

PostgreSQL Administration

Audience PostgreSQL Administration Course

The course PostgreSQL Administration is intended for persons who need to administer, monitor and support PostgreSQL databases and servers.

Prerequisites Course PostgreSQL Administration

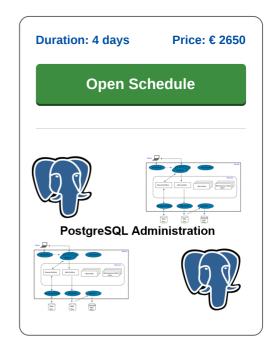
To join the course PostgreSQL Administration knowledge of the SQL guery language and databases is needed.

Realization Training PostgreSQL Administration

The subject matter is treated on the basis of presentations. Demos are used to clarify the theory and exercises are used to bring the theory into practice. The course times are from 9.30 up and to 16.30.

Certification Course PostgreSQL Administration

Participants receive an official certificate PostgreSQL Administration after successful completion of the course.



Content Course PostgreSQL Administration

In the course PostgreSQL Administration participants learn to configure and manage PostgreSQL databases. PostgreSQL is a powerful and robust open source object-relational database system with a good reputation for reliability and performance. The course uses the latest version of the PostgreSQL database and the pgAdmin graphical user interface.

PostgreSQL Intro

The course PostgreSQL Administration starts with a discussion of the installation options and the tools pgAdmin and psql. Also the main features of PostgreSQL are covered such as table inheritance, sophisticated locking, nested transactions and asynchronous replication.

PostgreSOL Architecture

Subsequently the PostgreSQL Architecture and the processes that play a role in it, such as the Postmaster Daemon Process, Background and Backend Processes and Client Processes, are treated. Tablespaces and vacuum are also covered.

Server and Database Objects

Attention is also paid to the most commonly used server and database objects that PostgreSQL provides. It is important to get to know these objects, such as Server Service and Database Object, in order to be able to use their functionality.

Backup and Restore

Then it's time for the PostgreSQL backup tools pg dump and pg dumpall. Point-in-Time Database Restoration and Setting up WAL archiving are then explained.

Indexes

The use of indices in PostgreSQL and the differences between the indices B-Tree, Hash, GiSY, GIN and BRIN is also part of the course PostgreSQL Administration.

Roles and Security

Securing a PostgreSQL Server is of course of great importance. In that respect access permissions and client authentication control are covered and Data Encryption and the pg crypto module as well.

Clustering

Finally attention is paid to High Availability and Load Balancing by placing multiple PostgreSQL servers in a cluster.

Houten, Amsterdam, Rotterdam, Eindhoven, Zwolle, Online

Locations



Modules Course PostgreSQL Administration

Module 1 : PostgreSQL Intro	Module 2 : PostgreSQL Architecture	Module 3 : Server and Database Objects
What is PostgreSQL?	Shared Memory	Server Service
PostgreSQL Features	Shared and WAL Buffer	Database Object
User-defined types	PostgreSQL Process Types	Table Object and Schema
Table inheritance	Postmaster Daemon Process	PostgreSQL Tablespaces
Sophisticated locking mechanism	Background Processes	pg_default and pg_global
Foreign key referential integrity	Backend Processes	View as Virtual Tables
Nested Transactions and Savepoints	Client Processes	Functions and Operators
Multi-version Concurrency Control	Database Structure	Server Configuration
Asynchronous replication	Create User Database	Logging Parameters
Install and Connect to PostgreSQL	What are Tablespaces?	Memory Parameters
pgAdmin Application and psql Shell	What is Vacuum?	WAL Parameters
Module 4 : Backup and Restore	Module 5 : Indexes	Module 6 : Database Management
PostgreSQL Backup Tools	What are Indexes?	Options to Create Databases
pg_dump and pg_dumpall	Index Types	Modify Databases
Point-in-Time Database Restoration	B-Tree, Hash, GiSY	Rename Databases
Setting up WAL archiving	GIN and BRIN	Change Owner and Tablespace
Data and/or Structure	Index Differences	Change Session Defaults
pg_dump Parameters	Create and Drop Index	Delete Databases
Backup Object Definitions	List indexes	Check Activity with pg_stat_activity
pg_restore and psql	Unique Index	Copy a Database
Ignore and Stop on Errors	Index on Expression	Using pg_dump
pg_store Parameters	Partial index and Reindex	Get Database Object Sizes
Restore only Structure	Multicolumn Indexes	Using pg_size_pretty
Module 7 : Role Management	Module 8 : Securing PostgreSQL	Module 9 : Cluster Management
Access Permissions	Client Authentication Control	High Availability Cluster
pg_hba.conf file	Rule Specification	Performing Replication
Creating PostgreSQL Roles	Server Configuration	Primary Server
Privileges and Restrictions	Changing Parameters	Promoting Standby Server
superuser	Role Strategies	Load Balancing
Login Privilege	Super User Management	HAProxy Configuration
pg_roles System Catalog	Data Encryption	Xinetd Setup
Role Attributes	One and Two Way Encryption	HAProxy in ClusterControl
Groups	pg_crypto	Reslaving Standby Server
Role Membership	Logging	Chained Replication
User Role and Group Inheritance	pg_stat_statements Module	Keepalived