

# Automating Windows Server 2008 Administration with Microsoft Windows PowerShell

**Course Number 6434 – 24 Hours**

## **Overview**

This three-day instructor-led course provides students with the knowledge and skills to utilize Windows PowerShell for administering and automating administration of Windows Server 2008. The course focuses on cmdlets, script structure and flow control, language syntax, and implementation details of scripting administrative tasks using COM, WMI, and .NET foundations.

## **On Completion, Delegates will be able to**

After completing this course, students will be able to:

- Install and launch Windows PowerShell
- Work with basic objects in Windows PowerShell, including using cmdlets, data types, variables, and fundamental object-based information models
- Implement sequences of operations by putting them together into a pipeline
- Control the formatting of the resultant set of objects that are emitted at the end of a pipeline
- Implement sequences of operations by putting them together into a script
- Implement flow control within scripts and define functions and filters to help modularize complex scripts
- Manipulate files and registry values
- Manage disk storage volumes, shadow copies, shared folders, Terminal Services and IIS properties using WMI in Windows PowerShell
- Administer and maintain Active Directory services using Windows PowerShell
- Maintain Group Policy using Windows PowerShell
- Maintain Web services and applications using Windows PowerShell

## **Who Should Attend**

This course is intended for Windows administrators interested in automating Windows Server 2008 administration tasks, as well as those people looking for a

full-featured interactive command-line environment for Windows operating systems. Windows end users or developers who need to understand what is involved in Windows administration or command-line environments may also find this course helpful.

## Prerequisites

Before attending this course, students must have

- Completed course #[6430](#), Managing and Maintaining Windows Server 2008 Servers, or have equivalent knowledge of administrative tasks

In addition, it is recommended, but not required, that students have completed:

- Course #[2433](#): Microsoft Visual Basic Scripting Edition and Microsoft Windows Script Host Essentials, or have equivalent knowledge of scripting and automation in Windows

## Course Contents

### Module 1: Introduction to Microsoft Windows PowerShell

This module explains how to name, declare, assign values to, and use variables. It also describes how to store data in an array.

- Introduction to Windows PowerShell
- Installing Windows PowerShell in Windows Server 2008

### Module 2: Overview of Microsoft Windows PowerShell

This module explains basic concepts in Windows PowerShell, including objects, variables, cmdlets, and pipelines. It describes how to invoke available cmdlets and aliases, assign aliases. The module also includes demonstrations of tab expansion and basic operators.

- Overview of Objects
- Working with Cmdlets
- Tab Expansion, Aliases, and History
- Using Variables and Types

### Module 3: Building Pipelines for Assembly-Line Style Processing

This module explains basic concepts in Windows PowerShell, including objects, variables, cmdlets, and pipelines. It describes how to invoke available cmdlets and aliases, assign aliases. The module also includes demonstrations of tab expansion and basic operators.

- Connecting the Pipeline
- Using Arrays
- Filtering and Iterating Through the Pipeline

- Reordering Objects in a Pipeline

#### **Module 4: Managing Processes and Formatting Cmdlet Output**

This module explains basic concepts in Windows PowerShell, including objects, variables, cmdlets, and pipelines. It describes how to invoke available cmdlets and aliases, assign aliases. The module also includes demonstrations of tab expansion and basic operators.

- Controlling Tasks and Processes in Microsoft Windows PowerShell
- Presenting Information with Specific Formatting

#### **Module 5: Implementing Scripts to Perform a Sequence of Operations**

This module explains basic concepts in Windows PowerShell, including objects, variables, cmdlets, and pipelines. It describes how to invoke available cmdlets and aliases, assign aliases. The module also includes demonstrations of tab expansion and basic operators.

- Writing Windows PowerShell Scripts
- Security in Windows PowerShell
- Scripting Life-Cycle Methodologies
- Customizing Windows PowerShell with Profiles

#### **Module 6: Implementing Flow Control and Functions**

This module explains basic concepts in Windows PowerShell, including objects, variables, cmdlets, and pipelines. It describes how to invoke available cmdlets and aliases, assign aliases. The module also includes demonstrations of tab expansion and basic operators.

- Controlling the Flow of Execution Within Scripts
- Iteration Flow Control
- Developing and Using Functions

#### **Module 7: Working with Files, the Registry, and Certificate Stores**

This module explains how to write scripts that perform specific tasks, such as searching files for particular text and modifying all matching files, or searching the event logs for events that match specific criteria. It also describes how to access data stores, the file store, the registry, certificate stores, and other stores, use wildcards and regular expressions, and import and export aliases and objects.

- Using Cmdlets to Access Data Stores
- Using Providers to Access the Registry and Certificate Store
- Filtering and Selecting with Regular Expressions
- Implementing Event Log Management
- Moving Objects In and Out of Files

### **Module 8: Using Microsoft Windows PowerShell with WMI**

This module explains how to use WMI to access system features, enumerate, defragment, and mount disk volumes in Windows PowerShell. Listing and configuring volume shadow copies, listing and creating shared folders with WMI, and configuring Terminal Services are also discussed.

- Introduction to WMI Objects
- Managing Disk Volumes Using Windows PowerShell with WMI
- Managing Shadow Copies Using Windows PowerShell with WMI
- Managing Shared Folders with Windows PowerShell
- Configuring Terminal Server Using Windows PowerShell with WMI

### **Module 9: Administering Active Directory with Microsoft Windows PowerShell**

This module explains how to write scripts to perform Active Directory administration tasks such as changing the domain functional level, moving FSMO roles, and creating and modifying objects such as groups and user accounts. Managing relationships between user accounts and groups is also demonstrated.

- Administering Domains and Forests Using .NET Objects
- Managing User Accounts and Groups Using COM Objects
- Managing Relationships Between Users and Groups

### **Module 10: Administering Group Policy in Microsoft Windows PowerShell**

This module explains how to write scripts to perform Active Directory administration tasks such as changing the domain functional level, moving FSMO roles, and creating and modifying objects such as groups and user accounts. Managing relationships between user accounts and groups is also demonstrated.

- Managing GPOs Using the GPMC COM Interface
- Using XML with Group Policy
- Managing Group Policy Settings
- Reporting Group Policy

### **Module 11: Managing Internet Information Services 7.0**

This module explains how to write scripts to manage IIS 7.0 properties and report IIS statistics. It also describes how to create and manage Web sites.

- Comparing IIS 7.0 Windows PowerShell Management Interfaces
- Administering IIS 7.0 with Windows PowerShell