



The PHP Company

# IBM i Modernization with PHP

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Manager, IBM Power  
Systems Software

# Agenda

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- IBM Application Development Update
- Zend Product Summary
- Explore Free Stuff in Zend Server
- Zend Studio Templates
- phpMyAdmin

# Questions?

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- If you have a question you can
  - ▶ Type in the Q&A panel

- Follow us!

 ▶ <http://bit.ly/cjueZg> (Zend Technologies or search for Zend)

 ▶ <http://twitter.com/zend>

# Resources

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- Recorded Webinars

- ▶ <http://www.zend.com/en/resources/webinars/i5-os>

- Zend Server for IBM i main page, link to downloads

- ▶ <http://www.zend.com/en/products/server/zend-server-ibm-i>

- Zend Server manual:

- ▶ PDF: <http://www.zend.com/topics/Zend-Server-5-for-IBMi-Reference-Manual.pdf>

- ▶ Online: [http://files.zend.com/help/Zend-Server-5/zend-server.htm#installation\\_guide.htm](http://files.zend.com/help/Zend-Server-5/zend-server.htm#installation_guide.htm)

# COMMON 2010 - Fall Conference and Expo

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- Six sessions on PHP from Zenders
  - ▶ Mike Pavlak
- More sessions by community members
  - ▶ Alan Seiden, Brian may
- Visit us in the Zend Booth





## Zend/PHP Conference

**Join us at ZendCon**  
The premier PHP conference!

**November 1-4, 2010 - San Jose, California**



### Conference Highlights

- Learn PHP best practices for architecture, design and development
- Technical sessions for all knowledge levels
- In-depth tutorials for advanced learning
- PHP Certification courses and testing
- Exhibit hall showcasing the latest products
- Networking opportunities with peers and luminaries

### Conference Topics

- Architecture & Design
- Expanding Horizons
- IBM i
- Lifecycle Best Practices
- NoSQL / Alternative Stores / Search
- PHP Development
- Server/Operations
- SQL
- Zend Framework

[www.zendcon.com](http://www.zendcon.com)

# Application Development Update from IBM

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- Alison Butterill -  
Application Development  
Offering Manager, Power  
Systems Software.



# IBM i Modernization with PHP

[www.zend.com](http://www.zend.com)

## Zend Product Summary

# IBM Relationship FAQ's

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- What do we get?
  - ▶ Zend Server CE
  - ▶ Zend Studio
  - ▶ 1 year Silver Level Support (email/web 72 hour response)
  
- What happens after 1 year?
  - ▶ Products will still run (Perpetual license)
  - ▶ Limited updates to product or PHP
  - ▶ Forum support only

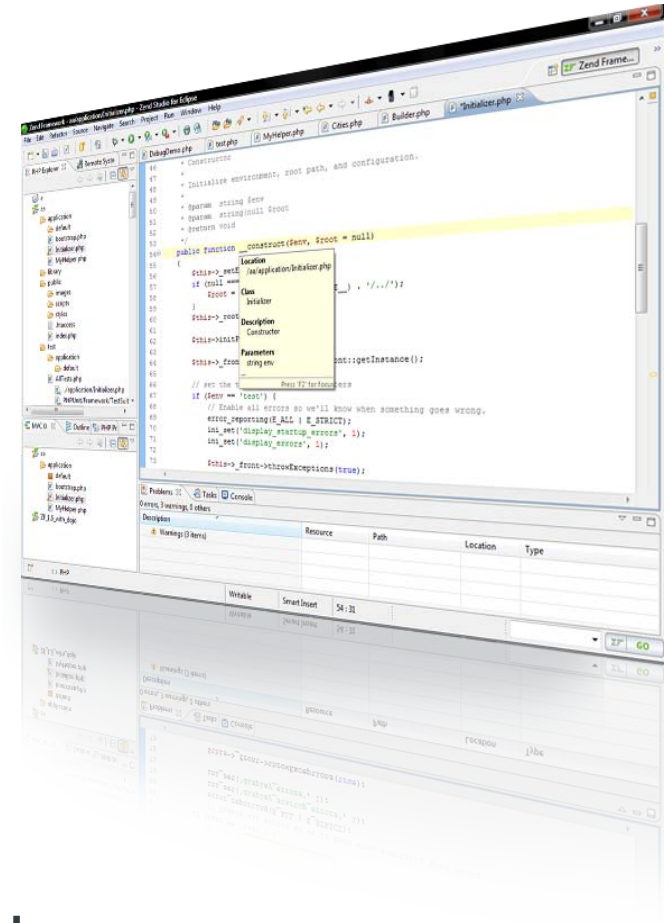
# IBM Relationship FAQ's

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- What do I do when support runs out?
  - ▶ Roll the dice
  - ▶ Zend account representative can discuss support options
  
- I downloaded Core and it's been a year. Can I download Server and get support for another year?
  - ▶ Yes! You can download Zend Server!
  - ▶ But once the support runs out on Core, there is no additional for Server...
  - ▶ Forum support is always available

# A Closer Look at Zend Studio

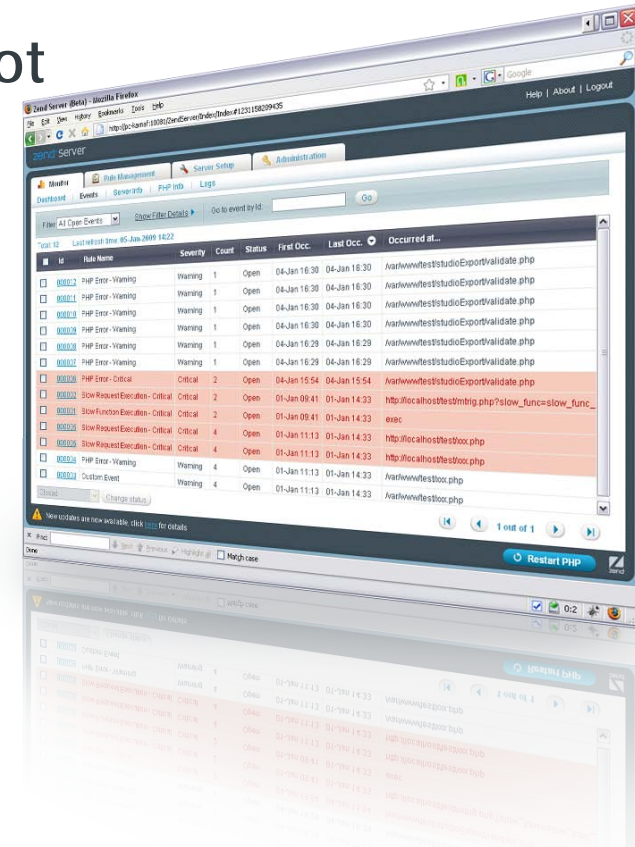
- Built on Eclipse / PDT
  - ▶ #1 ranked in InfoWorld PHPIDE review
  - ▶ #1 project at Eclipse.org
- Supports Agile development
  - ▶ Refactoring, PHPUnit, code coverage, profiling
- Slashes root cause analysis time
  - ▶ Zend Server Monitoring captures problem in production
  - ▶ Developers step through problems to quickly pinpoint root cause
- Fully integrated with Zend Server
- Fully integrated with Zend Framework



