training code: pgSQL-ZW / ENG DL 2d / EN

PostgreSQL: Performance management

Training recipients

The training is addressed both to administrators and developers responsible for diagnosing and troubleshooting SQL query performance in PostgreSQL 16 environment.

Benefits

During the training the participants will acquire knowledge:

- Query Planner functioning,
- interpreting and modifying query execution plans,
- the use of data indexing techniques,
- the use of temporary and partitioned tables,
- the use of materialized views,
- parallel SQL query execution,
- configuring buffer memory,
- generating extended statistics,
- detecting performance problems,
- performance tests automation.

Training program

1. Introduction to Query Planner (functioning, configuring)
2. Analyzing query execution plans
3. Collecting and expanding statistics for Query Planner
4. Index structures (B*-tree, hash, BRIN, GIN, GiST, partial, function-based)
5. Advanced table structures (partitioned, unlogged, temporary, materialized views)
6. Configuring buffer memory (buffer cache, work memory, maintenance work memory)

7. Parallel queries (execution plans, configuration)
8. Diagnosing performance problems (logs, pg_top, auto_explain, pg_stat_statements, cumulative statistics)
9. Using pgBench to implement simple system performance tests
10. Other techniques of performance tuning (prepare/execute, hints, sorting records physically, calculated columns, fillfactor)

Expected preparation of the participant

Knowledge of SQL language, knowledge of PostgreSQL database server architecture.

Training Includes

- 2 days of work with a trainer
- Trainer’s supervision
- Contact with community
- Coursebook
- Lab environment

Training method

- lecture
- workshops

Duration

2 days / 14 hours

Language

- Training: English
- Materials: English