



MariaDB Enterprise - The AI-enabled Open Source Database Revolution!!



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AI

Celebrating 15+ Years of MariaDB !!

The first version of MariaDB, 5.1.38, was released on 29th of October 2009 !

We have come a long way since then!

More information at

<https://monty-says.blogspot.com/2024/10/celebrating-15-years-of-mariadb.html>



About MariaDB

Created by the original developers of MySQL, MariaDB provides a powerful, open-source core database for enterprises. Now the default in the majority of Linux distributions, it gives businesses the strategic freedom to break from proprietary databases and build modern, scalable applications for the future.

Market Leadership

75%

Of Fortune 500 companies use MariaDB

1B+

Docker Hub downloads

2.5B+

Reach via Linux distros

200K+

Open source contributions

700+ Customers Globally

Amdocs

Deutsche Bank

Development Bank of Singapore

Nokia

Samsung

SelectQuote

ServiceNow

Virgin Media O2

200+ Employees

Proven leadership team

World class relational database engineering team, including the original core MySQL team

Dual headquartered

- Europe: Dublin, Ireland
- USA: Silicon Valley, California



The Enterprise Platform

Enterprise-Grade Reliability, Performance, and Ease of Use

Benefits of MariaDB Enterprise Platform over Community



Enterprise-Grade Reliability

Automated failure management and HA/DR (MaxScale)

Fully secured clustered environment (Enterprise Cluster)

Enterprise-grade security with end-to-end encryption



Business-Critical Support

24/7 access to global support

Guaranteed SLAs

Priority bug fixes and custom hotfixes

Personalized support levels



Designed for Extended Lifespan

Maintenance period of 8 years (vs 3 years for Community Server)

Selected features/bug fixes are backported as needed



Enhanced Performance

Streamline change management

Reduce impact of DDL in clustered topology

Support of transactions across multiple systems

The Complete Enterprise-Grade Platform

Delivering Performance, Scalability, Availability, and Security

MariaDB Tools

Workload Capture & Replay

Safe Upgrade Testing

Workload Visualization

Administrative User Interface

Enterprise Backup

MariaDB Monitoring

Flashback

Instant Schema Change

MariaDB Application Connectors

C

JDBC

ODBC

Node.js

Python

C++

R2DBC

PowerBI

Kafka

Spark

MariaDB MaxScale

High
Availability

SQL Aware
Read Scaling

Failover
Orchestration

Replica
Rebuild

MariaDB Enterprise Server Core

Enterprise
Replication

Enterprise
Cluster

Enterprise
Audit

Enterprise
Security

Workloads

Transactional (OLTP)
Analytical (OLAP)
Semi-structured
AI and ML
Cloud-native (public, private and hybrid clouds)

MariaDB Integration

Kubernetes Operator

Docker Container
Images

Caching: In-Memory, Redis,
Memcached

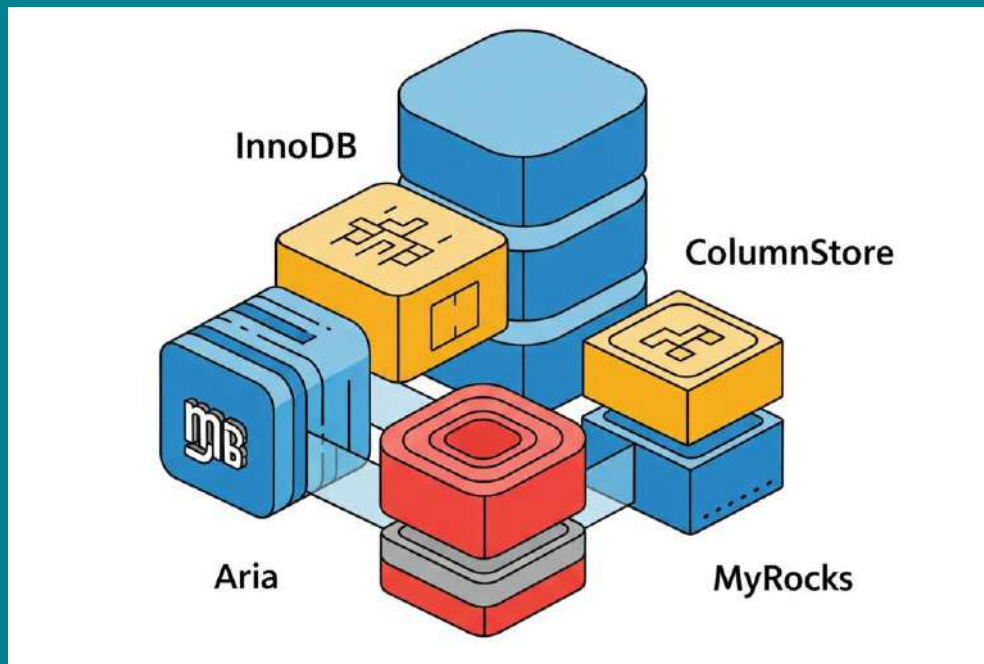
NoSQL Protocol

Kafka CDC Router

Oracle
Compatibility
Mode

Pluggable Storage Engines

- MariaDB supports multiple storage engines for diverse needs
- InnoDB provides ACID compliance and data integrity features
- ColumnStore offers columnar storage for analytical workloads
- MyRocks engine is designed for write-intensive applications
- Aria engine is ideal for temporary tables and internal processes



