WEBINAR SERIES

MariaDB | CREST

Avoiding Vendor Lock-In and Lowering cost for Oracle Dependent Applications with MariaDB Enterprise

Gurusamy Pandikrishnan
Sales Engineering
at MariaDB

REGISTER NOW

25 September 2025

13:00 WIB

Introducing Crest Infosolutions

- ✓ Founded in 2012 in Singapore
- ✓ Serving customers globally with presence in Singapore, Malaysia, Indonesia, USA and Netherlands
- ✓ **MariaDB distributor** and partner since 2015.
- ✓ Strong MariaDB consulting team with experience in setting-up and securing MariaDB at scale.
- ✓ **Migration team to support** customers in their database migration journey from Oracle, MS SQL, MySQL or PostgreSQL to MariaDB.

CREST Presence

Avoid Vendor lock-in for Oracle Dependent Apps with MariaDB Enterprise

Pandikrishnan
MariaDB Corporation

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!

Creator of MySQL and MariaDB - Michael Widenius(Monty)

More information at

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

MariaDB CREST

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(DBS Bank)
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

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Oracle is one of the most difficult vendors to manage, leaving you feeling confused and vulnerable

They have over 400 employees whose primary role is conducting audits

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Why Move Away from Oracle?

Working with them can be frustrating and cost prohibitive

Licensing Concerns

Requires two licenses per core if using other cloud provider

Virtual machines require a license per core, regardless of how many cores are being used for Oracle

Favors use of Oracle products

Exadata recommended for on premises

Oracle Cloud recommended for cloud based

Virtual machine usage can be costly

Annual increase in support fees

Even as support usage is likely to lessen

Currently, 8% additional per year

Difficult to scale back

Reducing number of licenses may not result in significant decrease in costs

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Why Move Away from Oracle?

Licensing concerns lead to frustrations

Compliance Issues

Minor corporate activities may lead to audits

Audits usually uncover some form of license violation

Complex Licensing

Confusion around licensing may lead to unintentional violations of agreement

Audit reimbursements can be significant, as much as $50M

Alternate cloud providers double the license fee

Per Core Licensing

On a virtual machine, all cores must be licensed, regardless of their intended use

This results in higher usage costs and possible license violations

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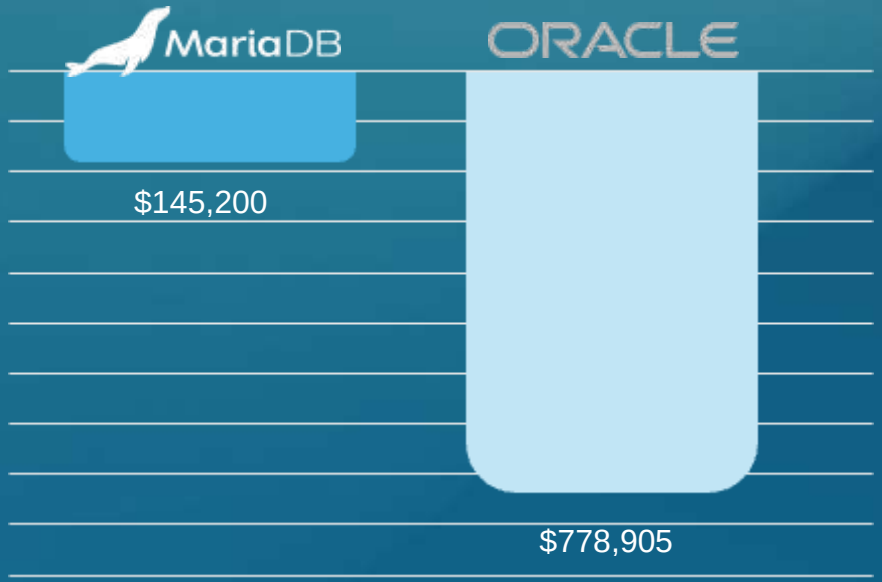
Power That Outperforms Price

One Year Total Cost of Ownership



Based on MariaDB migration savings calculator
- 10 applications
- 50% critical applications, 50% non critical applications
- 3 nodes per critical application, 1 node per non critical application
- 4 cores per database

