

# MySQL Enterprise Edition



MySQL Enterprise Edition includes the most comprehensive set of advanced features, management tools and technical support to achieve the highest levels of MySQL scalability, security, reliability, and uptime. It reduces the risk, cost, and complexity in developing, deploying, and managing business-critical MySQL applications.

- **Achieve database high availability** using MySQL InnoDB Cluster and MySQL InnoDB ClusterSet
- **Build, deploy, and manage a private DBaaS** and microservices using MySQL Operator for Kubernetes
- **Meet exponential growth** in users and data with MySQL Enterprise Scalability
- **Reduce risk of data loss** with MySQL Enterprise Backup for hot, online backup and recovery
- **Leverage existing security infrastructures** with MySQL Enterprise Authentication
- **Protect sensitive data** using encryption, key generation, and digital signatures
- **Block database attacks** such as an SQL Injection with MySQL Enterprise Firewall
- **Implement policy-based auditing compliance** to existing MySQL applications with MySQL Enterprise Audit
- **Improve database performance and availability** with MySQL Enterprise Monitor
- **Use relational tables and schema-less JSON documents** with MySQL Document Store
- **Get 24x7 assistance** in the development, deployment, and management of MySQL applications.

**Highlights**

- MySQL Database
- MySQL Enterprise HA
- MySQL Operator for Kubernetes
- MySQL Enterprise Backup
- MySQL Enterprise Scalability
- MySQL Enterprise Authentication
- MySQL Enterprise TDE
- MySQL Enterprise Encryption
- MySQL Enterprise Firewall
- MySQL Enterprise Audit
- MySQL Enterprise Monitor
- MySQL Document Store
- Oracle Premier Support

“We chose MySQL Enterprise Edition over Microsoft SQL Server as it provided all the tools we needed to secure our database at low costs, compared to the astronomically expensive Microsoft.”

Tony Searle  
CIO  
Guard.me

POWERED BY MYSQL					
Web/Enterprise		Embedded/ISV		Telecom	
Airbnb	Twitter	Adobe	IBM	AT&T	Italtel
Disney	VISA	Airbus	Intel	Cisco	Nokia
Facebook	Wells Fargo	EMC	Intuit	Comcast	Siemens
Google	YouTube	F5 Networks	NetApp	Ericsson	Telenor
Tencent	Uber	Hewlett Packard	Palo Alto Networks	France Telecom	Teligent

## MYSQL TECHNICAL SPECIFICATION

### Flexible Architecture

- Open Source
- Multi-threaded
- Pluggable Storage-Engine
- InnoDB, NDB, MyISAM,

### ANSI SQL Standards

- ANSI SQL
- SubQueries, Joins, Cursors
- Prepared Statements
- Views
- Triggers
- Stored Procedures
- User-Defined Functions
- Window Functions and CTEs
- NOWAIT and SKIP LOCK
- Descending Indexes
- Invisible Indexes
- Grouping

### Optimizer

- Cost-based Optimizer
- Optimizer Tracing
- JSON Explain
- Optimizer Hints
- Optimizer Histograms

### MySQL Document Store

- Relational Tables
- JSON Documents
- X Protocol
- X DevAPI

### Replication & High-Availability

- InnoDB Cluster, ClusterSet
- Group Replication
- Router
- Built-in Replication Engine
- Row-based Replication
- Multi-source Replication
- Time-delayed Replication
- Global Transaction IDs

### MySQL NDB Cluster

- 99.999% Availability
- Distributed architecture
- Synchronous replication
- Real-time performance
- Foreign Keys
- SQL & Non-SQL data access
- Auto sharding of data
- Java, C++, memcached, HTTP

### Drivers

- Java, C++, memcached, HTTP
- MySQL Native C Library
- MySQL Drivers for ODBC, JDBC, .Net, Python, C, C++
- Community Drivers for PHP, Perl, Python, Ruby, Go, Rust

### MySQL Operator for Kubernetes

- Containers and microservices
- Private DBaaS

### Security

- OpenSSL by Default
- SQL Roles
- Password management

### High-Performance

- Performance Schema
- Information Schema
- SYS Schema
- Resource Groups
- Partitioning
- Optimized for high concurrency
- Optimized for Read Only
- Optimized for use with SSD
- Multiple Index Type (B-tree, R-tree, Hash, Full Text, etc.)
- Server-side Thread Pool
- Connection Thread Caching
- Diagnostics, and SQL Tracing

### OLTP and Transactions

- ACID Transactions
- Commit, Rollback
- Foreign Keys
- Referential Integrity
- Row-level Locking
- Customizable Lock Isolation Levels
- Distributed Transactions (XA)
- Snapshot Isolation
- Repeatable Reads (readers don't block writers and vice-versa)
- Automatic Deadlock Detection

### Data Warehouse Optimized Features

- Fast Data Load Utility
- High-Speed Multi-Insert Function
- GROUP BY WITH ROLLUP
- Aggregate UDF
- Analytic SQL Functions
- Geospatial Support
- Multi-Terabyte Scalability

### JSON Support

- Native JSON Datatype
- JSON Table Functions
- JSON Aggregation Functions
- JSON Merge Functions
- JSON Partial Update

### Geo Spatial Support

- InnoDB R-tree Spatial Indexes
- GeoHash
- GeoJSON
- Spatial Reference System (SRS)

### MySQL HeatWave

- Fully Managed Database Service
- Single Database for OLTP, OLAP, ML
- On Premise to Cloud DR and Backup
- On Premise to Cloud for Analytics

### MySQL Enterprise Backup

- Hot Backup for InnoDB
- Parallel backup, recovery operations
- Compressed Backup
- Full, Incremental, Partial Backups
- Full, Partial Restore
- Point in Time Recovery
- Auto-Restart/Recovery
- Scriptable, command line interface
- Integrated with Oracle Secure Backup, NetBackup, Tivoli

### MySQL Enterprise High Availability

- MySQL InnoDB Cluster, ClusterSet
- MySQL Group Replication

### MySQL Enterprise Scalability

- MySQL Thread Pool

### MySQL Enterprise Security

- MySQL Enterprise Authentication
- MySQL Enterprise Transparent Data Encryption (TDE)
- MySQL Enterprise Encryption
- MySQL Enterprise Firewall
- MySQL Enterprise Audit

### MySQL Enterprise Monitor

- Visual Dashboard
- Query Analyzer
- Rules & Advisors
- Trends & Analysis
- Health monitoring
- Performance monitoring
- InnoDB Monitoring
- Replication Monitoring
- Backup Monitoring
- I/O Monitoring
- Blocking/Locking Reports
- Security Administration

### Oracle Enterprise Manager for MySQL

#### Graphical Tools

- MySQL Workbench
- Data Modeling
- Database Administration
- SQL Editor

#### MySQL Shell

- Admin API
- Python Scripting

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