



The PHP Company

# Zend Server for IBM i 5.6 Update

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To watch the webinar recording: <http://bit.ly/wGkoCD>

# Agenda

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- Open Source Toolkit
- Compatibility Wrapper
- Application Deployment
- Q&A

# Zend Server 5.6 for IBM i

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## Key Features

- ▶ Shipping with IBM i 6.1 & 7.1
- ▶ New Open Source Toolkit **\*\*\*GA\*\*\***
- ▶ Performance enhancements
- ▶ PHP 5.3.8
- ▶ Zend Framework 1.11.3
- ▶ Application Deployment
- ▶ PTF Update as well as full package



# Zend Server Update

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

Open Source Toolkit

# Why a new toolkit

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- Open Source is the plan
- Open Source languages using an Open Source toolkit
  - ▶ Makes sense to me...
- opportunity for community involvement
- Created enhancements beyond previous toolkit
- No effect on DB2 functions, only the i5 functions are impacted.

# But I liked the old one, what are my options?

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- **Upgrade customers**

- ▶ Can continue to use Easycom or the new toolkit
- ▶ PTF upgrade process will not remove Easycom
- ▶ Support from Aura

- **New download customers**

- ▶ New Open Source toolkit
- ▶ Easycom no longer ships with Zend Server 5.6 and higher
- ▶ Compatibility Wrapper...
  - intercepts i5 function calls
  - Passes to new toolkit, transparently

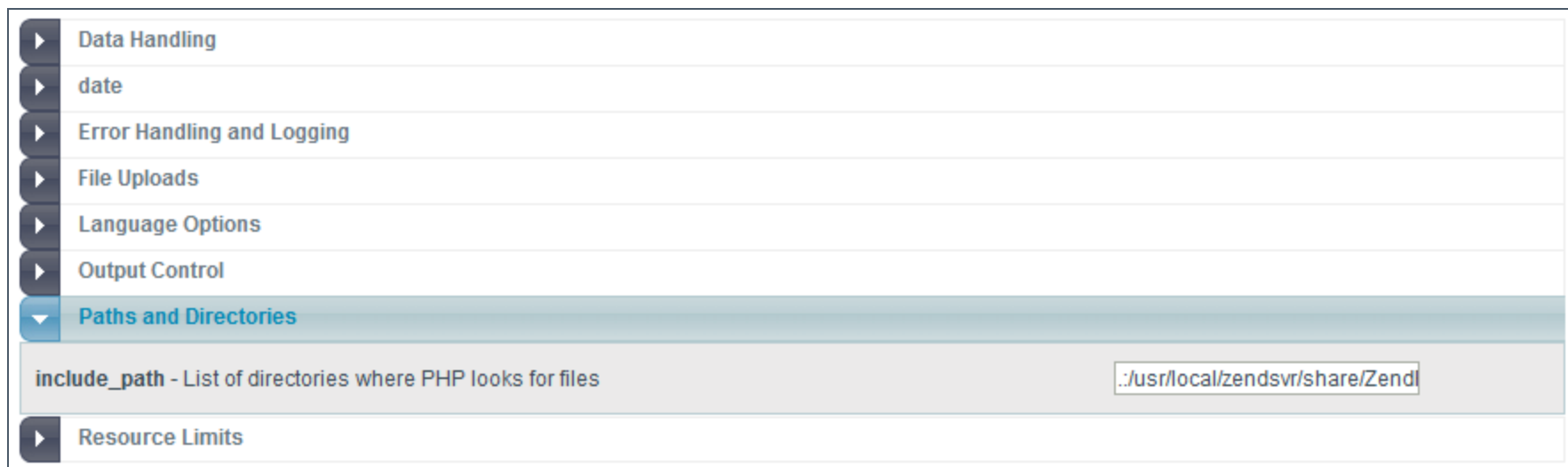
# New toolkit FAQ

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- Zend official position and response is in the forums
- Zend forums are a wonderful source of PHP info
- Forum PHP on IBM i → Zend Server for IBM i → New Toolkit
  - ▶ <http://forums.zend.com/viewtopic.php?f=113&t=41648>
- Contact Zend with questions.

