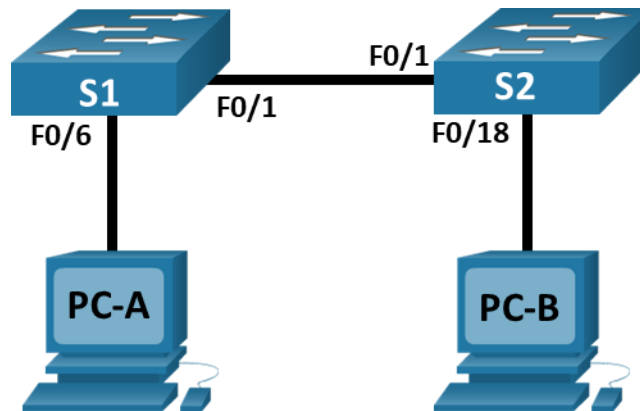


Packet Tracer - Basic Switch and End Device Configuration - Physical Mode

Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask
S1	VLAN 1	192.168.1.1	255.255.255.0
S2	VLAN 1	192.168.1.2	255.255.255.0
PC-A	NIC	192.168.1.10	255.255.255.0
PC-B	NIC	192.168.1.11	255.255.255.0

Objectives

Part 1: Set Up the Network Topology

Part 2: Configure PC Hosts

Part 3: Configure and Verify Basic Switch Settings

Background / Scenario

In this Packet Tracer Physical Mode (PTPM) activity, you will build a simple network with two hosts and two switches. You will also configure basic settings including hostname, local passwords, and login banner. Use **show** commands to display the running configuration, IOS version, and interface status. Use the **copy** command to save device configurations.

You will apply IP addressing for to the PCs and switches to enable communication between the devices. Use the **ping** utility to verify connectivity.

Instructions

Part 1: Set Up the Network Topology

Power on the PCs and cable the devices according to the topology. To select the correct port on a switch, right click and select **Inspect Front**. Use the Zoom tool, if necessary. Float your mouse over the ports to see the port numbers. Packet Tracer will score the correct cable and port connections.

- There are several switches, routers, and other devices on the **Shelf**. Click and drag switches **S1** and **S2** to the **Rack**. Click and drag two PCs to the **Table**.
- Power on the PCs.
- On the **Cable Pegboard**, click a **Copper Cross-Over** cable. Click the **FastEthernet0/1** port on **S1** and then click the **FastEthernet0/1** port on **S2** to connect them. You should see the cable connecting the two ports.
- On the **Cable Pegboard**, click a **Copper Straight-Through** cable. Click the **FastEthernet0/6** port on **S1** and then click the **FastEthernet0** port on **PC-A** to connect them.
- On the **Cable Pegboard**, click a **Copper Straight-Through** cable. Click the **FastEthernet0/18** port on **S2** and then click the **FastEthernet0** port on **PC-B** to connect them.
- Visually inspect network connections. Initially, when you connect devices to a switch port, the link lights will be amber. After a minute or so, the link lights will turn green.

Part 2: Configure PC Hosts

Configure static IP address information on the PCs according to the **Addressing Table**.

- Click **PC-A > Desktop > IP Configuration**. Enter the IP address for **PC-A** (192.168.1.10) and the subnet mask (255.255.255.0), as listed in the IP addressing table. You can leave default gateway blank at this time because there is no router attached to the network.
- Close the **PC-A** window.
- Repeat the previous steps to assign the IP address information for **PC-B**, as listed in the **Addressing Table**.
- Click **PC-A > Desktop > Command Prompt**. Use the **ipconfig /all** command at the prompt to verify settings.
- Enter **ping 192.168.1.11** at the prompt to test the connectivity to PC-B. The ping should be successful, as shown in the following output. If the ping is not successful, check the configurations on both of the PCs and troubleshoot as necessary.

```
Packet Tracer PC Command Line 1.0
```

```
C:\> ping 192.168.1.11
```

```
Pinging 192.168.1.11 with 32 bytes of data:
```

```
Reply from 192.168.1.11: bytes=32 time<1ms TTL=128
```

```
Reply from 192.168.1.11: bytes=32 time<1ms TTL=128
```

```
Reply from 192.168.1.11: bytes=32 time<1ms TTL=128
```

```
Reply from 192.168.1.11: bytes=32 time<1ms TTL=128
```

```
Ping statistics for 192.168.1.11:
```

```
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

