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Lawrence Gordon, MD,
Chief Executive Officer,
Waiting Room Solutions

Doctors no longer waiting with Zend and Waiting Room Solutions

Customer: Waiting Room Solutions

Geography: US domestic healthcare providers (headquarters: NY State)

Industry: Healthcare

Challenges:

- Web-based (SaaS) Electronic Medical Records and Practice Management
- Doctors impatient, work at very fast pace, so SaaS a significant challenge
- Development and testing cycles much too long
- Needed to optimize queries occurring in production system

Solution: Zend development environment and run-time production solutions

Waiting Room Solutions (WRS) is an award-winning, CCHIT certified, web-based EMR (Electronic Medical Record) & Practice Management System for physician’s offices.

WRS’s offering is provided using a Software as a Service (SaaS) delivery model on the Web, for a per user monthly fee. All WRS modules are integrated through a workflow engine. The modules available include: electronic health records, billing, scheduling, electronic prescriptions, online patient registration, practice website, messaging, order tracking, transcription, document management, and disease management.

“Waiting Room Solutions’ connectivity engine enables the sharing of health information and the synchronization of data between patients, physicians, hospitals, labs, pharmacies, and insurance companies,” said Lawrence Gordon, chief executive officer at WRS.

Challenges

As the leading web-based electronic medical records (EMR) solution, Waiting Room Solutions was faced with competition from traditional on-premises EMR software vendors. One of the biggest hurdles was the ability to deliver a web application with the speed that an on-premises system could deliver. Doctors are known for being impatient and the fast moving environment of a medical office will not wait for a slow response from their information systems.

Lengthy development cycles at WRS were problematic because they led to:

- Long periods of time between releases of product.
- Lengthy pre-release testing cycles to ensure that the months of development effort were as error-free as possible.
- Lack of timely customer input and subsequent lack of responsiveness to customer’s (doctor’s) needs in product.

One of the ways WRS chose to address these challenges was to integrate already existing technology in the open source PHP ecosystem. WRS is built on the LAMP (Linux, Apache, MySQL, and PHP) stack, whereas most other EMR systems are built on proprietary platforms. Gordon states, “Waiting Room Solution’s adherence to open source principles and standardized data nomenclatures ensures interoperability—the ability to connect to other systems—a significant requirement of President Obama’s stimulus package.”

Prior to the development of WRS’s codebase, the industry standard was to use proprietary data nomenclatures. This led to widespread data corruption, inability to report consistently internal to a system and between systems, and integration nightmares. Waiting Room Solutions has built its data sets strictly upon published standards, which were subsequently backed by the Federal Government.

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Brad Hall,
Systems Architect,
Waiting Room Solutions

The nomenclatures used by WRS include standards for medications, medical terminology, provider identification, and procedure and diagnosis codes. Also, Waiting Room Solutions data synchronization and messaging engine were built on widely published HL7, X12, XML and DICOM standards. These standards have recently been backed by federal laws.

Solution

The decision to load, maintain, update and centralize standard data sets has truly put WRS in another league with regards to data quality and their ability to speed deployment of new improvements to their products.

To enable affordable scalability and connectivity with other health information systems, the software architects at Waiting Room Solutions used open source technologies. This has positioned WRS as one of the only web-based solutions for physicians with a high performance and adaptable infrastructure that can also be affordably deployed.

For deployment WRS uses Zend’s web application server technology. Some of the issues that the Zend web application server helped them identify and get resolved quickly, according to Brad Hall, systems architect at WRS include:

- “Pinpointing and optimizing the source of intermittent system latency became significantly easier with Zend.”
- “High availability session clustering allows WRS to fully load balance and provides complete redundancy, guaranteeing uptime, even during maintenance.”
- “Caching has dramatically reduced server load, allowing us to serve many more pages with fewer servers.”
- “Zend’s app server file compression has vastly reduced our bandwidth usage, decreasing latency and allowing us to serve more pages without paying for more bandwidth.”

Waiting Room Solutions had adopted Zend Studio a number of years ago for their PHP development. Prior to this time, development cycles lasted several months. Since then, Zend Studio has enabled Waiting Room Solutions to adopt a rapid development cycle of releasing code updates on a bi-weekly basis to its customers.

The Zend solution as a whole has drastically reduced the pre-release software testing costs for WRS. The web-based modules WRS provides have also enabled instant feedback from their customers on their now much more frequent updates.

Result

Waiting Room Solutions adopted Zend’s web application server to meet their high-performance needs. Using the advanced application monitoring tools, Waiting Room Solutions optimized its queries so that none were running slower than 50ms (1/20th of a second). The Zend load-balancing tools enabled a multi-server web server layer that provides quick response to end-users and has scaled as WRS has grown.

Zend solutions improve web application performance & software staff productivity, saving customers time as well.



The PHP Company

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