

**I H C QU C GIA THÀNH PH H CHÍ MINH  
TR NG I H C KHOA H C T NHIÊN**

**KHOA CÔNG NGH THÔNG TIN  
MÔN:TH C T P M NG MÁY TÍNH**

**BÁO CÁO BÀI T P TU N 2**

**Giao th c nh tuy n RIP**

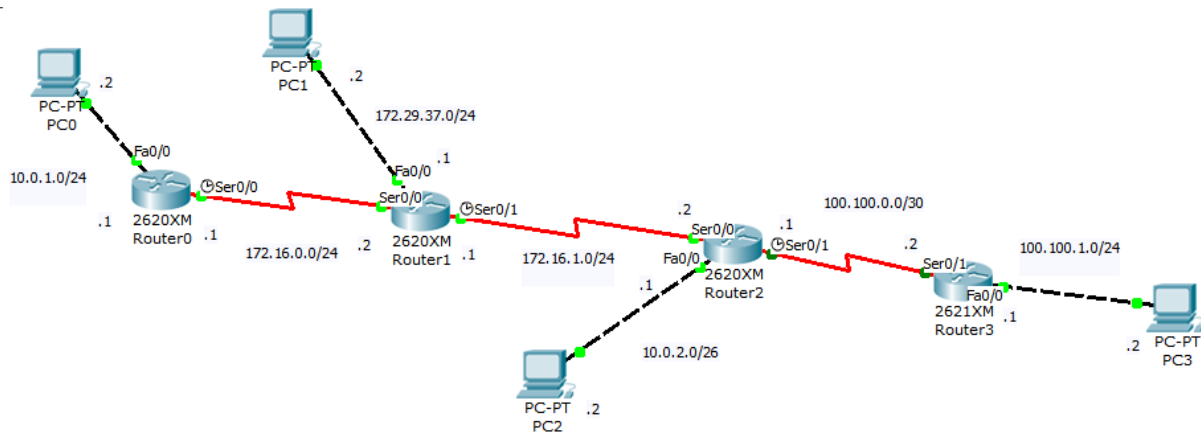
**L p: 09HCA**

**H tên : Võ Hu nh an**

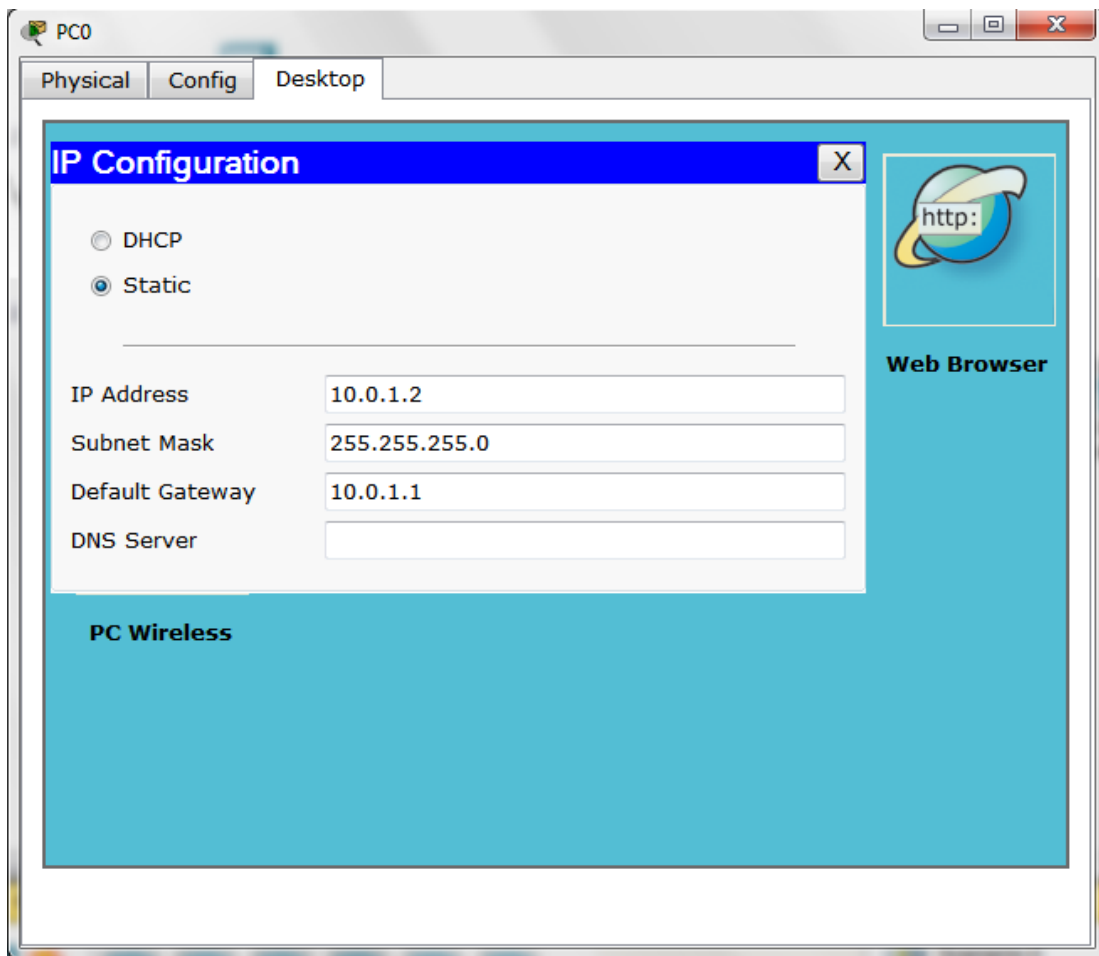
**MSSV : 0941037**

## Bài làm:

### 1. Thi t l p mô hình .

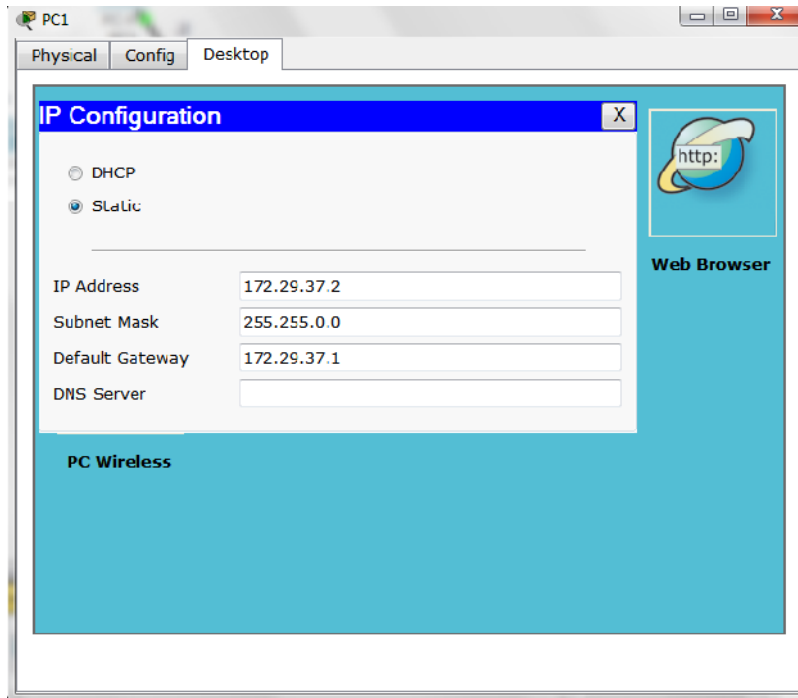


PC0



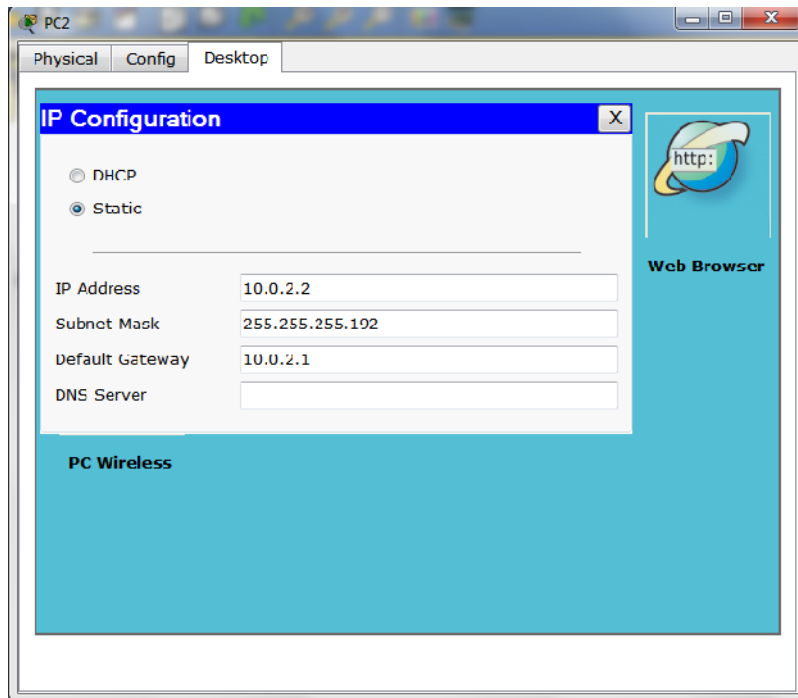
C u hình a ch ng m ng cho PC0

## PC1



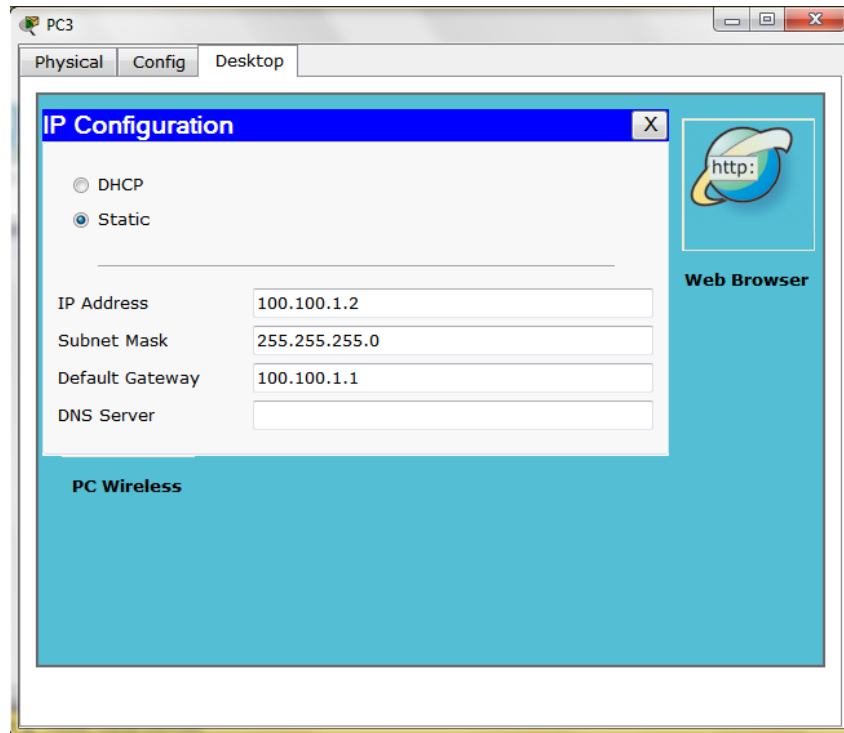
*C u hình a ch ng m ng cho PC1*

## PC2



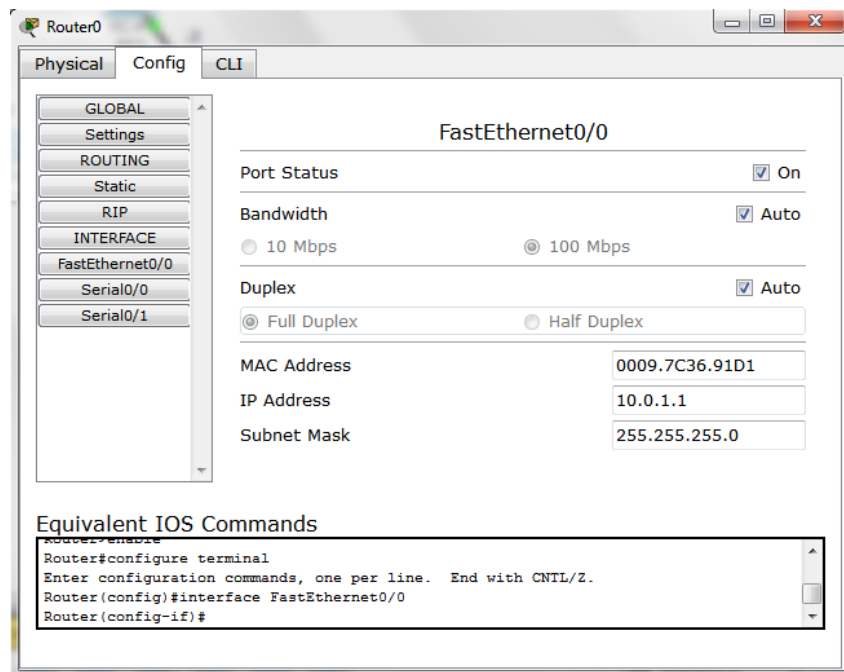
*C u hình a ch ng m ng cho PC2*

## PC3



C u hình a ch ng m ng cho PC3

## Router0



C u hình a ch ng m ng cho c ng Fa0/0 Router0

The screenshot shows the configuration window for Router0. The 'Config' tab is selected, and the 'Serial0/0' interface is chosen from the left sidebar. The configuration parameters are as follows:

