

Enterprise PHP on IBM i

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Alan Seiden (me)

PHP on IBM i Developer / Consultant / Mentor Strategic Business Systems, Inc.

- Contributed to IBM's Redbook: *Zend Core for i5/OS*
- Certified (first on IBM i !) in Zend Framework
- Developed of IBM/COMMON's "Best Web Solution" of 2009



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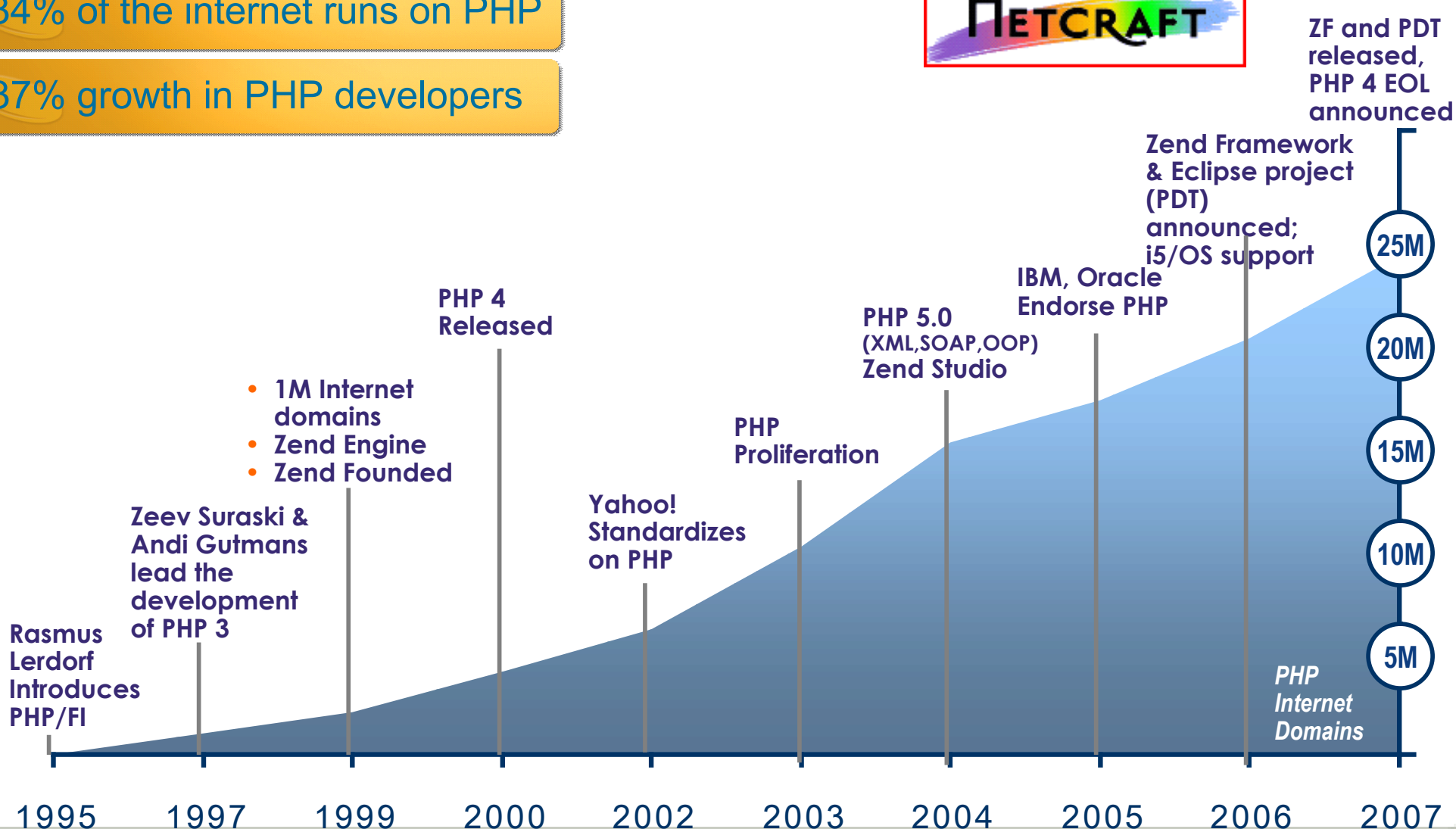
About Strategic Business Systems, Inc.

- **IBM partner since 1982**
 - IBM i (AS/400) hardware, software development, consulting
 - Concentration in food & beverage and automotive industries
 - HQ in northern New Jersey
- **Zend (“the PHP company”) partner since 2008**
 - PHP’s been preferred web technology for ourselves and clients since 2005
 - In addition to our consulting/development services, we offer Zend’s training and software
 - We represent Zend in the northeastern USA

PHP's growth as a web development language

34% of the internet runs on PHP

37% growth in PHP developers



Reasons for PHP's success

- **Easy way to get data to Web**
 - Generates ordinary HTML, viewable in any browser
- **Cross-platform**
- **Offers gradual path of mastery**
 - grass roots
 - pilot project
 - Enterprise
- **Open source**
 - Managed by Zend, “the PHP company”
 - Contributors from community and corporations

Open source is mainstream

http://www.economist.com/business/displaystory.cfm?STORY_ID=13743278

Economist.com

BUSINESS

Open-source software in the recession

Born free

May 28th 2009
From The Economist print edition

Open-source software firms are flourishing, but are also becoming less distinctive

MANY technology firms are floundering amid the recession. But many of the ones that offer services tied to open-source software—free programs written by volunteers who collaborate online—are boasting double-digit growth. Sales at Red Hat, the world's biggest independent open-source firm with annual revenues of \$653m, grew by 18% year-on-year in the first quarter. More and more firms, particularly in Europe, seem prepared to embrace open source (see chart). "Budgets are tight and we think that is good for open source," said Jim Whitehurst, Red Hat's boss, when announcing the results.

Indeed, open source is so widely accepted that traditional software firms are beginning to dabble in it, while some open-source firms are starting to sell proprietary add-ons to open-source programs instead of charging to provide support to firms using open-source software. If current trends hold, traditional software firms and their open-source rivals will soon be hard to tell apart. "A new pragmatism is rising," says Matt Asay, an open-source advocate and an executive at Alfresco, which makes open-source software that helps firms manage digital content.

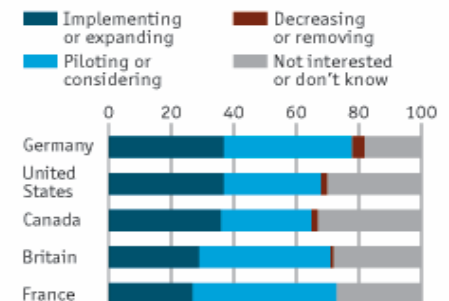
The "free and open-source software" movement, as it is officially called, has come a long way from its anti-establishment origins. Pioneers such as Richard Stallman did not want users to be locked into monolithic products, but to be able to change programs in whatever way they wanted, and to share their modifications.

For years, this software commons was no more than an obscure sideshow. But then the internet provided volunteer programmers with a way to co-operate cheaply. IBM and Oracle, two industry giants, threw their weight behind the Linux operating system, in part to weaken their rival Microsoft. After the dotcom bubble burst in 2001, many firms turned to Linux and other open-source software to save money.

Cost is once again the main reason why companies are turning to open source, says Jeffrey Hammond of Forrester Research, a consultancy. Its success is no longer limited to basic software, such as Linux or

Open minds

Firms' open-source software plans in the next 12 months, % of respondents*



*Survey conducted between December 2008 and February 2009

Source: Forrester Research

Who uses PHP?

