

SKYSQL HIGH AVAILABILITY ARCHITECTURE

The database-as-a-service (DBaaS) used by mission-critical applications in the cloud must meet the same high availability requirements as an on-premises database. However, it should also be optimized to take advantage of cloud infrastructure and services. SkySQL provides best-in-class high availability using an innovative combination of MariaDB and cloud-native technology.

AUTOMATIC FAILOVER

SkySQL uses MariaDB MaxScale, the advanced database proxy enterprise customers running on premises use to ensure the availability of mission-critical deployments, to provide automatic failover. If the primary database fails, MaxScale will automatically promote an available replica, either in the same zone or a different one, and begin routing writes to it – all within seconds, and all while continuing to load balance reads across the remaining replicas.

SELF-HEALING

SkySQL uses Kubernetes and an advanced operator to perform self-healing when cloud instances fail, automatically recovering standalone databases and returning replicated databases to full capacity. If a cloud instance fails, Kubernetes will create a new node. If the original had a MaxScale pod, a new one is scheduled. If the original had a MariaDB Enterprise Server pod, a new one is created scheduled with the original pod's persistent disk attached to it. With replicated databases, a recovered MariaDB Enterprise Server instance is brought back as a replica if MaxScale has performed an automatic failover. If a zone fails, the operator will create a new node in a different zone. If the original had a MaxScale pod, a new one is scheduled, and if the original had an instance of MariaDB Enterprise Server, and it was a primary, automatic failover is performed.

