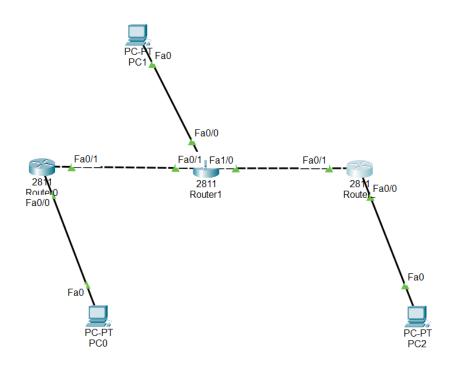
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PRAKTIKUM JARINGAN KOMPUTER ROUTING RIP dan EIGRP



Konfigurasi pada setiap router

• R1

Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R1_09010282327037

```
R1_09010282327037(config)#interface fa0/0
R1_09010282327037(config-if) #ip address 192.168.1.1 255.255.255.0 R1_09010282327037(config-if) #no shutdown
R1_09010282327037(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 09010282327037(config-if)#exit
R1_09010282327037(config) #interface fa0/1
R1_09010282327037(config-if) #ip address 192.168.100.1 255.255.255.252
R1 09010282327037 (config-if) #no shutdown
R1 09010282327037(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
R1_09010282327037(config-if)#exit
R1_09010282327037(config) #router rip
R1_09010282327037(config-router) #version 2
R1_09010282327037(config-router)#network 192.168.1.0
R1_09010282327037(config-router)#network 192.168.100.0
R1_09010282327037(config-router)#no auto-summary
R1_09010282327037(config-router)#passive-interface fa0/0
R1_09010282327037(config-router)#end
R1_09010282327037#
%SYS-5-CONFIG_I: Configured from console by console
R1_09010282327037#copy running-config startup-config Destination filename [startup-config]?
[OK]
```

• R2

```
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z. Router(config) #hostname R2_09010282327037 R2_09010282327037(config) #interface fa0/0
R2_09010282327037(config-if) #ip address 192.168.2.1 255.255.255.0
R2_09010282327037(config-if)#no shutdown
R2_09010282327037(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_09010282327037(config-if)#exit
R2_09010282327037(config) #interface fa0/1
R2_09010282327037(config-if) #ip address 192.168.100.2 255.255.255
R2_09010282327037(config-if) #no shutdown
R2_09010282327037(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 09010282327037(config-if)#exit
R2_09010282327037(config) #interface fa1/0
R2_09010282327037(config-if) #ip address 192.168.200.1 255.255.255
R2_09010282327037(config-if) #no shutdown
R2_09010282327037(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
R2 09010282327037(config-if)#exit
            R2_09010282327037(config) #router rip
R2_09010282327037(config-router) #version 2
             R2_09010282327037(config-router)#network 192.168.2.0
             R2_09010282327037(config-router) #network 192.168.100.0
             R2_09010282327037(config-router) #network 192.168.200.0
             R2_09010282327037(config-router)#no auto-summary
             R2_09010282327037(config-router)#passive-interface fa0/0
             R2_09010282327037(config-router)#end
             R2 09010282327037#
             %SYS-5-CONFIG_I: Configured from console by console
             R2_09010282327037#copy running-config startup-config
             Destination filename [startup-config]?
             Building configuration ...
             [OK]
```

R3

```
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z. Router(config) #hostname R3_09010282327037
R3_09010282327037(config)#interface fa0/0
R3_09010282327037(config-if) #ip address 192.168.3.1 255.255.255.0
R3 09010282327037(config-if) #no shutdown
R3_09010282327037(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 09010282327037(config-if)#exit
R3_09010282327037(config)#interface fa0/1
R3_09010282327037(config-if)#ip address 192.168.200.2 255.255.255.252
R3 09010282327037(config-if) #no shutdown
R3 09010282327037(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_09010282327037(config-if)#exit
R3_09010282327037(config) #router rip
R3_09010282327037(config-router)#version 2
R3_09010282327037(config-router)#network 192.168.3.0
R3_09010282327037(config-router)#network 192.168.200.0
R3_09010282327037(config-router)#no auto-summary
R3_09010282327037(config-router)#passive-interface fa0/0
R3_09010282327037(config-router)#end
R3 09010282327037#
%SYS-5-CONFIG_I: Configured from console by console
R3_09010282327037#copy running-config startup-config Destination filename [startup-config]?
Building configuration ...
[OK]
```