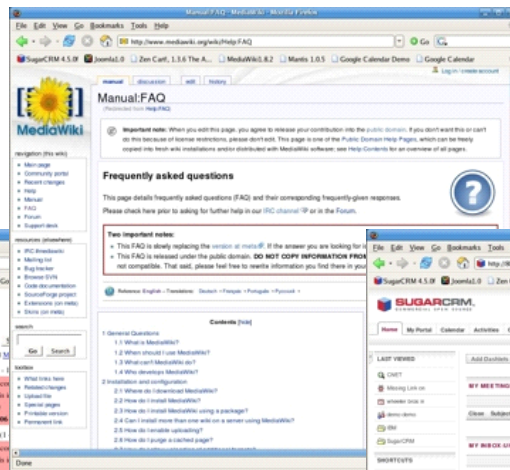
- **Yahoo, eBay, Wikipedia, Mazda, Disney, Facebook**
 - I bet it's used somewhere in your company
- **Open source developers – 10,000+ projects**
- **Strong community worldwide**
- **7 million+ developers**

Downloadable applications (fine for i5/OS!) Most of these use MySQL database

Content Management



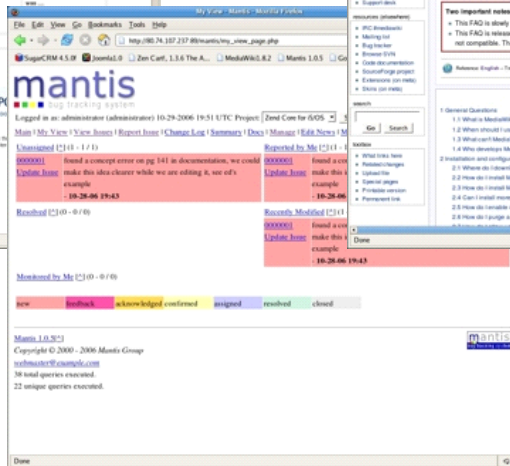
Wiki



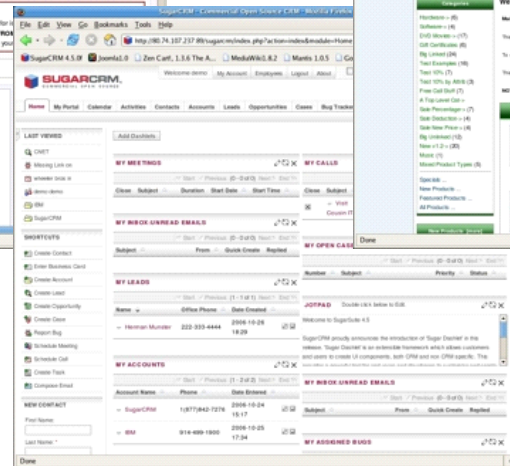
E-Commerce



Bug Tracking/Helpdesk (Mantis400.com)



CRM



Application demo: WordPress blog

10 Cool PHP Things

They're cool and they run on System i

WordPress + System i = Cool

October 23rd, 2007

This is my first blog post using WordPress ~~2.3~~ 2.7.1 on System i. I just noticed that WordPress saved my draft automatically to the MySQL database.



Tags: [blogging](#), [cool](#), [PHP](#), [System i](#)
Posted in [Uncategorized](#) | [Edit](#) | [No Comments](#) »

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10 Cool PHP Things is proudly powered by [WordPress](#)
[Entries \(RSS\)](#) and [Comments \(RSS\)](#).

PHP on i—a short history

- **2004: i5php.net**
 - Unofficial PHP binary for “i” available online
- **2005: IBM and Zend got together**
- **2006: Zend Core for i5/OS**
 - Official release with help from IBM
 - i5 Toolkit, SMTP (email), Apache module (good performance)
 - Professional technical support from Zend
- **2007: Zend Studio and Platform**
 - Studio: IDE/code editor and debugger
 - Platform: performance enhancer and code/bug profiler
- **2008: Zend Framework v1.7 enhanced for “i”**

Why PHP on i

- **Powerful, flexible, popular**
- **Runs completely on your good old “i”**
- **Backed by IBM**
- **Allows your teams to work together**
 - Re-use RPG logic, called from PHP
 - Consolidate departmental solutions (Excel spreadsheets!) into your reliable db2 database

Typical stages of PHP on i

- **Grass roots**
 - Prove to yourself how well PHP works on i
- **Pilot project(s)**
 - Managers see potential value; project approval
- **Enterprise PHP**
 - Important projects, developed with experience

Grass roots stage

Grass roots stage

- **Go ahead, kick the tires!**
 - Download and install Zend Core (free)
 - Includes MySQL
 - Create a simple web page, reading/writing db2
 - Try open source software. Examples:
 - Mantis/400, mantis400.com
 - WordPress, wordpress.org
 - Prove it to yourself before “selling” to manager

What you must know: grass roots

- **Learn some basic HTML**
 - Try <http://w3schools.com/html>
 - Tables (<table>, <tr>, <td>) useful for business data
 - “View Source” in browser to borrow bits of HTML
- **Optional: learn as needed**
 - Javascript
 - Adds dynamic functionality to pages
 - Cascading style sheets (CSS)
 - Modern way to specify colors, fonts, and other attributes of how a site looks

Install Zend Core

- **Check the prerequisites**
 - i5/OS V5R4, V6R1
 - PASE, Qshell, recent cumulative PTF package
- **Get FREE Zend Core for i5/OS**
 - Preloaded as licensed program or
 - Download from <http://zend.com/en/products/core/downloads>
 - Free account required
 - Choose Windows-based installer or *SAVF
- **Install on your i5**
 - If you need MySQL, can select it, too
 - Start Zend Core: GO ZENDCORE/ZCMENU, Option 5 then 1

Apache PHP jobs run in ZEND

- Look in Zend subsystem for Apache/PHP jobs

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Work with Subsystem Jobs                                SBSUSA
                                                         06/09/09 17:55:17

Subsystem . . . . . : ZEND

Type options, press Enter.
  2=Change  3=Hold  4=End  5=Work with  6=Release  7=Display message
  8=Work with spooled files  13=Disconnect

Opt  Job          User          Type          -----Status-----  Function
---  ---          ---          ---          -----
  1  I5_COMD       QTCP          BATCH         ACTIVE                 PGM-EASYCMD
  2  ZC_STR_PRN    ZENDADMIN    BATCHI        ACTIVE                 PGM-prngd
  3  ZENDCOREAP    ZENDADMIN    BATCHI        ACTIVE                 PGM-httpd
  4  ZENDCOREAP    ZENDADMIN    BATCHI        ACTIVE                 PGM-httpd
  5  ZENDCOREAP    ZENDADMIN    BATCHI        ACTIVE                 PGM-httpd
  6  ZENDCOREAP    ZENDADMIN    BATCHI        ACTIVE                 PGM-httpd
  7  ZENDCOREAP    ZENDADMIN    BATCHI        ACTIVE                 PGM-httpd
  8  ZENDCOREAP    ZENDADMIN    BATCHI        ACTIVE                 PGM-httpd
  9  ZENDCOREAP    ZENDADMIN    BATCHI        ACTIVE                 PGM-httpd

More...

Parameters or command
===>
F3=Exit      F4=Prompt    F5=Refresh    F9=Retrieve    F11=Display schedule data
F12=Cancel   F17=Top      F18=Bottom
```

First script: "Hello, World!"

- Save script in `/www/zendcore/htdocs/helloworld.php`
- Run in browser URL:
<http://i5system:89/helloworld.php>

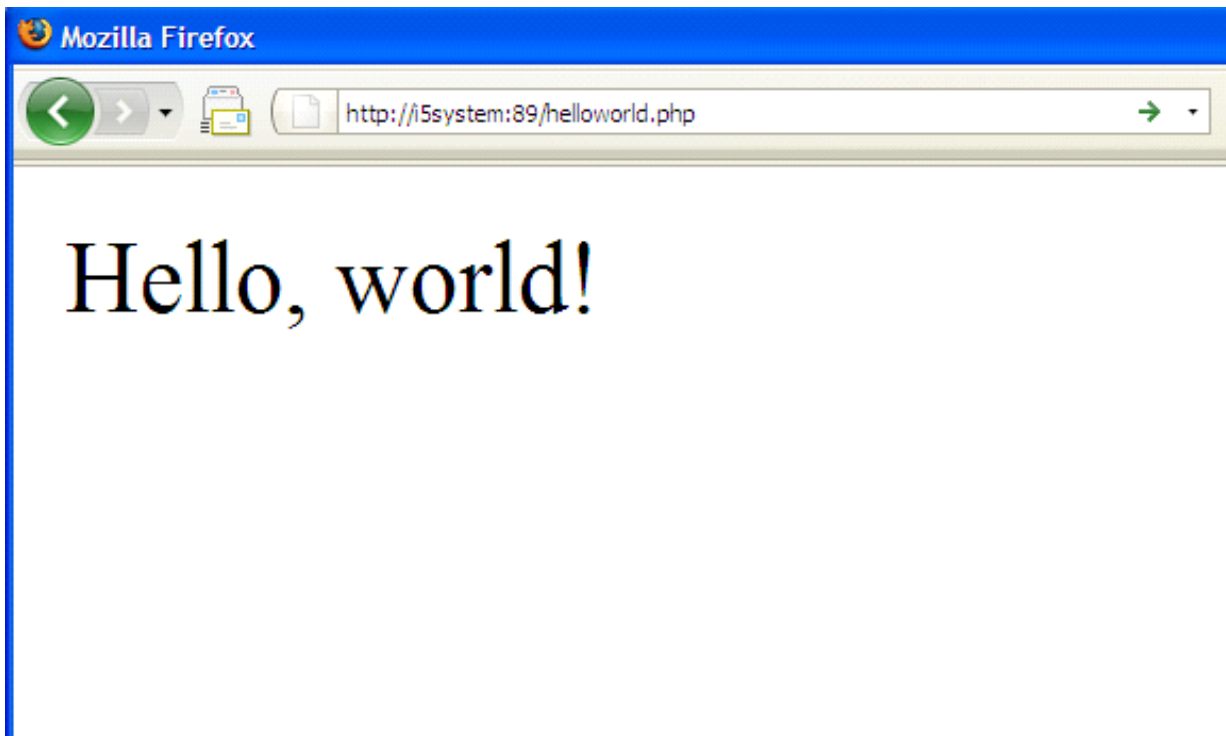
```
<?php

