

## Why PHP for System i ?

Alison Butterill

*i want stress free IT.  
i want control.  
i want an **i**.*

© 2007 IBM Corporation

## Agenda

- What is PHP
- Brief History and Zend
- PHP on System i
- What are customers doing with PHP?

## What is PHP?

- **PHP is an easy to use, open source, platform independent server-side scripting language**
  - Designed for web application development
  - 4.5+ Million PHP Developers
- **PHP is the leading scripting language deployed on the Internet**
  - 22+ Million Internet domains
  - Out Pacing Microsoft's ASP\*
- **Thousands of PHP applications are available**
  - Web applications tied to databases
  - Content management
  - Wikis and Blogs



www.hotscripts.com,  
www.phpjunkyard.com/  
www.phpfreaks.com/  
www.phpfreebies.com/

\* <http://www.php.net/usage.php> on 3-16-06

\* Source: 2005 Netcraft Survey <http://www.php.net/usage.php>

3

*i want an i.*

© 2007 IBM Corporation

## Basic syntax

- **Flat-text files with a PHP extension (or whatever Zend Core is configured to process)**
- **Can be used for command scripting (using the i5/OS PASE utilities)**
- **Typically used to add dynamic function to HTML**
- **PHP code embedded in PHP tags:**

```
<?php
    // PHP code
?>
```
- **Lines are delimited with a semicolon (;)**
- **PHP code is processed and the results are sent to the user as HTML**
  - You must understand HTML as it is the user interface

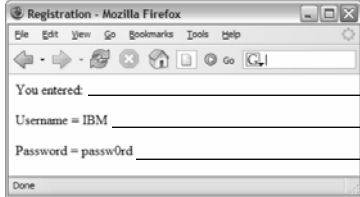


4

*i want an i.*

© 2007 IBM Corporation

## PHP Code Sample



```
<html>
<title>Registration</title>
<body>
<p>You entered:</p>

<?php
$username = "IBM";
$password = "passw0rd";

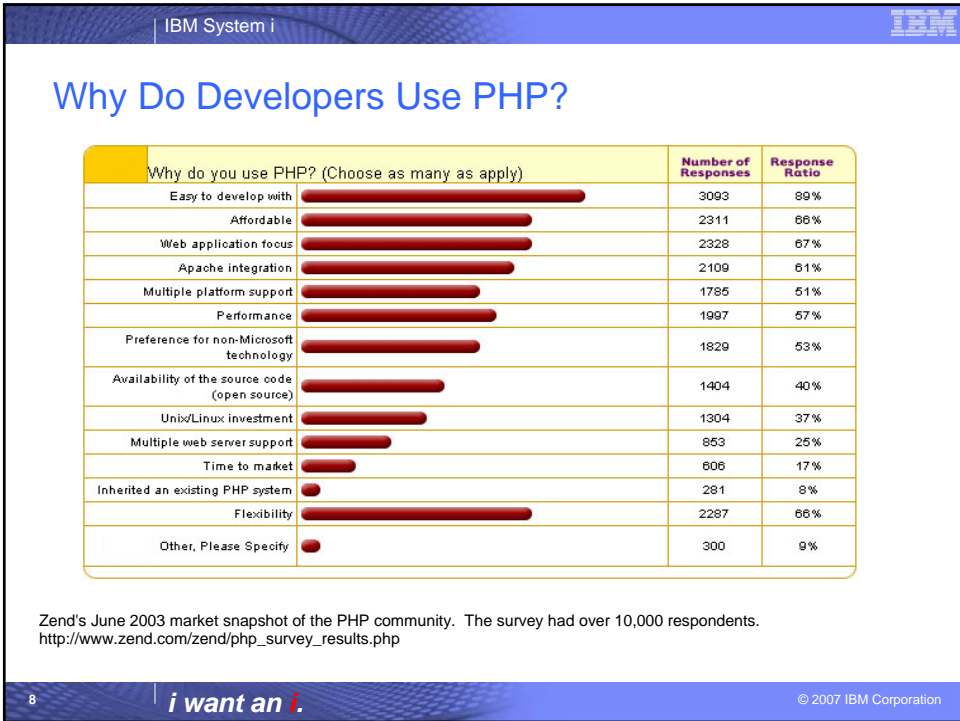
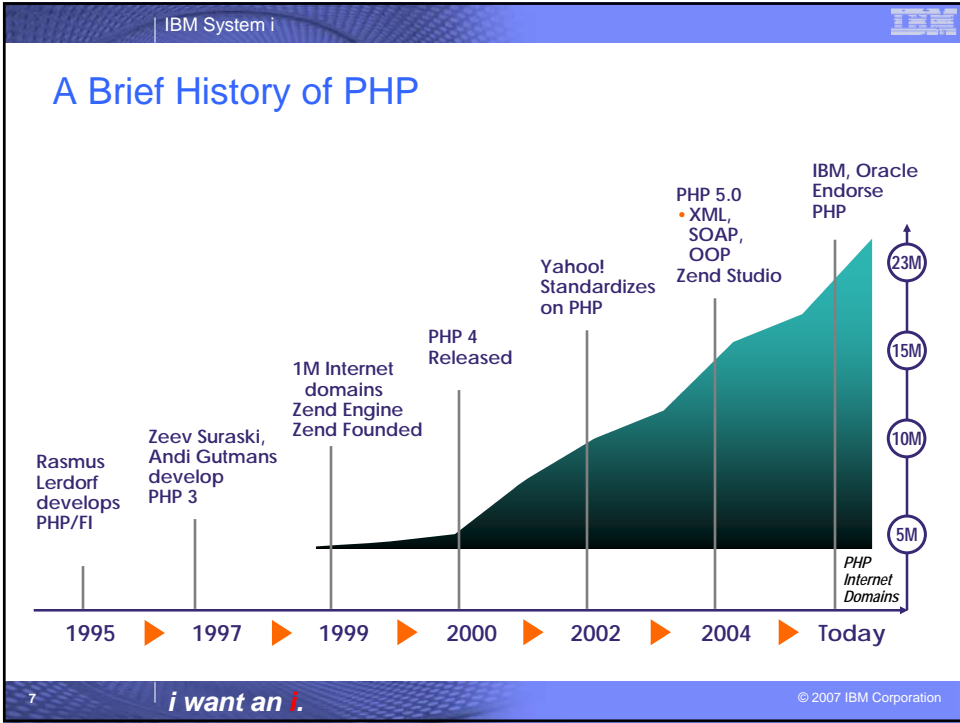
echo "<p>Username = " . $username . "</p>";
echo "<p>Password = " . $password . "</p>";
?>

</body>
</html>
```

