

Computer Networks

Project (Course & Lab)

Section-S

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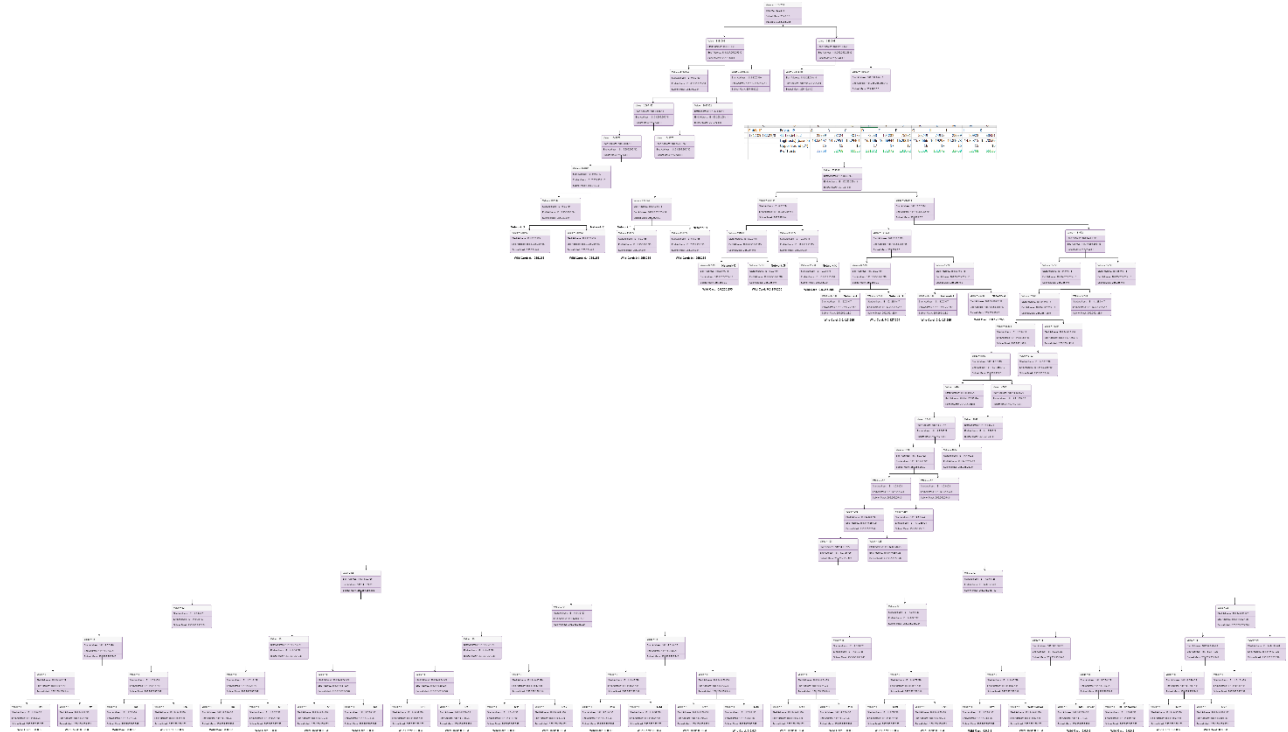
SE-S

Project (Course & Lab)

First & Second Task:

I have been assigned with the public Ip 181.109.182.22 and private Ip 41.133.64.222 and subnets of all the All the Networks.

For this I have created a VLSM tree and calculated all the Ip's of all the networks and routers.



I have also attached the pdf of this picture to look more visible.

In this, I have selected that Ip's block that exactly match with the no of hosts of those subnets.

Task 5: Perform DHCP

To assign Ip's to the routers and PC's, I add the selected Ip's from the VLSM Tree that are allocated to that network in the VLSM tree.

DHCP configuration

Date: 1st Block.

Network A :-

181.12.0.0 - 181.12.127.255.

select ip :- 181.12.0.1 router.

subnet mask :- 255.255.128.0.

• ON.

- dhcp commands:

ip dhcp pool Fast.

network 181.12.0.1 255.255.128.0

default-router 181.12.0.1.

Network B :-

0.0.127.255.

181.12.128.0 - 181.12.255.255.

select ip : 181.12.128.1 router.

subnet mask : 255.255.128.0.

same format commands.

Network C :-

0.0.255.255.

181.8.0.0 - 181.8.255.255

select ip :- 181.8.0.1 router.

subnet mask :- 255.255.0.0.

same format commands.