Verifikasi setiap router

• R1

• R2

```
R2_09010282327037#show ip route rip
R 192.168.1.0/24 [120/1] via 192.168.100.1, 00:00:02, 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, 00:00:05, FastEthernet1/0
```

• R3

Pengujian PING

No	Sumber	Tujuan	Hasil	
			Ya	Tidak
1.	PC1	PC2	Ya	
		PC3	Ya	

2.	PC2	PC1	Ya	
		PC3	Ya	
3.	PC3	PC1	Ya	
		PC2	Ya	

Hasil screenshot

• PC1

```
C:\>ping 192.168.2.10 with 32 bytes of data:

Request timed out.

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 = 0ms, Average = 0ms

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=1ms TTL=125
Reply from 192.168.3.10: bytes=32 time=2ms TTL=125
Reply from 192.168.3.10: bytes=32 time=2ms 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 = 0ms, Maximum = 2ms, Average = 1ms
```

• PC2

```
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
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 192.168.3.10
Pinging 192.168.3.10 bytes=32 time<1ms TTL=126
Reply from 192.168.3.10: bytes=32 t
```

```
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 = 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 = 1ms, Average = 0ms
```

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

```
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config) #hostname R4_09010282327037
R4_09010282327037(config)#interface fa0/0
R4_09010282327037(config-if) #ip address 192.168.4.1 255.255.255.0
R4 09010282327037 (config-if) #no shutdown
R4 09010282327037(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
R4 09010282327037 (config-if) #exit
R4_09010282327037(config)#interface fa0/1
     R4 09010282327037(config-if)#ip address 192.168.255.2 255.255.255.252
     R4 09010282327037(config-if) #no shutdown
     R4 09010282327037 (config-if) #exit
     R4_09010282327037(config) #router rip
     R4 09010282327037(config-router)#version 2
     R4_09010282327037(config-router)#network 192.168.4.0
     R4 09010282327037 (config-router) #network 192.168.255.0
     R4_09010282327037(config-router)#no auto-summary
     R4_09010282327037(config-router) #passive-interface fa0/0
     R4 09010282327037 (config-router) #end
     R4 09010282327037#
     %SYS-5-CONFIG_I: Configured from console by console
     R4_09010282327037#copy running-config startup-config
     Destination filename [startup-config]?
    Building configuration ...
  R4_09010282327037#show ip route rip
       192.168.1.0/24 [120/3] via 192.168.255.1, 00:00:18, FastEthernet0/1
       192.168.2.0/24 [120/2] via 192.168.255.1, 00:00:18, FastEthernet0/1 192.168.3.0/24 [120/1] via 192.168.255.1, 00:00:18, FastEthernet0/1
  R
  R
       192.168.100.0/30 is subnetted, 1 subnets
  R
           192.168.100.0 [120/2] via 192.168.255.1, 00:00:18, FastEthernet0/1
       192.168.200.0/30 is subnetted, 1 subnets
  R
           192.168.200.0 [120/1] via 192.168.255.1, 00:00:18, FastEthernet0/1
```

```
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=3ms 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 = 3ms, 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 = 1ms, Average = 0ms