Parameter	Value
Port Status	<input checked="" type="checkbox"/> On
Clock Rate	64000
Duplex	<input checked="" type="radio"/> Full Duplex
IP Address	172.16.0.1
Subnet Mask	255.255.255.0

Below the configuration fields, the 'Equivalent IOS Commands' are listed:

```

Router(config)#interface Serial0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0
Router(config-if)#
  
```

C u hình a ch ng m ng cho c ng s0/0 Router0

## Router1

The screenshot shows the configuration window for Router1. The 'Config' tab is selected, and the 'FastEthernet0/0' interface is chosen from the left sidebar. The configuration parameters are as follows:

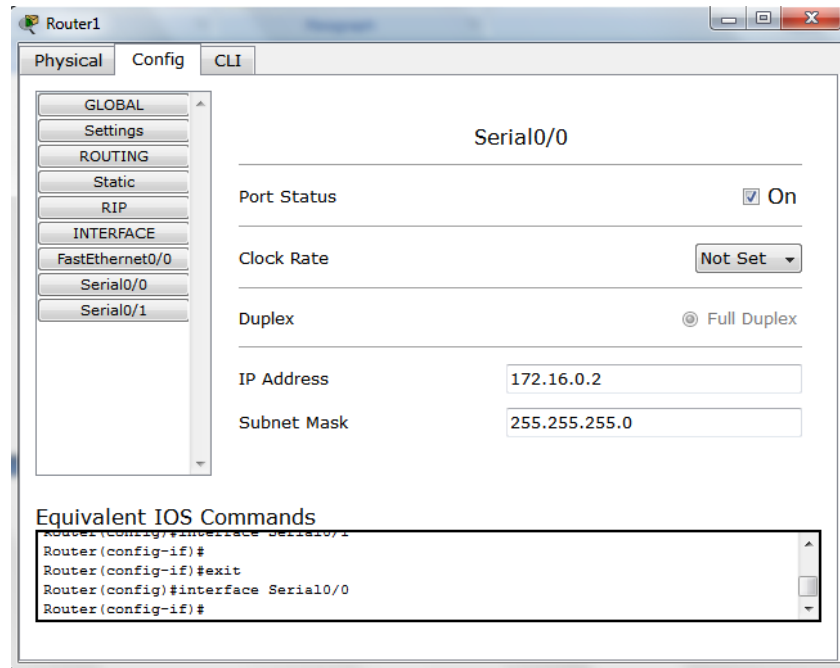
Parameter	Value
Port Status	<input checked="" type="checkbox"/> On
Bandwidth	<input checked="" type="checkbox"/> Auto
Duplex	<input checked="" type="checkbox"/> Auto
MAC Address	0002.1655.3841
IP Address	172.29.37.1
Subnet Mask	255.255.255.0

