

MSQ4-3 - MOC 10987 - PERFORMANCE TUNING AND OPTIMIZING SQL DATABASES

Categoria: **SQL Server 2017 e 2016**

INFORMAZIONI SUL CORSO



Durata:
4 Giorni



Categoria:
SQL Server 2017 e
2016



Qualifica Istruttore:
Microsoft Certified
Trainer



Dedicato a:
Professionista IT



Produttore:
Microsoft

OBIETTIVI

Descrivere la panoramica architettonica di alto livello di SQL Server e le sue varie componenti.

Descrivere il modello di esecuzione, le attese e le code di SQL Server.

Descrivere i concetti fondamentali di I / O, gli Storage Area Networks e i test delle prestazioni.

Descrivere i concetti architettonici e le migliori pratiche relative ai file di dati per i database utente e TempDB.

Descrivere i concetti architettonici e le migliori pratiche relative alla concorrenza, alle transazioni, ai livelli di isolamento e di chiusura.

Descrivere i concetti architettonici dell'Optimizer e come identificare e risolvere i problemi legati al piano di query.

Descrivere i concetti architettonici, gli scenari di risoluzione dei problemi e le migliori pratiche relativi al piano di cache.

Descrivere i concetti architettonici, la strategia di risoluzione dei problemi e gli scenari di utilizzo per gli Extended Events.

Spiegare la strategia di raccolta dei dati e le tecniche per analizzare i dati raccolti.

PREREQUISITI

Conoscenza di base del sistema operativo Microsoft Windows e delle sue funzionalità principali

Conoscenza operativa dell'amministrazione e manutenzione di un database

Conoscenza operativa di Transact-SQL

CONTENUTI

Module 1: SQL Server Architecture, Scheduling, and Waits

SQL Server Components and SQL OS

Windows Scheduling vs SQL Scheduling

Waits and Queues

Lab : SQL Server Architecture, Scheduling, and Waits

After completing this module, you will be able to:

Describe the SQL Server components and SQL OS

Describe the differences between Windows Scheduling and SQL scheduling

Describe waits and queues

Module 2: SQL Server I/O

Core Concepts

Storage Solutions

I/O Setup and Testing

Lab : Testing Storage Performance

After completing this module, you will be able to:

Describe the core concepts of SQL I/O

Describe storage solutions

Setup and test I/O

Module 3: Database Structures

Database Structure Internals

Data File Internals

TempDB Internals

Lab : Database Structures

After completing this module, you will be able to:

Describe the internal setup of database structures

Describe the internal setup of data files.

Describe the internal setup of TempDB

Module 4: SQL Server Memory

Windows Memory

SQL Server Memory

In-Memory OLTP

Lab : SQL Server Memory

After completing this module, you will be able to:

Describe the components of Windows memory

Describe the components of SQL Server memory

Describe In-Memory OLTP

Module 5: Concurrency and Transactions

Concurrency and Transactions

Locking Internals

Lab : Concurrency and Transactions

After completing this module, you will be able to:

Explain concurrency and transactions

Describe locking

Module 6: Statistics and Index Internals

Statistics Internals and Cardinality Estimation

Index Internals

Columnstore Indexes

Lab : Statistics and index Internals

After completing this module, you will be able to:

Describe statistics internals

Explain cardinality estimation

Describe why you would use Columnstore indexes and be able to implement one

Module 7: Query Execution and Query Plan Analysis

Query execution and optimizer internals

Analyzing query plans

Lab : Query execution and query plan analysis

After completing this module, you will be able to:

Describe query execution and optimizer

Analyze query plans and resolve common issues

Module 8: Plan Caching and Recompilation

Plan cache internals

Troubleshooting plan cache issues

Query store

Lab : Plan caching and recompilation

After completing this module, you will be able to:

Describe plan cache

Troubleshoot plan cache issues

Describe query store and why you would use it

Module 9: Extended Events

Extended events core concepts

Implementing extended events

Lab : Extended events

After completing this module, you will be able to:

Describe the core concepts of extended events

Implement extended events

Module 10: Monitoring, Tracing, and Baselineing

Monitoring and tracing

Baselineing and benchmarking

Lab : Monitoring, Tracing and Baselineing

After completing this module, you will be able to:

Describe various options for monitoring and tracing

Describe various options for benchmarking and baselineing

Module 11: Troubleshooting Common Performance Issues

Troubleshoot CPU performance

Troubleshoot memory performance

Troubleshoot I/O performance

Troubleshoot Concurrency performance

Troubleshoot TempDB performance

Lab : Troubleshooting common performance issues

After completing this module, you will be able to:

Troubleshoot common performance issues

INFO

Materiale didattico: Materiale didattico in formato digitale

Costo materiale didattico: incluso nel prezzo del corso a Calendario

Natura del corso: Operativo (previsti lab su PC)