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## PHP Batch Jobs on IBM i

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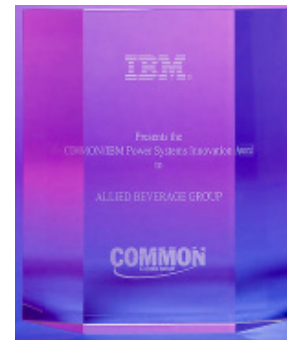
@alanseiden



# About Alan

## PHP on IBM i consultant

- Specializing in subsecond web performance on IBM i
- Lead PHP developer for new toolkit from Zend/IBM
- Zend Framework contributor (DB2 for i enhancements)
- Developer, IBM/COMMON's "Best Web Solution," 2009



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# Strategic Business Systems, Inc.



- **Based in Ramsey, Bergen County, New Jersey**
- **IBM Business Partner**
  - Power Systems hardware, software, development, consulting

# Where to download these slides

From my site

**<http://alanseiden.com/presentations>**

On SlideShare

**<http://slideshare.net/aseiden>**

The latest version will be available on both sites

# What we'll discuss today

- **Quick overview, Zend Server for IBM i**
- **PHP for Batch (non-web) Tasks on IBM i**
  - “batch” = command line or scheduled PHP
  - PHP as a utility language
- **Tips and techniques**
- **Questions**

# PHP/web

# PHP was built for server-side web apps

- **Started as a web development language in 1995**
- **Over time, the open source community and Zend made PHP more and more powerful**
- **Currently one of the most popular web languages**
  - It's everywhere, eBay, Wikipedia, Facebook...
  - But it's not limited to the web
  - It would be a shame to restrain PHP's power to only the web
- **On IBM i, all of PHP's power is available in Zend Server.**

# Zend Server

# Zend Server for IBM i

- **PHP stack for IBM i**
  - Best of Zend Core and Platform in one licensed program
- **Two license levels**
  - Zend Server for IBM i Community Edition (CE)
    - Available at no charge per IBM partnership
    - Includes “Optimizer+” that speeds up code
    - One year silver (email) support
  - Zend Server for IBM i
    - Subscription-based license
    - High value extra features, higher Support SLAs
- **Details of differences:**
  - <http://mikepavlak.blogspot.com/2010/08/i-want-to-do-php-on-ibm-i-so-what-do-i.html>

# Installation

- <http://www.zend.com/products/server/downloads>
  - Click on the “IBM i” tab
- **Prerequisites**
  - v5r4 and:
    - [http://files.zend.com/help/Zend-Server-IBMi/i5\\_installing\\_zend\\_server.htm](http://files.zend.com/help/Zend-Server-IBMi/i5_installing_zend_server.htm)
    - IBM’s FastCGI PTF (free)
- **Try Zend Studio’s IDE (no charge, courtesy of IBM)**
  - “Zend Studio for Eclipse, IBM i Edition”
  - <http://zend.com/en/products/studio/downloads>
  - Look for “IBM i Edition”

# Cheat sheet for upgrade from Zend Core

<http://alanseiden.com/2010/04/21/differences-between-zend-core-and-zend-server-on-ibm-i/>

	Zend Core	Zend Server
<b>Installation folder</b>	/usr/local/zend/core	/usr/local/zendsvr
<b>PHP.INI</b>	/usr/local/zend/core/etc	/usr/local/zendsvr/etc
<b>Web server root(s)</b>	/www/zendcore, /usr/local/zend/apache2	/www/zendsvr
<b>Document root</b>	/www/zendcore/htdocs	/www/zendsvr/htdocs
<b>Zend Framework</b>	/usr/local /Zend/ZendFramework	/usr/local/zendsvr/share /ZendFramework
<b>PHP binaries folder *</b> * where php and php-cli reside	/usr/local/zend/core/bin	/usr/local/zendsvr/bin
<b>PHP Log files</b>	/usr/local/zend/core/logs	/usr/local/zendsvr/ var/log
<b>Web user profile (assign authority to it)</b>	NOBODY	QTMHHTTP
<b>Default HTTP Port</b>	:89	:10088
<b>Admin Interface URL</b>	http://yourIBMi:89 /ZendCore/	http://yourIBMi:10088 /ZendServer/

# Zend Server and PHP resources

- **Support:** Zend Server CE includes one year of email support. Upgrade to Zend Server for more years and fast phone support
  - Register at <http://www.zend.com/products/server/downloads> and also get Zend's IBM i newsletter
- **Web:**
  - Zend's recorded webinars: <http://www.zend.com/resources/webinars/i5-os>
  - Zend Forums: [forums.zend.com](http://forums.zend.com) (look for IBM i Zend Server forums)
  - <http://alanseiden.com> (of course!)
    - Blog, articles, tips newsletter
- **Books (online and print)**
  - PHP Manual: <http://php.net>
  - PHP on IBM i book by Jeff Olen & Kevin Schroeder (MC Press)
- **Training from Zend/others**

# PHP beyond the web

# I first used “batch PHP” on an EDI project

- **Generate an XML-based price list and FTP it to customer each week at the same time**
- **Poll for and receive XML orders arriving in a folder**
  - Process the XML, generate a new XML acknowledgement, and then FTP a response
- **Send e-mail reports to administrators**
- **Special e-mails if any error occurred**

