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Group 1

LAB 1

I. Part 1 : Simple Router configuration

Q1.1.

It is not possible to display the running configuration of the router in the current user EXEC mode. We have to have to enable the exec mode and write the command:

Router>show running-config

Q1.2.

```
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname ?
  WORD  This system's network name
Router(config)#hostname R1
R1(config)#
```

New router's name

Q1.3.

There are 6 interfaces. None of them are assigned IP addresses.

```
R1#show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        unassigned      YES unset  administratively down down
FastEthernet1/0        unassigned      YES unset  administratively down down
Serial2/0              unassigned      YES unset  administratively down down
Serial3/0              unassigned      YES unset  administratively down down
FastEthernet4/0        unassigned      YES unset  administratively down down
FastEthernet5/0        unassigned      YES unset  administratively down down
R1#
```

This is how we set the password:

```
R1(config)#line console 0
R1(config-line)#password douze
R1(config-line)#login
R1(config-line)#exit
```

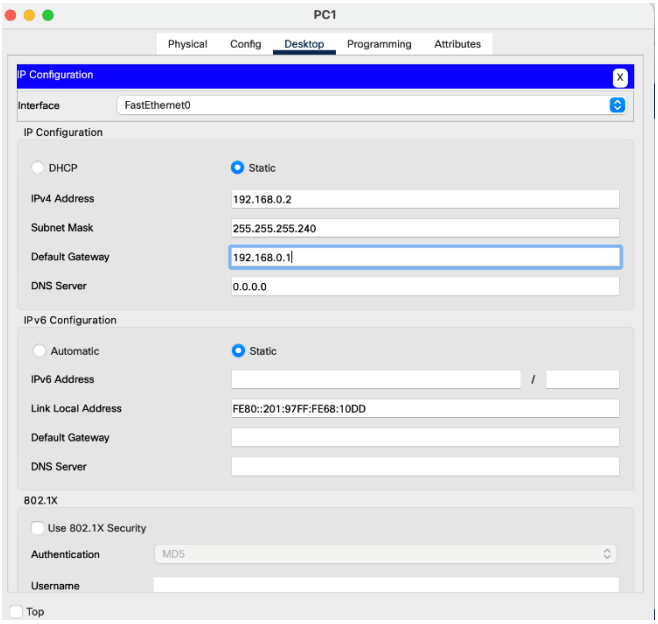
Q1.4.

```
R1(config)#line vty 0 15
R1(config-line)#password douzedouze
R1(config-line)#login
R1(config-line)#exit
R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console
reload
System configuration has been modified. Save? [yes/no]:yes
Building configuration...
[OK]
Proceed with reload? [confirm]
System Bootstrap, Version 12.1(3r)T2, RELEASE SOFTWARE (fc1)
Copyright (c) 2000 by cisco Systems, Inc.
Initializing memory for ECC
..
PT1000 processor with 524288 Kbytes of main memory
Main memory is configured to 64 bit mode with ECC enabled

Readonly ROMMON initialized

Self decompressing the image :
############################################################################ [OK]
```

Q1.5.

```
line con 0
 password douze
 login
!
line aux 0
!
line vty 0 4
 password douzedouze
 login
line vty 5 15
 password douzedouze
 login
!
!
```

Q1.6.




```
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Q1.7.

We should enter the virtual terminals password.

Q1.8.

First, we set a password to access the enable mode from the router.

```
R1#confi term
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#enable password douze
R1(config)#enable secret secret
R1(config)#service password-encryption
R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#reload
System configuration has been modified. Save? [yes/no]:yes
Building configuration...
[OK]
Proceed with reload? [confirm]
System Bootstrap, Version 12.1(3r)T2, RELEASE SOFTWARE (fc1)
Copyright (c) 2000 by cisco Systems, Inc.
Initializing memory for ECC
..
PT1000 processor with 524288 Kbytes of main memory
Main memory is configured to 64 bit mode with ECC enabled

Readonly ROMMON initialized

Self decompressing the image :
############################################################################ [OK]

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Software clause at DFARS sec. 252.227-7013.

           cisco Systems, Inc.
           170 West Tasman Drive
           San Jose, California 95134-1706
```

Then, we open a telnet session with router from terminal on PC1.


```
Trying 192.168.0.1 ...Open


User Access Verification

Password:
Password:
R1>
```

Q1.9.

First, we have to enter the password that we defined in the previous question. Then, we can enter the user privileged exec mode with the command “enable”.