MariaDB Benefits

Significantly lower subscription cost

Low effort migration

Over 80% TCO reduction

Use your own hardware, cloud, or a combination of the two

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MariaDB Enterprise Platform versus Oracle Enterprise Edition

Benefits Comparison

MariaDB Enterprise Platform	Oracle Enterprise Edition
Up to 90% lower cost	Costly license and support fees that grow each renewal cycle
Runs on low cost hardware, in the cloud, or hybrid	Encourages use of expensive proprietary hardware
Developers benefit from a modern data model, enabling greater flexibility	Limits developer innovation due to difficulty with management and deployment
Database consolidation enables a single database to meet multiple needs	Standalone environment for maintenance and use
Clustering, encryption, and advanced compression included in core product	Available at extra cost

	MariaDB Enterprise Platform	Oracle Enterprise Edition	Microsoft SQL Server Enterprise	IBM DB2
Replication	Yes	GoldenGate, Data Guard*	Availability groups	SQL replication
Clustering	Multiple clustering options	RAC*	Yes*	Yes
Multicloud Single-architectures	Yes	No	No	No
Backup and restore	MariaDB Enterprise Backup	RMAN	Yes	Yes
Built-in SQL IDE	Yes	Yes	Yes	No
Distributed partitions with legacy RDBMS connectors	Multiple options	Oracle Partitioning*	No	DPF
Compression	Multiple options	Yes	Yes	Yes
Encryption	Yes	Yes	Yes	Yes
Columnar	MariaDB ColumnStore engine	In-Memory ColumnStore	Yes	CDE
Temporal	Yes	Yes	Temporal Tables	Yes
Stored procedures	SQL, PSM, PL-SQL, C	PL, SQL, Java	T-SQL	Db2-SQL, SQL PL
Oracle compatibility	Yes	Yes	No	Yes

***Not included in Oracle Database Enterprise Edition license; must be purchased separately.**

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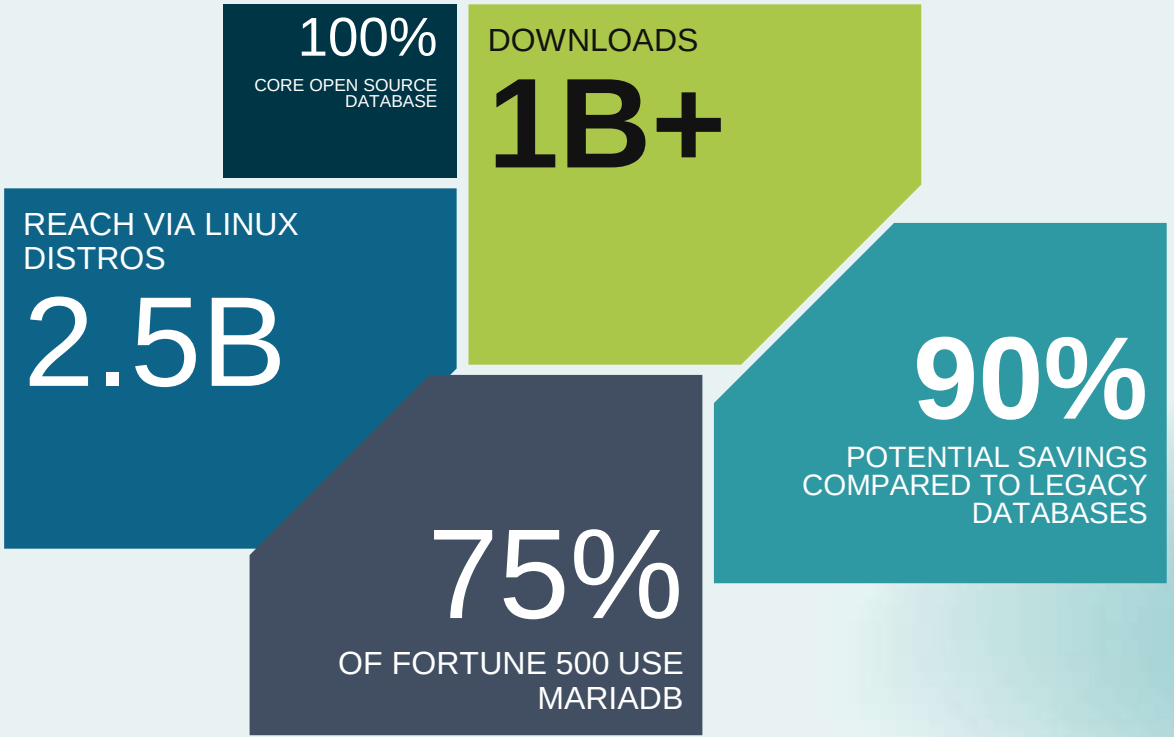
Why MariaDB Enterprise Platform 2025