Below the configuration fields, the 'Equivalent IOS Commands' are listed:

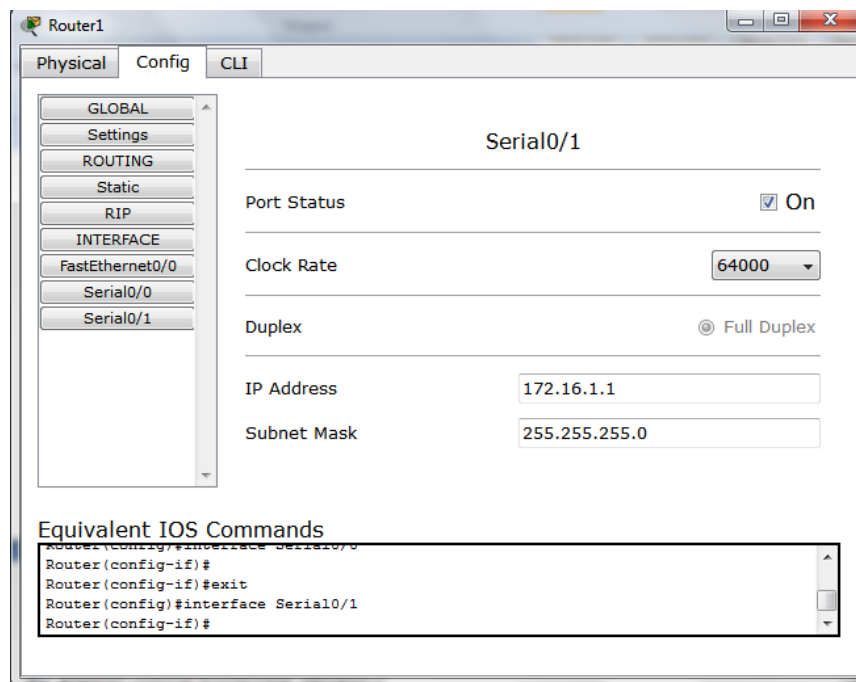
```

Router#enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
  
```

C u hình a ch ng m ng cho c ng Fa0/0 Router1



*C u hình a ch ng m ng cho c ng s0/0 Router1*



*C u hình a ch ng m ng cho c ng s0/1 Router1*

## Router2

The screenshot shows the Router2 configuration window with the 'Config' tab selected. The left sidebar has a tree view with 'FastEthernet0/0' selected. The main area displays the configuration for 'FastEthernet0/0'. The 'Port Status' is checked 'On'. 'Bandwidth' is set to 'Auto' (radio buttons for 10 Mbps and 100 Mbps are present). 'Duplex' is set to 'Auto' (radio buttons for Full Duplex and Half Duplex are present). The 'MAC Address' is '00D0.97E2.A612'. The 'IP Address' is '10.0.2.1' and the 'Subnet Mask' is '255.255.255.192'. At the bottom, the 'Equivalent IOS Commands' section shows the following commands:

```
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
```

C u hình a ch ng m ng cho c ng Fa0/0 Router2

The screenshot shows the Router2 configuration window with the 'Config' tab selected. The left sidebar has a tree view with 'Serial0/0' selected. The main area displays the configuration for 'Serial0/0'. The 'Port Status' is checked 'On'. The 'Clock Rate' is set to 'Not Set' (dropdown menu). 'Duplex' is set to 'Full Duplex' (radio button). The 'IP Address' is '172.16.1.2' and the 'Subnet Mask' is '255.255.255.0'. At the bottom, the 'Equivalent IOS Commands' section shows the following commands:

```
Router(config)#interface Serial0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0
Router(config-if)#
```

C u hình a ch ng m ng cho c ng s0/0 Router2

The screenshot shows the configuration window for Router2, specifically for the Serial0/1 interface. The window has tabs for Physical, Config, and CLI. The Config tab is active, showing a tree view on the left with categories: GLOBAL, Settings, ROUTING, Static, RIP, INTERFACE, FastEthernet0/0, Serial0/0, and Serial0/1. The Serial0/1 interface is selected. The main area displays the following settings:

- Port Status: ☒ On
- Clock Rate: 64000 (dropdown menu)
- Duplex: ☒ Full Duplex
- IP Address: 100.100.0.1
- Subnet Mask: 255.255.255.252

Below the settings, there is a section titled "Equivalent IOS Commands" with a text area containing the following commands:

```
Router(config)#interface Serial0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/1
Router(config-if)#
```

*C u hình a ch ng m ng cho c ng s0/1 Router2*

## Router3

The screenshot shows the configuration window for Router3, specifically for the FastEthernet0/0 interface. The window has tabs for Physical, Config, and CLI. The Config tab is active, showing a tree view on the left with categories: GLOBAL, Settings, ROUTING, Static, RIP, INTERFACE, FastEthernet0/0, FastEthernet0/1, Serial0/0, and Serial0/1. The FastEthernet0/0 interface is selected. The main area displays the following settings:

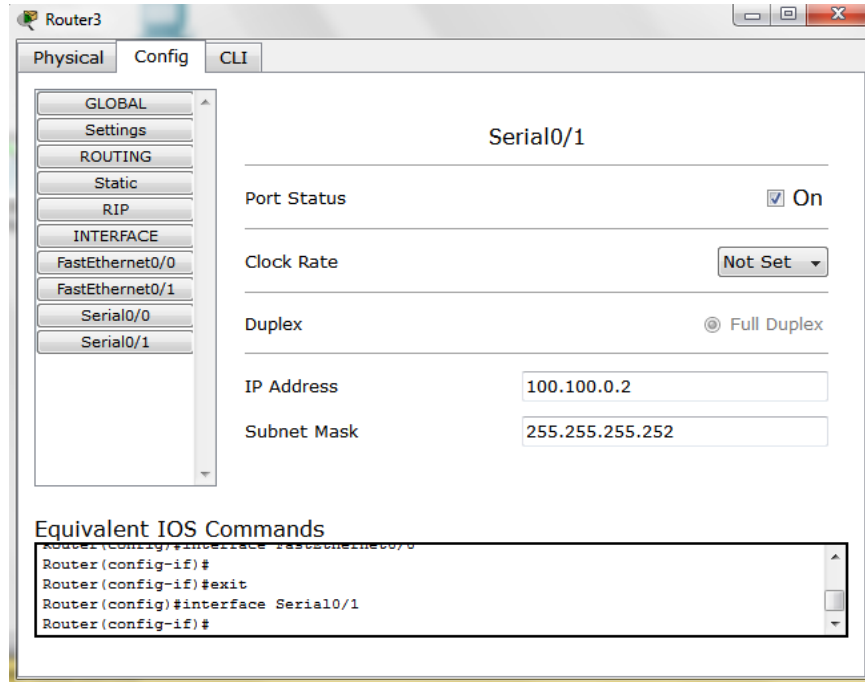
- Port Status: ☒ On
- Bandwidth: ☒ Auto
- Duplex: ☒ Auto
- MAC Address: 0090.0CE6.2501
- IP Address: 100.100.1.1
- Subnet Mask: 255.255.255.0

