PHP and System i
Omni User Group

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Tripp Lite
Three Parts

- Presentation
- Installation
- Startup and First Script
Presentation Agenda

- Introduction to PHP
- Why is PHP attractive?
- Example PHP scripts
- What is Zendcore?
- Connection to DB2 on i5/OS with sample
What is PHP?

- PHP Hypertext Pre-Processor
- Developed initially by Rasmus Lerdorf in 1994
- Andi Gutmans and Zeev Suraski in 1997
- Thousands of contributors worldwide
- 4-5 million developers
- 20-25 million web sites over 5+ million IPs?
PHP is a Scripting Language

- Not compiled, interpreted
- Easy way to get database info to Web
- Short learning curve as OO is optional
- Forgiving and intuitive code structure
- Similar in nature to Net.Data, not as verbose
Who is Using PHP?
Who uses PHP?

- Yahoo, Google, Fiat, Mazda, Disney
- Kids coming out of school (low $)
- Open source developers – 10,000 projects
- Community - strong in knowledge and support
Why use PHP?
Why use PHP?

- Easy to code
- Short learning curve
- Immediate productivity
- Zendcore – PHP Runtime engine
- PHP is to Java what RPG is to COBOL!
Why did Tripp Lite choose PHP?

- Applications!
  - Dot.Project – Project Management & Helpdesk
  - OWL – Procedure and Document Management
  - V-Bulletin – Online Forum (Vendor relations)
  - Mambo – Content Management System

- Cost
  - Total for all applications: one $99 support license
What is Zendcore?

- The PHP runtime engine, free download
- Created & supported by Zend
- Observe and manage performance of PHP
- System i V5R4 PHP runtime released July ‘06
Advantages of PHP on System i

- Zendcore for System i
- Modern platform for app consolidation
- Wide selection of PHP applications
- Scalability from 1-64 processors with no application code changes
- Outperforms Net.Data
Sample Script – PHP Info

- PHPInfo() is a great when starting out
- Confirms correct setup of PHP
- Shows a LOT of info about environment
- Sample code: (Shortest PHP Macro around!)

```php
<?php
    echo phpinfo();
?>
```
# PHP Version 5.1.6

<table>
<thead>
<tr>
<th>System</th>
<th>OS400 ACES 4.5 0010005 7910</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build Date</td>
<td>Sep. 14 2006 18:15:25</td>
</tr>
<tr>
<td>Server API</td>
<td>Apache 2.0 Handler</td>
</tr>
<tr>
<td>Virtual Directory Support</td>
<td>disabled</td>
</tr>
<tr>
<td>Configuration File (php.ini) Path</td>
<td>/usr/local/Zend/Core/lib/php.ini</td>
</tr>
<tr>
<td>PHP API</td>
<td>20041225</td>
</tr>
<tr>
<td>PHP Extension</td>
<td>20050822</td>
</tr>
<tr>
<td>Zend Extension</td>
<td>220051025</td>
</tr>
<tr>
<td>Debug Build</td>
<td>no</td>
</tr>
<tr>
<td>Thread Safety</td>
<td>disabled</td>
</tr>
<tr>
<td>Zend Memory Manager</td>
<td>enabled</td>
</tr>
<tr>
<td>IPv6 Support</td>
<td>enabled</td>
</tr>
<tr>
<td>Registered PHP Streams</td>
<td>php, file, http, ftp, compress, zip, html, ips</td>
</tr>
<tr>
<td>Registered Stream Socket Transports</td>
<td>tcp, udp, unix, udg, ss1, ss1v2, ss2, tls</td>
</tr>
<tr>
<td>Registered Stream Filters</td>
<td>string, rft13, string, tonumber, string, tolower, string, strip_tags, convert *, consumed, trim</td>
</tr>
</tbody>
</table>

This program makes use of the Zend Scripting Language Engine:  
Zend Engine v2.1.0, Copyright (c) 1998-2006 Zend Technologies  
with Zend Core v1.5.0, Copyright (c) 1999-2006, by Zend Technologies  
with Zend Extension Manager v1.0.10, Copyright (c) 2003-2006, by Zend Technologies  
with Zend Optimizer v3.0.1, Copyright (c) 1998-2005, by Zend Technologies  
with Zend Debugger v2.2.0-15, Copyright (c) 1999-2006, by Zend Technologies

