PowerShell – Advanced Techniques («PWSA01»)

This course introduces you to advanced PowerShell programming. You will learn more extensive techniques that will broaden your horizons in professional scripting.

Duration: 3 days
Price: 2'550.–
Course documents: Digicomp courseware

Content

Advanced functions

- Convert a command into a function
- Creating a script module
- Creating parameter attributes and their validation
- Functions that process input through the pipeline
- Complex function output
- Comment-based help

Using the .NET Framework and REST API in Windows PowerShell

- .NET Framework classes, properties, and methods
- .NET Framework documentation
- Using static .NET Framework class members
- Comparing .NET Framework syntax with command syntax
- Instantiating classes and using instance members
- Creating a message box

Controlling COM objects remotely

- Basics
- Remote control using the COM application Word as an example

JEA

- Introduction to JEA
- Principles of JEA
- Creating a JEA configuration
- Application of JEA
- Advantages of JEA
- The JEA helper tool

Managing the server network

- Administration of a DNS server
- Managing a DHCP server

Using C#, VB and C++ code in Windows PowerShell

- Using C# code in Windows PowerShell
- Using VB code in Windows PowerShell
- Using C++ code in Windows PowerShell

Dealing with script errors

- Basic error handling

- Handling errors in a script
- File system management
- File system operations (refreshers)
- Determining the size of a folder
- Deleting empty folders
- File hash
- Influence file properties
- Shortcuts in the file system
- Compression
- Monitoring the file system
- File encryption

Data areas and data files

- Data areas
- Data files
- Multilingualism and localization

Using XML, JSON, and formatted data

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

Introduction to Microsoft Graph

- Introduction to Microsoft Graph and Windows PowerShell
- Regular cmdlets to Microsoft 365
- Differences and decision factors
- Introduction to App Registrations
- Connecting to Microsoft Graph via Windows PowerShell
- Microsoft Graph examples

Folder shares and share permissions in Windows PowerShell

- Folder shares and share permissions
- NTFS permissions
- Windows PowerShell examples

Workshop with tasks

- Creating a virtual machine
- Configure Active Directory role
- Creating OUs, users and groups
- Define share and NTFS permissions

Key Learnings

- Learn and develop advanced features
- Accessing .NET Framework assemblies
- Access to COM objects
- Getting to know the JEA concept and practical application
- Managing a server network (DNS/DHCP)
- Dealing with script errors
- Managing the file system
- Data areas and data files
- Reading and evaluating XML/JSON formatted data
- Getting to know the server network
- Using C#, VB and C++ code in Windows PowerShell
- Using XML, JSON and formatted data
- Introduction to Microsoft Graph
- Folder sharing and sharing permissions
- Workshop with various real-world tasks: Hyper-V, Active Directory, folder shares and NTFS permissions

Target audience

This course is designed for IT professionals who have experience with general administration of Windows Server and Windows Clients. Participants should have a working knowledge of Windows PowerShell. In addition, this course provides scripting guidance for Microsoft Azure administrators and developers supporting development environments and deployment processes.

Requirements

This course is intended for experienced Windows system administrators and for people with scripting or programming experience.You will have the opportunity to develop and solve solutions to real-world tasks.

- Automating Administration with PowerShell – Intensive Training («AZ040»)
- Windows PowerShell - Administration & Automation («PWS»)

Any questions?

We are happy to advise you on +41 44 447 21 21 or info@digicomp.ch. You can find detailed information about dates on www.digicomp.ch/courses-microsoft-technology/microsoft-powershell/course-powershell-advanced-techniques