



# MFE-IT

Reference: KJ/EN/PGL

## PostgreSQL Training Course

Install, Secure and Monitor Your PostgreSQL Databases in  
Production

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*Duration: 3 Days | Hours: 21 h*

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

## DESCRIPTION

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PostgreSQL has become one of the most widely adopted database management systems in critical and cloud environments. Robust, scalable and open source, it is praised for its strict SQL compliance, extensibility (JSONB, PostGIS, pgvector) and rich feature set — but it requires rigorous administration to get the most out of its performance and reliability.

This PostgreSQL training course guides you through the implementation, daily administration and security of a PostgreSQL server. Through practical workshops, you will learn how to deploy a server, structure data, manage users, optimise queries and ensure high availability — with techniques that apply equally well on-premise and in cloud environments (AWS RDS, GCP Cloud SQL, Azure Database for PostgreSQL).

## LEARNING OBJECTIVES

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

- Install and configure a secure PostgreSQL server
- Create and administer databases and user roles
- Structure schemas, types and indexes for performance
- Implement a reliable backup and restore policy
- Monitor activity and diagnose common problems
- Optimise queries and fine-tune the engine

## PREREQUISITES

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- Basic knowledge of SQL
- Experience with a Unix or Linux system
- No prior knowledge of PostgreSQL required

*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

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Developers, system administrators and DBAs who wish to use PostgreSQL in a demanding professional environment.

## DETAILED PROGRAMME

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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 – Introduction and PostgreSQL Architecture

- Internal operation and processes
- Configuration files and directory layout
- Schemas, roles and connection management

### Module 2 – Installation and Configuration

- Linux installation via apt or yum
- postgresql.conf and pg\_hba.conf configuration
- Authentication and network security

### Module 3 – Database and User Management

- Creation of databases and roles
- Rights, privileges and grants
- Isolation levels and concurrent access

### Module 4 – Backup and Restore

- Logical backups: pg\_dump and pg\_restore
- Physical backups: pg\_basebackup and WAL archiving
- Disaster recovery and Point-In-Time Recovery (PITR)

### Module 5 – Optimisation and Supervision

- Indexes and execution plan analysis (EXPLAIN, EXPLAIN ANALYZE)
- Server tuning: shared\_buffers, work\_mem, effective\_cache\_size
- Monitoring tools: pgAdmin, Prometheus exporters

### Module 6 – Security and Best Practices

- Connection security and SSL/TLS
- Logs, auditing and pgaudit extension
- Version upgrades and extension management

## TEACHING METHODS

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### 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](mailto:contact@mfe-it.com).

## PRACTICAL INFORMATION

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### 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