# Notes on installation (PTF update only)

- Best to update Include\_Path in php.ini
  - ▶ PTF does not change it, first do no harm...
- Head to Server Setup → Directives → Paths & Directories
- Add: `:/usr/local/zendsvr/share/ToolkitAPI`

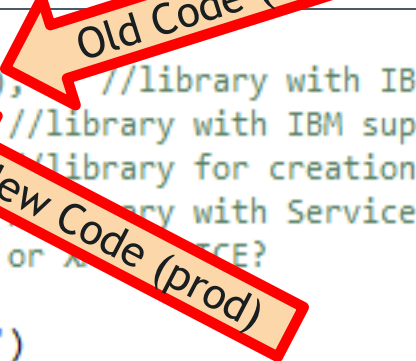


The screenshot shows a web-based configuration interface for PHP. On the left, a sidebar contains several expandable sections: Data Handling, date, Error Handling and Logging, File Uploads, Language Options, Output Control, Paths and Directories (which is currently expanded), and Resource Limits. The main content area displays the 'include\_path' directive, described as 'List of directories where PHP looks for files'. The value entered in the text box is ':/usr/local/zendsvr/share/Zend'.

# Bug in demos...sort of...

- Current toolkit default to library XMLService (test lib)
- Utilities are loaded into ZENDSVR. (production lib)
- Need to tweak a file setting.
- File : *[/usr/local/zendsvr/share/ToolkitAPI/ToolkitServiceSet.php](#)*

```
4
5 //define('XMLSERVICELIB', 'XMLSERVICE'); //library with IBM support objects
6 define('XMLSERVICELIB', 'ZENDSVR'); //library with IBM support objects
7 define('DFTLIB', 'QGPL'); //library for creation of temprorary objects (was QGPL)
8 define('ZSTOOLKITLIB', 'ZENDSVR'); //library with Service program
9 define('ZSTOOLKITPGM', 'ZSXMLSRV'); // or XMLSERVICE?
10 define('DBPROTOCOL', 'ibm_db2');
11 define('XMLINTERNALKEY', '/tmp/Toolkit')
```



# New toolkit is Object Oriented

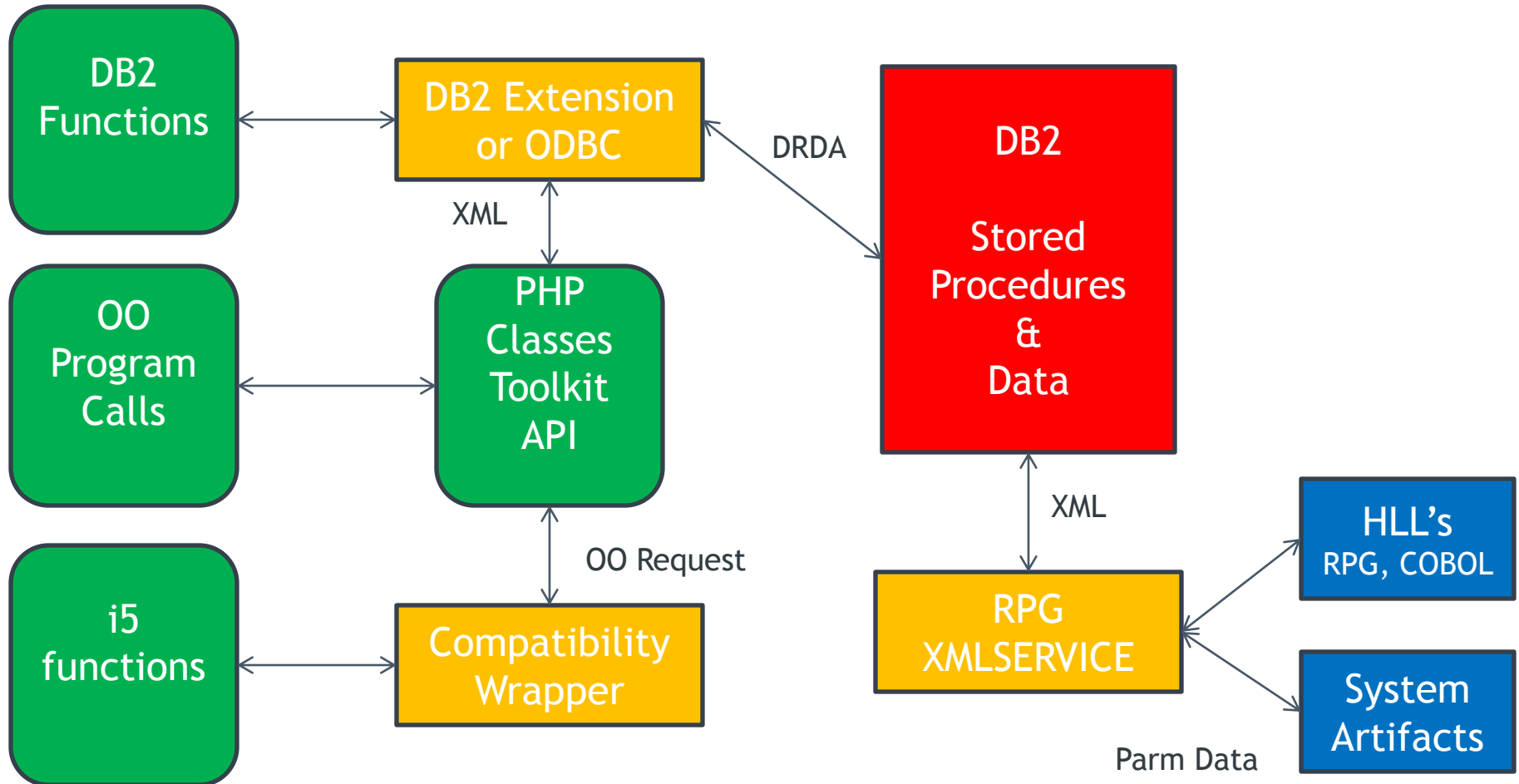
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- Series of classes that “wrap” the IBM project
- All PHP but Object Oriented...(wait, there’s more!)
- Zend built the PHP wrapper

