



LOVELY
PROFESSIONAL
UNIVERSITY

Final Project.

Subject : CSE307 (INTERNETWORKING ESSENTIALS)

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Section: K23CH-(G-2)

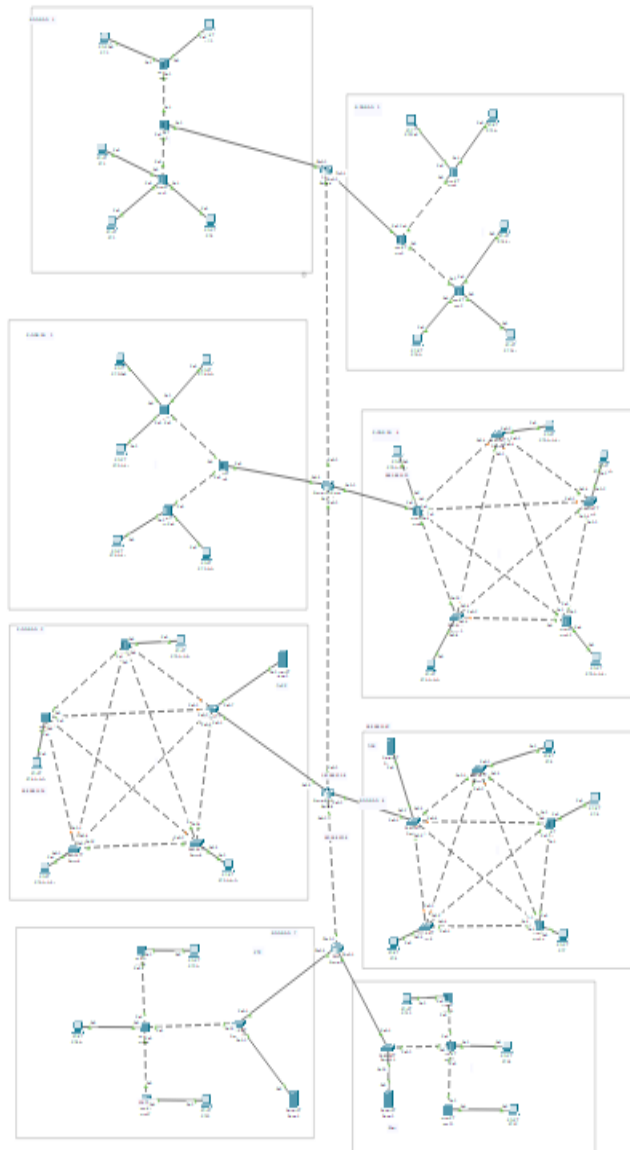
Roll No.: 52

Reg.No.: 12316619

Submitted To:

Gagandeep Kaur

1. Physical scenario:



I have created network :

- Floors 1–3 have 7 computers each. **(use of Hybrid Topology with hub)**
- Floors 4–6 have 7 computers each. **(use of Mesh Topology with switch and hub)**
- Floors 7–8 have 7 computers each. **(use of Bus Topology with Hub)**

2. IP VALUES and Servers:

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 196.162.5.2

Subnet Mask 255.255.255.248

Default Gateway 196.162.5.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address

Link Local Address FE80::202:4AFF:FEA9:5C48

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

Server3

Physical Config **Services** Desktop Programming Attributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

DHCP

Interface FastEthernet0 Service ☒ On ☐ Off

Pool Name serverPool

Default Gateway 196.162.5.33

DNS Server 196.162.5.34

Start IP Address : 196 162 5 35

Subnet Mask: 255 255 255 248

Maximum Number of Users : 5

TFTP Server: 0.0.0.0

WLC Address: 0.0.0.0

Add Save Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	196.162.5.33	196.162.5.34	196.162.5.35	255.255.2... 248	5	0.0.0.0	0.0.0.0

using **FLSM**, with the **network address 196.162.5.0**

FLSM : Fixed Length Subnet Mask.

I have total subnets are 8. So using FLSM I have created new subnet mask and subnet address.

