

# Building and Managing High Availability Solutions With SQL Server

IT & IT Engineering  
Amsterdam (Netherlands)  
03 - 07 Feb 2025

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## Building and Managing High Availability Solutions With SQL Server

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### Introduction

In this course you will learn basic aspects of High Availability as a Recovery Point Objective, Recovery Time Objective, measuring HA in percentage of time etc. Then you will get a brief overview of HA features introduced in Windows Server 2012 R2/2016, which are relevant for SQL Server solutions - domain/domainless WFCs, cluster shared volumes, scale-out file services, storage spaces, storage replica, Hyper-V, etc. From the SQL Server perspective, the course will focus on the most popular HA/DR features - Failover Clustering and Availability Groups. Details on how to design highly available SQL Server solution from the perspective of storage; Quorum and Failover Cluster Instance. From a practical point of view, you will learn how to maintain and troubleshoot an FCI solution

In the Availability Group part, you will learn details on how to design AG solution with custom requirements; quorum configurations and AG configuration sync/async, read only routing, read only load balancing, direct seeding, hybrid AG, etc.. Similar to Failover Cluster Instances, in the practical part you will learn how to monitor an AG solution. In addition, along the course you will also learn on interoperability of another SQL Server technologies with SQL Server HA - Integration Services, Analysis Services and Reporting Services.

### Course Objectives of Building and Managing High Availability Solutions With SQL Server

- Build a reliable High Availability solution with 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
- Build Disaster Recovery Solutions
- Troubleshoot problems with High Availability in SQL Server 2016 and 2014

### Building and Managing High Availability Solutions With SQL Server Course Outlines

#### Day 1: Introduction to High Availability

- Basic aspects of High Availability

A graphic of a chessboard with several chess pieces (a king, a queen, a rook, and a pawn) on it. The board is white and black, and the pieces are gold and silver. The text 'UK Training PARTNER' is overlaid on the board.

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- Windows Server 2016 High Availability Features Overview
- Overview of HA features in Windows Server 2016
- SQL Server 2016 High Availability Features Overview
- Failover Cluster Instances
- Availability Group
- Log Shipping

## **Day 2:** **Windows Server 2016 Failover Clustering**

- Installation
- Storage configuration
- The configuration of which
- Maintenance
- Patching/Upgrading
- Adding/Removing nodes to/from cluster
- Monitoring
- Troubleshooting

## **Day 3:** **SQL Server 2016 Failover Clustering Instance**

- SQL Server FCI configuration
- Active/Active
- Active/Passive
- MS DTC
- Maintenance
- Patching/Upgrading
- o Adding/Removing SQL Server to/from cluster
- Monitoring
- Troubleshooting

## **Day 4:** **SQL Server 2016 Availability Groups**

- SQL Server AG configuration
- Sync/Async
- Read Only Routing and Load Balancing
- Direct seeding
- Distributed AG
- Maintenance
- Patching/Upgrading
- Adding/Removing files to/from database in AG
- Adding/Removing database to/from AG
- Monitoring
- Troubleshooting

## **Day 5:**

A graphic of a chessboard with several chess pieces (a king, a pawn, and a knight) on it, set against a background of concentric circles. The text 'UK Training PARTNER' is overlaid on the right side of the board.

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### SQL Server Interoperability

- Interoperability
- with Integration Services
- with Analysis Services
- with Reporting Services

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