Sample problem for the lab exam

Suppose that there are four LANs A, B, and C, which are connected to each other as shown in Fig. 1.

The IP requirements of the networks are 58, 12, and 290, respectively.

Design the network in packet tracer and configure it if the given IP block is 5.5.192.0/18.

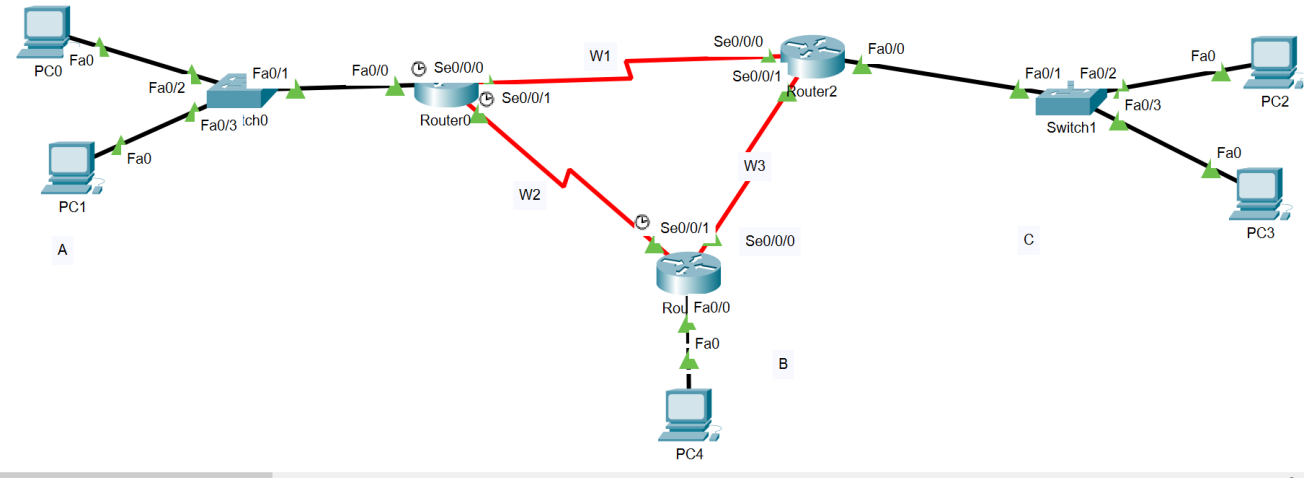

Fig. 1

Solution:

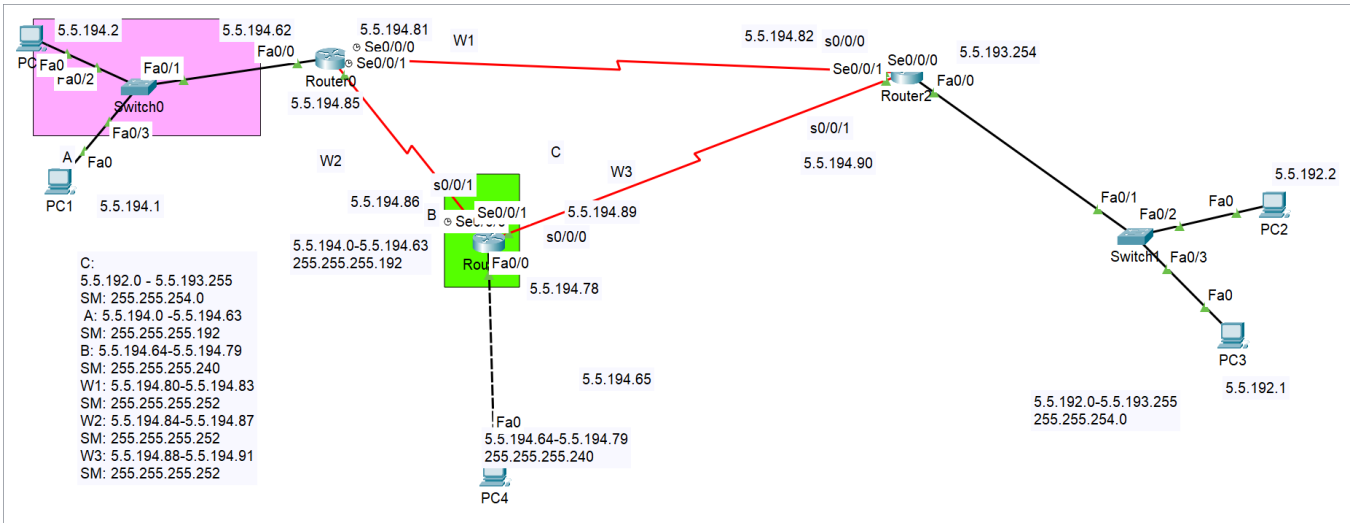

Fig. 2 Labelling of each device in the packet tracer

Correction: The second C network in the IP range (shown above) will be B.