MariaDB is the default over MySQL on Linux distributions



75% of the Fortune 500 uses MariaDB



Kubernetes Operator

Products

- MariaDB Enterprise Server
- MariaDB MaxScale
- MariaDB Enterprise Cluster (Galera)

Support

- Certified and Supported by RedHat
- Enterprise Grade Support
- MariaDB Support SLA

Security

- Certificate Lifetime configuration
- Private Key algorithm configuration
- Images are based on RH UBI

Testing

- Tested on Multiple OpenShift Versions
- Tested on Multiple Cloud Providers
- Fully trained MariaDB QA and SRE teams

Strategic Themes for Enterprise Platform

Performance
Leadership

Enterprise Only
Features

Advanced
Security

Ease of
Management

Capture New
Workloads

Cloud
Deployments

Easy
Migrations

Stable Release
Cadence

Enterprise Platform 2025 launched with multiple new features

Performance

Speed up complex queries with the new cost based optimizer built for modern hardware like SSD

Enterprise Only Features

Upgrade without a hitch with workload capture and replay and diff router functionality in MaxScale

Security

Secure by default with TLS encryption between server and client (no more manual setup needed), and add fine-grained privileges

Ease of Management

Quickly change schema with non-blocking ALTER TABLE
Reduce replication lag via optimistic ALTER TABLE

Enterprise Platform 2025 launched with multiple new features

New Workloads (Gen-AI)

Power your AI apps by storing embeddings in our Vector store - new data type, index, and vector search capabilities

New Workloads (JSON)

Store, manipulate, and query semi-structured data with 45+ JSON-specific functions

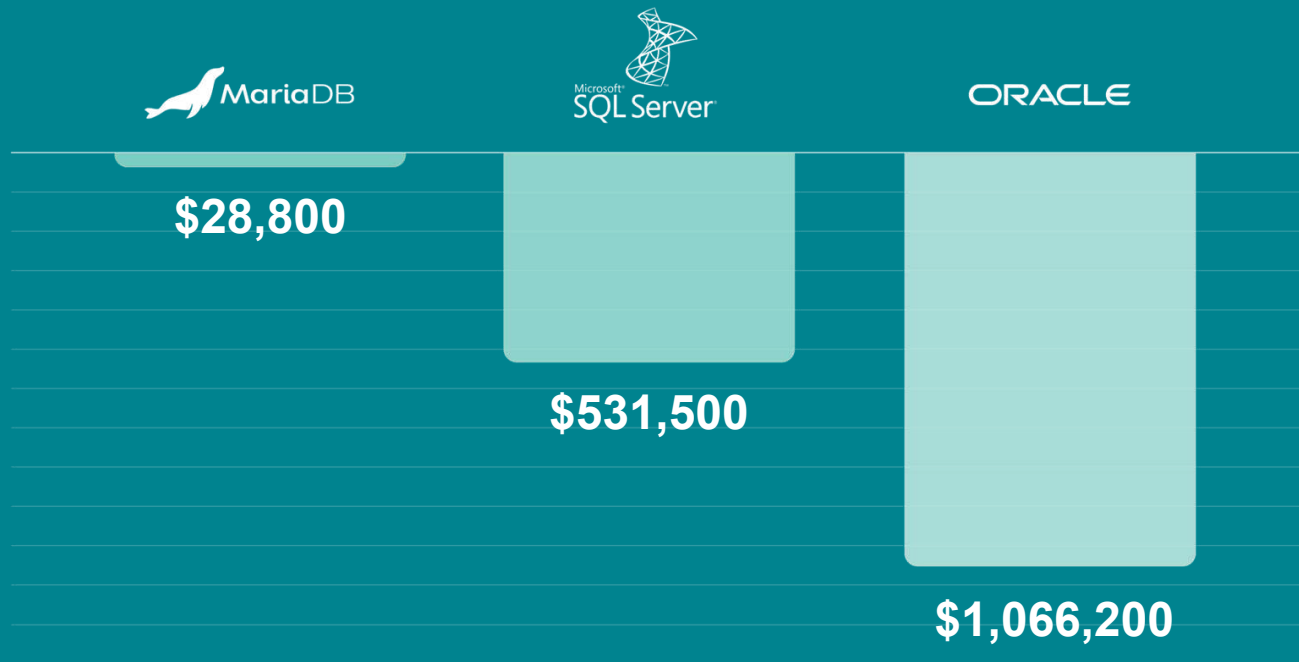
Cloud

Kubernetes Operator - Red Hat Certified

Cost and Features Comparison

MariaDB's Power That Outperforms Price

3 Year Total Cost of Ownership



MariaDB Benefits

Significantly lower subscription cost

Low effort migration

Up to 90% TCO reduction**

Sources: "State of the Open-Source DBMS Market, 2018", Gartner, Feb 2018 and MariaDB, July 2018