Below the settings, there is a section titled "Equivalent IOS Commands" with a text area containing the following commands:

```
Router(config)#interface Serial0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
```

*C u hình a ch ng m ng cho c ng Fa0/0 Router3*



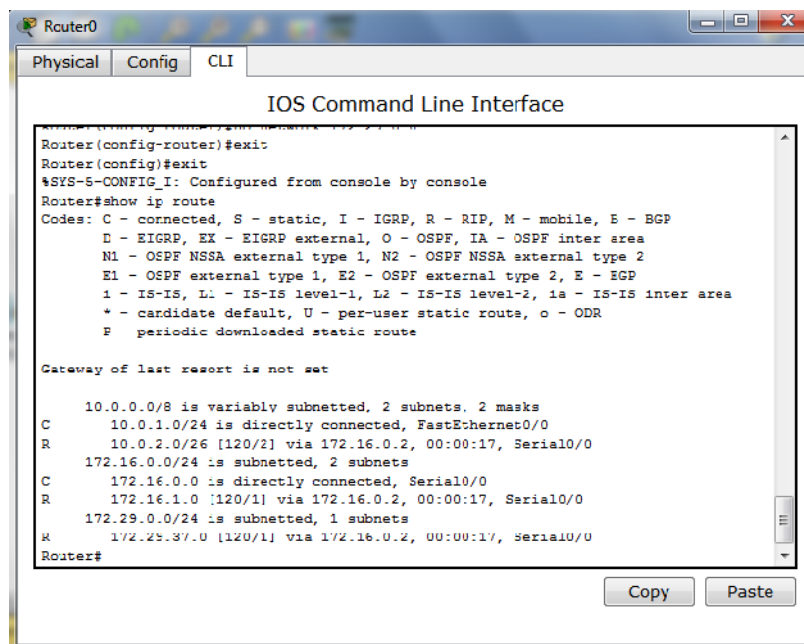


C u hình a ch ng m ng cho c ng s0/1 Router3

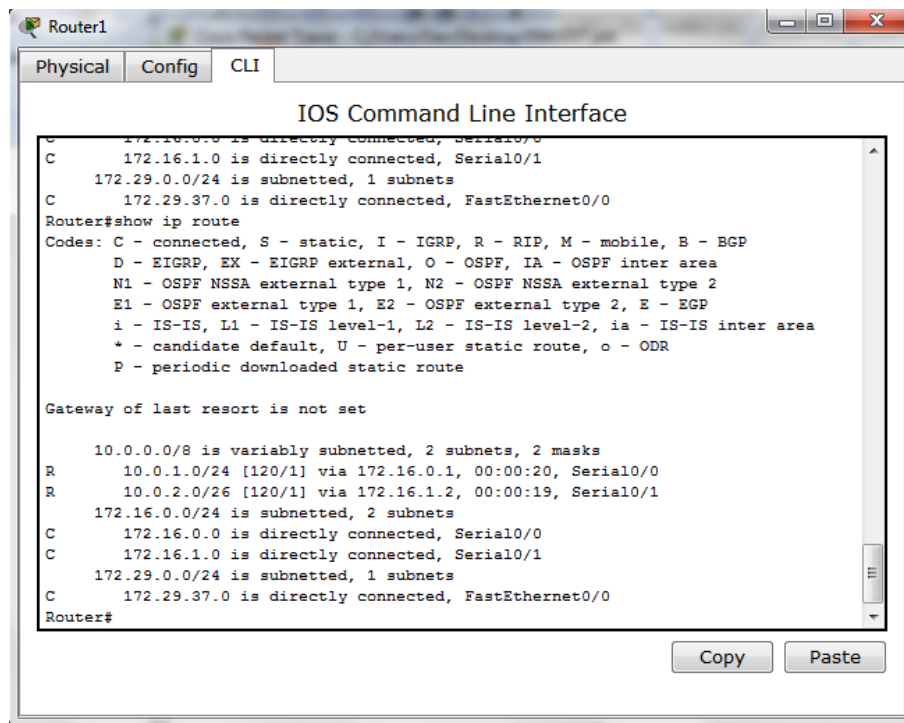
## 2. RIPv2:

**Yêu c u:** nh tuy n RIP y t t c PC n i v i R0, R1, R2 liên h c v i nhau.

**B ng nh tuy n c a R0:**



## B ng nh tuy n c a R1:



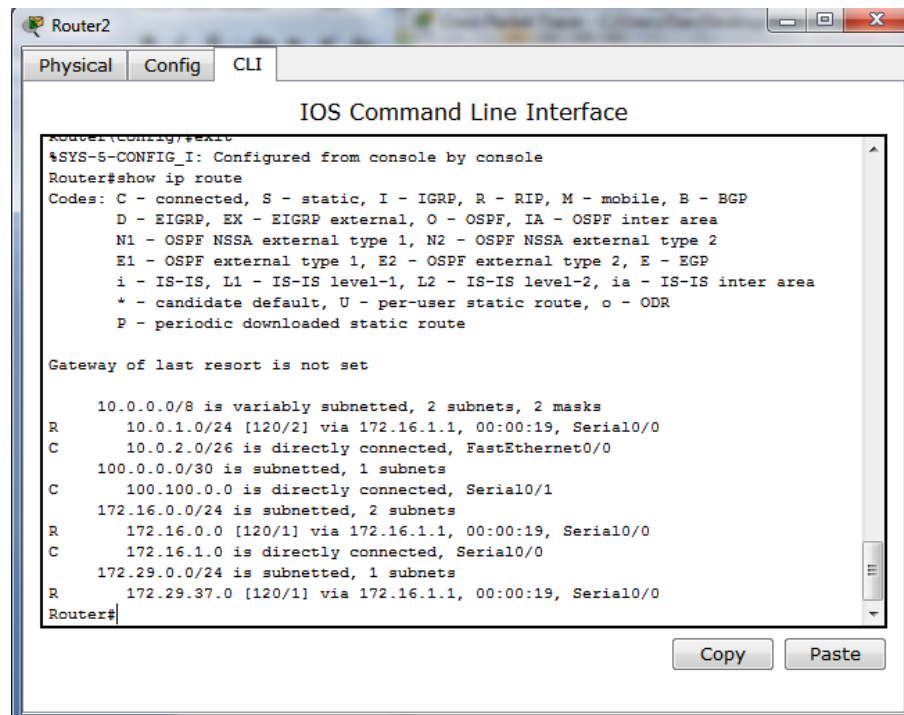
The screenshot shows the CLI of Router1. The 'show ip route' command has been executed, displaying the routing table. The output includes a legend for route codes (C, D, N1, N2, E1, E2, i, \*, P) and a list of routes. The routes are: 10.0.0.0/8 (variably subnetted, 2 subnets, 2 masks), 10.0.1.0/24 [120/1] via 172.16.0.1, 00:00:20, Serial0/0, 10.0.2.0/26 [120/1] via 172.16.1.2, 00:00:19, Serial0/1, 172.16.0.0/24 (subnetted, 2 subnets), 172.16.0.0 (directly connected, Serial0/0), 172.16.1.0 (directly connected, Serial0/1), 172.29.0.0/24 (subnetted, 1 subnets), and 172.29.37.0 (directly connected, FastEthernet0/0).

```
Router1
Physical Config CLI
IOS Command Line Interface
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

10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
R    10.0.1.0/24 [120/1] via 172.16.0.1, 00:00:20, Serial0/0
R    10.0.2.0/26 [120/1] via 172.16.1.2, 00:00:19, Serial0/1
172.16.0.0/24 is subnetted, 2 subnets
C    172.16.0.0 is directly connected, Serial0/0
C    172.16.1.0 is directly connected, Serial0/1
172.29.0.0/24 is subnetted, 1 subnets
C    172.29.37.0 is directly connected, FastEthernet0/0
Router#
```