```
Approximate round trip times in milli-seconds:
```

```
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

C:\>

Part 3: Configure and Verify Basic Switch Settings

- On the **Cable Pegboard**, click a **Console** cable. Connect the console cable between S1 and PC-A.
- Establish a console connection to the switch S1 from PC-A using the Packet Tracer generic **Terminal** program (**PC-A > Desktop > Terminal**). Press ENTER to get the **Switch>** prompt.
- You can access all switch commands in privileged EXEC mode. The privileged EXEC command set includes those commands contained in user EXEC mode, as well as the configure command through which access to the remaining command modes are gained. Enter privileged EXEC mode by entering the **enable** command.

```
Switch> enable
Switch#
```

- The prompt changed from **Switch>** to **Switch#** which indicates privileged EXEC mode. Enter global configuration mode.

```
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
```

- The prompt changed to **Switch(config)#** to reflect global configuration mode. Give the switch a name according to the **Addressing Table**.

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

- Enter local passwords. Use **class** as the privileged EXEC password and **cisco** as the password for console access.

```
S1(config)# enable secret class
S1(config)# line con 0
S1(config-line)# password cisco
S1(config-line)# login
S1(config-line)# exit
```

- Configure and enable the VLAN 1 interface according to the **Addressing Table**.

```
S1(config)# interface vlan 1
S1(config-if)# ip address 192.168.1.1 255.255.255.0
S1(config-if)# no shut
```

- h. A login banner, known as the message of the day (MOTD) banner, should be configured to warn anyone accessing the switch that unauthorized access will not be tolerated. Configure an appropriate MOTD banner to warn about unauthorized access.

A login banner, known as the message of the day (MOTD) banner, should be configured to warn anyone accessing the switch that unauthorized access will not be tolerated.
The banner motd command requires the use of delimiters to identify the content of the banner message. The delimiting character can be any character as long as it does not occur in the message. For this reason, symbols, such as the #, are often used.

```
S1(config)# banner motd #
```

```
Enter TEXT message. End with the character '#'.  
  
Unauthorized access is strictly prohibited and prosecuted to the full extent  
of the law. #
```

```
S1(config)# exit
```

- i. Save the configuration to the startup file on non-volatile random access memory (NVRAM).

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

- j. Display the current configuration.

The show running-config command displays the entire running configuration, one page at a time. Use the spacebar to advance paging. The commands configured in Steps a – h are highlighted below.

```
S1# show running-config  
Building configuration...  
  
Current configuration : 1409 bytes  
!  
! Last configuration change at 03:49:17 UTC Mon Mar 1 1993  
!  
version 15.0  
no service pad  
service timestamps debug datetime msec  
service timestamps log datetime msec  
no service password-encryption
```

Packet Tracer - Basic Switch and End Device Configuration - Physical Mode

```
!  
hostname S1  
!  
boot-start-marker  
boot-end-marker  
!  
enable secret 4 06YFDUHH61wAE/kLkDq9BGho1QM5EnRtoyr8cHAUg.2  
!  
no aaa new-model  
system mtu routing 1500  
!  
no ip domain-lookup  
  
<output omitted>  
interface Vlan 1  
    ip address 192.168.1.1 255.255.255.0  
  
ip http server  
ip http secure-server  
!  
banner motd ^C  
Unauthorized access is strictly prohibited and prosecuted to the full extent of  
the law. ^C  
!  
line con 0  
    password cisco  
    login  
line vty 0 4  
    login  
line vty 5 15  
    login  
!  
    End
```

- k. Display the IOS version and other useful switch information.

