PHP on IBM i: What’s New with Zend Server 5 for IBM i

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Audience

• Used PHP in Zend Core/Platform
• New to Zend PHP
• Looking to understand the strategic direction
• Anyone who does not believe third party vendors ARE investing in this space...
Agenda

• Review the IBM relationship
• Technical Overview
• Product Installation
• Community Edition Features
  ▸ Toolkit, optimizer, java bridge, debug
• Features of commercial edition
  ▸ Monitoring, Code Tracing, Job Queue
Questions?

• Let’s keep it interactive!

• Follow us!
  ‣ [Facebook](http://bit.ly/cjueZg) (Zend Technologies or search for Zend)
  ‣ [Twitter](http://twitter.com/zend)
What’s New with Zend Server

www.zend.com

IBM Relationship
IBM Relationship History

• Zend is an IBM business partner
• IBM selected Zend to bring PHP to IBM i in 2005
• Beta, then Core, then Platform now Server
• Tens of thousands of downloads from Zend
• Zend Server part of IBM i7.1
• Products are always available at Zend.com
IBM Relationship FAQ’s

• What do we get?
  ▶ Zend Server CE
  ▶ Zend Studio
  ▶ 1 year Silver Level Support  (email/web 72 hour response)
  ▶ Since Feb 1, 2009

• What happens after 1 year?
  ▶ Product will still run
  ▶ No updates to product or PHP*
  ▶ Forum support only
IBM Relationship FAQ’s

• What do I do when support runs out?
  ‣ Roll the dice
  ‣ Zend account representative can discuss support options
    ‣ Gold license and support
    ‣ Platinum license and support

• I downloaded Core and it’s been a year. Can I download Server and get support for another year?
  ‣ You can download and install Zend Server without support as the support entitlement is by server, not Zend Product
  ‣ The product will still run, however.
  ‣ Forum support is always available
Zend Support Options

• Silver for the first year from your first download
  ▶ Web ticket/email support
  ▶ 72 hour response window

• Gold - Business hour support
  ▶ 6 hour response on P1 (site down)

• Platinum - 24/7
  ▶ 2 hour response on P1 (site down)
  ▶ Customer requested PHP Bug Hot Fixes

• SLA detailed on Zend Website
Zend Server 5 for IBM i

www.zend.com

Technical overview
Zend Server 5.0 GA on 04/12/2010!

- The Linux and Windows distributions have been GA since Feb
- Code base consistency is making this gap smaller
- Training class available...see zend.com/store for more info
What Is Zend Server?

- Production quality PHP stack
  - PHP, ZF, DB connectivity, debugging extension, and more
- Two Editions - Free “Community Edition” provided by IBM & Full commercial edition
  - Both are production ready
- Application monitoring and diagnostics (integrated with Zend Studio)
- Multi-level performance enhancement capabilities
- Software updates and security hot fixes
- Easy and quick installation
- Zend Framework Integration
Zend Server for IBM i

- Next generation of PHP stack for IBM i
- Best of both Zend Core and Zend Platform
- Single Licensed Program Installation
- Two products (one download)
  - 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?

- 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 - Asynchronous PHP script processing (in batch!)
  - Page Caching - Performance and scalability
  - Support for PHP 5.3
- Easier installation, administration & maintenance
Zend Server Under the Covers

ILE Apache:10088
- Default configuration FastCGI

IBM i

i/OS

PASE

HTTP:10088 Server (FastCGI)

PHP CGI

Zend Server

PHP file

*PGM CMD

DB2 UDB

URL Request

HTML
Zend Server for IBM i

www.zend.com

Installation
Zend Server Installation

- Can install PHP 5.2 or 5.3
- Save File or Windows installer available at Zend.com
- Updated Fast CGI built by IBM requires PTFs
  - Current group for 57nnDG1 - IBM HTTP Server for i5/OS
  - V5R4 - Updated!
    - PASE - SI36004 - Updated!
    - HTTP - SI36026
  - i6.1 - Updated!
    - PASE - SI36005
    - HTTP - SI36027
Zend Core Users

- Can install Zend Server side by side
- Uses new directories
- Uses different port 10088
- Consider running one side at a time
  - Potential conflict with user based applications.
  - Other applications
- Once successfully on Zend Server, remove Core
  - DLTLICPGM
Beta customers

• Early beta
  ▸ Must remove LP and install GA version

• RC1
  ▸ Can apply PTF update

• How do I know which beta I have?
  ▸ Early beta: about screen from Zend Server admin
    • Version Zend Server 5.0 Beta
  ▸ RC1 beta: about screen in Zend Server admin
    • Version Zend Server 5.0
  ▸ GA version: Zend Server 5.0.1, nothing more to do.
Zend Server Administration

- New unified interface for all Zend controls
- Multi platform consistency in the interface

- Apache changes
  - Single server (YAY!)
  - PASE server eliminated
  - IBM HTTP Server Powered by Apache
  - PHP implemented using Fast CGI developed by IBM
  - Restart button saves round trip to green screen!
File locations