MariaDB Is Everywhere

The enterprise open-source database, engineered by the pioneers of relational databases to power any workload—from transactional to analytical—with proven reliability.



MariaDB

Companies Around the Globe Rely on MariaDB

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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 Containers
- Caching: In-Memory, Redis, Memcached
- NoSQL Protocol
- Kafka CDC Router
- Oracle Mode

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MariaDB Enterprise Platform Key Capabilities

MariaDB Enterprise Platform delivers multiple benefits when migrating from Oracle

SQL_MODE = ORACLE enables compatibility with Oracle Database SQL syntax and behavior

- Migrate applications while preserving the behavior and syntax of Oracle SQL
- Ensures existing SQL scripts, application logic, and database interactions are compatible

Multi-master setup option through Galera provides replication and scalability

MariaDB MaxScale is a robust and advanced intelligent database proxy

Multiple storage engine choices deliver OLTP and OLAP from a single source

Fast and scalable **vector search** using the HNSW algorithm

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ORACLE Mode in MariaDB Enterprise Platform

Set SQL_MODE = ORACLE to enable compatibility with Oracle Database SQL syntax and behavior

Migrate applications from Oracle Database to MariaDB while **preserving the behavior and syntax of Oracle SQL**

Ensures **existing SQL scripts, application logic, and database interactions are compatible** with MariaDB behavior

Oracle mode updates items to ensure compatibility

- Stored procedures
- Cursors
- Variables
- BEGIN blocks
- Functions
- SQL types
- Null handling
- Stored functions
- Loop
- Exceptions
- Syntax compatibility
- Prepared statements
- Packages
- Reserved words

Traditional MariaDB SQL/PSM syntax **continues to work as before**

MariaDB Enterprise Platform versus PostgreSQL

Feature comparison

MariaDB Enterprise Platform	PostgreSQL
Multiple storage options to tailor storage to needs	Single storage engine leads to inefficiency
AI and ML capabilities fully integrated	Require third-party tools
Based on SQL norms	Code rewriting from PL/SQL to PL/pgSQL required
Inherent scalability	Requires third-party product for horizontal scaling for write capabilities; read scaling only via replicas
High availability and automatic failover included	Require third-party tools
SET SQL_MODE = ORACLE	Require third-party tools
Enterprise-grade single solution	Full capabilities require third-party products

MariaDB vs PostgreSQL: Why MariaDB is the Better Enterprise Solution

Feature	MariaDB	PostgreSQL
Clustering	✅ Native **multi-master clustering** with Galera; automatic node failover and sync	❌ No native multi-master; sharding and clustering depend on external extensions
Replication	✅ **Galera synchronous replication** + async replication; supports **multi-source replication**	⚠️ Synchronous and logical replication are available but less mature; single-writer architecture limits write scalability
Scalability (Horizontal)	✅ Scales writes and reads natively using Galera; also supports native **sharding**	❌ Horizontal scaling for writes requires Citus (not core); read scaling via replicas only
High Availability (HA)	✅ **Built-inThe** with **Galera Cluster**; no third-party tools needed; native synchronous multi-master HA	❌ Requires third-party tools like **Patroni**, **repmgr**, or Citus for HA or clustering
Failover & Recovery	✅ **Automatic failover built-in** with Galera; no external orchestrators required	❌ Needs third-party orchestrators for automatic failover (e.g., Patroni)
Backup & Recovery	✅ Hot backups with **MariaBackup**; supports full, incremental, and streaming backups natively	❌ Requires tools like **pgBackRest** or **Barman**; more operational complexity
Point-in-Time Recovery	✅ Full PITR using binary logs	✅ Full PITR using WAL files
Simplicity & Operations	✅ Easier to set up, manage, and operate; lower DBA overhead for HA, backups, replication, clustering	❌ Operational complexity grows quickly for HA, DR, and scaling needs
ACID Compliance	✅ Full ACID via InnoDB or MyRocks	✅ Full ACID compliance
Query Optimizer	✅ **Superior cost-based optimiser,** better join handling, distributed query optimisation, traceable plans, optimiser hints	❌ Limited hinting, occasional plan instability, less efficient with distributed or complex joins
Concurrency Model	✅ MVCC with InnoDB; Galera handles conflict detection with cert-based replication	⚠️ MVCC, but requires handling deadloc at higher concurrency levels.

