

### **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 TCP/IP protocol layers.
- Associate the protocols of the TCP/IP suite with those of the OSI model.
- Describe the function of the protocols at each layer of the TCP/IP model.
- Describe how a frame moves through the TCP/IP layers and what happens at each layer.

### **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**

- Assigning IP Addresses
- Creating a Subnet
- Using IP Routing Tables
- Overcoming Limitations of the IP Addressing Scheme

After completing this module, students will be able to:

- Convert IP Addresses from decimal to binary.
- Create a subnet.
- Calculate a subnet mask.
- Use an IP routing table.
- Create subnets using VLSM and CIDR.
- Reduce the number of wasted IP addresses.

### **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 Host to Obtain an IP Address Automatically
- Using Alternate Configuration

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**

- Resolving Client Names
- Managing the ARP Cache
- Overview of NetBIOS
- Using Static Naming Methods
- Using Dynamic Naming Methods
- Summarizing the Name Resolution Process

After completing this module, students will be able to:

- Describe how client names are resolved.
- Use Address Resolution Protocol (ARP) to identify client media access control (MAC) addresses.
- Describe the function of Network Basic Input/Output System (NetBIOS).
- Configure a client to use a static IP address.
- Configure a client to use name resolution servers.

#### **Module 5: Isolating Common Connectivity Issues**

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

##### **Lessons**

- Determining the Causes of Connectivity Issues
- Network Utilities That You Can Use to Isolate Connectivity Issues

##### **Lab A: Isolating Common Connectivity Issues**

- Exercise 1: Documenting Your Current Environment
- Exercise 2: Resolving Connectivity Issues

After completing this module, students will be able to:

- Determine the causes of common connectivity issues.
- Use a flow chart to isolate a problem.
- Use utilities to isolate a problem.

**Contact the training coordinator for pricing and details at 613-563-NOVA (6682) Ext:250 Or [training@nova-networks.com](mailto:training@nova-networks.com)**

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