

# MariaDB TX 3.0

## *Born of the community. Raised in the enterprise.*

MariaDB TX is a complete enterprise open source database solution for modern applications and workloads – lightweight connectors, an advanced database proxy and firewall, a general-purpose database with pluggable, purpose-built storage engines, multi-master clustering, tools for database administrators and developers and notification services.

### What's new

#### Oracle compatibility

MariaDB TX 3.0 introduces Oracle compatibility to support Oracle data types, sequences and stored procedures/functions with control statements, static and dynamic SQL (including cursors with parameters), triggers and packages.

#### Temporal tables and queries

MariaDB TX 3.0 introduces built-in system-versioned tables (SVTs) to automatically and transparently store current and historical versions of rows, and temporal syntax to query them based on a specific point in time, between two specific points in time or all time.

#### Purpose-built storage

MariaDB TX 3.0 introduces the general availability of MyRocks, a space- and write-optimized storage engine developed by Facebook and recommended for write-intensive workloads, and Spider, a distributed storage engine recommended for storage and/or write scalability and concurrency.

#### Advanced security

MariaDB TX 3.0 introduces partial data masking and full data obfuscation to protect sensitive security and/or personally identifiable information (SSI/PII) from unauthorized access – necessary for regulatory compliance, including the EU General Data Protection Regulation (GDPR).

### Enterprise reliability

#### High availability

Ensure uptime for mission-critical applications with clustering, replication and automatic failover.

#### Performance

Meet user expectations with multi-core processors and a multi-threaded architecture.

#### Disaster recovery

Recover from unexpected failure with backup and restore or point-in-time rollback.

#### Scalability

Sustain business growth by scaling on demand with distributed, multi-master storage.

#### Security

Protect customer data with roles, encryption, data obfuscation/masking and query blocking.

#### Schema flexibility

Create hybrid data models with built-in JSON functions and instant add column.

# Features and capabilities

## High availability

- [Automatic failover](#)
- Transparent query routing
- Multi-master clustering
- Lossless semi-synchronous replication
- Multi-source replication

## Disaster recovery

- Backup and restore
- Point-in-time rollback
- Delayed replication

## Security

- [Data obfuscation](#)
- [Data masking \(full and partial\)](#)
- Pluggable authentication
- Roles
- User resource limits
- Transparent data encryption (TDE)
  - [Temporary files](#)
  - Tablespaces or tables
  - Logs
- Query blocking
- Auditing
- Result limiting

## Scalability

- Compression
  - [Columns](#)
  - Tables: rows or pages
- Consistent reads
- Read-write splitting

## Performance

- Fast connection creation
- Thread pool
- Query result caching
- Bulk insert streams
- NUMA interleave (InnoDB)

## Oracle compatibility

- [Data types](#)

- [Sequences](#)
- [Stored procedures and functions](#)
- [Packages](#)
- [Dynamic SQL](#)
- [Cursors with parameters](#)

## Storage

- [MyRocks](#): write performance
- [Spider](#): scalability and/or concurrency
- [InnoDB](#): general-purpose

## SQL

- [Temporal subclauses \(e.g., AS OF\)](#)
- [User-defined aggregate functions](#)
- [Ordered-set aggregate functions](#)
- [INTERSECT/EXCEPT](#)
- [Table value constructors](#)
- [DDL/SELECT lock timeout](#)
- [Common table expressions](#)
- [Window functions](#)
- [JSON functions](#)

## Schema

- [System versioned tables](#)
- [Instant ADD COLUMN](#)
- [Invisible columns](#)
- [Check constraints](#)
- [Default value functions/expressions](#)
- [Multiple triggers per type per table](#)
- [Virtual column indexes](#)
- [Spatial indexes](#)
- [Decimal scale of 38](#)

## Integration

- [Change-data-capture streams](#)

## Tools and services

- [Administration](#)
- [Monitoring](#)
- [Notifications](#)