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## Networking with Windows Server 2016 MCSA (Required)

DURATION: 5 DAYS

COURSE CODE: M20741

FORMAT: LECTURE/LAB

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### WHY FIREFLY

Firefly is trusted by customers, technology vendors and channel partners around the world to deliver highly effective, immersive educational experiences. Our innovative, role-based Microsoft training covers all of the latest certifications, from Azure to Server 2016 to SQL to the modern desktop, and is designed engineers the skills they need to remain relevant in today's multcloud world.

### PREREQUISITES

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

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### WHO SHOULD ATTEND

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.

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### LEARNING OBJECTIVES

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

## DESCRIPTION

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.

## COURSE OUTLINE

### 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.

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

### 2. Implementing DHCP

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

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

### 3. Implementing IPv6

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

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

### 4. Implementing DNS

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

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

### 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.

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

### 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.

Overview of remote access

Implementing the Web Application Proxy

#### Lab : Implementing Web Application Proxy

Implementing Web Application Proxy

Validating the Web Application Proxy deployment

### 7. Implementing DirectAccess

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

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

## COURSE OUTLINE

- 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

## 8. Implementing VPNs

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

- Planning VPNs
- Implementing VPNs

### Lab : Implementing VPN

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

## 9. Implementing networking for branch offices

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

- 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

## 10. Configuring advanced networking features

This module explains how to implement an advanced networking infrastructure.

- 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

## 11. Implementing Software Defined Networking

This module explains how to implement SDN.

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

### Lab : Deploying Network Controller

- Preparing to deploy Network Controller
- Deploying Network Controller