

KOENIG SOLUTIONS · COURSE OUTLINE

Advanced Automated Administration with Windows PowerShell 4.0 (Microsoft)

Learn to build advanced PowerShell functions, controller scripts, DSC configurations and workflows for automated server administration.

8

MODULES

46

TOPICS

20

HANDS-ON ACTIVITIES

COURSE OVERVIEW

This course covers creating advanced functions, including parameter validation, pipeline input and output, and comment-based help. It then addresses using the .NET Framework and REST APIs, writing controller scripts, and handling script errors. Further modules cover working with XML, JSON and custom-formatted data, enhancing server management with Desired State Configuration and Just Enough Administration, analysing and debugging scripts, and understanding Windows PowerShell Workflow.

WHO THIS COURSE IS FOR

Systems Administrators

IT Professionals

Automation Engineers

Server Administrators

Script Developers

LEARNING OBJECTIVES

- Convert a command into an advanced function
- Create a script module with parameter validation
- Write functions that accept pipeline input and output
- Document functions using comment-based help
- Use the .NET Framework and REST API in PowerShell
- Write controller scripts for user interfaces and reports
- Handle errors and timeouts in a script
- Create and deploy a Desired State Configuration

8 Modules, 46 Topics

01

Activity

Activity

Activity

Activity

Activity

Activity

Activity

Creating Advanced Functions

This module explains how to parameterize a command into an advanced function.

LESSONS

- Converting a command into an advanced function
- Creating a script module
- Defining parameter attributes and input validation
- Writing functions that accept pipeline input
- Producing complex pipeline output
- Documenting functions by using comment-based help
- Supporting -WhatIf and -Confirm

AFTER COMPLETING THIS MODULE, STUDENTS WILL BE ABLE TO

- Convert a command into an advanced function
- Create a script module
- Define parameter attributes and input validation
- Write functions that accept pipeline input
- Produce complex pipeline output
- Document functions by using comment-based help
- Support -WhatIf and -Confirm

02

Activity

Activity

Using Microsoft .NET Framework and REST API in Windows PowerShell

This module explains how to use Microsoft .NET Framework and REST API to supplement functionality that Windows PowerShell commands provide.

LESSONS

- Using Microsoft .NET Framework in Windows PowerShell
- Using REST API in Windows PowerShell

AFTER COMPLETING THIS MODULE, STUDENTS WILL BE ABLE TO

- Use Microsoft .NET Framework in Windows PowerShell
- Use REST API in Windows PowerShell

Writing Controller Scripts

This module explains how to combine advanced functions that perform a specific task and a controller script that provides a user interface or automates a business process.

LESSONS

- Introducing controller scripts
- Writing controller scripts that display a user interface
- Writing controller scripts that produce reports

AFTER COMPLETING THIS MODULE, STUDENTS WILL BE ABLE TO

- Describe controller scripts
- Write controller scripts that display a user interface
- Write controller scripts that produce reports

Handling Script Errors

This module explains how to perform basic error handling in scripts.

LESSONS

Understanding error handling · Handling errors and timeouts in a script

AFTER COMPLETING THIS MODULE, STUDENTS WILL BE ABLE TO

Describe error handling · Handle errors and timeouts in a script

Using XML, JSON, and Custom-Formatted Data

This module explains how to read, manipulate, and write data in XML and JSON format.

LESSONS

- Reading, manipulating, and writing XML-formatted data
- Reading, manipulating, and writing JSON-formatted data
- Reading and manipulating custom-formatted data

AFTER COMPLETING THIS MODULE, STUDENTS WILL BE ABLE TO

- Read, manipulate, and write XML-formatted data
- Read, manipulate, and write JSON-formatted data
- Read and manipulate custom-formatted data

06

Activity

Activity

Enhancing Server Management with Desired State Configuration and Just Enough Administration

This module explains how to write Desired State Configuration (DSC) configuration files, deploy those files to servers, and monitor server's configurations. This module also explains how to restrict administrative access with Just Enough Administration (JEA).

LESSONS

Understanding Desired State Configuration · Creating and deploying a DSC configuration · Implementing Just Enough Administration

AFTER COMPLETING THIS MODULE, STUDENTS WILL BE ABLE TO

Understand DSC · Create and deploy a DSC configuration · Implement JEA

07

Activity

Analyzing and Debugging Scripts

This module explains how to use native Windows PowerShell features to analyze and debug existing scripts.

LESSONS

Debugging in Windows PowerShell · Analyzing and debugging an existing script

AFTER COMPLETING THIS MODULE, STUDENTS WILL BE ABLE TO

Debug in Windows PowerShell · Analyze and debug an existing script

08

Activity

Understanding Windows PowerShell Workflow

This module explains the features of the Windows PowerShell Workflow technology.

LESSONS

- Understanding Windows PowerShell Workflow

AFTER COMPLETING THIS MODULE, STUDENTS WILL BE ABLE TO

- Describe and implement the Workflow feature of Windows PowerShell

Practise What You Learn

#	MODULE	ACTIVITY
01	Creating Advanced Functions	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 accept pipeline input: Writing functions that accept pipeline input
		Lab : Producing complex pipeline output: Producing complex pipeline output
02	Using Microsoft .NET Framework and REST API in Windows PowerShell	Lab : Documenting functions by using comment-based help: Documenting functions by using comment-based help
		Lab : Supporting -WhatIf and -Confirm: Supporting -WhatIf and -Confirm
		Lab : Using Microsoft .NET Framework in Windows PowerShell: Using Microsoft .NET Framework in Windows PowerShell
		Lab : Using REST API in Windows PowerShell: Using REST API in Windows PowerShell
03	Writing Controller Scripts	LAB : WRITING CONTROLLER SCRIPTS
		■ Writing controller scripts that display a user interface
		■ Writing controller scripts that implement a text-based menu
		LAB : WRITING CONTROLLER SCRIPTS THAT PRODUCE HTML REPORTS
		■ Writing functions to be used in the controller script
04	Handling Script Errors	■ Writing a controller script that produces HTML reports
		Lab : Handling errors in a script: Handling errors in a script
05	Using XML, JSON, and Custom-Formatted Data	LAB : READING, MANIPULATING, AND WRITING XML-FORMATTED DATA
		■ Testing the provided tools
		■ Updating an XML inventory document
06	Enhancing Server Management with Desired State Configuration and Just Enough Administration	
		Lab : Creating and deploying a DSC configuration: Creating and deploying a DSC configuration
		Lab : Configuring and using JEA: Configuring and using JEA
07	Analyzing and Debugging Scripts	
		Lab : Analyzing and debugging an existing script: Analyzing and debugging an existing script
08	Understanding Windows PowerShell Workflow	
		Lab : Creating and running a Windows PowerShell Workflow: Creating and running a Windows PowerShell Workflow

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training

Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

Ready to Get Started?

Talk to a learning advisor about schedules, group training and customised delivery.

Visit koenig-solutions.com

✉ info@koenig-solutions.com