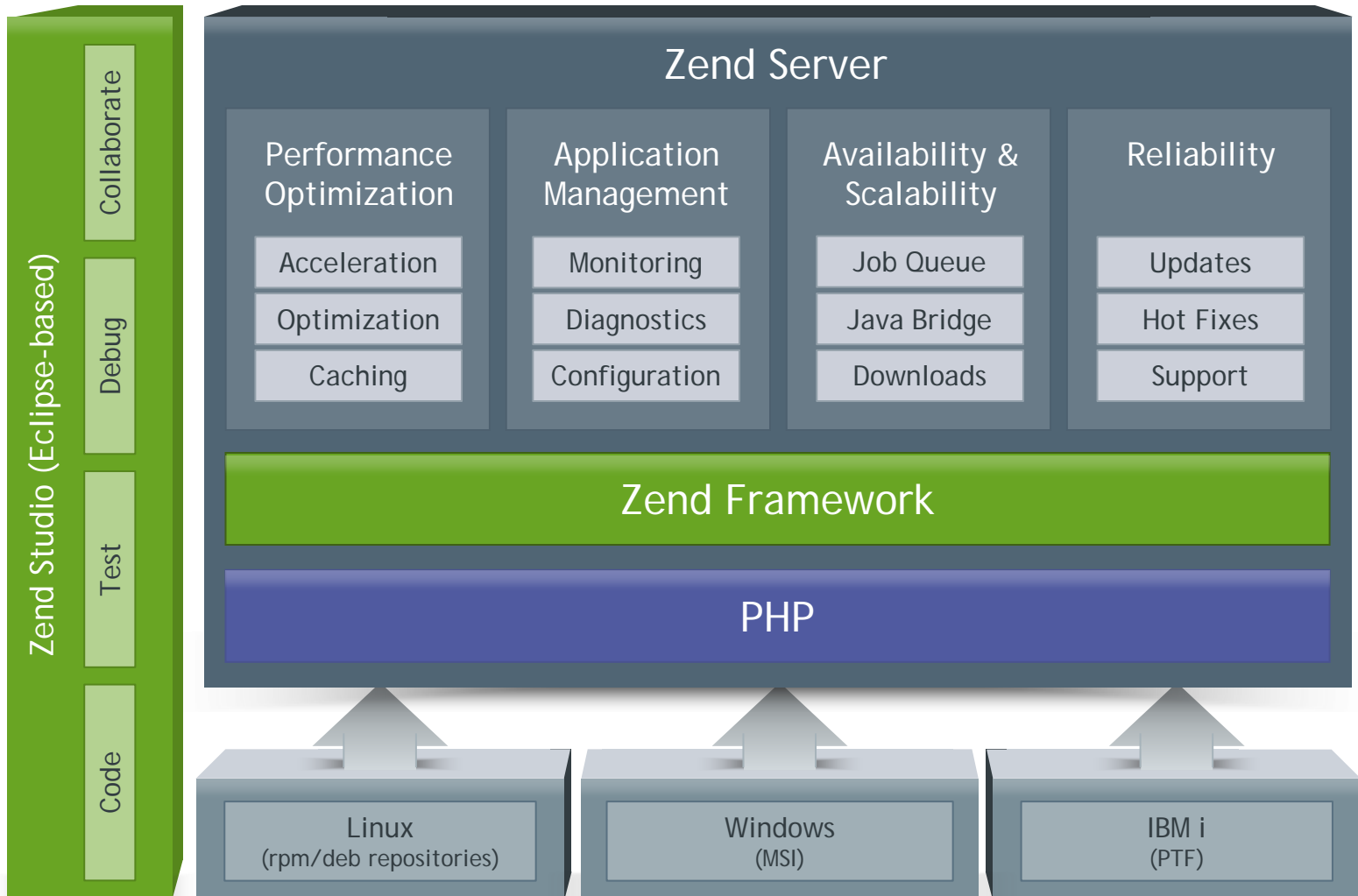
# What Is Zend Server?

A Complete, well-tested and supported PHP 5 stack - 70+extensions, DB connectivity, Troubleshooting, web based admin, and alot more

- Rapid root cause analysis with whole application monitoring (integrated with Zend Studio and an alerting system)
- Code Tracing Detailed Diagnostics of problems captured in realtime cuts troubleshooting times in half.
- Multi-level performance enhancement capabilities increases systems from 2 to 100 times faster
- Job Queue, Java Bridge, Download server
- Phone support, Easy Install, Software updates and security patches



# Zend Server



# Zend Server for IBM i

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- Next generation of PHP stack for IBM i
- Best of both Zend Core and Zend Platform
- Single Licensed Program Installation
- Two products
  - ▶ Zend Server for IBM i Community Edition
    - Available at no charge per IBM partnership
  - ▶ Zend Server for IBM i
    - Subscription available from Zend
    - High value extra features
    - Higher Support SLAs

# Why a new generation?

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

# What about the old products?

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- Zend Core is still available on the Zend Website for those stuck on V5R3.
- Core and Platform have started the “end-of-life” process
- Customer are encouraged to move to Zend Server for IBM i
- Zend will continue to support Core and Platform through the “end-of-life” process.

# Zend Server for IBM i

[www.zend.com](http://www.zend.com)

Explore free stuff in the Zend Products for IBM i

# Sample Applications

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- Customers have asked for examples
- Data inquiry
- Hello World
- Program call
- LDAP
- We heard you loud and clear!
- Samples use real data in DB2 & program in library ZENDSVR
  - ▶ SP\_CUST                      Table
  - ▶ COMMONPGM                RPGLE Program
- All samples work, right out of the box!

