



The PHP Company

Web-enabling your IBM i applications with PHP

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Audience

- Are you looking to learn more about the what & how of PHP on IBM i?
- Have you done some PHP but new to IBM i?
- Are you already doing PHP but Looking for product refresh?
- Might you be looking to grow beyond PDM/RPG?

Agenda

- The Five Steps...
 1. Understand the PHP universe
 2. Understand the “stack” on IBM i
 3. Install Zend Server
 4. Install Zend Studio
 5. Get productive!

1. Understand the PHP Universe

PHP is a Scripting Language

- ▶ PHP Hypertext Pre-Processor
- ▶ Developed initially by [Rasmus Lerdorf](#) in 1994: PHP/FI
- ▶ Zeev Suraski and Andi Gutmans Contributing since 1997+ (ZEEv + aNDi = Zend)
- ▶ Interpreted, not compiled
- ▶ Forgiving and intuitive code structure (Short learning curve)
- ▶ Immediate feedback during development
- ▶ Operating model is similar to Net.Data, not as verbose
- ▶ PHP is to Java what RPG is to COBOL

Who is Zend?



- Guiding light for PHP
- Providers of stable, supported PHP distribution
- Providers of commercial tooling and support for PHP
 - ▶ Zend Server - PHP runtime and tooling
 - ▶ Zend Studio - Integrated Development Environment
 - ▶ Zend Support - One stop for all PHP needs on IBM i

Zend and IBM

- Partnership began in 2005
- Renewed in 2008
- Zend selected by IBM to deliver PHP on IBM i
- Zend solutions pre-loaded with IBM i 6.1 and 7.1!
 - ▶ One of two ISV's in history of IBM i to distribute LP
- You can get products and updates at Zend.com
- IBM i7.1 includes Zend Server in Licensed Program media

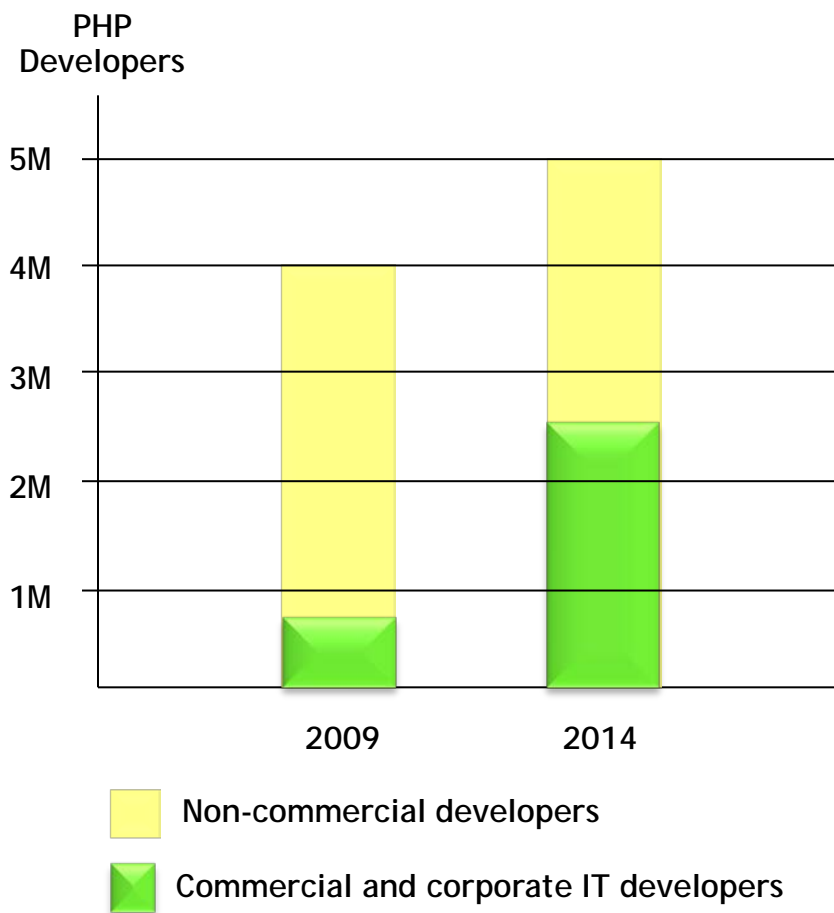


The “Stack”

- Tested, business ready and supported distribution of PHP
- Runs in native environment under PASE
- Home base for PHP modules like GD, PEAR, etc.
- Browser based admin console
- Accessible immediately after install
- the stack
- And then installation on IBM i
- No charge LP Included with system maintenance



Enterprise PHP Adoption is Growing Rapidly



Gartner

“Commercial and corporate IT developers will account for more than 2 million PHP community members—growing from 20% to 50% of the worldwide PHP developer population.”

Gartner Research Note: “PHP: Past, Present and Future”, Dec. 2nd, 2009

Top 10 Internet Sites by WW traffic



1. Google.com



2. Facebook.com



3. Youtube.com



4. Yahoo.com



5. Blogger.com



6. Baidu.com



7. Live.com



8. Wikipedia.com



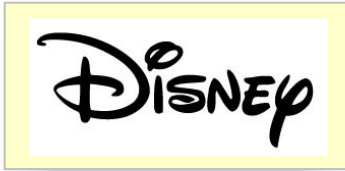
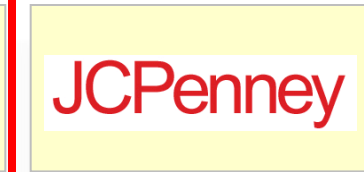
9. Twitter.com



10. qq.com

*Using IBM i

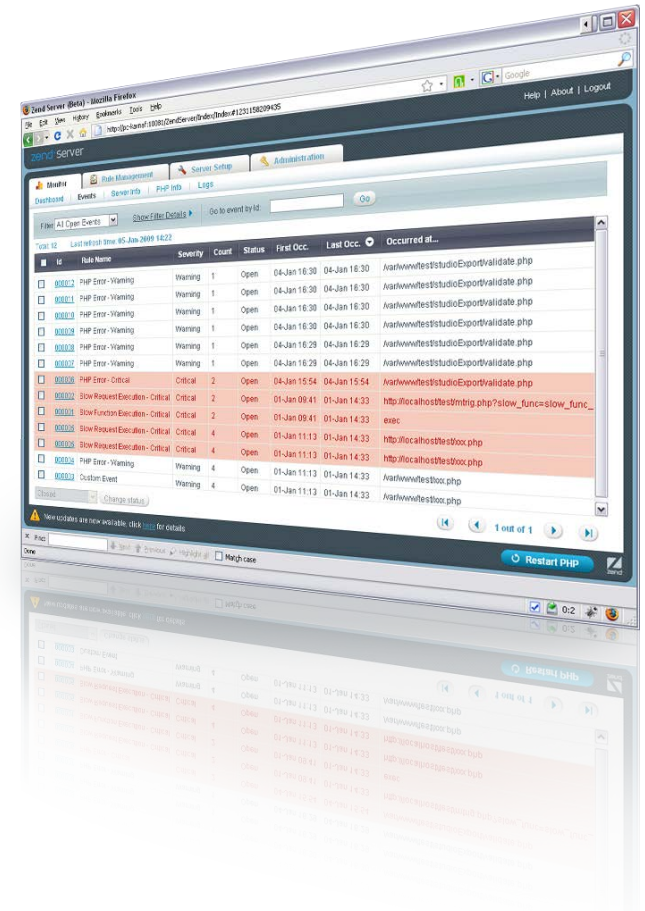
Enterprise Proof Points



2. Zend Server for IBM i

What Is Zend Server?

