

Maintaining a Microsoft SQL Server 2005 Database

- **Course Number:** 2780
- **Length:** 5 Day(s)

Certification Exam

This course will help you prepare for the following Microsoft Certified Professional exams:

- **Exam 70–431:** Microsoft SQL Server 2005 - Implementation and Maintenance

Course Overview

This five-day course provides students with the knowledge and skills to maintain a Microsoft SQL Server 2005 database. The course focuses on teaching individuals how to use SQL Server 2005 product features and tools related to maintaining a database.

Prerequisites

Before attending this course, students must have:

- Basic knowledge of the Microsoft Windows operating system and its core functionality.
- Working knowledge of Transact-SQL.
- Working knowledge of relational databases.
- Some experience with database design.

In addition, it is recommended, but not required, that students have completed:

- Course 2778: Writing Queries Using Microsoft SQL Server 2005 Transact-SQL.
- Course 2779: Implementing a Microsoft SQL Server 2005 Database.

Audience

This course is intended for IT Professionals who want to become skilled on SQL Server 2005 product features and technologies for maintaining a database.

Course Outline

- **Course Introduction**
- Course Introduction
- **Installing and Configuring SQL Server 2005**
- Lesson 1: Preparing to Install
- SQL Server 2005 Editions
- Hardware Requirements
- Software Requirements

- SQL Server Instances
- Licensing Options
- Security Considerations
- Collation Considerations
- Considerations for Upgrading
- Demo - Finding Pre-Installation Info
- Lesson 2: Installing
- Overview of the Installation Process
- System Consistency Checker?
- Options
- Performing an Unattended Installation
- Demo: Managing Comp Installations
- Lesson 3: Managing an Installation
- Surface Area Configuration Tool
- SQL Server Configuration Manager
- SQL Server Management Studio
- Demo: SQL Server Management Studio
- sqlcmd
- Demo: sqlcmd
- Server-Level Options?
- Module 1 Review
- **Managing Databases and Files**
- Lesson 1: Planning
- Data Storage
- Transaction Logging
- File Placement
- What Are Filegroups?
- Filegroup Considerations
- Capacity Planning Considerations
- Lesson 2: Creating
- Considerations
- Syntax for Creating a Database
- Schemas
- Syntax for Creating a Schema
- Name Resolution
- Demo: Creating Databases
- Lesson 3: Managing
- Options
- Finding Information about Databases
- Demo: Finding Information
- Module 2 Review
- **Disaster Recovery**
- Lesson 1: Backup Strategy
- Backup Types
- Recovery Models?
- Full Database Backup Strategy

- DB & Transaction Log Backup Strategy
- Differential Backup Strategy
- File or Filegroup Backup Strategy
- Backup Operators
- Backup Media
- Lesson 2: Back Up User Databases
- Full Database Backup
- Transaction Log Backup
- Differential Backup
- File and Filegroup Backups
- Ensuring Backup Integrity
- Demo: Back Up a Database
- Lesson 3: Restore User Databases
- The Restore Process
- Restoring a Database
- Restoring a Transaction Log Backup
- Restoring Pages, Files, and Filegroups
- Piecemeal Restore
- Demo: Restoring a Database
- Lesson 4: Recover Data -DB Snapshots
- Database Snapshots
- How Database Snapshots Work
- Recovering Data from a DB Snapshot
- Lesson 5: Disaster Recovery
- Backing Up System Databases
- Restoring System Databases
- Restoring the Master Database
- Module 3 Review
- **Managing Security**
- Lesson 1: Overview
- Principals
- Securables
- Permissions
- Lesson 2: Server Scope
- Authentication Modes
- Password Policies
- Managing SQL Server Logins
- Fixed Server Roles
- Delegation
- Credentials
- Server-Scope Permissions
- Demo: Managing Logins
- Lesson 3: Database Scope
- Managing Users
- Special Users
- Database Roles

- Application Roles
- Database-Scope Permissions
- Schema-Scope Permissions
- Demo: Managing Users
- Lesson 4: Managing Keys & Certificates Keys
- Certificates?
- Cryptography Architecture
- Keys and Certificates
- Demo: Using Certificates
- Module 4 Review
- **Monitoring SQL Server**
- Lesson 1: Current Activity
- Activity Monitor
- Dynamic Management Objects
- Demo: Viewing Current Activity
- Lesson 2: System Monitor
- System Monitor
- Performance Objects
- Monitoring SQL Server
- Demo: Using System Monitor
- Lesson 3: SQL Server Profiler
- SQL Server Profiler
- Profiler Trace Options
- Categories, Events, and Columns
- Demo: Using SQL Server Profiler
- Lesson 4: DDL Triggers
- Introduction
- Creating DDL Triggers
- Managing DDL Triggers
- Demo: Creating a DDL Trigger
- Lesson 5: Event Notifications
- Introduction
- Creating Event Notifications
- Processing Event Notifications
- Managing Event Notifications
- Demo: Implementing Event Notifications
- Module 5 Review
- **Transferring Data**
- Lesson 1: Introduction to Data Transfer
- Data Transfer
- Data Transformation
- Tools for Transferring Data
- Lesson 2: SQL Server Integration Srvcs
- Introduction to SSIS
- SSIS Task Processing
- SSIS Tools

- Demo: Import and Export Wizard
- Lesson 3: How to use SSIS
- Data Sources and Data Source Views
- Connection Manager
- Package Control Flow
- Data Flow Tasks
- Deploying Packages
- Module 6 Review
- **Automating Administrative Tasks**
- Lesson 1: Overview
- Benefits
- The Maintenance Plan Wizard
- The SQL Server Agent
- Demo: The Maintenance Plan Wizard
- Lesson 2: Configuring SQL Server Agent
- Considerations
- SQL Server Agent Mail Options
- Demo: Database Mail
- Lesson 3: Jobs and Operators Jobs
- Operators
- Creating Job Steps
- The Job Activity Monitor
- Demo: Jobs and Operators
- Lesson 4: Alerts
- Introduction
- Creating an Alert
- Demo: Alerts
- Lesson 5: Multiple Servers
- Master and Target Servers
- Considerations
- Event Forwarding
- Lesson 6: Managing Security
- SQL Server Agent Roles
- SQL Server Agent Proxies
- Demo: SQL Server Agent Proxies
- Module 7 Review
- **Maintaining High Availability**
- Lesson 1: Introduction
- Availability Factors
- Considerations
- Lesson 2: Server Clustering
- Introduction
- Considerations
- Installing SQL Server in a Cluster
- Lesson 3: Database Mirroring
- Introduction

- Options
- Database Mirroring Endpoints
- Preparing Servers for Database Mirroring
- Establishing a Mirror Session
- Handling Failover
- Lesson 4: Log Shipping
- Introduction
- Implementing Log Shipping
- Switching Server Roles
- Demo: Log Shipping
- Module 8 Review
- **Introduction to Replication**
- Lesson 1: Introduction
- Introduction
- Replication Roles
- Replication Types
- Articles, Publications, and Subscriptions
- Lesson 2: Scenarios
- Server to Server Scenarios
- Server to Client Scenarios
- Module 9 Review
- Course Closure