SRM INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University u/s 3 of UGC Act, 1956)

DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Sub Code & Name: 18CSS202J – COMPUTER COMMUNICATION

Experiment No	7
Title of Experiment	a.) To perform subnetting over class C IP address. b.) To perform VLSM subnetting
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Date of Experiment	19/03/2021 26/03/2021

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Oral Viva / Online Quiz	5	
2	Execution	10	
	Total	**15**	

Staff Signature with date

AIM: To perform subnetting over class C IP address. (FLSM)

Given add: 215.14.37.38/28

Default: 255.255.255.0

Binary: 11111111.11111111.11111111.00000000

32-28=4 n=4

11111111.11111111.11111111.11110000

2^7=128 2^6=64 2^5=32 2^4=16

Adding = 128+64+32+16=240

New subnet: 255.255.255.240

Least one is 2^4=16

Pc1:

SA: 215.14.37.0

GA: 215.14.37.1

IP: 215.14.37.2

SM: 255.255.255.240

Pc2:

SA: 215.14.37.0

GA: 215.14.37.1

IP: 215.14.37.3

SM: 255.255.255.240

LA: 215.14.37.15

Pc3:

SA: 215.14.37.16

GA: 215.14.37.17

IP: 215.14.37.18

SM: 255.255.255.240

Pc4:

SA: 215.14.37.16

GA: 215.14.37.17

IP: 215.14.37.19

SM: 255.255.255.240

LA: 215.14.37.31

Pc5:

SA: 215.14.37.32

GA: 215.14.37.33

IP: 215.14.37.34

SM: 255.255.255.240

Pc6:

SA: 215.14.37.32

GA: 215.14.37.33

IP: 215.14.37.35

SM: 255.255.255.240

LA: 215.14.37.47

Pc7:

SA: 215.14.37.48

GA: 215.14.37.49

IP: 215.14.37.50

SM: 255.255.255.240

Pc8:

SA: 215.14.37.48

GA: 215.14.37.49

IP: 215.14.37.51

SM: 255.255.255.240

LA: 215.14.37.63

AIM: To perform VLSM subnetting

QUESTION: A given address 192.168.10 /256 with 3 hosts of

1. 30 hosts

2. 50 hosts

3. 20 hosts

Check for highest host

2nd host

2^h>requirements

2^6>50

64>50

H=6

32-6=26

Default subnet mask:255.255.255.0

11111111.11111111.11111111.00000000

11111111.11111111.11111111.11000000

255.255.255.192

SA: 192.168.10.0

GA: 192.168.10.1

IP: 192.168.10.2

SM: 255.255.255.192

LA: 192.168.10.63

1-st host

2^h>requirements

2^5>30

32>30

H=5

32-5=27

Default subnet mask:255.255.255.0

11111111.11111111.11111111.00000000

11111111.11111111.11111111.11100000

255.255.255.224

SA: 192.168.10.64

GA: 192.168.10.65

IP: 192.168.10.66

SM: 255.255.255.224

LA: 192.168.10.95

3rd host

2^h>requirements

2^5>20

32>20

H=5

32-5=27

Default subnet mask:255.255.255.0

11111111.11111111.11111111.00000000

11111111.11111111.11111111.11100000

255.255.255.224

SA: 192.168.10.96

GA: 192.168.10.97

IP: 192.168.10.98

SM: 255.255.255.224

LA: 192.168.10.127

PROCEDURE:

Step 1: Open cisco packet tracer and create a new file.

Step 2: Add all the components – PCs, Switches and Router and wire all the components.

Step 3: Click PC-> Desktop->IP Configuration, to assign IP address 192.168.10.2 and Default gateway as 192.168.10.1. and similarly assign IP address, Default gateway for other PCs.

Step 4: Now Click on Router->CLI(Command Line Interface) to write the command for establishing a network connection.

Step 5: It will display "Continue with configuration dialog? [yes/no]:".Give "no" and Press enter which move on to user mode.

