

KOENIG SOLUTIONS • COURSE OUTLINE

Installation, Storage and Compute with Windows Server 2016 (55324AC)

12

MODULES

47

TOPICS

41

HANDS-ON ACTIVITIES

LEARNING OBJECTIVES

- Install and migrate server roles and workloads to Windows Server 2016
- Configure local storage disks and volumes
- Compare enterprise storage solutions such as DAS, NAS and SANs
- Implement Storage Spaces and Data Deduplication
- Configure Hyper-V hosts and virtual machines
- Deploy and manage Windows and Hyper-V containers using Docker
- Plan high availability and disaster recovery with failover clustering
- Configure Network Load Balancing clusters

12 Modules, 47 Topics

01

3 Activities

Installing, Upgrading, and Migrating Servers and Workloads

This module explains how to prepare for and install Windows Server 2016, including Server Core. This module also explains how to plan a server upgrade and migration strategy, how to perform a migration of server roles and workloads within and across domains, and how to choose an activation model based on environment characteristics.

TOPICS

Introducing Windows Server 2016 · Preparing and installing Server Core · Preparing for upgrades and migrations · Migrating server roles and workloads · Windows Server activation models

02

3 Activities

Configuring Local Storage

This module explains how to manage disks and volumes in Windows Server 2016.

TOPICS

Managing disks in Windows Server · Managing volumes in Windows Server

03

3 Activities

Implementing Enterprise Storage Solutions

This module explains how to understand direct-attached storage (DAS), network-attached storage (NAS), and storage area networks (SANs). It also explores the purpose of Microsoft Internet Storage Name Service (iSNS) Server, data center bridging, and Multipath I/O (MPIO). Additionally, this module compares Fibre Channel, Internet Small Computer System Interface (iSCSI), and Fibre Channel Over Ethernet (FCoE), and describes how to configure sharing in Windows Server 2016.

TOPICS

- Overview of DAS, NAS, and SANs
- Comparing Fibre Channel, iSCSI, and Fibre Channel over Ethernet
- Understanding iSNS, DCB, and MPIO
- Configuring sharing in Windows Server 2016

04

2 Activities

2 Activities

Implementing Storage Spaces and Data Deduplication

This module explains how to implement and manage Storage Spaces and Data Deduplication.

TOPICS

Implementing Storage Spaces · Managing Storage Spaces · Implementing Data Deduplication

Installing and Configuring Hyper-V and Virtual Machines

This module explains how to install Hyper-V, configure storage and networking on Hyper-V host servers, and configure and manage Hyper-V virtual machines.

TOPICS

- Overview of Hyper-V
- Installing Hyper-V
- Configuring storage on Hyper-V host servers
- Configuring networking on Hyper-V host servers
- Configuring Hyper-V virtual machines
- Managing virtual machines

Deploying and Managing Windows and Hyper-V Containers

This module explains how to deploy Windows Server and Hyper-V containers and how to install, configure, and manage containers by using Windows PowerShell and Docker.

TOPICS

- Overview of containers in Windows Server 2016
- Preparing for containers
- Installing, configuring, and managing containers by using Docker

Overview of High Availability and Disaster Recovery

This module explains how to plan high availability and disaster recovery solutions with Hyper-V virtual machines. Additionally, this module explains how to back up and restore the Windows Server 2016 operating system and data by using the Windows Server Backup feature.

TOPICS

- Defining levels of availability
- Planning high availability and disaster recovery solutions with Hyper-V virtual machines
- Backing up and restoring by using Windows Server Backup
- High Availability with failover clustering in Windows Server 2016

Implementing Failover Clustering

This module explains how to create and manage a failover cluster. Additionally, it explains how to implement high availability and stretch clustering for a site.

TOPICS

- Planning a failover cluster
- Creating and configuring a new failover cluster
- Maintaining a failover cluster
- Troubleshooting a failover cluster
- Implementing site high availability with stretch clustering

Implementing Failover Clustering with Windows Server 2016 Hyper-V

This module explains how to implement Hyper-V virtual machines in failover clusters and describes the key features for virtual machines in a clustered environment.

TOPICS

- Overview of the integration of Hyper-V Server 2016 with failover clustering
- Implementing Hyper-V VMs on failover clusters
- Key features for VMs in a clustered environment

Implementing Network Load Balancing

This module explains how to plan and configure an NLB cluster implementation. It also provides an overview of Network Load Balancing (NLB) and NLB clusters.

