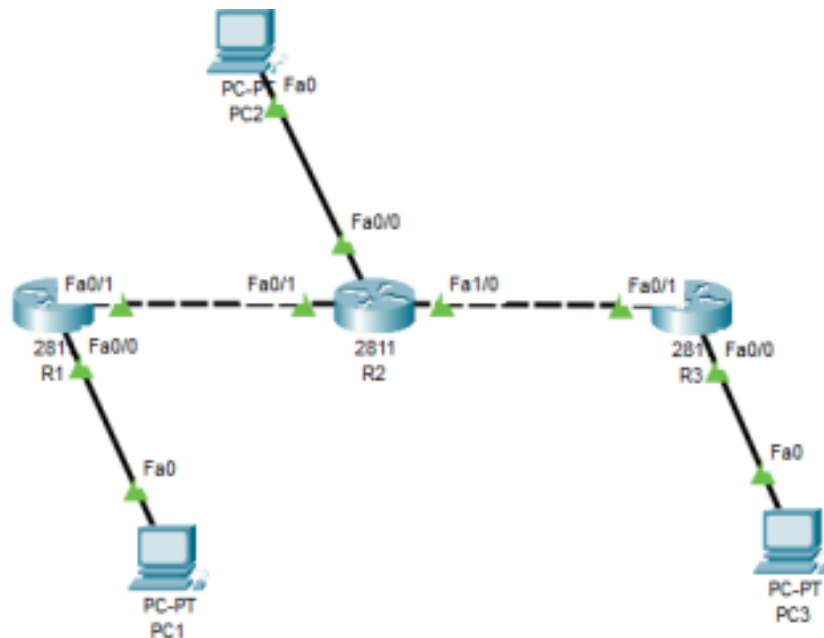


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Kelas : MI3A
Mata kuliah : praktikum jaringan komputer (RIP)



Hasil show ip route rip

Router 1

```
R1_09010282327022>show ip route rip
 192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
R   192.168.2.0/24 [120/1] via 192.168.100.2, 00:00:08, FastEthernet0/1
R   192.168.3.0/24 [120/2] via 192.168.100.2, 00:00:08, FastEthernet0/1
R   192.168.4.0/24 [120/3] via 192.168.100.2, 00:00:08, FastEthernet0/1
 192.168.200.0/30 is subnetted, 1 subnets
R       192.168.200.0 [120/1] via 192.168.100.2, 00:00:08, FastEthernet0/1
 192.168.220.0/30 is subnetted, 1 subnets
R       192.168.220.0 [120/2] via 192.168.100.2, 00:00:08, FastEthernet0/1
```

R1_09010282327022>

Router 2

```
R2_09010282327022>show ip route rip
R   192.168.1.0/24 [120/1] via 192.168.100.1, 00:00:27, FastEthernet0/1
 192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
R   192.168.3.0/24 [120/1] via 192.168.200.2, 00:00:19, FastEthernet1/0
R   192.168.4.0/24 [120/2] via 192.168.200.2, 00:00:19, FastEthernet1/0
 192.168.220.0/30 is subnetted, 1 subnets
R       192.168.220.0 [120/1] via 192.168.200.2, 00:00:19, FastEthernet1/0
R2_09010282327022>
```