# Sample Applications

The screenshot shows the Zend Server administration interface in a browser window. The address bar displays the URL: `http://192.168.15.204:10088/ZendServer/Index/Index#1283921158715`. The interface includes a navigation menu with options like 'Monitor', 'Rule Management', 'Server Setup', and 'Administration'. A 'Welcome' dialog box is open, titled 'Welcome to Zend Server for IBM i'. It features a section '8 Ways to Get Started with PHP on IBM i:' with a list of links. A callout box highlights the 8th item: '8. Additional PHP Demo Scripts'. Other sections include 'PHP Open Source Applications' with a list of applications like Mantis, Drupal, SugarCRM, MediaWiki, Joomla!, Zen Cart, and phpBB. A 'Note' section states that Zend does not offer commercial support for these applications. At the bottom, there is a 'Restart PHP' button and a checkbox for 'Do not display this on next login'.

**Welcome to Zend Server for IBM i**

**8 Ways to Get Started with PHP on IBM i:**

1. [Zend Server for IBM i user interface](#) lets you manage your Zend Server and PHP configuration
2. [PHP Toolkit API](#) enables you to call RPG/COBOL applications, system objects and data queues
3. [Zend Navigator Demo](#) shows PHP Toolkit API access to active jobs, spooled files, user profiles, system values and more
4. [Zend Studio for Eclipse](#) helps you build your first PHP application
5. [5250 \(API\) Bridge Demos](#) demonstrate how PHP can Web-enable 5250 applications
6. [Zend Framework](#) gives you a head start with secure, reliable, and modern Web 2.0 applications and Web services
7. [Foundations for IBM i Programmers](#) and [Quick Start: PHP for RPG Programmers](#) online training courses get you started with the basics of PHP
8. [Additional PHP Demo Scripts](#)

**PHP Open Source Applications**

Zend customers and partners are running these PHP applications:

- [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](#)

