Microsoft
Solutions Partner
Microsoft Cloud

Training Services

COURSE OUTLINE

Course Name: Automating Administration with PowerShell
Course Code: MS-AZ040T00

DELIVERY	SKILL LEVEL	DELIVERY METHOD	TRAINING CREDITS	TECHNOLOGY
5 Day	Advanced	In Class/VILT	N/A	Microsoft

Course Overview

This course provides students with the fundamental knowledge and skills to use PowerShell for administering and automating administration of Windows servers. This course provides students the skills to identify and build the command they require to perform a specific task.

In addition, students learn how 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 Azure, and Microsoft 365. 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.

Prerequisites

Before attending this course, students must have:
- Experience with Windows networking technologies and implementation.
- Experience with windows Server administration, maintenance and troubleshooting.

Course Objectives

- Describe the functionality of Windows PowerShell and use it to run and find basic commands.
- Identify and run cmdlets for local system administration.
- Work with the Windows PowerShell pipeline.
- Use PS Providers and PS Drives to work with other forms of storage.
- Query system information by using WMI and CIM.
- Work with variables, arrays, and hash tables.
- Create basic scripts in Windows PowerShell.
- Administer remote computers with Windows PowerShell.
- Manage Azure resources with PowerShell.
- Manage Microsoft 365 services with PowerShell.
- Use background jobs and scheduled jobs.

Course content

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 explains how to open and configure Windows PowerShell. It also explains how to run commands and use the built-in Help system in Windows PowerShell.

Lesson 1: Window PowerShell overview

Lesson 2: Understand Windows PowerShell command syntax

Lesson 3: Find commands and get help in windows PowerShell

Module 2: Windows PowerShell for local systems administration

This module introduces you to the different types of cmdlets commonly used for system administration. While you can search for cmdlets each time you need to accomplish a task, it is more efficient to have at basic understanding of these cmdlets. This explains how to manage Windows 10 by using PowerShell.

Lesson 1: Active Directory Domain Services administration cmdlets

Lesson 2: Network configuration cmdlets

Lesson 3: Server administration cmdlets

Lesson 4: Windows PowerShell in Windows 10

Module 3: Working with the Windows PowerShell pipeline

This module introduces the pipeline feature of Windows PowerShell. The pipeline feature is included in several command-line shells such as the command prompt in the Windows operating system.

However, the pipeline feature in Windows PowerShell provides more complex, flexible, and capable functionalities compared to other shells. This module provides you with the skills and knowledge that will help you use Windows PowerShell more effectively and efficiently.

Lesson 1: Understand the pipeline

Lesson 2: Select, sort and measure objects

Lesson 3: Filter objects out of the pipeline

Lesson 4: Enumerate objects in the pipeline

Lesson 5: Send and pass pipeline data as output

Module 4: Using PSProviders and PSDrives

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

Lesson 1: Using PSProviders.

Lesson 2: Using PSDrives.

Module 5: Querying management information by using CIM and WMI

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.

Lesson 1: Understand CIM and WMI

Lesson 2: Query data by using CIM and WMI

Lesson 3: Make changes by using CMI and WMI

Module 6: Working with variables, arrays and hash tables

Variables are essential component of scripts. Youn can use variables to accomplish complex tasks you can't complete by using a single command. This module explains how to work with variables, arrays and hash tables as steps in learning how to create Windows PowerShell scripts.

Lesson1: Use variables

Lesson 2: Manipulate variables

Lesson 3: Manipulate arrays and hash tables

Module 7: Windows PowerShell scripting

This module explains how to package a Windows PowerShell command in a script. Scripts allow you to perform repetitive tasks and more complex tasks that cannot be accomplished in a single command.

Lesson 1: Introduction to scripting with Windows PowerShell

Lesson 2: Processing an array with a ForEach loop

Lesson 3: Import data from files

Lesson 4: Creating users based on a CSV file

Lesson 5: Querying disk information from remote computers

Lesson 6: Updating the scripts to use alternate credentials

Module 8: Administering remote computers with Windows PowerShell

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.

Lesson 1: Use basic Windows PowerShell remoting

Lesson 2: Use advanced Windows PowerShell remoting techniques

Lesson 3: Use PSSesions

Module 9: Managing Azure resources with PowerShell

Lesson 1: Azure PowerShell

Lesson 2: Introduce Azure Cloud Shell

Lesson 3: Manage Azure VMs with PowerShell

Lesson 4: Manage storage and subscriptions

Module 10: Managing Microsoft 365 services with PowerShell

This module describes how to use PowerShell to manage Microsoft 365 user accounts, licences and groups, Exchange Online, SharePoint Online and Microsoft Teams.

Lesson 1: Manage Microsoft 365 user accounts, licences and groups with PowerShell

Lesson 2: Manage Exchange Online with PowerShell

Lesson 3: Manage SharePoint Online with PowerShell

Lesson 4: Manage Microsoft Teams with PowerShell

Module 11: Using background jobs and scheduled jobs

This module describe how to use background jobs and scheduled jobs. It also explains how to create schedules jobs and retrieve jobs results.

Lesson 1: Use background jobs

Lesson 2: Use scheduled jobs

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