



Accelerated: Maintaining and Implementing a Microsoft SQL Server 2008 Database

Days: 5
Format: Instructor-Led
Class Code: 12463
Certification Exams: None
Certification Track: None

Recommended Course Sequence

Knowledge of prerequisites noted below.

Course content is subject to change without notice.

Course Description:

This five-day instructor-led course provides students with the knowledge and skills to implement and maintain a SQL Server 2008 Database. The course focuses on teaching individuals how to use SQL Server 2008 product features and tools related to implement and maintain a SQL Server 2008 database.

Target Student:

This course is intended for IT Professionals who administer and maintain SQL Server databases. Also, this course is designed for an administrator moving from SQL 2000, SQL 2005, Oracle, MySQL, to SQL Server 2008.

Prerequisites:

Before attending this course, the student must have a basic knowledge of Microsoft Windows operating and its core functionality, a working knowledge of Transact-SQL, a working knowledge of relational databases, and some experience with database design.

Delivery Method:

Instructor led, group-paced, classroom-delivery learning model with structured hands-on activities.

At Course Completion:

Upon successful completion of this course, students will be able to:

- Install and configure SQL Server 2008.
- Backup and restore databases.
- Manage security.
- Automate administrative tasks.
- Replicate data between SQL Server instances.
- Maintain high availability.
- Create database and database files.
- Plan, create, and optimize indexes.
- Implement data integrity in Microsoft SQL Server 2008 databases by using constraints and triggers.
- Implement views.
- Implement stored procedures.
- Manage transactions and locks.

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Course Outline

Module 1: Installing and Configuring SQL Server

Lessons
<ul style="list-style-type: none">■ Lesson 1: Preparing to Install SQL Server■ Lesson 2: Installing SQL Server■ Lesson 3: Configuring a SQL Server Installation
Labs: Installing and Configuring SQL Server
<ul style="list-style-type: none">■ Exercise 1: Installing SQL Server.■ Exercise 2: Configuring SQL Server.

Module 2: Managing Databases and Files

The students will be introduced to database planning and creation, and using database options to control database behavior.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Planning Databases.■ Lesson 2: Creating Databases.■ Lesson 3: Using Policy-Based Management..
Lab: Managing Databases and Files
<ul style="list-style-type: none">■ Exercise 1: Creating a Database.■ Exercise 2: Monitoring and Managing File group Usage.■ Exercise 3: Creating a Policy.

Module 3: Creating Databases and Database Files

The students will learn one of the most fundamental tasks that a database developer must perform, the creation of a database and its major components, such as creating databases, setting database options, creating file groups, schemas, and database

Lessons
<ul style="list-style-type: none">■ Lesson 1: Creating Databases.■ Lesson 2: Creating File groups.■ Lesson 3: Creating Schemas.■ Lesson 4: Creating Database Snapshots
Lab: Creating Databases and Database Files
<ul style="list-style-type: none">■ Exercise 1: Creating a Database.■ Exercise 2: Creating Schemas.■ Exercise 3: Creating a Database Snapshot.

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Module 4: Disaster Recovery

The students will be introduced to disaster recovery techniques for SQL Server. They will learn how to perform different types of backup and restore operations, including online restores and backup and restores of system databases.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Planning a Backup Strategy.■ Lesson 2: Backing Up User Databases.■ Lesson 3: Restoring User Databases.■ Lesson 4: Performing Online Restore Operations.■ Lesson 5: Recovering Data from Database Snapshots.■ Lesson 6: System Databases and Disaster Recovery.
Lab: Disaster Recovery
<ul style="list-style-type: none">■ Exercise 1: Designing a Backup Strategy.■ Exercise 2: Implementing a Backup Strategy.■ Exercise 3: Restoring and Recovering a Database.■ Exercise 4: Performing Piecemeal Backup and Restore Operations.■ Exercise 5: Restoring the master Database.

Module 5: Managing Security

The students will be introduced to protecting SQL Server. Students will learn about the SQL Server security model and how to use SQL Server security features to control access to databases and their contents.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Overview of SQL Server Security.■ Lesson 2: Protecting the Server Scope.■ Lesson 3: Protecting the Database Scope.■ Lesson 4: Protecting the Server Scope.■ Lesson 5: Auditing Security.
Lab: Managing Security.
<ul style="list-style-type: none">■ Exercise 1: Creating Logins and Assigning Server-Scope Permissions.■ Exercise 2: Creating and Managing Users.■ Exercise 3: Using a Certificate to Protect Data.■ Exercise 4: Implementing SQL Server Audit.

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Module 6: Creating and Tuning Indexes

The students will learn how to plan, create, and optimize indexes to attain optimal performance benefits.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Planning Indexes.■ Lesson 2: Creating Indexes.■ Lesson 3: Optimizing Indexes.
Lab: Creating and Tuning Indexes
<ul style="list-style-type: none">■ Exercise 1: Creating Indexes.■ Exercise 2: Tuning Indexes.

Module 7: Implementing Data Integrity by Using Constraints and Triggers

The students will learn about implementing data integrity in SQL Server 2008 by using constraints. They will also implement data integrity by using triggers.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Data Integrity Overview.■ Lesson 2: Implementing Constraints.■ Lesson 3: Implementing Triggers.
Lab: Implementing Data Integrity by Using Constraints and Triggers
<ul style="list-style-type: none">■ Exercise 1: Creating Constraints.■ Exercise 2: Disabling Constraints.■ Exercise 3: Creating Triggers.