    // simple script to test PHP
    echo "Hello, world!";

?>
```

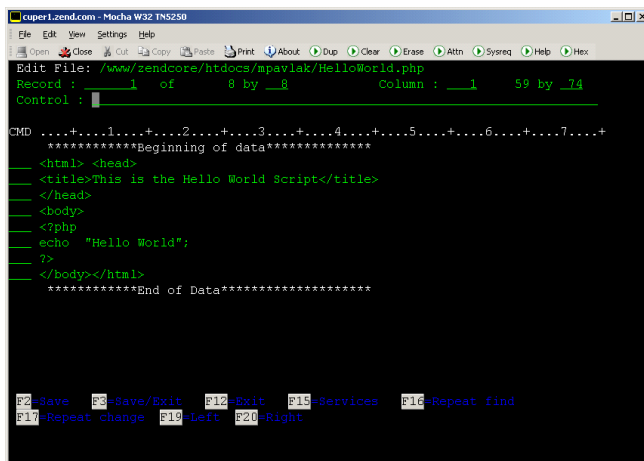
“Hello, world!” in browser

- **The output of helloworld.php**



How do I access IFS files?

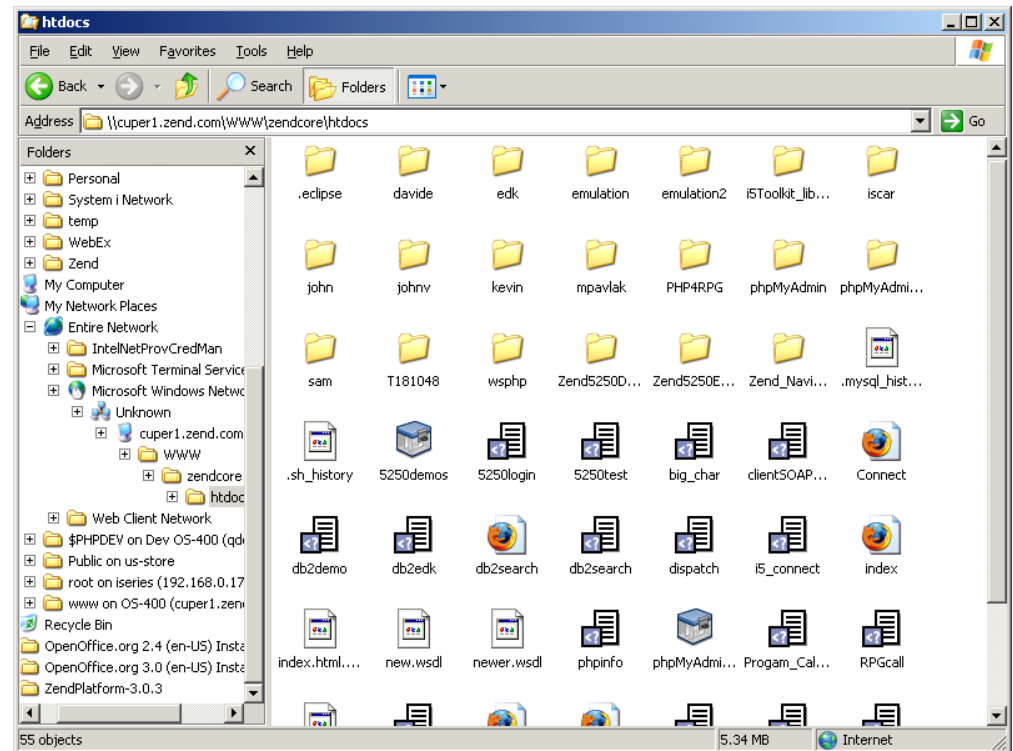
- Three methods
 - Netserver file associations (or a mapped local drive)
 - Can be sluggish, but works in Explorer too
 - FTP / “Remote server”
 - Recommended
 - WRKLNK
 - For emergencies only



```
cuper1.zend.com - Mocha WS2-TNS250
File Edit View Settings Help
Edit File: /www/zendcore/htdocs/mpavlak/HelloWorld.php
Record: _____ of _____ by ____ Column: ____ 59 by ____
Control: _____

CMD .....1.....2.....3.....4.....5.....6.....7.....+
*****Beginning of data*****
<html> <head>
<title>This is the Hello World Script</title>
</head>
<body>
<?php
echo "Hello World";
?>
</body></html>
*****End of Data*****

