

Date: 04-06-2024

1. Binary to decimal conversion.

10010010-->146

01110111-->119

11111111-->255

11000101-->197

11110110-->246

00010011-->19

10000001-->129

00110001-->49

01111000-->120

11110000-->240

00111011-->59

00000111-->7

2. Decimal to binary conversion.

238 --> 11101110

34 ---> 00100010

123 --> 01111011

50---> 00110010

255--> 11111111

200--> 11001000

10---> 00001010

138--> 10001010

1----->00000001

13---> 00001101

250--> 11111010

107--> 01101011

224--> 11100000

114--> 01100010

192--> 11000000

3. Identify host and network portion in given address.

Network & Host Identification

Circle the network portion
of these addresses:

177.100.18.4

119.18.45.0

209.240.80.78

199.155.77.56

117.89.56.45

215.45.45.0

192.200.15.0

95.0.21.90

33.0.0.0

158.98.80.0

217.21.56.0

10.250.1.1

Circle the host portion of
these addresses:

10.15.123.50

171.2.199.31

198.125.87.177

223.250.200.222

17.45.222.45

126.201.54.231

191.41.35.112

155.25.169.227

192.15.155.2

123.102.45.254

148.17.9.155

100.25.1.1

4. Identify the classes of given address.

Address	Class
10.250.1.1	Class A
150.10.15.0	Class B
192.14.2.0	Class C
148.17.9.1	Class B
193.42.1.1	Class C
126.8.156.0	Class B
220.200.23.1	Class C
230.230.45.58	Class D
177.100.8.4	Class B
119.18.45.0	Class D
249.240.80.78	Class E

5. Write correct default subnet mask for the following.

Write correct default Subnet Mask.	
1) 177.100.18.4	→ 255.255.0.0
2) 119.18.45.0	→ 255.0.0.0
3) 191.249.234.191	→ 255.255.0.0
4) 233.23.233.109	→ 255.255.255.0
5) 10.10.250.1	→ 255.0.0.0
6) 126.123.23.1	→ 255.0.0.0
7) 223.69.230.250	→ 255.255.255.0
8) 192.12.35.105	→ 255.255.255.0
9) 77.251.200.51	→ 255.0.0.0
10) 189.210.50.1	→ 255.255.0.0
11) 88.45.65.35	→ 255.0.0.0
12) 128.212.250.254	→ 255.255.0.0

6. Using IP address and subnet mask write out network address.

Network address.	
1) 188.10.18.2 255.255.0.0	⇒ 188.10.0.0
2) 10.10.48.80 255.255.255.0	⇒ 10.10.48.0
3) 192.149.24.191 255.255.255.0	⇒ 192.149.24.0
4) 10.10.10.10 255.0.0.0	⇒ 10.0.0.0
5) 186.13.23.110 255.255.255.0	⇒ 186.13.23.0
6) 223.69.230.250 255.255.0.0	⇒ 223.69.0.0
7) 200.120.130.15 255.255.255.0	⇒ 200.120.130.0

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7. Using IP address and subnet mask write out host address.

Host address	
1) 188.10.18.2 255.255.0.0	\Rightarrow 0.0.18.2
2) 10.10.48.80 255.255.255.0	\Rightarrow 0.0.0.80
3) 222.49.49.11 255.255.255.0	\Rightarrow 0.0.0.11
4) 128.23.230.19 255.255.0.0	\Rightarrow 0.0.230.19
5) 10.10.10.10 255.0.0.0	\Rightarrow 0.10.10.10
6) 200.113.123.11 255.255.255.0	\Rightarrow 0.0.0.11
7) 223.169.23.20 255.255.0.0	\Rightarrow 0.0.23.20

8. Write down the broadcast address for given.

BroadCast Address	
1) 188.10.18.2 255.255.0.0	\Rightarrow 188.10.255.255
2) 10.10.48.80 255.255.255.0	\Rightarrow 10.10.48.255
3) 192.149.24.191 255.255.255.0	\Rightarrow 192.149.24.255
4) 10.10.10.10 255.0.0.0	\Rightarrow 10.255.255.255
5) 186.13.23.110 255.255.255.0	\Rightarrow 186.13.23.255
6) 200.120.135.15 255.255.255.0	\Rightarrow 200.120.135.255
7) 223.69.230.250 255.255.0.0	\Rightarrow 223.69.255.255

9. Number of needed subnets = 16

Number of needed usable hosts = 30

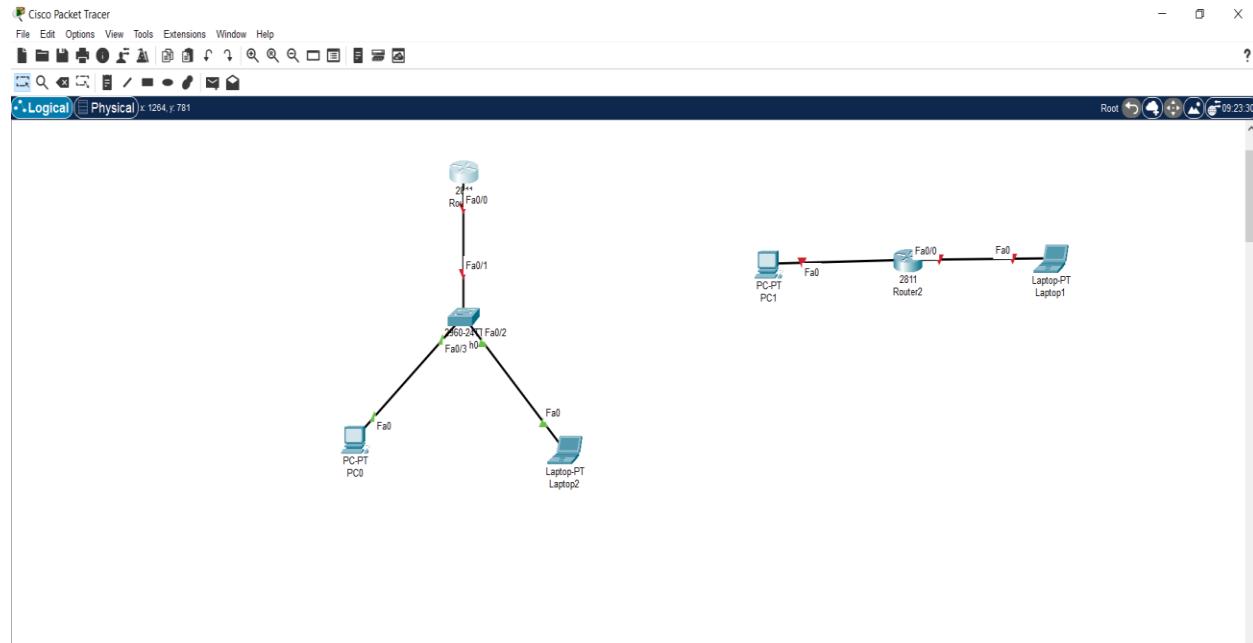
195.85.8.0

Solution:

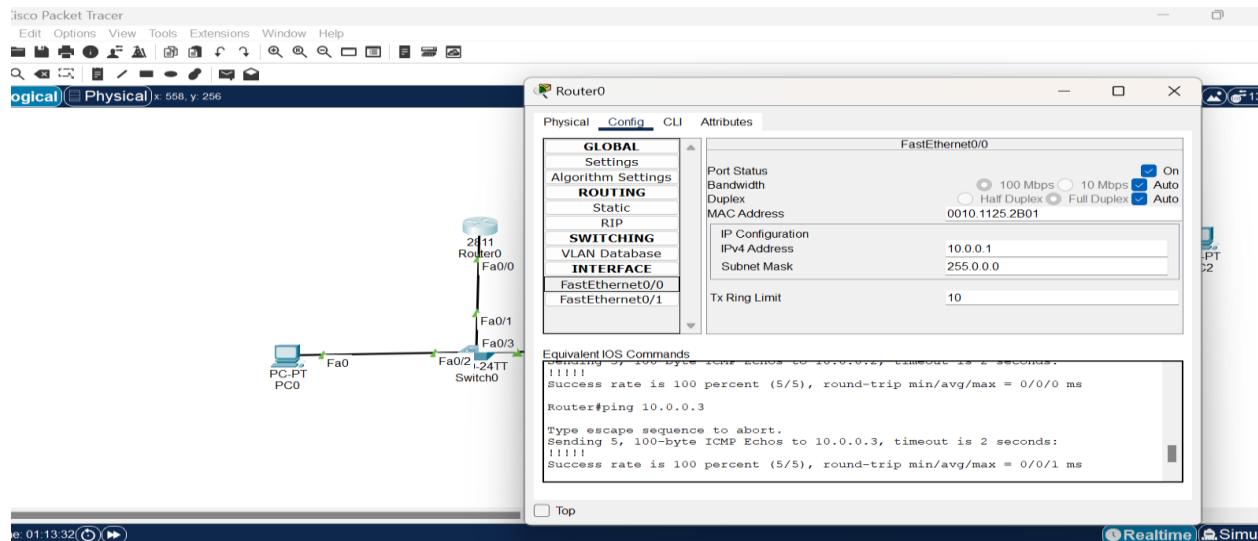
Q) No. of Subnets = 16 No. of Usable host ≥ 30	
Ans:	195.85.8.0
$2^5 \geq 16$	$2^5 \geq 32$
$2^5 \geq 32$	$[0-31]$
V.R. 195.85.8.1 to 195.85.8.30	
S1. 195.85.8.000HHHHH	
S2. 195.85.8.001HHHHH	
S3. 195.85.8.010HHHHH	
S4. 195.85.8.011HHHHH	
S5. 195.85.8.100HHHHH	
S6. 195.85.8.101HHHHH	
S7. 195.85.8.110HHHHH	
S8. 195.85.8.111HHHHH	
V.R. 195.85.8.65 to 195.85.8.94	

