



SQL SERVER AGENT AND POWERSHELL FOR AUTOMATION TASKS

Course ID : SQL-ADM-AGT



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Duration: 2 Days

(12 Hours) 09:00 AM – 04:00 PM



Price: Call

* In-house training only

* Eligible for 200% tax deduction



Training Schedule

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Category: Data

Transform repetitive and tedious SQL Server administration tasks into automated processes to reduce human error and improve operational efficiency by using SQL Server Agent and PowerShell. This course teaches participants how to reduce the workload of SQL Server administrators by leveraging SQL Server Agent and Windows PowerShell to automate recurring tasks, schedule jobs, and respond to errors, performance changes, or resource depletion. Participants will also learn how to write Windows PowerShell scripts

to automate tasks from the Windows environment, manage SQL Server, and run automation across both Windows and SQL Server. The course emphasizes proper security configuration based on best practices, as many administrators overlook essential security requirements for SQL Server Agent and PowerShell, often violating the Principle of Least Privilege (POLP).

Objectives

1. Participants will gain a thorough understanding of configuring automation tasks using Microsoft SQL Server Agent.
2. Participants will understand how to use Windows PowerShell for manage Microsoft SQL Server Agent.
3. Participants will develop a strong understanding of security best practices for Microsoft SQL Server Agent and Windows PowerShell.
4. Participants will be able to create automation tasks proficiently.

Target Audience

1. Microsoft SQL Server administrators
2. Individuals interested in working with Microsoft SQL Server Agent and Windows PowerShell

Prerequisites

Some experience in administering Microsoft SQL Server

System Requirements

1. Windows 11 or Windows 10
2. CPU : 1.6 GHz or faster
3. RAM : 8 GB or higher
4. Remote Desktop Connection enabled
5. Stable Internet connection

TRAINING TOPICS



DAY 1 Morning Session

9:00 AM – 12:00 PM

1. Creating Automation Tasks for Microsoft SQL Server

- Introduction to automation tasks
- Options for creating automation tasks for Microsoft SQL Server
- Overview of the SQL Server Agent Service
- Creating SQL Server Agent Jobs
- Configuring jobs, job step types, and job categories
- Defining job steps sequences
- Scheduling jobs
- Managing jobs
- Viewing job history
- Troubleshooting jobs that fail or encounter errors
- Running jobs across multiple servers
- Concepts of multiserver administration
- Alternatives to multiserver administration
- Executing jobs on target servers

2. Configuring SQL Server Agent Security

- Overview of SQL Server Agent security
- Understanding SQL Server Agent roles
- Factors that affect job execution
- Security contexts for job steps
- Configuring credentials
- Understanding credentials
- Creating and managing credentials
- Configuring proxy accounts
- Understanding proxy accounts
- Creating and managing proxy accounts

- Assigning fail-safe operators within the alert system
- Creating response actions for SQL Server Agent alerts
- Types of alerts
 - SQL Server event alerts
 - SQL Server performance condition alerts
 - WMI event alerts
- Configuring SQL Server event alerts
- Understanding error components and severity levels
- Configuring SQL Server performance condition alerts
- Understanding performance counter monitoring
- Configuring WMI event alerts
- Understanding WMI queries
- Troubleshooting alerts and notifications

3. Creating SQL Server Agent Alerts and Operators

- Configuring Database Mail
- Understanding Database Mail
- Creating Database Mail profiles
- Database Mail security
- Retention and logging policies for Database Mail messages
- Configuring the alert system in Microsoft SQL Server Agent
- Creating SQL Server Agent operators
- Understanding operators
- Creating and managing operators

4. Managing SQL Server with PowerShell

- Getting started with Windows PowerShell
- What is Windows PowerShell?
- Using the PowerShell help system
- Introduction to PowerShell
- Understanding PowerShell ISE
- Understanding SMOs (SQL Server Management Objects)
- Understanding PowerShell providers
- Introduction to configuring SQL Server with PowerShell
- Displaying SQL Server configuration

- Modifying database settings in SQL Server
- Modifying SQL Server instance-level settings
- Introduction to performing maintenance tasks with PowerShell
- Managing users and roles
- Displaying information about SQL Server instances
- Managing backup and restore operations
- Using PowerShell to retrieve Windows Update information



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