“Our single Master DB could no longer handle the number of connections and queries we needed to serve during peak periods. This obviously resulted in us dropping traffic and losing revenue. With traffic expected to grow, we had to look for a solid solution.”

Trent Goulden, System Administrator
availability was a key requirement, under no circumstances should the system go down.

Since Spree did not have a dedicated DBA, they needed a cost-effective solution that was easy to manage. The traffic pattern for an online retailer can vary greatly, with peaks during the holiday rush. Beefing up for peak traffic requires scaling up systems to allow customers to seamlessly transact on the site. Therefore, scaling the database needs cannot be a tedious procedure that takes time away from other activities.

**SOLUTION**

The number of large transactional queries that the team was seeing pointed them towards a highly available, multi-master setup. NoSQL databases were ruled out, the database was highly transactional and Magento was based on MySQL. The team briefly looked at Continuent Tungsten, but were not comfortable with a Java-based solution.

The team spent 2 months evaluating Galera Cluster. The initial deployment was quickly done with the ClusterControl. The cluster was subjected to a battery of availability tests. Some of the important characteristics tested included synchronous multi-master reads and writes, and rolling restarts with zero downtime. ClusterControl provided a wealth of insight and visibility into the cluster, which helped the team understand what was going on.

“The solution was incredibly fast to deploy, the ClusterControl tool was simple to use and we had our basic server setup fully operational within 40 minutes of completing the configuration”, says Trent Goulden. “The ClusterControl health checks and process monitoring make it very hard to actually kill the cluster. In our evaluation, the solution was able to automatically recovery from every simulated failure we could throw at it - with zero data loss.”

The team went live after the evaluation. The actual migration was straightforward, and required no schema changes. At the time of writing (October 2014), the system has been running live for over a year without issues, which has brought the peace-of-mind that Spree now has a data layer that is highly available. No traffic is dropped due to a database limitation, even when subjected to extreme traffic conditions.

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“Some of the benefits we’ve seen is powerful DB monitoring at a glance. The Health Reports have really aided us in identifying simple fixes which have shown fairly significant performance gains”, says Trent Goulden. “We feel more confident about our DB layer these days – things almost take care of themselves. We spend zero time sorting out DB uptime issues anymore, and this has allowed us to really focus our efforts on other areas of the business. Several nines will remain the bedrock of our technology stack for the years to come.”

Spree’s technology stack continues to evolve, but at the time of writing, they used a mix of Nginx, Varnish, Node.js, PHP5, ElasticSearch and Percona XtraDB Cluster (Galera).

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