Router 3

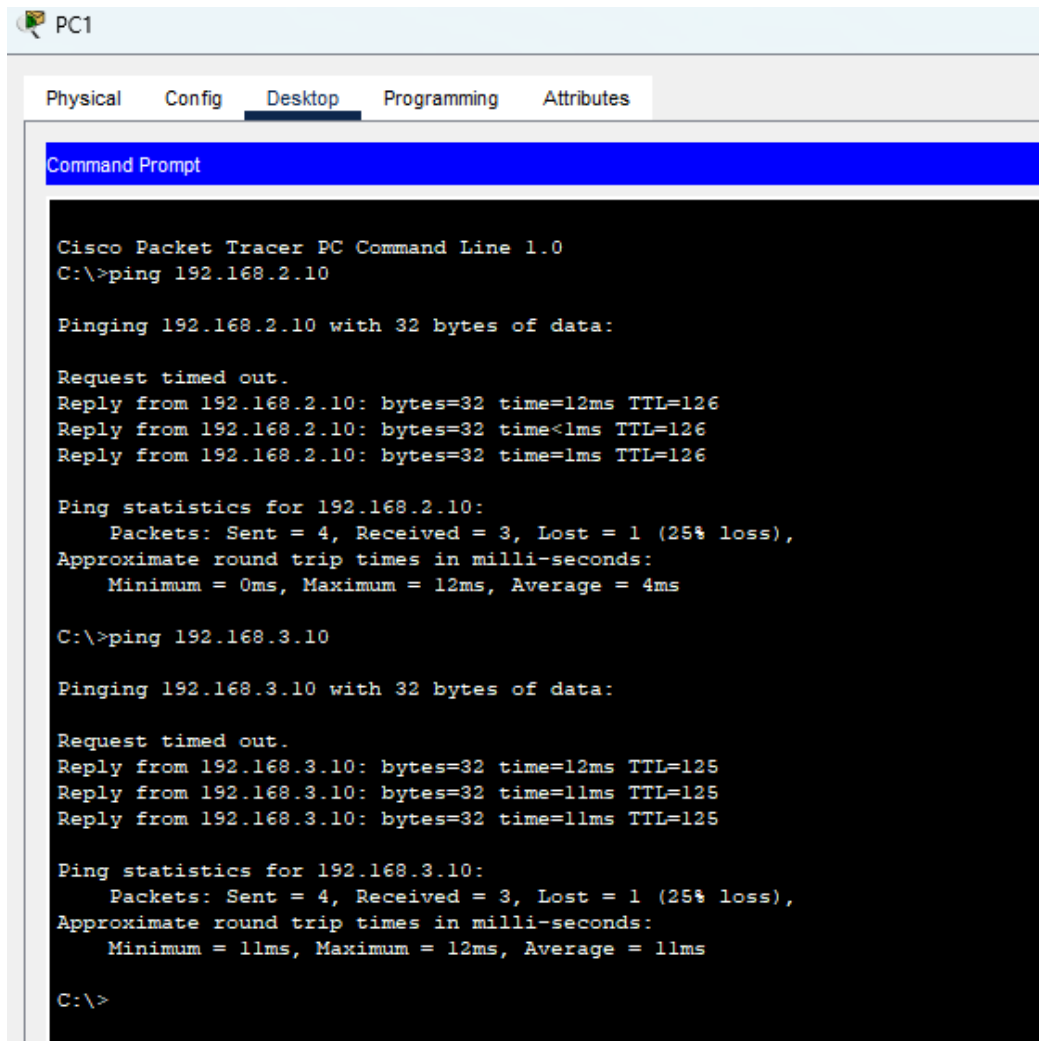
```
R3_09010282327022>show ip route rip
R   192.168.1.0/24 [120/2] via 192.168.200.1, 00:00:12, FastEthernet0/1
R   192.168.2.0/24 [120/1] via 192.168.200.1, 00:00:12, FastEthernet0/1
    192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
R   192.168.4.0/24 [120/1] via 192.168.220.2, 00:00:15, FastEthernet1/0
    192.168.100.0/30 is subnetted, 1 subnets
R   192.168.100.0 [120/1] via 192.168.200.1, 00:00:12, FastEthernet0/1

R3_09010282327022>
```

Lakukan PING dan Traceroute dari PC1 ke PC2 dan PC3, PC2 ke PC1 dan PC3, serta PC3 ke PC1 dan PC2.

