

COMPUTER NETWORK

PROJECT # 1



OCTOBER 28, 2025

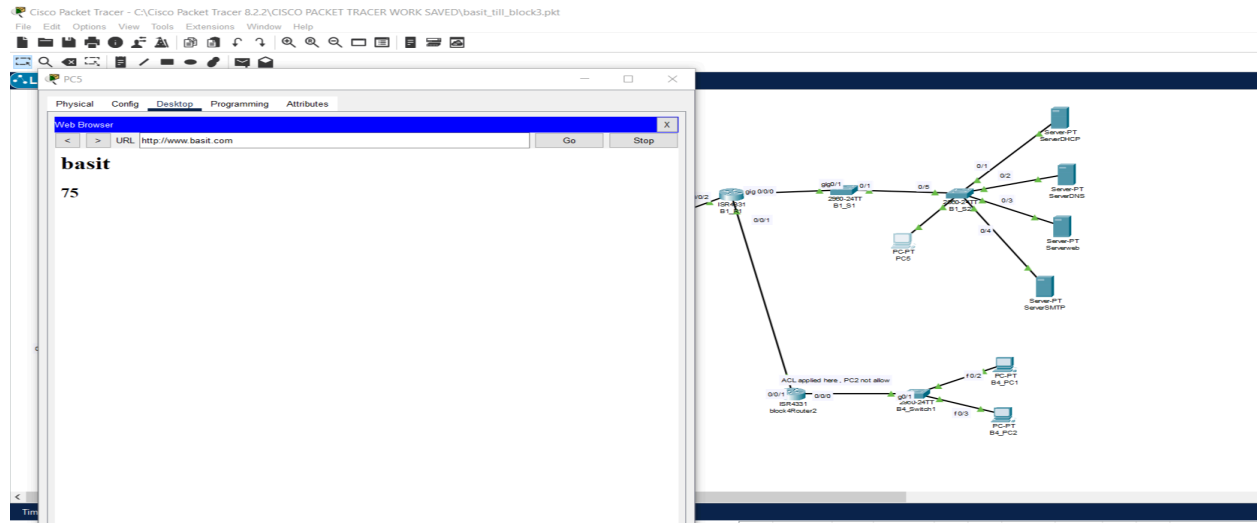
SUBMITTED TO: Zeeshan Ali

SUBMITTED BY: Muhammad Abdul Basit Subhani

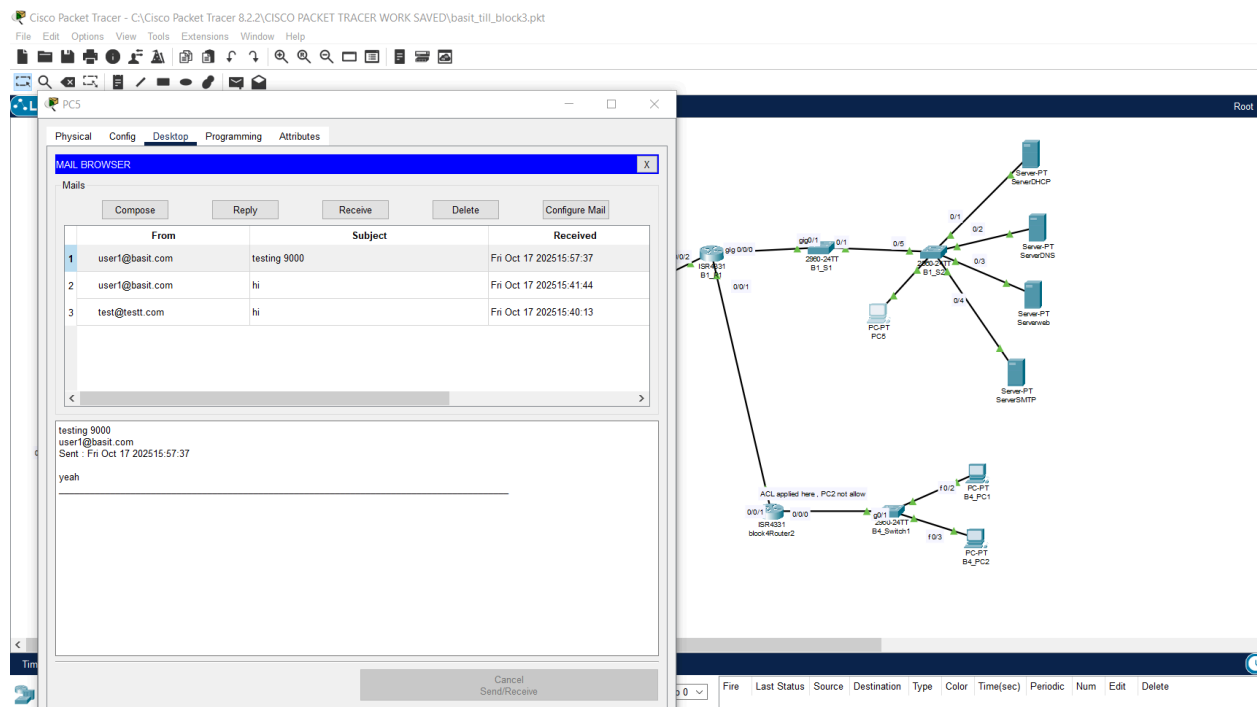
ROLL # BSAI 24075

Step 1: Block1 [Marks:02]