- Enterprise PHP stack
 - ▶ PHP, ZF, DB connectivity, debugging extension, and more
- Two Editions - no charge “Community Edition” provided by IBM & Full commercial edition
 - ▶ Both are production ready
- Application monitoring and diagnostics (integrated with Zend Studio)
- Multi-level performance enhancement capabilities
- Software updates and security hot fixes
- Easy and quick installation
- Zend Framework Integration



Why a new generation?

- Based on feedback of key areas for Improvement
- Improved basic PHP Performance
 - ▶ 30% to 600% depending on the application
- New capabilities
 - ▶ Application Monitoring
 - ▶ Code Tracing - Faster problem resolution
 - ▶ Job Queue - Performance and scalability
 - ▶ Multi-Level Caching - Performance and Scalability
 - ▶ Support for PHP 5.3
- Easier installation, administration & maintenance

Key Priorities articulated by CTOs, CIOs and VPs of Engineering

Leverage investment in IBM i infrastructure

- Expose DB2/400 data via the web

- Webify green screen applications for end-users

Maximize leverage of Power Systems computing power

- Move Windows/Linux based PHP apps to IBM i

- Deploy new web based applications

Mitigate and minimize risk/cost of migrations

Retool RPG programmers and access lower cost development resources to address business needs

Leverage benefits of open-source technologies - create portable applications

Why PHP on i?

Leverage Existing Infrastructure to Develop & Run Dynamic Web Applications Easily



- Powerful , Flexible, & Fastest Growing Web Development Language
- Native on IBM i/OS
- Backing & Support of IBM
- Controlled/Driven by PHP Community
- Easy to Use & Fast to Deploy
- Supports Heterogeneous Environments
- Powerful Integration Capabilities

Application Modernization

Use PHP to web-enable green screen applications, utilizing existing data & business logic without rewriting application

Access RPG Programs & Data as Web Services

Package programs and data as web services and make available to other web applications

Consolidate Data in DB2/400

Move PHP applications that are running on Windows or Linux that access data in DB2 to run in IBM i/OS to speed up or reduce complexity of the applications

Access DB2/400 Data via Browser

Easily access and interact with DB2/400 data using a standard web browser

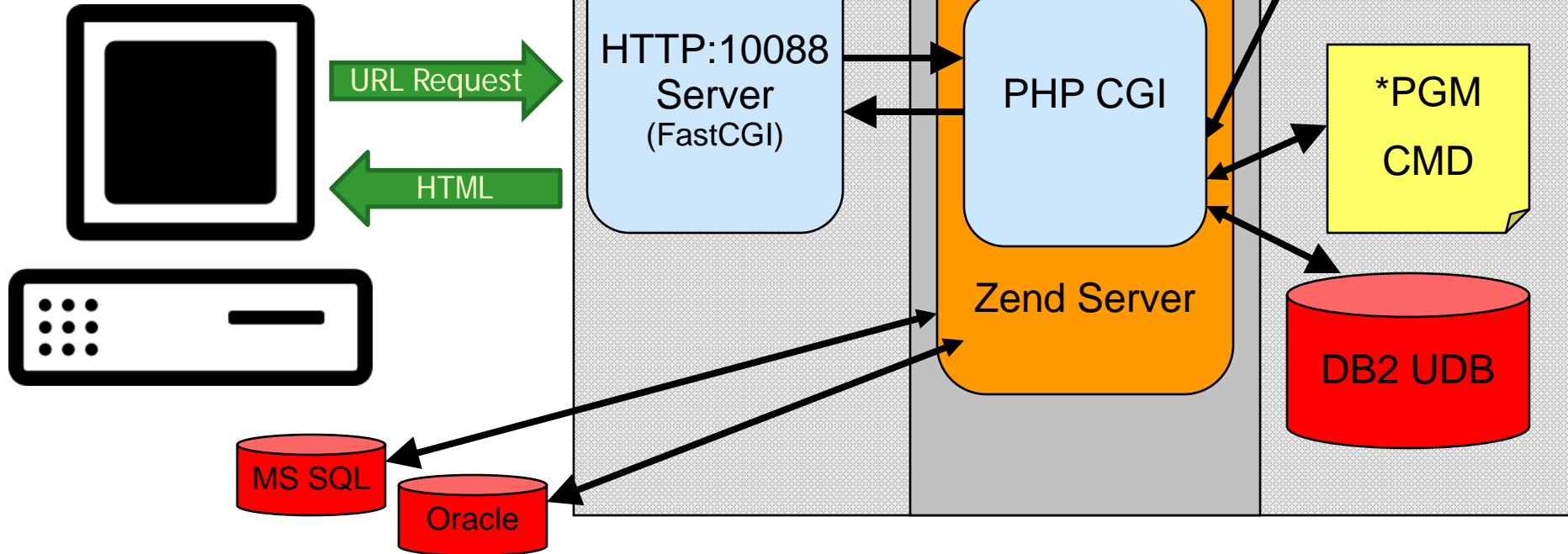
New/Packaged Web Application on IBM i/OS

Create new applications with PHP on IBM i/OS or leverage thousands of existing Open Sources applications

Zend Server Under the Covers

ILE Apache:10088

- Default configuration FastCGI



3. Installing Zend Server

Install Zend Server

- Prerequisites:
 - ▶ See Zend Server installation documentation!!!
 - ▶ Five prerequisite LP's (included in IBM i for no additional charge)
 - ▶ V5R4, i6.1, i7.1 (all interim releases, too)
 - ▶ Recent Cumulative PTF package, PASE, Qshell, Group for HTTP
- Software installation
 - ▶ Windows Installation or...
 - ▶ Upload *SAVF, Restore, and start coding!
 - ▶ Clean installation can start the stack automatically
- Bonus!
 - ▶ MySQL can be installed at the same time

Where do I get it? IBM LP or Zend.com

The screenshot shows the Zend Server Downloads page on the Zend website. The page features a navigation menu at the top with links for Solutions, Products, Services, Downloads, Community, Resources, Company, Online Store, and Support Center. A sidebar on the left lists various product options, including Zend Server for IBM i, System Requirements, Getting Started, What's New, Updates, Videos, Zend Unlimited, Community Edition, Webinars, Resource Library, Zend Server on Amazon EC2, Zend Framework, and FAQ. The main content area displays the Zend Server interface, which includes a dashboard with recent events, system overview, and tasks. A red circle highlights the 'IBM i' option in the operating system selection bar. Below the interface, a table lists the download links for different operating systems.

