

DP 3021- Configure and Migrate to Azure Database for PostgreSQL

Days: 1



Prerequisites: Students should be able to demonstrate an understanding of relational databases and an understanding of basic SQL.

Description: Azure Database for PostgreSQL is a Platform as a Service database service in the Microsoft cloud. It bases itself on the PostgreSQL open-source relational database and includes built-in high availability, automatic backup and restore, as well as comprehensive security features. The pay-as-you-go pricing model provides predictable performance and near-instant scaling. In this learning path, you learn the main features of PostgreSQL and how they work in Azure Database for PostgreSQL. You learn about the different Azure Database for PostgreSQL implementation options, and how to configure a server for your needs.

OUTLINE:

LESSON 1 - EXPLORE POSTGRESQL ARCHITECTURE

- Describe Azure Database for PostgreSQL
- Understand PostgreSQL architecture
- Understand PostgreSQL shared memory
- Module assessment

LESSON 2 - UNDERSTAND CLIENT-SERVER COMMUNICATION IN POSTGRESQL

- Understand connection handling
- Understand the PostgreSQL client tools
- Module assessment

LESSON 3 - UNDERSTAND POSTGRESQL QUERY PROCESSING

- Identify the query processing components
- Understand the EXPLAIN statement
- Module assessment

LESSON 4 - SECURE AZURE DATABASE FOR POSTGRESQL

- Describe Azure Database for PostgreSQL security
- Describe built-in Azure Database for PostgreSQL server roles
- Grant permissions in Azure SQL Database for PostgreSQL
- Understand encryption in Azure Database for PostgreSQL
- Module assessment

LESSON 5 - PROCEDURES AND FUNCTIONS IN POSTGRESQL

- Create a stored procedure in Azure Database for PostgreSQL
- Call a stored procedure in Azure Database for PostgreSQL
- Create and use a function in Azure Database for PostgreSQL
- Module assessment

LESSON 6 - UNDERSTAND WRITE-AHEAD LOGGING

- Describe write ahead logging
- Describe replication and logical decoding
- Module assessment

LESSON 7 - CONFIGURE AND MANAGE AZURE DATABASE FOR POSTGRESQL

- Understand the system catalogs and system views
- Investigate metadata with system catalogs and system views
- Explain the purpose of vacuum and autovacuum
- Configure autovacuum server parameters
- Module assessment

LESSON 8 - UNDERSTAND CONCURRENCY IN POSTGRESQL

- Understand multi-version concurrency control (MVCC) and snapshots
- Describe isolation levels

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- Understand locking
- Module assessment

LESSON 9 - TUNE QUERIES IN AZURE DATABASE FOR POSTGRESQL

- Understand statistics
- Assess query performance with the Query Store
- Module assessment

LESSON 10 - MIGRATE TO AZURE DATABASE FOR POSTGRESQL FLEXIBLE SERVER

- Compare online and offline migrations
- Identify migration tool options
- Analyze the decision criteria for tool selection and migration model
- Module assessment