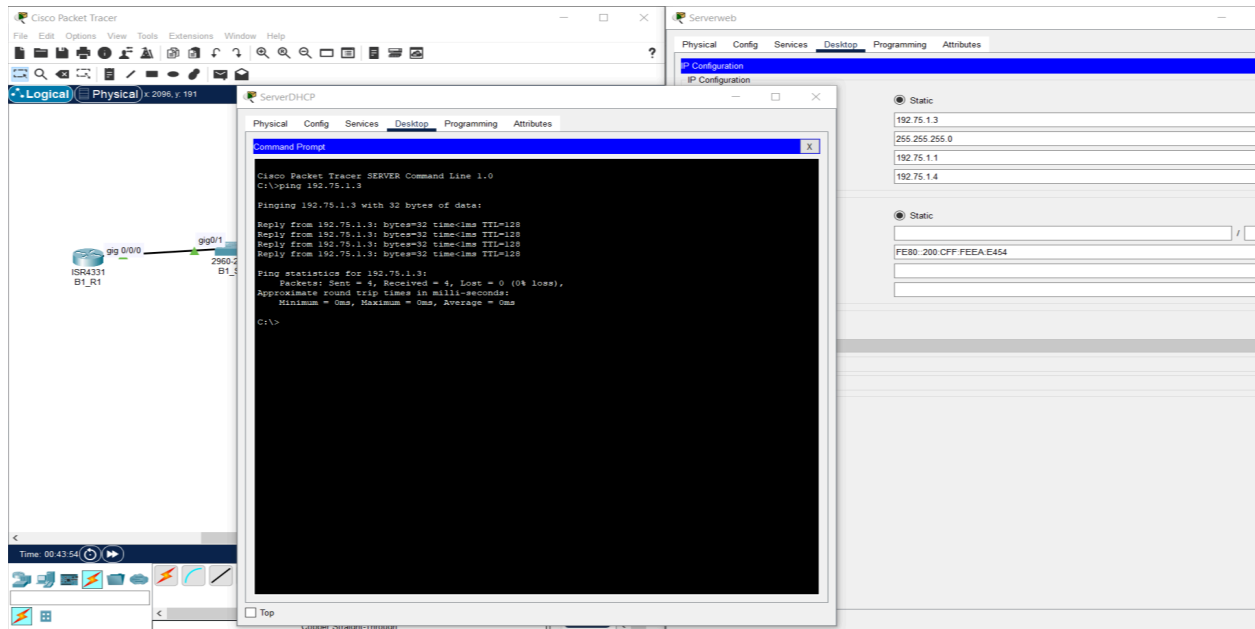
Web Test



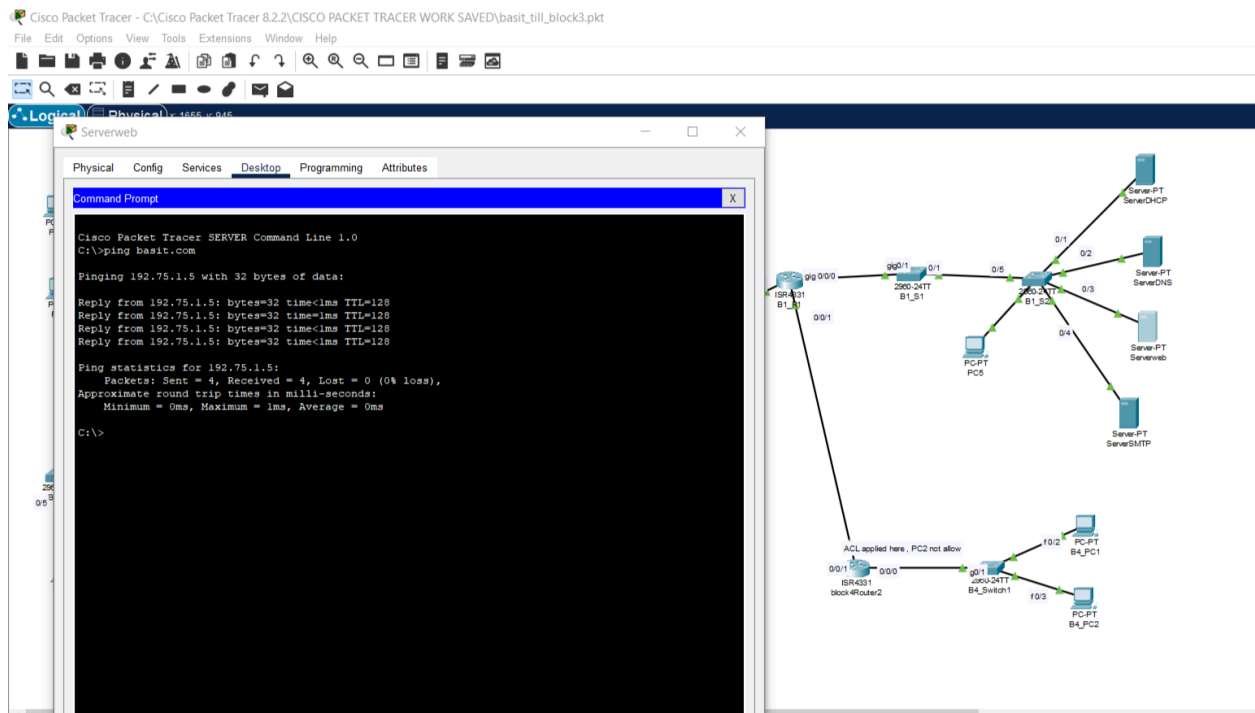
Mail Test:



Pinging between servers



DNS Test:



DHPC TEST

The image displays two windows from the Cisco Packet Tracer application. The left window shows the configuration for PC5, and the right window shows the network topology.