No	Sumber	Tujuan	Hasil	
			Ya	Tidak
1	PC 1	PC 2	Ya	-
		PC 3	Ya	-
2	PC 2	PC 1	Ya	-
		PC 3	Ya	-
3	PC 3	PC 1	Ya	-
		PC 2	Ya	-

PC 1 = PC 2 DAN PC 3



```
PC1

Physical  Config  Desktop  Programming  Attributes

Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.10: bytes=32 time=12ms TTL=126
Reply from 192.168.2.10: bytes=32 time<1ms TTL=126
Reply from 192.168.2.10: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 12ms, Average = 4ms

C:\>ping 192.168.3.10

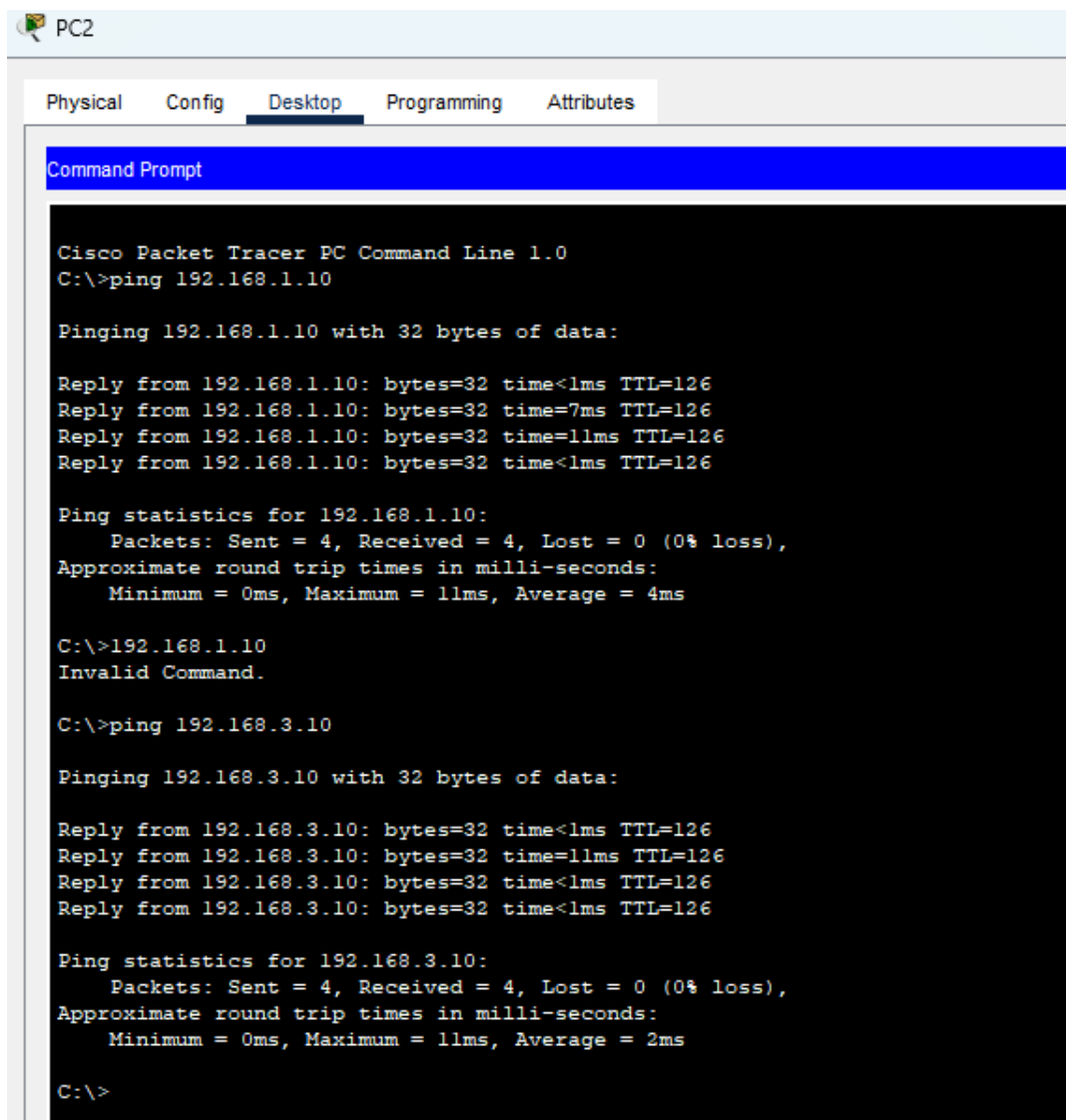
Pinging 192.168.3.10 with 32 bytes of data:

Request timed out.
Reply from 192.168.3.10: bytes=32 time=12ms TTL=125
Reply from 192.168.3.10: bytes=32 time=11ms TTL=125
Reply from 192.168.3.10: bytes=32 time=11ms TTL=125

Ping statistics for 192.168.3.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 12ms, Average = 11ms

C:\>
```