Zend Server Downloads

Zend Server is a Web Application Server for running and managing business-critical PHP applications in production.

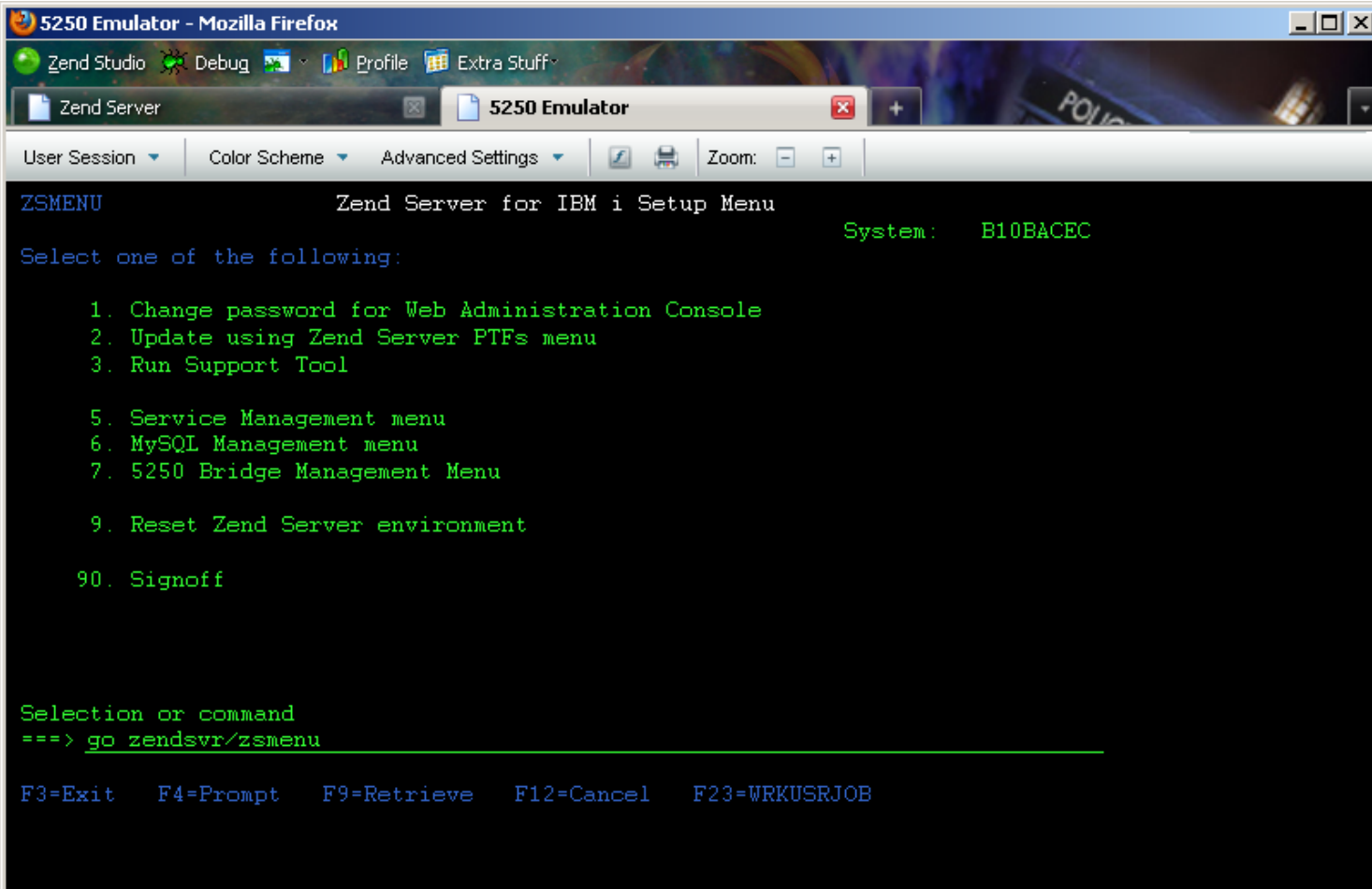
- Improved PHP application performance
- Application monitoring and diagnostics
- Production-ready PHP stack that includes Zend Framework
- Zend Studio integration for simplified debugging
- Expert technical support, software updates and security hotfixes

Don't have a license? Get a **free 30 day trial license** - click "Generate a Trial License" button link after downloading.

Product	Version	Format/Size	Notes
Zend Server for IBM i (PHP)	5.0.4	(ZIP) 332.05 MB	Release Notes

Start/stop Zend Server, MySQL, etc...

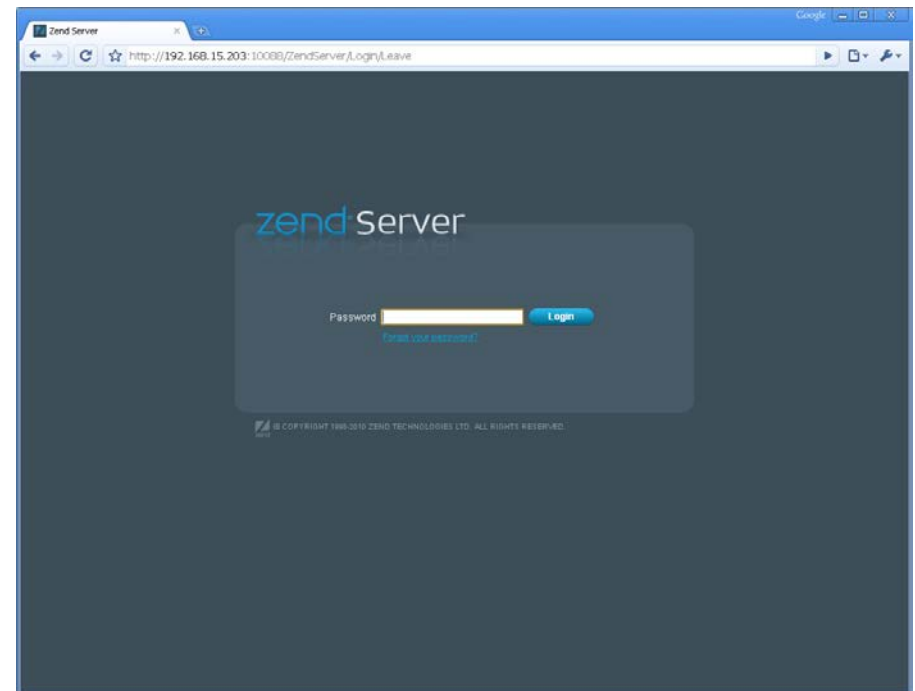
- ▶ Type GO ZENDSVR/ZSMENU, Option 5 then 1



```
5250 Emulator - Mozilla Firefox
Zend Studio Debug Profile Extra Stuff
Zend Server 5250 Emulator
User Session Color Scheme Advanced Settings Zoom:
ZSMENU          Zend Server for IBM i Setup Menu          System:  B10BACEC
Select one of the following:
1. Change password for Web Administration Console
2. Update using Zend Server PTFs menu
3. Run Support Tool
5. Service Management menu
6. MySQL Management menu
7. 5250 Bridge Management Menu
9. Reset Zend Server environment
90. Signoff
Selection or command
===> go zendsvr/zsmenu
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F23=WRKUSRJOB
```