PC5 Configuration (Left Window):

- Interface: FastEthernet0
- IP Configuration: DHCP (selected), Static (unselected)
- IPv4 Address: 192.75.1.100
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.75.1.1
- DNS Server: 192.75.1.4
- IPv6 Configuration: Automatic (unselected), Static (selected)
- IPv6 Address: (empty)
- Link Local Address: FE80::2E0:F7FF:FEB8:9616
- Default Gateway: (empty)
- DNS Server: (empty)
- 802.1X: (empty)
- Use 802.1X Security: (unchecked)
- Authentication: MD5
- Username: (empty)
- Password: (empty)

Network Topology (Right Window):

- Central Router: 2960-24TT B1_S1
- Servers:
 - Server-PT ServerDHCP (connected to 0/1)
 - Server-PT ServerDNS (connected to 0/2)
 - Server-PT Serverweb (connected to 0/3)
 - Server-PT ServerSMTP (connected to 0/4)
- PCs:
 - PC-PT PC5 (connected to 0/5)
 - PC-PT B4_PC1 (connected to f0/2)
- Other: 2960-24TT B1_S1 (connected to 0/0)

A red callout box points to the DHCP option in the PC5 configuration, stating: "PC5 get ipaddress through DHCP".

At the bottom of the right window, a note indicates: "ACL applied here, PC2 not allow".

STEP2 (BLOCK 2):

Pinging between PC's of block 2 successfull

The image displays a Cisco Packet Tracer network setup for Block 2, showing a logical view, a physical view, and the configuration for PC0.

Logical View: The network diagram shows PC0 and PC1 connected to a central switch (B2_S1) via their FastEthernet0/5 ports. The switch is connected to a router (B2_Router1) via its FastEthernet0/24 port. The router is connected to another router (B2_Router2) via its FastEthernet0/0/0 port. The second router is connected to a switch (B2_S2) via its FastEthernet0/24 port. The switch is connected to PC2 and PC4 via their FastEthernet0/1 ports.

Physical View: The physical view shows the same network topology with the physical ports of the devices labeled.

PC0 Configuration: The configuration for PC0 is shown in the Desktop tab. The IP Configuration section is set to Static with the following values:

- Interface: FastEthernet0
- IP Configuration: Static
- IPv4 Address: 192.75.2.10
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.75.2.1
- DNS Server: 0.0.0.0

The IPv6 Configuration section is also set to Static with the following values:

- IPv6 Configuration: Static
- IPv6 Address: FE80::201:63FF:FE7D:834D
- Link Local Address: FE80::201:63FF:FE7D:834D
- Default Gateway: FE80::201:63FF:FE7D:834D
- DNS Server: FE80::201:63FF:FE7D:834D

The 802.1X section is configured with the following values:

- 802.1X: 802.1X
- Use 802.1X Security: ☐
- Authentication: MD5
- Username:
- Password:

PC1 Command Prompt: The Command Prompt for PC1 shows the following output:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.75.1.100

Pinging 192.75.1.100 with 32 bytes of data:
Request reply.
Reply from 192.75.1.100: bytes=32 time=1ms TTL=125
Reply from 192.75.1.100: bytes=32 time=1ms TTL=125
Reply from 192.75.1.100: bytes=32 time=1ms TTL=125

Ping statistics for 192.75.1.100:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 11ms, Average = 11ms

