Course WLC-SQL1106: SQL Server 2012: AlwaysOn High Availability and Disaster Recovery Solutions

Four (4) days, Instructor-Led

The SQL Server 2012: AlwaysOn High Availability and Disaster Recovery Solutions is a four-day workshop that provides in-depth technical and architecture details of SQL Server 2012 AlwaysOn Technologies. Students will perform various hands-on labs and build practical end-to-end High Availability (HA) and Disaster Recovery (DR) solutions for mission critical applications using SQL Server 2012 AlwaysOn technologies.

Audience

This workshop is targeted at SQL Server 2012 architects, database administrators, IT professionals and SQL Server support staff. This is not a beginner's workshop or training targeted at SQL Server developers. To ensure the high-quality knowledge-transfer expected by attendees of this four day workshop, class size is limited to a maximum of 16 students who meet the following criteria:

- At least 1-2 years of experience working with SQL Server as a database administrator
- Basic understanding and hands-on experience with Windows Server 2008 R2 Failover Cluster

IT Requirements

Students need to have access to a workstation that meets or exceeds the minimum hardware and software requirements listed below. If you are attending open enrollment workshop, a workstation will be provided for you.

After attending this workshop, students will be able to:

- Understand HA and DR concepts
- Gain the practical experience and confidence required to manage SQL Server 2012 AlwaysOn HA and DR solutions
- Administer, maintain and troubleshoot SQL Server 2012 AlwaysOn HA and DR solutions

Course Outline

Module 1: SQL Server High Availability and Disaster Recover Technologies

This lesson introduces several SQL Server 2012 HA and DR solutions that will improve the availability of servers or databases. In this lesson, students gain an understanding of SQL Server 2012 AlwaysOn Failover Cluster Instances (FCI), AlwaysOn Availability Groups (AG), Database Mirroring, Log Shipping and Replication. This lesson also compares the solutions and provides an overview of how they can be used together.

Module 2: Windows Server Failover Clustering

This lesson provides a foundation for Windows Server 2008 R2 Failover Clustering to enable SQL Server administrators to build AlwaysOn FCIs and AGs on Windows Server 2008 R2 Failover Cluster. In this lesson, students get hands-on experience to build a two node Windows Server 2008 R2 Failover Cluster.

Module 3: AlwaysOn Failover Cluster Instances

This lesson explains the key enhancements in SQL Server 2012 AlwaysOn FCI. This lesson covers planning for AlwaysOn Failover Cluster Instance deployments and installation methods. Students get hands-on experience building a two node SQL Server 2012 AlwaysOn FCI.

Module 4: AlwaysOn Failover Cluster Instance Administration and Maintenance

In this lesson, students learn and perform common AlwaysOn FCI administration and maintenance tasks.

Module 5: AlwaysOn Failover Cluster Instance Troubleshooting

This lesson covers troubleshooting techniques for installation and post installation of SQL Server AlwaysOn FCI, as well as common problems.

Module 6: AlwaysOn Availability Groups

This lesson provides an overview of AlwaysOn AGs and discusses AG setup, architecture and client failover. In this lesson, students get hands-on experience to create and configure AlwaysOn AGs to provide high availability and disaster recovery for application databases

Module 7: AlwaysOn Active Secondary Replicas

AlwaysOn active secondary replicas enable database administrators to efficiently utilize all hardware in a high-availability SQL Server solution. This lesson discusses what AlwaysOn active secondary replicas are, how to create backups against them and maximize the hardware utilization by offloading read-only workloads to the secondary replicas. In this lesson, students get hands-on experience confirming active secondary replicas and read-only routing.

Module 8: AlwaysOn Availability Groups Administration and Troubleshooting

In this lesson, students learn and perform common AlwaysOn AG administration and troubleshooting.

Module 9: AlwaysOn Failover Cluster Instances and Availability Groups

This lesson examines the advantages of SQL Server FCIs combined with AGs over SQL Server FCIs and database mirroring. It also discusses setup and configuration, client connectivity, and the disaster recovery process of the recommended architecture.

Module 10: AlwaysOn Failover Cluster Instance and Microsoft Distributed Transaction Coordinator

This lesson introduces Microsoft Distributed Transaction Coordinator (MSDTC) and explains when it is needed for a clustered instance of SQL Server 2012. This lesson also outlines how to plan for and configure MSDTC in a Windows Server 2008 R2 failover cluster when one or more AlwaysOn FCIs are installed.

Module 11: Upgrading a SQL Server Failover Cluster Instance

This lesson explains how to perform a rolling upgrade from a previous version of SQL Server. In this lesson, students will learn how they can perform a rolling upgrade with minimum downtime.

Module 12: AlwaysOn Best Practices

This lesson discusses the best practices around implementing and maintaining SQL Server 2012 AlwaysOn FCIs and AGs.

Course Inclusions:

- Microsoft Official Curriculum (MOC) and/or Wizards Learning Courseware (WLC)
- Microsoft Certified Trainer (MCT)
- Lunch, AM and PM Snacks
- Certificate of Achievement
- Course Notes