

## Windows Server<sup>®</sup> 2008 Hyper-V<sup>™</sup> Virtualisation: Hands-On - 4 Days

*Course 968 Overview*

- You Will Learn How To**
- Implement Hyper-V to consolidate servers for optimised resource utilisation and availability
  - Effectively plan and deploy virtual machines and virtual networks
  - Roll out highly available services and applications through clustering and quick migrations
  - Centralise management of virtual machines with System Center Virtual Machine Manager (SCVMM)
  - Optimise, monitor and troubleshoot virtual machines with built-in tools and add-on solutions
  - Secure Hyper-V servers through firewalls and reduced attack surfaces
- Course Benefits** Virtualisation is a powerful enterprise technology that provides simplified administration, reduced total cost of ownership (TCO) and environmental benefits to the organisation. When properly implemented, Windows Server 2008 Hyper-V can be used to consolidate servers and ensure high availability. In this course, you gain the practical skills to deploy, manage and secure virtual machines built on Hyper-V technology.
- Who Should Attend** Server and network administrators, infrastructure architects and anyone responsible for implementing or managing virtualisation solutions based on Hyper-V. Experience with Windows Server administration is required.
- Hands-On Training** Throughout this course, extensive hands-on exercises provide practical experience deploying and managing virtual machines with Hyper-V. Exercises include:
- Planning and installing Hyper-V
  - Building efficient virtual machines
  - Constructing the virtual network topology
  - Performing quick migrations with clustered hosts
  - Leveraging SCVMM for P2V and V2V conversions
  - Remotely interfacing with the Self-Service Web Portal
  - Applying PRO Tips for increased performance
  - Configuring Hyper-V on Server Core

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## Course 968 Outline

### Deploying Microsoft Hyper-V

#### Overview of virtualisation

- Analysing the layered architecture
- Realising the financial and environmental benefits
- Contrasting Microsoft, VMware and Xen products

#### Planning the virtual infrastructure

- Meeting the hardware and software prerequisites
- Identifying potential applications for virtualisation
- Estimating capacity requirements

#### Installing and managing the hypervisor

- Adding the Windows Server role
- Hyper-V Manager
- WMI
- PowerShell

### Creating Virtual Machines

#### Implementing optimal hardware

- Accessing various storage technologies
- Local
- NAS
- iSCSI
- Fibre Channel
- Optimising CPU and memory for performance

#### Installing guest operating systems

- Contrasting physical virtualisation and paravirtualisation
- Identifying supported guest operating systems
- Migrating physical machines to VMs manually

#### Configuring extended settings

- Enhancing functionality with Integration Services
- Reverting to previous configurations with snapshots
- Expanding hard drives for increased storage

#### Backup and recovery

- Comparing host-based and VM-based strategies
- Restoring guest documents and folders
- Performing disaster recovery from system failures

### Implementing Virtual Networks

#### Connecting host networks

- Setting up the host for remote management

- Accessing shared storage

#### Enabling VM communications

- Constructing private, internal and bridged networks
- Interconnecting multiple network types

#### Optimising networking features

- Isolating network traffic with VLANs
- Increasing availability through NIC teaming

#### Clustering for High Availability

##### Building fault-tolerant hosts

- Assigning VMs to cluster resource groups
- Moving VMs with quick and live migrations

##### Creating resilient virtual machines

- Connecting to iSCSI targets for data storage
- Ensuring reliable heartbeats

#### Centralising Administration with SCVMM

##### Enhancing management capabilities

- Assembling the required components
- Navigating SCVMM with the Administrator Console

##### Organising resources with libraries

- Standardising configuration with guest OS and hardware profiles
- Rapidly deploying VMs from templates

##### Seamlessly migrating to Hyper-V

- Capturing live servers into virtual machines (P2V)
- Converting from VMware VMs to Hyper-V (V2V)

##### Streamlining remote access with the Self-Service Web Portal

- Simplifying user interaction with remote VMs
- Restricting interaction with self-service roles and policies

#### Troubleshooting and Optimising VMs

##### Monitoring system health

- Leveraging event logs to locate potential problems
- Identifying bottlenecks with the Performance Monitor
- Generating alerts with System Center Operations Manager

##### Alleviating performance issues

- Equalising processor usage with reservations and CPU shares
- Triggering remediation actions with Performance and Resource Optimisation (PRO)

#### Securing the Virtual Environment

##### Delegating administration

- Applying user-level permissions with SCVMM and Hyper-V
- Assigning roles and tasks with the Authorisation Manager

##### Hardening the parent partition

- Controlling network access with the Windows Firewall
- Minimising the footprint for increased stability
- Reducing the attack surface with Server Core