## B ng nh tuy n c a R2:



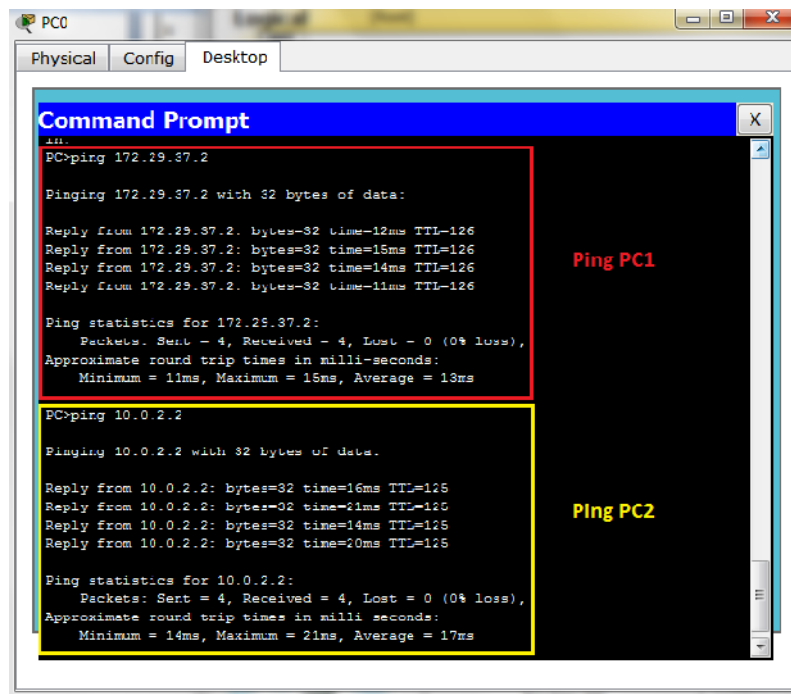
The screenshot shows the CLI of Router2. The 'show ip route' command has been executed, displaying the routing table. The output includes a legend for route codes (C, D, N1, N2, E1, E2, i, \*, P) and a list of routes. The routes are: 10.0.0.0/8 (variably subnetted, 2 subnets, 2 masks), 10.0.1.0/24 [120/2] via 172.16.1.1, 00:00:19, Serial0/0, 10.0.2.0/26 (directly connected, FastEthernet0/0), 100.0.0.0/30 (subnetted, 1 subnets), 100.100.0.0 (directly connected, Serial0/1), 172.16.0.0/24 (subnetted, 2 subnets), 172.16.0.0 [120/1] via 172.16.1.1, 00:00:19, Serial0/0, 172.16.1.0 (directly connected, Serial0/0), 172.29.0.0/24 (subnetted, 1 subnets), and 172.29.37.0 [120/1] via 172.16.1.1, 00:00:19, Serial0/0.

```
Router2
Physical Config CLI
IOS Command Line Interface
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

10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
R    10.0.1.0/24 [120/2] via 172.16.1.1, 00:00:19, Serial0/0
C    10.0.2.0/26 is directly connected, FastEthernet0/0
100.0.0.0/30 is subnetted, 1 subnets
C    100.100.0.0 is directly connected, Serial0/1
172.16.0.0/24 is subnetted, 2 subnets
R    172.16.0.0 [120/1] via 172.16.1.1, 00:00:19, Serial0/0
C    172.16.1.0 is directly connected, Serial0/0
172.29.0.0/24 is subnetted, 1 subnets
R    172.29.37.0 [120/1] via 172.16.1.1, 00:00:19, Serial0/0
Router#
```

## Màn hình ping c a PC0:



The screenshot shows the Command Prompt window on PC0. It displays the results of two ping commands. The first command is 'ping 172.29.37.2', which is highlighted with a red border. The second command is 'ping 10.0.2.2', which is highlighted with a yellow border. To the right of the Command Prompt, there are two labels: 'Ping PC1' in red and 'Ping PC2' in yellow.

```
PC0
Physical Config Desktop
Command Prompt
C:\>ping 172.29.37.2

Pinging 172.29.37.2 with 32 bytes of data:

Reply from 172.29.37.2: bytes=32 time=12ms TTL=126
Reply from 172.29.37.2: bytes=32 time=15ms TTL=126
Reply from 172.29.37.2: bytes=32 time=14ms TTL=126
Reply from 172.29.37.2: bytes=32 time=11ms TTL=126

Ping statistics for 172.29.37.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 15ms, Average = 13ms

C:\>ping 10.0.2.2

Pinging 10.0.2.2 with 32 bytes of data:

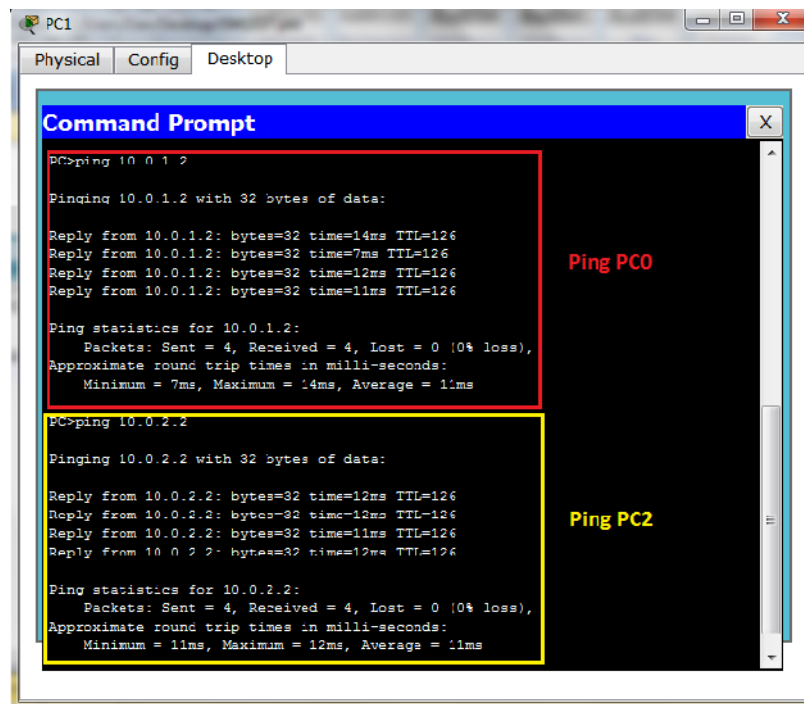
Reply from 10.0.2.2: bytes=32 time=16ms TTL=126
Reply from 10.0.2.2: bytes=32 time=21ms TTL=126
Reply from 10.0.2.2: bytes=32 time=14ms TTL=126
Reply from 10.0.2.2: bytes=32 time=20ms TTL=126

Ping statistics for 10.0.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 21ms, Average = 17ms
```