# Why use PHP for non-web tasks?

- **PHP easily handles:**
  - IFS stream files
  - manipulation of any string data and common formats such as XML and JSON
  - communication with other processes through TCP/IP, whether on your network or on the internet
- **Leverage your PHP skills instead of learning yet another language**
  - And have another opportunity to **improve** your PHP skills!
- **Share functions between web and non-web**

# More possibilities with PHP on i

- **Download, upload, process files from web and FTP servers**
- **Send e-mails with great flexibility**
- **Create graphics**
- **Read and write from your regular db2 files**
- **Schedule these tasks to occur when you want**

# Two methods to do this

- **Method #1: “PHP-CLI” (command line)**
  - Included in Zend Server CE (no charge)
  - Test on command line, embed in CL/RPG
  - Need knowledge of PASE or QSHELL environment
  - Accepts simple string parameters only
  - Delay of a few seconds for PHP-CLI to load
  
- **Method #2: Zend Server’s Job Queue**
  - Included in Zend Server Professional Edition
  - Web based, offers more flexibility, dynamic scheduling
  - Accepts varied parms, multi-dimensional arrays, objects
  - Faster loading

# Method #1: PHP-CLI

# CLI = Command Line

- **PHP-CLI runs PHP when not in a web server**
  - <http://docs.php.net/manual/en/features.commandline.php>
  - Location in Zend Server: /usr/local/zendsvr/bin/php-cli
- **Optimized for the command line**
  - No web server variables or HTTP headers
  - Get parameters from \$argv array, not web server \$\_GET and \$\_POST arrays

# Tips for PHP-CLI

- **To ensure success**
  - Use Zend Server 5.0.4 or higher (current is 5.1)
    - Prior versions required a manual edit to work properly
  - Navigate to PHP's "bin" directory where php-cli is located
    - `cd /usr/local/zendsvr/bin`
  - Specify **php-cli** explicitly; "php" by itself won't work (it used to in Zend Core)

# Techie note

- **Implemented differently on IBM i than on other systems**
  - On IBM i, php-cli is a shell script that sets up paths for PHP
  - On Linux, Windows, et al., php-cli is an actual executable file

# PHP-CLI doesn't need a web server to run

- **Apache web server does not have to be running**
- **Scripts needn't be in a web-accessible location**
  - In fact, for security, you should put them anywhere BUT the web server root, unless you also want the scripts to be run in a browser.
  - That means don't put them in `/www/zendsvr/htdocs`
  - Prefer a location such as `/php/appname/myscript.php`
    - Note: no "www" in the path. Not accessible to the web
    - Choose a convention so you'll be able to find the scripts
    - Assign \*RX permissions for chosen user
      - Example: `CHGAUT OBJ('/php/appname/') USER(MYUSER) DTAAUT(*RX) SUBTREE(*ALL)`

# PHP-CLI provides sanity checks

- **Independence from the web server makes it a good tool to check health of PHP installation**
- **`php-cli -v` outputs PHP version information**
- **`php-cli -i` outputs the equivalent of `phpinfo()`**
  - Shows what extensions and options you have loaded. An excerpt:  
`IBM DB2, Cloudscape and Apache Derby support => enabled`  
`Module release => 1.8.1`
  - Tip: filter results by piping to “grep”
    - `php-cli -i | grep ssl` outputs only ssl info
    - `php-cli -i | grep db2` outputs only db2 info
- **Use `php-cli -h` to see all options**

# PHP-CLI Runs via PASE or QSHELL

- **Two environments**
  - **PASE** (Portable Application System Environment): AIX-like environment on the IBM i
  - **QSHELL**: a scripting environment
- **I prefer PASE for calling php-cli**
  - PASE lets you pass parameters separately
  - Qshell requires a single concatenated command string
  - But you'll see Qshell in articles, or may have a need for it
- **I compared PASE and QSHELL in this article:**
  - <http://www.mcpressonline.com/tips-techniques/programming/techtip-qshell-vs-pase.html>

# PASE Primer

# Calling applications in PASE

- **If an app runs in AIX it will probably run in PASE**
- **Invoke with QP2TERM and QP2SHELL**
  - Interactively with QP2TERM (“TERM” = “terminal”)
    - Two steps: start QP2TERM, then run applicatin
    - **CALL QP2TERM**
    - `/usr/local/zendsvr/bin/php-cli`  
`'/php/sendinvoice.php' &EMAIL &NAME 'Y'`
  - From CL or to launch application in one step
    - **CALL QP2SHELL PARM( '/usr/local/zendsvr/bin/php-cli'**  
**'/php/sendinvoice.php' &EMAIL &NAME 'Y' )**
    - Don't confuse these with QSHELL environment

# Parameters for QP2SHELL or QP2SHELL2

## *From IBM Infocenter entry for QP2SHELL*

- **pathName**

- Character string that identifies the stream file in the Integrated File System that contains the OS/400 PASE program to run. The pathName string may include an absolute or relative path qualifier in addition to the stream file name. Relative path names are resolved using the current working directory.

- **argument strings**

- Optional character strings that are passed to the OS/400 PASE program as arguments. The system copies argument strings into OS/400 PASE memory and converts them from the job default CCSID to the CCSID specified by ILE environment variable QIBM\_PASE\_CCSID.

**Note:** When calling QP2SHELL or QP2SHELL2 from CL, be sure to quote any argument string that could be interpreted as a numeric value. CL converts unquoted numeric arguments to decimal or floating-point format, which does not match the assumption made by these APIs and OS/400 PASE programs that all arguments are null-terminated character strings.

