



PHP in the Cloud

Running Business-Critical PHP
Applications in the Cloud

RIGHT SCALE[®]



The PHP Company

Abstract

Cloud computing is exponentially growing as a viable way for businesses and organizations to deliver content and services to users. An economy of scale not seen before is making it cheaper, more efficient and easier to launch and scale new applications. However, the process of launching business-critical applications in the cloud and managing them once they are deployed can be a complex and time-consuming process that diminishes many of the initial benefits of moving applications to the cloud.

RightScale and Zend have teamed up to provide organizations with a faster process for deploying their PHP applications on the cloud with a pre-configured open Platform as a Service (PaaS). This solution provides a process to quickly initiate a pre-configured, 3-tier high availability (HA) architecture while maintaining the ability to customize and control the cloud environment if needed.

RightScale and Zend have created a production-ready solution that provisions a pre-configured, clustered PHP environment with on-demand scalability and high availability. The RightScale Zend combined solution delivers a faster on-ramp to cloud deployment while retaining full control of the architecture and freedom to choose among a variety of target cloud resource pools. The result is that organizations can now quickly launch applications in the cloud as a response to dynamic market opportunities in a timely and efficient manner.

In this white paper, we will describe in detail the three key areas you need to understand to successfully launch and manage business-critical PHP applications in the cloud.

1. A way to understand and minimize complexity when migrating PHP applications to the cloud:

We will describe the challenges of deploying and managing PHP applications in the cloud, including the need to build a flexible architecture that can scale easily to meet dynamic demand.

2. A customizable best-practices approach to deploying and managing PHP applications in the cloud:

We will describe an approach that incorporates best practices and is fully customizable for the customer. Once built, organizations can take advantage of autoscaling and comprehensive management capabilities for scaling up and down quickly and cost-effectively to meet demand.

3. A joint solution from RightScale and Zend that helps organizations deploy and manage PHP applications in the cloud:

RightScale and Zend have developed an open PaaS for faster on-boarding, productive automation and full transparency. Combining the RightScale Cloud Management Platform with the Zend PHP architecture powered by Zend Server, the integrated solution gives organizations a best-practices architecture that can be customized to fit their individual application needs.

Introduction

According to Gartner in their report, Reimagining IT: The 2011 CIO Agenda*, cloud computing services are the top priority among CIOs this year. These lightweight, pay-as-you-go resource pooling models are enabling CIOs to reinvent IT in a way that reduces costs while driving growth with flat budgets. Gartner predicts that while today only 3 percent of CIOs have the majority of their IT environments running in the cloud or on SaaS technologies, that number is expected to jump to 43 percent over the next four years—a much higher adoption rate than any other technology over the past 20 years.

Organizations are attracted to cloud computing because the technology gives them a highly-available resource that can power business agility many times faster than traditional on-premise infrastructure investment. Applications can be launched quickly and efficiently in the cloud to meet dynamic demand, providing companies with an edge in new product development or supporting new marketing campaigns characterized by unpredictable response. Better yet, the cloud can help IT organizations deliver expected application performance and availability with less strain on tightly-budgeted capital and human resources.

However, the cloud isn't without its challenges. Cloud vendors need to continue to fight public perception of the cloud as being unstable and insecure by establishing long term stability and best practices for cloud services—especially if they want to sustain its high adoption rate.

* http://www.gartner.com/technology/cio/cioagenda_findings.jsp

PHP Applications in the Cloud

For Business-Critical Applications an Enterprise-ready PHP Stack is Needed

Deploying PHP applications in the cloud can be done a variety of ways. You can choose a PHP Platform as a Service (PaaS) or you can go with an Infrastructure as a Service model (IaaS). There are advantages to the PaaS model because all the underlying infrastructure is defined for you, it's fast but it comes with heavy restrictions.

For business-critical applications, companies prefer to have more visibility into the infrastructure so it can be customized to their specific business needs. But building and managing your application with an IaaS provider can get complex quickly and requires tedious steps when setting up your architecture. From gathering your PHP version, libraries and patches to developing a scalable system architecture with your Web and database servers configured correctly is a complex process.

“Considering PHP’s ubiquity on the Web, it wasn’t a question of if it embraced the cloud, but when,” said Stephen O’Grady, Principal Analyst with RedMonk. “With the recently announced RightScale/Zend partnership, the two companies are offering PHP users the best of both worlds, with the time to market of Platform as a Service (PaaS) and the flexibility of Infrastructure as a Service (IaaS).”

Launching and managing PHP applications in the cloud with the ability to be tailored to your business needs can require a lot of time, expertise, resources and ongoing maintenance. Most importantly, you need a lot of patience—especially if you are using an open-source PHP stack that doesn’t include services and support.

