severalnines

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The *Mail & Guardian Online* relies on Severalnines to control database sprawl and automate database operations.

Customer Case Study: Mail & Guardian Online

Mail&Guardian Africa's Best Read

The Mail and Guardian Online

The *Mail & Guardian Online (M&G)* is a news portal, and was the first internet-based news publications in Africa. Launched in early 1994, it is one of South Africa's and Africa's major news publishers and is reputed internationally for its quality content. Today, it is a fast-growing site, taking its place as one of South Africa's top three biggest news sites.

The M&G Online runs numerous sites including:

- **Mail & Guardian Online**

  The flagship news site

- **Amabhungane**

  Investigative Journalism

- **M&G Jobs**

  Find a job and career management

- **Thought Leader**

  Blogs, opinion, analysis

- **The Teacher**

  News for teachers

- **M&G Mobile**

  Seven mobile sites, accessed on mobile browsers at m.mg.co.za

Mail&Guardian Africa's Best Read

At a Glance

Industry: Media

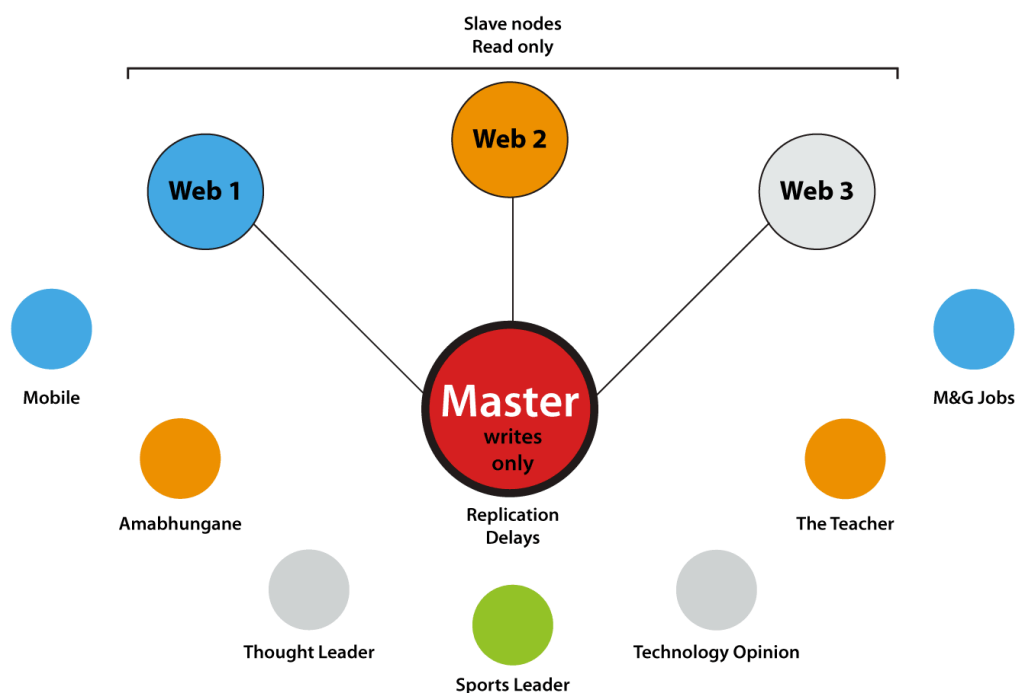**Location:** Johannesburg, South Africa

Hosting Provider: Rackspace, USA

Use Case: Database Automation

Why Severalnines: Full set of automation tools that simplify provisioning and operations of MySQL Clusters.

Challenge

The Mail & Guardian has been successful for years in maintaining its online presence using open source technologies on LAMP architectures. A major challenge was to create a robust platform that could cater for future expansion throughout the African continent. Being an independent news organization with a small development team, cost of operations was an important consideration. The IT team managed an internal server infrastructure, but all online services run on servers hosted by Rackspace in Texas, USA. Hosted infrastructure is very expensive in South Africa, which is the main reason for hosting services in the US.

Chaotic Data Distribution

The IT architecture developed as the business grew, which meant that a number of applications were deployed on an ad-hoc basis. New database servers for applications were created at deployment, which caused a situation where the company operated multiple database servers, with each application having dedicated databases.

The resulting database sprawl proved to be costly in terms of hardware and ongoing maintenance. The team was running at top speed to manually keep up with patches and upgrades while keeping up established Service Level Agreements. Restoring failed database servers was a painful procedure that took at least 3 hours of manual intervention. The database infrastructure became in fact very complex to manage, and required expert level database skills.

Being a well-known news portal, the service has to be accessible from anywhere – all the time. Performance has to be rock solid, even during sudden and unpredicted spikes in traffic. The ability to keep services running all the time, as well as great visibility into performance issues, are essential to delivering a reliable service.

Solution

The M&G IT team had to create a low-cost but robust platform to cater for future expansion throughout the African continent. Data consolidation was a key requirement, and a challenging one as well - data was stored on many servers, in different versions of MySQL or Memcached, and using different replication topologies. Databases were either optimized for reads or writes, and volatile in-memory data was stored in Memcached. Information that was common across different web properties were duplicated in different databases.

The goal was to have a robust clustered database that could scale horizontally on multiple VMs in a cloud environment, and the team looked into MySQL Cluster. "We knew that switching from standard MySQL to MySQL Cluster was like upgrading to a Ferrari, but our biggest fear was that we might not have enough qualified staff to maintain such a system", says Renier du Plessis, Digital Operations Manager at *Mail & Guardian Online*.

