

70-444 Optimizing and Maintaining a Database Admin Solution by using SQL 2005

- **Course Number:** 2790
- **Length:** 2 Day(s)

Certification Exam

This course will help you prepare for the following Microsoft Certified Professional exams:

- **MCITP Exam 70-444:** Optimizing and Maintaining a Database Administration Solution by Using Microsoft SQL Server 2005
- **MCITP Exam 70-447:** MCITP Upgrade for existing MCDBA Database Administrators.

Course Overview

The purpose of this two-day course is to teach database administrators working in enterprise environments how to determine and troubleshoot performance issues using Microsoft SQL Server 2005. The primary focus of this course is to teach the overall process of troubleshooting. It includes establishing monitoring standards and baselines, determining performance thresholds, and focusing the investigation on specific issues.

Prerequisites

Before attending this course, students must have:

- Working knowledge of SQL Server 2005 architecture including indexing, SQL execution plans, and SQL Server basic configuration.
- Basic monitoring and troubleshooting skills. For example, students should have used Sysmon and Perfmon on the job.
- Working knowledge of the operating system and platform. Students should understand how the operating system integrates with the database, what the platform or operating system can do, and the interaction between the operating system and the database.
- Basic understanding of server architecture such as CPU and memory utilization and disk input/output (I/O).
- Basic knowledge of application architecture. Students should know how applications can be designed in three layers, what applications can do, the interaction between applications and the database, and the interaction between the database and the platform or operating system.
- Understanding of Transact-SQL syntax and programming logic.
- Basic knowledge of Microsoft Windows networking. Students should understand how Domain Name Service (DNS) operates and how servers communicate between domains.
- Familiarity with SQL Server 2005 features, tools, and technologies.
- 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, Writing Queries Using Microsoft SQL Server 2005 Transact-SQL.
- Course 2779, Implementing a Microsoft SQL Server 2005 Database.
- Course 2780, Maintaining a Microsoft SQL Server 2005 Database.

Audience

This course is intended for current professional database administrators who have three or more years of on-the-job experience administering SQL Server database solutions in an enterprise environment.

Course Outline

- **Module 1 - Building a Monitoring Solution for SQL Server Performance Issues**
 - Building a Monitoring Solution for SQL Server Performance Issues
 - Narrowing a Performance Issue to an Environment Area
 - Using SQL Server Profiler and System Monitor
 - Auditing and Comparing Test Results
 - Module 1 Lab Introduction
 - Lab Demonstration - Setting Up System Monitor Using Performance Counters
 - Lab Demonstration - Set Up SQL Server Profiler
 - Module 1 Review
- **Module 2 - Troubleshooting Database and Database Server Performance Issues**
 - Troubleshooting Database and Database Server Performance Issues
 - Narrowing a Performance Issue to a Database Object
 - Using Server Profiler to Narrow a Search to a Specific Issue
 - Using SQLDiag to Analyze Outputs
 - Module 2 Lab Introduction
 - Lab Demonstration - Compare Trace and Log Files
 - Lab Demonstration - Query a Trace Table
 - Module 2 Review
- **Module 3 - Optimizing the Query Performance Environment**
 - Optimizing the Query Performance Environment
 - The Methodology for Optimizing a Query Environment
 - Query Performance Troubleshooting Process
 - Using the Database Engine Tuning Advisor to Troubleshoot the Query Environment
 - Module 3 Lab Introduction
 - Lab Demonstration - Execution Plan
 - Lab Demonstration - Database Tuning Advisor (DTA)
 - Module 3 Review
- **Module 4 - Troubleshooting SQL Server Connectivity Issues**
 - Troubleshooting SQL Server Connectivity Issues
 - The Methodology for Troubleshooting SQL Server Connectivity Issues
 - Common Connectivity Issues
 - SQL Server 2005 Endpoints
 - Module 4 Lab Introduction
 - Lab Demonstration - Server Not Found

- Lab Demonstration - Authentication Troubleshooting
- Lab Demonstration - End Point
- Module 4 Review
- **Module 5 - Troubleshooting SQL Server Data Issues**
- Troubleshooting SQL Server Data Issues
- Troubleshooting Data Integrity Issues
- Torn Pages Resolution with Single-Page Restore
- Module 5 Lab Introduction
- Lab Demonstration - Torn Pages
- Lab Demonstration - Data Problem
- Module 5 Review
- **Module 6 - Troubleshooting SQL Server Concurrency Issues**
- Troubleshooting SQL Server Concurrency Issues
- Troubleshooting Concurrency Issues
- SQL Server Latches
- Module 6 Lab Introduction
- Lab Demonstration - Deadlocking Issues
- Lab Demonstration - Blocking Issues
- Lab Demonstration - Latch Wait Types and Times
- Module 6 Review