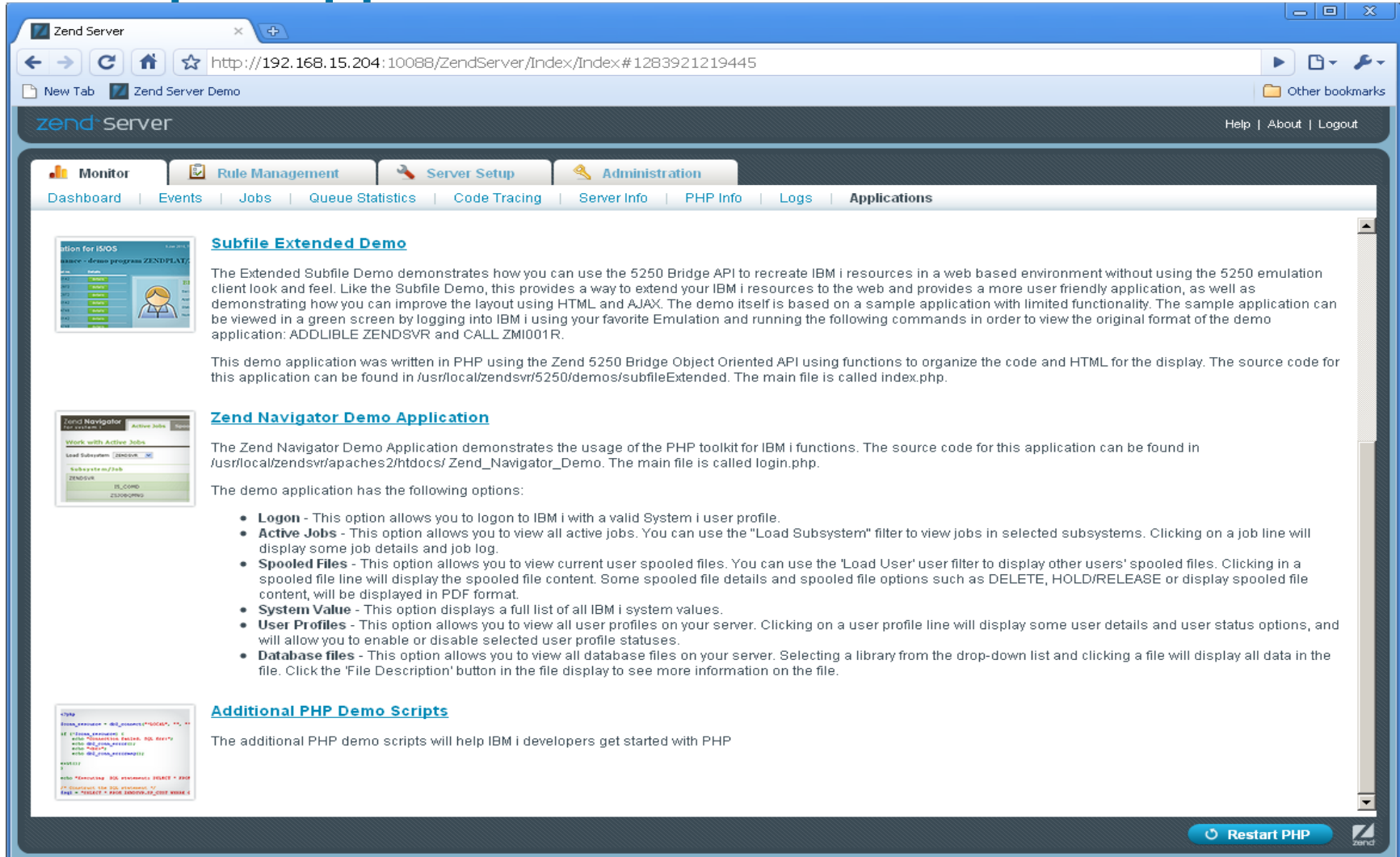
**Enhance your PHP**

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

Do not display this on next login

**8. Additional PHP Demo Scripts**

# Sample Applications

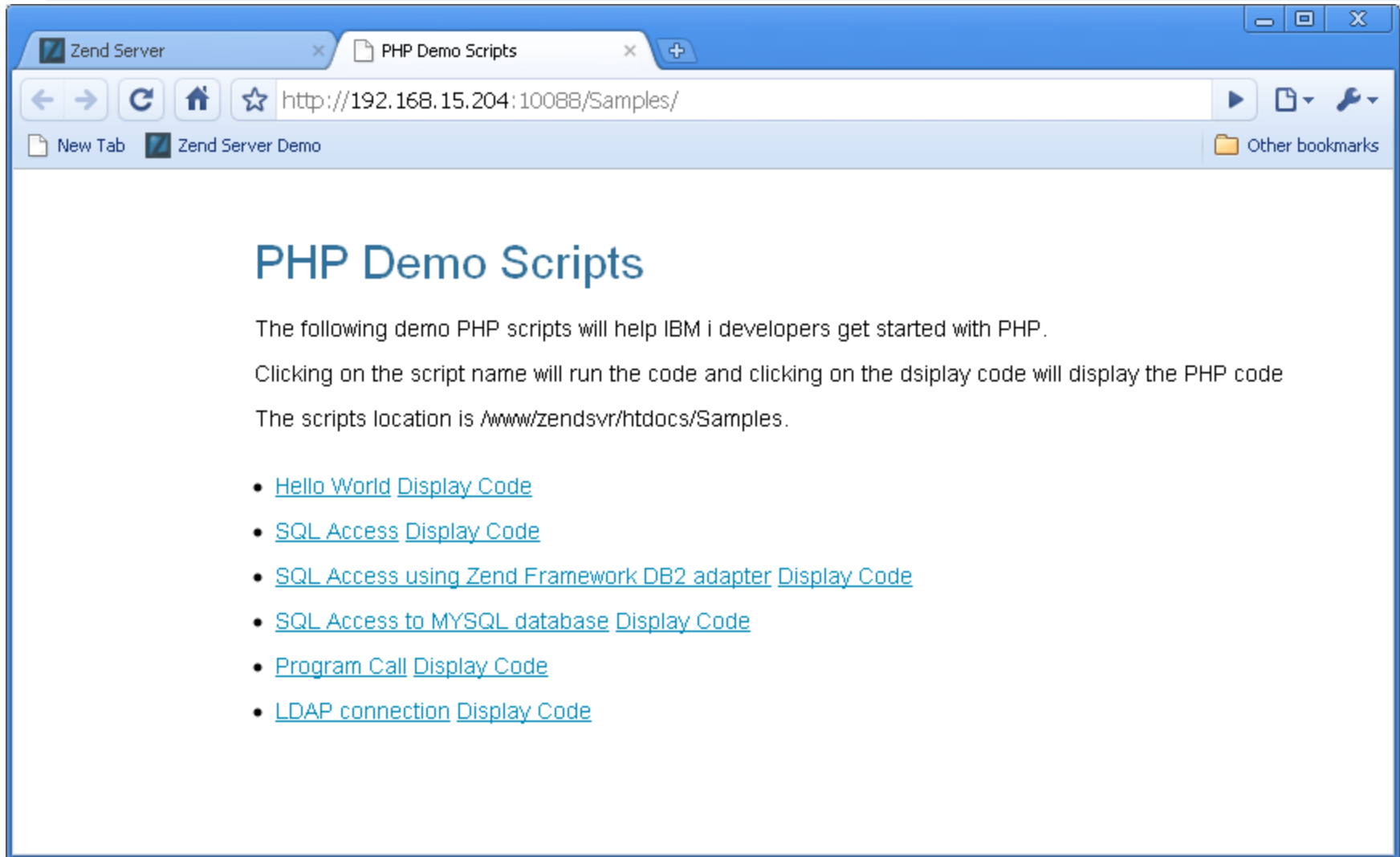


The screenshot shows the Zend Server web interface in a browser window. The address bar shows the URL `http://192.168.15.204:10088/ZendServer/Index/Index.#1283921219445`. The interface has a navigation menu with tabs for Monitor, Rule Management, Server Setup, and Administration. Below these are sub-tabs for Dashboard, Events, Jobs, Queue Statistics, Code Tracing, Server Info, PHP Info, Logs, and Applications. The main content area displays three sample applications:

- Subfile Extended Demo**: A screenshot of a green screen application. The text describes how it uses the 5250 Bridge API to recreate IBM i resources in a web environment. It provides commands: `ADDLIBLE ZENDSVR` and `CALL ZM001R`. It also mentions the source code is in `/usr/local/zendsvr/5250/demos/subfileExtended`.
- Zend Navigator Demo Application**: A screenshot of a web application interface. The text describes its use of the PHP toolkit for IBM i. The source code is in `/usr/local/zendsvr/apaches2/htdocs/Zend_Navigator_Demo`. It lists several options:
  - Logon**: Logon to IBM i with a valid System i user profile.
  - Active Jobs**: View all active jobs, with a "Load Subsystem" filter.
  - Spooled Files**: View current user spooled files, with a "Load User" filter.
  - System Value**: Full list of all IBM i system values.
  - User Profiles**: View all user profiles, with options to enable/disable.
  - Database files**: View all database files, with a drop-down list for libraries.
- Additional PHP Demo Scripts**: A screenshot of PHP code. The text states these scripts help IBM i developers get started with PHP.

At the bottom right of the interface, there is a "Restart PHP" button and the Zend logo.

# Sample Applications



The screenshot shows a web browser window with two tabs: "Zend Server" and "PHP Demo Scripts". The address bar displays the URL "http://192.168.15.204:10088/Samples/". The browser's bookmark bar shows "New Tab" and "Zend Server Demo". The main content area features the heading "PHP Demo Scripts" and a paragraph explaining that the following demo PHP scripts will help IBM i developers get started with PHP. It also notes that clicking on a script name will run the code and clicking on the "display code" link will display the PHP code. The scripts location is given as "/www/zendsvr/htdocs/Samples.". A list of six script links is provided:

- [Hello World Display Code](#)
- [SQL Access Display Code](#)
- [SQL Access using Zend Framework DB2 adapter Display Code](#)
- [SQL Access to MYSQL database Display Code](#)
- [Program Call Display Code](#)
- [LDAP connection Display Code](#)

# Sample Applications

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- First entry shows application execution
- Second entry displays code

- [Hello World Display Code](#)
- [SQL Access Display Code](#)
- [SQL Access using Zend Framework DB2 adapter Display Code](#)
- [SQL Access to MYSQL database Display Code](#)
- [Program Call Display Code](#)
- [LDAP connection Display Code](#)

# Sample Applications

The image shows two overlapping browser windows. The background window displays a table of customer data with columns: CUST\_ID, COMPANY, FIRSTNAME, LASTNAME, CIVIL, and ADDR. The foreground window shows a PHP script for database access.

