PHP

BALUG

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http://lerdorf.com/balug.pdf

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

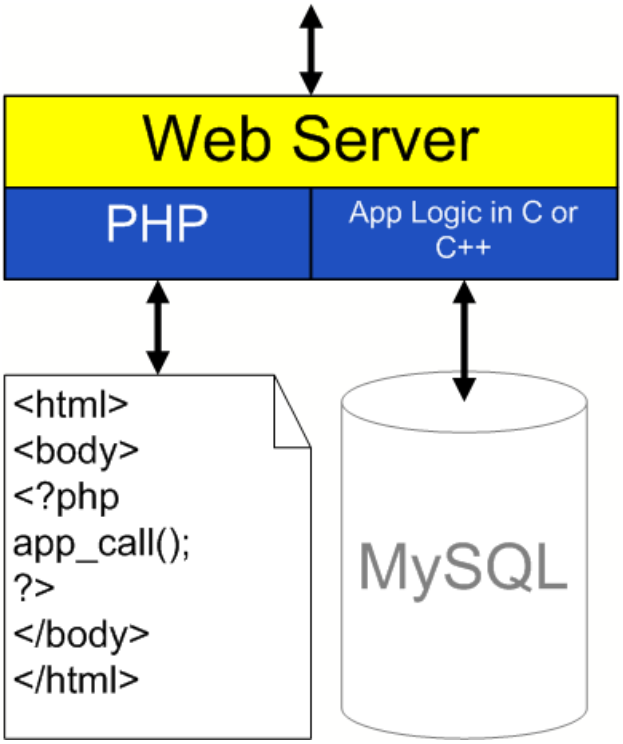
- Have a shallow learning curve
- Instant gratification
- Build on what you know
- Great documentation
- Solve the simple problem easily
- Eliminate tedium
- Be able to solve even the most complex problem
- Be secure
- Use/borrow existing technology
- Work everywhere

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.

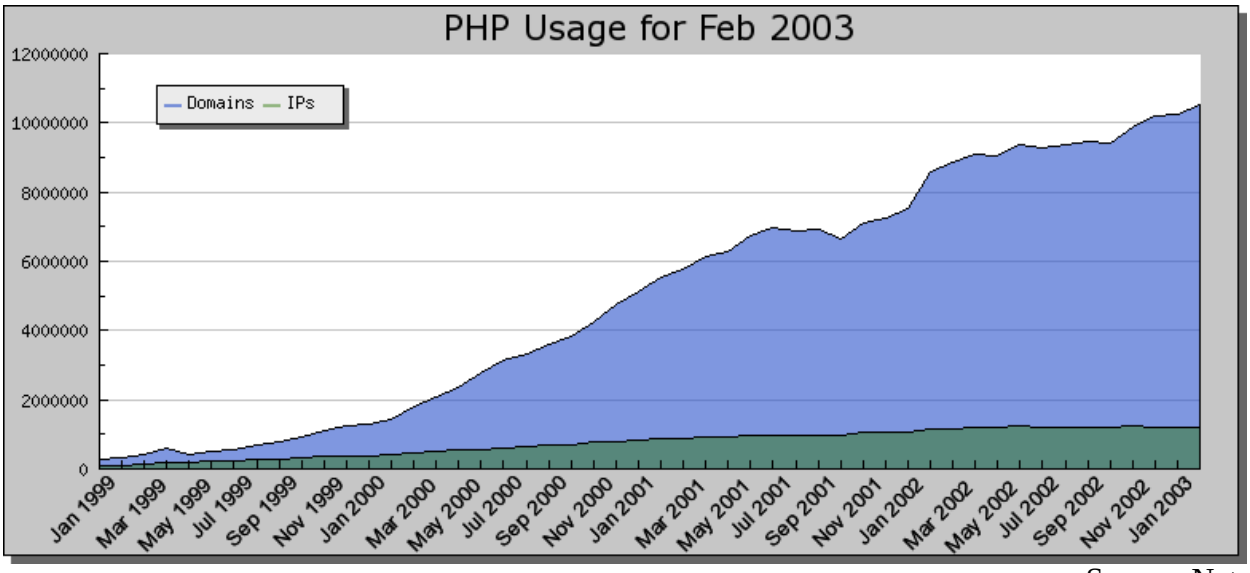


Most people don't really use PHP this way. Over the years the templating language improved both in scope and performance to the point where entire web apps could be written in it.

PHP Usage Growth

February 2003 Netcraft Report

- 35,863,952 Domains queried
- 10,519,623 Domains. 1,220,927 IP addresses
- PHP installed on 29.33% of all domains



Source: Netcraft

February 2003 Apache Module Report

- 5,852,747 Apache Servers surveyed
- 2,998,762 (51.24%) PHP
- 1,765,800 (30.17%) OpenSSL
- 1,703,290 (29.10%) mod_ssl
- 1,269,545 (21.69%) Frontpage
- 1,255,480 (21.45%) mod_perl
- 348,783 (5.96%) DAV
- 296,899 (5.07%) mod_throttle
- 167,790 (2.87%) AuthMySQL
- 159,416 (2.72%) mod_auth_pam
- 156,354 (2.67%) mod_jk

