

Customer Case Study



All Systems Go.



Mosso
San Antonio, TX
www.mosso.com

Industry
Clustered Hosting

About Mosso

- Full service, enterprise-level hosting technology
- A division of Rackspace
- Zero downtime guarantee
- 40 employees
- 30,000 sites & applications
- 2 billion requests per month

Key Benefits

- Single systems management solution provides coverage for all technologies
- Complete monitoring and metrics for physical and virtual environments to allow for capacity planning
- Single view interface provides complete visibility into the network for all employees
- Comprehensive management from Hyperic HQ has supported 100 percent up time SLA directive
- Automation of management task saved future headcount and improved existing team's service levels

Managed Hosting Provider Powers Extreme Growth and Virtualization with Hyperic

Launched in February, 2006 as a venture company of Rackspace Managed Hosting, Mosso was started by two entrepreneurial employees, Jonathan Bryce and Todd Morey. Bryce, a developer, and Morey, a designer, wanted to find a way for people with online services companies to promise their clients that their websites and email would work—all the time—without needing to be the ones responsible for all the technology.

Mosso's flagship product, the Hosting System, is the first web hosting platform designed for people who build websites. The Hosting System is built on cross-platform, clustered-computing architecture and is highly scalable. Powered by VMware and a mixture of proprietary technology, components can be requested and provisioned on-demand for customers looking to quickly deploy websites without having to acquire, build or create any technology.

Since launching, the company has grown to power almost 30,000 sites today. Mosso's customers and their users process billions of requests every month. Simplifying complex technology to bring reliable, scalable service to web application developers is Mosso's mission. Enterprise systems management software that keeps pace with their always-on, always-changing environment is essential.

Customers Rely on Mosso for their Livelihoods

The Mosso infrastructure is highly customized and complex. Co-founders Bryce and Morey had a vision of providing enterprise-level website and email hosting for their customers. To accomplish this they needed clustering, load-balancing, virtualization and massive amounts of shared storage—the kind of technologies sites like Google and Amazon.com use to stay online. They also needed to fuse these technologies together in a way that ensured scalability, reliability and the flexibility to provision capabilities to any of their users.

Mosso provides a very broad service: customers can take advantage of a number of technologies across Windows and Linux. To ensure customer satisfaction, it was critical that Bryce and Morey architect their datacenter to ensure agility and scalability. They organized their clusters around primary technology components such as PHP4, PHP5, MySQL4, MySQL5, Ruby on Rails, .NET, and Microsoft SQL Server. Furthermore, they compartmentalized these clusters using VMware ESX Server so they could monitor and manage the growth of their customer's websites and

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Environment

Hundreds of servers with:

- PHP 4 & 5
- MySQL 4 & 5
- PostgreSQL
- Windows – ASP & .NET
- Ruby on Rails
- SQLServer 2000 & 2005
- SAN
- Load balancers
- Network devices
- J2EE Application Servers (Tomcat, JOnAS)
- VMware ESX

Hyperic HQ Manages

- Dozens of custom built technologies
- 9000+ managed resources
- 6500 metrics per minute

seamlessly relocate resources to match demand with resource availability. This kind of architectural complexity can quickly become an operations nightmare. Bryce and his team knew early they would need a world class systems monitoring and management solution to maintain their high service levels.

“Our customers rely on us for their living. If they have downtime because of an infrastructure issue on our end, it can have a major impact on their livelihood,” said Bryce. “Today, with thousands of websites powered by Mosso, every decision is carefully geared to avoid that possibility.”

Coping with Growth

In the first six months of 2007, Mosso’s business doubled. Their customer profile also accelerated, with customer sites regularly garnering front page attention on CNET, Digg, and Technorati. Traffic on these sites would spike dramatically, with no warning for the Mosso team supporting their web infrastructure.

Virtualization helped immensely. The Mosso operations team was able to monitor the activity of a site, and perform a live migration of any affected virtual machine to a less taxed hardware resource. Soon, however, the team wearied from the exhausting game of virtualization “whack-a-mole”.

Bryce and his team initiated an extensive architecture review to design a better method to respond to these situations. At the heart of it was the need for a more modern systems management solution – one that could keep pace with the fluid nature of the VMs and could better prepare the team to anticipate problems and deal with them more proactively.

