

## PostgreSQL for Developers

Cursusduur: 3 Dagen    Cursuscode: PSQLDEV    Trainingsmethode: Virtual Learning

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### Beschrijving:

#### PostgreSQL for Developers Course Overview

**English - Please note this course is only available in English.**

Nederlands - Let op: deze training is alleen in het Engels beschikbaar.

Français - Veuillez noter que ce cours est uniquement disponible en anglais.

This course covers important basic and intermediate level details for developers interacting with PostgreSQL. Delegates will learn technique

Virtueel en Klassikaal™

Virtueel en Klassikaal™ is een eenvoudig leerconcept en biedt een flexibele oplossing voor het volgen van een klassikale training. Met Virtueel en Klassikaal™ kunt u zelf beslissen of u een klassikale training virtueel (vanuit huis of kantoor) of fysiek op locatie wilt volgen. De keuze is aan u! Cursisten die virtueel deelnemen aan de training ontvangen voor aanvang van de training alle benodigde informatie om de training te kunnen volgen.

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### Doelgroep:

#### Who will the Course Benefit?

Anyone who has a working knowledge of PostgreSQL but needs to enhance this to include PL/pgSQL, additional functions, and techniques to monitor and optimise query performance.

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### Doelstelling:

- Course Objectives
  - To provide a broader set of PostgreSQL skills for someone who currently has a good working knowledge of PostgreSQL.
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### Vereiste kennis en vaardigheden:

- This course assumes a good working knowledge of PostgreSQL SQL. This can be obtained by attendance on the pre-requisite SQL for PostgreSQL course.
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### Vervolg cursussen:

Further Learning

- PostgreSQL Administration
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## Cursusinhoud:

### PostgreSQL for Developers Training Course Course Contents - DAY 1

#### Course Introduction

- Administration and course materials
- Course structure and agenda
- Delegate and trainer introductions

#### Session 1: ADVANCED SQL LANGUAGE

- Advanced Datatypes
- Data Type Conversion

#### Session 2: ENHANCED GROUPING FEATURES

- Revision of aggregate functions and basic GROUP BY and HAVING clauses
- ROLLUP extension
- CUBE extension
- GROUPING function
- GROUPING SETS function

#### Session 3: ANALYTICAL QUERIES

- Ranking functions
- NTILE and WIDTH\_BUCKET functions
- Analytic aggregates
- Windowing functions
- Row and Range specifications
- FIRST\_VALUE and LAST\_VALUE
- LAG and LEAD functions

#### Session 4: RECURSIVE QUERIES

- The WITH clause
- Recursive Common Table Expressions

#### Session 5: REGULAR EXPRESSION SUPPORT

- Match operators and notation
- Repetition operators
- Regular Expression functions
- Sub-expression grouping
- SQL Regular Expressions

#### Session 6: SERVER PROGRAMMING BASICS

- Extending SQL with Procedural Code
- Basic Elements
- Variables and Constants
- Data Types
- Initialising Variables and Assigning Values
- Using DML Statements in Code
- Generating Output PostgreSQL for Developers Training Course Course Contents - DAY 2

#### Session 7: PROGRAM LOGIC

- IF THEN ELSIF ELSE Statements
- CASE Statements
- The Basic Loop Construct
- WHILE and FOR Loops
- Nested and Labelled Loops
- The CONTINUE Statement

#### Session 8: CURSORS

- What is a Cursor?
- Implicit and Explicit Cursors
- Cursor Operations
- Declaring, Opening and Closing Cursors
- Fetching Rows
- Status Checking
- Where current of clause
- Unbound cursors (refcursors)
- The Cursor FOR Loop
- Parameterised Cursors

#### Session 9: EXCEPTION HANDLING

- Errors and Messages
- The EXCEPTION clause
- System Raised Exceptions
- The RAISE statement
- STRICT option in a SELECT ..INTO
- Programmer Raised Exceptions
- The GET STACKED DIAGNOSTICS command
- Nested and Labelled Blocks
- Scope of Variables and Cursors

#### Session 10: USER-DEFINED FUNCTIONS

- CREATE FUNCTION statement
- Function parameters
- Functions Returning Void

#### Session 11: USER-DEFINED PROCEDURES

- CREATE PROCEDURE statement
- Procedure parameters
- Invoke a procedure using CALL
- Definer's and Invoker's rights execution
- ALTER and DROP PROCEDURE statements PostgreSQL for Developers Training Course Course Contents - DAY 3

#### Session 12: TRIGGERS

- DML Triggers
- The Trigger Function
- The CREATE TRIGGER Statement
- BEFORE, AFTER and INSTEAD OF Triggers
- The OLD and NEW qualifiers
- Errors in Triggers
- DDL and Database Event Triggers
- Managing Triggers
- Privileges to create Triggers

#### Session 13: TRANSACTIONS AND CONCURRENCY

- Overview of Transaction Processing in PostgreSQL
- Transaction Control
- COMMIT, ROLLBACK and SAVEPOINT statements
- AUTOCOMMIT
- Multi-version Concurrency Control (MVCC)
- Transaction Isolation Levels
- Locking Concepts
- Implicit and Explicit Locking of Tables and Rows
- Possible Causes of Contention
- Deadlocks
- Advisory Locks
- Lock Management Parameters

#### Session 14: SQL TUNING

- Query Optimization
- Scan Methods
- Join Methods
- Join Order
- Statement Transformation
- Detect Slow Queries
- View Execution Plans using EXPLAIN
- Gather Optimizer Statistics with ANALYZE
- Gather Extended Statistics with CREATE STATISTICS
- Parameters that affect Optimization
- Memory Settings that affect Query Performance
- Overview of declarative Table Partitioning

#### Session 15: LOADING AND UNLOADING DATA

- Execute a function using PERFORM
- Listing Functions
- ALTER and DROP FUNCTION statements

- Import and Export Operations with COPY
- Export using the COPY Command
- Import using the COPY Command

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### Nadere informatie:

Neem voor nadere informatie of boekingen contact op met onze Customer Service Desk 030 - 60 89 444

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[www.globalknowledge.com/nl-nl/](http://www.globalknowledge.com/nl-nl/)

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