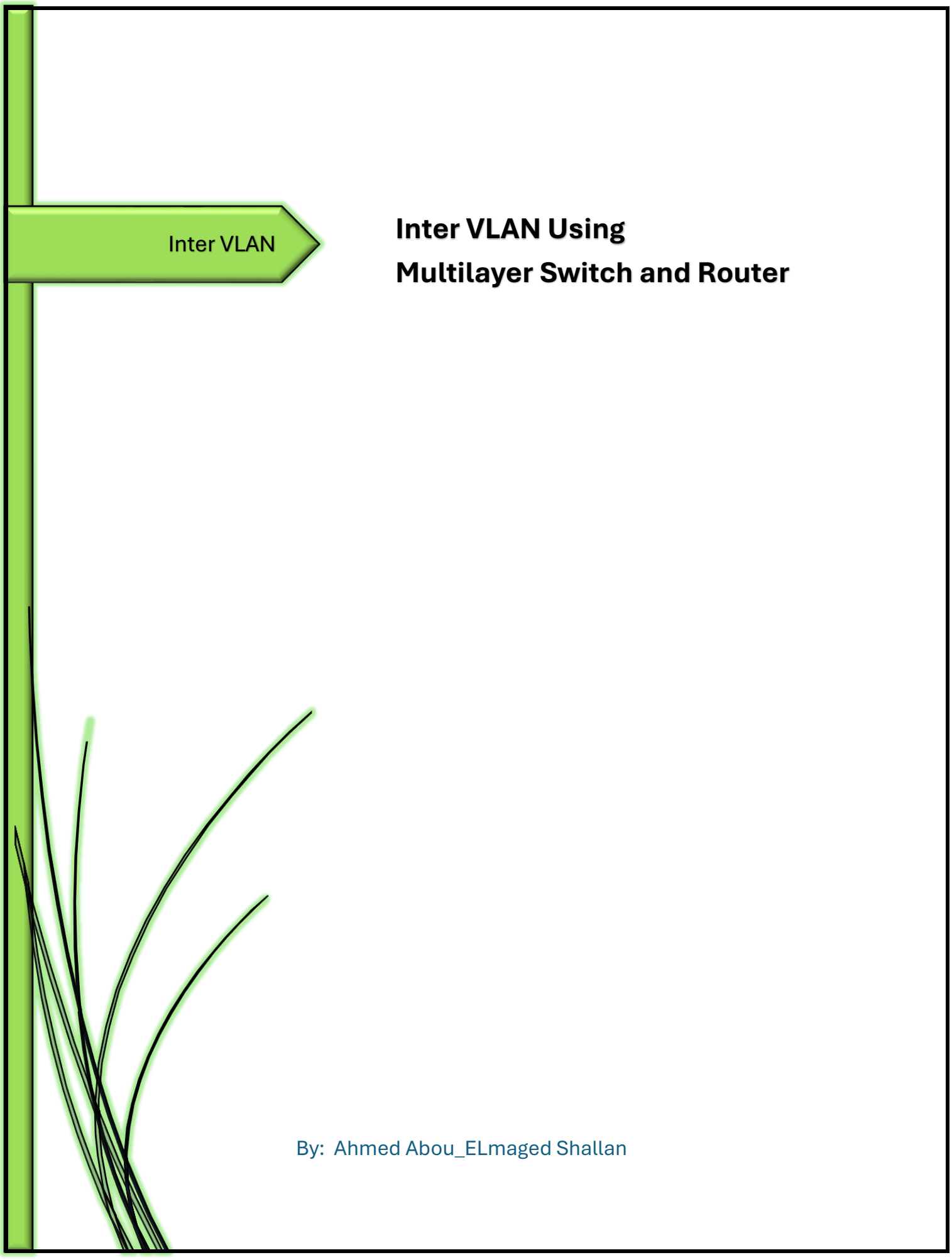
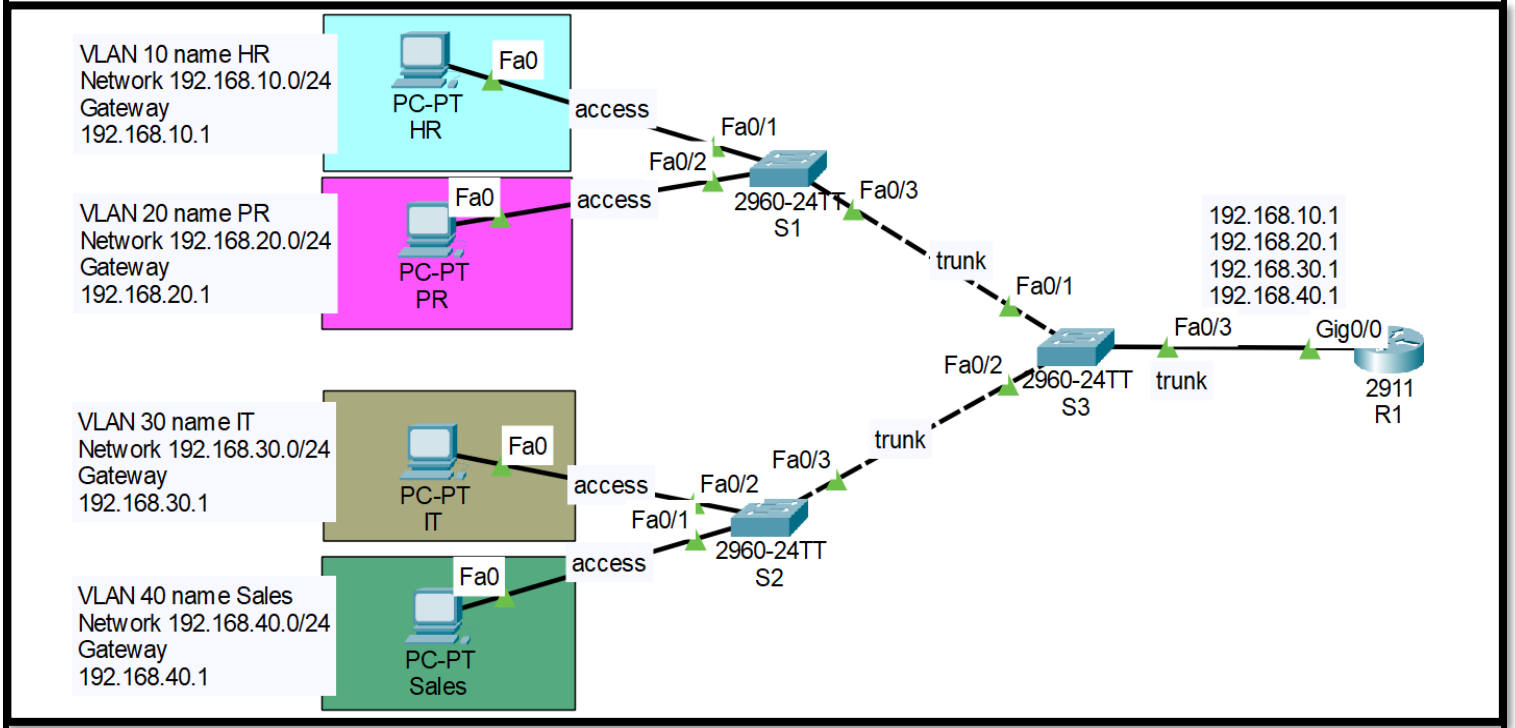