In FLSM, subnet mask is same for all networks .

$$2^n = 8$$

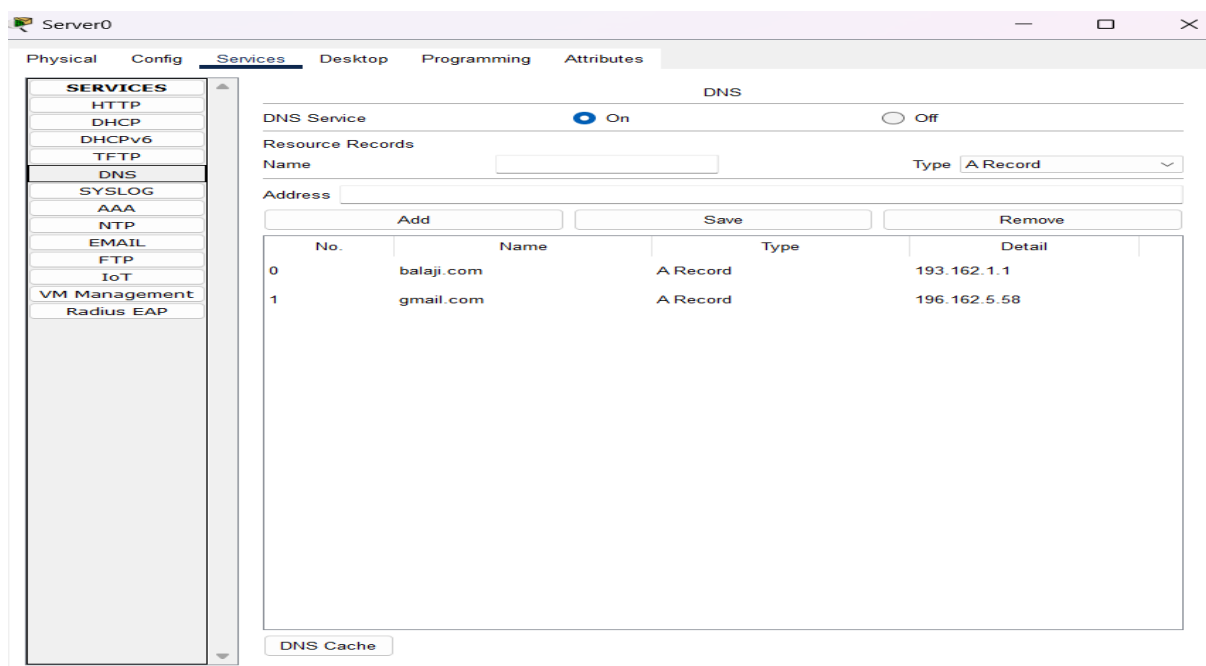
$$2^3 = 8 \quad (n = 3)$$

$$8 = 8$$

Given class was C:

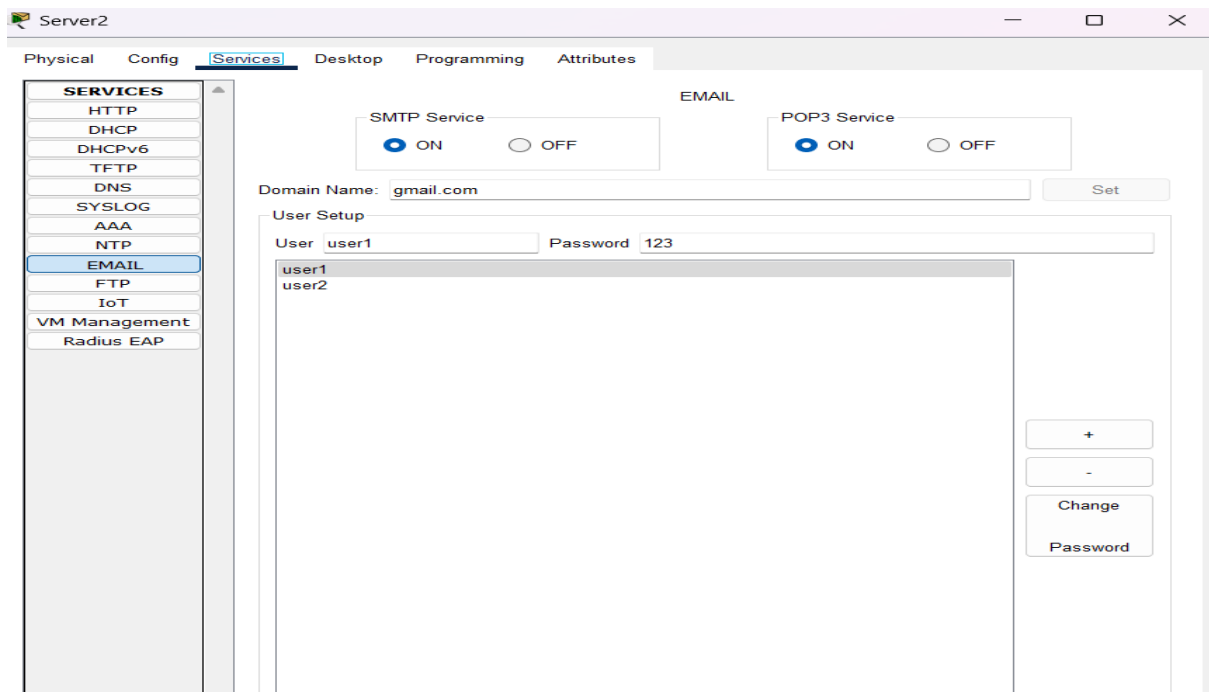
In class B we have 24 and 8 network and host. So we have to add 3 to network and subtract 3 from host. So the new network and host are 27 and 5.

