

# 70-642 R4: Configuring Windows Server 2008 Network Infrastructure

## Course Introduction

4 m

## Chapter 01 - Understanding and Configuring IP

1h 55m

### **Lesson: Introducing the OSI Model**

Understanding the Network Layers

OSI Model

The Encapsulation Process

OSI vs TCP/IP Model

### **Lesson: How IPv4 Works**

Ipv4 Address Structure

Why the Subnet Mask

How to Convert Binary to Decimal and Vice-Versa

Understanding What Routing and Default Gateways Are

Discussion of RFC 1918

### **Lesson: Increasing Networks with Subnetting**

What is Subnetting

Demo - IP Addressing

### **Lesson: What's New with IPv6**

Introducing IPv6

IPv6 Address Types

IPv6 Transition Technologies

### **Lesson: Configuring Windows with an IPv4 Address**

Configuring Networking Properties for Vista and 2008 Server

Viewing Network Connections

Network Connection Components

Methods of Configuring and Verifying an IP Address

Troubleshooting Network Connectivity

Demo - Configuring IP

Demo - Testing Connectivity

Chapter 01 Review

## Chapter 02 - Configuring IP Based Solutions

3h 21m

### **Lesson: Why Use a DHCP Server**

What are DHCP Address Assignments?

Configuring the Address Leases

Understanding the DHCP Scope

Adding the DHCP Server Role

What is the DHCPv6 Stateless Role?

Demo - DHCP

Demo - DHCP Options

### **Lesson: Creating DHCP Servers for Your Network**

Post-Installation Tasks

Other DHCP Options

DHCP on the Server Core

### **Lesson: How Windows Performs Name to IP Resolution**

Name Resolution Methods in Windows

Broadcast Name Resolution

WINS Server Name Resolution

### **Lesson: Configuring Windows to Use DNS**

Specifying DNS Servers

The Suffix Search List

How to Clear the Client's Cache

Using Dynamic Update Settings

Demo - DNS Client

**Lesson: How Does DNS Really Work**

How a DNS Query Works

DNS Query Example

DNS Query Illustrated

How Caching Works

Demo - Name Resolution

**Lesson: Deploying DNS Servers**

DNS on DC Deployment

Using Server-Core for DNS Services

Making a Stand-Alone or Member-Server DNS

Configuring a Caching-only DNS Server

Configuring Server Properties

Demo - Configuring DNS

**Lesson: DNS Configurable Options**

Integrating WINS records into DNS

Aging and Scavenging

Demo - Global Names Zone

**Lesson: Managing Different Types of DNS Zones**

How to Create Zones

The Scope of AD Zone Replication

Creating and Using the Forward and/or Reverse Lookup Zone

Using Dynamic Updates

Exploring the Built-in Resource Records

**Lesson: Configuring Zone Replication and Transfers**

Configure a Zone Replication Scope for Active Directory

Choosing Zone Replication Scope

Creating Custom Application Directory Partitions

Zone Transfers

Implementing Stub Zones

Demo - Secondary Zone

Chapter 02 Review

**Chapter 03 - Understanding IP Routing**

1h 12m

**Lesson: Routing Explained**

Routing Overview

Routing Process

Tools Used to Verify Routing

**Lesson: Router Communication Protocols**

Routing Protocols

Routing and Remote Access

Demo - IP Routing

Demo - Routing Protocols

Chapter 03 Review

**Chapter 04 - Connecting Windows to the LAN**

1h 32m

**Lesson: NAT Explained**

NAT Concepts

Windows 2008 NAT Options

**Lesson: Making NAT Work**

Configuring ICS

Configuring NAT using RRAS

Troubleshooting NAT

**Lesson: Remote Access to Other Networks**

Remote Access Overview

Configuring VPN Connections

Configuring Dial-Up Server  
Configuring the VPN Server  
Other Options  
Testing Connectivity  
Demo - VPN Connections  
**Lesson: WiFi Basics**  
Wireless Networking Concepts  
Wireless Networking Standards  
Wireless Security Standards  
Wireless Infrastructure  
Authenticating Wireless with Windows Server 2008  
Connecting to Wireless Networks  
Best Practices  
Demo - Wireless Network  
Demo - Wireless Group Policy  
Chapter 04 Review