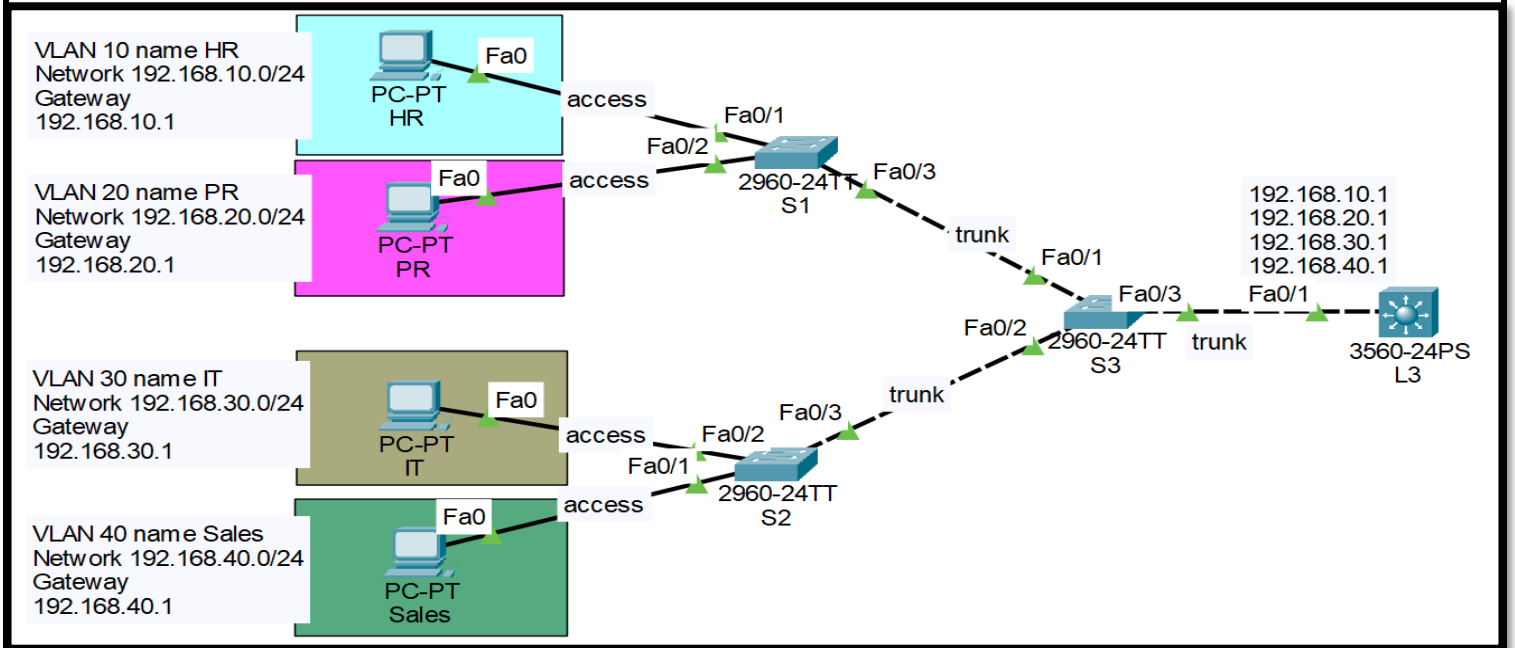


