



## SQL 2016 AlwaysOn High Availability (55246)

### Description

#### Optimize Your SQL Server Infrastructure with Our Advanced AlwaysOn and High Availability Training

This **SQL 2016** AlwaysOn High Availability training is designed for database administrators and Windows engineers, immersing you in the advanced concepts of SQL AlwaysOn and High Availability.

Using SQL 2016, you will learn to deploy failover clusters, configure availability groups, and perform proactive maintenance. Join us to master best practices for monitoring and troubleshooting availability groups while integrating key differences between SQL 2012, SQL 2014, and SQL 2016. Elevate your skills and ensure maximum availability of your SQL systems.

### Niveau

Intermédiaire

### Course Content

#### Module 01: Introduction

- Course introduction

#### Module 02: Alwayson and high availability concepts and terminology

- Concepts and Terminology
- Table of Availability
- High Availability
- Causes of Downtime
- Planned downtime
- Unplanned downtime
- Disaster Recovery
- Recovery Time Objective (RTO)
- Recovery Point Objective (RPO)
- Recovery Level Objective (RLO)
- Storage Area Networks (SAN)
- Edition Changes from SQL 2012
- SQL Server 2014 Changes
- SQL Server 2016 Changes

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- Legacy Solutions prior to Always On
  - Failover Cluster Instances
  - Log Shipping
  - A Typical Log Shipping Configuration
  - Monitor Server
  - Replication
  - Database Mirroring
  - Database Mirroring Terminology
  - Principle
  - Mirror
  - Witness (red box in image above)
  - Database Snapshots
  - Limitations of legacy solutions:
  - What do we mean by Always On?
  - Table of Always On Comparison

### **Module 03: Windows server 2016 failover clustering**

- Understanding Failover Clustering in Server 2016
- Statefull High Availability Solution
- Supported in both Standard and Datacenter
- Servers should run similar hardware
- Should run same edition
- Hyper-V best with datacenter
- Certified for Windows server logo
- Shared Storage
- Quorums
- Node Majority
- Node and Disk Majority configuration:
- Node and File Share Majority
- No Majority
- Configuration
- Cluster Networks Best Practices
- Connection to nodes to shared storage
- Private network for internal cluster
- Public network for client connections
- Cluster Aware Updating
- Virtual Machine Failover Clustering
- Preferred Owners
- Failover Failback
- Resources
- Dependences
- Heartbeat

### **Module 04: SQL 2016 failover cluster instances**

- Failover Cluster Instance
- As A FCI Appears To A Client

### **Module 05: SQL 2016 alwayson availability groups**

- Availability Groups and Replicas

- Primary Replica
- Secondary Replicas
- Availability Group Listener
- Availability Mode
- Synchronous Commit Mode
- Asynchronous Commit Mode
- Failover Modes
- Automatic Failover Without Data Loss
- Automatic Failover Requirements:
  - Manual
- Manual Failover Requirements
- Common Topologies

### **Module 06: The Dashboard**

- The Dashboard
- How to view logs
- Using replication with Logins
- Using partially contained databases

### **Module 07: Active Secondary Availability Group Actions**

- Reporting with Secondary Replicas
- Configuring a Readable secondary
- Read-Only Routing
- Load Balancing
- Lab : Configure a Read-Only Secondary
- Database Backups with Secondary
- Steps of Backup Using secondary
- Backup Preference Options

### **Module 08: Maintenance**

- DBCC Checks
- Database Adding and Removing

### **Module 09: Monitoring and troubleshooting availability groups**

- The Dashboard in Depth
- Events
- Policy Based Management for Availability Groups

### **Lab / Exercises**

- Online Labs

### **Documentation**

- Digital courseware included

### **Participant profiles**

- Experienced DBAs
- Windows Server Pros

- Team leaders

**Prerequisites**

- Experience as SQL DBA
- Experience as Windows IT PRO

**Objectives**

- Understand AlwaysOn High Availability
- Employ Server 2016 Failover Clustering
- Deploy SQL Failover Clusters
- Work with Availability Groups
- Perform maintenance
- Monitor and Troubleshoot Availability Groups

**Description**

SQL 2016 AlwaysOn High Availability Training

**Classroom Registration Price (CHF)**

2500

**Virtual Classroom Registration Price (CHF)**

2350

**Duration (in Days)**

3

**Reference**

55246AC