



High Performance Content Management

Supercharge dotCMS with Azul Zing

Learn how advanced JVM technology from Azul Systems helped deliver massive scalability, high performance and reduced downtimes for a Fortune 500 healthcare company using the leading Java content management platform – dotCMS.

An Enterprise-Class CMS Deserves an Enterprise-Class JVM



DotCMS is the leading Java Open Source content management system for companies that demand performance in their Web operations and CMS. With dotCMS, companies create value and deliver dynamic user experiences online. Built on open standards; JSON, XML, REST, Spring, OSGI and CMIS, dotCMS is the developer friendly CMS. Extensible and massively scalable, companies can rapidly deliver personalized, engaging content across devices, channels, second screens and endpoints, all from a single system.

Zing® is a 100% Java-compatible JVM based on Oracle HotSpot. Designed for enterprise applications and workloads that demand higher transaction rates, greater response consistency with higher sustained throughput, Zing is the only JVM that can elastically scale in memory and CPU cores and still guarantee response time consistency.

The Setting

The story begins with a Fortune 500 healthcare company running more than 1000 websites on a cluster of 3 dotCMS servers running with 40 GB heaps. DotCMS is designed with massive multi-site hosting in mind and had been

successfully scaling out new sites with the growing healthcare enterprise for several years.

As dotCMS and the healthcare company made changes to infrastructure and configurations they identified a recurring set of memory conditions in their production environment causing hang-ups and degraded performance, often requiring re-starts. No one was happy about being “on call” and “the business” wasn’t too keen about the downtimes either.

The Challenge

Initially the problems were elusive and it took a couple weeks of writing scripts, parsing log files and doing painstaking analysis to finally reveal the root cause. The difficulty was compounded by the fact that the healthcare company did not have a testing environment that could simulate production load. The team was left with working, testing and debugging in the production environment itself. The healthcare company was running Oracle’s standard JVM. The system was also running under heavy load with large datasets and high memory turnover. These conditions produced excessive pauses associated with Java garbage collection (GC). The excessive GC pauses caused nodes in the server cluster to lose communication and become unresponsive

BENEFITS OF SUPERCHARGING DOTCMS WITH AZUL ZING

- Delivers highly consistent response times, even under peak loads
- Improves GC performance and application availability
- Supports larger in-memory deployments for faster information access
- Provides faster time-to-deployment with reduced JVM tuning



Because dotCMS is an enterprise-class, feature-rich CMS that businesses rely on for their mission-critical Web presence, performance and scalability are imperative under all load conditions. By deploying on the Azul Zing runtime for Java, dotCMS customers can leverage best-in-class JVM technology that can improve response time consistency, especially during peak loads. Even more, Zing simplifies deployment to help get you up and running quickly.

for prolonged periods of time. The servers could no longer serve the content that was synchronized across the cluster.

Armed with a fresh root cause analysis in hand, the team decided to try and tune GC with the standard JVM. After a couple weeks, and with all their effort and tweaking they were able to make some improvements over the GC pauses, previously measured to be up to 170 seconds. However, even their best improvements could not get them anywhere close to the < 2-second goal they had established for acceptable performance (for max GC pauses).

Choosing Zing

At the same time, while attending the JavaOne™ conference, CTO Will Ezell of dotCMS started a conversation with Azul Systems representatives about the challenges they were facing with their healthcare client. They agreed. Why not short circuit the difficult GC analysis and trial and error testing and give Zing a try?

First, dotCMS tested and validated compatibility and performance gains using Zing in their in-house testing unit. With encouraging results in hand, dotCMS recommended a proof of concept/trial with the healthcare company.

After a successful POC at the healthcare company that demonstrated the ability to meet and exceed the < 2-second goal for acceptable performance for GC pauses, and showed significant improvements in performance and stability of the infrastructure, the teams concluded that Zing advanced JVM technology was a good fit and a great solution for the challenge at hand.

Today, the healthcare company is experiencing dramatically improved throughput performance, higher availability, reduced downtimes, and GC pauses are well within their target of acceptable performance. Importantly, page load times are down and the servers are in sync across the cluster environment that hosts the company's 1000 websites. Noticeably, "the business" is resting easier and the "guys on call," can finally get some sleep.

Zing: the Best JVM for Your dotCMS Deployment

Your content management system is mission-critical to your business. Consistent response times and unshakable reliability make for a user experience that increases customer satisfaction, lowers your call center costs and improves your brand image. By deploying dotCMS on Zing, you can ensure high performance operations and achieve maximum returns on your CMS investment, while lowering your total cost of ownership over conventional JVM deployments.

Solution: An Enterprise JVM for an Enterprise CMS

Zing provides dotCMS deployments with greater consistency, availability, scalability and sustained throughput than conventional JVMs. This allows for broader usage of advanced features with more consistent response times and higher performance even under load. And, Zing doesn't require extensive tuning, speeding time to market.

Zing's performance is independent of the application's memory size, so customers can store more information and documents in memory for faster access with highly consistent response times.

Contact Us

To discover how our support services can help you optimize and protect your investment in Azul products, contact Azul Systems today

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