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

Feb. 17, 2003	PHP 4.3.1
2003?	PHP 5.0

*.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

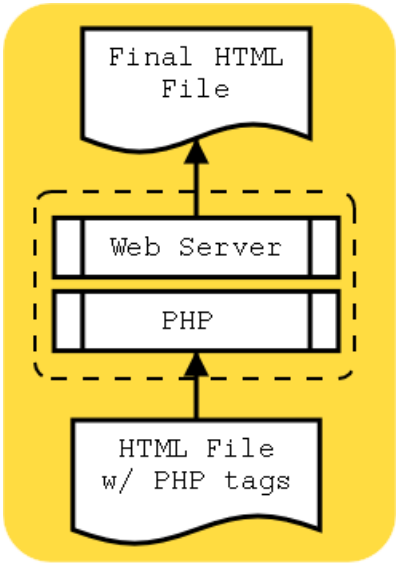
The home of the Smarty template engine for PHP.

snaps.php.net

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

PHP 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
```

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)

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)
);
```

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:

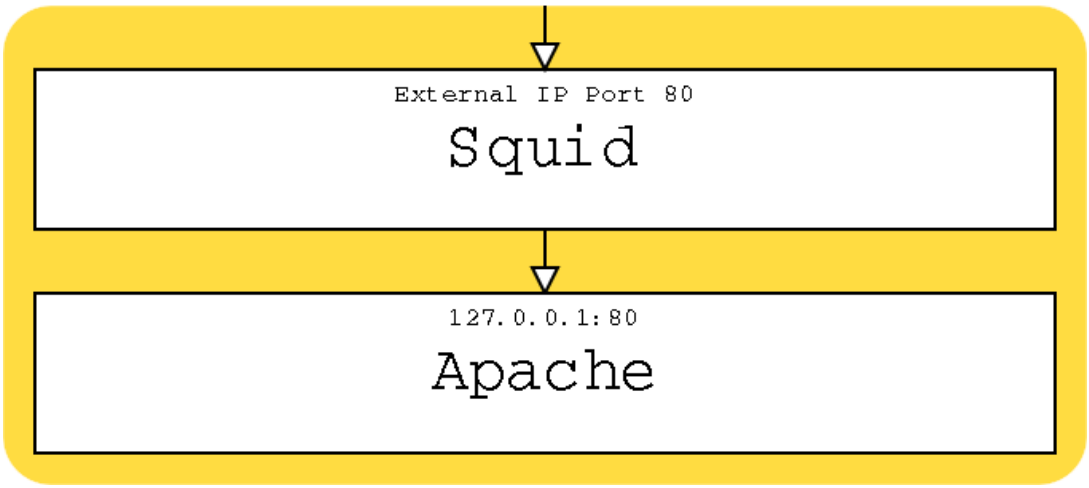
```
My Guestbook

Welcome to my Guestbook
Please write me a little note below



The entries so far:
```

DB Abstraction

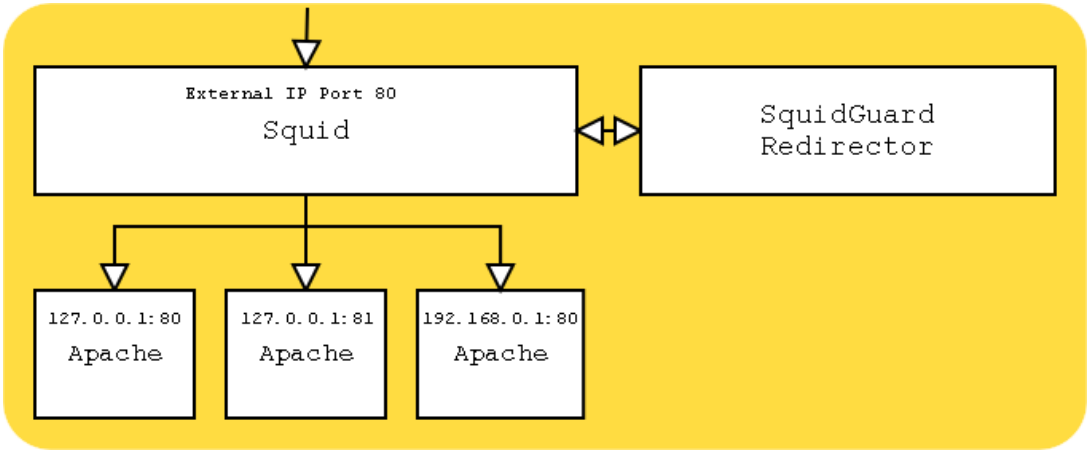
A database abstraction layer is bundled with PHP 4. In the example below, the only thing you would need to change to use a different database is the odbc word on the third line.

```
<?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();
?>
```

For really busy sites, a reverse proxy like Squid is magical! Either run it as a single-server accelerator:



Or as a front-end cache to a number of local or remote servers:



Note:

Watch out for any use of $REMOTE_ADDR in your PHP scripts. Use $HTTP_X_FORWARDED_FOR instead.

Squid Configuration

Make it listen to port 80 on our external interface:

```
http_port 198.186.203.51:80
```

If we don't do cgi-bin stuff, comment these out:

```
#acl QUERY urlpath_regex cgi-bin
#no_cache deny QUERY
```

If we have plenty of RAM, bump this up a bit:

```
cache_mem 16MB
maximum_object_size 14096 KB
```

Specify where to store cached files (size in Megs, level 1 subdirs, level 2 subdirs)

```
cache_dir ufs /local/squid/cache 500 16 256
```

Get rid of the big store.log file:

```
cache_store_log none
```

Set our SNMP public community string:

```
acl snmppublic snmp_community public
```

Get rid of "allow all" and use list of hosts we are blocking (1 ip per line):

```
#http_access allow all
acl forbidden src "/local/squid/etc/forbidden"
http_access allow !forbidden
```

Set user/group squid should run as:

```
cache_effective_user squid
cache_effective_group daemon
```

