

EXPERIMENT – 9

AIM: - Implementation of SUBNETTING in CISCO PACKET TRACER simulator.

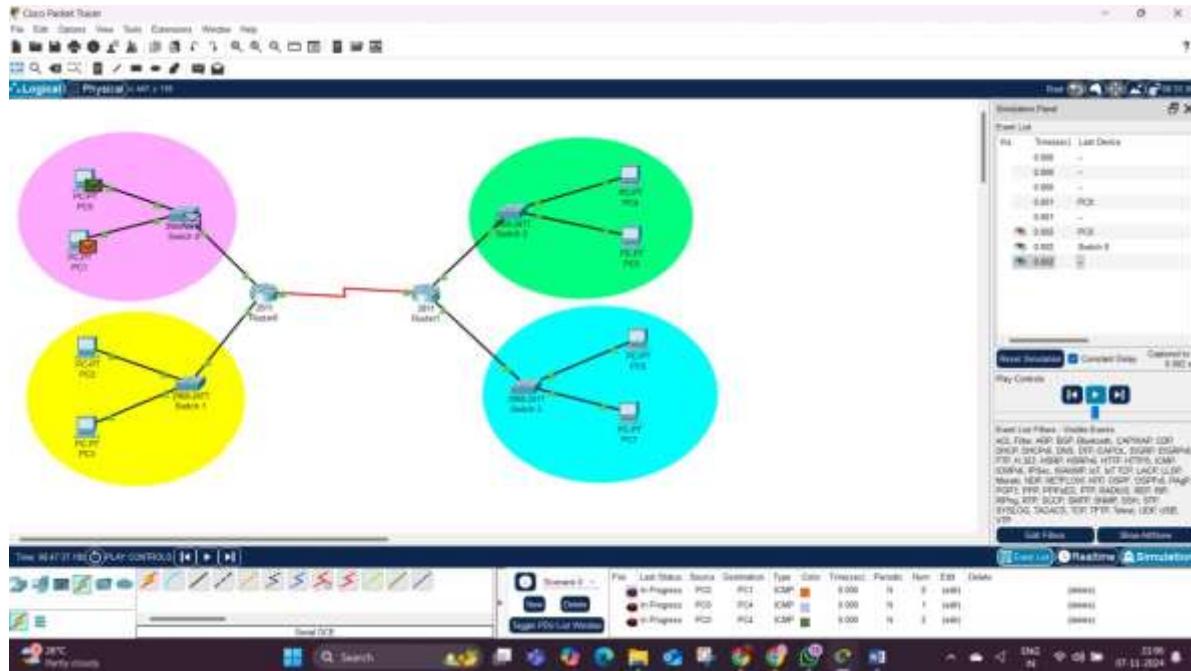
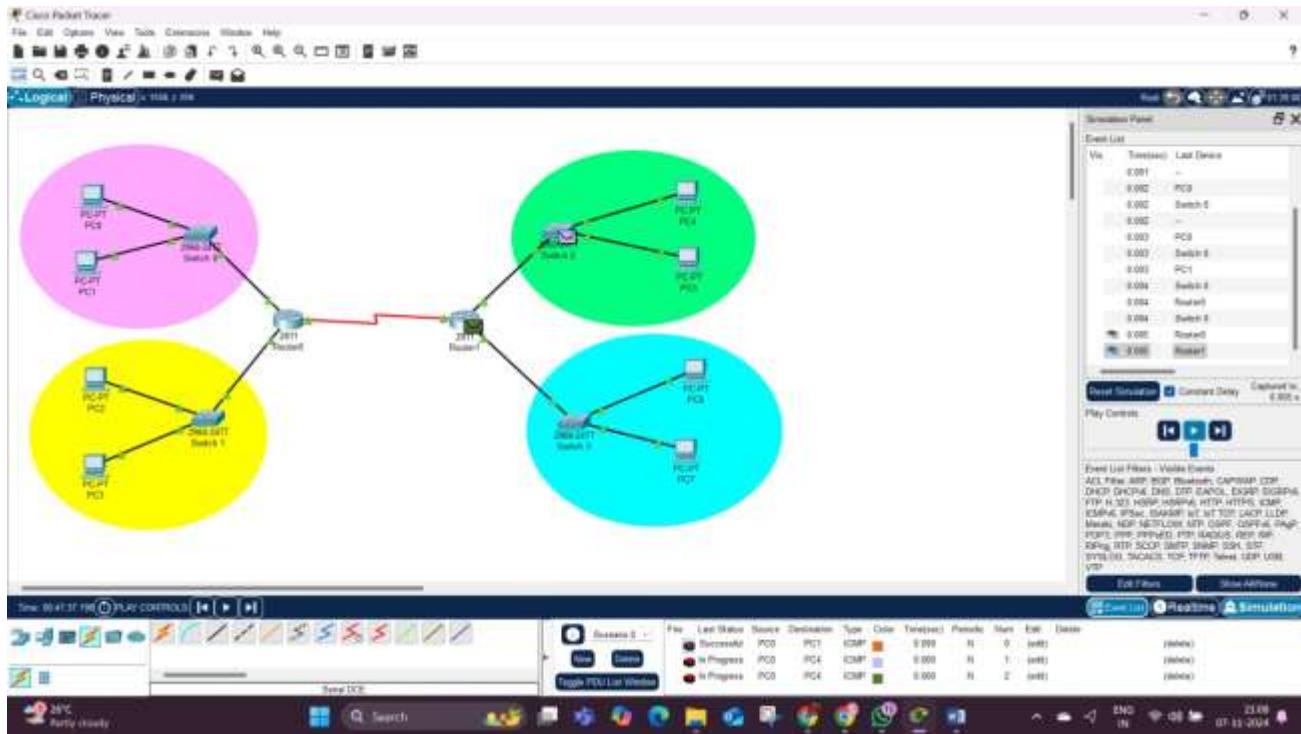
What is subnetting?

