

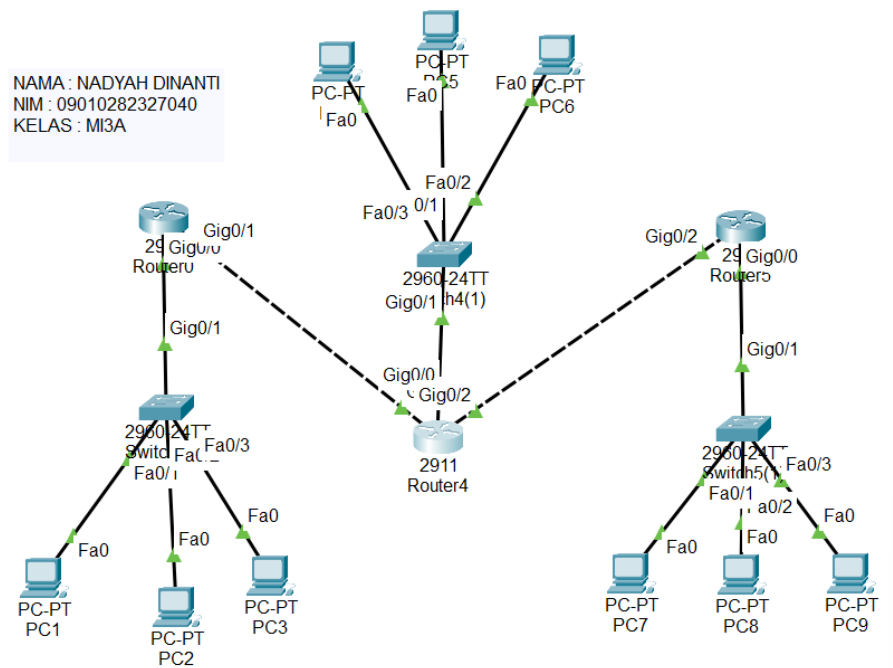
NAMA : NADYAH DINANTI

NIM : 09010282327040

KELAS : MI3A

MK : PRATIUM JARINGAN KOMPUTER

LAPORAN HASIL PRAKTIKUM



• Tabel Routing 1

```
09010282327040_R1#CONF T
Enter configuration commands, one per line. End with CNTL/Z.
09010282327040_R1(config)#int gig0/0
09010282327040_R1(config-if)#ip address 192.168.2.1 255.255.255.0
09010282327040_R1(config-if)#no sh
09010282327040_R1(config-if)#exit
09010282327040_R1(config)#int gig 0/1
09010282327040_R1(config-if)#ip address 10.10.10.1 255.255.255.252
09010282327040_R1(config-if)#no sh
09010282327040_R1(config-if)#exit
09010282327040_R1(config)#router rip
09010282327040_R1(config-router)#version 2
09010282327040_R1(config-router)#network 192.168.2.0
09010282327040_R1(config-router)#network 10.10.10.0
09010282327040_R1(config-router)#
```

```

09010282327040_R1#show ip route
Codes: L - local, C - connected, S - static, 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, 3 subnets, 2 masks
C       10.10.10.0/30 is directly connected, GigabitEthernet0/1
L       10.10.10.1/32 is directly connected, GigabitEthernet0/1
R       10.20.10.0/30 [120/1] via 10.10.10.2, 00:00:06, GigabitEthernet0/1
    192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.2.0/24 is directly connected, GigabitEthernet0/0
L       192.168.2.1/32 is directly connected, GigabitEthernet0/0
R       192.168.20.0/24 [120/1] via 10.10.10.2, 00:00:06, GigabitEthernet0/1
R       192.168.40.0/24 [120/2] via 10.10.10.2, 00:00:06, GigabitEthernet0/1

