Advanced Automated Administration With Windows PowerShell

This is a 3-day course that will teach students 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.

Students will learn how to works 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 Desired State Configuration (DSC) and Just Enough Administration (JEA) to configure and secure servers.

Détails

- Code : AdvPowerS
- Durée : 3 jours (21 heures)

Public

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

Objectifs
- 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

Programme

Module 1: Creating advanced functions
- Description
  - 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
- Labs
  - 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

Module 2: Using Microsoft .NET Framework and REST API in Windows PowerShell
- Description
  - 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
- Labs
  - 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

Module 3: Writing controller scripts
- Description
  - 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
- Lab
  - Writing controller scripts
  - Writing controller scripts that display a user interface
  - Writing controller scripts that implement a text-based menu
  - 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 controller scripts
  - Write controller scripts that display a user interface
  - Write controller scripts that produce reports

Module 4: Handling script errors

- Description
  - This module explains how to perform basic error handling in scripts
- Lessons
  - Understanding error handling
  - Handling errors and timeouts in a script
- Labs
  - Handling errors in a script
- After completing this module, students will be able to:
  - Describe error handling
  - Handle errors and timeouts in a script

Module 5: Using XML, JSON, and custom-formatted data

- Description
  - 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
- Labs
  - Reading, manipulating, and writing XML-formatted data
  - Testing the provided tools
  - Updating an XML inventory document
- 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

Module 6: Enhancing server management with Desired State Configuration and Just Enough Administration

- Description
  - This module explains how to write Desired State Configuration (DSC) configuration files, deploy those files to servers, and monitor servers' 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
- Labs
  - Creating and deploying a DSC configuration
  - Configuring and using JEA
- After completing this module, students will be able to:
  - Understand DSC
  - Create and deploy a DSC configuration
  - Implement JEA

Module 7: Analyzing and debugging scripts

- Description
  - 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
- Labs
  - 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

Module 8: Understanding Windows PowerShell Workflow

- Description
  - This module explains the features of the Windows PowerShell Workflow technology
- Lessons
  - Understanding Windows PowerShell Workflow
- Labs
  - Creating and running a Windows PowerShell Workflow
- After completing this module, students will be able to:
  - Describe and implement the Workflow feature of Windows PowerShell

Modalités

- Type d'action :Acquisition des connaissances
- Moyens de la formation :Formation présentielle – 1 poste par stagiaire – 1 vidéo projecteur – Support de cours fourni à chaque stagiaire

- **Modalités pédagogiques :** Exposés – Cas pratiques – Synthèse
- **Validation :** Exercices de validation – Attestation de stages