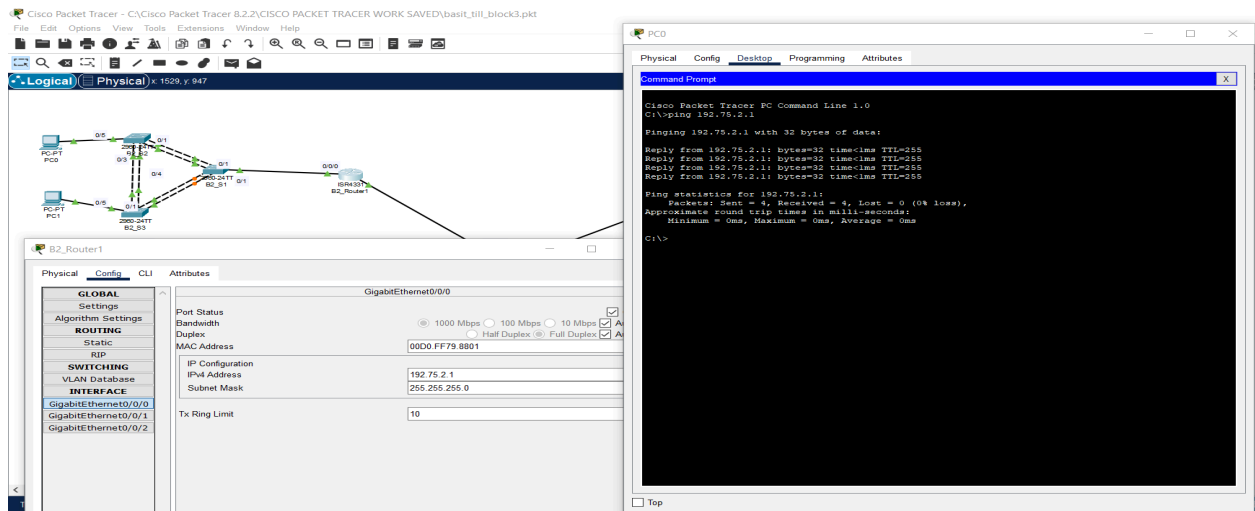
C:\>ping 192.75.2.10

Pinging 192.75.2.10 with 32 bytes of data:
Reply from 192.75.2.10: bytes=32 time=1ms TTL=128
Reply from 192.75.2.10: bytes=32 time=1ms TTL=128
Reply from 192.75.2.10: bytes=32 time=2ms TTL=128
Reply from 192.75.2.10: bytes=32 time=1ms TTL=128

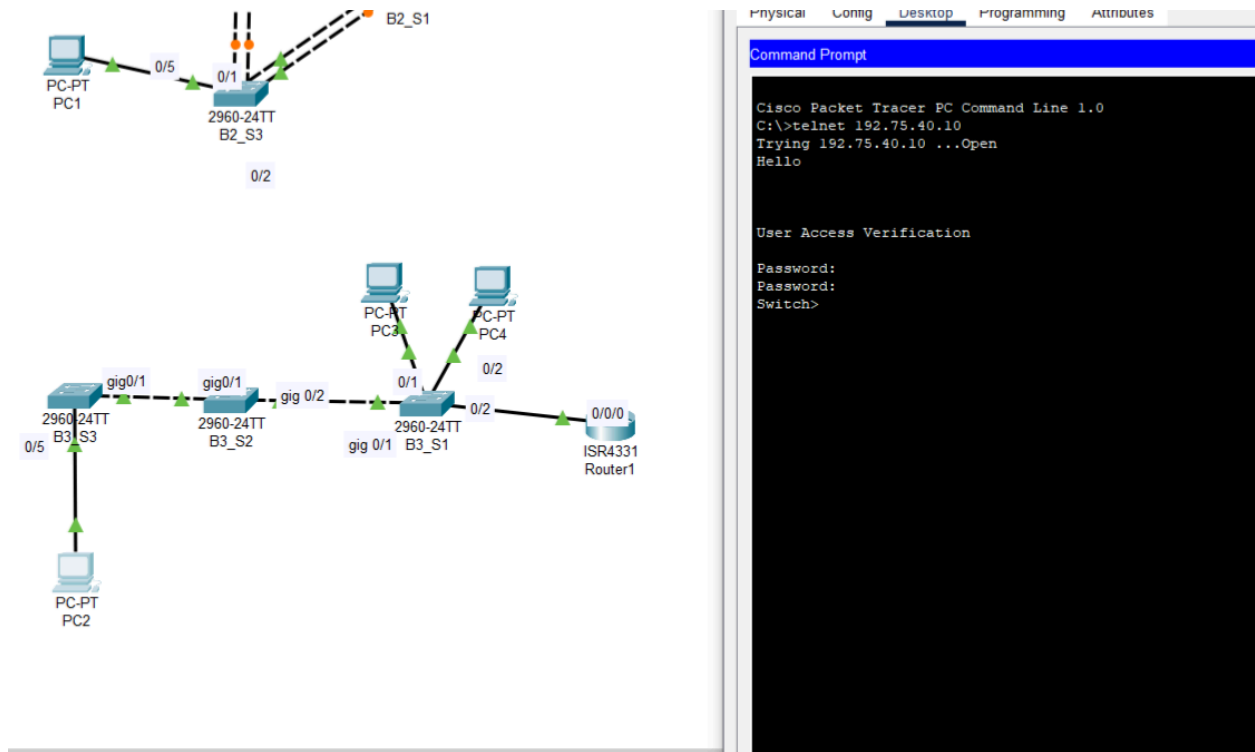
Ping statistics for 192.75.2.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\>
```

Ping PC0 with router:

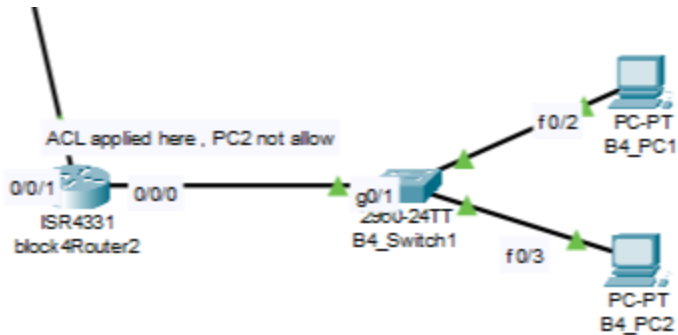


STEP 3 (BLOCK 3):



STEP 4 (BLOCK 4):

B4_PC2 not allowed



Confirmation:

IP address of block4Router2 at G0/0/0 is 192.75.4.1

Command Prompt (B4_PC1):

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.75.4.1

Pinging 192.75.4.1 with 32 bytes of data:
Reply from 192.75.4.1: bytes=32 time=1ms TTL=255
Reply from 192.75.4.1: bytes=32 time=1ms TTL=255
Reply from 192.75.4.1: bytes=32 time=1ms TTL=255
Reply from 192.75.4.1: bytes=32 time=1ms TTL=255

Ping statistics for 192.75.4.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>
```

Command Prompt (B4_PC2):

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.75.4.1

Pinging 192.75.4.1 with 32 bytes of data:
Reply from 192.75.4.1: Destination host unreachable.
Reply from 192.75.4.1: Destination host unreachable.
Reply from 192.75.4.1: Destination host unreachable.
Reply from 192.75.4.1: Destination host unreachable.