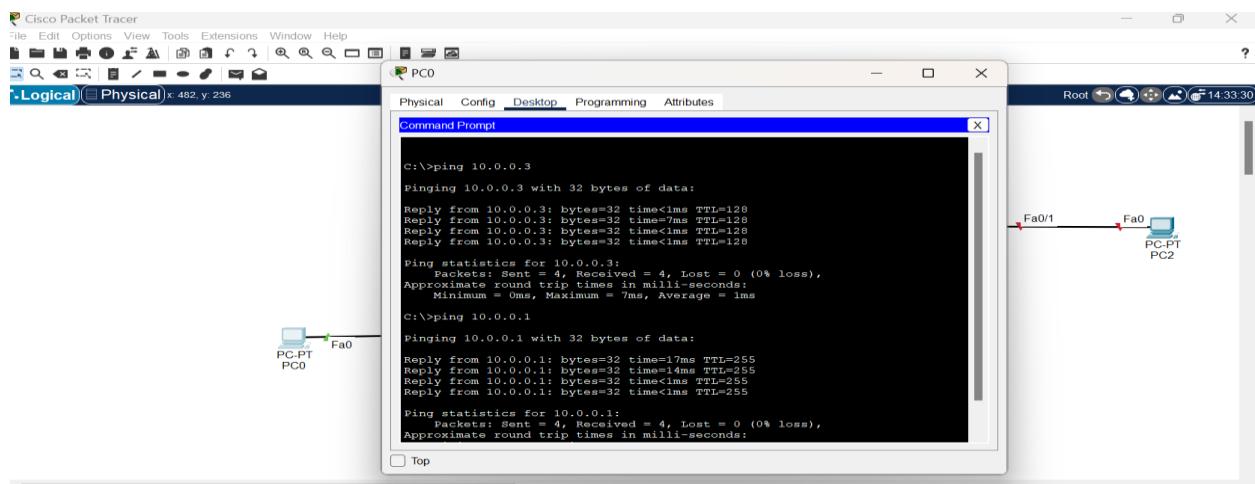
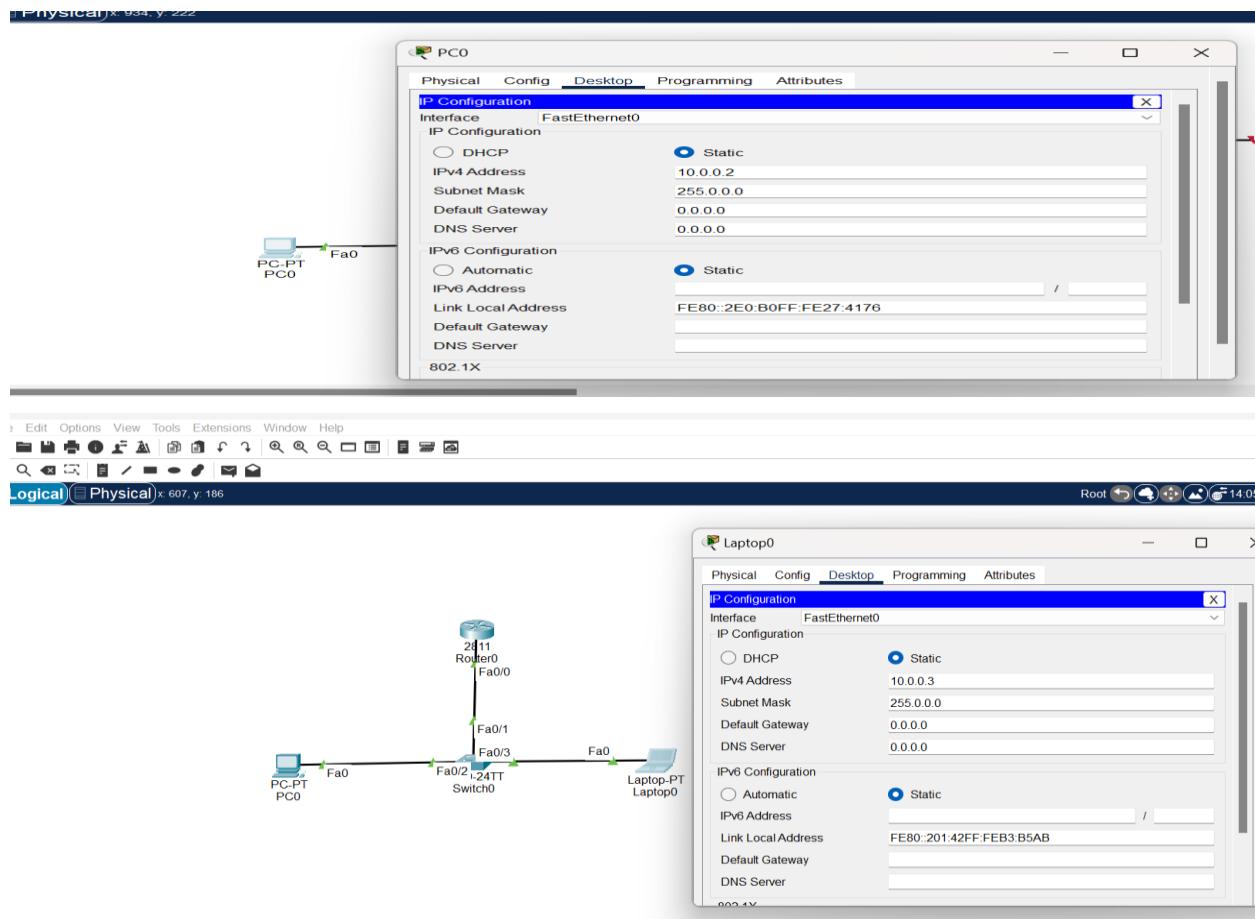
2023	
M T W T F S S	M T W T F S S
1 2 3 4 5 6 7	8 9 10 11 12
13 14 15 16 17 18 19	20 21 22 23 24 25 26
27 28 29 30 31	
S4. 195.85.8.011HHHHH [96-127] V.R. 195.85.8.97 to 195.85.8.126	
S5. 195.85.8.100HHHHH [128-159] V.R. 195.85.8.129 to 195.85.8.158	
S6. 195.85.8.101HHHHH [160-191] V.R. 195.85.8.161 to 195.85.8.190	
S7. 195.85.8.110HHHHH [192-223] V.R. 195.85.8.193 to 195.85.8.222	
S8. 195.85.8.111HHHHH [224-255] V.R. 195.85.8.225 to 195.85.8.254.	
Address Class: C Subnet mask: 255.255.255.0 Total no. of subnets: 8 Total no. of host address: 32 Ans: No. of Usable subnet ≥ 16 No. of " host ≥ 30	
Custom Subnet address 255.255.255.224	

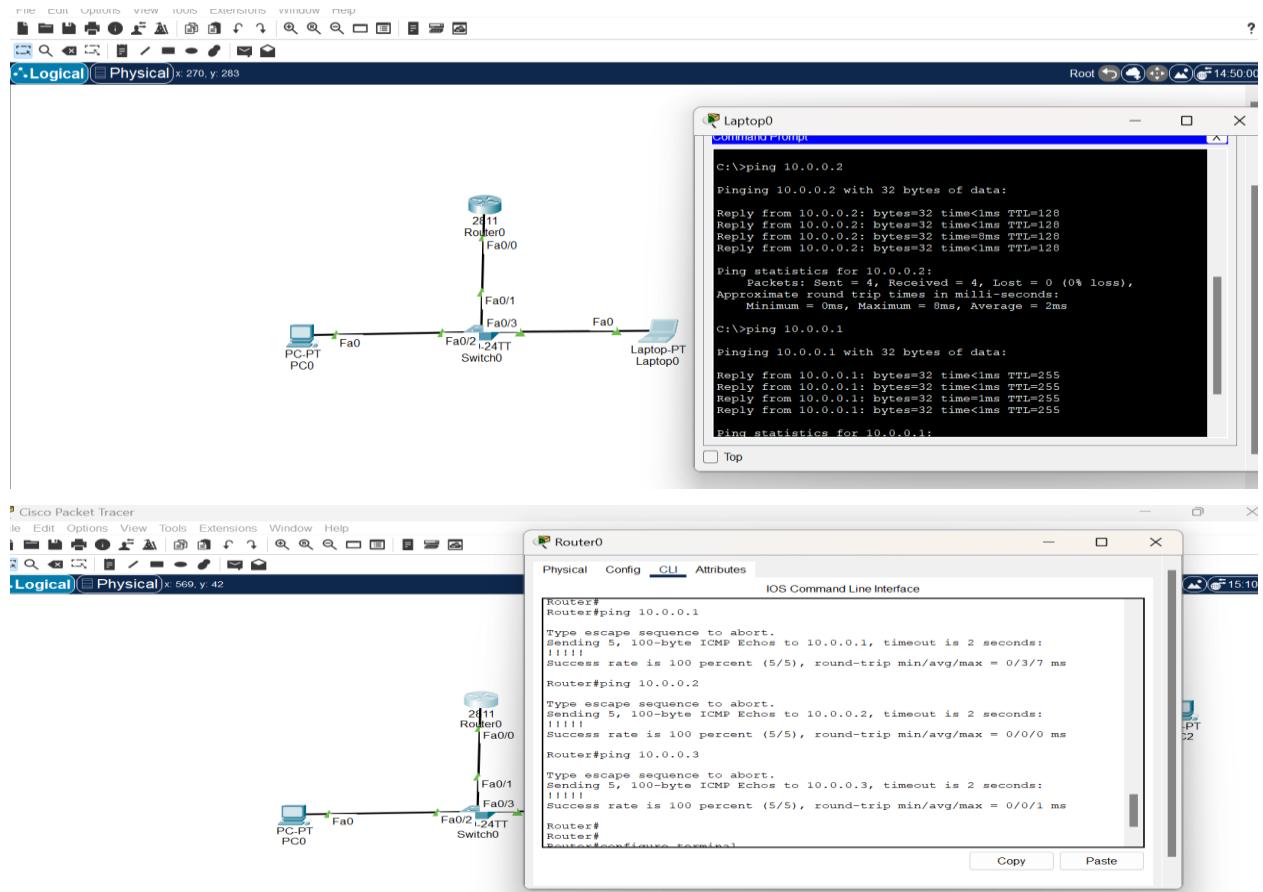
Lab1. Connecting the devices



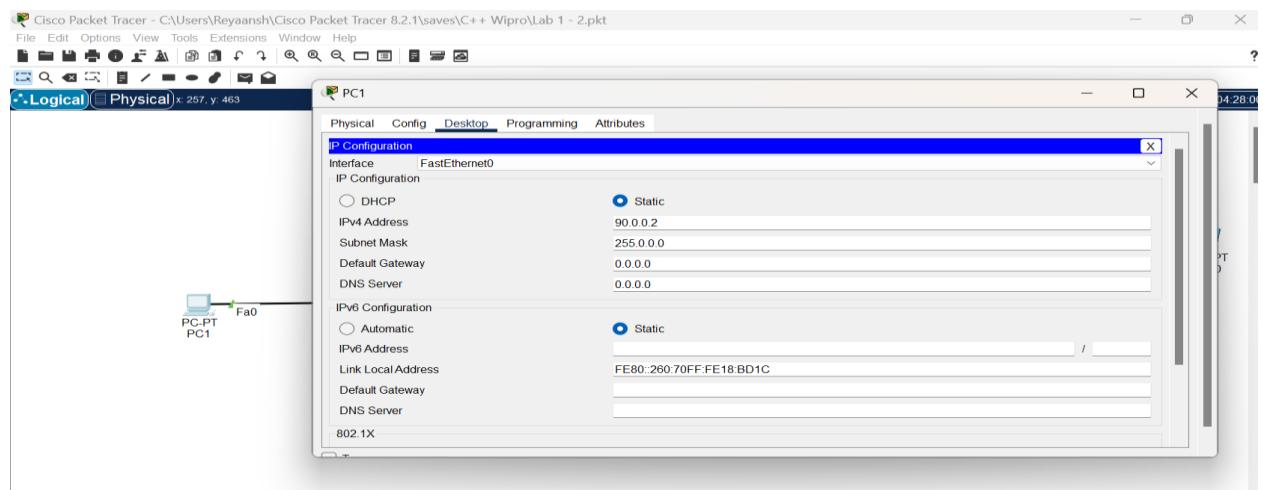
Lab 2: IP address Configuration and Ping check