**Pricing and licensing for Windows Server 2019, Microsoft March 2019.

** Based on per node pricing. MariaDB pricing changed on April 1, 2025



Feature	MariaDB Enterprise Platform	Oracle Enterprise Edition	Microsoft SQL Server Enterprise
Replication	Yes	Active Data Guard*	Availability groups
Clustering	Multiple clustering options	RAC*	Yes
Multi Cloud Single-architecture	Yes	No	No
Backup and restore	MariaDB Backup	RMAN	Yes
Built-in SQL IDE	Yes	Yes	Yes
Distributed partitions	Multiple options	Oracle Partitioning*	No
Compression	Multiple options	Compression*	Yes
Encryption	Yes	Security*	Yes
Columnar	MariaDB ColumnStore	Database In-Memory*	Yes
Temporal	Yes	Flashback Query*	Temporal Tables
Stored procedures	SQL, PSM, PL-SQL, CPL, SQL, Java	PL-SQL	T-SQL



**Not included in an Oracle Database Enterprise Edition*

Not JUST a FORK of MySQL

Feature	MySQL	MariaDB
MongoDB-compatible API	X	✓
Columnar storage	X	✓
Temporal tables	X	✓
Oracle database compatibility	X	✓
Non-blocking backups	X	✓
Write-anywhere clustering	✓	✓
Transaction replay	X	✓
Secure by default	✓	✓

Time for PostgreSQL comparison...

Thread based architecture !!

Very fast connections !!

Parallel and very flexible logical replication !!

Multi master setup with Galera !!

Replicas can use different storage engines than master!!

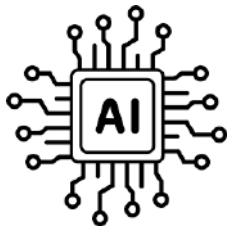
System versioned tables !!

Efficient and closely integrated storage engine interface !!

Oracle compatibility layer !!

Community support for the development !!

MariaDB Enterprise Platform 2025



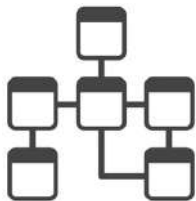
AI Vector & JSON Support

- Native Vector Search
- More JSON functions & Support



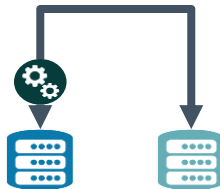
Advanced Security Improvements

- Passwords Reuse Rules
- More Granular Privileges
- Strict Read Only Replicas



Improved Performance and Schema Change

- Cost-based optimizer
- Online Schema Change
- Optimistic Alter Table for Replication

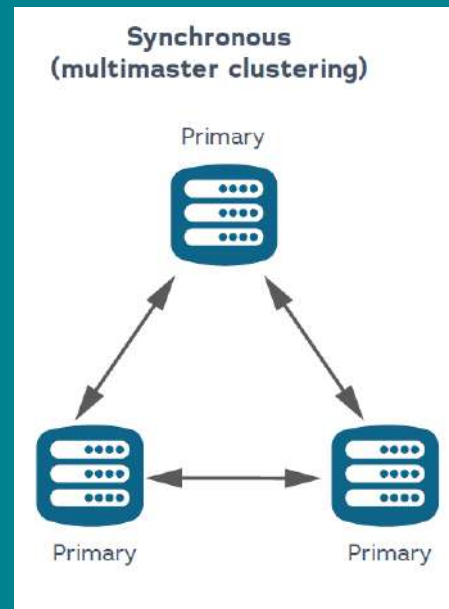
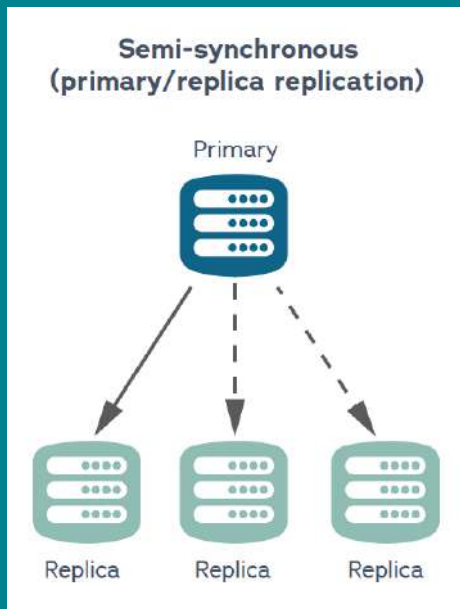
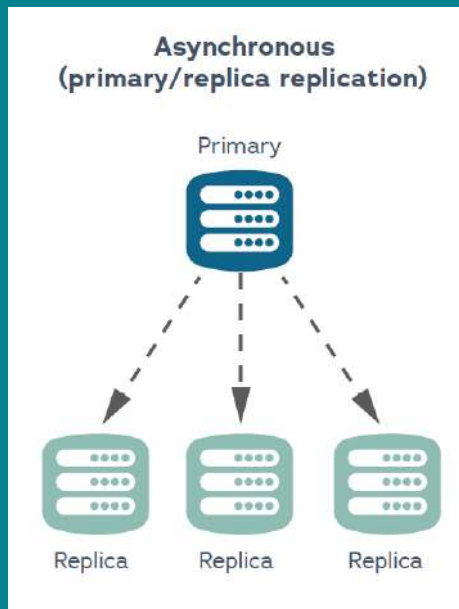


Upgraded QA Testing

- Workload Capture & Replay
- DIFF Router – Live Parallel Testing
- Workload Comparison Visualizer