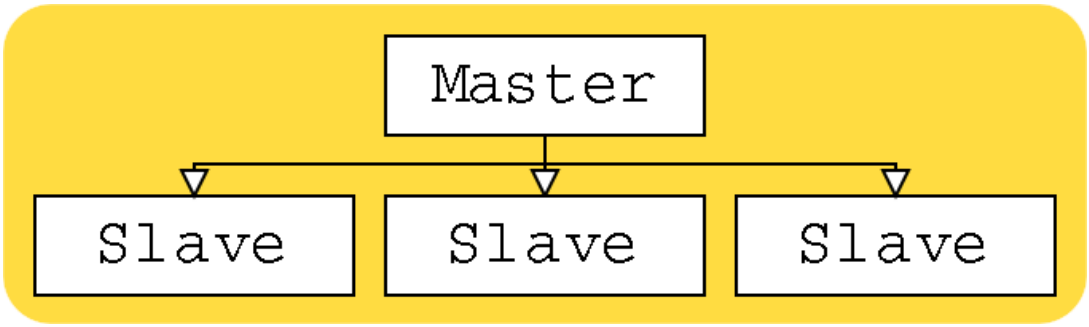
Single-server reverse proxy setup (set up Apache to listen to port 80 on the loopback):

```
httpd_accel_host 127.0.0.1
httpd_accel_port 80
httpd_accel_single_host on
httpd_accel_uses_host_header on
```

Only allow localhost access through snmp:

```
snmp_access allow snmppublic localhost
```

As of version 3.23.15 (try to use 3.23.29 or later), MySQL supports one-way replication. Since most web applications usually have more reads than writes, an architecture which distributes reads across multiple servers can be very beneficial.



In typical MySQL fashion, setting up replication is trivial. On your master server add this to your "my.cnf" file:

```
[mysqld]
log-bin
server-id=1
```

And add a replication user id for slaves to log in as:

```
GRANT FILE ON . TO repl@"%" IDENTIFIED BY 'foobar';
```

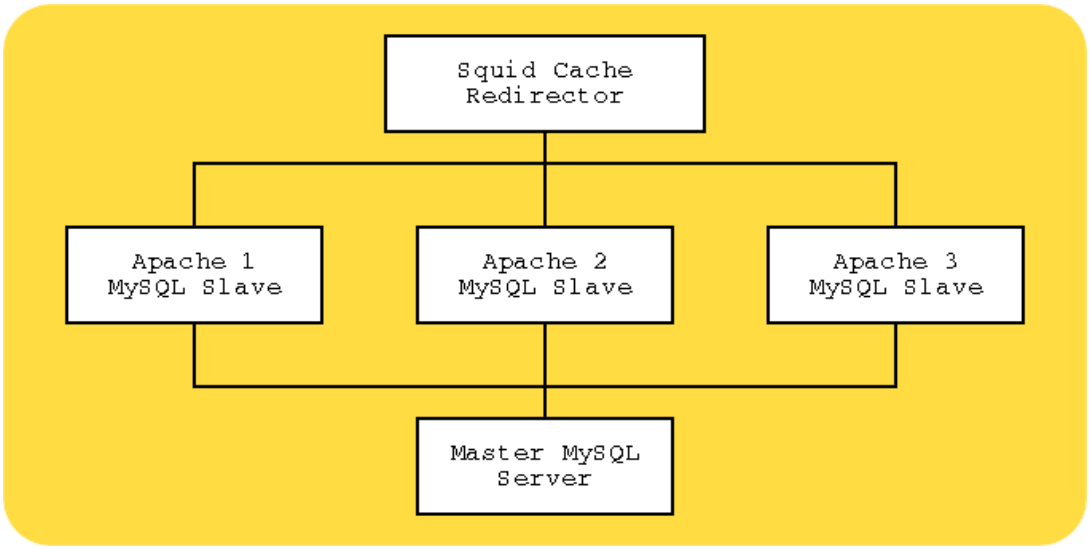
If you are using MySQL 4.0.2 or later, replace FILE with REPLICATION SLAVE in the above. Then on your slave servers:

```
[mysqld]
set-variable = max_connections=200
log-bin
master-host=192.168.0.1
master-user=repl
master-password=foobar
master-port=3306
server-id=2
```

Make sure each slave has its own unique server-id. And since these will be read-only slaves, you can start them with these options to speed them up a bit:

```
--skip-bdb --low-priority-updates
--delay-key-write-for-all-tables
```

Stop your master server. Copy the table files to each of your slave servers. Restart the master, then start all the slaves. And you are done. Combining MySQL replication with a Squid reverse cache and redirector and you might have an architecture like this:



You would then write your application to send all database writes to the master server and all reads to the local slave. It is also possible to set up two-way replication, but you would need to supply your own application-level logic to maintain atomicity of distributed writes. And you lose a lot of the advantages of this architecture if you do this as the writes would have to go to all the slaves anyway.

