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Enterprise PHP: Build a better web application

IS YOUR APPLICATION USED FOR REVENUE OR OTHER MISSION-CRITICAL PURPOSES?

If that answer is yes, you're running enterprise PHP. And like many leading-edge development teams, you're using PHP to accelerate your work while ensuring websites and web applications meet or exceed your organizations' and customers' demands for availability, high performance, scalability, security, cost-effectiveness, and continuous delivery of new features and new applications — all critical criteria for success.

What do Wikipedia, Vimeo, Etsy, Yahoo, Flickr, Mailchimp, and Badoo have in common? They all rely on PHP.

These leading-edge development teams use PHP to accelerate their work while ensuring the resulting websites and web applications meet or exceed their organizations' demands for availability, high performance, scalability, security, cost-effectiveness, and continuous delivery of new features and new applications — all critical criteria for success.

In fact, PHP drives more than 80 percent[1] of all dynamic websites globally. It also serves as the foundation of leading open source application frameworks such as Drupal, Magento, and WordPress.

When it comes to web applications, customers demand instant gratification. Unless they can access what they want, when they want it, your organization's revenue and reputation are at risk. Web and mobile applications have to be always available, scale to meet peak demand, and have blazing performance.

PHP is the foundation for robust applications for organizations of all shapes and sizes. But for those organizations where performance, security, and availability are non-negotiable, enterprise PHP demands a different set of standards. And, as tempting as DIY is for PHP applications, you may end up with a science project versus a bona fide enterprise-scale web application.

Look at it this way: When you build a house, you want to focus on the design, the appearance, the living space. You don't want to deal with spending time on the foundation, the plumbing, or the electrical. That's where you enlist professionals. An enterprise PHP platform handles all the plumbing and foundation work behind the scenes, allowing your developers and IT staff to focus on your applications rather than time spent on maintaining security fixes, building a custom open source PHP application stack, or tracing the root cause of problems.

Build for performance at scale, get there fast

PHP offers an easily accessible path to quickly building robust websites, but that accessibility also carries a price tag in the long-term. Some PHP projects start small but quickly become successful, burdening development and IT teams with excessive administration, maintenance, and a reliance on community support for critical issues or security vulnerabilities.

As the co-founders of PHP and builders of the PHP engine, as well as Zend Framework and Apigility, we know PHP. We also know when to consider a comprehensive PHP approach versus build-as-you-go piecemeal tactics.

First, define your PHP: Is the application used for revenue or other mission-critical purposes? If that answer is yes, you're running enterprise PHP.

Consider these typical PHP application use cases:

- Compliance with internal mandates and external regulations (customer SLAs, PCI compliance)
- Application complexity and distributed access
- Performance optimization and monitoring
- Managing peak demands without failure or risk
- Ongoing administration and maintenance without interruption

[1] Usage statistics and market share of PHP for websites, W3Techs, June 2017.

These are the hallmarks of enterprise PHP, requiring an enterprise-grade solution covering application deployment and management, performance and availability, and security and support.

Application deployment and management

Here are some eye-opening stats: 87 percent of developers experience delays in rolling code out to production[2], 56 percent have applications work in test but not in production, and 43 percent admit to difficulty in keeping up with the pace of deployment, sacrificing critical customer and business demands.

And, configuration changes can dramatically impact the application, even causing outages. Driven by the need to update or improve, these changes can be disruptive to critical applications where availability cannot be compromised. Insulating these applications from outages or service disruptions requires not just non-stop vigilance, but a supported, seamless technology stack.

Ongoing management and administration often involves run-rate development work, taking time away from higher-value efforts, and reducing developer satisfaction. Automating this day-to-day work speeds delivery, improves employee satisfaction, and removes any possibility of human error.

Performance and availability

Web applications are expected to work, period. Across all time zones, and consistently through both slow and peak intervals. Users demand instant responsiveness. In fact, a one-second delay in page loads results in a seven percent decrease in purchase conversions[3]. For example, if an e-commerce site is making $100,000 per day, a 1-second page delay could potentially cost $2.5 million in lost sales every year.

The challenge of maintaining high availability isn't just about keeping the servers running, but actually avoiding any issue that will cause an application to be unresponsive or otherwise fail for the end users. This has real implications including direct sales loss from people that are unable to complete their transactions, indirect sales loss from potential customers that will never get to the purchasing phase, increased operational costs of response, and loss of data. Enterprise PHP requires preventing, pinpointing, and correcting issues before performance suffers, balancing workloads automatically to optimize performance, one-click rollbacks to get back to the last working state, and always-available expert support.

> "If an e-commerce site is making $100,000 per day, a 1-second page delay could potentially cost $2.5 million in lost sales every year."

[2] Zend Developer Pulse Survey, Rogue Wave Zend, June 2013.

[3] Performance is king in the e-commerce world, Akamai, June 2015.

Security and support

Applications offer an appealing attack vector to hackers, and web even more so, with 75 percent of attacks via web applications. Old, unsupported PHP versions are not only out of PCI compliance, but also provide a convenient hacker route by sidestepping the latest security patches and enhancements. But, migrating to newer versions isn't easily done, and is often delayed in favor of other user or business-driven improvements.

USE CASE

Simpel boosts performance

Simpel is a low-cost mobile telephony company offering SIM-only services to more than half a million customers in the Netherlands. Originally a pure sales and marketing company, Simpel's focus on providing value and control to their customers drove the need to create a self-service website for subscriber functions. As demand and subscriptions grew, the website reached a tipping point, requiring a new solution that offered more capacity and the agility to respond to evolving customer needs. It engaged Enrise, a software development firm focused on bringing complex enterprise systems to the digital internet economy, to fundamentally shift the way things were done on the backend.