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MariaDB vs PostgreSQL: Why MariaDB is the Better Enterprise Solution

Feature	MariaDB	PostgreSQL
Storage Engines	✅ Pluggable: **InnoDB**, **MyRocks**, **Aria**, **ColumnStore**, **Spider (sharding)**, flexible for **OLTP**, **OLAP**, or hybrid	❌ Single engine; no pluggable storage engines
OLAP + OLTP	✅ Native **ColumnStore** for analytics on the same database; no external data warehouse needed	❌ Limited OLAP; relies on external tools or extensions like Timescale or Citus
JSON	✅ JSON functions for typical use; excels in relational workloads	✅ JSON support with binary storage (JSONB)
GIS/Spatial Support	✅ Fully OGC-compliant GIS capabilities; works well for most location-based workloads	⚠️ Requires the use of **PostGIS**.
Security Features	✅ Role-based access, encryption at rest, masking, key management	✅ Similar, but with some advanced row-level security capabilities
Cloud-Native	✅ Available on all major clouds	✅ Available on all major clouds
License Model	✅ GPL v2 (copyleft); encourages community contributions while offering a commercial enterprise version	❌ PostgreSQL License (permissive BSD-like); allows companies to use without contributing back
Vendor Lock-in	✅ GPL ensures the core remains open-source; MariaDB Corporation offers enterprise features without locking data	❌ PostgreSQL is permissively licensed; some managed services create partial lock-in with proprietary extensions
Enterprise Support	✅ Direct from **MariaDB Corporation** with enterprise features, SLAs	⚠️ Via **EDB**, **Crunchy Data**, or others, community-driven but fragmented
Community & Longevity	✅ Backed by MariaDB Foundation + corporate; forked from MySQL to protect open-source integrity	✅ Mature and stable community; independent foundation-led

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Components of MariaDB Enterprise Platform 2025

MariaDB Enterprise Server

A hardened, production-grade database that delivers enhanced reliability and stability

Ensure predictable operations and minimize risk with up to 8-year long-term support commitment

Ongoing backports of key features deliver the latest innovations, giving you access to advanced features without the disruption of mandatory upgrades

Deployment flexibility is offered across public, private and hybrid cloud environments

Support for diverse workloads including transactional processing, analytical queries and mixed workloads, accommodating relational, JSON and vector data models

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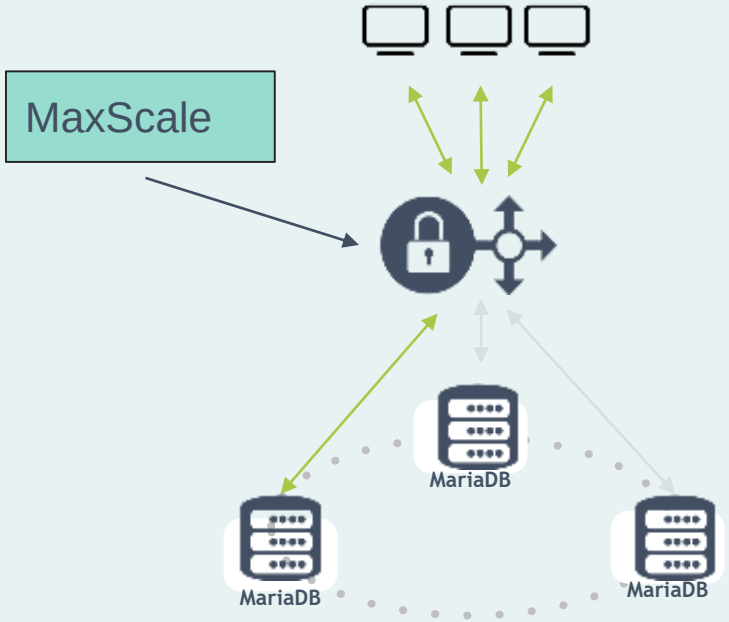
MariaDB MaxScale

