Information Technology

Automating Administration with Windows PowerShell v3.0

Course Introduction

This training course is designed to provide participants with the fundamental knowledge and skills to use Windows PowerShell for administering and automating administration of Windows servers and to identify and build the command they require to perform a specific task. In addition, participants will be able to build scripts to accomplish advanced tasks such as automating repetitive tasks and generating reports.

This course provides prerequisite skills supporting a broad range of Microsoft products, including Windows Server, Windows Client, Microsoft Exchange Server, Microsoft SharePoint Server, Microsoft SQL Server, System Center, and more. In keeping with that goal, this course will not focus on any one of those products, although Windows Server, which is the common platform for all of those products, will serve as the example for the techniques this course teaches.

Target Audience

This training course is designed for IT Professionals who are already experienced in general Windows Server and Windows Client administration, and who want to learn more about using Windows PowerShell for administration. No prior experience with any version of Windows PowerShell, or any scripting language, is assumed. This course is also suitable for IT Professionals already experienced in server administration, including Exchange Server, SharePoint Server, SQL Server, System Center, and others.

Learning Objectives

- Gain a comprehensive understanding of the functionality of Windows PowerShell and use it to run and find basic commands.

- Identify and run cmdlets for server administration.
- Work with Windows PowerShell pipeline.
- Describe the techniques Windows PowerShell pipeline uses.
- Use PSProviders and PSDrives to work with other forms of storage.
- Query system information by using WMI and CIM.
- Work with variables, arrays, and hash tables.
- Write basic and advanced scripts in Windows PowerShell.
- Administer remote computers.
- Use background jobs and scheduled jobs and advanced Windows PowerShell techniques.

Course Outline

- **Day 01**

  Module 1: Getting started with Windows PowerShell

  - This module will introduce you to Windows PowerShell and provide an overview of the product's functionality. The module shows you how to open and configure the shell for use and how to run commands within the shell. The module also introduces the built-in Help system in Windows PowerShell.
  - Overview and background of Windows PowerShell
  - Understanding command syntax
  - Finding commands

  Module 2: Cmdlets for Administration

  - This module introduces you to the cmdlets commonly used for administration. While you can search for cmdlets each time you need to accomplish a task, it is more efficient to have at least a basic understanding of the cmdlets available for system administration.
  - Active Directory administration cmdlets
  - Network configuration cmdlets

◦ Other server administration cmdlets
• **Day 02**

 Module 3: Working with the Windows PowerShell pipeline

 ◦ This module introduces the pipeline feature of Windows PowerShell. Although the pipeline feature is included in several command-line shells such as the command prompt in the Windows operating system, the pipeline feature in Windows PowerShell provides more complex, more flexible, and more capable functionalities compared to other shells. This module provides you with the skills and knowledge that will help you use the shell more effectively and efficiently.
 ◦ Understanding the pipeline
 ◦ Selecting, sorting, and measuring objects
 ◦ Filtering objects out of the pipeline
 ◦ Enumerating objects in the pipeline
 ◦ Sending pipeline data as output

 Module 4: Understanding how the pipeline works

 ◦ This module shows you how Windows PowerShell passes objects from one command to another in the pipeline. The shell provides two techniques that you can use. Knowing how these techniques work, and which one will be used in a given scenario, lets you construct more useful and complex command lines.
 ◦ Passing the pipeline data
 ◦ Advanced considerations for pipeline data

 Module 5: Using PSProviders and PSDrive

 ◦ This module introduces the PSProviders and PSDrives adapters. A PSProvider is basically a Windows PowerShell adapter that makes some form of storage resemble a disk drive. A PSDrive is an actual connection to a form of storage. You can use these two adapters to work with various forms of storage by using the same commands and techniques that you use to manage the file system.
 ◦ Using PSProviders

- ◦ Using PSDrives
- **Day 03**

  Module 6: Querying system information by using WMI and CIM

  - ◦ This module introduces you to two parallel technologies: Windows Management Instrumentation (WMI) and Common Information Model (CIM). Both these technologies provide local and remote access to a repository of management information including access to robust information available from the operating system, computer hardware, and installed software.
  - ◦ Understanding WMI and CIM
  - ◦ Querying data by using WMI and CIM
  - ◦ Making changes with WMI/CIM

  Module 7: Working with variables, arrays, and hash tables

  - ◦ This module provides you the skills and knowledge required to use variables, arrays, and hash tables in Windows PowerShell.
  - ◦ Using variables.
  - ◦ Manipulating variables.
  - ◦ Manipulating arrays and hash tables.

  Module 8: Basic scripting

  - ◦ This module shows you how to package a Windows PowerShell command in a script. Scripts allow you to perform repetitive tasks and more complex tasks than cannot be accomplished in a single command.
  - ◦ Introduction to scripting
  - ◦ Scripting constructs
  - ◦ Importing data from files
- **Day 04**

  Module 9: Advanced scripting

- This module introduces you to more advanced techniques that you can use in scripts. These techniques includes gathering user input, reading input from files, documenting scripts with help information and error handling.
- Accepting user input
- Overview of script documentation
- Troubleshooting and error handling
- Functions and modules

Module 10: Administering Remote Computers

- This module introduces you to the Windows PowerShell remoting technology that enables you to connect to one or more remote computers and instruct them to run commands on your behalf.
- Using basic Windows PowerShell remoting
- Using advanced Windows PowerShell remoting techniques
- Using PSSessions

• **Day 05**

Module 11: Using background jobs and scheduled jobs

- This module provides information about the job features of Windows PowerShell. Jobs are an extension point in Windows PowerShell, and there are many different kinds of jobs. Each kind of job can work slightly differently, and has different capabilities.
- Using background jobs
- Using scheduled jobs

Module 12: Using advanced Windows PowerShell techniques

- This module covers several advanced Windows PowerShell techniques and features. Many of these techniques and features extend functionality that you have learned about in previous modules. Some of these techniques are new and provide additional capabilities.

- ◦ Creating profile scripts
- ◦ Using advanced techniques

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
May 5, 2025	May 9, 2025	5 days	4250.00 $	UAE - Dubai
July 7, 2025	July 11, 2025	5 days	4950.00 $	Austria - Vienna
Nov. 10, 2025	Nov. 14, 2025	5 days	4250.00 $	UAE - Dubai