DNS SERVER:





EMAIL:



PC15

Physical Config Desktop Programming Attributes

MAIL BROWSER X

Mails

Compose Reply Receive Delete Configure Mail

	From	Subject	Received
1	user1@gmail.com	hiiiiiiiiii	Mon Apr 21 2025 21:25:56
2	user1@gmail.com	hiiiiiiiiii	Mon Apr 21 2025 21:25:50
3	user1@gmail.com	hiiiiiiiiii	Mon Apr 21 2025 21:25:12

PC15

Physical Config Desktop Programming Attributes

Configure Mail X

User Information

Your Name: user2

Email Address: user2@gmail.com

Server Information

Incoming Mail Server: 196.162.5.58

Outgoing Mail Server: 196.162.5.58

Logon Information

User Name: user2

Password: ●●●

Save Remove Clear Reset

FTP:

Server1

Physical

Config

Services

Desktop

Programming

Attributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

FTP

Service

On

Off

User Setup

Username

Password

Write

Read

Delete

Rename

List

	Username	Password	Permission	
1	balaji	123	RWDNL	Add
2	cisco	cisco	RWDNL	Save

Remove

File

1	asa842-k8.bin
2	asa923-k8.bin
3	c1841-advipservicesk9-mz.124-15.T1.bin
4	c1841-ipbase-mz.123-14.T7.bin
5	c1841-ipbasek9-mz.124-12.bin
6	c1900-universalk9-mz.SPA.155-3.M4a.bin
7	c2600-advipservicesk9-mz.124-15.T1.bin

Remove

Top

```
PC10
Physical Config Desktop Programming Attributes
Command Prompt
C:\Users\balaji>cmd
C:\Users\balaji>ftp 196.162.5.50
Connected to 196.162.5.50
220- Welcome to FT Ftp server
Username:balaji
331- Username ok, need password
Password:
230- Logged in
(passive mode on)
ftp>dir
Listing /ftp directory from 196.162.5.50:
 0 : asa842-k8.bin                    5571584
 1 : asa923-k8.bin                    30468096
 2 : c1841-advipservicesk9-mz.124-15.T1.bin 33591768
 3 : c1841-ipbase-mz.123-14.T7.bin 13832032
 4 : c1841-ipbasek9-mz.124-12.bin 16599160
 5 : c1900-universalk9-mz.SPA.155-3.M4a.bin 33591768
 6 : c2600-advipservicesk9-mz.124-15.T1.bin 33591768
 7 : c2600-i-mz.122-28.bin 5571584
 8 : c2600-ipbasek9-mz.124-8.bin 13169700
 9 : c2800nm-advipservicesk9-mz.124-15.T1.bin 50938004
10 : c2800nm-advipservicesk9-mz.151-4.M4a.bin 33591768
11 : c2800nm-ipbase-mz.123-14.T7.bin 5571584
12 : c2800nm-ipbasek9-mz.124-8.bin 15522644
13 : c2900-universalk9-mz.SPA.155-3.M4a.bin 33591768
14 : c2950-16q412-mz.121-22.EA4.bin 3058048
15 : c2950-16q412-mz.121-22.EA8.bin 3117390
16 : c2960-lanbase-mz.122-25.EA4.bin 4414921
17 : c2960-lanbase-mz.122-25.SEE1.bin 4670455
18 : c2960-lanbasek9-mz.150-2.SE4.bin 4670455
19 : c3560-advipservicesk9-mz.122-37.SE1.bin 8662192
20 : c3560-advipservicesk9-mz.122-46.SE.bin 10713279
21 : c800-universalk9-mz.SPA.152-4.M4a.bin 33591768
22 : c800-universalk9-mz.SPA.154-3.M6a.bin 83029236
23 : cat3k-cae-universalk9.16.03.02.SPA.bin 505532849
24 : cgr1000-universalk9-mz.SPA.154-2.CG 159487552
25 : cgr1000-universalk9-mz.SPA.156-3.CG 184530138
26 : ir800-universalk9-bundle.SPA.156-3.M.bin 160868869
27 : ir800-universalk9-mz.SPA.155-3.M 61750062
28 : ir800-universalk9-mz.SPA.156-3.M 63753767
29 : ir800-yocco-1.7.2.tar 2877440
30 : ir800-yocco-1.7.2.python-2.7.3.tar 5912000
31 : pt1000-1-mz.122-28.bin 5571584
32 : pt3000-16q412-mz.121-22.EA4.bin 3117390
ftp>
```

