



PREPARED FOR
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PROJECT REPORT

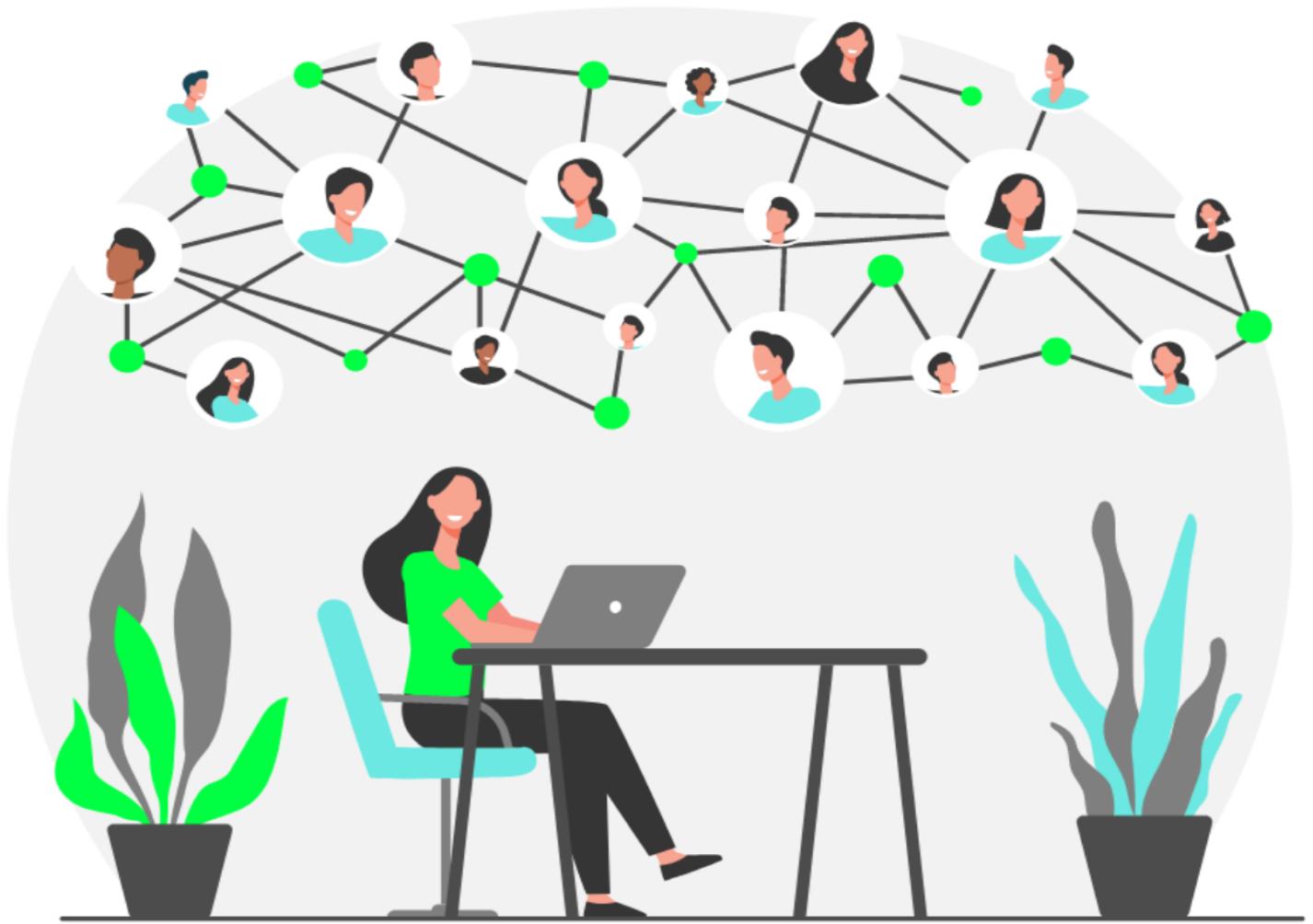
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2024



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Hospital Management System

PHASE 1



Description of overall project (Hospital Management System)

Submitted by:

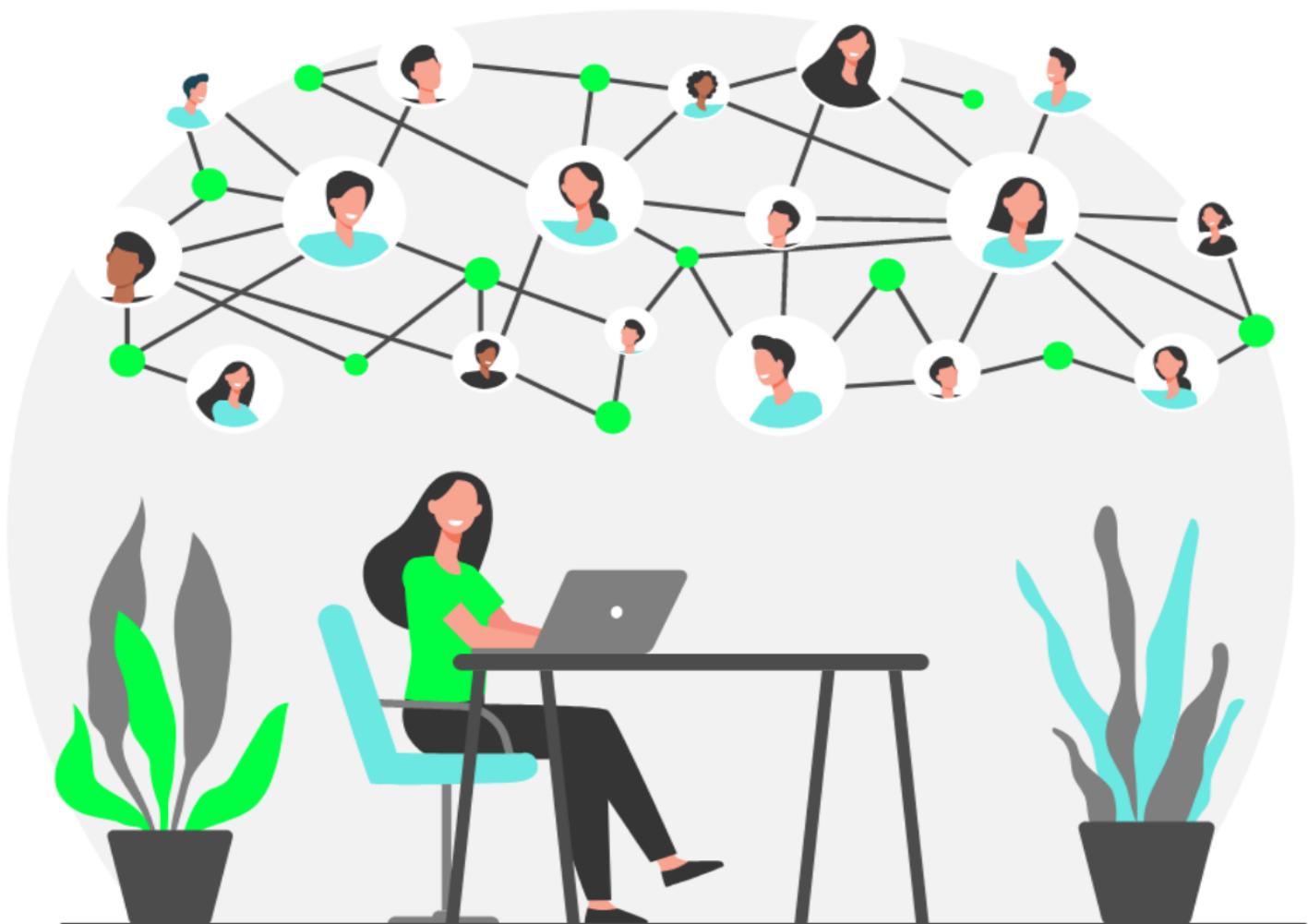
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May 29, 2024

Introduction:

The Hospital Management System (HMS) in Cisco Packet Tracer is an intricate simulation designed to illustrate how modern networking technologies can be applied to manage a hospital's communication infrastructure effectively. This project encompasses a variety of network components, including routers, switches, PCs, servers, and firewalls, all working together to provide a robust and secure network environment. The HMS network employs both public and private IP addressing to facilitate internal and external communication. Key features of the project include the implementation of Network Address Translation (NAT) and Port Address Translation (PAT) to manage IP address space efficiently and securely connect to the internet. Variable Length Subnet Masking (VLSM) is utilized to optimize IP address allocation, ensuring that different departments within the hospital can operate efficiently without wasting valuable IP resources. The network design adheres to a hierarchical model, promoting scalability and ease of management through the use of core, distribution, and access layers. Security is a paramount concern in the HMS, addressed through the configuration of firewalls and access control lists (ACLs) to protect sensitive medical data and ensure compliance with healthcare regulations.

Overall, the HMS in Cisco Packet Tracer is a comprehensive project that demonstrates the integration of essential networking components and advanced configurations to create a secure, efficient, and scalable network infrastructure tailored for a hospital setting. This simulation not only highlights the practical application of networking principles but also underscores the importance of security and efficient resource management in a healthcare environment.



Hospital Management System

PHASE 2



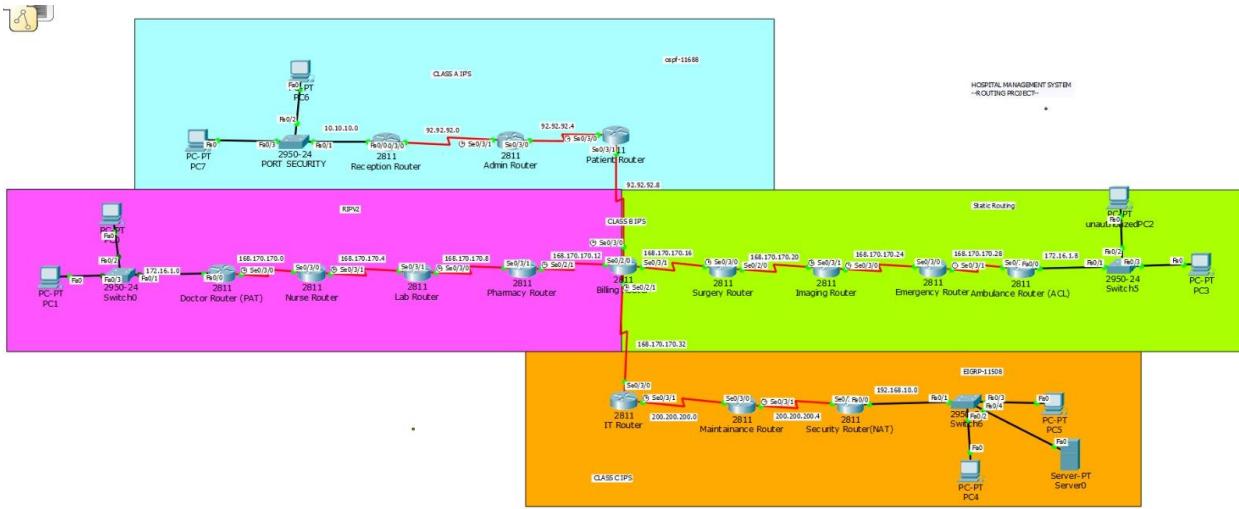
Topology diagram of our Hospital Management System

Submitted by:

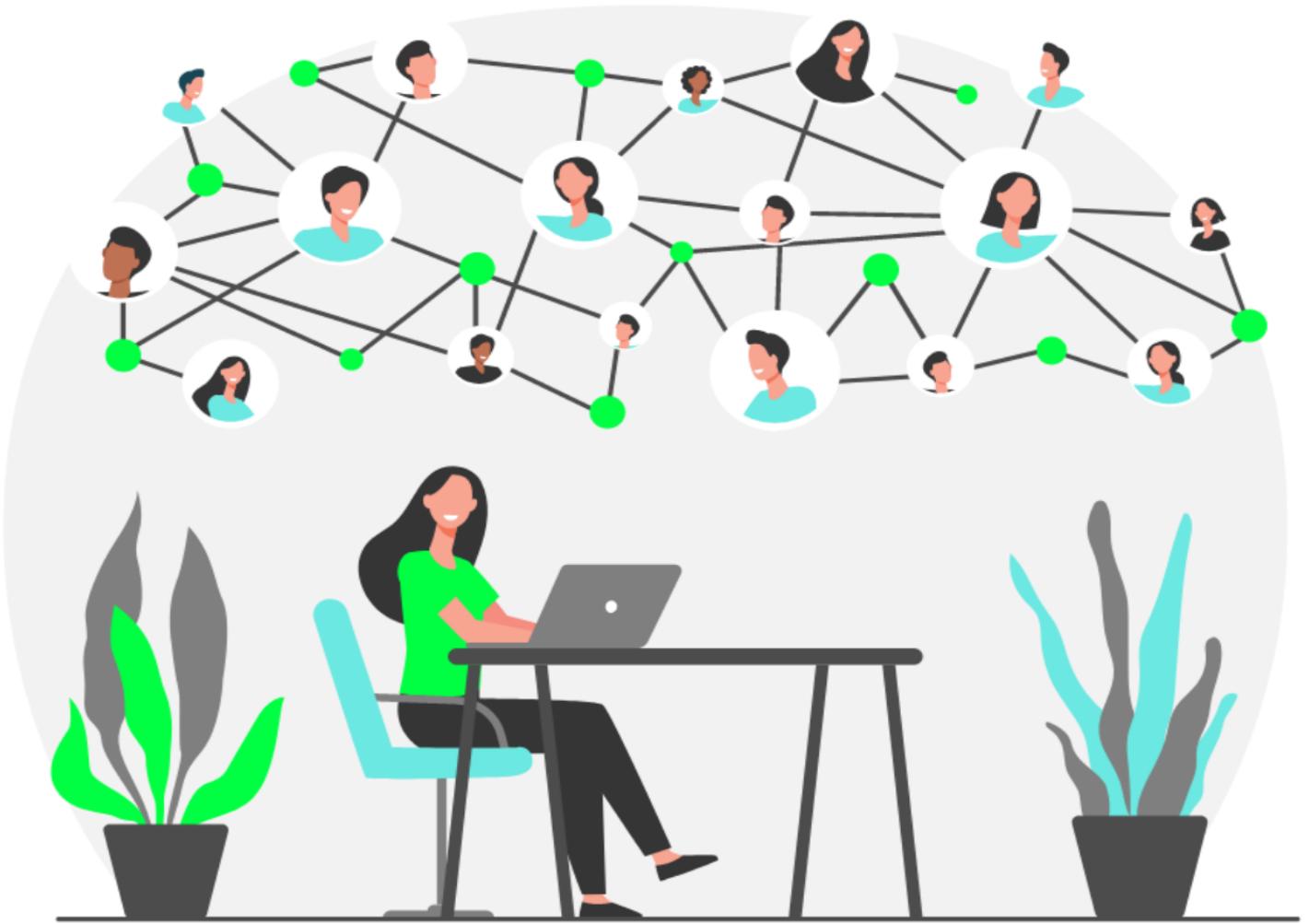
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Network Topology:



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete	
●	Successful	PC6	Doctor Rou...	ICMP		0.000	N	0	(edit)	(delete)	
●	Successful	PC0	Patient Rou...	ICMP		0.000	N	1	(edit)	(delete)	
●	Successful	unaut...	Billing Router	ICMP		0.000	N	2	(edit)	(delete)	



Hospital Management System

PHASE 3



Show ip interface brief (for each router)

Submitted by:

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May 29, 2024

Show IP interface brief:

Reception Router:

```
Maryam11688#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0      10.10.10.1    YES manual up
down

FastEthernet0/1      unassigned     YES unset   administratively down
down

Serial0/2/0          unassigned     YES unset   administratively down
down

Serial0/2/1          unassigned     YES unset   administratively down
down

Serial0/3/0          92.92.92.1   YES manual up
up

Serial0/3/1          unassigned     YES unset   administratively down
down

Vlan1               unassigned     YES unset   administratively down
down
Maryam11688#
```

