Introduction to Networks v7.02

Module Practice and Quiz

2.9.1

Packet Tracer - Basic Switch and End Device Configuration

As a recently hired LAN technician, you have been asked by your network manager to demonstrate your ability to configure a small LAN. Your tasks include configuring initial settings on two switches by using the Cisco IOS and configuring IP address parameters on host devices to provide end-to-end connectivity. You are to use two switches and two hosts on a cabled and powered network.

Basic Switch and End Device Configuration

Basic Switch and End Device Configuration

2.9.2

Lab - Basic Switch and End Device Configuration

Skills Practice Opportunity

You have the opportunity to practice the following skills:

- Part 1: Set Up the Network Topology
- Part 2: Configure PC Hosts
- Part 3: Configure and Verify Basic Switch Settings

You can practice these skills using the Packet Tracer or lab equipment, if available.

Packet Tracer - Physical Mode (PTPM)

Basic Switch and End Device Configuration - Physi...

Basic Switch and End Device Configuration - Physi...

Lab Equipment

Basic Switch and End Device Configuration

2.9.3

What did I learn in this module?

All end devices and network devices require an operating system (OS). The user can interact with the shell using a command-line interface (CLI) to use a keyboard to run CLI-based network programs, use a keyboard to enter text and text-based commands, and view output on a monitor.

As a security feature, the Cisco IOS software separates management access into the following two command modes: User EXEC Mode and Privileged EXEC Mode.

Global configuration mode is accessed before other specific configuration modes. From global config mode, the user can enter different subconfiguration modes. Each of these modes allows the configuration of a particular part or function of the IOS device. Two common subconfiguration modes include: Line Configuration Mode and Interface Configuration Mode. To move in and out of global configuration mode, use the **configure terminal** privileged EXEC mode command. To return to the privileged EXEC mode, enter the **exit** global config mode command.

Each IOS command has a specific format or syntax and can only be executed in the appropriate mode. The general syntax for a command is the command followed by any appropriate keywords and arguments. The IOS has two forms of help available: context-sensitive help and command syntax check.

The first configuration command on any device should be to give it a unique device name or hostname. Network devices should always have passwords configured to limit administrative access. Cisco IOS can be configured to use hierarchical mode passwords to allow different access privileges to a network device. Configure and encrypt all passwords. Provide a method for declaring that only authorized personnel should attempt to access the device by adding a banner to the device output.

There are two system files that store the device configuration: startup-config and running-config. Running configuration files can be altered if they have not been saved. Configuration files can also be saved and archived to a text document.

IP addresses enable devices to locate one another and establish end-to-end communication on the internet. Each end device on a network must be configured with an IP address. The structure of an IPv4 address is called dotted decimal notation and is represented by four decimal numbers between 0 and 255.

IPv4 address information can be entered into end devices manually, or automatically using Dynamic Host Configuration Protocol (DHCP). In a network, DHCP enables automatic IPv4 address configuration

for every end device that is DHCP-enabled. To access the switch remotely, an IP address and a subnet mask must be configured on the SVI. To configure an SVI on a switch, use the **interface vlan 1 global configuration** command. Vlan 1 is not an actual physical interface but a virtual one.

In the same way that you use commands and utilities to verify a PC host's network configuration, you also use commands to verify the interfaces and address settings of intermediary devices like switches and routers. The **show ip interface brief** command verifies the condition of the switch interfaces. The **ping** command can be used to test connectivity to another device on the network or a website on the internet.

2.9.4

Module Quiz - Basic Switch and End Device Configuration

1. Which statement is true about the running configuration file in a Cisco IOS device?

- ◯ It is automatically saved when the router reboots.
- ◯ It is stored in NVRAM.
- ◯ It should be deleted using the **erase running-config** command.
- ◯ It affects the operation of the device immediately when modified.

2. Which two statements are true regarding the user EXEC mode? (Choose two.)

- ☐ Only some aspects of the router configuration can be viewed.
- ☐ All router commands are available.
- ☐ Global configuration mode can be accessed by entering the **enable** command.
- ☐ The device prompt for this mode ends with the ">" symbol.
- ☐ Interfaces and routing protocols can be configured.

3. Which type of access is secured on a Cisco router or switch with the **enable secret** command?

- ◯ AUX port
- ◯ virtual terminal
- ◯ privileged EXEC
- ◯ console line

4. What is the default SVI on a Cisco switch?

- ◯ VLAN100
- ◯ VLAN99
- ◯ VLAN1

- ◯ VLAN999

5. When a hostname is configured through the Cisco CLI, which three naming conventions are part of the guidelines? (Choose three.)

- ☐ the hostname should be written in all lower case characters
- ☐ the hostname should end with a special character
- ☐ the hostname should be fewer than 64 characters in length
- ☐ the hostname should begin with a letter
- ☐ the hostname should contain no spaces

6. What is the function of the shell in an OS?

- ◯ It interfaces between the users and the kernel.
- ◯ It provides the intrusion protection services for the device.
- ◯ It interacts with the device hardware.
- ◯ It provides dedicated firewall services.

7. A router with a valid operating system contains a configuration file stored in NVRAM. The configuration file has an enable secret password but no console password. When the router boots up, which mode will display?

- ◯ user EXEC mode
- ◯ global configuration mode
- ◯ setup mode
- ◯ privileged EXEC mode

8. An administrator has just changed the IP address of an interface on an IOS device. What else must be done in order to apply those changes to the device?

- ◯ Reload the device and type **yes** when prompted to save the configuration.
- ◯ Copy the information in the startup configuration file to the running configuration.
- ◯ Copy the running configuration to the startup configuration file.
- ◯ Nothing must be done. Changes to the configuration on an IOS device take effect as soon as the command is typed correctly and the Enter key has been pressed.

9. Which memory location on a Cisco router or switch will lose all content when the device is restarted?

- ◯ ROM
- ◯ RAM
- ◯ flash

- NVRAM

10. Why would a technician enter the command **copy startup-config running-config**?

- to remove all configurations from the switch
- to save an active configuration to NVRAM
- to copy an existing configuration into RAM
- to make a changed configuration the new startup configuration

11. Which functionality is provided by DHCP?

- remote switch management
- end-to-end connectivity test
- automatic assignment of an IP address to each host
- translation of IP addresses to domain names

12. Which two functions are provided to users by the context-sensitive help feature of the Cisco IOS CLI? (Choose two.)

- [ ] displaying a list of all available commands within the current mode
- [ ] allowing the user to complete the remainder of an abbreviated command with the TAB key
- [ ] determining which option, keyword, or argument is available for the entered command
- [ ] selecting the best command to accomplish a task
- [ ] providing an error message when a wrong command is submitted

13. Which memory location on a Cisco router or switch stores the startup configuration file?

- ROM
- RAM
- NVRAM
- flash

14. To what subnet does the IP address 10.1.100.50 belong if a subnet mask of 255.255.0.0 is used?

- 10.1.100.32
- 10.0.0.0
- 10.1.100.0
- 10.1.0.0

Check Show Me

Reset

2.8
Verify Connectivity

3.0
Introduction