MariaDB Platform X5 is the enterprise open source database solution for running any workload at any scale, with the versatility to support transactions, analytics and hybrid transactions/analytics, and the scalability to grow from a standalone database or columnar data warehouse to fully distributed SQL – from initial application development to millions of transactions per second and interactive, ad hoc analytics on billions of rows.

ADAPTIVE SCALING

MariaDB Platform X5 is the first database solution to support adaptive scaling, growing with customers as they start with a standalone instance for development, turn on replication or clustering for high availability in production and enable distributed SQL to operate at greater scale and with elasticity – all without having to change databases or application code. In addition, DBAs can choose to scale out individual tables for transactions or analytics. If higher throughput or more storage capacity is needed for a given table, simply change it from replicated storage to distributed storage.

UNRIVALED VERSATILITY

MariaDB Platform X5 adapts to different workloads with pluggable "engines," making it possible to simplify database infrastructure and management by using a single solution for everything – interactive analytics with columnar storage, schema flexibility with JSON, continuous availability with multi-master clustering and now, massive scalability with distributed SQL.
**DISTRIBUTED SQL**

MariaDB Platform X5 introduces the Xpand storage engine for easy, elastic scale out with distributed SQL, removing the need for enterprises to deploy a specialized database when high scalability is required. Xpand tables are fully distributed, highly available, strongly consistent and capable of executing millions of transactions per second. In addition, Xpand provides DBAs with the flexibility to create distributed tables next to replicated tables (below left) or in a separate, dedicated cluster (below right). The same is true for analytics. DBAs can create columnar tables next to row tables or in a separate, dedicated cluster.

**KAFKA AND REDIS INTEGRATION**

MariaDB Platform X5 integrates with Apache Kafka and Redis as the foundation of a modern data infrastructure for today’s enterprises, publishing changes to Kafka for stream data processing and integration, and caching query results in Redis. This not only improves query performance, but reduces the load on the database so fewer resources are required or can be freed up for other queries. In addition to more efficient utilization of database resources, enterprises can get more from their existing Kafka and Redis deployments.
CAPABILITIES

HIGH AVAILABILITY
- Clustering
- Lossless replication
- Automatic failover
- Transaction replay
- Transparent query routing

SCALABILITY
- Sharding
- Compression
- Read-write splitting
- Distributed

ADVANCED SECURITY
- Encrypted transaction buffers
- Password expiration
- Dynamic data masking
- Pluggable authentication
- Roles and user resource limits
- Transparent data encryption (TDE)
- Database firewall (i.e., query blocking)
- Auditing with configuration logging
- Query result limiting (i.e., DoS protection)
- Connection attempt throttling
- Hashicorp Vault plugin
- Enforced SSL/TLS connections

SCHEMA
- Application-period time tables
- System versioned tables
- Instant ADD/DROP/MODIFY COLUMN
- Invisible columns
- CHECK constraints
- Default value functions/expressions
- Multiple triggers per event
- Virtual column indexes
- Spatial indexes
- Decimal scale of 38
- Federated tables via ODBC

DISASTER RECOVERY
- Non-blocking backups
- Point-in-time rollback
- Delayed replication

PERFORMANCE
- Optimizer trace
- Non-locking ANALYZE TABLE
- Thread pool
- Query result caching
- Bulk insert streams

STANDARD SQL
- Common table expressions
- JSON functions
  - JSON_OBJECTAGG
  - JSON_ARRAYAG
- Geospatial functions
- Window functions
- Ordered-set aggregate functions
- User-defined aggregate functions
- Percentile and median window functions
- Table value constructors
- INTERSECT/EXCEPT ALL
- INSERT/REPLACE... RETURNING

POWERFUL ANALYTICS
- Distributed, columnar storage
- Massively parallel processing
- Statistical functions (e.g., CORR)
- Apache Spark connector
- Apache Kafka connector
- Pentaho connector
- C, Java and Python import clients
- Object storage support (Amazon S3 compatible)
- Amazon S3 imports

ORACLE DATABASE COMPATIBILITY
- Data types and sequences
- Dynamic SQL and cursors with parameters
- Stored procedures and packages

*New in MariaDB Platform X5

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