Admin Router:

Admin Router

Physical Config CLI

IOS Command Line Interface

```
Maryam11688#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0    unassigned      YES unset   administratively down
down

FastEthernet0/1    unassigned      YES unset   administratively down
down

Serial0/2/0        unassigned      YES unset   administratively down
down

Serial0/2/1        unassigned      YES unset   administratively down
down

Serial0/3/0        92.92.92.5    YES manual  up
up

Serial0/3/1        92.92.92.2    YES manual  up
up

Vlan1             unassigned      YES unset   administratively down
down
Maryam11688#
```

Copy Paste

Patient Router:

Patient Router

Physical Config CLI

IOS Command Line Interface

```
Maryam11688#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0    unassigned      YES unset   administratively down
down

FastEthernet0/1    unassigned      YES unset   administratively down
down

Serial0/2/0        unassigned      YES unset   administratively down
down

Serial0/2/1        unassigned      YES unset   administratively down
down

Serial0/3/0        92.92.92.6    YES manual  up
up

Serial0/3/1        92.92.92.9    YES manual  up
up

Vlan1             unassigned      YES unset   administratively down
down
Maryam11688#
```

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Doctor Router:

Doctor Router (NAT)

Physical Config CLI

IOS Command Line Interface

```
Maryam11688#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0    172.16.1.1     YES manual up
up

FastEthernet0/1    unassigned      YES unset administratively down
down

Serial0/2/0        unassigned      YES unset administratively down
down

Serial0/2/1        unassigned      YES unset administratively down
down

Serial0/3/0        168.170.170.1   YES manual up
up

Serial0/3/1        unassigned      YES unset administratively down
down

Vlan1             unassigned      YES unset administratively down
down
Maryam11688#
```

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Nurse Router:

Nurse Router

Physical Config CLI

IOS Command Line Interface

```
Maryam11688#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0    unassigned      YES unset administratively down
down

FastEthernet0/1    unassigned      YES unset administratively down
down

Serial0/2/0        unassigned      YES unset administratively down
down

Serial0/2/1        unassigned      YES unset administratively down
down

Serial0/3/0        168.170.170.2   YES manual up
up

Serial0/3/1        168.170.170.5   YES manual up
up

Vlan1             unassigned      YES unset administratively down
down
Maryam11688#
```

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Lab Router:

Lab Router

Physical Config CLI

IOS Command Line Interface

```
Maryaml1688#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0    unassigned      YES unset administratively down
down

FastEthernet0/1    unassigned      YES unset administratively down
down

Serial0/2/0        unassigned      YES unset administratively down
down

Serial0/2/1        unassigned      YES unset administratively down
down

Serial0/3/0        168.170.170.9  YES manual up
up

Serial0/3/1        168.170.170.6  YES manual up
up

Vlan1             unassigned      YES unset administratively down
down
Maryaml1688#
```

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Pharmacy Router:

Pharmacy Router

Physical Config CLI

IOS Command Line Interface

```
Maryaml1688#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0    unassigned      YES unset administratively down
down

FastEthernet0/1    unassigned      YES unset administratively down
down

Serial0/2/0        unassigned      YES unset administratively down
down

Serial0/2/1        168.170.170.13 YES manual up
up

Serial0/3/0        unassigned      YES unset administratively down
down

Serial0/3/1        168.170.170.10 YES manual up
up

Vlan1             unassigned      YES unset administratively down
down
Maryaml1688#
```

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Billing Router:

 Billing Router

Physical Config CLI

IOS Command Line Interface

```
Maryam11688#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0     unassigned      YES unset administratively down
down

FastEthernet0/1     unassigned      YES unset administratively down
down

Serial0/2/0         168.170.170.14 YES manual up
up

Serial0/2/1         168.170.170.33 YES manual up
up

Serial0/3/0         92.92.92.10  YES manual up
up

Serial0/3/1         168.170.170.17 YES manual up
up

Vlan1              unassigned      YES unset administratively down
down

Maryam11688#
```

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Surgery Router:

 Surgery Router

Physical Config CLI

IOS Command Line Interface

```
Muzammill1508#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0     unassigned      YES unset administratively down
down

FastEthernet0/1     unassigned      YES unset administratively down
down

Serial0/2/0         168.170.170.21 YES manual up
up

Serial0/2/1         unassigned      YES unset administratively down
down

Serial0/3/0         168.170.170.18 YES manual up
up

Serial0/3/1         unassigned      YES unset administratively down
down

Vlan1              unassigned      YES unset administratively down
down

Muzammill1508#
```

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Imagin Router:

Imaging Router

Physical Config CLI

IOS Command Line Interface

```
Muzammill1508#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0    unassigned      YES unset   administratively down
down

FastEthernet0/1    unassigned      YES unset   administratively down
down

Serial0/2/0        unassigned      YES unset   administratively down
down

Serial0/2/1        unassigned      YES unset   administratively down
down

Serial0/3/0        168.170.170.25 YES manual up
up

Serial0/3/1        168.170.170.22 YES manual up
up

Vlan1             unassigned      YES unset   administratively down
down
Muzammill1508#
```

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Emergency Router:

Emergency Router

Physical Config CLI

IOS Command Line Interface

```
Muzammill1508#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0    unassigned      YES unset   administratively down
down

FastEthernet0/1    unassigned      YES unset   administratively down
down

Serial0/2/0        unassigned      YES unset   administratively down
down

Serial0/2/1        unassigned      YES unset   administratively down
down

Serial0/3/0        168.170.170.26 YES manual up
up

Serial0/3/1        168.170.170.29 YES manual up
up

Vlan1             unassigned      YES unset   administratively down
down
Muzammill1508#
```

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IT Router:

IT Router

Physical Config CLI

IOS Command Line Interface

```
Muzammill11508#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0    unassigned      YES unset administratively down
down

FastEthernet0/1    unassigned      YES unset administratively down
down

Serial0/2/0        unassigned      YES unset administratively down
down

Serial0/2/1        unassigned      YES unset administratively down
down

Serial0/3/0        168.170.170.34 YES manual up
up

Serial0/3/1        200.200.200.1  YES manual up
up

Vlan1             unassigned      YES unset administratively down
down
Muzammill11508#
```

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Ambulance Router:

Ambulance Router (ACL)

Physical Config CLI

IOS Command Line Interface

```
Muzammill11508#show ip interface brief
Interface          IP-Address      OK? Method Status
Protocol

FastEthernet0/0    172.16.1.9    YES manual up
up

FastEthernet0/1    unassigned      YES unset administratively down
down

Serial0/2/0        unassigned      YES unset administratively down
down

Serial0/2/1        unassigned      YES unset administratively down
down

Serial0/3/0        168.170.170.30 YES manual up
up

Serial0/3/1        unassigned      YES unset administratively down
down

Vlan1             unassigned      YES unset administratively down
down
Muzammill11508#
```

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Maintenance Router:

Muzammill1508#show ip interface brief

Interface	IP-Address	OK?	Method	Status
FastEthernet0/0	unassigned	YES	unset	administratively down
FastEthernet0/1	unassigned	YES	unset	administratively down
Serial0/2/0	unassigned	YES	unset	administratively down
Serial0/2/1	unassigned	YES	unset	administratively down
Serial0/3/0	200.200.200.2	YES	manual	up
Serial0/3/1	200.200.200.5	YES	manual	up
Vlan1	unassigned	YES	unset	administratively down

Muzammill1508#

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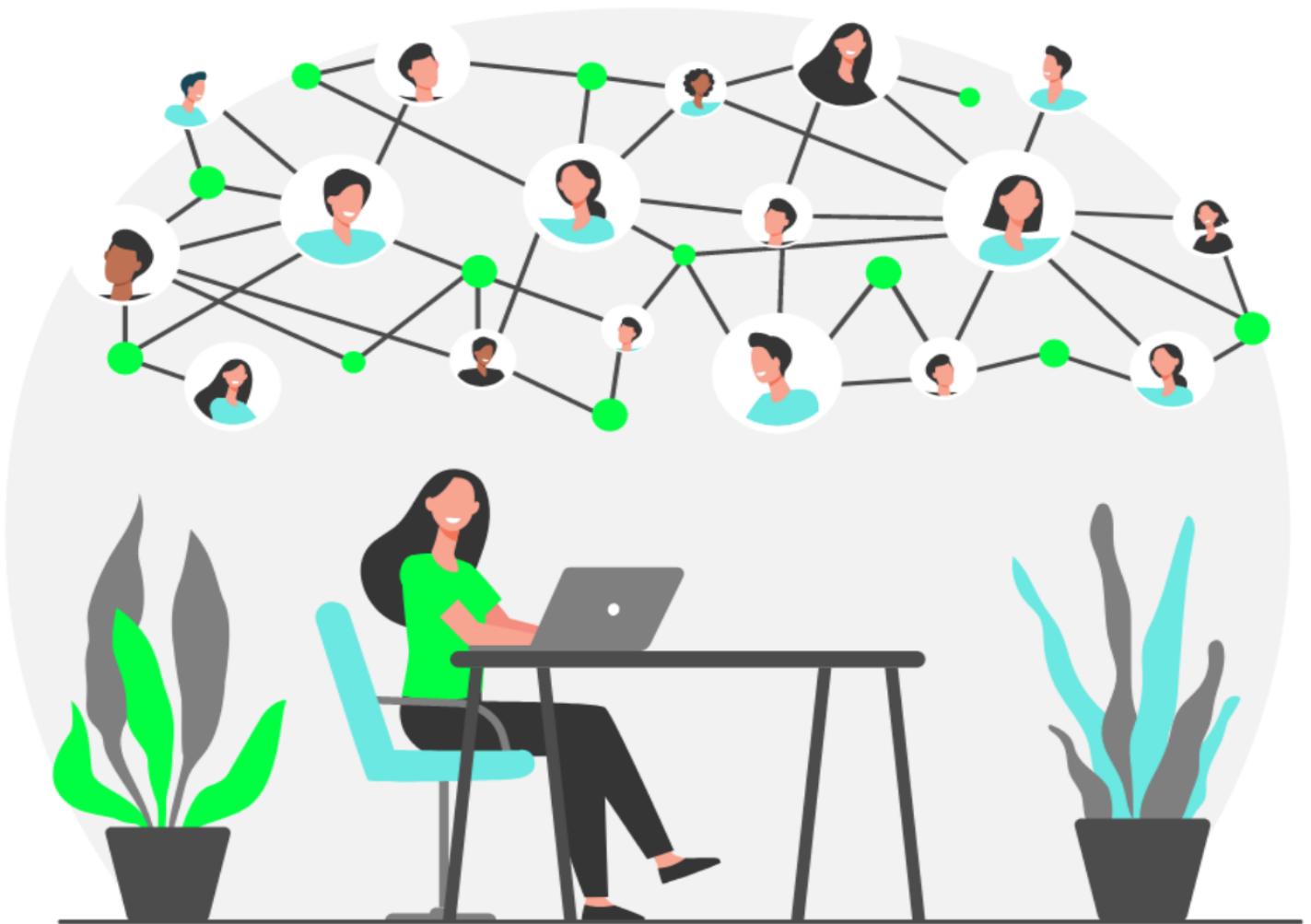
Security Router

Muzammill1508#show ip interface brief

Interface	IP-Address	OK?	Method	Status
FastEthernet0/0	192.168.10.1	YES	manual	up
FastEthernet0/1	unassigned	YES	unset	administratively down
Serial0/2/0	unassigned	YES	unset	administratively down
Serial0/2/1	unassigned	YES	unset	administratively down
Serial0/3/0	200.200.200.6	YES	manual	up
Serial0/3/1	unassigned	YES	unset	administratively down
Vlan1	unassigned	YES	unset	administratively down

Muzammill1508#

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Hospital Management System

PHASE 4



Show IP route (for each router)

Submitted by:

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11688 Maryam

May 29, 2024

Show IP Route Command:

Patient Router:

```
Patient Router
Physical Config CLI
IOS Command Line Interface

%LINK-3-CHANGED: interface Serial0/3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/1, changed state to up
00:00:10: %OSPF-5-ADJCHG: Process 11689, Nbr 92.92.92.5 on Serial0/3/0 from LOADING to FULL, Loading Done
00:00:10: %OSPF-5-ADJCHG: Process 11688, Nbr 168.170.170.33 on Serial0/3/1 from LOADING to FULL, Loading Done

Maryam11689>en
Maryam11689#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - Level1, L2 - Level2, Ls - LS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

92.0.0.0/30 is subnetted, 3 subnets
C 92.92.92.0 [110/128] via 92.92.92.5, 00:02:49, Serial0/3/0
C 92.92.92.1 [110/128] via 92.92.92.5, 00:02:49, Serial0/3/0
C 92.92.92.8 [110/128] via 92.92.92.5, 00:02:49, Serial0/3/1
168.170.0.0/30 is subnetted, 9 subnets
O E2 168.170.170.0 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
O E2 168.170.170.4 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
O E2 168.170.170.8 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
O E2 168.170.170.12 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
O E2 168.170.170.16 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
O E2 168.170.170.20 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
O E2 168.170.170.24 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
O E2 168.170.170.28 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
O E2 168.170.170.32 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
172.16.0.0/29 is subnetted, 2 subnets
O E2 172.16.1.0 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
O E2 172.16.1.8 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
192.168.10.0/29 is subnetted, 1 subnets
O E2 192.168.10.0 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
200.200.200.0/30 is subnetted, 2 subnets
O E2 200.200.200.0 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
O E2 200.200.200.4 [110/250] via 92.92.92.10, 00:02:49, Serial0/3/1
Maryam11689#
Maryam11689#
```

Admin Router:

```
Admin Router
Physical Config CLI
IOS Command Line Interface

%LINK-3-CHANGED: Line protocol on interface Serial0/3/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
00:00:10: %OSPF-5-ADJCHG: Process 11689, Nbr 92.92.92.9 on Serial0/3/0 from LOADING to FULL, Loading Done
00:00:10: %OSPF-5-ADJCHG: Process 11688, Nbr 92.92.92.1 on Serial0/3/1 from LOADING to FULL, Loading Done

Maryam11689>en
Maryam11689#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - Level1, L2 - Level2, Ls - LS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

92.0.0.0/30 is subnetted, 3 subnets
C 92.92.92.0 is directly connected, Serial0/3/1
C 92.92.92.6 [110/128] via 92.92.92.6, 00:03:16, Serial0/3/0
C 92.92.92.8 [110/128] via 92.92.92.6, 00:03:16, Serial0/3/0
168.170.0.0/30 is subnetted, 9 subnets
O E2 168.170.170.0 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
O E2 168.170.170.4 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
O E2 168.170.170.8 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
O E2 168.170.170.12 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
O E2 168.170.170.16 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
O E2 168.170.170.20 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
O E2 168.170.170.24 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
O E2 168.170.170.28 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
O E2 168.170.170.32 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
172.16.0.0/29 is subnetted, 2 subnets
O E2 172.16.1.0 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
O E2 172.16.1.8 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
192.168.10.0/29 is subnetted, 1 subnets
O E2 192.168.10.0 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
200.200.200.0/30 is subnetted, 2 subnets
O E2 200.200.200.0 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
O E2 200.200.200.4 [110/250] via 92.92.92.6, 00:03:16, Serial0/3/0
Maryam11689#
Maryam11689#
Maryam11689#
```