Operational Efficiency

High Availability and Data Replication Options



MaxScale



Intelligent Load Balancing



Database Protection



Database Ease of Use

Value Proposition - MaxScale - Core Benefits

<i>FEATURE</i>	<i>BENEFITS</i>	<i>COMPARATIVE ADVANTAGES</i>
ENHANCED PRODUCTIVITY	Supports automatic failover with detection and promotion of a new primary. Can use Galera Cluster, Replication, or Binlog Router modes. Supports diff router and schema router. Supports transaction replay, allowing clients to continue after a primary failure with minimal disruption. Exhaustive list of filters to provide a tailored solution. https://mariadb.com/docs/maxscale/maxscale-archive/archive-of-2x.xx-versions/mariadb-maxscale-24-02/maxscale-24-02filters	Less need for external failover orchestration tools.
SUPERIOR PERFORMANCE	MaxScale understands the MySQL/MariaDB protocol, queries, and topology. It can route queries based on type (e.g., send SELECT to replicas, INSERT/UPDATE/DELETE to primary). Enables query-level load balancing, not just TCP-level or connection-level.	More efficient use of replicas; reduces read load on the primary automatically.
COMPLICATED COMPLIANCE NEEDS	Query rewriting Query throttling Audit logging	Powerful for compliance-heavy or complex environments.
ROBUST SECURITY	Acts as a secure gateway to the database tier: Query firewall(in the roadmap): block certain queries or patterns (e.g., DROP TABLE) TLS termination: acts as a secure endpoint. User mapping and LDAP integration.	Reduces security exposure and centralizes access control.
EASE OF USE, COST-EFFECTIVE & ALL-IN-ONE	MaxScale is part of the Enterprise Platform. REST API and GUI (MaxCtrl and MaxGUI) are for real-time monitoring, topology control, and admin tasks.	Easier to manage than HAProxy or ProxySQL in large deployments.

A Comprehensive Managed Database Service

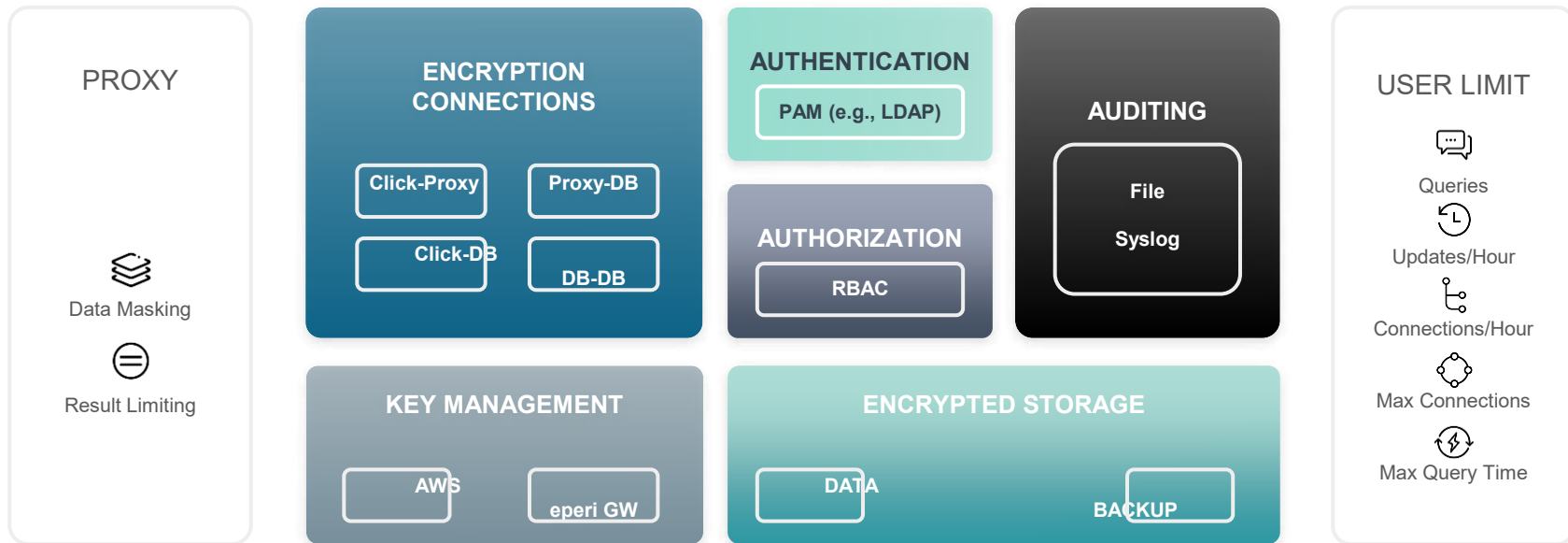
MMD is a complete, expert-driven **managed service** for running MariaDB in the cloud - **not a DBaaS**. It combines the power of **MariaDB Enterprise Platform** with world-class support and robust infrastructure to ensure your database is secure, highly available, and performant.

- **Fully Managed:** Automated deployment, monitoring, and maintenance
- **Expert-Driven:** Backed 24/7 by the engineers who built MariaDB
- **High Availability:** Architectures designed for resilience and business continuity
- **Secure & Compliant:** Integrated data protection and security best practices
- **Flexible:** Customizable with a wide range of add-on services to meet specific needs
- **Big 3 Cloud Support:** Available for AWS, Azure, and GCP
- **Cloud Marketplaces:** Will be available in AWS only soon.