• Document Root
  ‣ /www/zendsvr/htdocs

• Zend Installation Directories
  ‣ /usr/local/zendsvr

• Zend Framework
  ‣ /usr/local/zendsvr/share/ZendFramework

• PHP binaries (CLI and more)
  ‣ /usr/local/zendsvr/bin
Other new defaults

- Web User
  - QTMHHTTP

- Initial port
  - 10088

- Admin Interface

  - http://yourIBMiNameHere:10088/ZendServer

- Nice comparison table of Core vs. Server (Alan Seiden)

Update process

• User controlled PTF
• PTF available from Zend
• Check for updates in Administration panel
Sample scripts

• Free for the install  http://yourIBMiName:10088/Samples/

• Basic concepts, if you want an application consider Open Source community

PHP Demo Scripts

The following demo PHP scripts will help IBM I developers get started with PHP. Clicking on the script name will run the code and clicking on the display code will display the PHP code. The scripts location is /www/zendsvr/htdocs/Samples/

- HelloWorld 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
Zend Server for IBM i

Community Edition Features
## Zend Server CE vs. Commercial

<table>
<thead>
<tr>
<th>Feature</th>
<th>CE</th>
<th>Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certified PHP</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Zend Framework</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Apache integration</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>MySQL</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Built-in database connectivity</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Java connector</td>
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<td>●</td>
</tr>
<tr>
<td>Web-based admin</td>
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<tr>
<td>Debugger</td>
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<td>●</td>
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<tr>
<td>Bytecode acceleration</td>
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<tr>
<td>Caching API</td>
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<td>●</td>
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<tr>
<td>PHP 5.3</td>
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<td>●</td>
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<tr>
<td>PHP IBM i toolkit</td>
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<td>●</td>
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<tr>
<td>Page Cache</td>
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<td>●</td>
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<td>Application Monitoring</td>
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<tr>
<td>Code tracing</td>
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<td>Job queue</td>
<td>●</td>
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<td>Software updates and hot fixes</td>
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<td>●</td>
</tr>
<tr>
<td>Technical support</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
Database resources supported

- **DB2**
  - `db2_connect`
- **MySQL**
  - `mysql_connect`
- **Microsoft SQL Server**
  - `mssql_connect`
- **IBM i PHP Toolkit**
  - `i5_connect`
Leverage investments in existing technology

• Call High level language programs
  ‣ RPG
  ‣ COBOL
  ‣ CL programs via toolkit
  ‣ C based API’s

• Call Java Program via Java Connector
  ‣ Now part of the both Zend Server and Zend Server Community Edition
Optimizer+

Eliminates what’s not needed

- Opcode cache
  - Caches the PHP bytecode in RAM
  - Significantly reduces disk access
- Opcode optimizer
  - Optimizes certain code fragments to improve execution speed

Now part of the free Community Edition package
Zend Server for IBM i

www.zend.com

Commercial Edition Features
Data Caching

Provides a set of API functions for caching data items

- DB query results, web service calls, complex or hard-to-get data
- Output elements
- Allows skipping slow PHP code chunks
- Shared memory and Disk storage backends
- Data can be grouped using namespaces
- APC user cache compatibility layer
- Zend Framework Zend_Cache_Backend adapters
Page Caching

Don't execute a single line of PHP if you don't have to

- Caches entire HTTP response
- Configured from UI, no code changes required
- Live / cached decision is based on request or session parameters
- Variants can be created based on request or session parameters
Page Caching

![Zend Server](https://www.zend.com)

**Rule Name:** Drupal - guest node views

**Caching Conditions**

- **Cache If:** URL matches Regular expression
- **And also:** All of the following are true
  - GET [q]
  - regex_match node/.*

**Multiple Versions of Cached Pages**

- Create compressed cache copies

Create a separate cached page for each value of

- SERVER [QUERY_STRING]
- SERVER [REQUEST_URI]
Zend Server 5 for IBM i

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Code Tracing
Code Tracing Supported Workflows

• Monitoring workflow:
  ▶ When a monitoring event is created, the associated trace data of the specific request is captured
  ▶ Trace data is attached and associated to the monitoring event

• Manual tests/functional workflow:
  ▶ Manually through the GUI or from a browser by adding a parameter to the request

• Production workflow
  ▶ Can be activated automatically in case of a Zend Monitoring event, for example a PHP error, a slow execution or high memory usage
Code Tracing Enhancements since last demo

- We are working this stuff pretty hard 😊
- Toggle Critical path display
- Toggle Memory display
- Arguments display
Zend Server 5: Technical Overview

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Job Queue
Job Queue allows you to...

• Put certain tasks into a separate execution queue
  ▶ Off-load to new process (or defer to a later time)
  ▶ Off-load to a different server

• Execute certain tasks at a specified time
  ▶ Distribute processing load to off-hours

• Execute certain tasks periodically

• While..
  ▶ Maximizing reuse of existing infrastructure & code
  ▶ Making sure nothing falls between the cracks
  ▶ Doing it all from a PHP API
Creating Jobs

• Jobs are created using the `createHttpJob()` method

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

• Pass parameters
  - Simple ones, via query string `$_GET`
  - Complex ones, as an associative array of key => value pairs

• Set job options
  - Name, priority, schedule, etc.
  - Create deferred or recurring jobs

• Or... create from the UI
Resources

• Recorded Webinars

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

• Zend Server manual:
Thank you & Q&A

• If you have a question you can
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  ▶ Tweet #zendwebinar

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  ▶ http://twitter.com/zend
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