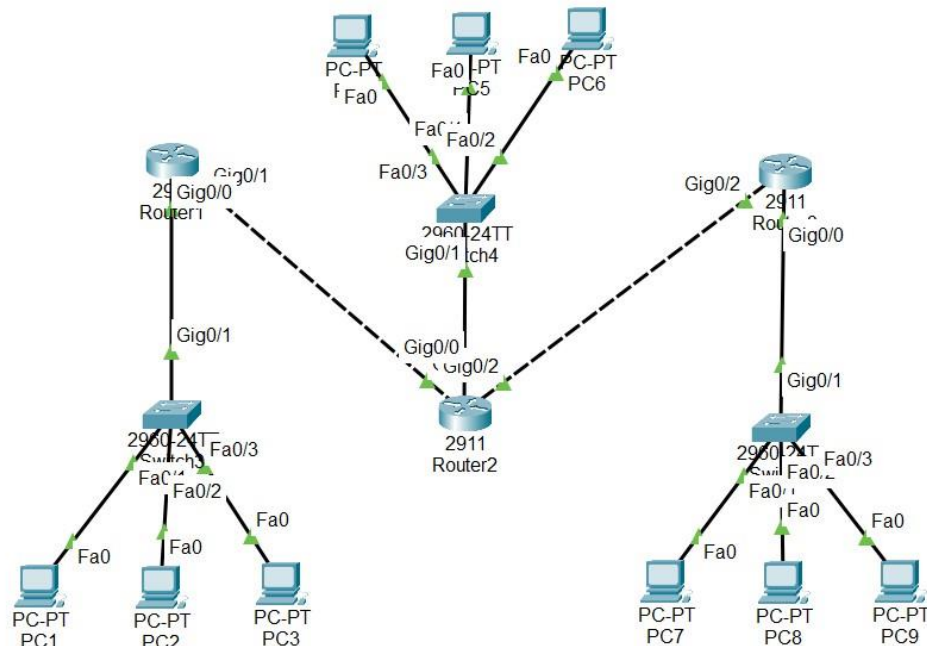


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## LAPORAN HASIL PRAKTIKUM



### • Tabel Routing 1

```
09010282327040_R1(config)#ip route 192.168.20.0 255.255.255.0 10.10.10.2
09010282327040_R1(config)#ip route 10.20.10.0 255.255.255.252 10.10.10.2
09010282327040_R1(config)#ip route 192.168.40.0 255.255.255.0 10.10.10.2
09010282327040_R1(config)#

09010282327040_R1>enable
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, 3 masks
C       10.0.0.0/8 is directly connected, GigabitEthernet0/1
L       10.10.10.1/32 is directly connected, GigabitEthernet0/1
S       10.20.10.0/30 [1/0] via 10.10.10.2
       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
S       192.168.20.0/24 [1/0] via 10.10.10.2
S       192.168.40.0/24 [1/0] via 10.10.10.2
```

### • Tabel Routing 2

```

09010282327040_R2(config)#ip route 192.168.2.0 255.255.255.0 10.10.10.1
09010282327040_R2(config)#ip route 192.168.40.0 255.255.255.0 10.20.10.2
09010282327040_R2(config)#

```

```

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
S       192.168.2.0/24 [1/0] via 10.10.10.1
      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
S       192.168.40.0/24 [1/0] via 10.20.10.2