Ping PC1

Ping PC2

## Màn hình ping c a PC1:



The screenshot shows the Command Prompt window on PC1. It displays the results of two ping commands. The first command is 'ping 10.0.1.2', which is highlighted with a red border. The second command is 'ping 10.0.2.2', which is highlighted with a yellow border. To the right of the Command Prompt, there are two labels: 'Ping PC0' in red and 'Ping PC2' in yellow.

```
PC1
Physical Config Desktop
Command Prompt
C:\>ping 10.0.1.2

Pinging 10.0.1.2 with 32 bytes of data:

Reply from 10.0.1.2: bytes=32 time=14ms TTL=126
Reply from 10.0.1.2: bytes=32 time=7ms TTL=126
Reply from 10.0.1.2: bytes=32 time=12ms TTL=126
Reply from 10.0.1.2: bytes=32 time=11ms TTL=126

Ping statistics for 10.0.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 7ms, Maximum = 14ms, Average = 11ms

C:\>ping 10.0.2.2

Pinging 10.0.2.2 with 32 bytes of data:

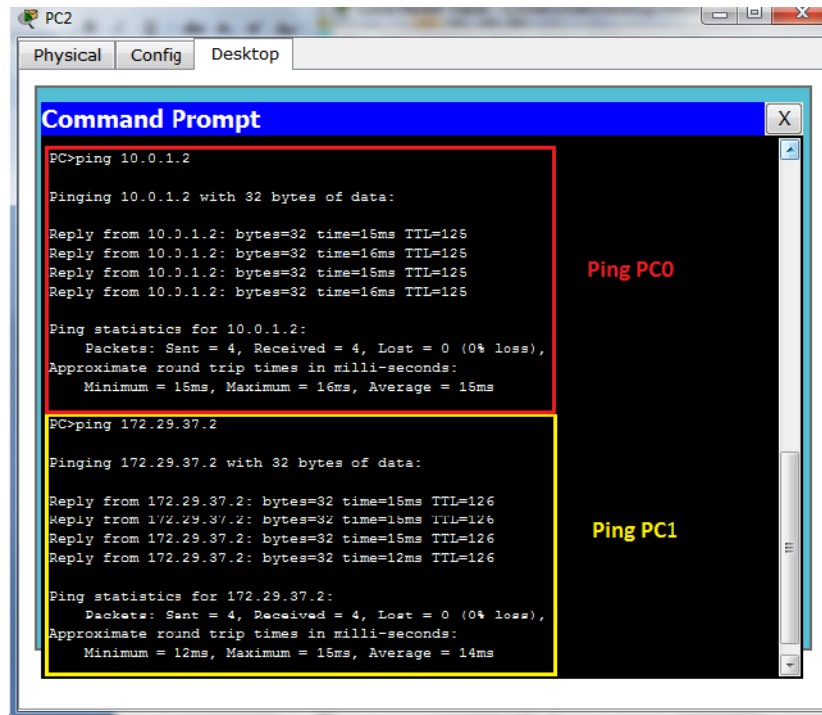
Reply from 10.0.2.2: bytes=32 time=12ms TTL=126
Reply from 10.0.2.2: bytes=32 time=12ms TTL=126
Reply from 10.0.2.2: bytes=32 time=11ms TTL=126
Reply from 10.0.2.2: bytes=32 time=12ms TTL=126

Ping statistics for 10.0.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 12ms, Average = 11ms
```

Ping PC0

Ping PC2

Màn hình ping c a PC2:



The screenshot shows a Windows-style window titled 'PC2' with tabs for 'Physical', 'Config', and 'Desktop'. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The Command Prompt has a blue title bar and a black background with white text. It shows two ping commands and their results. The first command is 'PC>ping 10.0.1.2', which is highlighted with a red border. The results show four successful replies from 10.0.1.2 with times between 15ms and 16ms and TTL=125. The statistics show 4 packets sent, 4 received, 0 lost, and an average round trip time of 15ms. The second command is 'PC>ping 172.29.37.2', highlighted with a yellow border. The results show four successful replies from 172.29.37.2 with times between 12ms and 15ms and TTL=126. The statistics show 4 packets sent, 4 received, 0 lost, and an average round trip time of 14ms. To the right of the Command Prompt window, the text 'Ping PC0' is written in red and 'Ping PC1' is written in yellow.

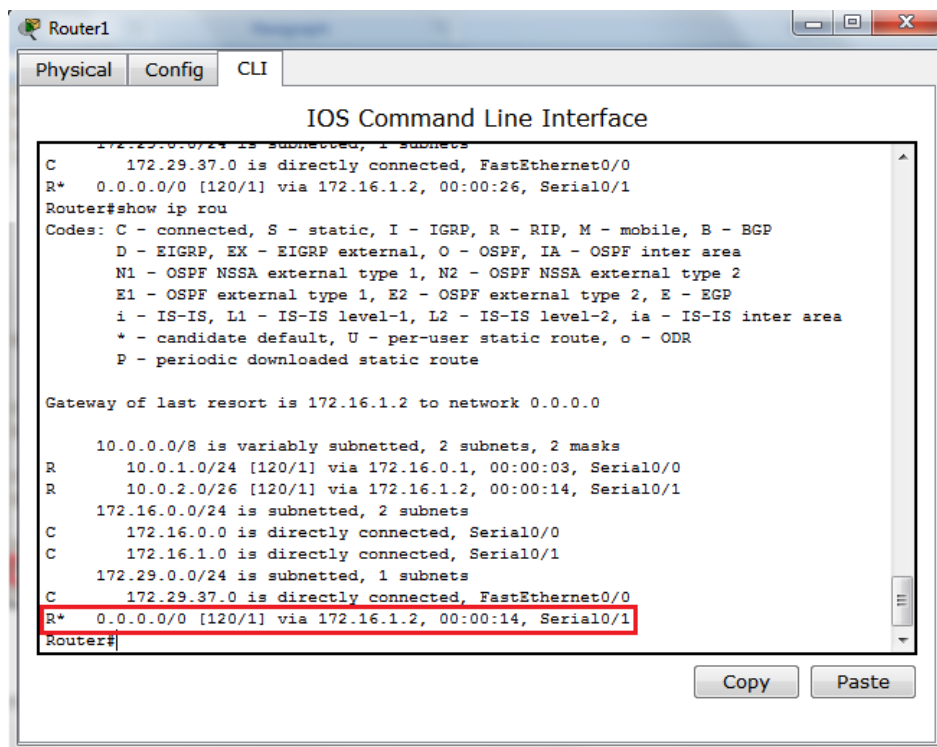
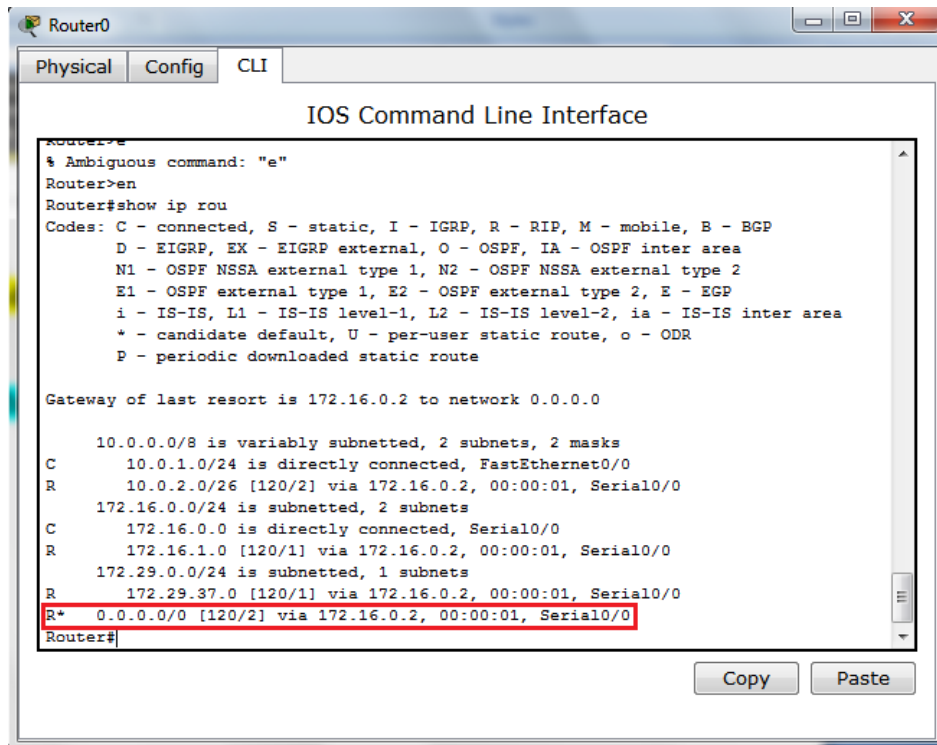
```
PC2
Physical Config Desktop
Command Prompt
PC>ping 10.0.1.2
Pinging 10.0.1.2 with 32 bytes of data:
Reply from 10.0.1.2: bytes=32 time=15ms TTL=125
Reply from 10.0.1.2: bytes=32 time=16ms TTL=125
Reply from 10.0.1.2: bytes=32 time=15ms TTL=125
Reply from 10.0.1.2: bytes=32 time=16ms TTL=125
Ping statistics for 10.0.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 15ms, Maximum = 16ms, Average = 15ms
PC>ping 172.29.37.2
Pinging 172.29.37.2 with 32 bytes of data:
Reply from 172.29.37.2: bytes=32 time=15ms TTL=126
Reply from 172.29.37.2: bytes=32 time=15ms TTL=126
Reply from 172.29.37.2: bytes=32 time=15ms TTL=126
Reply from 172.29.37.2: bytes=32 time=12ms TTL=126
Ping statistics for 172.29.37.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 12ms, Maximum = 15ms, Average = 14ms
```