Executing SQL statement: SELECT \* FROM ZENDSVR.SP\_CUST WHERE CUST\_ID > 1220 FOR FETCH ONLY

CUST_ID	COMPANY	FIRSTNAME	LASTNAME	CIVIL	ADDR
1221	Kauai Dive Shoppe	LINA	Norman	2	4-976 Sugarland Hwy
1231	Unisco	George	Weathers	1	PO Box 547
1351	Sight Diver	Phyllis	Spooner	1	1 Nept Lane
1354	Cayman Divers World Unlimited	Joe	Bailey	1	PO Box 541
1356	Tom Sawyer Diving Centre	Chris	Thomas	1	632-1 Third Fryden
1380	Blue Jack Aqua Center	Ernest	Barratt	1	23-738 Paddin Lane

```
<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
/* Construct the SQL statement */
$sql = "SELECT * FROM ZENDSVR.SP_CUST WHERE CUST_ID > ? FOR FE
/* 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 )
{
```

# IBM i Modernization with PHP

[www.zend.com](http://www.zend.com)

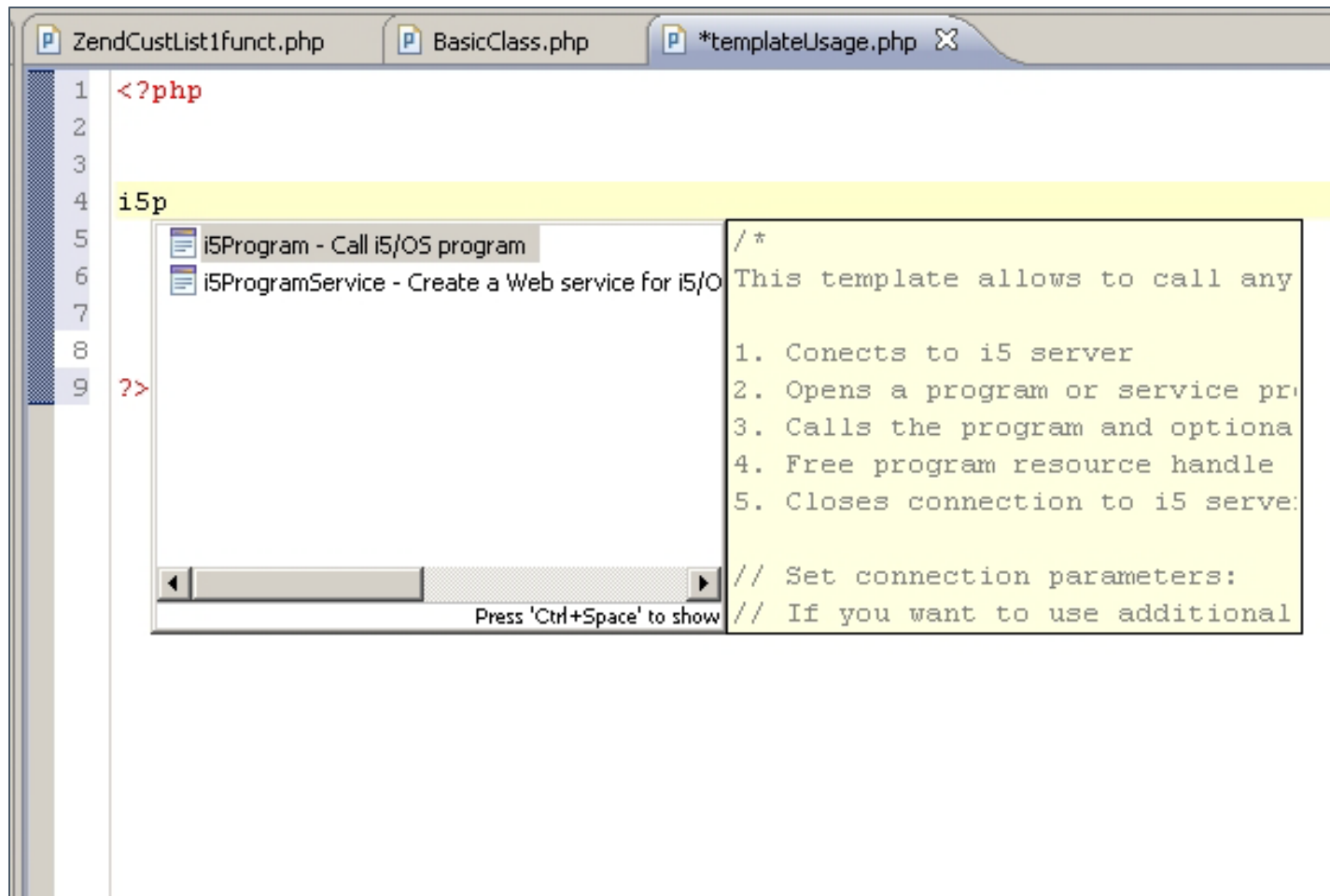
## Zend Studio Templates

# Zend Studio Templates

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- Program call has a lot of steps
- Wouldn't it be nice to reduce the number of steps?
- Fill in the blanks?
- Check out templates in Zend Studio!

