Packet Tracer - Implement Basic Connectivity

Addressing Table

Device	Interface	IP Address	Subnet Mask
S1	VLAN 1	192.168.1.253	255.255.255.0
S2	VLAN 1	192.168.1.254	255.255.255.0
PC1	NIC	192.168.1.1	255.255.255.0
PC2	NIC	192.168.1.2	255.255.255.0

Objectives

Part 1: Perform a Basic Configuration on S1 and S2

Part 2: Configure the PCs

Part 3: Configure the Switch Management Interface

Background

In this activity, you will first create a basic switch configuration. Then, you will implement basic connectivity by configuring IP addressing on switches and PCs. When the IP addressing configuration is complete, you will use various **show** commands to verify the configuration and use the **ping** command to verify basic connectivity between devices.

Instructions

Part 1: Perform a Basic Configuration on S1 and S2

Complete the following steps on S1 and S2.

Step 1: Configure S1 with a hostname.

a. Click S1 and then click the CLI tab.

b. Enter the correct command to configure the hostname as S1.

```
Switch(config)#hostname S1
S1(config)#
```

Step 2: Configure the console and encrypted privileged EXEC mode passwords.

a. Use **cisco** for the console password.

b. Use **class** for the privileged EXEC mode password.

```
S1>ena
S1#config t
Enter configuration commands, one per line.  End with CNTL/Z.
S1(config)#line cons
S1(config)#line console 0
S1(config-line)#password cisco
S1(config-line)#login
S1(config-line)#enable pass
S1(config-line)#enable passw
S1(config-line)#enable password class
```

Step 3: Verify the password configurations for S1.

How can you verify that both passwords were configured correctly?

- The switch will ask you for a password to access the console interface after you exit user EXEC mode, and it will ask you again when you enter privileged EXEC mode. The passwords can also be viewed by using the show run command.

Step 4: Configure an MOTD banner.

Use an appropriate banner text to warn unauthorized access. The following text is an example:

Authorized access only. Violators will be prosecuted to the full extent of the law.

```
S1(config)#banner motd $ Authorized access only. Violators will be prosecuted to the full extent of
the law. $
```

Step 5: Save the configuration file to NVRAM.

Which command do you issue to accomplish this step?

