

# Automated High Availability and Innovation

## Implementing the Multi-Master Database Solution MariaDB Galera Cluster on OpenShift

### Customer

Leading provider of IT solutions for the global travel industry, headquartered in Germany.

## SUCCESS STORY

Following the motto “More efficiency thanks to automation”, IT industrialisation makes rapid strides. In order to save operational costs and improve service quality, IT processes and components are being standardised. As a precondition, applications and databases must be operated in one single infrastructure. In order to facilitate this, Adfinis SyGroup has taken on the innovative task to implement the fully automated operation of the multi-master database solution “MariaDB Galera Cluster” on the container platform “OpenShift”.

### Objective



As IT solutions provider for the global travel industry, one must offer a variety of services, which have to be provided with high efficiency and the optimum use of economies of scale. The project aimed to standardise the management of the entire IT environment including the underlying infrastructure. This was to be achieved by migrating all applications and databases to the container infrastructure “OpenShift”. In this way, sub-processes and IT components could be standardised and automated. Thus, in the future, it would be possible to flexibly replace and combine them into new services.

### Challenge



The customer had already containerised all applications and they were readily integrated into OpenShift. Now, the multi-master database solution MariaDB Galera Cluster, with its strict structures and its persistent use of memory, was also to be operated on the container platform. The provisioning of a Galera Cluster on OpenShift was a widely sought-after feature, which had not been created before. At that time, the functionality required for the implementation, namely StatefulSet, was still in its development stage. Thus, in order to apply it, new know-how and basics had to be developed.

### Solution



Due to the high level of complexity involved, the implementation of the solution was outsourced to the Open Source experts of Adfinis SyGroup, who have excelled through innovative solutions and new working methods. StatefulSet was extensively tested and verified and step-by-step it was applied in Open Shift. Thus, a solution was developed, featuring the integrated monitoring of containers in OpenShift as well as the logic for restoring the cluster state in Galera. Thanks to this, IT infrastructure failures can now be processed fully automated and with minimum downtime.

### Benefits



- Automated high availability of the MariaDB environment
- Flexible scalability of DB clusters during operation
- The adjustment of the number of nodes is fully automated
- Seamless integration in Kubernetes and OpenShift
- Efficiency improvement and cost savings

#### Learn More About the Solution



<https://www.adfinis-sygroup.ch/blog>