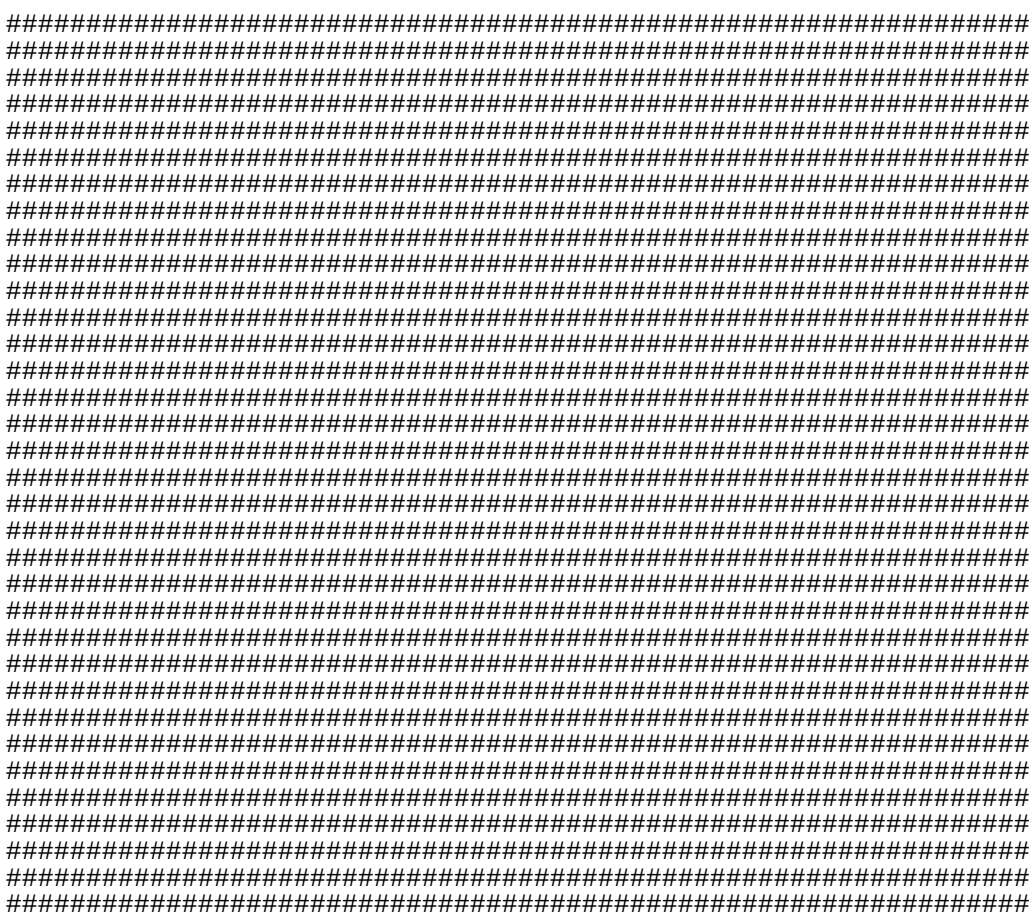
Creating a PNG with a TrueType font

```
<?
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)?>">
```

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:



CreateFrom and Bounding Box Math

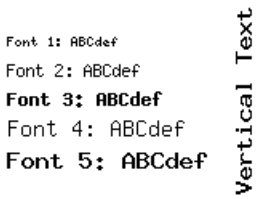
```
<?
Header("Content-type: image/png");
$font = 'phpi';
if(!$si) $si = 66;
$im = ImageCreateFromPNG('php-blank.png');
$tsize = imagettfbbox($si,0,$font,$text);
$dx = abs($tsize[2]-$tsize[0]);
$dy = abs($tsize[5]-$tsize[3]);
$x = ( imagesx($im) - $dx ) / 2;
$y = ( imagesy($im) - $dy ) / 2 + 3*$dy/4;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

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:



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 

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**

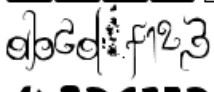
courbi ***ABCdéf123***

couri *ABCdéf123*

cour ABCdéf123

dc_sans 

dc_serif 

dilate 

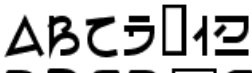
dirtydoz 

Dotmatrx ABCdéf123

dronecat 

earth 

Eklekti0 ABCDÉF123

electroh 

Eroded2020 

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: *
CompressedBitsPerPixel: 24/10
ShutterSpeedValue: 800/100
ApertureValue: 400/100
ExposureBiasValue: 0/100
MaxApertureValue: 300/100
```

```
SubjectDistance: 107/100
MeteringMode: 2
LightSource: 0
Flash: 1
FocalLength: 80000/10000
MakerNote: *       Eastman Kodak Company
FlashPixVersion: 0100
ColorSpace: 1
ExifImageWidth: 1536
ExifImageLength: 1024
```

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;
?>
```

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:

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:

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:

$PATH_INFO

$PATH_INFO is your friend when it comes to creating clean URLS. Take for example this URL:

```
http://www.company.com/products/routers
```

If the Apache configuration contains this block:

```
<Location "/products">
  ForceType application/x-httpd-php
</Location>
```

Then all you have to do is create a PHP script in your DOCUMENT_ROOT named 'products' and you can use the $PATH_INFO variable which will contain the string, '/routers', to make a DB query.

ErrorDocument

Apache's ErrorDocument directive can come in handy. For example, this line in your Apache configuration file:

```
ErrorDocument 404 /error.php
```

Can be used to redirect all 404 errors to a PHP script. The following server variables are of interest:

- $REDIRECT_ERROR_NOTES - File does not exist: /docroot/bogus
- $REDIRECT_REQUEST_METHOD - GET
- $REDIRECT_STATUS - 404
- $REDIRECT_URL - /docroot/bogus

Don't forget to send a 404 status if you choose not to redirect to a real page.

```
<? Header('HTTP/1.0 404 Not Found'); ?>
```

Interesting uses

- Search for closest matching valid URL and redirect
- Use attempted url text as a DB keyword lookup
- Funky caching

An interesting way to handle caching is to have all 404's redirected to a PHP script.

