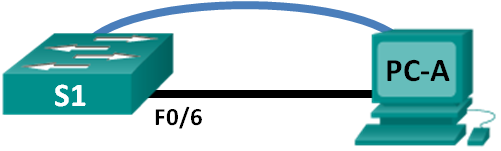
Lab – Configuring Basic Switch Settings

1. Topology



1. Addressing Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Device | Interface | IP Address | Subnet Mask | Default Gateway |
| S1 | VLAN 99 | 192.168.1.2 | 255.255.255.0 | 192.168.1.1 |
| PC-A | NIC | 192.168.1.10 | 255.255.255.0 | 192.168.1.1 |

1. Cable the Network and Verify the Default Switch Configuration

In Part 1, you will set up the network topology and verify default switch settings.

* 1. Cable the network as shown in the topology.
     1. Connect the console cable as shown in the topology. Do not connect the PC-A Ethernet cable at this time.
     2. Connect to the switch from PC-A using Tera Term or other terminal emulation program.

**[Report]** Why must you use a console connection to initially configure the switch? Why is it not possible to connect to the switch via Telnet or SSH?

\_Because a brand new switch doesn’t come with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Verify the default switch configuration.
     1. Assuming the switch had no configuration file stored in nonvolatile random-access memory (NVRAM), A console connection using Tera Term or other terminal emulation program will place you at the user EXEC mode prompt on the switch with a prompt of Switch>. Use the **enable** command to enter privileged EXEC mode.

…

* + 1. Examine the current running configuration file.

Switch# **show running-config**

**[Report]** How many FastEthernet interfaces does a 2960 switch have? \_\_\_\_\_\_\_\_

**[Report]** How many Gigabit Ethernet interfaces does a 2960 switch have? \_\_\_\_\_\_\_\_

**[Report]** What is the range of values shown for the vty lines? \_\_\_\_\_\_\_\_

* + 1. Examine the startup configuration file in NVRAM.

Switch# **show startup-config**

startup-config is not present

**[Report]** Why does this message appear? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* + 1. Examine the characteristics of the SVI for VLAN 1.

Switch# **show interface vlan1**

**[Report]** Is there an IP address assigned to VLAN 1? \_\_\_\_\_\_\_\_

**[Report]** What is the MAC address of this SVI? Answers will vary. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Is this interface up?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* + 1. Examine the IP properties of the SVI VLAN 1.

Switch# **show ip interface vlan1**

**[Report]** What output do you see?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* + 1. Connect an Ethernet cable from PC-A to port 6 on the switch and examine the IP properties of the SVI VLAN 1. Allow time for the switch and PC to negotiate duplex and speed parameters.

Switch# **show ip interface vlan1**

**[Report]** What output do you see?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* + 1. Examine the Cisco IOS version information of the switch.

Switch# **show version**

**[Report]** What is the Cisco IOS version that the switch is running? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**[Report]** What is the system image filename? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**[Report]** What is the base MAC address of this switch? Answers will vary. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* + 1. Examine the default properties of the FastEthernet interface used by PC-A.

Switch# **show interface f0/6**

**[Report]** Is the interface up or down? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**[Report]** What event would make an interface go up? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**[Report]** What is the MAC address of the interface? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**[Report]** What is the speed and duplex setting of the interface? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* + 1. Examine the default VLAN settings of the switch.

Switch# **show vlan**

**[Report]** What is the default name of VLAN 1? \_\_\_\_\_\_\_\_\_\_\_\_

**[Report]** Which ports are in VLAN 1? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**[Report]** Is VLAN 1 active? \_\_\_\_\_\_\_\_\_\_\_\_

**[Report]** What type of VLAN is the default VLAN? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Issue one of the following commands to examine the contents of the flash directory.

Switch# **show flash**

Switch# **dir flash:**

Files have a file extension, such as .bin, at the end of the filename. Directories do not have a file extension.

**[Report]** What is the filename of the Cisco IOS image? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Configure Basic Network Device Settings

In Part 2, you will configure basic settings for the switch and PC.

* 1. Configure basic switch settings.
     1. Copy the following basic configuration and paste it into S1 while in global configuration mode.
     2. Set the SVI IP address of the switch. This allows remote management of the switch.
     3. Assign all user ports to VLAN 99.

…

* + 1. Issue the **show vlan brief** command to verify that all ports are in VLAN 99.

...

* + 1. Configure …
    2. Console …
    3. Configure the virtual terminal (vty) lines for the switch to allow Telnet access. If you do not configure a vty password, you will not be able to Telnet to the switch.

S1(config)# **line vty 0 15**

S1(config-line)# **password cisco**

S1(config-line)# **login**

S1(config-line)# **end**

S1#

\*Mar 1 00:06:11.590: %SYS-5-CONFIG\_I: Configured from console by console

**[Report]** Why is the **login** command required? **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* 1. Configure an IP address on PC-A.

1. Verify and Test Network Connectivity
2. Manage the MAC Address Table

In Part 4, you will determine the MAC addresses that the switch has learned, set up a static MAC address on one interface of the switch, and then remove the static MAC address from that interface.

* 1. Record the MAC address of the host.

...

* 1. Determine the MAC addresses that the switch has learned.

Display the MAC addresses using the **show mac address-table** command.

S1# **show mac address-table**

**[Report]** How many dynamic addresses are there? \_\_\_\_\_\_\_\_\_\_\_\_

**[Report]** How many MAC addresses are there in total? \_\_\_\_\_\_\_\_\_\_\_\_

**[Report]** Does the dynamic MAC address match the MAC address of PC-A? \_\_\_\_\_\_\_\_\_\_\_\_

* 1. List the show mac address-table options.
     1. Display the MAC address table options.

…

* + 1. Issue the **show mac address-table dynamic** command to display only the MAC addresses that were learned dynamically.

S1# **show mac address-table dynamic**

**[Report]** How many dynamic addresses are there? \_\_\_\_\_\_\_\_\_\_\_\_

* + 1. View the MAC address entry for PC-A. The MAC address formatting for the command is xxxx.xxxx.xxxx.

S1# **show mac address-table address <PC-A MAC here>**

* 1. Set up a static MAC address.

1. [Report] Reflection
   1. Why should you configure the vty password for the switch?

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* 1. Why change the default VLAN 1 to a different VLAN number?

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* 1. How can you prevent passwords from being sent in plain text?

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* 1. Why configure a static MAC address on a port interface?

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