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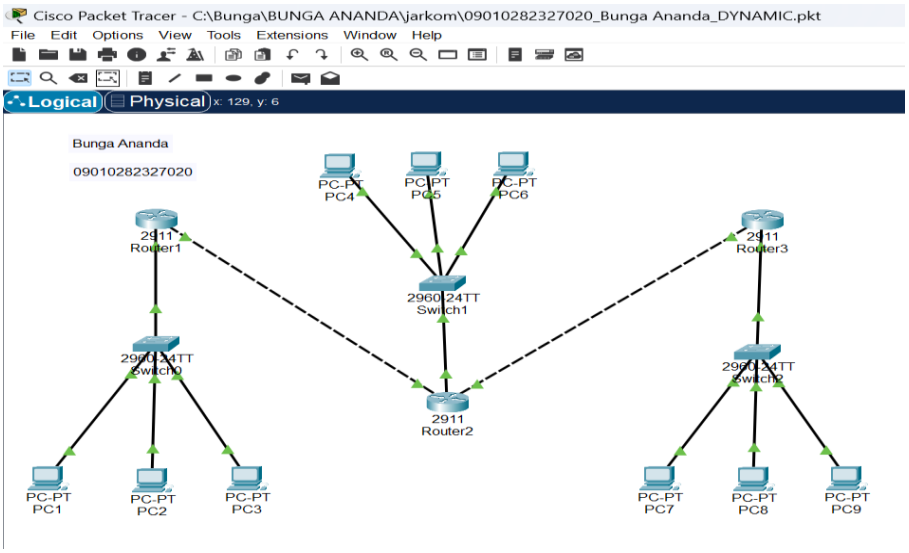
MK : Praktikum Jaringan Komputer

Laporan Hasil Praktikum



Tabel Routing 1

```
09010282327020_R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
09010282327020_R1(config)#int gig0/0
09010282327020_R1(config-if)#ip address 192.168.2.1 255.255.255.0
09010282327020_R1(config-if)#no sh
09010282327020_R1(config-if)#ex
09010282327020_R1(config)#int gig0/1
09010282327020_R1(config-if)#ip address 10.10.10.1 255.255.255.252
09010282327020_R1(config-if)#no sh
09010282327020_R1(config-if)#ex
09010282327020_R1(config)#router rip
09010282327020_R1(config-router)#version 2
09010282327020_R1(config-router)#network 192.168.2.0
09010282327020_R1(config-router)#network 10.10.10.0
09010282327020_R1(config-router)#ex
09010282327020_R1(config)#ex
09010282327020_R1#
%SYS-5-CONFIG_I: Configured from console by console

09010282327020_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

```
09010282327020_R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
09010282327020_R2(config)#int gig0/0
09010282327020_R2(config-if)#ip address 192.168.20.1 255.255.255.0
09010282327020_R2(config-if)#no sh
09010282327020_R2(config-if)#ex
09010282327020_R2(config)#int gig0/1
09010282327020_R2(config-if)#ip address 10.10.10.2 255.255.255.252
09010282327020_R2(config-if)#no sh
09010282327020_R2(config-if)#ex
09010282327020_R2(config)#int gig0/2
09010282327020_R2(config-if)#ip address 10.20.10.1 255.255.255.252
09010282327020_R2(config-if)#no sh
09010282327020_R2(config-if)#ex
09010282327020_R2(config)#router rip
09010282327020_R2(config-router)#version 2
09010282327020_R2(config-router)#network 192.168.20.0
09010282327020_R2(config-router)#network 10.10.10.0
09010282327020_R2(config-router)#network 10.20.10.0
09010282327020_R2(config-router)#ex
09010282327020_R2(config)#ex
09010282327020_R2#
%SYS-5-CONFIG_I: Configured from console by console

09010282327020_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

```
09010282327020_R3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
09010282327020_R3(config)#int gig0/0
09010282327020_R3(config-if)#ip address 192.168.40.1 255.255.255.0
09010282327020_R3(config-if)#no sh
09010282327020_R3(config-if)#ex
09010282327020_R3(config)#int gig0/2
09010282327020_R3(config-if)#ip address 10.20.10.2 255.255.255.252
09010282327020_R3(config-if)#no sh
09010282327020_R3(config-if)#ex
09010282327020_R3(config)#router rip
09010282327020_R3(config-router)#version 2
09010282327020_R3(config-router)#network 192.168.40.0
09010282327020_R3(config-router)#network 10.20.10.0
09010282327020_R3(config-router)#ex
09010282327020_R3(config)#ex
09010282327020_R3#
%SYS-5-CONFIG_I: Configured from console by console

09010282327020_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
```