MySQL Cluster was a great option with a mixture of disk and in-memory data, automatic data sharding on multiple nodes and inbuilt fail-over. The Digital Operations Manager, Renier Du Plessis, was looking for tools to help deploy and manage MySQL Cluster. When he found and tried Severalnines, he was astonished that he could set up an 4-node MySQL Cluster in a matter of minutes. The Severalnines Configurator (http://www.severalnines.com/config) was very easy to use, had settings for Rackspace Cloud servers, and automated the installation of the whole cluster. Setting up the whole environment, from provisioning servers on Rackspace, installing the database, loading test data and running the first test queries against the cluster took under 2 hours. With the ClusterControl tool, Renier had a centralized graphical view of all nodes, and gained immediate insights into queries across the Cluster. The M&G team never looked back.

> *"The Severalnines dashboard makes it possible for nearly any person in our team to perform quite complex tasks, such as adding new database nodes, applying patches, monitoring performance, pinpointing problems and drilling down to the source"*
>
> *- Renier du Plessis, Digital Operations Manager.*

Severalnines gave the team an easy-to-use, intuitive tool to help them manage the database cluster, rapidly becoming the backbone of M&G's database operations strategy. "The Severalnines dashboard makes it possible for nearly any person in our team to perform quite complex tasks, such as adding new database nodes, applying patches, monitoring performance, pinpointing problems and drilling down to the source", says Renier du Plessis.
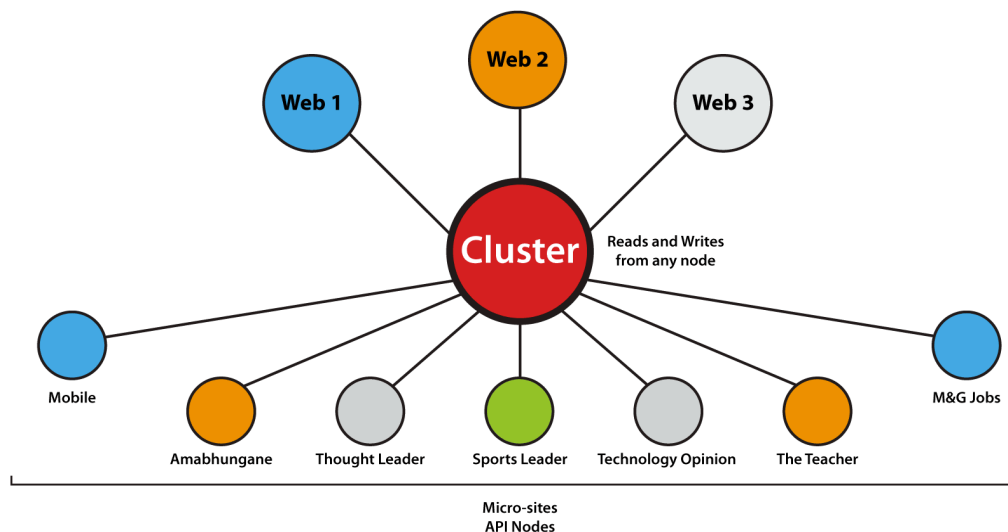
Results

The database layer is critical to M&G's operation. The team understands all too well that any performance issue or downtime causes their customers to suffer, so preventing issues is their first concern. The second is resolving them quickly if they do occur. M&G sees Severalnines as a best of breed provider in its field – automation and management of MySQL Cluster.

"Severalnines is so ingrained in our database infrastructure that every operational exercise we go through involves using the tool, from provisioning new nodes to rolling upgrades and patches", says Renier du Plessis.

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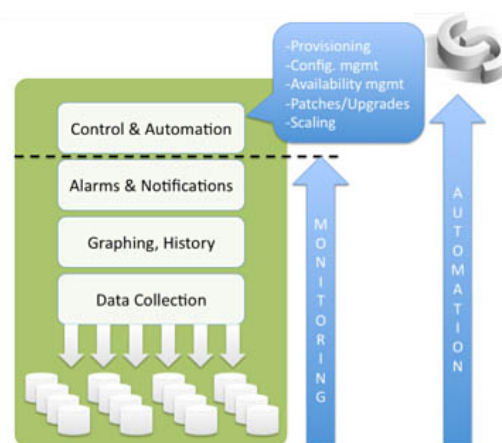**AFTER**   **Centralised Data Distribution**

The company consolidated all data from their MySQL databases and Memcached servers, and the new database platform halved the number of servers required while achieving higher availability.

Tasks that previously required hours, e.g. staging a new database server, would now be done in minutes. The team can easily provision and deprovision SQL nodes to meet changing workloads.

"It is comforting to know that we have leading experts such as Severalnines backing us in our endeavours to provide high quality news to the African continent. The support we have received was excellent and the training provided was invaluable", says Renier.

About Severalnines

Severalnines provides software for easily usable, highly available and auto scalable cloud database platforms. Built upon well-established open-source software, Severalnines has created state of the art products that enable customers to more efficiently build their clustered database platforms, either on premise or in the cloud, hence lowering capital expenditures as well as increasing productivity and innovation.

Severalnines provides software for easily usable, highly available and auto scalable cloud database platforms. Our flagship product, ClusterControl™, enables customers to deploy and manage their database clusters.

Severalnines' goal is to provide the full 'deploy, manage, monitor, scale' cycle to developers, thus freeing them from the complexity and learning curves typically associated with highly available clusters.

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