# Zend Studio Templates

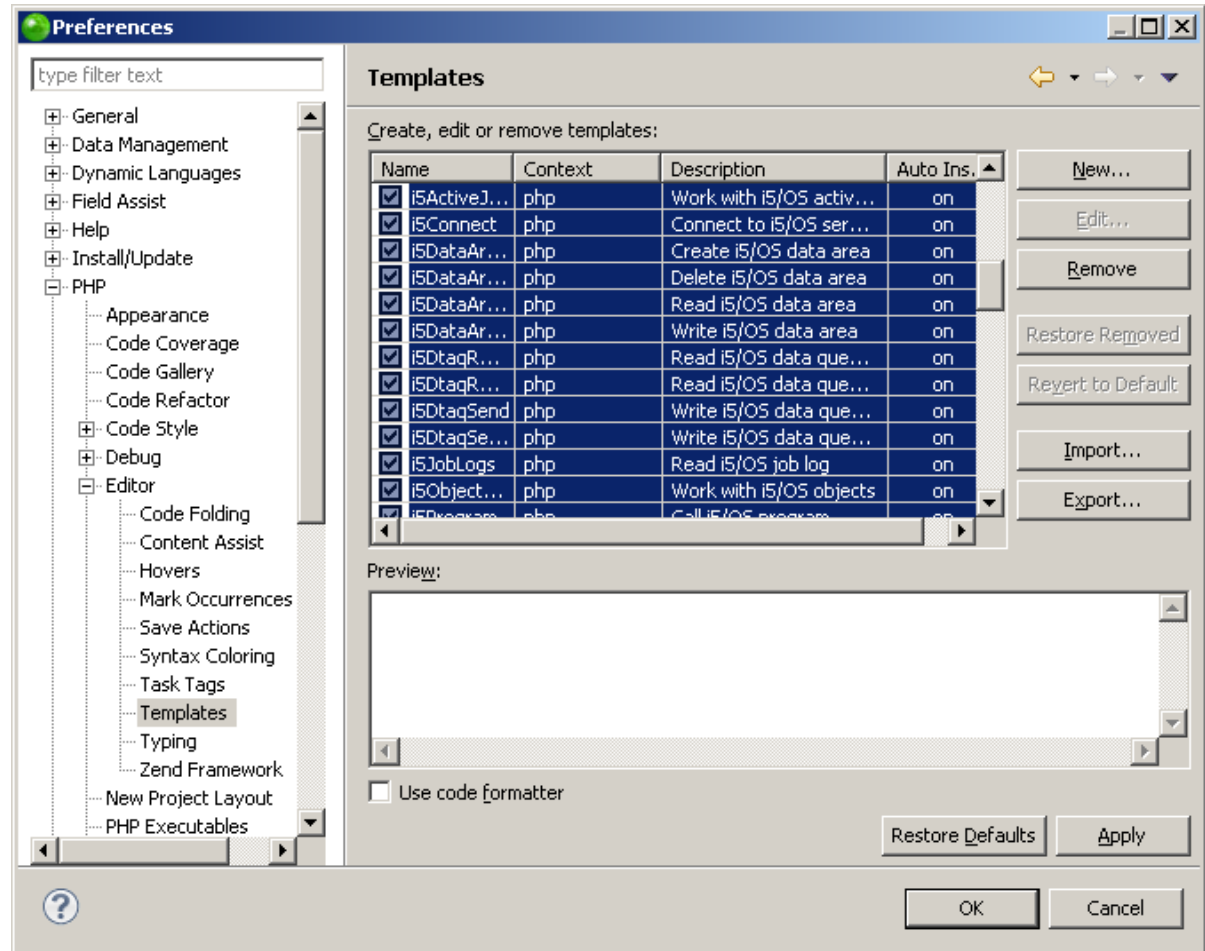


# Zend Studio Templates

```
1 <?php
2
3
4 /*
5 This template allows to call any i5/OS program with parameters
6
7 1. Conects to i5 server
8 2. Opens a program or service procedure and prepares it to be run
9 3. Calls the program and optionally accepts results
10 4. Free program resource handle
11 5. Closes connection to i5 server */
12
13 // Set connection parameters:
14 // If you want to use additional connection options, remove comments in the array block
15
16 $connection_parameters = array(
17 // I5_OPTIONS_JOBNAME => 'job_name', // Define machine name by default
18 // I5_OPTIONS_SQLNAMING => 'sql_naming', // To use dotted (.) or slashed (/) notation in SQL requests
19 // I5_OPTIONS_DECIMALPOINT => 'decimal_point', // To use dot or comma as decimal separator
20 // I5_OPTIONS_CODEPAGEFILE => 'code_page_file', // To use a specific code page
21 // I5_OPTIONS_ALIAS => 'alias', // Enables naming a connection
22 // I5_OPTIONS_INITLIBL => 'init_libl' // Specifies initial library
23 );
24
25 $conn = i5_connect('127.0.0.1', 'user_name', 'password'/*, $connection_parameters*/);
26 if (is_resource($conn)) {
27
28 /* Prepare File for execution
29 PHP-format program description
30 This should be provided if the program is not described on server
31
32 Name - name of the field
33
34 Type - type of the field, can be:
35 I5_TYPE_CHAR
36 I5_TYPE_INT
```

# Zend Studio Templates

- To see more
  - ▶ Windows →
  - ▶ Preferences →
  - ▶ PHP →
  - ▶ Editor →
  - ▶ Templates
- Like
  - ▶ Spooled file
  - ▶ Data queue
  - ▶ Object list
  - ▶ Many more!



- 19 different templates

# IBM i Modernization with PHP

[www.zend.com](http://www.zend.com)

## MySQL and phpMyAdmin

# MySQL is an open source database!

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- MySQL download is available from [www.mysql.org](http://www.mysql.org)
- Bundled with Zend Server
- Includes DB2 Storage Engine!
- Wouldn't it be nice if you had DFU for MySQL?
  - ▶ Well, you do!!!



# phpMyAdmin

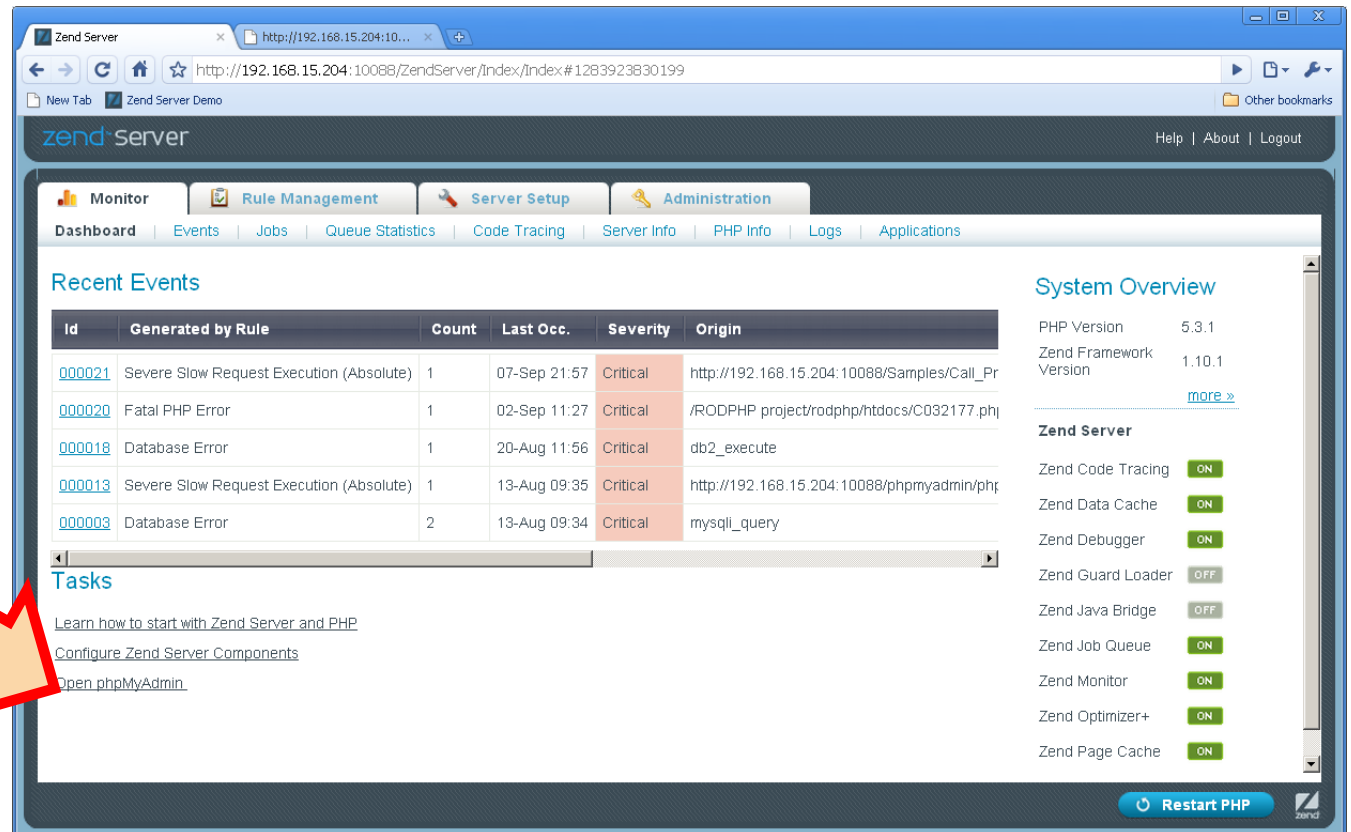
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- phpMyAdmin is an open source utility
- Written in PHP
- Runs on nearly every platform
- Automatically installed with Zend Server