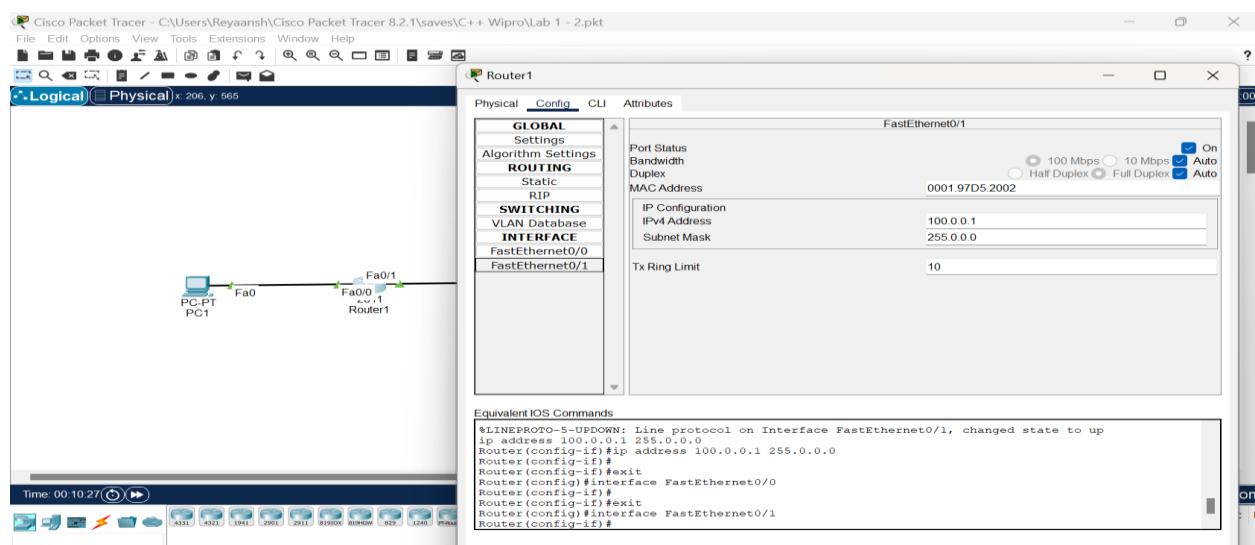
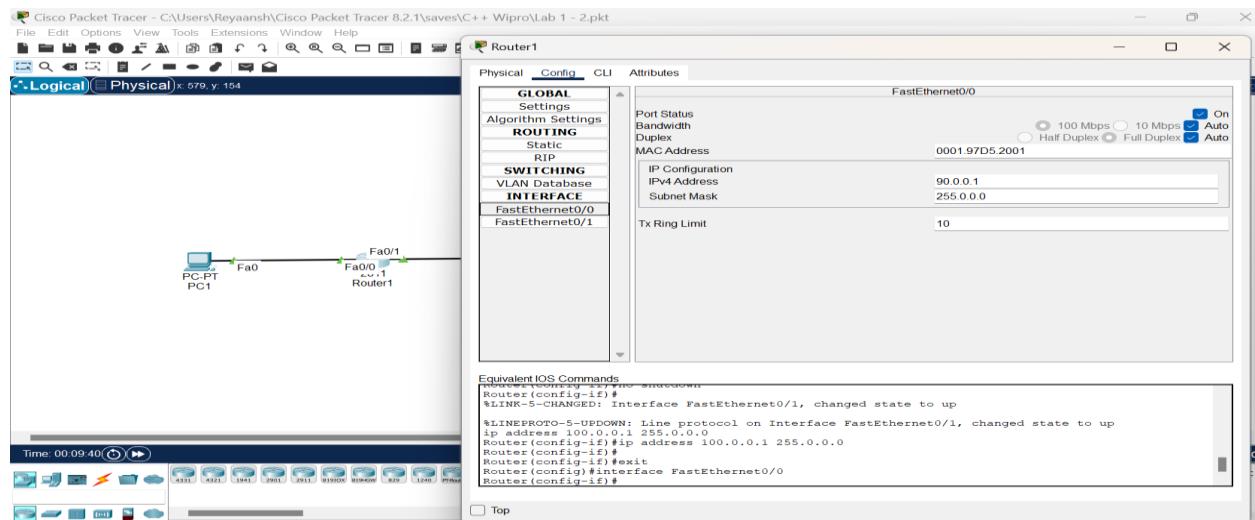
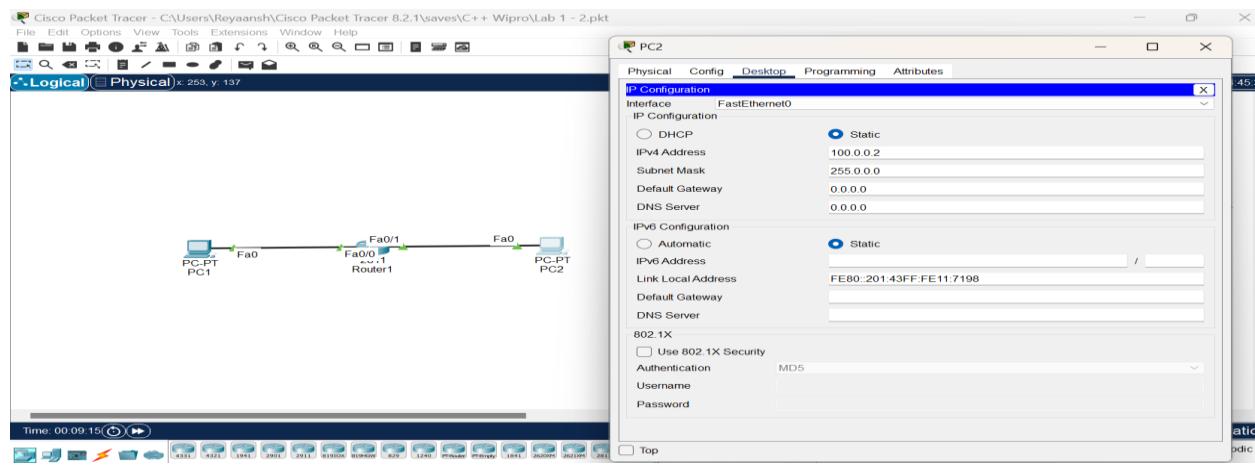


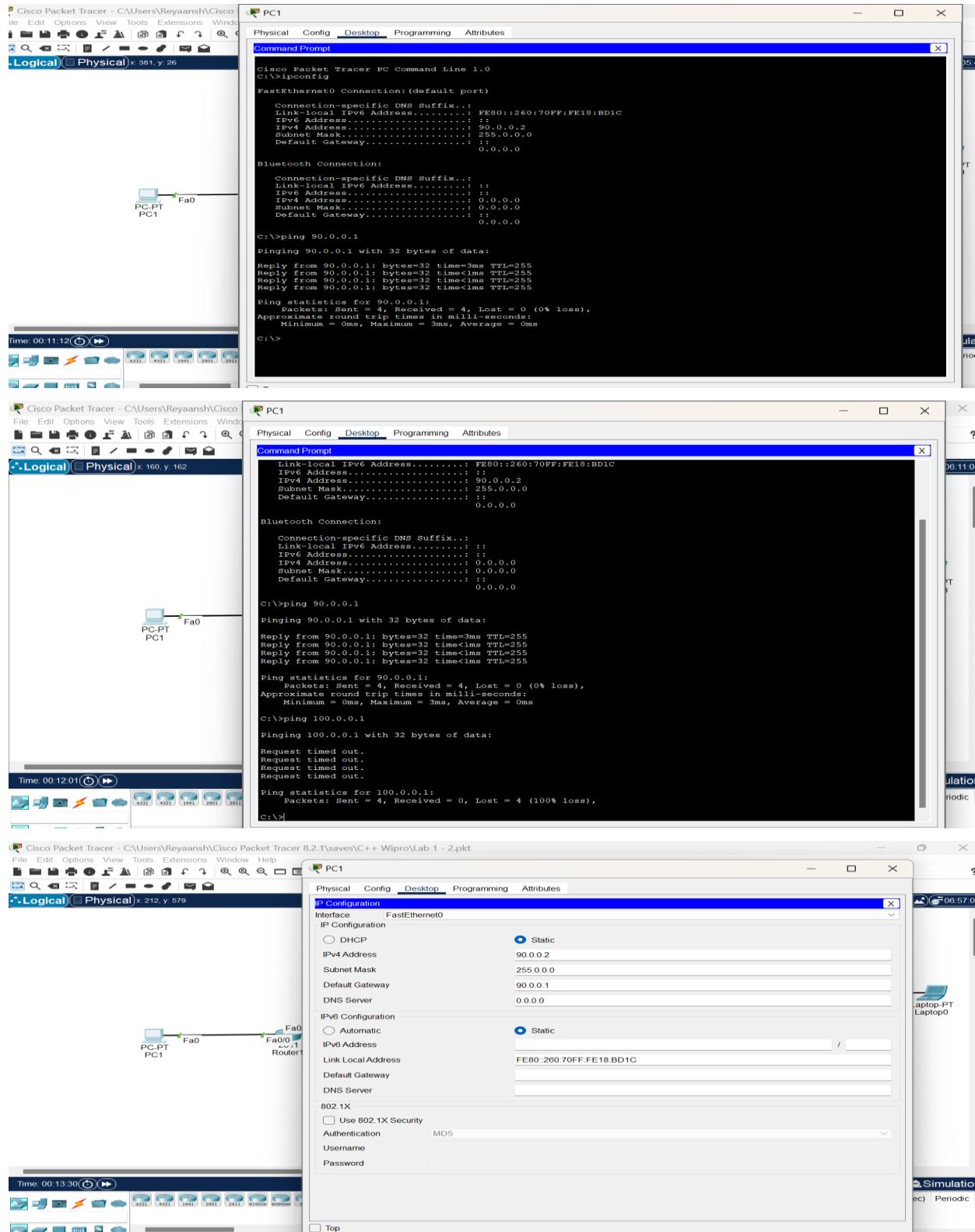


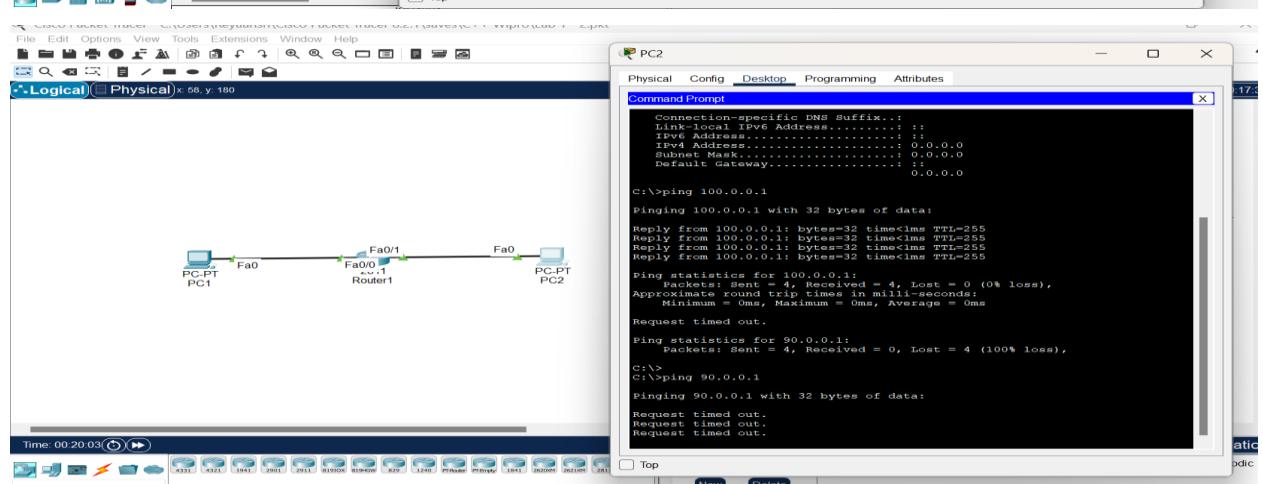
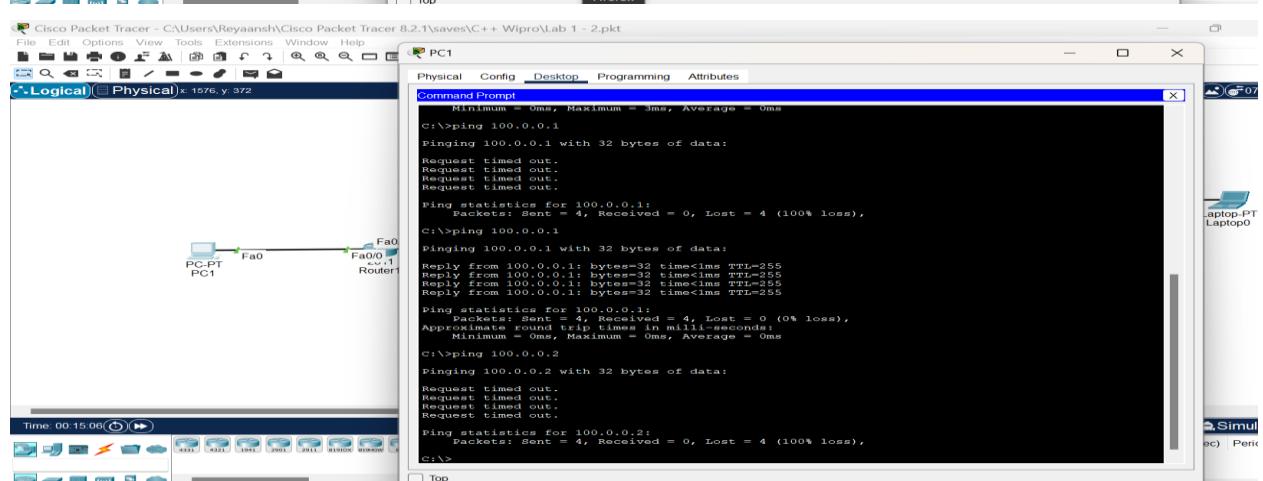
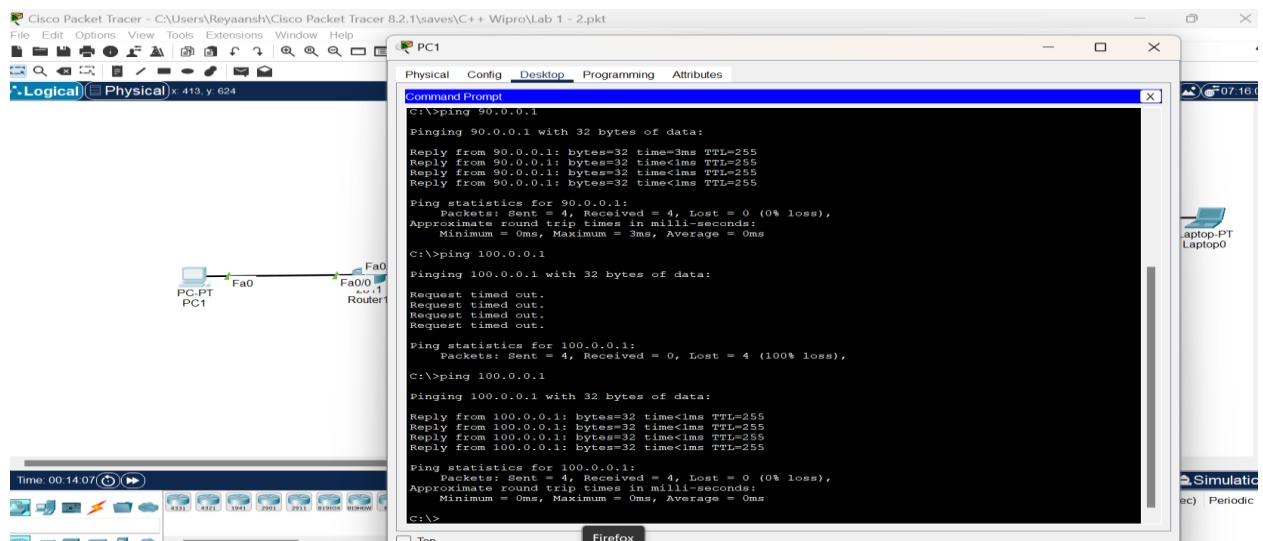