A robust and advanced intelligent database proxy



Designed for production environments, MariaDB MaxScale delivers enterprise-grade high availability, scalability, security and integration services, seamlessly complementing MariaDB Enterprise Server

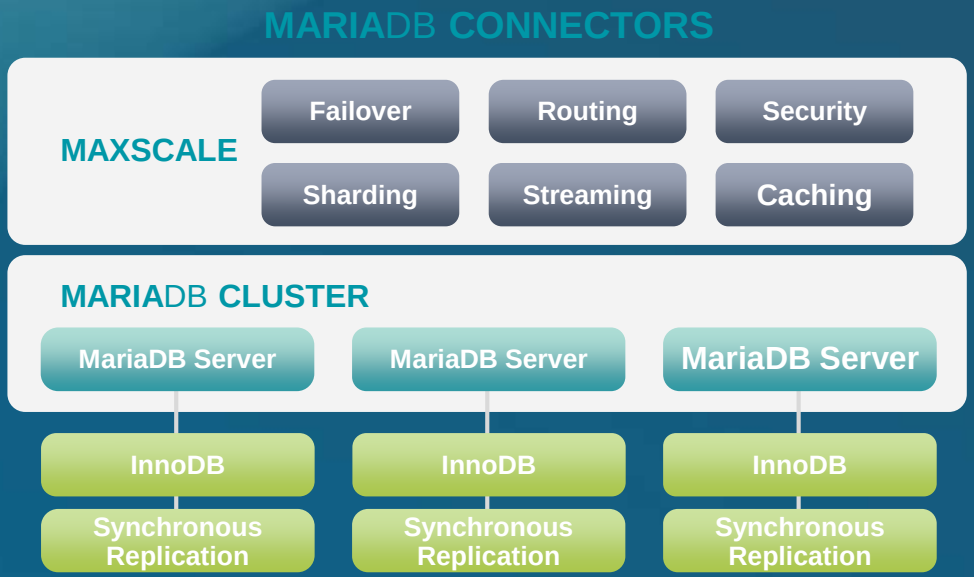
- Enables HA, scalability, security, and integration services
- Intelligent, low-latency load balancer designed for MariaDB Server
- Insulates client applications from database architecture
- Routes application requests based off specific algorithms, database component states, and session state

MariaDB Enterprise Cluster, Powered by Galera

An active-active, multi-master synchronous replication solution

MariaDB Enterprise Cluster, an open source active-active, multimaster synchronous replication solution provides parallel replication and data consistency across nodes

- High Availability for InnoDB
- All nodes are equal, read and write to any node
- Asynchronous Replication between Clusters supported
- Typically, an odd number of nodes to avoid split brain
- Automatically manages the identification and removal of failed nodes as well as rejoining new or repaired nodes



SCALING

Load balancing across database clusters

- MariaDB Primary/Replica
  - Semisynchronous Replication
  - Asynchronous Replication

