

# **Database Replication**





#### **Database Replication**

Ref: 321447\_130234 Date: 27 - 31 Jan 2025 Location: London (UK) Fees: 4400 Euro

#### Introduction

In this training participants will learn the general and advanced aspects of database replication, performance turning, and advanced development. Replication is the process of copying data from a central database to one or more databases. The central database is called the publication database because it provides the data for users at other sites. The data in the publication database is copied replicated to subscription databases at other locations.

By having multiple copies of a database stored on different servers, it is possible for applications to spread the processing load across those servers. This can result in improved performance, as it allows more tasks to be processed at the same time, especially when everything is just on one network.

### **Course objectives of Database replication**

- Use advanced administration techniques to configure and manage a database server.
- Read and write to multiple replicated databases
- Optimize the database and queries for maximum performance.
- Replicate and scale a database server.
- Learn to Setup Data Capture Replication
- Learn to Monitor Data Capture Replication

### **Course Outline of Database replication**

#### **Day 1-2**

#### Overview of database Architecture and Advanced Features database Administration

- Connecting to the Database
- Configuring the Server
- Setting up and Managing Users
- Overview of Database Object Types
- Setting Permissions & Security
- Querying the Database
- Monitoring the Database
- Ensuring Atomicity and Isolation
- Backing up and Restoring the database

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- Migrating Data to Another System
- Working with database Logs

#### Day 3

#### **Performance Optimization**

- Reducing I/O with HOT
- Locking & Concurrency
- Evaluating the Design of the Database
- · Inspecting the Workload
- Benchmarking and Profiling
- Using Indexes Efficiently

#### Read and write to multiple replicated databases

#### **Day 4-5**

#### **Database Replication**

- Overview of Replication
- High Availability
- Streaming Replication
- Managing Clusters
- Running Queries on Database in Hot Standby
- Synchronous Replication
- File-based Log Shipping
- Trigger-based Logical Replication
- Connection Pooling
- Upgrading
- Sharding and Scaling



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