```

• Tabel Routing 2

```

09010282327040_R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
09010282327040_R2(config)#int gig0/0
09010282327040_R2(config-if)#ip address 192.168.20.1 255.255.255.0
09010282327040_R2(config-if)#no sh
09010282327040_R2(config-if)#exit
09010282327040_R2(config)#int gig0/1
09010282327040_R2(config-if)#ip address 10.10.10.2 255.255.255.252
09010282327040_R2(config-if)#no sh
09010282327040_R2(config-if)#exit
09010282327040_R2(config)#int gig0/2
09010282327040_R2(config-if)#ip address 10.20.10.1 255.255.255.252
09010282327040_R2(config-if)#no sh
09010282327040_R2(config-if)#exit
09010282327040_R2(config)#router rip
09010282327040_R2(config-router)#version 2
09010282327040_R2(config-router)#network 192.168.20.0
09010282327040_R2(config-router)#network 10.10.10.0
09010282327040_R2(config-router)#network 10.20.10.0
09010282327040_R2(config-router)#ex

09010282327040_R2#show ip route
Codes: L - local, C - connected, S - static, 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, 4 subnets, 2 masks
C       10.10.10.0/30 is directly connected, GigabitEthernet0/1
L       10.10.10.2/32 is directly connected, GigabitEthernet0/1
C       10.20.10.0/30 is directly connected, GigabitEthernet0/2
L       10.20.10.1/32 is directly connected, GigabitEthernet0/2
R       192.168.2.0/24 [120/1] via 10.10.10.1, 00:00:15, GigabitEthernet0/1
    192.168.20.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.20.0/24 is directly connected, GigabitEthernet0/0
L       192.168.20.1/32 is directly connected, GigabitEthernet0/0
R       192.168.40.0/24 [120/1] via 10.20.10.2, 00:00:18, GigabitEthernet0/2

```

• Tabel Routing 3

```

09010282327040_R3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
09010282327040_R3(config)#int gig0/0
09010282327040_R3(config-if)#ip address 192.168.40.1 255.255.255.0
09010282327040_R3(config-if)#no sh
09010282327040_R3(config-if)#exit
09010282327040_R3(config)#int gig0/2
09010282327040_R3(config-if)#ip address 10.20.10.2 255.255.255.252
09010282327040_R3(config-if)#no sh
09010282327040_R3(config-if)#exit
09010282327040_R3(config)#router rip
09010282327040_R3(config-router)#version 2
09010282327040_R3(config-router)#network 192.168.40.0
09010282327040_R3(config-router)#network 10.20.10.0
09010282327040_R3(config-router)#exit
09010282327040_R3(config)#exit
09010282327040_R3#
%SYS-5-CONFIG_I: Configured from console by console

09010282327040_R3#show ip route
Codes: L - local, C - connected, S - static, 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, 3 subnets, 2 masks
R       10.10.10.0/30 [120/1] via 10.20.10.1, 00:00:21, GigabitEthernet0/2
C       10.20.10.0/30 is directly connected, GigabitEthernet0/2
L       10.20.10.2/32 is directly connected, GigabitEthernet0/2
R      192.168.2.0/24 [120/2] via 10.20.10.1, 00:00:21, GigabitEthernet0/2
R      192.168.20.0/24 [120/1] via 10.20.10.1, 00:00:21, GigabitEthernet0/2
       192.168.40.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.40.0/24 is directly connected, GigabitEthernet0/0
L       192.168.40.1/32 is directly connected, GigabitEthernet0/0

```

Tes Koneksi ICMP (catat hasil yang anda dapatkan)

No	Sumber	Tujuan	Hasil	
			Ya	Tidak
1	PC 1	PC 2	Ya	
		PC3	Ya	
		PC 4	Ya	
		PC 5	Ya	
		PC 6	Ya	
		PC 7	Ya	
		PC 8	Ya	
		PC 9	Ya	