```

### • Tabel Routing 3

```

09010282327040_R2#CONF T
Enter configuration commands, one per line. End with CNTL/Z.
09010282327040_R2(config)#hostname 09010282327040_R3
09010282327040_R3(config)#ip route 192.168.20.0 255.255.255.0 10.20.10.1
09010282327040_R3(config)#ip route 10.10.10.0 255.255.255.252 10.20.10.1
09010282327040_R3(config)#ip route 192.168.2.0 255.255.255.0 10.20.10.1
09010282327040_R3(config)#EX
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
S       10.10.10.0/30 [1/0] via 10.20.10.1
C       10.20.10.0/30 is directly connected, GigabitEthernet0/2
L       10.20.10.2/32 is directly connected, GigabitEthernet0/2
S       192.168.2.0/24 [1/0] via 10.20.10.1
S       192.168.20.0/24 [1/0] via 10.20.10.1
      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	

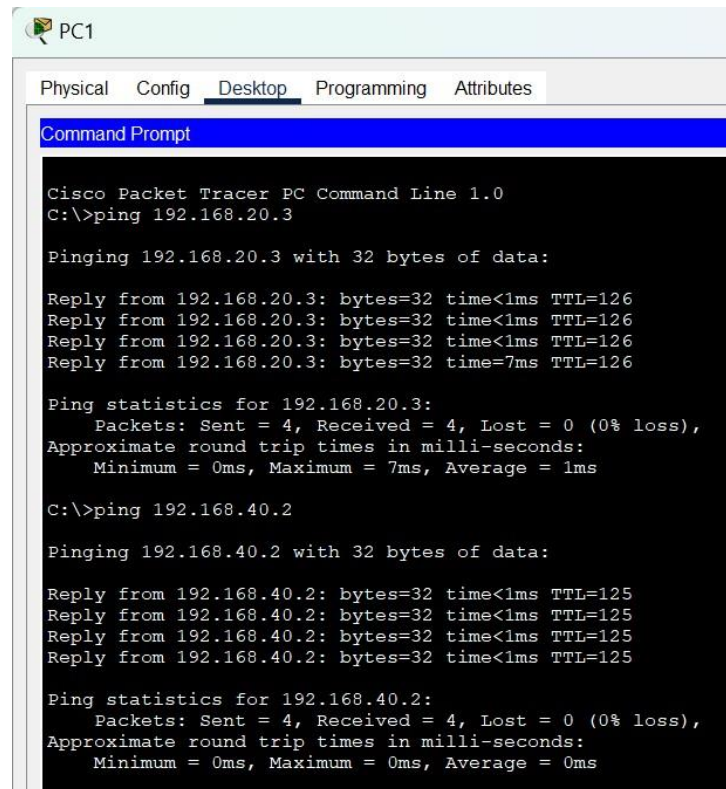
		PC 9	Ya	
No	Sumber	Tujuan	Hasil	
			Ya	Tidak
2	PC 4	PC 1	Ya	
		PC 2	Ya	
		PC 3	Ya	
		PC 5	Ya	
		PC 6	Ya	
		PC 7	Ya	
		PC 8	Ya	
		PC 9	Ya	

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 'PC1' window in Cisco Packet Tracer. The 'Desktop' tab is selected, displaying a 'Command Prompt' window. The text in the command prompt is as follows:

```
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=7ms 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 = 7ms, Average = 1ms

C:\>ping 192.168.40.2

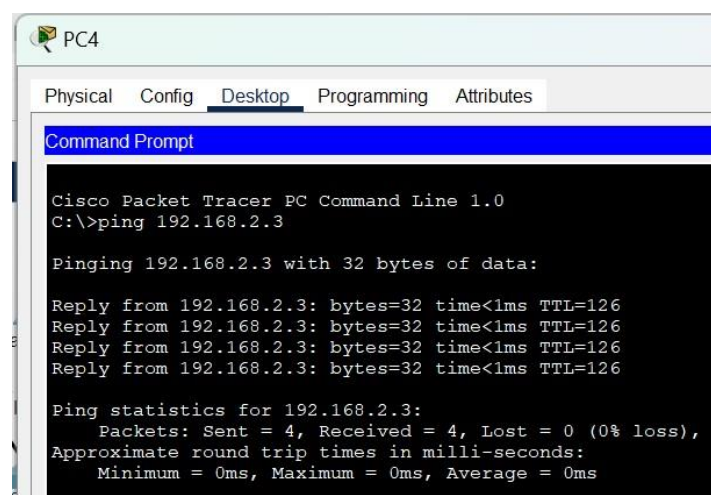
Pinging 192.168.40.2 with 32 bytes of data:

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
```

**PC4 -> PC2**

**PC4 -> PC8**



The screenshot shows the 'PC4' window in Cisco Packet Tracer. The 'Desktop' tab is selected, displaying a 'Command Prompt' window. The text in the command prompt is as follows:

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

```

C:\>ping 192.168.40.3

Pinging 192.168.40.3 with 32 bytes of data:

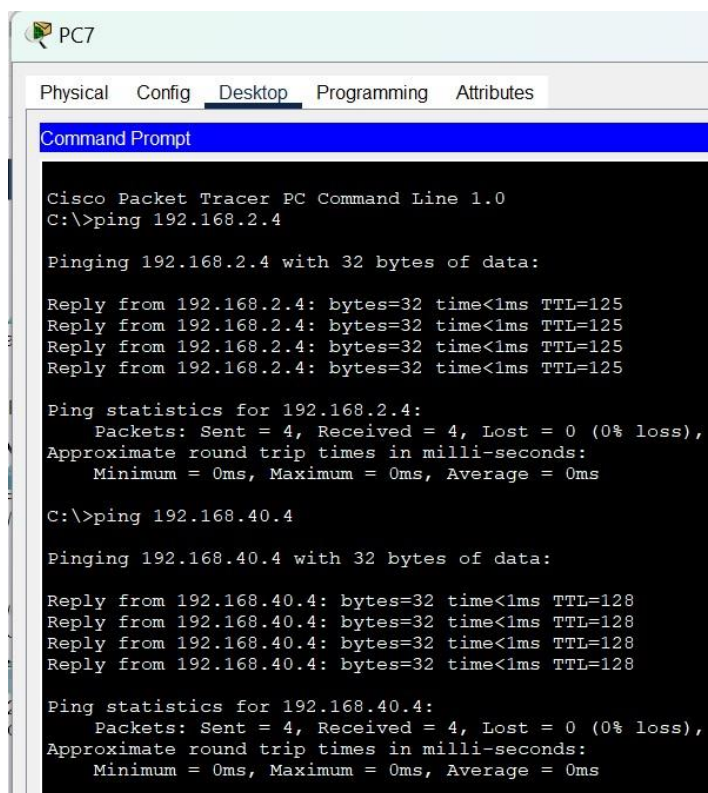
Reply from 192.168.40.3: bytes=32 time<1ms TTL=126
Reply from 192.168.40.3: bytes=32 time<1ms TTL=126
Reply from 192.168.40.3: bytes=32 time<1ms TTL=126
Reply from 192.168.40.3: bytes=32 time<1ms TTL=126

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 = 0ms, Average = 0ms

```

**PC7 -> PC3**

**PC7 -> PC9**



```

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<1ms TTL=125
Reply from 192.168.2.4: bytes=32 time<1ms TTL=125
Reply from 192.168.2.4: bytes=32 time<1ms 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 = 0ms, Maximum = 0ms, Average = 0ms

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

```

## **HASIL PERCOBAAN :**

### **Konfigurasi Router:**

- Setiap router berhasil dikonfigurasi dengan alamat IP yang sesuai dan disimpan di NVRAM. Masing-masing router (R1, R2, R3) menampilkan tabel routing setelah konfigurasi statis ditambahkan.
- Router menunjukkan entri "S" dalam tabel routing yang menunjukkan rute statis.

### **Tes Koneksi ICMP:**

- Koneksi ICMP berhasil
- Tidak ada masalah dalam pengiriman paket ICMP antara perangkat yang diuji, menandakan bahwa routing statis telah diatur dengan benar

### **ANALISIS PERCOBAAN :**

Percobaan ini berfokus pada konfigurasi dan pengujian routing statis pada jaringan menggunakan beberapa router dan klien PC. Setiap router diberi nama, dikonfigurasi dengan IP address, dan disimpan ke NVRAM. Tabel routing statis dibuat untuk menghubungkan jaringan yang tidak terkoneksi langsung ke router. Langkah-langkah ini memastikan bahwa setiap router dapat mengenali rute ke jaringan lain melalui entri routing yang ditambahkan secara manual.

Selanjutnya, tes koneksi dilakukan menggunakan ICMP (ping) antara berbagai PC di jaringan, dan hasil ping dicatat. Hal ini memungkinkan pengujian keberhasilan komunikasi antara perangkat yang berada pada subnet yang berbeda, yang diarahkan melalui router.

### **KESIMPULAN PERCOBAAN :**

Dari percobaan ini, dapat disimpulkan bahwa routing statis berhasil diimplementasikan ketika tabel routing yang tepat ditambahkan ke router. Pengujian ICMP menunjukkan bahwa perangkat yang tidak berada di jaringan yang sama secara langsung dapat berkomunikasi dengan baik selama tabel routing statis telah dikonfigurasi dengan benar. Namun, jika ada perubahan pada jaringan atau jumlah router, tabel tersebut perlu diperbarui secara manual.