- Simple scripting language
- Easy to map to web artifacts

## Agenda

- What is PHP
- [Brief History and Zend](#)
- PHP on System i
- What are customers doing with PHP?



## What Types of Applications are Developed in PHP?

What types of applications does your organization develop in PHP?	Number of Responses	Response Ratio
CRM	557	16%
Content Management	2067	59%
Security	510	15%
ERP	191	5%
Games	237	7%
Communications	851	24%
Ecommerce	1275	37%
Complete list	128	4%
Content Display/Media	1051	30%
Customer focused (external) web site	1137	33%
Intranet - Internal web front-ends for Internal organizational systems or databases	1781	51%
Extranet - External web front-ends for customers or suppliers to Internal organizational systems or databases	1014	29%
Web-based applications	2557	73%
None	78	2%

Zend's June 2003 market snapshot of the PHP community. The survey had over 10,000 respondents. [http://www.zend.com/zend/php\\_survey\\_results.php](http://www.zend.com/zend/php_survey_results.php)

## Open Source Applications Like SugarCRM



## Zend Technologies



- The founders of Zend have been key contributors to the PHP language since 1997
- Zend delivers commercial products that enable developers and IT personnel to deliver and operate business-critical PHP applications
  - Zend has been the leading supplier of PHP products and solutions for the last six years. Its products and solutions are being used by more than 15,000 companies worldwide. The Zend Engine (the PHP kernel) is being utilized on more than 22 million websites today
  - Zend takes the open source PHP code through rigorous testing for additional quality assurance and adds over 35 popular PHP extensions to deliver their PHP runtime environment
- Zend provides enterprise level support for the PHP environment

## Zend Products for Linux®, Windows®, and UNIX®



- **Zend Core** \$199 per year with Standard Support
  - A fully tested and enhanced version of the open source PHP runtime environment.
- **Zend Studio** \$299 per year with Standard Support
  - Provides an integrated IDE for building and debugging PHP applications
- **Zend Guard** \$995 per year with Standard Support
  - Provides code protection and license enforcement tools for solution providers (copyright protection)
- **Zend Platform** Prices not Public
  - A robust PHP production environment providing performance, scalability, and monitoring for PHP applications

– Prices from zend.com on 6-29-06

## Web Development and Deployment Stacks

L A M P  
i p y H  
n a S P  
u c Q  
x h L  
e



W I M P  
i l y H  
n S S P  
d Q  
o L  
w  
s



## Agenda

- What is PHP
- Brief History and Zend
- [PHP on System i](#)
- What are customers doing with PHP?

## PHP on System i

- **For System i customers** who need to innovate their business and are looking for an easy, cost-effective and rapid way to deploy web applications
- **For i5/OS solution providers** who need to enhance their application offerings and are looking for an easy, cost-effective and rapid way to develop web applications
- **For PHP solution providers** who need to expand their market for new PHP-based applications with the help of an established partner



## System i and Zend Announcements

- April 3, 2006: IBM and Zend announced a multi-year agreement to deliver selected Zend PHP products and solutions for i5/OS®
- July 11, 2006: IBM announcement of order taking for Zend Core and Studio for i5/OS with GA on July 28.
- First year, over 4200 people downloaded Zend Core for i5/OS





<http://www.ibm.com/systems/i/software/php>

IBM System i

## Zend Products for i5/OS

July 11, 2006 Announcement

- 
  - **Zend Core for i5/OS**
    - Available July 28 through IBM or Zend's web site
- 
  - **Zend Studio Professional for i5/OS**
    - Available July 28 through IBM or Zend's web site
- 
  - **Zend Platform for i5/OS**
    - Available today via Zend's web site
- 
  - **Zend Guard for i5/OS**
    - Available directly from Zend