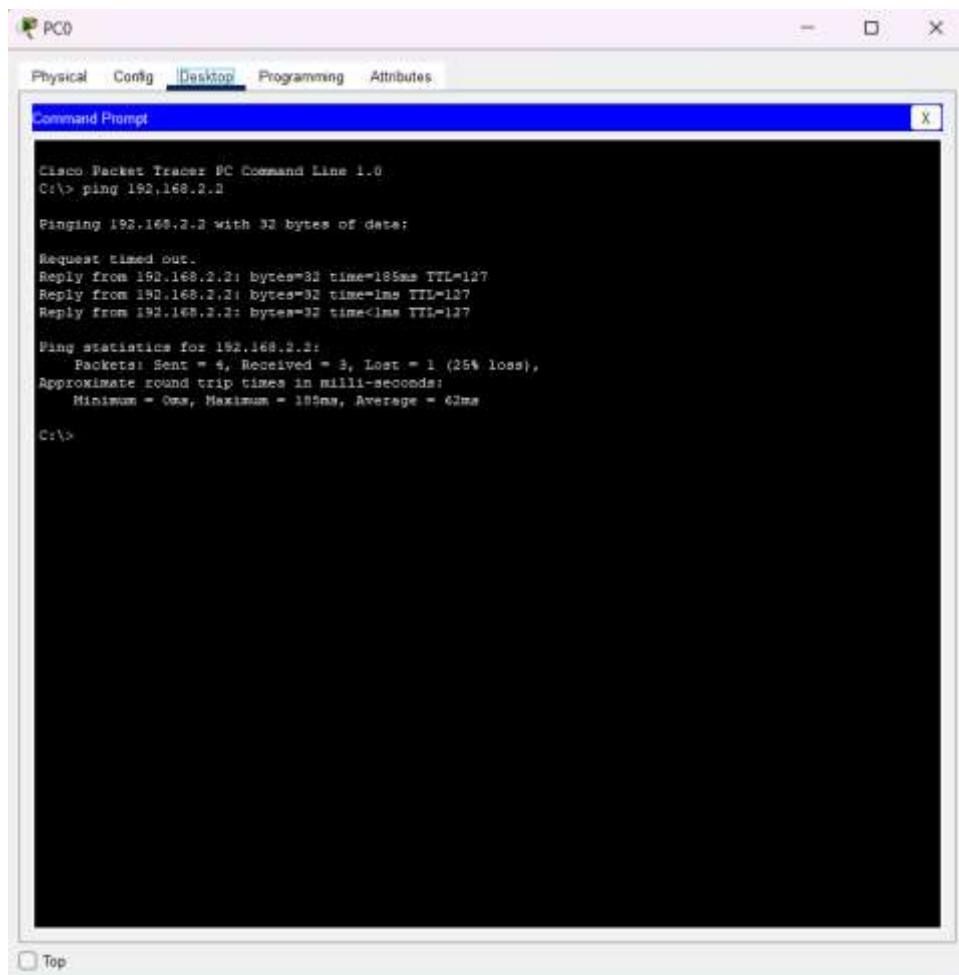
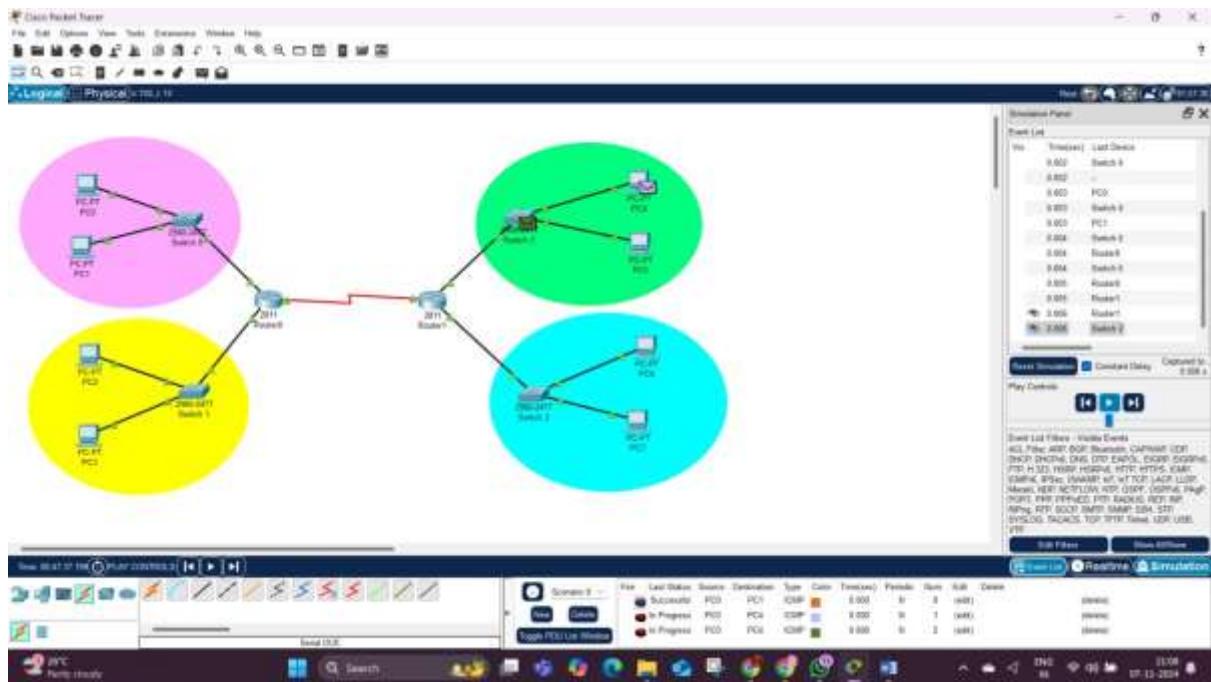
Classless IP subnetting is a technique that allows for more efficient use of IP addresses by allowing for subnet masks that are not just the default masks for each IP class. This means that we can divide our IP address space into smaller subnets, which can be useful when we have a limited number of IP addresses but need to create multiple networks.