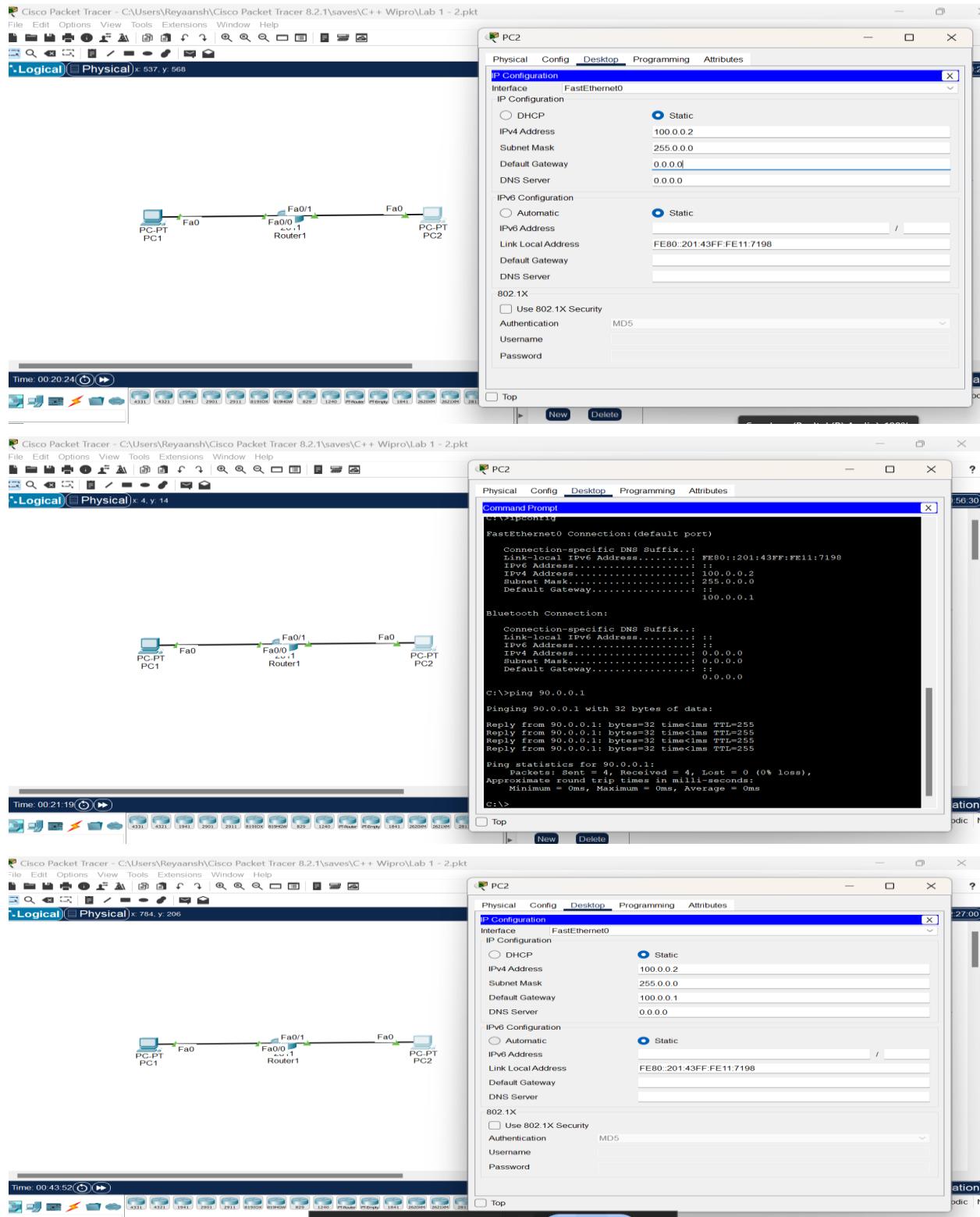
Lab 3: Configuring Default Gateway





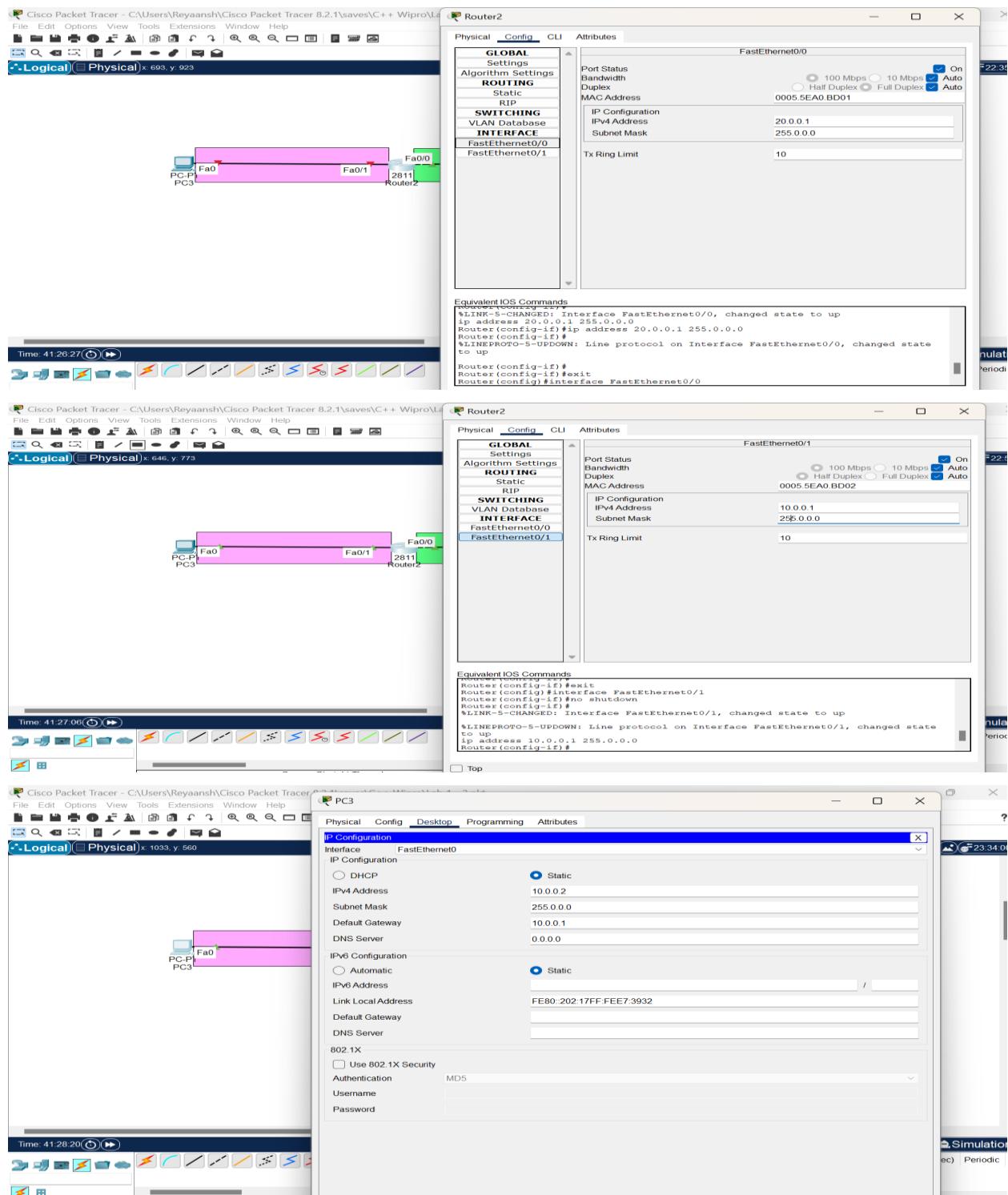


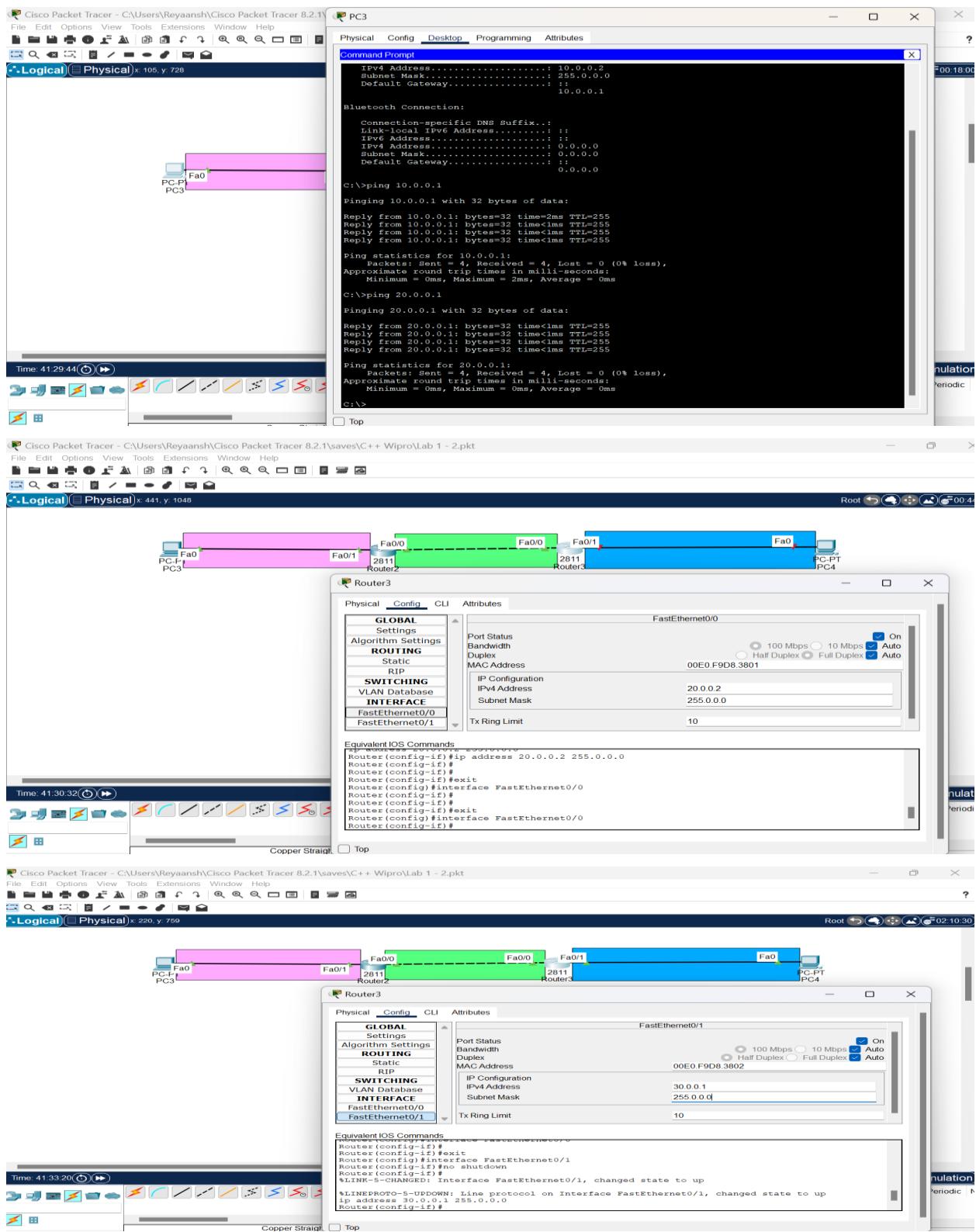


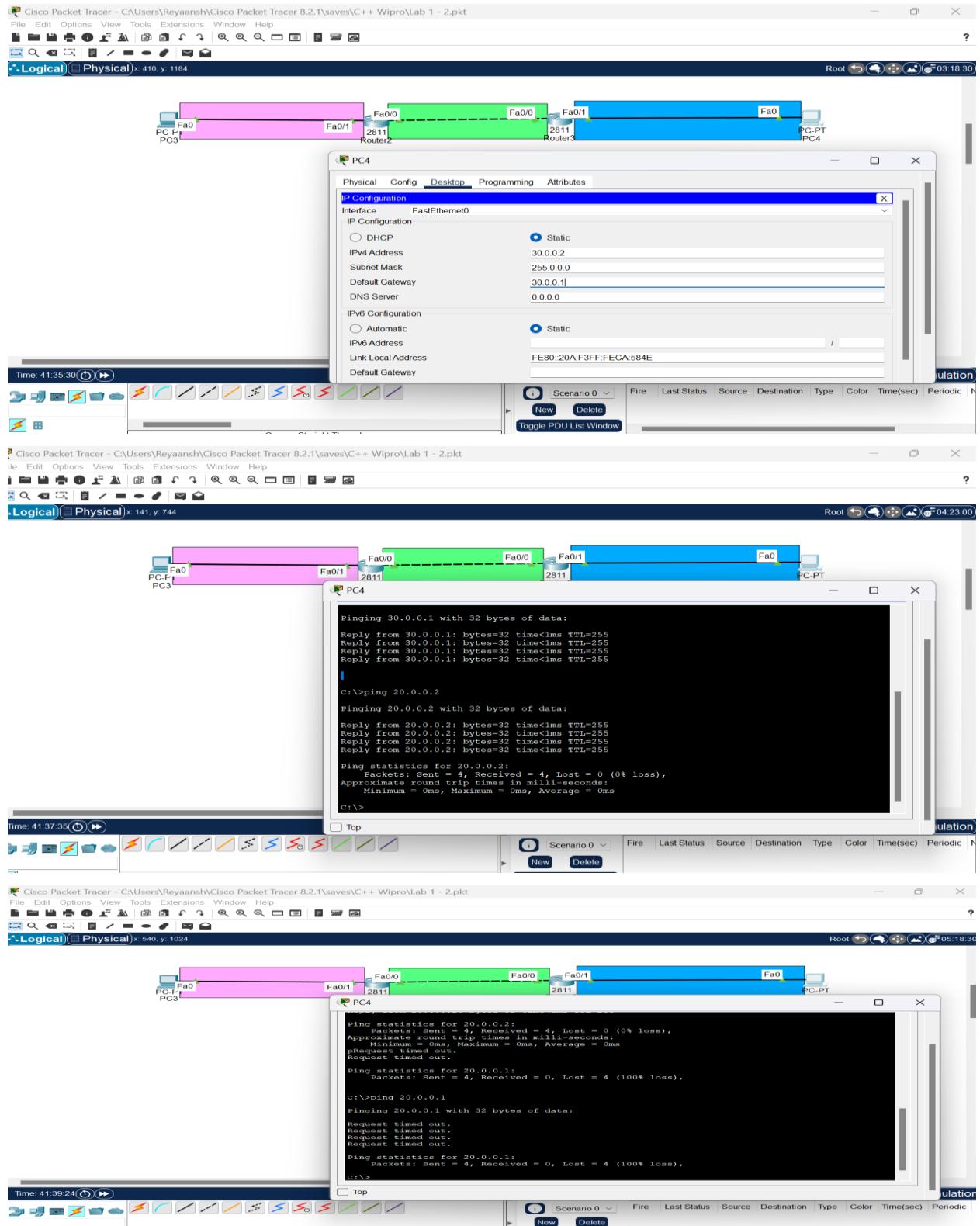