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<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 = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

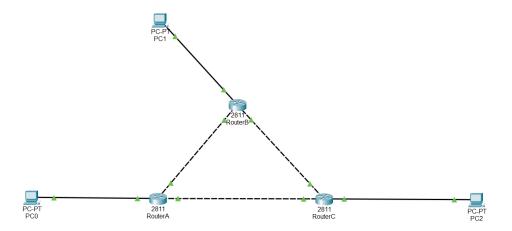
Analisa

Terdapat 3 router dan 3 PC yang akan diuji dengan metode RIP, yaitu R1, R2, R3, PC0, PC1), dan PC2. Pada R2 ditambahkan NM-2FE2W untuk menampilkan fa1/0. Kemudian setiap router diberi konfigurasi dengan alamat IP yang sesuai. Proses konfigurasi pada setiap router meliputi pengaturan nama router, banner, interface fa, dan router RIP. Setelah dilakukan konfigurasi, melakukan verifikasi RIP dengan menampilkan ip route rip. Setelah itu lakukan tes ke semua PC melalui jaringan router menggunakan IMCP untuk memastikan apakah sambungan ke PC lain dapat berfungsi dengan baik atau tidak. Setelah melakukan tes, terdapat tambahan router dan pc baru bernama R4 dan PC3. Kemudian lakukan yang sama seperti sebelumnya dengan menambahkan fa1/0 pada router ke-3. Hasil tersebut apakah dapat menghubung ketiga PC tersebut atau tidak.

Kesimpulan

Hasil dari atas bahwa metode RIP berfungsi dengan baik walaupun ada pengetesan ping yang bersifat *timed out* pada PC3 dan PC0. Tetapi semua sambungan ke PC lain dapat berfungsi dengan baik tanpa ada kendala.

ROUTING EIGRP



Konfigurasi setiap router

RouterA

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. E Router(config) #hostname RouterA_09010282327037
                                                               End with CNTL/Z.
RouterA_09010282327037(config) #interface fa0/0
RouterA_09010282327037(config-if) #ip address 192.168.1.1 255.255.255.0
RouterA_09010282327037(config-if) #no shutdown
RouterA_09010282327037(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_09010282327037(config-if)#exit
RouterA_09010282327037(config) #interface fa1/0
RouterA_09010282327037(config-if) #ip address 100.100.100.1 255.255.255
RouterA_09010282327037(config-if) #no shutdown
RouterA_09010282327037(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
RouterA_09010282327037(config-if) #exit
RouterA_09010282327037(config) #interface fa0/1
RouterA_09010282327037(config-if) #ip address 100.100.100.5 255.255.255.252
RouterA_09010282327037(config-if)#no shutdown
RouterA_09010282327037(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
RouterA_09010282327037(config-if)#exit
RouterA_09010282327037(config)#eigrp 1
% Invalid input detected at '^' marker.
RouterA_09010282327037(config) #router eigrp 1
RouterA_09010282327037(config)=router) #network 192.168.1.0 0.0.0.255
RouterA_09010282327037(config=router) #network 100.100.100.0 0.0.0.3
RouterA_09010282327037(config=router) #network 100.100.100.4 0.0.0.3
RouterA_09010282327037(config=router) #network 100.100.100.4 0.0.0.3
RouterA_09010282327037(config-router)#exit
           RouterA_09010282327037(config)#exit
           RouterA_09010282327037#
           %SYS-5-CONFIG_I: Configured from console by console
           RouterA_09010282327037#copy running-config startup-config
           Destination filename [startup-config]?
           Building configuration...
           [OK]
```