Reception Router:

```
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
00:00:10 %OSPF-5-ADJCHG: Process 11688, Nbr 92.92.92.5 on Serial0/3/0 from LOADING to FULL, Loading Done

Maryam11688>
Maryam11688>show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
      i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
      * - candidate default, U - per-user static route, o - ODR
      P - periodic downloaded static route

Gateway of last resort is not set

  92.0.0.0/30 is subnetted, 3 subnets
  C 92.92.92.0 is directly connected, Serial0/3/0
  O 92.92.92.4 [110/128] via 92.92.92.2, 00:03:39, Serial0/3/0
  O 92.92.92.8 [110/192] via 92.92.92.2, 00:03:39, Serial0/3/0
  168.170.0.0/30 is subnetted, 9 subnets
  O E2 168.170.170.0 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  O E2 168.170.170.4 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  O E2 168.170.170.8 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  O E2 168.170.170.12 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  O E2 168.170.170.16 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  O E2 168.170.170.20 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  O E2 168.170.170.24 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  O E2 168.170.170.28 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  O E2 168.170.170.32 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  O E2 172.16.1.0 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  O E2 172.16.1.8 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  192.168.10.0/29 is subnetted, 1 subnets
  O E2 192.168.10.0 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  200.200.200.0/30 is subnetted, 1 subnets
  O E2 200.200.200.0 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
  O E2 200.200.200.4 [110/250] via 92.92.92.2, 00:03:39, Serial0/3/0
Maryam11688#
Maryam11688#
```

Ambulance Router:

```
C399 bytes of non-volatile configuration memory.
687208 bytes of ATA CompactFlash (Read/write)
Cisco IOS Software, 2800 Software (C2800NM-ADVIPSERVICESK9-M), Version 12.4(15)T1, RELEASE SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Wed 18-Jul-07 06:21 by pt_rel_team

Press RETURN to get started!

%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
%DHCPCD-4-PING_CONFLICT: DHCP address conflict: server pinged 172.16.1.9.
%DHCPCD-4-PING_CONFLICT: DHCP address conflict: server pinged 172.16.1.10.

Muzammill111508>
Muzammill111508>
Muzammill111508>show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
      i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
      * - candidate default, U - per-user static route, o - ODR
      P - periodic downloaded static route

Gateway of last resort is 168.170.170.29 to network 0.0.0.0

  0.0.0.0/32 is subnetted, 1 subnets
  S*   0.0.0.0 [1/0] via 168.170.170.29
  168.170.170.0/24 is subnetted, 1 subnets
  S    168.170.170.16 [1/0] via 168.170.170.29
  S    168.170.170.20 [1/0] via 168.170.170.29
  S    168.170.170.24 [1/0] via 168.170.170.29
  C    168.170.170.28 [1/0] is directly connected, Serial0/3/0
  C    172.16.1.0/30 is subnetted, 1 subnets
  C    172.16.1.8 is directly connected, FastEthernet0/0
Muzammill111508#
Muzammill111508#
Muzammill111508#
```

Emergency Router:

```
Router# show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 168.170.170.25 to network 0.0.0.0

* 0.0.0.0/32 is subnetted, 1 subnets
S* 0.0.0.0 [1/0] via 168.170.170.25
  168.170.0.0/30 is subnetted, 4 subnets
S 168.170.170.16 [1/0] via 168.170.170.25
S 168.170.170.20 [1/0] via 168.170.170.25
C 168.170.170.24 is directly connected, Serial0/3/0
C 168.170.170.28 is directly connected, Serial0/3/1
  172.16.0.0/29 is subnetted, 1 subnets
S 172.16.0.18 [1/0] via 168.170.170.30
Muzammill11508#
Muzammill11508#
Muzammill11508#
Muzammill11508#
```

Imaging Router:

```
Router# show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 168.170.170.21 to network 0.0.0.0

* 0.0.0.0/32 is subnetted, 1 subnets
S* 0.0.0.0 [1/0] via 168.170.170.21
  168.170.0.0/30 is subnetted, 4 subnets
S 168.170.170.16 [1/0] via 168.170.170.21
S 168.170.170.20 [1/0] via 168.170.170.21
C 168.170.170.24 is directly connected, Serial0/3/0
S 168.170.170.28 [1/0] via 168.170.170.26
  172.16.0.0/29 is subnetted, 1 subnets
S 172.16.0.18 [1/0] via 168.170.170.26
Muzammill11508#
Muzammill11508#
Muzammill11508#
Muzammill11508#
```

Surgery Router:

```

Surgery Router
Physical Config CLI
IOS Command Line Interface

4 Low-speed serial(sync/async) network interface(s)
239K bytes of non-volatile configuration memory.
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Wed Jul 18-07:06:21 by pt_rei_team.

Press RETURN to get started!

%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up
%LINK-5-CHANGED: Interface Serial0/2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up

Muzammill11508#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 168.170.170.17 to network 0.0.0.0

* 0.0.0.0/32 is subnetted, 1 subnets
S* 0.0.0.0 [1/0] via 168.170.170.17
   168.170.0.0/30 is subnetted, 4 subnets
C 168.170.170.16 is directly connected, Serial0/3/0
C 168.170.170.24 is directly connected, Serial0/2/0
S 168.170.170.24 [1/0] via 168.170.170.22
S 168.170.170.28 [1/0] via 168.170.170.22
   172.16.0.0/29 is subnetted, 1 subnets
S 172.16.1.8 [1/0] via 168.170.170.22

Muzammill11508#
Muzammill11508#
Muzammill11508#
Muzammill11508#
Muzammill11508#

```

Billing Router:

```

Billing Router
Physical Config CLI
IOS Command Line Interface

%DUAL-5-NBRCHANGE: IP-EIGRP 11508: Neighbor 168.170.170.34 (Serial0/2/1) is up: new adjacency
00:00:10: %OSPF-5-ADJCHG: Process 11688, Nbr 92.92.92.9 on Serial0/3/0 from LOADING to FULL, Loading Done

Maryam11688>
Maryam11688>show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

92.0.0.0/30 is subnetted, 3 subnets
O 92.92.92.0 [110/192] via 92.92.92.9, 00:06:25, Serial0/3/0
O 92.92.92.4 [110/192] via 92.92.92.4, 00:06:25, Serial0/3/0
C 92.92.92.8 is directly connected, Serial0/3/0
   168.170.170.0/30 is subnetted, 9 subnets
     168.170.170.0 [120/3] via 168.170.170.13, 00:00:11, Serial0/2/0
     168.170.170.4 [120/3] via 168.170.170.13, 00:00:11, Serial0/2/0
     168.170.170.8 [120/3] via 168.170.170.13, 00:00:11, Serial0/2/0
     168.170.170.12 [1/0] via 168.170.170.18
     168.170.170.16 [1/0] via 168.170.170.18
     168.170.170.20 [1/0] via 168.170.170.18
     168.170.170.24 [1/0] via 168.170.170.18
     168.170.170.28 [1/0] via 168.170.170.18
C 168.170.170.32 is directly connected, Serial0/2/1
   172.16.0.0/29 is subnetted, 2 subnets
     172.16.1.8 [1/0] via 168.170.170.18, 00:00:11, Serial0/2/0
     172.16.1.12 [1/0] via 168.170.170.18
   192.168.10.0/29 [90/3196416] via 168.170.170.34, 00:06:35, Serial0/2/1
     200.200.200.0/30 is subnetted, 2 subnets
     D 200.200.200.4 [90/3193856] via 168.170.170.34, 00:06:35, Serial0/2/1
     D 200.200.200.4 [90/3193856] via 168.170.170.34, 00:06:35, Serial0/2/1

Maryam11688#
Maryam11688#
Maryam11688#
Maryam11688#
Maryam11688#

```

Pharmacy Router:

```
Pharmacy Router
Physical Config CLI
IOS Command Line Interface

%LINK-5-UPDOWN: Line protocol on Interface Serial0/2/1, changed state to up
%LINK-5-UPDOWN: Line protocol on Interface Serial0/3/1, changed state to up

Maryam11689>
Maryam11689>
Maryam11689>
Maryam11689>en
Maryam11689#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
      i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
      * - candidate default, U - per-user static route, o - ODR
      P - periodic downloaded static route

Gateway of last resort is not set

92.0.0.0/30 is subnetted, 3 subnets
R 92.92.92.0 [120/2] via 168.170.170.14, 00:00:05, Serial0/2/1
R 92.92.92.4 [120/3] via 168.170.170.14, 00:00:05, Serial0/2/1
R 92.92.92.8 [120/3] via 168.170.170.14, 00:00:05, Serial0/2/1
168.170.0.0/30 is subnetted, 9 subnets
R 168.170.170.0 [120/2] via 168.170.170.9, 00:00:22, Serial0/3/1
R 168.170.170.4 [120/2] via 168.170.170.9, 00:00:22, Serial0/3/1
R 168.170.170.8 [120/2] via 168.170.170.12 is directly connected, Serial0/3/1
C 168.170.170.12 is directly connected, Serial0/2/1
R 168.170.170.16 [120/1] via 168.170.170.14, 00:00:05, Serial0/2/1
R 168.170.170.20 [120/2] via 168.170.170.14, 00:00:05, Serial0/2/1
R 168.170.170.28 [120/2] via 168.170.170.14, 00:00:05, Serial0/2/1
R 168.170.170.32 [120/1] via 168.170.170.14, 00:00:05, Serial0/2/1
172.16.0.0/29 is subnetted, 2 subnets
R 172.16.1.0 [120/2] via 168.170.170.9, 00:00:22, Serial0/3/1
R 172.16.1.8 [120/2] via 168.170.170.14, 00:00:05, Serial0/2/1
192.168.10.0/29 is subnetted, 1 subnets
R 192.168.10.0 [120/2] via 168.170.170.14, 00:00:05, Serial0/2/1
200.200.200.0/30 is subnetted, 2 subnets
R 200.200.200.0 [120/2] via 168.170.170.14, 00:00:05, Serial0/2/1
R 200.200.200.4 [120/2] via 168.170.170.14, 00:00:05, Serial0/2/1
Maryam11689#
Maryam11689#
Maryam11689#
```

Lab Router:

```
Lab Router
Physical Config CLI
IOS Command Line Interface

%LINK-5-CHANGED: Interface Serial0/3/1, changed state to up
%LINK-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
%LINK-5-UPDOWN: Line protocol on Interface Serial0/3/1, changed state to up

Maryam11689>
Maryam11689>
Maryam11689>
Maryam11689>en
Maryam11689#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
      i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
      * - candidate default, U - per-user static route, o - ODR
      P - periodic downloaded static route

Gateway of last resort is not set

92.0.0.0/30 is subnetted, 3 subnets
R 92.92.92.0 [120/3] via 168.170.170.10, 00:00:10, Serial0/3/0
R 92.92.92.4 [120/3] via 168.170.170.10, 00:00:10, Serial0/3/0
R 92.92.92.8 [120/3] via 168.170.170.10, 00:00:10, Serial0/3/0
168.170.0.0/30 is subnetted, 9 subnets
R 168.170.170.0 [120/1] via 168.170.170.5, 00:00:22, Serial0/3/1
C 168.170.170.4 is directly connected, Serial0/3/1
C 168.170.170.8 is directly connected, Serial0/3/1
R 168.170.170.12 [120/1] via 168.170.170.10, 00:00:10, Serial0/3/0
R 168.170.170.16 [120/1] via 168.170.170.10, 00:00:10, Serial0/3/0
R 168.170.170.20 [120/3] via 168.170.170.10, 00:00:10, Serial0/3/0
R 168.170.170.24 [120/3] via 168.170.170.10, 00:00:10, Serial0/3/0
R 168.170.170.28 [120/3] via 168.170.170.10, 00:00:10, Serial0/3/0
R 168.170.170.32 [120/1] via 168.170.170.10, 00:00:10, Serial0/3/0
172.16.0.0/29 is subnetted, 2 subnets
R 172.16.1.0 [120/3] via 168.170.170.5, 00:00:22, Serial0/3/1
R 172.16.1.8 [120/3] via 168.170.170.10, 00:00:10, Serial0/3/0
192.168.10.0/29 is subnetted, 1 subnets
R 192.168.10.0 [120/3] via 168.170.170.10, 00:00:10, Serial0/3/0
200.200.200.0/30 is subnetted, 2 subnets
R 200.200.200.0 [120/3] via 168.170.170.10, 00:00:10, Serial0/3/0
R 200.200.200.4 [120/3] via 168.170.170.10, 00:00:10, Serial0/3/0
Maryam11689#
Maryam11689#
Maryam11689#
```

Nurse Router:

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/1, changed state to up
%LINK-5-CHANGED: Interface Serial0/3/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up

Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
      i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
      * - candidate default, U - per-user static route, o - ODR
      P - periodic downloaded static route

Gateway of last resort is not set

92.0.0.0/30 is subnetted, 3 subnets
R 92.92.92.0 [120/4] via 168.170.170.6, 00:00:20, Serial0/3/1
R 92.92.92.4 [120/4] via 168.170.170.6, 00:00:20, Serial0/3/1
R 92.92.92.8 [120/4] via 168.170.170.6, 00:00:20, Serial0/3/1
168.170.0.0/30 is subnetted, 9 subnets
C 168.170.170.0 is directly connected, Serial0/3/0
168.170.170.4 is directly connected, Serial0/3/0
168.170.170.8 [120/1] via 168.170.170.6, 00:00:20, Serial0/3/1
R 168.170.170.12 [120/1] via 168.170.170.6, 00:00:20, Serial0/3/1
R 168.170.170.16 [120/3] via 168.170.170.6, 00:00:20, Serial0/3/1
R 168.170.170.20 [120/4] via 168.170.170.6, 00:00:20, Serial0/3/1
R 168.170.170.24 [120/4] via 168.170.170.6, 00:00:20, Serial0/3/1
R 168.170.170.28 [120/4] via 168.170.170.6, 00:00:20, Serial0/3/1
R 168.170.170.32 [120/3] via 168.170.170.6, 00:00:20, Serial0/3/1
172.16.0.0/29 is subnetted, 2 subnets
R 172.16.1.0 [120/1] via 168.170.170.1, 00:00:20, Serial0/3/0
R 172.16.1.4 [120/1] via 168.170.170.1, 00:00:20, Serial0/3/1
192.168.10.0/29 is subnetted, 1 subnets
R 192.168.10.0 [120/4] via 168.170.170.6, 00:00:20, Serial0/3/1
200.200.200.0/30 is subnetted, 2 subnets
R 200.200.200.0 [120/4] via 168.170.170.6, 00:00:20, Serial0/3/1
R 200.200.200.4 [120/4] via 168.170.170.6, 00:00:20, Serial0/3/1

Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
      i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
      * - candidate default, U - per-user static route, o - ODR
      P - periodic downloaded static route

Gateway of last resort is not set
```

Doctor Router:

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged 172.16.1.1.

Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
      i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
      * - candidate default, U - per-user static route, o - ODR
      P - periodic downloaded static route

Gateway of last resort is not set

92.0.0.0/30 is subnetted, 3 subnets
R 92.92.92.0 [120/5] via 168.170.170.2, 00:00:21, Serial0/3/0
R 92.92.92.4 [120/5] via 168.170.170.2, 00:00:21, Serial0/3/0
R 92.92.92.8 [120/5] via 168.170.170.2, 00:00:21, Serial0/3/0
168.170.0.0/30 is subnetted, 9 subnets
C 168.170.170.0 is directly connected, Serial0/3/0
168.170.170.4 [120/0] via 168.170.170.2, 00:00:21, Serial0/3/0
R 168.170.170.8 [120/1] via 168.170.170.2, 00:00:21, Serial0/3/0
R 168.170.170.12 [120/1] via 168.170.170.2, 00:00:21, Serial0/3/0
R 168.170.170.16 [120/3] via 168.170.170.2, 00:00:21, Serial0/3/0
R 168.170.170.20 [120/5] via 168.170.170.2, 00:00:21, Serial0/3/0
R 168.170.170.24 [120/5] via 168.170.170.2, 00:00:21, Serial0/3/0
R 168.170.170.28 [120/5] via 168.170.170.2, 00:00:21, Serial0/3/0
R 168.170.170.32 [120/4] via 168.170.170.2, 00:00:21, Serial0/3/0
172.16.0.0/29 is subnetted, 2 subnets
C 172.16.1.0 [120/0] via 168.170.170.1, 00:00:21, Serial0/3/0
R 172.16.1.4 [120/1] via 168.170.170.1, 00:00:21, Serial0/3/1
192.168.10.0/29 is subnetted, 1 subnets
R 192.168.10.0 [120/5] via 168.170.170.2, 00:00:21, Serial0/3/0
200.200.200.0/30 is subnetted, 2 subnets
R 200.200.200.0 [120/5] via 168.170.170.2, 00:00:21, Serial0/3/1
R 200.200.200.4 [120/5] via 168.170.170.2, 00:00:21, Serial0/3/0

Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
      i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
      * - candidate default, U - per-user static route, o - ODR
      P - periodic downloaded static route
```

Security Router:

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
%DUAL-5-NBRCHANGE: IP-EIGRP 11508: Neighbor 200.200.200.5 (Serial0/3/0) is up: new adjacency
%DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged 192.168.10.1
%DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged 192.168.10.2.

