

KOENIG SOLUTIONS • COURSE OUTLINE

AZ-040T00: Automate Administration with PowerShell

Learn to automate administration across Windows, Azure and Microsoft 365 using PowerShell scripting, remoting and job scheduling.

5 Days

40 HOURS

11

MODULES

37

TOPICS

40

HANDS-ON LABS

COURSE OVERVIEW

The AZ-040T00: Automating Administration with PowerShell course is designed for IT professionals who want to learn how to automate administrative tasks using PowerShell across various Microsoft products. The course covers fundamental concepts starting with the basics of Windows PowerShell, its Command syntax, and how to find commands and get help. Learners will gain hands-on experience through labs that simulate real-world scenarios. The curriculum progresses through managing local systems, working with the PowerShell pipeline, using PS Providers and PS Drives, querying information with CIM and WMI, and handling Variables, arrays, and hash tables. Scripting with PowerShell is a key focus, offering insights into Script constructs, Data import, user input, troubleshooting, and creating functions and modules. Advanced topics include Administering remote computers, Managing Azure resources, and Controlling Microsoft 365 services all through PowerShell. The course also teaches how to utilize Background and scheduled jobs for task automation. Completing the AZ-040 course equips learners with the skills to efficiently manage and automate a wide range of administrative tasks, enhancing their IT proficiency and productivity.

Who Should Attend

The AZ-040T00 course empowers IT professionals to automate administration using PowerShell, enhancing efficiency and proficiency.

System Administrators and Engineers

IT Professionals with a focus on Windows Server management

DevOps Engineers who implement automation and configuration management

Network Administrators seeking to automate network tasks

Security Analysts aiming to streamline security protocols

Cloud Administrators managing Azure or Microsoft 365 environments

Support Technicians automating repetitive tasks

Database Administrators using PowerShell for database management

Professionals responsible for Active Directory management and automation

Technical Consultants providing IT solutions and infrastructure automation

Software Developers needing to integrate PowerShell in their workflows

Anyone seeking to learn scripting and automation in a Windows environment

LEARNING OBJECTIVES

- Explain Windows PowerShell command syntax and Help system
- Apply cmdlets for local systems and Active Directory administration
- Use the pipeline to select, filter and sort objects
- Configure PS Providers and PS Drives for storage access
- Query and change management data using CIM and WMI
- Manipulate variables, arrays and hash tables
- Develop scripts with functions, modules and error handling
- Administer remote computers with PowerShell remoting

11 Modules, 37 Topics

01

4 Labs

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.

TOPICS

- Windows PowerShell overview
- Understanding Windows PowerShell command syntax

02

3 Labs

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 least a basic understanding of these cmdlets. This module also explains how to install and start using Windows PowerShell in Windows 10.

TOPICS

- Active Directory Domain Services administration cmdlets
- Network configuration cmdlets
- Server administration cmdlets
- Windows PowerShell in Windows 10

03

4 Labs

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.

TOPICS

Understand the pipeline · Select, sort, and measure objects · Filter objects out of the pipeline · Enumerate objects in the pipeline · Send and pass pipeline data as output

04**3 Labs**

Using PS Providers and PS Drives

This module introduces the PS Providers and PS Drives adapters. A PS Provider is basically a Windows PowerShell adapter that makes some form of storage resemble a disk drive. A Posidrive is an actual connection to a form of storage. You can use these two adapters to work with various forms of storage by using the same commands and techniques that you use to manage the file system.

TOPICS

Using PS Providers · Using PS Drives

05**3 Labs**

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.

TOPICS

Understand CIM and WMI · Query data by using CIM and WMI · Make changes by using CIM and WMI

06**3 Labs**

Working with Variables, Arrays, and Hash Tables

This module provides you the skills and knowledge required to use variables, arrays, and hash tables in Windows PowerShell.

TOPICS

Use variables · Manipulate variables

07**6 Labs**

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 than cannot be accomplished in a single command.

TOPICS

- Introduction to scripting with Windows PowerShell
- Script constructs
- Import data from files
- Accept user input
- Troubleshooting and error handling
- Functions and modules

08**5 Labs**

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.

TOPICS

- Use basic Windows PowerShell remoting
- Use advanced Windows PowerShell remoting techniques
- Use PS Sessions

09**3 Labs**

Managing Azure Resources with PowerShell

This module provides information about Azure PowerShell. It also introduces Azure Cloud Shell. It explains how to manage Azure VMs with PowerShell. The module also describes how you can manage storage and Azure subscriptions with Azure PowerShell.

TOPICS

Azure PowerShell · Introduce Azure Cloud Shell · Manage Azure VMs with PowerShell · Manage storage and subscriptions

10**4 Labs**

Managing Microsoft 365 Services with PowerShell

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

TOPICS

- Manage Microsoft 365 user accounts, licenses, and groups with PowerShell
- Manage Exchange Online with PowerShell
- Manage SharePoint Online with PowerShell
- Manage Microsoft Teams with PowerShell

11**2 Labs**

Using Background Jobs and Scheduled Jobs

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

TOPICS

Use background jobs · Use scheduled jobs

Practise What You Learn

#	MODULE	ACTIVITY
01	Getting Started with Windows PowerShell	■ Configuring the Windows PowerShell console application ■ Configuring the Windows PowerShell ISE application ■ Finding and running Windows PowerShell commands ■ Using Help and About files
02	Windows PowerShell for Local Systems Administration	■ Creating a website ■ Configuring network settings on Windows Server ■ Creating and managing Active Directory objects
03	Working with the Windows PowerShell Pipeline	■ Selecting, sorting, and displaying data ■ Filtering objects ■ Enumerating objects ■ Converting objects
04	Using PS Providers and PS Drives	■ Create a new Active Directory group ■ Creating a registry key for your future scripts ■ Creating files and folders on a remote computer
05	Querying Management Information by Using CIM and WMI	■ Querying information by using WMI ■ Querying information by using CIM ■ Invoking methods
06	Working with Variables, Arrays, and Hash Tables	■ Using hash tables ■ Using arrays ■ Working with variable types
07	Windows PowerShell Scripting	■ Signing a script ■ Processing an array with a For Each loop ■ Processing items by using If statements ■ Creating users based on a CSV file ■ Querying disk information from remote computers ■ Updating the script to use alternate credentials
08	Administering Remote Computers with Windows PowerShell	■ Managing multiple computers ■ Using implicit remoting ■ Performing one-to-many remoting ■ Performing one-to-one remoting ■ Enabling remoting on the local computer
09	Managing Azure Resources with PowerShell	■ Installing Azure PowerShell module ■ Installing Cloud Shell ■ Managing Azure resources with Azure PowerShell

#	MODULE	ACTIVITY
10	Managing Microsoft 365 Services with PowerShell	■ Managing Exchange Online resources with Windows PowerShell ■ Managing SharePoint Online with Windows PowerShell ■ Managing Microsoft 365 user and group objects with Windows PowerShell ■ Connecting to Microsoft 365 with Windows PowerShell
11	Using Background Jobs and Scheduled Jobs	■ Starting and managing jobs ■ Creating a scheduled job

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training

Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

Ready to Get Started?

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