

# Course 55207A: PowerShell for SQL Administration

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## [Course details](#)

### **Course Outline**

#### **Module 1: Course Overview**

This module explains how the class will be structured and introduces course materials and additional administrative information.

#### **Lessons**

- Introduction
- Course Materials
- Facilities
- Prerequisites
- What We'll Be Discussing

#### **Lab : Course Overview**

- Successfully log into their virtual machine.
- Have a full understanding of what the course intends to cover.

#### **Module 2: PowerShell and SQL**

In this module, we will be discussing SQL Server Cmdlets and SQL Server Management Objects. In addition, we will look at modules and the process to install the SQLPS Module.

## **Lessons**

- Examining Modules and Installing the SQLPS Module
- Examining SQL Server Cmdlets
- Discussing SQL Server Management Objects (SMO)
- Recent Updates – July 2016

## **Lab : PowerShell and SQL**

- Installing the PowerShell SQL Module
- Examine and install modules.
- Examine and understand SQL Server Cmdlets.
- Understand SQL Server Management Objects (SMO).
- Understand recent updates.

## **Module 3: SQL Administration with PowerShell**

In this module, we will examine ways of retrieving information pertaining to the SQL Server instance installed, and look at ways of accomplishing many other management and administrative tasks that can be quickly and efficiently tackled with PowerShell.

## **Lessons**

- Examining SQL Information Retrieval
- Exploring Logins
- Adding Files and Filegroups
- Detach and Attach Databases
- Understanding Backup and Restore
- Examining Indexes

## **Lab : SQL Administration with PowerShell**

- SQL Server Instances
- Databases
- Tables
- Processes
- Features
- Jobs
- Logins
- Files and FileGroups
- Detach and Attach Databases
- Backup and Restore
- Indexes
- Retrieve SQL Server instance information.
- Understand and create logins.
- Understand how to add files and filegroups.
- Understand how to detach and attach databases.
- Understand how to backup and restore databases.
- Understand how to reorganize/rebuild indexes.

#### **Module 4: Monitoring and Automation**

In this module, we will examine a handful of helpful cmdlets, discuss options for scheduling, and explore ways to track performance metrics.

##### **Lessons**

- Exploring Cmdlets
- Discussing Scheduling

- Understanding Performance Metrics

### **Lab : Monitoring and Automation**

- Explore available cmdlets.
- Understand scheduling options.
- Understand options for tracking performance metrics.

### **Module 5: SSAS, SSIS, AND SSRS**

In this module, we will examine ways of working with SQL Server Analysis Services (SSAS), SQL Server Integration Services (SSIS), and SQL Server Reporting Services (SSRS). This module is not meant to be an exhaustive reference but instead is intended to give you a brief look at the capabilities built into the system and encourage you to further explore ways of managing your SQL Server environment using PowerShell.

#### **Lessons**

- Examining SQL Server Analysis Services (SSAS)
- Exploring SQL Server Integration Services (SSIS)
- Utilizing SQL Server Reporting Services (SSRS)

### **Lab : SSAS, SSIS, AND SSRS**

- SSAS
- SSIS
- SSRS
- Understand and utilize SSAS.
- Understand and utilize SSIS.
- Understand and utilize SSRS.

### **Module 6: Appendix: 752552 PowerShell 5.0 Basics**

PowerShell is a scripting language, and an automation platform for Windows and Windows Server, which allows you to simplify and streamline the management of your systems. PowerShell utilizes the power of the .NET Framework, which provides rich objects and an extensive set of built-in functionality for taking control of your Windows environments.

### **Lessons**

- Introduction to PowerShell
- Utilizing PowerShell
- The Pipeline
- Processing Data with Loops
- Scripting and Functions

### **Lab : Appendix: 752552 PowerShell 5.0 Basics**

- The Console
- The PowerShell Integrated Scripting Environment (ISE)
- Updating Help
- Utilizing Help
- Utilizing PowerShell
- Working with the File System
- Parameters
- User-Defined Variables
- Arrays
- Hash Tables
- Creating a Pipeline
- Passing Data Through the Pipeline

- While Loops
- Do While Loops
- Do Until Loops
- For Loops
- ForEach Loop
- Scripting
- Understand the evolution of PowerShell.
- Understand and utilize the PowerShell environment.
- Understand and utilize the all-important Help System.
- Understand and utilize PowerShell.
- Understand and utilize working with the file system.
- Understand and utilize parameters.
- Understand and utilize user-defined variables.
- Understand and utilize arrays.
- Understand and utilize hash tables.
- Understand and execute cmdlets.
- Understand and utilize the pipeline.
- Understand how to control the output with formatting.
- Understand background jobs.
- Understand aliases.
- Understand and utilize loops.
- Understand and utilize While loops.

- Understand and utilize Do While loops.
  - Understand and utilize Do Until loops.
  - Understand and utilize For loops.
  - Understand and utilize ForEach loops.
  - Understand altering loop execution.
  - Understand and utilize scripting.
  - Understand functions and filters.
  - Understand the basics of script design.
  - Understand scripting pitfalls.
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