Muzammill11508>
Muzammill11508#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

92.0.0.0/30 is subnetted, 3 subnets
D EX  92.92.92.0 [170/27136256] via 200.200.200.5, 00:07:31, Serial0/3/0
D EX  92.92.92.8 [170/27136256] via 200.200.200.5, 00:07:40, Serial0/3/0
168.170.0.0/30 is subnetted, 9 subnets
D EX  168.170.170.0 [170/27136000] via 200.200.200.5, 00:07:40, Serial0/3/0
D EX  168.170.170.4 [170/27136000] via 200.200.200.5, 00:07:40, Serial0/3/0
D EX  168.170.170.8 [170/27136000] via 200.200.200.5, 00:07:40, Serial0/3/0
D EX  168.170.170.12 [170/27136000] via 200.200.200.5, 00:07:40, Serial0/3/0
D EX  168.170.170.16 [170/27136000] via 200.200.200.5, 00:07:40, Serial0/3/0
D EX  168.170.170.20 [170/27136256] via 200.200.200.5, 00:07:40, Serial0/3/0
D EX  168.170.170.24 [170/27136256] via 200.200.200.5, 00:07:40, Serial0/3/0
D EX  168.170.170.28 [170/27136256] via 200.200.200.5, 00:07:40, Serial0/3/0
D EX  168.170.170.32 [170/27136256] via 200.200.200.5, 00:07:41, Serial0/3/0
172.16.0.0/29 is subnetted, 2 subnets
D EX  172.16.1.0 [170/27136000] via 200.200.200.5, 00:07:40, Serial0/3/0
D EX  172.16.1.8 [170/27136256] via 200.200.200.5, 00:07:40, Serial0/3/0
C  192.168.10.0 is directly connected, FastEthernet0/0
  200.200.200.0/30 is subnetted, 2 subnets
    200.200.200.5 [90/2681856] via 200.200.200.5, 00:07:41, Serial0/3/0
    200.200.200.4 is directly connected, Serial0/3/0
Muzammill11508#
Muzammill11508#
Muzammill11508#
Muzammill11508#
```

Maintenance Router:

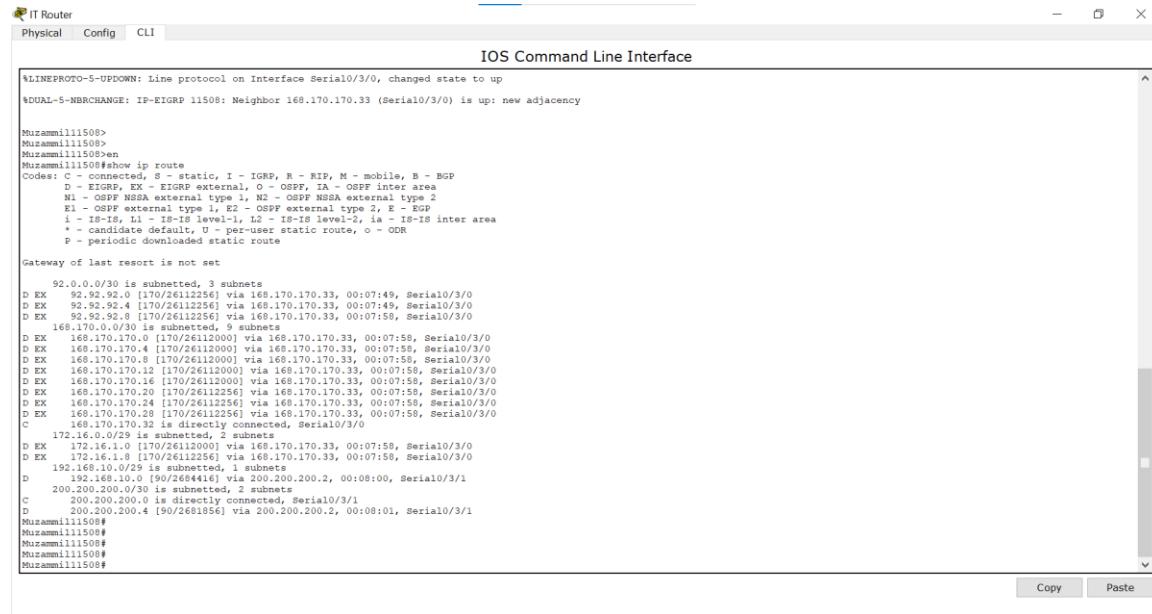
```
%LINEPROTO-5-UPDOWN: Line protocol on interface serial0/3/0, changed state to up
%DUAL-5-NBRCHANGE: IP-EIGRP 11508: Neighbor 200.200.200.1 (Serial0/3/0) is up: new adjacency
%DUAL-5-NBRCHANGE: IP-EIGRP 11508: Neighbor 200.200.200.6 (Serial0/3/1) is up: new adjacency

Muzammill11508>
Muzammill11508#
Muzammill11508#
Muzammill11508#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

92.0.0.0/30 is subnetted, 3 subnets
D EX  92.92.92.0 [170/26624256] via 200.200.200.1, 00:07:40, Serial0/3/0
D EX  92.92.92.8 [170/26624256] via 200.200.200.1, 00:07:40, Serial0/3/0
168.170.0.0/30 is subnetted, 9 subnets
D EX  168.170.170.0 [170/26624000] via 200.200.200.1, 00:07:49, Serial0/3/0
D EX  168.170.170.4 [170/26624000] via 200.200.200.1, 00:07:49, Serial0/3/0
D EX  168.170.170.8 [170/26624000] via 200.200.200.1, 00:07:49, Serial0/3/0
D EX  168.170.170.12 [170/26624000] via 200.200.200.1, 00:07:49, Serial0/3/0
D EX  168.170.170.16 [170/26624000] via 200.200.200.1, 00:07:49, Serial0/3/0
D EX  168.170.170.20 [170/26624256] via 200.200.200.1, 00:07:49, Serial0/3/0
D EX  168.170.170.24 [170/26624256] via 200.200.200.1, 00:07:49, Serial0/3/0
D EX  168.170.170.28 [170/26624256] via 200.200.200.1, 00:07:49, Serial0/3/0
D EX  168.170.170.32 [90/2681856] via 200.200.200.1, 00:07:50, Serial0/3/0
172.16.0.0/29 is subnetted, 2 subnets
D EX  172.16.1.0 [170/26624256] via 200.200.200.1, 00:07:49, Serial0/3/0
D EX  172.16.1.8 [170/26624256] via 200.200.200.1, 00:07:49, Serial0/3/0
192.168.10.0 is subnetted, 1 subnets
D  192.168.10.0 [90/2172416] via 200.200.200.6, 00:07:51, Serial0/3/1
  200.200.200.0 is directly connected, Serial0/3/1
C  200.200.200.4 is directly connected, Serial0/3/1
Muzammill11508#
Muzammill11508#
Muzammill11508#
Muzammill11508#
```

IT Router:



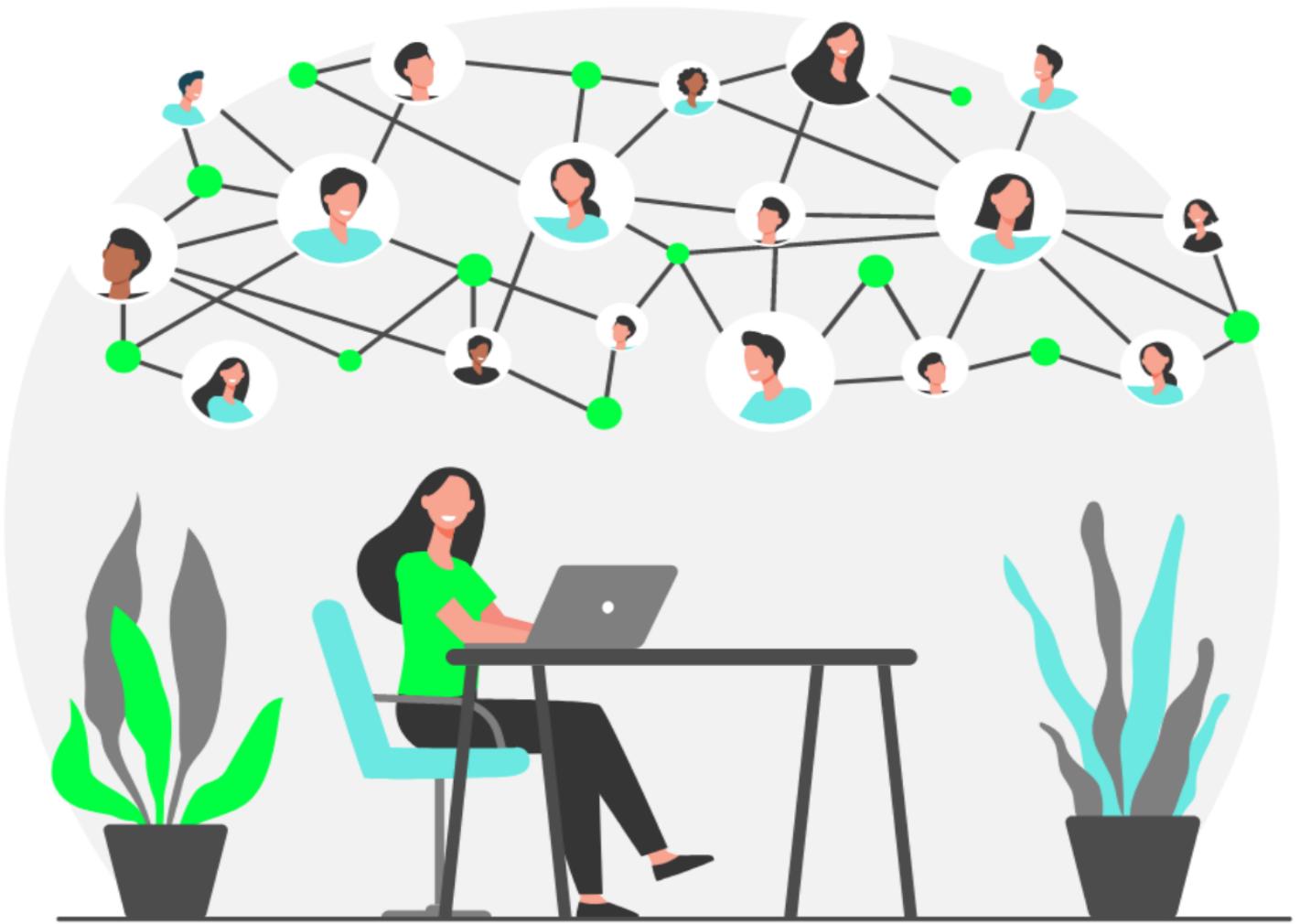
The screenshot shows the 'IOS Command Line Interface' window titled 'IT Router'. The window has tabs for Physical, Config, and CLI, with CLI selected. The main area displays the output of the 'show ip route' command. The output includes various route entries with their flags (e.g., C, S, R, M, B, E1, E2, *), metrics, and next-hop information. It also shows subnetting details and directly connected routes. The interface includes standard window controls (minimize, maximize, close) and buttons for Copy and Paste at the bottom right.

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
%DUAL-5-NBRCHANGE: IP-EIGRP 11508: Neighbor 168.170.170.33 (Serial0/3/0) is up: new adjacency

Muzammill11508>
Muzammill11508>
Muzammill11508#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       E1 - OSPF external type 1, E2 - OSPF external type 2
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

92.0.0.0/30 is subnetted, 3 subnets
D EX  92.92.92.0 [170/26112256] via 168.170.170.33, 00:07:49, Serial0/3/0
D EX  92.92.92.8 [170/26112256] via 168.170.170.33, 00:07:55, Serial0/3/0
168.170.170.0/24 is subnetted, 9 subnets
D EX  168.170.170.4 [170/26112000] via 168.170.170.33, 00:07:58, Serial0/3/0
D EX  168.170.170.4 [170/26112000] via 168.170.170.33, 00:07:58, Serial0/3/0
D EX  168.170.170.8 [170/26112000] via 168.170.170.33, 00:07:58, Serial0/3/0
D EX  168.170.170.12 [170/26112000] via 168.170.170.33, 00:07:58, Serial0/3/0
D EX  168.170.170.16 [170/26112000] via 168.170.170.33, 00:07:58, Serial0/3/0
D EX  168.170.170.20 [170/26112256] via 168.170.170.33, 00:07:58, Serial0/3/0
D EX  168.170.170.24 [170/26112256] via 168.170.170.33, 00:07:58, Serial0/3/0
D EX  168.170.170.28 [170/26112256] via 168.170.170.33, 00:07:58, Serial0/3/0
C 172.16.0.0/29 is subnetted, 2 subnets
D EX  172.16.1.0 [170/26112000] via 168.170.170.33, 00:07:58, Serial0/3/0
D EX  172.16.1.8 [170/26112256] via 168.170.170.33, 00:07:58, Serial0/3/0
192.168.1.0/24 is subnetted, 2 subnets
D 192.168.1.0.0 [90/2684416] via 200.200.200.2, 00:08:00, Serial0/3/1
C 200.200.200.0/30 is subnetted, 2 subnets
D 200.200.200.4 [90/2681956] via 200.200.200.2, 00:08:01, Serial0/3/1
Muzammill11508#
Muzammill11508#
Muzammill11508#
Muzammill11508#
```



Hospital Management System

PHASE 5



Show Running Configuration (for each router)

Submitted by:

11508 MUZAMIL KHAN
11688 Maryam

May 29, 2024

Show Running Configuration: Patient Router:

Patient Router

Physical Config CLI

IOS Command Line Interface

```
Maryam1168>
Maryam1168#en
Maryam1168#show running-config
Building configuration...
Current configuration : 956 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Maryam1168
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
!
```

Copy Paste

Patient Router

Physical Config CLI

IOS Command Line Interface

```
shutdown
!
interface Serial0/2/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/1
no ip address
clock rate 2000000
shutdown
!
interface Serial0/3/0
ip address 92.92.92.6 255.255.255.252
clock rate 2000000
!
interface Serial0/3/1
ip address 92.92.92.9 255.255.255.252
!
interface Vlan1
no ip address
shutdown
!
router ospf 1168
log-adjacency-changes
network 92.92.92.4 0.0.0.3 area 0
network 92.92.92.8 0.0.0.3 area 0
!
ip classless
!
ip flow-export version 9
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
login
!
```

Copy Paste

Admin Router:

Admin Router

Physical Config CLI

IOS Command Line Interface

```
Maryaml1688>en
Maryaml1688#show running-config
Building configuration...
Current configuration : 956 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Maryaml1688
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
shutdown
```

Copy Paste

Admin Router

Physical Config CLI

IOS Command Line Interface

```
speed auto
shutdown
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/2/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/1
no ip address
clock rate 2000000
shutdown
!
interface Serial0/3/0
ip address 92.92.92.5 255.255.255.252
!
interface Serial0/3/1
ip address 92.92.92.2 255.255.255.252
clock rate 2000000
!
interface Vlan1
no ip address
shutdown
!
router ospf 11688
log-adjacency-changes
network 92.92.92.0 0.0.0.3 area 0
network 92.92.92.4 0.0.0.3 area 0
!
ip classless
!
ip flow-export version 9
!
!
!
!
line con 0
```