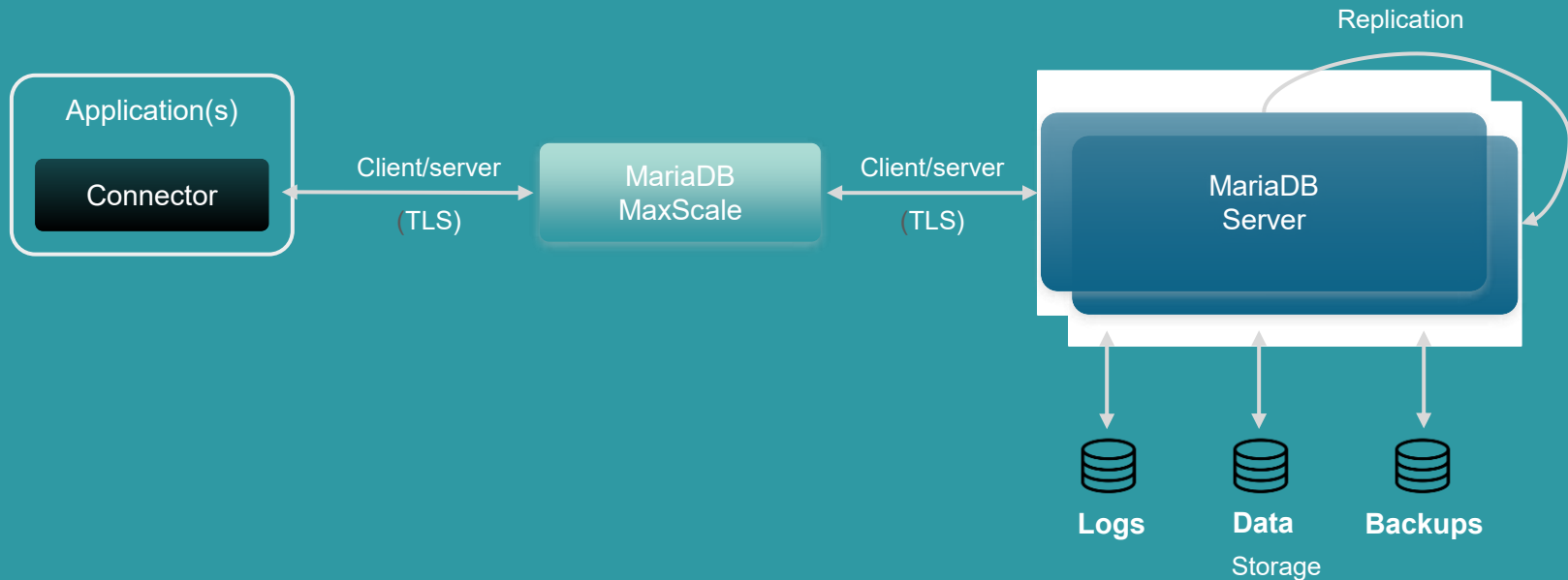


Cyber Security offerings

COMPREHENSIVE SECURITY



END-TO-END ENCRYPTION



MariaDB Audit Plugins - Key Features

User Activity Logging

Logs user logins, logouts, and any SQL queries executed by users. This logging helps in tracking down unauthorized access and potential misuse.

Flexible Event Filtering

Customize the logging of specific event types, such as CONNECT, QUERY and TABLE (for table-specific actions). selecting only relevant event types and focusing on critical activities.

Compliance Support

GDPR, HIPAA, PCI DSS Compliant. The audit plugin provides a detailed and timestamped record of activities, which can be crucial during audits.

Json Log Output

The latest plugin version supports Json logging making it easier to parse and analyze logs with modern log management tools like Elastic Stack or Splunk.

Log Mgmt System Integration

Administrators can review database activities alongside logs from other infrastructure, improving the ability to spot suspicious behavior.

Audit Log Destinations

Logging to a file or [System Log](#)

Log Rotation

MariaDB's audit plugin supports log rotation, allowing you to manage log file sizes and retain important audit data.



Authentication and Authorization in MariaDB

Authentication	PAM	Unix Socket	MySQL Native Password	GSSAPI, ED25591, PARSEC, SHA-256, Named Pipes
Authorization	RBAC	Principle of Least Privilege	Host Specific Access	Regular Audits
Benefits	Simplified Administration	Reduced Risk	Improved Compliance	Better scalability

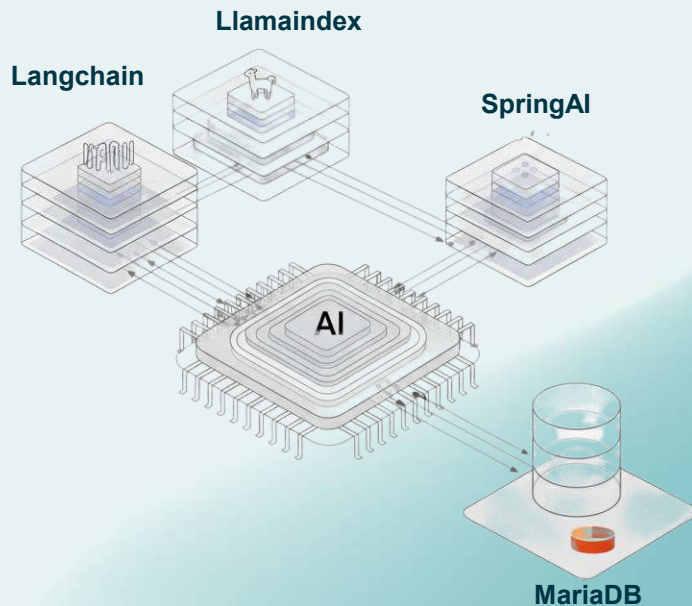
AI Enablement

MariaDB: A Vector Database for Modern AI Frameworks

MariaDB's native vector search capabilities allow it to act as a powerful and efficient backend for leading AI frameworks, simplifying the development of generative AI applications by unifying your data stack