# phpMyAdmin

- Access form main Zend Server dashboard



The screenshot displays the Zend Server dashboard interface. At the top, there's a navigation bar with tabs for Monitor, Rule Management, Server Setup, and Administration. Below this is a sub-navigation bar with links for Dashboard, Events, Jobs, Queue Statistics, Code Tracing, Server Info, PHP Info, Logs, and Applications. The main content area is divided into two columns. The left column features a 'Recent Events' table with the following data:

Id	Generated by Rule	Count	Last Occ.	Severity	Origin
<a href="#">000021</a>	Severe Slow Request Execution (Absolute)	1	07-Sep 21:57	Critical	http://192.168.15.204:10088/Samples/Call_Pr
<a href="#">000020</a>	Fatal PHP Error	1	02-Sep 11:27	Critical	/RODPHP project/rodphp/htdocs/C032177.ph
<a href="#">000018</a>	Database Error	1	20-Aug 11:56	Critical	db2_execute
<a href="#">000013</a>	Severe Slow Request Execution (Absolute)	1	13-Aug 09:35	Critical	http://192.168.15.204:10088/phpmyadmin/ph
<a href="#">000003</a>	Database Error	2	13-Aug 09:34	Critical	mysql_query

Below the table is a 'Tasks' section with the following links:

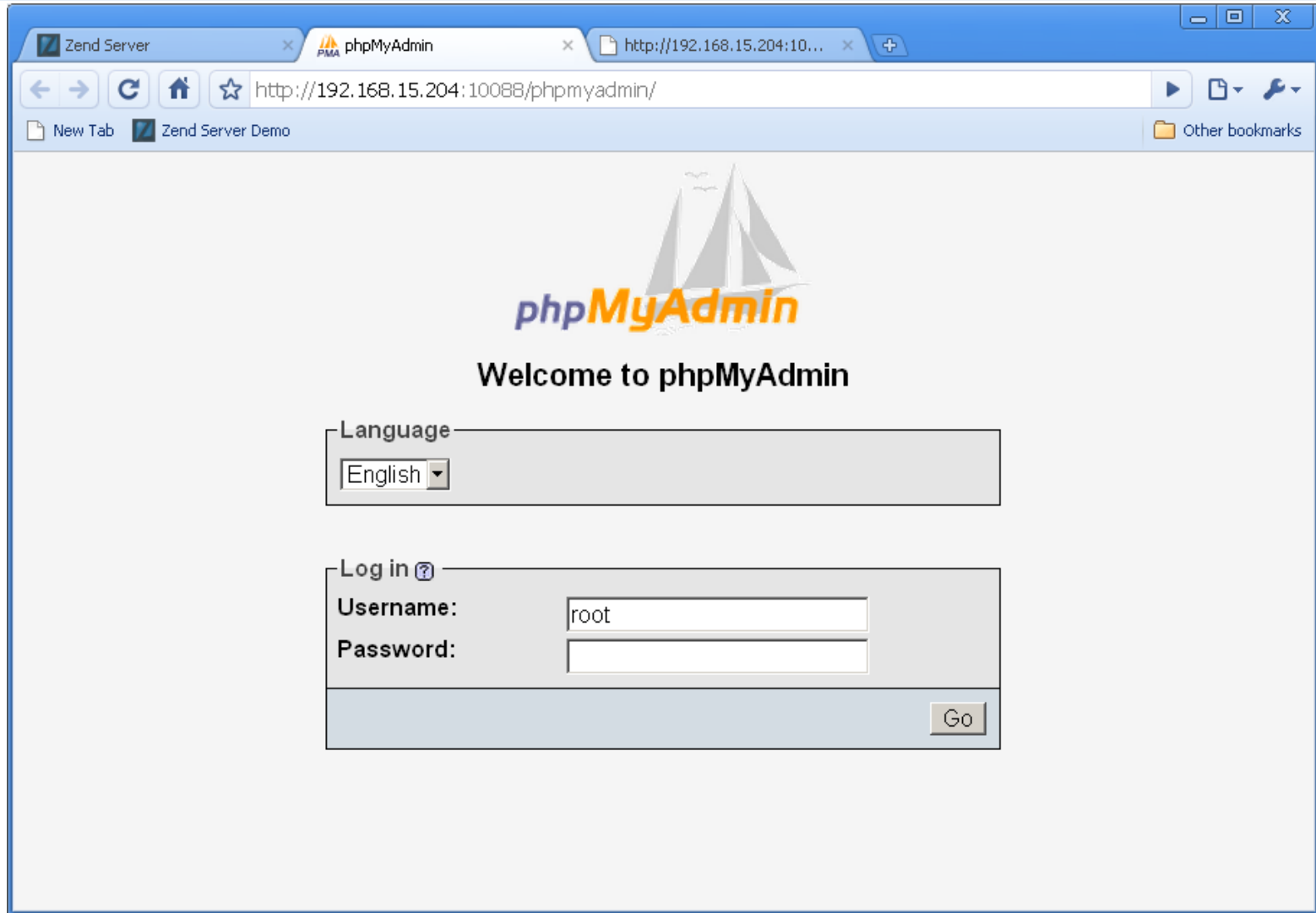
- [Learn how to start with Zend Server and PHP](#)
- [Configure Zend Server Components](#)
- [Open phpMyAdmin](#)

The right column contains a 'System Overview' section with the following details:

- PHP Version: 5.3.1
- Zend Framework Version: 1.10.1
- [more »](#)
- Zend Server**
- Zend Code Tracing:  ON
- Zend Data Cache:  ON
- Zend Debugger:  ON
- Zend Guard Loader:  OFF
- Zend Java Bridge:  OFF
- Zend Job Queue:  ON
- Zend Monitor:  ON
- Zend Optimizer+:  ON
- Zend Page Cache:  ON

At the bottom right, there is a 'Restart PHP' button and the Zend logo.

