
WHAT IS MIMER SQL 11

Mimer is a company with a strong foundation in standards and innovation. The Mimer SQL database server has from the start been built with scalability and flexibility in mind, which is why it is, in the true sense of the word, the Swiss Army Knife of databases. With Mimer SQL you can freely mix between various technologies for replication, database partitioning, distribution, physical hardware, in-memory operation, operating systems, all depending on your applications' needs.

Thanks to this flexibility, and an extremely compact code base, Mimer SQL has an unsurpassed support for multiple computing platforms where we can provide the exact same functions and capabilities, regardless if Mimer SQL runs in an embedded system such as an IoT device, or a vehicle, in the cloud, or in the datacenter of an enterprise. Being a true 64-bit solution, the only thing that limits the size of data that Mimer SQL can handle is the hardware.

Our codebase is designed with this flexibility in mind which explains the broad range of operating systems and architectures Mimer SQL is ported to, and the range of computing environments we support. The way we can offer a complete, Core SQL-2016 compliant database over the whole range of products, is unique in the market.

Mimer SQL is used for enterprise, cloud, desktop, embedded systems, and real time applications, and we have versions for operating systems such as Windows, Linux, macOS, and VMS as well as support for embedded and real time operating systems such as INTEGRITY from Green Hills Software, QNX from Blackberry, VxWorks, and Android. This list goes on and herein lies our strength: with a codebase designed for the future in mind, being able to easily port to a new environment is a cornerstone in our architecture.

Mimer SQL in the cloud is supported out-of-the-box with Docker where we have integrated Docker features such as volume persistence with a fully customizable Mimer Docker image. This is a very slim and pure database server version and we therefore also offer a version where monitoring and administration of the Mimer SQL database server can be done through REST, and this version of Mimer SQL is the foundation for the next level of cloud integration, a Helm Chart version of Mimer SQL for Kubernetes.

Mimer SQL is defined by two major pillars: The first is that we are a zero-maintenance database management server. That is, the server manages and mitigates any data storage degradation that traditionally appears over time in other products. Instead Mimer SQL continuously optimizes and balances the data storage to be optimal at any given time. Zero maintenance is also of paramount importance when it comes to cloud and edge applications, where functionality and reliability are key concepts. Another advantage is that this gives high performance as the data can be located in an optimal fashion.

The second pillar is our reliance on optimistic concurrency control (OCC) where we very early saw the advantages of this approach to transactions and have honed our skills since then. Today is this the natural choice for large scaled distributed database solutions and with this, the latest version of Mimer SQL, we have introduced new levels of refinement and optimization in our implementation of OCC.

MIMER SQL VERSION 11

The new major version of Mimer SQL is the result of more than five years development with focus on performance and scalability. The result is dramatically improved performance and scalability in the database kernel, in the SQL compiler and the optimizer, performance in the integration with the host operating system and performance in the client communication, just to mention a few.

A minor, but still very visible, change on the Windows platform is the new installer. The installation procedure has been streamlined and can now be done in just a few steps and it takes seamlessly care of an upgrade situation and un-installs the previous version automatically.

In June 2018 Unicode version 12.1 was announced and this new standard has been implemented in Mimer SQL 11 with the result that Mimer SQL has support for 144 different language collations, as well as support for all 137.374 characters, probably more than any comparable product on the market.

We are also proud to announce that with the release of Mimer SQL 11 we support all of SQL-2016 core SQL features as well as 137 of the extended features. A proof of Mimer's continued commitment to supporting and embracing the standard.

MIMER SQL 11 DATABASE KERNEL

Mimer SQL is true 64-bit in order to leverage the new and powerful processors and computers that exist today and will emerge in the future. True 64-bit means virtually unlimited storage and the only constraints and limits to storage are now the underlying file system and operating system, that is, the maximum size of each databank file has by this change been extended to 4 Exabyte

The result of this work is that records can now be of variable length and all datatypes are implemented in formats native to the platform we are running on. The larger page size allows Mimer SQL 11 to better use improvements in modern disk technology, and data is stored in a more compact and more efficient manner than ever before. In addition, the main memory cache also has unlimited size which allows Mimer SQL to use large main memory efficiently, typically found on server systems.

The upshot is an increase in performance which is a prerequisite for scalability, expandability, and is a foundation for taking Mimer SQL to the next level.

Being 64-bit means that the current limit of the database cache is 327 Terabytes, a truly staggering amount that allows huge amounts of data to be cached in memory, allowing the database server to handle extremely large data volumes and to efficiently make use of the huge amounts of RAM that modern data centers can provide – all hardware resources available can be used by Mimer SQL.

MIMER SQL 11 IN-MEMORY DATABASE SERVER

For systems where a relational database and extreme performance matters, the new Mimer SQL in-memory database server is the choice. This database server runs, as the name implies, purely in memory which removes all constraints that physical storage imposes and the result is lightning speed in all aspects of the database server.

The in-memory server is functionally equivalent with the standard, on-disk database server, which means that it can be used transparently from the application perspective.

MIMER SQL 11 COMPILER

The new compiler has full support of the SQL core features from the ANSI/ISO SQL-2016 standard. In addition to this Mimer SQL has support for new datatypes, such as the Universally Unique Identifiers (UUID) and these can be generated automatically in the server or supplied by the application. The new compiler also has extended domain support as well as support for FULL OUTER JOIN, DISTINCT and UNIQUE predicates.

The WITH clause allows recursive traversal of data, allowing hierarchical data to be easily queried by the system.

All platforms now support IEEE float with improved precision for conversions using these types.

MIMER SQL 11 CLIENT ACCESS

In Mimer 11 we have improved our range of client access possibilities with a newly written native API, called Mimer API. This gives the programmer much improved handling of database access with all modern features without the need for a driver manager and the overhead and extra administration that comes with that.

Mimer SQL 11 still has excellent support for ODBC, JDBC, and ADO.NET and with this new native API Mimer SQL 11 have added yet another native connection method to an already proven and trusted offering.

MIMER SQL 11 NETWORK ENCRYPTION

With this latest version of Mimer SQL we have added best in class network encryption so now is not only data protected from eavesdroppers, but any attempted tampering is also detected. Our encryption between the database server and the clients is based on existing and accepted standards, encrypted using AES-GCM (Advanced Encryption Standard – Galois/Counter Mode), an authenticated encryption algorithm designed to provide both data authenticity (integrity) and confidentiality.

The addition of network encryption to our secure login implementation means that we can now offer our customers a complete crypto solution. A solution that spans from blocking eavesdropping during the login phase, all the way to a secure channel for all client communications.

MIMER SQL 11 SQL MONITOR

The new SQL Monitor allows the user to see which statements are running, which resources are used and which users are currently putting a load on the system. All this data can be accessed both via a graphical user interface (GUI) as well as from the command line and allows a DBA to better monitor, analyze, and understand production systems.

MIMER SQL MODULE LANGUAGE

SQL module language is in a way similar to embedded SQL but instead of interleaving code with SQL, the SQL module language gives the programmer a way to separate procedural code from SQL.

In Mimer SQL 11 we have support for SQL module language for C, COBOL, FORTRAN and Pascal.