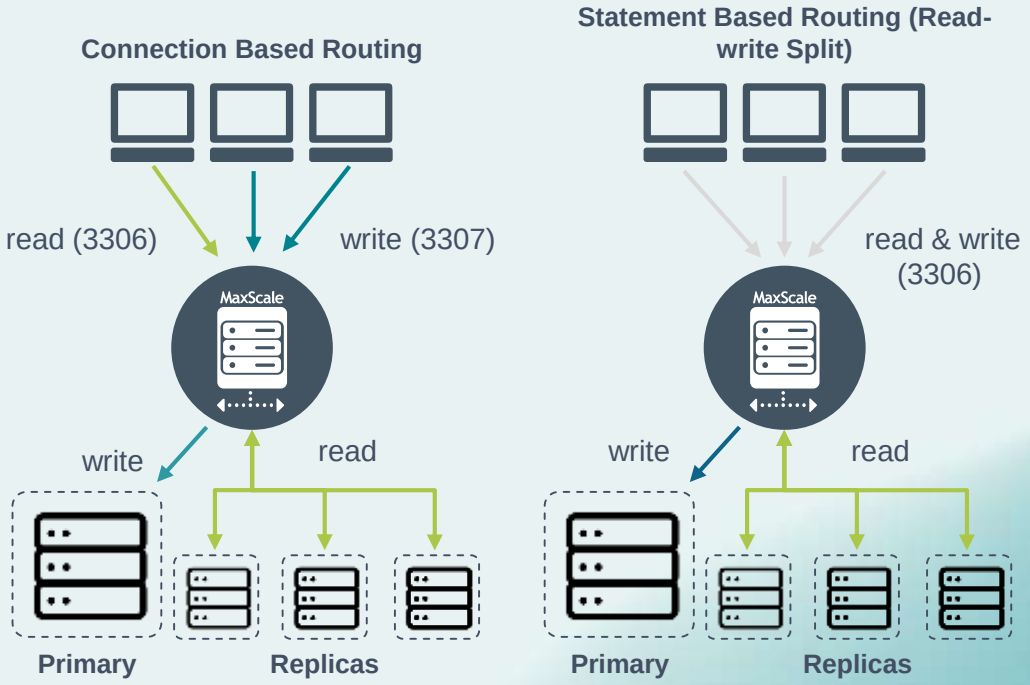
Routing based on

- Query Types
- Query Patterns
- Database Server State
- Replication Lags

Scale database environment without application impact

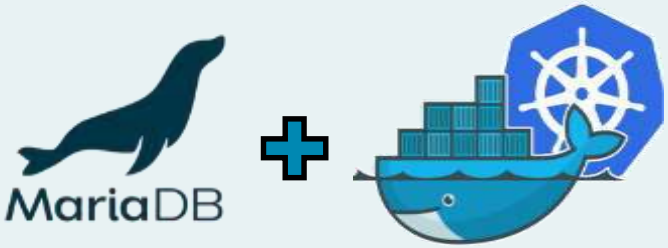
Minimize maintenance downtime

Automati c Failover and Replay



MariaDB Kubernetes Operator

Deploy complex, production-ready MariaDB topologies using a simple declarative file



Enterprise-grade security, OpenShift compatibility and flexibility for regulated industries, backed by commercial support

- Red Hat OpenShift Certified Operator, providing seamless deployment with Red Hat UBI-based minimal, secure docker images
- Advanced TLS delivers customizable ciphers (RSA), flexible certificate lifetimes, and rotation – critical for regulated environments
- Immutable Images enable enhanced security and consistency
- MaxScale Enterprise and Galera support for replication
- HELM installation
- Google Distributed Cloud (Air-Gapped) support

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MariaDB Vector Search

Build sophisticated RAG systems, semantic search, and other AI-powered applications

Simplified Data Stack

Manage relational data and vector embeddings in one unified environment

Reduce complexity, overhead, and data synchronization headaches

High Performance

Fast, high-QPS similarity searches for AI applications

Ensure optimal performance and seamless integration without requiring specialized external databases

