

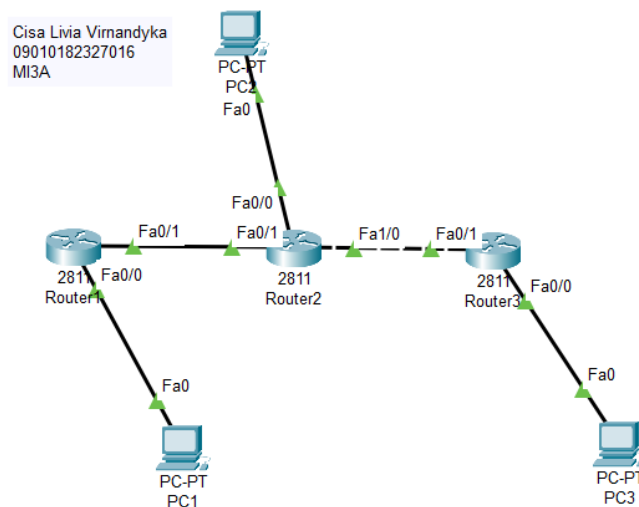
RIP & EIGRP DYNAMIC ROUTING

Nama : Cisa Livia Virnandyka
NIM : 09010182327016
Kelas : MI3A
MK : Praktikum Jaringan Komputer

RIP DYNAMIC ROUTING

ASSIGNMENT:

SS Topologi Routing RIP, sekaligus berikan Nama, NIM, dan Kelas pada pojok kiri Topologi Kalian (Place Note).

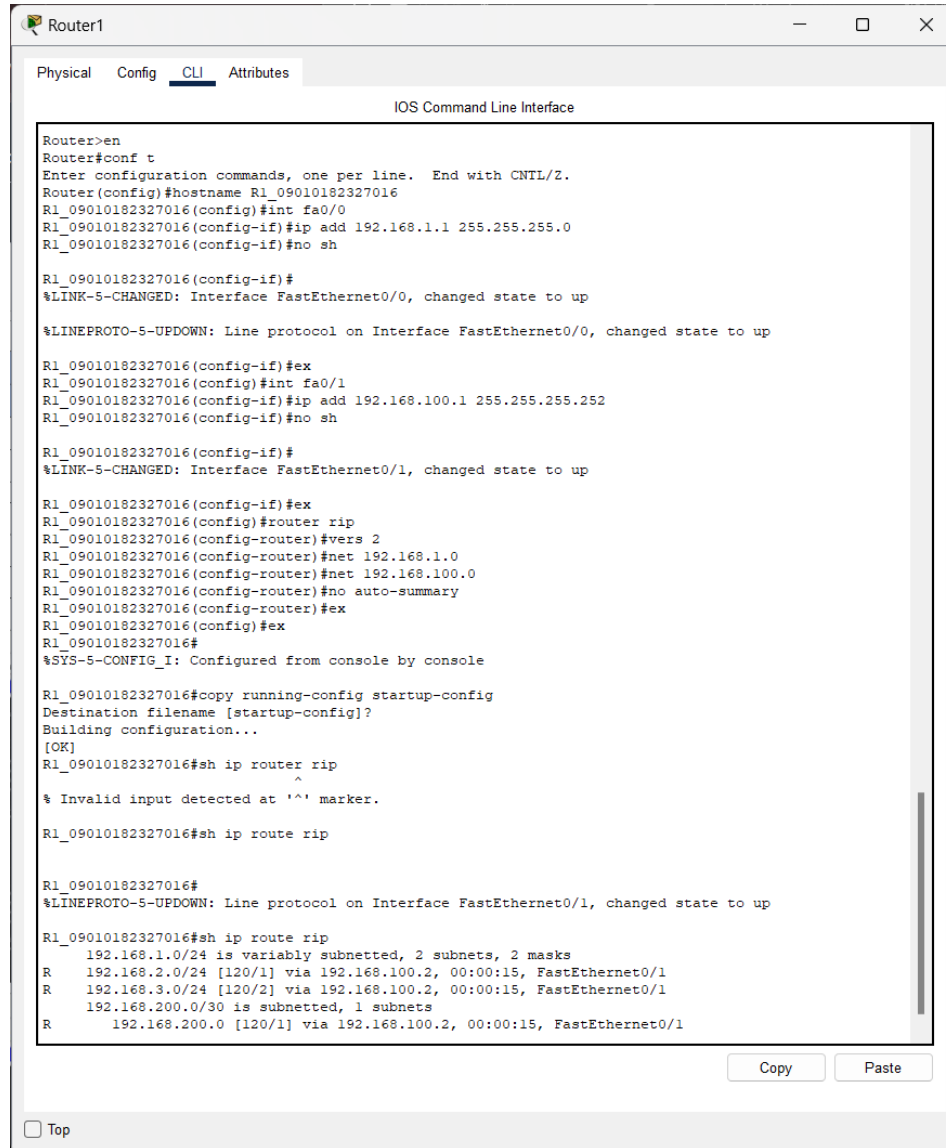


Dengan IP Address di tiap PC

No	Nama Device	Alamat	Netmask	Gateway
1	PC1	192.168.1.10	255.255.255.0	192.168.1.1
2	PC2	192.168.2.10	255.255.255.0	192.168.2.1
3	PC3	192.168.3.10	255.255.255.0	192.168.3.1

SS hasil konfigurasi dan perintah `#show ip route eigrp` dari setiap router.

1. Router1



```
Router1
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R1_09010182327016
R1_09010182327016(config)#int fa0/0
R1_09010182327016(config-if)#ip add 192.168.1.1 255.255.255.0
R1_09010182327016(config-if)#no sh

R1_09010182327016(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_09010182327016(config-if)#ex
R1_09010182327016(config)#int fa0/1
R1_09010182327016(config-if)#ip add 192.168.100.1 255.255.255.252
R1_09010182327016(config-if)#no sh

R1_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

R1_09010182327016(config-if)#ex
R1_09010182327016(config)#router rip
R1_09010182327016(config-router)#vers 2
R1_09010182327016(config-router)#net 192.168.1.0
R1_09010182327016(config-router)#net 192.168.100.0
R1_09010182327016(config-router)#no auto-summary
R1_09010182327016(config-router)#ex
R1_09010182327016(config)#ex
R1_09010182327016#
%SYS-5-CONFIG_I: Configured from console by console

R1_09010182327016#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R1_09010182327016#sh ip router rip

% Invalid input detected at '^' marker.

R1_09010182327016#sh ip route rip

R1_09010182327016#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

R1_09010182327016#sh 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, 00:00:15, FastEthernet0/1
R       192.168.3.0/24 [120/2] via 192.168.100.2, 00:00:15, FastEthernet0/1
      192.168.200.0/30 is subnetted, 1 subnets
R       192.168.200.0 [120/1] via 192.168.100.2, 00:00:15, FastEthernet0/1
```