F2-Save F8-Save/Exit F12-Exit F15-Services F16-Repeat find
F17-Repeat change F19-Left F20-Right
```

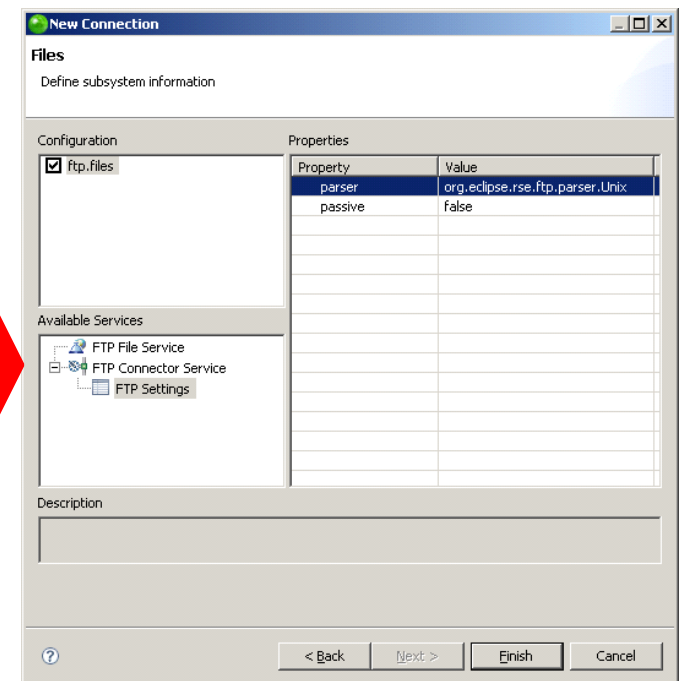
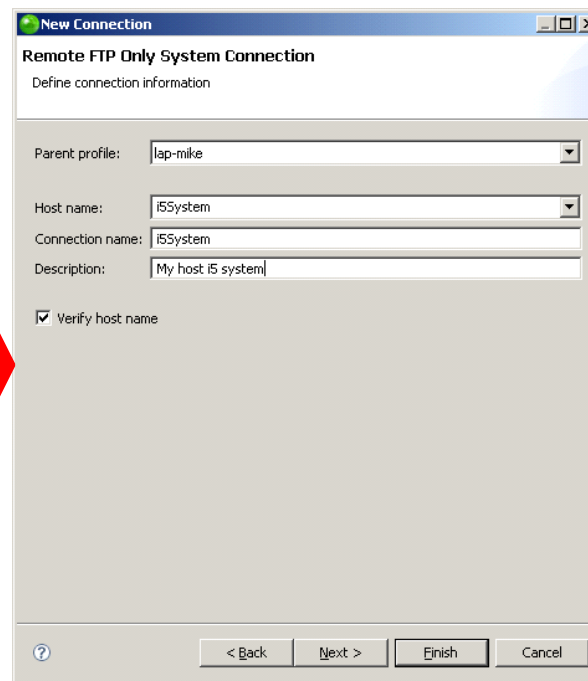
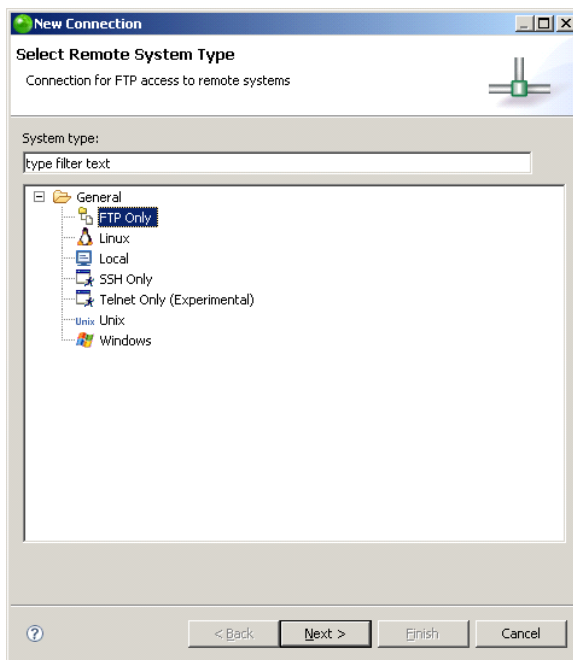


Zend Studio for Eclipse, i5 Edition

- **Better IDE than “Notepad”**
- **Free for IBM i customers**
- **Can connect to mapped drive (“local”) or FTP server (“remote”)**
- **Alerts you to any syntax errors or other mistakes; offers interactive debugging and code completion (like the F4 prompt)**
- **For good performance, your PC needs 2GB RAM**

Configure “Remote Server” in Studio

- Start Zend Studio for Eclipse, i5 Edition
- Click the new connection button; select FTP
- Enter domain name or IP address
- Set “FTP Settings/Parser” to Unix (org.eclipse.rse.ftp.parser.Unix)

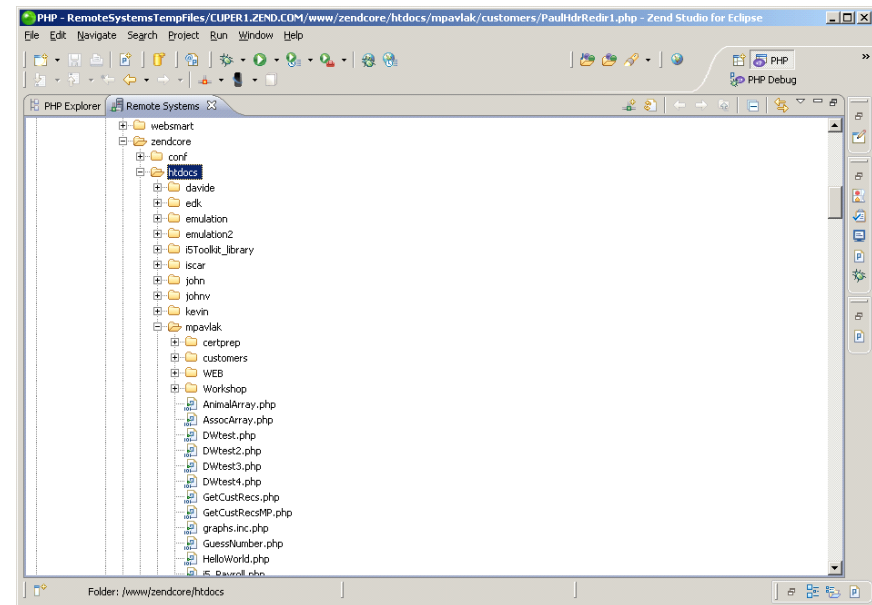


Configure FTP on i5

- **CHGFTP NAMEFMT(*PATH) CURDIR(*HOMEDIR) LISTFMT(*UNIX)**
 - This is a more mainstream setting (no QSYS.LIB/QGPL.LIB to confuse FTP clients)
- **Restart FTP server**
 - ENDTCP SVR SERVER(*FTP)
 - STRTCPSVR SERVER(*FTP)

Navigate to files

- Expand the tree for your system
- Navigate to the directory /www/ZendCore/htdocs
- Enter user credentials and you're in!





PHP Expl Remote

- Local
 - Cuper1
 - Files
 - My Home
 - Root
 - /
 - bin
 - davidephp
 - demos
 - dev
 - etc
 - fastemp
 - fixes
 - fr_tests
 - home
 - kevin
 - lib
 - media_library

Outli PHP PHP

type filter text

- AppendIterator
- ArrayAccess
- ArrayIterator
- ArrayObject
 - ARRAY_AS_PROPS
 - STD_PROP_LIST
 - __construct(array \$array)
 - append(value \$value)
 - asort()
 - count()
 - exchangeArray(array \$array)
 - getArrayCopy()
 - getFlags()
 - getIterator()
 - getIteratorClass()
 - ksort()

```

1 <?php
2
3 // Standard DB connection to DB2...
4 $conn = "*LOCAL"; $name = ""; $pwd = "";
5 $i5link = db2_connect($conn, $name, $pwd);
6 if (!$i5link)
7     echo 'Connection failed: '.db2_stmt_error().';'
8
9 $sq
10 $stmt
11 or
12
13 //
14 ech
15 ech
16
17 // loop di loop through customer recs...
18 while($row=db2_fetch_array($stmt)){
19     list( $CUSTOMER_NUMBER, $CUSTOMER_NAME, $CUSTOMER_ADI
20           $CUSTOMER_CITY, $CUSTOMER_STATE, $CUSTOMER_ZI
21     echo("<TR><TD> $CUSTOMER_NUMBER</TD> <TD>$CUSTOMER_NA
22           <TD>$CUSTOMER_ADDRESS_LINE2</TD><TD>$CUSTOMEF
23           <TD> $CUSTOMER_ZIP</TD></TR>");

```

Description
Fetch a row of data from the resource.

Parameters
result resource resource resulting from operation returning data
option int[optional] flag specifying which record to fetch (IS_READ_SEEK - Current record, IS_READ_NEXT - Next record, IS_READ_PREV - Previous record, IS_READ_FIRST - First record, IS_READ_LAST - Last record).

- `is_errormsg(resource[optional] $connection = ...)`
- `is_execute(resource $stmt, array[optional] $params)`
- `is_fetch_array(resource $result, int[optional] $rownum)`
- `is_fetch_assoc(resource $result, int[optional] $rownum)`
- `is_fetch_object(resource $result, int[optional] $rownum)`
- `is_fetch_row(resource $result, int[optional] $rownum)`
- `is_field_len(resource $result, mixed[optional] $field)`
- `is_field_name(resource $result, integer $field)`
- `is_field_scale(resource $result, mixed $field)`

Debug Output

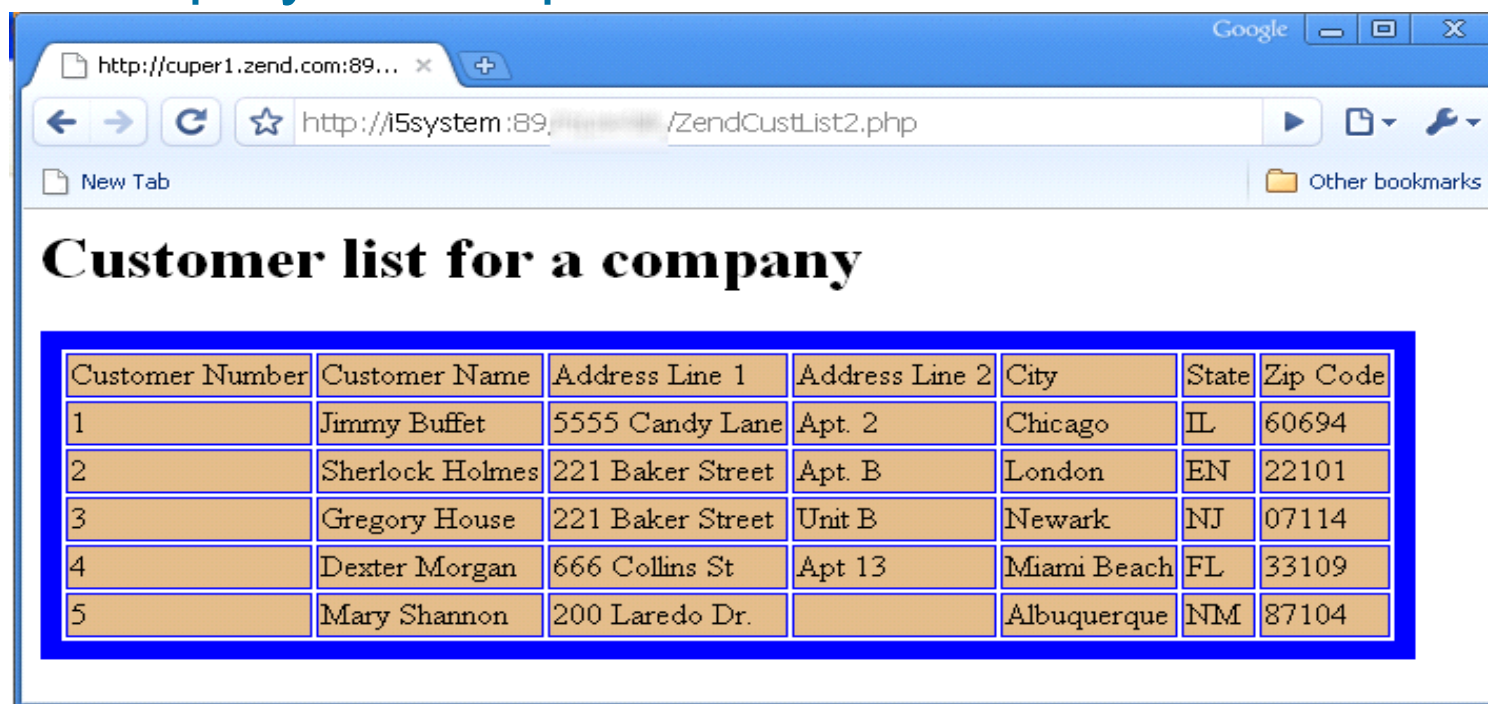
Problems Tasks Console

0 errors, 3 warnings, 0 others

Description	Resource	Path	Location	Type
Warnings (3 items)				
bool-assign : Assignment in condition	ZendCustList1...	RemoteSystemsTe...	line 18	Code Analyzer...
expr-unused : Expression result is never u	ZendCustList1...	RemoteSystemsTe...	line 11	Code Analyzer...
var-use-before-def-global : Global variable	DebugDemo.php	ExampleProject	line 61	Code Analyzer...

Basic file listing script

- Connect to DB2 i
- Select records from a DB2 table
- Load the records in an HTML table
- Display the output



The screenshot shows a web browser window with the address bar containing `http://i5system:89.../ZendCustList2.php`. The page title is "Customer list for a company". Below the title is a table with 7 columns: Customer Number, Customer Name, Address Line 1, Address Line 2, City, State, and Zip Code. The table contains 5 rows of customer data.

Customer Number	Customer Name	Address Line 1	Address Line 2	City	State	Zip Code
1	Jimmy Buffet	5555 Candy Lane	Apt. 2	Chicago	IL	60694
2	Sherlock Holmes	221 Baker Street	Apt. B	London	EN	22101
3	Gregory House	221 Baker Street	Unit B	Newark	NJ	07114
4	Dexter Morgan	666 Collins St	Apt 13	Miami Beach	FL	33109
5	Mary Shannon	200 Laredo Dr.		Albuquerque	NM	87104

Connection to DB2 for i

- Need three things:
 - System
 - User ID
 - Password