Cost-Effective Vector Search

Leverage existing infrastructure for integrated vector search

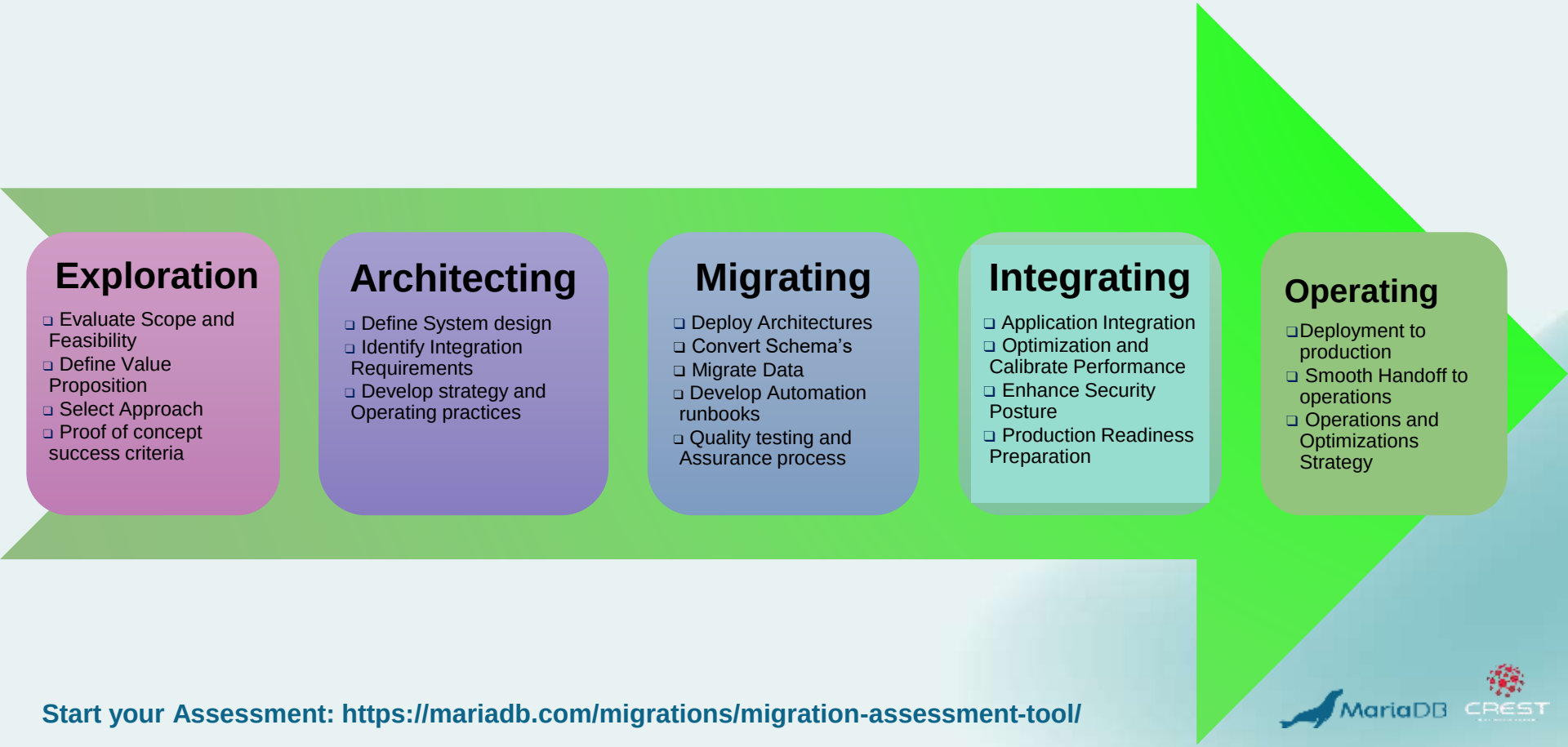
Simplify administration and reduce operational overhead

Seamless Integration

Query for visually similar products that match structured criteria within a single SQL statement