2. Router2



The screenshot shows the Router2 CLI interface with the following content:

Router2

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R2_09010182327016
R2_09010182327016(config)#int fa0/0
R2_09010182327016(config-if)#ip add 192.168.2.1 255.255.255.0
R2_09010182327016(config-if)#no sh

R2_09010182327016(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_09010182327016(config-if)#ex
R2_09010182327016(config)#int fa0/1
R2_09010182327016(config-if)#ip add 192.168.100.2 255.255.255.252
R2_09010182327016(config-if)#no sh

R2_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

R2_09010182327016(config-if)#ex
R2_09010182327016(config)#int fa1/0
R2_09010182327016(config-if)#ip add 192.168.200.1 255.255.255.252
R2_09010182327016(config-if)#no sh

R2_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

R2_09010182327016(config-if)#router rip
R2_09010182327016(config-router)#version 2
R2_09010182327016(config-router)#net 192.168.2.0
R2_09010182327016(config-router)#net 192.168.100.0
R2_09010182327016(config-router)#net 192.168.200.0
R2_09010182327016(config-router)#no auto-summary
R2_09010182327016(config-router)#passive-int fa0/0
R2_09010182327016(config-router)#ex
R2_09010182327016(config)#ex
R2_09010182327016#
%SYS-5-CONFIG_I: Configured from console by console

R2_09010182327016#copy running-config startup-config
^
% Invalid input detected at '^' marker.

R2_09010182327016#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R2_09010182327016#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

R2_09010182327016#sh ip route rip
R   192.168.1.0/24 [120/1] via 192.168.100.1, 00:00:22, FastEthernet0/1
R   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

R2_09010182327016#
```

Copy Paste

☐ Top

3. Router3



The screenshot shows the Router3 CLI interface with the following content:

```
Router3
Physical Config CLI Attributes
IOS Command Line Interface

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R3_09010182327016
R3_09010182327016(config)#int fa0/0
R3_09010182327016(config-if)#ip add 192.168.3.1 255.255.255.0
R3_09010182327016(config-if)#no sh

R3_09010182327016(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

R3_09010182327016(config-if)#ex
R3_09010182327016(config)#int fa0/1
R3_09010182327016(config-if)#ip add 192.168.200.2 255.255.255.252
R3_09010182327016(config-if)#no sh

R3_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

R3_09010182327016(config-if)#ex
R3_09010182327016(config)#router rip
R3_09010182327016(config-router)#version 2
R3_09010182327016(config-router)#net 192.168.3.0
R3_09010182327016(config-router)#net 192.168.200.0
R3_09010182327016(config-router)#no auto_summary
% Invalid input detected at '^' marker.

R3_09010182327016(config-router)#no auto-summary
R3_09010182327016(config-router)#passive-interface fa0/0
% Invalid input detected at '^' marker.

R3_09010182327016(config-router)#passive-interface fa0/0
R3_09010182327016(config-router)#ex
R3_09010182327016#
%SYS-5-CONFIG_I: Configured from console by console

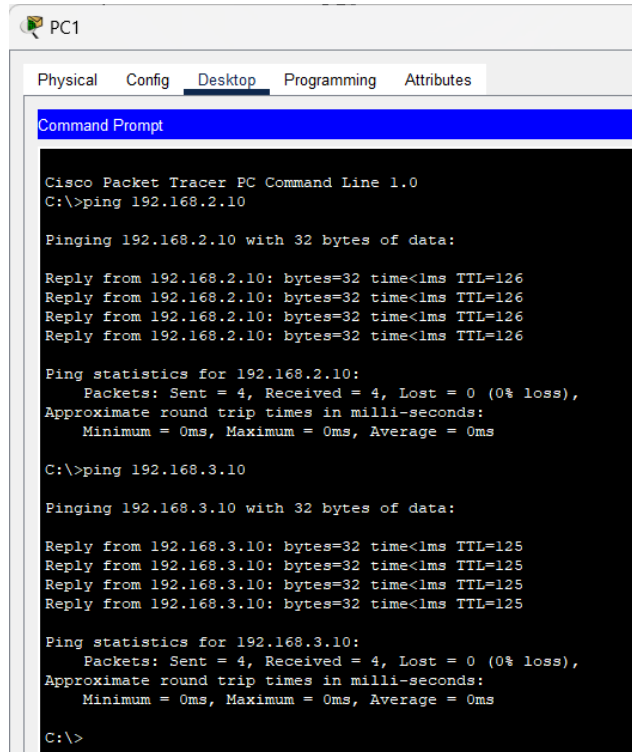
R3_09010182327016#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R3_09010182327016#
R3_09010182327016#sh ip route rip
R   192.168.1.0/24 [120/2] via 192.168.200.1, 00:00:07, FastEthernet0/1
R   192.168.2.0/24 [120/1] via 192.168.200.1, 00:00:07, FastEthernet0/1
    192.168.100.0/30 is subnetted, 1 subnets
R       192.168.100.0 [120/1] via 192.168.200.1, 00:00:07, FastEthernet0/1
```

Buttons: Copy, Paste

☐ Top

Tes PING dan Traceroute dari PC1 ke PC2 dan PC3, PC2 ke PC1 dan PC3, serta PC3 ke PC1 dan PC2

- PC1 ke PC2 dan PC3



The screenshot shows the PC1 interface with the 'Desktop' tab selected. The Command Prompt displays the following output:

```
Cisco Packet Tracer PC Command Line 1.0
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<1ms 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 = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.3.10