~~Mail Server :-~~

~~181.14.0.88 - 181.14.0.91.~~

~~select ip :- 181.14.0.90~~

~~subnet mask :- 255.255.255.252.~~

~~default gateway: Network C router ip.~~

~~181.8.0.1.~~

2nd Block.

Network D :-

181.0.0.0 - 181.1.255.255.

select ip :- 181.0.0.1 router.

subnet mask :- 255.254.0.0.

same format commands.

Network E :-

181.2.0.0 - 181.3.255.255.

select ip :- 181.2.0.1 router

subnet mask :- 255.254.0.0

same format commands.

Network F :-

181.4.0.0 - 181.5.255.255

select ip :- 181.4.0.1 router.

subnet mask : 255.254.0.0.

same format commands.

Excel

Date:

3rd Block.

Network G:-

181.9.0.0 - 181.9.255.255.

select-ip: 181.9.0.1 router.

subnet-mask: 255.255.0.0.

same Format commands:-

Network H:-

181.6.0.0 - 181.7.255.255.

select ip: 181.6.0.1

subnet mask: 255.254.0.0.

same Format comands:-

~~As we have no pc/laptop connected, so dhcp
ip is not valid but we have web server, so
assign ip statically.~~

~~Web Server:-~~

~~181.14.0.84 - 181.14.0.87.~~

~~select ip: 181.14.0.85.~~

~~subnet mask: 255.255.255.252~~

~~default-gateway: Network H router ip
181.6.0.1~~

Network I:-

181.13.0.0 - 181.13.127.255

select-ip :- 181.13.0.1 router.

subnet mask :- 255.255.128.0.

same Format commands:-

4th Block.

Network J:-

181.13.128.0 - 181.13.255.255

select-ip :- 181.13.128.1 router.

subnet mask :- 255.255.128.0.

same Format commands.

Network K:-

181.10.0.0 - 181.10.255.255

select-ip :- 181.10.0.1 router.

subnet-mask :- 255.255.0.0.

same Format Commands.

~~DHCP server:-~~

~~181.14.0.92 - 181.14.0.95~~

~~select-ip :- 181.14.0.93~~

~~subnet-mask :- 255.255.255.252~~

~~default gateway: Network K router ip~~

~~181.10.0.1~~

Enrol

Router to Router configuration.

Date:

1st Block

R1:

181.14.0.0 - 181.14.0.3

select ip in router 0 : 181.14.0.1 se 0/1/0

select ip in router 2 : 181.14.0.2 se 0/3/0

sub-net mask : 255.255.255.252.

R2:

181.14.0.4 - 181.14.0.7

select ip in router 1 : 181.14.0.5 se 0/2/0.

select ip in router 2 : 181.14.0.6 se 0/3/1

subnet mask : 255.255.255.252.

R3:-

181.14.0.8 - 181.14.0.11

select ip in router 1 : 181.14.0.9 se 0/2/1

select ip in router 3 : 181.14.0.10 se 0/3/1.

subnet mask : 255.255.255.252.

R4:-

181.14.0.12 - 181.14.0.15

select ip in router 2 : 181.14.0.13 se 0/1/0

select ip in router 3 : 181.14.0.14 se 0/3/0.

subnet mask : 255.255.255.252.

R5: 181.14.0.16 - 181.14.0.19

select ip in router 3 : 181.14.0.17 se 0/0/0

select ip in router 4 : 181.14.0.18 se 0/3/0

subnet mask: 255.255.255.252.

2nd Block.

R6:- 181.14.0.20 - 181.14.0.23.

select ip in router 4 : 181.14.0.21 se 0/3/1

select ip in router 5 : 181.14.0.22 se 0/3/0

subnet mask: 255.255.255.252.

R7:- 181.14.0.24 - 181.14.0.27

select ip in router 5 : 181.14.0.25 se 0/3/1

select ip in router 6 : 181.14.0.26 se 0/3/0.

subnet mask: 255.255.255.252.

R8: 181.14.0.28 - 181.14.0.31

select ip in router 6 : 181.14.0.29 se 0/3/1

select ip in router 7 : 181.14.0.30 se 0/3/0.

subnet mask: 255.255.255.252.

R9: 181.14.0.32 - 181.14.0.35.

select ip in router-7: 181.14.0.33 se 0/3/1

select ip in router 9: 181.14.0.34 se 0/3/0.

subnet mask: 255.255.255.252.

