# PowerShell-1

## Automating Administration with Windows PowerShell

### Description:

Learn how with Windows PowerShell 5.1, you can remotely manage single or multiple Windows-based servers and automate day-to-day management and administration tasks. This five day course provides students with the fundamental knowledge and skills to use Windows PowerShell 5.1 for administering and automating administration of Windows based servers.

It focuses on primary Windows PowerShell command-line features and techniques, and will provide prerequisite skills supporting many different Microsoft products. This includes Windows Server,Windows Client, Exchange Server, SharePoint Server, 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) will serve as the example for the techniques being taught. In this five day course you will learn to execute and monitor scripts more efficiently through more robust session connectivity, workflow capabilities, improved job scheduling, and Windows PowerShell Web Access. Learn Windows PowerShell with greater ease through improved cmdlet discovery and simplified, consistent syntax across all cmdlets. Write Windows PowerShell scripts quicker and more intuitively through the new Integrated Scripting Environment (ISE) that enables script sharing, which connects IT pros to a larger Windows PowerShell user community. Learn all this and more in this five-day Microsoft Official Course in Windows PowerShell v5.1.

### Students will be able to:

- Understand the basic concepts behind Windows PowerShell
- Work with the Pipeline
- Understand How the Pipeline Works
- Use PSProviders and PSDrives
- Format Output
- Use WMI and CIM
- Prepare for Scripting
- Moving From a Command to a Script to a Module
- Administer Remote Computers
- Put the various Windows PowerShell components together
- Use Background Jobs and Scheduled Jobs
- Use Advanced PowerShell Techniques and Profiles

### Course requirements:

- Previous Windows Server and Windows Client management knowledge and hands on experience
- Experience installing and configuring Windows Server into existing enterprise environments, or as standalone installations
- Knowledge and experience of network adapter configuration, basic Active Directory user administration, and basic disk configuration
- Knowledge and hands on experience specifically with Windows Server 2012 and Windows 8 would be of benefit but is not essential

**This course is intended for:**

- This course is intended for IT Professionals already experienced in general Windows Server and Windows Client administration or already experienced in administering and supporting Application servers and services including applications like Exchange, SharePoint, and SQL.
- It is broadly intended for students who want to use Windows PowerShell to automate administrative tasks from the command line, using any Microsoft or independent software vendor (ISV) product that supports Windows PowerShell manageability.
- This course is not intended to be a scripting or programming course, and includes only basic coverage of scripting and programming topics. Students are not expected to have prior scripting or programming experience, and are not expected to have prior Windows PowerShell experience

**Literature:**

All participants will get original Microsoft student materials.

**Hardware:**

Classrooms are equipped with high-performance computers with Internet access and the possibility of wireless connection.

**Syllabus:**

**Chapter 1: Getting Started with Windows PowerShell**

- Overview and Background
- Finding and Learning Commands
- Running Commands

**Chapter 2: Working with the Pipeline**

- Understanding the Pipeline
- Selecting, Sorting, and Measuring Objects
- Converting, Exporting, and Importing Objects
- Filtering Objects Out of the Pipeline
- Enumerating Objects in the Pipeline

**Chapter 3: Understanding How the Pipeline Works**

- Passing Data in the Pipeline By Value
- Passing Data in the Pipeline By Property Name

**Chapter 4: Using PSProviders and PSDrives**

- Using PSProviders
- Using PSDrives

**Chapter 5: Formatting Output**

- Using Basic Formatting
- Using Advanced Formatting
- Redirecting Formatted Output

## Chapter 6: Querying Management Information by Using WMI and CIM

- Understanding WMI and CIM
- Querying Data with WMI and CIM
- Making Changes by Using WMI and CIM

## Chapter 7: Preparing for Scripting

- Using Variables
- Scripting Security

## Chapter 8: Moving From a Command to Script to Module

- Moving From Command to Script
- Moving From Script to Function to Module
- Implementing Basic Error Handling
- Using Basic Scripting Constructs
- Exploring Other Scripting Features

## Chapter 9: Administering Remote Computers

- Using Basic Remoting
- Using Advanced Remoting Techniques
- Using Remoting Sessions

## Chapter 10: Putting it All Together

- Provisioning a New Server Core Instance

## Chapter 11: Using Background Jobs and Scheduled Jobs

- Using Background Jobs
- Using Scheduled Jobs

## Chapter 12: Using Profiles and Advanced PowerShell Techniques

- Using Advanced PowerShell Techniques
- Creating Profile Scripts
- Working With Alternative Credentials