



# Achieving high availability and combating DDoS



## ROOT LEVEL TECH

**Industry:** Hosting  
**Technologies:** MySQL  
**Datacenters:** 3  
**Products:** ClusterControl

## USE CASE

Complex, multi-data center redundancy requires complex database clustering to ensure uptime and performance

## WHY SEVERALNINES

Dependability and automation to allow the ops team to deploy & manage complex database clusters

## BACKGROUND

Root Level Technology (RLT) is changing the way managed hosting is done. The company builds custom solutions with geographic redundancy, high availability, and protection from Distributed Denial of Service (DDoS) attacks.

Established in 2012, RLT is a team of 15 employees based across North America and Europe. This “skeleton crew” requires a broad range of skills, from hardware, OS, application/web tier, storage, database, networking, disaster recovery, and security, to meet the specifications of their customers to build highly stable and secure networks.

With its continual acquisitions of hosting companies (such as ReliaBox and SemoWeb) onto its DNS servers, RLT is growing rapidly and innovating heavily, quickly becoming one of the top server hosting technology companies in the US.

RLT provides assistance to its customers on how to combat DDoS attacks, which are increasing in frequency. The number of attacks is expected to grow over 100 percent from 8.4 million this year to 17.4 million in 2020. The increase in DDoS attacks is due to the fast return on investment by the attacker, reaching profit margins of up to 95 percent of the original malware investment.

According to recent research by the Georgia Institute of Technology, of the 400 websites they studied, roughly 10% of cloud repositories were infected with malware, so the need for companies such as RLT has been growing rapidly since 1998. This has led to an array of new competitors for RLT coming out of the US each year, but RLT stays one step ahead of their competitors due to the advanced and innovative security they deliver for their clients.

## CHALLENGE

Ensuring organizations get access to the required applications when they need it requires specialists to design and implement their complex networking solutions.

RLT designs highly-complex networking solutions from scratch to develop customized solutions for their customers. Issues arise when the database tier also needs to be distributed and managing this is a complex challenge, as companies can experience networking issues between data centers which can disturb replication and databases can get out of sync, leading to downtime and loss in data integrity.

“If anyone is looking to save time monitoring clusters and help package the management of them, then ClusterControl is the go-to product. They made us look sharper in front of our customers. We’ve not needed to contact support or bring in external technicians to help with deployment because the platform just works.” Stewart Smith, COO of Root Level Tech RLT called on Severalnines when one of its customer’s networking solutions began experiencing issues.

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In trying to diagnose problems within the database clusters, RLT realized they did not have the right expertise to resolve the challenges because they did not have a full-time DBA. They needed to deploy, configure, and monitor the full database stack, from load balancer down to the OS, automatically recover failed instances, upgrades, backups, and scale when required. For instance, if databases are not monitored correctly, immediate action cannot be taken, which can impact the overall performance of the IT infrastructure. Troubleshooting also was a time-intensive task, which affected the business’ productivity and profit margins; rigorous MGMT practices were required, in order to preserve data integrity.

Before using ClusterControl, the team would try to remove these problems by monitoring and manually resolving issues on a database by database basis, but this took dozens of man-hours per week, costing the business thousands of dollars. Building geographically distributed systems to maximize availability while maintaining total security is hard for any company, particularly a smaller one.

## SOLUTION

RLT knew operational efficiency could be improved by automating database monitoring and management, which would allow them to solve the problem with as little human intervention as possible. Monyog was originally reviewed as a potential solution, but it was found to be inadequate because it only provided database monitoring and did not offer the combination of monitoring, troubleshooting, and automated recovery that RLT was looking for.

Finally, through word-of-mouth, RLT came across Severalnines and brought ClusterControl to its customers to implement it in line with their networking architecture.

## OUTCOME

ClusterControl helped RLT customers achieve a highly available and reliable database. The amount of time saved by automating database operations helped RLT to provide its customers with a holistic network implementation service.

Stewart Smith, COO at Root Level Tech, said, “If anyone is looking to save time monitoring clusters and help package the management of them, then ClusterControl is the go-to product. They made us look sharper in front of our customers. We’ve not needed to contact support or bring in external technicians to help with deployment because the platform just works.”

“As more customers come on board whose architectures fit the scope of needing ClusterControl, we won’t hesitate to advise on the implementation of the ClusterControl technology, Severalnines helped ensure the integrity of our client’s data through its robust technology.” Smith concludes.

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Stewart Smith, COO of Root Level Tech