```
Trying 192.168.0.1 ...Open


User Access Verification

Password:
Password:
R1>enable
Password:
R1#
```

II. Part 2: Static Routing

Q2.1.

The maximum number of IP address for X is 16,777,214.

The maximum number of IP address for Z is 62.

Q2.2.

For router 0 with Fa0/0:

```
enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shutdown
```

For router 0 with Se2/0:

```
Router(config)#interface Serial2/0
Router(config-if)#ip address 200.200.200.1 255.0.0.0
Router(config-if)#no shutdown
```

Show ip interface brief for router 0:

```
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        10.0.0.1        YES manual up                    up
FastEthernet1/0        unassigned      YES unset  administratively down down
Serial2/0              200.200.200.1   YES manual up                    up
Serial3/0              unassigned      YES unset  administratively down down
FastEthernet4/0        unassigned      YES unset  administratively down down
FastEthernet5/0        unassigned      YES unset  administratively down down
```

For router 1 with Fa0/0:

```
Router(config-if)#interface FastEthernet0/0
Router(config-if)#ip address 156.12.0.1 255.0.0.0
Router(config-if)#no shutdown
```

For router 1 with Se2/0:

```
Router(config)#interface Serial2/0
Router(config-if)#ip address 200.200.200.2 255.0.0.0
Router(config-if)#no shutdown
```

Show ip interface brief for router 1:

```
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        156.12.0.1      YES manual up                    up
FastEthernet1/0        unassigned      YES unset  administratively down down
Serial2/0              200.200.200.2   YES manual up                    up
Serial3/0              unassigned      YES unset  administratively down down
FastEthernet4/0        unassigned      YES unset  administratively down down
FastEthernet5/0        unassigned      YES unset  administratively down down
```

Q2.3.

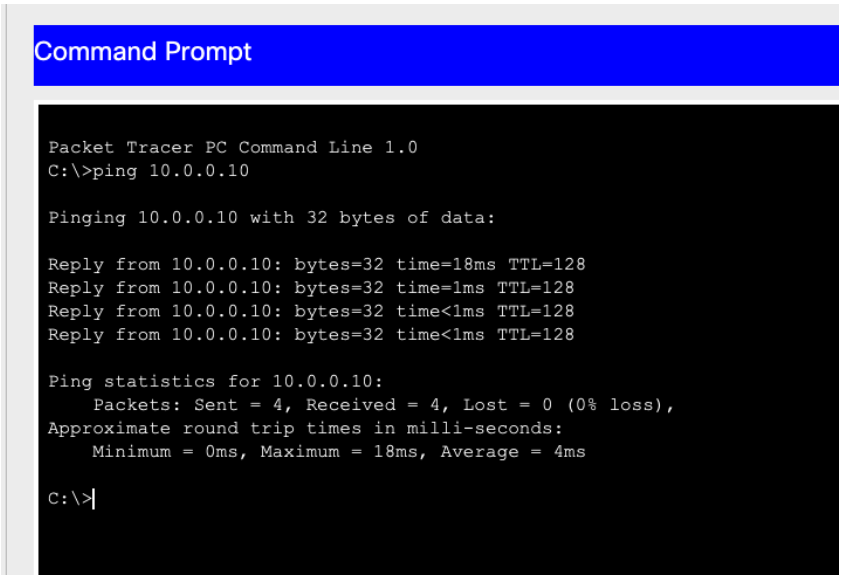
For router 0:

```
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    156.0.0.0/8 is directly connected, FastEthernet0/0
C    200.0.0.0/8 is directly connected, Serial2/0
```

For router 1:

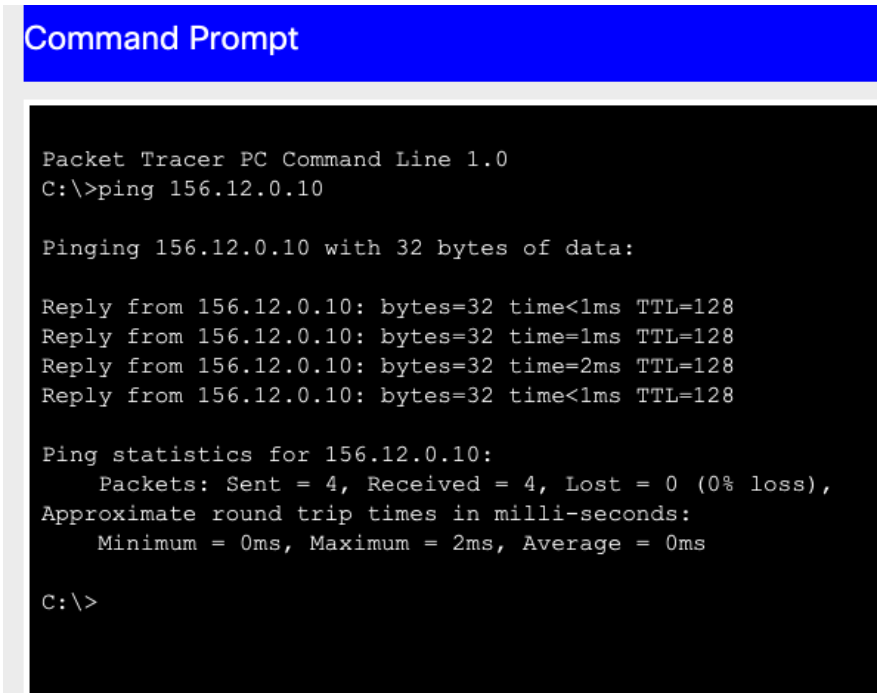
```
Router#show ip route`
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    10.0.0.0/8 is directly connected, FastEthernet0/0
C    200.0.0.0/8 is directly connected, Serial2/0
```

Q2.4.



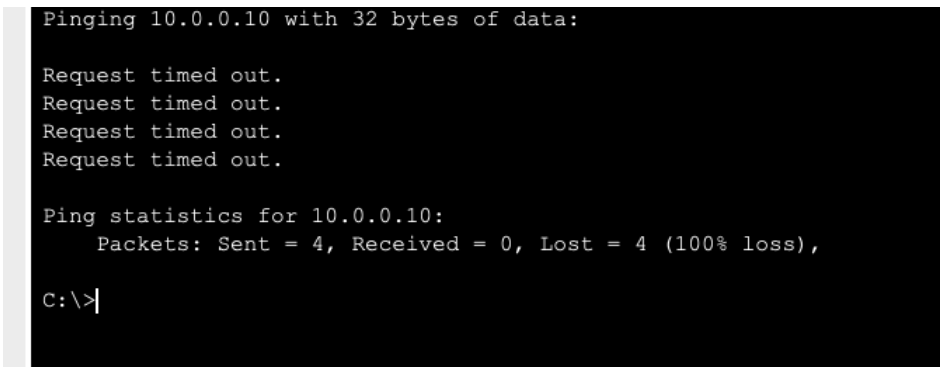
Yes, we got a reply.

Q2.5.



Yes, we got a reply.

Q2.6.



We can’t ping PC0 from PC1 because the routing tables of router 1 and router 2 are not configured.

Q2.7.

Network address: 200.200.200.0 (Router’s IP address -1)

Subnet mask: 255.255.255.0

Interface name: Serial2/0

```
Router(config)#ip route 200.200.200.0  255.255.255.0 Serial2/0
Router(config)#
```

Show ip interface brief for router 0:

```
Router#show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        10.0.0.1        YES manual up                    up
FastEthernet1/0        unassigned      YES unset  administratively down down
Serial2/0              200.200.200.1   YES manual up                    up
Serial3/0              unassigned      YES unset  administratively down down
FastEthernet4/0        unassigned      YES unset  administratively down down
FastEthernet5/0        unassigned      YES unset  administratively down down
Router#
```

Show ip interface brief for router 1:

```
Router#show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        156.12.0.1      YES manual up                    up
FastEthernet1/0        unassigned      YES unset  administratively down down
Serial2/0              200.200.200.2   YES manual up                    up
Serial3/0              unassigned      YES unset  administratively down down
FastEthernet4/0        unassigned      YES unset  administratively down down
FastEthernet5/0        unassigned      YES unset  administratively down down
Router#
```

Q2.8.

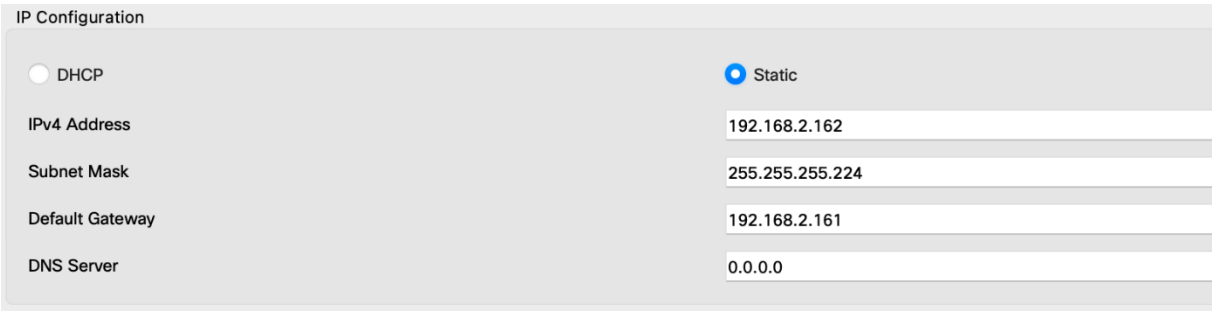
We got a reply because we added the necessary entry in the routing table.

Q2.9.

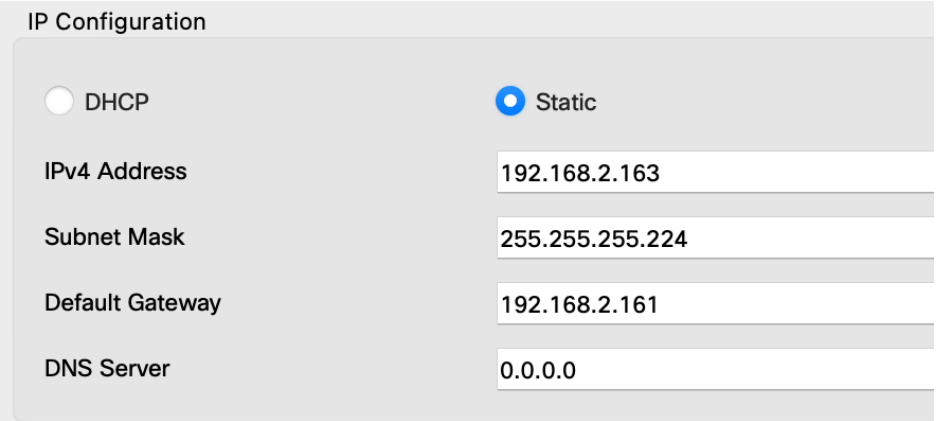
III. Part 3: DHCP server

Q3.1.

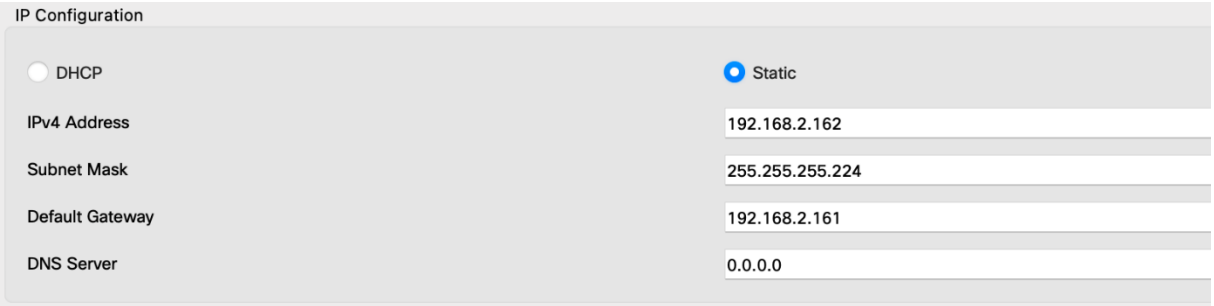
For PC7:



For PC8:



For PC9:



Q3.2:

Configuration of the routing table for router 1:

```
Router(config)#ip route 192.168.2.96 255.255.255.224 Serial2/0
Router(config)#ip route 192.168.2.160 255.255.255.224 Serial2/0
```

Configuration of the routing table for router 2:

```
Router(config)#ip route 192.168.2.32 255.255.255.224 Serial2/0
Router(config)#ip route 192.168.2.128 255.255.255.224 Serial2/0
```

Show ip route static for router 1:

```
Router#show ip  route static
     192.168.2.0/27 is subnetted, 5 subnets
S       192.168.2.96 is directly connected, Serial2/0
S       192.168.2.160 is directly connected, Serial2/0
```

Show ip route static for router 2:

```
Router#show  ip route static
     192.168.2.0/27 is subnetted, 5 subnets
S       192.168.2.32 is directly connected, Serial2/0
S       192.168.2.128 is directly connected, Serial2/0
```

Q3.3:

```
C:\>ping 192.168.2.34

Pinging 192.168.2.34 with 32 bytes of data:

Reply from 192.168.2.34: bytes=32 time=1ms TTL=126
Reply from 192.168.2.34: bytes=32 time=1ms TTL=126
Reply from 192.168.2.34: bytes=32 time=3ms TTL=126
Reply from 192.168.2.34: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.2.34:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 3ms, Average = 1ms
```

Q3.4:

```
C:\>ping 192.168.2.99

Pinging 192.168.2.99 with 32 bytes of data:

Reply from 192.168.2.99: bytes=32 time=1ms TTL=126
Reply from 192.168.2.99: bytes=32 time=3ms TTL=126
Reply from 192.168.2.99: bytes=32 time=1ms TTL=126
Reply from 192.168.2.99: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.2.99:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 3ms, Average = 1ms
```