PostgreSQL Database Administration and Operations Training Course

19 – 23 April 2027
Seoul

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Overview

PostgreSQL Database Administration and Operations Training Course is a one-week course for database administrators, backend developers, data engineers, systems engineers, application support specialists, and technical operations teams, who leave with a PostgreSQL Operations Runbook. The course connects PostgreSQL database administration, role-based access control, schema and transaction management, PostgreSQL performance tuning, backup and recovery, database monitoring, replication concepts, maintenance, and incident diagnosis in one operating workflow. Agile Leaders Training Center presents the course on PostgreSQL database operations.

Who Should Attend

- Teams responsible for administering database clusters, databases, and schemas
- Functions responsible for backend data access and transaction behavior
- Specialists responsible for data platforms, pipelines, and service reliability
- Teams responsible for application support, monitoring, and incident response
- Control functions responsible for database access, change evidence, and recovery readiness

The course assumes participants support databases, applications, infrastructure, or data services at work and leaves out AI vector search, retrieval-augmented generation, software certification preparation, and advanced extension development.

Departments and Industries

The course supports PostgreSQL database operations across service, industrial, and public-facing organizations.

- Database and data platform departments
- Application engineering and enterprise systems teams
- Infrastructure, cloud operations, and service support functions
- Financial services and digital commerce organizations
- Manufacturing, logistics, and energy employers
- Healthcare and education institutions

Learning Objectives

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

- Analyze PostgreSQL cluster, database, schema, and process architecture
- Apply SQL transactions and role-based access control
- Build workload-aware indexes and interpret query plans
- Evaluate backup, restore, and replication readiness
- Use database monitoring and routine maintenance methods
- Diagnose operational incidents and prioritize recovery actions

Course Agenda

Day 1: Architecture and Database Foundations

- PostgreSQL Cluster, Database, and Schema Context Map
- Server Process and Client Connection Flow
- Installation Configuration and Parameter Baseline
- Database Object and Namespace Design Method
- psql Administration Command Practice

Day 2: SQL Operations and Access Control

- DDL and DML Operations Checklist
- Transaction Isolation and Concurrency Scenario Map
- Role Membership and Ownership Model
- GRANT and REVOKE Privilege Matrix
- Authentication Boundary and Least-Privilege Review

Day 3: Indexing and Query Performance

- B-Tree, Hash, GiST, GIN, SP-GiST, and BRIN Decision Guide
- Multicolumn, Partial, and Expression Index Design
- EXPLAIN and EXPLAIN ANALYZE Plan Reading Method
- Planner Statistics and ANALYZE Diagnostic Flow
- Query and Configuration Tuning Record

Day 4: Resilience, Monitoring, and Maintenance

- Logical and Physical Backup Selection Matrix
- Restore Validation and Recovery Procedure
- Write-Ahead Log and Standby Replication Context
- Database Monitoring and Alert Evidence Dashboard
- VACUUM, ANALYZE, and REINDEX Maintenance Schedule

Day 5: PostgreSQL Operations Practice

- Architecture and Configuration Baseline Exercise
- Role and Privilege Diagnosis Exercise
- Index and Query Plan Analysis Exercise
- Backup, Monitoring, and Incident Triage Exercise
- PostgreSQL Operations Runbook Capstone Exercise

Practical Exercises

The course uses suggested activities to practice PostgreSQL database administration and operational decisions.

- Suggested activity: map cluster processes, databases, schemas, configuration parameters, and connection paths for a service workload.
- Suggested activity: design roles, ownership, privileges, transaction scenarios, and access review evidence for an application team.
- Suggested activity: compare index choices, read EXPLAIN plans, evaluate statistics, and record tuning decisions.
- Suggested activity: assemble backup, restore, replication, monitoring, maintenance, and incident actions into a PostgreSQL Operations Runbook.

FAQs

Who suits PostgreSQL database administration training and what does it assume?

PostgreSQL database administration training suits database, development, data, infrastructure, support, and operations professionals. It assumes workplace exposure to databases or technical services and does not require prior responsibility for a production PostgreSQL cluster.

How does PostgreSQL database operations training differ from PostgreSQL AI application training?

PostgreSQL database operations training focuses on architecture, SQL, access, indexes, query plans, backup, monitoring, maintenance, and recovery. PostgreSQL AI application training focuses on embeddings, vector search, retrieval workflows, and application integration.

How do PostgreSQL roles and privileges control database access?

PostgreSQL roles hold login attributes, memberships, ownership, and granted privileges. Administrators combine role design with GRANT, REVOKE, schema controls, authentication rules, and periodic access review to limit actions to operational needs.

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How does PostgreSQL performance tuning use EXPLAIN and indexes?

PostgreSQL performance tuning uses EXPLAIN to inspect planner choices, row estimates, scan methods, joins, and costs. Index design, current statistics, workload evidence, and EXPLAIN ANALYZE results help teams compare alternatives without assuming every query needs an index.

What supports PostgreSQL backup and recovery readiness?

PostgreSQL backup and recovery readiness depends on an appropriate logical or physical backup method, protected retention, documented recovery steps, restore testing, write-ahead log planning, monitoring, ownership, and recorded evidence.

Conclusion

Participants take a PostgreSQL Operations Runbook back to work. It connects architecture, configuration, SQL operations, access control, indexing, query plans, backup, recovery, replication, monitoring, maintenance, and troubleshooting. It changes isolated administration tasks into traceable operating decisions, repeatable checks, diagnosed incidents, and prioritized recovery actions.