



# **Réseaux/Networks**

## **TP3**

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# Packet Tracer - Designing and Implementing a VLSM Addressing Scheme

## Ex1/ Part1/Step1/

### Step 1: Determine the number of subnets needed.

You will subnet the network address 192.168.72.0/24 . The network has the following requirements:

- |       |                  |    |                   |
|-------|------------------|----|-------------------|
| • Sw1 | LAN will require | 7  | host IP addresses |
| • Sw2 | LAN will require | 15 | host IP addresses |
| • Sw3 | LAN will require | 29 | host IP addresses |
| • Sw4 | LAN will require | 58 | host IP addresses |

How many subnets are needed in the network topology?

5 subnets.

## Ex1/ Part1/Step2/

### Step 2: Determine the subnet mask information for each subnet.

- Which subnet mask will accommodate the number of IP addresses required for Sw1 255.255.255.240 ?  
How many usable host addresses will this subnet support? usable host addresses:14 Total host addresses :16
- Which subnet mask will accommodate the number of IP addresses required for Sw2 255.255.255.224 ?  
How many usable host addresses will this subnet support? usable host addresses:30 Total host addresses :32
- Which subnet mask will accommodate the number of IP addresses required for Sw3 255.255.255.224 ?  
How many usable host addresses will this subnet support? usable host addresses:30 Total host addresses :32
- Which subnet mask will accommodate the number of IP addresses required for Sw4 255.255.255.192 ?  
How many usable host addresses will this subnet support? usable host addresses:62 Total host addresses :64
- Which subnet mask will accommodate the number of IP addresses required for the connection between Remote-Site1 and Remote-Site2 ? 255.255.255.252  
usable host addresses:2  
Total host addresses :4

### Part 2: Design the VLSM Addressing Scheme

## Ex1/ Part2/Step1/

### Step 1: Divide the 192.168.72.0/24 network based on the number of hosts per subnet.

- Use the first subnet to accommodate the largest LAN.
- Use the second subnet to accommodate the second largest LAN.
- Use the third subnet to accommodate the third largest LAN.
- Use the fourth subnet to accommodate the fourth largest LAN.
- Use the fifth subnet to accommodate the connection between Remote-Site1 and Remote-Site2 .

## Ex1/ Part2/Step2/

Complete the **Subnet Table**, listing the subnet descriptions (e.g. Sw1 LAN), number of hosts needed, then network address for the subnet, the first usable host address, and the broadcast address. Repeat until all addresses are listed.

**Subnet Table**

Subnet Description	Number of Hosts Needed	Network Address/CIDR	First Usable Host Address	Broadcast Address
Sw4	58	192.168.72.0/26	192.168.72.1	192.168.72.63
Sw3	29	192.168.72.64/27	192.168.72.65	192.168.72.95
Sw2	15	192.168.72.96/27	192.168.72.97	192.168.72.127
Sw1	7	192.168.72.128/28	192.168.72.129	192.168.72.143
Remote Site1 & Site2	2	192.168.72.144/30	192.168.72.145	192.168.72.147

## Ex1/ Part2/Step3/

### Step 3: Document the addressing scheme.

- Assign the first usable IP addresses to Remote-Site1 for the two LAN links and the WAN link.
- Assign the first usable IP addresses to Remote-Site2 for the two LANs links. Assign the last usable IP address for the WAN link.
- Assign the second usable IP addresses to the switches.
- Assign the last usable IP addresses to the hosts.

## Ex1/ Part2/Step3/a

```
Remote-Sitel#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Remote-Sitel(config)#int g0/0
Remote-Sitel(config-if)#ip add 192.168.72.129 255.255.255.240
Remote-Sitel(config-if)#no shut

Remote-Sitel(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
int g0/1
Remote-Sitel(config-if)#ip add 192.168.72.97 255.255.255.224
Remote-Sitel(config-if)#no shut
Remote-Sitel(config-if)#no shut
Remote-Sitel(config-if)#no shut

Remote-Sitel(config-if)#no shut

Remote-Sitel(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
Remote-Sitel(config-if)#
Remote-Sitel(config-if)#int s0/0/0
Remote-Sitel(config-if)#
Remote-Sitel(config-if)#ip address 192.168.72.145 255.255.255.252
Remote-Sitel(config-if)#clock rate 128000
Remote-Sitel(config-if)#no shut
Remote-Sitel(config-if)#no shut
```

## Ex1/ Part2/Step3/b

```

Remote-Site2>en
Remote-Site2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Remote-Site2(config)#int g0/1
Remote-Site2(config-if)#ip address 192.168.72.1 255.255.255.192
Remote-Site2(config-if)#no shut
Remote-Site2(config-if)#ip address 192.168.72.65 255.255.255.224
% 192.168.72.64 overlaps with GigabitEthernet0/0
Remote-Site2(config-if)#no shut
Remote-Site2(config-if)#int s0/0/0
Remote-Site2(config-if)#ip address 192.168.72.146 255.255.255.252
Remote-Site2(config-if)#no shut
Remote-Site2(config-if)#
Remote-Site2(config-if)#

```

## Ex1/ Part2/Step3/c

```

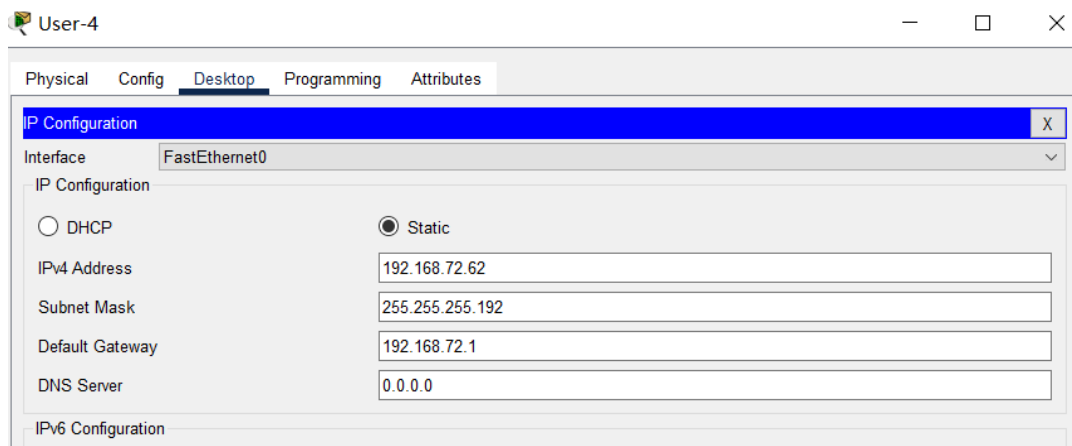
Sw3#
Sw3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Sw3(config)#int vlan1
Sw3(config-if)#ip add 192.168.72.66 255.255.255.224
Sw3(config-if)#no shut

Sw3(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
ip def 192.168.72.65
Sw3(config)#ip def 192.168.72.65

```

## Ex1/ Part2/Step3/d



## Ex1/ Part3/Step1/

**Step 1: Configure IP addressing on** Remote-Site1 **LAN interfaces.**

## Remote-Site1

Physical Config CLI Attributes

IO

```
Remote-Sitel>en
Remote-Sitel#show run
Building configuration...

Current configuration : 806 bytes
!
version 15.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
```

## Remote-Site1

Physical Config CLI Attributes

IOS C

```
!
!
interface GigabitEthernet0/0
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface GigabitEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial0/0/0
 ip address 192.168.72.145 255.255.255.252
 clock rate 64000
!
interface Serial0/0/1
 no ip address
 clock rate 2000000
 shutdown
!
```

```
Remote-Sitel#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Remote-Sitel(config)#int g0/0
Remote-Sitel(config-if)#ip add 192.168.72.129 255.255.255.240
Remote-Sitel(config-if)#no shut

Remote-Sitel(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
int g0/1
Remote-Sitel(config-if)#ip add 192.168.72.97 255.255.255.224
Remote-Sitel(config-if)#no shut
Remote-Sitel(config-if)#no shut
Remote-Sitel(config-if)#no shut

Remote-Sitel(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

Remote-Sitel(config-if)#
Remote-Sitel(config-if)#int s0/0/0
Remote-Sitel(config-if)#
Remote-Sitel(config-if)#ip address 192.168.72.145 255.255.255.252
Remote-Sitel(config-if)#clock rate 128000
Remote-Sitel(config-if)#no shut
Remote-Sitel(config-if)#no shut
```

## Ex1/ Part3/Step2/

**Step 2: Configure IP addressing on Sw3**, including the default gateway.

```
Sw3>
Sw3>en
Sw3#show run
Building configuration...

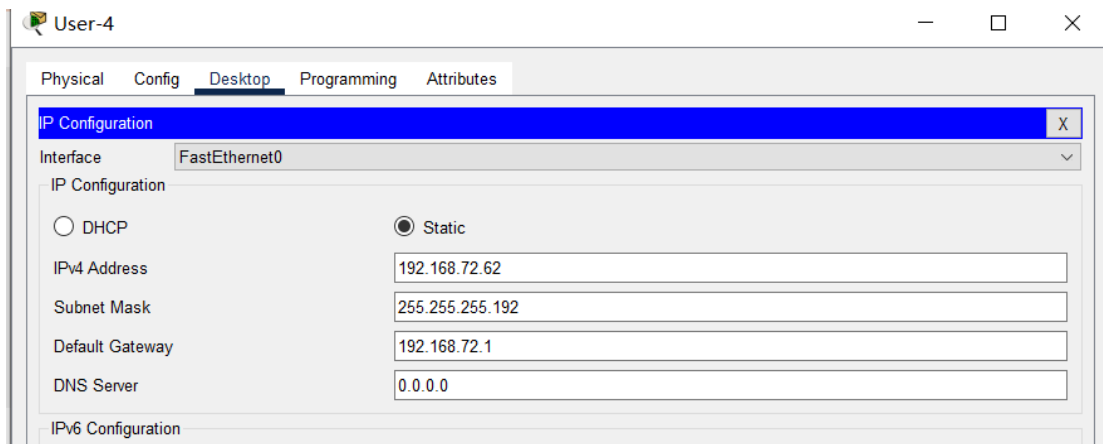
Current configuration : 1083 bytes
!
version 15.0
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
,
Sw3#
Sw3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Sw3(config)#int vlan1
Sw3(config-if)#ip add 192.168.72.66 255.255.255.224
Sw3(config-if)#no shut

Sw3(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
ip def 192.168.72.65
Sw3(config)#ip def 192.168.72.65
```

## Ex1/ Part3/Step3/

**Step 3: Configure IP addressing on User-4**, including the default gateway.



The screenshot shows a window titled "User-4" with tabs for Physical, Config, Desktop, Programming, and Attributes. The "Config" tab is active, and the "IP Configuration" section is expanded. The "Interface" dropdown is set to "FastEthernet0". Under "IP Configuration", the "Static" radio button is selected. The fields are filled with the following values:

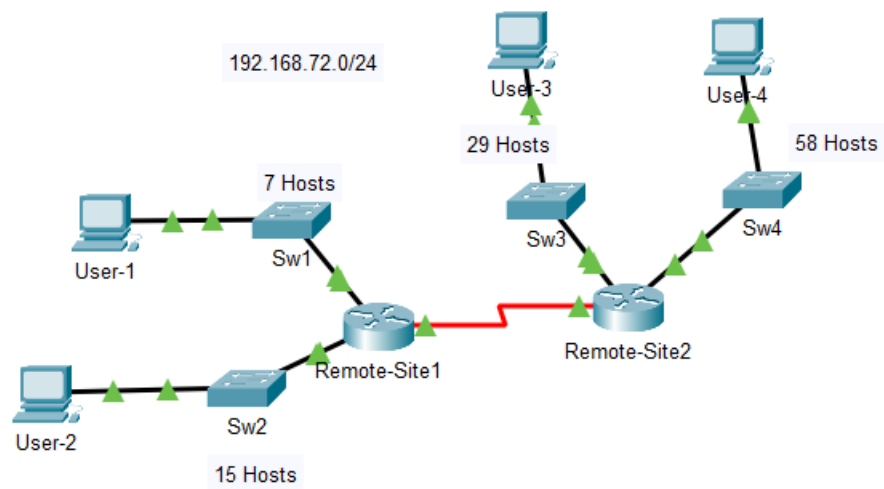
Field	Value
IPv4 Address	192.168.72.62
Subnet Mask	255.255.255.192
Default Gateway	192.168.72.1
DNS Server	0.0.0.0

Below the IP Configuration section, the "IPv6 Configuration" section is visible but not expanded.