Use the **show version** command to display the IOS version that the switch is running, along with other useful information. Again, you will need to use the spacebar to advance through the displayed information.

```
S1# show version
```

```
Cisco IOS Software, C2960 Software (C2960-LANBASEK9-M), Version 15.0(2)SE,  
RELEASE SOFTWARE (fc1)
```

```
Technical Support: http://www.cisco.com/techsupport
```

```
Copyright (c) 1986-2012 by Cisco Systems, Inc.
```

```
Compiled Sat 28-Jul-12 00:29 by prod_rel_team
```

```
ROM: Bootstrap program is C2960 boot loader
```

```
BOOTLDR: C2960 Boot Loader (C2960-HBOOT-M) Version 12.2(53r)SEY3, RELEASE  
SOFTWARE (fc1)
```

```
S1 uptime is 1 hour, 38 minutes
```

```
System returned to ROM by power-on
```

```
System image file is "flash:/c2960-lanbasek9-mz.150-2.SE.bin"
```

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
<http://www.cisco.com/wwl/export/crypto/tool/stqrg.html>

If you require further assistance please contact us by sending email to export@cisco.com.

```
cisco WS-C2960-24TT-L (PowerPC405) processor (revision R0) with 65536K bytes of  
memory.
```

```
Processor board ID FCQ1628Y5LE
```

```
Last reset from power-on
```

```
1 Virtual Ethernet interface
```

```
24 FastEthernet interfaces
```

```
2 Gigabit Ethernet interfaces
```

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The password-recovery mechanism is enabled.

64K bytes of flash-simulated non-volatile configuration memory.

Base ethernet MAC Address : 0C:D9:96:E2:3D:00
Motherboard assembly number : 73-12600-06
Power supply part number : 341-0097-03
Motherboard serial number : FCQ16270N5G
Power supply serial number : DCA1616884D
Model revision number : R0
Motherboard revision number : A0
Model number : WS-C2960-24TT-L
System serial number : FCQ1628Y5LE
Top Assembly Part Number : 800-32797-02
Top Assembly Revision Number : A0
Version ID : V11
CLEI Code Number : COM3L00BRF
Hardware Board Revision Number : 0x0A

Switch	Ports	Model	SW Version	SW Image
-----	-----	-----	-----	-----
*	1 26	WS-C2960-24TT-L	15.0(2)SE	C2960-LANBASEK9-M

Configuration register is 0xF

I. Display the status of the connected interfaces on the switch.

To check the status of the connected interfaces, use the show ip interface brief command. Press the spacebar to advance to the end of the list.

S1# show ip interface brief

Interface	IP-Address	OK?	Method	Status	Protocol
Vlan1	192.168.1.1	YES	unset	up	up
FastEthernet0/1	unassigned	YES	unset	up	up
FastEthernet0/2	unassigned	YES	unset	down	down
FastEthernet0/3	unassigned	YES	unset	down	down
FastEthernet0/4	unassigned	YES	unset	down	down
FastEthernet0/5	unassigned	YES	unset	down	down
FastEthernet0/6	unassigned	YES	unset	up	up
FastEthernet0/7	unassigned	YES	unset	down	down
FastEthernet0/8	unassigned	YES	unset	down	down
FastEthernet0/9	unassigned	YES	unset	down	down

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FastEthernet0/10	unassigned	YES	unset	down	down
FastEthernet0/11	unassigned	YES	unset	down	down
FastEthernet0/12	unassigned	YES	unset	down	down
FastEthernet0/13	unassigned	YES	unset	down	down
FastEthernet0/14	unassigned	YES	unset	down	down
FastEthernet0/15	unassigned	YES	unset	down	down
FastEthernet0/16	unassigned	YES	unset	down	down
FastEthernet0/17	unassigned	YES	unset	down	down
FastEthernet0/18	unassigned	YES	unset	down	down
FastEthernet0/19	unassigned	YES	unset	down	down
FastEthernet0/20	unassigned	YES	unset	down	down
FastEthernet0/21	unassigned	YES	unset	down	down
FastEthernet0/22	unassigned	YES	unset	down	down
FastEthernet0/23	unassigned	YES	unset	down	down
FastEthernet0/24	unassigned	YES	unset	down	down
GigabitEthernet0/1	unassigned	YES	unset	down	down
GigabitEthernet0/2	unassigned	YES	unset	down	down

m. Repeat the previous steps to configure switch S2. Make sure the hostname is configured as S2.