```
ErrorDocument 404 /generate.php
```

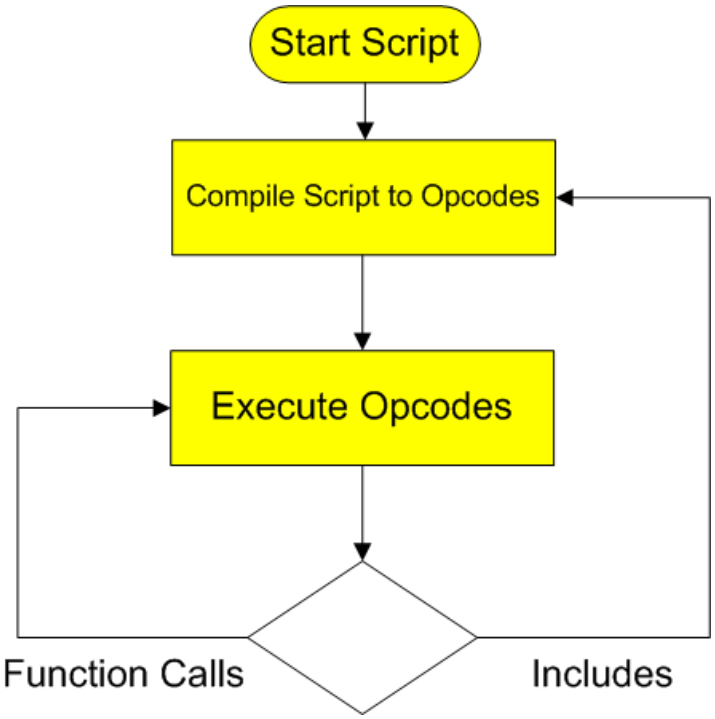
Then in your generate.php script use the contents of $REDIRECT_URI to determine which URL the person was trying to get to. In your database you would then have fields linking content to the URL they affect and from that you should be able to generate the page. Then in your generate.php script do something like:

```
<?php
    $s = $REDIRECT_URI;
    $d = $DOCUMENT_ROOT;
    // determine requested uri
    $uri = substr($s, strpos($s,$d) + strlen($d) + 1);
    ob_start();  // Start buffering output
    // ... code to fetch and output content from DB ...
    $data = ob_get_contents();
    $fp = fopen("$DOCUMENT_ROOT/$uri",'w');
    fputs($fp,$data);
    fclose($fp);
    ob_end_flush(); // Flush and turn off buffering
?>
```

So, the way it works, when a request comes in for a page that doesn't exist, generate.php checks the database and determines if it should actually exist and if so it will create it and respond with this generated data. The next request for that same URL will get the generated page directly. So in order to refresh your cache you simply have to delete the files.

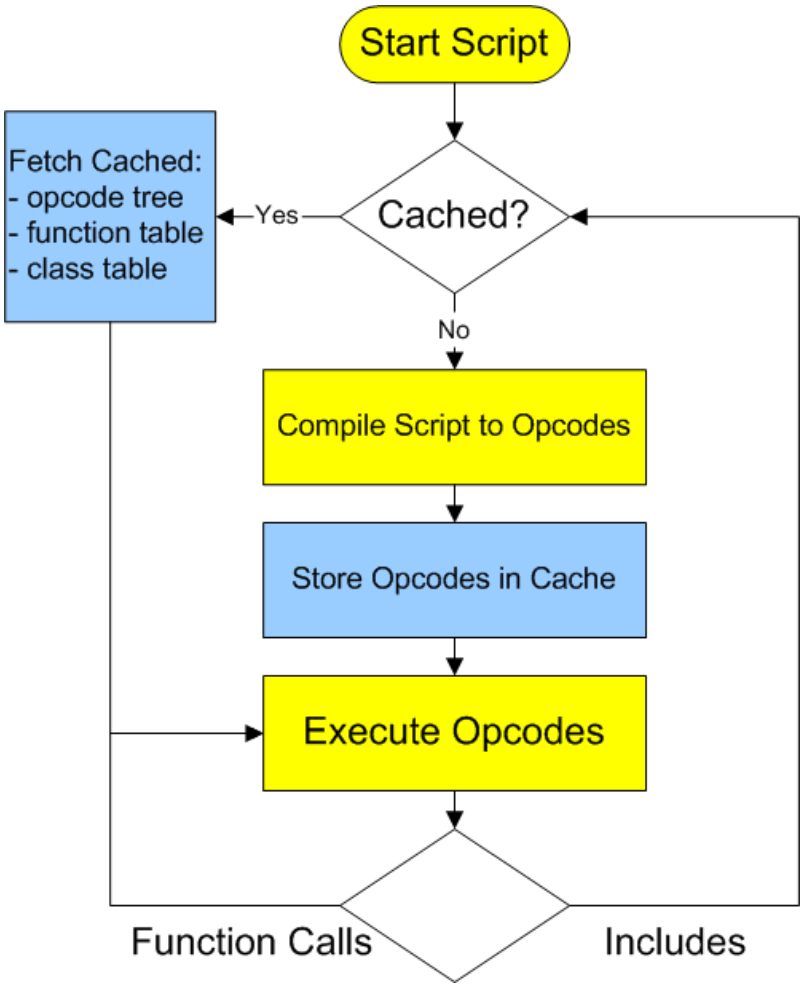
PHP Opcode Caches

Standard PHP



PHP Opcode Caches

PHP with an Opcode Cache



There are a number of them out there.

- APC - open source
- IonCube Accelerator - free, but closed source
- Zend Cache - commercial

Installation

Typically very trivial. For IonCube, for example, in your php.ini add:

