php
$filename = basename($_SERVER['REDIRECT_URL']);
if(preg_match('/^([^]?)([^]?)([^_]?)\.(.?)$/',$filename, $reg)) {
    $type = $reg[1];
    $text = $reg[2];
    $rgb = $reg[3];
    $ext = $reg[4];
}

if(strlen($rgb)==6) {
    $r = hexdec(substr($rgb,0,2));
    $g = hexdec(substr($rgb,2,2));
    $b = hexdec(substr($rgb,4,2));
} else $r = $g = $b = 0;

    switch(strtolower($ext)) {
        case 'jpg':
            Header("Content-Type: image/jpg");
            break;
        case 'png':
        case 'gif': / We don't do gif - send a png instead /
            Header("Content-Type: image/png");
            break;
        default:
            break;
    }

    switch($type) {
        case 'solid':
            $im = imagecreatetruecolor(80,80);
            $bg = imagecolorallocate($im, $r, $g, $b);
            imagefilledrectangle($im,0,0,80,80,$bg);
            break;
        case 'button':
            $si = 32; $font = "php";
            $im = imagecreatefrompng('blank_wood.png');
            $tsize = imagettfbbox($si,0,$font,$text);
            $dx = abs($tsize[2]-$tsize[0]);
            $dy = abs($tsize[5]-$tsize[3]);
            $x = ( imagesx($im) - $dx ) / 2;
            $y = ( imagesy($im) - $dy ) / 2 + $dy;
            $white = ImageColorAllocate($im,255,255,255);
            $black = ImageColorAllocate($im,$r,$g, $b);
            ImageTTFText($im, $si, 0, $x, $y, $white, $font, $text);
            ImageTTFText($im, $si, 0, $x+2, $y, $white, $font, $text);
            ImageTTFText($im, $si, 0, $x, $y+2, $white, $font, $text);
            ImageTTFText($im, $si, 0, $x+2, $y+2, $white, $font, $text);
            ImageTTFText($im, $si, 0, $x+1, $y+1, $black, $font, $text);
        break;
    }
    Header("HTTP/1.1 200 OK");
    $dest_file = dirname($_SERVER['SCRIPT_FILENAME']).'/'.$filename;
    switch(strtolower($ext)) {
        case 'png':
        case 'gif':
            @ImagePNG($im,$dest_file);
            ImagePNG($im);
            break;
        case 'jpg':
            @ImageJPEG($im,$dest_file);
            ImageJPEG($im);
            break;
    }
?>
```

The URL, http://localhost/images/button_test_000000.png produces this image:

PEAR

PHP Extension and Application Repository

A unified repository of code written in both PHP and C complete with a dependency-checking installer.

What is PEAR?

- PEAR is designed to let you install and maintain packages for PHP in a very easy manner
- Similar in idea and intent as CPAN for Perl
- Only very high quality packages are allowed into PEAR
- All PEAR packages follow a specific coding guidelines
- PECL (pronounced Pickle) is subset of PEAR
  - PECL stands for PHP Extension Code Library
  - PECL is made up of C and C++ code, not PHP
  - PECL packages are modules for PHP, which add additional functionality to PHP
  - They are still installed and treated as normal PEAR packages
- Why use PEAR?
  - PEAR contains many packages which add additional functionality to PHP
  - Using some of this functionality can save time and money
- How do I get PEAR?
  - PEAR is automatically compiled along with PHP, so you should already have it!

See: http://pear.php.net

PEAR Examples

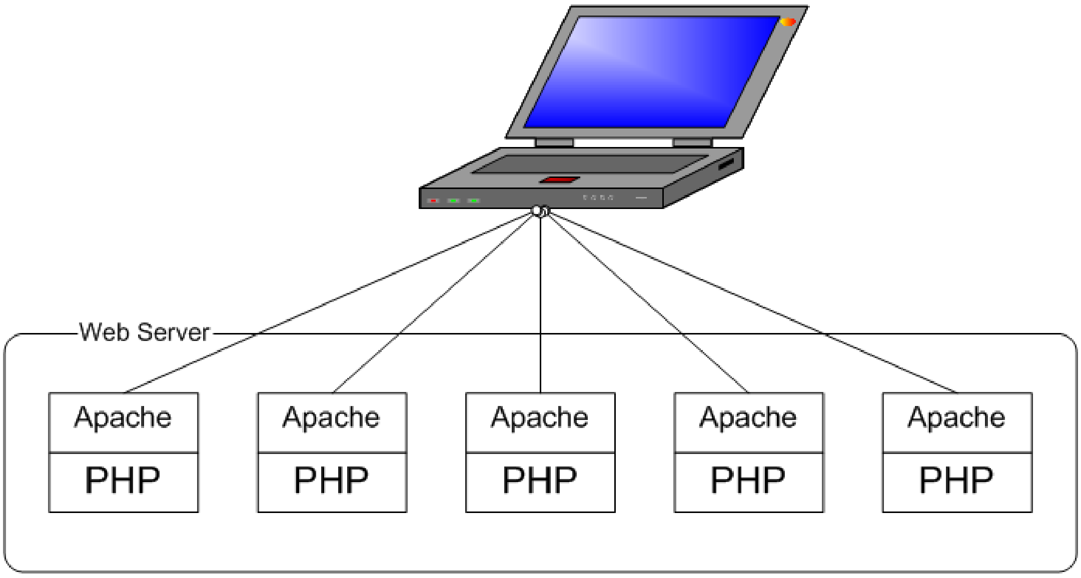
```
prompt:~> pear list
Installed packages:
===================
+----------------+----------+--------+
| Package        | Version  | State  |
| Archive_Tar    | 0.9      | stable |
| Console_Getopt | 0.11     | beta   |
| DB             | 1.2      | stable |
| Mail           | 1.0      | stable |
| Net_Sieve      | 0.8      | stable |
| Net_Socket     | 1.0.1    | stable |
| PEAR           | 0.91-dev | beta   |
| XML_Parser     | 1.0      | stable |
| XML_RPC        | 1.0.3    | stable |
| XML_RSS        | 0.9.1    | stable |
| XML_Tree       | 1.1      | stable |
+----------------+----------+--------+

