Hands-On

MCSA CORE-Courses 1 & 2

Exam Prep 70-290 and 70-291

Course Description

This extensive Hands-On course will combine the two CORE-Courses for the MCSA Certification Track, preparing you for the following exams

Exam 70-290 Implementing a Microsoft Windows Server 2003 Network Infrastructure Network Hosts

Exam 70-291 Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure Network Services

This course will provide the knowledge and skills you need to manage accounts and resources, maintain server resources, monitor server performance, and safeguard data in a Microsoft Windows Server 2003/2007 environment...

combined with the knowledge and skills you need to implement, manage, and maintain a Microsoft Windows Server 2003/2007 network infrastructure. Learn to execute routing and to implement, manage, and maintain Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), and Windows Internet Name Service (WINS). Secure Internet Protocol (IP) traffic with Internet Protocol security (IPSec) and certificates, and implement a network access infrastructure by configuring the connections for remote access clients. You'll also learn to manage and monitor network access.

Students Will Learn

- **CORE-1**
- **Describe the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol architecture.**
- **Convert Internet Protocol (IP) addresses between decimal and binary.**
- **Calculate a subnet mask.**
- **Create subnets using Variable-Length Subnet Mask (VLSM) and Classless Inter-Domain Routing (CIDR).**
- **Configure a host to use a static IP address.**
- **Assign IP addresses in a multiple subnet network.**
- **Describe the IP routing process.**
- **Configure a host to obtain an IP address automatically.**
- **Configure a host so that automatic private IP address configuration is disabled.**
- **Configure a host to use name servers.**
- **Isolate common connectivity issues.**
- **CORE-2**
- **Use DHCP to allocate IP addressing.**
- **Manage and monitor DHCP.**
- **Resolve names.**
- **Resolve host names by using DNS.**

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- **Manage the integration of Active Directory and DNS.**
- **Manage and monitor DNS.**
- **Use WINS to resolve network basic input/output system (NetBIOS) names.**
- **Secure network traffic using IPSec and certificates.**
- **Configure routing with the Routing and Remote Access service.**
- **Configure network access.**
- **Manage and monitor network access.**

Target Audience

Systems administrators, systems engineers, and who are responsible for implementing, managing, and maintaining server networking technologies. This course is geared for those seeking this field and/or to obtain their MCSA Certification.

Prerequisites

Strong computer and networking skills and/or A+ Certification and Network+.

Course Outline

CORE - 1

Module 1: Reviewing the Suite of TCP/IP Protocols

This module reviews the suite of TCP/IP protocols. By understanding the function of each of the protocols and how the protocols relate to each other, you have the context for understanding network administration tasks and network troubleshooting.Lessons

- Overview of the OSI Model
- Overview of the TCP/IP Protocol Suite
- Viewing Frames Using Network Monitor

After completing this module, students will be able to:

- Describe the architecture of the OSI reference model and the function of each layer.
- Describe the four layers of the TCP/IP protocol suite.
- Capture and view frames by using Network Monitor.

Module 2: Assigning IP Addresses in a Multiple Subnet Network

This module explains how to construct and assign IP addresses and how to isolate addressing issues associated with the IP routing process.Lessons

- Configuring IP Addressing for Simple Networks
- Configuring IP Addressing for Complex Networks
- Using IP Routing Tables

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- Overcoming Limitations of the IP Addressing Scheme

Lab : Assigning IP Addresses in a Multiple Subnet Network
- Defining the Subnet Mask for a WAN
- Defining the Subnet Mask for Supernetting Four Class C Networks

After completing this module, students will be able to:
- Explain how to configure IP addressing for simple TCP/IP networks.
- Explain how to configure IP addressing for complex TCP/IP networks.
- Describe routing protocols and how they are used.
- Overcome limitations that are caused by class-based routing.