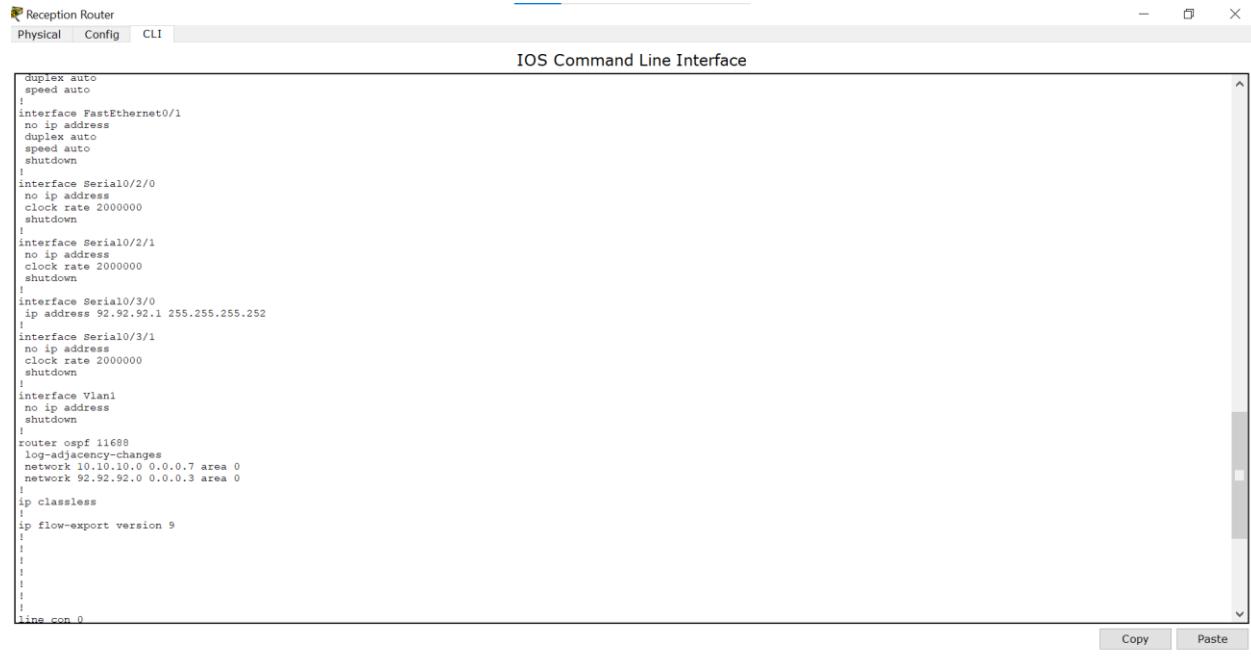
Copy Paste

Reception Router:



Maryam168\$en
Maryam168#show running-config
Building configuration...
Current configuration : 1044 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Maryam168
!
!
ip dhcp pool maryam168
network 10.10.10.0 255.255.255.248
default-router 10.10.10.1
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
ip address 10.10.10.1 255.255.255.248

Copy Paste



```
duplex auto
speed auto
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/2/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/1
no ip address
clock rate 2000000
shutdown
!
interface Serial0/3/0
ip address 92.92.92.1 255.255.255.252
!
interface Serial0/3/1
no ip address
clock rate 2000000
shutdown
!
interface Vlan1
no ip address
shutdown
!
router ospf 11688
log-adjacency-changes
network 10.10.0.0 0.0.0.7 area 0
network 92.92.92.0 0.0.0.3 area 0
!
ip classless
ip flow-export version 9
!
!
!
line con 0
```

Copy Paste

Ambulance Router:

Ambulance Router (ACL)

Physical Config CLI

IOS Command Line Interface

```
Muzammill1508>
Muzammill1508#en
Muzammill1508#show running-config
Building configuration...
Current configuration : 1336 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamp debug datetime msec
no service password-encryption
!
hostname Muzammill1508
!
!
!
!
ip dhcp pool maryam1688
  network 172.16.1.8 255.255.255.248
  default-router 172.16.1.9
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
  ip address 172.16.1.9 255.255.255.248
```

Copy Paste

Ambulance Router (ACL)

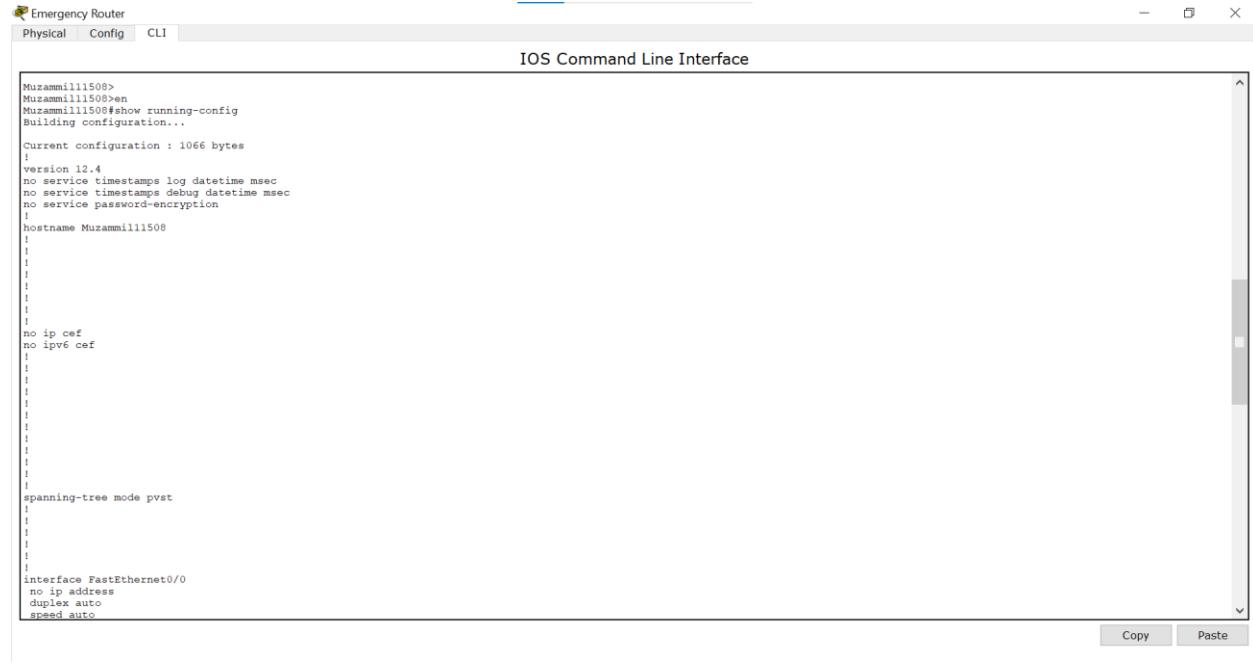
Physical Config CLI

IOS Command Line Interface

```
!
interface FastEthernet0/0
  ip address 172.16.1.9 255.255.255.248
  duplex auto
  speed auto
!
interface FastEthernet0/1
  no ip address
  duplex auto
  speed auto
  shutdown
!
interface Serial0/2/0
  no ip address
  clock rate 2000000
  shutdown
!
interface Serial0/2/1
  no ip address
  clock rate 2000000
  shutdown
!
interface Serial0/3/0
  ip address 168.170.170.30 255.255.255.252
  ip access-group 108 out
!
interface Serial0/3/1
  no ip address
  clock rate 2000000
  shutdown
!
interface Vlan1
  no ip address
  shutdown
!
ip classless
ip route 168.170.170.16 255.255.255.252 168.170.170.29
ip route 168.170.170.20 255.255.255.252 168.170.170.29
ip route 168.170.170.24 255.255.255.252 168.170.170.29
ip route 0.0.0.0 255.255.255.255 168.170.170.29
!
ip flow-export version 9
!
!
access-list 108 permit tcp host 172.16.1.10 host 192.168.10.2 eq www
access-list 108 deny tcp any host 192.168.10.2 eq www
```

Copy Paste

Emergency Router:



Muzammill11508>
Muzammill11508#en
Muzammill11508#show running-config
Building configuration...

Current configuration : 1066 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Muzammill11508
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto

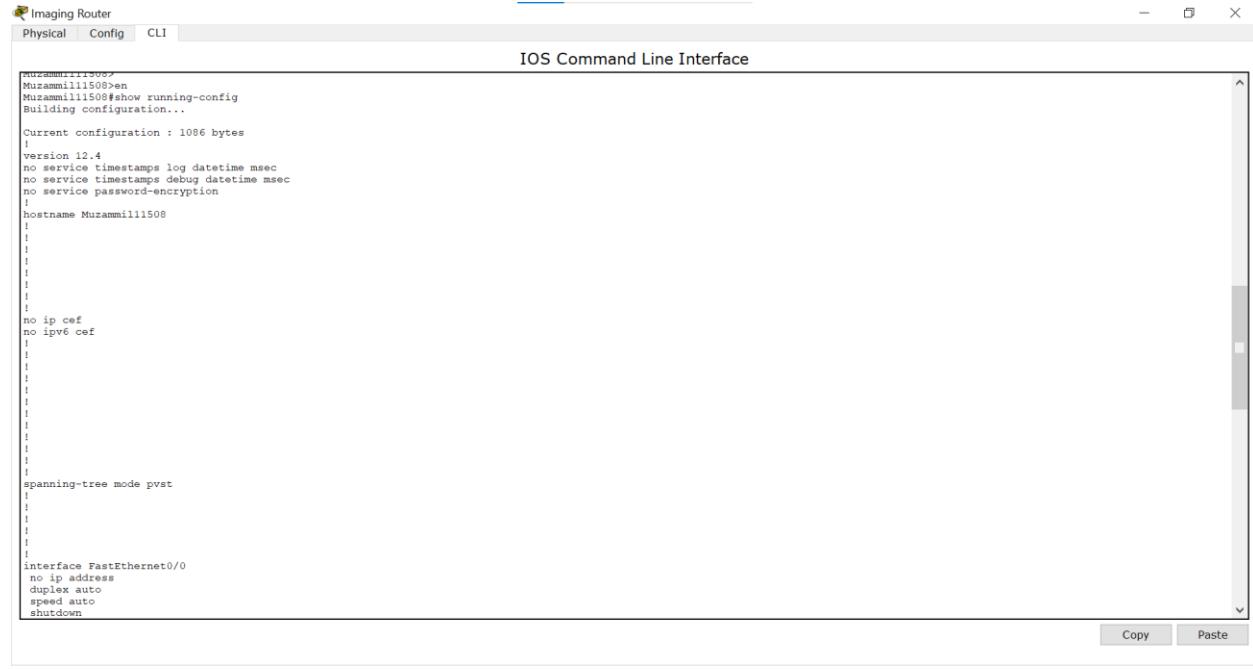
Copy Paste



```
shutdown
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/2/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/1
no ip address
clock rate 2000000
shutdown
!
interface Serial0/3/0
ip address 168.170.170.26 255.255.255.252
!
interface Serial0/3/1
ip address 168.170.170.29 255.255.255.252
clock rate 2000000
!
interface Vlan1
no ip address
shutdown
!
ip classless
ip route 168.170.170.16 255.255.255.252 168.170.170.25
ip route 168.170.170.20 255.255.255.252 168.170.170.25
ip route 172.16.1.8 255.255.255.248 168.170.170.30
ip route 0.0.0.0 255.255.255.255 168.170.170.25
!
ip flow-export version 9
!
!
!
line con 0
line aux 0
```

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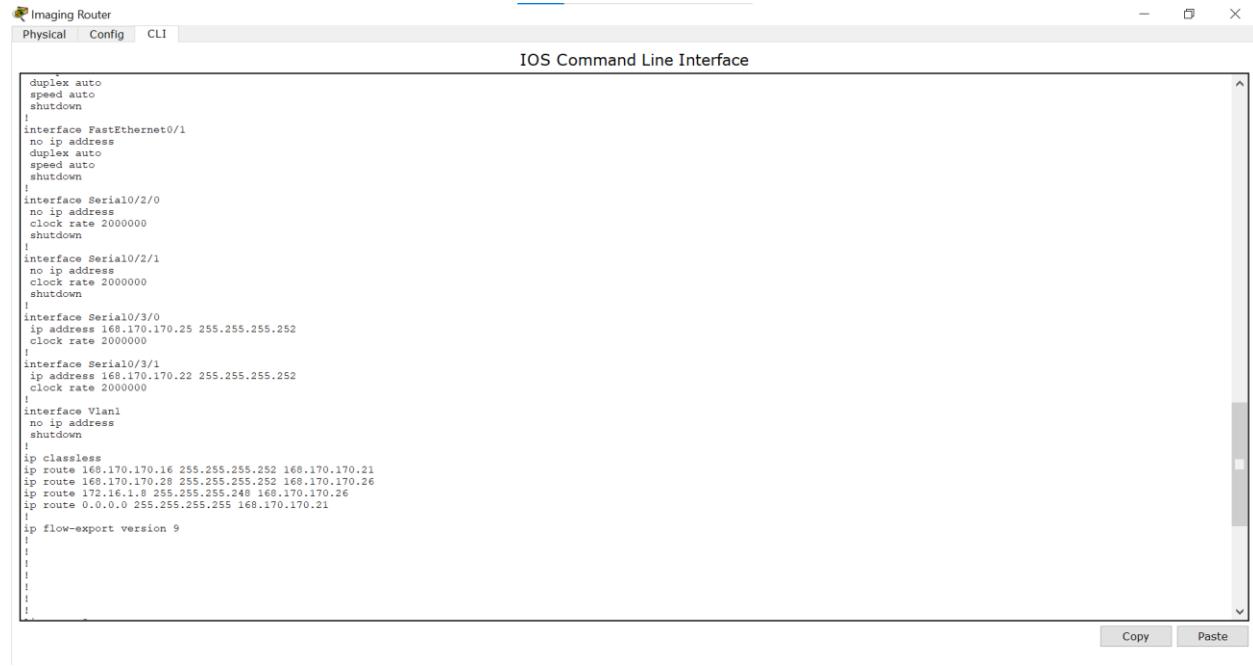
Imaging Router:



IOS Command Line Interface

```
Muzammill11508>en
Muzammill11508#show running-config
Building configuration...
Current configuration : 1086 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Muzammill11508
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
shutdown
```

Copy Paste



IOS Command Line Interface

```
duplex auto
speed auto
shutdown
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/2/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/1
no ip address
clock rate 2000000
shutdown
!
interface Serial0/3/0
ip address 168.170.170.25 255.255.255.252
clock rate 2000000
!
interface Serial0/3/1
ip address 168.170.170.22 255.255.255.252
clock rate 2000000
!
interface Vlan1
no ip address
shutdown
!
ip classless
ip route 168.170.170.16 255.255.255.252 168.170.170.21
ip route 168.170.170.28 255.255.255.252 168.170.170.26
ip route 172.16.1.8 255.255.255.240 168.170.170.26
ip route 0.0.0.0 255.255.255.255 168.170.170.21
!
ip flow-export version 9
!
!
!
```

Copy Paste

Billing Router:

Billing Router

Physical Config CLI

IOS Command Line Interface

```
Maryam168>en
Maryam168#show running-config
Building configuration...
Current configuration : 1654 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Maryam168
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
shutdown
!
```

Copy Paste

Billing Router

Physical Config CLI

IOS Command Line Interface

```
speed auto
shutdown
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/2/0
ip address 168.170.170.14 255.255.255.252
!
interface Serial0/2/1
ip address 168.170.170.33 255.255.255.252
clock rate 2000000
!
interface Serial0/3/0
ip address 92.92.92.10 255.255.255.252
clock rate 200000
!
interface Serial0/3/1
ip address 168.170.170.17 255.255.255.252
!
interface Vlan1
no ip address
shutdown
!
router eigrp 11500
 redistribute ospf 11688 metric 100 0 255 10 5
 redistribute ospf 11688 metric 100 1 255 10 5
 redistribute static metric 100 1 255 10 5
 network 168.170.170.32 0.0.0.3
 no auto-summary
!
router ospf 11688
log-adjacency-changes
redistribute rip metric 250 subnets
redistribute eigrp 11500 metric 250 subnets
redistribute static metric 250 subnets
network 92.92.92.8 0.0.0.3 area 0
!
router rip
version 2
redistribute eigrp 11500 metric 2
redistribute ospf 11688 metric 2
redistribute static metric 2
network 168.170.0.0
```

