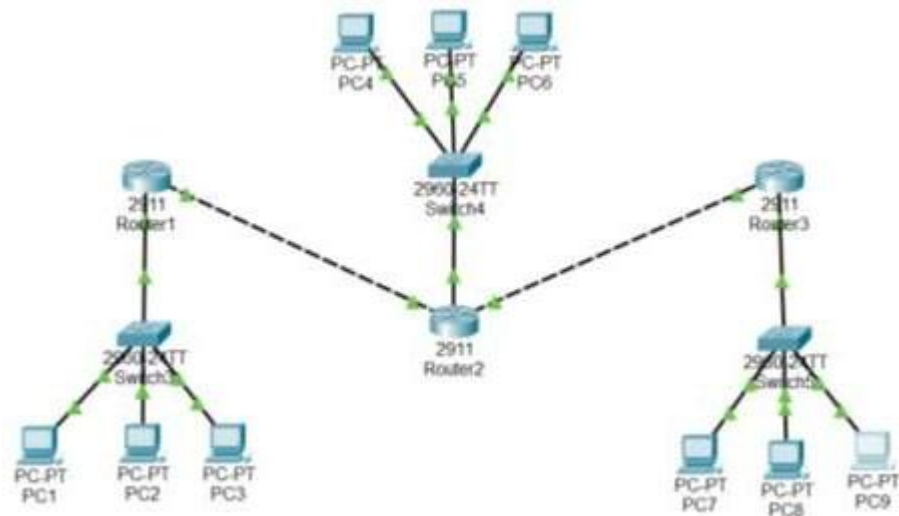Nama : Ralovesya Chafella Gusman
Nim : 09010282327036
Kelas : MI 3A
MK : Praktikum Jaringan Komputer

Praktikum jaringan komputer

Router 1

```
09010182327036_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, 4 subnets, 4 masks
C       10.0.0.0/8 is directly connected, GigabitEthernet0/1
L       10.10.10.1/32 is directly connected, GigabitEthernet0/1
S       10.20.10.0/24 [1/0] via 10.10.10.2
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

09010182337036 R1#
```

Router 2

```
09010182327036_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

09010182327036_R2#
```

Router 3

```
09010182327036_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

09010182327036_R3#
```

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

Sumber	Sumber	Tujuan	Hasil	
			Ya	Tidak
	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
	PC 7	PC 1	Ya	
		PC 2	Ya	
		PC 3	Ya	
		PC 4	Ya	
		PC 5	Ya	

		PC 6	Y a	
		PC 8	Y a	
		PC 9	Y a	

PC1→PC5
PC1→PC7

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

Pinging 192.168.20.3 with 32 bytes of data:

Request timed out.
Request timed out.
Reply from 192.168.20.3: bytes=32 time=10ms TTL=126
Reply from 192.168.20.3: bytes=32 time=10ms TTL=126

Ping statistics for 192.168.20.3:
    Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 10ms, Average = 10ms

C:\>ping 192.168.40.3

Pinging 192.168.40.3 with 32 bytes of data:

Request timed out.
Request timed out.
Reply from 192.168.40.3: bytes=32 time=13ms TTL=125
Reply from 192.168.40.3: bytes=32 time=12ms TTL=125

Ping statistics for 192.168.40.3:
    Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
Approximate round trip times in milli-seconds:
    Minimum = 12ms, Maximum = 13ms, Average = 12ms

C:\>
```

PC4→PC2
PC4→PC8

```
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=128
Reply from 192.168.2.3: bytes=32 time<1ms TTL=128
Reply from 192.168.2.3: bytes=32 time=1ms TTL=128
Reply from 192.168.2.3: bytes=32 time<1ms TTL=128

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 = 1ms, 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=125
Reply from 192.168.40.3: bytes=32 time=10ms TTL=125
Reply from 192.168.40.3: bytes=32 time<1ms TTL=125
Reply from 192.168.40.3: bytes=32 time=18ms TTL=125

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 = 18ms, Average = 7ms
```

PC7→PC3
PC7→PC9

```
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=128
Reply from 192.168.2.4: bytes=32 time<1ms TTL=128
Reply from 192.168.2.4: bytes=32 time<1ms TTL=128
Reply from 192.168.2.4: bytes=32 time<1ms TTL=128

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:

Request timed out.
Reply from 192.168.40.4: bytes=32 time=23ms TTL=125
Reply from 192.168.40.4: bytes=32 time=12ms TTL=125
Reply from 192.168.40.4: bytes=32 time=12ms TTL=125

Ping statistics for 192.168.40.4:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 12ms, Maximum = 23ms, Average = 15ms
```

Hasil percobaan:
Router yang telah dikonfigurasi sesuai dengan alamat ip.setiap router menampilkan tabel routing yang telah ditambahkan.

Analisis percobaan:
Pada percobaan ini, dilakukan konfigurasi dan pengujian routing statis pada jaringan yang terdiri dari beberapa router dan komputer. Tabel routing statis dibuat untuk memungkinkan komunikasi antar jaringan yang tidak terhubung langsung melalui router. Langkah ini memastikan setiap router mampu menemukan jalur menuju jaringan lain melalui entri routing yang diatur secara manual.

Setelah itu, konektivitas diuji dengan menggunakan ICMP (ping) antar komputer dalam jaringan, dan hasil ping dicatat. Proses ini memungkinkan verifikasi keberhasilan komunikasi antara perangkat di subnet berbeda yang dihubungkan melalui router.

Kesimpulan percobaan:

Kesimpulan dari percobaan ini adalah bahwa pengaturan routing statis yang tepat memungkinkan komunikasi yang efektif antara berbagai jaringan yang tidak terhubung langsung. Dengan menyusun tabel routing secara manual, setiap router dapat mengarahkan paket data dengan benar. Pengujian konektivitas menggunakan ICMP (ping) membuktikan bahwa perangkat di subnet yang berbeda dapat berkomunikasi dengan sukses, menunjukkan bahwa konfigurasi routing statis yang dilakukan telah berhasil.