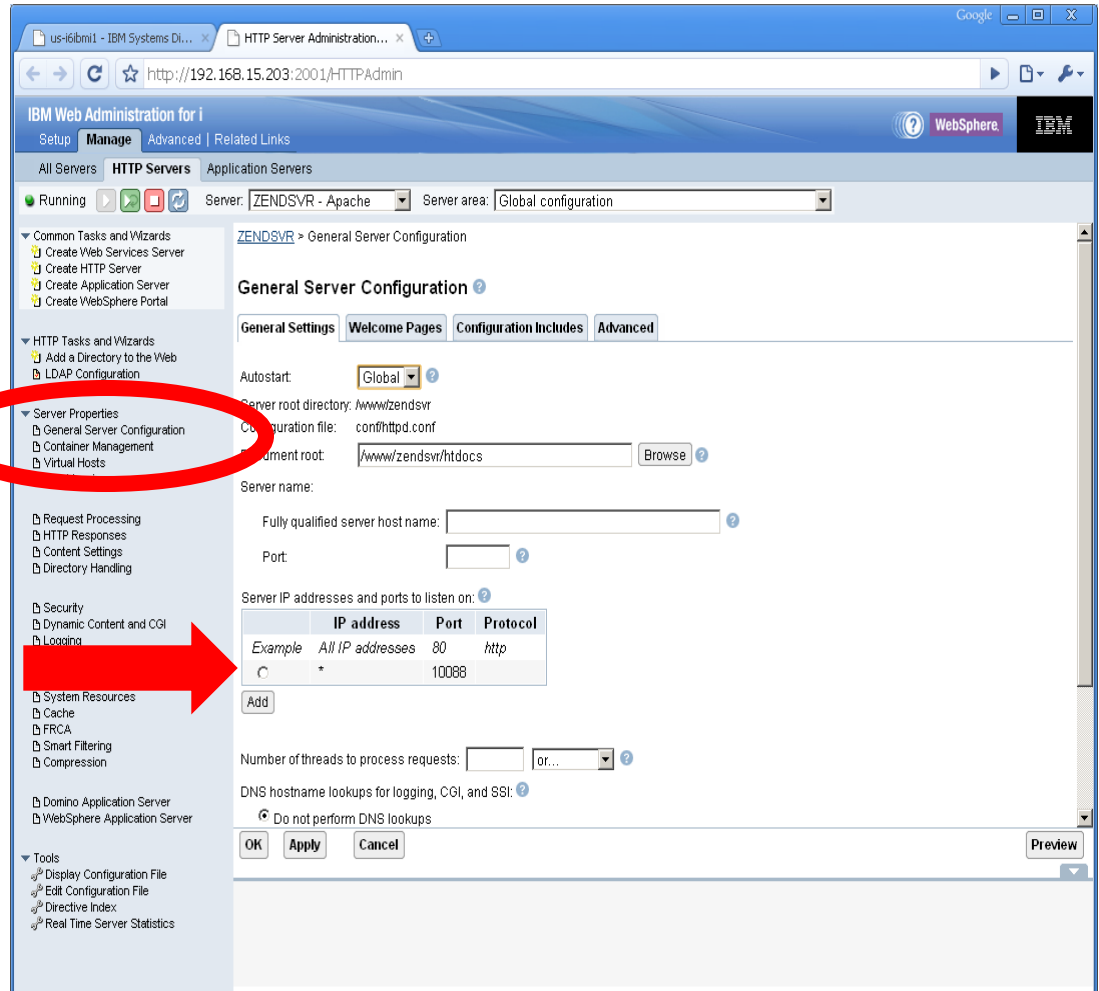
Zend Server Configuration

- Only two screens!
 - ▶ Use <http://ibmiserver:2001> to administer IBM HTTP server
 - ▶ Use Zend Admin to administer Zend/PHP options



Zend Server Port Change?

- Default proxy points to Port 10088
 - ▶ Log in to IBM Admin Server and open up ZENDSVR
 - ▶ Go to General Server Configuration
 - ▶ Click Apply & restart the server



The screenshot shows the IBM Web Administration for i interface. The browser address bar displays `http://192.168.15.203:2001/HTTPAdmin`. The page title is "ZENDSVR - General Server Configuration". The left-hand navigation pane shows a tree view with "Server Properties" selected and circled in red. A red arrow points from the "Apply" button at the bottom of the configuration page to the "Server Properties" menu item.

The "General Server Configuration" page includes the following fields and options:

- Autostart: Global
- Server root directory: `www/zendsvr`
- Configuration file: `conf/httpd.conf`
- Document root: `/www/zendsvr/htdocs` (with a "Browse" button)
- Server name: Fully qualified server host name: (empty field)
- Port: (empty field)
- Server IP addresses and ports to listen on: A table with columns for IP address, Port, and Protocol.

	IP address	Port	Protocol
Example	All IP addresses	80	http
	*	10088	

Buttons at the bottom: OK, Apply, Cancel, Preview.

Sample Scripts!