17 *i want an i.* © 2007 IBM Corporation

IBM System i

## Zend Products for i5/OS – July 11, 2006 Announcement

- Customers can order Zend Core for i5/OS and Zend Studio Professional for i5/OS from IBM
  - Orders will be passed to Zend for fulfillment with a GA of July 28th
- 
  - **Zend Core for i5/OS** No Charge
    - PHP runtime environment in i5/OS providing connections to DB2 UDB for i5/OS and RPG and COBOL applications
      - With 3 years Standard support
    - Gold and Platinum support levels available for a fee
- 
  - **Zend Studio Professional for i5/OS** No Charge
    - Integrated Development Environment on Windows or Linux
      - With 3 years Standard support
    - Gold and Platinum support levels available for a fee

\* Zend retail price for Core and Studio Professional on Intel for 5 developers with 3 years standard support – zend/com 7-6-06 = \$5000 Value\*

18 *i want an i.* © 2007 IBM Corporation

## PHP Integration with i5/OS

- **Are shipped with Zend products**
  - Zend core for i5/OS
  - Zend Platform for i5/OS
- **Specifically for accessing i5 data and resources from PHP (similar to IBM ToolBox for Java)**
  - DB2 UDB – SQL and Native
  - Program call
  - Procedure call
  - Data Area
  - Data Queue
  - Message Queue
  - Commands
  - System values
  - Spool files



## DB2 Example

- **Retrieve the list of names from table named NAMES in library RMSMITH**

```
<?php
$user="PHPUSER";
$password="PASSWORD";
$db="SE520A2";
try {
    $conn = db2_connect($db, $user, $password);
    if (!$conn) {
        echo db2_conn_errormsg();
    } else {
        echo "Names from Table RMSMITH/NAMES<br>";
        $result = db2_exec($conn, "select * from rmsmith.names ");
        if ($result) {
            while ($row = db2_fetch_both($result)) {
                echo "Hello, ".$row['NAME']."<br>";
            }
        }
        db2_close($conn);
    }
} catch (Exception $ex) {
    echo $ex;
}
?>
```

## System i Requirements for Zend Core for i5/OS

- **i5/OS V5R4**
- **i5/OS V5R3**
  - Zend Core for i5/OS Version 1.6 or later required
  - i5/OS V5R3 database PTF SI25802 is required
  - Zend Core for i5/OS does not support remote debugging from a Zend Studio client



- **Plus**

Portable App Solutions Environment (PASE)	33	5722-SS1
IBM Portable Utilities for i5/OS	*base	5733-SC1
OpenSSH, OpenSST.Zlib	1	5733-SC1
Crypto Access Provider 128 bit	*base	5722-AC3
Qshell	30	5722-SS1
System Openness Includes	13	5722-SS1
Digital Certificate Manager	34	5722-SS1



- **System i servers that run i5/OS V5R4 or V5R3**

## Web Development and Deployment Stacks




<p>L A M P</p> <p>i p y H</p> <p>n a S P</p> <p>u c Q</p> <p>x h L</p> <p>e</p>	<p>W I M P</p> <p>i l y H</p> <p>n S S P</p> <p>d Q</p> <p>o L</p> <p>w</p> <p>s</p>	<p>i A D P</p> <p>5 p B H</p> <p>/ a 2 P</p> <p>O c</p> <p>S h</p> <p>e</p>
---	--	---



IBM System i

## Web Development and Deployment Stacks

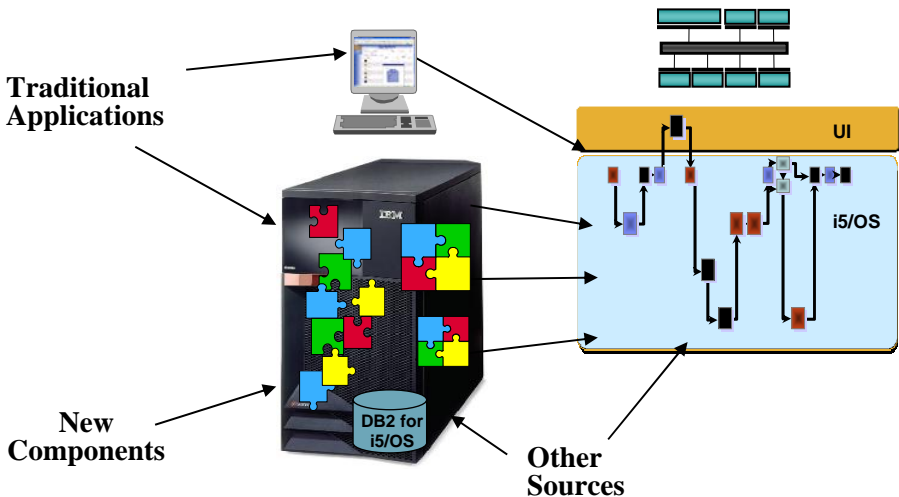
L i n u x	A p n c h e	M p S Q L	P H P
W i n d o w s	I I n d o w s	M S S Q L	P H P
i	A	M	P
5	p	y	H
/	a	S	P
O	c	Q	
S	h	L	
	e		

