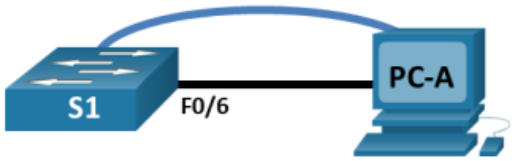
Topology



Addressing Table

Device	Interface	IP Address / Prefix
S1	VLAN 99	192.168.1.2 /24
		2001:db8:acad:1::2 /64
		fe80::2
PC-A	NIC	192.168.1.10 /24
		2001:db8:acad:1::10 /64

Objectives

Part 1: Cable the Network and Verify the Default Switch Configuration

Part 2: Configure Basic Network Device Settings

Part 3: Verify and Test Network Connectivity

Background / Scenario

Cisco switches can be configured with a special IP address known as the switch virtual interface (SVI). The SVI, or management address, can be used for remote access to the switch to display or configure settings. If the VLAN 1 SVI is assigned an IP address, by default, all ports on VLAN 1 have access to the SVI IP address.

In this activity, you will build a simple topology using Ethernet LAN cabling to access a Cisco switch using the console and remote access methods. You will examine default switch configurations before configuring basic switch settings. These basic switch settings include device name, interface description, local passwords, message of the day (MOTD) banner, IP addressing, and static MAC address. You will also use a management IP address for remote switch management. The topology consists of one switch and two hosts using only Ethernet and console ports. You will verify network connectivity and manage a MAC address table using two end devices.

Instructions

Part 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.

Step 1:Cable the network as shown in the topology.

a. From the shelf, click and drag switch S1 and place it on the left side of the table.
b. From the shelf, click and drag the device PC-A and place it on the right side of the table. Power on PC-A.
c. Connect a console cable from device PC-A to switch S1, as shown in the topology. Do not connect the device PC-A Ethernet cable at this time.
d. From the Desktop tab of PC-A, use Terminal to connect to the switch.

Step 2:Verify the default switch configuration.

In this step, you will examine the default switch settings, such as current switch configuration, IOS information, interface properties, VLAN information, and flash memory.

You can access all of the switch IOS commands in privileged EXEC mode. Access to privileged EXEC mode should be restricted by password protection to prevent unauthorized use because it provides direct access to global configuration mode and commands used to configure operating parameters. You will set passwords later in this activity.

The privileged EXEC mode command set includes those commands contained in user EXEC mode, as well as the configure command through which the access to the remaining command modes is gained. Use the enable command to enter privileged EXEC mode.

a. Assuming the switch had no configuration file stored in nonvolatile random-access memory (NVRAM), a console connection using Terminal 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.

Open configuration window

Switch> enable

Switch#

Notice that the prompt changed in the configuration to reflect privileged EXEC mode.

b. Verify that there is a clean default configuration file on the switch by issuing the show running-config privileged EXEC mode command. Examine the current running configuration file.

Switch# show running-config

Questions:

How many GigabitEthernet interfaces does the switch have?

- **2 Gigabit Ethernet/IEEE 802.3 interface(s)**

What is the range of values shown for the vty lines?

- **0 to 4 and 5 to 15**

3. Examine the startup configuration file in NVRAM.

Switch# show startup-config
startup-config is not present

Question:

Why does this message appear?

- **start up configuration hasn't been saved yet**

4. Examine the characteristics of the SVI for VLAN 1.

Switch# show interface vlan1

Questions:

Is there an IP address assigned to VLAN 1?

- **NO**

What is the MAC address of this SVI? Answers will vary.

- **0001.42b3.a4d0**

5. Examine the IP properties of the SVI VLAN 1.

Switch# show ip interface vlan1

Question:

What output do you see?

- **Vlan1 is administratively down, line protocol is down**
- **Internet protocol processing disabled**

6. Connect an Ethernet cable from PC-A to GigabitEthernet1/0/6 on the switch. Allow time for the switch and PC to negotiate duplex and speed parameters. Examine the IP properties of the SVI VLAN 1.

Question:

What output do you see?

- **Vlan1 is administratively down, line protocol is down**
- **Internet protocol processing disabled**

7. Enter global configuration and enable the SVI VLAN 1 interface.
Switch# configure terminal
Switch (config)# interface VLAN 1
Switch (config-if)# no shutdown

8. Examine the IP properties of the SVI VLAN 1.
Switch# show ip interface vlan1

Question:

What output do you see?

- **Vlan1 is up, line protocol is up**
- **Internet protocol processing disabled**

9. Examine the Cisco IOS version information of the switch.
Switch# show version

Questions:

What is the Cisco IOS version that the switch is running?

- **Version 12.2(25)FX**

What is the system image filename?

- **C2960-LANBASE-M**

What is the base Ethernet MAC address of this switch?

- **0001.42B3.A4D0**

10. Examine the default properties of the GigabitEthernet1/0/6 interface used by PC-A.
Switch# show interface gig1/0/6

Question:

Is the interface up or down?

- **GigabitEthernet0/1 is up, line protocol is up (connected)**

What event would make an interface go down?

- **Removing the cable or enter the command ‘shutdown’ on the interface**

What is the MAC address of the interface?

- **000b.be30.5419**

What is the speed and duplex setting of the interface?

- **Full-duplex, 100Mb/s**

11. Examine the default VLAN settings of the switch.
Switch# show vlan

Question:

What is the name of VLAN 1?

- **default**

Which ports are in VLAN 1?

- **Fa0/1, Fa0/2, Fa0/3, Fa0/4**
- **Fa0/5, Fa0/6, Fa0/7, Fa0/8**
- **Fa0/9, Fa0/10, Fa0/11, Fa0/12**
- **Fa0/13, Fa0/14, Fa0/15, Fa0/16**
- **Fa0/17, Fa0/18, Fa0/19, Fa0/20**
- **Fa0/21, Fa0/22, Fa0/23, Fa0/24**
- **Gig0/1, Gig0/2**

Is VLAN 1 active?

- **YES**

12. Examine flash memory.
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.

Question:

What is the filename of the Cisco IOS image?

- **c2960-lanbase-mz.122-25.FX.bin**