

Hands-on course , 3  
day(s)  
Ref : POS

### Participants

Developers, operators, and anyone else who wants to use PostgreSQL better or migrate to PostgreSQL.

### Pre-requisites

Basic knowledge of an operating system (Windows, Linux/Unix).

### Next sessions

# Getting Started with PostgreSQL

## OBJECTIVES

*The PostgreSQL DBMS has most of the features found in commercial products like Oracle or DB2. This training will teach you how to use it effectively, particularly to create and operate a database, or program in PL/pgSQL language.*

### 1) Introduction

### 2) SQL with PostgreSQL

### 3) PL/pgSQL language

### 4) Data maintenance

### 5) Managing users and groups.

### 6) Configuring PostgreSQL

### 7) Additional instruction

## 1) Introduction

- Overview of PostgreSQL, versions.
- The relational model, the schema.
- Tables, constraints. User interfaces.

## 2) SQL with PostgreSQL

- The SQL standard. Positioning of PostgreSQL. Setting up a database's schema.
- PostgreSQL data type. Tables. Sequences. Views. Integrity constraints on tables.
- Adding, editing, and deleting data.
- Querying a database's schema. Selection, restriction, sorting, joining.
- Complex queries. Using operators. SQL features of PostgreSQL.
- Advanced features of PostgreSQL. Transactions. Views. Tables. Table inheritance.

### Workshop

*Creating a schema. SQL DDL scripts. Creating views. Transaction scenarios.*

## 3) PL/pgSQL language

- Instructions, types of language. Blocks of code.
- Control structures. Errors and exceptions.
- Cursors. Declaration, movement, and closing.
- Procedures and functions.
- Adding subprograms to a database.
- Triggers. Structure.

### Workshop

*Stored functions.*

## 4) Data maintenance

- Importing/exporting data.
- With COPY TO and COPY FROM. With Psql.
- Backing up and restoring data.
- pg\_dump tools. Request optimization
- Indexes. The optimizer. EXPLAIN and VACUUM.

### Workshop

*Importing/exporting data. Creating an index and analyzing a query execution plan.*

## 5) Managing users and groups.

- Creation. Authentication.
- Grant privileges.

### Workshop

*Creating users, allocating rights. Authentication tests.*

## 6) Configuring PostgreSQL

- Installing and starting a database.
- Postmaster. The postgresql.conf file.
- System tables.

### Workshop

*Installing a database and configuration.*

## 7) Additional instruction

- Programming interfaces.
- Connecting PostgreSQL with PHP, JDBC, ODBC.