- Sam Pinkhasov, Zend



# Toolkit Plumbing from 10,000 feet



# XML Service

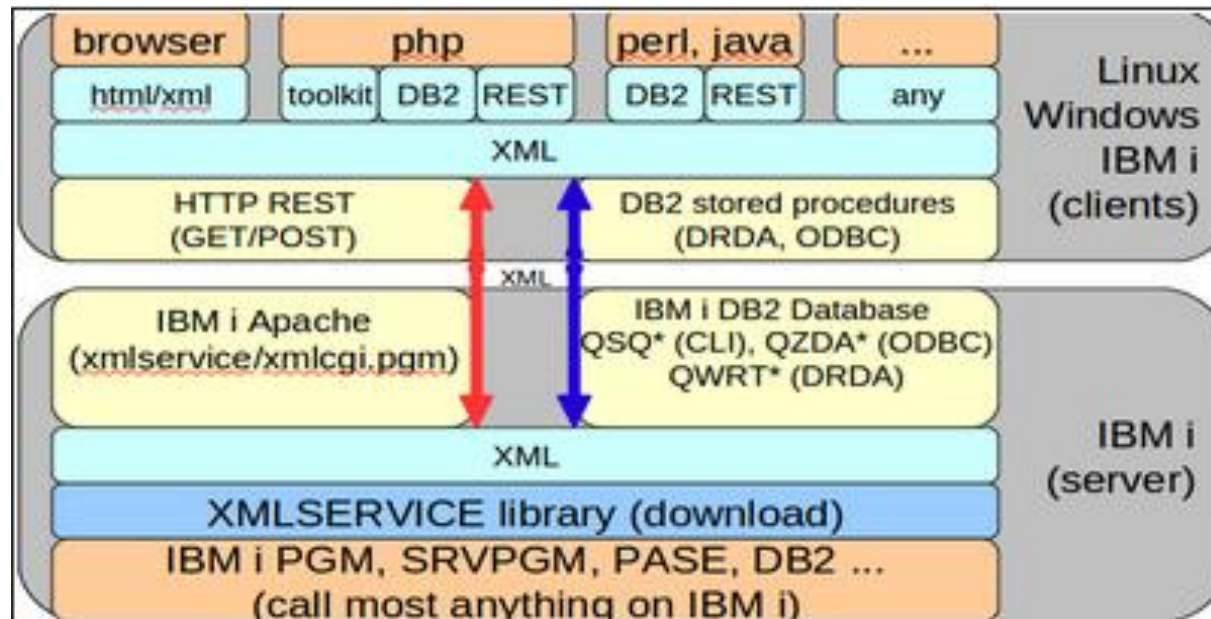
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- IBM has open sourced XMLService.
- First Open Source project on IBM i. (that I know of...)
- Made up of RPG, CL and DB2 stored procedures (SQL)
  
- Tony Cairns, IBM Rochester



# XML Service

- Cross platform
- Language agnostic
- Basic plumbing for all open source languages



# Compatibility Wrapper

- Intercepts existing i5 function requests
- Written in pure PHP
- Passes them on to OO PHP which then...
- Passes on to XML Service



