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#### Course Guide

If you're already experienced with virtualisation technologies, you can expand your skills to meet future business needs with a Microsoft virtualisation certification on Windows Server and Microsoft System Center technologies.

By completing this track, candidate will secure following certificates:

Microsoft Certified Professional – [74-409]



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#### Microsoft Hyper-V Contents

HyperV curriculum follows the Microsoft certification standards and is designed to meet the requirements of small corporate as well as enterprise needs.

## Server Virtualization with Windows Server Hyper-V and System Center (Exam 74-409)

#### Configure Hyper-V

#### Create and configure virtual machine (VM) settings

- Configure dynamic memory, configure smart paging, configure Resource Metering, configure guest integration services.
- Create and configure Generation 1 and 2 virtual machines, configure and use extended session mode, and configure RemoteFX

#### Create and configure virtual machine storage

- Create VHDs and VHDx, configure differencing drives, modify VHDs, configure pass-through disks, manage checkpoints
- Implement a virtual Fibre Channel adapter, configure storage Quality of Service

#### Create and configure virtual networks

- Configure Hyper-V virtual switches
- Optimise network performance
- Configure MAC addresses, configure network isolation, configure synthetic and legacy virtual network adapters, configure NIC teaming in virtual machines

## Configure and manage virtual machine high availability

#### Configure failover clustering with Hyper-V

- Configure shared storage, configure Quorum, configure cluster networking, restore single node or cluster configuration
- Implement Cluster Aware Updating, upgrade a cluster, configure and optimize clustered shared volumes and configure clusters without network names

#### Manage failover clustering roles

- Configure role-specific settings, including continuously available shares, configure VM monitoring
- Configure failover and preference settings and configure guest clustering

#### Manage virtual machine movement

- Perform Live Migration, perform quick migration, perform storage migration, import, export and copy VMs;
- Configure virtual machine network health protection, configure drain on shutdown
- Manage virtual-to-virtual (V2V) migrations and implement virtual machine migration between clouds

#### Implement a server virtualisation infrastructure

#### Implement virtualisation hosts

 Implement a delegation of virtualisation environment (hosts, services and virtual machines), including selfservice capabilities; implement multi-host libraries, including equivalent objects; implement host resource optimisation; integrate third-party virtualisation platforms; and deploy Hyper-V hosts to bare metal

#### Implement virtual machines

- Implement highly available VMs;
- Implement guest resource optimisation, including shared VHDx, configure placement rules, create a Virtual Machine Manager template

#### Implement virtualisation networking

- Configure Virtual Machine Manager logical networks, including virtual switch extensions and logical switches;
- Configure IP address and MAC address settings across multiple Hyper-V hosts, including network virtualization;
- Configure virtual network optimisation; plan and implement Windows Server Gateway;
- Implement VLANs and pVLANs;
- Plan and implement virtual machine networks;
- Implement converged networks

#### Implement virtualisation storage

- Configure Hyper-V host clustered storage;
- Configure Hyper-V virtual machine storage, including virtual Fibre Channel, Internet SCSI (iSCSI) and shared VHDx;
- Plan for storage optimisation;
- Plan and implement storage by using SMB 3.0 file shares

### Manage and maintain a server virtualisation infrastructure

- Manage dynamic optimisation and resource optimization
- Integrate Operations Manager with System Center Virtual Machine Manager and System Center Service Manager
- Update virtual machine images in libraries
- Implement backup and recovery of a virtualization
- Infrastructure by using System Center Data Protection Manager (DPM)

### Monitor and maintain a server virtualisation infrastructure (15–20%)

#### Plan and implement a monitoring strategy

- Planning considerations, including monitoring servers using Audit Collection Services (ACS) and System Center Global Service Monitor
- Performance monitoring, application monitoring
- Centralised monitoring and centralised reporting
- Implement and optimise System Center 2012 Operations Manager management packs; and plan for monitoring Active Directory

### Plan and implement a business continuity and disaster recovery solution

- Plan a backup and recovery strategy;
- Planning considerations, including Active Directory domain and forest recovery
- Hyper-V replica
- Domain controller restore and cloning, and Active Directory object and container restore using authoritative restore and Recycle Bin
- Plan for and implement backup and recovery by using System Center DPM

#### Practical Approach

 The real life examples will be given throughout the lectures.

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