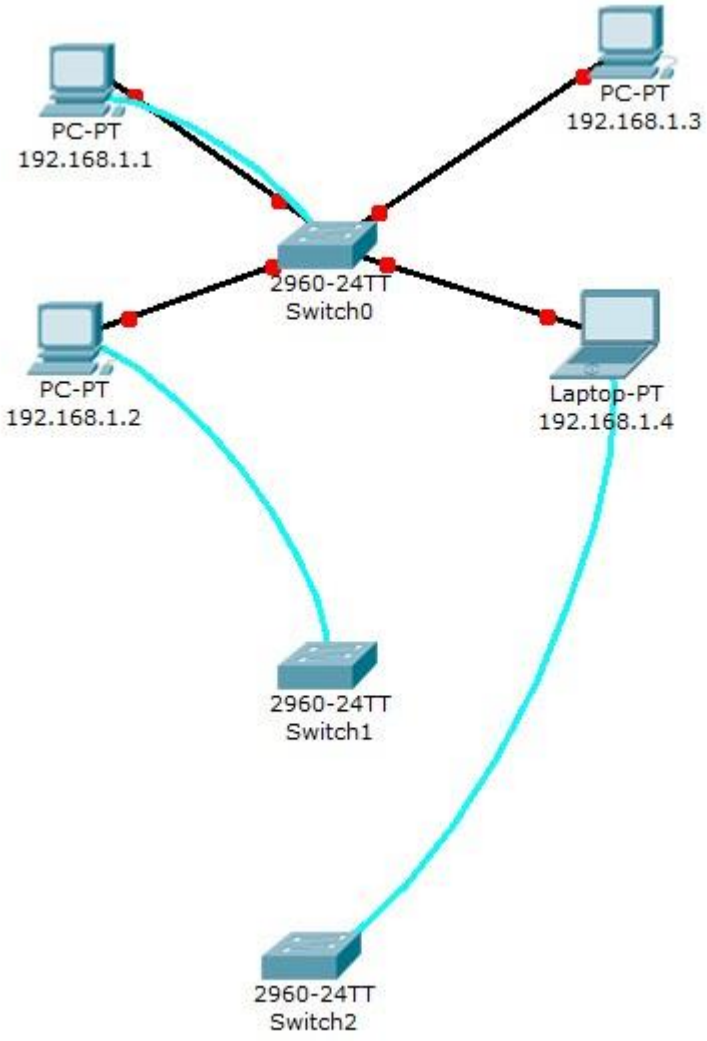
Lab 8-2: Interfaces configuration
Solved By 20ES062

Network diagram

This lab will test your ability to configure **speed**, **duplex**, and **vlan settings** on the network interfaces of a Catalyst 2960 switch using Cisco Packet Tracer 8.1.1 .



Lab instructions

1. Connect to Switch0 using console interface and configure each Switch0 fastethernet switchport for operation.

Settings to be configured on each port are :

- Port type : access port
- Speed : 100 Mbit/s
- Duplex mode : Full Duplex
- Autonegotiation: disabled

Use **show ip interface brief** command to verify status of all ports.

2. PC "192.168.1.4" seems to be unable to ping other PCs in the network. Check switch configuration.

TIP : How many broadcast domains are there in this network ?

3. Choose the right cable to connect :

- Switch0 gigabitethernet 1/1 to Switch1 gigabitethernet 1/1
- Switch1 gigabitethernet 1/2 to Switch2 gigabitethernet 1/2

4. Configure those two links as trunk lines without using trunk negotiation between switches

Solution

1. Connect to Switch0 using console interface and configure each Switch0 fastethernet switchport for operation.

Explicitly configuring the speed with the **speed 100** IOS command of a Cisco Catalyst network interface disable auto-negociation on this interface

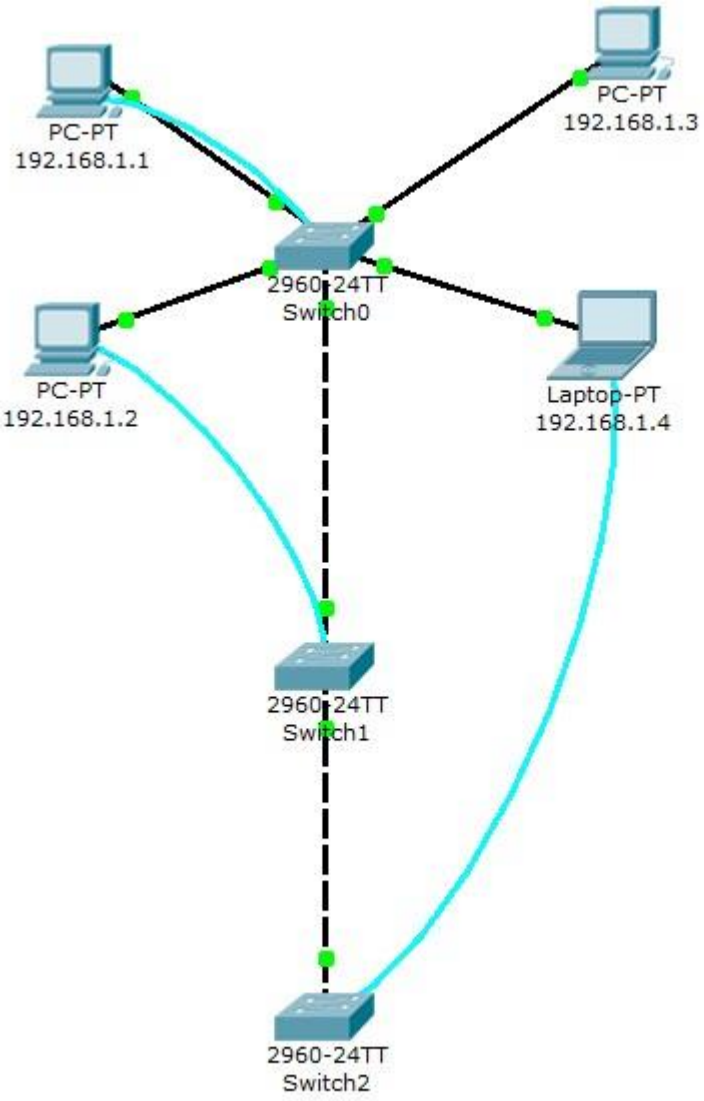
```
Switch>enable
Switch#configure terminal

Switch(config)#interface FastEthernet0/1

switchport mode access
duplex full
speed 100

Switch(config)#interface FastEthernet0/2
Switch(config-if)#switchport mode access
Switch(config-if)#duplex full
Switch(config-if)#speed 100

Switch(config)#interface FastEthernet0/3
Switch(config-if)#switchport mode access
Switch(config-if)#duplex full
Switch(config-if)#speed 100

Switch(config)#interface FastEthernet0/4
Switch(config-if)#switchport mode access
Switch(config-if)#duplex full
Switch(config-if)#speed 100
```