PC 2 = PC 1 DAN PC 3



The screenshot shows the PC2 interface in Cisco Packet Tracer. The 'Desktop' tab is selected, and a 'Command Prompt' window is open. The command prompt displays the output of several commands: a successful ping to 192.168.1.10, an invalid command attempt, and a successful ping to 192.168.3.10. The ping results show 0% loss and specific round trip times.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time<1ms TTL=126
Reply from 192.168.1.10: bytes=32 time=7ms TTL=126
Reply from 192.168.1.10: bytes=32 time=11ms TTL=126
Reply from 192.168.1.10: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 11ms, Average = 4ms

C:\>192.168.1.10
Invalid Command.

C:\>ping 192.168.3.10

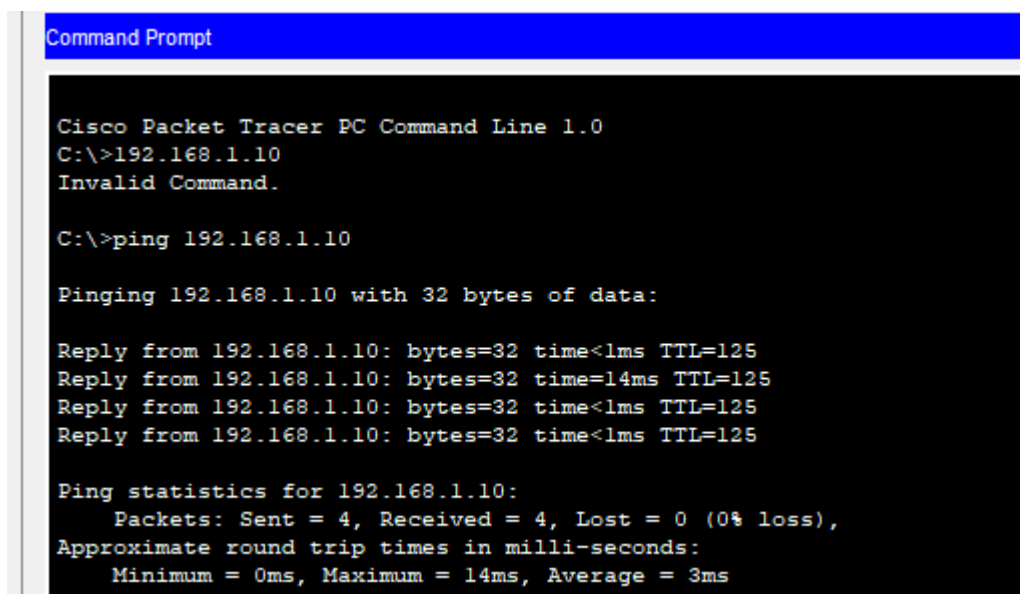
Pinging 192.168.3.10 with 32 bytes of data:

Reply from 192.168.3.10: bytes=32 time<1ms TTL=126
Reply from 192.168.3.10: bytes=32 time=11ms TTL=126
Reply from 192.168.3.10: bytes=32 time<1ms TTL=126
Reply from 192.168.3.10: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.3.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 11ms, Average = 2ms