prompt:~> pear remote-list
Available packages:
===================
+----------------------+---------+
| Package              | Version |
| Archive_Tar          | 0.9     |
| Auth                 | 1.0.2   |
| Auth_HTTP            | 1.0.1   |
| Benchmark            | 1.1     |
| Cache                | 1.5.1   |
| Config               | 0.3.1   |
| Crypt_CBC            | 0.3     |
| Crypt_Rc4            | 0.1     |
| Date                 | 1.1     |
| DB                   | 1.3     |
| DB_ado               | 1.1     |
| DB_Pager             | 0.7     |
| File                 | 1.0.2   |
| File_Find            | 0.1     |
| File_SearchReplace   | 1.0     |
| HTML_Common          | 1.0     |
| HTML_QuickForm       | 2.3     |
| HTML_Table           | 1.1     |
| HTML_TreeMenu        | 1.0.3   |
| HTTP                 | 1.1     |
| HTTP_Request         | 1.0     |
| HTTP_Upload          | 0.8     |
| Log                  | 1.2     |
| Mail                 | 1.0     |
| Mail_Mime            | 1.2     |
| Net_CheckIP          | 1.0.1   |
| Net_Curl             | 0.1     |
| Net_Dig              | 0.1     |
| Net_Geo              | 1.0     |
| Net_NNTP             | 0.1     |
| Net_Ping             | 1.0.1   |
| Net_POP3             | 1.1     |
| Net_Portscan         | 1.0.1   |
| Net_Sieve            | 0.8     |
| Net_SMTP             | 1.0     |
| Net_Socket           | 1.0.1   |
| Net_URL              | 1.0.3   |
| Net_UserAgent_Detect | 1.0     |
| Numbers_Roman        | 0.1     |
| Pager                | 1.0.4   |
| Payment_Clieop       | 0.1     |
| PEAR                 | 0.9     |
| PHPUnit              | 0.3     |
| Science_Chemistry    | 1.0.2   |
| System_Command       | 1.0     |
| XML_CSSML            | 1.1     |
| XML_fo2pdf           | 0.97    |
| XML_image2svg        | 0.1     |
| XML_Parser           | 1.0     |
| XML_RPC              | 1.0.3   |
| XML_RSS              | 0.9.1   |
| XML_Transformer      | 0.3     |
| XML_Tree             | 1.1     |
+----------------------+---------+