Copy Paste

Billing Router

Physical Config CLI

IOS Command Line Interface

```
router ospf 11688
log-advertisement-changes
redistribute rip metric 250 subnets
redistribute eigrp 11508 metric 250 subnets
redistribute static metric 250 subnets
network 92.92.92.8 0.0.0.3 area 0
!
router rip
version 2
redistribute eigrp 11508 metric 2
redistribute ospf 11688 metric 2
redistribute static metric 2
network 168.170.0.0
no auto-summary
!
ip classless
ip route 168.170.170.20 255.255.255.252 168.170.170.18
ip route 168.170.170.24 255.255.255.252 168.170.170.18
ip route 168.170.170.28 255.255.255.252 168.170.170.18
ip route 172.16.1.8 255.255.255.248 168.170.170.18
!
ip flow-export version 9
!
!
!
!
line con 0
line aux 0
line vty 0 4
login
!
end
```

Surgery Router:

Surgery Router

Physical Config CLI

IOS Command Line Interface

```
Muzammill11508#en
Muzammill11508#show running-config
Building configuration...
!
Current configuration : 1066 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Muzammill11508
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
shutdown
```

Copy Paste

Surgery Router

Physical Config CLI

IOS Command Line Interface

```
duplex auto
speed auto
shutdown
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/2/0
ip address 168.170.170.21 255.255.255.252
!
interface Serial0/2/1
no ip address
clock rate 2000000
shutdown
!
interface Serial0/3/0
ip address 168.170.170.18 255.255.255.252
clock rate 2000000
!
interface Serial0/3/1
no ip address
clock rate 2000000
shutdown
!
interface Vlan1
no ip address
shutdown
!
ip classless
ip route 168.170.170.24 255.255.255.252 168.170.170.22
ip route 168.170.170.28 255.255.255.252 168.170.170.22
ip route 172.16.1.8 255.255.255.248 168.170.170.22
ip route 0.0.0.0 255.255.255.255 168.170.170.17
!
ip flow-export version 9
!
!
!
!
!
line con 0
```

Copy Paste

Pharmacy Router:

Pharmacy Router

Physical Config CLI

IOS Command Line Interface

```
Maryam1168#en
Maryam1168#show running-config
Building configuration...
Current configuration : 913 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Maryam1168
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
shutdown
```

Copy Paste

Pharmacy Router

Physical Config CLI

IOS Command Line Interface

```
duplex auto
speed auto
shutdown
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/2/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/1
ip address 168.170.170.13 255.255.255.252
clock rate 200000
!
interface Serial0/3/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/3/1
ip address 168.170.170.10 255.255.255.252
!
interface Vlan1
no ip address
shutdown
!
router rip
version 2
network 168.170.0.0
no auto-summary
!
ip classless
!
ip flow-export version 9
!
!
!
!
!
line con 0
```

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Lab Router:

Lab Router

Physical Config CLI

IOS Command Line Interface

```
Mariam1680>en
Mariam1680#show running-config
Building configuration...
Current configuration : 911 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Mariam1680
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
shutdown
```

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Lab Router

Physical Config CLI

IOS Command Line Interface

```
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/2/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/1
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/3/0
ip address 168.170.170.9 255.255.255.252
clock rate 2000000
!
interface Serial0/3/1
ip address 168.170.170.6 255.255.255.252
!
interface Vlan1
no ip address
shutdown
!
router rip
version 2
network 168.170.0.0
no auto-summary
!
ip classless
!
ip flow-export version 9
!
!
!
!
!
line con 0
line aux 0
```

Copy Paste

Nurse Router:

Nurse Router

Physical Config CLI

IOS Command Line Interface

```
Maryam1168>en
Maryam1168#show running-config
Building configuration...
Current configuration : 911 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Maryam1168
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
shutdown
```

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Nurse Router

Physical Config CLI

IOS Command Line Interface

```
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/2/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/1
no ip address
clock rate 2000000
shutdown
!
interface Serial0/3/0
ip address 168.170.170.2 255.255.255.252
!
interface Serial0/3/1
ip address 168.170.170.5 255.255.255.252
clock rate 2000000
!
interface Vlan1
no ip address
shutdown
!
router rip
version 2
network 168.170.0.0
no auto-summary
!
ip classless
!
ip flow-export version 9
!
!
!
!
line con 0
line aux 0
!
```

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Doctor Router:

Doctor Router (PAT)

Physical Config CLI

IOS Command Line Interface

```
Maryam1168>
Maryam1168#en
Maryam1168#show running-config
Building configuration...
Current configuration : 1166 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Maryam1168
!
!
!
ip dhcp pool maryam1168
network 172.16.1.0 255.255.255.248
default-router 172.16.1.1
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
ip address 172.16.1.1 255.255.255.248
!
```

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Doctor Router (PAT)

Physical Config CLI

IOS Command Line Interface

```

ip nat inside
duplex auto
speed auto
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/2/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/1
no ip address
clock rate 2000000
shutdown
!
interface Serial0/3/0
ip address 168.170.170.1 255.255.255.252
ip nat outside
clock rate 2000000
!
interface Serial0/3/1
no ip address
clock rate 2000000
shutdown
!
interface Vlan1
no ip address
shutdown
!
router rip
version 2
network 168.170.0.0
network 172.16.0.0
no auto-summary
!
ip nat inside source list 1 interface Serial0/3/0 overload
ip classless
!
ip flow-export version 9
!

```

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Security Router:

Security Router(NAT)

Physical Config CLI

IOS Command Line Interface

```

Muzammill11508>
Muzammill11508>
Muzammill11508#en
Muzammill11508#show running-config
Building configuration...
Current configuration : 1236 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Muzammill11508
!
!
!
!
ip dhcp pool maryam1688
network 192.168.10.0 255.255.255.248
default-router 192.168.10.1
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
spanning-tree mode pvst
!
!
```

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Security Router(NAT)

Physical Config CLI

IOS Command Line Interface

```

interface FastEthernet0/0
ip address 192.168.10.1 255.255.255.248
ip nat inside
duplex auto
speed auto
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/2/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/1
no ip address
clock rate 2000000
shutdown
!
interface Serial0/3/0
ip address 200.200.200.6 255.255.255.252
ip nat outside
!
interface Serial0/3/1
no ip address
clock rate 2000000
shutdown
!
interface Vlan1
no ip address
shutdown
!
router eigrp 11508
network 200.200.200.4 0.0.0.3
network 192.168.10.0 0.0.0.7
no auto-summary
!
ip nat pool maryam 200.200.200.5 200.200.200.6 netmask 255.255.255.252
ip nat inside source list 25 pool maryam overload
ip classless
!
ip flow-export version 9
!
```

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Maintenance Router:

Maintainance Router

Physical Config CLI

IOS Command Line Interface

```

Muzammill11508>en
Muzammill11508#show running-config
Building configuration...
Current configuration : 949 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Muzammill11508
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
shutdown
!
```

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Maintainance Router

Physical Config CLI

IOS Command Line Interface

```
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/2/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/1
no ip address
clock rate 2000000
shutdown
!
interface Serial0/3/0
ip address 200.200.200.2 255.255.255.252
!
interface Serial0/3/1
ip address 200.200.200.5 255.255.255.252
clock rate 64000
!
interface Vlan1
no ip address
shutdown
!
router eigrp 11508
network 200.200.200.0 0.0.0.3
network 200.200.200.4 0.0.0.3
no auto-summary
!
ip classless
!
ip flow-export version 9
!
!
!
!
line con 0
line aux 0
```

Copy Paste

IT Router:

IT Router

Physical Config CLI

IOS Command Line Interface

```
Muzammill11508>en
Muzammill11508#show running-config
Building configuration...
Current configuration : 953 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Muzammill11508
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
shutdown
```

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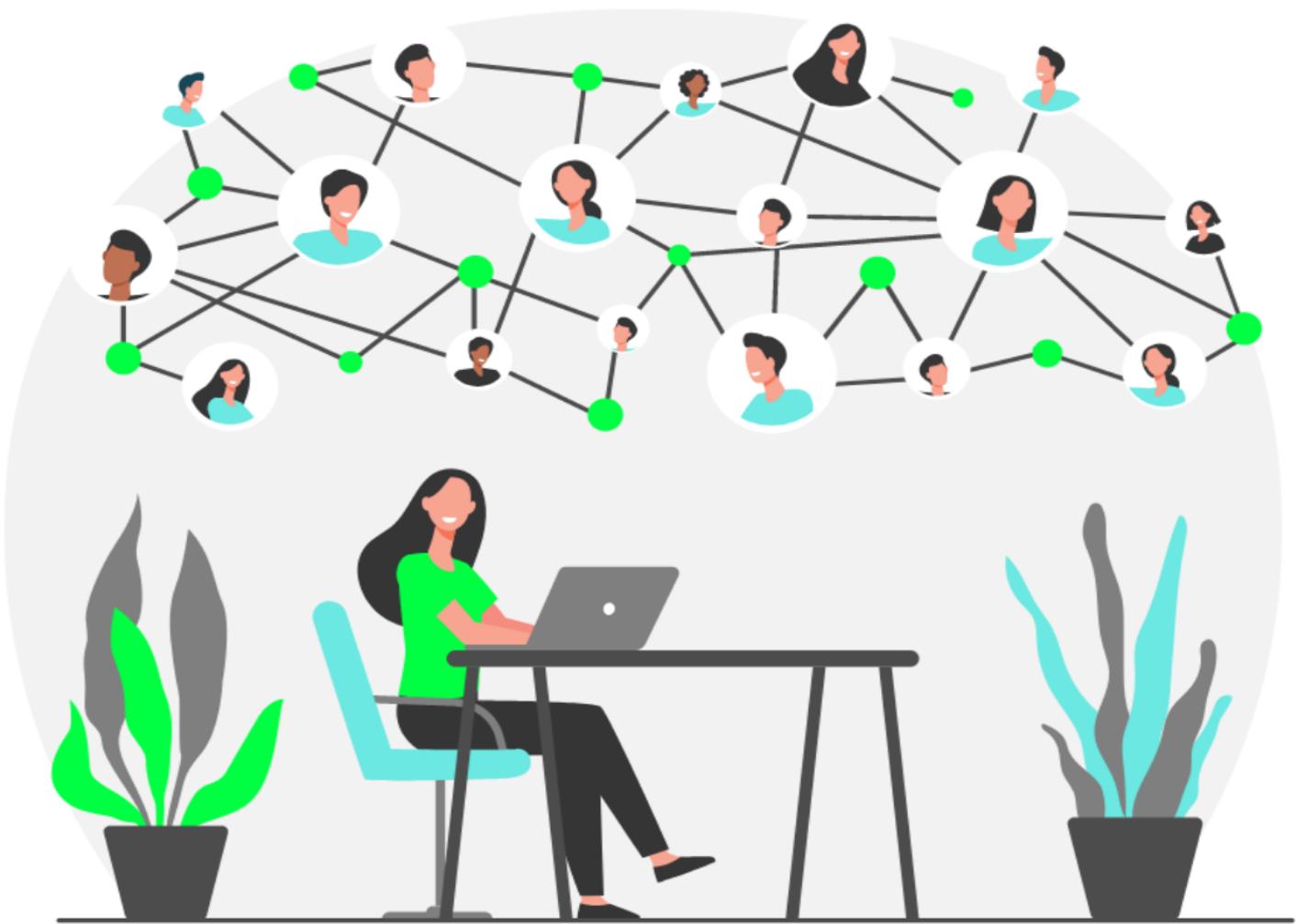
IT Router

Physical Config CLI

IOS Command Line Interface

```
speed auto
shutdown
!
interface Serial0/2/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/2/1
no ip address
clock rate 2000000
shutdown
!
interface Serial0/3/0
ip address 168.170.170.34 255.255.255.252
!
interface Serial0/3/1
ip address 200.200.200.1 255.255.255.252
clock rate 2000000
!
interface Vlan1
no ip address
shutdown
!
router eigrp 11500
network 168.170.170.32 0.0.0.3
network 200.200.200.0 0.0.0.3
no auto-summary
!
ip classless
!
ip flow-export version 9
!
!
!
line con 0
line aux 0
line vty 0 4
login
!
```

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Hospital Management System

PHASE 6



Result for some examples (ie. NAT, ACL, PS, Redistribution)

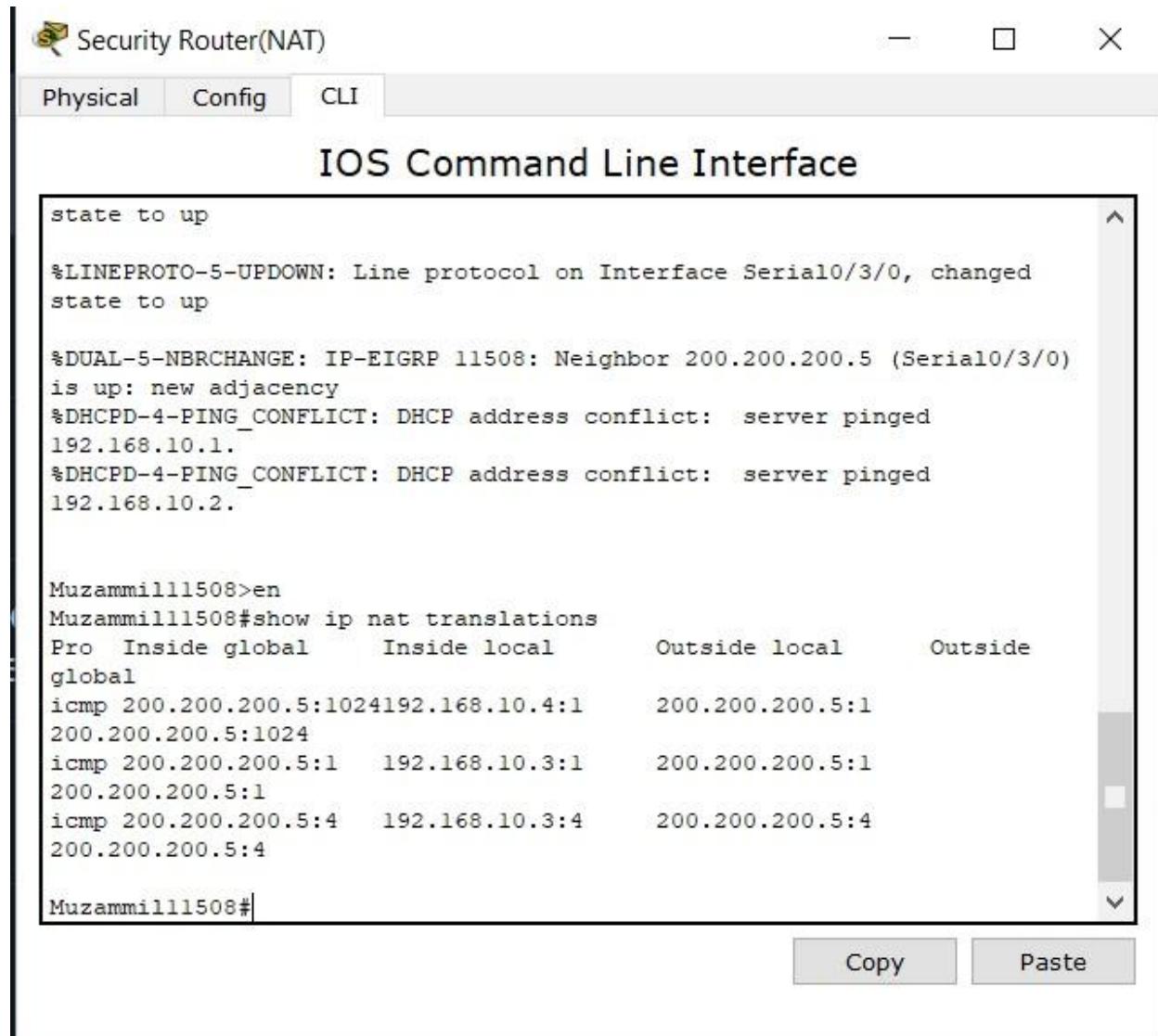
Submitted by:

11508 MUZAMIL KHAN
11688 Maryam

May 29, 2024

Result for some examples (i.e. NAT, ACL, PS, Redistribution):

NAT:



Security Router(NAT)

Physical Config CLI

IOS Command Line Interface

```
state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed
state to up

%DUAL-5-NBRCHANGE: IP-EIGRP 11508: Neighbor 200.200.200.5 (Serial0/3/0)
is up: new adjacency
%DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged
192.168.10.1.
%DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged
192.168.10.2.

Muzammill11508>en
Muzammill11508#show ip nat translations
Pro Inside global      Inside local      Outside local      Outside
global
icmp 200.200.200.5:1024 192.168.10.4:1    200.200.200.5:1
200.200.200.5:1024
icmp 200.200.200.5:1    192.168.10.3:1    200.200.200.5:1
200.200.200.5:1
icmp 200.200.200.5:4    192.168.10.3:4    200.200.200.5:4
200.200.200.5:4

Muzammill11508#
```

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PAT:

The screenshot shows a window titled "IOS Command Line Interface" with the following content:

```
Maryaml1688(config-if)#exit
Maryaml1688(config)#exit
Maryaml1688#
%SYS-5-CONFIG_I: Configured from console by console

Maryaml1688#ip nat translations
^
% Invalid input detected at '^' marker.

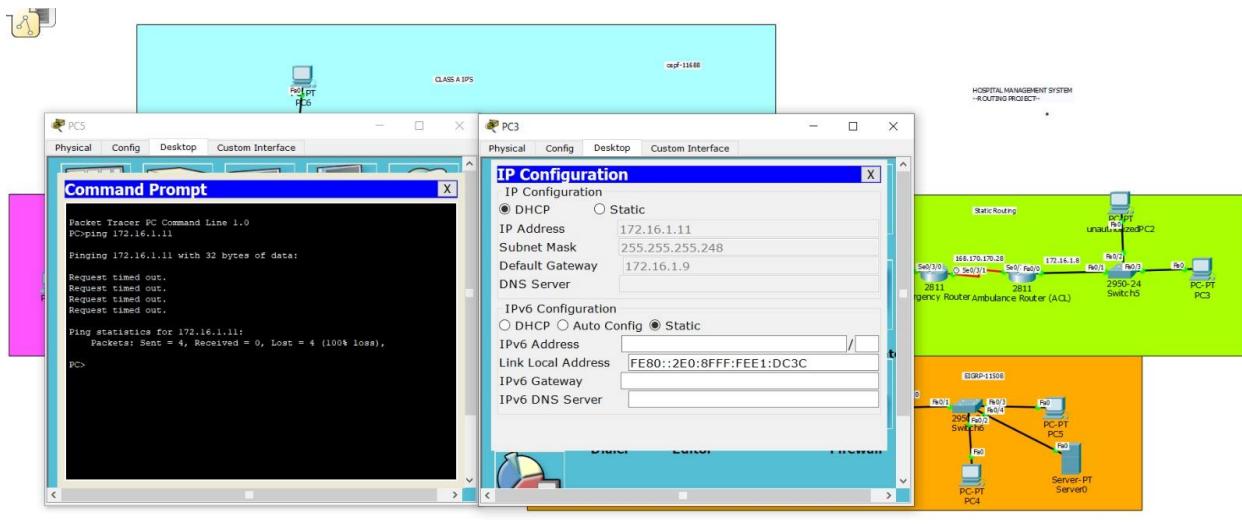
Maryaml1688#show ip nat translations
^
% Invalid input detected at '^' marker.

Maryaml1688#show ip nat translations
Maryaml1688#show ip nat translations
Pro Inside global      Inside local        Outside local      Outside
global
icmp 168.170.170.1:1024 172.16.1.3:1    168.170.170.2:1
168.170.170.2:1024
icmp 168.170.170.1:1    172.16.1.2:1    168.170.170.2:1
168.170.170.2:1
icmp 168.170.170.1:2    172.16.1.2:2    168.170.170.2:2
168.170.170.2:2

Maryaml1688#
```

At the bottom of the window are two buttons: "Copy" and "Paste".

ACL:



Port Security:

PORT SECURITY

Physical Config CLI

IOS Command Line Interface

```
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed
state to up

%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed
state to up

Switch>en
Switch#show port security
^
% Invalid input detected at '^' marker.

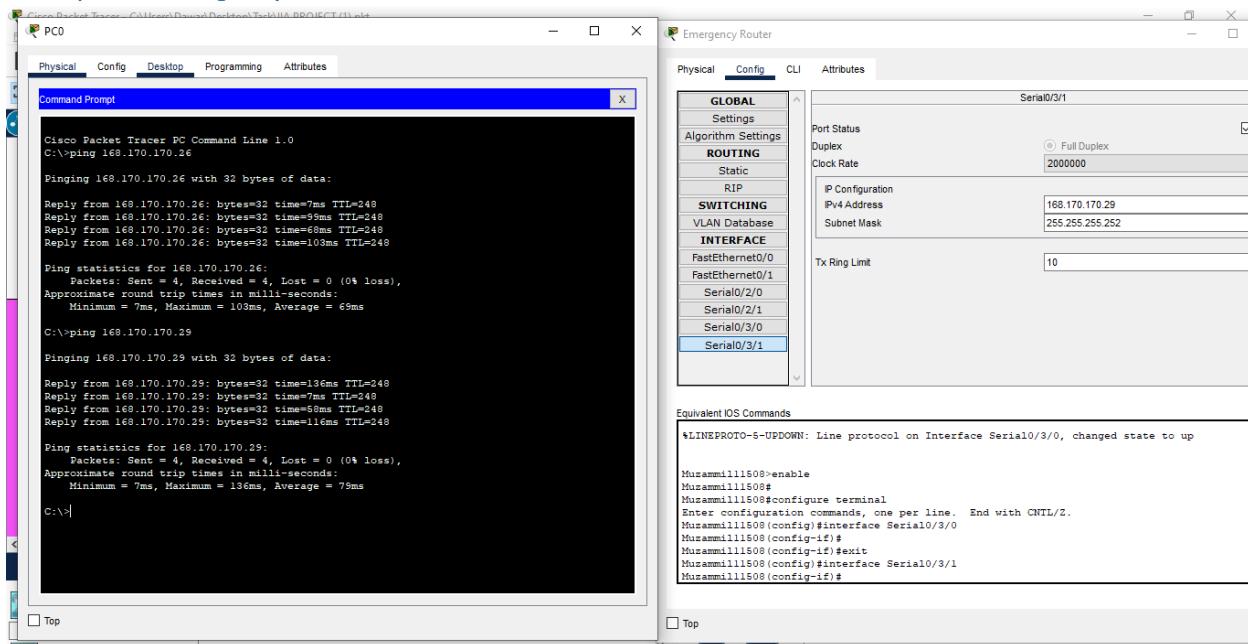
Switch#show port-security
Secure Port MaxSecureAddr CurrentAddr SecurityViolation Security Action
(Count) (Count) (Count)
-----
Fa0/1 1 1 0 Shutdown
Fa0/2 1 1 0 Shutdown
Fa0/3 1 1 0 Shutdown
```

Switch#

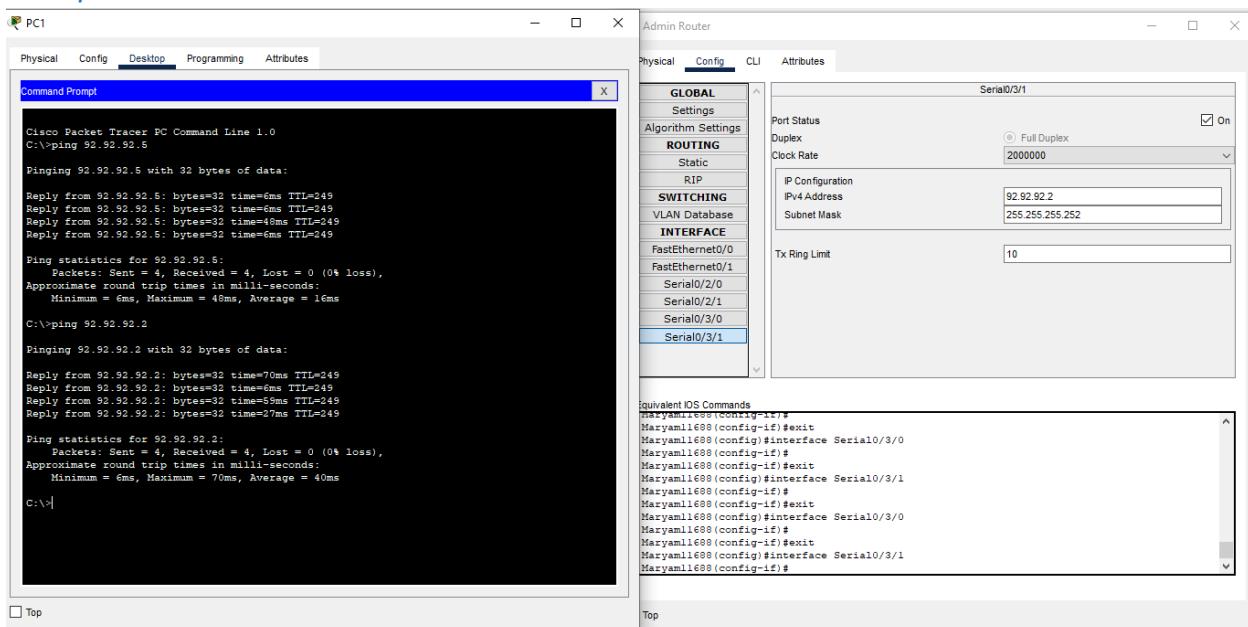
Copy Paste

Redistribution:

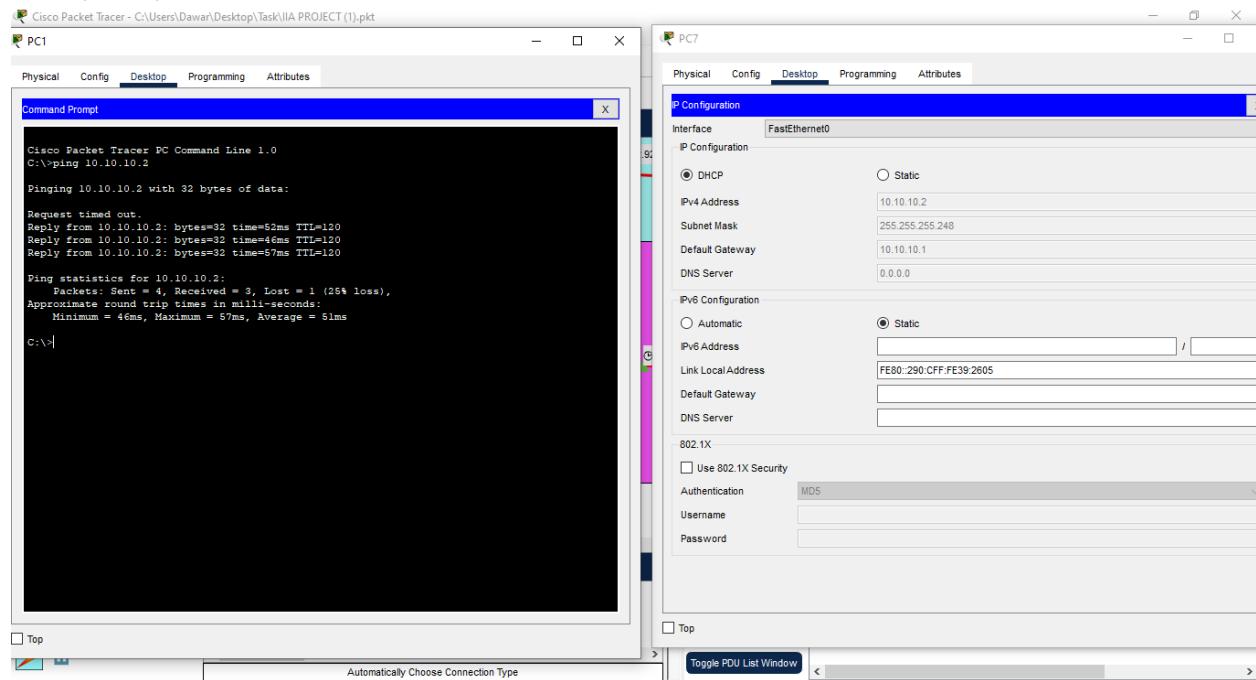
From p0 to emergency router:



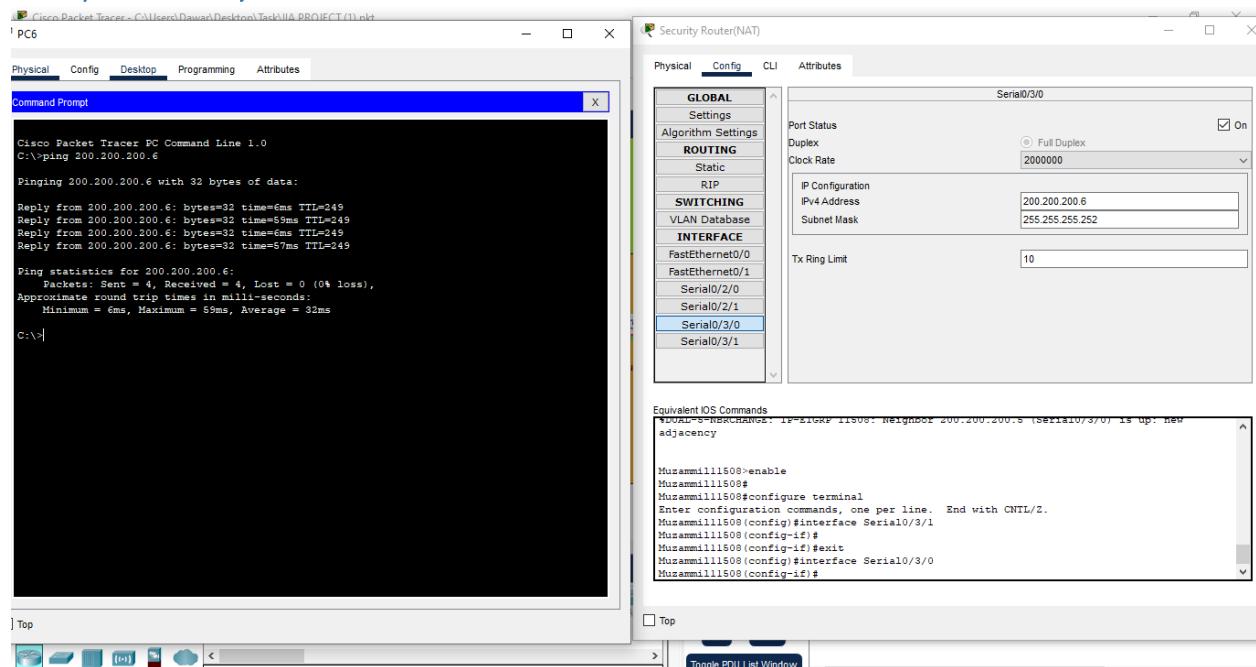
From p1 to admin router:



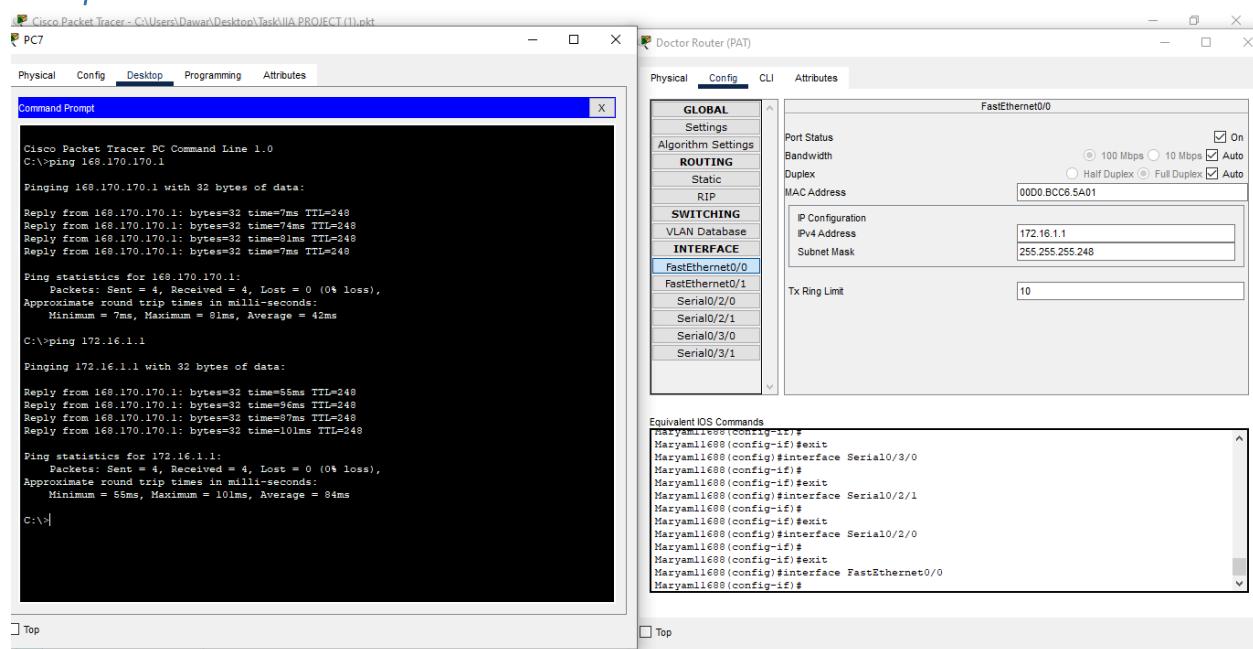
From p1 to p7:

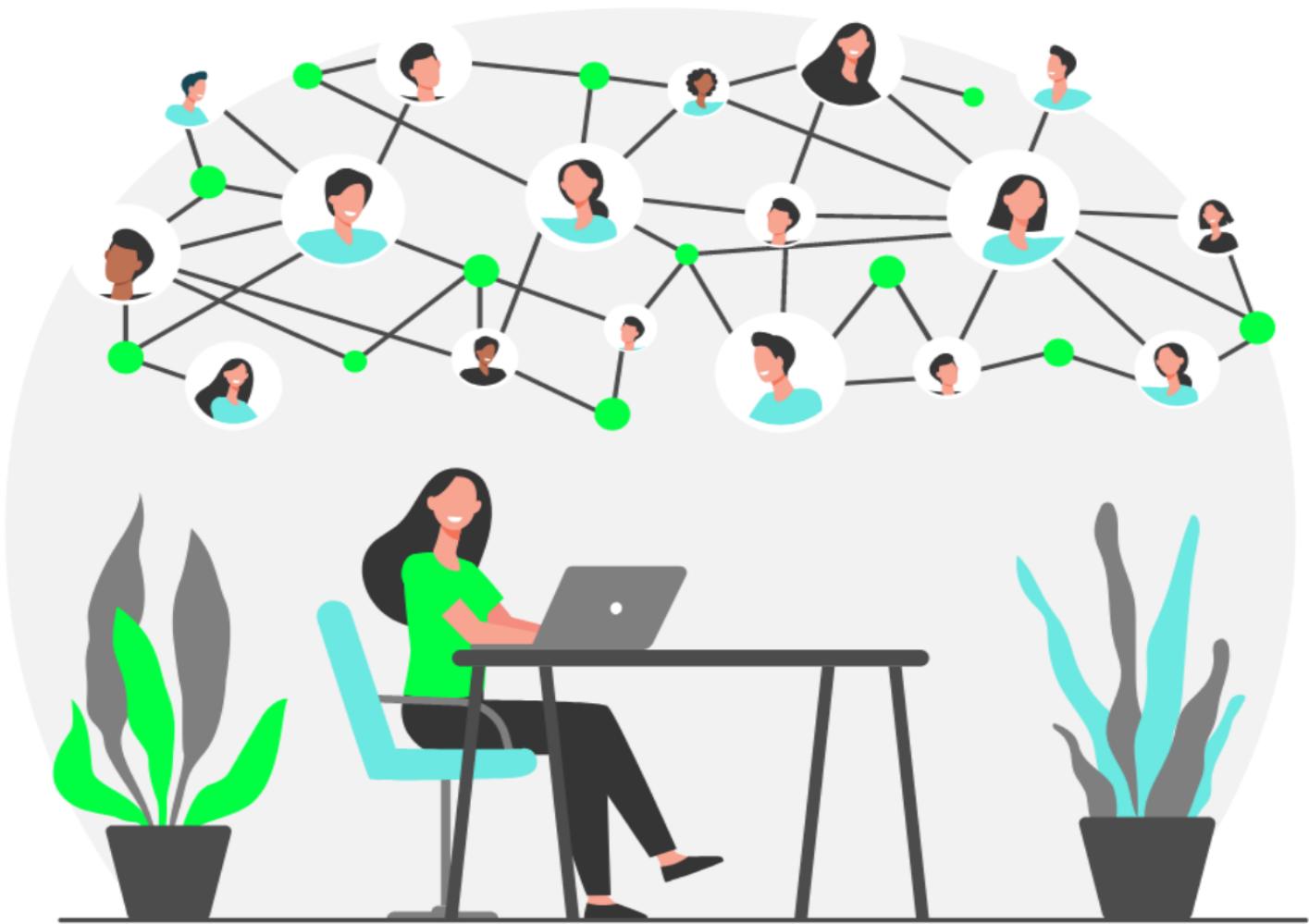


From p6 to security router:



From p7 to doctor router:





Hospital Management System

PCs Screenshot



PCs Screenshot of Hospital Management System

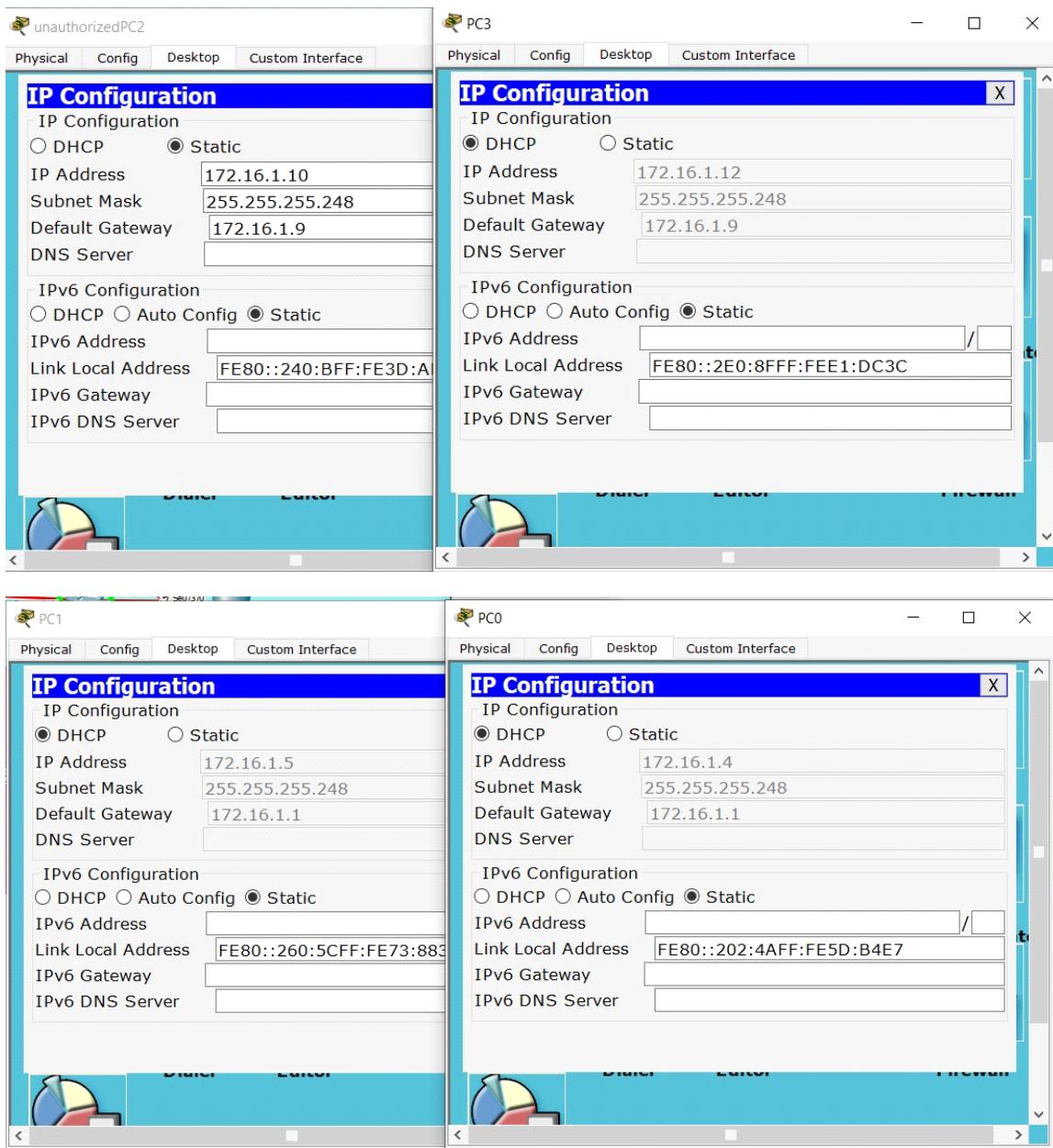
Submitted by:

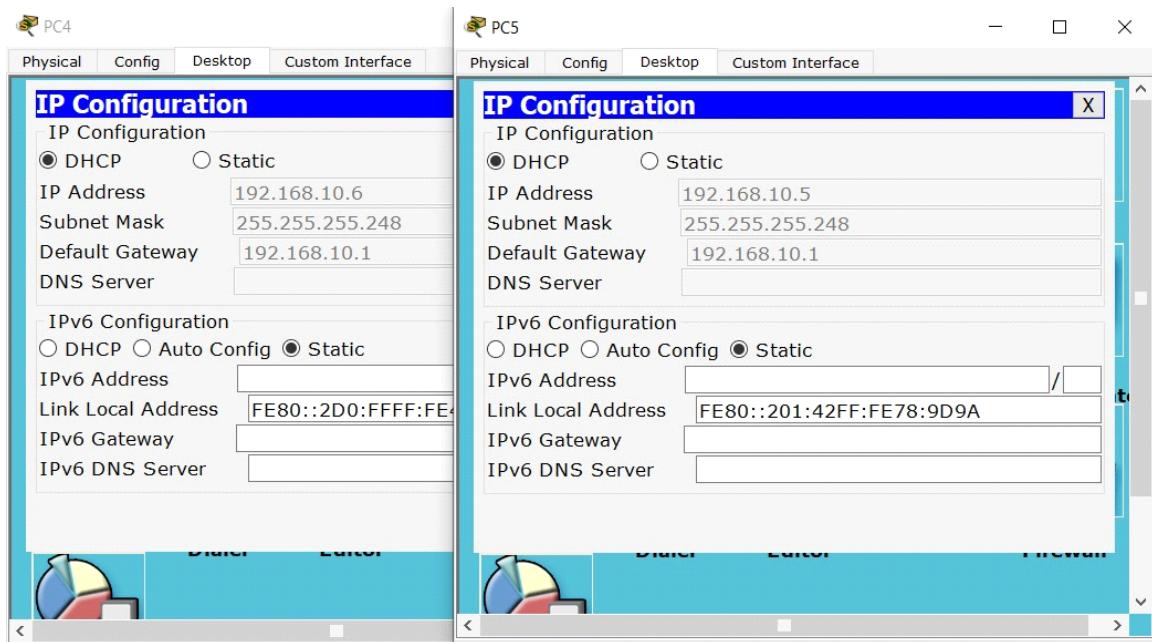
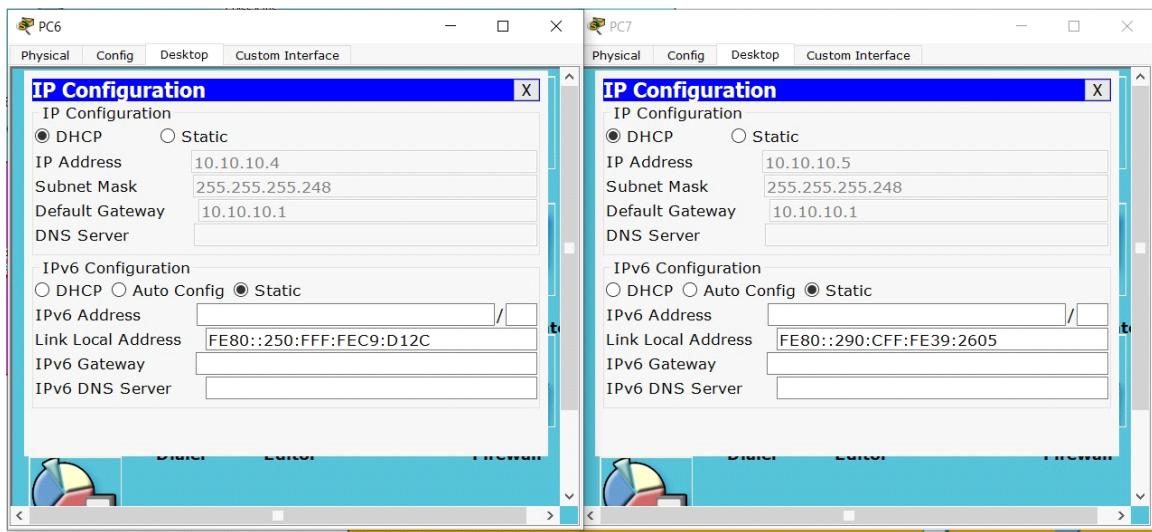
11508 MUZAMIL KHAN

11688 Maryam

May 29, 2024

PCs Screenshot:





Conclusion:

The Hospital Management System (HMS) project in Cisco Packet Tracer showcases the comprehensive deployment of advanced networking technologies tailored to meet the intricate needs of a hospital environment. Through this project, we successfully designed and implemented a robust network infrastructure that ensures efficient communication, secure data handling, and optimal resource management. Key components such as routers, switches, PCs, and servers were meticulously configured to support the hospital's operational and administrative functions. The integration of public and private IP addressing schemes facilitated seamless internal and external communications, while NAT and PAT enabled efficient IP address utilization and secure internet connectivity. The utilization of Variable Length Subnet Masking (VLSM) allowed for precise IP address allocation, accommodating the varying size requirements of different hospital departments and optimizing the use of available IP space. The hierarchical network design enhanced scalability and manageability, with core, distribution, and access layers ensuring a structured and organized network layout.

Security was a paramount focus, with access control lists (ACLs) implemented to protect sensitive patient data and ensure compliance with healthcare regulations. Overall, the HMS project in Cisco Packet Tracer demonstrates a well-rounded approach to network design and implementation, emphasizing the importance of security, efficiency, and scalability in a healthcare setting. This simulation serves as a valuable model for deploying a modern hospital network, capable of meeting the dynamic and critical demands of today's healthcare industry. By leveraging advanced networking principles and best practices, the project highlights the potential for technology to significantly enhance the functionality and security of hospital operations.

Thank You

11508 MUZAMIL KHAN

11688 Maryam

Hospital Management System
IIA Project Report