When it’s done right, deployment and management of applications in the cloud can provide a new level of flexibility, scalability and value to your business.

While individual users and developers have had success launching PHP applications in a cloud environment, the process of deploying business-critical PHP applications that adhere to high-availability and high-performance standards is more complex and tedious.

First you need to find, download, install and configure PHP components, including the current PHP version, libraries, patches and certificates. Often these are spread out across the Web on various sites—and developers can never really be assured they have the latest versions. You then have to continually search for updates once the application is put into production. As a result, while organizations should be focusing on meeting dynamic traffic levels, enhancing functionality and supporting users, they are often bogged down with tracking PHP updates, and even then, they are not assured of having a robust environment that can hold up to today’s fast-changing business needs or compliance requirements. When cloud is added to the picture, this scenario can challenge even the most established and well-managed IT organization.

Business-critical PHP applications need to support inherently dynamic Web traffic. Users are notoriously inconsistent, logging on and accessing applications at various times of the day, week and month. Shopping around the holidays causes enormous spikes for e-retailers. Online gaming companies see a big boost in traffic at the end of the work day and later in the evening. Universities have to deal with variable traffic based around semester schedules. Media organizations get the majority of their traffic during major news events, and financial services organizations must deal with varying market hours at exchanges around the world. Meeting these demands requires a powerful yet flexible application architecture, in-house expertise and quality customer support.

This, as you can imagine, can be cost prohibitive for many organizations. The process required to provision a PHP server can take dozens of man-hours over the course of several weeks, making it costly to continually scale up and down as demand crests and falls. The ongoing operational expenses can lead to serious project overruns.

Architected correctly, however, an intelligent cloud-based solution can solve this costly dilemma. Building business-critical PHP applications on a robust platform in the cloud with automation and best practices allows organizations to offer unparalleled performance and availability to users while having the ability to easily scale up and down to meet dynamic demand.

An Ideal Solution to Launching and Managing PHP Applications in the Cloud

As we've said, organizations need a reliable cloud platform solution that can stand up to robust production standards while being flexible enough to be customized to the unique needs of customers and their applications. Luckily, there are solutions out there that can meet these demands.

Amazon, Rackspace and other Infrastructure as a Service (IaaS) vendors provide customers with a feature-rich infrastructure in which to deploy and manage cloud servers. By taking on the capital investment and ongoing back-end maintenance of the cloud infrastructure, these vendors make infrastructure more elastic and therefore more economical and easier to scale—especially when demand is highly dynamic or unpredictable. However, organizations still need to employ dedicated administrators to manage the cloud infrastructure and the integration with customers' systems.

Solutions such as Google App Engine and Force.com take it one step further by providing organizations with a Platform as a Service (PaaS) on which to build and launch applications. These providers combine the availability benefits of the cloud with a better economy of scale but leave little room for customization. It's a one-size-fits-all model that does not allow organizations to tailor the platform to their unique needs.

What organizations need is the best of both worlds: an approach that incorporates pre-built solutions and yet is fully customizable for the customer. A cloud solution provider can offer organizations a certified software stack they can use as the framework for their business-critical PHP applications while giving them the ability to define and customize stacks to fit their unique needs. Once built, organizations also need the ability to streamline the provisioning, scaling and management processes so that servers can be scaled up and down with relative ease.

Organizations looking to deploy business-critical PHP applications in the cloud need to look for the following characteristics in a cloud management platform:

Automation:

Opportunities need to be taken advantage of quickly before users lose interest and patience and move on to a competitor. Manually provisioning a set of servers takes time, so organizations need to streamline the server provisioning process before new opportunities arise or traffic levels spike. Implementing automation throughout your cloud platform solution and maintaining software stack templates allows you to quickly provision PHP servers and add or subtract them from the production environment based on real-time performance and availability data—thus enabling you to take advantage of business opportunities as they arise.

High Availability:

Downtime of Web applications is a revenue and brand killer. Cloud platform solutions need to be always available with robust failover capabilities to ensure uptime and a positive user experience—not just at the server level, but also at the application level so user sessions are not lost when problems occur or when capacity is being spun down. These powerful failover and load-balancing technologies need to better manage workloads, so utilization is kept at a consistent level that doesn't affect performance or cause unnecessary downtime or lost transactions.

Transparency/Visibility:

Administrators need the ability to monitor and track performance, capacity and applications in the cloud environment. This allows them to scale up or down to meet demand and cut off potential problems before they occur, helping to streamline management of the cloud infrastructure. The ability to automatically scale up and down based on thresholds is an even better capability, taking manual labor and human error out of the equation.