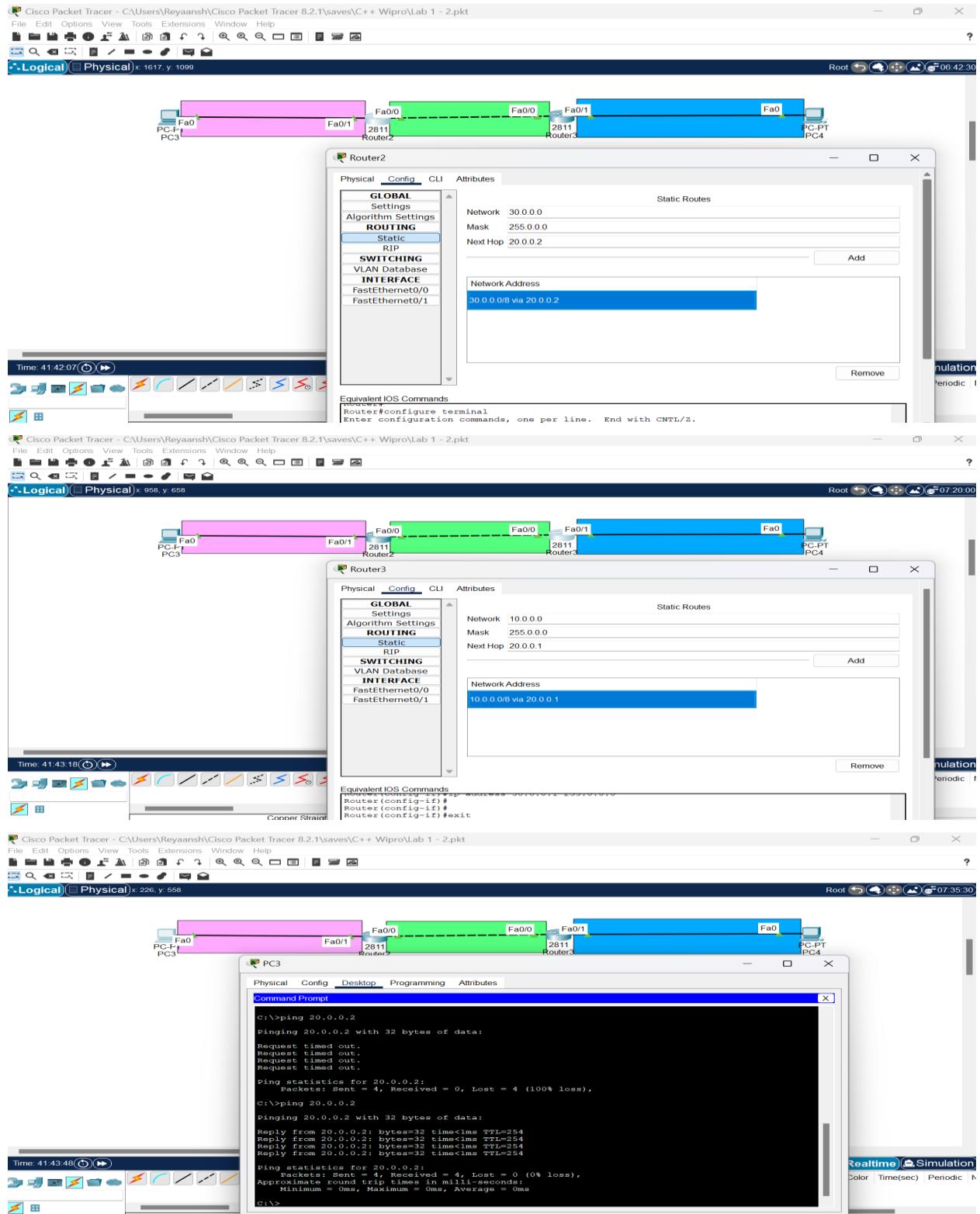
Date: 07-06-2024

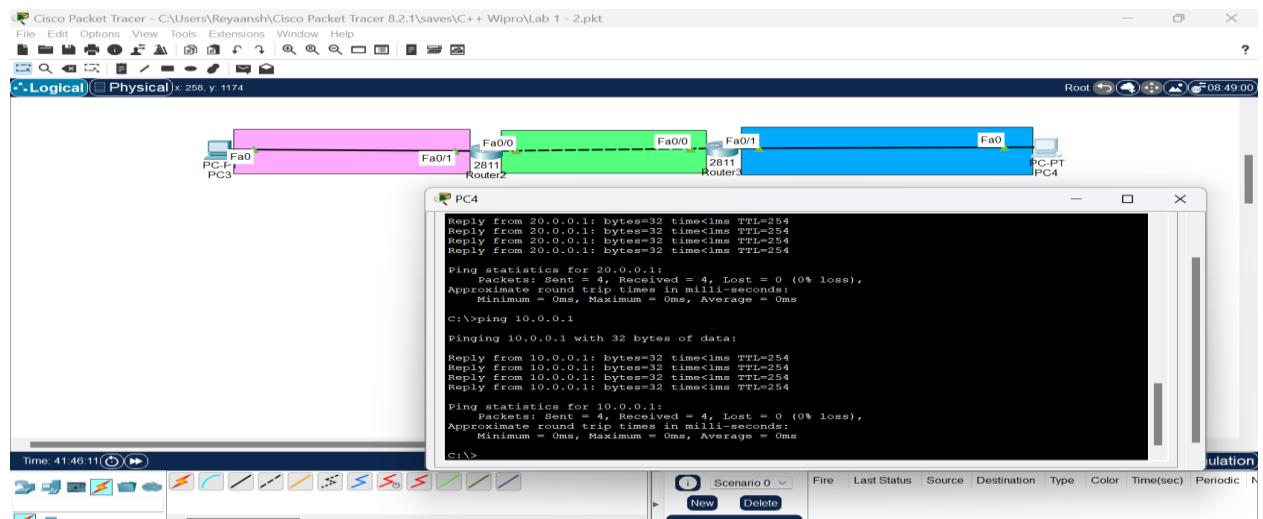
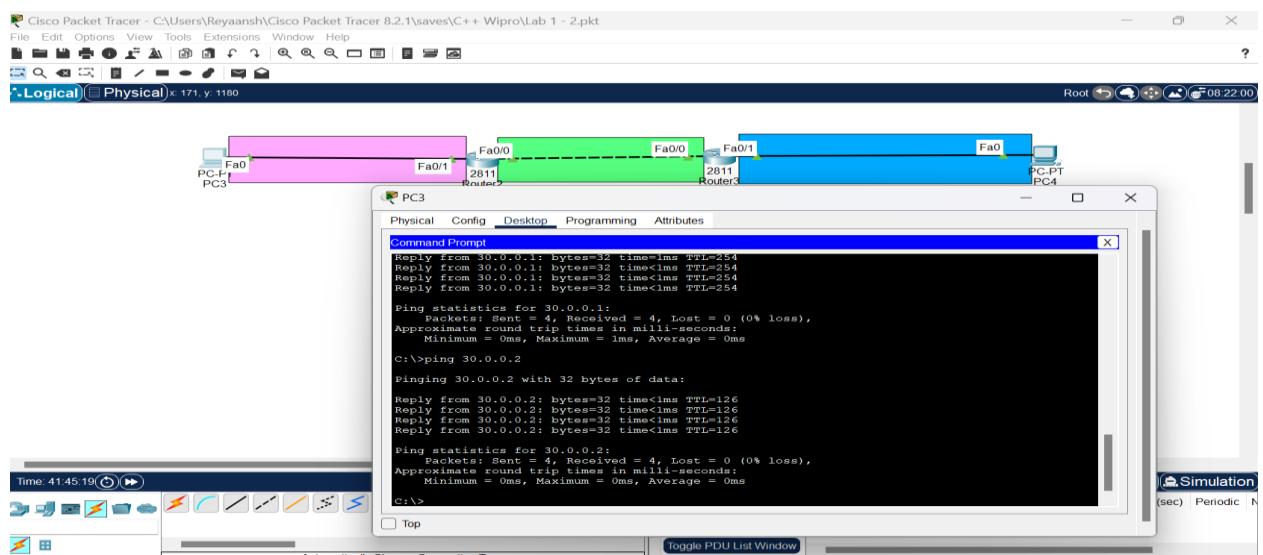
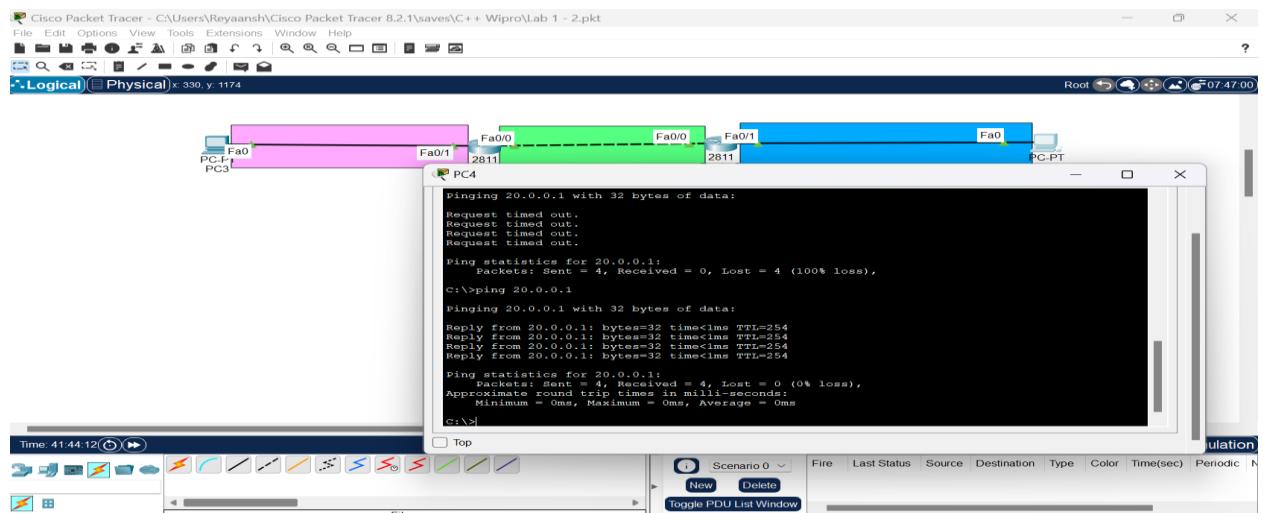
Lab 4: Static Routing