Ping statistics for 192.75.4.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>
```

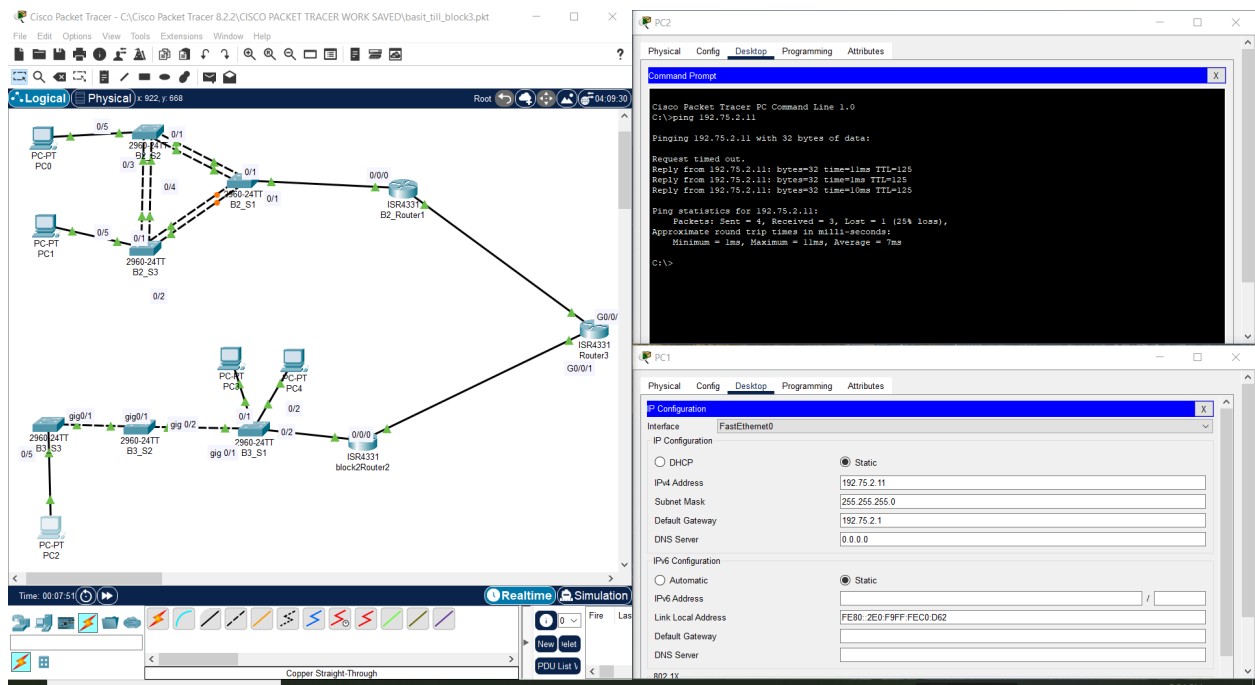
Network Topology:

- Router: ISR4331 block4Router2 (GigabitEthernet 0/0/0: 192.75.4.1, GigabitEthernet 0/0/1: 192.75.4.2)
- Switch: B4_Switch1 (GigabitEthernet 0/1: 192.75.4.3, FastEthernet 0/2: 192.75.4.4, FastEthernet 0/3: 192.75.4.5)
- PCs: B4_PC1 (192.75.4.6), B4_PC2 (192.75.4.7)
- Servers: ServerDNS (192.75.4.8), ServerWeb (192.75.4.9), ServerSMTP (192.75.4.10)

Step 5:

RIP Configuration:

PC2 at block 3 ping successfully with PC1 at block 2



and vice versa

The network diagram shows a topology with two main sections. The top section includes PC-PT PC0, PC-PT PC1, and two 2960-24TT switches (B2_S1, B2_S3) connected to a 3560-24TT switch (B3_S2). The bottom section includes PC-PT PC2, two 2960-24TT switches (B3_S1, B3_S2), and a 3560-24TT switch (B3_S3). Routers include ISR4331 (B2_Router1), ISR4331 (B3_Router1), and ISR4331 (B3_Router2). The time is 04:14:00.

PC1 Configuration:

Interface	FastEthernet0
IP Configuration	Static
IPv4 Address	192.75.40.5
Subnet Mask	255.255.255.0
Default Gateway	192.75.40.1
DNS Server	0.0.0.0
IPv6 Configuration	Static
IPv6 Address	
Link Local Address	FE80::209:7CFF:FE82:C870
Default Gateway	
DNS Server	

Command Prompt Output:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.75.40.5