```
// Standard DB connection to DB2...
$conn = "*LOCAL"; $name = ""; $pwd = "";

$i5link = db2_connect($conn, $name, $pwd);
if (!$i5link)
echo 'Connection failed: '.db2_stmt_error().': '.db2_stmt_errormsg();

$sql = "SELECT * from zenddata.customer";

$stmt = db2_exec($i5link,$sql)
or die("Failed query:".db2_stmt_error().": ".db2_stmt_errormsg());

?>
```

Reading data...

Loop through record set

```
<h1> Customer list for a company</h1>
<TABLE BORDER="10" BORDERCOLOR="blue"><TBODY BGCOLOR="DEB887">
<TR><TD>Customer Number</TD><TD>Customer Name</TD><TD>Address Line 1</TD>
<TD>Address Line 2</TD><TD>City</TD><TD>State</TD><TD>Zip Code</TD></TR>

<?php

while($row=db2_fetch_array($stmt)){
list( $CUSTOMER_NUMBER, $CUSTOMER_NAME, $CUSTOMER_ADDRESS_LINE1,
    $CUSTOMER_ADDRESS_LINE2, $CUSTOMER_CITY, $CUSTOMER_STATE,
    $CUSTOMER_ZIP)= $row;

echo(" <TR><TD> $CUSTOMER_NUMBER </TD><TD> $CUSTOMER_NAME </TD>
    <TD> $CUSTOMER_ADDRESS_LINE1 </TD><TD>$CUSTOMER_ADDRESS_LINE2 </TD>
    <TD> $CUSTOMER_CITY</TD><TD> $CUSTOMER_STATE </TD>
    <TD> $CUSTOMER_ZIP </TD></TR> ");
}
echo ' </table> ';
db2_close($i5link);

?>
```

- **Included with Zend Core**
- **Allows a PHP application to:**
 - **run i5/OS commands and programs**
 - **access DB2 for i5 natively or in SQL**
 - **access DTAARA, DTAQ, User Spaces**
 - **read system values**
 - **read/list/create spool files**
 - **list system objects**
- **Example coming up...**

i5 Toolkit Example: Retrieve Job Attributes

```
<?php

// rtvjoba.php: connect to i5, call command via Zend's i5 Toolkit
// two functions: i5_connect, i5_command

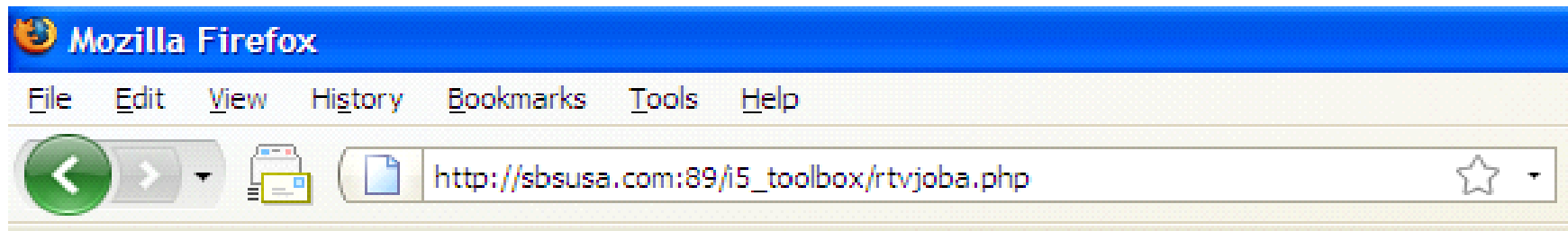
$conn = i5 connect("localhost", "ASEIDEN", "password");

$ret = i5 command(
    "rtvjoba",
    array(),
    array(
        "user" => "user",
        "curlib" => "curl",
        "usrlib1" => "userlib",
        "syslib1" => array("syslib", "char(165)"))
);

echo "User: $user<br>";
echo "Current library: $curl<br>";
echo "User library: $userlib<br>";
echo "System libs list: $syslib<br>";

?>
```

Results of rtvjoba.php



User: ASEIDEN

User library: QTEMP QGPL SBSUTIL ALAN ZENDCORE

System libs list: QSYS QSYS2 QHLPSYS QUSRSYS DBU80 QSYS38

Current library: *NONE

Grass roots resources

- **Support: Zend Core includes one year of “silver” support**
- **Forums and lists**
 - forums.zend.com (look for i5 forums)
 - lists.nyphp.org (general PHP questions)
- **Books (online and print)**
 - PHP Manual: <http://php.net>
 - *Zend Core for i5/OS Redbook*
 - PHP/i book by Jeff Olen & Kevin Schroeder (MC Press)
- **PHP User Groups: Boston’s is active**
 - Bostonphp.org



Pilot project

Pilot project: how to pick one

- **Well defined, useful, with modest scope**
- **Accesses IBM i resources**
 - db2
 - RPG calls (optional)
- **Could be a new application or extension of an existing one to the web**

Pilot project: “AE” demo

1. Start

2. Transferee Info

3. Services

4. Crating/Uncrating

5. Special Instructions

6. Review and Submit



**Select tabs above by clicking on the tab names (or by pressing Alt and the tab number).
See a summary of your order, and submit it, on Tab 6.**

Pilot project: goals and resources

- **Small scale lets you do it right**
 - Set standards for future
 - Safe space to get experience
- **You need these free tools**
 - Zend Core
 - Zend Studio
- **And consider one or more of these:**
 - Training/Support
 - A PHP framework (e.g. Zend Framework, which is free)
 - Mentoring, coached development
 - Greatly accelerate progress, save staff time
 - Especially when starting with a framework
 - Zend Platform (try 60-day trial)

A pilot project using Zend Framework

- **FIDM: student course configuration system**
 - Goals: Set standards for future. Do it “right.” Work as a team.
 - Training
 - “PHP for RPG programmers”
 - Zend Framework introduction
 - Mentoring in Zend Framework
 - Invited certified consultant (me)
 - They invited me after doing some development, which generated good questions
 - “What we did together in 3 days, we couldn’t have done alone in 3 months.”

But what is Enterprise PHP?

Enterprise PHP is:

- **Grown-up development**
- **Think of your mature RPG processes**
 - Consistent
 - Reliable
- **You know how to do that**

Zend Framework helps you do it right

- **A starting point for your applications, providing**
 - Security features
 - Modular design
- **A collection of over 70 PHP components to simplify common tasks, including some for:**
 - Form creation (and reuse)
 - Logging
 - Database access
- **A demonstration of PHP 5 best practices**
- **It provides standards and great functionality but will not cramp your style. Your development is not limited in any way**

Zend Framework

- Like the “i,” it has everything you need
- You don’t have to integrate lots of pieces (template system, emailer, etc.)
- It’s all tested for you



Zend Framework's Model, View, Controller

- **M, V, and C separate parts of application for you**
- **Model contains most of your business logic**
- **View: If you have HTML you want to use, just plunk it in the “view” without worrying about overwriting your mainline PHP code**
- **Controller handles the application's flow**

Zend Framework "Model": example

