



# SQL Server 2014 High Availability

## Microsoft Curriculum

**Course Length:** 3 days

**Course Delivery:** Traditional Classroom • Online Live

### Course Overview

This course provides an in-depth review of SQL Server 2014 High Availability, including concepts for HA, drill-through of the various technologies available with SQL Server 2014, and how to implement high availability using those technologies.

### Objectives

Upon completion of this course, the student will be able to: - Design a SQL Server 2014 availability solution to meet their availability goals. - Implement that design using the available technologies in SQL Server 2014. - Implement system maintenance while understanding the availability implications. - Troubleshoot problems with High Availability in SQL Server 2014.

### Course Details

#### 1 - High Availability Overview

- Defining High Availability
- Achieving High Availability

#### 2 - Overview of Windows Server Failover Clustering

- Failover Clustering Concepts
- Cluster Resources
- Setting up a Windows Failover Cluster
- MSDTC Clustering
- LAB: Creating Your Windows Server Failover Cluster

#### 3 - SQL Server 2014 High Availability Overview

- SQL Server 2014 High Availability (HA) Technologies
- High-level Considerations on Technology Choices
  
- Common Combinations

#### 4 - AlwaysOn Failover Clustering

- SQL Server Failover Clustering – Definitions and History
- SQL Server 2014 Failover Clustering Instance (FCI)
- Maintaining a SQL Server 2014 FCI



- Multi-Site Failover Clustering
- LAB: Installing a Two-Node Failover Clustered SQL Server and Analysis Services Installation

#### 5 - AlwaysOn Availability Groups

- Availability Group Concepts
- Partners and Secondary Servers
- LAB A: Creating an Availability Group Hosted on Three Servers: Primary, Synchronous Secondary, and Asynchronous Secondary
- LAB B: Database Backups for Secondary Replicas: Creating Automated Database Backups on All Secondary Replicas

#### 6 - Legacy Database Mirroring

- Database Mirroring Overview
- Database Mirroring Architecture
- Enabling Database Mirroring
- Database Mirroring Operations
- LAB: Enabling Database Mirroring Between Two Servers

#### 7 - Legacy Log Shipping

- Log Shipping Overview
- Log Shipping Architecture
- Configuring Log Shipping
- Log Shipping Internals
- Administering Log Shipping
- LAB: Enabling Log Shipping Between Two Servers

#### 8 - Using Replication for High Availability

Replication Overview

Replication Types

Replication Architecture

Configuring Replication

Replication Monitoring

LAB: Enabling Transactional Replication with Three Servers

#### 9 - High Availability Solutions Interoperability

- AlwaysOn Failover Cluster Instances with AlwaysOn Availability Groups
- AlwaysOn Failover Cluster Instances with Legacy Database Mirroring
- AlwaysOn Availability Groups with Replication
- LAB: Creating AlwaysOn Availability Groups Running a Primary Replica on an AlwaysOn Failover Cluster Instance



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## 10 - High Availability with Virtualization

- Hyper-V in Windows Server 2008 R2
- Improvements in Windows Server 2012/R2
- SQL Server Hyper-V Support
- Hyper-V HA Considerations
- Using Cluster Shared Volumes for High Availability
- Live Migration
- Using Guest Clustering
- Using Azure Virtual Machines
- Using VMWare

## 11 - Meeting Your Availability Goal

- Technology Choices
- Servicing for Availability
- Ongoing Maintenance
- Indexing
- Partitioning
- Processes and Procedures for Availability
- Rule No.1
- Understanding the Technologies Used
- Understanding the Procedures and Escalation Paths
- Planned Downtime



To register or for more information call our office **(208) 898-9036** or email [register@leapfoxlearning.com](mailto:register@leapfoxlearning.com)



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