FCN ASSIGNMENT 2

SET A

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Q1 . Create a /26 subnet from LAN POOL for each location

LAN POOL - 192.168.1.0/24

ANS :

LAN POOL is 192.168.1.0/24

To create /26 subnet

No. Of network bits =2

ie. No of subnet is 2^2=4

No of host bits =6

Subnet mask = 255.255.255.192

Subnet Renge :

Subnet 1 = 192.168.1.0 - 192.168.1.63

Subnet 2 = 192.168.1.64 - 192.168.1.127

Subnet 3 = 192.168.1.128 - 192.168.1.191

Subnet 4 = 192.168.1.192 - 192.168.1.255

Q 2. Create a minimum possible subnet from WAN IP POOL point to point connectivity between WAN links , write the ip ranges for each subnet

Ans :

Number Of Host Bits= 2

Number Of Subnet Bits= 6

Number Of Possible Host= 4

Number Of Possible Host= 64

Location A : 192.168.1.0

Range: 196.1.113.1 - 196.1.113.2

Location B : 192.168.1.4

Range: 196.1.113.5 - 196.1.113.6

Location C : 192.168.1.8

Range: 196.1.113.9 - 196.1.113.210

Location D : 192.168.1.12

Range: 196.1.113.13 - 196.1.113.14

Q.3 Implement any dynamic routing protocol between WAN Links.

Ans :

Implementing RIP

Router 1

Router(config-if)#

ip address 196.1.113.129 255.255.255.224

Router(config)#ip routing

Router(config)#router rip version 2

Router(config-router)#network 192.168.1.0

Router(config-router)#network 196.1.113.0

Router 2

Router#configure terminal

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

Router(config)#interface GigabitEthernet0/0

Router(config-if)#no shutdown

Router(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state

to up

ip address 192.168.1.1 255.255.255.0

Router(config)#ip routing

Router(config)#router rip

Router(config)#router rip

Router(config-router)#network 192.168.1.0

Router(config-router)#network 196.1.113.0

Router 3

Router#configure terminal

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

Router(config)#interface GigabitEthernet0/0

Router(config-if)#no shutdown

Router(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state

to up

ip address 192.168.1.64 255.255.255.0

Router(config)#interface GigabitEthernet0/0

Router(config-if)#ip address 192.168.1.129 255.255.255.192

Router(config-if)#

Router(config-if)#

Router(config-if)#exit

Router(config)#interface GigabitEthernet0/1

Router(config-if)#

Router(config-if)#exit

Router(config)#interface GigabitEthernet0/0

Router(config-if)#

Router(config-if)#exit

Router(config)#interface Serial0/0/0

Router(config-if)#

Router(config-if)#exit

Router(config)#interface Serial0/0/1

Router(config-if)#no shutdown

Router(config-if)#

Router(config-if)#exit

Router(config)#interface Serial0/0/1

Router(config-if)#

Router(config-if)#exit

Router(config)#interface Serial0/0/0

Router(config-if)#ip address 196.1.113.65 255.255.255.224

Router(config-if)#no shutdown

Router(config-if)#

Router(config-if)#exit

Router(config)#interface Serial0/1/0

Router(config-if)#ip address 196.1.113.130 255.255.255.224

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#ip routing

Router(config)#router rip version 2

Router(config-router)#network 196.1.113.0

Router(config-router)#network 192.168.1.0

Router 4

Router#configure terminal

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

Router(config)#interface GigabitEthernet0/0

Router(config-if)#

Router(config-if)#exit

Router(config)#interface Serial0/0/0

Router(config-if)#no shutdown

Router(config-if)#

%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

ip address 196.1.113.97 255.255.255.0

Router(config-if)#ip address 196.1.113.97 255.255.255.224

Router(config-if)#

Router(config-if)#exit

Router(config)#interface Serial0/0/0

Router(config-if)#

Router(config-if)#exit

Router(config)#interface Serial0/0/1

Router(config-if)#ip address 196.1.113.66 255.255.255.224

Router(config-if)#ip address 196.1.113.66 255.255.255.224

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#router rip

Router(config-router)#network 192.168.1.0

Router(config-router)#network 196.1.113.0

Q .4 Write a rule to NAT LAN IP to WAN IP for any location

Ans :

A1(config)#interface Fa0/0

A1(config-if)#ip nat inside

A1(config-if)#interface Fa0/1

A1(config-if)#ip nat outside

A1(config-if)#end

R1(config-if)#ip nat inside source static 192.168.1.62 196.1.113.1

SET B

Q.1 Write an ACL rule to enable internet for IT Team only.

Ans :

Router#config t

Router(config)#access-list 1 deny 192.168.3.3 0.0.0.0

Router(config)#access-list 1 deny 192.168.1.2 0.0.0.0

Router(config)#access-list 1 permit any

Router(config)#exit

Router#show ip access-lists

Standard IP access list 1

10 deny host 192.168.3.3

20 deny host 192.168.1.2

30 permit any

Router#config t

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

Router(config)#interface serial 0/0/0

Router(config-if)#ip access-group 1 out

Router(config-if)#exit

Router#show ip access-lists

Standard IP access list 1

10 deny host 192.168.3.3

20 deny host 192.168.1.2

30 permit any

Q.2 Block traffic from the host 192.168.2.0/24 to the HR application server using ACL but allow it to get the Internet.

Ans :

Router#config t

Router(config)#int gigabitEthernet 0/0

Router(config-if)#ip add 192.168.3.2 255.255.255.0

Router(config-if)#no shut

Router(config)#int gigabitEthernet 0/1

Router(config-if)#ip add 192.168.1.2 255.255.255.0

Router(config-if)#no shut

Router(config)#int gigabitEthernet 0/2

Router(config-if)#ip add 192.168.2.2 255.255.255.0

Router(config-if)#no shut

```
Router(config)#int serial 0/0/0
Router(config-if)#ip add 202.1.20.3 255.255.255.0
Router(config-if)#no shut
```