Modernizing Legacy Applications on i5 with PHP

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Key Priorities articulated by CTOs, CIOs and VPs of Engineering

- Leverage investment in System I infrastructure
  - Expose DB2/400 data via the web
  - Webify green screen applications for end-users
- Maximize leverage of i5 computing power
  - Move Windows/Linux based PHP apps to System I
  - Deploy new web based applications
- Mitigate and minimize risk/cost of migrations
- Retool RPG programmers and access lower cost development resources to address business needs
- Leverage benefits of open-source technologies - create portable applications
Why are organizations leveraging PHP to web-enable their legacy applications?
PHP enables organizations to ...

- Expose critical DB2/400 data over the web
- Modernization of green screen applications
- Develop new web applications on i5
- Consolidate PHP apps on other platforms
Drivers for PHP growth

• **The Migration to Web Applications**
  - When did you last install a desktop application?
  - Emerging generation of software services (Web2.0)
  - PHP is the leading web development platform

• **Software buyers favor Open Source Software**
  - OSS adoption driven by cost of ownership benefits, freedom from vendor lock in, and superior software quality

• **PHP is the perfect Web Integration Platform**
  - Best support for browser based rich client applications (Ajax)
  - Strong support for Web Services, XML & legacy systems
  - Powerful SOA capabilities enable new IT approaches (“mashable assets”) for reducing application backlogs

• **PHP is backed by a very strong community**
  - ~ 1000 committers, ~ 4.5M developers (corporate/community)
  - Thousands of opensource projects and applications
  - Hundreds of thousands of commercial deployments
  - High profile PHP applications like Yahoo!, Flickr and YouTube
PHP new to the i5 Community, yet has developed over the past decade

- Rasmus Lerdorf Introduces PHP/FI
- Zeev Suraski & Andi Gutmans lead the development of PHP 3
- 1M Internet domains
- Zend Engine
- Zend Founded
- PHP 4 Released
- PHP 5.0 (XML, SOAP, OOP), Zend Studio
- IBM, Oracle Endorse PHP
- PHP Proliferation
- Yahoo! Standardizes on PHP
- Zend Framework & Eclipse project (PDT) announced
- ZF and PDT released, PHP 4 EOL announced
- PHP Internet Domains

Roughly 30% of the Internet runs PHP based applications

PHP Enabled Apache Servers: Research by (February 2008)

- Total Servers: 27,374,802
- Apache Servers: 20,144,014 (73.6%)
- PHP Enabled Apache Servers: 7,656,379 (38%)

Web Server Survey
March 1st, 2008

Across All Domains

Market Share Change (Total servers: 27,374,802)

<table>
<thead>
<tr>
<th>Server</th>
<th>February Count</th>
<th>February %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apache</td>
<td>20,144,014</td>
<td>73.59%</td>
</tr>
<tr>
<td>Microsoft</td>
<td>5,197,745</td>
<td>18.99%</td>
</tr>
<tr>
<td>Zeus</td>
<td>114,805</td>
<td>0.42%</td>
</tr>
<tr>
<td>Netscape</td>
<td>55,014</td>
<td>0.20%</td>
</tr>
<tr>
<td>WebSTAR</td>
<td>16,540</td>
<td>0.06%</td>
</tr>
<tr>
<td>WebSite</td>
<td>6,156</td>
<td>0.03%</td>
</tr>
<tr>
<td>Other</td>
<td>1,039,725</td>
<td>3.72%</td>
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</tbody>
</table>

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The Growth of Resources Experienced in PHP

<table>
<thead>
<tr>
<th>Worldwide Developers</th>
<th>2006</th>
<th>%</th>
<th>2007</th>
<th>%</th>
<th>Growth%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Java</td>
<td>5,863</td>
<td>44%</td>
<td>6,806</td>
<td>47%</td>
<td>+16%</td>
</tr>
<tr>
<td>.Net</td>
<td>6,420</td>
<td>48%</td>
<td>8,176</td>
<td>57%</td>
<td>+27%</td>
</tr>
<tr>
<td>PHP</td>
<td>4,634</td>
<td>35%</td>
<td>6,426</td>
<td>44%</td>
<td>+37%</td>
</tr>
<tr>
<td>Total</td>
<td>13,315</td>
<td></td>
<td>14,461</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Packaged Business Applications available in PHP, and now can run on i5/OS

Content Management

Wiki

E-Commerce

Bug Tracking

CRM
What are the key challenges facing organizations looking to build PHP based applications?
The new PHP based Application Infrastructure introduces Operational Instability …

System I Organizations are operationally mature …

- Developer
  - Download PHP from PHP.net
  - Download Editor and Apache Server

- Build PHP Application
  - Fast!
  - Easy

- Try to Deploy
  - Problems!
  - Headaches!

Now What?

but when they decide to leverage PHP, they lack expertise and know how
Challenges with ensuring Predictability through the Applications Delivery Lifecycle

- Scalability requirements for web based applications are not familiar to RPG programmers
- Web development introduces new security risks
- Deployment documentation is lacking

- Production operations lacks expertise to manage PHP apps
- Low deployment success rate
- Developers frequently involved in production issues

Chasm Between Development and Production Operations
Automation and Best Practices help create Predictability in the Applications Delivery Lifecycle.