## Ex1/ Part3/Step4/

**Step 4: Verify connectivity.**

You can only verify connectivity from Remote-Site1, Sw3, and User-4. However, you should be able to ping every IP address listed in the Addressing Table.



```
C:\>ping 192.168.72.142

Pinging 192.168.72.142 with 32 bytes of data:

Request timed out.
Reply from 192.168.72.142: bytes=32 time=1ms TTL=126
Reply from 192.168.72.142: bytes=32 time=1ms TTL=126
Reply from 192.168.72.142: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.72.142:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms
```

```
C:\>ping 192.168.72.94

Pinging 192.168.72.94 with 32 bytes of data:

Request timed out.
Reply from 192.168.72.94: bytes=32 time<1ms TTL=127
Reply from 192.168.72.94: bytes=32 time<1ms TTL=127
Reply from 192.168.72.94: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.72.94:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.72.126

Pinging 192.168.72.126 with 32 bytes of data:

Request timed out.
Reply from 192.168.72.126: bytes=32 time=10ms TTL=126
Reply from 192.168.72.126: bytes=32 time=8ms TTL=126
Reply from 192.168.72.126: bytes=32 time=15ms TTL=126

Ping statistics for 192.168.72.126:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 8ms, Maximum = 15ms, Average = 11ms
```

## Ex1/Activity Results

### Activity Results

Congratulations Guest! You completed the activity.

Overall Feedback   Assessment Items   Connectivity Tests

Congratulations! You successfully completed the Packet Tracer - Designing and Implementing a VLSM Addressing Scheme activity.

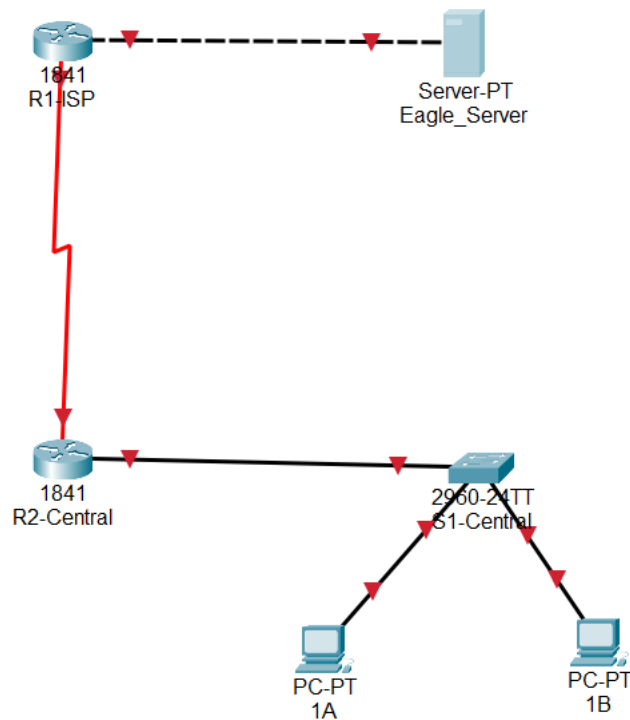


# Skills Integration Challenge-Configuring and Testing the Lab Network

## Ex2/ Task1/ Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1-ISP	Fa0/0	192.168.3.78	255.255.255.240	N/A
	S0/0/0	192.168.3.98	255.255.255.252	N/A
R2-Central	Fa0/0	192.168.3.30	255.255.255.224	N/A
	S0/0/0	192.168.3.97	255.255.255.252	N/A
PC 1A	NIC	192.168.3.1	255.255.255.224	192.168.3.30
PC 1B	NIC	192.168.3.2	255.255.255.224	192.168.3.30
Eagle Server	NIC	192.168.3.77	255.255.255.240	192.168.3.3
S1-Central	VLAN1	192.168.3.29	255.255.255.224	N/A

## Ex2/ Task1/



## Ex2/ Task2/R1-ISP

R1-ISP

Physical Config CLI Attributes

IOS Command Line Interface

Technical Support: <http://www.cisco.com/techsupport>  
Copyright (c) 1986-2006 by Cisco Systems, Inc.  
Compiled Mon 15-May-06 14:54 by pt\_team  
  
Press RETURN to get started!

Router>enable  
Router#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Router(config)#hostname R1-ISP  
R1-ISP(config)#enable password cisco  
R1-ISP(config)#line console 0  
R1-ISP(config-line)#password cisco  
R1-ISP(config-line)#login  
R1-ISP(config-line)#line vty 0 4  
R1-ISP(config-line)#password cisco  
R1-ISP(config-line)#login  
R1-ISP(config-line)#banner motd # This is lab router R1-ISP. Authorized access only. #  
R1-ISP(config)#interface FastEthernet0/0  
R1-ISP(config-if)#ip address 192.168.3.78 255.255.255.240  
R1-ISP(config-if)#no shutdown  
  
R1-ISP(config-if)#  
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up  
  
R1-ISP(config-if)#exit  
R1-ISP(config)#interface Serial0/0/0  
R1-ISP(config-if)#ip address 192.168.3.98 255.255.255.252  
R1-ISP(config-if)#clock rate 64000  
R1-ISP(config-if)#no shutdown  
  
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down  
R1-ISP(config-if)#exit  
R1-ISP(config)#ip route 192.168.3.96 255.255.255.252 192.168.3.97  
R1-ISP(config)#end  
R1-ISP#  
%SYS-5-CONFIG\_I: Configured from console by console  
  
R1-ISP#write memory  
Building configuration...  
[OK]  
R1-ISP#

Copy

Paste

☐ Top

```
R1-ISP#show ip route static
R1-ISP#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

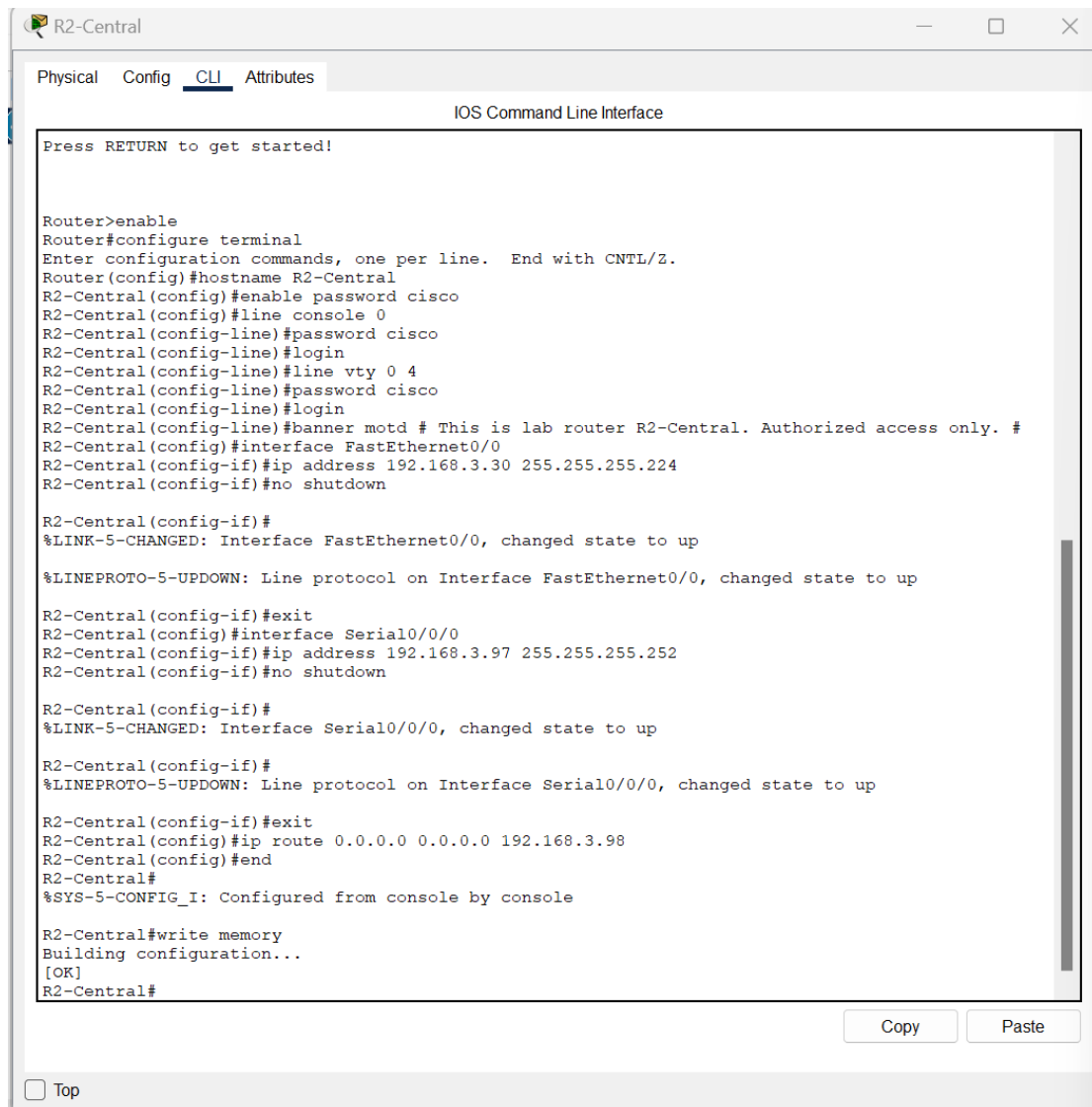
Gateway of last resort is not set

    192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.64/28 is directly connected, FastEthernet0/0
C       192.168.3.96/30 is directly connected, Serial0/0/0

R1-ISP#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1-ISP(config)#ip route 192.168.3.0 255.255.255.224 192.168.3.97
R1-ISP(config)#end
R1-ISP#
%SYS-5-CONFIG_I: Configured from console by console

R1-ISP#write memory
Building configuration...
[OK]
R1-ISP#
```

## Ex2/ Task2/R2-Central



The screenshot shows a window titled "R2-Central" with tabs for "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is active, displaying the "IOS Command Line Interface". The interface shows a series of commands entered into a router, with corresponding system messages and status updates. The commands include enabling the terminal, setting the hostname to R2-Central, configuring console and vty lines with passwords, setting a banner, and configuring interfaces FastEthernet0/0 and Serial0/0/0 with IP addresses and protocols. The configuration is saved to memory.

```
Press RETURN to get started!

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R2-Central
R2-Central(config)#enable password cisco
R2-Central(config)#line console 0
R2-Central(config-line)#password cisco
R2-Central(config-line)#login
R2-Central(config-line)#line vty 0 4
R2-Central(config-line)#password cisco
R2-Central(config-line)#login
R2-Central(config-line)#banner motd # This is lab router R2-Central. Authorized access only. #
R2-Central(config)#interface FastEthernet0/0
R2-Central(config-if)#ip address 192.168.3.30 255.255.255.224
R2-Central(config-if)#no shutdown

R2-Central(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

R2-Central(config-if)#exit
R2-Central(config)#interface Serial0/0/0
R2-Central(config-if)#ip address 192.168.3.97 255.255.255.252
R2-Central(config-if)#no shutdown

R2-Central(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up

R2-Central(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

R2-Central(config-if)#exit
R2-Central(config)#ip route 0.0.0.0 0.0.0.0 192.168.3.98
R2-Central(config)#end
R2-Central#
%SYS-5-CONFIG_I: Configured from console by console

R2-Central#write memory
Building configuration...
[OK]
R2-Central#
```

At the bottom right of the CLI window, there are "Copy" and "Paste" buttons. At the bottom left, there is a "Top" button with a small square icon next to it.

