

## EDB Postgres Advanced Server v14

DAY ONE	
<p><b>Part 1: Introduction</b></p> <ul style="list-style-type: none"> <li>➤ History of PostgreSQL</li> <li>➤ Major Features</li> <li>➤ New Features of PostgreSQL</li> <li>➤ Multi Version Concurrency Control</li> <li>➤ Write-Ahead Logging</li> <li>➤ Architectural Overview</li> <li>➤ Limits</li> </ul> <p><b>Part 2: PostgreSQL System Architecture</b></p> <ul style="list-style-type: none"> <li>➤ Architectural Summary</li> <li>➤ Shared Memory</li> <li>➤ Statement Processing</li> <li>➤ Utility Processes</li> <li>➤ Disk Read Buffering</li> <li>➤ Write Buffering</li> <li>➤ Background Writer Cleaning Scan</li> <li>➤ Commit &amp; Checkpoint</li> <li>➤ Physical Database Architecture</li> <li>➤ Data Directory Layout</li> <li>➤ Installation Directory Layout</li> <li>➤ Page Layout</li> </ul>	<p><b>Part 3: Creating and Managing Databases</b></p> <ul style="list-style-type: none"> <li>➤ Object Hierarchy</li> <li>➤ Creating Databases</li> <li>➤ Creating Schemas</li> <li>➤ Schema Search Path</li> <li>➤ Roles, Users &amp; Groups</li> <li>➤ Access Control</li> </ul> <p><b>Part 4: Installation</b></p> <ul style="list-style-type: none"> <li>➤ OS User &amp; Permissions</li> <li>➤ Installation</li> <li>➤ Setting environment variables</li> <li>➤ Clusters</li> <li>➤ Creating a database cluster</li> <li>➤ Starting and Stopping the Server</li> <li>➤ (pg_ctl)</li> </ul> <p>Connect to the server using psql</p>

## DAY TWO

### Part 5: Configuration

- Setting PostgreSQL Parameters
- Access Control
- Connection Settings
- Security and Authentication
- Settings
- Memory Settings
- Query Planner Settings
- WAL Settings
- Background Writer Settings

### Part 6: Log Management

- Where to Log
- When to Log
- What to Log

### Part 7: PSQL Commands

- Introduction
- Conventions
- Connecting to PostgreSQL
- PSQL Command Line Parameters
- Entering PSQL Commands
- PSQL Meta-Commands
- PSQL SET Parameters
- Information Commands

### Part 8: pgAdmin III

- Registering a server
- Viewing and Editing Data
- Query Tool
- Databases
- Languages
- Schemas
- Domains
- Functions
- Sequences
- Tables
- Columns
- Constraints
- Indexes
- Maintenance
- Rules
- Triggers
- Types
- Views
- Table spaces
- Roles

### Part 9: Tablespaces

- Tablespaces and Datafiles
- pg\_global and pg\_default
- Advantages of Tablespaces
- Creating Tablespaces
- Changing Default Tablespace
- Usage Example
- Altering Tablespaces
- Dropping Tablespaces

DAY THREE	DAY FOUR
<p><b>Part 10: Security</b></p> <ul style="list-style-type: none"> <li>➤ Authentication</li> <li>➤ Authorization</li> <li>➤ Levels of security</li> <li>➤ pg_hba.conf file</li> <li>➤ Users</li> <li>➤ Object ownership</li> <li>➤ Access control</li> <li>➤ Application access parameters</li> </ul> <p><b>Part 11: Backup and Recovery &amp; Point-in Time Recovery</b></p> <ul style="list-style-type: none"> <li>➤ Backup Types</li> <li>➤ SQL Dump</li> <li>➤ Cluster Dump</li> <li>➤ Offline Copy Backup</li> <li>➤ Continuous Archiving</li> <li>➤ pg_basebackup</li> <li>➤ Point-In Time Recovery</li> <li>➤ pg_upgrade</li> </ul> <p><b>Part 12: Postgres Data Dictionary</b></p> <ul style="list-style-type: none"> <li>➤ The System Catalog Schema</li> <li>➤ System Information views/tables</li> <li>➤ System Information Functions</li> </ul>	<p><b>Part 14: Performance Tuning</b></p> <ul style="list-style-type: none"> <li>➤ Hardware Configuration</li> <li>➤ OS Configuration</li> <li>➤ Server Parameter Tuning</li> <li>➤ Connection Settings</li> <li>➤ Memory Parameters</li> <li>➤ Memory settings for Planner</li> <li>➤ WAL Parameters</li> <li>➤ Explain Plan</li> <li>➤ Explain Example</li> <li>➤ Statistics Collection</li> <li>➤ Indexes</li> <li>➤ Examining Index Usage</li> <li>➤ Tips for Inserting Large Amount of Data</li> <li>➤ Some Notes About pg_dump Non-Durable Settings</li> <li>➤ Labs</li> </ul> <p><b>Part 15: Routine Maintenance</b></p> <ul style="list-style-type: none"> <li>➤ Explain and Explain Analyze</li> <li>➤ Table Statistics</li> <li>➤ Updating Planner Statistics</li> <li>➤ Scheduling Auto Vacuum</li> <li>➤ Preventing Transaction ID Wraparound Failures</li> <li>➤ The Visibility Map</li> <li>➤ Routine Reindexing</li> </ul>

**Part 13: PostgreSQL API Connectivity**

- Installing Third-Party Drivers
- Installation & Configuration of JDBC & ODBC Drivers

**Part 16: Replication & Failover**

- Database High Availability
- Causes of Data Loss
- Plan for Common Errors
- Selection Criteria
- High Availability Options
- Hot Streaming Replication, Architecture and Setup
- Streaming Replication Example

**DAY FIVE****Part 17: Table Partitioning**

- Partitioning
- Partitioning Methods
- When to Partition
- Partitioning Setup
- Partitioning Example
- Partitioning and Constraint
- Exclusion
- Caveats
- Lab

**Part 18: Connection Pooling**

- Pgpool-II
- Pgpool-II Features
- Install and Configure pgpool-II
- Pgpool II Modes
- Starting/Stopping pgpool-II
- Pgpool-II Example

**Part 19: Database Monitoring**

- Database Statistics
- The Statistics Collector
- Database Statistic Tables
- Operating System Process Monitoring
- Current Sessions and Locks
- Log Slow Running Queries
- Disk Usage

**Part 20: Migration**

- Introduction to Migration Toolkit (Oracle/MSSQL to PostgreSQL)
- Migration Assessment
- Oracle Compatibility
- Demo - Migration from Oracle to PostgreSQL