2. PC "192.168.1.4" seems to be unable to ping other PCs in the network. Check switch configuration.

```
Switch(config)#interface FastEthernet0/4
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 1
```

3. Choose the right cable to connect Switch0 to Switch1 and Switch2

Crossover network cable have to be used to connect two network devices of the same type together (two network switches, two routers, two PC). **Crossed wiring inside the crossover cable** connects the transmit PIN at one end of the cable to the receive PIN at the other end.



4. Configure those two links as trunk lines without using trunk negotiation between switches

On every interface that has to be configured for trunk operation, configure the following settings :

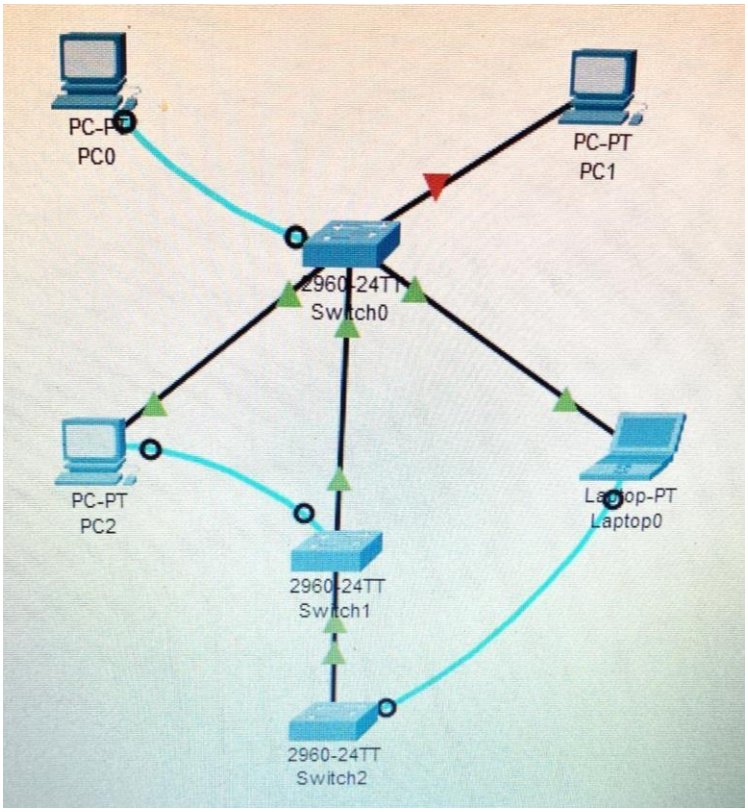
```
Switch(config)#interface GigabitEthernet1/X
Switch(config-if)#switchport mode trunk
```

Verify interface operational mode using the **show interface GigabitEthernet1/X** switchport command :

```
Name: Gig1/2
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
```

Another useful IOS command is **show interfaces trunk** :

```
Switch#sh interfaces trunk
Port        Mode         Encapsulation  Status        Native vlan
Gig1/2      on           802.1q         trunking      1

Port        Vlans allowed on trunk
Gig1/2      1-1005

Port        Vlans allowed and active in management domain
Gig1/2      1

Port        Vlans in spanning tree forwarding state and not pruned Gig1/2
1
```



Switch0

Physical Config CLI Attributes

IOS Command Line Interface

```
*    1    26      WS-C2960-24TT      12.2                    C2960-
LANBASE-M

Cisco IOS Software, C2960 Software (C2960-LANBASE-M), Version
12.2(25)FX, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Wed 12-Oct-05 22:05 by pt_team

Press RETURN to get started!


%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3,
changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4,
```

Ctrl+F6 to exit CLI focus Copy Paste

IOS Command Line Interface

```
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3
changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4,
changed state to up


Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#switchport mode access
Switch(config-if)#duplex full
Switch(config-if)#speed 100
Switch(config-if)#no shutdown
Switch(config-if)#exit
Switch(config)#^Z
Switch#
%SYS-5-CONFIG_I: Configured from console by console
enable
```

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