Pinging 192.75.40.5 with 32 bytes of data:

Reply from 192.75.40.5: bytes=32 time=1ms TTL=125
Reply from 192.75.40.5: bytes=32 time=1ms TTL=125
Reply from 192.75.40.5: bytes=32 time=1ms TTL=125
Reply from 192.75.40.5: bytes=32 time=1ms TTL=125

Ping statistics for 192.75.40.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

PING between PC 0 and PC 2

The network diagram is the same as the first image, but the time is 02:28:59. The configuration for PC0 and PC2 is shown below.

PC0 Configuration:

Interface	FastEthernet0
IP Configuration	Static
IPv4 Address	192.75.40.5
Subnet Mask	255.255.255.0
Default Gateway	192.75.40.1
DNS Server	0.0.0.0
IPv6 Configuration	Static
IPv6 Address	
Link Local Address	FE80::209:7CFF:FE82:C870
Default Gateway	
DNS Server	

PC2 Configuration:

Interface	FastEthernet0
IP Configuration	Static
IPv4 Address	192.75.40.5
Subnet Mask	255.255.255.0
Default Gateway	192.75.40.1
DNS Server	0.0.0.0
IPv6 Configuration	Static
IPv6 Address	
Link Local Address	FE80::209:7CFF:FE82:C870
Default Gateway	
DNS Server	

Command Prompt Output (PC0):

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.75.40.5

Pinging 192.75.40.5 with 32 bytes of data:

Reply from 192.75.40.5: bytes=32 time=1ms TTL=125
Reply from 192.75.40.5: bytes=32 time=1ms TTL=125
Reply from 192.75.40.5: bytes=32 time=1ms TTL=125
Reply from 192.75.40.5: bytes=32 time=1ms TTL=125

