When deploying to the cloud, successful companies don’t only focus on immediate cost savings. They also focus on operations efficiency, application security and improving overall agility. The cloud delivers on these three important promises, and it offers a bonus: improved application management. With this, the cloud goes a long way toward also saving on future costs.

Data Center vs. Cloud-based Management
When most developers think of data center management, they think of application management. This includes monitoring and managing applications, including deployments, application performance, watching for and handling software failures and working to stay informed about the status of business-critical applications.

While these are important tasks, the work involved in data center management doesn’t end here. It also includes network and server hardware management (install, service and replace) and facilities management in the form of controlling building, electrical, plumbing, HVAC, physical security and access systems, and so on. Add to that the complex work of intelligent capacity planning for all of the above, while working within corporate budgets and hierarchy, and it’s clear that managing a data center is a substantial job.

Contrast this with the public cloud, where facilities management, capacity planning and holistic monitoring are someone else’s problems, and moving workload to the cloud quickly becomes an attractive option for many companies. This explains why, when developers were asked whether they were developing for the cloud, 68% said they were already doing so.

Public vs. Private Cloud Management
Before choosing between a public and a private cloud, consider the following:

- **Security**: Is your data too critical to house externally?
- **Accessibility**: Do you need the ability to “touch” the hardware and OS platform?
- **Platform choice**: Are you vendor dependent (i.e., CPU architecture, OS type and so on)?
- **Software platform**: Does your cloud vendor provide good levels of support and capabilities for your app platform (i.e., Java, PHP, .Net)?
- **Real-time notifications**: Can you define, receive and process application events as they happen?
- **Dashboards**: Does your vendor support deep views into your app’s performance and runtime statistics?

Once you’ve moved to the cloud, there are new issues to consider. For example, how will you manage application deployments? How will you administer and manage cloud-based...
applications with the same level of rigor as internal systems? How will you identify response latency, scalability issues and other performance bottlenecks? Can you manage network infrastructure, storage management and service disruptions? Additionally, how do you manage security and access control when the environment isn’t under your direct control?

Cloud management includes monitoring application and performance, managing security and compliance, enabling failover and handling disaster recovery. The complexity this creates in turn demands a flexible and scalable cloud application platform and toolset. The public cloud mainly shifts the management focus from hardware to software (namely, an organization’s applications). Having the best app management tools and capabilities furthers efficiency, cost savings and overall success.

Additionally, management tools need to be as available and performance-minded as the cloud strategy they are used in. Let’s examine these considerations and explore how to best leverage the public cloud for business-critical PHP applications.

**Application Performance Management**

With any application, detecting performance problems that have an impact on users is important. This is even more critical with cloud applications since additional factors can affect performance, including server virtualization, resource sharing and usage spikes. Effective management requires tools with real-time monitoring to alert you to performance issues before users notice any problems, giving you the ability to respond before it’s too late.

**Network Management**

Beyond application-specific issues, you need to monitor the connectivity between users and servers. This includes Internet connectivity, network traffic within your cloud vendor’s infrastructure and users’ own network bottlenecks. Your management tools need to discover bottlenecks and environmental changes and help you resolve them in real time.

**Storage Management**

If your application uses cloud-based shared storage, your management strategy needs to measure latency and capacity in this area as well. Storage administration includes backup monitoring, capacity planning and a simple restore procedure in case of any emergencies.

**Cluster and Configuration Management**

A cloud solution requires complex administration of both physical and virtual server instances and cluster-wide configuration. Your management tools should help you spin up new server instances with the correct configuration through an automated process. They should also notify you when changes are made to your cloud environment. This includes servers added or removed from your application cluster, or when any server’s configuration is out of sync.
Software Deployment
Software life-cycle management in the cloud is achievable with the right tools. This includes automated software deployment of all artifacts, including software updates, configuration changes, and scripts. Management tools ensure secure access to production resources, provide an auditable trail of each change, and help control which people are allowed to deploy updates to specific servers. Real-time monitoring alerts you to changes when they occur, so you can detect and stop unauthorized updates.

Quality-of-Service (QoS) Management
Effective cloud management tools allow you to create monitoring rules around key QoS parameters that you define. Examples are user response time, maximum latency, average throughput, storage capacity, database query times, the number of active sessions, server memory and CPU utilization.

PHP in the Cloud
Given its Web focus, PHP works well in cloud environments, public or private. Commercial PHP platforms take this further and offer advanced facilities for application management. For instance, Zend Server is an enterprise-ready platform for the cloud, supported by Amazon Web Services, IBM, VMware and others. Additionally, Zend Server provides secure, reliable cloud app deployment support, dashboards for monitoring cloud-based applications, real-time code tracing, app troubleshooting capabilities, and automatic scaling and elasticity.

Zend Server provides centralized app monitoring, APIs for deployment control as well as built-in and custom performance metrics with real-time reporting. Zend’s in-cloud scaling can trigger the scale-up of applications automatically, including instance provisioning, PHP installation and application deployment.

Zend Server provides application access controls to the operations team to manage which team members and developers have production access. This includes defining which applications they can access, and whether they can work in full or read-only mode. It also provides a history of changes to production systems and configurations and includes PHP security updates, even in a cloud environment.

Conclusion
In recent research, four out of five decision makers said that PHP speeds up development, and it’s the easiest choice for cloud-based app development.1 This, coupled with the advantages of app management in the cloud, equates to faster, more efficient development and deployment, and a more reliable and cost-effective production environment once deployed.

With many of the top public cloud vendors supporting Zend PHP Server in their environments, including Amazon, IBM, Red Hat, RightScale and others, choosing PHP for business-critical cloud application is a low-risk business choice. In terms of application management, Zend Server’s in-cloud scaling can trigger the scale-up of applications automatically, including instance provisioning, PHP installation and application deployment. Additionally, to ease a developer’s on-ramp to the cloud and Zend Server, Zend offers a cloud-based developer stack (phpcloud.com), which is an instantly available, free cloud-based development environment with tools, debugging and group collaboration.

Zend Server offers the added convenience of an on-premise and cloud-based platform. Using it both in-house and in the cloud provides a consistent platform for critical applications. Given its integration with IBM SmartCloud, Red Hat OpenShift, Amazon Web Services and other clouds, combined with the dashboards and APIs for management and integration, Zend Server can simplify PHP cloud-based application management.


ABOUT ZEND
Zend partners with businesses to rapidly deliver modern apps across mobile and cloud. Zend helped establish the PHP language, which today powers over 240 million applications and web sites. Zend’s flagship offering, Zend Server, is the leading Application Platform for developing, deploying and managing business-critical applications in PHP. Zend solutions are deployed at more than 40,000 companies, including NYSE Euronext, BNP Paribas, Bell Helicopter, France Telecom and other leading brands worldwide. Learn more at www.zend.com.