Please note that the blue texts show the function of the corresponding command. Do not input them into the packet tracer.

Router0

Router>enable //TO ENTER THE PRIVILEGED MODE
Router#configure terminal //TO ENTER THE GLOBAL CONFIGURATION MODE
Router#hostname Router0 //TO NAME THE ROUTER: Router0

Router0(config)#interface fa0/0 //SELECTING THE INTERFACE FA0/0 FOR IP CONFIGURATION
Router0(config-if)#ip address 5.5.194.62 255.255.255.192 //SETTING 5.5.194.62 WITH SUBNET MASK 255.255.255.192 TO THE INTERFACE FA0/0
Router0(config-if)#no shutdown //MAKING THE INTERFACE UP FROM THE DOWN STATE

Router0(config-if)#interface s0/0/0
Router0(config-if)#ip address 5.5.194.81 255.255.255.252
Router0(config-if)#clock rate 64000 //SETTING THE LINE SPEED 64 KBPS TO THE LINK
Router0(config-if)#no shutdown

Router0(config-if)#interface s0/0/1
Router0(config-if)#ip address 5.5.194.85 255.255.255.252
Router0(config-if)#clock rate 64000
Router0(config-if)#
Router0(config-if)#

Router0(config)#router rip //STARTING RIP ROUTING CONFIGURATION
Router0(config-router)#version 2 //USING VERSION 2 AS THE VERSION 1 DOES NOT SUPPORT VLSM
Router0(config-router)#network 5.5.194.0 //THE NETWORK 5.5.194.0 IS DIRECTLY CONNECTED TO THE ROUTER0
Router0(config-router)#network 5.5.194.80 //THE NETWORK 5.5.194.80 IS DIRECTLY CONNECTED TO THE ROUTER0

Router0(config-router)#network 5.5.194.84 //THE NETWORK 5.5.194.84 IS DIRECTLY CONNECTED TO THE ROUTER0

Router0(config-router)#no auto-summary

Router2

Router>enable
Router#configure terminal

Router(config)#hostname Router2

Router2(config-if)#interface s0/0/0
Router2(config-if)#ip address 5.5.194.82 255.255.255.252

```
Router2(config-if)#no shutdown

Router2(config-if)#
Router2(config-if)#interface fa0/0
Router2(config-if)#ip address 5.5.193.254 255.255.254.0
Router2(config-if)#no shutdown


Router2(config-if)#interface s0/0/1
Router2(config-if)#ip address 5.5.194.90 255.255.255.252
Router2(config-if)#no shutdown
Router2(config-if)#exit

Router2(config)#router rip
Router2(config-router)#version 2
Router2(config-router)#network 5.5.192.0
Router2(config-router)#network 5.5.194.80
Router2(config-router)#network 5.5.194.88
Router2(config-router)#no auto-summary
Router2(config-router)#
```

Router1

```
Router>enable
Router#configure terminal
Router#hostname Router1

Router1(config)#interface s0/0/1
Router1(config-if)#ip address 5.5.194.86 255.255.255.252
Router1(config-if)#no shutdown


Router1(config-if)#interface s0/0/0
Router1(config-if)#ip address 5.5.194.89 255.255.255.252
Router1(config-if)#clock rate 64000
Router1(config-if)#no shutdown


Router1(config-if)#inter fa0/0
Router1(config-if)#ip address 5.5.194.78 255.255.255.240
Router1(config-if)#no shutdown


Router1(config-if)#
Router1(config-if)#router rip
```

```
Router1(config-router)#version 2
Router1(config-router)#network 5.5.194.64
Router1(config-router)#network 5.5.194.88
Router1(config-router)#network 5.5.194.84
Router1(config-router)#no auto-summary
```