# QP2SHELL Example (non-PHP)

```
CALL PGM(QP2SHELL) PARM('/mypath/C42PDF' '-o' 'invoice.pdf'  
  '-l' + 'tifflist.txt')
```

- **Example of calling an AIX binary in PASE**
- **C42PDF binary combines “TYPE IV TIFF” images into a multi-page PDF file**
- **Compiled binary at <http://c42pdf.ffii.org>**
- **Works well on IBM i**

# Qshell Primer

# Qshell is another UNIX-like environment

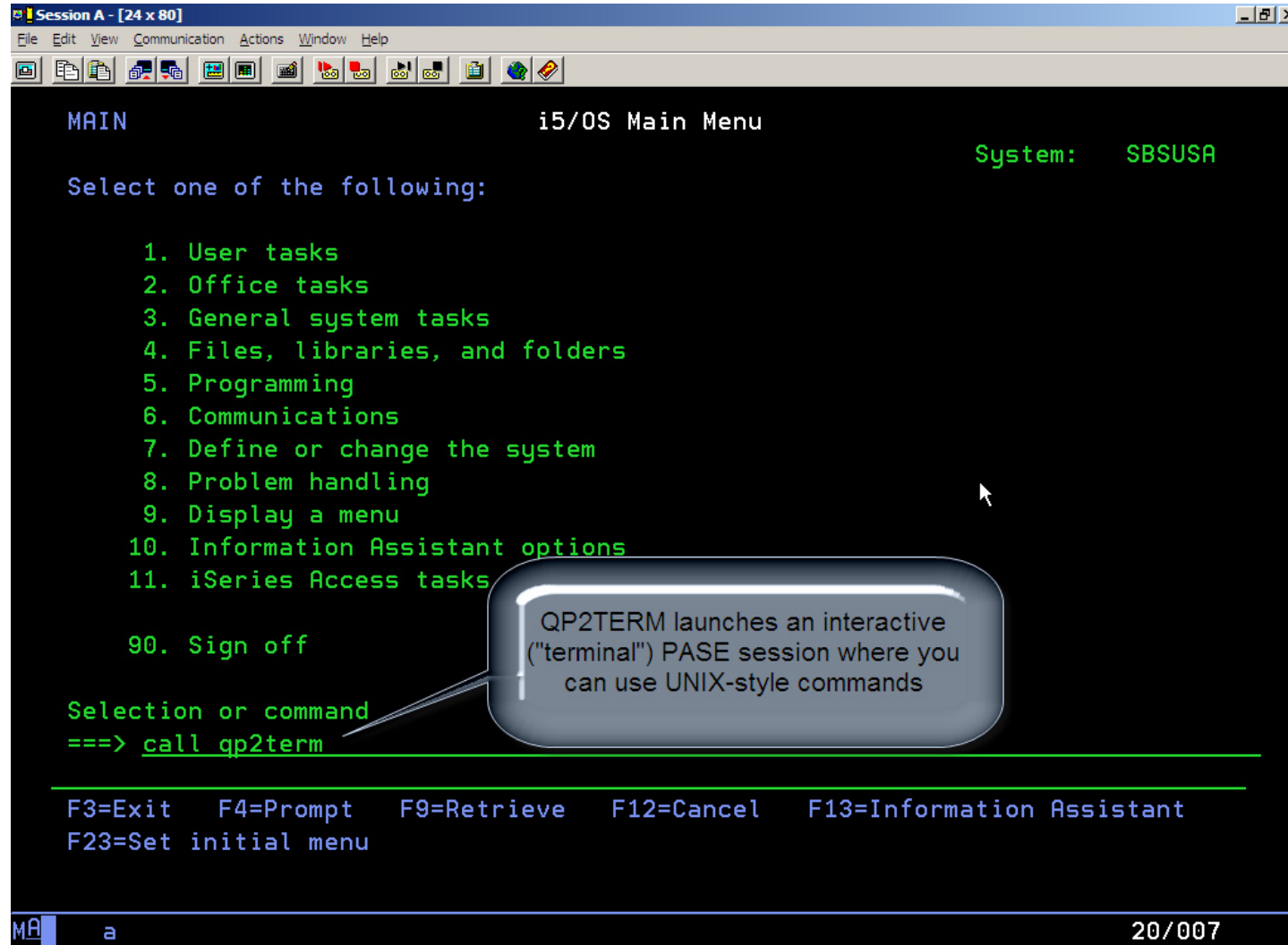
- **Run commands on its command line or launch Qshell environment from CL, etc.**
- **Allows complex shell script utilities**
- **For our purposes, use it similarly to PASE, except you'll have to concatenate commands into a single string**

# Using Qshell

- **Invoke with QSH and QSH CMD()**
  - Interactively
    - `QSH` by itself
  - From CL or to launch application in one step
    - `QSH CMD ( 'MYCOMMAND' )`
    - Launches a command or application of your choice
- **Note: QSH is equivalent to STRQSH**

