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

Training objectives

By the end of this

course, students will be able to:

- 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

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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.

Course outline

Learning Path 1 — Getting Started with Windows PowerShell

- Module 1 — Review Windows PowerShell
- Module 2 — Understand the command syntax in Windows PowerShell
- Module 3 — Find commands and Get Help in Windows PowerShell

Learning Path 2 — Maintain system administration tasks in Windows PowerShell

- Module 1 — Manage Active Directory Domain Services using PowerShell cmdlets
- Module 2 — Manage network service settings for Windows devices using PowerShell cmdlets
- Module 3 — Manage Windows Server settings using PowerShell cmdlets
- Module 4 — Manage settings for a local Windows machine using PowerShell cmdlets

Learning Path 3 — Work with the Windows PowerShell pipeline

- Module 1 — Understand the Windows PowerShell pipeline
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Module 2 — Select, sort, and measure objects using the pipeline

- Module 3 — Filter objects out of the pipeline
- Module 4 — Enumerate objects in the pipeline
- Module 5 — Send pipeline data as output
- Module 6 — Pass pipeline data

Learning Path 4 — Work with PowerShell providers and PowerShell drives in Windows PowerShell

- Module 1 — Connect with data stores using PowerShell providers
- Module 2 — Use PowerShell drives in PowerShell

Learning Path 5 — Query management information using CIM and WMI

- Module 1 — Review CIM and WMI
- Module 2 — Query configuration information using CIM and WMI
- Module 3 — Query and manipulate repository objects using CIM and WMI methods

Learning Path 6 — Use variables, arrays, and hash tables in Windows PowerShell scripts

- Module 1 — Manage variables in Windows PowerShell scripts
- Module 2 — Work with arrays and hash tables in Windows PowerShell scripts

Learning Path 7 — Create and modify scripts using Windows PowerShell

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- Module 1 — Create and run scripts using Windows PowerShell
- Module 2 — Work with scripting constructs in Windows PowerShell
- Module 3 — Import data in different formats for use in scripts using Windows PowerShell cmdlets
- Module 4 — Use methods to accept user inputs in Windows PowerShell scripts
- Module 5 — Troubleshoot scripts and handle errors in Windows PowerShell
- Module 6 — Use functions and modules in Windows PowerShell scripts

Learning Path 8 — Administer remote computers using Windows PowerShell

- Module 1 — Manage single and multiple computers using Windows PowerShell remoting
- Module 2 — Use advanced Windows PowerShell remoting techniques
- Module 3 — Manage persistent connections to remote computers using Windows PowerShell sessions

Learning Path 9 — Manage cloud resources using Windows PowerShell

- Module 1 — Review the Azure PowerShell module
- Module 2 — Review the features and tools for Azure Cloud Shell
- Module 3 — Manage Azure resources using Windows PowerShell

Learning Path 10 — Manage Microsoft 365 services using Windows PowerShell

- Module 1 — Manage users, groups, and licenses in Microsoft Entra ID using Windows PowerShell
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Module 2 — Manage Exchange Online using Windows PowerShell

- Module 3 — Manage SharePoint Online using Windows PowerShell
- Module 4 — Manage Microsoft Teams using Windows PowerShell

Learning Path 11 — Create and manage background jobs and scheduled jobs in Windows PowerShell

- Module 1 — Create and manage background jobs using Windows PowerShell
- Module 2 — Create and manage scheduled jobs using Windows PowerShell

Approach and methodology

A practical and structured approach combining focused theory and guided workshops. Participants progressively automate Windows administration tasks using 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, building confidence with PowerShell’s core capabilities .

Led by a Microsoft Certified Trainer (MCT), the training emphasizes interactivity and the development of directly transferable technical skills to optimize Windows, Azure, and Microsoft 365 administration in a professional context

Prerequisites

Students

should have the following knowledge and experience before attending this

course:

- Windows Server administration, maintenance, and troubleshooting
- Windows Client administration, maintenance, and troubleshooting
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Basic security best practices

- Windows networking technologies and implementation
- Core networking technologies such as IP addressing, name resolution, and Dynamic Host Configuration Protocol (DHCP)

Recommendations

Optional Prerequisites

- General familiarity with Windows PowerShell
- Basic understanding of Windows Server and Windows Client administration
- Foundational knowledge of Active Directory services
- Awareness of Azure PowerShell and Azure Cloud Shell
- Basic knowledge of Microsoft 365 services (Exchange, SharePoint, Teams)
- Understanding of scripting concepts (variables, arrays, hash tables)
- Introductory knowledge of WMI and CIM
- Familiarity with automating repetitive administrative tasks

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