Reference: W/EN/MG

MariaDB Galera Cluster Training Course

Deploy a Robust, Fault-Tolerant Architecture for Service Continuity

Duration: 3 Days | Hours: 21 h

Remote · Sessions guaranteed from 1 registrant · 60% hands-on practice

DESCRIPTION

In critical environments, databases must remain available at all times. MariaDB, coupled with Galera Cluster, offers real-time synchronous replication between multiple nodes, ensuring business continuity, fault tolerance and horizontal scalability — a setup adopted by financial services, telecoms and any organisation where downtime translates directly into business loss.

This MariaDB Galera Cluster training course will enable you to understand the fundamentals of MariaDB, configure a functional Galera cluster and master failover, recovery and monitoring scenarios. Hands-on labs cover the full operational lifecycle on simulated multi-node environments — from initial deployment to split-brain resolution and disaster recovery testing.

LEARNING OBJECTIVES

By the end of this training course, participants will be able to:

- Understand MariaDB architecture and how Galera Cluster works
- Install, configure and administer a secure and redundant Galera cluster
- Ensure data synchronisation and avoid conflicts
- Manage failure, split-brain and automatic recovery scenarios
- Optimise performance and monitor cluster health
- Integrate the cluster into production environments

PREREQUISITES

- Good foundation in Linux administration
- Basic knowledge of databases (MySQL or MariaDB)
- Experience in managing production services (CI/CD, monitoring) is a plus

> *Because each participant is unique, a personalised interview is systematically organised in advance with our expert to design a training programme perfectly aligned with their objectives, level and professional challenges.*

TARGET AUDIENCE

System administrators, DevOps engineers, infrastructure managers and IT architects responsible for high-availability database environments.

DETAILED PROGRAMME

> The training alternates between theoretical input and hands-on practice (approximately 60% of the time). Modules are built around practical exercises based on real-world business use cases.

Module 1 – MariaDB Architecture and Replication Principles

- MariaDB vs MySQL: history and key differences
- Storage engines (InnoDB, MyISAM, Aria)
- Master-slave vs multi-master architecture; synchronous replication concepts

Module 2 – Introduction to Galera Cluster

- How Galera works: SST vs IST and write sets
- Quorum, consistency and multi-node topology
- System requirements and supported network conditions

Module 3 – Cluster Installation and Configuration

- Step-by-step deployment of MariaDB with Galera on Linux
- Firewall configuration and SSL between nodes
- Communication testing and bootstrap procedure

Module 4 – Cluster Management and Maintenance

- Adding and removing nodes online
- Conflict management and certification failures
- Control tools: galera_new_cluster, wsrep_status, wsrep_cluster_size

Module 5 – Security and Supervision

- Securing inter-node exchanges with TLS
- Audits and access control
- Monitoring with Prometheus, Grafana and ClusterControl

Module 6 – Failure Scenarios and Disaster Recovery

- Behaviour in case of node failure
- Split-brain detection and recovery
- Automatic restart, failover testing and DRP procedures

TEACHING METHODS

Format and Delivery

The training is delivered remotely via an interactive virtual classroom. It can also be delivered on-site, with content customised to match the needs of your professional project. The theory/practice split is approximately 40%/60%.

MFE-IT Ultra-Personalised Format

Each session accommodates between 1 and 3 participants, ensuring highly individualised support. A preliminary interview allows us to tailor the content to each participant's profile. Inter-company sessions are guaranteed from just 1 registrant (except in cases of force majeure).

Skills Assessment

Throughout the training, the trainer assesses participant progress through multiple-choice questions, role-playing exercises and hands-on work. At the end, a certificate of achievement is issued to each participant.

Post-Training Support

For one month following the training, each participant can contact MFE-IT trainers with questions about implementing acquired knowledge. A response is provided by email or telephone within 48 working hours.

Accessibility

MFE-IT is committed to welcoming people with disabilities. Contact: contact@mfe-it.com.

PRACTICAL INFORMATION

Trainer Resources

- Structured demonstrations aligned with the detailed programme
- Exercise briefs and solutions throughout the training
- A ready-to-use technical environment for practical workshops
- Trainer validation of acquired knowledge at the end of each workshop
- Digital reference documents

Certification and Validation

At the end of the training, a certificate is sent by email specifying the objectives, nature, duration and assessment results. A completion certificate can also be provided on request.

Benefits for Participants

- Train from your workplace or home, with no travel required
- Benefit from an expert trainer-consultant on the subject
- Enjoy an ultra-personalised format (1 to 3 participants)
- Continue training even in the event of unforeseen circumstances

Benefits for the Organisation

- Optimise the training budget by reducing travel and accommodation costs
- Offer quality training to all employees, regardless of location
- Reduce absence time linked to travel
- Support team upskilling in all contexts