## Ex2/ Task2/ S1-Central

S1-Central

Physical Config CLI Attributes

IOS Command Line Interface

Switch	Ports	Model	SW Version	SW Image
*	1 26	WS-C2960-24TT	12.2	C2960-LANBASE-M

Cisco IOS Software, C2960 Software (C2960-LANBASE-M), Version 12.2(25)FX, RELEASE SOFTWARE (fc1)  
Copyright (c) 1986-2005 by Cisco Systems, Inc.  
Compiled Wed 12-Oct-05 22:05 by pt\_team

Press RETURN to get started!

%LINK-5-CHANGED: Interface FastEthernet0/24, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname S1-Central
S1-Central(config)#enable password cisco
S1-Central(config)#line console 0
S1-Central(config-line)#password cisco
S1-Central(config-line)#login
S1-Central(config-line)#line vty 0 4
S1-Central(config-line)#password cisco
S1-Central(config-line)#login
S1-Central(config-line)#banner motd # This is lab switch S1-Central. Authorized access only. #
S1-Central(config)#interface vlan1
S1-Central(config-if)#ip address 192.168.3.29 255.255.255.224
S1-Central(config-if)#no shutdown

S1-Central(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

S1-Central(config-if)#exit
S1-Central(config)#end
S1-Central#
%SYS-5-CONFIG_I: Configured from console by console

S1-Central#write memory
Building configuration...
[OK]
S1-Central#
```

Copy

Paste

☐ Top

## Ex2/ Task2/PC-1A

1A

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.3.1

Subnet Mask 255.255.255.224

Default Gateway 192.168.3.30

DNS Server 192.168.3.77

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::260:5CFF:FED2:499D

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

## Ex2/ Task2/PC-1B

1B

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.3.2

Subnet Mask 255.255.255.224

Default Gateway 192.168.3.30

DNS Server 192.168.3.77

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::205:5EFF:FEB2:6A19

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

Ex2/ Task2/ Eagle\_Server

Eagle\_Server

Physical Config Services Desktop Programming Attributes

IP Configuration

DHCP

Static

IPv4 Address192.168.3.77

Subnet Mask255.255.255.240

Default Gateway192.168.3.78

DNS Server0.0.0.0

Automatic

Static

IPv6 Address

Link Local AddressFE80::201:C7FF:FE03:786B

Default Gateway

DNS Server

802.1X

Use 802.1X Security

AuthenticationMD5

Username

Password

Ex2/ Task2/DNS&HTTP

Eagle\_Server

Physical Config Services Desktop Programming Attributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

DNS

DNS Service

On

Off

Resource Records

Name

TypeA Record

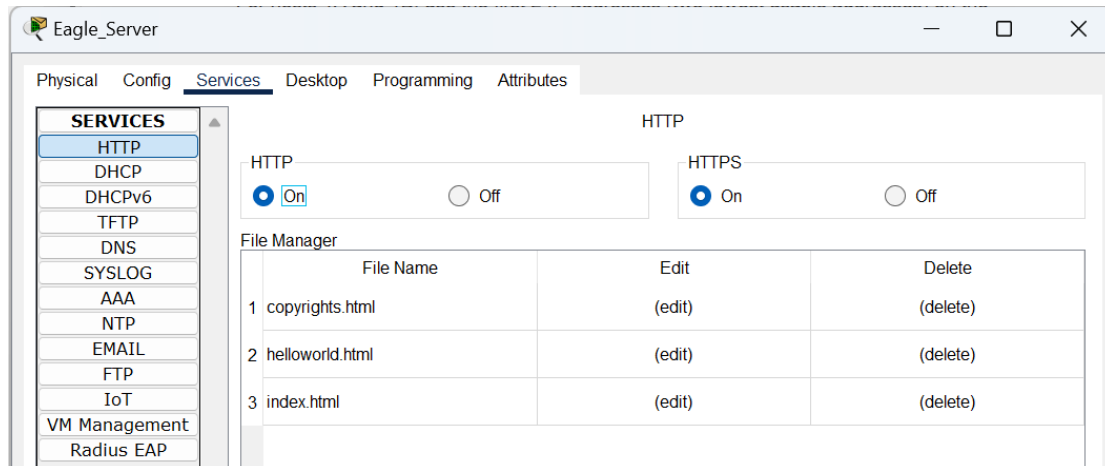
Address

Add

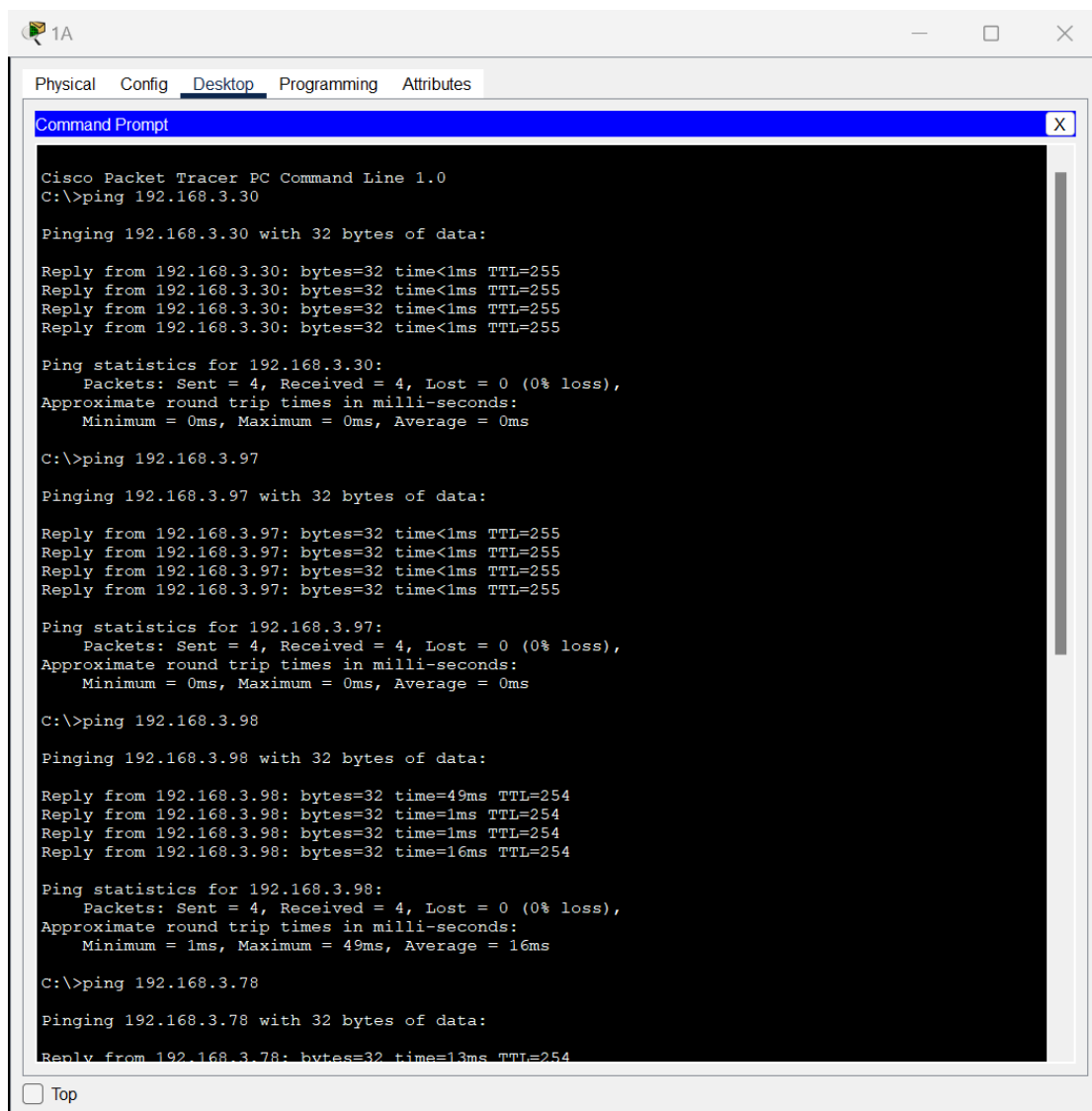
Save

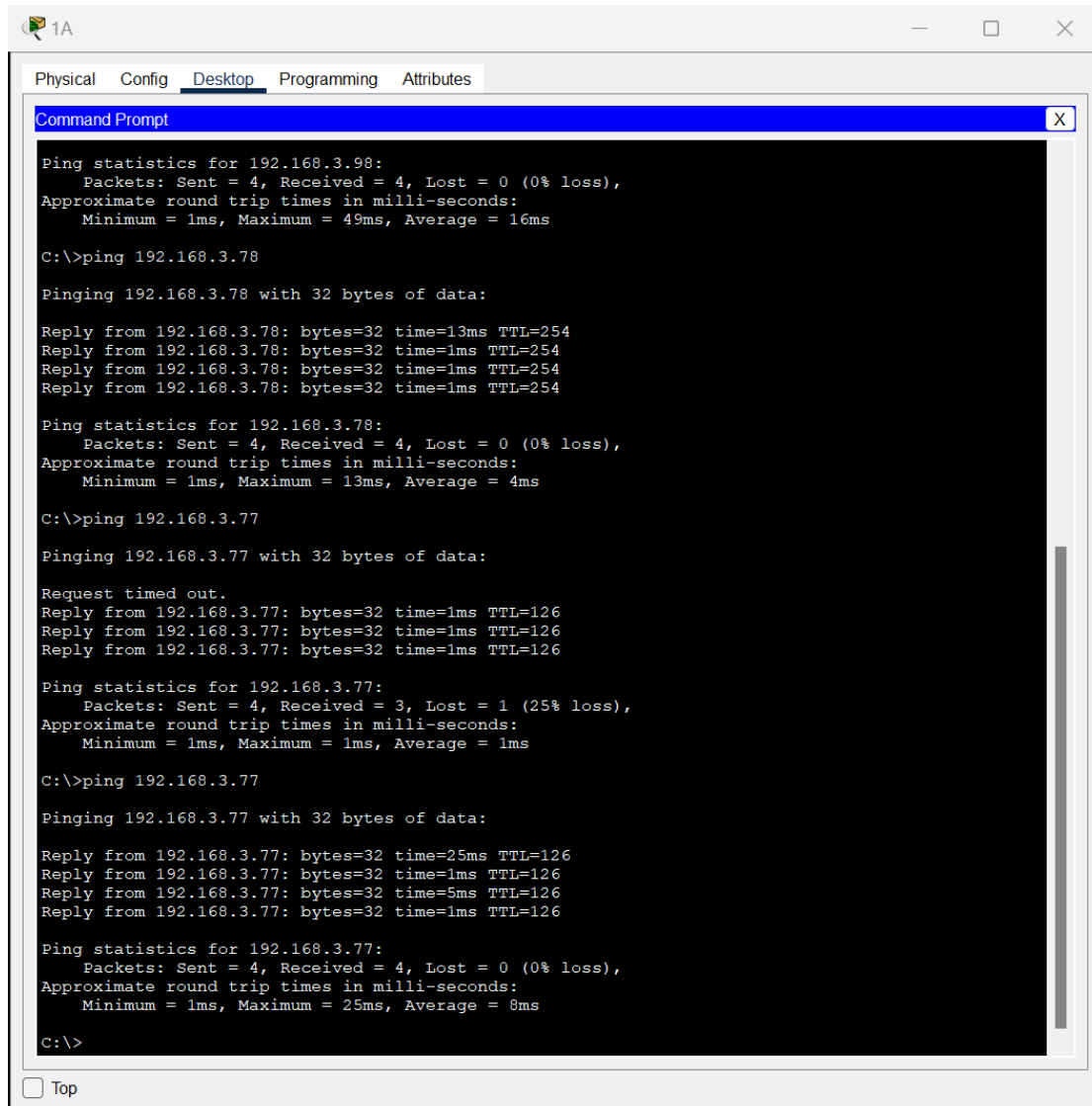
Remove

No.	Name	Type	Detail
0	eagle-server.example.com	A Record	192.168.3.77



## Ex2/ Task3/1-Test connectivity





1A

Physical Config Desktop Programming Attributes

Command Prompt