Repeat the previous steps for Switch S2. Make sure the hostname is configured as S2.

n. Record the interface status for the following interfaces.

Interface	S1 Status	S1 Protocol	S2 Status	S2 Protocol
F0/1	UP	UP	UP	UP
F0/6	UP	UP	DOWN	DOWN
F0/18	DOWN	DOWN	UP	UP
VLAN 1	UP	UP	UP	UP

o. From a PC, ping S1 and S2. The pings should be successful.

p. From a switch, ping PC-A and PC-B. The pings should be successful.

Reflection Question

Why are some FastEthernet ports on the switches up while others are down?

The FastEthernet ports are up when cables are connected to the ports unless they were manually shutdown by the administrators. Otherwise, the ports would be down.

What could prevent a ping from being sent between the PCs?

Wrong IP address, media disconnected, switch powered off or ports administratively down, firewall.

Device Configs

Switch S1 (complete)

```
S1#sh run
Building configuration...
Current configuration : 1514 bytes

version 15.0
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname S1

boot-start-marker
boot-end-marker
!
enable secret 4 06YFDUHH61wAE/kLkDq9BGho1QM5EnRtoyr8cHAUg.2
!
no aaa new-model
system mtu routing 1500
!
no ip domain-lookup
!
spanning-tree mode pvst
spanning-tree extend system-id
!
vlan internal allocation policy ascending
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!
interface FastEthernet0/3
!
interface FastEthernet0/4
!
interface FastEthernet0/5
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
```

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```
interface FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
 ip address 192.168.1.1 255.255.255.0
!
ip http server
ip http secure-server
!
banner motd ^C
Unauthorized access is strictly prohibited and prosecuted to the full extent of the
law. ^C
!
line con 0
 password cisco
 login
line vty 0 4
 login
line vty 5 15
 login
end
```

Switch S2 (complete)

```
S2# sh run
Building configuration...
Current configuration : 1514 bytes
!
version 15.0
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
```

Packet Tracer - Basic Switch and End Device Configuration - Physical Mode

```
!  
hostname S2  
!  
boot-start-marker  
boot-end-marker  
!  
enable secret 4 06YFDUHH61wAE/kLkDq9BGho1QM5EnRtoyr8cHAUg.2  
!  
no aaa new-model  
system mtu routing 1500  
!  
no ip domain-lookup  
!  
spanning-tree mode pvst  
spanning-tree extend system-id  
!  
vlan internal allocation policy ascending  
!  
interface FastEthernet0/1  
!  
interface FastEthernet0/2  
!  
interface FastEthernet0/3  
!  
interface FastEthernet0/4  
!  
interface FastEthernet0/5  
!  
interface FastEthernet0/6  
!  
interface FastEthernet0/7  
!  
interface FastEthernet0/8  
!  
interface FastEthernet0/9  
!  
interface FastEthernet0/10  
!  
interface FastEthernet0/11  
!  
interface FastEthernet0/12  
!  
interface FastEthernet0/13  
!  
interface FastEthernet0/14  
!  
interface FastEthernet0/15  
!  
interface FastEthernet0/16  
!  
interface FastEthernet0/17  
!  
interface FastEthernet0/18  
!  
interface FastEthernet0/19  
!  
interface FastEthernet0/20  
!  
interface FastEthernet0/21  
!
```

Packet Tracer - Basic Switch and End Device Configuration - Physical Mode

```
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
ip address 192.168.1.2 255.255.255.0
!
ip http server
ip http secure-server
!
banner motd ^C
Unauthorized access is strictly prohibited and prosecuted to the full extent of the
law. ^C
line con 0
password cisco
login
line vty 0 4
login
line vty 5 15
login
end
```