Inter VLAN Using Multilayer Switch and Router

By: Ahmed Abou_ELmaged Shallan

Network Topology





Configurations Network

S1

```
S1(config)#
S1(config)#vlan 10
S1(config-vlan)#name HR
S1(config-vlan)#vlan 20
S1(config-vlan)#name PR
S1(config-vlan)#vlan 30
S1(config-vlan)#name IT
S1(config-vlan)#vlan 40
S1(config-vlan)#name Sales
S1(config-vlan)#exit

S1(config)#int f0/1
S1(config-if)#switchport mode access
S1(config-if)#switchport access vlan 10
S1(config-if)#int f0/2
S1(config-if)#switchport mode access
S1(config-if)#switchport access vlan 20
S1(config-if)#exit

S1(config)#int f0/3
S1(config-if)#switchport mode trunk
S1(config-if)#exit
S1(config)#exit
S1#
```

S2

```
S2(config)#
S2(config)#vlan 10
S2(config-vlan)#name HR
S2(config-vlan)#vlan 20
S2(config-vlan)#name PR
S2(config-vlan)#vlan 30
S2(config-vlan)#name IT
S2(config-vlan)#vlan 40
S2(config-vlan)#name Sales
S2(config-vlan)#exit

S2(config)#int f0/2
S2(config-if)#switchport mode access
S2(config-if)#switchport access vlan 30
S2(config-if)#int f0/1
```

```
S2(config-if)#switchport mode access
S2(config-if)#switchport access vlan 40
S2(config-if)#exit

S2(config)#int f0/3
S2(config-if)#switchport mode trunk
S2(config-if)#exit
S2(config)#exit
S2#
```

S3

```
S3(config)#
S3(config)#vlan 10
S3(config-vlan)#name HR
S3(config-vlan)#vlan 20
S3(config-vlan)#name PR
S3(config-vlan)#vlan 30
S3(config-vlan)#name IT
S3(config-vlan)#vlan 40
S3(config-vlan)#name Sales
S3(config-vlan)#exit

S3(config)#int range f0/1-3
S3(config-if-range)#switchport mode trunk
S3(config-if-range)#exit
S3(config)#exit
S3#
```