The screenshot shows the Zend Server web interface. A 'Welcome' dialog box is open, displaying the following content:

Welcome to Zend Server for IBM i

8 Ways to Get Started with PHP on IBM i:

- [Zend Server for IBM i user interface](#) lets you manage your Zend Server and PHP configuration
- [PHP Toolkit API](#) enables you to call RPG/COBOL applications, system objects and data queues
- [Zend Navigator Demo](#) shows PHP Toolkit API access to active jobs, spooled files, user profiles, system values and more
- [Zend Studio for Eclipse](#) helps you build your first PHP application
- [5250 \(API\) Bridge Demos](#) demonstrate how PHP can Web-enable 5250 applications
- [Zend Framework](#) gives you a head start with secure, reliable, and modern Web 2.0 applications and Web services
- [Foundations for IBM i Programmers](#) and [Quick Start: PHP for RPG Programmers](#) online training courses get you started with the basics of PHP
- [Additional PHP Demo Scripts](#)

Enhance your PHP

 Build Web Applications and Web services using [Zend Studio for Eclipse](#). [Learn about i5/OS specific features.](#)

Do not display this on next login

PHP Open Source Applications

Zend customers and IBM have reported success running these PHP applications on IBM i:

- [Mantis/400](#) (Bug Tracker)
- [Drupal](#) (CMS)
- [SugarCRM](#) (CRM)
- [MediaWiki](#) (wiki)
- [Joomla!](#) (CMS)
- [Zen Cart](#) (Online Store)
- [phpBB](#) (Bulletin board)

Note:
Zend does not offer commercial or other support for any of these open source applications.

[Learn how to start with Zend Server and PHP](#)

Sample Scripts!

The screenshot shows a web browser window with two panes. The left pane displays a table titled "Executing SQL statement" with columns "CUST_ID" and "COMPANY". The right pane shows the source code of a PHP script that connects to a database and executes a query to retrieve customer information.

CUST_ID	COMPANY
1221	Kauai Dive Shoppe
1231	Unisco
1351	Sight Diver
1354	Cayman Divers World Unlimited
1356	Tom Sawyer Diving Centre
1380	Blue Jack Aqua Center

```
<html>
<head>
<title></title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
</head>
<body>

<?php
$conn_resource = db2_connect ("*LOCAL", "", "");

if (!$conn_resource) {
    echo "Connection failed. SQL Err:";
    echo db2_conn_error();
    echo "<br>";
    echo db2_conn_errormsg();

    exit();
}

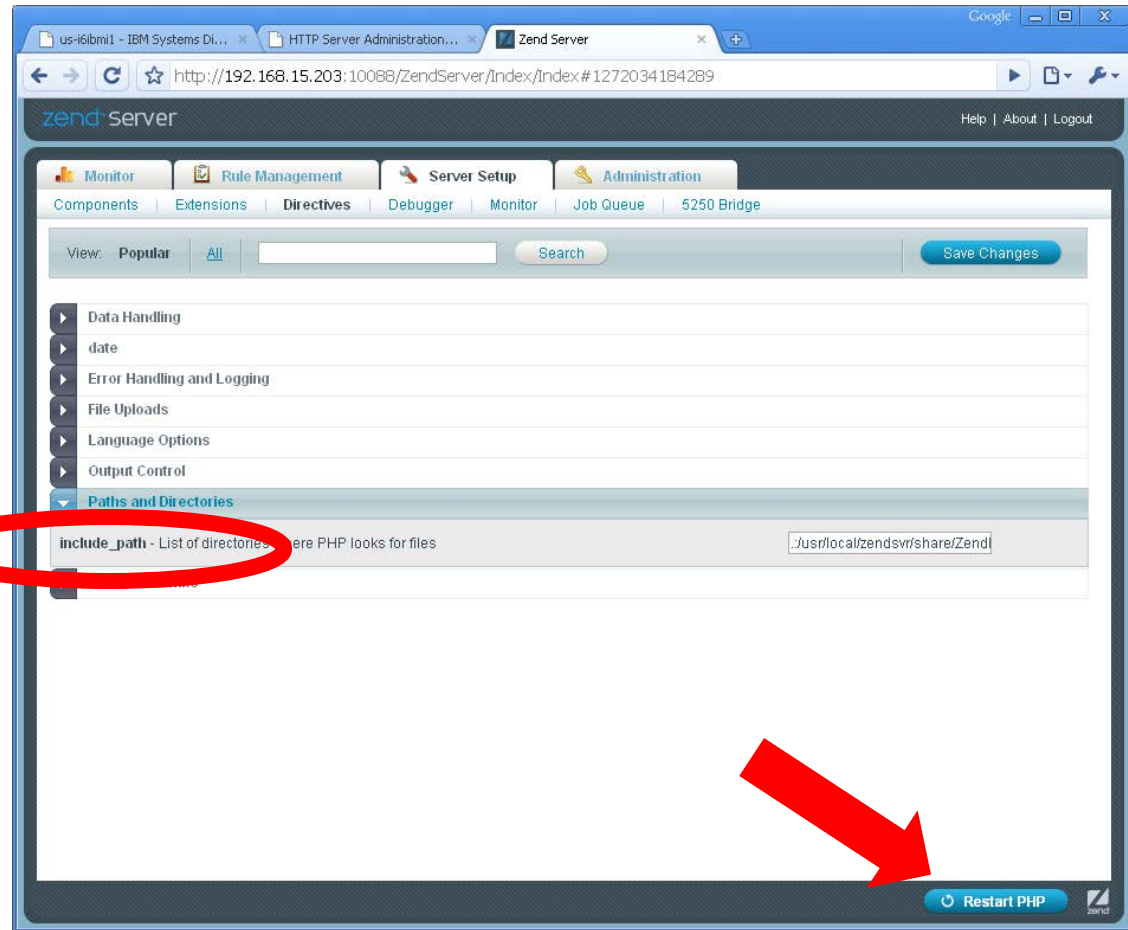
echo "Executing SQL statement: SELECT * FROM ZENDSVR.SP_CUST WHERE CUST_ID > 1220 FOR FETCH ONLY";
echo "<br>", "<br>";

/* Construct the SQL statement */
$sql = "SELECT * FROM ZENDSVR.SP_CUST WHERE CUST_ID > ? FOR FETCH ONLY";

/* Prepare, bind and execute the DB2 SQL statement */
$stmt= db2_prepare($conn_resource, $sql);
$lower_limit = 1220; //from the CUST_ID value
$fields = db2_num_fields($stmt);
if($fields > 0 )
```

Zend Server php.ini changes

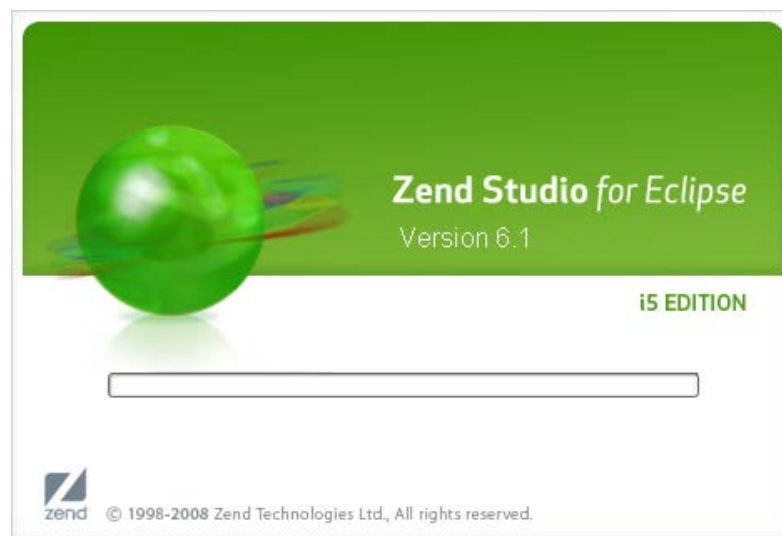
- Manage php.ini via GUI in Zend Server
 - ▶ Log in with initial password, can reset in green screen → Server Setup → Directives
 - ▶ Administer all values in php.ini
 - ▶ Include path is one of many options
 - ▶ Must restart PHP using new blue button!