TOPICS

Overview of NLB · Configuring an NLB cluster · Planning an NLB implementation

Creating and Managing Deployment Images

This module explains how to create and manage deployment images by using the Microsoft Deployment Toolkit (MDT). Additionally, it describes different workloads in the virtual machine environment.

TOPICS

- Introduction to deployment images
- Creating and managing deployment images by using MDT
- Virtual machine environments for different workloads

Managing, Monitoring, and Maintaining Virtual Machine Installations

This module explains how to manage the update process with WSUS. Additionally, this module provides an overview of Windows PowerShell Desired State Configuration (DSC) and Windows Server 2016 monitoring tools.

TOPICS

- WSUS overview and deployment options
- Update management process with WSUS
- Overview of Windows PowerShell DSC
- Overview of Windows Server 2016 monitoring tools
- Using Performance Monitor
- Monitoring event logs

HANDS-ON ACTIVITIES

Practise What You Learn

#	MODULE	ACTIVITY
01	Installing, Upgrading, and Migrating Servers and Workloads	LAB 1: INSTALLING AND CONFIGURING SERVER CORE ■ Installing Server Core ■ Completing post-installation tasks on Windows Server 2016 Core ■ Performing remote management
02	Configuring Local Storage	LAB 1: CONFIGURING LOCAL STORAGE ■ Creating and managing volumes ■ Resizing volumes ■ Managing virtual hard disks
03	Implementing Enterprise Storage Solutions	LAB 1: PLANNING AND CONFIGURING STORAGE TECHNOLOGIES AND COMPONENTS ■ Planning storage requirements ■ Configuring iSCSI storage ■ Configuring and managing the share infrastructure
04	Implementing Storage Spaces and Data Deduplication	LAB 1: IMPLEMENTING STORAGE SPACES ■ Creating a Storage Space ■ Enabling and configuring storage tiering LAB 2: IMPLEMENTING DATA DEDUPLICATION ■ Installing Data Deduplication ■ Configuring Data Deduplication
05	Installing and Configuring Hyper-V and Virtual Machines	LAB 1: INSTALLING AND CONFIGURING HYPER-V ■ Verifying installation of the Hyper-V server role ■ Configuring Hyper-V networks ■ Creating and configuring virtual machines ■ Enabling nested virtualization for a virtual machine

#	MODULE	ACTIVITY
06	Deploying and Managing Windows and Hyper-V Containers	LAB 1: INSTALLING AND CONFIGURING CONTAINERS ■ Installing Docker Enterprise Edition for Windows Server 2016 ■ Installing and configuring an IIS container
07	Overview of High Availability and Disaster Recovery	LAB 1: PLANNING AND IMPLEMENTING A HIGH AVAILABILITY AND DISASTER RECOVERY SOLUTION ■ Determine the appropriate high availability and disaster recovery solution ■ Implementing storage migration ■ Configuring Hyper-V Replicas
08	Implementing Failover Clustering	LAB 1: IMPLEMENTING FAILOVER CLUSTERING ■ Creating a failover cluster ■ Verifying quorum settings and adding a node LAB 2: MANAGING A FAILOVER CLUSTER ■ Evicting a node and verifying quorum settings ■ Changing the quorum from disk witness to file-share witness and defining node voting ■ Verifying high availability
09	Implementing Failover Clustering with Windows Server 2016 Hyper-V	LAB 1: IMPLEMENTING FAILOVER CLUSTERING WITH WINDOWS SERVER 2016 HYPER-V ■ Configuring virtual environment ■ Configuring a failover cluster for Hyper-V ■ Configuring a highly available VM
10	Implementing Network Load Balancing	LAB 1: IMPLEMENTING NLB ■ Implementing a Network Load Balancing (NLB) cluster ■ Configuring and managing the NLB cluster ■ Validating high availability for the NLB cluster
11	Creating and Managing Deployment Images	LAB 1: USING MDT TO DEPLOY WINDOWS SERVER 2016 ■ Configuring MDT ■ Creating and deploying an image
12	Managing, Monitoring, and Maintaining Virtual Machine Installations	LAB 1: IMPLEMENTING WSUS AND DEPLOYING UPDATES ■ Implementing WSUS ■ Configuring update settings ■ Approving and deploying an update by using WSUS LAB 2: MONITORING AND TROUBLESHOOTING WINDOWS SERVER 2016 ■ Establishing a performance baseline ■ Identifying the source of a performance problem ■ Viewing and configuring centralized event logs

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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