Implementation of subnetting In Cisco Packet tracker Simulator

AIM

to implement subnetting cisco packet tracker Simulator

classlus IP:

technique that allows more efficient use of a address by divided IP address space into smaller unequal subnets use per requirement

help in optimization of IP address, Impressed network management, enhanced route efficiency.

creating network topology:

first step to implement classless IP subnet is create network topology in packet tracer

to create a network topology, select 'New' button in top left corner, select 'Network'

This creates a block network topology to device

Devices Used
1) 2 router (Cisco 28 11)
2) 4 switches (cisco 2960 -24 TT)
3) 8 PCs
4) copper straight through cables a serial Cables

Network design -

i) LAN1

subnet ID	subnet mask	gateway	Devices connected
192.168.1.0	255.255.255.0 (/24)	192.168.11	PC0, PC1

ii) LAN2

192.168.2.0	255.255.255.0 (/25)	192.168.21	PC2, PC3

iii) LAN3

192.168.3.0	255.255.255.0	192.168.31	PC4, PC5

iv) LAN4

192.168.4.0	255.255.255.0	192.168.4.1	PC6, PC7

v) Router link

192.168.10.0	255.255.255 .252 (/30)	R-0-) 192.168.10.1 R-1-) 192.168.10.2	WAN link btw Router.
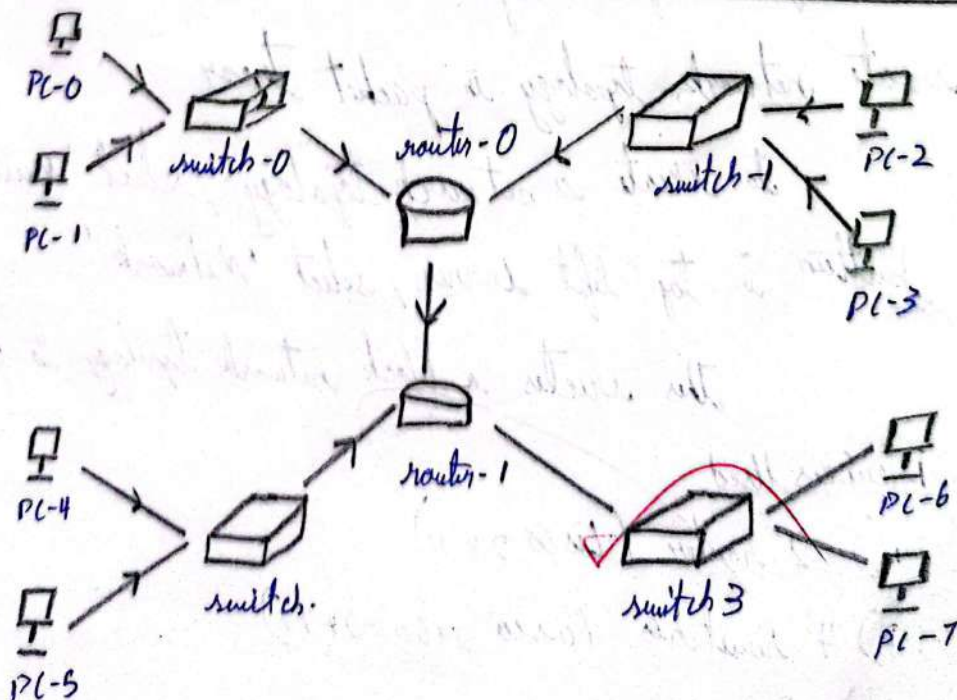
Configuration steps:

router R1:

                              serial 0/0/0 : 192.168.10.1

  gigabit Ethernet 0/0:   192.168.1.1

  gigabit ethernet 0/1:   192.168.2.1

Switch S1:

    Fast Ethernet 0/1: 192.168.10/24

    PC1 : 192.168.1.2

    PC2 : 192.168.1.3

Switch S2:

    Fast Ethernet 0/1 : 192.168.2.0/25

    PC1 : 192.168.2.2

    PC2 : 192.168.2.3

router R2:

    serial 0/0/0 : 192.168.10.2

    gigabit Ethernet 0/0 : 192.168.3.1

    gigabit Ethernet 0/1 : 192.168.4.1

Switch S3:

    fast Ethernet 0/1 : 192.168.3.0/24

    PC1 : 192.168.3.2

    PC2 : 192.168.3.3

Switch S4:

  fast Ethernet 0/1 : 192.168.4.0/25

  PC1: 192.168.4.2

  PC2: 192.168.4.3

Configuring Network:

  enable

* configure terminal

* configure Router0, router1

* configure switches

* Configure PCs

  Desktop -> IP Config -> IP Addr / subnet mask / exit

Testing & verify

  * Use 'ping' command or send packet from one PC

to another

student observation

  i) understanding of subnetting

       * Process of dividing a large network into

smaller subnet to efficient use IP address & manage

traffic

2) advantage of subnetting
    * reduces network congestion
    * allow better management
    * isolate network segments

3) subnet in college
    * yes, subnetting is implement to seperat
the Ex: CSE - 192.168.10.0/26.

Result:
    classless IP subnetting was implement
if cisco packet tracer sucessfully.