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Course: Computer Networks

Sec: B
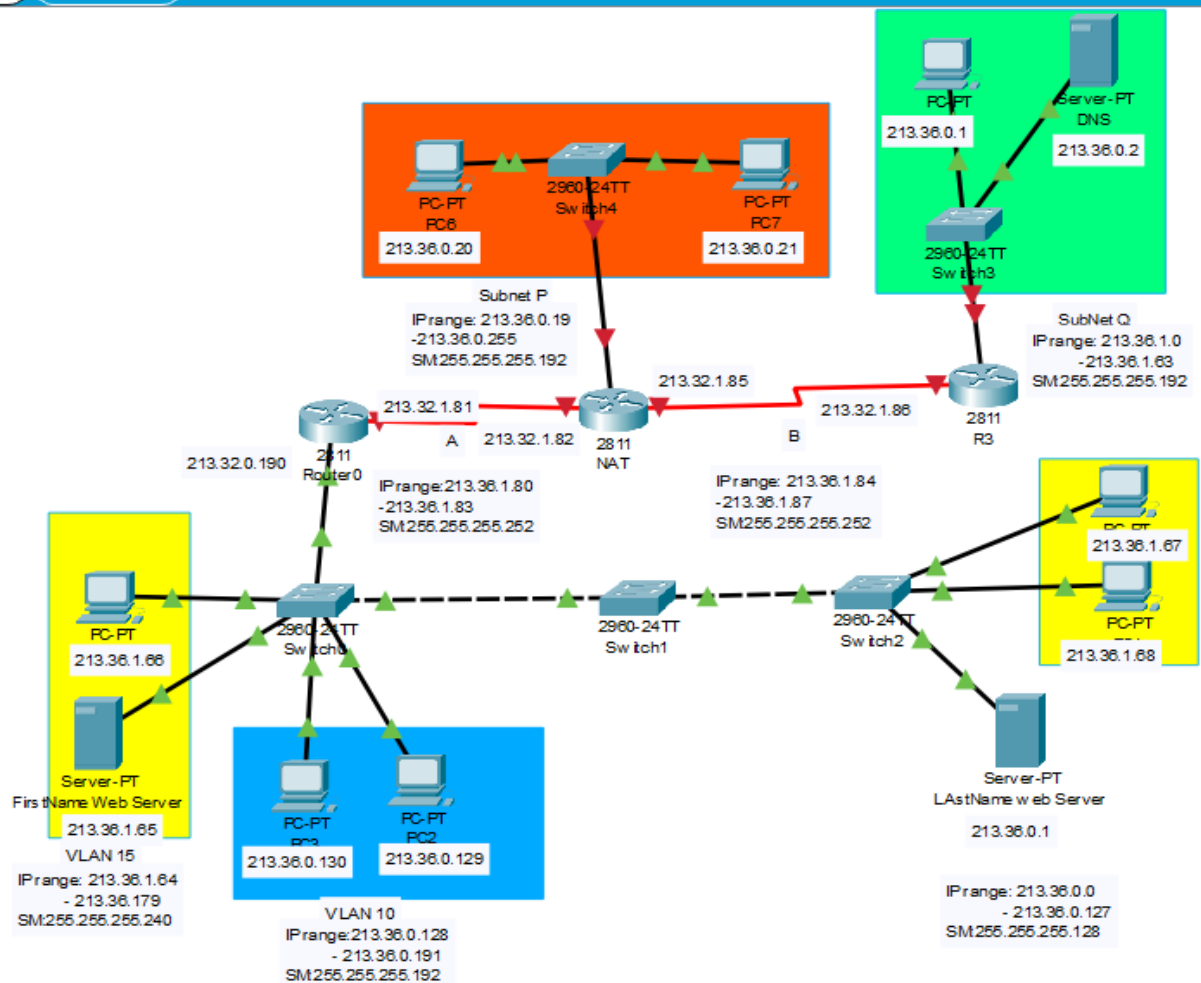
Problem Statement:

Subnet	Ip requirement	If ID:18-36333-1 IP Addreess
P	YX	33
Q	XW	33
Vlan 10	WV	36
vlan 15	ZS	11
Vlan which the last name of server	TX	83

Network Design:

PC-PT
213.36.0.1

Server-PT
DNS
213.36.0.2

2960-24TT
Switch4

PC-PT
PC6
213.36.0.20

PC-PT
PC7
213.36.0.21

Subnet P
IPrange: 213.36.0.19
-213.36.0.255
SM255.255.255.192

2960-24TT
Switch3

SubNet Q
IPrange: 213.36.1.0
- 213.36.1.63
SM255.255.255.192

213.32.1.85

213.32.1.81

213.32.1.82

2811
NAT

213.32.1.86

B

2811
R3

213.32.0.190

2811
Router0

A

IPrange:213.36.1.80
-213.36.1.83
SM255.255.255.252

IPrange: 213.36.1.84
-213.36.1.87
SM255.255.255.252

PC-PT
213.36.1.67

PC-PT
213.36.1.66

2960-24TT
Switch0

2960-24TT
Switch1

2960-24TT
Switch2

PC-PT
213.36.1.68

Server-PT
FirstName Web Server
213.36.1.65
VLAN 15
IPrange: 213.36.1.64
- 213.36.179
SM:255.255.255.240

