



ET : 517 Microsoft SQL Server 2005 Performance Tuning

Course Level

Expert

Course Duration

5 Days.

Overview

Performance tuning a relational database can be engaging yet frustrating, and this guide gives you the practical information you need to configure and tune a Microsoft® SQL Server™ 2005 database for better, faster, more scalable solutions.

Who should attend?

Student that works as a SQL Server DBA who wants to get proactive and organized with performance monitoring and tuning

Course Outline

- Provides a winning performance methodology for use in analyzing any SQL Server database
- Demonstrates how to uncover serious bottlenecks that exist in your SQL Server
- Offers insight into how to determine the overall workload of a SQL Server
- Supplies methods for determining how and when to reorganize databases and objects
- Presents new techniques for monitoring and optimizing memory usage
- Shows how to quickly pinpoint and resolve I/O hotspots at the database session, and object level
- Details strategies on how to successfully use capacity planning for performance analysis
- Provides new tips and techniques for locating and fixing problem SQL and procedure code
- Presents improved methods for uncovering session-related bottlenecks
- Provides new tips and techniques for locating and fixing problem SQL

Course Descriptions.

Module 1: Introduction to Performance Lifecycle

Module 2: Measure Database Performance

Module 3: Optimized SQL Performance

Module 4: Creating a Monitoring Plan

Module 5: Diagnosing storage and system problems

Module 6: Diagnosing session and O/S issues

Module 7: Workload Analysis

Module 8: Tuning SQL Server

Course Outline

I. Performance Lifecycle Management

Database performance isn't something to be managed haphazardly, but instead should be approached in a methodical and organized manner. This is precisely what Performance Lifecycle Management or PLM is designed to provide. This chapter provides an introduction to PLM and covers the basics areas involved in a successful PLM implementation.

II. How to Accurately Measure Database Performance

Determining the overall health of a SQL Server system can be confusing task, but it doesn't have to be. Accurately measuring database performance can easily be accomplished once you understand the basic components of performance and how they relate to one another. This chapter takes a brief look at performance modeling and how it can be applied to any SQL Server installation.

III. PLM Step 1 - Proactive Actions that Ensure Optimized Performance

The foundation of SQL Server performance isn't found in SQL tuning or other such tasks. Instead, it's established during the initial physical design and performance testing phases of the PLM cycle. This chapter shows how to create a winning SQL Server database design and discusses how to perform one of the most neglected activities of performance management, which is proactive testing.

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IV. PLM Step 2 - Establishing a Smart Monitoring Plan

What are the overall goals of a smart SQL Server monitoring plan? Do you know how to accurately use the most important performance analysis methods for SQL Server? This chapter provides an overview of the building blocks of a solid SQL Server monitoring plan and introduces the key performance analysis methods that every DBA needs to understand and practice.

V. Bottleneck Analysis Part 1 – Diagnosing storage and system problems

Bottleneck analysis is the primary performance analysis method DBAs should use in diagnosing and tuning SQL Server response time problems. This chapter focuses on how to recognize and correct bottlenecks that occur in the storage and overall SQL Server system layers.

VI. Bottleneck Analysis Part 2 – Diagnosing session and O/S issues

If DBAs cannot locate any obvious SQL Server issues at the storage or system layers, the next step is to drill down into session and operating system metrics to determine if any bottlenecks exist in these layers. This chapter contains information on how to identify and correct bottlenecks with SQL Server processes and the Windows server.

VII. Workload Analysis - Unlocking the Who, What, and Why of Performance Problems

After bottleneck analysis, the next most important performance methodology is workload analysis, which focuses on the overall workload generated by system, session, and SQL activity. This chapter contains details on how to understand the overall

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VIII. Ratio Analysis - Techniques for quickly getting a bird's eye view of performance

Key performance ratios can quickly help a SQL Server DBA understand how well their overall system is performing. This chapter provides details on what ratios a DBA needs to monitor, along with recommendations for what to do when key performance metrics are out of line.

IX. PLM Steps 3 and 4 - Using History to Prepare for the Future

Many SQL Server DBAs work in a reactive mode, which means they do little to plan for the future needs of the databases they oversee. This chapter discusses the importance of historical trend analysis, what key metrics should be tracked, and how to use historical data to forecast future needs.

X. PLM Step 5 - Tuning that makes a difference

Many SQL Server DBAs spend time tuning things that make little or no impact in overall performance. This chapter focuses on what to pay attention to and how to form an overall PLM tuning plan that can be effectively used in large SQL Server installations to dramatically increase performance