Ping statistics for 192.75.40.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.75.40.5

Pinging 192.75.40.5 with 32 bytes of data:

Reply from 192.75.40.5: bytes=32 time=1ms TTL=125
Reply from 192.75.40.5: bytes=32 time=1ms TTL=125
Reply from 192.75.40.5: bytes=32 time=1ms TTL=125
Reply from 192.75.40.5: bytes=32 time=1ms TTL=125

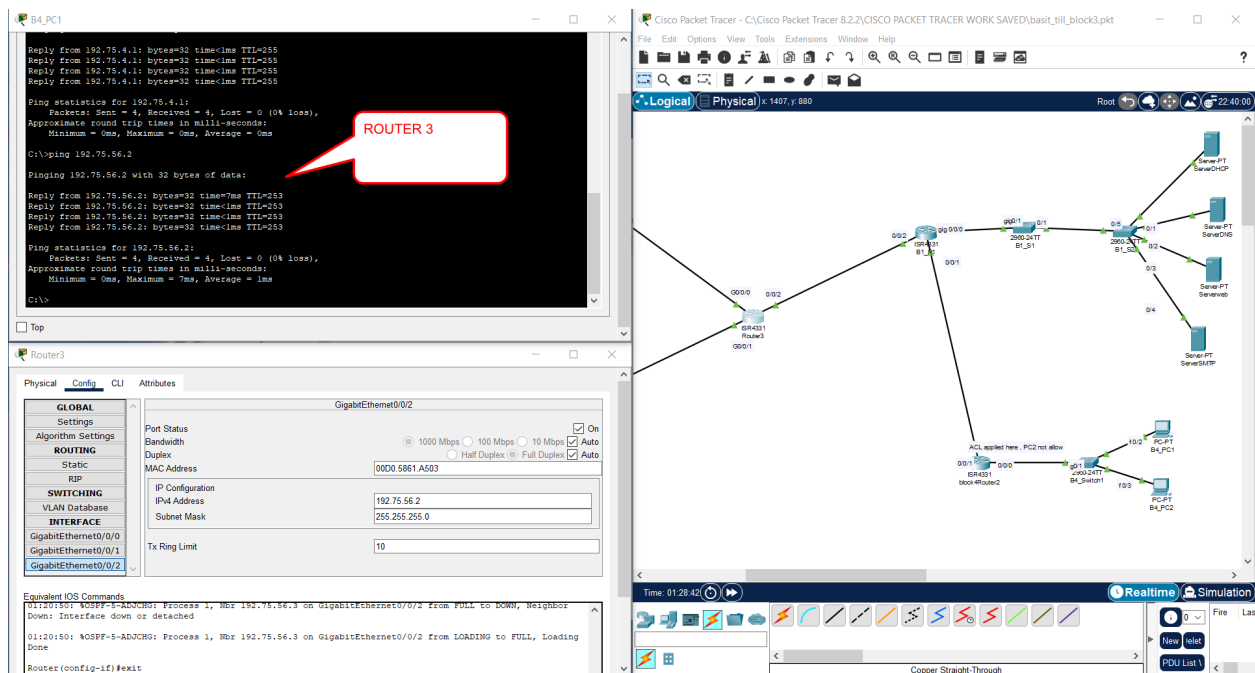
Ping statistics for 192.75.40.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

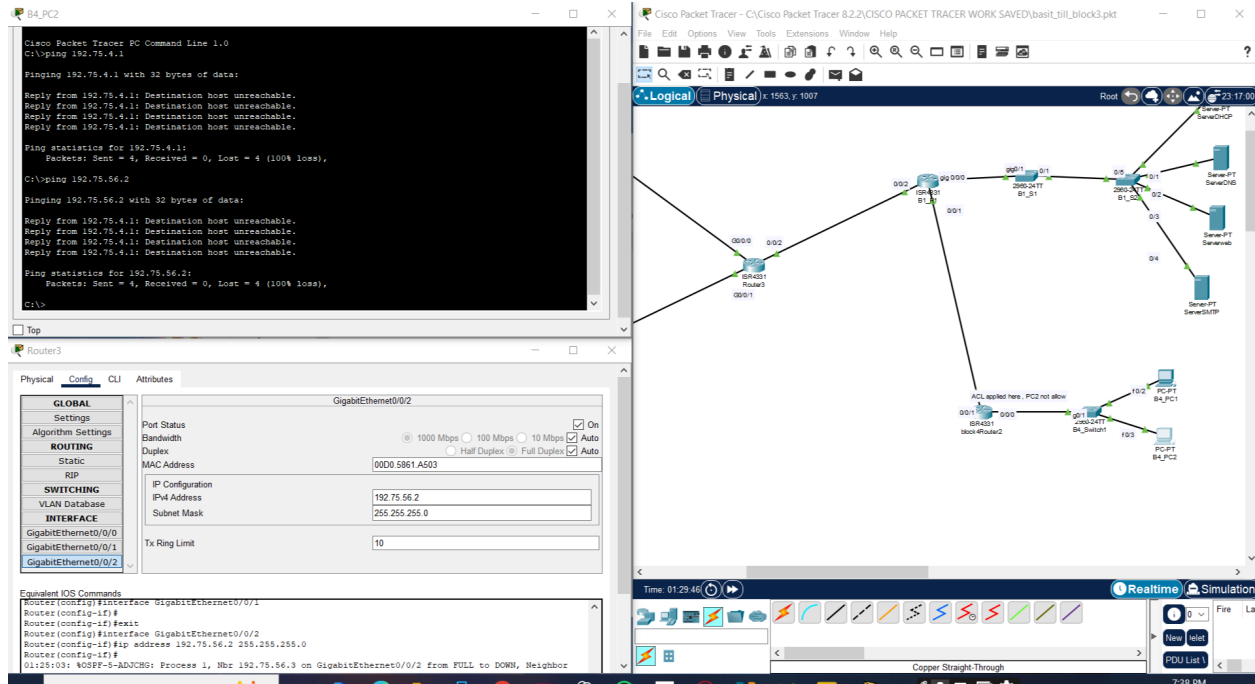
STEP 6:

OSPF Configuration:

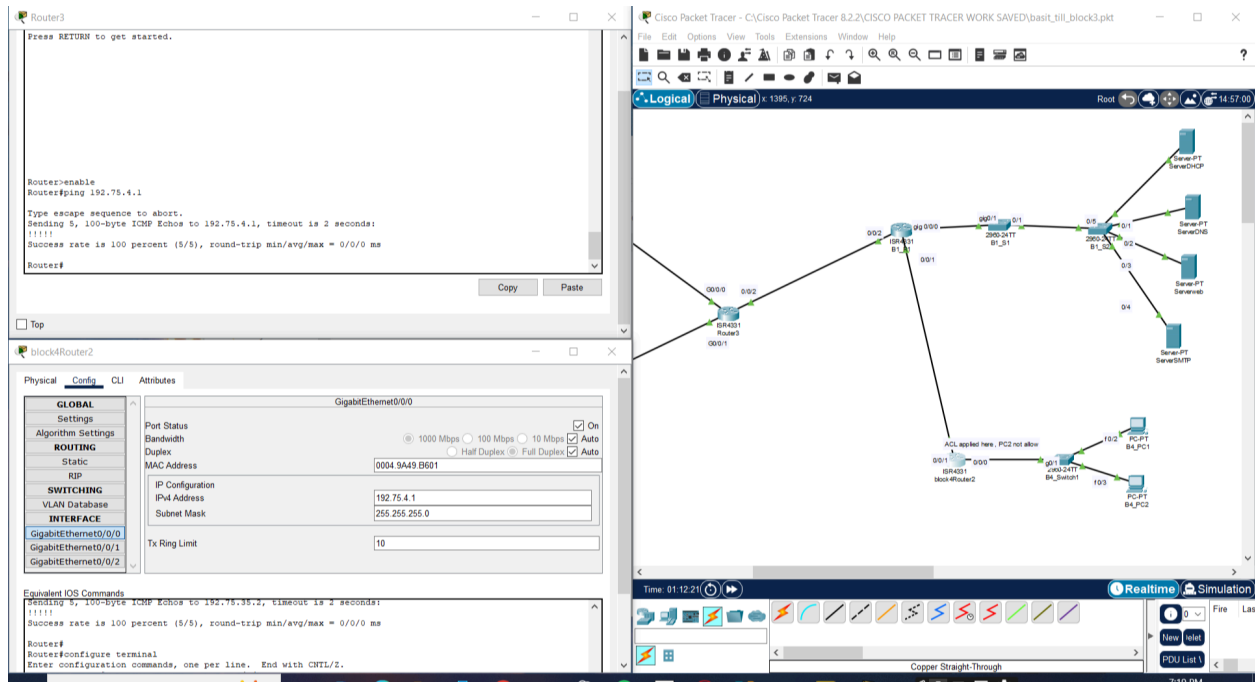
B4_PC1 is successfully ping with router3 (Middle router) because of OSPF Configuration



BUT if we so with B4_PC2 then ACL applied

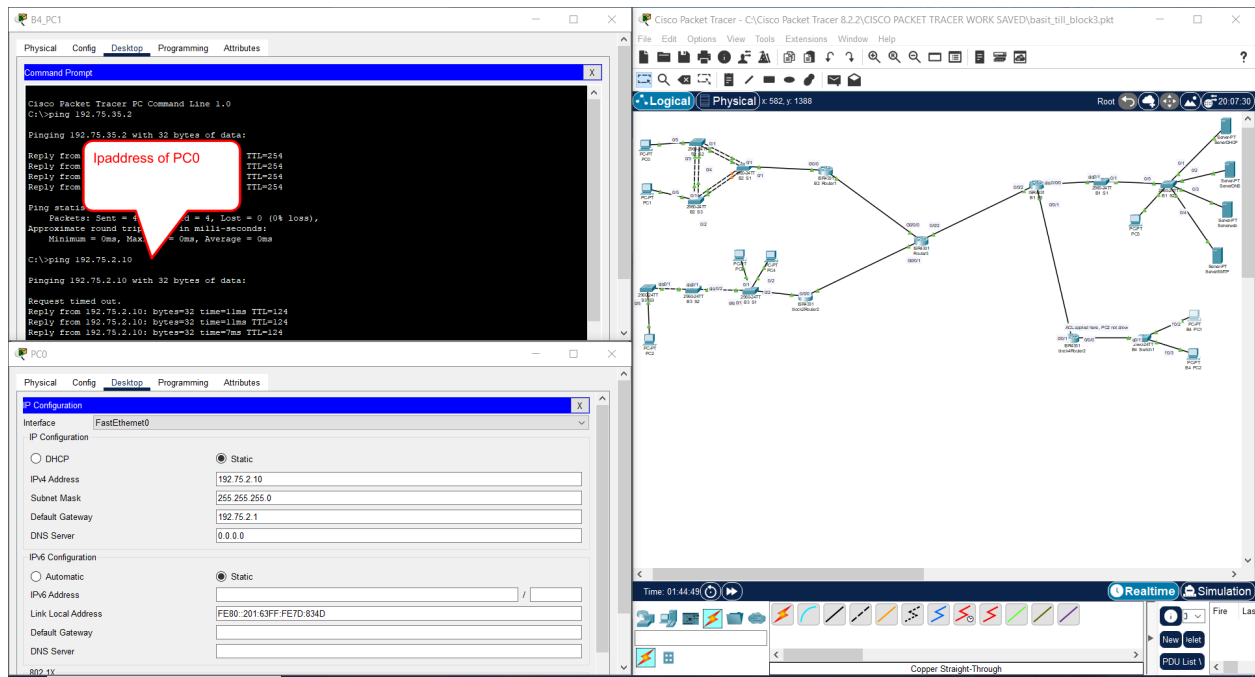


Now Pinging between router3 and block4Router2



STEP7:

B4PC1 at block 4 have (OSPF) configuration connected with PC0 at Block 2 (RIP) Configured because of RIP-OSPF Distribution



NOW PC5 at block 1 is successfully ping with PC 1 at Block 2

RIP-OSPF Distribution:

PC1

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.75.1.100

Pinging 192.75.1.100 with 32 bytes of data:

Request timed out.
Reply from 192.75.1.100: byte=32 time=1ms TTL=125
Reply from 192.75.1.100: byte=32 time=1ms TTL=125
Reply from 192.75.1.100: byte=32 time=1ms TTL=125

Ping statistics for 192.75.1.100:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\>
```