**Try PHP-CLI**

# Start PASE session with QP2TERM



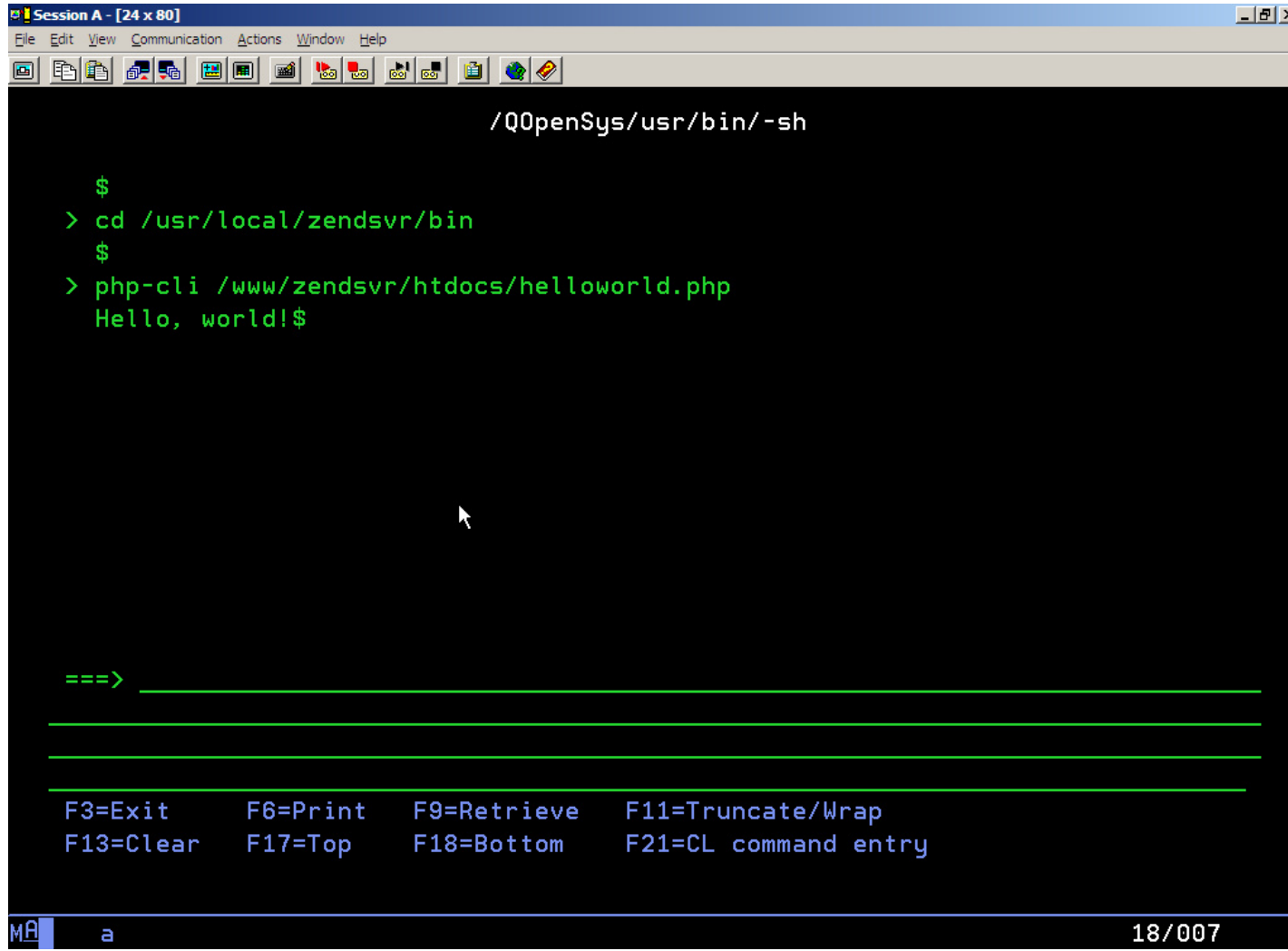
# Do a simple version check: php-cli -v

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
/QOpenSys/usr/bin/-sh

$
> cd /usr/local/zendsvr/bin
$
> php-cli -v
PHP 5.2.10 (cli) (built: Sep  9 2009 11:50:07)
Copyright (c) 1997-2009 The PHP Group
Zend Engine v2.2.0, Copyright (c) 1998-2009 Zend Technologies
    with Zend Extension Manager v5.1, Copyright (c) 2003-2009, by Zend Techno
logies
    - with Zend Data Cache v4.0, Copyright (c) 2004-2009, by Zend Technolog
ies [loaded] [licensed] [disabled]
    - with Zend Java Bridge v3.1, Copyright (c) 2004-2009, by Zend Technologi
es [loaded] [licensed] [enabled]
    - with Zend Job Queue v4.0, Copyright (c) 2004-2009, by Zend Technologies

