

VLSM + VTP + DHCP + OSPF + NAT

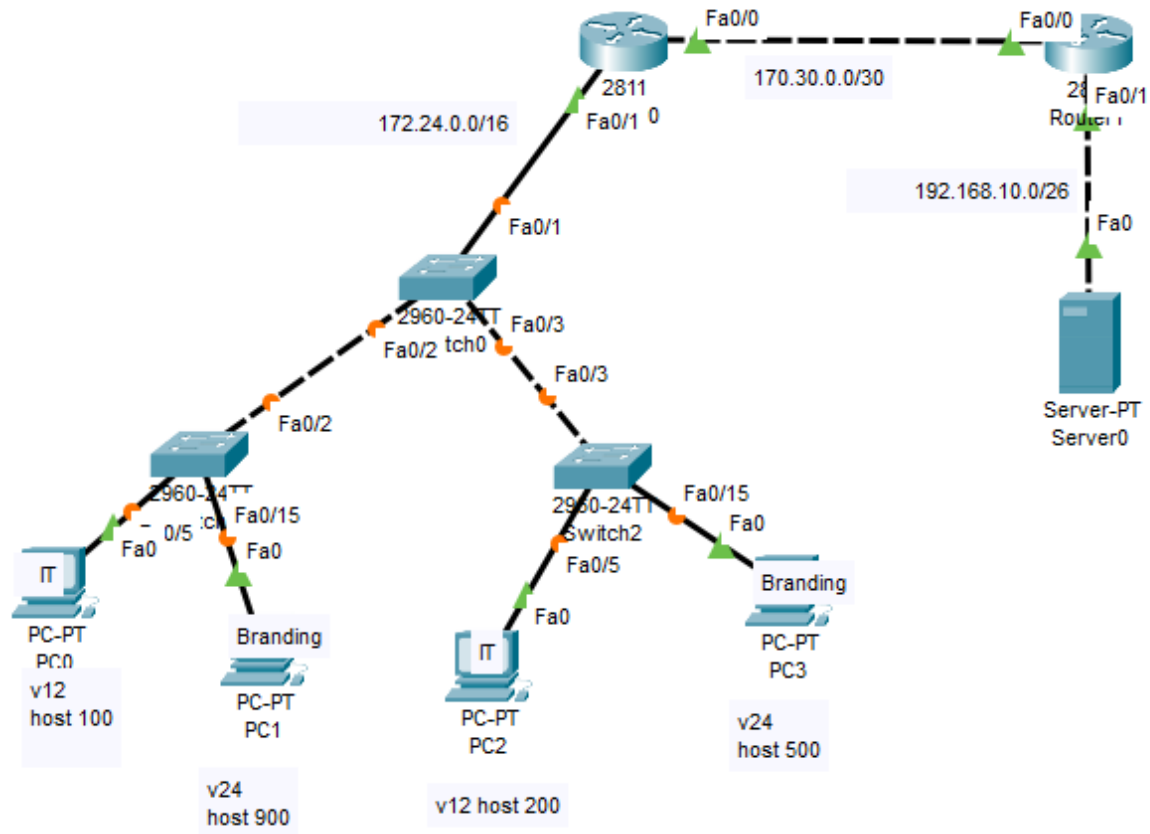
Question:

V12 (IT) - F0/4 - F0/13

V24 (BRANDING) - F0/14- F0/24

TRUNK - F0/1, F0/2, F0/3

DOMAIN - tech



Step 01 :

Server switch configuration

substeps to follow :

- 1/ create VLANs
- 2/ set domain name
- 3/ VLAN name assigning
- 4/ trunking

Coding :

```
Switch>enable
Switch#conf t
Switch(config)#do show vtp status
Switch(config)#vtp domain tech
Changing VTP domain name from NULL to tech
Switch(config)#vlan 12
Switch(config-vlan)#name IT
Switch(config-vlan)#exit
Switch(config)#vlan 24
Switch(config-vlan)#name Branding
Switch(config-vlan)#exit
Switch(config)#int range f0/1-f0/3
Switch(config-if-range)#switchport mode trunk
Switch(config-if-range)#switchport trunk allow vlan all
Switch(config-if-range)#exit
```

Step 02 :

Client switch configuration:

substeps to follow :

- 1/ set to client
- 2/ set domain name
- 3/ range assigning

for switch 1-

Coding :

```
Switch>enable
```

```
Switch#conf t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Switch(config)#vtp mode client
```

