

MOC 20741 B: Networking with Windows Server 2016

Course Summary

Description

This course provides the fundamental networking skills required to deploy and support Windows Server 2016 in most organizations. It covers IP fundamentals, remote access technologies, and more advanced content including Software Defined Networking.

Objectives

By the end of the course, students will be able to:

- Plan and implement an IPv4 network.
- Implement Dynamic Host Configuration Protocol (DHCP).
- Implement IPv6.
- Implement Domain Name System (DNS).
- Implement and manage IP address management (IPAM).
- Plan for remote access.
- Implement DirectAccess.
- Implement virtual private networks (VPNs).
- Implement networking for branch offices.
- Configure advanced networking features.
- Implement Software Defined Networking.

Topics

- Planning and implementing an IPv4 network
- Implementing DHCP
- Implementing IPv6
- Implementing DNS
- Implementing and managing IPAM
- Remote access in Windows Server 2016
- Implementing DirectAccess
- Implementing VPNs
- Implementing networking for branch offices
- Configuring advanced networking features
- Implementing Software Defined Networking

Audience

This course is intended for existing IT professionals who have some networking knowledge and experience and are looking for a single course that provides insight into core and advanced networking technologies in Windows Server 2016. This audience would typically include:

- Network administrators who are looking to reinforce existing skills and learn about new networking technology changes and functionality in Windows Server 2016.
- System or Infrastructure Administrators with general networking knowledge who are looking to gain core and advanced networking knowledge and skills on Windows Server 2016.

The secondary audience for this course is those IT professionals who are looking to take the MCSA 70-741: Networking with Windows Server 2016 exam.

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Course Summary (cont.)

Prerequisite

In addition to professional experience, students who attend this training should already have the following technical knowledge:

- Experience working with Windows Server 2008 or Windows Server 2012
- Experience working in a Windows Server infrastructure enterprise environment
- Knowledge of the Open Systems Interconnection (OSI) model
- Understanding of core networking infrastructure components and technologies such as cabling, routers, hubs, and switches
- Familiarity with networking topologies and architectures such as local area networks (LANs), wide area networks (WANs) and wireless networking
- Some basic knowledge of the TCP/IP protocol stack, addressing and name resolution
- Experience with and knowledge of Hyper-V and virtualization
- Hands-on experience working with the Windows client operating systems such as Windows 8.1 or Windows 10

Duration

Five Days

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Course Outline

I. *Planning and implementing an IPv4 network*

This module explains how to plan and implement an IPv4 addressing scheme to support organizational needs. This module also explains how to use fundamental networking tools and techniques to configure and troubleshoot IPv4-based networks.

- A. Planning IPv4 addressing
- B. Configuring an IPv4 host
- C. Managing and troubleshooting IPv4 network connectivity

Lab: Planning an IPv4 network

- Planning the IPv4 address assignments

Lab : Implementing and troubleshooting an IPv4 network

- Verifying the IPv4 communication
- Troubleshooting IPv4

II. *Implementing DHCP*

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

- A. Overview of the DHCP server role
- B. Deploying DHCP
- C. Managing and troubleshooting DHCP

Lab : Implementing DHCP

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

III. *Implementing IPv6*

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

- A. Overview of IPv6 addressing
- B. Configuring an IPv6 host
- C. Implementing IPv6 and IPv4 coexistence
- D. 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

IV. *Implementing DNS*

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

- A. Implementing DNS servers
- B. Configuring zones in DNS
- C. Configuring name resolution between DNS zones
- D. Configuring DNS integration with Active Directory Domain Services (AD DS)
- E. 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 AD DS

- Integrating DNS with AD DS

Lab : Configuring advanced DNS settings

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

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Course Outline (cont.)

V. *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.

- A. Overview of IPAM
- B. Deploying IPAM
- C. 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

VI. *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.

- A. Overview of remote access
- B. Implementing Web Application Proxy

Lab : Implementing Web Application Proxy

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

VII. *Implementing DirectAccess*

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

- A. Overview of DirectAccess
- B. Implementing DirectAccess by using the Getting Started Wizard
- C. 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

VIII. *Implementing VPNs*

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

- A. Planning VPNs
- B. Implementing VPNs

Lab : Implementing a VPN

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

IX. *Implementing networking for branch offices*

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

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

Lab : Implementing DFS for branch offices

- Implementing DFS
- Validating the deployment

Lab : Implementing BranchCache

- Implementing BranchCache
- Validating the deployment

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Course Outline (cont.)

X. *Configuring advanced networking features*

This module explains how to implement an advanced networking infrastructure.

- A. Overview of high performance networking features
- B. 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

XI. *Implementing Software Defined Networking*

This module explains how to implement software defined networking.

- A. Overview of Software Defined Networking
- B. Implementing network virtualization
- C. Implementing Network Controller

Lab : Deploying Network Controller

- Preparing to deploy Network Controller
- Deploying Network Controller