# phpMyAdmin



# phpMyAdmin

Server: localhost Database: mysql

Structure SQL Search Query Export Import Operations Privileges Drop

Table	Action	Records	Type	Collation	Size	Overhead
<input type="checkbox"/> columns_priv		0	MyISAM	utf8_bin	4.0 KiB	-
<input type="checkbox"/> db		2	MyISAM	utf8_bin	5.9 KiB	-
<input type="checkbox"/> event		0	MyISAM	utf8_general_ci	2.0 KiB	-
<input type="checkbox"/> func		0	MyISAM	utf8_bin	1.0 KiB	-
<input type="checkbox"/> general_log		2	CSV	utf8_general_ci	unknown	-
<input type="checkbox"/> help_category		37	MyISAM	utf8_general_ci	24.0 KiB	-
<input type="checkbox"/> help_keyword		450	MyISAM	utf8_general_ci	102.6 KiB	-
<input type="checkbox"/> help_relation		990	MyISAM	utf8_general_ci	26.7 KiB	-
<input type="checkbox"/> help_topic		504	MyISAM	utf8_general_ci	428.9 KiB	-
<input type="checkbox"/> host		0	MyISAM	utf8_bin	2.0 KiB	-
<input type="checkbox"/> ndb_binlog_index		0	MyISAM	latin1_swedish_ci	1.0 KiB	-
<input type="checkbox"/> plugin		0	MyISAM	utf8_bin	1.0 KiB	-
<input type="checkbox"/> proc		0	MyISAM	utf8_general_ci	2.0 KiB	-
<input type="checkbox"/> procs_priv		0	MyISAM	utf8_bin	4.0 KiB	-
<input type="checkbox"/> servers		0	MyISAM	utf8_general_ci	1.0 KiB	-
<input type="checkbox"/> slow_log		2	CSV	utf8_general_ci	unknown	-
<input type="checkbox"/> tables_priv		0	MyISAM	utf8_bin	4.0 KiB	-
<input type="checkbox"/> time_zone		0	MyISAM	utf8_general_ci	1.0 KiB	-
<input type="checkbox"/> time_zone_leap_second		0	MyISAM	utf8_general_ci	1.0 KiB	-
<input type="checkbox"/> time_zone_name		0	MyISAM	utf8_general_ci	1.0 KiB	-
<input type="checkbox"/> time_zone_transition		0	MyISAM	utf8_general_ci	1.0 KiB	-

# IBM i Modernization with PHP

[www.zend.com](http://www.zend.com)

Wrap up & Q/A

# Zend Product Features

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- **Zend Server**
  - ▶ PHP
  - ▶ Example scripts
  - ▶ Zend Framework
  - ▶ MySQL
  - ▶ phpMyAdmin
- **Zend Studio**
  - ▶ Templates
  - ▶ Debugger
- **Productivity features**
  - Monitoring
  - Code Tracing
  - Job Queue
  - 5250 Bridge
  - Data Cache and Page Cache
  - Studio & Server integration

# COMMON 2010 - Fall Conference and Expo

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- Six sessions on PHP from Zenders
  - ▶ Mike Pavlak, Sam Pinkhasov, Kevin Shroeder
- More sessions by community members
  - ▶ Alan Seiden, Brian may
- Visit us in the Zend Booth





## Zend/PHP Conference

**Join us at ZendCon**  
The premier PHP conference!

**November 1-4, 2010 - San Jose, California**



### Conference Highlights

- Learn PHP best practices for architecture, design and development
- Technical sessions for all knowledge levels
- In-depth tutorials for advanced learning
- PHP Certification courses and testing
- Exhibit hall showcasing the latest products
- Networking opportunities with peers and luminaries

### Conference Topics

- Architecture & Design
- Expanding Horizons
- IBM i
- Lifecycle Best Practices
- NoSQL / Alternative Stores / Search
- PHP Development
- Server/Operations
- SQL
- Zend Framework

[www.zendcon.com](http://www.zendcon.com)

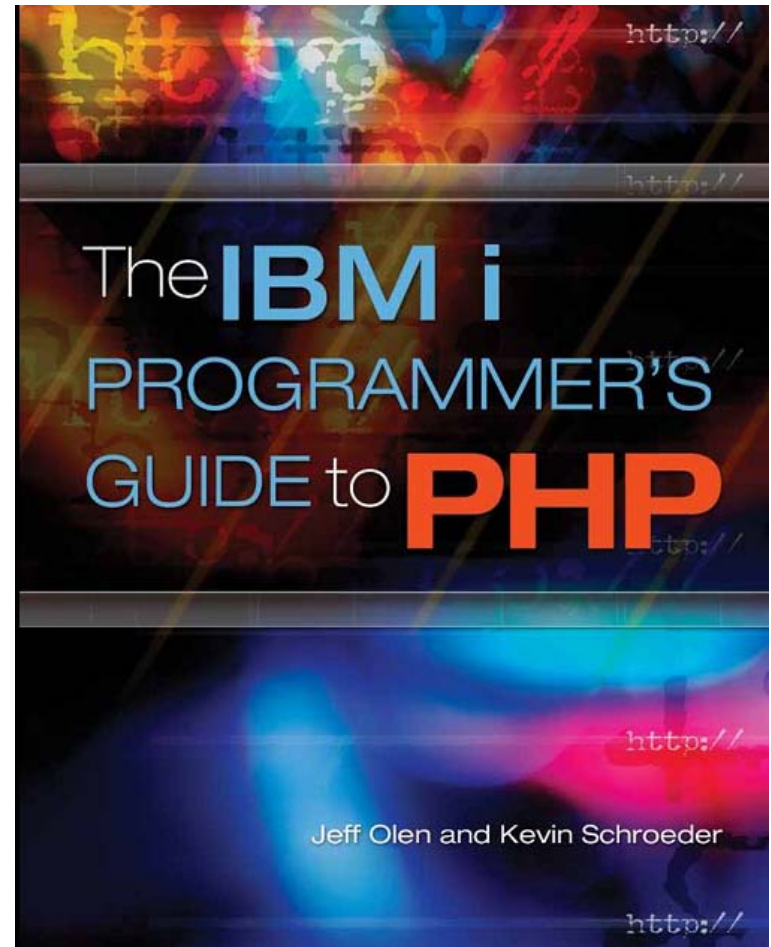
# Great book!

Kevin Schroeder from Zend's  
Global Services Group

with

Jeff Olen, co-author of...

Get yours at MCPressonline  
or at fine bookstores everywhere



# Q&A

Special thank you to Alison!

[www.zend.com](http://www.zend.com)

[mike.p@zend.com](mailto:mike.p@zend.com)