- **Development**: Mastering the Basics
- **Quality Assurance**: Proactive Planning
- **Staging**: Achieving Predictability & Stability
- **Production**: Continuous Monitoring

Feedback / Improvement

Moving consistently across phases increases operational predictability & performance.
Mastering the Basics

- Best practices and coding standards for web based applications
- Reusable code
- Architecture guidelines
- Consistent development environment
Proactive Planning

- Repeatable, uniform testing
- Documentation standards
- Performance and scalability metrics
- Planning for Compliance
Achieving Predictability and Stability

- Deployment and maintenance standards
- Agreed-upon processes
- Proactive management
- Centralized monitoring
- Established, proven communication mechanisms
Continuous Monitoring & Improvement

- Delivering on SLAs
- Reducing MTTR via root cause analysis
- Increasing MTBF through Post incident reviews
- Configuration Mgmt through Maintenance & update profiles
Moving consistently across phases enhances Operational Maturity

Greater Maturity => Reduced Cost, Risk => Increased Uptime
How is your organization doing on these phases?

Mastering the Basics
- Development
  - Best practices and coding standards
  - Reusable code
  - Architecture guidelines
  - Consistent development environment

Proactive Planning
- Quality Assurance
  - Repeatable, uniform testing
  - Documentation standards
  - Performance and scalability metrics
  - Planning for Compliance

Predictability & Stability
- Staging
  - Deployment and maintenance standards
  - Agreed-upon processes
  - Proactive management
  - Centralized monitoring
  - Established, proven communication mechanisms

Continuous Monitoring
- Production
  - Delivering on SLAs
  - Reducing MTTR via root cause analysis
  - Increasing MTBF through post incident reviews
  - Configuration Mgmt through Maintenance & update profiles
Where is your Organization on the Operational Maturity Curve?

Operational Maturity

Value

Current Maturity with Existing applications

Achieving Predictability & Stability

Mastering the Basics

Proactive Planning

Maturity with PHP Applications

Maturity required to deliver on SLAs/business goals with web applications

The PHP Company

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Zend’s solutions leverage automation to mitigate the Operational Maturity Gap
Modernizing legacy applications on i5 with PHP

- Consistent versions of PHP, extensions, database drivers
- Timely updates associated with security patches, bug fixes, new extensions/drivers

Zend Core: Ensuring Consistency Between Development and Production

- Mastering the Basics
- Proactive Planning
- Quality Assurance
- Achieving Predictability & Stability
- Continuous Monitoring

• Configuration Management across entire production infrastructure
Zend Framework: Enhancing Developer Productivity, Improving Code Quality

- **Rapid development**
  - Pre-built components
  - Iterative development cycles
- **Developers focus on business specific functionality as opposed to infrastructure**
- **Higher deployment success rates**
  - Components rigorously tested by Zend and PHP community
Zend Studio: Providing Developers Insight into Production Issues

Mastering the Basics

Development

Proactive Planning

Quality Assurance

Achieving Predictability & Stability

Staging

Continuous Monitoring

Production

- Reusability
- Remote Debugging in Production
- Development best practices

Repeatable, uniform testing

Standards for deployment

- Root Cause Analysis
- Replicate Production problems in developer’s environment

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Zend Application Server: Delivering Proactive Management and Scalability in Production

Mastering the Basics

Development

Proactive Planning

Quality Assurance

Achieving Predictability & Stability

Staging

Continuous Monitoring

Production

Defining/measuring performance & scalability metrics

Developing high performance code via Caching

Manageability

• Web Enabling of 5250 Applications
• Proactive Monitoring
• Scalability
• Performance
Zend’s Software Solutions

• How many PHP developers do you have?
  ▪ Developer Bundle
    • Zend Core/Zend Framework
    • Zend Studio
    • Zend Platform (Development License)
    • Zend Gold Support

• How many production/staging servers do you have?
  ▪ Production Server Bundle
    • Zend Core/Zend Framework
    • Zend Platform
    • Zend Platinum Support
Zend Services Align with phases of the Application Delivery Lifecycle

Mastering the Basics
- PHP I: Foundations i5/OS
- PHP II: Higher Structures

Proactive Planning
- Building PHP Apps with Zend Framework
- Building RIA with AJAX

Training
- Zend Certification
- Platform for Sys Admins
- Building Secure PHP Applications

Achieving Predictability & Stability
- Migration Consulting
- Audits: Performance, security, architecture

Support
- Gold Support
- Platinum Support

Continuous Monitoring
- Remote Installation & Admin Services
- Architecture & Design Consulting
- JumpStart for i5/OS
Goals of Jump Start for i5/OS

- Bridge the knowledge gap between RPG and PHP
- Provide foundation for leveraging PHP applications to address business objectives
- Deploy a Proof of Concept addressing a current project/business need in 30 calendar days
<table>
<thead>
<tr>
<th>Stage</th>
<th>Task Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gather and Define</td>
<td>Gather business objectives, operational constraints &amp; identify POC target (current project need)</td>
</tr>
<tr>
<td>2</td>
<td>Deliver Training (On-site)</td>
<td>Quick Start: PHP for RPG developers &lt;br&gt;PHPI: Foundations for i5/OS</td>
</tr>
<tr>
<td></td>
<td>Develop Proof of Concept</td>
<td>Stand up and document a Proof of Concept with Checkpoints along the way</td>
</tr>
<tr>
<td>3</td>
<td>Knowledge Transfer and POC Delivery</td>
<td>Knowledge transfer on POC and make recommendations on future projects</td>
</tr>
</tbody>
</table>
Zend’s solutions help organizations move up the maturity curve fast …