RightScale and Zend Deliver on the Promise of Cloud

Automating Cloud Application Deployment with the RightScale Zend Solution Pack

The new RightScale Zend PHP Solution Pack provides a pre-configured open PaaS for faster application deployment. The process of launching PHP business-critical applications in the cloud is now much simpler. How simple is it? Let's find out.

- Step 1:** Access the RightScale Zend PHP Solution Pack's pre-built architecture, including PHP components and cloud-ready server deployment
- Step 2:** Develop PHP application
- Step 3:** Find cloud hosting provider
- Step 4:** Onboard the target application into the RightScale Zend PHP Solution Pack
- Step 5:** Test for and resolve any bugs, and optimize for performance, capacity and dynamic workloads
- Step 6:** Launch application in the cloud
- Step 7:** Proactively monitor performance through the RightScale Cloud Management Platform to quickly identify and resolve issues using Zend Server Code Tracing
- Step 8:** Automatically re-allocate more servers or decommission servers according to real-time demand
- Step 9:** Customize architecture if needed
- Step 10:** Regain time and bandwidth to focus on other mission-critical projects

Now organizations whose business-critical applications are built on PHP can deploy and manage their applications faster while improving resource utilization. RightScale and Zend automate 10 key steps to cloud application development and deployment, backed by service and support.

Recognizing that the process of deploying and managing business-critical PHP applications in the cloud needs to be streamlined, RightScale—the cloud management experts—and Zend—the PHP company—have developed a joint open PaaS for faster on-boarding, seamless scalability and central management.

Combining the RightScale Cloud Management Platform with the Zend PHP architecture powered by Zend Server, the solution gives organizations a best-practices platform that can be customized to fit their individual application needs.

Now organizations can take advantage of a pre-configured, 3-tier high-availability architecture for a faster on-ramp to cloud deployment while retaining full control of the architecture and preserving their freedom to choose among a variety of target cloud resource pools. The RightScale Zend PHP Solution Pack comes bundled with RightScale premium onboarding—a step-by-step path to deploying on the cloud—which helps customers get started quickly while following best practices developed jointly by RightScale and Zend.

Using pre-configured RightScale ServerTemplates™ and Macros, organizations can automatically provision Zend PHP servers and quickly put them into the production environment in the cloud—sometimes as fast as 10 minutes. This allows organizations to meet dynamic demand and fluctuating Web traffic seamlessly without breaking the bank or relying on costly in-house expertise. Thresholds can be set that trigger actions to provision additional servers when traffic spikes and to decommission servers when traffic slows.

RightScale and Zend also offer a best-practices development and test solution pack, allowing organizations to accelerate PHP application development and testing processes while reducing IT costs. Using RightScale's cloud management platform, organizations can easily and quickly provision a complete, pre-integrated Zend PHP environment. As a result, organizations can build their application while utilizing Zend Framework components to access a variety of cloud servers and debug and test the application on an actual Zend Server instance running in the cloud.

This solution allows organizations to develop innovative new PHP applications without having to worry about time needed for hardware procurement or resulting management burden. The RightScale Development and Test Solution Pack with Zend PHP, increases an organization's agility in the development and test process and then provides a smooth transition into a production environment when ready.