Ping PC0

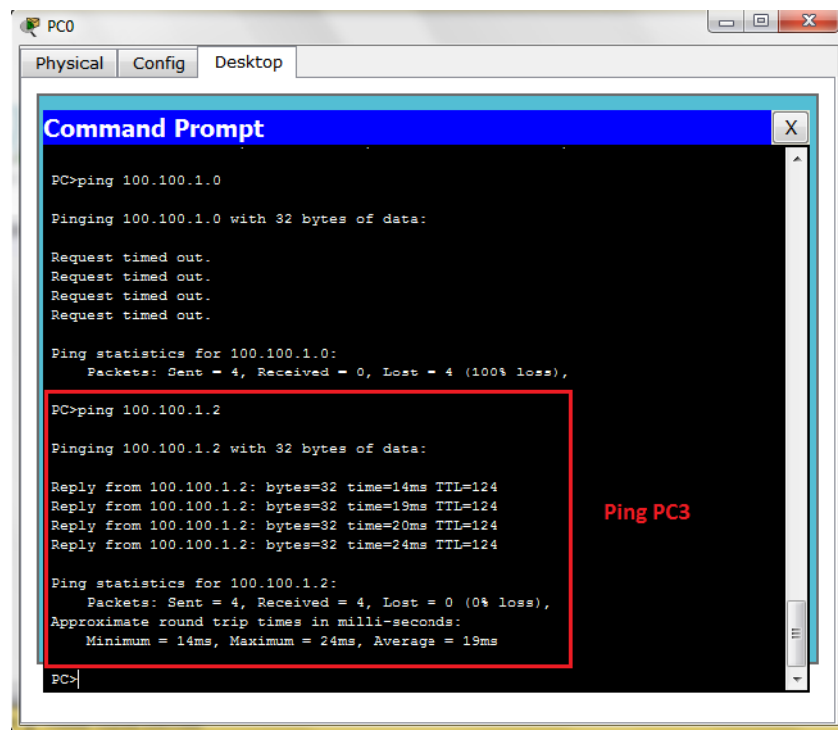
Ping PC1

### 3. Lan truy n ng default route:

Trên R0, R1 s c 1 ng Default Route h c b ng RIP:



Màn hình ping c a PC0 t i PC3:



```
PC0
Physical Config Desktop

Command Prompt

PC>ping 100.100.1.0

Pinging 100.100.1.0 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 100.100.1.0:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

PC>ping 100.100.1.2

Pinging 100.100.1.2 with 32 bytes of data:

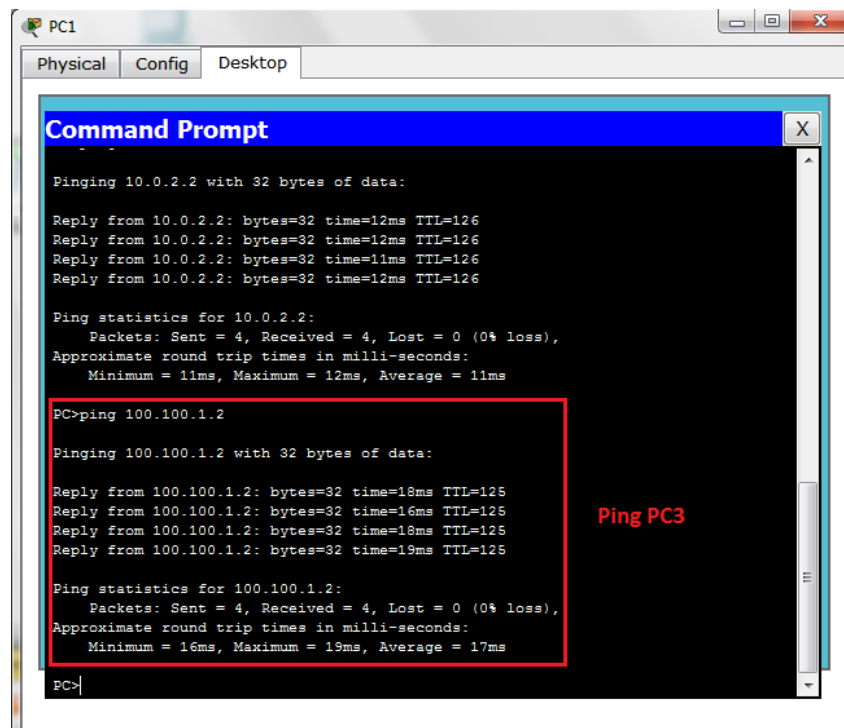
Reply from 100.100.1.2: bytes=32 time=14ms TTL=124
Reply from 100.100.1.2: bytes=32 time=19ms TTL=124
Reply from 100.100.1.2: bytes=32 time=20ms TTL=124
Reply from 100.100.1.2: bytes=32 time=24ms TTL=124

Ping statistics for 100.100.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 24ms, Average = 19ms

PC>
```