```
Ping statistics for 192.168.3.98:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
  Minimum = 1ms, Maximum = 49ms, Average = 16ms

C:\>ping 192.168.3.78

Pinging 192.168.3.78 with 32 bytes of data:

Reply from 192.168.3.78: bytes=32 time=13ms TTL=254
Reply from 192.168.3.78: bytes=32 time=1ms TTL=254
Reply from 192.168.3.78: bytes=32 time=1ms TTL=254
Reply from 192.168.3.78: bytes=32 time=1ms TTL=254

Ping statistics for 192.168.3.78:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
  Minimum = 1ms, Maximum = 13ms, Average = 4ms

C:\>ping 192.168.3.77

Pinging 192.168.3.77 with 32 bytes of data:

Request timed out.
Reply from 192.168.3.77: bytes=32 time=1ms TTL=126
Reply from 192.168.3.77: bytes=32 time=1ms TTL=126
Reply from 192.168.3.77: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.3.77:
  Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
  Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\>ping 192.168.3.77

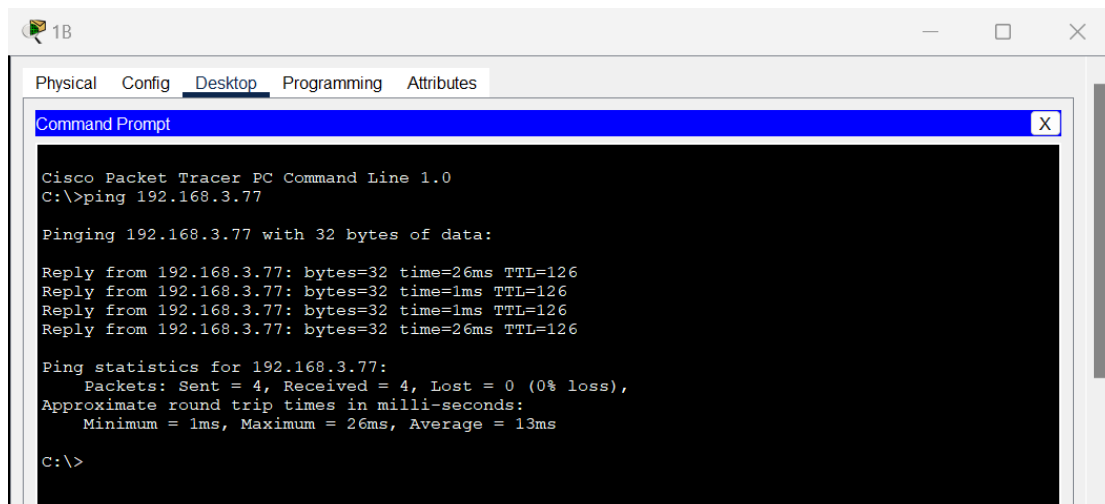
Pinging 192.168.3.77 with 32 bytes of data:

Reply from 192.168.3.77: bytes=32 time=25ms TTL=126
Reply from 192.168.3.77: bytes=32 time=1ms TTL=126
Reply from 192.168.3.77: bytes=32 time=5ms TTL=126
Reply from 192.168.3.77: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.3.77:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
  Minimum = 1ms, Maximum = 25ms, Average = 8ms

C:\>
```

☐ Top



1B

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.3.77

Pinging 192.168.3.77 with 32 bytes of data:

Reply from 192.168.3.77: bytes=32 time=26ms TTL=126
Reply from 192.168.3.77: bytes=32 time=1ms TTL=126
Reply from 192.168.3.77: bytes=32 time=1ms TTL=126
Reply from 192.168.3.77: bytes=32 time=26ms TTL=126

Ping statistics for 192.168.3.77:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
  Minimum = 1ms, Maximum = 26ms, Average = 13ms

C:\>
```

**Ex2/ Task3/ 2-Test management connections using Telnet.**



```
R1-ISP
IOS Command Line Interface

User Access Verification

Password:

R1-ISP>enable
Password:
R1-ISP#config t
Enter configuration commands, one per line. End with CNTL/Z.
R1-ISP(config)#username user secret cisco
R1-ISP(config)#line vty 0 4
R1-ISP(config-line)#password cisco
R1-ISP(config-line)#login local
R1-ISP(config-line)#transport input telnet
R1-ISP(config-line)#exit
R1-ISP(config)#exit
R1-ISP#
%SYS-5-CONFIG_I: Configured from console by console

R1-ISP#write memory
Building configuration...
[OK]
R1-ISP#
```

```
R2-Central
R2-Central>enable
Password:
R2-Central#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R2-Central(config)#Router(config)# username [username] secret [password]
^
% Invalid input detected at '^' marker.

R2-Central(config)#username user secret cisco
R2-Central(config)#line vty 0 4
R2-Central(config-line)# password cisco
R2-Central(config-line)#login local
R2-Central(config-line)#transport input telnet
R2-Central(config-line)#exit
R2-Central(config)#exit
R2-Central#
%SYS-5-CONFIG_I: Configured from console by console

R2-Central#write memory
Building configuration...
[OK]
R2-Central#
```

```
1A
Ping statistics for 192.168.3.77:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 25ms, Average = 8ms

C:\>telnet 192.168.3.30
Trying 192.168.3.30 ...Open This is lab router R2-Central. Authorized access only.

User Access Verification

Username: user
Password:
R2-Central>
```

☐ Top

1B

Minimum = 1ms, Maximum = 26ms, Average = 13ms

```
C:\>telnet 192.168.3.30
Trying 192.168.3.30 ...Open This is lab router R2-Central. Authorized access only.

User Access Verification

Username: user
Password:
R2-Central>
```

☐ Top

## Ex2/ Task3/ 3-Check routing table.

1A

```
User Access Verification

Username: user
Password:
R2-Central>
R2-Central>enable
Password:
R2-Central#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 192.168.3.98 to network 0.0.0.0

    192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.0/27 is directly connected, FastEthernet0/0
C       192.168.3.96/30 is directly connected, Serial0/0/0
S*    0.0.0.0/0 [1/0] via 192.168.3.98

R2-Central#
```

☐ Top

1B

Physical Config Desktop Programming Attributes

Command Prompt

```
C:\>telnet 192.168.3.30
Trying 192.168.3.30 ...Open This is lab router R2-Central. Authorized access only.

User Access Verification

Username: user
Password:
R2-Central>enable
Password:
R2-Central#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 192.168.3.98 to network 0.0.0.0

    192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.0/27 is directly connected, FastEthernet0/0
C       192.168.3.96/30 is directly connected, Serial0/0/0
S*    0.0.0.0/0 [1/0] via 192.168.3.98

R2-Central#
```

☐ Top

## Ex2/ Task3/ 4- Protocol visualization in simulation mode

The screenshot displays the Cisco Packet Tracer interface in simulation mode. The network topology includes:

- R1-ISP** (1841) connected to **Server-PT Eagle\_Server**.
- R2-Central** (1841) connected to **S1-Central** (2960-24TT).
- S1-Central** connected to **PC-PT 1A** and **PC-PT 1B**.

The **Simulation Panel** on the right shows the **Event List** with the following data:

Vis.	Time(sec)	Last Device
	0.000	--
	0.001	1A
<input checked="" type="checkbox"/>	0.002	S1-Central
	0.018	--
	0.019	R2-Central
	0.020	S1-Central
	0.994	--
	0.995	S1-Central
	0.995	S1-Central
	0.995	S1-Central
	2.995	--
	2.996	S1-Central
	2.996	S1-Central
	2.996	S1-Central
	4.992	--
	4.993	S1-Central
	4.993	S1-Central
	4.993	S1-Central
	5.008	--
	5.008	--

Below the event list, the **Play Controls** section includes buttons for **Reset Simulation**, **Constant Delay** (checked), and **Captured to: 151.301 s**. The **Event List Filters - Visible Events** section lists various protocols such as ARP, BGP, DHCP, DNS, etc. The bottom status bar shows the time as 01:36:05.585 and the current mode as **Simulation**.

## Ex2/ Task3/ 5- Analyze protocol behavior

### ARP Request Analysis:

**Function:** The Address Resolution Protocol (ARP) is used to map network layer IP addresses to link layer MAC addresses.

- **Algorithm Steps:** When a device wants to communicate with another

device on the same local network but doesn't know its MAC address, it generates an ARP broadcast request.

- The ARP request contains the sender's IP and MAC addresses and the target device's IP address, but the target's MAC address field is empty, as that's the information it's seeking.
- All devices on the network receive this ARP request, but only the device with the matching IP address will respond.
- The target device sends back an ARP reply containing its MAC address.
- Upon receiving the ARP reply, the requesting device stores the IP-to-MAC address mapping in its ARP cache for future use.

