

Automating Administration with PowerShell

Content

Module 1: Getting Started with Windows PowerShell

This module introduces Windows PowerShell and provides an overview of its functionality. It explains how to open, configure, run commands, and use the built-in Help system.

Lessons:

- Windows PowerShell overview
- Understanding PowerShell command syntax
- Finding commands and getting help

Lab:

- Configuring PowerShell console and ISE
- Finding and running commands
- Using About files

Outcomes:

- Describe PowerShell features, configure, and run commands.
 - Find PowerShell commands for specific tasks.
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Module 2: Windows PowerShell for Local Systems Administration

This module covers cmdlets commonly used for system administration, including managing Windows 10 with PowerShell.

Lessons:

- AD DS administration cmdlets
- Network configuration cmdlets
- Server administration cmdlets
- PowerShell in Windows 10

Lab:

- Creating and managing AD objects
- Configuring network settings
- Creating a website

Outcomes:

- Use cmdlets for AD DS, network, and server administration.
 - Manage Windows 10 using PowerShell.
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Module 3: Working with the Windows PowerShell Pipeline

This module introduces the pipeline feature in PowerShell, enabling effective and flexible data manipulation.

Lessons:

- Pipeline basics
- Selecting, sorting, and measuring objects
- Filtering objects
- Enumerating pipeline objects

Lab:

- Selecting, sorting, and displaying data
- Filtering and converting objects

Outcomes:

- Work with the pipeline to select, filter, and send data.
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Module 4: Using PSProviders and PSDrives

This module introduces PSProviders and PSDrives, which allow you to manage various storage types using file system-like commands.

Lessons:

- Using PSProviders
- Using PSDrives

Lab:

- Creating files and folders remotely
- Creating a registry key
- Creating an AD group

Outcomes:

- Use PSProviders and PSDrives.

Module 5: Querying Management Information Using CIM and WMI

This module explains how to use WMI and CIM to query and manage system information.

Lessons:

- Understanding CIM and WMI
- Querying data with CIM and WMI
- Making changes with CIM and WMI

Lab:

- Querying with WMI and CIM
- Invoking methods

Outcomes:

- Query and manage data using CIM and WMI.
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Module 6: Working with Variables, Arrays, and Hash Tables

This module covers variables, arrays, and hash tables in PowerShell scripts.

Lessons:

- Using variables
- Manipulating arrays and hash tables

Lab:

- Working with variables, arrays, and hash tables

Outcomes:

- Manipulate variables, arrays, and hash tables in scripts.
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Module 7: Windows PowerShell Scripting

This module focuses on scripting in PowerShell, covering constructs, importing data, and error handling.

Lessons:

- Introduction to scripting

- Script constructs
- Importing data from files
- Accepting user input
- Functions and modules

Lab:

- Processing arrays and CSV files
- Querying disk information
- Using alternate credentials

Outcomes:

- Create and troubleshoot PowerShell scripts.
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Module 8: Administering Remote Computers with PowerShell

This module covers PowerShell remoting techniques for administering remote systems.

Lessons:

- Basic and advanced remoting
- Using PSSessions

Lab:

- Enabling remoting
- One-to-one and one-to-many remoting
- Using implicit remoting

Outcomes:

- Use remoting to manage remote computers.
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Module 9: Managing Azure Resources with PowerShell

This module introduces using PowerShell to manage Azure resources like VMs and storage accounts.

Lessons:

- Azure PowerShell overview
- Using Azure Cloud Shell
- Managing Azure VMs and storage

Lab:

- Installing Az module
- Using Azure Cloud Shell
- Managing Azure resources

Outcomes:

- Manage Azure VMs, storage, and subscriptions.
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Module 10: Managing Microsoft 365 Services with PowerShell

This module covers using PowerShell for managing Microsoft 365 user accounts, licenses, Exchange Online, and SharePoint.

Lessons:

- Managing Microsoft 365 accounts, licenses, and groups
- Managing Exchange, SharePoint, and Teams with PowerShell

Lab:

- Managing Azure AD users and groups
- Managing Exchange, SharePoint, and Teams

Outcomes:

- Use PowerShell to manage Microsoft 365 services.
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Module 11: Using Background Jobs and Scheduled Jobs

This module explains how to create and manage background and scheduled jobs in PowerShell.

Lessons:

- Using background jobs
- Using scheduled jobs

Lab:

- Starting and managing jobs
- Creating a scheduled job

Outcomes:

- Create and manage background and scheduled jobs.