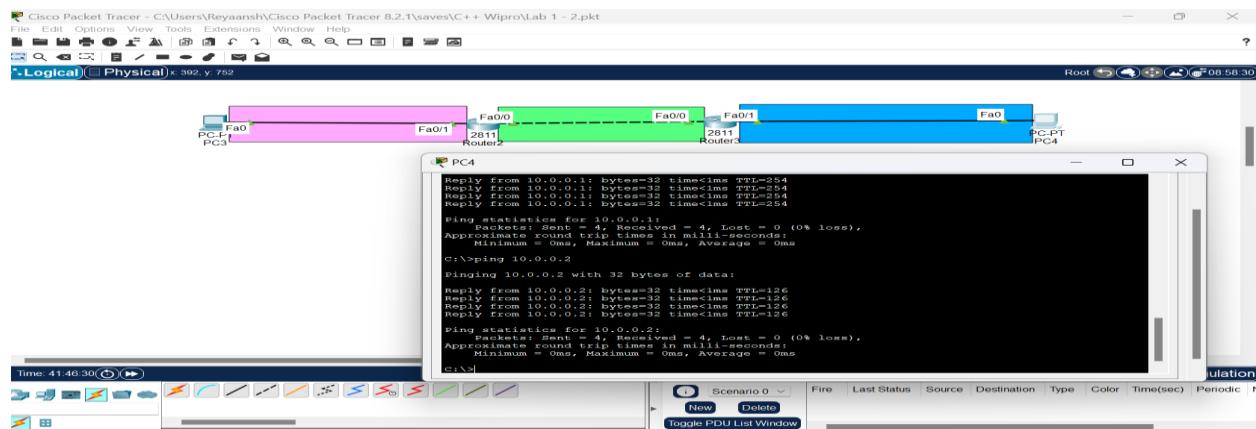




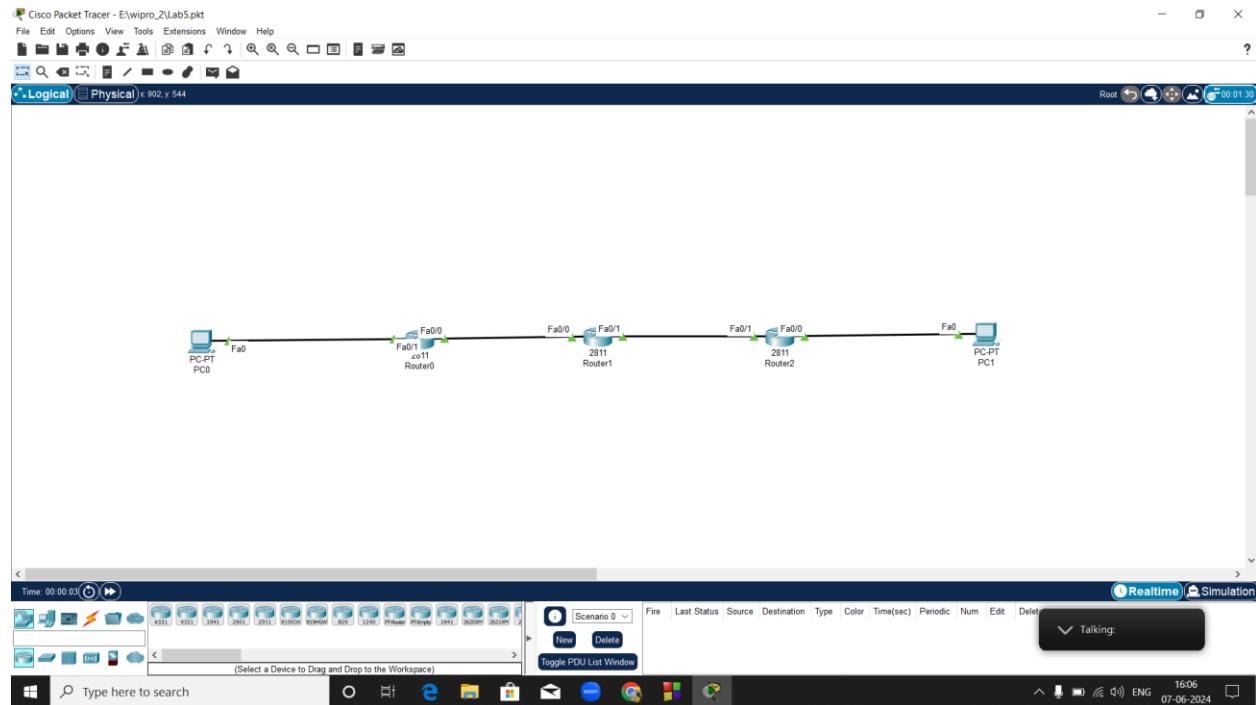


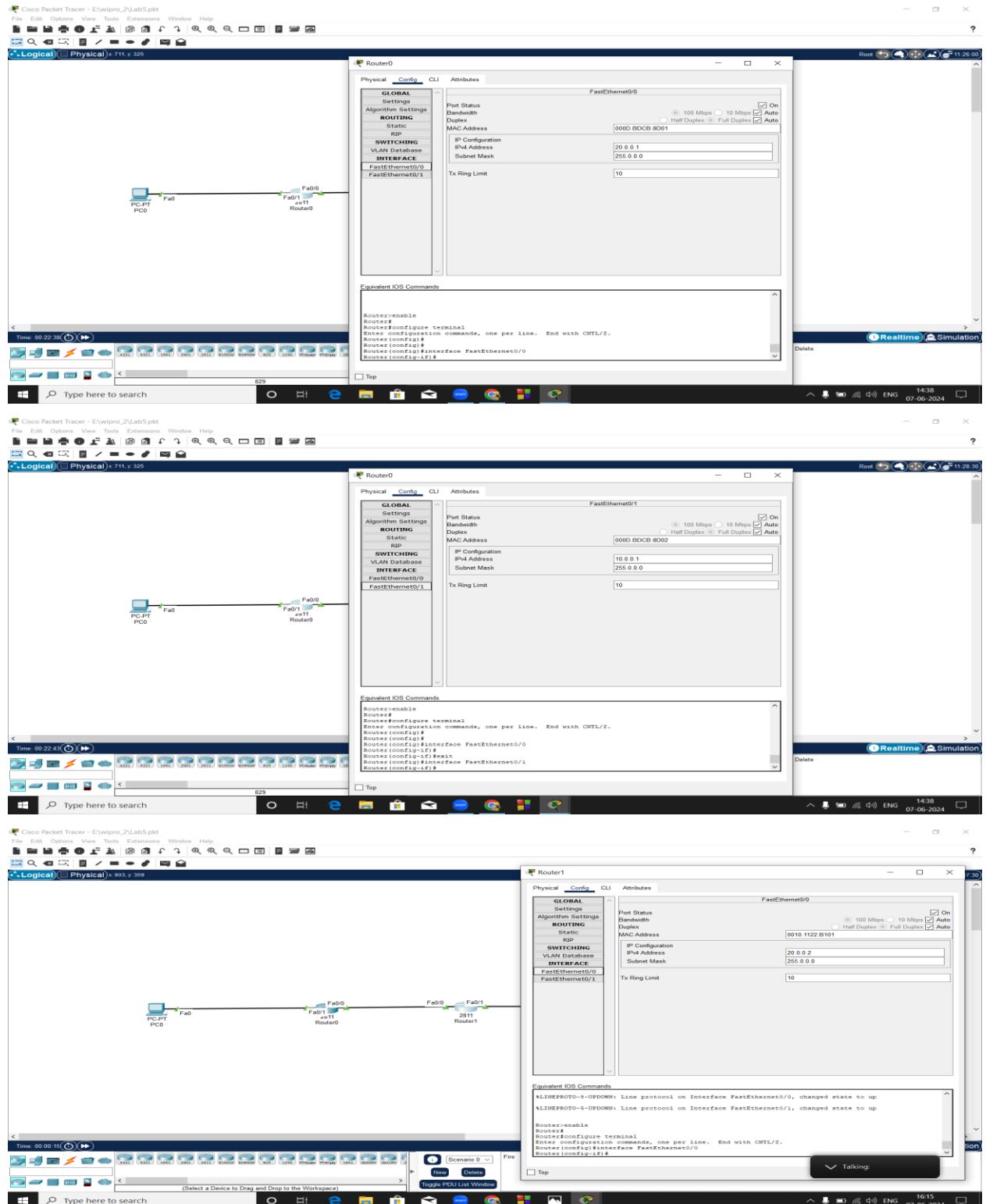


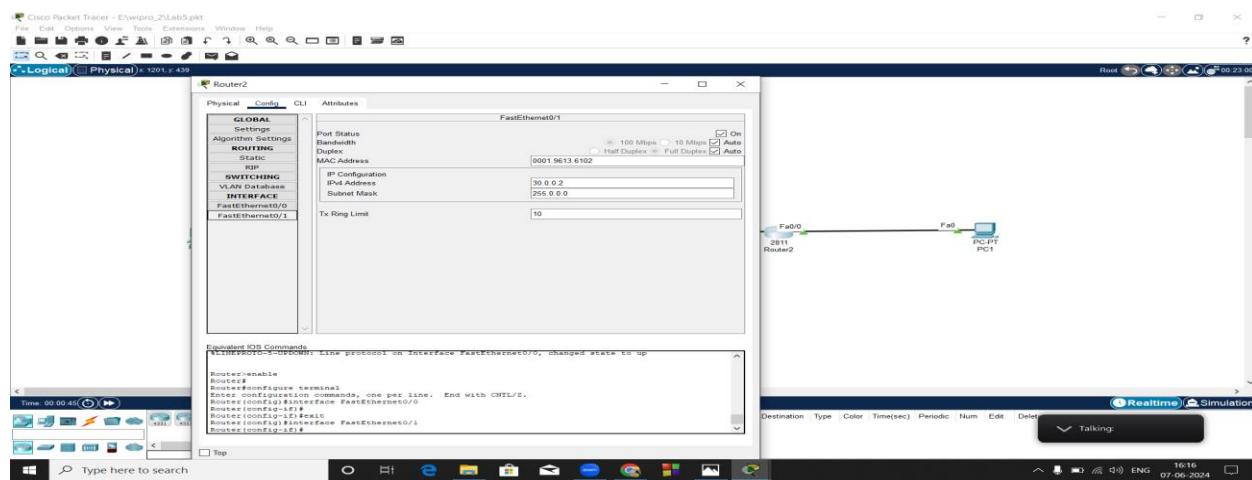
