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Hyper-V Core Virtualization Training

3 days (21 hours)

Overview

Hyper-V Core Virtualization is a virtualization solution from Microsoft, designed to provide a secure, high-performance platform for hosting virtual machines. Deployed without a graphical user interface, Hyper-V Core enables optimized management of server resources, while reducing attack surface and maintenance costs.

This solution is ideal for production, test or backup environments requiring stability, performance and advanced control.

This Hyper-V Core Virtualization training course will enable you to master the installation, configuration, administration and automation of a virtualized infrastructure with Hyper-V Core Server. You'll learn how to create virtual machines, configure complex virtual networks, secure your environments, automate recurring tasks and set up high-availability scenarios.

Thanks to a resolutely practical approach, you'll be able to deploy a reliable, high-performance and scalable virtualization solution.

Like all our training courses, this one will introduce you to the latest stable version of Hyper-V Core.

Objectives

- Understand the fundamentals of virtualization with Hyper-V Core
- Install, configure and administer a Hyper-V infrastructure
- Efficiently deploy and manage virtual machines
- Ensure security, backup and high availability
- Automate administration tasks via PowerShell

Target audience

- System / network administrators
- IT managers
- IT professionals wishing to manage a virtualized infrastructure with Hyper?V

Prerequisites

- Basic knowledge of Windows Server systems
- Notions of virtualization and network infrastructure
- Server administration experience recommended

Training program: Hyper-V Core Virtualization

Installing and configuring Hyper-V Core

- Introduction to Hyper-V and its use cases
- Architecture and differences between Hyper-V Core and Hyper-V under Windows Server
- Hardware requirements and system compatibility
- Step-by-step installation of Hyper-V Core Server
- Initial configuration via sconfig and remote tools
- Workshop: Complete installation of Hyper-V Core on a physical or virtual machine

Creating and managing virtual machines

- VM creation via PowerShell and remote Hyper-V Manager
- Resource settings: CPU, dynamic RAM, virtual disks
- Manage checkpoints
- Deploy a standardized VM template
- Basic network configuration (vSwitch, NAT, external/internal)
- Workshop: Deploying and configuring several VMs with simulated internal network

Storage and advanced network virtualization

- Virtual disk types (VHD/VHDX, differential, fixed, dynamic)
- Use of shared storage and redundancy strategies
- Advanced virtual switch configuration
- Network isolation, VLAN, teaming and QoS
- Integration with third-party storage solutions (SAN, NAS)
- Workshop: Creating a complete virtual infrastructure with shared storage

Security, backup and high availability

- Security best practices for Hyper-V
- Managing permissions and resource isolation
- Backing up and restoring VMs with Windows Admin Center and PowerShell

- High availability options: clustering, Live Migration
- Hyper-V replication and manual failover
- Workshop: Setting up a VM replication scenario

Administration and automation

- Using Hyper-V PowerShell for day-to-day administration
- Performance monitoring with PerfMon and Event Viewer
- Automation scripts for common tasks
- Integration into an enterprise environment: Active Directory, WSUS, etc.
- Task scheduling and VM lifecycle management
- Workshop: Creating an audit and optimization script for a Hyper-V host

Optimization and best practices

- Performance diagnostics: CPU, memory, disk I/O
- Resource optimization strategies on physical hosts
- Enterprise usage scenarios: Dev/Test, sandbox, production
- Security and sustainability recommendations
- Resolution of common Hyper-V Core failures
- Workshop: Complete audit and optimization plan for an existing Hyper-V host

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced IT 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 forthcoming course, 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.

Certification

A certificate will be awarded to each trainee who has completed the entire course.