Step 6: Type "en" and press enter. Now you get into the Privileged Mode,

Step 7: Type "conf t" and press enter to get into global configuration mode.

Step 8: Now configure router interface by checking it through hovering it on red arrow and type “int Gig0/0” as per your local router interface.

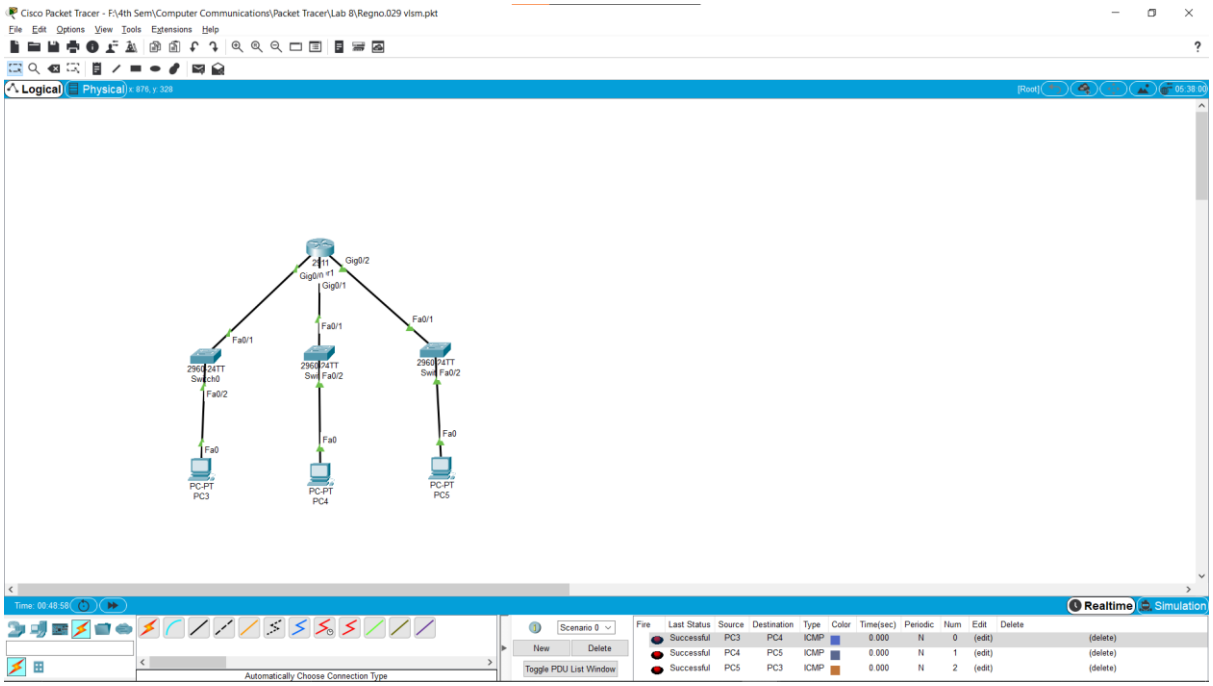
Step 9: Type “ip address 192.168.10.1 255.255.255.192” ip address and subnet mask then give “no shut” to make this interface and line protocol up. And type “exit” to get back to config mode.

Step 10: Similarly type the above steps for configuring 2nd switch connection.

Step 11: At last, assign the message from one PC to other and simulate the environment.

VLSM Subnetting

Screenshot:



CLI code:

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int Gig0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.192
Router(config-if)#no shut

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

Router(config-if)#exit
Router(config)#int Gig0/1
Router(config-if)#ip address 192.168.10.65 255.255.255.224
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to
up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet0/1, changed state to up

Router(config-if)#exit
Router(config)#int Gig0/2
Router(config-if)#ip address 192.168.10.97 255.255.255.224
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to
up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet0/2, changed state to up

Router(config-if)#exit
Router(config)#
```

RESULT: Connection was made successfully.