Module 3: Configuring a Client IP Address

This module describes how to configure an IP address for a client computer running Microsoft Windows Server 2003.Lessons
- Configuring a Client to Use a Static IP Address
- Configuring a Client to Obtain an IP Address Automatically
- Using Alternate Configuration

Lab : Configuring Hosts to Connect to a Network Running the TCP/IP Protocol Suite
- Viewing DHCP Packets

After completing this module, students will be able to:
- Configure a client to use a static IP address.
- Configure a client to obtain an IP address automatically by using DHCP.
- Configure a client to obtain an IP address automatically by using Alternate Configuration

Module 4: Configuring a Client for Name Resolution

This module describes the various types of name resolution mechanisms provided by the Windows operating systems and how to use and configure them for clients on your network.Lessons
- Overview of Name Resolution
- Resolving Host Names
- Resolving NetBIOS Names

Lab : Configuring a Client for Name Resolution
- Viewing DNS Packets

After completing this module, students will be able to:
- Describe how name resolution occurs.
- Describe how host names are used and resolved.
- Describe how NetBIOS names are used and resolved.

Module 5: Isolating Common Connectivity Issues

This module explains how to isolate common connectivity issues and describes how to use utilities as part of this process.Lessons

- Analyzing Client Startup Communication
- Determining the Causes of Connectivity Issues
- Using Network Utilities and Tools to Isolate Connectivity Issues

Lab : Isolating Common Connectivity Issues

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- Documenting Your Current Environment
- Resolving Connectivity Issues

After completing this module, students will be able to:
- Determine the causes of connectivity issues.
- Describe utilities and tools to resolve connectivity issues.
- Describe the client startup communication process.

CORE - 2

Module 1: Allocating IP Addressing by Using Dynamic Host Configuration Protocol (DHCP) This module provides you with the knowledge and skills to allocate IP addressing in a network environment.Lessons

- Multimedia: The Role of DHCP in the Network Infrastructure
- Adding and Authorizing a DHCP Server Service
- Configuring a DHCP Scope
- Configuring DHCP Reservations and Options
- Configuring a DHCP Relay Agent

Lab : Identifying and Resolving Common Issues When Allocating IP Addressing by Using DHCP
- Identifying and Resolving Common Issues When Allocating IP Addressing by Using DHCP

After completing this module, students will be able to:
- Describe the role of DHCP in the network infrastructure.
- Add and authorize a DHCP Server service.
- Configure a DHCP scope.
- Configure DHCP reservations and options.
- Configure a DHCP relay agent.

Module 2: Managing and Monitoring Dynamic Host Configuration Protocol (DHCP)

This module provides you with the knowledge and skills to manage the DHCP service to reflect changing client IP addressing needs. It also provides you with the knowledge and skills to monitor DHCP server performance, because the DHCP environment is dynamic.Lessons
- Managing a DHCP Database
- Monitoring DHCP
- Applying Security Guidelines for DHCP

Lab : Managing and Monitoring DHCP
- Managing and Monitoring DHCP

After completing this module, students will be able to:
- Manage a DHCP database.
- Monitor DHCP.
- Apply security guidelines for DHCP.

Module 3: Resolving Names

This module provides you with the knowledge and skills to assign computer names to the IP addresses of the source and destination hosts, and then use the computer name to contact the hosts.Lessons

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- Multimedia: Introduction to the Name Resolution Process
- Viewing Names on a Client
- Configuring Host Name Resolution
- Configuring NetBIOS Name Resolution

Lab : Resolving Names
- Troubleshooting Name Resolution

After completing this module, students will be able to:
- Describe the name resolution process.
- View names on a client.
- Configure host name resolution.
- Configure NetBIOS name resolution.

Module 4: Resolving Host Names by Using Domain Name System (DNS)

This module provides you with the knowledge and skills to resolve host names by using Domain Name System.Lessons
- Multimedia: The Role of DNS in the Network Infrastructure
- Installing the DNS Server Service
- Configuring the DNS Server Service
- Configuring the DNS Zones
- Configuring DNS Zone Transfers
- Configuring a DNS Client

Lab : Resolving Host Names by Using Domain Name System
- Implementing a DNS Infrastructure

After completing this module, students will be able to:
- Describe the role of DNS in the network infrastructure.
- Install the DNS Server service.
- Configure the DNS Server service.
- Configure the DNS zones.
- Configure DNS zone transfers.
- Configure a DNS client.