The RightScale Zend PHP HA Solution Pack

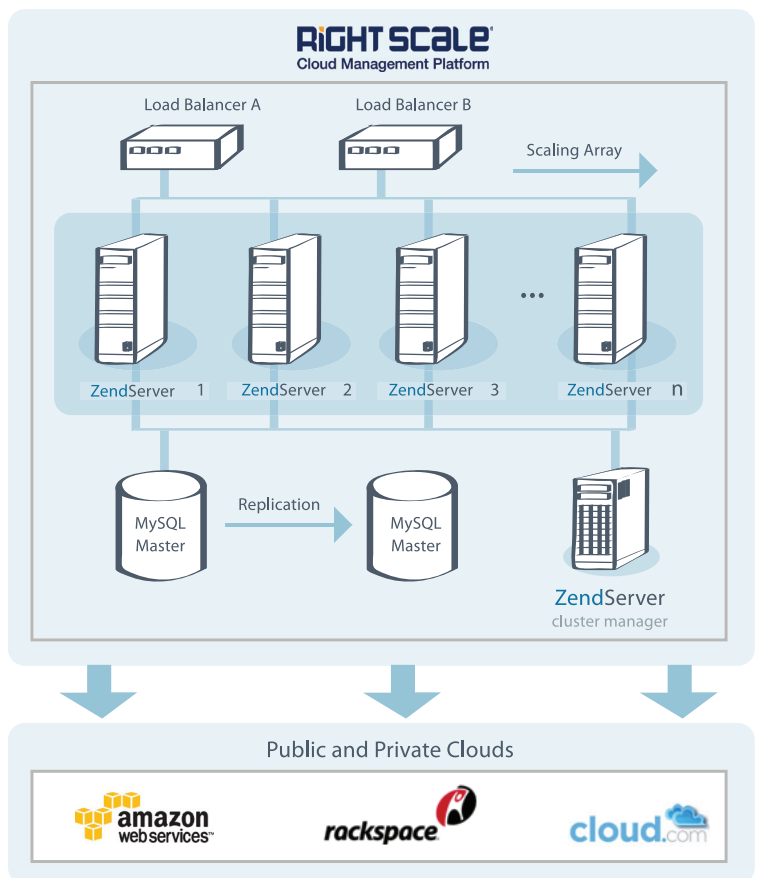
Quick Deployment

With open PaaS as the model, RightScale and Zend developed a pre-configured architecture to eliminate the heavy lifting for customers. In conjunction with RightScale and Zend's professional onboarding, the time to launching your application is significantly decreased. Once your application is live, RightScale's autoscaling technology automatically provisions Zend servers and adds them to the production environment when certain thresholds are met. With this powerful scaling capability organizations are now prepared to dynamically meet fluctuating demand or respond to unanticipated events.

Comprehensive Management

The RightScale Zend PHP Solution Pack provides administrators the visibility and control they need for managing and monitoring applications. Zend Server instances that are automatically added to the production environment are also automatically integrated within the load-balancing environment, ensuring high availability and performance. This visibility and load-balancing control allows administrators to reallocate workload while down servers are remediated quickly and seamlessly—leading to little or no downtime.

The RightScale and Zend solution incorporates proactive monitoring of applications and servers, along with in-depth diagnostics, giving administrators the visibility and control into the cloud environment, and enabling developers to rapidly pinpoint and resolve application issues that occur in production without having to spend time on recreating problems. In addition, the solution enables post-event analysis for better long-term performance and less downtime in the future, including detailed reporting for transparency and visibility. Organizations can fully customize the solution as business needs evolve or grow, therefore building on invested time and effort instead of having to move to a new platform or cloud infrastructure.



Flexibility and Efficiency

The RightScale Zend PHP Solution Pack also provides flexibility on a level not achieved by other cloud IaaS and PaaS vendors. PHP applications can be deployed to various clouds or regions—whether they are public or private—giving organizations multiple cloud platform options for a variety of business uses. This agility not only allows for better choice but helps prepare organizations for business continuity in case of a natural disaster or cloud outage. Administrators can simply relaunch PHP software stacks on another infrastructure without configuring new systems—a provisioning process that is automated and fast and gets business services back up and running quickly.

Powerful Solutions

Organizations need to make sure their mission-critical business systems are reliable, secure and powerful from the architecture all the way up to the PHP application. The customizable and best-practices approach by RightScale and Zend ensures this stability and robustness in an efficient package. The joint solution ensures high availability by automatically maintaining sessions on redundant servers that can failover without losing data. At the same time, redundant load balancing and multiple caching technologies also ensure reliability and consistency.

Conclusion

As more enterprises run their business-critical PHP applications in the cloud, they can simplify and automate the process and avoid the complexity and cost of attempting it from scratch. The RightScale Zend PHP Solution Pack simplifies the process through a customizable best-practices approach. The result is quick, efficient onboarding, seamless and comprehensive cloud management, agile application development, and highly available and scalable PHP applications in production.

About RightScale

RightScale is the leader in cloud computing management. Founded in 2006, the company offers a fully automated cloud management platform that enables organizations to easily deploy and manage business-critical applications across multiple clouds with complete control and portability. The RightScale Cloud Management Platform is delivered as “software as a service” (SaaS) and is available in a range of editions. To date, thousands of deployments and millions of servers have been launched on the RightScale platform for leading organizations such as PBS, Harvard University, Zynga and Sling Media. To learn more about RightScale, please go to <http://www.RightScale.com>.

About Zend Technologies

Zend Technologies, Inc., the PHP Company, is the leading provider of software and services for developing, deploying and managing business-critical PHP applications on-premise and in the cloud. PHP runs more than one-third of the world's Web sites. Deployed at more than 40,000 companies worldwide, including GE, BNP Paribas, Orange Telecom, AT&T and NYSE Euronext. The Zend family of products delivers a comprehensive solution supporting the entire application lifecycle. Visit www.zend.com, or follow www.twitter.com/zend.

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