To deploy the desired integrated, multi-supplier system with high availability, achieve efficient change management for releases, and increase conversions from prospect to sales, Enrise implemented key business logic layer requirements using Zend Server. Specifically, it uses Zend Server job queuing and job rules to coordinate data traffic between systems and manage business rules, and to automate deployment and accelerate changes to production servers. It also uses Zend Server Z-Ray to measure and log performance.

"We validated Zend Server, piloting it first and then testing it. We tested Zend Server, pushing it to the limit, and it just worked. We're now serving over half a million customers on a brand-new stack and with many benefits. Zend Server job queuing is really, really, important to this. It's been up for a year now with zero incidents."

simpel

Staying current also applies to the latest patches and security updates across all commercial and open source components. DIY web applications are at the mercy of what the IT team knows and can address. What about the unknown unknowns? In the past year, there have been 107 software security alerts[4], and there are no signs of slowing. Enterprise PHP demands uptime and bulletproof security, with proactive notifications, immediate access to fixes, and readily available, expert support assistance.

[4] CVE Details, June 2017.

Meeting the needs of the business and the application

Building and managing enterprise PHP applications doesn't have to be difficult, but it can be time-consuming. Like any core application, care and feeding includes staying current with the language itself and all related packages, both open source and commercial, and ensuring security is up-to-date. The decision becomes: Are we spending time on the right things?

In the latest State of PHP survey, we found the vast majority of PHP developers spend between 25 and 50 percent of their time on problem resolution[5].

So, it starts with developer productivity, which drives innovation and positive business results. Using enterprise PHP, developers can create and deploy reliable, robust, scalable, high-performing, and secure web applications rapidly.

USE CASE

Accelerating productivity to drive innovation

To provide his web development team with the best tools to accelerate productivity and innovation, Adam Kammeyer, web programming project leader at Citizens Equity First Credit Union (CEFCU), decided to use PHP for all internal web development. "For me, PHP was the obvious choice," says Kammeyer. "Not only was it easy for me to read, but I knew it would be an easy and approachable language for newcomers that would hopefully be joining my team. We now have a great program for new developers, and PHP gives them immediate success."

Now, he adds, "Every PHP application that we develop is deployed through Zend Server. At my last count, it was 60 to 70 applications. Four years ago it was just one application. PHP and Zend Server are the backbone of our internal websites at CEFCU." Kammeyer considers this decision very important to the continued success of CEFCU, enabling his team to deliver greater innovation and a continued pattern of growth for the organization, which will translate into even better customer service and financial well-being.

CEFCU
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[5] State of PHP survey, Rogue Wave Software, January 2017.

PHP is free, but you still need support

While PHP is enterprise ready, it's open source software (OSS), which means that while it's "free," it does have a cost of ownership. Like all software products, you can't simply obtain and deploy it and be assured that from that point on everything will be just peachy. As OSS, PHP is provided "as is." It's not automatically covered by warranties and service-level guarantees. This is also the case with the entire PHP stack (e.g. LAMP stack: Linux OS, Apache Web Server, MySQL relational database, PHP).

Because PHP drives key systems, it's important for organizations to have a plan to support this software, including a dedicated IT staff with specialized expertise. In many organizations, the responsibility for supporting PHP and the rest of the LAMP (or WAMP) stack falls to IT and developers who are organizations' most valuable assets. Regardless of who, there's a need to support PHP and its complete stack, and to provide that support most effectively.

Enterprise PHP

With what's riding on your web applications, it makes sense to remove risk where possible. That means:

- A complete, tested, optimized PHP stack
- High availability architecture at scale
- Application performance monitoring
- Performance tuning and optimization
- Ongoing proactive administration and maintenance
- Access to expert support

OSS support challenges and costs

While OSS is ostensibly "free," there's definitely a cost of ownership inherent in using open source products:

Security

- 75 percent of data breaches now occur on web apps.
- 70 percent of web apps are running old, unsupported versions of PHP.

Availability and performance

- A conservative estimate from Gartner pegs the hourly cost of downtime for computer networks at $42,000.
- A 1-second delay in page response can result in a 7 percent reduction in conversion.
- The average annual cost of downtime to a Fortune 1000 company ranges from $125 million to $250 million.
- 56 percent of app development and operations professionals have had the experience of apps that worked in testing, only to fail in production.
- 43 percent of developers say they have trouble keeping up with demand for frequent deployments, which is a big problem since rapid time to market and continuous delivery of new releases are critical to marketplace success. If you fail to innovate, your competitors will eat you alive.

Web applications can run the gamut from internal to external, large-scale to small, and simple to complex, but when it comes to enterprise PHP, the applications have one thing in common: The organization relies on them.

Incremental costs over time to deploy, manage, secure, and optimize your web applications will rapidly accumulate, and add an unnecessary burden to your development and IT teams. Stay focused on your organization goals, deliver an optimal experience for your customers, and ensure your teams are working on the right things. That's enterprise PHP.

Zend Server is enterprise PHP

Comprehensive runtime for enterprise PHP:

- Create and run great applications faster
- Isolate bugs with Z-Ray and code tracing
- Automate deployment
- Monitor applications
- Optimize performance
- Gain deep insight into running code
- Scale on-demand
- Integrate with existing tools

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