3.Routing:

Router6

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/2

RIP Routing (v2)

Network

Network Address

192.168.100.0

196.162.5.0

Add

Remove

Equivalent IOS Commands

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

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

Router>enable

Router#

Router#configure terminal

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

Router(config)#router rip

Router(config-router)#

Router8

Physical

Config

CLI

Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

INTERFACE

FastEthernet0/0

FastEthernet1/0

FastEthernet2/0

FastEthernet3/0

FastEthernet4/0

RIP Routing (v2)

Network

Network Address

192.168.100.0

196.162.5.0

Add

Remove

Equivalent IOS Commands

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet3/0, changed state to up

Router>enable

Router#

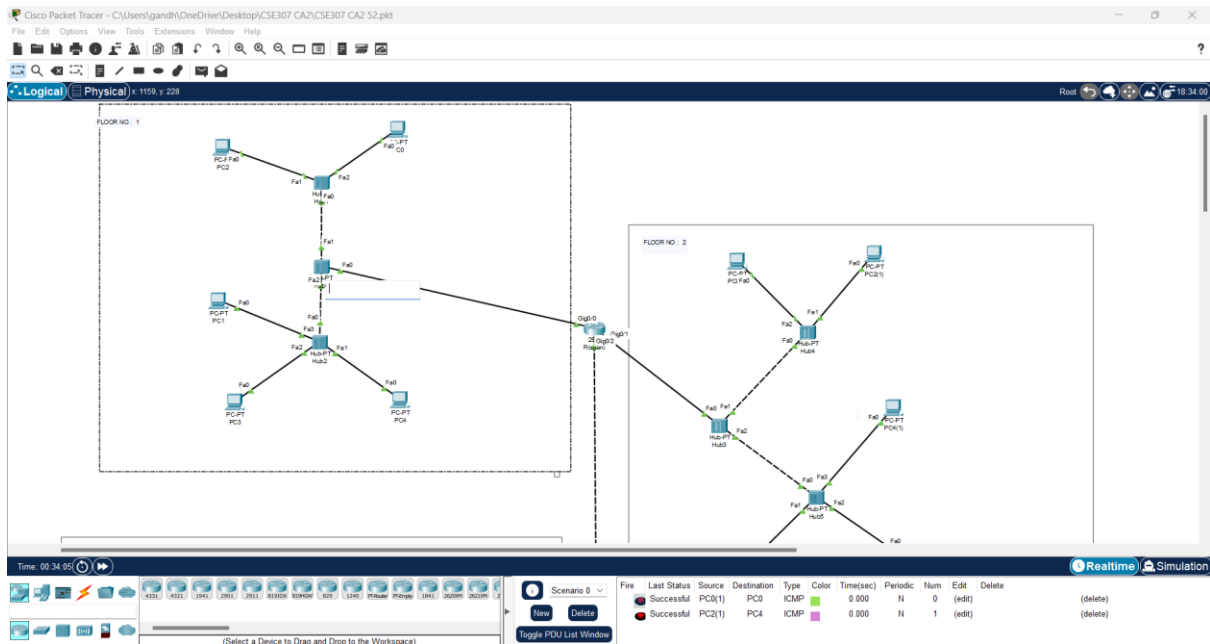
Router#configure terminal

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

Router(config)#router rip

Router(config-router)#

4. Communication between pc:



After Routing :

You can see in above pic that all the message sent from one pc to another became successful.

Finally , we can send message pc to any pc .

GIT-HUB link: <https://github.com/ParimiBalaji/CSE307>

THANK YOU