R1

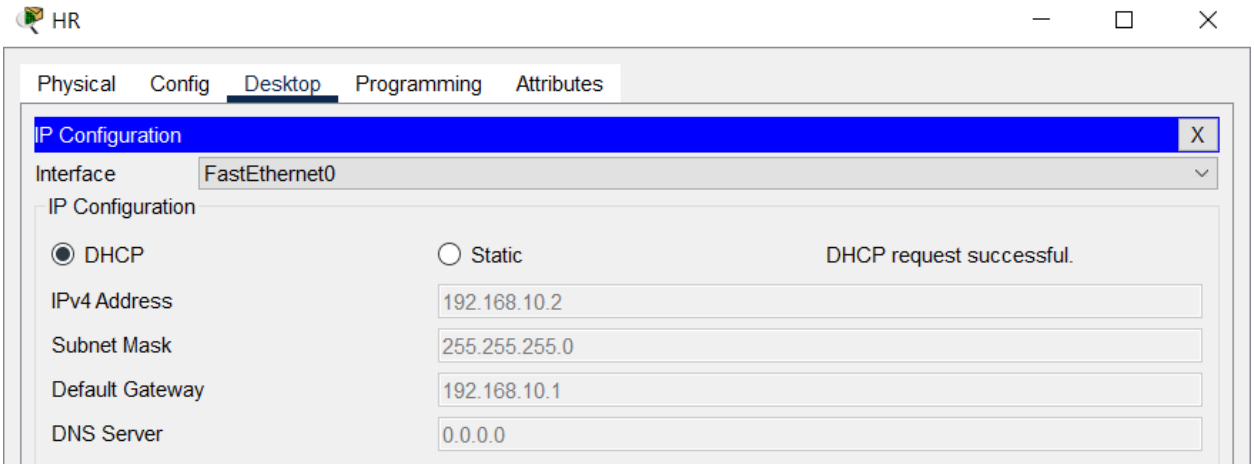
```
R1(config)#int gig0/0
R1(config-if)#no sh
R1(config-if)#exit
R1(config)#int gig0/0.10
R1(config-subif)#encapsulation dot1Q 10
R1(config-subif)#ip add 192.168.10.1 255.255.255.0
R1(config-subif)#no sh
R1(config-subif)#int gig0/0.20
R1(config-subif)#encapsulation dot1Q 20
R1(config-subif)#ip add 192.168.20.1 255.255.255.0
R1(config-subif)#no sh
R1(config-subif)#int gig0/0.30
R1(config-subif)#encapsulation dot1Q 30
R1(config-subif)#ip add 192.168.30.1 255.255.255.0
R1(config-subif)#no sh
```

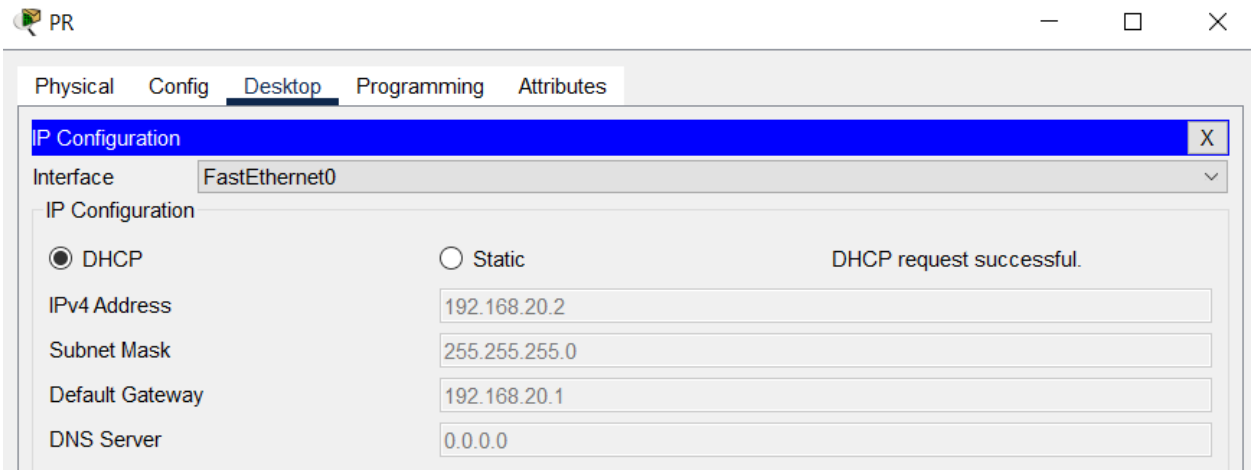
```
R1(config-subif)#int gig0/0.40
R1(config-subif)#encapsulation dot1Q 40
R1(config-subif)#ip add 192.168.40.1 255.255.255.0
R1(config-subif)#no sh
R1(config-subif)#exit
R1(config)#exit
R1#

R1(config)#
R1(config)#ip dhcp pool vlan10
R1(dhcp-config)#network 192.168.10.0 255.255.255.0
R1(dhcp-config)#default-router 192.168.10.1
R1(dhcp-config)#exit

R1(config)#ip dhcp pool vlan20
R1(dhcp-config)#network 192.168.20.0 255.255.255.0
R1(dhcp-config)#default-router 192.168.20.1
R1(dhcp-config)#exit

R1(config)#ip dhcp pool vlan30
R1(dhcp-config)#network 192.168.30.0 255.255.255.0
R1(dhcp-config)#default-router 192.168.30.1
R1(dhcp-config)#exit

R1(config)#ip dhcp pool vlan40
R1(dhcp-config)#network 192.168.40.0 255.255.255.0
R1(dhcp-config)#default-router 192.168.40.1
R1(dhcp-config)#exit
R1(config)#exit
R1#
```