Ping PC3

Màn hình ping c a PC1 t i PC3:



```
PC1
Physical Config Desktop

Command Prompt

Pinging 10.0.2.2 with 32 bytes of data:

Reply from 10.0.2.2: bytes=32 time=12ms TTL=126
Reply from 10.0.2.2: bytes=32 time=12ms TTL=126
Reply from 10.0.2.2: bytes=32 time=11ms TTL=126
Reply from 10.0.2.2: bytes=32 time=12ms TTL=126

Ping statistics for 10.0.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 12ms, Average = 11ms

PC>ping 100.100.1.2

Pinging 100.100.1.2 with 32 bytes of data:

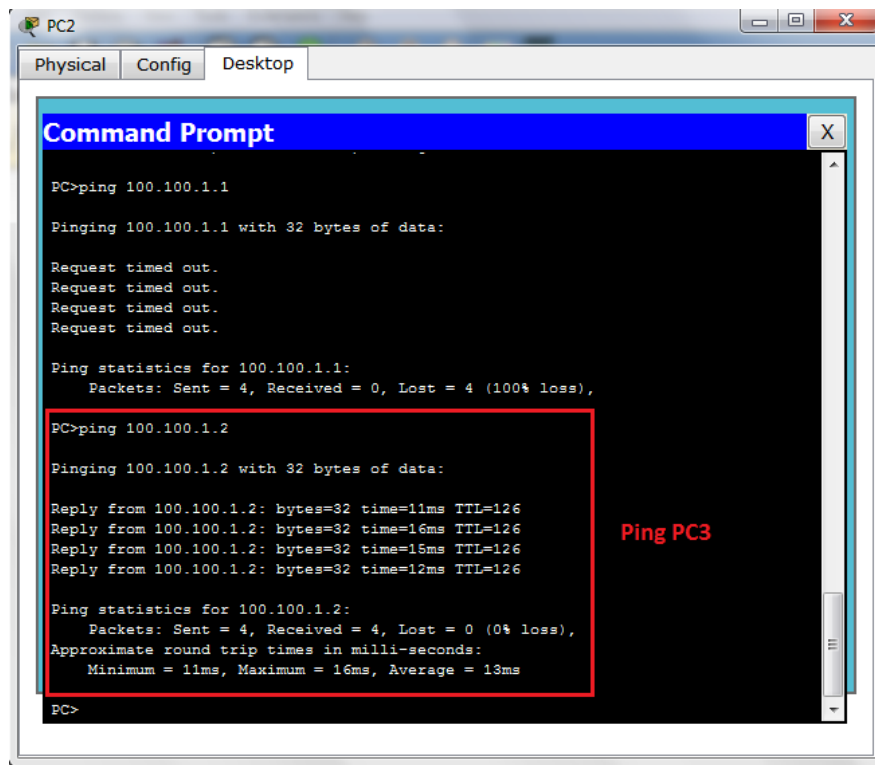
Reply from 100.100.1.2: bytes=32 time=18ms TTL=125
Reply from 100.100.1.2: bytes=32 time=16ms TTL=125
Reply from 100.100.1.2: bytes=32 time=18ms TTL=125
Reply from 100.100.1.2: bytes=32 time=19ms TTL=125

Ping statistics for 100.100.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 16ms, Maximum = 19ms, Average = 17ms

PC>
```

Ping PC3

Màn hình ping c a PC2 t i PC3:



```
PC2
Physical Config Desktop

Command Prompt

PC>ping 100.100.1.1

Pinging 100.100.1.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 100.100.1.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

PC>ping 100.100.1.2

Pinging 100.100.1.2 with 32 bytes of data:

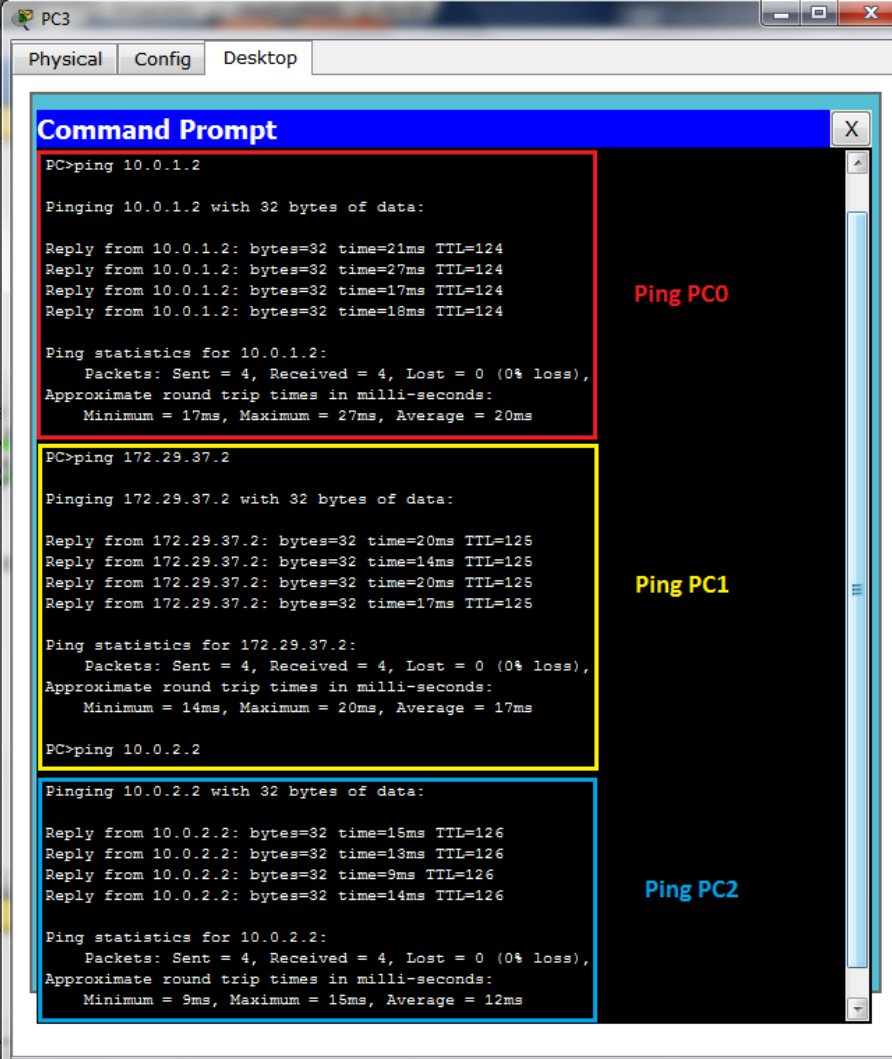
Reply from 100.100.1.2: bytes=32 time=11ms TTL=126
Reply from 100.100.1.2: bytes=32 time=16ms TTL=126
Reply from 100.100.1.2: bytes=32 time=15ms TTL=126
Reply from 100.100.1.2: bytes=32 time=12ms TTL=126

Ping statistics for 100.100.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 16ms, Average = 13ms

PC>
```

Ping PC3

Màn hình ping của PC3 tới PC0, PC1, PC2:



The screenshot shows a Windows Command Prompt window titled "PC3" with tabs for "Physical", "Config", and "Desktop". The window displays the results of three ping commands executed from PC3. The first command is "ping 10.0.1.2" (Ping PC0), the second is "ping 172.29.37.2" (Ping PC1), and the third is "ping 10.0.2.2" (Ping PC2). Each command's output is highlighted with a colored border (red, yellow, and blue respectively) and labeled on the right side of the window. The output for each ping shows four successful replies with 32 bytes of data, 0% loss, and approximate round trip times in milliseconds.

```
PC3>ping 10.0.1.2

Pinging 10.0.1.2 with 32 bytes of data:

Reply from 10.0.1.2: bytes=32 time=21ms TTL=124
Reply from 10.0.1.2: bytes=32 time=27ms TTL=124
Reply from 10.0.1.2: bytes=32 time=17ms TTL=124
Reply from 10.0.1.2: bytes=32 time=18ms TTL=124

Ping statistics for 10.0.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 17ms, Maximum = 27ms, Average = 20ms

PC3>ping 172.29.37.2

Pinging 172.29.37.2 with 32 bytes of data:

Reply from 172.29.37.2: bytes=32 time=20ms TTL=125
Reply from 172.29.37.2: bytes=32 time=14ms TTL=125
Reply from 172.29.37.2: bytes=32 time=20ms TTL=125
Reply from 172.29.37.2: bytes=32 time=17ms TTL=125

Ping statistics for 172.29.37.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 20ms, Average = 17ms

PC3>ping 10.0.2.2

Pinging 10.0.2.2 with 32 bytes of data:

Reply from 10.0.2.2: bytes=32 time=15ms TTL=126
Reply from 10.0.2.2: bytes=32 time=13ms TTL=126
Reply from 10.0.2.2: bytes=32 time=9ms TTL=126
Reply from 10.0.2.2: bytes=32 time=14ms TTL=126

Ping statistics for 10.0.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 9ms, Maximum = 15ms, Average = 12ms
```

Kết luận: Tất cả các PC đã ping thành công với nhau

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