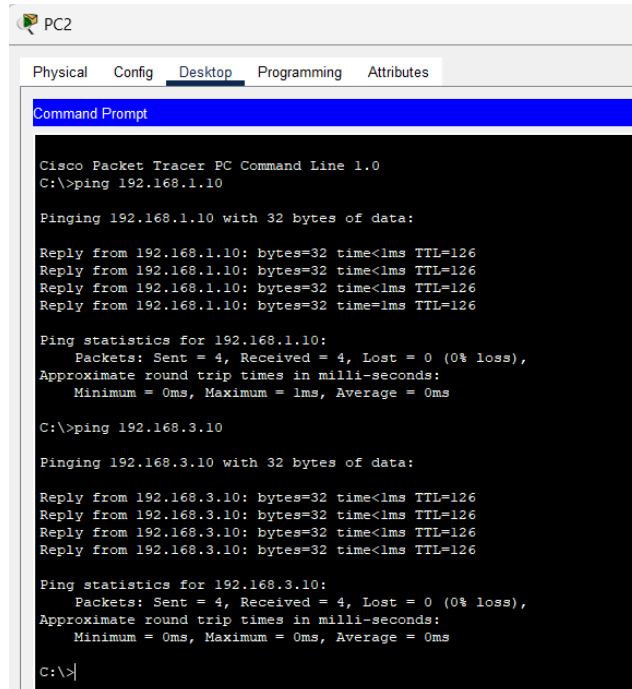
Pinging 192.168.3.10 with 32 bytes of data:

Reply from 192.168.3.10: bytes=32 time<1ms TTL=125
Reply from 192.168.3.10: bytes=32 time<1ms TTL=125
Reply from 192.168.3.10: bytes=32 time<1ms TTL=125
Reply from 192.168.3.10: bytes=32 time<1ms TTL=125

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 = 0ms, Average = 0ms

C:\>
```

- PC2 ke PC1 dan PC3



The screenshot shows the PC2 interface with the 'Desktop' tab selected. The Command Prompt displays the following output:

```
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<1ms TTL=126
Reply from 192.168.1.10: bytes=32 time<1ms 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 = 1ms, Average = 0ms

C:\>ping 192.168.3.10

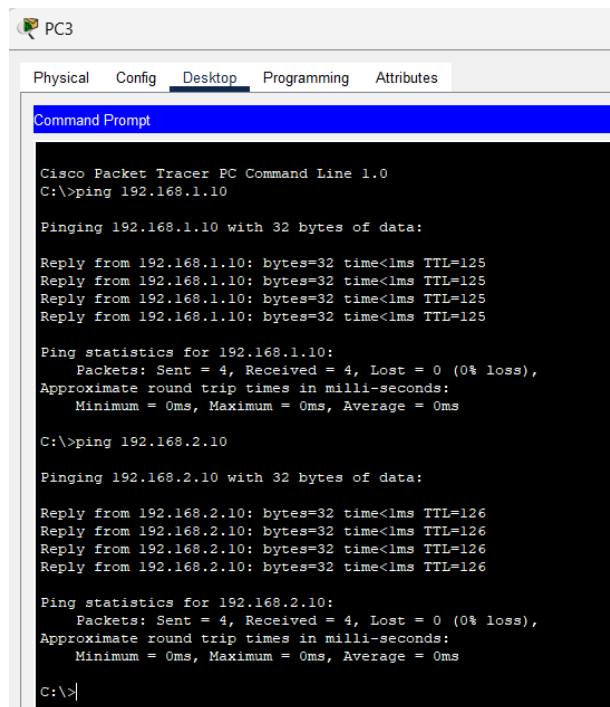
Pinging 192.168.3.10 with 32 bytes of data:

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<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 = 0ms, Average = 0ms

C:\>
```

- PC3 ke PC1 dan PC2



```

PC3
Physical  Config  Desktop  Programming  Attributes
Command Prompt

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=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
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 = 0ms, Average = 0ms

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<1ms 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 = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>|
  
```

Tabel hasil PING.

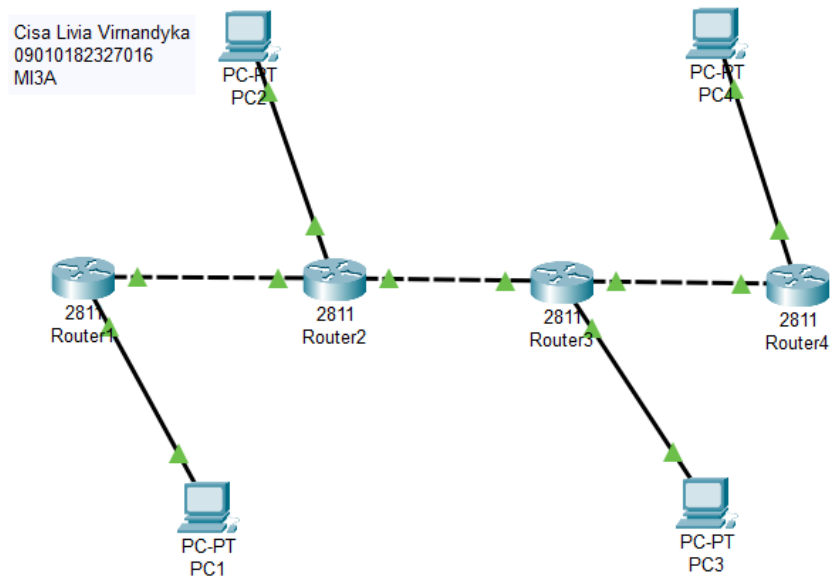
No	Sumber	Tujuan	Hasil	
			Ya	Tidak
1	PCA	PCB	Ya	-
		PCC	Ya	-

2	PCB	PCA	Ya	-
		PCC	Ya	-

3	PCC	PCA	Ya	-
		PCB	Ya	-

Tambahkan satu Router (R4) dan PC (PC4), dimana R4 terhubung ke R3 dan PC4 terhubung ke R4. Konfigurasi Router dengan protokol RIP pada R4, dan konfigurasi IP pada PC4. Lakukanlah konfigurasi seperti tahap 3, buktikan jika PC4 dapat melakukan PING dan traceroute ke PC lainnya

Topologi:



Konfigurasi di Router 4



```
Router4
Physical Config CLI Attributes
IOS Command Line Interface

Router>en
Router#
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa 0/0
Router(config-if)#ip add 192.168.4.1 255.255.255.0
Router(config-if)#no sh

Router(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

Router(config-if)#ex
Router(config)#int fa0/1
Router(config-if)#ip add 192.168.210.2 255.255.255.252
Router(config-if)#no sh

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Router(config-if)#ex
Router(config)#router rip
Router(config-router)#vers 2
Router(config-router)#net 192.168.4.0
Router(config-router)#net 192.168.210.0
Router(config-router)#no auto-summary
Router(config-router)#passive-interface fa0/0
Router(config-router)#ex
Router(config)#ex
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#copy running-config startup-config
^
% Invalid input detected at '^' marker.

Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
?Bad filename
%Error parsing filename (Bad file number)
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R4_09010182327016

R4_09010182327016#sh ip route rip
R   192.168.1.0/24 [120/3] via 192.168.210.1, 00:00:01, FastEthernet0/1
R   192.168.2.0/24 [120/2] via 192.168.210.1, 00:00:01, FastEthernet0/1
R   192.168.3.0/24 [120/1] via 192.168.210.1, 00:00:01, FastEthernet0/1
    192.168.100.0/30 is subnetted, 1 subnets
R       192.168.100.0 [120/2] via 192.168.210.1, 00:00:01, FastEthernet0/1
    192.168.200.0/30 is subnetted, 1 subnets
R       192.168.200.0 [120/1] via 192.168.210.1, 00:00:01, FastEthernet0/1

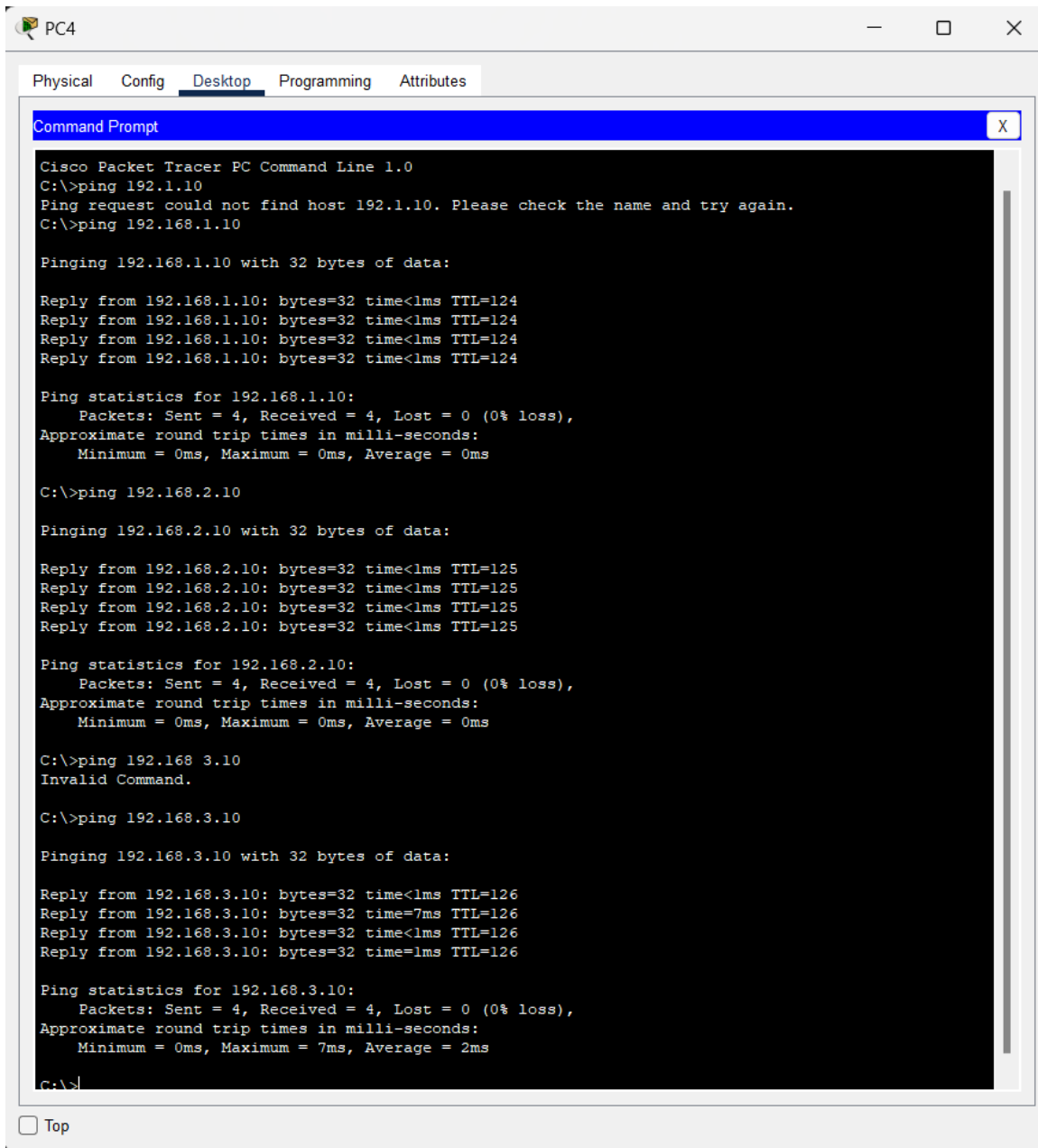
R4_09010182327016#
```

Copy Paste

☐ Top

(Lupa buat hostname dan udah dibuat diakhir yang nyatu sama ss konfigurasi)

Tes Ping PC4 ke seluruh PC



The screenshot shows a Cisco Packet Tracer PC Command Line window for PC4. The window has tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, displaying a Command Prompt. The Command Prompt shows the following commands and output:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.1.1.10
Ping request could not find host 192.1.10. Please check the name and try again.
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=124
Reply from 192.168.1.10: bytes=32 time<1ms TTL=124
Reply from 192.168.1.10: bytes=32 time<1ms TTL=124
Reply from 192.168.1.10: bytes=32 time<1ms 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 = 0ms, Maximum = 0ms, Average = 0ms

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<1ms TTL=125
Reply from 192.168.2.10: bytes=32 time<1ms TTL=125
Reply from 192.168.2.10: bytes=32 time<1ms 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 = 0ms, Average = 0ms

C:\>ping 192.168.3.10
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=7ms 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 = 7ms, Average = 2ms

C:\>
```

At the bottom left of the window, there is a checkbox labeled "Top".

Hasil Praktikum RIP

Pada Praktikum ini, konfigurasi protokol RIP berhasil menghubungkan beberapa router sehingga setiap PC dapat saling berkomunikasi. Setelah konfigurasi RIP pada router (R1, R2, R3, dan R4), seluruh perangkat dalam jaringan dapat terhubung, terbukti dari hasil tes **PING** dan **Traceroute** yang menunjukkan koneksi berhasil antara semua PC. Protokol RIP mengiklankan jalur ke subnet lain, memungkinkan tiap router mengetahui dan mengarahkan paket ke tujuan yang benar.