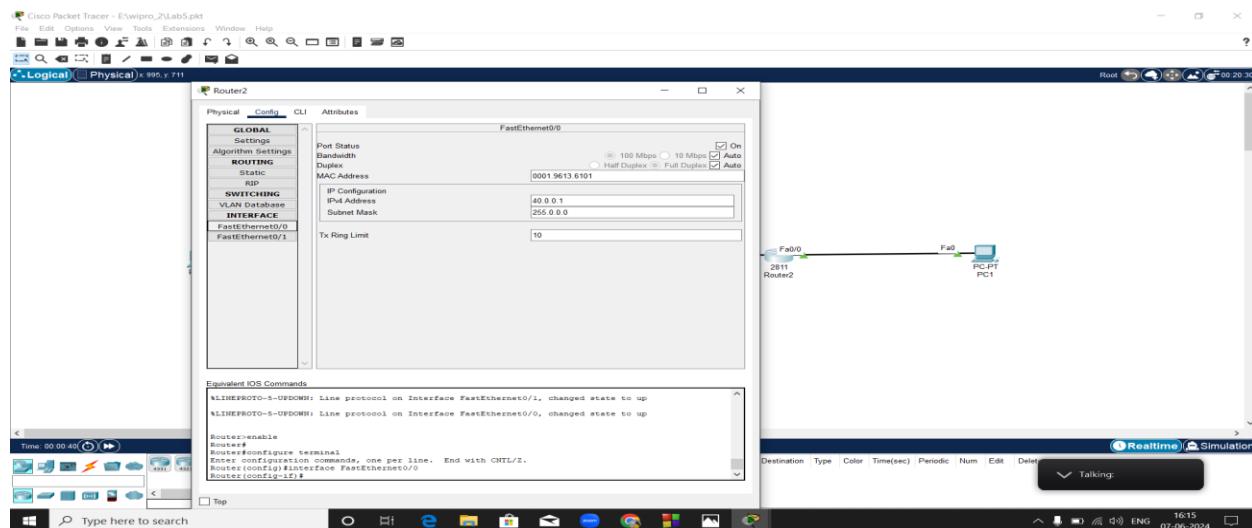
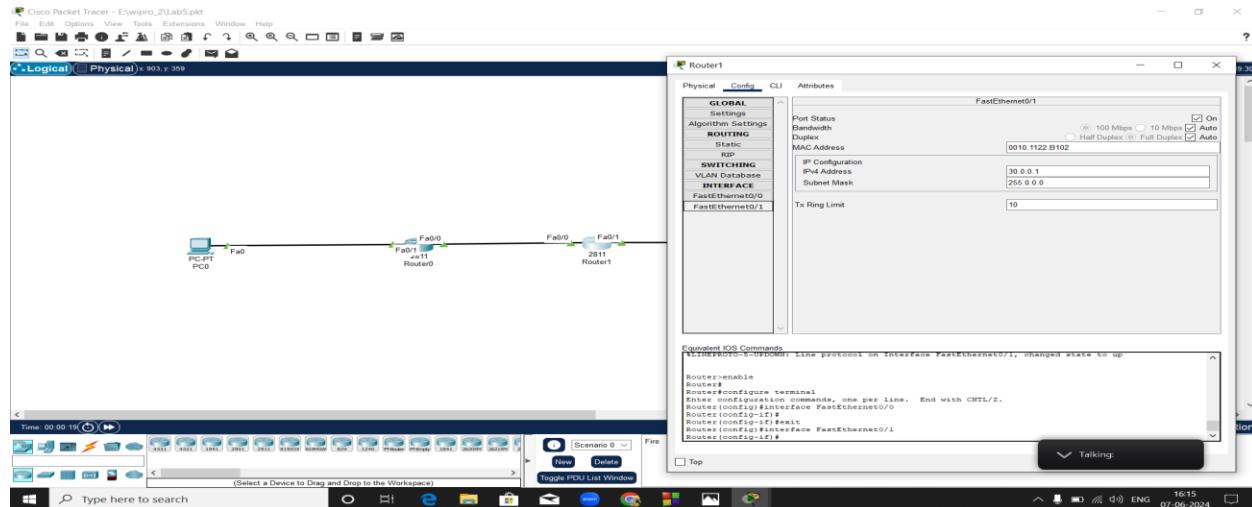


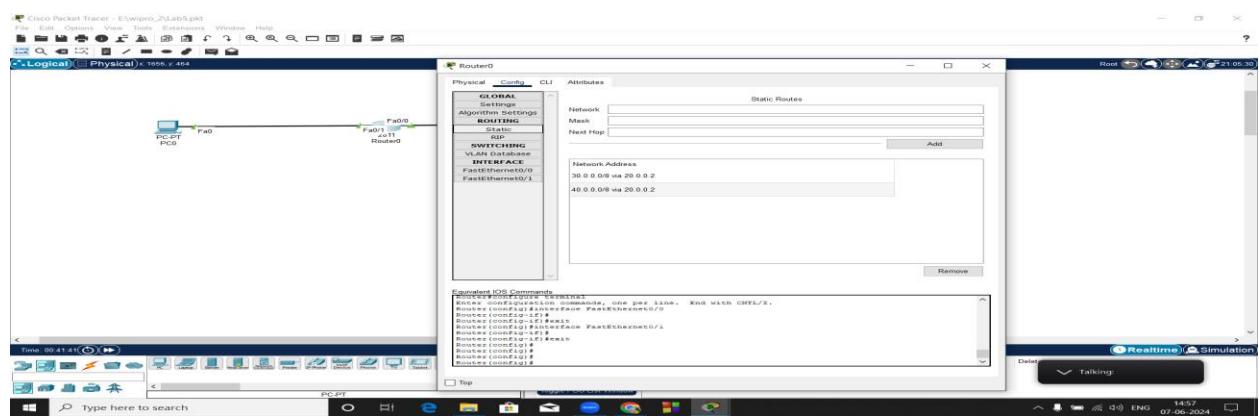
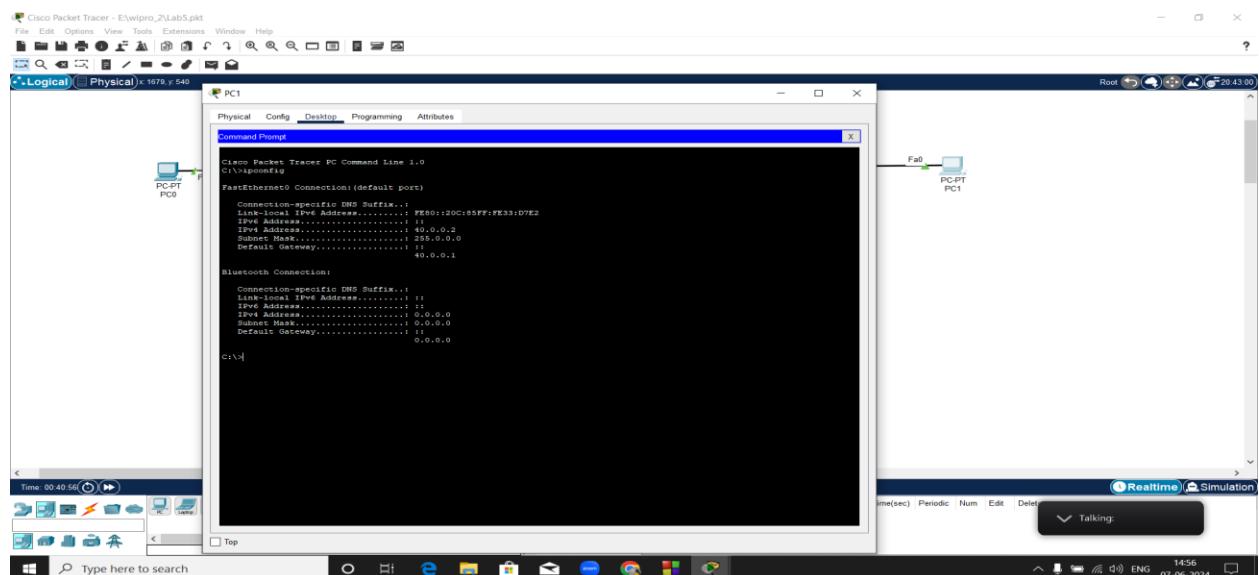
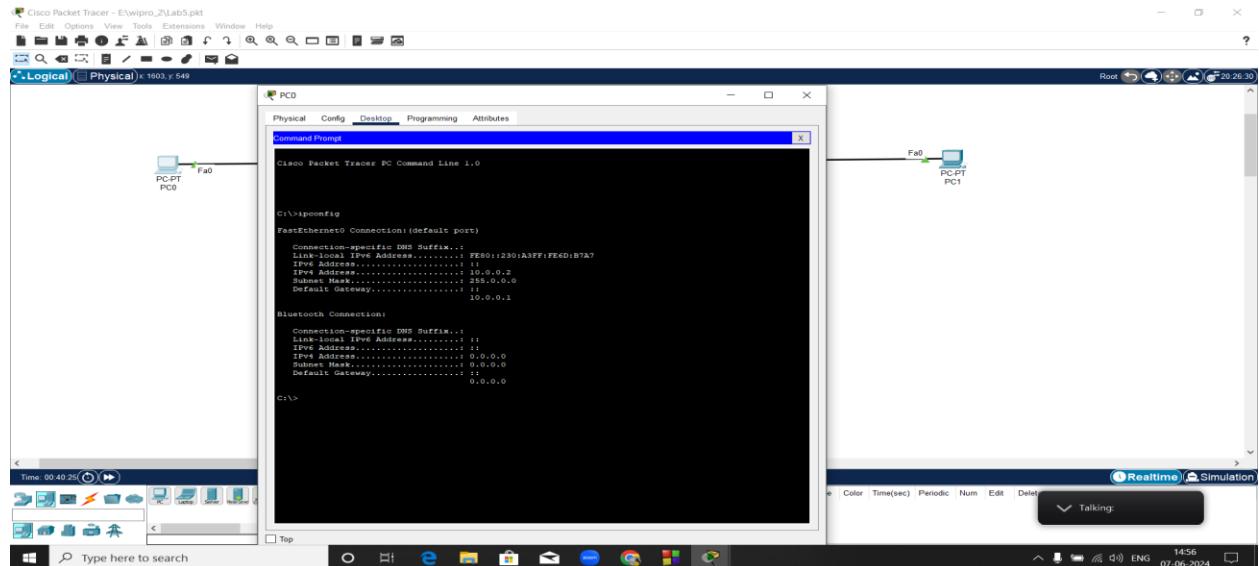