Setting device to VTP CLIENT mode.

```
Switch(config)#do show vtp status
```

```
Switch(config)#do show vlan
```

```
Switch(config)#int range f0/4-f0/13
```

```
Switch(config-if-range)#switchport mode access
```

```
Switch(config-if-range)#switchport access vlan 12
```

```
Switch(config-if-range)#exit
```

```
Switch(config)#int range f0/14-f0/24
```

```
Switch(config-if-range)#switchport mode access
```

```
Switch(config-if-range)#switchport access vlan 24
```

```
Switch(config-if-range)#exit
```

Step 03 :

switch 02 configuration

same code and same steps

Step 04 :

Router configuration :

1/first VLSM has to be done

2/ Router0 configuration

v24 (Branding)

host - 1400

network ip

172.24.0.0/21

broadcast ip

172.24.7.255

subnet mask

255.255.248.0

v12 (IT)

host - 300

network ip

172.24.8.0/23

broadcast ip

172.24.9.255

subnet mask

255.255.254.0

Router0 configuration :

Would you like to enter the initial configuration dialog? [yes/no]: no
Press RETURN to get started!

Router>enable

Router#conf t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#int f0/1

Router(config-if)#no shut

Router(config-if)#

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Router(config-if)#int f0/1.12

Router(config-subif)#

%LINK-5-CHANGED: Interface FastEthernet0/1.12, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1.12, changed state to up

Router(config-subif)#encapsulation dot1q 12

Router(config-subif)#ip address 172.24.8.1 255.255.254.0

Router(config-subif)#exit

Router(config)#int f0/1.24

Router(config-subif)#

%LINK-5-CHANGED: Interface FastEthernet0/1.24, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1.24, changed state to up

Router(config-subif)#encapsulation dot1q 24

Router(config-subif)#ip address 172.24.0.1 255.255.248.0

Router(config-subif)#exit

Router(config)#ip dhcp pool vp12

Router(dhcp-config)#network 172.24.8.0 255.255.254.0

Router(dhcp-config)#default 172.24.8.1

Router(dhcp-config)#exit

Router(config)#ip dhcp pool vp24

Router(dhcp-config)#network 172.24.0.0 255.255.248.0

Router(dhcp-config)#default 172.24.0.1

Router(dhcp-config)#exit

Step 05 :

manually ip set up in common line between two routers

```
Router(config)#int f0/0
Router(config-if)#no shut
Router(config-if)#ip address 170.30.0.1 255.255.255.252
Router(config-if)#exit
```

Step 06 :

Router1 configuration :

```
Router>enable
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int f0/0
Router(config-if)#no shut
Router(config-if)#ip address 170.30.0.2 255.255.255.252
Router(config-if)#exit
```

```
Router(config-if)#int f0/1
Router(config-if)#no shut
```

```
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
```

```
Router(config-if)#ip address 192.168.10.1 255.255.255.192
Router(config-if)#exit
Router(config)#ip dhcp pool p1
Router(dhcp-config)#network 192.168.10.0 255.255.255.192
Router(dhcp-config)#default 192.168.10.1
Router(dhcp-config)#exit
```

Step 07 : Routing in Router0

```
Router>enable
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 2500
Router(config-router)#network 172.24.0.0 0.0.7.255 area 0
Router(config-router)#network 172.24.8.0 0.0.1.255 area 0
Router(config-router)#network 170.30.0.0 0.0.0.3 area 0
Router(config-router)#exit
```

Step 08 : Routing in Router1

```
Router>enable
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 2500
Router(config-router)#network 170.30.0.0 0.0.0.3 area 0
Router(config-router)#network 192.168.10.0 0.0.0.63 area 0
Router(config-router)#exit
```

Step 09 : Natting in Router0

```
Router(config)#access-list 12 permit 172.24.8.0 0.0.1.255
Router(config)#access-list 24 permit 172.24.0.0 0.0.7.255
Router(config)#ip nat inside source list 12 interface f0/0 overload
Router(config)#ip nat inside source list 24 interface f0/0 overload
Router(config)#int f0/1
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#int f0/0
Router(config-if)#ip nat outside
Router(config-if)#exit
```

Step 10 : Natting in Router1

```
Router(config)#ip nat inside source static 192.168.10.2 170.30.0.2
Router(config)#int f0/1
Router(config-if)#ip nat inside
Router(config-if)#int f0/0
Router(config-if)#ip nat outside
Router(config-if)#exit
```