BLACKBIRD FOR TRAINING

Building and Managing High Availability Solutions With SQL Server

24 – 28 January 2027
Cairo (Egypt)



Building and Managing High Availability Solutions With SQL Server

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Introduction

In this course, you will learn the fundamental aspects of High Availability HA such as Recovery Point Objective RPO, Recovery Time Objective RTO, and how to measure HA as a percentage of time, among other concepts. You will also get a brief overview of the HA features introduced in Windows Server 2012 R2/2016 relevant for SQL Server solutions, including domain/domainless WFCS, cluster shared volumes, scale-out file services, storage spaces, storage replication, Hyper-V, and more. The course will focus on the most popular HA/DR features for SQL Server, specifically Failover Clustering and Availability Groups. You will gain practical knowledge on how to design highly available SQL Server solutions from the perspective of storage, quorum, and Failover Cluster Instances FCI. Furthermore, you will learn how to troubleshoot and maintain an FCI solution, configure Availability Groups AG, and monitor them effectively. The course will also cover the interoperability of other SQL Server technologies such as Integration Services, Analysis Services, and Reporting Services with SQL Server HA solutions.

Course Objectives

- Build a reliable High Availability solution using Windows Server 2012 R2/2016 and SQL Server 2014/2016.
- Manage a High Availability solution with Windows Server 2012 R2/2016 and SQL Server 2014/2016.
- Design and implement Disaster Recovery DR solutions for SQL Server.
- Troubleshoot High Availability issues in SQL Server 2016/2014.
- Learn how to configure SQL Server replication and manage different types of replication, such as transactional replication and merge replication.

Course Outlines

Day 1: Introduction to High Availability

- Basic aspects of High Availability in SQL Server.
- Overview of High Availability features in Windows Server 2016.
- SQL Server 2016 High Availability features overview.
- Failover Cluster Instances and their role in HA.
- Introduction to Availability Groups.
- Log Shipping as a DR solution.



Day 2: Windows Server 2016 Failover Clustering

- Installation and configuration of Failover Clusters in Windows Server 2016.
- Storage configuration for Failover Clusters.
- Maintaining and patching Failover Clusters.
- Adding or removing nodes from Failover Clusters.
- Monitoring and troubleshooting Failover Clusters.

Day 3: SQL Server 2016 Failover Clustering Instances FCI

- Configuring SQL Server FCI.
- Active/Active and Active/Passive configurations in FCI.
- MS DTC Microsoft Distributed Transaction Coordinator with FCI.
- Patching and upgrading SQL Server FCI.
- Adding or removing SQL Server from FCI.
- Monitoring and troubleshooting SQL Server FCI.

Day 4: SQL Server 2016 Availability Groups

- Configuring SQL Server Availability Groups AG.
- Synchronous/Asynchronous configurations in AG.
- Read-Only Routing and Load Balancing in Availability Groups.
- Direct Seeding and Distributed AG configurations.
- Patching and upgrading Availability Groups.
- Monitoring and troubleshooting SQL Server AG.

Day 5: SQL Server Interoperability

- SQL Server interoperability with Integration Services, Analysis Services, and Reporting Services.
- SQL Server replication types and how to configure them.
- Checking if SQL Server replication is running.
- Troubleshooting SQL Server replication issues.
- Database High Availability solutions using SQL Server replication.

Why Attend this Course: Wins & Losses!

- Gain hands-on experience in configuring and managing High Availability HA solutions for SQL Server.
- Master key concepts and best practices for SQL Server replication, including the various replication types and troubleshooting.
- Learn how to implement Disaster Recovery DR solutions that will minimize downtime and prevent data loss.
- Acquire the necessary skills to configure and manage Failover Clusters and Availability Groups effectively.
- Improve your ability to design and monitor highly available SQL Server environments, ensuring business continuity.



Conclusion

This course provides you with the essential knowledge and hands-on experience needed to design and implement reliable High Availability solutions for SQL Server. You will learn how to configure and maintain Failover Clusters and Availability Groups, along with gaining insights into SQL Server replication and other key HA features. Whether you are aiming to improve your SQL Server HA skills or implement effective Disaster Recovery solutions, this course is a must-attend.

Don't miss the chance to enhance your career and master SQL Server High Availability.