Module 8: Implementing Views

The students will be introduced to the different types of views available in Microsoft SQL Server 2008 which provide a convenient way to access data through a predefined query.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Introduction to Views.■ Lesson 2: Creating and Managing Views.■ Lesson 3: Optimizing Performance by Using Views.
Lab: Implementing Views
<ul style="list-style-type: none">■ Exercise 1: Creating Views.■ Exercise 2: Creating Indexed Views.■ Exercise 3: Creating Partitioned Views.

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Module 9: Implementing Stored Procedures

The students will learn the design and implementation of stored procedures to enforce business rules or data consistency, or to modify and maintain existing stored procedures written by other developers.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Implementing Stored Procedures.■ Lesson 2: Creating Parameterized Stored Procedures.■ Lesson 3: Working With Execution Plans.■ Lesson 4: Handling Errors.
Lab: Implementing Stored Procedures
<ul style="list-style-type: none">■ Exercise 1: Creating Stored Procedures.■ Exercise 2: Working with Execution Plans.

Module 10: Implementing Functions

The students will learn the design and implementation of user-defined functions that enforce business rules or data consistency, or to modify and maintain existing functions written by other developers.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Creating and Using Functions.■ Lesson 2: Working with Functions.■ Lesson 3: Controlling Execution Context.
Lab: Implementing Functions
<ul style="list-style-type: none">■ Exercise 1: Creating Functions.■ Exercise 2: Controlling Execution Context.

Module 11: Managing Transactions and Locks

The students will learn to use transactions and SQL Server locking mechanisms to meet the performance and data integrity requirements of their applications.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Overview of Transactions and Locks.■ Lesson 2: Managing Transactions.■ Lesson 3: Understanding SQL Server Locking Architecture.■ Lesson 4: Managing Locks.
Lab: Managing Transactions and Locks
<ul style="list-style-type: none">■ Exercise 1: Using Transactions.■ Exercise 2: Managing Locks.■ Exercise 3: Using Partition Locking.

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Module 12: Automating Administrative Tasks

The students will learn how to automate routine administrative tasks using jobs, operators, and alerts.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Automating Administrative Tasks in SQL Server.■ Lesson 2: Using SQL Server Agent.■ Lesson 3: Creating Maintenance Plans.■ Lesson 4: Implementing Alerts.■ Lesson 5: Managing Multiple Servers.■ Lesson 6: Managing SQL Server Agent security.
Lab: Automating Administrative Tasks
<ul style="list-style-type: none">■ Exercise 1: Configuring SQL Server Agent.■ Exercise 2: Creating Operators and Jobs.■ Exercise 3: Creating Alerts.

Module 13: Implementing Replication

The students will be introduced to techniques for configuring SQL Server replication.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Overview of Replication.■ Lesson 2: Managing Publications and Subscriptions.■ Lesson 3: Configuring Replication in Some Common Scenarios.
Lab: Implementing Replication
<ul style="list-style-type: none">■ Exercise 1: Implementing Snapshot Replication.■ Exercise 2: Implementing Peer-to-Peer Transactional Replications.■ Exercise 3: Implementing HTTP Merge Replication.

Module 14: Maintaining High Availability

The students will be introduced to concepts and methods for maintaining high availability with SQL Server.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Introduction to High Availability.■ Lesson 2: Implementing Log Shipping.■ Lesson 3: Implementing Database Mirroring.■ Lesson 4: Implementing Server Clustering■ Lesson 5: Using Distributed High Availability Solutions
Lab: Maintaining High Availability:
<ul style="list-style-type: none">■ Exercise 1: Configuring Log Shipping.■ Exercise 2: Configuring Database Mirroring.■ Exercise 3: Implementing SQL Server Clustering.

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Module 15: Monitoring SQL Server

The students will be introduced to monitoring SQL Server performance and activity

Lessons
<ul style="list-style-type: none">■ Lesson 1: Viewing Current Activity.■ Lesson 2: Using SQL Server Profiler.■ Lesson 3: Monitoring with DDL Triggers.■ Lesson 4: Using Event Notifications.
Lab: Monitoring SQL Server
<ul style="list-style-type: none">■ Exercise 1: Monitoring SQL Server Activity.■ Exercise 2: Tracing SQL Server Activity.■ Exercise 3: Using DDL Triggers.■ Exercise 4: Using Event Notifications

Module 16: Troubleshooting and Performance Tuning

The students will learn how to troubleshoot a variety of common SQL Server problems. Students will also learn how to tune SQL Server for improved performance using a variety of tools.

Lessons
<ul style="list-style-type: none">■ Lesson 1: Troubleshooting SQL Server.■ Lesson 2: Performance Tuning in SQL Server.■ Lesson 3: Using Resource Governor.■ Lesson 4: Using Data Collector
Lab: Troubleshooting and Performance Tuning
<ul style="list-style-type: none">■ Exercise 1: Troubleshooting Connectivity Problems.■ Exercise 2: Troubleshooting Concurrency Problems.■ Exercise 3: Using the Database Engine Tuning Advisor.■ Exercise 4: Implementing Resource Governor.■ Exercise 5: Implementing Data Collector.