

Networking with Microsoft Windows Server 2016 (MS-20741)

Modality: Virtual Classroom

Duration: 5 Days

SATV Value: 5

The exam associated with this course will retire on 31st January 2021. However, the course is still valid as training material for learning purposes.

About this course

This IT Ops training is a 5-day course which is classroom-based. It provides the basic skills required for networking for the support and deployment of Windows Server 2016 in an array of organizations. The course also covers the key aspects of IP and remote access technologies allowing the students to learn advanced content such as Software Defined Networking.

The average salary for a Windows Server Administrator is **\$69,077** per year.

Course objectives

- Implement DNS (Domain Name System)
- Configure advanced and complex networking features.
- Plan and execute IPv4 network
- Define strategies for remote access
- Execute VPNs (virtual private networks)
- Execute and supervise IPAM (IP address management)
- Implement DirectAccess
- Implement IPv6 and DHCP (Dynamic Host Configuration Protocol)
- Execute networking required within the branch offices
- Execute Software Defined Networking

Audience

This Microsoft Server 2016 training course is designed for professionals in the field of IT with some experience in networking, especially those who are willing to take a single course which will take their

skillset higher and provide them with an even advanced grasp of Windows Server 2016 networking technologies. Such an audience would have:

- Network administrators wanting to hone their current expertise in the area and learn new and advanced things about networking technology including its Windows Server 2016 functionality.
- Infrastructure or system administrators who already have a generic idea about networking, but want to gain further knowledge of advanced networking and skills required on Windows Server 2016.

In addition to these, this IT Ops training course is also perfect for professionals who plan on taking the MCSA 70-741: Networking with Windows Server 2016 exam.

Prerequisites

Anyone enrolling in this course should be equipped with the following in addition to professional experience in this field:

- Good grasp on Windows Server 2008 or 2012
- Understanding of OSI (Open Systems Interconnection) model
- Knowledge and professional experience of virtualization and Hyper-V.
- Understanding of network architectures and topologies such as LANs and WANs.
- Previous experience working with Windows 10, Windows 8.1 and other similar Windows client operating systems.
- Professional experience in Windows Server infrastructure enterprise environment.
- Good grasp on the core components of networking infrastructure as well as cabling, routers, switches, hubs, and other such technologies.
- Basic understanding of TCP/IP protocol stack, name resolution, and addressing.

To meet the prerequisites, students should have a skillset that is equivalent to: 10967A: Fundamentals of a Windows Server Infrastructure, or they can opt for the following courses to meet the abovementioned prerequisites.

Suggested Prerequisite Courses

- Installing and Configuring Windows Server 2012 (MS-20410)
- Microsoft Windows 10

Course Outline:

Module 1: Planning and implementing an IPv4 network

This module also explains how to use fundamental networking tools and techniques to configure and troubleshoot IPv4-based networks.

Lessons

- Planning IPv4 addressing
- Configuring an IPv4 host
- Managing and troubleshooting IPv4 network connectivity

Lab : Planning an IPv4 network

- Planning the IPv4 address assignments

Lab : Implementing and troubleshooting an IPv4 network

- Verifying IPv4
- Troubleshooting IPv4

After completing this module, students will be able to:

- Plan IPv4 addressing.
- Configure an IPv4 host.
- Manage and troubleshoot IPv4 network connectivity

Module 2: Implementing DHCP

This module explains how to plan and implement DHCP to support the IPv4 infrastructure.

Lessons

- Overview of the DHCP server role
- Deploying DHCP
- Managing and troubleshooting DHCP

Lab : Implementing DHCP

- Planning a DHCP server implementation
- Implementing the DHCP configuration
- Validating the DHCP implementation

After completing this module, students will be able to:

- Explain the DHCP server role.
- Deploy DHCP.
- Manage and troubleshoot DHCP.

Module 3: Implementing IPv6

This module explains how to implement IPv6, and how to integrate IPv6 and IPv4 networks.

Lessons

- Overview of IPv6 addressing
- Configuring an IPv6 host
- Implementing IPv6 and IPv4 coexistence
- Transitioning from IPv4 to IPv6

Lab : Configuring and evaluating IPv6 transition technologies

- Reviewing the default IPv6 configuration
- Implementing DHCPv6
- Configuring network integration by using ISATAP
- Configuring native IPv6 connectivity
- Configuring 6to4 connectivity

After completing this module, students will be able to:

- Describe the features and benefits of IPv6.
- Configure an IPv6 host.
- Implement the coexistence between IPv4 and IPv6 networks.
- Transition from an IPv4 network to an IPv6 network.