RouterB

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. E. Router(config)#hostname RouterB_09010282327037
                                                         End with CNTL/Z.
RouterB_09010282327037(config)#interface fa0/0
RouterB_09010282327037(config-if) #ip address 192.168.2.1 255.255.255.0 RouterB_09010282327037(config-if) #ino shutdown
RouterB_09010282327037(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
RouterB 09010282327037(config-if)#exit
RouterB_09010282327037(config) #interface fa1/0
RouterB_09010282327037(config-if) #ip address 100.100.100.6 255.255.255.252
RouterB_09010282327037(config-if)#no shutdown
RouterB_09010282327037(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
RouterB_09010282327037(config-if)#exit
RouterB_09010282327037(config) #interface fa0/1
RouterB_09010282327037(config-if) #ip address 100.100.100.9 255.255.255.252
RouterB_09010282327037(config-if)#no shutdown
RouterB_09010282327037(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
RouterB_09010282327037(config-if) #exit
RouterB_09010282327037(config) #router eigrp 1
RouterB_09010282327037(config-router) #network 192.168.2.0 0.0.0.255
          RouterB_09010282327037(config-router) #network 100.100.100.8 0.0.0.3
          RouterB_09010282327037(config-router) #network 100.100.100.4 0.0.0.3
          RouterB_09010282327037(config-router)#network 100.100.
RouterB_09010282327037(config-router)#exit
RouterB_09010282327037(config)#exit
RouterB_09010282327037#
          %SYS-5-CONFIG_I: Configured from console by console
          RouterB_09010282327037#copy running-config startup-config
          Destination filename [startup-config]?
          Building configuration...
         [OK]
```

RouterC

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config) #hostname RouterC_09010282327037
RouterC_09010282327037(config) #interface fa0/0
RouterC_09010282327037(config-if) #ip address 192.168.3.1 255.255.255.0
RouterC_09010282327037(config-if)#no shutdown
RouterC_09010282327037(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 09010282327037(config-if)#exit
RouterC_09010282327037(config) #interface fa1/0
RouterC_09010282327037(config-if) #ip address 100.100.100.10 255.255.255.252
RouterC 09010282327037 (config-if) #no shutdown
RouterC 09010282327037(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_09010282327037(config-if)#exit
RouterC_09010282327037(config)#interface fa0/1
RouterC_09010282327037(config-if)#ip address 100.100.100.2 255.255.255.252
RouterC_09010282327037(config-if) #no shutdown
RouterC 09010282327037(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_09010282327037(config-if)#exit
RouterC_09010282327037(config) #router eigrp 1
RouterC_09010282327037(config-router) #network 192.168.3.0 0.0.0.255
RouterC_09010282327037(config-router) #network 100.100.100.8 0.0.0.3
```

```
RouterC_09010282327037(config-router) #network 100.100.100.0 0.0.0.3 RouterC_09010282327037(config-router) #no auto-summary RouterC_09010282327037(config-router) #exit RouterC_09010282327037(config) #exit RouterC_09010282327037# %SYS-5-CONFIG_I: Configured from console by console RouterC_09010282327037#copy running-config startup-config Destination filename [startup-config]? Building configuration... [OK]
```

Lakukan verifikasi EIGRP

• Router A

```
RouterA_09010282327037#show 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, 00:04:24, FastEthernet0/1
[90/30720] via 100.100.100.2, 00:03:05, 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, 00:08:25, FastEthernet0/1
D 192.168.3.0/24 [90/30720] via 100.100.100.2, 00:03:05, FastEthernet1/0
```

• Router B

• Router C

Test PING

			Hasil	
No	Sumber	Tujuan	Ya	Tidak
		PCB	Ya	
1	PCA	PCC	Ya	
2	PCB	PCA	Ya	
		PCC	Ya	
3	PCC	PCA	Ya	
		PCB	Ya	

Hasil Analisa

Terdapat 3 router dan 3 PC yang akan diuji dengan metode EIGRP, yaitu RouterA, RouterB, RouterC, PCA (PC0), PCB (PC1), dan PCC (PC2). Kemudian setiap router diberi konfigurasi dengan alamat IP yang sesuai. Proses konfigurasi pada setiap router meliputi pengaturan nama router, banner, interface fa, dan router EIGRP. Setelah dilakukan konfigurasi, melakukan verifikasi EIGRP dengan menampilkan ip route eigrp. Setelah itu lakukan tes ke semua PC melalui jaringan router menggunakan IMCP untuk memastikan apakah sambungan ke PC lain dapat berfungsi dengan baik atau tidak.

Kesimpulan

Hasil dari pengujian diatas menggunakan router EIGRP, bahwa semua PC yang diuji coba ke PC lain dapat bekerja. Dengan melakukan IMCP, bahwa PC ke PC lain dapat terhubung dengan baik. Router dapat menyambung dari satu PC ke PC lain, bahwa projek ini berfungsi dengan normal.