- **copy running-config startup-config**

```
S1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```

Step 6: Repeat Steps 1 to 5 for S2.

Part 2: Configure the PCs

Configure PC1 and PC2 with IP addresses.

Step 1: Configure both PCs with IP addresses.

a. Click PC1 and then click the Desktop tab.

b. Click IP Configuration. In the Addressing Table above, you can see that the IP address for PC1 is 192.168.1.1 and the subnet mask is 255.255.255.0. Enter this information for PC1 in the IP Configuration window.

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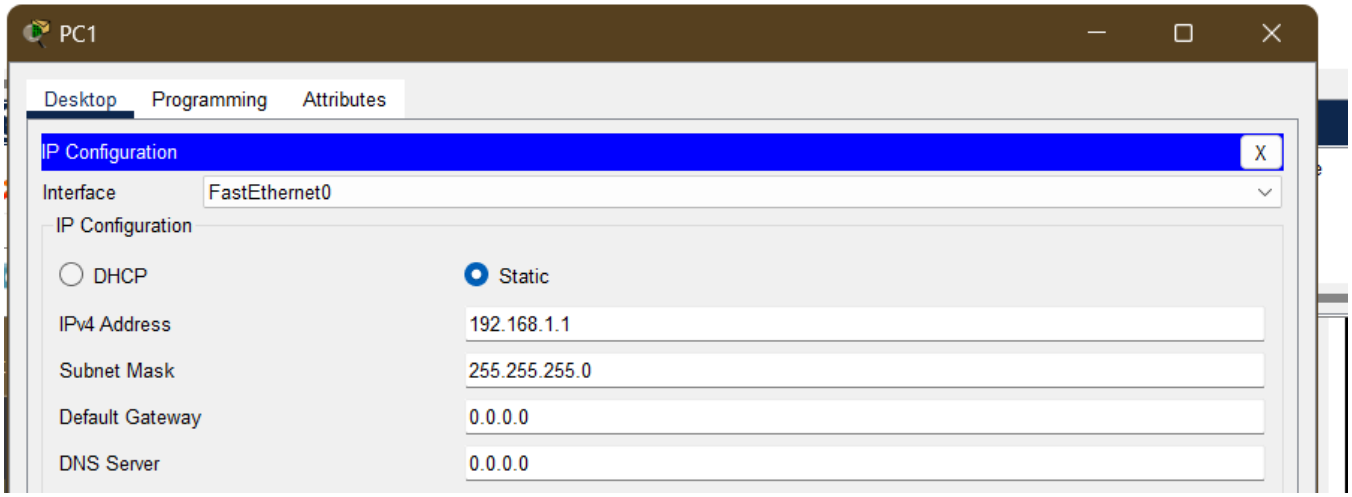

c. Repeat steps 1a and 1b for PC2.

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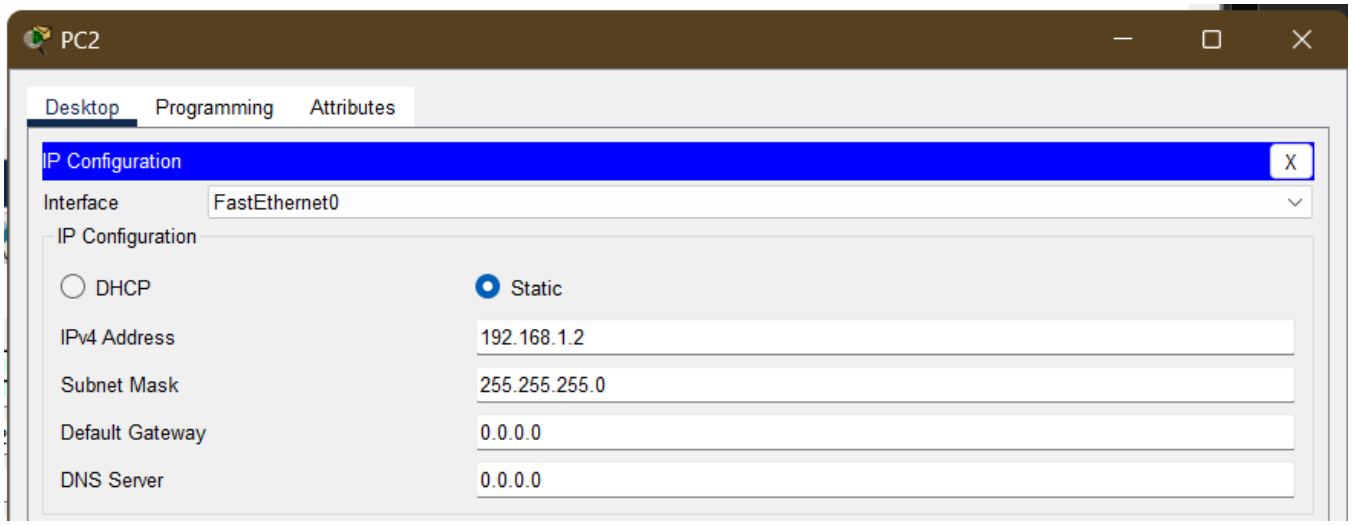

Step 2: Test connectivity to switches.

a. Click PC1. Close the IP Configuration window if it is still open. In the Desktop tab, click Command Prompt.

b. Type the **ping** command and the IP address for S1 and press Enter.

```
Packet Tracer PC Command Line 1.0
PC> ping 192.168.1.253
```

Were you successful? Explain.

- Because the switches are not set with IP addresses, ping has failed.

Part 3: Configure the Switch Management Interface

Configure S1 and S2 with an IP address.

Step 1: Configure S1 with an IP address.

Switches can be used as plug-and-play devices. This means that they do not need to be configured for them to work. Switches forward information from one port to another based on MAC addresses.

If this is the case, why would we configure it with an IP address?

- A switch has to be given an IP address so that you can connect to it remotely. The switch is first set up so that VLAN 1 is in charge of managing the switch.

Use the following commands to configure S1 with an IP address.