OUTPUT: -

The screenshot shows a Cisco Packet Tracer simulation window. The interface includes a menu bar (File, Edit, Device, View, Tools, Elements, Window, Help), a toolbar with various icons, and a status bar at the bottom. The main area displays a network topology with four distinct subnets, each represented by a colored circle (pink, green, yellow, cyan). Each subnet contains two hosts (PC0 and PC1). Router nodes (Router1 and Router2) connect the subnets. Router1 connects the pink and yellow subnets to Router2, which then connects to the green and cyan subnets. The subnets are labeled: Subnet 0 (pink), Subnet 1 (yellow), Subnet 2 (green), and Subnet 3 (cyan). The status bar shows the date and time as 20-Nov-2014 11:11:20.

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful		PC0	PC1	ICMP	Orange	0.000	N	0	(edit)	(delete)
Failed		PC0	PC4	ICMP	Purple	0.000	N	1	(edit)	(delete)
Successful		PC0	PC4	ICMP	Green	0.000	N	2	(edit)	(delete)





Router0

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

Serial0/3/0

Static Routes

Network _____

Mask _____

Next Hop _____

Add

Network Address

192.168.2.128/26 via 192.168.2.226

192.168.2.192/27 via 192.168.2.226

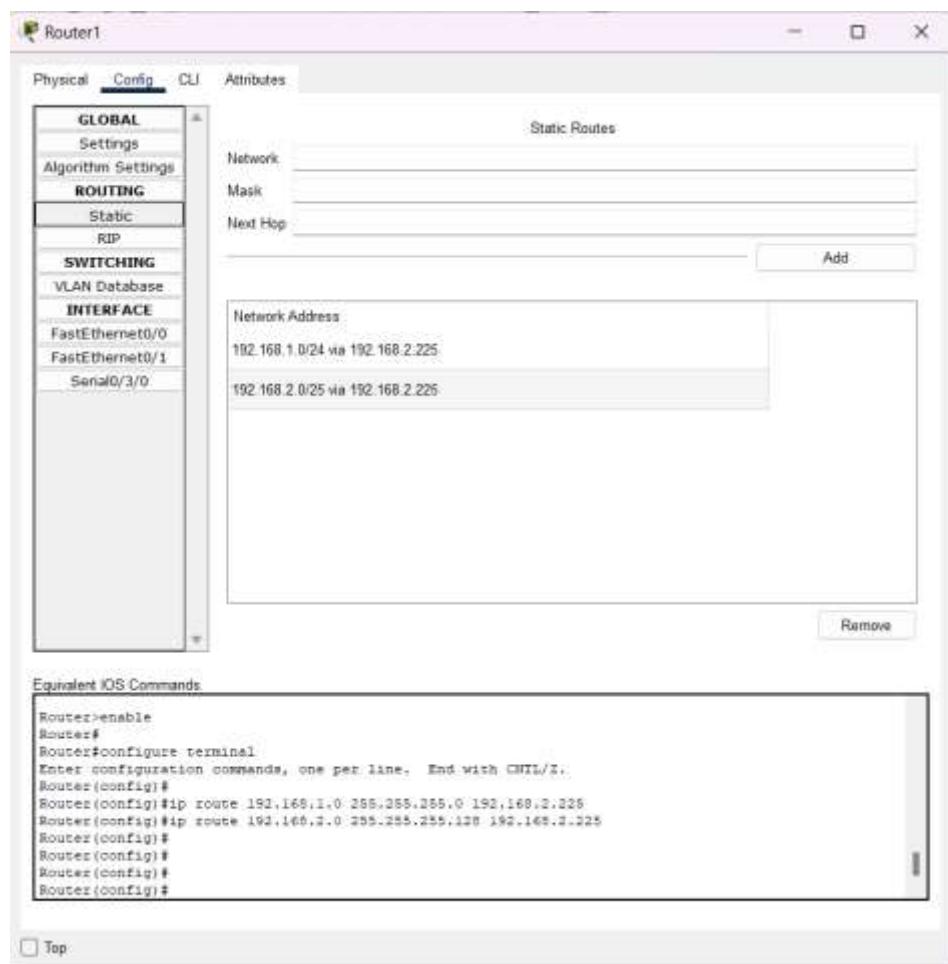
Remove

This screenshot shows a software interface for managing network routes. On the left is a navigation tree with sections like GLOBAL, ROUTING, SWITCHING, and INTERFACE. Under INTERFACE, it lists FastEthernet0/0, FastEthernet0/1, and Serial0/3/0. The main panel is titled 'Static Routes' and contains three input fields: Network, Mask, and Next Hop, each with a corresponding text entry field. Below these is an 'Add' button. A large list area shows 'Network Address' and two entries: '192.168.2.128/26 via 192.168.2.226' and '192.168.2.192/27 via 192.168.2.226'. At the bottom right of this list area is a 'Remove' button.