4. Install Zend Studio

Zend Studio 8 for IBM i

- Included for IBM i customers w/1 year support & upgrades
- Essential IDE for PHP on IBM i
- Syntax checker & code Completion
- JavaScript Library Support
- Debugger
- Built on Eclipse framework
- Function directory
- Templates
- Much, much, more

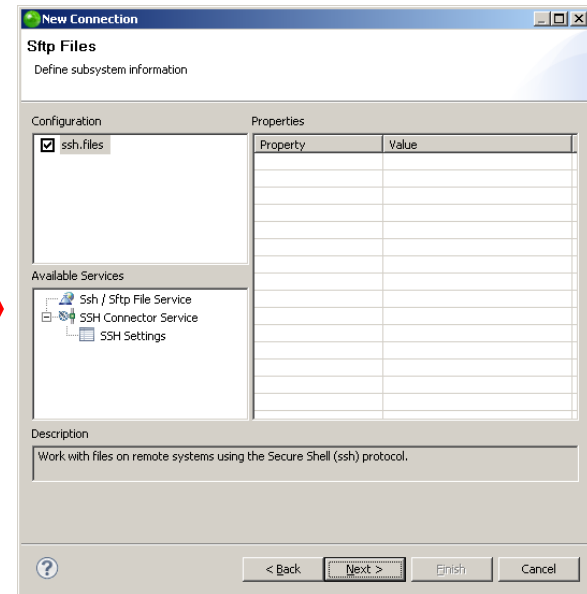
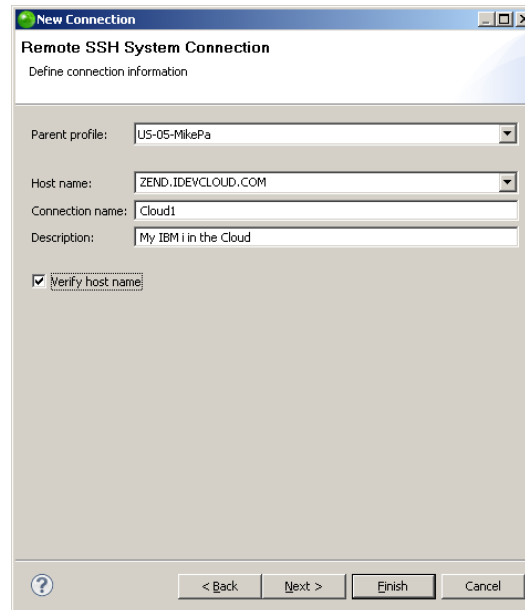
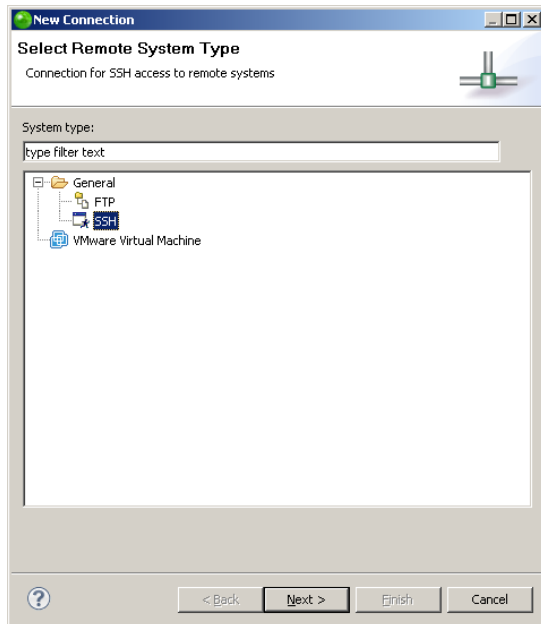


Zend Studio 8 for IBM i - Installation

- Download program from [Zend.com/en/downloads](https://www.zend.com/en/downloads) (IBM i Edition!)
- Install to workstation (Mac, Windows, Linux)
- Follow the prompts for licensing the product
- Zend.com with QSRLNBR to license product
- Start the IDE and begin coding PHP immediately

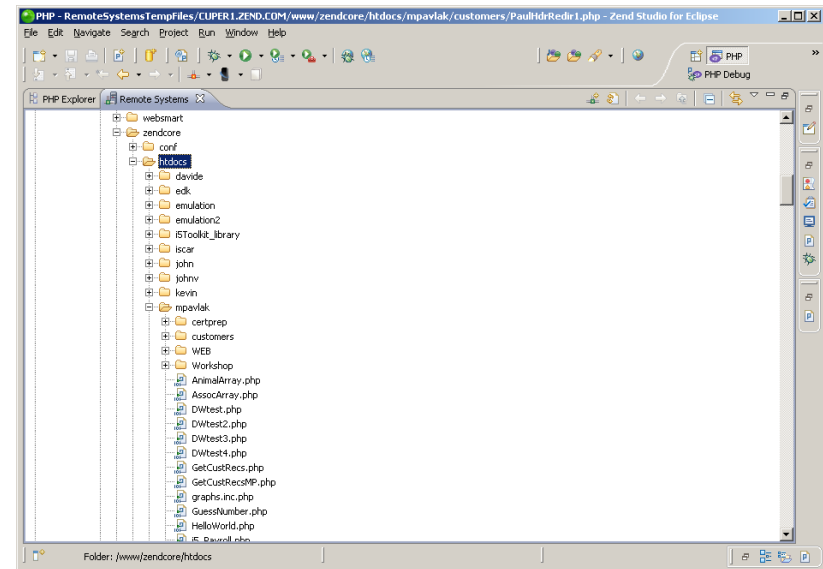
Configuring a remote server (SFTP)

- Start Zend Studio for IBM i
- Click the new connection button and select SSH
- Enter system name or IP address
- Leave verify host name, click next then Finish



Navigate to files

- Expand the tree for your system
- Navigate to the directory /www/zendsvr/htdocs
- Enter user credentials and your in!