===>
F3=Exit    F6=Print   F9=Retrieve F11=Truncate/Wrap
F13=Clear  F17=Top    F18=Bottom  F21=CL command entry
```

# Now run our “Hello World” script



The screenshot shows a terminal window titled "Session A - [24 x 80]". The terminal prompt is `/QOpenSys/usr/bin/-sh`. The user enters `$` at the prompt. Then, they enter `> cd /usr/local/zendsvr/bin`, and the prompt changes to `$`. Next, they enter `> php-cli /www/zendsvr/htdocs/helloworld.php`, and the terminal outputs `Hello, world!$`. Below the terminal output, there are three horizontal lines and a list of function key shortcuts: `F3=Exit`, `F6=Print`, `F9=Retrieve`, `F11=Truncate/Wrap`, `F13=Clear`, `F17=Top`, `F18=Bottom`, and `F21=CL command entry`. At the bottom left of the terminal window, there is a small icon and the letter `a`. At the bottom right, the text `18/007` is displayed.

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
/QOpenSys/usr/bin/-sh

$
> cd /usr/local/zendsvr/bin
$
> php-cli /www/zendsvr/htdocs/helloworld.php
Hello, world!$

===> _____
_____
_____

F3=Exit    F6=Print    F9=Retrieve  F11=Truncate/Wrap
F13=Clear  F17=Top     F18=Bottom  F21=CL command entry

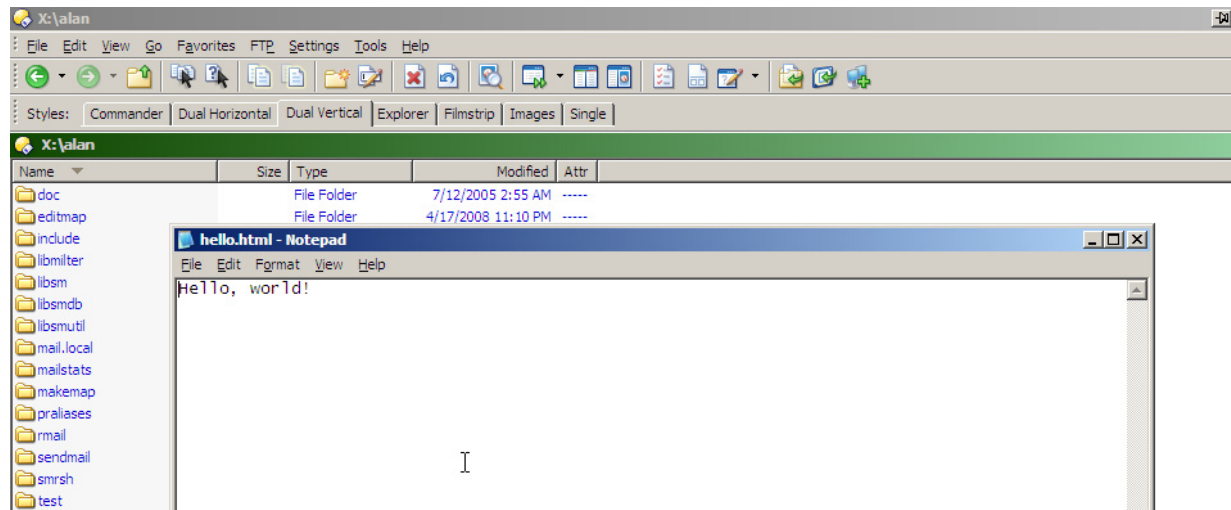
MR a 18/007
```

# Output the results to an IFS file

Type this into QP2TERM (note 'pipe' symbol):

```
> php-cli /www/zendsvr/htdocs/helloworld.php > /alan/hello.html  
$
```

Produces a file that I can view in Notepad:



# Email with PHP

```
<?php

// emailme.php

// establish "from" user (optional)
ini_set("sendmail_from","sender@example.org");

// Parameters: recipient, subject, body
mail("alan@alanseiden.com",
     "Sent from CL",
     "CL can call PHP scripts.");

?>
```

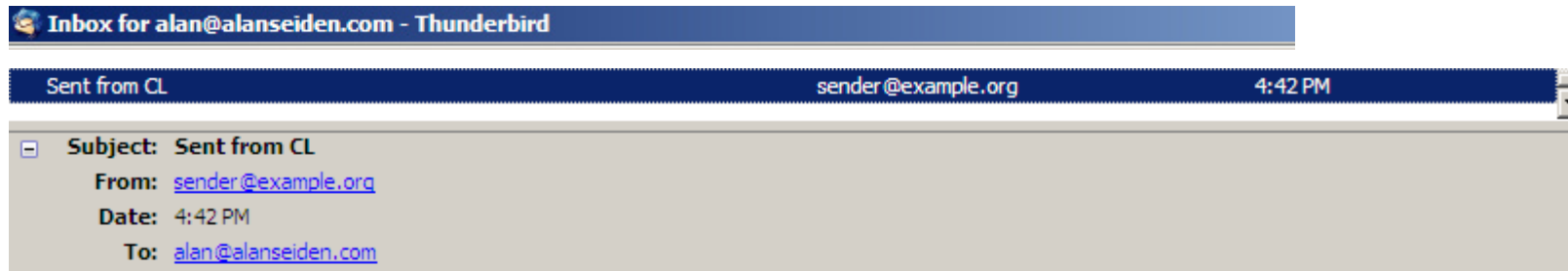
# Call the email script from a CL program

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Columns . . . : 1 71 Edit ALAN/QCLSRC
SEU==> CALLPHP
***** Beginning of data *****
0001.00 CALL PGM(QP2SHELL) +
0002.00 PARM('/usr/local/zendsvr/bin/php-cli' +
0003.00 '/www/zendsvr/htdocs/emailme.php')
***** End of data *****
```

## Now call your CL

```
Type command, press Enter.
==> call alan/callphp
```

# I received the message



CL can call PHP scripts.



# How to automate it?

- Add a job schedule entry (ADDJOBSCDE) for your CL program
- (In the UNIX world they call this a “CRON job.”)
- ```
ADDJOBSCDE JOB(SNDPRICES) SCDDATE(*NONE)
CMD(CALL PGM(MYLIB/PRICEPGM))
SCDDAY(*FRI) SCDTIME('23:00')
FRQ(*WEEKLY) RCYACN(*NOSBM)
JOB(MYLIB/PRICEJOB)
```

# Receive params in PHP

# Command-line arguments

- **When we use PHP in a website, we receive parameters using the `$_GET` and `$_POST` arrays**
- **How do we get parameters/arguments when PHP is called from the command line or a CL?**

# Two special variables

- **\$argv: array of arguments**
  - \$argv[0] is always the PHP script name itself, e.g. helloworld.php
  - \$argv[1], \$argv[2], and so on are the actual arguments
- **\$argc: count (how many) of arguments**
  - Use it to check that you've received what you expected

# Args.php gets params with \$argc and \$argv