prompt:~> pear list-upgrades
Available Upgrades (stable):
============================
+---------+---------+------+
| Package | Version | Size |
| DB      | 1.3     | 58kB |
+---------+---------+------+

prompt:~> pear upgrade DB
downloading DB-1.3.tgz ...
...done: 59,332 bytes
upgrade ok: DB 1.3

prompt:~> pear install PHPUnit
downloading PHPUnit-0.3.tgz ...
...done: 7,284 bytes
install ok: PHPUnit 0.3
```

PHP Sessions

HTTP is Stateless

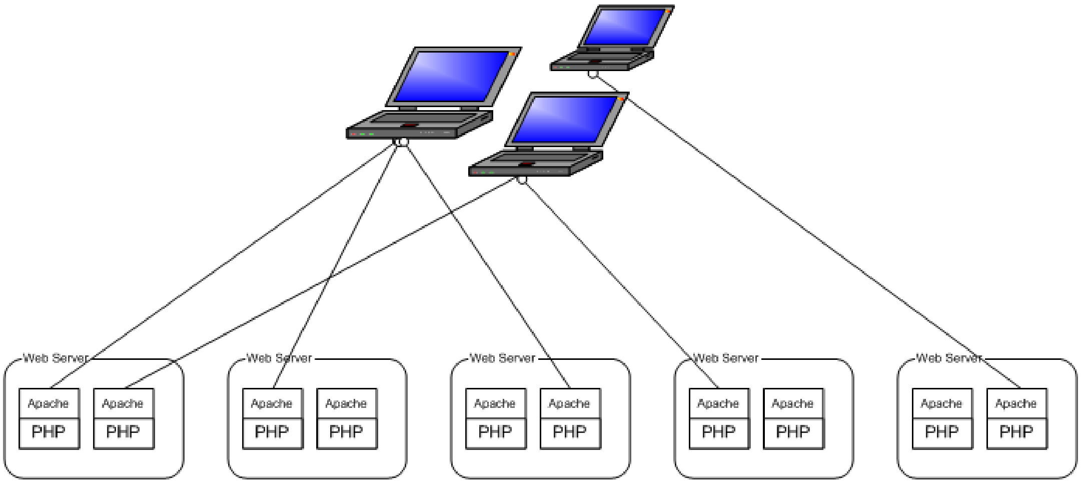
There is nothing in the HTTP protocol that will tie subsequent requests together. This is a common problem faced by web developers when working on sites that require a shopping-cart type of functionality.

Additionally, given Apache's multi-process architecture, subsequent requests from the same user may be handled by different processes.



PHP Sessions

In larger environments, there are also multiple web servers where requests may be round-robined across or perhaps a load balancer is distributing the requests across the server farm.



PHP Sessions

The Solution

When a user first visits our site we have to give them an identifier and ask them nicely to give this something back to us when they visit again. Then we tie whatever data we want to have persist across requests to this identifier. This is known as the session ID.

PHP has a number of built-in functions that implement this idea of creating a unique session id for each visitor and associating data with them. There is nothing particularly magical about these functions and you can easily come up with your own system for dealing with sessions.

PHP Sessions

Starting a Session

To start a session use session_start() and to register a variable in this session use the $_SESSION array.

```
<?php
  session_start();
  $_SESSION['my_var'] = 'Hello World';
?>
```

If register_globals is enabled then your session variables will be available as normal variables on subsequent pages. Otherwise they will only be in the $_SESSION array.