**PHP Credits**
Install Zendcore

- Prerequisites:
  - See Zendcore installation documentation!!!
  - i5/OS V5R4 (V5R3 coming in 2007)
  - Recent Cumulative PTF package, PASE, QShell

- Software installation
  - Upload *SAVF, Restore, and…
  - Type GO ZCMENU
Start Zendcore

...and select option 5
Start Zendcore

- Menu: Select option 4
It’s that easy!
Some real PHP code:

Basics:

- Variables are all cast with $ 
- Array processing supports multi-dimensional 
- Can change the type of a variable during operation 
- If then, while do, Switch, Do Until 
- And many many more!
**Hello World**

```php
<html>  
<head>  
<title>This is the Hello World Script</title>  
</head>  
<body>  

<?php  
// This is a comment  
/* This is a comment  
that spans multiple lines */  

    echo "<br> Hello World";  
    echo "<br> Hello World";  

?>  

</body></html>
```
Hello World
Hello World
Connection to DB2

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

```php
$conn = "*LOCAL";
$name = "PHPDEV";
$pwd = "password";

$i5link = i5_connect($conn, $name, $pwd);
if ($i5link) echo "Connected to i5 running under $name profile";
else echo 'Connection failed: '.db2_stmt_error().' : '.db2_stmt_errormsg();
```
Sample Payroll List

- Connect to System i
- Select record from any table
- Display records
  - Calculate net pay
  - Calculate totals
- Perform some summary functions
- Disconnect
### Source Data

<table>
<thead>
<tr>
<th>EMP_NAME</th>
<th>EMP_NUMBER</th>
<th>WEEKLY_PAY</th>
<th>TAX</th>
<th>INSURANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joe Smith</td>
<td>1</td>
<td>1,200.00</td>
<td>150.00</td>
<td>25.00</td>
</tr>
<tr>
<td>John Doe</td>
<td>2</td>
<td>1,500.00</td>
<td>200.00</td>
<td>27.00</td>
</tr>
<tr>
<td>Jane Doe</td>
<td>3</td>
<td>1,750.00</td>
<td>199.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Robert Smith</td>
<td>4</td>
<td>595.00</td>
<td>75.00</td>
<td>.00</td>
</tr>
</tbody>
</table>

*******  End of data  *******
**Payroll Report**

Connected to i5 running under PHPDEV profile

<table>
<thead>
<tr>
<th>Name</th>
<th>Number</th>
<th>Gross</th>
<th>Tax</th>
<th>Insurance</th>
<th>Net</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joe Smith</td>
<td>1</td>
<td>$1200.00</td>
<td>150.00</td>
<td>$25.00</td>
<td>$1025</td>
</tr>
<tr>
<td>John Doe</td>
<td>2</td>
<td>$1500.00</td>
<td>200.00</td>
<td>$27.00</td>
<td>$1273</td>
</tr>
<tr>
<td>Jane Doe</td>
<td>3</td>
<td>$1750.00</td>
<td>199.00</td>
<td>$5.00</td>
<td>$1546</td>
</tr>
<tr>
<td>Robert Smith</td>
<td>4</td>
<td>$595.00</td>
<td>75.00</td>
<td>$0.00</td>
<td>$520</td>
</tr>
</tbody>
</table>

Total Gross Pay is $5045

Total tax payment is $624

Total insurance payment is $57

The average for each record is $1261.25
Code for Page...

See Zend Studio!
14 // connect to i5 DB
15 $i5link = db2_connect($conn, $name, $pwd);
16 if ($i5link) echo "<p>Connected to i5 running under $name profile</p>";
17 else echo "<p>Connection failed: " . db2_stmt_error() . "</p>";
18 // prepare sql statement
20 $sql = "SELECT * FROM payroll_master";

// libraries

function i5_add_new(resource $file, integer $mode) {
    // Create new record in the file.
    // Parameters:
    // file resource opened i5 file
    // mode integer if to clean the record (I5_ADDNEW_CLEAR - clear, I5_ADDNEW_NOCLEAR - do not clean)
    // Returns:
    // resource if open succeeded false if open failed
}

// $i5link
// $conn
// $name
// $pwd

Resources...

- Books
  - Sam’s teach yourself PHP, MySQL and Apache All in One (3rd edition) ISBN:0672328739
  - Redbook coming soon
  - PHP User Guide comes with Zendcore download!

- Websites:
  - Zend.com
  - i5php.net
  - Sourceforge.net