Module 5: Integrating Domain Name System and Active Directory

Integrating Domain Name System and Active Directory This module provides you with the ability to manage integration between Active Directory directory service and Domain Name System (DNS).Lessons

- **Configuring Active Directory Integrated Zones**
- **Configuring DNS Dynamic Updates**
- **Understanding How Active Directory Uses DNS**

Lab : Integrating DNS and Active Directory
- **Configuring Active Directory Integrated DNS Zones**

After completing this module, students will be able to:
- **Describe how Active Directory integrated zones function.**
- **Configure DNS to support dynamic updates.**
- **Explain how Active Directory uses DNS.**

Module 6: Managing and Monitoring Domain Name System (DNS)

This module provides you with the knowledge and skills to manage and monitor DNS servers to ensure that they are functioning properly and to optimize network performance.Lessons

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- **Managing DNS Records**
- **Testing the DNS Server Configuration**
- **Monitoring DNS Server Performance**

Lab : Managing and Monitoring DNS

- **Managing and Monitoring DNS**

After completing this module, students will be able to:

- **Manage the properties of DNS records.**
- **Test DNS server configuration.**
- **Monitor DNS server performance.**

Module 7: Resolving NetBIOS Names by Using Windows Internet Name Service (WINS)

This module provides you with the knowledge and skills to use WINS to register NetBIOS names and resolve them to IP addresses.Lessons

- **Multimedia: The Role of WINS in the Network Infrastructure**
- **Installing and Configuring a WINS Server**
- **Managing Records in WINS**
- **Configuring WINS Replication**
- **Managing the WINS database**

After completing this module, students will be able to:

- **Describe the role of WINS in the network infrastructure.**
- **Install and configure a WINS server.**
- **Manage records in WINS.**
- **Configure WINS replication.**
- **Manage a WINS database.**

Module 8: Configuring Routing by Using Routing and Remote Access

This module provides you with the knowledge and skills to configure a routing solution for your network environment.Lessons

- **Multimedia: The Role of Routing in the Network Infrastructure**
- **Enabling and Configuring the Routing and Remote Access Service**
- **Configuring Packet Filters**

Lab : Configuring Routing by Using Routing and Remote Access

- **Configure Routing and Remote Access**
- **Plan a Routing Topology**

After completing this module, students will be able to:

- **Describe the role of routing in the network infrastructure.**
- **Enable and configure the Routing and Remote Access service.**
- **Configure packet filters.**

Module 9: Securing Network Traffic by Using IPSec and Certificates

This module provides you with the knowledge and skills to secure network traffic and to use certificates with IPSec for increased security.Lessons

- **Implementing IPSec**

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- **Understanding IPSec Deployment Scenarios**
- **Monitoring IPSec**

After completing this module, students will be able to:

- **Implement IPSec.**
- **Understand IPSec deployment scenarios.**
- **Monitor IPSec.**

Module 10: Configuring Network Access

This module provides you with the knowledge and skills to configure a server with the Routing and Remote Access service, create appropriate remote access connections on a network access server, and configure users' access rights.Lessons

- **Introduction to a Network Access Infrastructure**
- **Configuring VPN Access**
- **Configuring Dial-up Access**
- **Configuring Wireless Access**
- **Controlling User Access to a Network**
- **Centralizing Network Access Authentication by Using IAS**
- **Protecting Remote Access by Using Network Access Quarantine**

After completing this module, students will be able to:

- **Describe a network access infrastructure.**
- **Configure a virtual private network (VPN) connection.**
- **Configure a dial-up connection.**
- **Configure a wireless connection.**
- **Control remote user access to a network.**
- **Centralize authentication and policy management for network access by using IAS.**
- **Control remote access to your network by using Network Access Quarantine.**

Module 11: Managing and Monitoring Network Access

This module provides you with the knowledge and skills to manage and monitor network access.Lessons

- **Managing the Network Access Services**
- **Configuring Logging on a Network Access Server**
- **Collecting and Monitoring Network Access Data**

Lab : Managing and Monitoring Remote Access

- **Monitoring a Remote Access Server**

After completing this module, students will be able to:

- **Manage the network access services.**
- **Configure logging on the network access server.**
- **Collect and monitor network access data.**

Delivery Method

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Instructor led with numerous Hands-On labs and exercises.

Equipment Requirements

(This apply's to our hands-on courses only)

BTS always provides equipment to have a very successful Hands-On course. BTS also encourages all attendees to bring their own equipment to the course. This will provide attendees the opportunity to incorporate their own gear into the labs and gain valuable training using their specific equipment.

Course Length

5 Days

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