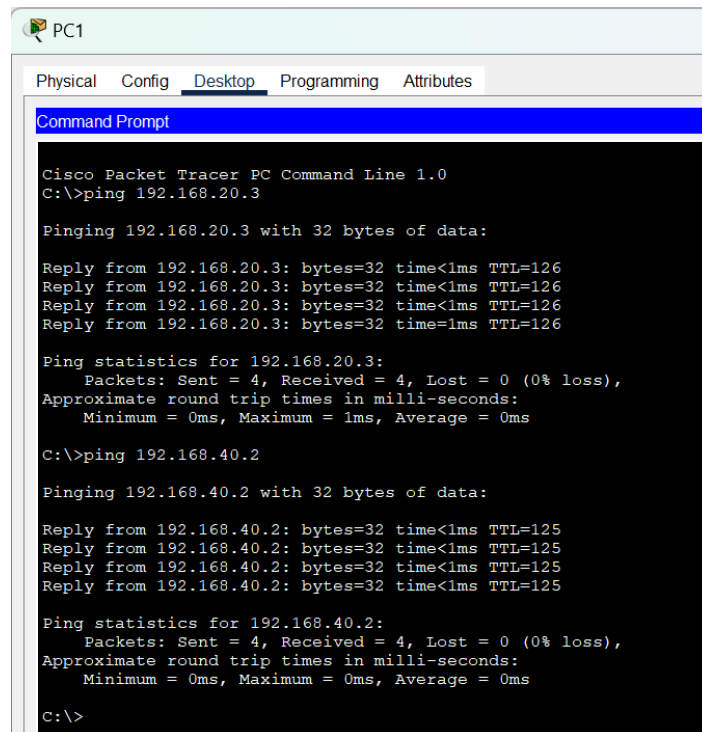
No	Sumber	Tujuan	Hasil	
			Ya	Tidak
2	PC 4	PC 1	Ya	
		PC 2	Ya	
		PC 3	Ya	
		PC 5	Ya	
		PC 6	Ya	
		PC 7	Ya	
		PC 8	Ya	
		PC 9	Ya	

No	Sumber	Tujuan	Hasil	
			Ya	Tidak
3	PC 7	PC 1	Ya	
		PC 2	Ya	
		PC 3	Ya	
		PC 4	Ya	
		PC	Ya	
		PC 7	Ya	
		PC 8	Ya	
		PC 9	Ya	

Screenshot hasil Ping pada cmd PC:

PC1 -> PC5

PC1 -> PC7



The screenshot shows the Command Prompt window for PC1 in Cisco Packet Tracer. The window title is 'PC1'. The tabs are 'Physical', 'Config', 'Desktop' (selected), 'Programming', and 'Attributes'. The Command Prompt shows the following output:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.20.3

Pinging 192.168.20.3 with 32 bytes of data:

Reply from 192.168.20.3: bytes=32 time<1ms TTL=126
Reply from 192.168.20.3: bytes=32 time<1ms TTL=126
Reply from 192.168.20.3: bytes=32 time<1ms TTL=126
Reply from 192.168.20.3: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.20.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.40.2

Pinging 192.168.40.2 with 32 bytes of data:

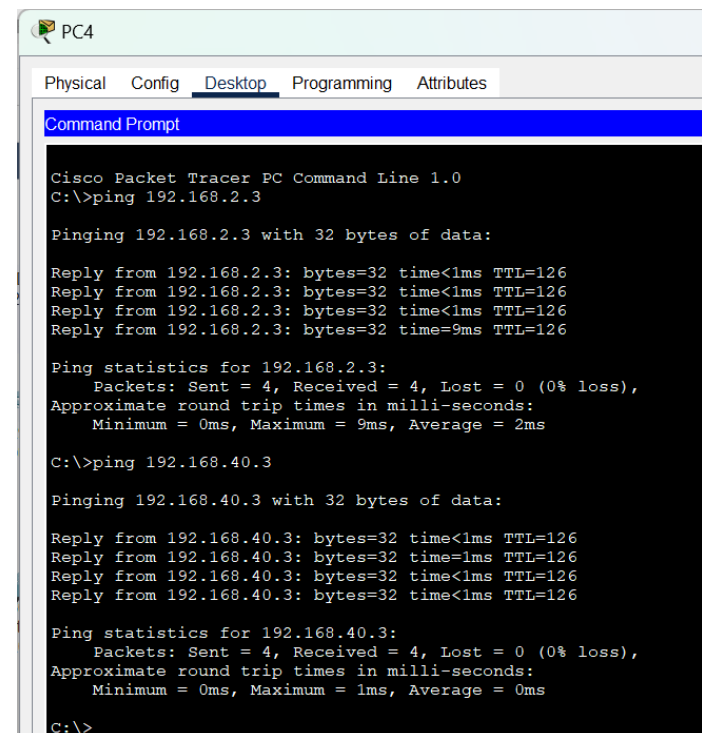
Reply from 192.168.40.2: bytes=32 time<1ms TTL=125
Reply from 192.168.40.2: bytes=32 time<1ms TTL=125
Reply from 192.168.40.2: bytes=32 time<1ms TTL=125
Reply from 192.168.40.2: bytes=32 time<1ms TTL=125

