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

Before attending this course, students must have:
• Previous Windows Server and Windows Client management knowledge and hands on experience.
• Experience installing and configuring Windows Server into existing enterprise environments, or as standalone installations.
• Knowledge and experience of network adapter configuration, basic Active Directory user administration, and basic disk configuration.
• Knowledge and hands on experience specifically with Windows Server 2012 and Windows 8 would be of benefit but is not essential.

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 PSShaders and PSDrivers 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.

Schedule

Class Length: 5 Days

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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®