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PostgreSQL 15 Training: Developer

3 days (21 hours)

Presentation

PostgreSQL 15 is the only free, open-source database management system offering high performance. This tool is packed with features to help developers create applications and producers protect the reliability of large amounts of data, while keeping infrastructures stable.

Starting with an introduction to the new features of PostgreSQL 15, our training will help you master PostgreSQL administration and build dynamic database solutions for enterprise applications, designing both the physical and technical aspects of the system.

In this PostgreSQL training course, you'll learn the fundamental rules of development with PostgreSQL, as well as how to create and manipulate databases and tables. You'll also learn how to manage JSON and JSONB data, and how to configure a Patroni cluster.

Our PostgreSQL 15 training course, ideal for developers, will enable you to quickly master this system, thanks to a complete apprenticeship in queries, database creation and manipulation. Our PostgreSQL 15 training course will teach you the basics of the latest version of the tool, [PostgreSQL 15](#).

Objectives

- Learn the fundamental rules of PostgreSQL development
- Create databases and tables
- Query and manipulate data
- Setting up a Patroni cluster
- Understanding JSON and JSONB data

Target audience

Architects, Project managers, Developers, Database managers

Prerequisites

- Knowledge of databases
- Knowledge of SQL

Hardware requirements

- A Linux system preferably with administrator access and Internet access (2 vCPUs minimum, but 4 recommended)
- SSH client or console access for file transfers
- PostgreSQL installed

Pre-course reading recommendations

- A complete article on the [differences between Postgre and MySQL](#)
- A long article to familiarize you with [all aspects of databases](#)
- A [DBMS simulator for SQL training](#)
- [Documentation](#) of the latest tool features
- A clear tutorial for [successful joins](#)

PostgreSQL 15 training program for developers

PostgreSQL fundamentals

- Introducing PostgreSQL
- Understanding PostgreSQL databases
- PostgreSQL data types
- Data recovery
- Data filtering
- Data sorting
- Deleting duplicates
- Using the HAVING clause
- Trunking a table
- Stored procedures

Database design with PostgreSQL

- Relational data modeling
- Database schema design

- Using database constraints
- Creating tables with PostgreSQL
- Using the graphical user interface (GUI)
- Join tables with INNER Join
- Join tables with LEFT Join
- Join tables with FULL OUTER Join
- Join tables with CROSS Join
- Joining tables with NATURAL Join

PostgreSQL administration

- User and role management
- Data backup and restoration
- Configuring PostgreSQL for optimum performance
- Transaction management
- Using PostgreSQL documentation

Advanced PostgreSQL features

- Using indexes to optimize query performance
- Using stored functions
- Database replication management
- Database security management
- Using monitoring and activity logs
- Optimizing PostgreSQL performance
 - Understanding the PostgreSQL optimizer
 - Using statistics to improve performance
 - SQL query optimization

Working with JSON and JSONB data

- Understanding JSON and JSONB format
- Data storage and recovery
- Using JSON and JSONB functions
- Using queries to work with JSON and JSONB data

Data migration from Oracle to PostgreSQL

- Comparing the differences between Oracle and PostgreSQL
- Data migration using the Oracle import tool
- Manual data migration with PostgreSQL
- Using the data migration tool

Database cluster management

- Understanding clustering concepts

- Installing and configuring database clusters with Patroni
- High availability management
- Using third-party tools to manage database clusters

Further information

Companies concerned

This training course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.