



CASE STUDY: SOFTWARE2

Accelerated delivery of an application Hub serving tens of thousands on any device

INDUSTRY

Software

CHALLENGES

Application virtualization technology for educational institutions

WEBSITE

www.software2inc.com

SOLUTION

Zend Server

RESULTS

"We've been able to develop a consistent release schedule and deploy more functionality. It's definitely a much bigger solution. And as we grow, the more confident we are in our decision to use Zend Server."

Ryan Heath, Vice president of technical services, Software2

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As Software2 co-founder Tony Austwick tells it, the university desktop is one of the most complex IT environments in the world.

Consider this: Over the course of four years, a single student may never sit down to work at the same machine twice. Welcome to Software2's world: Engineering solutions to solve dynamic and large-scale issues for hundreds of universities and colleges around the world.

Making CIO Review's list of most promising education technology solution providers, Software2 meets the needs of both universities and their students with an internally developed application portal or Hub. Powered by Zend Server, the Software2 Hub is an application portal enabling students to access university-required and sanctioned software from a customized, intuitive screen.

Software2 entered the education market as the exclusive reseller of application virtualization technology, Application Jukebox, which uniquely enables institutions to deliver 100 percent of their Windows applications to end-users in a virtualized and controlled manner. Six years later, Software2 offers a range of products including profile virtualization, end-user analytics, and security monitoring, all geared towards improving the student experience.

To get an understanding of the scale, one new customer for Software2 can equate to tens of thousands of users, accessing hundreds of applications across thousands of devices. With those kinds of numbers, the combinations — and complexity — are endless. According to Ryan Heath, a veteran PHP developer and vice-president of technical services at Software2, the evolution has been a long time coming, "Ten years ago, students could only access applications via the university's own hardware. Five years ago, they would be given a CD containing some titles with limited-use licenses requiring uninstallation at completion. Now, students want and need to access services wherever and whenever. In fact, our recent student survey indicates that 92 percent of students expect a university-provided app store."

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The portal solves a number of challenges unique to education providers. Heath explains, “Our customers are expected to support a wide range of environments, from their own fixed lab and open access machines to any number of devices that a student may bring on-site to access services provided by the institution. Additionally, different technologies may be required to support each of these environments depending on the type of service a user is wanting to access. The biggest headache we see day after day is combining a wide range of enabling technologies into a solution that is streamlined for the end user. We decided that we could solve this problem by developing a single point-of-access platform that students (or staff) at an institution could visit and access all of those services, no matter where they were, or what device they were connecting from.” The concept of the Software2 Hub was born.

The Software2 Hub allows institutions to create their own, customized portal where users can access a wealth of services and resources with minimal effort required for configuration and management.

Community, and in this case a partner organization was contacted to help resolve the problem.

Partnering with customers to design the application portal

Working with ten customers as design partners, Software2 began to outline what an application portal would look like, and what would be required. Considerations such as security, administration, restrictions, user experience, and maintenance became the focus for the group’s meetings. They soon discovered that of the approximately 300 applications, about two-thirds are common across the customer base. And, the reality of bring-your-own-device (BYOD) administration required close scrutiny of applicable software licenses, often requiring restricted application use based on a number of different environmental parameters including geographic location.

Heath explains the decision to build using the PHP web development language, “For our project to be successful, we needed an underlying technology that was powerful enough to fulfill all of our requirements while being flexible enough to run in a wealth of different environments. My years of experience developing web applications with PHP left me confident that the technology would be a good fit for the project we were undertaking.”

Along the way, the portal began to take shape. In four months, the team created an initial proof-of-concept using PHP, then in six months migrated this to a more long-term and scalable solution. Already familiar with Zend Framework, Zend Server became the fast-track to meet timescales and the demands of the portal. As Heath says, “We’re a small company in a very competitive space, so we needed to build something quickly not only to satisfy our customers, but to make our mark in the industry. We knew by using Zend Server we could get there faster. And this proved to be true. Using Zend Server saved us from needing to utilize two people for administration, deployment, environment management, and bug-fixing. Within the first 3-6 months, Zend Server paid for itself, and continues to enable our rapid growth.”

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The LAMP stack: A large and complex ecosystem

The Software2 team knew they needed to provide consistent uptime and wanted an enterprise-grade infrastructure that their customers could rely on. They also needed to combine that with an IDE and development workflow that would allow them to produce an enterprise-grade product. The team needed a full PHP stack that could be easily installed, configured, and updated to continue to meet evolving customer demands. With those requirements in mind, a lean staff, and a commitment to customers for rapid delivery, the team decided on Zend Framework, Zend Studio, and Zend Server.

Running a full Linux Apache MySQL PHP (LAMP) stack means handling a number of different components, with each one often difficult to manage and configure. Most of this requires an expert level of understanding to run and administer. Add in security requirements and performance tuning, and it can often be a nightmare for a team to manage. Says Heath, “The detailed understanding of every component that makes up the web stack was not something I wanted my team to worry about. There are so many caveats to managing a web stack and a lot of responsibility to keep it running in a reliable, efficient, and secure manner. That was a rabbit hole I really didn’t want to get stuck down.”

Heath continues, “Zend Server gives us a unified installation process for all of our servers and allows us to quickly and simply configure each environment through the consolidated administration interface. From a developer’s point of view, we wanted something that would put the effort in for us so we only had to worry about developing. I would estimate the Zend Server installation, application deployment, and upgrade process saved us at least two months of development time so far. That is two extra month’s effort put into developing the Software2 product rather than dealing with production infrastructure. Using Zend Server allows our developers to focus on our own commercial enhancements and features. We recently added support for accessing Windows applications from OS X and Android devices, which has definitely won us a lot of new customers. We would not have been able to deliver that functionality so soon without Zend.”

The universities look to Software2 for guidance and a simplified way to run the application portal. This became possible with Zend Server. “We were looking for a full PHP stack, and it happened to be something that could be easily installed, and could be upgraded regularly. Zend Server was the only way we could do that,” says Heath.

Managing and growing, 10,000 users at time

Each of Software2’s customers host their own server infrastructure on-site. This presents its own challenges as Software2 needs control and insight into a growing number of server environments. Additionally, with each new customer Software2 adds, the task of upgrading servers and the application itself grows exponentially. This is something that we can only handle with the automation and deployment capabilities of Zend Server.

Commenting on Zend Server, Heath says, “Zend Server works best when part of an entire solution. A great product on its own, when you start bringing it together with Zend Framework and Zend Studio, you begin to see the real benefits. Using these technologies over the course of the past year, we’ve been able to develop a consistent release schedule and deploy more functionality. It’s definitely a much bigger solution, and as we grow, I become more confident in the decision to use Zend Server.”

Committed to its customers, what does the future hold? Now that Software2 has its foundation, the team will begin exploiting additional features available in the Zend ecosystem such as deployment and upgrade automation (expanding on their current continuous integration workflow), caching and job queuing that are part of Zend Server. Says Heath, “With more customers come more users and applications. Performance and stability become much more critical. This is something we can now focus on using tools like Z-Ray.”



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