Fundamentals of Windows Server 2008 Network and Applications Infrastructure

About this Course
This five-day instructor-led course introduces students to network and applications infrastructure concepts and configurations provided by Window Server 2008. Students will be able to acquire a fundamental understanding in order to pursue advanced topics available for certification in the network and applications infrastructure areas.
Audience Profile
This course is intended for new IT employees or Desktop Support workers moving into server support. The information in this course allows them acquire a fundamental understanding of Windows networks to pursue advanced topics. This course is also useful for those migrating from competitive platforms to Windows Server 2008.
At Course Completion
After completing this course, students will be able to:

- Describe the fundamentals of an enterprise networking environment.
- Describe the typical roles of IT Professionals in an enterprise environment.
- Describe TCP/IPv4 configurations, protocols, and tools.
- Describe the fundamentals of communication technologies.
- Create an IPv4 address range and subnet.
- Configure IPv6 addresses.
- Administer a Windows 2008 server.
- Describe basic security concepts for server roles.
- Describe how to secure network traffic by using certificates.
- Configure Windows Firewall.
- Configure and troubleshoot remote access.
- Describe routing concepts, protocols, and quality of service.
- Configure and test network load balancing.
- Configure network print resources and printing pools.
- Describe the functions included with Windows Server Virtualization (WSV).

Course OutlineModule 1: Fundamentals of Network Infrastructure
This module describes the fundamentals of an enterprise networking environment, which consists of Windows Infrastructure Services, Windows Application Platform Services, and Active Directory.
Lessons

- Network Communication Standards
- Physical Network Infrastructure
- Logical Network Organization
- Overview of Active Directory

- Server Roles

Lab : Identifying Network Components

- Creating a Network Diagram
- Expanding the Network Diagram

After completing this module, students will be able to:

- Describe the purpose of network communication standards and the OSI model.
- Describe the components of physical network infrastructure.
- Describe the logical organization of networks.
- Describe the characteristics of Active Directory components.
- Describe server roles and how they are categorized.

Module 2: IT Professionals in the Enterprise
This module describes the IT Professional roles (and their respective responsibilities) that may exist in a typical enterprise environment.
Lessons

- IT Professional Roles
- IT Management and Processes
- Professional Development for IT Professionals

Lab : Developing a Training Plan

- Reviewing Information about Microsoft Learning Resources
- Creating a Training Plan

After completing this module, students will be able to:

- Describe the IT professional roles.
- Describe IT management and processes.
- Describe options for the professional development of IT professionals.

Module 3: Configuring Basic TCP/IPv4
This module describes the TCP/IPv4 configuration, protocols and the tools used to validate configurations.
Lessons

- Overview of the TCP/IP Protocol Suite
- Overview of TCP/IP Addressing
- Name Resolution
- Dynamic IP Addressing
- TCP/IPv4 Tools

Lab : Configuring Basic TCP/IPv4 Settings and Validating TCP/IPv4 Connectivity

- Configuring a Dynamic IP Address
- Configuring a Static IP Address
- Testing DNS Configuration
- Connecting to a Web Application

After completing this module, students will be able to:

- Describe the TCP/IP protocol suite and the individual protocols that are part of it.
- Describe the components of IPv4 addressing.
- Describe NetBIOS and DNS name resolution.
- Describe how IPv4 addresses can be assigned dynamically.
- Describe tools that can be used to manage and monitor IPv4.

Module 4: Fundamentals of Communication Technologies
This module describes static and dynamic HTTP content, how to differentiate between the two, and the various mechanisms used by TCP/IPv4 to send and receive data traffic.
Lessons

- Network Content Types
- Packet Delivery Methods

Module 5: Creating IPv4 Address Spaces
This module explains how to define and create an IPv4 address range and subnetting for a network.
Lessons

- Overview of IP Communication
- Subnetting Overview
- Subnetting for Complex Networks

Lab : Creating IPv4 Address Spaces

- Defining the Subnet Mask for a WAN
- Defining the Hosts for a Network

After completing this module, students will be able to:

- Describe the IPv4 communication process between computers.
- Describe the concept of subnetting.
- Create IPv4 networks by performing subnetting.

Module 6: IPv6 Fundamentals
This module introduces IPv6, describes the differences between IPV4 and IPv6, and explains how to configure IPv6 addresses.

Lessons

- Introduction to IPv6
- Unicast IPv6 Addresses
- Configuring IPv6

Lab : Configuring IPv6

- Defining IPv6 Networks for Internal Use
- Configuring a Static IPv6 Address on a Server

After completing this module, students will be able to:

- Describe the characteristics of IPv6.
- Describe the characteristics of IPv6 unicast addresses.
- Describe how IPv6 can be configured automatically and statically.

