Course Syllabus

PowerShell for SQL Server Administrators

Course #: 55069A

Number of Days: **2**

Format: **Instructor-Led**

Certification Exams:

This course syllabus should be used to determine whether the course is appropriate for the students, based on their current skills and technical training needs.

Course content, prices, and availability are subject to change without notice.

Elements of this syllabus are subject to change.

(Updated for SQL Server 2022)

This two-day instructor-led course provides candidates with the knowledge and skills needed to use PowerShell for SQL Server administration. Students will learn how to manage day-to-day and scheduled maintenance tasks. The main focus will be administration of the database engine, but optional material & exercises on Analysis Services (SSAS) and Integration Services (SSIS) are also included.

If all the optional lab exercises are included, the class may need to be taught in three days instead of two.

Audience

This course is intended for SQL Server administrators who work in a Windows network environment. At least one year of experience administering SQL Servers and using PowerShell is recommended.

At Course Completion

After completing this course, students will be able to:

- Install and Configure SQL Server and all its components using PowerShell
- Manage day-to-day SQL Server Administration with PowerShell
- Maintain the SQL Server environment using PowerShell scripting and programming options

Prerequisites

Before attending this course, students must have:

- Experience working on Windows desktops or servers
- Experience working in a Windows domain environment
- Experience Administering SQL Server Servers
- Fundamental experience with PowerShell

Additional Reading

To help you prepare for this class, review the following resources:

- Classroom Training: Course 55318A – Advanced Automated Administration with Windows PowerShell

Module 1: Install and Configure SQL Server with PowerShell

This module explains how to setup SQL Server components using PowerShell.

Lessons
- Module Objectives   - Lesson 1: Install SQL Server   - Lesson 2: Configure Database Settings   - Lesson 3: Configure SQL Server Settings   - Lesson 4: Configure SQL Server Policy-Based Management   - Review
Lab 1: Configuring SQL Server with PowerShell
- Exercise 1: Install SQL Server   - Exercise 2: Configure Database Settings   - Exercise 3: Configure SQL Server Settings   - Exercise 4: Configure SQL Server Policy-Based Management

After completing this module, students will be able to use PowerShell to:

- Install SQL Server
- Add/Remove components to an existing instance (SSRS, SSIS, SSAS, Management Tools, etc.)
- Configure SQL Server and Database Settings
- Configure SQL Server Policy-Based Management

Module 2: Administering SQL Servers with PowerShell

This module explains how to perform day-to-day administrative tasks on SQL Server Servers using PowerShell.

Lessons
- Module Objectives   - Lesson 1: Managing Users and Roles   - Lesson 2: Managing Database Performance   - Lesson 3: Managing Database Availability   - Lesson 4: Managing SQL Server Features   - Review
Lab 2: Administering SQL Servers with PowerShell
- Exercise 1: Managing Users and Roles   - Exercise 2: Managing Database Performance   - Exercise 3: Managing Database Availability   - Exercise 4: Managing SQL Server Features

After completing this module, students will be able to use PowerShell to:

- Manage Users and Roles
- Manage Database Performance
- Manage Database Availability (Using Clustering and AlwaysOn Availability Features)
- Manage Integration Services (SSIS) and Analysis Services (SSAS)

Module 3: Maintaining SQL Server with PowerShell

This module explains how to perform maintenance tasks on SQL Servers using PowerShell.

Lessons
- Module Objectives   - Managing Backups and Restores   - Maintaining Database Integrity and Performance   - Monitoring and Auditing   - Task Automation   - Generating Reports   - Review
Lab 3: Maintaining SQL Servers with PowerShell
- Exercise 1: Managing Backups and Restores   - Exercise 2: Maintaining Database Integrity and Performance   - Exercise 3: Monitoring and Auditing   - Exercise 4: Task Automation   - Exercise 5: Generating Reports

After completing this module, students will be able to use PowerShell to:

- Manage SQL Server Backups and Restores
- Maintain Database Integrity and Performance (Using DBCC and other tools)
- Monitor and Audit changes to a SQL Server
- Task Automation on SQL Server
- Generate SQL Server Reports