Equivalent IOS Commands

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up  
Router(config-if)#  
Router(config-if)#exit  
Router(config)#  
Router(config)#ip route 192.168.2.128 255.255.255.192 192.168.2.226  
Router(config)#ip route 192.168.2.192 255.255.255.224 192.168.2.226  
Router(config)#  
Router(config)#  
Router(config)#  
Router(config)#
```

Top



The screenshot shows a Windows-style Command Prompt window titled "PC0" within the Cisco Packet Tracer interface. The window displays several ping commands and their results:

```
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 18ms, Average = 6ms

C:\> ping 192.168.2.129

Pinging 192.168.2.129 with 32 bytes of data:

Reply from 192.168.1.100: Destination host unreachable.

Ping statistics for 192.168.2.129:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\> ping 192.168.2.193

Pinging 192.168.2.193 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.193: bytes=32 time=10ms TTL=126
Reply from 192.168.2.193: bytes=32 time=16ms TTL=126
Reply from 192.168.2.193: bytes=32 time=3ms TTL=126

Ping statistics for 192.168.2.193:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 16ms, Average = 8ms
C:\> ping 192.168.2.193

Pinging 192.168.2.193 with 32 bytes of data:

Reply from 192.168.2.193: bytes=32 time=1ms TTL=126
Reply from 192.168.2.193: bytes=32 time=10ms TTL=126
Reply from 192.168.2.193: bytes=32 time=1ms TTL=126
Reply from 192.168.2.193: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.2.193:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 24ms, Average = 11ms
C:\>
```

RESULT:-

Implementation of SUBNETTING in CISCO PACKET TRACER simulator have been done successfully