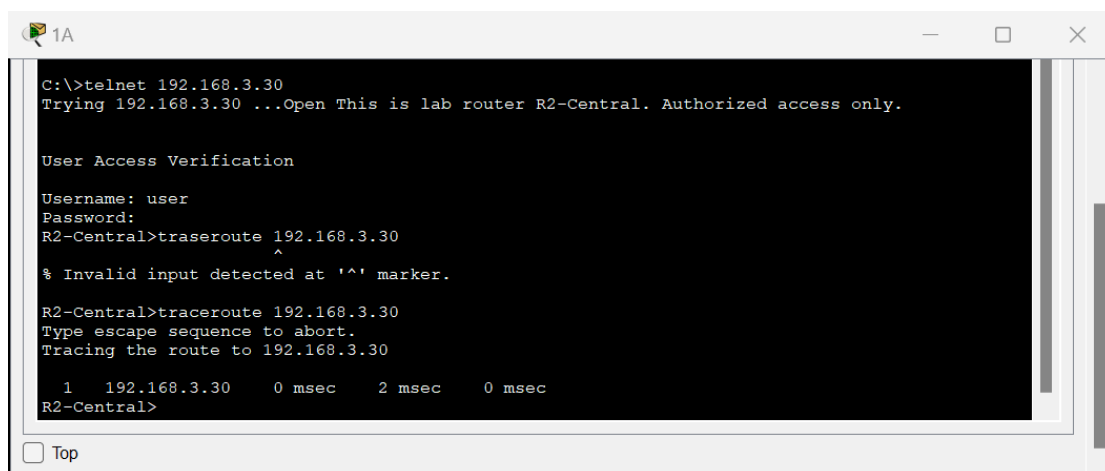
### **ICMP Message Analysis:**

**Function:** The Internet Control Message Protocol (ICMP) is used primarily for conveying problems in network communications, such as echo requests and replies generated by the ping command.

- **Algorithm Steps:** When you ping from one device to another, it sends out an ICMP echo request.
- The target device, upon receiving the echo request, generates an ICMP echo reply.
- If the echo request fails to reach the target (e.g., due to TTL expiration or problems along the path), devices on the network will send ICMP error messages back to the originating device, such as destination unreachable or timeout information.

- How to Analyze in Packet Tracer:
- In simulation mode, generate ARP or ICMP traffic (e.g., by using the ping command on a PC).
- Observe the event list for ARP request and ICMP message events.
- Step through each event to watch the behavior of the packet within the network.
- Analyze the detailed information window of the packets, which will show source IP, destination IP, source MAC, destination MAC (for ARP), and the specific type of ICMP message.
- For ARP requests, note how the response is returned to the requester and how the MAC address is added to the ARP table.
- For ICMP, observe how ping requests receive responses or how error messages are generated when the destination is unreachable.

### Ex2/ Task3/ 6- Use the traceroute command.



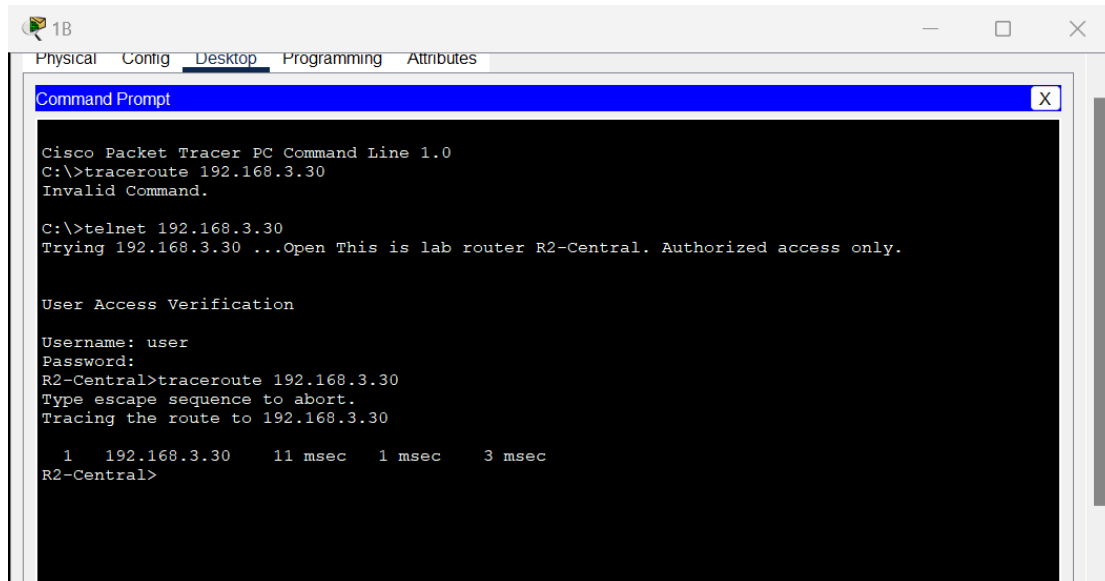
```

1A
C:\>telnet 192.168.3.30
Trying 192.168.3.30 ...Open This is lab router R2-Central. Authorized access only.

User Access Verification
Username: user
Password:
R2-Central>traseroute 192.168.3.30
^
% Invalid input detected at '^' marker.

R2-Central>traceroute 192.168.3.30
Type escape sequence to abort.
Tracing the route to 192.168.3.30
 0  1  192.168.3.30    0 msec    2 msec    0 msec
R2-Central>
  
```

☐ Top



```
Cisco Packet Tracer PC Command Line 1.0
C:\>tracert 192.168.3.30
Invalid Command.

C:\>telnet 192.168.3.30
Trying 192.168.3.30 ...Open This is lab router R2-Central. Authorized access only.

User Access Verification

Username: user
Password:
R2-Central>tracert 192.168.3.30
Type escape sequence to abort.
Tracing the route to 192.168.3.30

  1  192.168.3.30      11 msec    1 msec    3 msec
R2-Central>
```

## Ex2/Activity Results

In this network configuration and management experiment, we successfully established a basic network environment through a series of steps, and tested and managed it. The core part of the experiment involves IP address allocation, routing configuration, connection testing and remote management practice. The following are the key links and gains from the experiment:

- **Address assignment:**

IP addresses are assigned to each device based on the network design diagram, including router interfaces, switch virtual interfaces, servers, and PCs.

- **Static routing configuration:**

Since the PC cannot ping route R1 after the network connection is set up, a static route is set up on the router. This is to ensure that devices in the network can communicate with each other, especially devices

that are not in the same subnet.

- **Connectivity test:**

The network connectivity was tested using the ping and Telnet commands to verify the correctness of the network configuration and whether the communication between devices was normal.

- **Remote management:**

The process of using Telnet to remotely manage network devices, which includes access to routers and configuration management.

- **Protocol behavior observations:**

In simulation mode, we also observed the behavior of protocols such as DNS, HTTP, Telnet, TCP, UDP, ICMP and ARP.

- All the errors reported in the activity results are related to the connection port and type, so it is considered to be a system file identification problem that cannot be solved by individuals.

### 11.6.1 : Exercice d'intégration des compétences : Configuration et test de votre réseau

#### Schéma de topologie :

Vous commencez avec un réseau vide.

Périphérique	Interface	Adresse IP	Masque de sous-réseau	Passerelle par défaut
R1-ISP	Fa0/0			S/O
	S0/0/0			
R2-Central	Fa0/0			S/O
	S0/0/0			
PC 1A	Carte réseau			
PC 1B	Carte réseau			
Edge Server	Carte			

Time Elapsed: 02:02:41

Completion: 73%

☐ Top

☐ Dock

[Check Results](#)

[Back](#)

1/1

[Next](#)



Cisco Packet Tracer - C:\Users\16273\GitHub\ISEP-Documents\2309-2401\Réseaux et Networks\TP3-E...

File Edit Options View Tools Extensions Window Help

Activity Results

Time Elapsed: 02:02:30

You did not complete the activity. Please close this window and try again.

Overall Feedback

Assessment Items

Connectivity Tests

Expand/Collapse All

Show All Item

Assessment Items	Status	Points	Cor
Network			
1A			
DNS Server IP	Incorrect	0	Other
Ports			
FastEthernet0			
Link to S1-Central			
Connects to FastEthernet0/1	Incorrect	0	Other
Type	Incorrect	0	Other
1B			
DNS Server IP	Incorrect	0	Other
Ports			
FastEthernet0			
Link to S1-Central			
Connects to FastEthernet0/2	Incorrect	0	Other
Type	Incorrect	0	Other
Eagle_Server			
Ports			
FastEthernet0			
Link to R1-ISP			
Connects to FastEthernet0/0	Incorrect	0	Other
Type	Incorrect	0	Other
R1-ISP			
Ports			
FastEthernet0/0			
Link to Eagle_Server			
Connects to FastEthernet0	Incorrect	0	Other
Type	Incorrect	0	Other
Serial0/0/0			
Link to R2-Central			
Connects to Serial0/0/0	Incorrect	0	Other
Type	Incorrect	0	Other
Routes		0	Other
VTY Lines		0	Other
R2-Central			
Ports			
FastEthernet0/0			
Link to S1-Central			
Connects to FastEthernet0/24	Incorrect	0	Other
Type	Incorrect	0	Other
Serial0/0/0			
Link to R1-ISP			
Connects to Serial0/0/0	Incorrect	0	Other
Type	Incorrect	0	Other
Routes		0	Other
VTY Lines		0	Other
S1-Central			
Ports			
VTY Lines		0	Other

Component	Items/Total	Score
Ip	3/3	1/1
Other	31/47	0/0
Physical	9/9	0/0
Routing	2/2	0/0

Close

# Packet Tracer-

## Implementing a Subnetted IPv6 Addressing Scheme

### Ex3/Part1/Step 1/Subnet Table


Subnet Description	Subnet Address
R1 G0/0 LAN	2001:DB8:ACAD:00C8::0/64
R1 G0/1 LAN	2001:db8:acad:00c9::0/64
R2 G0/0 LAN	2001:db8:acad:00ca::0/64
R2 G0/1 LAN	2001:db8:acad:00cb::0/64
WAN Link	2001:db8:acad:00cc::0/64

For hexadecimal, 10→a, 11→b, 12→c.