- Alan Seiden, SBS & [alanseiden.com](http://alanseiden.com)

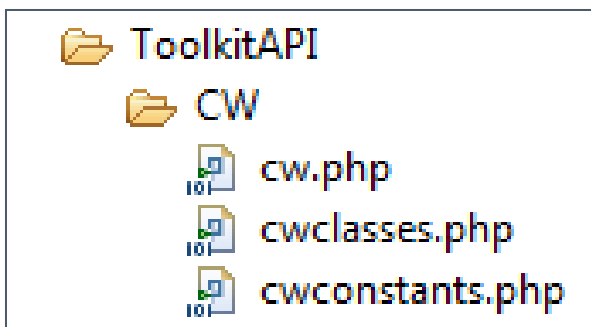


# Minor change to existing PHP script

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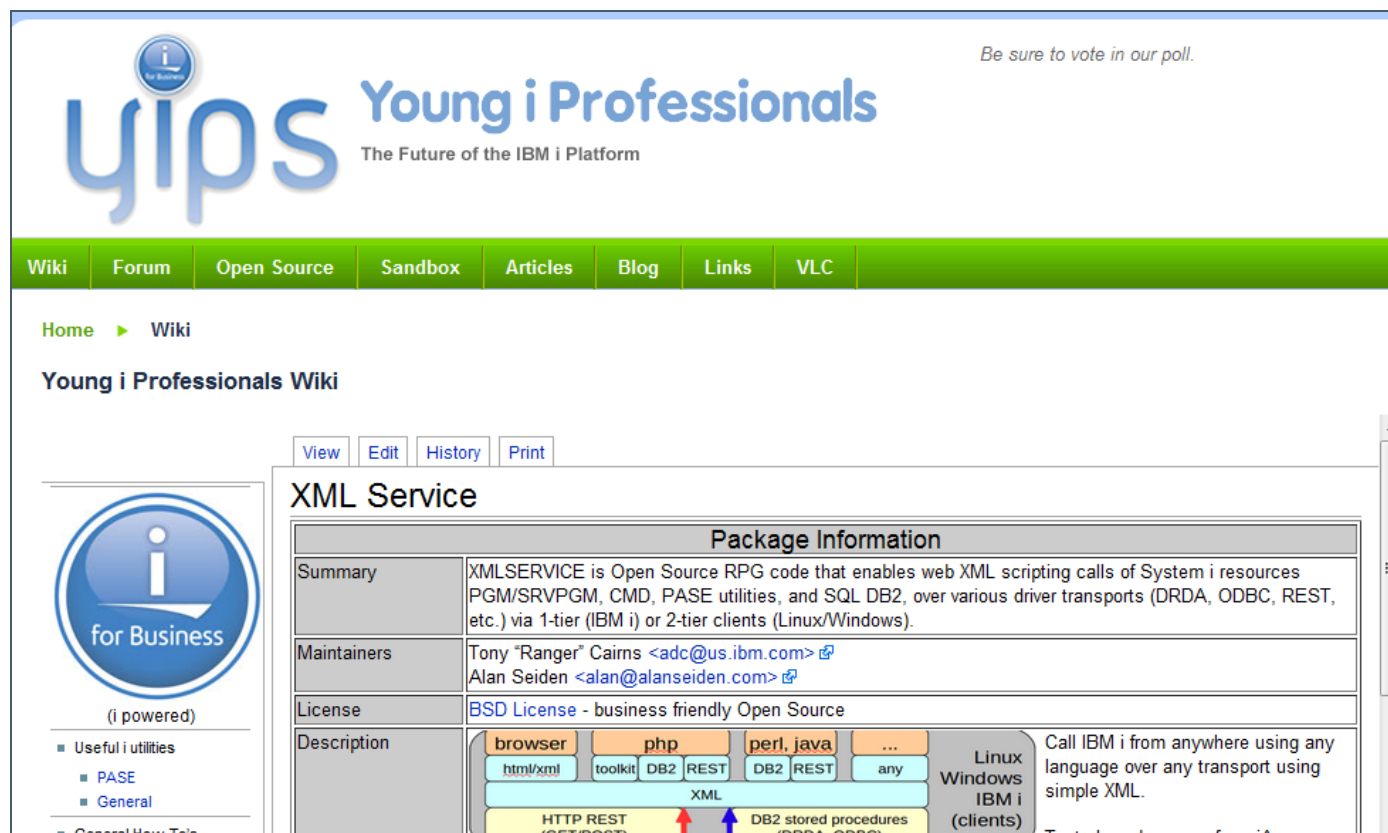
- Require the class...

```
18 require_once( 'CW/cw.php' );
```