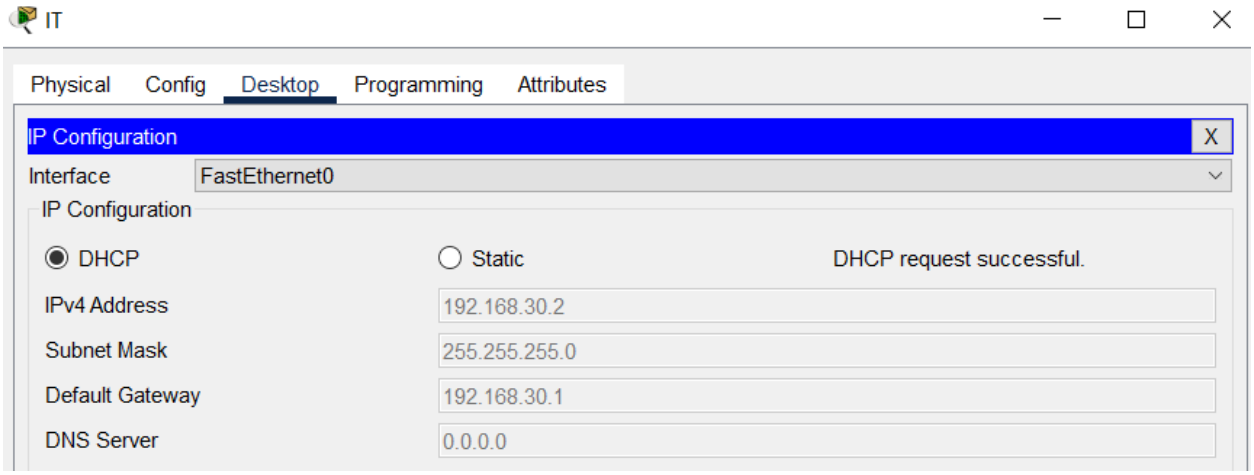
L3

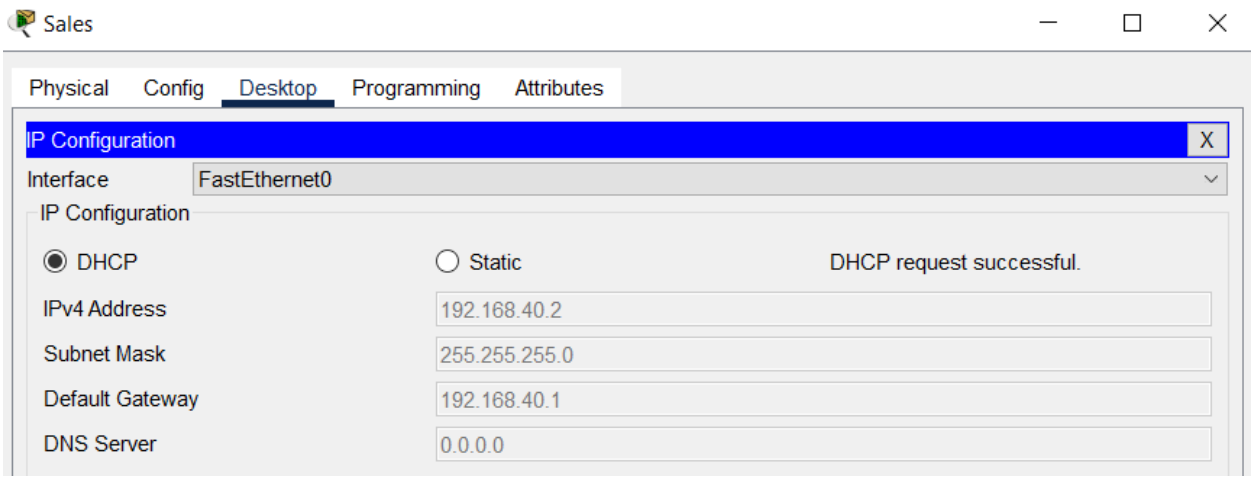
```
L3(config)#
L3(config)#ip routing
L3(config)#vlan 10
L3(config-vlan)#vlan 20
L3(config-vlan)#vlan 30
L3(config-vlan)#vlan 40
L3(config-vlan)#exit
L3(config)#
L3(config)#int vlan 10
L3(config-if)#ip add 192.168.10.1 255.255.255.0
L3(config-if)#int vlan 20
L3(config-if)#ip add 192.168.20.1 255.255.255.0
```

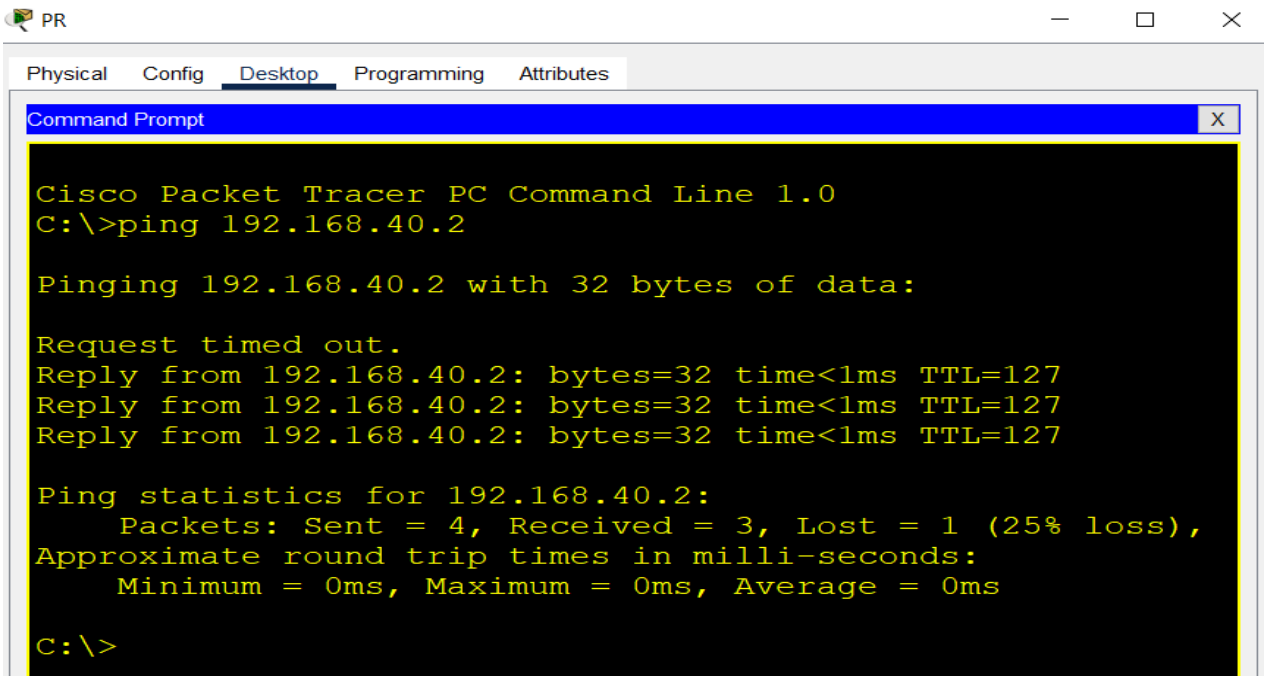
```
L3(config-if)#int vlan 30
L3(config-if)#ip add 192.168.30.1 255.255.255.0
L3(config-if)#int vlan 40
L3(config-if)#ip add 192.168.40.1 255.255.255.0
L3(config-if)#exit

L3(config)#ip dhcp pool vlan10
L3(dhcp-config)#network 192.168.10.0 255.255.255.0
L3(dhcp-config)#default-router 192.168.10.1
L3(dhcp-config)#exit
L3(config)#ip dhcp pool vlan20
L3(dhcp-config)#network 192.168.20.0 255.255.255.0
L3(dhcp-config)#default-router 192.168.20.1
L3(dhcp-config)#exit
L3(config)#ip dhcp pool vlan30
L3(dhcp-config)#network 192.168.30.0 255.255.255.0
L3(dhcp-config)#default-router 192.168.30.1
L3(dhcp-config)#exit
L3(config)#ip dhcp pool vlan40
L3(dhcp-config)#network 192.168.40.0 255.255.255.0
L3(dhcp-config)#default-router 192.168.40.1
L3(dhcp-config)#exit
L3(config)#
```