23 | *i want an i.* | © 2007 IBM Corporation

IBM System i

## IBM Strategy includes PHP: System i Developers' Road Atlas



**Traditional Applications**

**New Components**

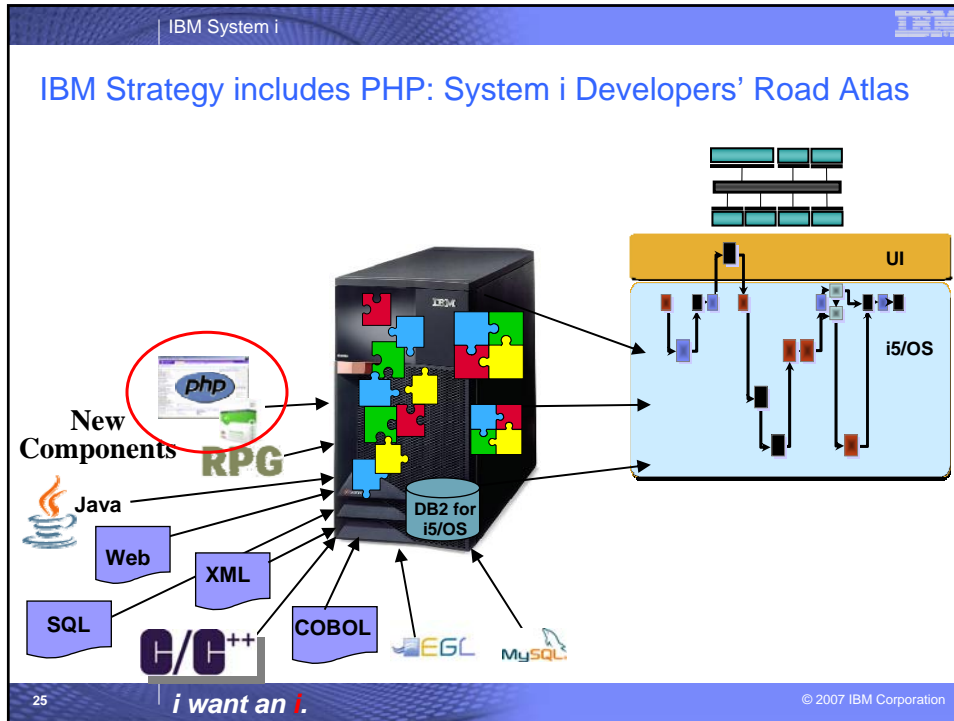
**Other Sources**

**UI**

**i5/OS**

**DB2 for i5/OS**



24 | *i want an i.* | © 2007 IBM Corporation



IBM System i

## PHP and Java

- Java™
  - general purpose programming language
  - wide range of application types
  - generally more specific to transaction based systems
- PHP
  - specialized programming language
  - focused on Web and Web services development
  - simpler language to learn; faster delivery of solutions
- Both languages integrate with other application components regardless of language
- PHP and Java can work together in a mixed environment
  - Java back-end applications have PHP web-based front-ends?

26

*i want an i.*

© 2007 IBM Corporation

## 2006 Highlights

- **Deployed Opensource PHP applications on i5/OS**
  - 5000+ registrations for Zend's products for i5/OS
  - *My Customer ..... deployed 6 PHP applications on i5/OS instead of UNIX*
  - *My Customer ..... shortened their development cycle by leveraging PHP*
  - *My Customer ..... Moved PHP applications from x86 to i5/OS*

## 2007 - System i Key Initiatives Include PHP

- **For Small/Medium Enterprises:**
  - Support VIP solutions with new competitiveness vs Windows®
  - Extend BladeCenter integration with VMWare
  - Integrate IP telephony and collaboration solutions
  - **Deploy more open source applications**
  - Drive new business resiliency solutions with CBU
- **For Large Enterprises:**
  - Drive new business resiliency solutions with CBU
  - Enhance internal disk flexibility & performance
  - Take the next step with SOA
  - Virtualize more, manage less
  - .... *And prepare for POWER6 and i5/OS V5R5*

IBM System i

## Agenda

- What is PHP
- Brief History and Zend
- PHP on System i
- What are customers doing with PHP?

29 *i want an i.* © 2007 IBM Corporation

IBM System i

## PHP Applications

Microsoft Internet Explorer

Address: <http://www.i5php.net/>

i5php.net

Login or Register Home :: Downloads :: Community Forums :: Register Septemb

Main Menu

- Home
- Contact
- Downloads
- Community
- i5php Forums
- Search
- Forums
- Articles
- News
- Members options
- Your Account

Welcome to i5php.net!

Powered by Zend Core for IBM i5/OS v1.4, MySQL-4.1.21, and Dragonfly CMS on an IBM® System i

Not all the content is back online yet. Please check back in a couple weeks.