```
zend_extension = "/usr/local/lib/php/php_accelerator_1.3.3r2.so"
```

So why isn't this just built into standard PHP?

This gets asked often, and although not a good answer, the answer is that since it wasn't in PHP from the start a number of competing plugin cache systems were developed and choosing one over another at this point would effectively chop these projects, both commercial and free, off at their knees. This way they can compete and innovate against each other at the cost of duplicated effort.

Benchmarking

Let's have a look at how we might benchmark and subsequently tune a PHP server.

http://apc.communityconnect.com/sources/apc-cvs.tar.gz

http://www.ioncube.com

```
CPU: Pentium III 700MHz
RAM: 128M
```

Our test script includes 2 files, defines 3 functions, loops a bit and outputs about 6k of data.

For testing I am using http_load from acme.com and the default SendBufferSize

```
#  To change this on Linux, cat a larger number
#  into /proc/sys/net/core/wmem_max in your
#  httpd startup script
SendBufferSize 65535
```

Benchmarking Results

An http_load run

```
% http_load -parallel 5 -fetches 5000 url.txt
5000 fetches, 5 max parallel, 2.954e+07 bytes, in 12.5082 seconds
5908 mean bytes/connection
399.739 fetches/sec, 2.36166e+06 bytes/sec
msecs/connect: 0.242907 mean, 9.246 max, 0.195 min
msecs/first-response: 10.7645 mean, 130.136 max, 2.114 min
HTTP response codes:
  code 200 -- 5000
```

No Opcode cache	254 requests/sec
With APC2 cache	399 requests/sec
With IonCube (phpa) cache	350 requests/sec

It is also interesting to look at what your server is doing while you hammer it with http_load:

Load without opcode cache

```
   procs                  memory    swap          io     system          cpu
 r  b  w   swpd   free   buff  cache  si  so    bi    bo   in    cs  us  sy  id
11  0  0  90000   3844   4928  73152   0   0     0     0 2854   450  87  13   0
11  0  1  90000   5280   4944  73128   0   8     0   160 2934   450  88  12   0
13  0  0  90000   3928   4944  73164   0   0     0     0 3002   595  87  13   0
12  0  1  90000   3892   4944  73184   0   0     0     0 2928   515  82  18   0
 9  0  0  90000   3896   4944  73200   0   0     0     0 2970   602  79  21   0
12  0  1  90000   3840   4952  73220   0   0     0    12 2948   517  80  20   0
11  0  1  90000   3956   4952  73240   0   0     0     0 2916   522  91   9   0
 9  0  1  90000   3952   4952  73256   0   0     0     0 2996   547  89  11   0
11  0  1  90000   3916   4952  73276   0   0     0     0 2949   534  81  19   0
13  0  1  90000   3896   4952  73296   0   0     0     0 2886   516  86  14   0
11  0  1  90000   3876   4960  73312   0   0     0    12 2887   547  90  10   0
11  0  1  90000   3864   4960  73332   0   0     0     0 2931   531  85  15   0
12  0  1  90000   3844   4960  73348   0   0     0     0 3013   579  89  11   0
12  0  1  90000   3952   4960  73368   0   0     0     0 2999   508  87  13   0
12  0  1  90000   3928   4968  73388   0   0     0    12 3022   600  79  21   0
```

Load with APC2 cache

```
   procs                  memory    swap          io     system          cpu
 r  b  w   swpd   free   buff  cache  si  so    bi    bo   in    cs  us  sy  id
11  0  0  90000   3904   4712  72212   0   0     0     0 4494   596  78  22   0
10  0  1  90000   5280   4680  72160   0   0     0     0 4422   596  77  23   0
11  0  1  90000   5176   4688  72192   0   0     0    12 4500   791  85  15   0
 9  0  0  90000   5224   4688  72092   0   0     0     0 4541   702  79  21   0
11  0  1  90000   5152   4688  72120   0   0     0     0 4495   885  88  12   0
10  0  1  90000   5216   4688  72020   0   0     0     0 4513   674  73  27   0
11  0  1  90000   5132   4688  72048   0   0     0     0 4477   794  82  18   0
11  0  1  90000   5200   4688  71952   0   0     0   128 4476   701  80  20   0
10  0  1  90000   5296   4688  71852   0   0     0     0 4486   770  76  24   0
11  0  1  90000   5224   4688  71880   0   0     0     0 4524   698  82  18   0
11  0  0  90000   5144   4688  71908   0   0     0     0 4481   788  78  22   0
11  0  1  90000   5196   4688  71808   0   0     0     0 4504   684  74  26   0
11  0  1  90000   5116   4688  71836   0   0     0   128 4463   792  80  20   0
10  0  1  90000   5172   4688  71740   0   0     0     0 4539   681  80  20   0
```

```
12  0  1  90000   5228   4688  71640   0   0     0     0 4503   747  74  26   0
```

Load with IonCube cache