```
<?php
  session_start();
  echo $_SESSION['my_var'];
?>
```

PHP Session Configuration

Default session settings are set in your php.ini file:

```
session.save_handler = files    ; Flat file backend
session.save_path=/tmp          ; where to store flat files
session.name = PHPSESSID        ; Name of session (cookie name)
session.auto_start = 0          ; init session on req startup
session.use_cookies = 1         ; whether cookies should be used
session.use_only_cookies = 0    ; force only cookies to be used
session.cookie_lifetime = 0     ; 0 = session cookie
session.cookie_path = /         ; path for which cookie is valid
session.cookie_domain =         ; the cookie domain
session.serialize_handler = php ; serialization handler (wddx|php)
session.gc_probability = 1      ; garbage collection prob.
session.gc_dividend    = 100    ; If 100, then above is in %
session.gc_maxlifetime = 1440   ; garbage collection max lifetime
session.referer_check =         ; filter out external URL\'s
session.entropy_length = 0      ; # of bytes from entropy source
session.entropy_file =          ; addtional entropy source
session.use_trans_sid = 1       ; use automatic url rewriting
url_rewriter.tags = "a=href,area=href,frame=src,input=src"
session.cache_limiter = nocache ; Set cache-control headers
session.cache_expire = 180      ; expiry for private/public caching
```

Cache-control is important when it comes to sessions. You have to be careful that end-user client caches aren't caching invalid pages and also that intermediary proxy-cache mechanisms don't sneak in and cache pages on you. When cache-limiter is set to the default, no-cache, PHP generates a set of response headers that look like this:

```
HTTP/1.1 200 OK
Date: Sat, 10 Feb 2001 10:21:59 GMT
Server: Apache/1.3.13-dev (Unix) PHP/4.0.5-dev
X-Powered-By: PHP/4.0.5-dev
Set-Cookie: PHPSESSID=9ce80c83b00a4aefb384ac4cd85c3daf; path=/
Expires: Thu, 19 Nov 1981 08:52:00 GMT
Cache-Control: no-store, no-cache, must-revalidate, post-check=0, pre-check=0
Pragma: no-cache
Connection: close
Content-Type: text/html
```

For cache_limiter = private the cache related headers look like this:

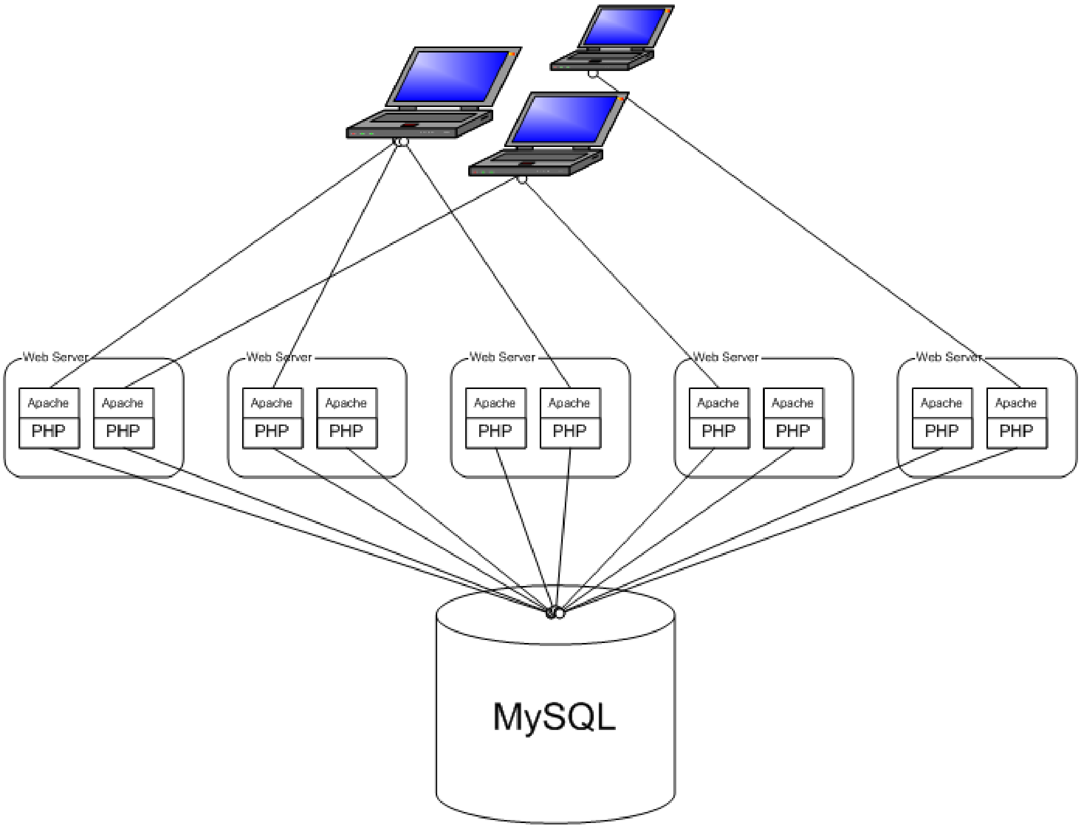
```
Set-Cookie: PHPSESSID=b02087ce4225987870033eba2b6d78c3; path=/
Expires: Thu, 19 Nov 1981 08:52:00 GMT
Cache-Control: private, max-age=10800, pre-check=10800
```

For cache_limiter = public they look like this:

```
Set-Cookie: PHPSESSID=37421e3d0283c667f75481745b25b9ad; path=/
Expires: Tue, 12 Feb 2001 13:57:16 GMT
Cache-Control: public, max-age=10800
```

Server Farm

By default PHP will store its session data in files on the local filesystem. This obviously won't work in a load-balanced architecture as we requests from the same session can span servers.



Therefore, we will need a way to store our session data in a central datastore accessible by all of our web servers. This is the sort of thing MySQL excels at!

Custom Backend

You can change the session backend datastore from a script using session_module_name().

```
<?php
  session_module_name("files");  // ASCII files

  session_module_name("mm");     // Shared memory

  session_module_name("user");   // Custom session backend
?>
```

You can also define your own custom session backend datastore using the session_set_save_handler() function.

```
<?php
  session_set_save_handler("myOpen", "myClose",
                           "myRead", "myWrite",
                           "myDestroy", "myGC");
?>
```

You would then write these 6 functions.

Custom Backend

Let's have a look at an actual custom session backend. This uses MySQL to store the session data. We could set these right in the script, but let's make use of Apache's httpd.conf file to set our custom save handler for a portion of our web site.

```
<Directory "/var/html/test">
    php_value session.save_handler user
    php_value session.save_path mydb
    php_value session.name sessions
</Directory>
```

The MySQL schema looks like this:

```
CREATE TABLE sessions (
    id char(32) NOT NULL,
    data text,
    ts timestamp,
    PRIMARY KEY (id)
)
```

We can now write our handler. It looks like this:

```
<?php
function open($db,$name) {
    global $table;
    mysql_connect('localhost');
    mysql_select_db($db);
    $table = $name;
    return true;
}

function close() {
    mysql_close();
    return true;
}

function read($id) {
    global $table;
    $result = mysql_query("select data from $table where id='$id'");
    if($result && mysql_num_rows($result)) {
        return mysql_result($result,0);
    } else {
        error_log("read: ".mysql_error()."\n",3,"/tmp/errors.log");
        return "";
    }
}

function write($id, $data) {
    global $table;
    $data = addslashes($data);
    mysql_query("replace into $table (id,data) values('$id','$data')")
      or error_log("write: ".mysql_error()."\n",3,"/tmp/errors.log");
    return true;
}

function destroy($id) {
    global $table;
    mysql_query("delete from $table where where id='$id'");
}

function gc($max_time) {
    global $table;
    mysql_query(
      "delete from $table where
       UNIX_TIMESTAMP(ts)<UNIX_TIMESTAMP()-$max_time")
      or error_log("gc: ".mysql_error(). "\n",3,"/tmp/errors.log");
    return true;
}

session_set_save_handler('open','close','read','write','destroy','gc');
```

```
?>
```

Our PHP files under /var/html/test then simply need to look something like this:

```
<?php
  require 'handler.php';

  session_start();
  session_register('var');
  $var = "Hello World";
?>
```

Future

- Apache 2.0
- Extensions to talk to everything!
- php-soap
- Parrot

Resources

Home Page: http://www.php.net

Manual: http://php.net/manual

Tutorial: http://php.net/tut.php

Books: http://php.net/books.php

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