```
S1# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
S1(config)# interface vlan 1
S1(config-if)# ip address 192.168.1.253 255.255.255.0
S1(config-if)# no shutdown
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
S1(config-if)#
S1(config-if)# exit
S1#
```

```
S1(config)#interface vlan 1
S1(config-if)#ip address 192.168.1.253 255.255.255.0
S1(config-if)#no shutdown

S1(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
```

Why do you enter the **no shutdown** command?

- The interface is put in an active state administratively using the no shutdown command.

Step 2: Configure S2 with an IP address.

Use the information in the Addressing Table to configure S2 with an IP address.

```
Enter configuration commands, one per line.  End with CN.
S2(config)# interface vlan 1
S2(config-if)#ip address 192.168.1.253 255.255.255.0
```

```
S2(config)#interface vlan 1
S2(config-if)#no shutdown

S2(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
%IP-4-DUPADDR: Duplicate address 192.168.1.253 on Vlan1, sourced by 0002.1714.2963
```

Step 3: Verify the IP address configuration on S1 and S2.

Use the **show ip interface brief** command to display the IP address and status of all the switch ports and interfaces. You can also use the **show running-config** command.

```
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/1        unassigned      YES manual up                    up
FastEthernet0/2        unassigned      YES manual up                    up
FastEthernet0/3        unassigned      YES manual down                  down
FastEthernet0/4        unassigned      YES manual down                  down
FastEthernet0/5        unassigned      YES manual down                  down
FastEthernet0/6        unassigned      YES manual down                  down
FastEthernet0/7        unassigned      YES manual down                  down
FastEthernet0/8        unassigned      YES manual down                  down
FastEthernet0/9        unassigned      YES manual down                  down
FastEthernet0/10       unassigned      YES manual down                  down
FastEthernet0/11       unassigned      YES manual down                  down
FastEthernet0/12       unassigned      YES manual down                  down
FastEthernet0/13       unassigned      YES manual down                  down
FastEthernet0/14       unassigned      YES manual down                  down
FastEthernet0/15       unassigned      YES manual down                  down
FastEthernet0/16       unassigned      YES manual down                  down
FastEthernet0/17       unassigned      YES manual down                  down
FastEthernet0/18       unassigned      YES manual down                  down
FastEthernet0/19       unassigned      YES manual down                  down
FastEthernet0/20       unassigned      YES manual down                  down
FastEthernet0/21       unassigned      YES manual down                  down
FastEthernet0/22       unassigned      YES manual down                  down
FastEthernet0/23       unassigned      YES manual down                  down
FastEthernet0/24       unassigned      YES manual down                  down
GigabitEthernet0/1     unassigned      YES manual down                  down
GigabitEthernet0/2     unassigned      YES manual down                  down
Vlan1                  192.168.1.253   YES manual up                    up
S2#
```

Step 4: Save configurations for S1 and S2 to NVRAM.

Which command is used to save the configuration file in RAM to NVRAM?

- copy running-config startup-config

Step 5: Verify network connectivity.

Network connectivity can be verified using the **ping** command. It is very important that connectivity exists throughout the network. Corrective action must be taken if there is a failure. Ping S1 and S2 from PC1 and PC2.

a. Click PC1 and then click the Desktop tab.

b. Click Command Prompt.

c. Ping the IP address for PC2.

```
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

d. Ping the IP address for S1.

```
C:\>ping 192.168.1.253

Pinging 192.168.1.253 with 32 bytes of data:

Reply from 192.168.1.253: bytes=32 time<1ms TTL=255
Reply from 192.168.1.253: bytes=32 time<1ms TTL=255
Reply from 192.168.1.253: bytes=32 time<1ms TTL=255
Reply from 192.168.1.253: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.253:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

e. Ping the IP address for S2.

```
C:\>ping 192.168.1.253

Pinging 192.168.1.253 with 32 bytes of data:

Reply from 192.168.1.253: bytes=32 time<1ms TTL=255
Reply from 192.168.1.253: bytes=32 time<1ms TTL=255
Reply from 192.168.1.253: bytes=32 time<1ms TTL=255
Reply from 192.168.1.253: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.253:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Note: You can also use the **ping** command on the switch CLI and on PC2.

All pings should be successful. If your first ping result is 80%, try again. It should now be 100%. You will learn why a ping may sometimes fail the first time later in your studies. If you are unable to ping any of the devices, recheck your configuration for errors.