```
<?php

// args.php
// remember, [0] is the script itself.

echo "\n"; // blank line

// check argument count
if ($argc > 0) {
    echo $argc . " argument(s) received, including the script name
    itself.\n\n";

    foreach ($argv as $num=>$val) {
        echo "arg $num: $val\n";
    }
} else {
    echo "We should have had at least one argument: the script name
    itself.";
}

// usage: /usr/local/zendsvr/bin/php-cli /batchphp/args.php firstarg
// secondarg

?>
```

# Run args.php in QP2TERM (PASE)

- **cd /usr/local/zendsvr/bin**
- **php-cli /batchphp/args.php**  
1 argument(s) received, including the script name itself.

```
arg 0: /batchphp/args.php  
$
```

- **php-cli /batchphp/args.php hello "I like PHP"**  
3 argument(s) received, including the script name itself.

```
arg 0: /batchphp/args.php  
arg 1: hello  
arg 2: I like PHP  
$
```

# Pass parameters into CL, into PHP

```
/* CL named PHPPARAMS */
PGM          PARM(&FIRST &SECOND)
DCL          VAR(&FIRST) TYPE(*CHAR) LEN(25)
DCL          VAR(&SECOND) TYPE(*CHAR) LEN(25)

/* Call PHP with command line arguments */
CALL         PGM(QP2SHELL) +
            PARM(' /USR/LOCAL/ZENDSVR/BIN/PHP-CLI ' +
                ' /BATCHPHP/ARGS.PHP ' +
                &FIRST &SECOND)

ENDPGM
```

## Then...

```
CALL PHPPARAMS PARM('param1 ' 'param2 ')
```

# Examples

# Examples of batch tasks

- **Generate and email Excel spreadsheets or HTML-formatted emails**
- **Access web services**
- **Create PDF files with dynamic text and graphics**
- **Manipulate IFS stream files**

# Excel spreadsheets: simple or formatted

|   | A         | B        |
|---|-----------|----------|
| 1 | firstname | lastname |
| 2 | Joe       | Smith    |
| 3 | Andi      | Gutmans  |
| 4 |           |          |

|    | A                            | B           | C                                                                                   | D            | E           | F                 |          |
|----|------------------------------|-------------|-------------------------------------------------------------------------------------|--------------|-------------|-------------------|----------|
| 1  | <b>Houlihan's price list</b> |             |  |              |             | <b>***October</b> |          |
| 2  |                              |             |                                                                                     | <b>Order</b> |             |                   |          |
| 3  | <b>Description</b>           | <b>Code</b> | <b>Cases</b>                                                                        | <b>Btls</b>  | <b>Size</b> | <b>Pk</b>         | <b>B</b> |
| 4  |                              |             |                                                                                     |              |             |                   |          |
| 5  | <b>WHISKEY</b>               |             |                                                                                     |              |             |                   |          |
| 6  | BEAM 8 STAR                  | 0102030     |                                                                                     |              | LITER       | 12                |          |
| 7  | BELLOWS CLUB BOURBON         | 0204030     |                                                                                     |              | LITER       | 12                |          |
| 8  | BUSHMILLS IRISH              | 0393030     |                                                                                     |              | LITER       | 12                |          |
| 9  | CANADIAN CLUB 6YR            | 0360030     |                                                                                     |              | LITER       | 12                |          |
| 10 | CROWN ROYAL                  | 0387030     |                                                                                     |              | LITER       | 12                |          |
| 11 | JACK DAN #7                  | 0226030     |                                                                                     |              | LITER       | 12                |          |
| 12 | JAMESON REG 80               | 0448930     |                                                                                     |              | LITER       | 12                |          |
| 13 | JIM BEAM BOURBON             | 0260030     |                                                                                     |              | LITER       | 12                |          |
| 14 | JIM BEAM RED STAG            | 0200030     |                                                                                     |              | LITER       | 12                |          |
| 15 | KNOB CREEK BBN 6PK           | 0242030     |                                                                                     |              | LITER       | 6                 |          |
| 16 | MAKERS MARK                  | 0261030     |                                                                                     |              | LITER       | 12                |          |
| 17 | SEAG WH VO                   | 0388030     |                                                                                     |              | LITER       | 12                |          |
| 18 | SEAG WH 7 CROWN              | 0183030     |                                                                                     |              | LITER       | 12                |          |
| 19 | W.TURKEY 101                 | 0331630     |                                                                                     |              | LITER       | 12                |          |
| 20 | W.TURKEY 80                  | 0331530     |                                                                                     |              | LITER       | 12                |          |
| 21 |                              |             |                                                                                     |              |             |                   |          |
|    | <b>COGNAC/BRANDY/GR</b>      |             |                                                                                     |              |             |                   |          |
| 22 | <b>APPA</b>                  |             |                                                                                     |              |             |                   |          |
| 23 | COURVOISIER VSOP             | 1234230     |                                                                                     |              | LITER       | 12                |          |
| 24 | HENNESSY V.S.                | 1225030     |                                                                                     |              | LITER       | 12                |          |

# How to generate spreadsheets

- **Simple CSV spreadsheet**


- Note: change curly quotes to straight quotes in your code