Posted by rward on Sunday, August 06, 2006 (02:58:28) (5 reads) | Score: 0

RSS FEED: Zend Developer Zone

- Zend Certification for PHP 5: It's OFFICIAL!
- The PEAR book is About to Ripen
- ...And now For Something Completely Different.
- php|works Tutorail Review: Rob Ricahrds - Advanced XML and Web Services

30 *i want an i.* © 2007 IBM Corporation

## PHP Applications

- **Check out the thousands of PHP scripts available that can be used as-is or as the starting point for Web projects.**
  - <http://www.hotscripts.com>
  - <http://www.phpjunkyard.com/>
  - <http://www.phpfreaks.com/>
  - <http://phpfreebies.com/>

## PHP Applications

The screenshot shows a web browser window with the address bar containing the URL: [http://www.zend.com/company/zend\\_news/announcements/2006/11/open\\_source\\_applications\\_running\\_on\\_system\\_i](http://www.zend.com/company/zend_news/announcements/2006/11/open_source_applications_running_on_system_i). The page content includes a navigation menu with links like 'Company', 'Products', 'Downloads', 'Education', 'Partners', 'Developer Zone', 'Zend Network', 'Store', and 'Search'. The main content area is titled 'Open Source Applications Running on System i' and features a list of applications: SugarCRM, Mediawiki, Zen Cart, Mantis, and Joomla. A quote from Ed Kietlinkski is also visible: "Deploying PHP on System i was so easy, it took less time to install than it did to download the code," commented Ed Kietlinkski, Senior Solution Consultant with Zend.

## Content Management Applications

- You can check out over 100 applications including Wiki's, BLOGs, Portals, Forums and much more

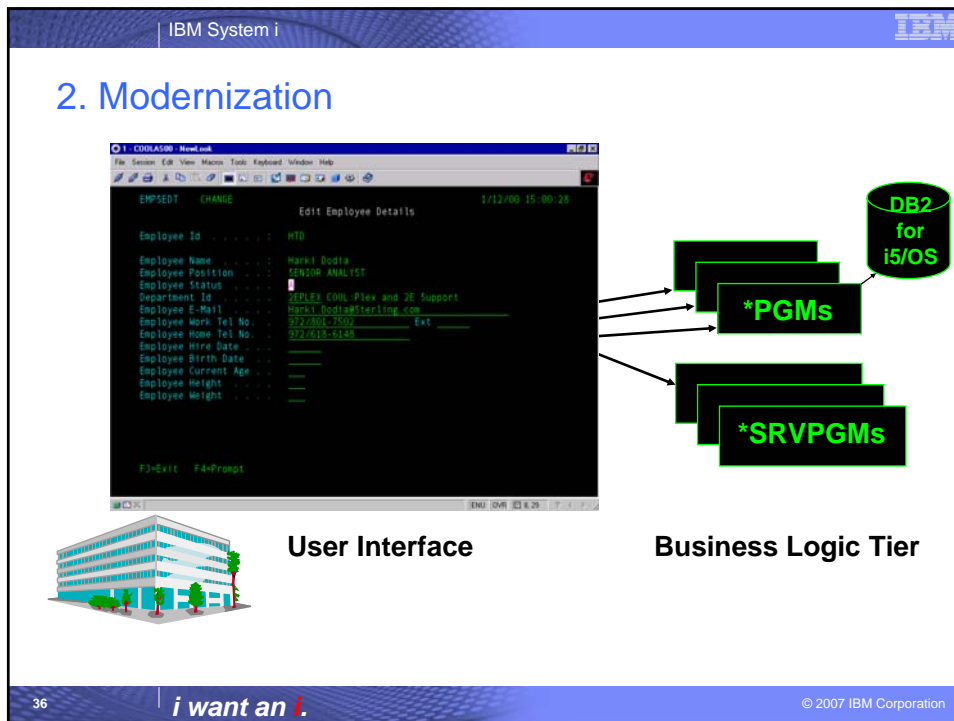
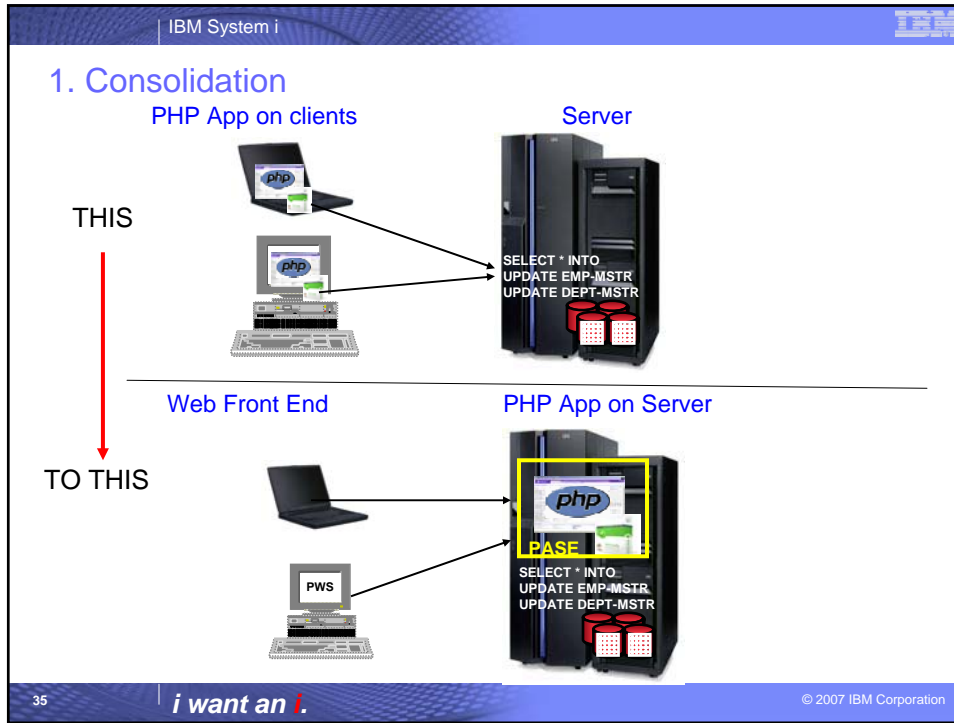