Analisis Praktikum

Penggunaan RIP dalam jaringan ini menunjukkan keefektifan protokol ini untuk jaringan sederhana. RIP, yang bekerja dengan menghitung jumlah "hop" atau lompatan antar router, berhasil melakukan routing untuk jaringan kecil tanpa konfigurasi rumit. Namun, karena RIP terbatas pada maksimal 15 hop, protokol ini kurang efisien untuk jaringan yang lebih besar atau kompleks. Protokol RIP juga melakukan update secara periodik, yang dapat menambah sedikit beban jaringan, meskipun dalam skala kecil hal ini tidak terasa signifikan.

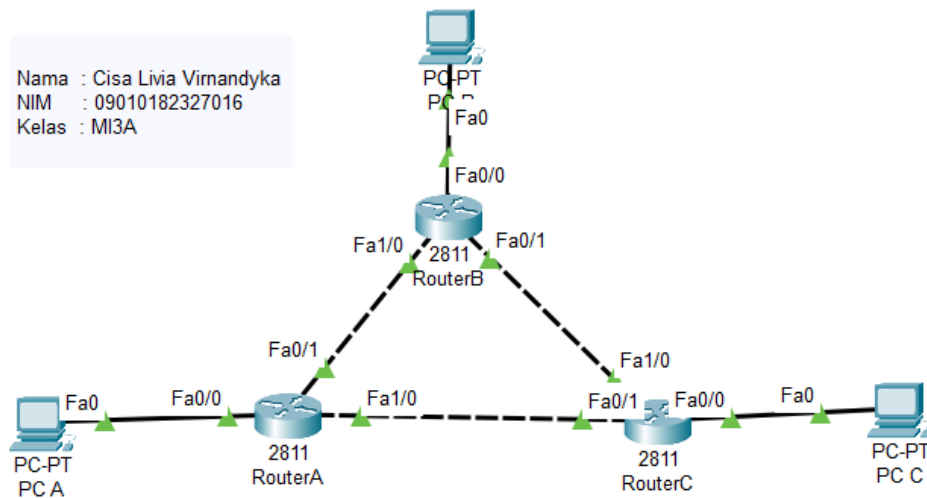
Kesimpulan

Praktikum ini berhasil menunjukkan bahwa RIP mampu menyediakan konektivitas dinamis antar perangkat dalam jaringan sederhana. Protokol ini mudah dikonfigurasi dan cukup efektif untuk jaringan kecil, namun memiliki keterbatasan untuk jaringan yang lebih besar. RIP adalah pilihan yang baik untuk jaringan dengan kebutuhan routing dasar dan topologi sederhana.

EIGRP DYNAMIC ROUTING

ASSIGNMENT:

SS Topologi Routing EIGRP, sekaligus berikan Nama, NIM, dan Kelas pada pojok kiri Topologi Kalian (Place Note).

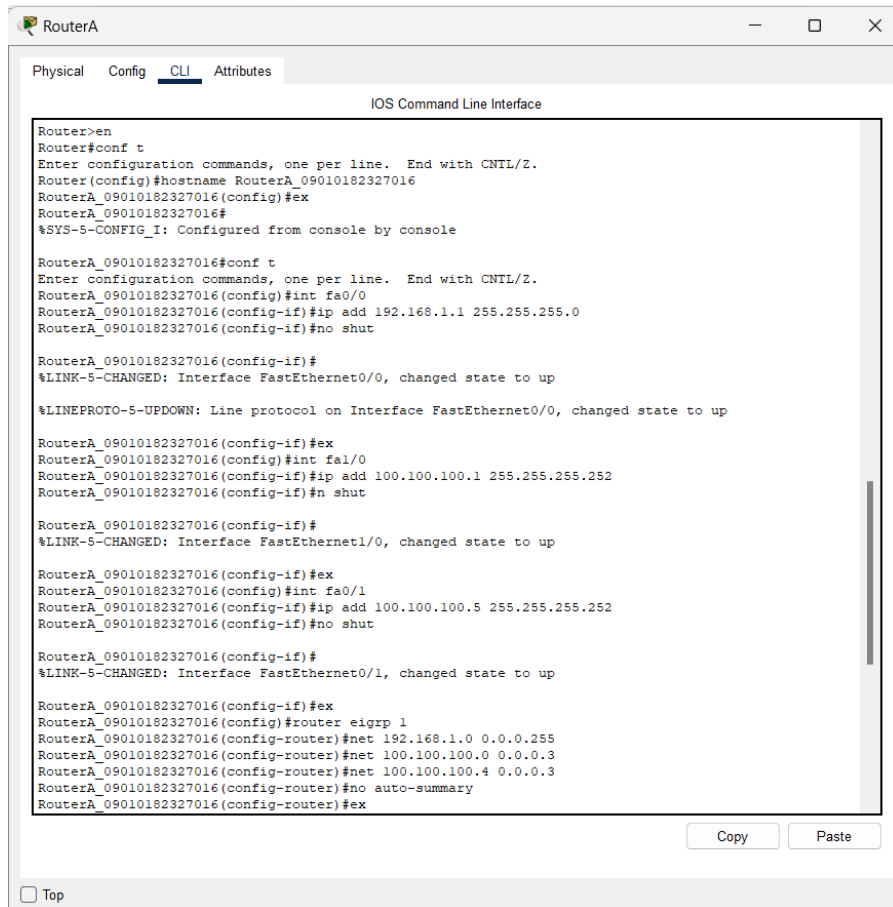


Dengan IP Address di PC

No	Nama Device	Alamat	Netmask	Gateway
1	PCA	192.168.1.10	255.255.255.0	192.168.1.1
2	PCB	192.168.2.10	255.255.255.0	192.168.2.1
3	PCC	192.168.3.10	255.255.255.0	192.168.3.1

SS hasil konfigurasi perintah *#show ip route eigrp* dari setiap router.

4. RouterA

A screenshot of a Cisco IOS Command Line Interface window titled "RouterA". The window has tabs for "Physical", "Config", "CLI", and "Attributes", with "CLI" selected. The CLI shows a sequence of configuration commands and their outputs. The commands include enabling configuration mode, setting the hostname to "RouterA_09010182327016", enabling EXEC mode, and configuring three interfaces: FastEthernet0/0, FastEthernet1/0, and FastEthernet0/1. Each interface is configured with an IP address, subnet mask, and is brought up. Finally, EIGRP is configured with a single network, 192.168.1.0/24, and auto-summary is disabled. The outputs show the state changes for each interface and the EIGRP configuration. At the bottom, there are "Copy" and "Paste" buttons and a "Top" link.

