10961 Automating Administration with Windows PowerShell

Overview

This course provides students with the fundamental knowledge and skills to use Windows PowerShell for administering and automating administration of Windows-based servers.

Prerequisite Comments

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.

Target Audience

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.

Course Objectives

After completing this course, students will be able to:
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.
Describe the techniques Windows PowerShell pipeline uses.
Use PSProviders and PSDrives to work with other forms of storage.
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.
Administer remote computers.
Use background jobs and scheduled jobs.
Use advanced Windows PowerShell techniques.

Course Outline
Getting Started with Windows PowerShell

Overview and Background
Understanding command syntax
Finding commands
Lab : Configuring Windows PowerShell
Lab : Finding and Running Basic Commands

Cmdlets for administration
Active Directory administration cmdlets
Network configuration cmdlets
Other server administration cmdlets
Lab : Windows Administration

Working with the Windows PowerShell pipeline
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
Lab : Filtering Objects
Lab : Enumerating Objects
Lab : Sending output to a file

Understanding How the Pipeline Works
Passing the pipeline data
Advanced considerations for pipeline data
Lab : Working with Pipeline Parameter Binding

Using PSProviders and PSDrives
Using PSProviders
Using PSDrives
Lab : Using PSProviders and PSDrives

Querying Management Information by Using WMI and CIM
Understanding WMI and CIM
Querying Data with WMI and CIM
Making changes with WMI/CIM
Lab : Working with WMI and CIM
Working with variables, arrays, and hash tables

Using variables
Manipulating variables
Manipulating arrays and hash tables
Lab: Working with variables

Basic scripting

Introduction to scripting
Scripting constructs
Importing data from files
Lab: Basic scripting

Advanced scripting

Accepting user input
Overview of script documentation
Troubleshooting and error handling
Functions and modules
Lab: Accepting data from users
Lab: Implementing functions and modules

Administering Remote Computers

Using basic Windows PowerShell remoting
Using advanced Windows PowerShell remoting techniques
Using PSSessions
Lab: Using basic remoting
Lab: Using PSSessions

Using Background Jobs and Scheduled Jobs

Using Background Jobs
Using Scheduled Jobs
Lab: Using Background Jobs and Scheduled Jobs

Using advanced Windows PowerShell techniques

Creating profile scripts
Using advanced techniques
Lab: Practicing advanced techniques
Lab: Practicing script development (optional)

Related Courses, Certifications, Exams

- 10962 Advanced Automated Administration with Windows PowerShell®