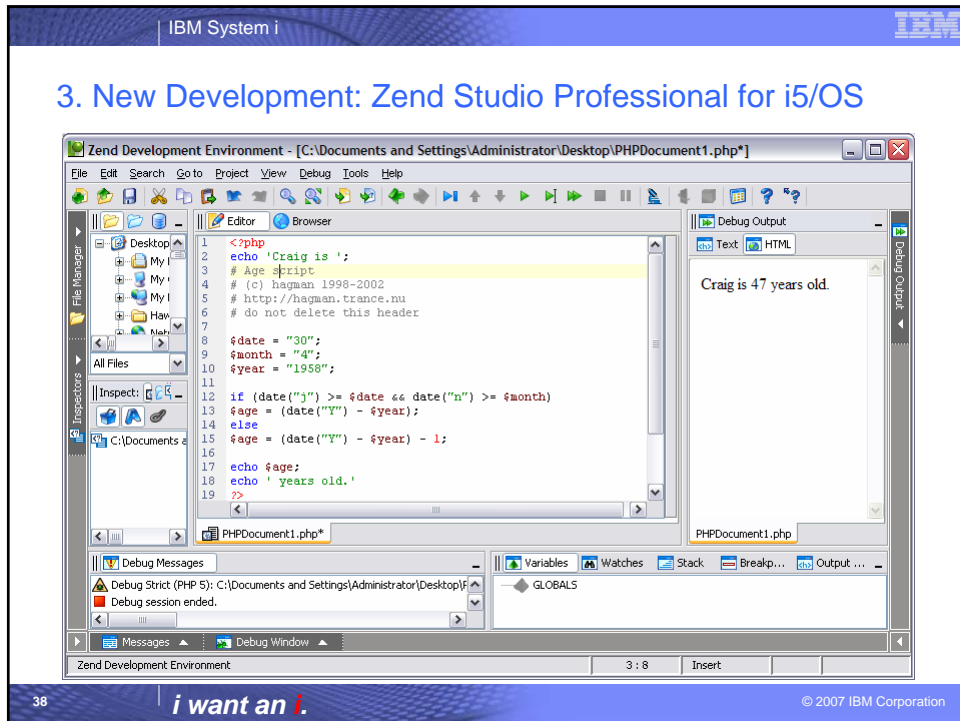
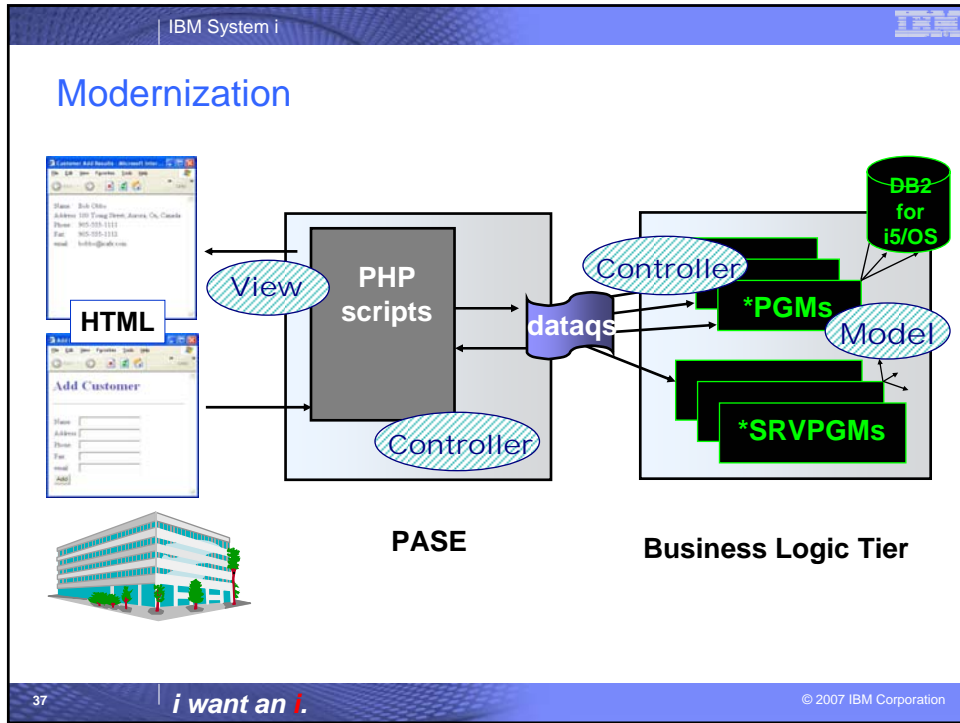
<http://www.opensourcecms.com/>

## What are System i Customers Doing with PHP?

### Top Four:

- 1.Consolidation:** Move PHP applications that are running on Windows or Linux that access data in DB2 to run in i5/OS to speed up or reduce complexity of the applications.
- 2.Modernization:** Use PHP to web-enable green screen applications.
- 3.New application development:** Create new applications with PHP on i5/OS including applications for the intranet, reporting, websites, and extranets.
- 4.Leveraging PHP portfolio:** Run commercial or open source PHP applications on i5/OS.





