Automating Administration with Windows PowerShell - MOC On Demand (MS-10961)

Modality: On Demand

Duration: 2 Days

SATV Value: 2

This course is only accessible for 90 days from the enrollment date and is a Microsoft On-Demand Course. Candidates having annual subscriptions or candidates who purchase this course individually will lose access to this course after 90 days.

About this Course:

This intermediate-level training program is designed for IT Professionals and Administrators and helps them develop a conceptual understanding of Windows Server Administration & Automation with Windows PowerShell. This course provides a comprehensive overview of Windows PowerShell Advanced Functionalities and helps professionals learn the art of Tasks Automation, Reports Generation, Scripts Development, and Pipeline Techniques. On average, a Windows PowerShell Administrator earns $70,000 annually.

This course covers a wide range of Microsoft Products including SharePoint & Exchange Server, System Center, Windows Client, Windows Server, and many more. Professionals get to develop a conceptual understanding of key concepts and functionalities relating to these products and services.

Course Objectives:

The core objective of this course is to help professionals develop a better understanding and sound knowledge of the following key concepts:

- Fundamentals of Windows PowerShell and Basic Commands Familiarity
- Cmdlet Command Identification for Server Administration
- Pipeline Working Techniques in Windows PowerShell
- Working with Storage Types Using PSDrives and PSProviders
- CIM and WMI Applications for Query System Information
- Windows PowerShell Scripts Creation and Arrays, Variables, & Hash Tables
- Basic and Advanced Windows PowerShell Scripts Creation
- Remote Computers Administration and Background & Scheduled Jobs Application
- Windows PowerShell Advanced Techniques and Practices

Audience:

- Windows System and Server Administrator
- IT Professionals and Experts
- Professionals striving to Learn Windows PowerShell Administration
- Exchange, SQL and SharePoint Server Administrators

Prerequisites:

Professionals planning to enroll in the Automating Administration with Windows PowerShell – MOC on Demand (MS-10961) course must comply with the following prerequisites:

- Practical Experience of Windows Networking Systems and Implementation
- Familiarity with Windows Server & Client Administration and Maintenance
- Practical Experience as a Windows Server Administrator is highly Recommended

Course Outline:

Module 1: Getting Started with Windows PowerShell

This module introduces students to Windows PowerShell, its purpose and history. The module will also cover the basics of using the shell, including the help system, command syntax, command discovery explaining the use of the two built-in host applications.

Lessons

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

Lab : Configuring Windows PowerShell

Lab : Finding and Running Basic Commands

After completing this module, students will be able to:

- Open and configure Windows PowerShell
- Discover, learn, and run Windows PowerShell commands
- Run commands by using correct command and parameter syntax

Module 2: Working with the Pipeline

This module covers the Windows PowerShell pipeline along with a number of additional techniques and commands, including customizing command output, exporting and converting data, sorting objects, filtering objects, and enumerating objects allowing for the overall retrieval, manipulation and displaying of data.

Lessons

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

Lab : Using the Pipeline

Lab : Converting, Exporting, and Importing Objects

Lab : Filtering Objects

Lab : Enumerating Objects

After completing this module, students will be able to:

- Describe the purpose of the Windows PowerShell pipeline
- Manipulate objects in the pipeline
- Convert, export, and import objects
- Filter objects out of the pipeline
- Enumerate objects in the pipeline

Module 3: Understanding How the Pipeline Works

This module explains the underlying details of how Windows PowerShell passes objects from command to command within the pipeline. Having seen it in action in the previous module will now get to see some of the theory under the hood. The emphasis will be on two specific techniques used by the shell and students will learn to explain the pipeline operation, predict command behavior and allows them construct more useful, predictable commands.

Lessons

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

Lab : Working with Pipeline Parameter Binding

After completing this module, students will be able to:

- Pass data by using the ByValue technique
- Pass data by using the ByPropertyName technique

Module 4: Using PSProviders and PSDrives

This module explains the purpose and use of Windows PowerShell PSProviders and PSDrives, and shows students how to use these useful components for administrative tasks. Students will also learn to use the -item* commands to manipulate items within a PSDrive.

Lessons

- Using PSProviders
- Using PSDrives

Lab : Using PSProviders and PSDrives

After completing this module, students will be able to:

- Explain the purpose and use of PSProviders
- Explain the purpose and use of PSDrives

Module 5: Formatting Output

This module demonstrates how to format command output and how to create custom output elements.

Lessons

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

Lab : Formatting Output

After completing this module, students will be able to:

- Format command output by using basic formatting commands
- Format command output by using advanced formatting options
- Redirect formatted output

Module 6: Querying Management Information by Using WMI and CIM

This module explains Windows Management Instrumentation (WMI) and Common Information Model (CIM), and shows students how to retrieve and in some cases modify management information about local and remote computers.

Lessons

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

Lab : Working with WMI and CIM

After completing this module, students will be able to:

- Explain the differences between WMI and CIM
- Query management information by using WMI and CIM
- Invoke methods by using WMI and CIM

Module 7: Preparing for Scripting

This module prepares students for writing scripts with Windows PowerShell, covering the Windows PowerShell security model and the use of variables.

Lessons

- Using Variables
- Scripting Security

Lab : Working with Security in Windows PowerShell

After completing this module, students will be able to:

- Create, use, and manage variables
- Configure shell scripting security

Module 8: Moving From a Command to Script to Module

This module shows students how to take a command that runs well in the console and turn it into a parameterized, reusable script, and how to evolve that script into a standalone script module. Students will learn the foundations needed to create their own reusable tools.

Lessons

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

Lab : Moving From Command to Script

Lab : Moving From Script to Function to Module

Lab : Implementing Basic Error Handling

Lab : Creating an Advanced Function

After completing this module, students will be able to:

- Move from Command to Script
- Move from Script to Function to Module
- Implement basic error handling
- Implement basic scripting constructs
- Explain additional advanced Windows PowerShell scripting features

Module 9: Administering Remote Computers

This module explains Windows PowerShell remoting, and shows students how to configure and use remoting to manage multiple remote computers.

Lessons

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

Lab : Using Basic Remoting

Lab : Using Remoting Sessions

After completing this module, students will be able to:

- Describe remoting architecture and security, manually enable remoting, and use remoting for one-to-one and one-to-many connections
- Pass local variables to remote computers
- Create and manage persistent remoting sessions, and use implicit remoting

Module 10: Putting it All Together

This module offers students an opportunity to use everything they have learned so far. Students will discover, learn, and run commands that perform a complex, real-world administrative task.

Lessons

- Provisioning a New Server Core Instance

Lab : Provisioning a New Server Core Installation

After completing this module, students will be able to:

- Plan your Windows PowerShell Script
- Configure Server Core computers using Windows PowerShell

Module 11: Using Background Jobs and Scheduled Jobs

In this module students will learn to create and manage background jobs and scheduled jobs.

Lessons

- Using Background Jobs
- Using Scheduled Jobs

Lab : Using Background Jobs

?Lab : Using Scheduled Jobs

After completing this module, students will be able to:

- Create and manage Background Jobs
- Create and manage Scheduled Jobs

Module 12: Using Profiles and Advanced PowerShell Techniques

This module covers a variety of additional advanced Windows PowerShell features and techniques including additional comparison operators, use of alternate credentials, creation of profile scripts, manipulation of strings and date objects.

Lessons

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

Lab : Practicing Advanced Techniques

After completing this module, students will be able to:

- Manipulate data and objects by using advanced techniques and operators
- Create and manage profile scripts
- Connect to remote computers by using alternative credentials