MariaDB®

CASE STUDY

# Red Hat Builds Enterprise Applications with MariaDB

Red Hat, one of the most successful and respected open source corporations in the world, offers enterprise IT solutions through its comprehensive portfolio of products and services, including Red Hat OpenStack Platform, Red Hat OpenShift, Red Hat JBoss Enterprise Application Platform and Red Hat Mobile Application Platform. Red Hat is a major contributor to dozens of communities, including Linux, JBoss, OpenStack, Ansible, Ceph, Kubernetes, and many more, and while known for open innovation, its success is often attributed, in part, to its enterprise-grade reliability – enabling Fortune 500 companies to deploy mission-critical applications with confidence.
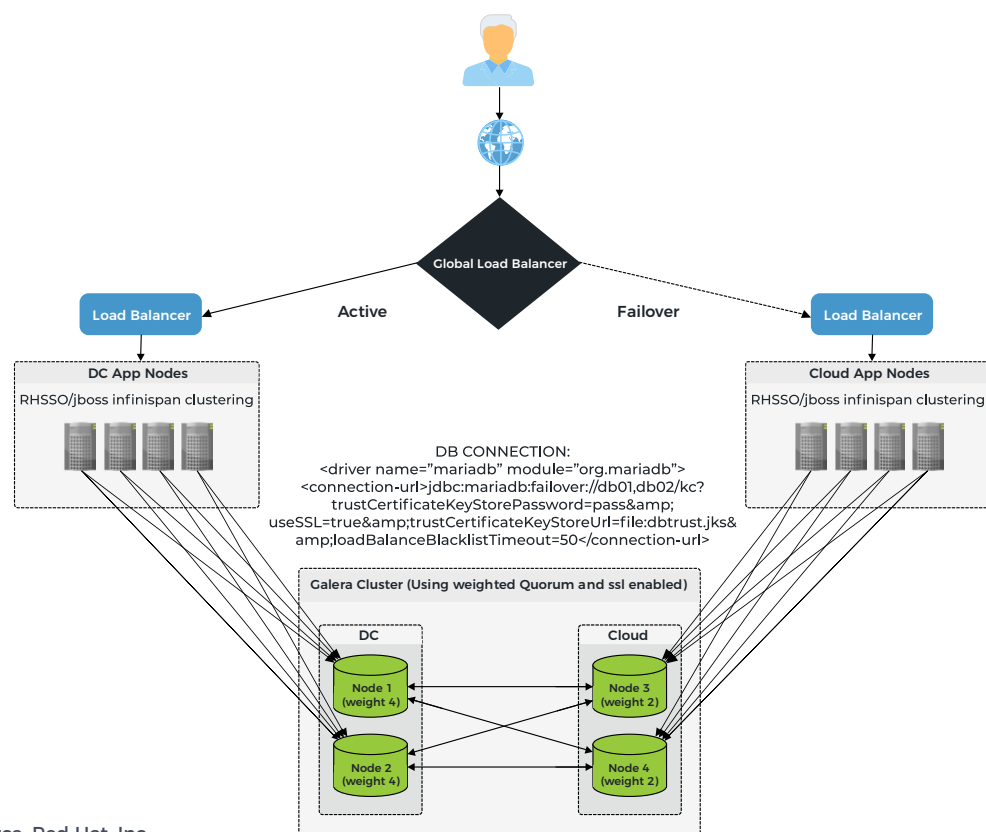
## Help Increase the Security of Mission-Critical Web Properties with an Open Source Enterprise Stack

Red Hat, the leading open source vendor, required a more secure, scalable solution for single sign-on to its customer-facing web properties. To meet the need, they deployed Red Hat Single Sign-On (RH-SSO), based on the Keycloak project. To achieve a multi-site hybrid cloud deployment of RH-SSO, Red Hat chose MariaDB TX Cluster as the backing data store, due to built-in active-active replication based on Galera Cluster.

> " We continue to innovate with open source platforms like MariaDB to support our enterprise needs.

– Srini Are, Red Hat Consulting Database Administrator



Global Load Balancer

Load Balancer          Active          Failover          Load Balancer

**DC App Nodes**
RHSSO/jboss infinispan clustering

**Cloud App Nodes**
RHSSO/jboss infinispan clustering

DB CONNECTION:
<driver name="mariadb" module="org.mariadb">
<connection-url>jdbc:mariadb:failover://db01,db02/kc?
trustCertificateKeyStorePassword=pass&amp;
useSSL=true&amp;trustCertificateKeyStoreUrl=file:dbtrust.jks&amp;loadBalanceBlacklistTimeout=50</connection-url>

**Galera Cluster (Using weighted Quorum and ssl enabled)**

DC                          Cloud

Node 1 (weight 4)          Node 3 (weight 2)

Node 2 (weight 4)          Node 4 (weight 2)

Source: Red Hat, Inc.

## Developing a More Secure Environment with Open Source

MariaDB TX Cluster was chosen, in part, due to its high security standards and features, including data-at-rest and in-motion encryption, authentication and role-based access control. MariaDB leverages both community contributions and internal development to provide industry leading security features. For data at rest, tables or table spaces as well as log files can be encrypted, enabling end-user data to be more secure while at the same time reducing the need to handle encryption from within the application. For data in motion, SSL can enable encrypted connections using the TLS v1.2 protocol. Finally, for data in use, native encryption functions can be used by applications via SQL, giving them full control over what data is encrypted and when.

## Enabling Resilient Services with Open Source

MariaDB TX Cluster helps enable Red Hat to operate its RH-SSO service in a truly resilient multi-site hybrid cloud architecture. MariaDB TX Cluster nodes deployed across multiple public cloud and datacenter sites replicate users' authentication data using Galera Cluster.

The multi-master synchronous replication technology means users' authentication sessions are more likely to be uninterrupted, even during a major datacenter site outage. Finally, a MariaDB subscription provides 24x7x365 support with a 30-minute response time.

## Conclusion

With a full open source stack from the operating system to the database to the application, Red Hat offers a more secure and highly available single-sign-on experience to its customers.

> "
> *Our priority is to support open source technology, which can include databases like MariaDB for our internal purposes, as well as to promote open source culture and values.*

– Srini Are, Red Hat Consulting Database Administrator

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## About MariaDB

MariaDB Corporation is the company behind MariaDB, the fastest growing open source database. MariaDB is available in all leading Linux distributions, including Debian and Ubuntu, and is the default database in openSUSE, Manjaro, Red Hat Enterprise Linux/ CentOS/ Fedora, Arch Linux and SUSE Linux Enterprise – reaching more than 60 million users. MariaDB can be deployed in a hybrid, public or private cloud with technologies like Docker, Microsoft Azure, Amazon Web Services and OpenStack. Recently, the company expanded its product portfolio to include MariaDB MaxScale and MariaDB ColumnStore, enabling a broader range of use cases across the enterprise. MariaDB, with its commitment to community innovation and customer success, is the leading database preferred by developers and trusted by enterprises.