```
<?php
// model: Busyflag.php

class Busyflag
{
    // The table name
    protected $name = 'SYSFLAGS'; // old-fashioned "System 36" table

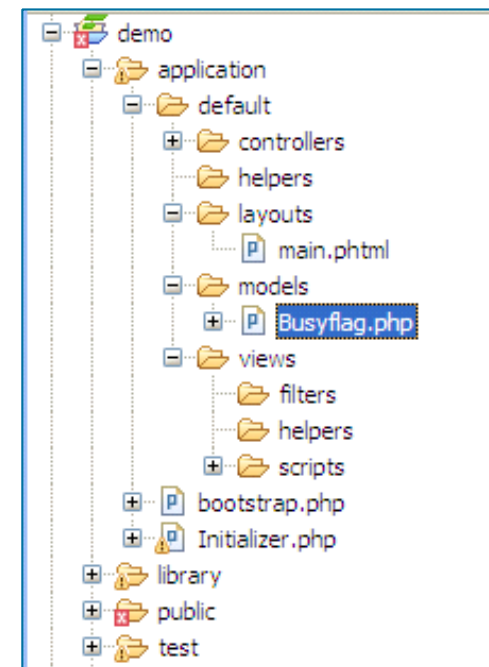
    // isSiteUp: return true if up, false if down
    public function isSiteUp() {

        // one record, with key "B"
        $sql = "select BZYFLG from {$this->name} where RECID = 'B'";
        $row = SBSDBhelp::getOneRow($sql);

        // true if Y, false otherwise.
        return $row['BZYFLG'] == 'Y';

    } // (public function isSiteUp())
} // (class Busyflag)
```

```
// usage (from a preDispatch front controller plugin)
$busyFlag = new Busyflag();
if (!$busyFlag->isSiteUp()) {
    // Take user to "site down" page.
    $request->setControllerName("Down");
    $request->setActionName("index");
} // (if (!$busyFlag->isSiteUp()))
```



Controller Routes “friendly” URL request

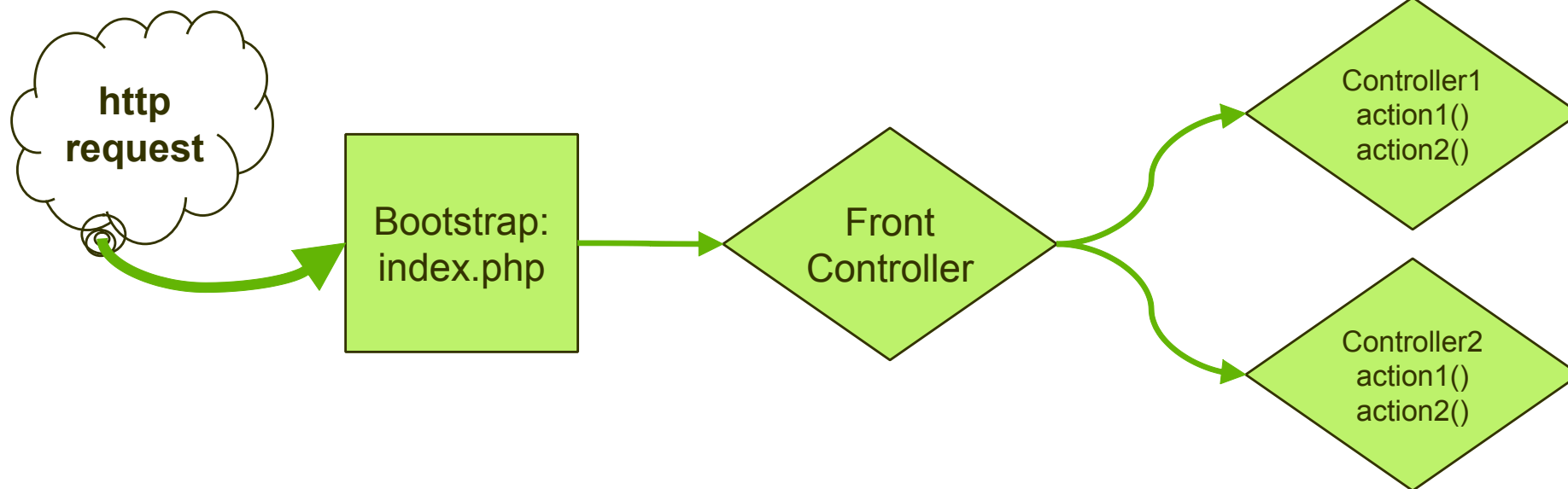
- **Default routing convention:**

- `http://example.com/controller/action/param1/value1...`

Controller maps to class name

Action maps to method name

Param/value pairs are passed to action



A “view helper”: TitleCase.php

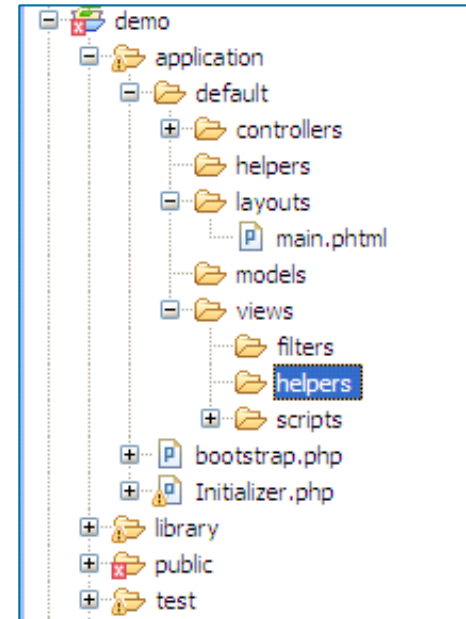
```
<?php
Require_once 'Zend/View/Interface.php';

/**
 * TitleCase helper
 */
class Zend_View_Helper_Title_Case {

    public $view;

    public function titleCase($string = '')
    {
        // convert incoming string so that
        // first letter of each word is capitalized/
        // but all other letters are lowercase.
        // Also trim the string.
        return ucwords(strtolower(trim($string)));
    }

    public function setView(Zend_View_Interface $view) {
        $this->view = $view;
    }
}
```



Usage:

```
echo $this->titleCase('mozilla
firefox');