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname RouterA_09010182327016
RouterA_09010182327016(config)#ex
RouterA_09010182327016#
%SYS-5-CONFIG_I: Configured from console by console

RouterA_09010182327016#conf t
Enter configuration commands, one per line. End with CNTL/Z.
RouterA_09010182327016(config)#int fa0/0
RouterA_09010182327016(config-if)#ip add 192.168.1.1 255.255.255.0
RouterA_09010182327016(config-if)#no shut

RouterA_09010182327016(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

RouterA_09010182327016(config-if)#ex
RouterA_09010182327016(config)#int fa1/0
RouterA_09010182327016(config-if)#ip add 100.100.100.1 255.255.255.252
RouterA_09010182327016(config-if)#n shut

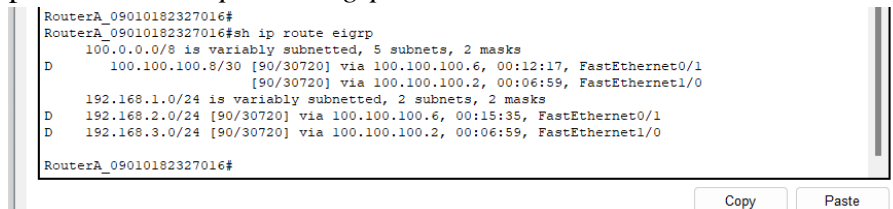
RouterA_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

RouterA_09010182327016(config-if)#ex
RouterA_09010182327016(config)#int fa0/1
RouterA_09010182327016(config-if)#ip add 100.100.100.5 255.255.255.252
RouterA_09010182327016(config-if)#no shut

RouterA_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

RouterA_09010182327016(config-if)#ex
RouterA_09010182327016(config)#router eigrp 1
RouterA_09010182327016(config-router)#net 192.168.1.0 0.0.0.255
RouterA_09010182327016(config-router)#net 100.100.100.0 0.0.0.3
RouterA_09010182327016(config-router)#net 100.100.100.4 0.0.0.3
RouterA_09010182327016(config-router)#no auto-summary
RouterA_09010182327016(config-router)#ex
```

perintah *#show ip route eigrp*

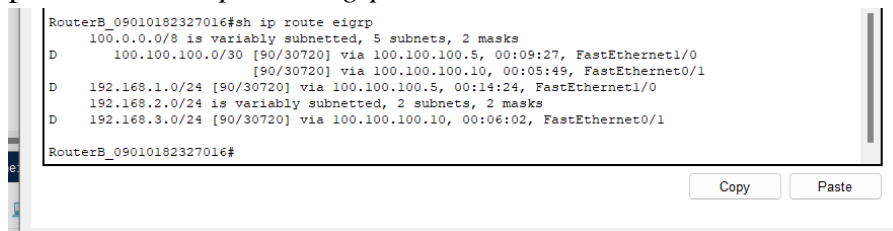
A screenshot of the RouterA CLI showing the output of the command "show ip route eigrp". The output displays three EIGRP routes: 100.0.0.0/8, 100.100.100.0/30, and 192.168.1.0/24. Each route is shown with its administrative distance (D), a brief description of the route, and the interface it is learned from. The routes are learned from FastEthernet0/1 and FastEthernet1/0. At the bottom, there are "Copy" and "Paste" buttons.

```
RouterA_09010182327016#
RouterA_09010182327016#sh ip route eigrp
 100.0.0.0/8 is variably subnetted, 5 subnets, 2 masks
D    100.100.100.8/30 [90/30720] via 100.100.100.6, 00:12:17, FastEthernet0/1
      [90/30720] via 100.100.100.2, 00:06:59, FastEthernet1/0
 192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
D    192.168.2.0/24 [90/30720] via 100.100.100.6, 00:15:35, FastEthernet0/1
D    192.168.3.0/24 [90/30720] via 100.100.100.2, 00:06:59, FastEthernet1/0

RouterA_09010182327016#
```

5. RouterB

perintah *#show ip route eigrp*

A screenshot of the RouterB CLI showing the output of the command "show ip route eigrp". The output displays three EIGRP routes: 100.0.0.0/8, 100.100.100.0/30, and 192.168.1.0/24. Each route is shown with its administrative distance (D), a brief description of the route, and the interface it is learned from. The routes are learned from FastEthernet1/0 and FastEthernet0/1. At the bottom, there are "Copy" and "Paste" buttons.

```
RouterB_09010182327016#sh ip route eigrp
 100.0.0.0/8 is variably subnetted, 5 subnets, 2 masks
D    100.100.100.0/30 [90/30720] via 100.100.100.5, 00:09:27, FastEthernet1/0
      [90/30720] via 100.100.100.10, 00:05:49, FastEthernet0/1
 192.168.1.0/24 [90/30720] via 100.100.100.5, 00:14:24, FastEthernet1/0
 192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
D    192.168.3.0/24 [90/30720] via 100.100.100.10, 00:06:02, FastEthernet0/1

RouterB_09010182327016#
```

6. RouterC

7.

```

RouterC_09010182327016>en
RouterC_09010182327016#conf t
Enter configuration commands, one per line. End with CNTL/Z.
RouterC_09010182327016(config)#int fa1/0
RouterC_09010182327016(config-if)#ip add 192.168.3.1 255.255.255.0
RouterC_09010182327016(config-if)#no sh

RouterC_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

RouterC_09010182327016(config-if)#ex
RouterC_09010182327016(config)#int fa1/0
RouterC_09010182327016(config-if)#ip add 100.100.100.10 255.255.255.252
RouterC_09010182327016(config-if)#no sh
RouterC_09010182327016(config-if)#ex
RouterC_09010182327016(config)#int fa0/0
RouterC_09010182327016(config-if)#ip add 192.168.3.1 255.255.255.0
RouterC_09010182327016(config-if)#no sh

RouterC_09010182327016(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

RouterC_09010182327016(config-if)#ex
RouterC_09010182327016(config)#int fa0/1
RouterC_09010182327016(config-if)#ip add 100.100.100.2 255.255.255.252
RouterC_09010182327016(config-if)#no sh

RouterC_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

RouterC_09010182327016(config-if)#ex
RouterC_09010182327016(config)#int fa0/0
RouterC_09010182327016(config-if)#ip add 100.100.100.10 255.255.255.252
RouterC_09010182327016(config-if)#no sh
RouterC_09010182327016(config-if)#ex
RouterC_09010182327016(config)#ex
RouterC_09010182327016#
%SYS-5-CONFIG_I: Configured from console by console

