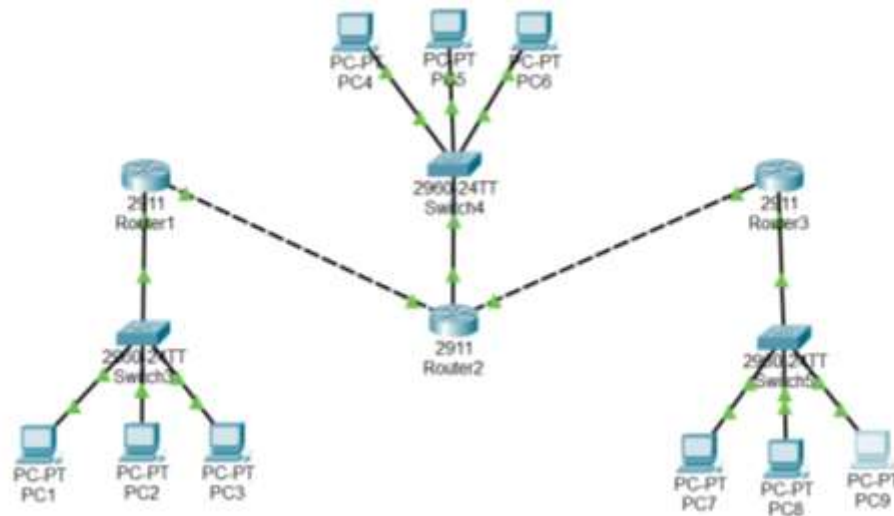


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Mata Kuliah: Praktikum Jaringan Komputer

## Praktikum jaringan komputer



### Router 1

```
09010182327025_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
```

```
09010182327025_R1#
```

## Router 2

```
09010182327025_R2(config)#ip route 192.168.2.0 255.255.255.0 10.10.10.1
09010182327025_R2(config)#ip route 192.168.40.0 255.255.255.0 10.10.10.2
```

```
09010182327025_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
S    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
```

```
09010182327025_R2#
```

## Router 3

```
09010182327025_R3(config)#ip route 192.168.20.0 255.255.255.0 10.20.10.1
09010182327025_R3(config)#ip route 10.10.10.0 255.255.255.252 10.20.10.1
09010182327025_R3(config)#ip route 192.168.2.0 255.255.255.0 10.20.10.1
09010182327025_R3(config)#exit
09010182327025_R3#
```

```
09010182327025_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
S    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
```

```
09010182327025_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	Ya	
		PC 8	Ya	
		PC 9	Ya	

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:**

Dalam percobaan ini,melakukan pengaturan dan pengujian routing statis dalam jaringan yang melibatkan beberapa router dan komputer. Tabel routing statis disusun untuk memungkinkan komunikasi antara jaringan yang tidak terhubung secara langsung dengan router. Tahapan ini memastikan setiap router dapat menemukan rute menuju jaringan lain melalui entri routing yang diatur secara manual.

Selanjutnya, konektivitas diuji menggunakan ICMP (ping) antara komputer dalam jaringan, dan hasil ping dicatat. Hal ini memungkinkan verifikasi keberhasilan komunikasi antara perangkat di subnet yang berbeda yang diarahkan 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.