```
   procs                      memory    swap          io     system         cpu
 r  b  w   swpd   free   buff  cache  si  so    bi    bo   in    cs  us  sy  id
11  0  1  86084   5196   6284  54104   0   0     0     4 4078   632  75  25   0
12  0  1  86084   5132   6284  54132   0   0     0     0 4024   593  78  22   0
12  0  1  86084   5204   6284  54052  32   4    32     4 3996   705  66  34   0
12  0  1  86084   5180   6292  54076   0   0     0   140 3979   678  74  26   0
11  0  1  86084   5148   6292  54104   0   0     0     0 3980   740  70  30   0
10  0  1  86084   5256   6292  54000   0   0     0     0 3945   660  82  18   0
10  0  1  86084   5228   6292  54024   0   0     0     0 4025   663  75  25   0
12  0  1  86084   5200   6292  54052   0   0     0     0 3967   692  82  18   0
11  0  1  86084   5180   6292  54076   0   0     0     0 3994   688  76  24   0
11  0  1  86084   5156   6292  54100   0   0     0     0 4023   641  71  29   0
11  0  1  86144   5264   6292  54012   0   0     0     0 3993   719  78  22   0
10  0  1  86144   5232   6292  54036   0   0     0     0 3967   655  80  20   0
12  0  1  86144   5208   6292  54060   0   0     0     0 3946   732  78  22   0
11  0  0  86144   5180   6292  54088   0   0     0   128 4011   637  76  24   0
10  0  1  86144   3856   6292  54112   0   0     0     0 3983   664  80  20   0
11  0  1  86160   3976   6292  54080   0  28     0    28 3932   639  80  20   0
```

Our benchmark test was deliberately designed to have quite a bit of PHP processing and not a whole lot of output. 6k is somewhat small for a web page. If instead we have a whole lot of output, chances are we will be io-bound instead of cpu-bound. If you are io-bound, there is little sense in optimizing at the PHP level.

Evidence of an io-bound test

```
   procs                      memory    swap          io     system         cpu
 r  b  w   swpd   free   buff  cache  si  so    bi    bo   in    cs  us  sy  id
 4  0  0  94928   5204   2228  29812   0   0     0     0 4813  1660  19  24  58
 7  0  0  94928   5200   2228  29812   0   0     0     0 4828  1614   7  33  60
 6  0  0  94928   5176   2248  29812   0   0     4    24 4823  1688  13  20  68
 7  0  0  94928   5172   2248  29816   0   0     0     0 4815  1670   8  38  54
 5  0  0  94928   5168   2248  29816   0   0     0     0 4840  1647  12  23  66
 5  0  0  94928   5168   2248  29816   0   0     0     0 4821  1663  12  28  60
 5  0  0  94928   5164   2248  29820   0   0     0     0 4843  1664  11  25  64
 5  0  0  94928   5152   2256  29820   0   0     0    12 4791  1687   9  26  65
 4  0  0  94936   5276   2256  29820   0   8     0     8 4853  1665  14  25  62
 6  0  0  94936   5284   2256  29824   0   0     0     0 4805  1670   7  28  65
 6  0  0  94936   5268   2256  29824   0   0     0     0 4823  1676   8  25  67
 6  0  0  94936   5244   2256  29824  24   0    24     0 4803  1700   9  32  59
 5  0  0  94936   5228   2264  29824   0   0     0    12 4865  1762  12  23  66
```

Things to try if you are io-bound

```
[php.ini]
output_handler = ob_gzhandler


[httpd.conf]
LoadModule gzip_module lib/apache/mod_gzip.so
```

Tuning

Some simple guidelines

- Try to limit yourself to 5 or less includes per request
- Don't go overboard on OOP. Use where appropriate.
- Same goes for Layers. Abstraction, Indirection, abstract classes.
- Everything has a cost
- Watch your regular expressions!
- Cache! Cache! Cache!

include_path

```
include_path = "/usr/share/pear:."
```

```
<?php
    include './template_helpers.inc';
    include 'business_logic.inc';
?>
```

open_basedir

```
open_basedir = "/usr/share/htdocs/:/usr/share/pear/"
```

open_basedir checking adds some extra syscalls to every file operation. It can be useful, but it is rather expensive, so turn it off if you don't think you need it.

variables_order

```
variables_order = "GPC"
```

```
<?php
    echo $_SERVER['DOCUMENT_ROOT'];
    echo getenv('DOCUMENT_ROOT');
?>
```

PHP 4.3 w/ APC2 and EGPCS	399 requests/sec
PHP 4.3 w/ APC2 and GPC	513 requests/sec

Why Profile?

Because your assumptions of how things work behind the scenes are not always correct. By profiling your code you can identify where the bottlenecks are quantitatively.

How?

PEAR/Pecl to the rescue!

```
www:~> pear install apd
downloading apd-0.4p1.tgz ...
...done: 39,605 bytes
16 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/apd-0.4p1
running: /tmp/tmprFlAqf/apd-0.4p1/configure
running: make
apd.so copied to /tmp/tmprFlAqf/apd-0.4p1/apd.so
install ok: apd 0.4p1
```

Woohoo!

```
www:~> pear info apd
About apd-0.4p1
===============
+-----------------+-------------------------------------------------+
| Package         | apd                                             |
| Summary         | A full-featured engine-level profiler/debugger  |
| Description     | APD is a full-featured profiler/debugger that is |
|                 | loaded as a zend_extension. It aims to be an    |
|                 | analog of C's gprof or Perl's Devel::DProf.     |
| Maintainers     | George Schlossnagle <george@omniti.com> (lead)  |
| Version         | 0.4p1                                           |
| Release Date    | 2002-11-25                                      |
| Release License | PHP License                                     |
| Release State   | stable                                          |
| Release Notes   | Fix for pre-4.3 versions of php                 |
| Last Modified   | 2002-12-02                                      |
+-----------------+-------------------------------------------------+
```

```
www:~> pear config-show
Configuration:
==============
+----------------------+-----------------+-----------------------------------+
| PEAR executables     | bin_dir         | /usr/local/bin                    |
| directory            |                 |                                   |
| PEAR documentation   | doc_dir         | /usr/local/lib/php/docs           |
| directory            |                 |                                   |
| PHP extension        | ext_dir         | /usr/local/lib/php/extensions/no-de |
| directory            |                 | bug-non-zts-20020429              |
| PEAR directory       | php_dir         | /usr/local/lib/php                |
| PEAR Installer cache | cache_dir       | /tmp/pear/cache                   |
| directory            |                 |                                   |
| PEAR data directory  | data_dir        | /usr/local/lib/php/data           |
| PEAR test directory  | test_dir        | /usr/local/lib/php/tests          |
| Cache TimeToLive     | cache_ttl       | <not set>                         |
| Preferred Package    | preferred_state | stable                            |
| State                |                 |                                   |
| Unix file mask       | umask           | 18                                |
```

