



MICROSOFT TRAINING

Master Ms Sql Server Performance Tuning

Optimize SQL Server performance to enhance database efficiency and responsiveness. Master tuning techniques for critical Microsoft SQL Server databases.

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 "Master Ms Sql Server Performance Tuning" course, offered by Computer Pride, is an intermediate-level, 40-hour deep dive designed for IT professionals seeking to optimize the performance of Microsoft SQL Server databases. You will gain comprehensive knowledge and practical skills in identifying, diagnosing, and resolving performance bottlenecks within SQL Server environments. The curriculum covers essential topics such as understanding SQL Server architecture, analyzing execution plans, mastering indexing strategies, optimizing T-SQL queries, and effective resource management. This course empowers you to significantly enhance database efficiency, reduce query response times, and ensure the smooth operation of mission-critical applications.

By the end of this intensive training, participants will be proficient in utilizing SQL Server's built-in tools and techniques to proactively monitor performance, implement robust tuning methodologies, and maintain highly responsive database systems. The professional benefits are immense, translating into improved application performance, enhanced user experience, reduced operational costs, and a more stable IT infrastructure. Elevate your database administration and development capabilities, becoming an invaluable asset to any organization reliant on high-performing SQL Server databases.

Duration	40 hours
Level	Intermediate
Vendor	Microsoft

COURSE CURRICULUM

01 Module 1: Introduction to Performance Tuning & Diagnostic Tools

- Understanding SQL Server Architecture and Components
- Performance Tuning Methodology and Best Practices
- Introduction to SQL Server Profiler and Extended Events
- Using Dynamic Management Views (DMVs) and Functions (DMFs)
- Monitoring with Performance Monitor (PerfMon) and Data Collector
- Basics of Wait Statistics and Resource Bottlenecks

02 Module 2: Advanced Indexing Strategies and Optimization

- Deep Dive into Clustered and Non-Clustered Indexes
- Understanding Index Design Principles and Best Practices
- Composite Indexes, Included Columns, and Filtered Indexes
- Strategies for Index Maintenance (Rebuild vs. Reorganize)
- Identifying Missing and Unused Indexes
- Analyzing Index Usage and Impact on Query Performance

03 Module 3: T-SQL Query Optimization and Execution Plans

- Interpreting Graphical and XML Execution Plans
- Understanding Operators, Costs, and Plan Cache
- Rewriting Inefficient Queries for Optimal Performance
- Using Hints (Query, Join, Table) and their Implications
- Optimizing Joins, Subqueries, and Common Table Expressions (CTEs)
- Parameter Sniffing Issues and Resolutions

Module 4: Database and Server Configuration for Performance

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- Optimizing Database Settings (Recovery Model, Auto-Growth)
 - Configuring TempDB for High Performance
 - Understanding and Optimizing Filegroups and Data Files
 - Memory Management and Buffer Pool Tuning
 - CPU and I/O Performance Considerations
 - Hardware Best Practices for SQL Server

05 Module 5: Advanced Monitoring, Troubleshooting & Concurrency

- Troubleshooting Blocking and Deadlocking Scenarios
- Understanding Transaction Isolation Levels
- Utilizing Resource Governor for Workload Management
- Analyzing SQL Server Agent Job Performance
- Introduction to Database Engine Tuning Advisor
- Proactive Performance Maintenance and Health Checks

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

- > **Senior SQL Server Database Administrator (DBA)**
- > **Database Performance Optimization Specialist**
- > **Advanced SQL Developer with Performance Focus**

FREQUENTLY ASKED QUESTIONS

Q: What are the prerequisite skills or knowledge required before enrolling in this Master Ms Sql Server Performance Tuning course?

To get the most out of this intermediate-level course, participants should have a solid foundational understanding of SQL Server administration and T-SQL querying. This includes experience with creating databases, writing complex queries, understanding basic indexing concepts, and familiarity with SQL Server Management Studio (SSMS). Prior exposure to database monitoring tools would be beneficial but is not strictly required.

Q: How will this course specifically equip me to diagnose and resolve complex real-world SQL Server performance bottlenecks in my current role?

This course goes beyond theoretical concepts, providing hands-on training to diagnose and resolve actual performance issues. You will learn to expertly analyze execution plans, interpret wait statistics, identify inefficient indexes, and rewrite problematic T-SQL queries. Through practical exercises, you will develop a systematic approach to pinpointing root causes of slowdowns and implementing effective, measurable tuning solutions, directly applicable to your production environments.

Q: What tangible improvements in database performance or operational efficiency can I realistically achieve for my organization after completing this Master Ms Sql Server Performance Tuning certification?

Upon completion, you can realistically expect to achieve significant improvements such as reducing critical query execution times by 30-70%, decreasing I/O bottlenecks, optimizing CPU utilization, and substantially mitigating blocking and deadlocking issues. These improvements translate into faster application response times, enhanced user satisfaction, and increased operational stability for your SQL Server-dependent systems, directly contributing to your organization's

bottom line.

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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