Spil Games Reduces Maintence of High Availability with Galera Cluster

Spil Games is a social gaming company, with over 250 employees. It has grown in a short time from an internet start-up, to a global on-line gaming leader. It has now 49 gaming sites, serving 180 million users per month. This rapid growth of a business based very much on its database, and that has a large user-base that demands high-speed data service, presented some major challenges to Art van Scheppingen, as Head of Database Engineering at Spil Games.

Inherent Difficulties and Challenges

As they began to find difficulties with the administration and maintenance of their database system given their particular needs, Art van Scheppingen and his staff looked to find a better alternative. The main challenge was to find a replacement for their aging high availability system that would work in both old and new storage layers. Van Scheppingen says, "The old storage layers were not much more than direct database access from the applications." They were using MMM with floating IP addresses and one active master, along with an inactive master that could assume the role as master. This system writes only to the active master and performs read queries from the inactive master and slaves.

Geographic Reach
180 Million Monthly Active Users

Western Europe 31%
Eastern Europe 12%
Asia 12%
Rest of the World 5%
North America 13%
Latin America 27%

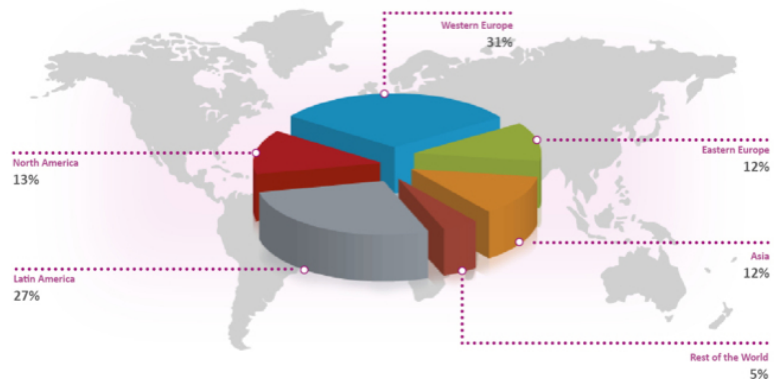Source: Google Analytics, August 2012
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The impact on their efforts had been mostly in the maintenance of these masters and slaves. They needed to ensure that the inactive master and slaves were synchronized with the active master. If one should fail, they would have to clone the master or another node to restore the failed server. This was time consuming and reduced the availability within the cluster until the situation was resolved. "Almost all monitoring tools to retain this type of HA are flawed: MMM, MHa and Percona-PRM all have similar issues where they make too many decisions on their own and try to repair the cluster by themselves (i.e., promote slaves to master)," says van Scheppingen.

Finding a Solution

To improve their situation, Spil Games looked for a solution that would provide them with the high availability they needed, consistent data between nodes, and easy maintenance. They sought to abandon the method they had been using which performed separately reads and writes, and looked to have a single interface to their database. They felt that MySQL replication wasn't a good solution since it's single threaded within a single database. They wanted to maintain a consistent state throughout the cluster. They found that all of these requirements and preferences are met in Galera Cluster, with the assistance of Codership.

The main reason Spil Games decided to implement the Galera solution was due to ease of use. "Once configured properly it is easy to add new nodes to a cluster. Once properly automated using Puppet, it becomes very easy also to create new clusters," says van Scheppingen. "Obviously, it took more than that to make the decision: we also investigated creating back-ups, load balancing (e.g., HA Proxy, MaxScale and Riverbed Stingray) and trying actually to push the cluster to its limits." In the end, they found Galera Cluster to be the best solution.

Spil Games now uses Galera in a three-server cluster, utilizing the Percona XtraDB Cluster package. All of the servers are 16-core machines with at least 148GB of memory, and some use flashcache. For load balancing, they use Riverbed Stingray load balancers since that was already part of their infrastructure. For back-ups, they use Percona XtraBackup and stream the process via the network to a centralized back-up solution (i.e., BackupPC).

Benefits

Now that Spil Games has deployed Galera Cluster, it has given them much more flexibility. "We cut down on the number of components involved, reduced complexity and increased velocity," says van Scheppingen. "We now can deploy a new cluster or add a new node a lot faster." The benefits have been no data loss, no slave lag, 24/7 availability, and no complex fail-overs. All of this has lead to no down-time or data loss, the retaining of customers, and the growth of revenues.

Van Scheppingen says, "Galera definitely lived up to our expectations: even though we had to invest a lot of time and resources for the initital setup and tools, our maintenance is a lot easier and well worth the investment for us." For the future, Spil Games wants to expand the usage within their sharded environment and to consolidate multiple, older active master/inactive master database pairs into Galera clusters. Van Scheppingen says, "We are very happy with Galera and are confident it will serve as our preferred replication/clustering solution for the upcoming years."

About Codership

Codership Ab provides high availability, no-data-loss and scalable data replication and clustering solutions for open source databases. Their flagship product is Galera Cluster™ for MySQL, a True Multimaster Cluster based on synchronous replication. Galera Cluster is an easy-to-use, high-availability solution which provides high system uptime, no data loss and scalability for future growth. For more information about Galera Cluster, please contact info@codership.com