### Ex3/Part1/Step 2/abc/Addressing Table

Device	Interface	IPv6 Address	Link-Local
R1	G0/0	2001:db8:acad:00c8::1/64	FE80::1
	G0/1	2001:db8:acad:00c9::1/64	FE80::1
	S0/0/0	2001:db8:acad:00cc::1/64	FE80::1
R2	G0/0	2001:db8:acad:00ca::1/64	FE80::2
	G0/1	2001:db8:acad:00cb::1/64	FE80::2
	S0/0/0	2001:db8:acad:00cc::2/64	FE80::2
PC1	NIC	Auto Config	
PC2	NIC	Auto Config	
PC3	NIC	Auto Config	
PC4	NIC	Auto Config	

## Ex3/ Part2/ Step 1

 R1

Physical Config CLI Attributes

IOS Command Line Interface

```
R1>enable
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface GigabitEthernet0/0
R1(config-if)#ipv6 address fe80::1 link-local
R1(config-if)#ipv6 address 2001:db8:acad:c8::1/64
R1(config-if)#no shutdown

R1(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
interface GigabitEthernet0/1
R1(config-if)#ipv6 address fe80::1 link-local
R1(config-if)#ipv6 address 2001:db8:acad:c9::1/64
R1(config-if)#no shutdown


R1(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
interface Serial0/0/0
R1(config-if)#ipv6 address fe80::1 link-local
R1(config-if)#ipv6 address 2001:db8:acad:cc::1/64
R1(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
R1(config-if)#
```

Copy Paste

☐ Top

 R2

Physical Config CLI Attributes

IOS Command Line Interface

```
R2>enable
R2#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#ipv6 unicast-routing
R2(config)#interface GigabitEthernet0/0
R2(config-if)#ipv6 address fe80::2 link-local
R2(config-if)#ipv6 address 2001:db8:acad:ca::1/64
R2(config-if)#no shutdown

R2(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
interface GigabitEthernet0/1
R2(config-if)#ipv6 address fe80::2 link-local
R2(config-if)#ipv6 address 2001:db8:acad:cb::1/64
R2(config-if)#no shutdown

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

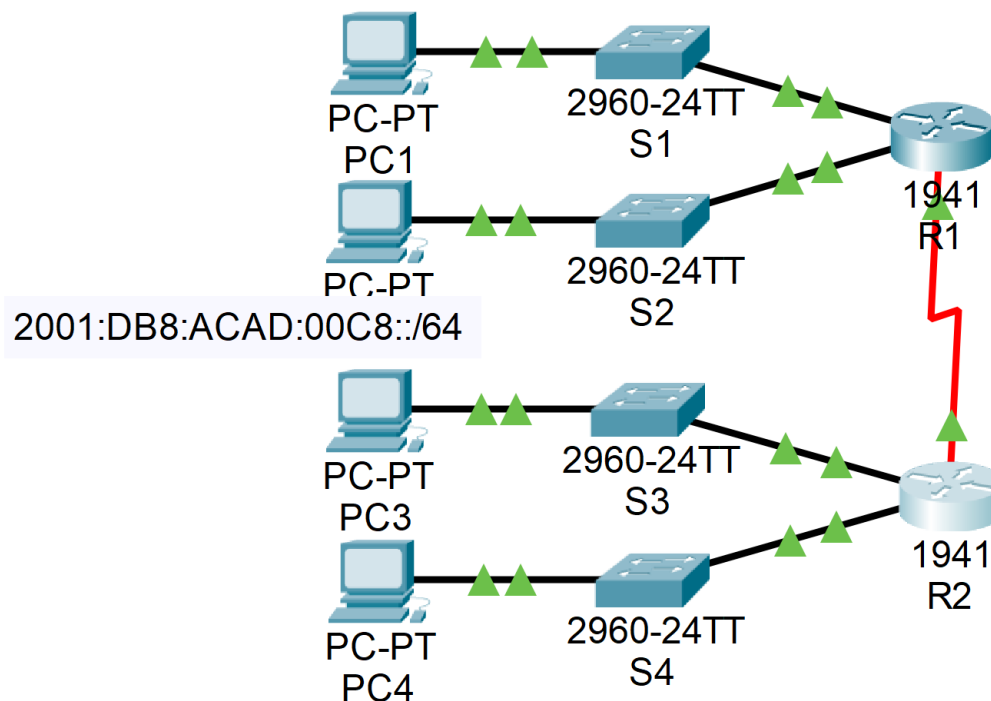
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
interface Serial0/0/0
R2(config-if)#ipv6 address fe80::2 link-local
R2(config-if)#ipv6 address 2001:db8:acad:cc::2/64
R2(config-if)#no shutdown

R2(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
end
R2#
%SYS-5-CONFIG_I: Configured from console by console

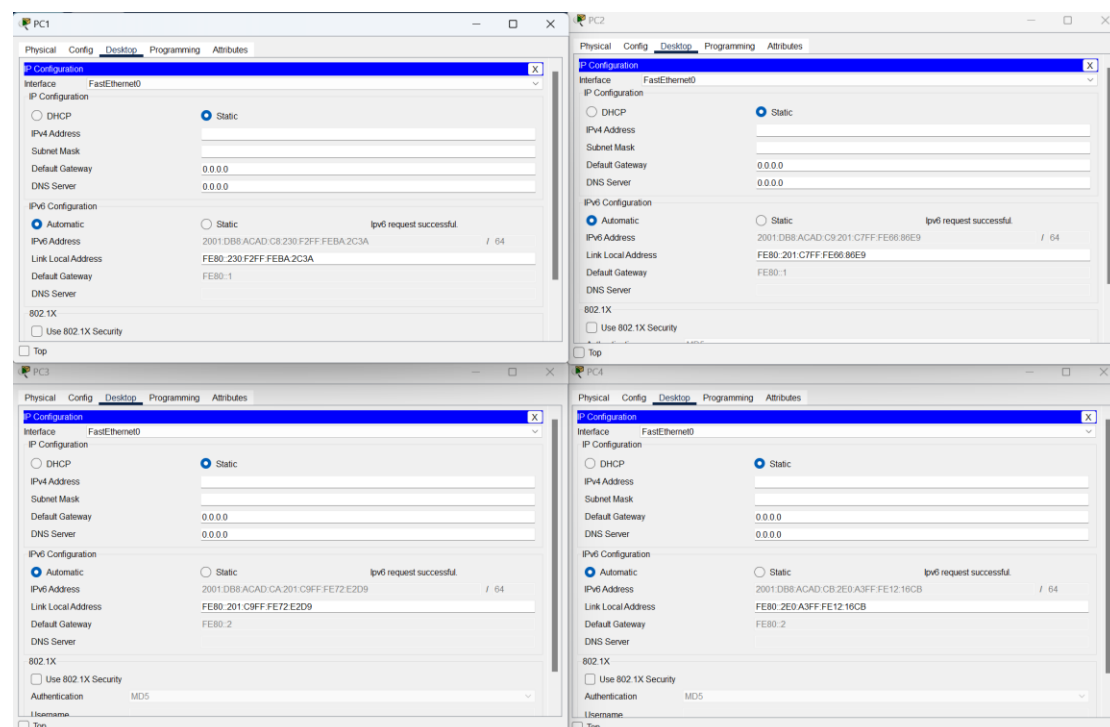
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up
|
```

Copy Paste

☐ Top

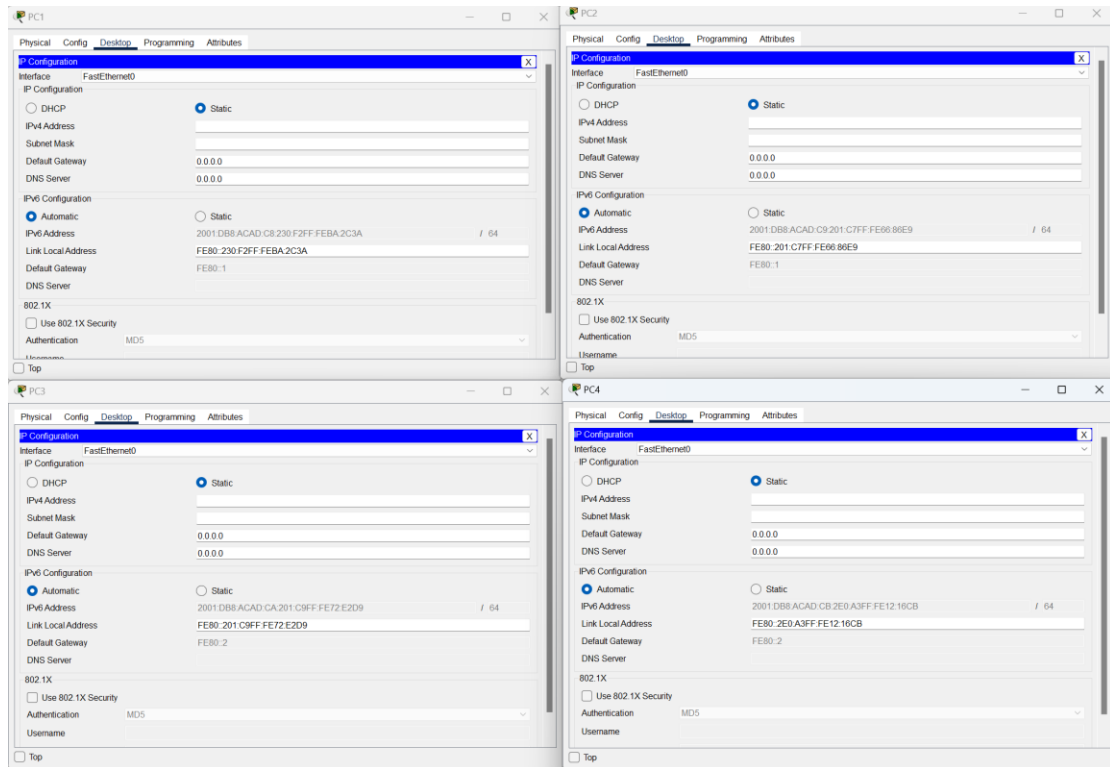


## Ex3/ Part2/ Step 2

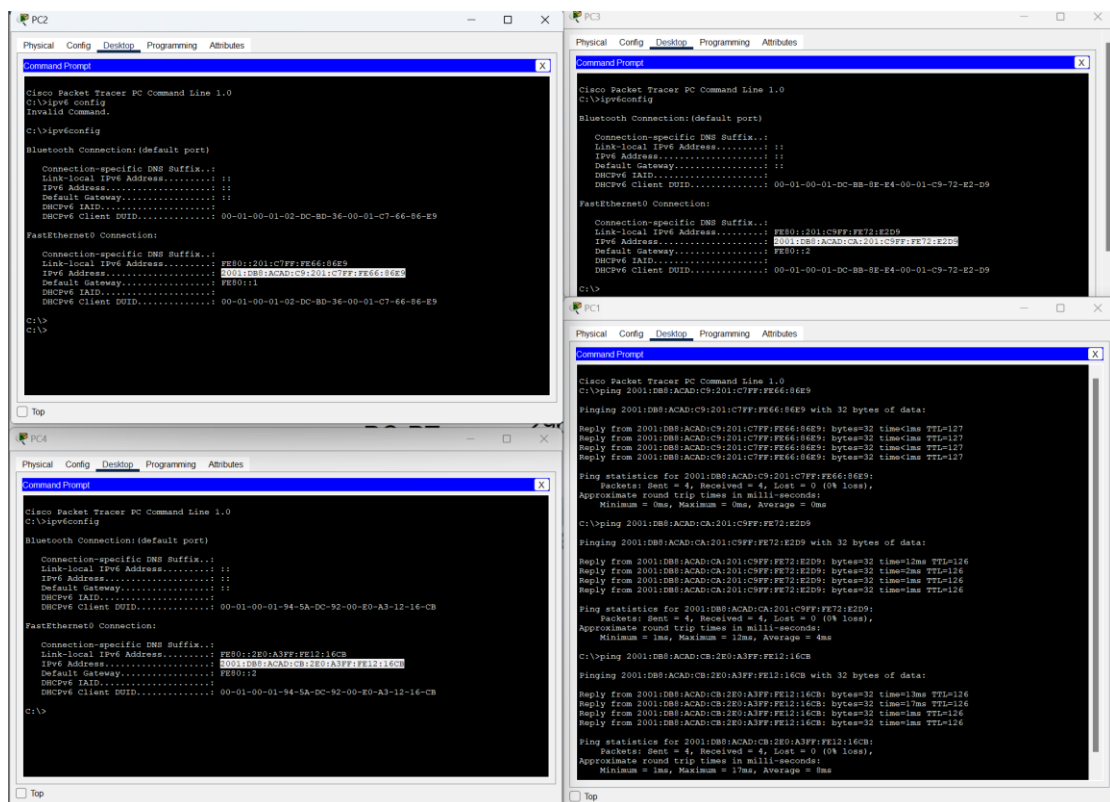


```
R1(config-if)#exit
R1(config)#ipv6 unicast-routing
R1(config)#
```

```
R2>enable
R2#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#ipv6 unicast-routing
R2(config)#
```



## Ex3/ Part2/ Step 3



**PC1**

```

Ping statistics for 2001:DB8:ACAD:CB:2E0:A3FF:FE12:16CB:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
      Minimum = 1ms, Maximum = 17ms, Average = 8ms

C:\>ping 2001:DB8:ACAD:C8::1

Pinging 2001:DB8:ACAD:C8::1 with 32 bytes of data:

Reply from 2001:DB8:ACAD:C8::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:ACAD:C8::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:ACAD:C8::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:ACAD:C8::1: bytes=32 time<1ms TTL=255

Ping statistics for 2001:DB8:ACAD:C8::1:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
      Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>

```

**R1**

Physical Config CLI Attributes

IOS Command Line Interface

```

!
!
!
!
interface GigabitEthernet0/0
  no ip address
  duplex auto
  speed auto
  ipv6 address FE80::1 link-local
  ipv6 address 2001:DB8:ACAD:C8::1/64
  ipv6 rip 1 enable
!
interface GigabitEthernet0/1
  no ip address
  duplex auto
  speed auto
  ipv6 address FE80::1 link-local
  ipv6 address 2001:DB8:ACAD:C9::1/64
  ipv6 rip 1 enable
!

