

PowerShell 7.0 for Support Professionals

Length: 3 Days

About this course: This course provides students with the fundamental knowledge and skills to use Windows 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 Exchange Server, Microsoft SharePoint Server, Microsoft SQL Server, System Center, and more. 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.

Audience Profile: This course is intended for IT Professionals who are already experienced in general Windows Server and Windows Client administration, and who want to learn more about using Windows PowerShell for administration. No prior experience with any version of Windows PowerShell, or any scripting language, is assumed. This course is also suitable for IT Professionals already experienced in server administration, including Exchange Server, SharePoint Server, SQL Server, System Center, and others.

At Course Completion: After completing this course, students will be able to:

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- Describe the functionality of Windows PowerShell and use it to run and find basic commands.
- Identify and run cmdlets for server administration.
- Work with Windows PowerShell pipeline.
- Query system information by using WMI and CIM.
- Work with variables, arrays, and hash tables.
- Write basic scripts in Windows PowerShell.
- Write advanced scripts in Windows PowerShell

Prerequisites

- Experience with Windows networking technologies and implementation.
- Experience with Windows Server administration, maintenance, and troubleshooting.
- Experience with Windows Client administration, maintenance, and troubleshooting
- Students who attend this training can meet the prerequisites by obtaining equivalent knowledge and skills through practical experience as a Windows system administrator. No prerequisite courses are required.

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 shows you how to open and configure the shell for use and how to run commands within the shell. The module also introduces the built-in Help system in Windows PowerShell.

Lessons

Overview and background of Windows PowerShell
Understanding command syntax
Finding commands
Lab : Configuring Windows PowerShell
Configuring the Windows PowerShell console
Configuring the Windows PowerShell ISE application
Lab : Finding and running basic commands
Finding commands
Running commands
Using the About files

Module 2: Cmdlets for administration

This module introduces you to the cmdlets commonly used for 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 the cmdlets available for system administration.

Lessons

Active Directory administration cmdlets
Network configuration cmdlets
Other server administration cmdlets
Lab : Windows Administration
Creating and managing Active Directory objects
Configuring network settings on Windows Server
Creating a web site

Module 3: Working with the Windows PowerShell pipeline

This module introduces the pipeline feature of Windows PowerShell. Although the pipeline feature is included in several command-line shells such as the command prompt in the Windows operating system, the pipeline feature in Windows PowerShell provides more complex, more flexible, and more capable functionalities compared to other shells. This module provides you with the skills and knowledge that will help you use the shell more effectively and efficiently.

Lessons

Understanding the pipeline

Selecting, sorting, and measuring objects
Filtering objects out of the pipeline
Enumerating objects in the pipeline
Sending pipeline data as output
Lab : Using the pipeline
Selecting, sorting, and displaying data
Lab : Filtering objects
Filtering objects
Lab : Enumerating objects
Enumerating objects
Lab : Sending output to a file
Exporting user information to a file

Module 4: Querying system information by using WMI and CIM

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.

Lessons

Understanding WMI and CIM
Querying data by using WMI and CIM
Making changes with WMI/CIM
Lab : Working with WMI and CIM
Querying information by using WMI
Querying information by using CIM
Invoking methods

Module 5: 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.

Lessons

Using variables.
Manipulating variables.
Manipulating arrays and hash tables.
Lab : Working with variables
Working with variable types
Using arrays

Using hash tables

Module 6: Basic scripting

This module shows you 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.

Lessons

Introduction to scripting

Scripting constructs

Importing data from files

Lab : Basic scripting

Setting a script

Processing an array with a ForEach loop

Processing items by using If statements

Creating a random password

Creating users based on a CSV file

Module 7: Advanced scripting

This module introduces you to more advanced techniques that you can use in scripts. These techniques includes gathering user input, reading input from files, documenting scripts with help information and error handling.

Lessons

Accepting user input

Overview of script documentation

Troubleshooting and error handling

Functions and modules

Lab : Accepting data from users

Querying disk information from remote computers

Updating the script to use alternate credentials

Documenting a script

Lab : Implementing functions and modules

Creating a logging function

Adding error handling to a script

Converting a function to a module