Ping statistics for 192.168.40.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

PC4 -> PC2

PC4 -> PC8



The screenshot shows the Command Prompt window for PC4 in Cisco Packet Tracer. The window title is 'PC4'. The tabs are 'Physical', 'Config', 'Desktop' (selected), 'Programming', and 'Attributes'. The Command Prompt shows the following output:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

Reply from 192.168.2.3: bytes=32 time<1ms TTL=126
Reply from 192.168.2.3: bytes=32 time<1ms TTL=126
Reply from 192.168.2.3: bytes=32 time<1ms TTL=126
Reply from 192.168.2.3: bytes=32 time=9ms TTL=126

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 9ms, Average = 2ms

C:\>ping 192.168.40.3

Pinging 192.168.40.3 with 32 bytes of data:

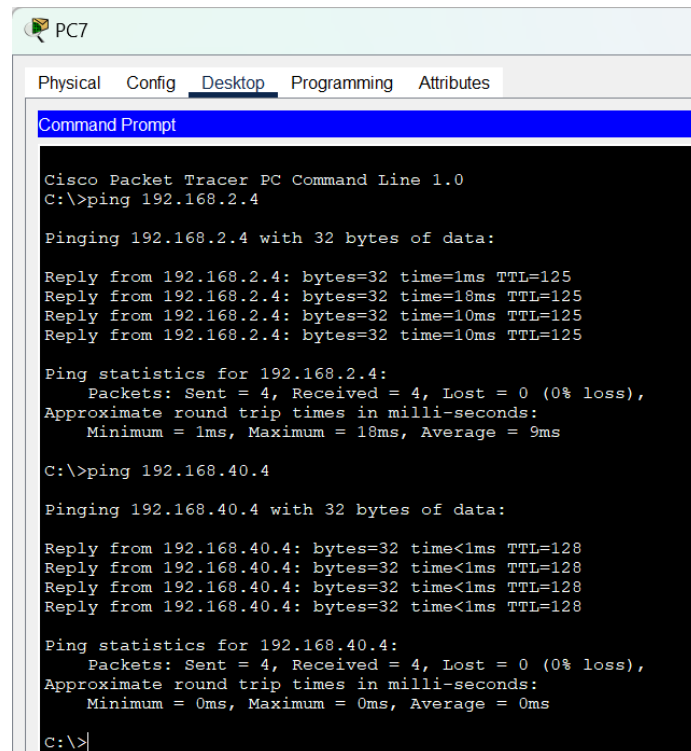
Reply from 192.168.40.3: bytes=32 time<1ms TTL=126
Reply from 192.168.40.3: bytes=32 time<1ms TTL=126
Reply from 192.168.40.3: bytes=32 time<1ms TTL=126
Reply from 192.168.40.3: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.40.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