```
function getCsv() {  
    // commas to separate. \n for new line  
    $csvStr = "firstname,lastname\nJoe,Smith\nAndi,Gutmans";  
    return $csvStr;  
}  
$csvStr = getCsv();  
// save it in an IFS file  
$ret = file_put_contents('/dir/names.csv', $csvStr);
```

|   | A         | B        |
|---|-----------|----------|
| 1 | firstname | lastname |
| 2 | Joe       | Smith    |
| 3 | Andi      | Gutmans  |

- **True Excel file with formatting**

- [http://pear.php.net/package/Spreadsheet\\_Excel\\_Writer](http://pear.php.net/package/Spreadsheet_Excel_Writer)
- <http://phpexcel.net> (for newer format, 2007+)
- These free packages allow complex styling, nonscrolling headers, lots more

|   | A                     | B       | C                                                                                     | D    |
|---|-----------------------|---------|---------------------------------------------------------------------------------------|------|
| 1 | Houlihan's price list |         |  |      |
| 2 |                       |         | Order                                                                                 |      |
| 3 | Description           | Code    | Cases                                                                                 | Btls |
| 4 |                       |         |                                                                                       |      |
| 5 | WHISKEY               |         |                                                                                       |      |
| 6 | BEAM 8 STAR           | 0102030 |                                                                                       |      |
| 7 | BELLOWS CLUB BOURBON  | 0204030 |                                                                                       |      |

# Generate and send HTML email

**From:** Alan Seiden/strategic  
**Recipients:** Houlihan's Hasbrouck Hts <andyladrum@aol.com>, Kevin Donahue <kevin.donahue@alliedbeve  
<kjlr1@optonline.net>, <lisa.kligge@alliedbeverage.com>, <jparrott@optonline.net>, <jparrott@gmail.com>, <paulpruckc  
<shawn.kelly@alliedbeverage.com>  
**Subject:** Order from Houlihan's  
**Date:** 02:25:13 PM Yesterday



An order from Houlihan's  
Allied customer 34838, Houlihan's Hasbrouck Hts, HASBROUCK HTS NJ  
**Thank you for ordering from Allied Beverage!**  
Please print for your records.

Order reference number  
Message for your rep  
Order date  
Web confirmation no.

**WHISKEY**

# Sending authenticated HTML mail

```
require_once 'Zend/Mail.php';
require_once 'Zend/Mail/Transport/Smtp.php';
$mail = new Zend_Mail_Transport_Smtp('mail.myhost.com',array('auth' => 'login',
    'username' => 'myuser','password' => 'mypass'));
Zend_Mail::setDefaultTransport($mail);
$mail = new Zend_Mail();

$mail->setFrom($mailFrom, $mailFromName);
$mailBody = '<HTML><table>
<tr><td>Alert 1: hot tea at buffet<td><tr>
<tr><td>Alert 2: decaf available<td><tr>
</table></HTML>';

// add addresses
foreach ($custEmails as $custEmail) {
    $mail->addTo(trim($custEmail['email']), trim($custEmail['name']));
} //(foreach ($custEmails as $custEmail) )

$mail->AddTo('alan@alanseiden.com', 'Alan Seiden');
$mail->AddCc('president@common.org', 'Mr. President');

$mail->setSubject("Alert of vital importance");
$mail->setBodyHTML($mailBody);
// attach CSV file
$csvStr = getCsv(); // string
$attachment = $mail->createAttachment($csvStr, 'application/csv');
$attachment->filename = 'names.csv';
$mail->send();
```

# Generate a PDF from text provided

```
<?php
// Zend_Pdf docs: http://files.zend.com/help/Zend-Framework/zend.pdf.drawing.html
require_once 'Zend/Pdf.php';

$textToShow = $argv[1]; // assume argument is present

// Create new PDF
$pdf = new Zend_Pdf();

// Add new page to the document
$page = $pdf->newPage(Zend_Pdf_Page::SIZE_A4);
$pdf->pages[] = $page;

// Set font
$page->setFont(Zend_Pdf_Font::fontWithName(Zend_Pdf_Font::FONT_HELVETICA), 40);

// Draw text
$page->drawText($textToShow, 100, 510);
$this->_helper->layout()->disableLayout();
$this->_helper->viewRenderer->setNoRender();
// plus I create an ellipse shape (code not shown here...see zend documentation,
// above, for how to do that)
$pdf->save('/alan/pdffromtext.pdf'); // now save to a file on IFS
?>
```

# Run PDF generator

