This three-day instructor-led course provides students with the knowledge and skills to design high availability database solutions using Microsoft SQL Server 2005. The course focuses on teaching experienced database administrators working in enterprise environments to design database solutions that meet the availability needs of their organization. It emphasizes that students should think broadly about high availability, which includes thinking about the database itself and about their entire environment, including business needs; regulatory requirements; and network, systems, and database considerations during design. Students will also learn how to document and test the high availability database solution.

### COURSE DETAILS:

#### Module 1: Selecting the Appropriate High-availability Solution

This module provides the guidelines for identifying business requirements and technical and non-technical constraints of high-availability. This module also explains the guidelines for analyzing the requirements and constraints for high-availability. Finally, this module provides a brief overview of existing high-availability technologies and explains the process and guidelines for determining the appropriate high-availability technology that can be used to meet business requirements and constraints.

**Lessons**

- Identifying High-availability Requirements and Constraints
- Analyzing High-availability Requirements and Constraints
- Determining Appropriate High-availability Solutions

**Lab 1:** Proposing a High-availability Solution

- Gathering Requirements
- Prioritizing Requirements
- Determining Appropriate High-availability Technology
- Proposing a High-availability Solution

#### Module 2: Designing a Clustering Solution

This module provides the considerations and guidelines for designing a SQL Server cluster implementation. This module also provides the guidelines for designing recovery strategies and formulating the test plan for database clustering. Next, this module explains the considerations for migrating and upgrading SQL Server clusters. Finally, this module explains the process of creating an operations plan for clustering. In this module, you will also learn about the planned and unplanned events that can affect a cluster environment.

**Lessons**

- Designing the Platform for Clustering
- Designing the SQL Server Cluster Implementation
- Designing Recovery Strategies and Test Plans for Database Clustering
- Migrating and Upgrading SQL Server Clusters
- Designing an Operations Plan for Clustering

**Lab 2:** Designing a Database Clustering Solution

- Designing a Cluster Topology
- Designing an Operations Plan
- Verifying a SQL Server Cluster Configuration
**Recommended Prerequisites:**
Before attending this course, students must:

- Have a basic understanding of network architecture.
- Understand the tradeoffs among the different redundant storage types.
- Understand how replication works and how replication is implemented.
- Be familiar with reading user requirements and business-need documents.
- Have monitoring and troubleshooting skills.
- Have knowledge of the operating system and platform.
- Have knowledge of application architecture.

Know how to use:
- A monitoring tool
- Microsoft Visio (to create infrastructure diagrams)
- Be familiar with SQL Server 2005 features, tools, and technologies.
- Have a Microsoft Certified Technology Specialist: Microsoft SQL Server 2005 credential - or equivalent experience.

In addition, it is recommended, but not required, that students have completed:
Course 2778 • Course 2779 • Course 2780

**Course Length:**
Three days

**Technical Specifications:**
Minimum hardware requirements for the computers used in this course are as follows:

- Pentium 4 2.4 GHz or better (Dual Core or Core 2 Duo of 2.0 GHz or better also acceptable)
- 2GB RAM
- 40GB 7200rpm Hard disk drive
- DVD-ROM drive
- 32MB video card memory
- PCI 100Mb/s Ethernet card (PCI-X, or PCI-e also acceptable)

**Course Details:**

- Monitoring a SQL Server Cluster

**Module 3: Designing a Highly Available Database Storage Solution**

This module provides the guidelines and considerations to determine the storage requirements for SQL Server databases, components, and external files that are a part of the database system. This module also explains the guidelines for designing storage solutions for these resources.

In this module, you will also learn about designing restore strategies to maximize availability. Finally, this module explains the guidelines for recovering damaged and partially damaged system and user databases.

**Lessons**
- Determining Storage Requirements for SQL Server Databases
- Determining Storage Requirements for SQL Server Components and Files
- Designing Storage Solutions for SQL Server Databases
- Designing a Backup and Restore Strategy

**Lab 3: Designing a Highly Available Database Storage Solution**
- Determining Storage Needs
- Selecting the Storage Solution
- Designing a RAID Solution
- Designing a SAN Solution
- Designing a Backup and Restore Strategy

**Module 4: Designing a Log Shipping Solution**

In this module, you will learn about the guidelines and considerations for designing a log shipping solution. This module provides the guidelines for determining log shipping server roles and topology. This module also explains the guidelines for upgrading log shipping.

Finally, this module explains the process of designing an operations plan for log shipping. In this module, you will also learn about the planned and unplanned events that can affect a log shipping environment.

**Lessons**
- Introduction to Designing a Log Shipping Solution
- Designing Log Shipping Server Roles and Topology
- Designing a Log Shipping Upgrade Strategy
- Designing an Operations Plan for Log Shipping

**Lab 4: Designing a Log Shipping Solution**
- Selecting the Appropriate Log Shipping Architecture
- Designing Log Shipping Database Roles and Topology
- Designing an Operations Plan
- Verifying and Testing a Log Shipping Solution

**Module 5: Designing a Database Mirroring Solution**

In this module, you will learn about the guidelines and considerations for designing a database mirroring solution. This module provides the guidelines for determining the database roles and topology for mirroring. This module also explains the guidelines for migrating from an existing high-availability technology in SQL Server 2000 to database mirroring in SQL Server 2005.

Finally, this module explains the process of designing an operations plan for database mirroring. In this module, you will also learn about the planned and unplanned events that can affect a mirroring environment.

**Lessons**
- Introduction to Designing a Database Mirroring Solution
- Designing Database Mirroring Server Roles and Topology
- Designing a Database Mirroring Upgrade Strategy
- Designing an Operations Plan for Database Mirroring
- Verifying and Testing a Database Mirroring Solution

**Lab 4: Designing a Database Mirroring Solution**
- Selecting the Appropriate Database Mirroring Architecture
- Designing Database Mirroring Database Roles and Topology
- Designing an Operations Plan
- Verifying and Testing a Database Mirroring Solution
Lessons

- Introduction to Designing a Database Mirroring Solution
- Designing Database Roles and Topology for Database Mirroring
- Converting High-availability Solutions to Database Mirroring
- Designing an Operations Plan for Database Mirroring

Module 7: Combining High-availability Technologies

This module provides guidelines for designing high-availability solutions by combining existing high-availability technologies. This module enables you to evaluate the weaknesses in each high-availability technology. In this module, you will determine technologies that complement each other to minimize these weaknesses.

Lessons

- Evaluating Weaknesses in Each High-availability Technology
- Maximizing Availability by Combining High-availability Technologies

Lab 7: Combining High-availability Technologies

- Evaluating Weaknesses in High-availability Technologies
- Maximizing Availability by Combining Technologies

Module 8: Documenting and Testing a High-availability Strategy

This module provides guidelines for documenting and testing high-availability solutions. This module explains the structure of a high-availability solution document and also explains the need for documenting the solution. In this module, you will also discuss the process of creating a test plan for high-availability solutions.

Lessons

- Documenting High-availability Solutions
- Creating a Test Plan for High-availability Solutions

Lab 8: Documenting and Testing a High-availability Strategy

- Documenting the High-availability Solution
- Creating a Test Plan

Pricing:

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