
CSQL Enterprise

Abstract: CSQL is the fastest enterprise class, open source main memory relational database management system. Traditional disk based database management systems are persistent but are incapable with dealing with dynamic data that constantly changes and application that require response time in few microseconds rather than milliseconds.

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Introduction

CSQL is the fastest enterprise class open source main memory relational database management system. Traditional disk based database management systems are persistent but are incapable with dealing with dynamic data that constantly changes and application that require response time in few microseconds rather than milliseconds.

Software applications that deal with real time data require faster response times and high throughput, were limiting themselves to generic databases leaving incredible business benefits. With the speed of business increasing, and the volume of information that enterprises must process growing as well, businesses in many industry domains transition to real time data management in order to stay competitive.

CSQL, by its inherent memory architecture manages database in memory, achieving dramatic gains in responsiveness and throughput, even compared to a fully cached disk resident database.

Benefits

High Performance

Modern applications are transaction-intensive, demanding the responsiveness of in-memory data caching to support increased transaction volumes with minimal latency. Wisconsin benchmarking of CSQL on commodity hardware delivers 30 times faster response times than leading database management system.

Ease of use

CSQL comes with pre-installed package (2 MB size) which follows download, extract and use strategy. It requires no DBA and completely eliminates performance tuning. Through its standard interface support such as ODBC and JDBC, reduces the learning curve for developers to use CSQL in their applications.

It provides a transparent pass through mechanism in case the applications wish to use existing database for normal queries and use CSQL only for frequently accessed queries.

Lower TCO

Organizations of all types and sizes are under pressure to boost efficiency and cut costs. Open Source Software (OSS) through its lower cost of ownership has become an enabler for many organizations allowing them to implement solutions that otherwise would have been too costly. Traditional data management solutions are expensive to maintain, manage, and scale. CSQL - a high performance main memory relational database management system was designed to lower database TCO. CSQL's innovative architecture helps organizations dramatically reduce both capital and operating expenses, while improving performance, data availability and recovery.

Closed-code vendors usually charge a single-perpetual license for each instance and additional annual maintenance and support. CSQL open source approach is based on annual subscriptions for any additional proprietary features and support with no initial perpetual license fee.

Forrester Research estimates that 80% of application requirements can be met using only 25% of the features and functionality that closed source database applications offer; while the Gartner Group states that open source technologies provide significant opportunities to lower Total Cost of Ownership (TCO) and increase Return on Investment (ROI).

Is CSQL enterprise ready?

Enterprise ready deals with stability, scalability, availability, capacity and interoperability aspects of the product. This section outlines capabilities of CSQL in these aspects.

Stability

ACID compliance

“ACID” is an acronym for these four principles: Atomicity, Consistency, Isolation, and Durability. CSQL is fully ACID compliant which ensures data recovery in case of system crashes or power failure and avoids data corruption.

Extensive Testing

CSQL performs very detailed QA testing of the CSQL Enterprise with thousands of tests being run to verify that the software is of the highest possible quality.

Quarterly Patches

CSQL provides service packs once a quarter with complete binary compatibility. Applications need not recompile their application to incorporate new patches.

Emergency Fixes

In the unlikely event if a critical, business-stopping bug is discovered, CSQL provides emergency fix to patch the problem. This service is valuable for a mission-critical system when it experiences an issue that is sure stopper for business.

Production Support

24/7 telephone and mail support
Quicker response time and fixes based on SLA

Scalability

Scalability refers to the ability of the DBMS to cope with growth. CSQL by employing lock free technology scales up very well with additional processor and with its inherent main memory architecture scales well with additional RAM capacity. CSQL can process and store a massive number of records, and allow simultaneous access to hundreds or thousands of users.

Availability

It determines whether the server can be relied on to keep databases available for 99.999 percent of the required operating hours.

High End data management systems require costly expertise on site for all of the hours when the databases have to be working.

CSQL is highly fault tolerant and robust and recovers immediately from power failure, without loss of database integrity.

CSQL with its replication option provides instantaneous fail over in the event of failure providing 5 nine availability.

Capacity

There is no limit on number of fields, database size, record size, etc in CSQL. 32 bit systems have OS limitation of 2 GB for database size (as CSQL keeps database in process address space). 64 bit OS systems supports 2^{64} address space allowing database size to grow in terabytes.

Interoperability

Standards Compliance

CSQL supports JDBC3.0, ODBC3.0 and SQL92, thereby reducing migration costs for existing application.

Transparent Caching

CSQL can be used to transparently cache hot tables from existing DBMS with no or minimal code changes. Application is unaware about the caching framework that eliminates application code changes for determining locality of data.