# Source Code on YiPs...for now...

- <http://youngiprofessionals.com/>



The screenshot shows the Young i Professionals Wiki page for the XML Service package. The page header includes the YIPs logo and the tagline "The Future of the IBM i Platform". A navigation bar contains links for Wiki, Forum, Open Source, Sandbox, Articles, Blog, Links, and VLC. The main content area displays the package information for XML Service, including a summary, maintainers, license, and a description with a diagram of supported transports and languages.

Be sure to vote in our poll.

## Young i Professionals

The Future of the IBM i Platform

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### Young i Professionals Wiki

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#### XML Service

Package Information																	
Summary	XMLSERVICE is Open Source RPG code that enables web XML scripting calls of System i resources PGM/SRVPGM, CMD, PASE utilities, and SQL DB2, over various driver transports (DRDA, ODBC, REST, etc.) via 1-tier (IBM i) or 2-tier clients (Linux/Windows).																
Maintainers	Tony "Ranger" Cairns < <a href="mailto:adc@us.ibm.com">adc@us.ibm.com</a> > <a href="#">✉</a> Alan Seiden < <a href="mailto:alan@alanseiden.com">alan@alanseiden.com</a> > <a href="#">✉</a>																
License	BSD License - business friendly Open Source																
Description	<table border="1"><tr><td>browser</td><td>php</td><td>perl, java</td><td>...</td></tr><tr><td>html/xml</td><td>toolkit DB2 REST</td><td>DB2 REST</td><td>any</td></tr><tr><td colspan="4" style="text-align: center;">XML</td></tr><tr><td colspan="2">HTTP REST (GET/POST)</td><td>DB2 stored procedures (DRDA, ODBC)</td><td>Linux Windows IBM i (clients)</td></tr></table> <p>Call IBM i from anywhere using any language over any transport using simple XML.</p>	browser	php	perl, java	...	html/xml	toolkit DB2 REST	DB2 REST	any	XML				HTTP REST (GET/POST)		DB2 stored procedures (DRDA, ODBC)	Linux Windows IBM i (clients)
browser	php	perl, java	...														
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# PHP Classes

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- Class where all wrapper functions start
  - ▶ Yes, this is OO but not too bad...
  - ▶ Look at it and poke around, It's OK!
  - ▶ This is why we need the path set correctly

```
include_once 'ToolkitService.php';
```

# Housekeeping...

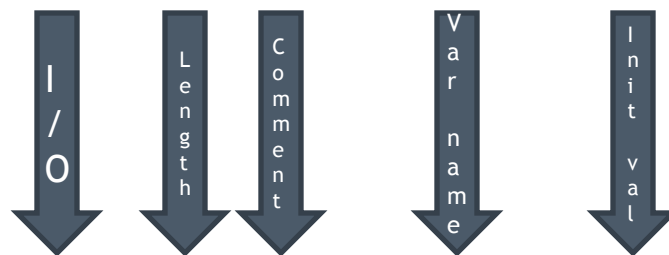
- Need to set the extension and instantiate the object
  - ▶ Singleton pattern
  - ▶ Try & Catch
  - ▶ Can put this in your own include

```
21 $extension='ibm_db2';
22 try {
23     $ToolkitServiceObj = ToolkitService::getInstance($db, $user, $pass, $extension);
24 }
25
26 catch (Exception $e)
27 {
28     echo $e->getMessage(), "\n";
29     exit();
30 }
31
32
33 $ToolkitServiceObj->setToolkitServiceParams(array('InternalKey'=>"/tmp/$user"));
34 $code = $_POST ['code'];
35 $desc = ' ';
```

# Now the program call

- Set parameters based on function

- ▶ Call program
- ▶ Output results



```
37 $param[] = $ToolkitServiceObj->AddParameterChar('both', 10, 'CODE', 'CODE', $code);
38 $param[] = $ToolkitServiceObj->AddParameterChar('both', 10, 'DESC', 'DESC', $desc);
39
40 $result = $ToolkitServiceObj->PgmCall("COMMONPGM", "ZENDSVR", $param, null, null);
41
42 if($result){
43     showTable( $result['io_param']);
44 }
45 else
46     echo "Execution failed.";
```