Host side change (SSH)

- i6.1 +
 - STRTCPSVR *SSHD
- V5R4 - Will need to configure and start SSH
 - Midrange.com - excellent resource for IBM i, RPG, PHP
 - Forum and lists
 - midrange-l
 - Web400 - (Zend watches this, Mike and Kevin)
 - See <http://wiki.midrange.com/index.php/SSH>



PHP Expl Remote

Local

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

```

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 $st
11 OR
12
13 //
14 ech
15 ech
16
17 // loop di loop through customer recs...
18 while($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>");
24

```

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).

- i5_errormsg(resource[optional] \$connection =
- i5_execute(resource \$stmt, array[optional] \$p
- i5_fetch_array(resource \$result, int[optional]
- i5_fetch_assoc(resource \$result, int[optional]
- i5_fetch_object(resource \$result, int[optional]
- i5_fetch_row(resource \$result, int[optional] \$
- i5_field_len(resource \$result, mixed[optional]
- i5_field_name(resource \$result, integer \$field)
- i5_field_scale(resource \$result, mixed \$field)

Outl 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()

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...

5. Get Productive!

Hello World

Sample Script - Hello World

- Obligatory program when starting out
- Confirms correct setup of PHP
- Sample code: (Shortest PHP Macro around!)
- Save script in IFS /www/zendsvr/htdocs/helloworld.php
- Browser URL: <http://ibmisystem:10088/helloworld.php>

```
<?php
    echo "Hello World";
?>
```

This is the Hello World Script × +

← → ↻ ☆ http://i5system:89/mpavlak/helloworld.php ▶ □ ⚙

New Tab Other bookmarks

Hello World

i5 Toolkit APIs

- System values
 - `i5_get_system_value`
- Data areas
 - `i5_data_area_prepare`
 - `i5_data_area_receive`
 - `i5_data_area_send`
 - `i5_data_area_close`
- Print/Get spooled file
 - `i5_spool_list`
 - `i5_spool_list_read`
 - `i5_spool_list_close`
 - `i5_spool_get_data`
 - `i5_spool_from_file??`
- Job logs
 - `i5_jobLog_list`
 - `i5_jobLog_list_read`
 - `i5_jobLog_list_close`
- Active jobs
 - `i5_job_list`
 - `i5_job_list_read`
 - `i5_job_list_close`
- Objects list
 - `i5_object_list`
 - `i5_object_list_read`
 - `i5_object_list_close`
- User space
 - `i5_userspace_create`
 - `i5_userspace_prepare`
 - `i5_userspace_get`
 - `i5_userspace_put`
- Programs
 - `i5_program_prepare`
 - `I5_program_call`

Open Source Toolkit

- Collaboration with IBM and Zend
- Built on ILE RPG, Stored Procedures & pure PHP
- Up to 10 times faster
- Object Oriented, but not too much!
- Old toolkit not going away, but support may be chargeable

Example: Toolkit function - Program Call

```
ToolkitObj = new ToolkitService();
ToolkitObj->setToolkitServiceParams(array('ControlKey'=>'*here', 'Internal key'=>'/tmp/QAUser') );

/* Call service program function "sum" which has 3 parms: 2 int input parms and 1 output parm */
$params[] = array('type'=>'10i0', 'io'=>'in', 'parm_name'=>'first', 100); /*first input parameter */
$params[] = AddParameterInt ('in', 10, 'second', 200); /*second input parameter */
$params[] = AddParameterInt ('out', 10, 'third', 0); /*third output parameter*/

$result = ToolkitObj->PgmCall('TESTSRVPGM', NULL, $Params, NULL, array('func', 'sum'));

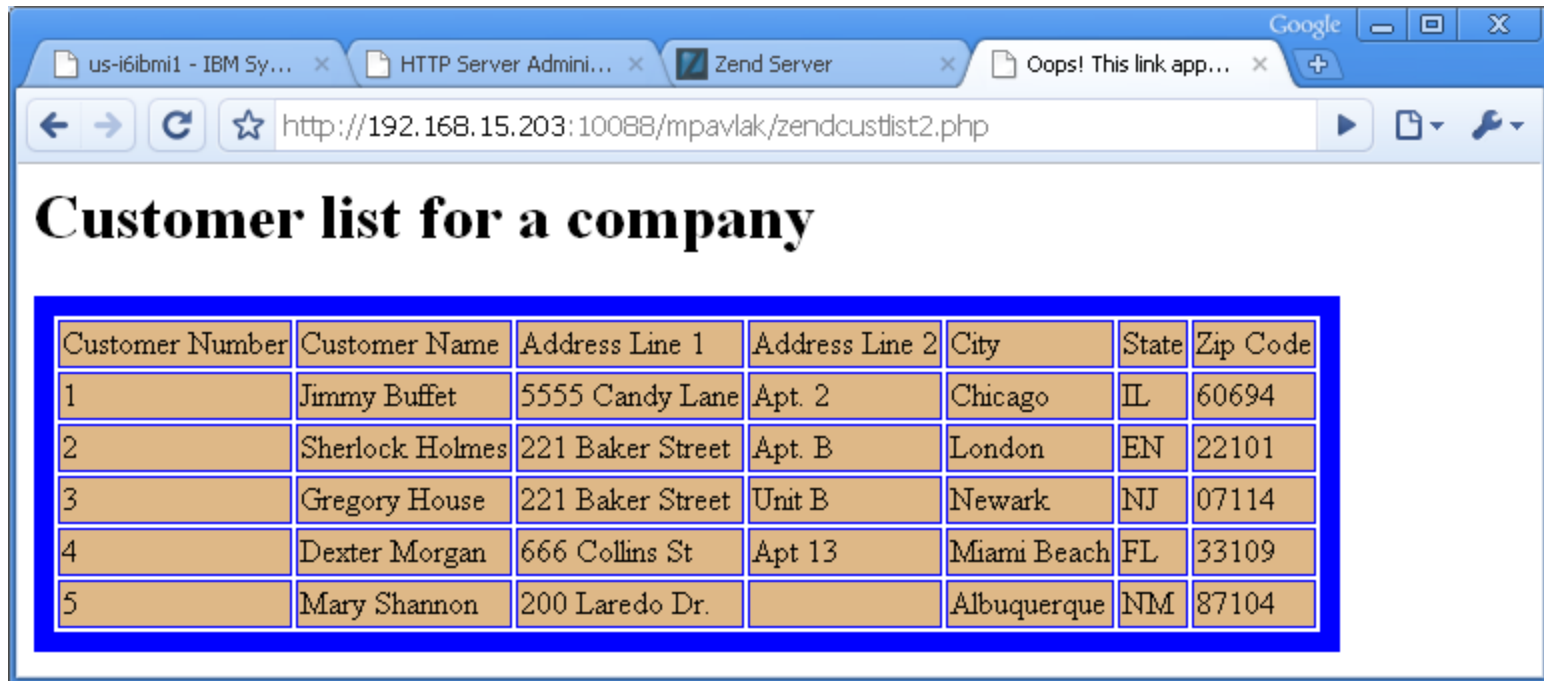
Print_r($Result); //Output of

ToolkitObj->disconnect();
```

PHP Data Access Example

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 URL `http://192.168.15.203:10088/mpavlak/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 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

Note: If your data sets have *PUBLIC access, no user or password is required

```
// 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);

?>
```

Enterprise Adoption

API Group: Modernization

Background

API Group (\$1.2B in revenue), located in St. Paul, MN, is the parent company of 30 different companies that consist of fire protection (sprinkler), construction, and inspection service. They grow through acquisition.