## **Chapter 05 - Securing the Client, Network, and Communications**

3h 5m

### **Lesson: Communication Security: IPSec**

Explaining IPSec  
IPSec Policies  
Understanding Connection Security Rules  
Security Associations  
How IPSec Establishes Connections  
What Authentication Methods can be used with IPSec

### **Lesson: Enforcing IPSec with Policies**

Looking at the Predefined IPSec Policies  
Using the IPSec Security Rule Wizard  
Using the Connection Security Rule Wizard  
Demo - IPSec

### **Lesson: Network Security with NAP**

Concepts of NAP  
System Health Agents and Validators  
The NAP Process  
Planning NAP Deployment  
Installing and Configuring NAP

### **Lesson: Client Security with Windows Firewall**

Why are Firewalls Important?  
Outbound Filtering  
Inbound Filtering  
Firewall Scope  
Using Group Policies  
Authorizing Connections  
Demo - Windows Firewall Inbound  
Demo - Windows Firewall Outbound

### **Lesson: Other Security Solutions**

Other Configurations  
IPSec Rules  
802.1x Configuration  
Configuring DHCP  
Configuring NAP Components  
Configuring SHVs  
Configuring Network Policies  
Demo - Install NAP  
Demo - NPS  
Demo - SHV

Demo - Health Policy  
Chapter 05 Review

## **Chapter 06 - Managing Files**

1h 37m

### **Lesson: Working with File Security**

NTFS Files Permissions

NTFS Permissions

Methods of Securing Files

### **Lesson: Server Role - File Services**

The File Services Server Role

Using Quotas

Configuring Quotas

### **Lesson: Using DFS**

Sharing Folders

DFS Overview

Installing DFS

Demo - DFS

### **Lesson: Using EFS**

EFS

How to Encrypt a File/Folder

Sharing Encrypted Files

Configuring EFS Using GPS

Demo - File Security

Demo - EFS

### **Lesson: Performing a Backup and Restore**

Shadow Copies

Managing Shadow Copies

Windows Server Backup

Recovery

Demo - Back Up

Chapter 06 Review

## **Chapter 07 - Monitoring Systems**

1h 41m

### **Lesson: How to Install and Use Network Monitor**

Installing Network Monitor

Analyze Network Data

Demo - Network Monitor

### **Lesson: Windows Performance and Reliability Monitoring**

Performance Monitor

Reliability Monitor

Built-In Data Collector Sets

Demo - WRPM

### **Lesson: Looking at Event Logs**

Event Forwarding Concepts

### **Lesson: Configuring Event Forwarding**

How to Configure Event Forwarding

Configuring the Collecting Computer

Creating a Subscription

Configure Event Forwarding to use HTTPS

Demo - Monitoring Events

Chapter 07 Review

## **Chapter 08 - Managing Printers**

37m

### **Lesson: Server Role: Print Services**

Installing the Print Services Server Role

Installing Printers

### **Lesson: How to Share Printers**

Sharing Printers

Printer Pooling

Printer Priority

Managing Internet Printing

Generating Notifications

Migrating Printers

Managing Printers with the CLI

Demo - Managing Printers

Demo - Web Printing

Chapter 08 Review

## **Chapter 09 - Securing Windows Through Updates**

43m

### **Lesson: What is Windows Server Update Services**

WSUS Overview

WSUS Architecture

WSUS Minimum Requirements

### **Lesson: Planning & Deploying the WSUS Installation**

Planning for the WSUS Installation

Auditing Updates

Demo - Install WSUS

### **Lesson: Using Windows Server Update Services**

WSUS

How to Troubleshoot Update Problems

How to Remove Updates

Chapter 09 Review

Course Closure

Total Duration: 15h 47m