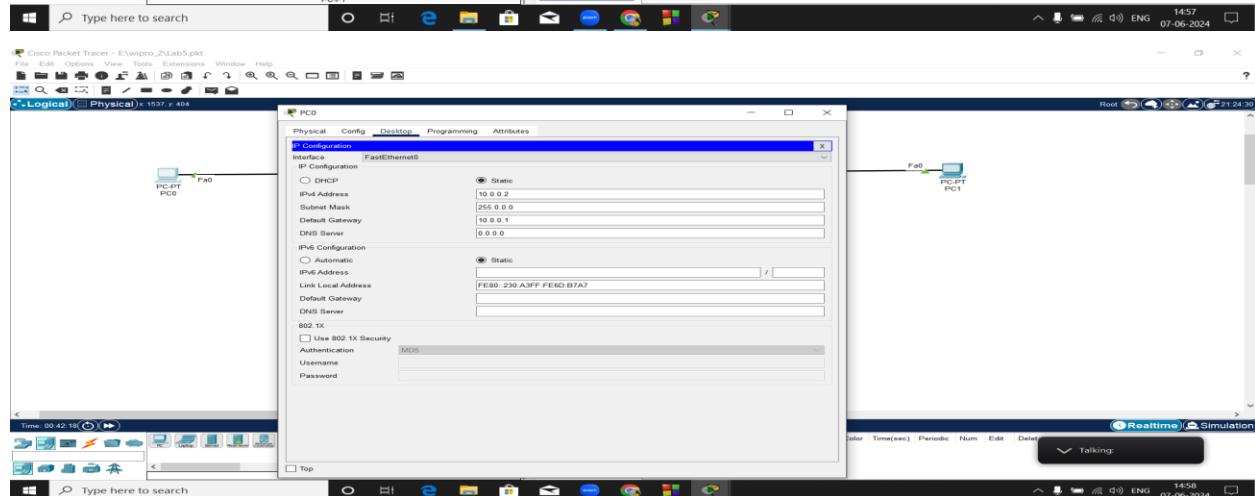
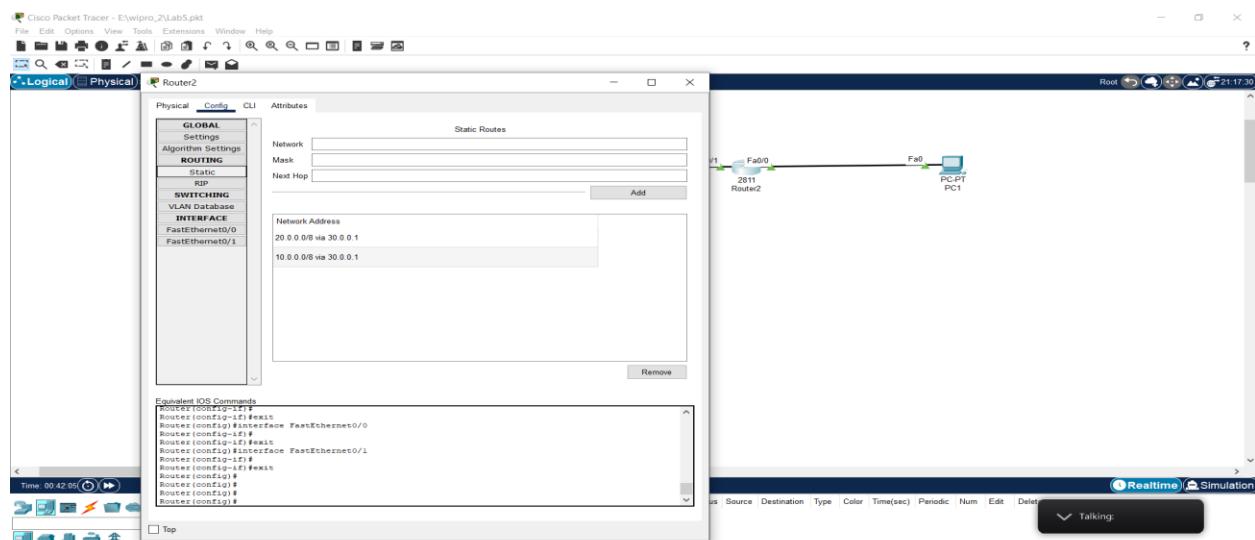
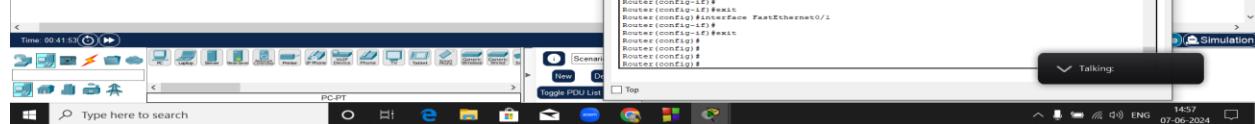
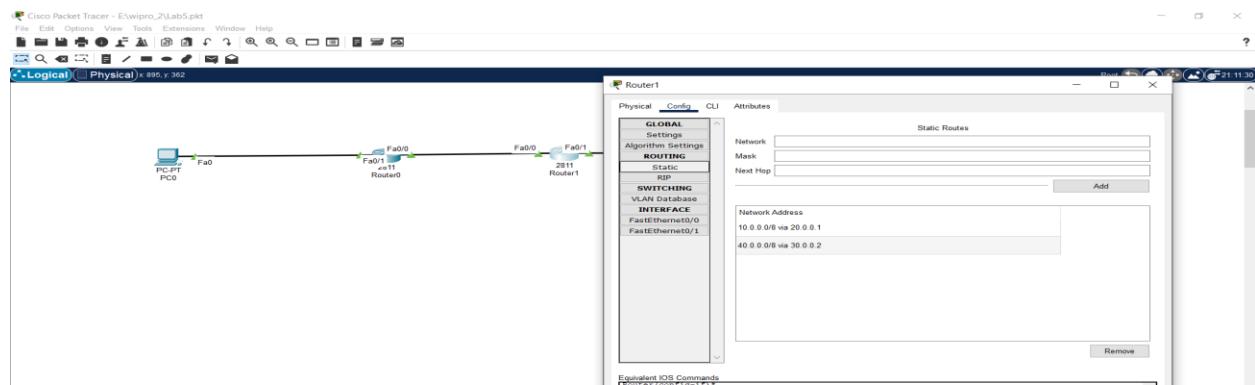
Lab 5: Static networking using two routers

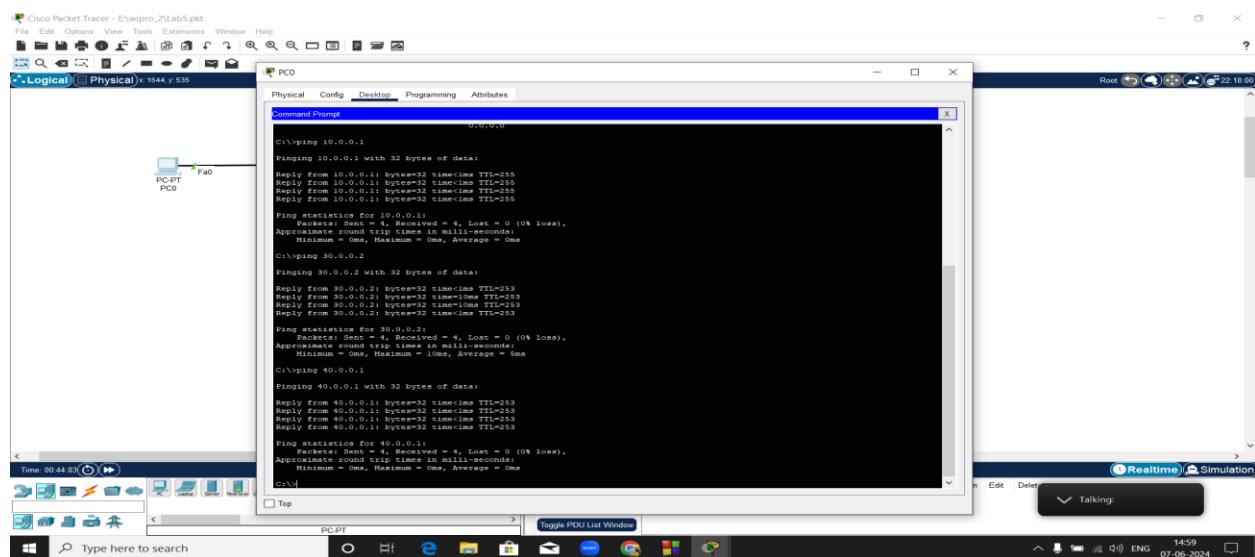
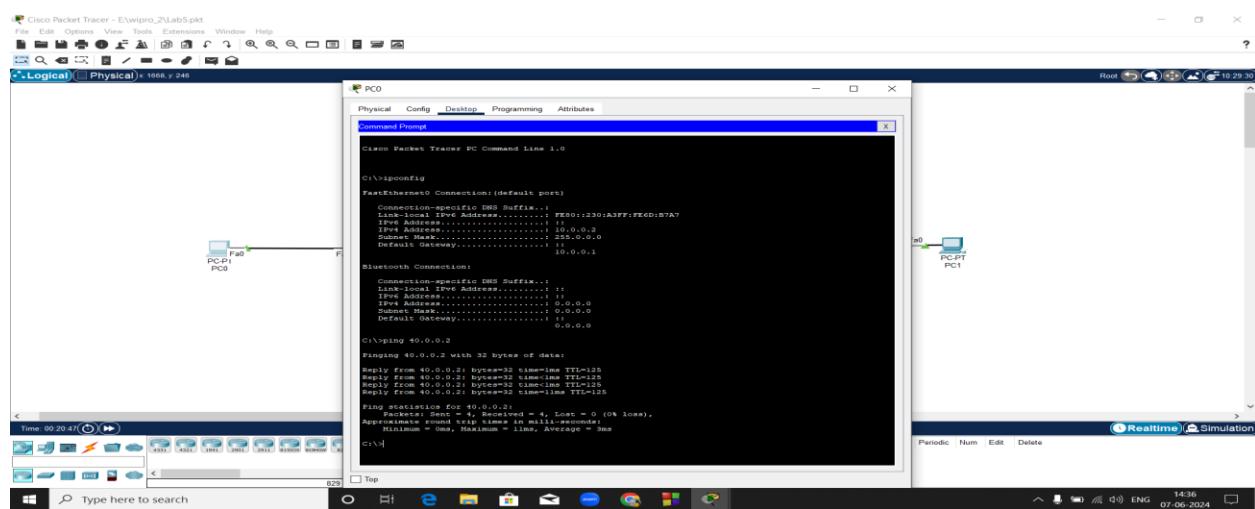
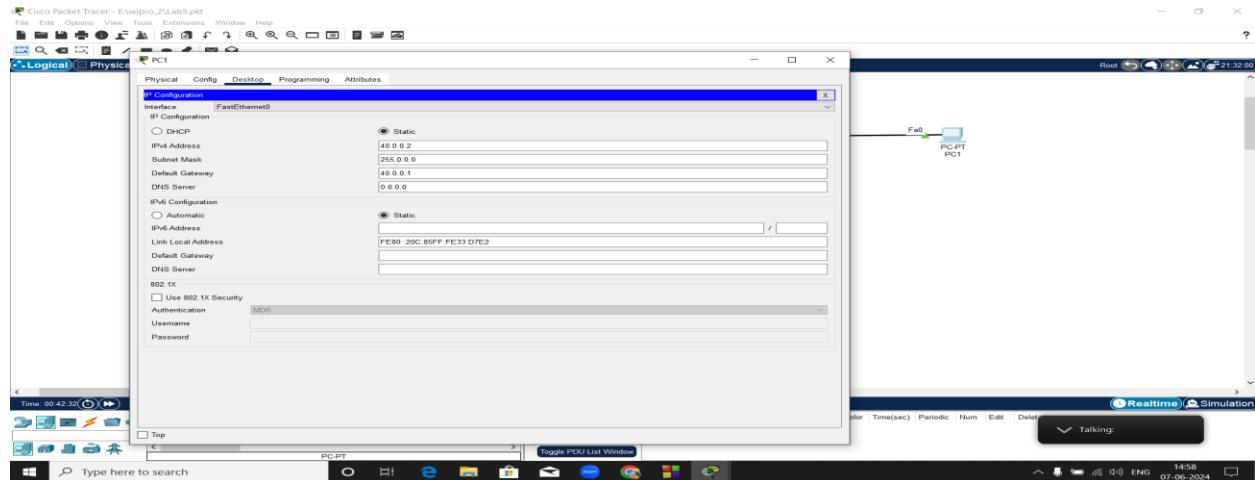


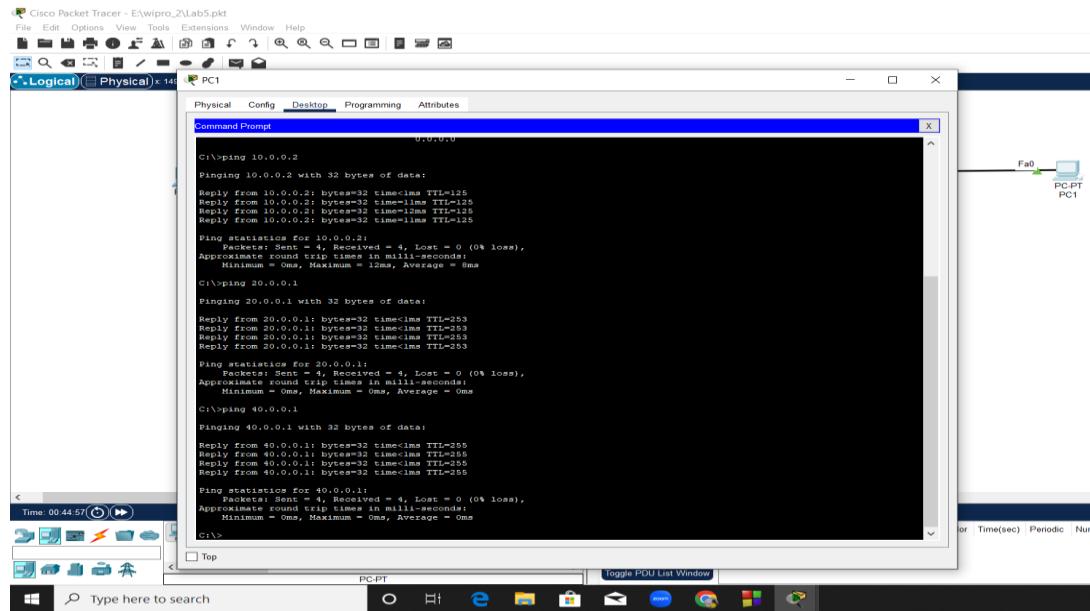












Lab 6: Dynamic Routing