// Mozilla Firefox
```

Action Controller

- **Controller classes handle groups of request URLs**

`http://example.com/controller/action`

Default: `IndexController`

- Organizes and groups functionality
- One class (extending `Zend_Controller_Action`) for each controller

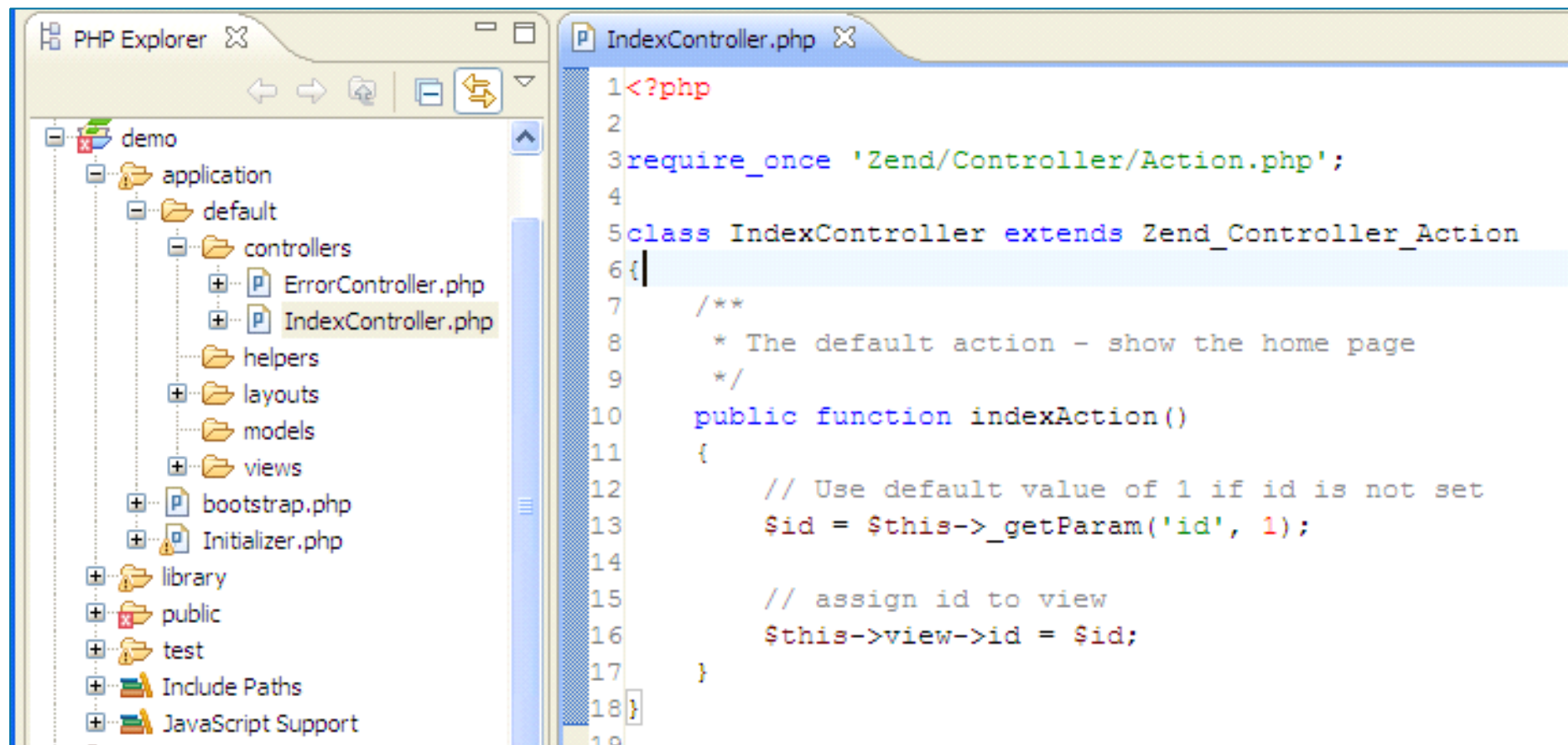
- **Action methods in each controller class handle requests**

`http://example.com/controller/action`

Default: `indexAction()`

- **Named like *actionAction()***
 - **Example: If *action* is “edit” then method is `editAction()`**

Controller example



The image shows a screenshot of the PHP Explorer IDE. On the left, a file tree for a project named 'demo' is visible. The tree structure is as follows:

- demo
 - application
 - default
 - controllers
 - ErrorController.php
 - IndexController.php
 - helpers
 - layouts
 - models
 - views
 - bootstrap.php
 - Initializer.php
 - library
 - public
 - test
 - Include Paths
 - JavaScript Support

On the right, the code editor shows the content of 'IndexController.php':