Module 7: Fundamentals of Administering Windows Server 2008
This module explains how to use the administrative tools available in Windows 2008
server to monitor system performance, monitor system status, and manage a server from
a remote computer rather than the server console.
Lessons

- Using Windows Server 2008 Administrative Tools
- Monitoring Performance
- Monitoring Events
- Using Remote Desktop for Administration
- Configuring Security for Server Administration

Lab : Administering Windows Server 2008

- Joining a Server to the Domain
- Configuring Remote Desktop for Administration
- Centralizing Event Logging
- Resolving a Performance Issue by Using Reliability and Performance Monitor

After completing this module, students will be able to:

- Describe common Windows Server 2008 Administrative Tools.
- Describe how to monitor performance.
- Describe how to monitor events.
- Describe how to use Remote Desktop for administration.
- Describe how to configure security for server administration.

Module 8: Security Fundamentals
This module introduces basic industry standard security concepts for server roles.

Lessons

- Defense-in-Depth
- Securing Access to Web Content
- Securing Access to Files
- Data Encryption

Lab : Configuring Data Security

- Creating a Simple Share
- Creating an Advanced Share
- Configuring Web Content for Anonymous Access
- Securing Web Content

After completing this module, students will be able to:

- Describe how Defense in Depth is used to secure computers.
- Describe how to secure access to Web content.
- Describe how to secure access to files.
- Describe data encryption and how it is used to protect data on disk.

Module 9: Fundamentals of Securing Network Communication
This module describes how to secure network traffic by using certificates.
Lessons

- Public Key Infrastructure
- Using Certificates

Lab : Securing a Web Site by using SSL

- Verifying the Trusted Root CA
- Securing a Web site by using SSL

After completing this module, students will be able to:

- Describe public key infrastructure components and certificates.
- Describe methods for securing network communication by using certificates.

Module 10: Windows Firewall and Caching Fundamentals
This module describes proxy and caching services; how to configure Windows Firewall
by creating exceptions and modifying firewall rules; how to configure auditing and
monitoring; and how to troubleshoot Windows Firewall.
Lessons

- Overview of Perimeter Security
- Windows Firewall Overview

- Creating Windows Firewall Rules
- Monitoring and Troubleshooting Windows Firewall

Lab : Using Windows Firewall

- Limiting Access to a Web Application
- Distributing Windows Firewall Rules by Using Group Policy

After completing this module, students will be able to:

- Describe firewall and proxy server characteristics.
- Describe Windows Firewall and how to perform basic administration.
- Describe how to create Windows Firewall rules.
- Describe how to monitor and troubleshoot Windows Firewall.

Module 11: Remote Access Fundamentals
This module explains how to configure network policies, configure a radius proxy, and how to troubleshoot NPS as a radius proxy.
Lessons

- Remote Access Overview
- RADIUS Overview
- Network Policy Server
- Troubleshooting Remote Access

Lab : Implementing Remote Access

- Implementing a VPN server
- Implementing a RADIUS server
- Implementing a RADIUS proxy

After completing this module, students will be able to:

- Describe the characteristics of remote access methods.
- Describe how RADIUS is used.
- Describe how to implement network policies on a Network Policy Server.
- Describe how to troubleshoot remote access.

Module 12: Routing Fundamentals
This module describes routing concepts and protocols, and explains how quality of service can be used within a network environment.
Lessons

- Routing Overview
- Configuring Routing and Remote Access as a Router

- Quality of Service

Lab : Configuring Routing

- Configuring a LAN Router
- Implementing RIPv2
- Configuring a Demand-dial Router
- Configuring QoS

After completing this module, students will be able to:

- Describe routing protocols and routing tables.
- Describe how to configure RRAS as a LAN router.
- Describe Quality of Service (QoS) and how to implement it.

Module 13: Network Load Balancing Fundamentals
This module explains how to configure and test network load balancing.
Lessons

- Server Availability and Scalability Overview
- Network Load Balancing
- Configuring Windows NLB

Lab : Implementing Network Load Balancing

- Preparing Web Servers for NLB
- Creating an NLB Cluster for Failover
- Configuring an NLB Cluster for Load Balancing

After completing this module, students will be able to:

- Describe server availability and scalability options.
- Describe Windows Network Load Balancing.
- Describe how to configure Windows Network Load Balancing.

Module 14: Configuring Print Resources and Printing Pools
This module explains how to configure network print resources and printing pools.
Lessons

- Printing Overview
- Configuring Network Printers
- Using Print Management
- Managing Printers
- Troubleshooting Network Printing

Lab : Implementing Printing

- Creating an XPS document
- Adding a Printer by Using Control Panel
- Using Print Management
- Deploying Printers by Using Group Policy
- Migrating a Printer to a New Server

After completing this module, students will be able to:

- Describe the printing process.
- Describe how to configure network printers.
- Describe how to manage servers by using Print Management.
- Describe how to manage printers by using Print Management.
- Describe how to troubleshoot network printing.

Module 15: Server Virtualization Overview
This module describes the fundamental functions included with Windows Server Virtualization (WSV).
Lessons

- Overview of Server Virtualization
- Overview of Windows Server Virtualization
- Creating a Virtual Environment