

# PostgreSQL Training Contents

## Curriculum 1:

- \* Introduction and Overview of PostgreSQL
- \* PostgreSQL System Architecture
- \* Architectural Summary
- \* Process Architecture
- \* Database Clusters
- \* PostgreSQL Terminology
- \* Physical Database Architecture
- \* Data File Architecture
- \* Database Server
- \* Installation Using PostgreSQL Binary Windows
- \* Installation from Source
- \* Creating a database cluster
- \* Starting and Stopping the Server (Other)
- \* Lab Exercise - Installation
- \* Install PostgreSQL from source
- \* Create a database cluster
- \* Start the database server
- \* Connect to the server using psql
- \* Stop the database server

## Curriculum 2 :

- \* Configuration
- \* Setting PostgreSQL Parameters
- \* Access Control
- \* Connection Settings
- \* Security and Authentication Settings
- \* Configure client/server connectivity
- \* Memory Settings
- \* Free Space Settings
- \* Kernel Resource Settings
- \* Log Management
- \* Background Writer Settings
- \* Vacuum Cost Settings

### Curriculum 3:

- \* Create and Managing PostgreSQL Database and Security
- \* USERS
- \* GROUPS
- \* ROLES
- \* Object Ownership
- \* Schemas and Search Paths
- \* Lab to create USERS, SCHEMAS, ROLES, Alter SEARCH\_PATH
- \* GRANT and REVOKE privileges
- \* Levels of security: pg\_hba.conf, schemas and users and table level
- \* pg\_hba.conf

### Curriculum 4

- \* Moving Data with PostgreSQL and Backup and Recovery
- \* COPY
- \* Perform a Logical Backup Using PG\_DUMP
- \* Perform Entire Cluster Backup using PG\_DUMPALL
- \* Filesystem Level Backup (Hot and Cold)
- \* Server To Server Backup Using BART and PG\_ADMIN Tools
- \* PITR - Point in Time Recovery
- \* pg\_start\_backup and pg\_stop\_backup
- \* Creating a base backup
- \* Archive Backup Local and Standby
- \* Recovery file parameters
- \* Lab to test PITR

### Curriculum 5:

- \* Routine Database Maintenance Tasks
- \* Routine Vacuuming
- \* Recovering Disk Space
- \* Vacuum Full
- \* Updating Planner Statistics
- \* Preventing Transaction ID Wraparound Failures
- \* Routine Reindexing

### Curriculum 6:

- \* Performance Tuning
- \* Explain and Explain Analyze
- \* Forcing Query Plan Selection
- \* Indexing
- \* Log Management
- \* Clustering

### Curriculum 7:

- \* PostgreSQL Partitioning and Table spaces
- \* Partition Methods
- \* Partition Setup
- \* Partition Table Explain Plan
- \* Table space Management

### Curriculum 8

- \* High Availability and Replication
- \* Hot Standby / Warm Standby
- \* Why Use Replication?
- \* Hot Streaming Replication
- \* Replication Limitations and Monitoring log shipping
- \* Replication Configuration and check Logs

### Curriculum 09

- \* Connection Pooling
- \* Why Connection Pooling?
- \* Pgpool-II setup
- \* Pgbouncer setup

### Curriculum 10

- \* Advance Monitoring Techniques
- \* Importance of Monitoring
- \* PGFouine/pg\_badger - Log Analyzer

### Curriculum11

- \* Advance Monitoring Tools(community and EDB)
- \* Monitoring the Database using Pg\_admin and pgbadger
- \* Pem server(Enterprise Manager). Handle more than 10 server one window
- \* pg\_client, pg\_agent
- \* Ora2pg(migration)-oracle to postgres Migration
- \* Edb Migration Tool Kit