C:\>
```

PC 3 = PC 1 DAN PC 2



The screenshot shows the PC3 interface in Cisco Packet Tracer. The 'Command Prompt' window displays the output of commands: an invalid command attempt and a successful ping to 192.168.1.10. The ping results show 0% loss and specific round trip times.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>192.168.1.10
Invalid Command.

C:\>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time<1ms TTL=125
Reply from 192.168.1.10: bytes=32 time=14ms TTL=125
Reply from 192.168.1.10: bytes=32 time<1ms TTL=125
Reply from 192.168.1.10: bytes=32 time<1ms TTL=125

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 14ms, Average = 3ms
```

```

C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

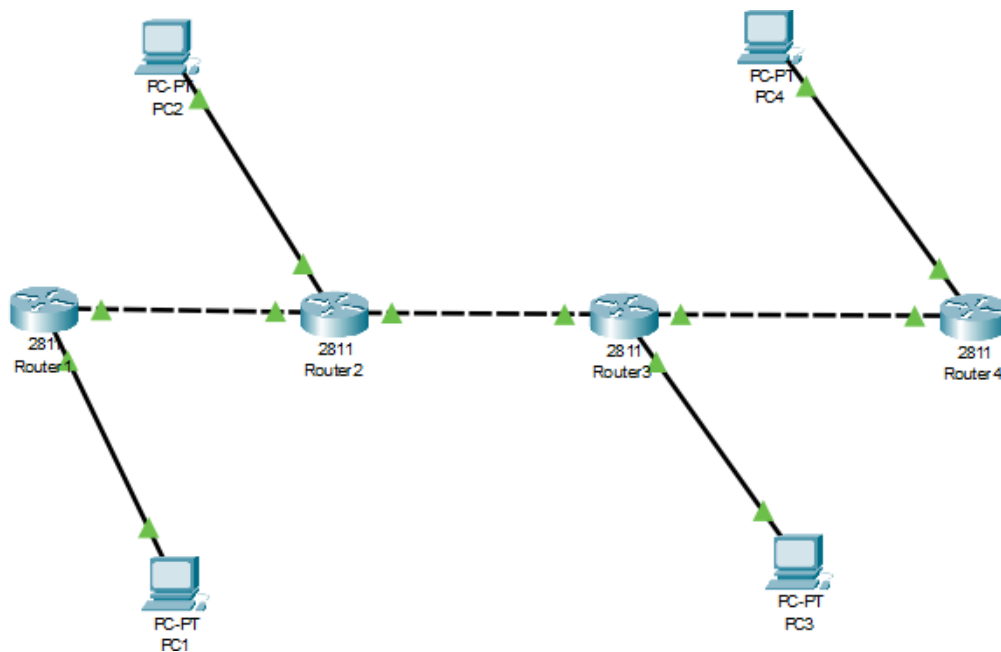
Reply from 192.168.2.10: bytes=32 time<1ms TTL=126
Reply from 192.168.2.10: bytes=32 time=10ms TTL=126
Reply from 192.168.2.10: bytes=32 time<1ms TTL=126
Reply from 192.168.2.10: bytes=32 time=12ms TTL=126

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 12ms, Average = 5ms

C:\>

