

SQL Server High Availability and Disaster Recovery Solutions

Summary: Duration –3 full days, Level - 300 (MS Scale), Delivery method - Virtual Instructor-led class or In-class

The course goal is to dive into SQL Server Technologies and solutions that support and provide service and database availability, to understand, maintain and support them in real environments.

It is very important to know the way availability solutions work to design, implement, and maintain critical production systems and align to SLAs. Developing an overall understanding and familiarity of the basic features and different implementations is relatively simple. What is trickier to develop however, is an understanding of the mechanics (or internals) of Clustering, Availability Groups and Log Shipping and gaining experience of how to manage large scale and critical systems.

This training gives you the important aspects to gain a good understanding of how the Clustering, Log Shipping and Availability group technology works so that you can design, build, and manage a reliable availability solution. It covers HADR in hybrid and cloud environments.

Technical Level: 300+

Versions covered: The course covers all versions of SQL Server from 2016+ and later, including SQL Server 2025. The lab exercises will be on SQL Server 2019.

AUDIENCE:

DBAs and Architects, who need to design, implement, and maintain SQL Server High Availability and Disaster Recovery solutions on prem and in the cloud.

Prerequisites: Level 200 of Microsoft SQL Server Administration and Development. T-SQL and database programming knowledge is good to have.

AFTER THE TRAINING ATTENDEES WILL BE ABLE TO:

- Decide which HA and DR technology to implement
- Understand how the specific availability solution work
- Implement a proper high availability solution or a combination of them
- Manage, maintain, operate and troubleshoot Availability Group configuration
- Monitor and take actions to optimize the solution performance

TOPICS:

Module 1: HA and DR concepts

Putting measures and definition as availability solution requirements
Defining SQL Server Availability terms
SQL Server HA and DR Solutions overview

Module 2: Backups and Log Shipping

Backup and restore process
Log Shipping Concepts
Configuring Log Shipping

Module 3: Providing Service level protection with SQL Server Failover Clustering

How the FC works
The Voting concepts.
Installing SQL Server FC – important steps
Maintaining SQL Server FC solution

Module 4: SQL Server Availability Groups

Solution, design decisions, and possible architectures
Configuration parameters and security
Readable secondaries and Read Only Routing

Module 5: Operating an Availability Group Solution

Solution Maintenance and support
Replica and failover mechanics
Monitoring Availability Group Solution
Alerts and Notifications

Module 6: HADR in hybrid and Cloud environments

Important factors in combining HA and DR solutions.
Distributed AG
HADR in hybrid and Cloud only - IaaS and PaaS options and possible configurations, SQL MI for a DR, Azure SQL DR

Course format: The course modules consist of presentation for describing the respective concept and a demonstration. Some of the modules consist of practical exercises for the attendees to understand the concept better.