To succeed Mosso required a holistic perspective to enable them to pinpoint application-level problems, and correct them with greater lead time rather than simply relocating application services. In order to obtain this, the team needed a solution that could provide detailed metrics and requests inside the applications running on virtual machines in context with the physical performance of the VMware Server – all from a single view.

Looking for an Answer

The team evaluated various combinations of management tools, including Nimbus, Nagios, HP Openview, Five Runs, and Cacti, but none of these were able to fully support all of their technologies, particularly when it came to the virtualized environments and the clustered servers. In June of 2007, the Mosso team downloaded the open source version of Hyperic HQ for VMware. Within three hours, they had implemented

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“Customer service is our lifeblood. We believe in putting humanity behind our technology. With Hyperic HQ, anyone in our organization has visibility at any time into our network. This means we can immediately give our customers the information they need to keep their businesses up and running. This is critical to the success of our organization.”

Jonathan Bryce
Founder, Mosso

Hyperic HQ on more than 20 systems, where it began monitoring and collecting metrics both inside and outside of the virtual machines. They saw application level metrics that outlined performance of custom services distributed across virtualized resources. They pinpointed users and applications that skewed resource consumption, and improved service levels. In a short time, Mosso knew it had found a management system that could match its needs. The following week, the team downloaded the enterprise trial.

Hyperic HQ enabled Bryce and his team to consolidate the discovery, monitoring, analysis and control of all application, system and network assets, both inside and outside of the virtual machines powered by VMware.

For the first time, the engineering team had the single window they had been searching for—not only for their physical servers, but their virtual ones as well. This was a crucial benefit.

The next time one of their high profile bloggers hit the front page of Digg, the team was able to pinpoint that a single website application—specifically a feature of the web application—was beginning to consume resources at a meteoric rate. The team then called the customer to discuss options. Together, using the data from Hyperic, they were able to optimize his site and improve his level of service.

In early August, the Mosso team decided to fully deploy Hyperic HQ Enterprise. The ease of deployment, scalability, and lack of disruption to regular business processes were additional selling points. Within two weeks, all of Mosso’s critical services were completely monitored by Hyperic HQ.

Hyperic Gives Mosso a Single Window

Because Mosso’s customers host thousands of dynamic applications with ever-changing code bases, bandwidth and resource usage changes without notice. You name it, it happens.

Without strong management and alerting tools, a node in the Mosso infrastructure could become so overloaded that no diagnostics could be run, which could ultimately set the stage for an outage.

With Hyperic HQ Enterprise, Bryce and his team created a sophisticated alerting scheme that incorporated control actions as a natural reaction to these alert conditions. Availability alerts automatically initiated custom scripts that captured information specific to the Mosso service including

Customer Case Study



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About Hyperic Inc.

Hyperic provides the only open source systems management software purpose-built for the fast-moving online services market. Hyperic's software provides unprecedented cross-stack visibility and helps enterprises to pinpoint, correct and prevent problems at every layer – including hardware, networks, virtualization, middleware and applications. Hyperic's technology-neutral approach supports innovation by enabling manageability across technologies in the market today as well as those of tomorrow. Hyperic's software manages online services businesses of all sizes, including hi5 Networks, eHarmony.com, MyNewPlace.com and more.

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“snapshotting” - running services and correlating them to user accounts. This alerting process provided diagnostic data that helped the team troubleshoot a specific application and contact a specific user to solve their problem before an architectural shift such as a live virtual machine migration was mandated.

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A System that Pays for Itself

Providing early and detailed contextual information empowered the team to provide better service to their customers and make better use of their infrastructure. The sophisticated alert features also streamlined management, with global alert templates allowing the team to define alert policies once and apply them to groups of resources. Auto-discovery seamlessly aligned technology inventory with Mosso's management policies, inside and outside of the VMs.

The software itself required minimum overhead to manage yet provided broad functionality and visibility. As a result, not only has Mosso improved the service level of its infrastructure, it has done so without taxing the company's administrators.

“If I had to grow my IT team by 60 percent every three months just to keep up with our traffic growth, the business model simply would not scale. We need our people to be working on special projects, not routine maintenance,” said Bryce. “Hyperic has been a great partner and the support we've gotten has been phenomenal.”

Mosso continues to expand their use of Hyperic. Currently, all customer-facing platforms are managed using Hyperic HQ Enterprise, and Mosso plans to extend their deployment on the remaining development servers by the end of the year.