Date:

R10: 181.14.0.36 - 181.14.0.39.

select ip in router 6: 181.14.0.37 se 0/1/0.

select ip in router 8: 181.14.0.38 se 0/2/0.

subnet mask: 255.255.255.252

R11: 181.14.0.40 - 181.14.0.43

select ip in router 8: 181.14.0.41 se 0/2/1

select ip in router 9: 181.14.0.42 se 0/3/1

subnet mask: 255.255.255.252.

R12: 181.14.0.44 - 181.14.0.47

select ip in router 9: 181.14.0.45 se 0/1/0.

select ip in router 10: 181.14.0.46 se 0/3/0.

subnet mask: 255.255.255.252.

R13: 181.14.0.48 - 181.14.0.51

select ip in router 8: 181.14.0.49 se 0/0/0

select ip in router 10: 181.14.0.50. se 0/3/1

subnet mask: 255.255.255.252

3rd block.

R14: 181.14.0.52 - 181.14.0.55

select ip in router 12: 181.14.0.53 se 0/3/0.

select ip in router 13: 181.14.0.54 se 0/3/0.

subnet mask: 255.255.255.252.

Excel

Date:

R 15:

181.14.0.56 - 181.14.0.59

select ip in Router 12 : 181.14.0.57 se 0/3/1

select ip in Router 14 : 181.14.0.58 se 0/3/0.

subnet mask: 255.255.255.252.

Block 4.

R 16:- 181.14.0.60 - 181.14.0.63.

select ip in Router 14 : 181.14.0.61 se 0/3/1

select ip in Router : 181.14.0.62 se 0/0/0.

subnet mask: 255.255.255.252

R 17: 181.14.0.64 - 181.14.0.67

Select ip in router 15 : 181.14.0.65 se 0/3/0-

Select ip in router 16 : 181.14.0.66 se 0/0/0-

subnet mask: 255.255.255.252.

R 18: 181.14.0.68 - 181.14.0.71

select ip in router 15 : 181.14.0.69 se 0/3/1

select ip in router 17 : 181.14.0.70 se 0/2/0.

subnet mask: 255.255.255.252.

R 19: 181.14.0.72 - 181.14.0.75

select ip in router 19 : 181.14.0.73 se 0/3/1

select ip in router 17 : 181.14.0.74 se 0/3/1

subnet mask: 255.255.255.252.

Excel

R20: 181.14.0.76 - 181.14.0.79

select ip in router 16 : 181.14.0.77 se 0/3/0.

select ip in router 18 : 181.14.0.78. se 0/3/1

subnet mask: 255.255.255.252.

R21: 181.14.0.80 - 181.14.0.83.

select ip in router 17 : 181.14.0.81 se 0/3/0.

select ip in router 18 : 181.14.0.82 se 0/3/0.

subnet mask: 255.255.255.

R22:

181.14.0.96 - 181.14.0.99

select ip in router 11 : 181.14.0.97 se 0/3/0.

select ip in router 12 : 181.14.0.98. se 0/0/1.

subnet mask: 255.255.255.252

R23: 181.14.0.100 - 181.14.0.103.

select ip in router 12 : 181.14.0.101 se 0/0/0.

select ip in router 10 : 181.14.0.102. se 0/1/0

subnet mask: 255.255.255.252.

Date:

redistribution

1st router.

en

configure terminal.

router ospf 1.

redistribute eigrp ~~5~~ metric ^{255.}_{or} 1 subnet

en

~~configure~~ terminal.

router eigrp 5

redistribute ospf 1 metric 100 200 255 1 150.

en configure terminate?

router ~~eigrp~~ rip.

Date:

Mail Server:

All hosts.

Mail Server
ip

181.8.0.2

default gateway
181.8.0.1

~~181.8.0.2~~ X.

~~rip~~ rip

Last Block:

configure terminal.

router rip

version 2

- network (All the networks that are connected)

e.g:- network 181.14.0.68

network 181.14.0.72

network 181.14.0.76.

1st & 3rd Block: OSPF.

→ en

→ configure terminal.

→ router ospf 1.

→ network (Network address) (wild card) area 1.

2nd

2 Block ~~EIGRP~~ EIGRP 5.

en

configure terminal.

router eigrp 5

network (network address) (subnet mask)

Date: _____

Access list:

Network A { access-list 1 deny host : 181.12.0.2
 access-list 1 permit any
 int fa0/0
 ip access-group 1 out.

Network B { access-list 2 deny (network address) (subnet)
 access-list 2 permit any.
 int fa0/1
 ip access-group 2 out.

181.0.0.0 0.1.255.255
 Wildcard

Date: _____

Natting:

↓

41.133.64.222. 41.0.0.0

181.23.18... 255.255.128.0

DHCP