```
| Debug Log Level      | verbose         | 1                                  |
| HTTP Proxy Server    | http_proxy      | <not set>                          |
| Address              |                 |                                    |
| PEAR server          | master_server   | pear.php.net                       |
| PEAR password (for   | password        | <not set>                          |
| maintainers)         |                 |                                    |
| PEAR username (for   | username        | <not set>                          |
| maintainers)         |                 |                                    |
+----------------------+-----------------+------------------------------------+
```

```
www:~> cd /usr/local/lib/php
www:/usr/local/lib/php> ln -s extensions/no-debug-non-zts-20020429/apd.so apd.so
```

Then in your php.ini file:

```
zend_extension = "/usr/local/lib/php/apd.so"
apd.dumpdir = /tmp
```

It isn't completely transparent. You need to tell the profiler when to start profiling. At the top of a script you want to profile, add this call:

```
<?php
apd_set_pprof_trace();
?>
```

The use the command-line tool called pprofp:

```
wwww: ~> pprofp
pprofp <flags> <trace file>
    Sort options
    -a          Sort by alphabetic names of subroutines.
    -l          Sort by number of calls to subroutines
    -m          Sort by memory used in a function call.
    -r          Sort by real time spent in subroutines.
    -R          Sort by real time spent in subroutines (inclusive of child calls).
    -s          Sort by system time spent in subroutines.
    -S          Sort by system time spent in subroutines (inclusive of child
calls).
    -u          Sort by user time spent in subroutines.
    -U          Sort by user time spent in subroutines (inclusive of child calls).
    -v          Sort by average amount of time spent in subroutines.
    -z          Sort by user+system time spent in subroutines. (default)

    Display options
    -c          Display Real time elapsed alongside call tree.
    -i          Suppress reporting for php builtin functions
    -O <cnt>    Specifies maximum number of subroutines to display. (default 15)
    -t          Display compressed call tree.
    -T          Display uncompressed call tree.


% ls -latr /tmp/pprofp.*
-rw-r--r--    1 nobody   nobody      16692 Dec  3 01:19 /tmp/pprof.04545

% pprofp -z /tmp/pprof.04545
Trace for /home/rasmus/phpweb/bm.php
Total Elapsed Time =    0.01
Total System Time  =    0.00
Total User Time    =    0.01

         Real         User        System             secs/    cumm
%Time (excl/cumm)  (excl/cumm)  (excl/cumm) Calls    call    s/call  Memory Usage
Name
--------------------------------------------------------------------------------------
100.0  0.01  0.01   0.01  0.01   0.00  0.00     2   0.0050    0.0050         3488
include
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     1   0.0000    0.0000           48 c
  0.0  0.00  0.00   0.00  0.00   0.00  0.00    21   0.0000    0.0000         1168 b
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     1   0.0000    0.0000           56 a
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     1   0.0000    0.0000            0
main
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     1   0.0000    0.0000         1080
range


Trace for /home/rasmus/phpweb/index.php
```

```
Total Elapsed Time =    0.69
Total System Time  =    0.01
Total User Time    =    0.08

         Real         User        System              secs/    cumm
%Time (excl/cumm)  (excl/cumm)  (excl/cumm) Calls    call    s/call  Memory Usage
Name
-----------------------------------------------------------------------------------
 33.3  0.11  0.13   0.02  0.03   0.01  0.01     7   0.0043    0.0057       298336
require_once
 22.2  0.02  0.02   0.02  0.02   0.00  0.00   183   0.0001    0.0001       -33944
feof
 11.1  0.01  0.01   0.01  0.01   0.00  0.00     3   0.0033    0.0033       -14808
define
 11.1  0.04  0.04   0.01  0.01   0.00  0.00   182   0.0001    0.0001       112040
fgetcsv
 11.1  0.25  0.25   0.01  0.01   0.00  0.00     6   0.0017    0.0017         3768
getimagesize
 11.1  0.01  0.01   0.01  0.01   0.00  0.00    55   0.0002    0.0002         2568
sprintf
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     7   0.0000    0.0000         -136
printf
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     1   0.0000    0.0000          136
htmlspecialchars
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     1   0.0000    0.0000          -16
mirror_provider_url
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     7   0.0000    0.0000          112
spacer
  0.0  0.00  0.00   0.00  0.00   0.00  0.00    10   0.0000    0.0000         -552
delim
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     1   0.0000    0.0000          112
mirror_provider
  0.0  0.00  0.00   0.00  0.00   0.00  0.00    20   0.0000    0.0000         -624
print_link
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     1   0.0000    0.0000           24
have_stats
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     1   0.0000    0.0000          -72
make_submit
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     2   0.0000    0.0000          112
strrchr
  0.0  0.08  0.08   0.00  0.00   0.00  0.00     2   0.0000    0.0000          168
filesize
  0.0  0.00  0.00   0.00  0.00   0.00  0.00     1   0.0000    0.0000          -16
commonfooter
  0.0  0.00  0.11   0.00  0.00   0.00  0.00     2   0.0000    0.0000            0
download_link
  0.0  0.00  0.25   0.00  0.01   0.00  0.00     6   0.0000    0.0017          208
make_image
```

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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