```

**PC3**

Command Prompt

```

FastEthernet0 Connection:
Connection-specific DNS Suffix...:
Link-local IPv6 Address . . . . .: FE80::201:C9FF:FE72:E2D9
IPv6 Address . . . . .: 2001:DB8:ACAD:CA:201:C9FF:FE72:E2D9
Default Gateway . . . . .: FE80::2
DHCPv6 IAID . . . . .:
DHCPv6 Client DUID . . . . .: 00-01-00-01-DC-BB-8E-E4-00-01-C9-72-E2-D9

C:\>ping 2001:DB8:ACAD:CA::1

Pinging 2001:DB8:ACAD:CA::1 with 32 bytes of data:

Reply from 2001:DB8:ACAD:CA::1: bytes=32 time=13ms TTL=255
Reply from 2001:DB8:ACAD:CA::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:ACAD:CA::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:ACAD:CA::1: bytes=32 time<1ms TTL=255

Ping statistics for 2001:DB8:ACAD:CA::1:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
      Minimum = 0ms, Maximum = 13ms, Average = 3ms

C:\>

```

**R2**

Physical Config CLI Attributes

IOS Command Line Interface

```

!
!
!
!
interface GigabitEthernet0/0
  no ip address
  duplex auto
  speed auto
  ipv6 address FE80::2 link-local
  ipv6 address 2001:DB8:ACAD:CA::1/64
  ipv6 rip 1 enable
!
interface GigabitEthernet0/1
  no ip address
  duplex auto
  speed auto
  ipv6 address FE80::2 link-local
  ipv6 address 2001:DB8:ACAD:CB::1/64
  ipv6 rip 1 enable
!
interface Serial0/0/0
  no ip address

```

## Ex3/Activity Results

Cisco Packet Tracer - C:\Users\16273\GitHub\ISEP-Documents\2309-2401\Réseaux et Networks\TP3-EN\TP3-EN\TP3\_ex3\_EN.pka - Guest - 2016-08-24 1

File Edit Options View Tools Extensions Window Help

Activity Results

Congratulations Guest! You completed the activity.

Overall Feedback Assessment Items Connectivity Tests

Congratulations! You successfully completed the **Packet Tracer - Implementing a Subnetted IPv6 Addressing Scheme** activity.

# Packet Tracer - DHCP and DNS Servers

## Ex4/ Part 1/Step1/ab

The screenshot shows the configuration window for the 'Inkjet' interface. The left sidebar has tabs for 'GLOBAL', 'Settings', 'INTERFACE', and 'FastEthernet0'. The 'Config' tab is selected. The main area is titled 'Global Settings' and contains the following fields:

- Display Name: Inkjet
- Gateway/DNS IPv4:
  - ☐ DHCP
  - ☒ Static
  - Default Gateway: 192.168.0.1
  - DNS Server: 64.100.8.8
- Gateway/DNS IPv6:
  - ☐ Automatic
  - ☒ Static
  - Default Gateway: (empty)
  - DNS Server: (empty)

## Ex4/ Part 1/Step1/cd

The screenshot shows the configuration window for the 'FastEthernet0' interface. The left sidebar has tabs for 'GLOBAL', 'Settings', 'INTERFACE', and 'FastEthernet0'. The 'Config' tab is selected. The main area is titled 'FastEthernet0' and contains the following fields:

- Port Status: ☒ On
- Bandwidth: ☒ 100 Mbps, ☐ 10 Mbps
- Duplex: ☐ Half Duplex, ☒ Full Duplex
- MAC Address: 00D0.BCEC.2786
- IP Configuration:
  - ☐ DHCP
  - ☒ Static
  - IPv4 Address: 192.168.0.2
  - Subnet Mask: 255.255.255.0
- IPv6 Configuration:
  - ☐ Automatic
  - ☒ Static
  - IPv6 Address: (empty)
  - Link Local Address: (empty)

## Ex4/ Part 1/Step2/abc

WRS

Physical Config **GUI** Attributes

**Setup** Setup Wireless Security Access Restrictions Applications & Gaming Administration Status

Basic Setup DDNS MAC Address Clone Advanced Routing

**Internet Setup**

Internet Connection type: Automatic Configuration - DHCP

Optional Settings (required by some internet service providers):

Host Name:

Domain Name:

MTU:  Size: 1500

**Network Setup**

Router IP: IP Address: 192 . 168 . 0 . 1 Subnet Mask: 255.255.255.0

DHCP Server Settings: DHCP Server: ☒ Enabled ☐ Disabled DHCP Reservation

Start IP Address: 192.168.1. 100

Maximum number of Users: 50

IP Address Range: 192.168.1. 100 - 149

Client Lease Time: 0 minutes (0 means one day)

Static DNS 1: 64 . 100 . 8 . 8

Static DNS 2: 0 . 0 . 0 . 0

Static DNS 3: 0 . 0 . 0 . 0

WINS: 0 . 0 . 0 . 0

Help...

## Ex4/ Part 1/Step3/abcd

Home Laptop

Physical Config **Desktop** Programming Attributes

**IP Configuration**

Interface: Wireless0

IP Configuration: ☒ DHCP ☐ Static DHCP request successful.

IPv4 Address: 192.168.0.100

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.0.1

DNS Server: 64.100.8.8

IPv6 Configuration: ☒ Automatic ☐ Static Ipv6 request failed.

IPv6 Address:  /

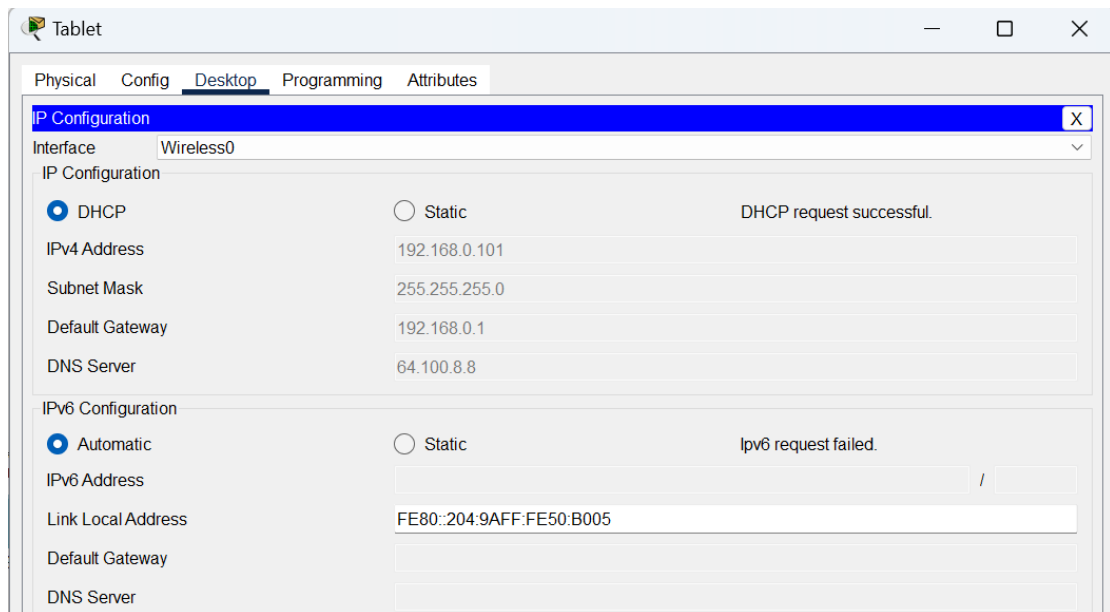
Link Local Address: FE80::201:42FF:FE9E:30C6

Default Gateway:

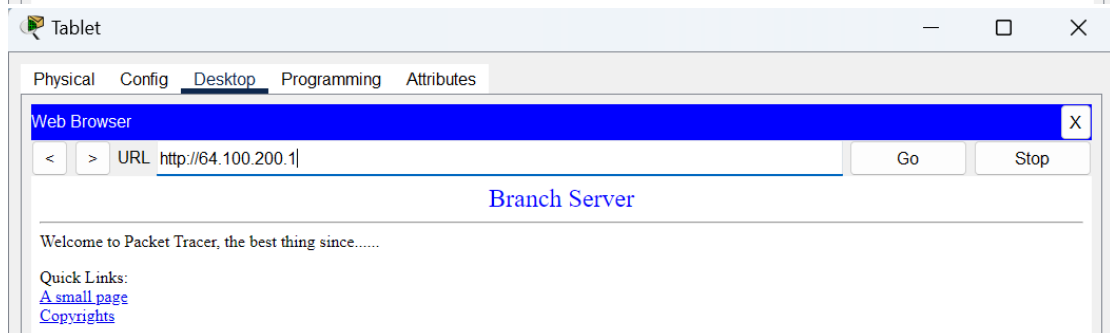
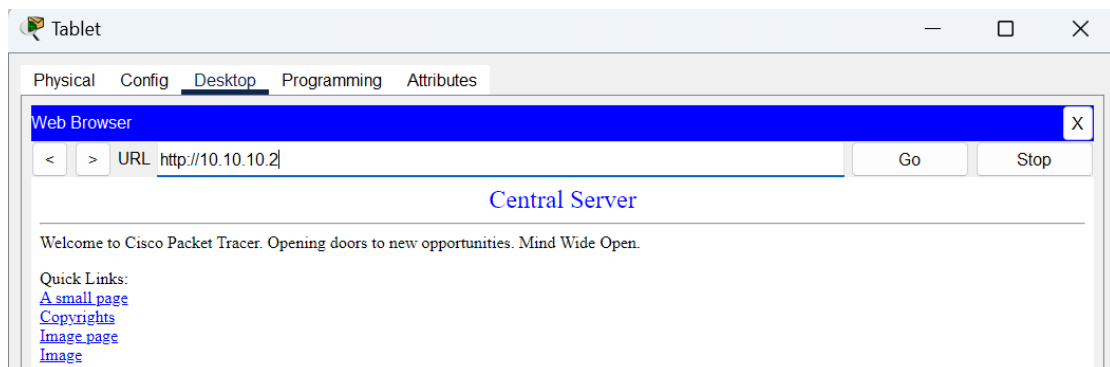
DNS Server:

## Ex4/ Part 1/Step4/abc

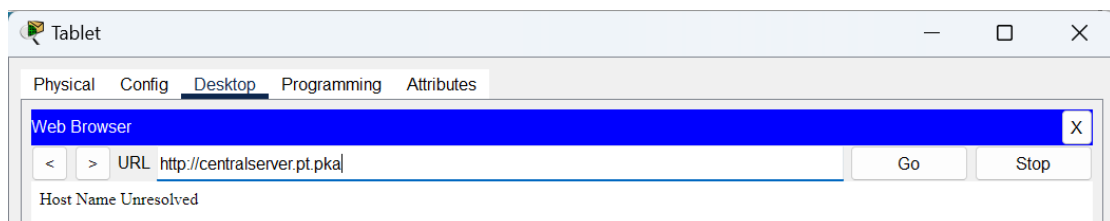


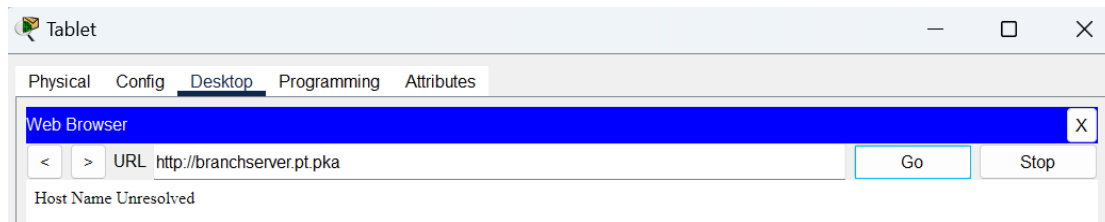


## Ex4/ Part 1/Step5/ab

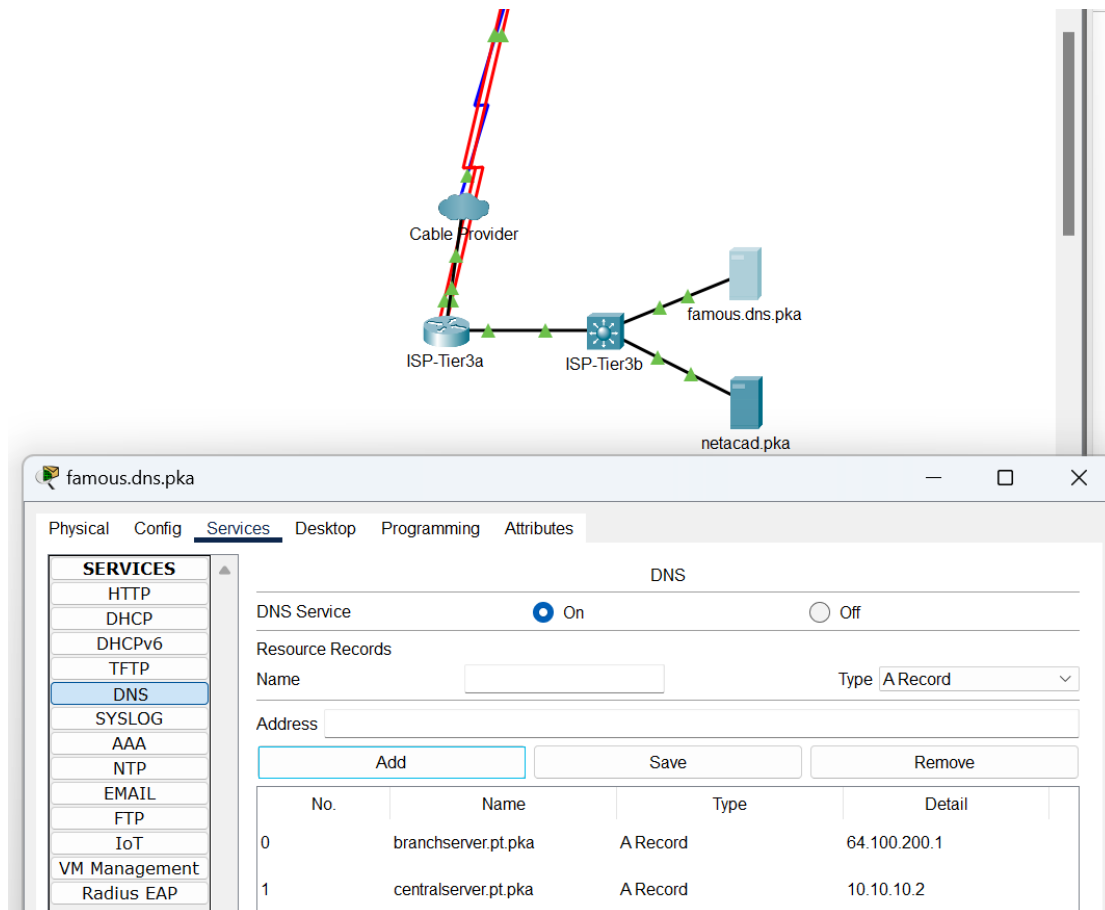


## Ex4/ Part 1/Step5/c

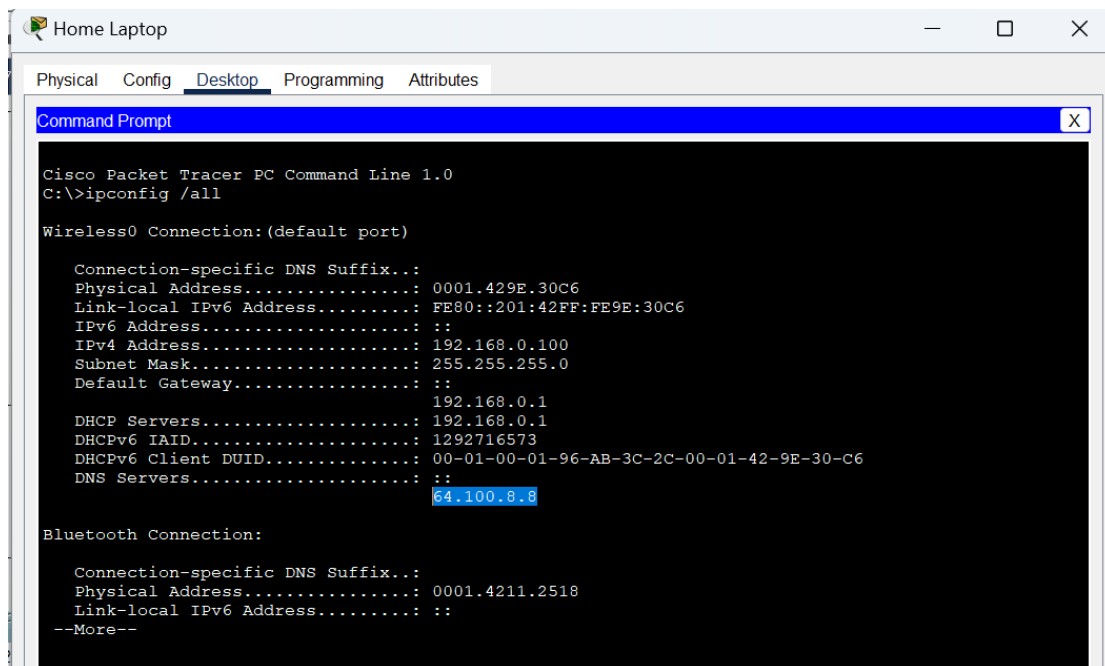




## Ex4/ Part 2/Step1/abcde



## Ex4/ Part 2/Step2/ab



## Ex4/ Part 2/Step2/c

```
C:\>ping 64.100.8.8

Pinging 64.100.8.8 with 32 bytes of data:

Reply from 64.100.8.8: bytes=32 time=28ms TTL=125
Reply from 64.100.8.8: bytes=32 time=19ms TTL=125
Reply from 64.100.8.8: bytes=32 time=15ms TTL=125
Reply from 64.100.8.8: bytes=32 time=15ms TTL=125

Ping statistics for 64.100.8.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 15ms, Maximum = 28ms, Average = 19ms

C:\>nslookup centralserver.pt.pka

Server: [64.100.8.8]
Address: 64.100.8.8

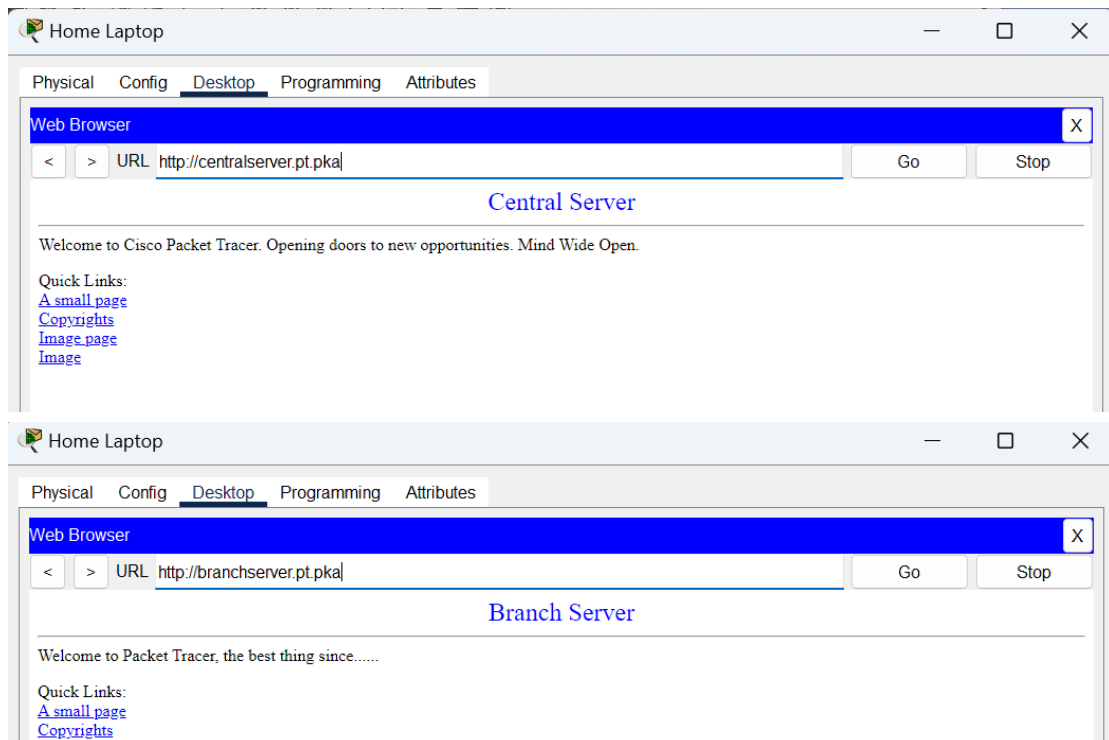
Non-authoritative answer:
Name:   centralserver.pt.pka
Address: 10.10.10.2

C:\>nslookup branchserver.pt.pka

Server: [64.100.8.8]
Address: 64.100.8.8

Non-authoritative answer:
Name:   branchserver.pt.pka
Address: 64.100.200.1
```

## Ex4/ Part 2/Step2/d



## Ex4/Activity Results