PC-PT
PC3
213.36.0.130

PC-PT
PC2
213.36.0.129

Server-PT
LAstName web Server
213.36.0.1

VLAN 10
IPrange:213.36.0.128
- 213.36.0.191
SM:255.255.255.192

IPrange: 213.36.0.0
- 213.36.0.127
SM:255.255.255.128

VLSM Table:

1/ VLSM Table:

Subnet	IP	Allowcated	Subnet mask	Allocated IP
Vlan last name	83	$2^7 = 128$	255.255.255.128	213.36.0.0 213.36.0.127/25
Vlan 10	36	$2^6 = 64$	255.255.255.192	213.36.0.128 213.36.0.191/26
P	33	$2^6 = 64$	255.255.255.192	213.36.0.192 213.36.0.255/26
S	33	$2^6 = 64$	255.255.255.192	213.36.1.0 213.36.1.63/26
Vlan15	11	$2^4 = 16$	255.255.255.240	213.36.1.64 213.36.1.79/28
A	4	$2^2 = 4$	255.255.255.252	213.36.1.80 213.36.1.83/30
B	4	$2^2 = 4$	255.255.255.252	213.36.1.84 213.36.1.88/30

TABLE 1 switech0 configuration

Switch(config)#vlan 10 Switch(config-vlan)#Exit Switch(config)#vlan 15 Switch(config-vlan)#Exit	Create a vlan 10 and 15
Switch(config)#interface range fa0/3-4 Switch(config-if-range)#switchport mode access Switch(config-if-range)#switchport access vlan 10 Switch(config-if-range)#exit	Select Interface range fa0/3-4 Make both interface access link include them to the VLAN 10
Switch(config)#interface range fa0/5-6 Switch(config-if-range)#switchport mode access Switch(config-if-range)#switchport access vlan 15 Switch(config-if-range)#exit	Select Interface range fa0/5-6 Make both interface access link include them to the VLAN 15
Switch(config)#interface fa0/2 Switch(config-if)#switchport mode trunk	Select Interface fa0/2 Make it a trunk port

TABLE 2 switch1 configuration

Switch(config)#vlan 10 Switch(config-vlan)#Exit Switch(config)#vlan 15 Switch(config-vlan)#Exit	Create a vlan 10 and 15.Though this pc has no pc for vlan 10 and 20, we have to create vlan 10 and 20 as a switch need to foeward a frame vlan 10 and 20 from sw0 to sw1
Switch(config)#interface fa0/1 Switch(config-if)#switchport mode trunk	Select Interface fa0/1 Make it a trunk port
Switch(config)#interface fa0/2 Switch(config-if)#switchport mode trunk	Select Interface fa0/2 Make it a trunk port

TABLE 3 switch2 configuration

Switch(config)#vlan 10 Switch(config-vlan)#Exit Switch(config)#vlan 15 Switch(config-vlan)#Exit	Create a vlan 10 and 15
Switch(config)#interface range fa0/5-6 Switch(config-if-range)#switchport mode access Switch(config-if-range)#switchport access vlan 15 Switch(config-if-range)#exit	Select Interface range fa0/5-6 Make both interface access link include them to the VLAN 15
Switch(config)#interface fa0/1 Switch(config-if)#switchport mode trunk	Select Interface fa0/1 Make it a trunk port

TABLE 4 switch0 vtp configuration

Switch(config)#vtp mode server Device mode already VTP SERVER. Switch(config)#vtp domain Hridoy Changing VTP domain name from NULL to Hridoy Switch(config)#vtp password 123 Setting device VLAN database password to 123	Make the Switch server Set the domain name Hridoy set the password 123

TABLE 5 switch1 vtp configuration

Switch(config)#vtp mode client Setting device to VTP CLIENT mode. Switch(config)#vtp domain Hridoy Domain name already set to Hridoy Switch(config)#vtp password 123 Setting device VLAN database password to 123	Make the Switch client Set the domain name Hridoy set the password 123

TABLE 6 switch2 vtp configuration

Switch(config)#vtp mode client Setting device to VTP CLIENT mode. Switch(config)#vtp domain Hridoy Domain name already set to Hridoy Switch(config)#vtp password 123 Setting device VLAN database password to 123	Make the Switch client Set the domain name Hridoy set the password 123

TABLE 7 router0 VLAN 10 IP From DHCP Server

Router>en Router#config t	
Router(config)#interface fa0/0 Router(config-if)#ip address 213.32.0.190 255.255.255.192 Router(config-if)#no shut	
Router(config)#ip dhcp pool mypool Router(dhcp-config)#network 213.32.0.190 255.255.255.192 Router(dhcp-config)#dns-server 213.32.1.2 Router(dhcp-config)#default-router 215.32.1.86 Router(dhcp-config)#ip dhcp excluded-address 213.32.1.17 213.32.1.18 Router(config)#exit	create a pool