

## **10962: Advanced Automating Administration with Windows PowerShell** (3 Days)

In this Advanced Automated Administration with Windows PowerShell training class students learn how to automate administrative tasks using Windows PowerShell 5.1. Students will learn core scripting skills such as creating advanced functions, writing controller scripts, and handling script errors and how to work with Windows PowerShell Workflow, the REST API and XML and JSON formatted data files. Students will also learn how to use new administration tools such as Desired State Configuration (DSC) and Just Enough Administration (JEA) to configure and secure servers.

This course is intended for IT professionals who are experienced in general Windows Server and Windows Client administration. Students should have a foundational knowledge of Windows PowerShell, which they can obtain by taking course 10961C: Automating Administration with Windows PowerShell.

### **Learning Objectives**

After completing this course, students will be able to:

- Create advanced functions.
- Use Microsoft .NET Framework and REST API in Windows PowerShell.
- Write controller scripts.
- Handle script errors.
- Use XML, JSON, and custom formatted data.
- Enhance server management with Desired State Configuration and Just Enough Administration.
- Analyze and debug scripts
- Understand Windows PowerShell workflow.

### **Prerequisites**

In addition to their professional experience, students who attend this training should already have the following technical knowledge:

- Experience with Windows networking technologies and implementation.
- Experience with Windows Server administration, maintenance, and troubleshooting.
- Experience with Windows Client administration, maintenance, and troubleshooting.
- Experience with using Windows PowerShell to run commands and to create basic non-modularized scripts.

Students who attend this training can meet the prerequisites by obtaining equivalent knowledge and skills through practical experience as a Windows System Administrator. MOC 10961: *Automating Administration with Windows PowerShell* is strongly recommended to obtain prerequisite skills in Windows PowerShell.

## **Audience**

This course is intended for IT professionals who are experienced in general Windows Server and Windows Client administration. Students should have a foundational knowledge of Windows PowerShell, which they can obtain by taking course 10961C: Automating Administration with Windows PowerShell. In addition, this course provides scripting guidance for developers who support development environments and deployment processes.

## **Course Outline**

### **Module 1: Creating Advanced Functions**

- Converting a Command into an Advanced Function
- Creating a Script Module
- Defining Parameter Attributes and Input Validation
- Writing Functions that use Multiple Objects
- Writing Functions that Accept Pipeline Input
- Producing Complex Function Output
- Documenting Functions by using Content-Based Help
- Supporting -What if and -Confirm

### **Module 2: Using Cmdlets and Microsoft .NET Framework in Windows PowerShell**

- Running Windows PowerShell Commands
- Using Microsoft .NET Framework in Windows PowerShell

### **Module 3: Writing Controller Scripts**

- Understanding Controller Scripts
- Writing Controller Scripts that Show a User Interface
- Writing Controller Scripts That Produce Reports

### **Module 4: Handling Script Errors**

- Understanding Error Handling
- Handling Errors in a Script

### **Module 5: Using XML Data Files**

- Reading, Manipulating and Writing Data in XML

### **Module 6: Managing Server Configurations by Using Desired State Configuration**

- Understanding Desired State Configuration
- Creating and Deploying a DSC Configuration

### **Module 7: Analyzing and Debugging Scripts**

- Debugging in Windows PowerShell
- Analyzing and Debugging an Existing Script