

Course 505

Microsoft SQL Server 2005: Performance Tuning

(5 days)

Course Description...

Database administrators using Microsoft SQL Server 2005 in today's enterprise architectures must be able to monitor and troubleshoot performance issues. This course will teach the process of monitoring and troubleshooting using the built-in tools of SQL Server 2005. Students will learn advanced querying techniques and how queries are interpreted and processed by the SQL Server execution engine to evaluate and improve queries and query response times. In addition, students will establish performance baselines, performance thresholds, and user specific performance profiles.

Learning Objectives...

- Utilizing monitoring tools
- Analyzing physical storage
- Analyzing index pointers and level
- Analyzing and repair data and index fragmentation
- Understanding the query optimizer
- Implementing query hints
- Configuring data and procedure cache
- Analyzing query plans
- Configuring server memory
- Designing an index strategy
- Understanding and manage locking concurrency
- Optimizing physical database designs

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.

See next page for a detailed course outline...



Course Outline...

Building a Monitoring Solution for SQL Server Performance Issues

- Setting Monitoring Goals
- Identify area to monitor
- Choosing Monitoring Tools
- Choosing Appropriate Counters

Measuring Database Performance

- Importance of Measuring
- Choosing Counter in the Performance Monitor
- Establishing a Trace using the Profiler
- Instant Measurements Using the Management Studio
- Using Dynamic Management Objects

Physical Storage

- Clustered/Nonclustered Index Node Access
- Forward Pointers
- Changing Datatypes Affect on I/O
- Disabling Indexes
- Online Index Rebuilding
- Tracking and Repair Table and Index Fragmentation
- Covering Indexes

Memory Utilization

- Buffer Cache
- Procedure Cache

Query Optimizer

- Internal Query Analysis
- Query Reuse
- Query Hints and Shortcuts

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

Managing Concurrency

- Performance Optimization Model: Locking and Blocking
- Strategies to Reduce Locking and Blocking
- Identifying Deadlocks
- Lock Timeouts

Optimizing Physical Database Design

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

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