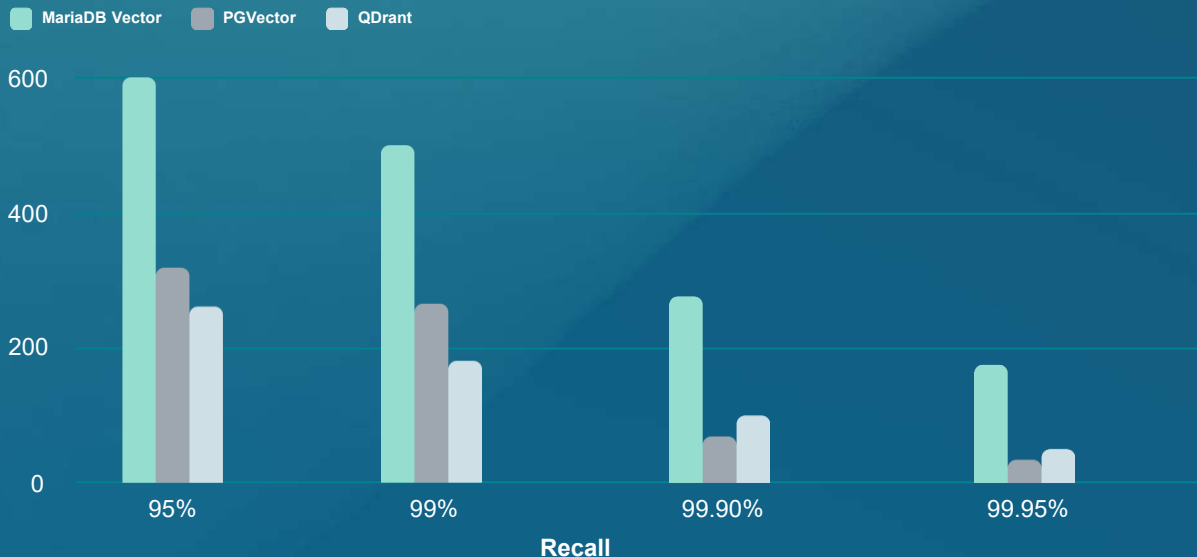
Key Framework Integrations

- **Langchain & LLamaindex:** Use MariaDB as a native **Vector Store** to power RAG pipelines, grounding LLMs/AI Agents in your data for more accurate and context-aware responses.
- **Spring AI:** Easily add vector search to enterprise Java applications with a **MariaDB Vector Store** implementation, providing a familiar data layer for Spring developers.



Blazing Fast Vector Search: MariaDB Leads PGVector by 2X

Single Threaded QPS (GIST 960 Euclidean)



MariaDB vs. PGVector

2X

Faster index creation time

2X

Faster vector search

MariaDB MCP Server: AI Power for Your Database

What it is:

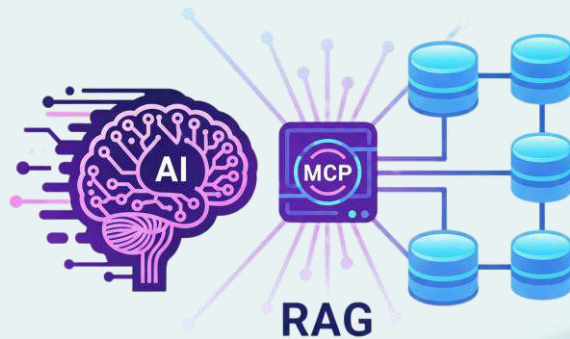
- It's a new technology that connects your existing MariaDB database to AI.
- It lets you do standard database tasks **AND** powerful AI operations like semantic search.

Key features:

- **Normal database operations:** Lets AI run regular operations with MariaDB (list databases, get data, etc.).
- **AI search:** Can create "vector stores" and search for information based on meaning.
- **Uses popular AI:** Works with well-known AI technologies like OpenAI and Google Gemini.

Benefits:

- **Faster AI development:** Developers can add AI features more easily.
- **Better AI applications:** AI engineers can build more powerful tools.
- **More data value:** Database administrators can get more insights from their data.



Open Source and available at
MariaDB Github

Available Now

Coming Next

Future

AI App
Integrations

Langchain

Llamaindex

Spring AI

MariaDB MCP
Server

Feast Feature
Store Plugin

DB Query
Processing

Vector Search /
Vector Datatype

HNSW Indexing

Vector Retrieval
Enhancements
(Matryoshka)

Full Text Search
Performance
Enhancements

New Algorithms
for Indexing and
Performance

RAG / AI
Enablement

Native MariaDB
AI Tool for RAG

Vector
Synchronization
& Advanced
Retrieval

Text to SQL

Advanced Pre-
processing &
Agentic Retrieval
Pipeline

AI Agents

DBA Agent

Performance
Tuning Agent

Database migrations and Customer Success Stories

Why do Customers migrate?