```
/usr/local/zendsvr/bin/php-cli  
  /batchphp/pdffromtext.php "Look, ma! I'm  
  in a PDF!"
```

# Result

Look ma, I'm in a PDF!



# Method #1.5: UNIXCMD

# Get a result back from PHP?

- **This requirement is arising in the PHP/i world:**
  - RPG needs to call PHP and get parameters back
- **Answer: UNIXCMD**
  - Free software from Scott Klement
  - <http://www.scottklement.com/unixcmd>
- **Answer #2: RPG POPEN**
  - Free software by IBM's Tony Cairns
  - <http://174.79.32.155/wiki/RPGpopen/RPGpopen>

# UNIXCMD

- **Creates a “pipe” to the QSHELL or PASE environment**
  - Uses STDIN/STDOUT streams of UNIX
  - Yet another way to pass data to PHP
- **Read article by Scott Klement**
  - <http://systeminetwork.com/article/run-qshellpase-commands-rpg-special-files>
- **Items to adapt in Scott’s article**
  - Change references of /zend/core/ to /zendsvr/
  - Change references of php to php-cli

# Method #2: PHP Job Queue

# Job Queue is part of Zend Server (non-CE)

- **Web-based**
- **More flexible than the CL technique**
- From the documentation: “Long-running report generation, order processing, database cleanup, and pulling of RSS feeds are some examples of jobs that can be executed asynchronously. Zend Server for IBM i incorporates a job queue to provide full support for creating, executing and managing jobs to optimize application performance and reduce server load, **minimizing application bottlenecks** and improving the end-user experience. “

# Job Queue allows you to...

- **Move tasks into a separate execution queue**
  - Off-load to new process, later time, or different server
- **Execute certain tasks at a specified time**
  - Distribute processing load to off-hours
- **Use complex parameters**
- **Do it from a PHP API or Zend Server GUI**
- **Launch faster than PHP-CLI**

# Creating Jobs

- **Jobs are created using the `createHttpJob()` method**

```
$queue = new ZendJobQueue();  
$queue->createHttpJob('http://backend.local/jobs/somejob.php');
```

- **Pass parameters**

- Simple: via query string `$_GET`
- Complex: as an associative array of key => value pairs

- **Set job options**

- Name, priority, schedule, etc.
- Create deferred or recurring jobs

- **Launch right from PHP or use the Zend Server UI**

# More about Zend Job Queue

Specs: <http://files.zend.com/help/Zend-Server/jobqueue-global-api.html>

Tutorial: [http://files.zend.com/help/Zend-Server/working\\_with\\_jobs.htm](http://files.zend.com/help/Zend-Server/working_with_jobs.htm)

## API signature for createHttpJob:

```
int ZendJobQueue::createHttpJob (
    string $url,
    array $vars,
    mixed $options)
```

## Example with nested array variables:

```
$queue = new ZendJobQueue();
$queue->createHttpJob(
    'http://yourIBMi.com/send_alert.php',
    array('from'=> 'alan@alaseiden.com',
        'to'=>array('someone@example.com',
            'another@example.com')),
    array('persistent'=>false) );
```

# Job Queue Management

View job status and manage execution

The screenshot displays the Zend Server web interface for job queue management. The browser address bar shows the URL: `http://pc-karnaf:10081/ZendServer/Index/Index#1252590602687`. The interface includes a navigation menu with options like Monitor, Rule Management, Server Setup, and Administration. Below the menu, there are tabs for Dashboard, Events, Jobs, Queue Statistics, Code Tracing, Server Info, PHP Info, and Logs. A filter dropdown is set to 'All Jobs'. The main content area shows a table of jobs with the following data:

| ID  | URL                                       | Application | Status    | Priority | Run Time     |
|-----|-------------------------------------------|-------------|-----------|----------|--------------|
| 333 | http://localhost/test/xxx.php?dump_data=1 | local       | scheduled | normal   | 10-Sep 17:16 |
| 332 | http://localhost/test/xxx.php?dump_data=1 | local       | failed    | normal   | 10-Sep 16:16 |
| 331 | http://localhost/test/xxx.php?dump_data=1 | local       | failed    | normal   | 10-Sep 15:16 |
| 330 | http://localhost/test/xxx.php?dump_data=1 | local       | failed    | normal   | 10-Sep 14:16 |
| 329 | http://localhost/test/xxx.php?dump_data=1 | local       | failed    | normal   | 10-Sep 13:16 |
| 328 | http://localhost/test/xxx.php?dump_data=1 | local       | failed    | normal   | 10-Sep 12:16 |
| 327 | http://localhost/test/xxx.php?dump_data=1 | local       | failed    | normal   | 10-Sep 11:16 |
| 326 | http://localhost/test/xxx.php?dump_data=1 | local       | completed | normal   | 10-Sep 10:16 |
| 325 | http://localhost/test/xxx.php?dump_data=1 | local       | completed | normal   | 10-Sep 09:16 |
| 324 | http://localhost/test/xxx.php?dump_data=1 | local       | completed | normal   | 10-Sep 08:16 |
| 323 | http://localhost/test/xxx.php?dump_data=1 | local       | completed | normal   | 10-Sep 07:16 |
| 322 | http://localhost/test/xxx.php?dump_data=1 | local       | completed | normal   | 10-Sep 06:16 |

At the bottom of the interface, there are controls for 'Delete', 'Restart PHP', and search options like 'Next', 'Previous', 'Highlight all', and 'Match case'.

# Other Job Capabilities

- **Managing priorities**
- **Job dependencies**
- **Querying for jobs**
- **Checking job status and queue statistics**
- **Suspending and resuming recurring jobs & queues**
- **Passing custom HTTP headers**
- **Management of jobs**
  - Handling failures and controlling retries
  - Code tracing, monitor

# Other ideas

# Other ways to use batch PHP

- **Web services to synchronize data**
  - Call from interactive RPG
  - OR schedule for nighttime
- **Use Zend Framework's "livedocx" service to merge data with .doc templates/overlays to create MS Word .docx files**
- **Authenticate users with an Active Directory server**

**Now it's your turn**

# Share what you've been working on

- **Or brainstorm some ideas**

# Alan's upcoming appearances

**MITEC, OCEAN....**

**Complete list here:**

**<http://alanseiden.com/presentations/upcoming>**

In New York City? I host the NYC Zend Framework Meetup

**<http://www.meetup.com/ZendFramework-NYCmetro/>**

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