Migration Success Stories

Migration Framework



Start your Assessment: https://mariadb.com/migrations/migration-assessment-tool/

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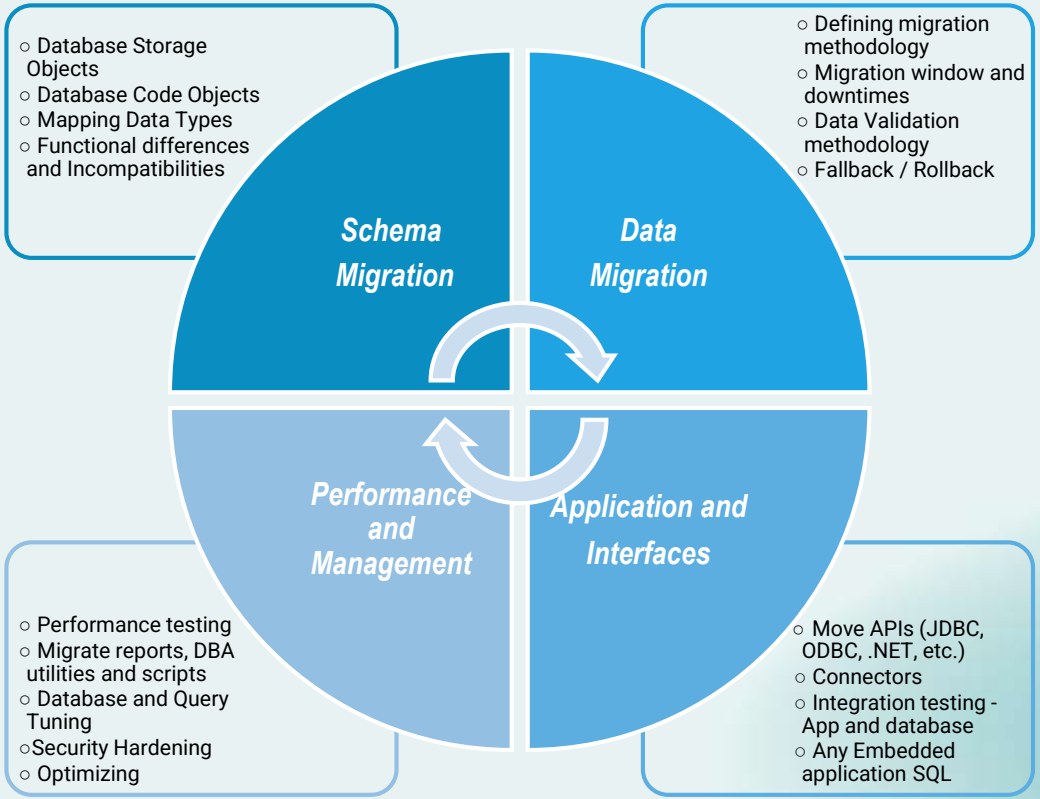
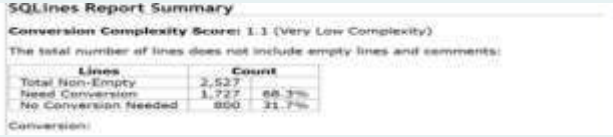
Migration Considerations



SQlines and Migration Portal



SQLines SQL Converter

- Converts **database schema (DDL)**, queries (DML/SELECT), views, stored procedures, functions, and triggers between
- Provides **assessment reports** (HTML/JSON) detailing object counts, data types, functions,
- Supports **extensive customization**: schema/object/identifier mapping, data-type remapping, metadata injection.

SQLines Data (SQLData)

- Automates **bulk data migration** and **data transfer**
- Features **high-performance** multi threaded ETL on Linux/Windows
- Offers fine-grained control: column selection, transformations, filtering, chunked loads, parallel sessions .
- Supports **migration validation** by row-count and value-level comparison

Assessment Portal

- **Upload Oracle DDL**, SQL queries, stored procedures, functions, and triggers for analysis.
- **Object Breakdown:** Detailed counts of tables, views, procedures, etc.
- **Compatibility Matrix:** Categorizes objects as Directly Compatible, Automatically Convertible, or Manual Intervention Required.

Benefits

- **Enterprise-Scale Readiness:** Designed for **fully automated, customizable pipelines**
- **High-Quality Code Conversion:** Ensures output that **preserves formatting** and maintainability
- **Flexible Deployment Options:** A versatile mix of online, desktop, and command-line workflows.
- **Comprehensive Support:** Built-in assessment, reporting, technical support for complex projects.

Start your Assessment: https://mariadb.com/migrations/migration-assessment-tool/

MariaDB

DBS innovates with MariaDB

Breaking free from proprietary databases, modernizing with open source MariaDB

75%

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

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SAMSUNG

Samsung SDS modernizes its operations with MariaDB

Cuts database costs in half by moving from Oracle to MariaDB

80%

Services for one application moved from Oracle to MariaDB

50%

Cost savings after moving from Oracle to MariaDB

Established zero-downtime architecture environment to meet business continuity requirements

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WEBINAR SERIES

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Thank You for Attending

See you on 23 October !

Gurusamy Pandikrishnan
Sales Engineering
at MariaDB

UPCOMING WEBINARS

23 Oct I 2pm

Application Modernisation using GenAI capabilities with MariaDB Enterprise Vector Database

REGISTER NOW

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