



## Designing a Database Solution with Microsoft SQL Server 2014

The focus of this three-day instructor-led course is on planning & implementing enterprise database infrastructure solutions by using SQL Server 2014 and other Microsoft technologies. It describes how to consolidate SQL Server workloads, how to plan & implement high availability & disaster recovery solutions.

Note: This course is designed for those who are interested in learning SQL Server 2012 or SQL Server 2014. It covers new features in SQL Server 2014, & the important capabilities across the SQL Server data platform..

### Who Should Attend

This course is intended for database professionals who need to plan, implement, & manage database solutions.

Primary Responsibilities include:

- Planning & implementing database infrastructure & consolidation strategies
- Implementing SQL Server in on-premises, cloud & hybrid IT scenarios
- Planning & implementing high availability & disaster recovery solutions

### Course Prerequisites

**Before attending this course, participants should have, in addition to their professional experience:**

- At least 2 years relational database experience
- Querying with Transact-SQL
- Planning, implementing & managing databases
- Basic knowledge of high availability & disaster recovery

### Course Objectives

**After completing this course, participants will be able to:**

- Assess an existing enterprise environment.
- Plan & implement Policy-Based Management.
- Describe the considerations for consolidating workloads with SQL Server 2014.
- Describe considerations for including SQL Server 2014 in a private cloud.
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Course Code: 20465D  
Course Duration: 3 Days

### Course Summary

**Module 1:** Introduction to Enterprise Data Architecture

**Module 2:** Multi Server Configuration Management

**Module 3:** Monitoring SQL Server 2014 Health

**Module 4:** Consolidating Database Workloads with SQL Server 2014

**Module 5:** Introduction to Cloud Data Solutions

**Module 6:** Introduction to High Availability in SQL Server 2014

**Module 7:** Clustering with Windows Server & SQL Server 2014

**Module 8:** AlwaysOn Availability Groups

**Module 9:** Planning High Availability & Disaster Recovery

**Module 10:** Replicating Data

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## Course Outline

### Module 1: Introduction to Enterprise Data Architecture

As organizations grow to enterprise scale, their IT infrastructure requirements become more complex and the network environment often includes an increasing number of servers, client computers, network segments, and other components. Because data is fundamental to most IT operations, careful thought must be given to the provisioning and management of databases across the enterprise.

#### Lessons

- Considerations for Enterprise Data
- Assessing an Existing Infrastructure

#### Lab

- Assessing an Existing Enterprise Data Infrastructure

### Module 2: Multi-Server Configuration Management

This module discusses Policy-Based Management in SQL Server, and describes how it can be used together with enterprise configuration management tools such as Microsoft System Center to aid enterprise database server management.

#### Lessons

- Policy-Based Management
- Microsoft System Center

#### Lab

- Planning and Implementing Policy-Based Management

### Module 3: Monitoring SQL Server 2014 Health

This module describes Data Collector and the SQL Server Utility Control Point (UCP), two features of SQL Server 2014 that enable you to perform in-depth health monitoring across the enterprise.

#### Lessons

- Introduction to Health Monitoring
- Data Collector
- SQL Server Utility

#### Lab

- Describe and Configure Data Collector
- Describe and Configure SQL Server Utility

### Module 4: Consolidating Database Workloads with SQL Server 2014

This module provides an overview of the benefits of consolidating database workloads by using SQL Server 2014, and describes the different options for implementing a consolidation strategy. It also describes how you can manage a consolidated infrastructure in various scenarios.

#### Lessons

- Considerations for Database Server Consolidation
- Managing Resources in a Consolidated Database Infrastructure

#### Lab

- SQL Server Consolidation

### Module 5: Introduction to Cloud Data Solutions

This module describes some of the fundamental concepts of cloud computing and outlines how to include SQL Server 2014 in a private cloud infrastructure.

#### Lessons

- Overview of Cloud Computing
- SQL Server in a Private Cloud

#### Lab

- Preparing a SQL Server Installation in a Virtual Machine Template

### Module 6: Introduction to High Availability in SQL Server 2014

This module explains the different ways that you can implement high availability by using SQL Server 2014. It also describes how to use log shipping to promote resilience for individual user databases.

#### Lessons

- High Availability Concepts & Options in SQL Server 2014
- Log Shipping

#### Lab

- Using Log Shipping



### **Module 7: Clustering in Windows Server & SQL Server 2014**

This module explains how Windows Server Failover Clustering and SQL Server AlwaysOn Failover Cluster Instances work, and describes how to implement clustering to protect service availability

#### Lessons

- Introduction to Windows Server Failover Clustering
- SQL Server AlwaysOn Failover Clustering Instances

#### Lab

- Implementing an AlwaysOn Failover Cluster Instance

### **Module 8: AlwaysOn Availability Groups**

This module describes AlwaysOn Availability Groups in SQL Server 2014, explains the key concepts of AlwaysOn Availability Groups, and describes how you can use them to maintain highly available databases.

#### Lessons

- Introduction to AlwaysOn Availability Groups
- Working with AlwaysOn Availability Groups
- Considerations for Using AlwaysOn Availability Groups

#### Lab

- Implementing and Testing an AlwaysOn Availability Group

### **Module 9: Planning High Availability & Disaster Recovery**

This module describes the planning considerations for high availability and disaster recovery, and provides common implementation scenarios for on-premises, hybrid, and Microsoft Azure environments.

#### Lessons

- High Availability and Disaster Recovery with SQL Server 2014
- SQL Server High Availability and Disaster Recovery Solutions

#### Lab

- Planning High Availability and Disaster Recovery

### **Module 10: Replicating Data**

This module provides an overview of SQL Server replication and explains the agents used to implement replication. It also describes some common replication scenarios, how to design an appropriate replication system for your requirements, and how to monitor and troubleshoot replication.

#### Lessons

- SQL Server Replication
- Planning Replication

#### Lab

- Planning and Implementing Replication