Challenge

Integration of each acquisition was slowed by introduction and training of “back to the stone age” green screen ERP.

Green screen ERP system did not fit into long-term strategic plans.

Modernizing ERP or purchase a new one?



Solution

Leveraging RPG logic (and IBM i) on the back-end with PHP on the front-end.

Benefits

Cost savings: PHP and RPG modernization was 1/10 the cost of the ERP solution (\$8M - \$15M vs. \$1.2M)

Time to market: 3 year world wide ERP rollout replaced with 18 month modernization

Significant risk mitigation: no wrapping process around software, no unexpected soft costs, no operational delays



Corvette America

Background

Leading manufacturer of Corvette interiors and supplier of aftermarket parts and accessories for Corvette dealers and owners who may be buying, selling, restoring or accessorizing a vintage or late model Corvette.



Challenges

To maintain lean, efficient central operations while providing fast and impeccable service to a 3,000-member dealer network with a worldwide customer base

Driving more processes online to provide a superior business experience for both dealers and customers. Manual, time-consuming order sourcing and fulfillment process.

Solution

Zend PHP solutions helped Corvette America's IT group extend the capabilities of its e-commerce application, quickly and cost-effectively, on IBM i.

Benefits

Leveraged existing business logic in pricing routines without need for complicated code re-write.

Collaborative development approach has team working together

Accelerated dealer sales process while improving the efficiency of managing the supply chain.

Allied Beverages

Background

Exclusive liquor distributor on East Coast.

Challenge

Increase industry leadership through superior customer service

Establish e-Commerce and mobile site to support distribution

Integrate with IBM i

Solution

Implemented PHP natively while simultaneously utilizing legacy code and data.

Leverage Web 2.0 and Zend Framework to build eBiz site

Benefits

Development time was lower than estimated and shorter than considered alternatives

Doubled the speed of eBiz by utilizing Zend Server

Site won 2009 IBM COMMON Innovation Award

No additional hardware required to implement solution



HarrisData - Enterprise Information Portal (EIP)



Background

The HarrisData EIP is the browser-based interface to the HarrisData suite of applications (manufacturing/distribution ERP, MES CRM, HRIS, and SRM) targeted at mid-sized organizations in the North marketplace

Utilizing PHP to

Broaden browser-based ERP offerings

Expand functionality of the current applications

Facilitate integration of other commercial and open-source PHP tools and applications into HarrisData solutions

“We expect the new functionality to make us more competitive with Windows offerings....”

Lane Nelson, President

Getting Started with PHP on IBM i

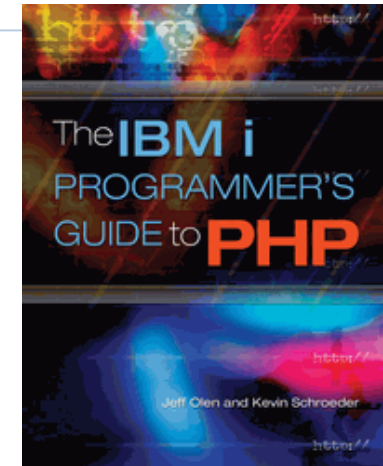
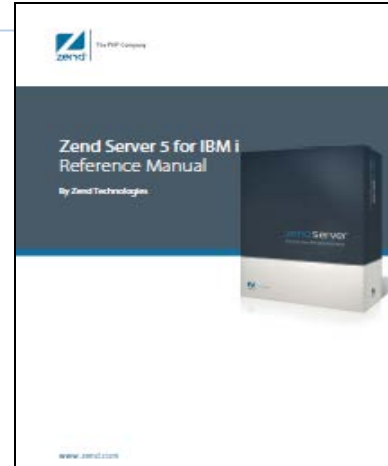
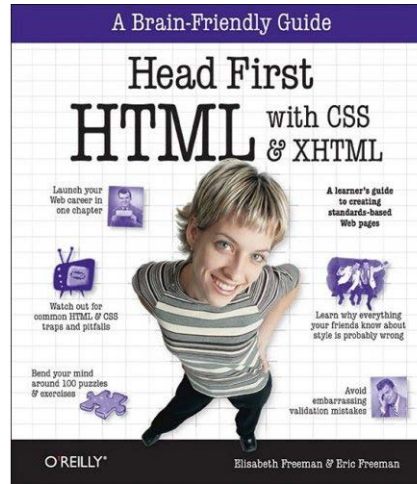
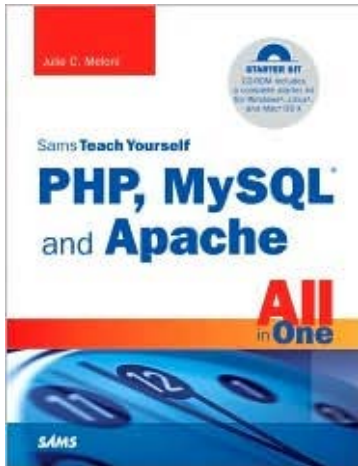
www.zend.com

Wrap it up!

Where do I go next?

- Get some HTML training
 - ▶ Remember, HTML is to PHP what DDS is to RPG
- JavaScript won't hurt
 - ▶ Can add pizzazz to web pages, but not required
- Download free code - see online resource slide
- Play, have fun, discover
- Education, training more See zend.com
- Practice, practice, practice!

PHP Resources...



- Books

- ▶ Sam's teach yourself PHP, MySQL and Apache All in One (4th edition) ISBN:067232976X
- ▶ Head First HTML with CSS and XHTML ISBN:059610197X
- ▶ Zend Server Doc at Zend Website
- ▶ IBM i Programmer's Guide to PHP on IBM i - MC Press

Online Resources...

- Support?
 - ▶ Zend.com/forums
 - ▶ Zend.com/support-center
 - ▶ Zend.com/products
 - ▶ php.net - on-line PHP manual
 - ▶ Midrange.com WEB400 forum
- Free code!
 - ▶ Sourceforge.net - free applications
 - ▶ phpclasses.org - free PHP code samples
 - ▶ hotscripts.com - free PHP code

Questions?

Thank you!!

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