Open source advantages



Migrating from Oracle to MariaDB involves several considerations beyond PL/SQL compatibility





DBS innovates with MariaDB

Breaking free from
proprietary databases,
modernizing with open
source MariaDB.

54%

Of mission-critical apps
migrated so far

4.1M

Dollars in net
savings

333B

Total assets of DBS, with
over 3 million monthly
financial transactions



A Large Middle Eastern Airline is in the process of doing PoCs to test Oracle to MariaDB migrations!!

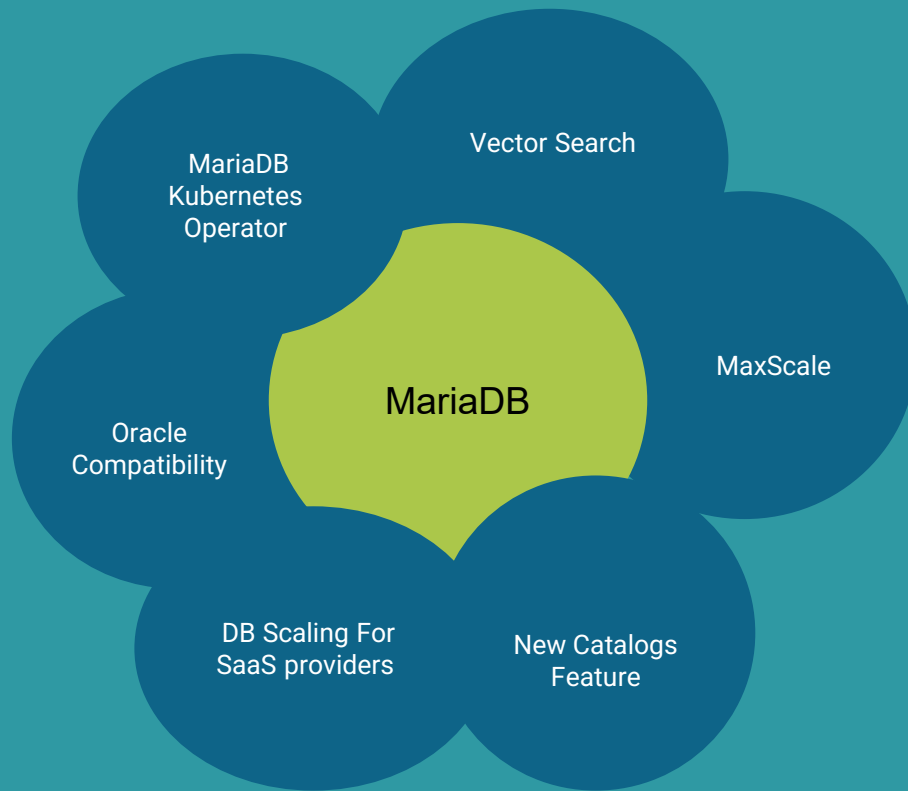
Not only for the cost benefits..

But for the technology advantages including

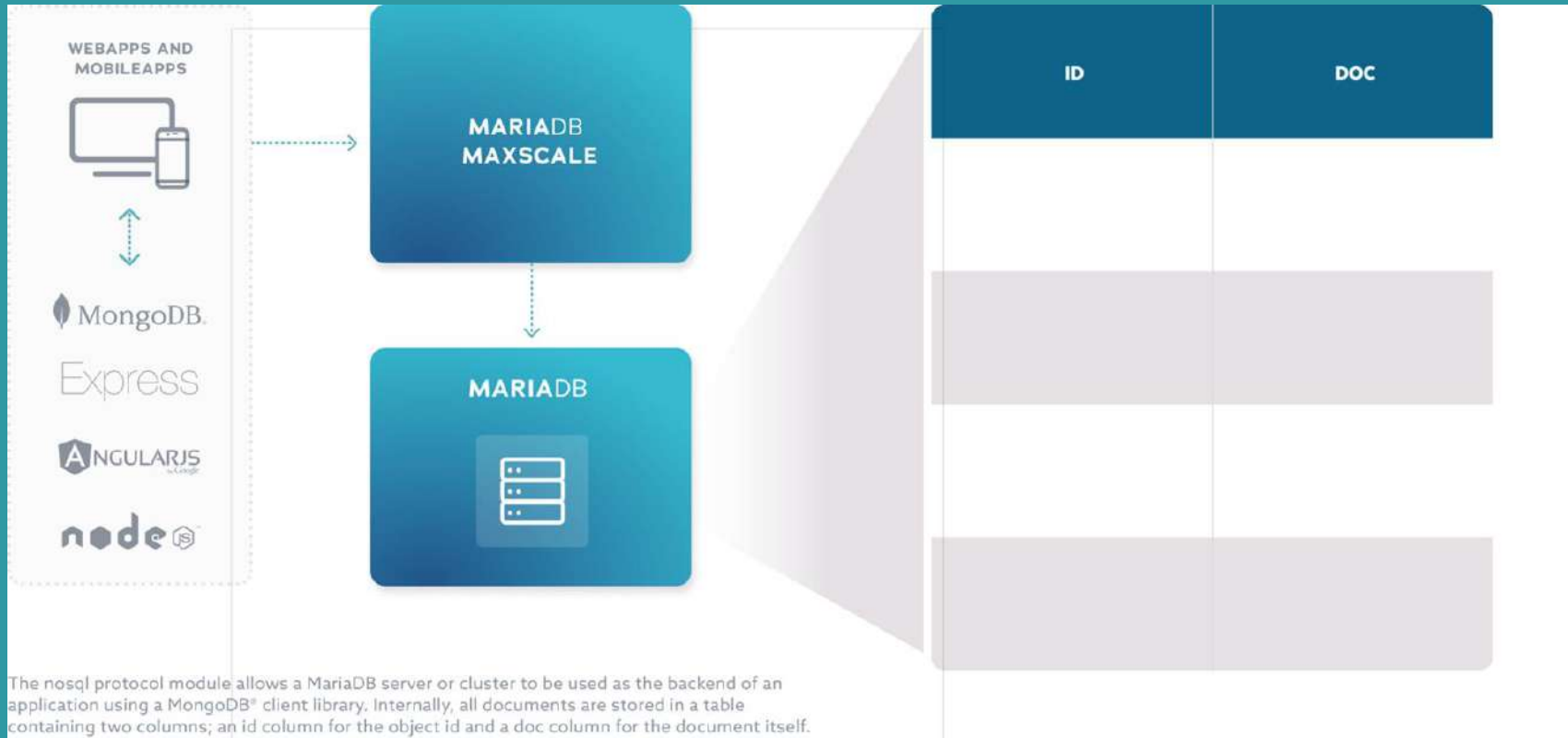
- **Performance**
- **Scalability**
- **Availability**
- **Security**