RouterC_09010182327016#conf t
Enter configuration commands, one per line. End with CNTL/Z.
RouterC_09010182327016(config)#router eigrp 1
RouterC_09010182327016(config-router)#net 192.168.3.0 0.0.0.255
RouterC_09010182327016(config-router)#net 100.100.100.8 0.0.0.3
RouterC_09010182327016(config-router)#
%DUAL-5-NBRCHANGE: IP-EIGRP 1: Neighbor 100.100.100.9 (FastEthernet1/0) is up: new adjacency

RouterC_09010182327016(config-router)#net 100.100.100.0 0.0.0.3
RouterC_09010182327016(config-router)#
%DUAL-5-NBRCHANGE: IP-EIGRP 1: Neighbor 100.100.100.1 (FastEthernet0/1) is up: new adjacency

RouterC_09010182327016(config-router)#no auto-summary
RouterC_09010182327016(config-router)#ex
RouterC_09010182327016(config)#ex
RouterC_09010182327016#
%SYS-5-CONFIG_I: Configured from console by console

RouterC_09010182327016#show ip route eigrp
100.0.0.0/8 is variably subnetted, 5 subnets, 2 masks
D    100.100.100.4/30 [90/30720] via 100.100.100.9, 00:00:50, FastEthernet1/0
      [90/30720] via 100.100.100.1, 00:00:36, FastEthernet0/1
D    192.168.1.0/24 [90/30720] via 100.100.100.1, 00:00:36, FastEthernet0/1
D    192.168.2.0/24 [90/30720] via 100.100.100.9, 00:00:50, FastEthernet1/0

RouterC_09010182327016#
  
```

perintah *#show ip route eigrp*

Tes Hasil PING

➤ PC A

PC A

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:

Reply from 192.168.2.10: bytes=32 time<1ms 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
Reply from 192.168.2.10: bytes=32 time<1ms 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 = 1ms, Average = 0ms

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=5ms 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 = 5ms, Average = 1ms

C:\>
```

➤ PC B

PC B

Physical Config Desktop Programming Attributes

Command Prompt

```
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=2ms TTL=126
Reply from 192.168.1.10: bytes=32 time<1ms 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 = 2ms, Average = 0ms

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<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 = 0ms, Average = 0ms

C:\>
```

➤ PC C

```

PC C
Physical Config Desktop Programming Attributes
Command Prompt

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<1ms TTL=126
Reply from 192.168.1.10: bytes=32 time<1ms 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 = 1ms, Average = 0ms

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<1ms 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 = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

```

Tabel hasil PING

No	Sumber	Tujuan	Hasil	
			Ya	Tidak
1	PCA	PCB	Ya	-
		PCC	Ya	-

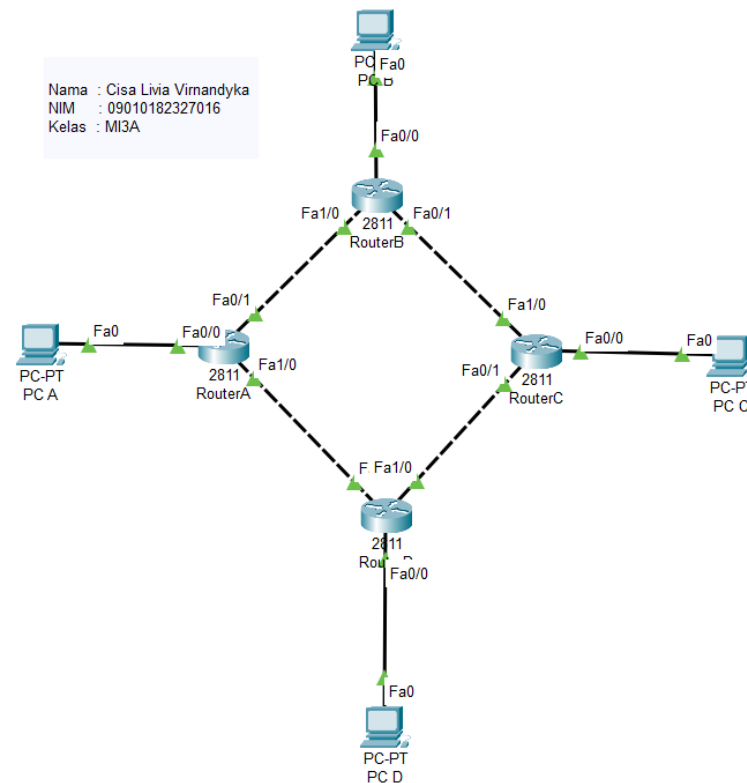
2	PCB	PCA	Ya	-
		PCC	Ya	-

3	PCC	PCA	Ya	-
		PCB	Ya	-

Penambahan RouterD dan PCD:

Putuskan koneksi pada RouterA ke RouterC, lalu tambahkan satu Router (RouterD) dan PC (PCD), dimana RouterD terhubung ke RouterA dan RouterC. Konfigurasi Router dengan protokol EIGRP pada RouterD, dan konfigurasi IP pada PCD. Lakukanlah konfigurasi seperti tahap 3, buktikan jika PCD dapat melakukan PING dan traceroute ke PC lainnya.

