

## **Advanced Automated Administration with Windows PowerShell - MOC On Demand (MS-10962)**

**Modality:** Self-Paced Learning

**Duration:** 2 Days

**SATV Value:** 2

**CLC:**

**NATU:**

**SUBSCRIPTION:** Master

*This course is only accessible for 90 days from the enrollment date and is a Microsoft On-Demand Course. Candidates having annual subscriptions or candidates who purchase this course individually will lose access to this course after 90 days.*

### **About this Course:**

This intermediate-level course is specifically designed for IT Professionals and Administrators and helps them develop a better understanding of Windows PowerShell Core Functionalities. This course provides professionals with a comprehensive overview of administrative tasks automation with the help of Windows PowerShell 5.1. On average, an IT Administrator earns \$59,350 annually.

This course covers the key concepts of Advanced Functions Development, Controller Scripts Creation, Scripts Error Management, Custom Formatted Data Applications, Server Management Enhancement, and Microsoft .NET Framework Applications. This course will nurture and develop the scripting and programming skills of IT professionals and will help them automate administrative tasks and business processes. This course will also introduce professionals with modern administrative tools such as Just Enough Administration and Desired State Configuration.

### **Course Objectives:**

The core objective of this course is to help professionals gain a better understanding and knowledge of the following key concepts:

- Advanced Functions Development and Controller Scripts Creation
- REST API and Microsoft .NET Framework Applications
- Script Errors Management and Scripts Analysis & Debugging
- Custom Formatted Data and XML & JSON Applications
- Understanding Workflow in Windows PowerShell
- Just Enough Administration and Desired State Configuration
- Server Management Enhancements Techniques

### **Audience:**

- IT Professionals and Experts

- Windows Server Administrators
- App Developers
- IT Administrators

## **Prerequisites:**

Professionals planning to enroll in the Advanced Automated Administration with Windows PowerShell – MOC On-Demand (MS-10962) course must comply with the following prerequisites:

- Familiarity with Windows Networking Implementation
- Practical Know-how of Windows Client & Server Administration and Troubleshooting
- Working Experience with Windows PowerShell
- Understands Non-Modularized Scripts Creation and Commands

## **Course Outline:**

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

In this module students will learn how to parameterize a command into an advanced function. It is designed to teach several key principles in a single logical sequence, by using frequent hands-on exercises to reinforce new skills.

#### **Lessons**

- 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 -Whatif and -Confirm

#### **Lab : Converting a Command into an Advanced Function**

- Converting a Command into an Advanced Function

#### **Lab : Creating a Script Module**

- Creating a Script Module

#### **Lab : Defining Parameter Attributes and Input Validation**

- Defining Parameter Attributes and Input Validation

#### **Lab : Writing Functions that use Multiple Objects**

- Writing Functions that use Multiple Objects

#### **Lab : Writing Functions that Accept Pipeline Input**

- Writing Functions that Accept Pipeline Input

### **Lab : Producing Complex Function Output**

- Producing Complex Function Output

### **Lab : Documenting Functions by using Content-Based Help**

- Documenting Functions by using Content-Based Help

### **Lab : Supporting -Whatif and -Confirm**

- Supporting -Whatif and -Confirm

After completing this module, students will be able to:

- Parameterize a command and create an advanced function.
- Convert a script and function into a script module.
- Define parameter attributes and input validation for a function.
- Enumerate objects by using scripting constructs.
- Modify a function to accept pipeline input.
- Produce complex pipeline output in a function.
- Document a function by using comment-based Help.
- Create functions that support ?WhatIf and ?Confirm.

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

Windows PowerShell provides commands that accomplish many of the tasks that you will need in a production environment. Sometimes, a command is not available but the .NET Framework provides an alternate means of accomplishing a task. Because Windows PowerShell is built on the .NET Framework, it is able to access those alternate means. In this module, you will learn how to discover and run Windows PowerShell commands, and how to use .NET Framework components from inside Windows PowerShell. These two techniques will provide you with the most flexibility and capability for accomplishing tasks in a production environment.

### **Lessons**

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

### **Lab : Using .NET Framework in Windows PowerShell**

- Using Static and Instance Members

After completing this module, students will be able to:

- Discover Windows PowerShell commands by using the Help system.
- Describe and use .NET Framework classes and instances in Windows PowerShell.

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

In this module, students will learn how to combine tools ? advanced functions that perform a specific task ? and a controller script that provides a user interface or automates a business process.

## Lessons

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

### Lab : Writing Controller Scripts that Display a User Interface

- Write Functions to be Used in the Controller Script
- Write a Controller Script that Implements a Text-Based Menu

### Lab : Writing Controller Scripts That Produce HTML Reports

- Writing Functions To Be Used in the Controller Script
- Writing a Controller Script That Produces HTML Reports

After completing this module, students will be able to:

- Describe the difference between tools and controller scripts.
- Write controller scripts that present a user interface.
- Write controller scripts that automate a business process.

## Module 4: Handling Script Errors

In this module, students will learn how to perform basic error handling in scripts. The focus will be about how to add error handling to existing tools, primarily as a time-saving mechanism (instead of having students write new tools). A side benefit of this approach is that it will help build the skills that you must have to analyze and reuse existing code written by someone else.

## Lessons

- Understanding Error Handling
- Handling Errors in a Script

### Lab : Handling Errors in a Script

- Handling Errors in a Script

After completing this module, students will be able to:

- Describe the shell?s default error response mechanisms.
- Add error handling code to existing tools.

## Module 5: Using XML Data Files

In this module, students will learn how to read, manipulate, and write data in XML files. XML files provide a robust, yet straightforward way to store both flat and hierarchical data. XML files are more flexible than CSV, more accessible for small amounts of data than SQL Server, and easier to code

against that Excel automation.

### **Lessons**

- Reading, Manipulating and Writing Data in XML

### **Lab : Reading, Manipulating and Writing Data in XML**

- Testing the Provided Tools
- Updating an XML Inventory Document

After completing this module, students will be able to:

- Read, manipulate, and write data in XML.

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

In this module, students will learn how to write Desired State Configuration (DSC) configuration files, deploy those files to servers, and monitor servers' configurations.

### **Lessons**

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

### **Lab : Creating and Deploying a DSC Configuration**

- Writing, Running and Pushing a DSC Configuration

After completing this module, students will be able to:

- Describe the architecture and deployment models of DSC.
- Write and deploy DSC configuration files.

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

In this module, students will learn how to use native Windows PowerShell features to analyze and debug existing scripts. These skills are also useful when students have to debug their own scripts.

### **Lessons**

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

### **Lab : Analyzing and Debugging and Existing Script**

- Analyzing and Debugging and Existing Script

After completing this module, students will be able to:

- Describe the debugging features of Windows PowerShell.
- Analyze and debug an existing script.

## **Module 8: Understanding Windows PowerShell Workflow**

In this module, students will learn about the features of the Windows PowerShell Workflow technology.

### **Lessons**

- Understanding Windows PowerShell Workflow

After completing this module, students will be able to:

- Describe the Workflow feature of Windows PowerShell.