```

1. Tambahkan satu Router (R4) dan PC (PC4), dimana R4 terhubung ke R3 dan PC4 terhubung ke R4.



Hasil show ip route rip

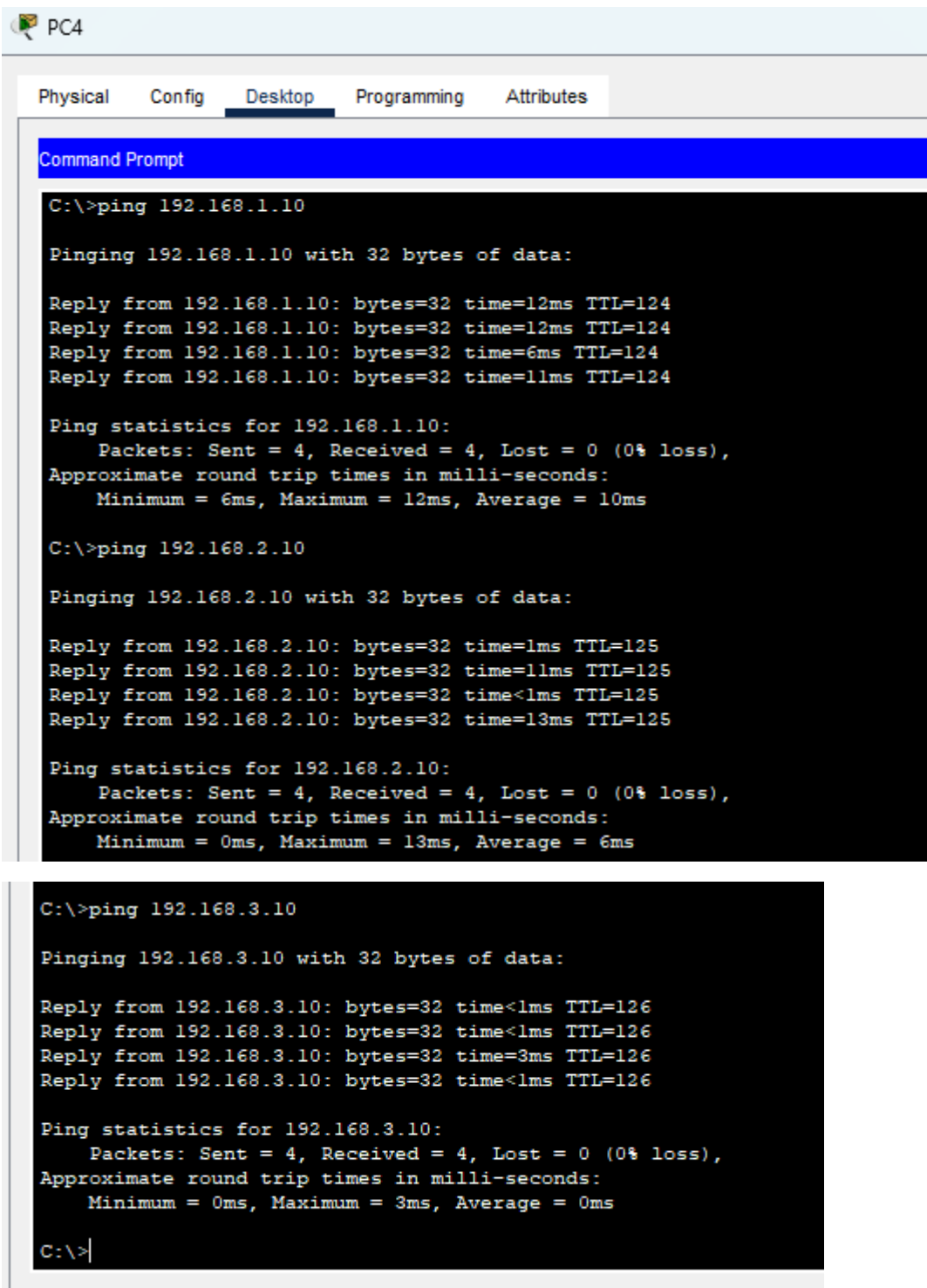
Router 4

```

R4_09010282327022>show ip route rip
R    192.168.1.0/24 [120/3] via 192.168.220.1, 00:00:17, FastEthernet0/1
R    192.168.2.0/24 [120/2] via 192.168.220.1, 00:00:17, FastEthernet0/1
R    192.168.3.0/24 [120/1] via 192.168.220.1, 00:00:17, FastEthernet0/1
    192.168.100.0/30 is subnetted, 1 subnets
R      192.168.100.0 [120/2] via 192.168.220.1, 00:00:17, FastEthernet0/1
    192.168.200.0/30 is subnetted, 1 subnets
R      192.168.200.0 [120/1] via 192.168.220.1, 00:00:17, FastEthernet0/1
R4_09010282327022>

