Course : PostgreSQL, tuning

Practical course - 2d - 14h00 - Ref. POU
Price : 1600 CHF E.T.

4 / 5

This course will teach you how to optimize your applications connected to a PostgreSQL server. Several levels of intervention are possible: working directly at server level (memory, cache), improving PostgreSQL queries, acting at client level (API and connectors).

Teaching objectives

At the end of the training, the participant will be able to:

- Identify areas for optimization
- Analyze PostgreSQL behavior to identify bottlenecks
- Optimizing PostgreSQL configuration settings
- Improve query performance

Intended audience

Database and system administrators.

Prerequisites

Good knowledge of PostgreSQL administration or knowledge equivalent to that provided by the course "PostgreSQL, administration" (ref. PGA).

Practical details

Hands-on work

Theoretical sequences alternate with practical work.

Course schedule

1 Main parameters

- Various optimization parameters (connections, memory, etc.).

Exercise
Modification of memory parameters and analysis of results.

PARTICIPANTS
Database and system administrators.

PREREQUISITES
Good knowledge of PostgreSQL administration or knowledge equivalent to that provided by the course "PostgreSQL, administration" (ref. PGA).

TRAINER QUALIFICATIONS
The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS
The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

2 Processing algorithms

- The PostgreSQL engine.
- Details of the various request processing mechanisms.

Exercise
Performance comparison using different processing algorithms for the same query.

3 Query algorithms

- Query processing methods (statistics, etc.).
- Different types of algorithms (join, LOOP...).

Exercise
Performance comparison using different query algorithms.

4 Memory optimization

- Configuration of memory parameters (shared_buffers...).
- How to calculate the value of shared_buffers.

5 Caching mechanisms and access performance

- Disk cache for data files.
- Cache transaction logs.
- Hides open spaces.
- Hides temporary objects.

Exercise
Modification of various caches, memory and behavior analysis.

6 Performance through APIs and connectors

- Use of APIs (Java, PHP...).
- Use of connectors (e.g. TranQL).
- Optimizing resource management. Table organization with CLUSTER.
- Configuration of operating system kernel resources.
- Data distribution. Free space management.
- PostgreSQL isolation levels (READ COMMITED...). Lock levels.
- Locking method in PostgreSQL (record, table...).
- Stack size.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

Dates and locations

REMOTE CLASS
2026 : 9 Mar., 8 June, 21 Sep., 7 Dec.