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Powershell training: Master automation and system administration

3 days (21 hours)

Presentation

Our PowerShell training is aimed at system administrators who want to gain expertise in automation and system administration with PowerShell. This technology will enable you to automate common tasks, manage large-scale systems and improve the efficiency of your IT environment. In this course, you'll learn how to use Power Shell's advanced features, write powerful scripts and manage system administration tasks efficiently. You'll also discover how to automate processes, manage users and security policies, and solve common problems using PowerShell. As with all our training courses, this one will introduce you to the latest stable version (Powershell 7.3 at the time of writing).

Objectives

- Master PowerShell's advanced features for automation and system administration
- Write powerful PowerShell scripts to automate repetitive tasks
- Managing users, groups and security strategies with PowerShell
- Use PowerShell to solve common problems and diagnose system errors

Target audience

- DevOps engineers
- Network administrators

Prerequisites

Basic knowledge of system administration and command line concepts.

Power Shell Training Program

Introduction to PowerShell

- PowerShell fundamentals and its importance in system administration
- Installing PowerShell on different platforms and operating systems
- The PowerShell command-line environment
- Main features
- Using cmdlets
- Navigating the object hierarchy
- Data handling
- PowerShell philosophy: Why this language? Language architecture

Scripting

- Writing and executing scripts
- Variables
- Data types
- Operators
- Control structures: loops and conditions
- File and folder handling using specific cmdlets
- Best practices for organizing and documenting PowerShell scripts
- Creating PowerShell modules: Best practices and algorithms

System management

- Manage users, groups and security strategies
- Automate configuration and management of system services with scripts
- Monitor system performance and generate reports with PowerShell cmdlets
- Manage virtual machines, networks and firewalls with PowerShell
- Use advanced disk and volume management functions
- Global management and industrialization of Microsoft infrastructure services (Active Directory, Azure AD, DHCP, DNS, etc.)
- Blob Storage connectivity with PowerShell

Network administration

- Configuring and managing network devices
- Automate network parameter configuration using scripts
- Network troubleshooting using specific cmdlets
- Integration with other network management tools for centralized administration

Task automation

- Extended automation features
- Create scheduled tasks and automated backup scripts
- Interaction with third-party applications via APIs
- Installing modules and extensions
- Advanced automation techniques
  - Workflow integration
  - Using environment variables
- Interacting with the Microsoft Graph API & using PowerShell in a Microsoft Cloud environment: Microsoft 365 & Microsoft Azure
- PowerShell: your ITSM ally

Safety and troubleshooting

- Security tasks: vulnerability scanning and patch management
- Intrusion detection and log analysis techniques
- Strengthen system security by configuring security strategies

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.