IBM System i

## Zend Studio Example

- Executes an SQL query, returning records whose LASTNAME field begins with 'S'.

### Employee Records On System i starting with S

000310	Setright	Maude	E11	OPERATE	15900.00
000300	Smith	Philip	E11	OPERATOR	17750.00
000280	Schneider	Ethel	E11	OPERATOR	26250.00
000250	Smith	Daniel	D21	CLERK	19280.00
000180	Scoutten	Marilyn	D11	DESIGN	21340.00
000100	Spenser	Theodore	E21	MANAGER	26150.00
000060	Stern	Irving	D11	MANAGER	32250.00

```

45 <?php
46
47 /* Include System i connection information */
48 if (!include "is_properties.php" == false) {
49     echo("Problems encountered loading is_properties.php include file");
50 }
51
52 /* Set up database connection */
53 $dbh = db2_connect($db, $user, $password);
54
55 if (!$dbh) {
56     die ("Problems connecting to the database.");
57 }
58
59 /* Query file using input from form and deliver results to client */
60 /* Construct the SQL statement, using lastname as the search substring */
61 $sql = "select * from $schema.employee where lastname like 'S%'";
62 /* Execute the SQL statement, place results into statst */
63 $stat = db2_exec($dbh, $sql, array('cursor' => DB2_SCROLLABLE));
64 /* Print Employee Search Results header and table setup */
65 print "<br>Employee Records On System i starting with S<br>";
66 print "<br><table border=1 cellpadding=5 cellspacing=5>";
67 /* Iterate through result set, printing one table line per record returned
68 /* Note that the customerNumber field will be an "active field" which will
69 /* $GET the customerNumber and reinvoke the employee_update.php applicat
70 while ($row = db2_fetch_array($stat)) {
71     if ($row=="") {
72         $customerNumber = $row[0];
73         $customerName = $row[3];
74         $customerFirst = $row[1];
75         $customerLast = $row[4];
76         $job = $row[7];
77         $salary = $row[11];
78         print "<tr><td align=center><a href=employee_update.php?customerN
79             <br></td><td>.$customerName.</td>.$customerFirst.</td>.$workdept.'
80     }
81 }
82 /* Close table */
83 print "</table><br>";
84 /* Print the DB2 SQL statement which was executed - Informational */
85 print "<br>Echo of dynamically-built sql: '$sql.<br>";
86
87 }
    
```

39 *i want an i.* © 2007 IBM Corporation

IBM System i

## New Application Development

**Zend**  
The php Company

Company Products Downloads Education Partners Developer Zone Zend Network

Zend.com / Products / Zend Studio / Eclipse

### Zend Studio for Eclipse Beta

The world's most powerful PHP IDE for creating rich Web applications

Zend is launching a beta of its next generation Zend Studio IDE. Code named "Neon", Zend Studio's next generation product is based on proven Zend Studio technology and the Eclipse PHP Developers Tools (PDT) project. Zend Studio for Eclipse creates a unique IDE that provides professional PHP development capabilities combined with the Eclipse multi-language support and plugin extension technology that creates the world's most powerful PHP IDE.

**Buy Zend Studio now and get a 15% Discount! Customers who purchase Zend Studio today automatically get a license for Zend Studio for Eclipse when it is released.**

**Proven Zend Studio Technology**

Zend Studio for Eclipse is designed for professional PHP developers that need a powerful environment to create dynamic Web-based business applications. Zend Studio for Eclipse is the only PHP IDE based on proven Zend Studio technologies. It supports the full application development lifecycle with a powerful set of editing, analysis, debugging, and database tools. Zend Studio for Eclipse simplifies complex projects and increases productivity making your applications more robust. Integration with Zend Core and Zend Platform simplifies analysis of the root cause of a problem that makes debugging problems a snap so solve problems quickly and get applications back up running faster.

**Eclipse Integration Benefits**

Eclipse is the world most popular open source development platform comprised of an extensible framework of tools and runtimes for building, deploying and managing software across the development lifecycle. With a vibrant ecosystem supported by major technology vendors, start-

### Zend Studio for eclipse

- Plug-in for eclipse-based tools like WDSC
  - Ability to create PHP from within same workbench as RPG, etc.
  - Currently testing for compatibility
- Huge interest from System i

40 *i want an i.* © 2007 IBM Corporation

IBM System i

## Zend Forum for i5/OS ..... [www.zend.com/forums](http://www.zend.com/forums)

Topic	Replies	Views	Last message
Remote Debugger	3	934	Tue, 27 June 2006 15:45 By: <a href="#">Iush7558</a>
DB2 for i5/OS - Example	0	79	Tue, 27 June 2006 10:58 By: <a href="#">Iush7558</a>
MySQL on i5/OS Example	2	556	Mon, 26 June 2006 17:08 By: <a href="#">sandberg</a>
PHP-Nuke-7.8 on i5/OS Example	0	50	Mon, 26 June 2006 17:04 By: <a href="#">sandberg</a>
SSL and PHP	0	73	Mon, 26 June 2006 09:49 By: <a href="#">d0na</a>
mysql_connect - call to undefined function	1	54	Sun, 25 June 2006 23:51 By: <a href="#">msodde</a>
Zend Network Updates	1	54	Thu, 22 June 2006 17:12 By: <a href="#">aseiden</a>