# AddParameterChar

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- Located in ToolkitService.php
  - ▶ /usr/local/zendsvr/share/ToolkitAPI
  - ▶ Uses CharParam which extends ProgramParam, etc...

```
719  static function AddParameterChar( $io, $size , $comment, $varName = '', $value , $varying = 'off', $dimension = 0) {  
720      return ( new CharParam( $io, $size , $comment, $varName, $value , $varying , $dimension = 0));  
721  }
```

# Before and after...Part 1

- Existing code call

```
3 <?php
4 $user = ''; $password = '';
5
6 $conn_resource = i5_connect ( '127.0.0.1', $user, $password );
7 if ($conn_resource === false) {
8     echo "Connection failed. SQL Err:" . i5_errno ();
9     echo "<br>";
10    echo i5_errormsg ();
11    exit ();
12 }
13
14 $desc = array (array ("name" => "CODE", "io" => I5_INOUT, "type" => I5_TYPE_CHAR, "length" => "10" ),
15              array ("name" => "DESC", "io" => I5_INOUT, "type" => I5_TYPE_CHAR, "length" => "10" ) );
16
17 $prog = i5_program_prepare ( "ZENDSVR/COMMONPGM", $desc );
18 if ($prog === FALSE) {
19     $errorTab = i5_error ();
20     echo "Program prepare failed <br>\n";
21     var_dump ( $errorTab );
22     die ();
23 }
24
25 /* Execute Program */
26 $paramin = array ("CODE" => '1', "DESC" => " " );
27 $paramout = array ("CODE" => "var1", "DESC" => "var2" );
28 $ret = i5_program_call ( $prog, $paramin, $paramout );
```

## Before and after...Part 2

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- New Open Source Toolkit program call

```
76     //Instantiate the toolkit service object...
77 $ToolkitServiceObj->setToolkitServiceParams(array('InternalKey'=>"/tmp/$user"));
78
79 // Program call...
80 $code = 2; //1 = IBM and 2 = Zend...
81 $desc = ' ';
82
83 $param[] = $ToolkitServiceObj->AddParameterChar('both', 10, 'CODE', 'CODE', $code);
84 $param[] = $ToolkitServiceObj->AddParameterChar('both', 10, 'DESC', 'DESC', $desc);
85
86 $result = $ToolkitServiceObj->PgmCall("COMMONPGM", "ZENDSVR", $param, null, null);
```

# Why the compatibility wrapper?

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- In the past 6 years many folks have invested in i5 functions
- New toolkit is OOP but i5 functions support procedural code
- Smooth the transition from Easycom to Open Source toolkit
- Currently in beta

# Zend Server Update

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

## Application Deployment

# Package up applications

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- Easily create application packages that consist of source code, metadata and scripts
- Deploy applications on any number of servers using a simple wizard or through a Web API
- View deployment errors in Zend Server or Zend Server Cluster Manager Events view
- Rapidly deploy application updates or remove applications from servers
- Full support for on-premise and cloud deployments
- Use with custom or 3rd party applications, such as Magento and Drupal

# Zend Server Update

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

Wrap it up

# Webcasts

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- February 15 - Application Deployment on IBM i
- March 6 - Performance Tuning PHP and IBM i
- April 12 - Stored Procedures Part II (RPG, etc.)
- May 2 - Additional Functions of DB2 with PHP on IBM i

**Your thoughts???**

# Events where you'll find Zend..

- User groups

- ▶ Status (Ft Wayne, IN) Feb 14

- <http://www.statususer.org/html/20120214.html>

- ▶ OCEAN (Orange County, CA) Feb 21

- <http://www.ocean400.org/>

- ▶ WMCPA (Lake Geneva, WI) Mar 20-22

- <http://wmcpa.org/>

- ▶ NEUGC (Boston, MA) April 2-4

- <http://neugc.org/>



**STATUS**

An IBM Midrange User Group



# Events where you'll find Zend...(cont.)

- Major venues

- ▶ RPG & DB2 Summit (Ft. Worth, TX) Mar 25-28

- <http://www.systemideveloper.com/Summit/conferences.html>



- ▶ COMMON Annual Meeting and Expo (Anaheim, CA) May 6-9

- <http://www.common.org/index.php/annualmeeting.html>



- ▶ COMMON Fall Conference (Columbus, OH) Sep 24-26

- <http://www.common.org/index.php/fall-conference-and-expo.html>

# Q&A

mike.p@zend.com

To watch the webinar recording: <http://bit.ly/wGkoCD>