The innovation continues...

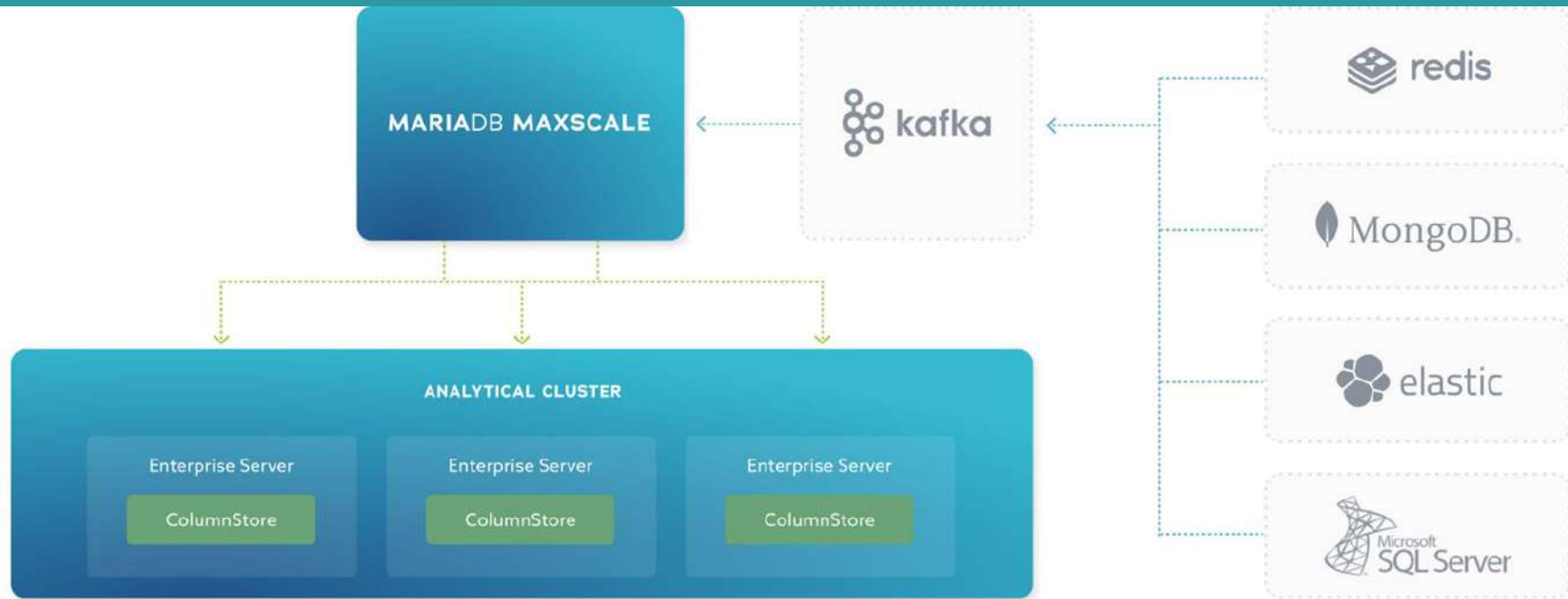
List of innovations from MariaDB



NOSQL DOCUMENT PROTOCOL



KAFKA IMPORTER



The Kafka Importer module reads messages from Kafka and streams them into a MariaDB server. The messages are inserted into a table designated by either the topic name or the message key.



2025 Winner

MariaDB

PRODUCT/TECHNOLOGY

**MariaDB Enterprise
Platform**

PUBLIC SECTOR TECH DAY

GenAI and Cybersecurity Trends for Operational Efficiency

THANK YOU FOR ATTENDING!



KEMENTERIAN DIGITAL
JABATAN DIGITAL NEGARA



SCAN TO REQUEST FOR INFORMATION



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