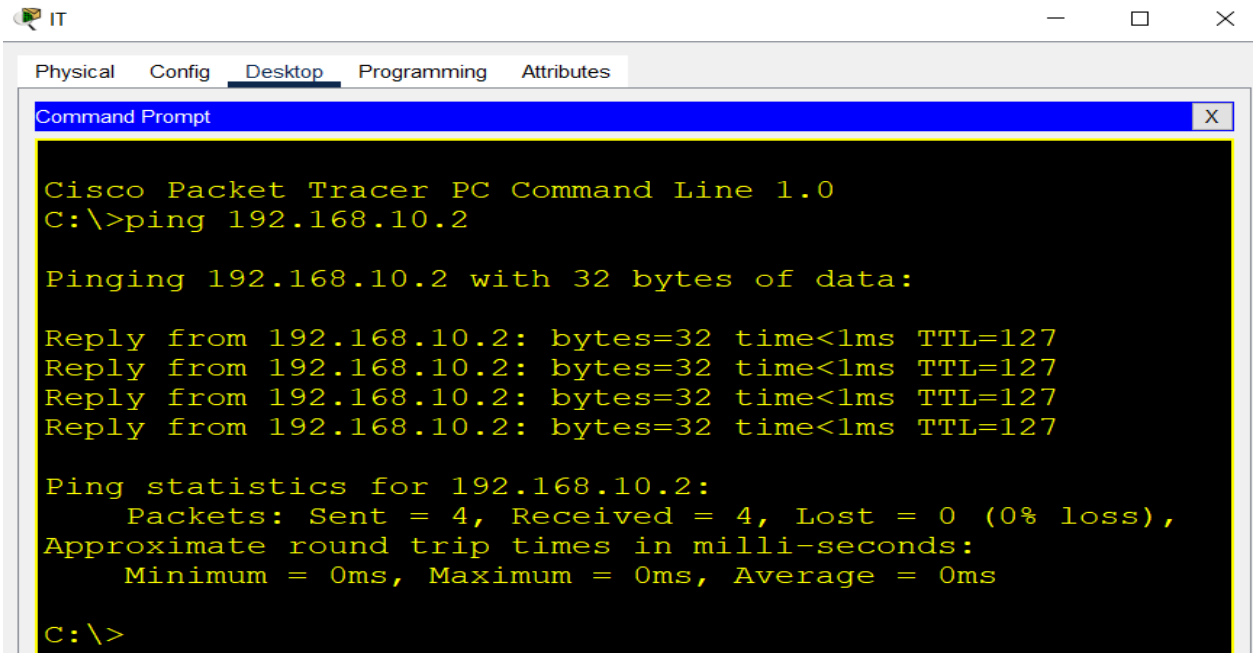



PR
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
DHCP request successful.
IPv4 Address
192.168.20.2
Subnet Mask
255.255.255.0
Default Gateway
192.168.20.1
DNS Server
0.0.0.0


IT
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
DHCP request successful.
IPv4 Address
192.168.30.2
Subnet Mask
255.255.255.0
Default Gateway
192.168.30.1
DNS Server
0.0.0.0


Sales
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
DHCP request successful.
IPv4 Address
192.168.40.2
Subnet Mask
255.255.255.0
Default Gateway
192.168.40.1
DNS Server
0.0.0.0





Thanks

Network Security Engineer: - Ahmed Allam