Topologi



perintah *#show ip route eigrp*

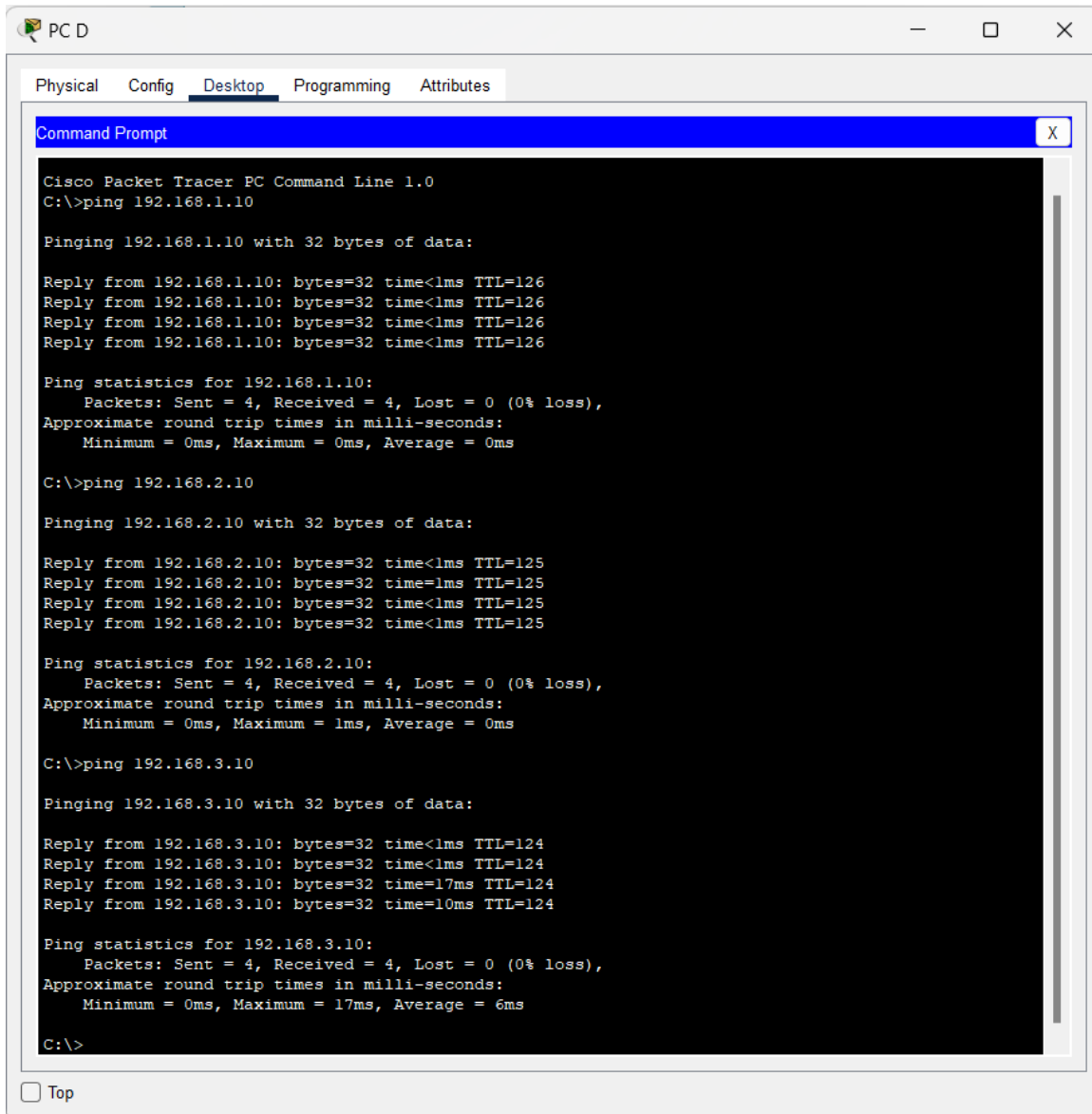
```
RouterD_09010182327016#sh ip route eigrp
 100.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
D    100.100.100.4/30 [90/30720] via 100.100.100.1, 00:03:07, FastEthernet0/1
D    100.100.100.8/30 [90/33280] via 100.100.100.1, 00:03:07, FastEthernet0/1
D    192.168.1.0/24 [90/30720] via 100.100.100.1, 00:03:07, FastEthernet0/1
D    192.168.2.0/24 [90/33280] via 100.100.100.1, 00:03:07, FastEthernet0/1
D    192.168.3.0/24 [90/35840] via 100.100.100.1, 00:03:07, FastEthernet0/1

RouterD_09010182327016#
```

Copy Paste

☐ Top

Tes PING dan traceroute dari PC4 ke PC lain



Hasil Praktikum EIGRP

Pada praktikum ini, konfigurasi **EIGRP (Enhanced Interior Gateway Routing Protocol)** diterapkan untuk membangun jalur dinamis antar-router di jaringan. Setiap router dikonfigurasi untuk mengenali dan berbagi informasi tentang jaringan yang terhubung dengannya. Protokol EIGRP memungkinkan tiap router untuk menemukan rute optimal secara otomatis.

Setelah konfigurasi selesai:

1. Setiap Router dapat berbagi informasi jaringan menggunakan EIGRP, sehingga terbentuk jalur dinamis di seluruh jaringan.
2. Setelah memutuskan koneksi antara RouterA dan RouterC, RouterD dan PCD ditambahkan. Dengan konfigurasi EIGRP, RouterD langsung terhubung ke seluruh jaringan tanpa perlu penyesuaian pada router lain.
3. PING dan Traceroute yang dilakukan dari PCD ke PCA, PCB, dan PCC menunjukkan bahwa PCD bisa mencapai seluruh perangkat lain di jaringan, menandakan bahwa EIGRP telah berfungsi dengan benar.

Analisis Praktikum

EIGRP memberikan kemudahan dalam pengelolaan jalur antar-router dengan konfigurasi yang minim, terutama pada jaringan dinamis. Saat **RouterD** dan **PCD** ditambahkan, EIGRP otomatis memperbarui tabel routing di semua router, memungkinkan PCD langsung terhubung ke seluruh jaringan tanpa perlu konfigurasi tambahan pada router lain. Ini menunjukkan kemampuan EIGRP dalam menyesuaikan jalur secara otomatis, yang sangat bermanfaat pada jaringan besar.

Selain itu, EIGRP mengurangi penggunaan bandwidth karena hanya menyebarkan perubahan, bukan seluruh tabel routing, membuat jaringan lebih efisien. Dengan fitur seperti pemilihan rute optimal dan perlindungan terhadap loop jaringan, EIGRP sangat ideal untuk jaringan yang membutuhkan adaptasi cepat dan manajemen routing yang handal.

Kesimpulan

Praktikum ini berhasil menunjukkan bahwa EIGRP adalah protokol routing yang efektif dan efisien untuk jaringan dinamis. EIGRP memungkinkan jaringan untuk beradaptasi dengan perubahan topologi dan tetap menjaga konektivitas di seluruh perangkat. Penggunaan EIGRP memberikan keuntungan dalam hal efisiensi pemilihan jalur, pengurangan waktu pemulihan saat terjadi kegagalan, dan kemudahan dalam manajemen jaringan. Kesuksesan dari pengujian PING dan Traceroute di seluruh jaringan membuktikan bahwa EIGRP dapat diandalkan untuk memenuhi kebutuhan routing pada jaringan yang memiliki kompleksitas menengah hingga tinggi.