

1-800-ROI-9877

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## Course 505: SQL Server Performance Tuning (5 days)

### Course Description...

Students who attend SQL Server Performance Tuning will leave the course armed with the knowledge and skills they require to improve query response times and troubleshooting performance issues using Microsoft SQL Server 2005.

The primary focus of this workshop is to teach the overall process of query optimization and troubleshooting. It includes learning how to establish monitoring standards and baselines, determining performance thresholds, and focusing the investigation on specific issues.

### Who Should Attend...

Anyone interested in improving the performance of their SQL Servers.

### Prerequisites...

Students should have working knowledge of SQL Server 2005 architecture such as indexing, SQL execution plans SQL Server basic configuration. They should also be comfortable using the T-SQL language.

### Learning Objectives...

After successfully completing this course, students will be able to:

- Building a Monitoring Solution for SQL Server Performance Issues
- Analyzing Sysmon and Profiler Traces
- Performing Index Analysis by Using the Database Tuning Advisor (DTA).
- Reviewing an Execution Plan for Clues to Poor Performance
- Managing Concurrency
- Capture baseline performance
- Prioritize identified problems
- Optimizing Physical Database Design
- Optimizing Queries for Performance
- Optimizing an Indexing Strategy

### Hands-On Labs:

The hands-on labs are a key learning element of this course. Each lab reinforces the material presented in lecture allowing the student to gain confidence by successfully translating theory into practice. Taken as a whole, the labs identify the essential skills that will be used to improve performance of SQL queries and improve the architectural design of database.

**See next page for a detailed course outline...**



## Course Outline...

### **Building a Monitoring Solution for SQL Server Performance Issues**

- Narrowing Down a Performance Issue to an Environment Area
- Guidelines for Monitoring Database Servers and Instances by Using Profiler and Sysmon
- Guidelines for Auditing and Comparing Test Results

### **Optimizing the Query Performance Environment**

- The Methodology of Optimizing a Query Environment
- The Query Performance Troubleshooting Process
- Use of Database Tuning Advisor to Troubleshoot the Query Environment

### **Measuring Database Performance**

- Importance of Benchmarking
- Key Measures for Query Performance: Sysmon
- Key Measures for Query Performance: Profiler
- Guidelines for Identifying Locking and Blocking

### **Optimizing Physical Database Design**

- Performance Optimization Model
- Schema Optimization Strategy: Keys
- Schema Optimization Strategy: Responsible Denormalization

### **Optimizing Queries for Performance**

- Performance Optimization Model: Queries
- What Is Query Logical Flow
- Considerations for Using Subqueries
- Guidelines for Building Efficient Queries

### **Optimizing an Indexing Strategy**

- Performance Optimization Model: Indexes
- Considerations for Using Indexes
- Best Uses of the Clustered Index
- Best Practices for Non-Clustered Index Design
- How to Document an Indexing Strategy

### **Managing Concurrency**

- Performance Optimization Model: Locking and Blocking
- Strategies to Reduce Locking and Blocking
- Identifying deadlocks

*Please contact your ROI representative to discuss course tailoring!!!*