41 *i want an i.* © 2007 IBM Corporation

IBM System i

## 4. Leveraging Application Portfolio: PHP and MySQL



**SUGARCRM**  
COMMERCIAL OPEN SOURCE

Customer Relationship Management



**MANTIS**

Help Desk



**XOOPS**  
powered by you

Portal



**Joomla!**  
because open source matters

Portal



**mambo**  
power at simplicity

Portal



**moodle**

Course Management System



**zen cart**  
the art of e-commerce

e-Commerce



**MediaWiki**

Wiki



**phpbb**  
creating communities

Bulletin Board



**Dragonfly**

Content Management System

42 *i want an i.* © 2007 IBM Corporation

## MySQL

- **MySQL is the database for the PHP application portfolio**

- MySQL is the “M” in LAMP
- MySQL is the most popular open source database
- 1000s of PHP scripts and applications use MySQL

- **Database Products**

- MySQL Community Server
  - No charge
  - Supported by community
- MySQL Enterprise
  - Chargeable
  - Supported by MySQL



- **We have MySQL running in i5/OS today**

- “How to” posted on Zend Forum

## Customer: Parts Depot

- **Background**

- Parts Depot is one of the largest distributors and resellers of automotive aftermarket parts and paints in the U.S.

- **Objectives**

- Update its applications that enable business partners to conduct a variety of online transactions, ranging from price quotations to fulfillment to the reviewing of historical data.

- **Solution**

- Three System i 520s support the business.
  - Production, Development and HA
- Developed new web application with PHP integrating with backend RPG applications



*“It’s about the speed of delivery to the market. When you have a new idea for an application, you have to build it quickly, implement it and get it into the market. If you’re going to keep a competitive advantage, you have to be nimble.”*

Jonathan George, CIO

## Customer: Cremer

- **Background**
  - Distributor and manufacture of disposable health products in Brazil
- **Challenge**
  - Improve customer satisfaction with a streamlined call center application – inventory, prices, credit, invoices
  - Reduce software costs
- **Solution**
  - Developed new PHP web-based call center application accessing DB2 on i5/OS V5R3
- **Benefits**
  - Reduction in software costs
  - Short development cycle – even though started with no PHP skills
  - Faster access to DB2 information



## Customer: Icon Fitness

- **Background**
  - World's large home fitness manufacturer...and includes brands such as NordicTrack, HealthRider, and Proform
- **Challenge**
  - Quickly develop fitness/nutrition web sites to meet January demand peak
- **Solution**
  - Developed new consumer web sites with PHP tying into existing WebSphere Commerce Server on i5/OS V5R4



[www.ifit.com](http://www.ifit.com)  
[www.iconfitness.com](http://www.iconfitness.com)

## Summary

- **For System i customers** who need to innovate their business and are looking for an easy, cost-effective and rapid way to deploy web applications
- **For i5/OS solution providers** who need to enhance their application offerings and are looking for an easy, cost-effective and rapid way to develop web applications
- **For PHP solution providers** who need to expand their market for new PHP-based applications with the help of an established partner



## Trademarks

### Trademarks

The following are trademarks of the International Business Machines Corporation in the United States and/or other countries. For a complete list of IBM Trademarks, see [www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml): AS/400, DBE, e-business logo, ESCO, eServer, FICON, IBM, IBM Logo, iSeries, MVS, OS/390, pSeries, RS/6000, S/390, VM/ESA, VSE/ESA, Websphere, xSeries, z/OS, zSeries, z/VM

The following are trademarks or registered trademarks of other companies

Lotus, Notes, and Domino are trademarks or registered trademarks of Lotus Development Corporation  
 Java and all Java-related trademarks and logos are trademarks of Sun Microsystems, Inc., in the United States and other countries  
 LINUX is a registered trademark of Linux Torvalds.  
 UNIX is a registered trademark of The Open Group in the United States and other countries.  
 Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation.  
 SET and Secure Electronic Transaction are trademarks owned by SET Secure Electronic Transaction LLC.  
 Intel is a registered trademark of Intel Corporation  
 \* All other products may be trademarks or registered trademarks of their respective companies.

### NOTES:

Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.

IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply.

All customer examples cited or described in this presentation are presented as illustrations of the manner in which some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.

This publication was produced in the United States. IBM may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. Consult your local IBM business contact for information on the product or services available in your area.

All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Information about non-IBM products is obtained from the manufacturers of those products or their published announcements. IBM has not tested those products and cannot confirm the performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

Prices subject to change without notice. Contact your IBM representative or Business Partner for the most current pricing in your geography.

References in this document to IBM products or services do not imply that IBM intends to make them available in every country.

Any proposed use of claims in this presentation outside of the United States must be reviewed by local IBM country counsel prior to such use.

The information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.