PC5

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

☒ DHCP ☐ Static

IPv4 Address: 192.75.1.100

Subnet Mask: 255.255.255.0

Default Gateway: 192.75.1.1

DNS Server: 192.75.1.4

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::2E0:F7FF:FE08:9616

Default Gateway:

DNS Server:

802.1X:

Cisco Packet Tracer - C:\Cisco Packet Tracer 8.2.2\CISCO PACKET TRACER WORK SAVED\basit_till_block3.pkt

File Edit Options View Tools Extensions Window Help

Logical Physical x 1234, y 1302

Root

Time: 01:49:13

Realtime Simulation

Now Relist PDU List

Copper Straight-Through

PC5 in 1st block should be able to **Telnet into Middle (Router3)** in network

The screenshot displays the Cisco Packet Tracer interface with three main components:

- PC5 Command Line:** Shows the user attempting to telnet to 192.75.23.1. The prompt is "User Access Verification" and the user has entered "Router".
- Router3 Configuration:** The configuration window for Router3 is open, showing the configuration for GigabitEthernet0/0/1. The IP address is 192.75.23.1 and the subnet mask is 255.255.255.0. The interface is configured with a speed of 1000 Mbps, duplex of Full Duplex, and a Tx Ring Limit of 10.
- Network Diagram:** The network topology is visible, showing Router3 connected to a switch (S1) and a PC (PC5). The switch is connected to a router (R1) and a PC (PC1). The router (R1) is connected to a switch (S1) and a PC (PC2). The switch (S1) is connected to a router (R1) and a PC (PC1).

The network diagram shows a complex topology with multiple routers and switches. The configuration for Router3 is shown in the bottom left, and the PC5 configuration is shown in the top left. The network diagram is in the center, showing the physical and logical connections between the devices.

FINAL PNG of Project Topology:

