

Automating Windows Administration with Microsoft PowerShell® (AZ-040T00)

Duration: 5 days

Audience: Professionnel TI

Who is this training for?

This course is intended for IT professionals who are already experienced in the general administration of Windows Server, Windows client, Azure, and Microsoft 365, and who want to learn more about using Windows PowerShell for administration. No prior experience with any version of PowerShell or scripting language is assumed. This course is also suitable for IT professionals who are already experienced in server administration, including Microsoft Exchange Server, Microsoft SharePoint Server, and Microsoft SQL Server.

Training objectives

- Describe the features of Windows PowerShell and use it to run and find basic commands. • Identify and execute cmdlets for local system administration.
- Work with the Windows PowerShell pipeline.
- Use PSProviders and PSDrives to work with other forms of storage.
- Query system information 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 tasks and scheduled tasks.

Summary

This course provides participants with the fundamental knowledge and skills to use PowerShell for administration and automation of Windows server administration. This course equips participants with the skills to identify and construct the command they need to perform a specific task. In addition,

participants learn how to build scripts to accomplish advanced tasks such as automating repetitive tasks and generating reports. This course provides the skills prerequisite for supporting a wide range of Microsoft products, including Windows Server, Windows Client, Microsoft Azure, and Microsoft 365. In keeping with this purpose, this course will not focus on any one of these products, although Windows Server, which is the common platform for all of these products, will serve as an example for the techniques taught in this course.

Course outline

Learning Path 1: Introduction to Windows PowerShell

- Module 1: Windows PowerShell Review.
- Module 2: Understand the syntax of commands in Windows PowerShell.
- Module 3: Find commands and use Get-Help in Windows PowerShell.

Learning Path 2: Maintaining System Administration Tasks with Windows PowerShell

- Module 1: Managing Active Directory Domain Services with PowerShell Cmdlets.
- Module 2: Manage network services settings for Windows devices with PowerShell.
- Module 3: Manage Windows Server settings with PowerShell.
- Module 4: Manage settings on a local Windows computer with PowerShell.

Learning Path 3: Working with the Windows PowerShell Pipeline

- Module 1: Understanding the Windows PowerShell Pipeline.
- Module 2: Select, sort, and measure objects with the pipeline.
- Module 3: Filtering Objects Out of the Pipeline.
- Module 4: Enumerating objects in the pipeline.
- Module 5: Send Pipeline Data Out.
- Module 6: Passing data through the pipeline.

Learning Path 4: Using PowerShell Providers and Readers

- Module 1: Connect to Data Stores with PowerShell Providers.

- Module 2: Using PowerShell Readers.

Learning Path 5: Querying Management Information with CIM and WMI

- Module 1: Reviewing CIM and WMI.
- Module 2: Querying configuration information with CIM and WMI.
- Module 3: Manipulating repository objects with CIM and WMI methods.

Learning Path 6: Working with Variables, Tables, and Hash Tables in PowerShell Scripts

- Module 1: Managing Variables in PowerShell Scripts.
- Module 2: Working with Arrays and Hash Tables.

Learning Path 7: Creating and Editing Scripts with Windows PowerShell

- Module 1: Creating and Running Scripts with Windows PowerShell. •
- Module 2: Working with script constructs.
- Module 3: Importing data in different formats.
- Module 4: Accept User Input in PowerShell Scripts.
- Module 5: Troubleshooting scripts and handling errors.
- Module 6: Use functions and modules in PowerShell.

Learning Path 8: Administering Remote Computers with Windows PowerShell

- Module 1: Managing Remote Computers with Windows PowerShell.
- Module 2: Use advanced remote PowerShell techniques.
- Module 3: Managing persistent connections remotely.

Learning Path 9: Managing Cloud Resources with Windows PowerShell

- Module 1: Azure PowerShell Module Review.
- Module 2: Review of Azure Cloud Shell tools and features.
- Module 3: Manage Azure resources with Windows PowerShell.

Learning path 10: Manage Microsoft 365 services with Windows PowerShell

- Module 1: Manage users, groups, and licenses in Azure AD.
- Module 2: Manage Exchange Online with PowerShell.
- Module 3: Manage SharePoint Online with PowerShell.
- Module 4: Manage Microsoft Teams with PowerShell.

Learning Path 11: Creating and Managing Background Tasks and Scheduled Tasks

- Module 1: Creating and Managing Background Tasks with PowerShell.
- Module 2: Create and manage scheduled tasks with PowerShell.

Approach and methodology

Practical and structured approach combining focused theory and guided workshops. Participants gradually automate the administration of Windows environments with Microsoft PowerShell® through real-world exercises inspired by professional scenarios, promoting immediate application of learning. They learn how to create scripts, manage system administration tasks, and automate complex processes efficiently and securely. Led by a Microsoft certified trainer, the training focuses on interactivity and the development of directly transferable technical skills to optimize systems administration in a professional context.

Prerequisites

- Administration, maintenance and troubleshooting of Windows Server.
- Administration, maintenance and troubleshooting of Windows Client.
- Key security best practices. • Windows networking technologies and implementation.
- Fundamental networking technologies, such as IP addressing, name resolution, and Dynamic Host Configuration Protocol (DHCP).

Recommendations

Review: Windows Server basics (roles, services, AD) network concepts (IP addressing, name resolution)

Familiarize yourself with: Windows administration (graphical interface)

Identify your needs: automation of repetitive tasks script management improvement of operational efficiency