PC7 -> PC3

PC7 -> PC9



```
PC7
Physical Config Desktop Programming Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.4

Pinging 192.168.2.4 with 32 bytes of data:

Reply from 192.168.2.4: bytes=32 time=1ms TTL=125
Reply from 192.168.2.4: bytes=32 time=18ms TTL=125
Reply from 192.168.2.4: bytes=32 time=10ms TTL=125
Reply from 192.168.2.4: bytes=32 time=10ms TTL=125

Ping statistics for 192.168.2.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 18ms, Average = 9ms

C:\>ping 192.168.40.4

Pinging 192.168.40.4 with 32 bytes of data:

Reply from 192.168.40.4: bytes=32 time<1ms TTL=128
Reply from 192.168.40.4: bytes=32 time<1ms TTL=128
Reply from 192.168.40.4: bytes=32 time<1ms TTL=128
Reply from 192.168.40.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.40.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

HASIL PERCOBAAN :

1. Pembuatan Topologi Jaringan: Topologi jaringan dibuat sesuai Gambar yang terdiri dari tiga router (R1, R2, dan R3) yang saling terhubung dengan beberapa PC sebagai klien.
2. Konfigurasi Routing Dynamic (RIP v2):
 - Pada router R1, ditambahkan jaringan 192.168.2.0 dan 10.10.10.0 menggunakan perintah:

R1(config)#router rip

R1(config-router)#version 2

R1(config-router)#network 192.168.2.0

R1(config-router)#network 10.10.10.0
 - Pada router R2, ditambahkan jaringan 192.168.20.0, 10.10.10.0, dan 10.20.10.0:

```
R2(config)#router rip
```

```
R2(config-router)#version 2
```

```
R2(config-router)#network 192.168.20.0
```

```
R2(config-router)#network 10.10.10.0
```

```
R2(config-router)#network 10.20.10.0
```

- Pada router R3, ditambahkan jaringan 192.168.40.0 dan 10.20.10.0:

```
R3(config)#router rip
```

```
R3(config-router)#version 2
```

```
R3(config-router)#network 192.168.40.0
```

```
R3(config-router)#network 10.20.10.0
```

3. Pengamatan Tabel Routing: Melalui perintah `show ip route` di setiap router (R1, R2, dan R3), terlihat bahwa jaringan berhasil diidentifikasi dengan baik pada masing-masing router.
4. Tes Koneksi ICMP:
Uji koneksi dilakukan melalui ping antar PC, seperti dari PC1 ke PC5, PC1 ke PC7, PC4 ke PC8, dan sebagainya. Hasil ping dicatat untuk setiap koneksi sebagai indikator keberhasilan atau kegagalan komunikasi antar perangkat di jaringan.

Analisa

1. Protokol RIP v2 berhasil digunakan untuk menghubungkan seluruh jaringan dengan baik. Penggunaan RIP v2 memungkinkan router untuk bertukar informasi routing antar jaringan, sehingga cocok untuk jaringan berskala kecil hingga menengah. Namun, jika jaringan diperluas, protokol ini mungkin perlu digantikan dengan yang lebih efisien, seperti OSPF atau EIGRP.
2. Hasil tes ping antar PC menunjukkan bahwa konfigurasi routing berjalan dengan benar pada beberapa jalur, jika terdapat jalur yang gagal terkoneksi. ini bisa jadi disebabkan oleh kesalahan pengaturan IP atau kendala dalam topologi jaringan. Diperlukan pengecekan lebih lanjut pada jalur yang gagal untuk memastikan seluruh perangkat terhubung sesuai konfigurasi.

3. Pengecekan tabel routing di setiap router menunjukkan bahwa masing-masing entri jaringan dikenali dan ditambahkan secara otomatis melalui RIP v2, yang mempermudah dalam pengelolaan jaringan dinamis dibandingkan routing statis yang memerlukan input manual.

Kesimpulan

1. Konfigurasi dynamic routing menggunakan RIP v2 berhasil diterapkan di semua router, memungkinkan komunikasi antar jaringan dengan baik.
2. Tes ping berhasil dilakukan antar PC, yang menunjukkan koneksi berfungsi dengan benar. Jalur yang gagal memerlukan pengecekan lebih lanjut untuk memastikan tidak ada kendala.