

# 6231 Maintaining a Microsoft SQL Server 2008 R2 Database

Course Outlines

## 6231 Maintaining a Microsoft SQL Server 2008 R2 Database

Days of Training: 5

### Overview

This five-day instructor-led course provides students with the knowledge and skills to maintain a Microsoft SQL Server 2008 R2 database. The course focuses on teaching individuals how to use SQL Server 2008 R2 product features and tools related to maintaining a database.

### Prerequisites

- Basic knowledge of the Microsoft Windows operating system and its core functionality.
- Working knowledge of Transact-SQL.
- Working knowledge of relational databases.
- Completed course 2778: Writing Queries Using Microsoft SQL Server 2008 Transact-SQL.

### At Course Completion

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

- Explain SQL Server 2008 R2 architecture, resource requirements and perform prechecks of I/O subsystems.
- Plan, install and configure SQL Server 2008 R2.
- Backup and restore databases.
- Import and export wizards and explain how they relate to SSIS.
- Use BCP and BULK INSERT to import data.
- Manage security.
- Assign, configure fixed database roles and create and assign user defined database roles.
- Configure and assign permissions.
- Implement SQL Server 2008 R2 Agent Audits.
- Manage SQL Server 2008 R2 Agent and Jobs.
- Configure database mails, alerts and notifications.
- Maintain databases.
- Configure SQL Profiler Traces and Use the Database Tuning Advisor.
- Monitor data by using Dynamic Management Views.
- Execute multi-server queries and configure a central management server.
- Deploy a data-tier-application.
- Troubleshoot common issues.

### Lesson 1: Introduction to SQL Server 2008 R2 and its Toolset

Introduction to SQL Server Platform  
Working with SQL Server Tools  
Configuring SQL Server Services

### Lesson 2: Preparing Systems for SQL Server 2008 R2

Overview of SQL Server 2008 R2 Architecture  
Planning Server Resource Requirements  
Pre-installation Testing for SQL Server 2008 R2

### Lesson 3: Installing and Configuring SQL Server 2008 R2

Preparing to Install SQL Server 2008 R2  
Installing SQL Server 2008 R2  
Upgrading and Automating Installation

### Lesson 4: Working with Databases

Overview of SQL Server Databases  
Working with Files and Filegroups  
Moving Database Files

### Lesson 5: Understanding SQL Server 2008 R2 Recovery Models

Plan a Backup Strategy  
Understanding SQL Server Transaction Logging  
Planning a SQL Server Backup Strategy

### Lesson 6: Backup of SQL Server 2008 R2 Databases

Backing up Databases and Transaction Logs  
Managing Database Backups  
Working with Backup Options

### Lesson 7: Restoring SQL Server 2008 R2 Databases

Understanding the Restore Process  
Restoring Databases  
Working with Point-in-time Recovery  
Restoring System Databases and Individual Files

### Lesson 8: Importing and Exporting Data

Transferring Data To/From SQL Server 2008 R2  
Importing & Exporting Table Data  
Inserting Data in Bulk

### Lesson 9: Authenticating and Authorizing Users

Authenticating Connections to SQL Server  
Authorizing Logins to Access Databases  
Authorization Across Servers

### Lesson 10: Assigning Server and Database Roles

Working with Server Roles  
Working with Fixed Database Roles  
Creating User-defined Database Roles

### Lesson 11: Authorizing Users to Access Resources

Authorizing User Access to Objects  
Authorizing Users to Execute Code  
Configuring Permissions at the Schema Level

### Lesson 12: Auditing SQL Server Environments

Options for Auditing Data Access in SQL Server  
Implementing SQL Server Audit  
Managing SQL Server Audit

### Lesson 13: Automating SQL Server 2008 R2 Management

Automating SQL Server Management  
Working with SQL Server Agent  
Managing SQL Server Agent Jobs

### Lesson 14: Configuring Security for SQL Server Agent

Understanding SQL Server Agent Security  
Configuring Credentials  
Configuring Proxy Accounts

### Lesson 15: Monitoring SQL Server 2008 R2 with Alerts and Notifications

Configuration of Database Mail  
Monitoring SQL Server Errors  
Configuring Operators, Alerts and Notifications

### Lesson 16: Performing Ongoing Database Maintenance

Ensuring Database Integrity  
Maintaining Indexes  
Automating Routine Database Maintenance

### Lesson 17: Tracing Access to SQL Server 2008 R2

Capturing Activity using SQL Server Profiler  
Improving Performance with the Database Engine Tuning Advisor  
Working with Tracing Options

### Lesson 18: Monitoring SQL Server 2008 R2

Monitoring Activity  
Capturing & Managing Performance Data  
Analyzing Collected Performance Data

### Lesson 19: Managing Multiple Servers

Working with Multiple Servers  
Virtualizing SQL Server  
Deploying and Upgrading Data-Tier Applications

### Lesson 20: Troubleshooting Common SQL Server 2008 R2 Administrative Issues

SQL Server Troubleshooting Methodology  
Resolving Service-related issues  
Resolving Concurrency Issues  
Resolving Login and Connectivity Issues

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