```

2. Lakukan PING dan Traceroute dari PC4 ke PC1, PC 2 dan PC3



The screenshot shows the 'PC4' window with the 'Desktop' tab selected. A 'Command Prompt' window is open, displaying the results of three ping tests. The first test is to 192.168.1.10, showing four successful replies with times ranging from 6ms to 12ms and a TTL of 124. The second test is to 192.168.2.10, showing four successful replies with times ranging from 6ms to 13ms and a TTL of 125. The third test is to 192.168.3.10, showing four successful replies with times ranging from 0ms to 3ms and a TTL of 126. All tests show 0% loss and successful completion.

```
C:\>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time=12ms TTL=124
Reply from 192.168.1.10: bytes=32 time=12ms TTL=124
Reply from 192.168.1.10: bytes=32 time=6ms TTL=124
Reply from 192.168.1.10: bytes=32 time=11ms TTL=124

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 12ms, Average = 10ms

C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Reply from 192.168.2.10: bytes=32 time=1ms TTL=125
Reply from 192.168.2.10: bytes=32 time=11ms TTL=125
Reply from 192.168.2.10: bytes=32 time<1ms TTL=125
Reply from 192.168.2.10: bytes=32 time=13ms TTL=125

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 13ms, Average = 6ms

C:\>ping 192.168.3.10

Pinging 192.168.3.10 with 32 bytes of data:

Reply from 192.168.3.10: bytes=32 time<1ms TTL=126
Reply from 192.168.3.10: bytes=32 time<1ms TTL=126
Reply from 192.168.3.10: bytes=32 time=3ms TTL=126
Reply from 192.168.3.10: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.3.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 3ms, Average = 0ms

C:\>|
```

Penjelasan Praktikum

Praktikum ini bertujuan untuk menguji kemampuan komunikasi antar perangkat dalam jaringan yang terhubung melalui protokol RIP. Dalam konfigurasi awal, terdapat tiga router (R1, R2, dan R3) dan tiga PC (PC1, PC2, dan PC3). Setiap perangkat terhubung dengan perangkat lainnya untuk memastikan bahwa protokol RIP berfungsi dalam mengelola rute antar jaringan.

Pengujian yang dilakukan mencakup:

- Konfigurasi Routing pada masing-masing router untuk memastikan bahwa tabel routing RIP dapat mengarahkan lalu lintas antara semua perangkat dalam jaringan.
- Pengujian PING dan Traceroute antara setiap PC untuk memeriksa konektivitas serta jalur yang dilewati oleh paket data.
- Selain itu, router R4 dan PC4 ditambahkan dalam tahap berikutnya untuk melihat bagaimana jaringan memperluas rute dan memastikan bahwa perangkat baru dapat berkomunikasi dengan perangkat lainnya.

Analisis Praktikum

Hasil PING dan Traceroute menunjukkan bahwa setiap PC berhasil berkomunikasi dengan PC lain melalui jalur yang diatur oleh RIP. Hal ini mengindikasikan bahwa tabel routing berhasil dibuat, dan setiap router mampu menerima serta meneruskan paket data ke router lain sesuai dengan konfigurasi yang diberikan.

Penambahan Router 4 (R4) dan PC4 juga menunjukkan bahwa jaringan yang dikonfigurasi menggunakan RIP dapat dengan mudah diperluas, di mana RIP memperbarui tabel routing secara otomatis untuk menyertakan perangkat baru. Ini menunjukkan kelebihan dari protokol RIP dalam hal kemudahan pengelolaan jaringan dinamis.

- PC4: Diberikan IP Address: 192.168.2.2

Hasil Tabel Routing pada R4 Perintah 'show ip route rip' dijalankan pada R4 untuk memastikan bahwa routing telah dikonfigurasi dengan benar. Pengujian Konektivitas untuk PC4

Pengujian konektivitas dilakukan dari PC4 ke semua perangkat lainnya (PC1, PC2, dan PC3) menggunakan perintah PING dan Traceroute, yang semuanya berhasil.

Kesimpulan

Praktikum ini menunjukkan bahwa:

RIP efektif dalam pengelolaan rute untuk jaringan kecil hingga menengah, terutama dalam hal penambahan dan pemutakhiran otomatis tabel routing. Jaringan yang menggunakan RIP dapat diperluas dengan mudah, seperti ditunjukkan pada konfigurasi dengan penambahan R4 dan PC4. Hasil PING dan Traceroute yang berhasil dari semua PC mengindikasikan bahwa setiap perangkat dalam jaringan mampu berkomunikasi sesuai dengan rute yang diatur oleh RIP, menunjukkan stabilitas dan efektivitas konfigurasi jaringan berbasis RIP. Dengan demikian, protokol RIP dapat diandalkan dalam jaringan yang tidak memerlukan skala rute yang kompleks, meskipun untuk jaringan besar protokol routing yang lebih canggih mungkin lebih disarankan.