



Course 20741A: Networking with Windows Server 2016

In development

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Overview

About this course

This 5-day classroom-based 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.



Audience profile

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.

At course completion

After completing this 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.

Course details

Course Outline



Module 1: 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.

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 the IPv4 configuration

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 the 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 : Implementing IPv6

Reviewing the default IPv6 configuration

Implementing DHCPv6

Lab : Configuring and evaluating IPv6 transition technologies

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

IPAM overview

Deploying IPAM

Managing IP address spaces by using IPAM

Lab : Implementing IPAM



Installing the IPAM Server feature

Provisioning the IPAM Server feature

Managing IP address spaces by using IPAM

After completing this module, students will be able to:

Describe 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

Remote access overview

Implementing Web Application Proxy

Lab : Implementing Web Application Proxy

Implementing Web Application Proxy

Validating Web Application Proxy

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 a VPN

Implementing a VPN

Validating VPN deployment

Lab : Troubleshooting VPN access

Troubleshooting VPN access

After completing this module, students will be able to:

Plan for VPNs.

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 Hyper-V networking features

Lab : Configuring advanced Hyper-V networking features

Creating and using Microsoft Hyper-V virtual switches

Configuring and using the advanced features of a virtual switch

After completing this module, students will be able to:

Describe high performance networking features.

Configure advanced Hyper-V networking features.

Module 11: Implementing software defined networking

This module explains how to implement software defined networking.

Lessons

Overview of software defined networking

Implementing network virtualization

Implementing Network Controller



Lab : Implementing Network Controller

Deploying Network Controller

Configuring network services with Network Controller

Managing and monitoring with Network Controller

After completing this module, students will be able to:

Describe software defined networking.

Implement network virtualization.

Implement Network Controller.

Prerequisites

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