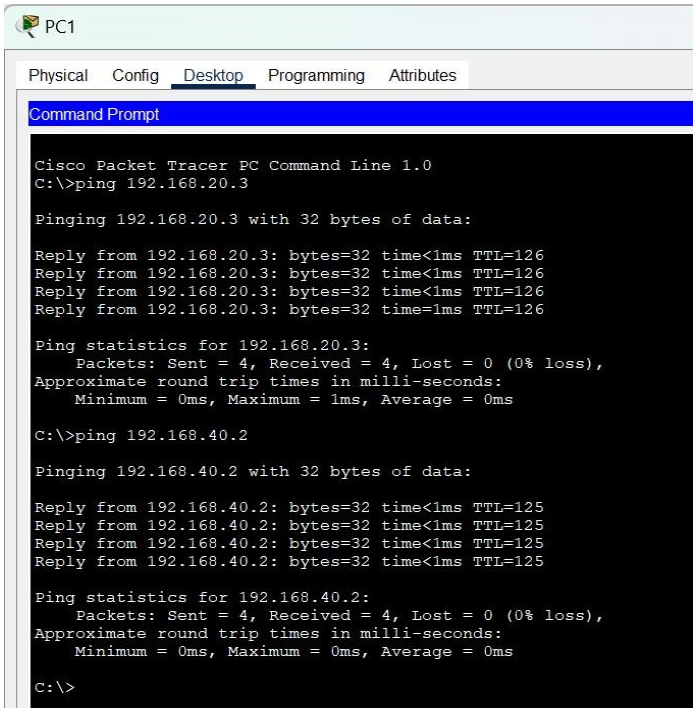
Tes Koneksi ICMP (catat hasil yang anda dapatkan)

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	
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	
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:

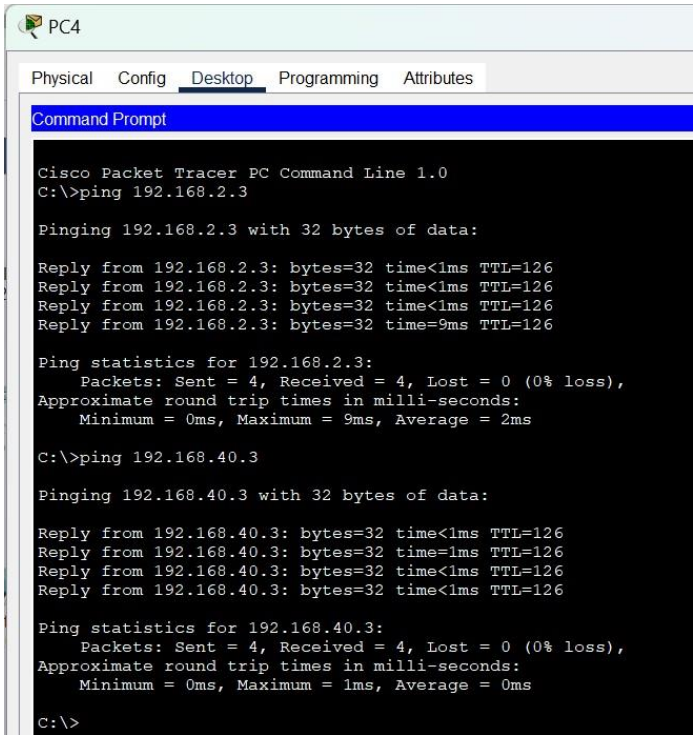
PC1 → PC5

PC1 → PC7



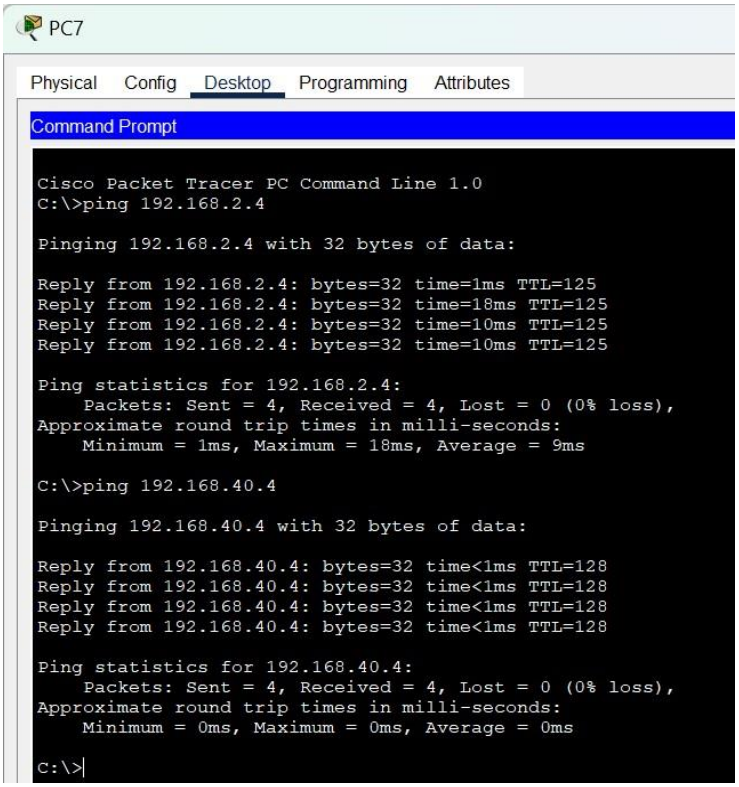
PC4 → PC2

PC4 → PC8



PC7 → PC3

PC7 → PC9



Hasil Percobaan:

1. **Pembuatan Topologi Jaringan:** Topologi terdiri dari tiga router (R1, R2, dan R3) yang terhubung, dengan beberapa PC sebagai klien.
2. **Konfigurasi Dynamic Routing (RIP v2):** RIP v2 diterapkan pada setiap router dengan memasukkan jaringan yang relevan, memungkinkan pembaruan otomatis pada tabel routing.
3. **Pengamatan Tabel Routing:** Setiap router berhasil mengenali jaringan yang terhubung, terbukti dari entri yang muncul pada tabel routing masing-masing.
4. **Pengujian Koneksi ICMP:** Pengujian konektivitas dilakukan melalui ping antar PC (misalnya, dari PC1 ke PC5, PC4 ke PC8). Hasil ping dicatat sebagai indikasi keberhasilan atau kegagalan koneksi.

Analisis:

1. **Kinerja Protokol RIP v2:** Penggunaan RIP v2 berjalan baik untuk pertukaran informasi routing antar router dalam jaringan ini, membuatnya efektif untuk jaringan kecil hingga menengah. Namun, untuk jaringan yang lebih besar, protokol seperti OSPF atau EIGRP mungkin lebih sesuai.
2. **Hasil Pengujian Koneksi:** Sebagian besar tes ping menunjukkan koneksi berhasil, tetapi ada beberapa jalur yang gagal terhubung, kemungkinan disebabkan oleh kesalahan pengaturan IP atau masalah topologi yang perlu ditelusuri lebih lanjut.
3. **Kemudahan Manajemen Jaringan:** RIP v2 memungkinkan penambahan entri secara otomatis di tabel routing, yang lebih praktis dibandingkan pengaturan manual pada routing statis.

Kesimpulan:

1. **Keberhasilan Implementasi RIP v2:** Dynamic routing menggunakan RIP v2 berhasil diimplementasikan, memastikan jaringan terhubung dengan baik.
2. **Konektivitas yang Memadai:** Sebagian besar tes ping antar perangkat berhasil, meskipun jalur yang gagal perlu diperiksa lebih lanjut untuk memastikan koneksi seluruh jaringan berfungsi tanpa hambatan.

Penggunaan RIP v2 memudahkan konfigurasi jaringan yang dinamis dan meminimalkan pengaturan manual, tetapi tinjauan lanjutan dapat membantu untuk mengoptimalkan jaringan dalam hal stabilitas dan skalabilitas.