```
1 <?php
2
3 require_once 'Zend/Controller/Action.php';
4
5 class IndexController extends Zend_Controller_Action
6 {
7     /**
8      * The default action - show the home page
9      */
10    public function indexAction()
11    {
12        // Use default value of 1 if id is not set
13        $id = $this->_getParam('id', 1);
14
15        // assign id to view
16        $this->view->id = $id;
17    }
18 }
19
```

Zend Framework resources

- **Framework.zend.com**
- **Devzone.zend.com**
- **Tune in to my webcast with Zend on June 17, 2009 (12pm Eastern Time)**
 - <http://www.zend.com/en/news/event/list/year/2009/month/6/day/17>

Enterprise PHP in detail

- **Design/development cycle**
 - Standards
 - Security
 - Focus on easy maintainance
 - Reusable functionality (not just copy and paste)
 - Procedures that ensure quality
 - Think of change management as well
- **Deployment**
 - Need tools to help support app in live environment
 - Predictable, consistent performance

Zend Platform

Provides caching (fast!), debugging and event tracking, integration with Zend Studio (IDE)

The screenshot displays the Zend Platform dashboard interface. At the top, there is a navigation bar with the following items: Platform, PHP Intelligence, Performance, ZDS, Job Queues, and Integration. Below this is a secondary navigation bar with: Dashboard, Status, Preferences, User Management, and Cluster Manager. The main content area is titled "Dashboard" and features a section called "Events at a Glance". This section includes a "Load Filter" dropdown menu currently set to "Recent Events", a "Show All" button, and a search field for "Find Event by Id:" with a "Find" button. Below these controls is a table listing event data.

Id	Event	Count	Last Occurrence	Location	URL	Severity
34	Slow Script Execution (Absolute)	329	07 Apr 2009 20:42:05	localhost	.../QuickOrder	Moderate
9	Slow Script Execution (Absolute)	234	07 Apr 2009 19:47:51	localhost	.../index.php	Moderate
32	Slow Script Execution (Absolute)	153	07 Apr 2009 18:41:58	localhost	.../chard+napa+750	Severe
33	PHP Error	16	07 Apr 2009 16:28:24	localhost	.../5531043	Moderate
47	PHP Error	304	07 Apr 2009 16:25:59	localhost	.../advancedsearch	Moderate

Zend Platform: detail

Drill down to find the cause of performance lags or errors



The screenshot shows the 'Event Details' window for Event #29 in Mozilla Firefox. The URL is `http://ebizdev.alliedbeverage.com/ZendPlatform/server/eventreport.php?event_id=29`. The event is a 'Severe Event' titled 'Report for Slow Script Execution (Absolute) #29'. The requested URL is `http://ebizdev.alliedbeverage.com/advancedsearch`, the main file is `/www/ebizdev/htdocs/html/index.php`, and the script ran for 7183 msec. The event occurred 179 times between Dec 01, 2008 and Jun 10, 2009. Below the event info are diagnostic tools: Test URL, Debug URL, Profile URL, and Show Source Code. The event context shows variables like GET, POST, COOKIE, and SERVER, with values such as `REDIRECT_STATUS = 200`, `HTTP_HOST = ebizdev.alliedbeverage.com`, and `HTTP_USER_AGENT = Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.9.0.4) Gecko/2008102920`.

Event Details

Report for Slow Script Execution (Absolute) #29

Severe Event

Requested URL: `http://ebizdev.alliedbeverage.com/advancedsearch`

Main file: `/www/ebizdev/htdocs/html/index.php`

Source file: In file `/www/ebizdev/htdocs/html/index.php`

Script ran for: 7183 msec

Event Occurrences Info:
Occurred 179 times (in 191 days), the first on 01 Dec 2008 13:14:59 and the last on 10 Jun 2009 16:08:51. First occurrence was on virtual host `ebizdev.alliedbeverage.com` on server `localhost`.

Zend Studio Diagnostics:

Test URL Debug URL Profile URL Show Source Code

Event Context:

Data


- Variables
 - GET
 - POST
 - COOKIE
 - SERVER
 - `REDIRECT_STATUS = 200`
 - `HTTP_HOST = ebizdev.alliedbeverage.com`
 - `HTTP_USER_AGENT = Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.9.0.4) Gecko/2008102920`
 - `HTTP_ACCEPT = text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8`
 - `HTTP_ACCEPT_LANGUAGE = en-us,en;q=0.5`

Enterprise and Zend Framework demo

Allied Beverage Group: Wine catalog/ordering system

Search Results (7 products found), order for EUROPA LIQUORS (001588) - Mozilla Firefox

Home Advanced Search Orders ABG Employee Connect Log out

 Welcome, Angel Wong #125

Home > Search Product Catalog > Search Results (7 products found), order for EUROPA LIQUORS (001588) PRICING MONTH: **June 2009**

Advanced Search

Search for item: [?] [\(proof °\)](#)

with bottle price (\$): [?] to [?] (optional)

AMERICO'S INC (001588)
DBA EUROPA LIQUORS
155-57 PACIFIC ST, NEWARK NJ, 07102
Phone: 875-588-8185

Off Premise Terms: NET
Total List: \$218.54
Total Disc: \$26.00
Est Total Net: \$ 192.54

Results for **Keywords: CHARD NAPA 375ML**

Product	Code	Size	Pack	Qty	Cs/Bt	Add Items	Price		Inventory		Vintage	Info	\$ Best Buy
							\$ Case	\$ Bottle	Case	Bottle			
Acacia Chardonnay A By Acacia	5607061	375 MI	12	<input type="text" value="3"/>	cases ▾	<input type="button" value="Add"/>			26	5	NV		
Cakebread Cellars Chardonnay Napa Valley 07	7433065	375 MI	12	<input type="text" value="1"/>	bottles ▾	<input type="button" value="Add"/>			9	5	2007		
Groich Hills Cellar Chardonnay	5544265	375 MI	12	<input type="text"/>	cases ▾	<input type="button" value="Add"/>			5	7	2006		
Levendi Chardonnay Red Hen 05	4591060	375 MI	12	<input type="text"/>	cases ▾	<input type="button" value="Add"/>			13	2	2005		
Merrvale Chardonnay Starmont 07	4223069	375 MI	12	<input type="text"/>	cases ▾	<input type="button" value="Add"/>			8	8	2007		
Schramsberg Blanc de Blanc	4056064	375 MI	12	<input type="text"/>	cases ▾	<input type="button" value="Add"/>			17	9	2005		

Enterprise demo ingredients

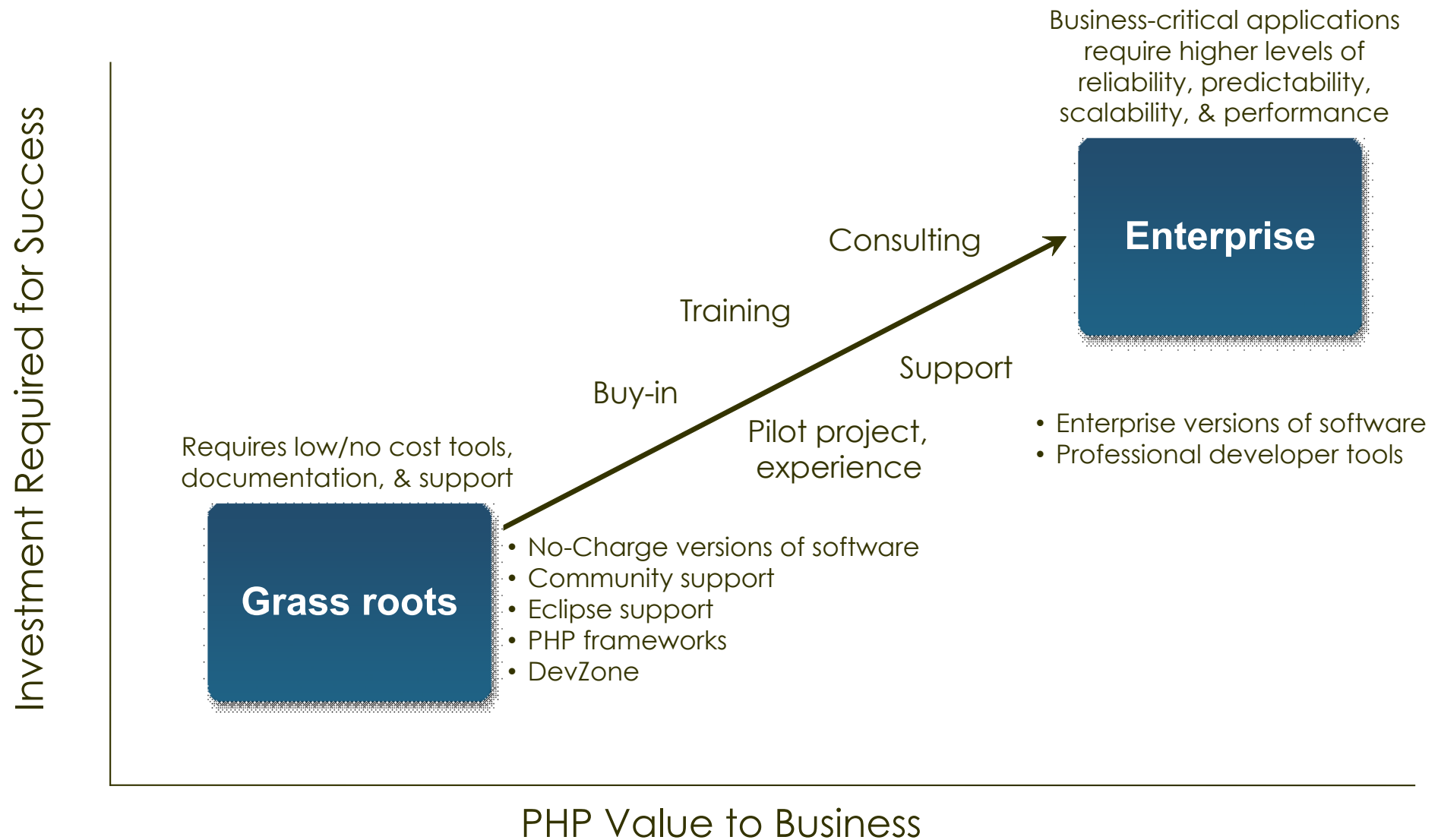
- **Allied project won IBM/COMMON “Best Web Solution” of 2009**
- **For Allied, PHP brings people and resources together on the “i”**
 - db2 database provides reliable, consistent product catalog and order data
 - No extra servers needed
 - Re-using RPG logic
 - Everyone on the same team
 - PHP is “superglue”: plans afoot to connect other systems, too
- **In the wine distribution industry, a solid reputation is important**
 - For their first high-profile project, asked Strategic (us) to develop the system
- **Consistency, standards, security, reusability**
 - Zend Framework
- **Speed critical for sales reps in the field**
 - (Being compared to green screen speed!)
 - Zend Platform
 - Also allows monitoring of production environment

How we did a full text search

- **Create a reverse index, just as Google did**
 - Don't use "LIKE" heavily in your SQL...must read every byte
- **Run a job that goes through product catalog, breaking up each field into individual words**
 - Omit "a", "the", etc.
- **For each word, add a record to WRDSEARCH table/file**
 - Keyed by the search word
 - Other fields
 - "Origin" of the word (original field name in which word was found)
 - The product code that we're looking up
- **Now, we can query by the words the user typed in, and get the product codes back**

**How do we get
there?**

Path to Enterprise PHP



Tools that help (3 of them are free)

Grass roots

Consistent & Predictable

Enterprise



- Consistent commercial versions of PHP, extensions, database drivers, libraries
- Timely updates of security patches, bug fixes, new extensions/drivers
- Configuration Management across entire production infrastructure



- Pre-built components for rapid development
- Best Practices
- Iterative development cycles
- Higher deployment success rates results from rigorous testing by Zend & PHP community



- Reusability
- Remote Debugging in Production
- Development best practices
- Repeatable, uniform testing
- Standards for deployment
- Root Cause Analysis
- Replicate Production problems in developer's environment



- Improved Scalability
- High performance via Caching
- Defining/measuring performance & scalability metrics
- Proactive Monitoring & Management

Get help to smooth the learning curve

Grass roots

Consistent & Predictable

Enterprise

Support

Gold Support

Business Hour Phone Access
4 hr Priority Response

Platinum Support

24/7 Phone Access
4 hr Priority Response/2 hr on P1

Training

PHP I: Foundations
PHP for RPG Prog
PHP for Exp Prog
Studio w/ Platform

PHP II: Higher Structures
Building Apps w/ Framework
Zend Certifications

Zend Platform for SysAdmins
Building Secure Apps

Consulting

Architecture & Design
SmartStart Rapid App Dev
Coached Development

Remote Install & Admin
PHP Performance Audits
PHP Security Audits

App Migration

Enjoy the ride...

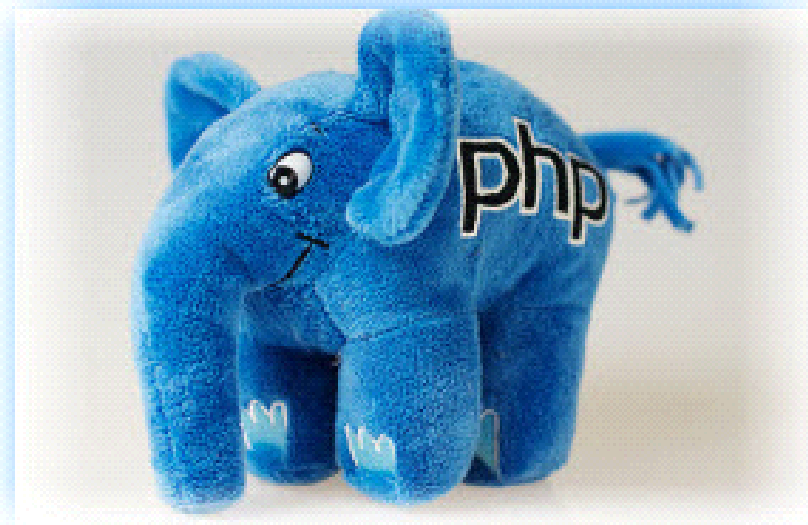
Enjoy the ride...

...on the path to Enterprise PHP!

- **Start with grass roots: experiment**
- **Get training and move on to pilot project**
- **As your confidence grows, use Zend Framework and other tools. Consider mentoring to accelerate progress, avoid pitfalls**
- **Call me for guidance or to sign up for training, mentoring, or to learn more about Zend's productivity tools**
 - 1-800-727-7260 or aseiden@sbsusa.com
 - Say you saw Alan's presentation at NH/VT

Thanks and Questions

To download these slides, go to:
NHMUG.org, **VTMUG.org**, or
<http://alanseiden.com/presentations> (leave a
comment!)



To receive free PHP/i tips by email, write to
aseiden@sbsusa.com with subject: “PHP tips.”
Or write “PHP tips” on a business card.