

## High Availability and Load Balancing for CSQL MMDB

CSQL Replication enables real time data replication between multiple CSQL MMDB instances to provide high availability and load balancing for mission critical enterprise data.

### Why CSQL Replication?

Application that provide service 24/7 cannot tolerate service downtime which impacts the revenue and credibility. Two important aspects for highly available systems are down time and data consistency during fail over.

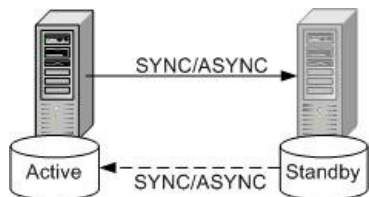
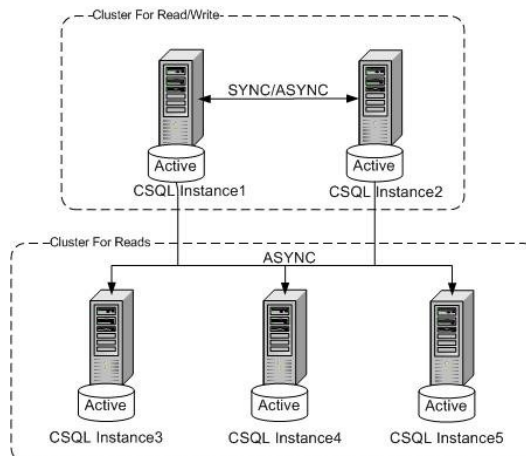
Web and real time applications are read intensive and employing cluster shall reduce load on the backend databases resulting in high throughput.

CSQL Replication provides real time update anywhere 'N' way replication model which suites for both high availability and load balancing. It provides synchronous and asynchronous update propagation modes enabling applications to choose between high throughput and high consistency.

CSQL Replication uses transaction log based replication scheme using TCP/IP, which delivers high performance.

**Quick Facts**

- Update anywhere 'N' way replication
- Transparent replication
- High Availability and Disaster recovery
- Load balancing – Increase throughput
- Flexible deployment options



It provides multiple deployment options based on the application requirements ranging from active –standby configuration (provide high availability and data protection for catastrophes or disasters) to cluster configurations for varying read /write intensive loads.

### Benefits

#### Ease of use

CSQL Replication is simple to use and requires minimal setup to get data replicated. Requires no changes to application and minimal administration as CSQL has inbuilt self-healing mechanisms to tolerate faults.

#### Performance and Consistency

Load balancing database operations on multiple servers improves throughput by multifold.

Transactions logs can be applied on peer sites either synchronously or asynchronously. The former provides high throughput and the later provides high consistency.

### Scalability

CSQL supports clusters up to 12 updateable CSQL instances, each propagating updates either in synchronous and asynchronous modes to its peer. There is no limit on the total number of read only CSQL instances in the quorum.

## Feature Summary

### Replication Granularity

Database  
Table  
Partial table

### Update Propagation Modes

Synchronous  
Asynchronous

### High Availability

Fail over in sub seconds  
Online S/W and H/W upgrade with no data loss

### Load Balancing

Multi node full table replication  
Distributors for read only replication nodes  
Multi node partial table replication with one centralized database CSQL instance

### Recovery

Automatic fast recovery with no data loss in case any node goes down  
Synchronous mode automatically switches to asynchronous mode instead of transaction failure

### Data Consistency

Transaction consistent replication  
Conflict resolution in case of asynchronous update propagation  
Tool to check consistency

### Platform

Linux – x86

### Deployment options

Active – Standby  
Active - Active  
Read Intensive Load Balancing Cluster  
Read/Write Intensive Load Balancing Cluster  
Distributed Star Cluster

Refer White paper “Guide to choose replication strategy” for more information

### Business Value

Improves ROI by providing always on business applications serving more customers by load balancing  
Data protection from disasters

For any sales queries  
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