Module 4: Implementing DNS

This module explains how to install, configure, and troubleshoot DNS within the organization's network.

Lessons

- Implementing DNS servers
- Configuring zones in DNS
- Configuring name resolution between DNS zones
- Configuring DNS integration with Active Directory Domain Services (AD DS)
- Configuring advanced DNS settings

Lab : Planning and implementing name resolution by using DNS

- Planning DNS name resolution
- Implementing DNS servers and zones

Lab : Integrating DNS with Active Directory

- Integrating DNS with Active Directory

Lab : Configuring advanced DNS settings

- Configuring DNS policies
- Validating the DNS implementation
- Troubleshooting DNS

After completing this module, students will be able to:

- Implement DNS servers.
- Configure zones in DNS.
- Configure name resolution between DNS zones.
- Configure DNS integration with AD DS.
- Configure advanced DNS settings

Module 5: Implementing and managing IPAM

This module explains how to implement and manage the IPAM feature in Windows Server 2016. This module also explains how to use IPAM to manage services such as DHCP and DNS.

Lessons

- Overview of IPAM
- Deploying IPAM
- Managing IP address spaces by using IPAM

Lab : Implementing IPAM

- Installing the IPAM Server feature
- Provisioning the IPAM Server
- Managing IP address spaces by using IPAM

After completing this module, students will be able to:

- Describe the IPAM functionality and components.
- Deploy IPAM.
- Manage IP address spaces by using IPAM.

Module 6: Remote access in Windows Server 2016

This module explains how to plan for remote access in Windows Server 2016 and how to implement Web Application Proxy.

Lessons

- Overview of remote access
- Implementing the Web Application Proxy

Lab : Implementing Web Application Proxy

- Implementing Web Application Proxy
- Validating the Web Application Proxy deployment

After completing this module, students will be able to:

- Describe remote access.
- Implement Web Application Proxy.

Module 7: Implementing DirectAccess

This module explains how to implement and manage DirectAccess in Windows Server 2016.

Lessons

- Overview of DirectAccess
- Implementing DirectAccess by using the Getting Started Wizard
- Implementing and managing an advanced DirectAccess infrastructure

Lab : Implementing DirectAccess by using the Getting Started Wizard

- Verifying readiness for a DirectAccess deployment
- Configuring DirectAccess
- Validating the DirectAccess deployment

Lab : Deploying an advanced DirectAccess solution

- Preparing the environment for DirectAccess
- Implementing the advanced DirectAccess infrastructure
- Validating the DirectAccess deployment

After completing this module, students will be able to:

- Explain DirectAccess and how it works.
- Implement DirectAccess by using the Getting Started Wizard.
- Implement and manage an advanced DirectAccess infrastructure.

Module 8: Implementing VPNs

This module explains how to implement and manage remote access in Windows Server 2016 by using VPNs.

Lessons

- Planning VPNs
- Implementing VPNs

Lab : Implementing VPN

- Implementing VPN
- Validating the VPN deployment
- Troubleshooting VPN access

After completing this module, students will be able to:

- Plan a VPN solution.
- Implement VPNs.

Module 9: Implementing networking for branch offices

This module explains how to implement network services for branch offices.

Lessons

- Networking features and considerations for branch offices
- Implementing Distributed File System (DFS) for branch offices
- Implementing BranchCache for branch offices

Lab : Implementing DFS for branch offices

- Implementing DFS
- Validating the deployment

Lab : Implementing BranchCache

- Implementing BranchCache
- Validating the deployment

After completing this module, students will be able to:

- Describe the networking features and considerations for branch offices.
- Implement DFS for branch offices.
- Implement BranchCache for branch offices.

Module 10: Configuring advanced networking features

This module explains how to implement an advanced networking infrastructure.

Lessons

- Overview of high performance networking features
- Configuring advanced Microsoft Hyper-V networking features

Lab : Configuring advanced Hyper-V networking features

- Creating and using Hyper-V virtual switches
- Configuring and using the advanced features of a virtual switch

After completing this module, students will be able to:

- Describe the high performance networking enhancements in Windows Server 2016.
- Configure the advanced Microsoft Hyper-V networking features.

Module 11: Implementing Software Defined Networking

This module explains how to implement SDN.

Lessons

- Overview of SDN.
- Implementing network virtualization
- Implementing Network Controller

Lab : Deploying Network Controller

- Preparing to deploy Network Controller
- Deploying Network Controller

After completing this module, students will be able to:

- Describe SDN.
- Implement network virtualization.
- Implement Network Controller.