



MICROSOFT TRAINING

Ms Sql Server Performance Tuning Management

Enhance MS SQL Server database speed and efficiency. Master performance tuning techniques to prevent bottlenecks.

DURATION

40 hours

LEVEL

Intermediate

FORMAT

Instructor-Led

- Globally Recognized Certification

- Expert-Led Hands-On Training

- Flexible Scheduling

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COURSE OVERVIEW

This intermediate-level Microsoft SQL Server Performance Tuning Management course is meticulously designed for IT professionals seeking to master the art and science of optimizing SQL Server databases. You will delve deep into identifying, diagnosing, and resolving performance bottlenecks that plague complex database systems. The curriculum covers essential techniques for query optimization, effective indexing strategies, database configuration best practices, and advanced monitoring using SQL Server's built-in tools like Extended Events, DMVs, and Performance Monitor. By understanding how to efficiently manage and tune SQL Server, you will significantly improve application responsiveness, reduce resource consumption, and enhance overall system stability.

Upon completion, participants will possess the practical skills to proactively prevent performance issues and react swiftly to emerging problems, ensuring robust and highly performant database environments. This course leverages hands-on labs and real-world scenarios to solidify your understanding of core technologies such as execution plans, transaction management, and resource governance. Elevate your expertise to become an indispensable asset in any organization relying on Microsoft SQL Server for critical data operations, driving efficiency and delivering a superior user experience.

Duration	40 hours
Level	Intermediate
Vendor	Microsoft

COURSE CURRICULUM

01 Module 1: Understanding SQL Server Performance Fundamentals

- Introduction to Performance Tuning and Bottlenecks
- SQL Server Architecture and Resource Consumption
- Performance Monitoring Basics: Tools and Methodologies
- Interpreting Wait Statistics and Latches
- Establishing a Performance Baseline

02 Module 2: Advanced Query Optimization Techniques

- Understanding and Analyzing Execution Plans (Graphical and XML)
- Rewriting Inefficient Queries for Optimal Performance
- Indexing Strategies: Clustered vs. Non-Clustered Indexes
- Using Columnstore Indexes for Data Warehousing
- Query Hints and Plan Guides

03 Module 3: Database and Server Configuration for Performance

- Optimizing Database File and Filegroup Placement
- Configuring TempDB for High Performance
- Memory Management and Buffer Pool Tuning
- CPU and I/O Performance Considerations
- SQL Server Configuration Options and Best Practices

04 Module 4: Index and Statistics Management

- Designing Effective Indexing Strategies
- Maintaining Indexes: Reorganize vs. Rebuild
- Understanding and Managing Statistics for Optimal Query Plans
- Missing Index DMVs and Recommendations

- Troubleshooting Index-Related Performance Issues

05 Module 5: Concurrency, Blocking, and Deadlock Resolution

- Understanding Transaction Isolation Levels
- Identifying and Resolving Blocking Situations
- Detecting and Preventing Deadlocks
- Locking Mechanisms and Escalation
- Using Row Versioning (RCSI, SNAPSHOT) for Concurrency

06 Module 6: Monitoring, Auditing, and Troubleshooting Tools

- Leveraging Dynamic Management Views (DMVs) for Performance Insights
- Implementing and Analyzing Extended Events Sessions
- Using Performance Monitor (PerfMon) Counters
- SQL Server Profiler and Trace Flag Usage
- Data Collector and Management Data Warehouse (MDW)

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

- > **Senior Database Administrator (DBA) specializing in performance**
- > **SQL Server Performance Engineer/Analyst**
- > **Data Platform Architect focused on optimization and scalability**

FREQUENTLY ASKED QUESTIONS

Q: What are the essential prerequisites for enrolling in the Ms SQL Server Performance Tuning Management course?

To get the most out of this intermediate-level course, participants should have a solid foundational understanding of SQL Server administration, including experience with database creation, basic query writing (SELECT, INSERT, UPDATE, DELETE statements), and familiarity with SQL Server Management Studio (SSMS). Prior exposure to basic troubleshooting concepts will also be beneficial, though not strictly required.

Q: How will mastering SQL Server performance tuning directly enhance my ability to troubleshoot and prevent database issues in a production environment?

This course equips you with a systematic approach to performance troubleshooting. You will learn to interpret execution plans to pinpoint inefficient queries, configure indexes effectively to speed up data retrieval, and optimize server settings to prevent resource bottlenecks. By understanding the root causes of slow performance, blocking, and deadlocks, you'll be able to proactively optimize your databases and respond rapidly to critical incidents, significantly reducing downtime and improving overall system reliability.

Q: What career advancement opportunities become available after completing this Ms SQL Server Performance Tuning Management course?

Successfully completing this course positions you as a highly valuable specialist in database optimization. This expertise is critical for roles such as a Senior Database Administrator, where performance is a primary concern, or a dedicated SQL Server Performance Engineer. It also provides a strong foundation for aspiring Data Platform Architects, who need to

design highly scalable and performant database solutions. Your ability to ensure robust database performance makes you an indispensable asset in any data-driven organization.

ABOUT COMPUTER PRIDE



East Africa's Premier IT Training Center

With over 15 years of excellence, Computer Pride delivers globally recognized certification programs from leading technology vendors. Located on Kenyatta Avenue in Nairobi's CBD, our state-of-the-art facilities and expert instructors have empowered thousands of professionals across East Africa.

15+

Years of Excellence

10,000+

Professionals Trained

50+

Vendor Certifications

READY TO ENROL?

Take the next step in your technology career.

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