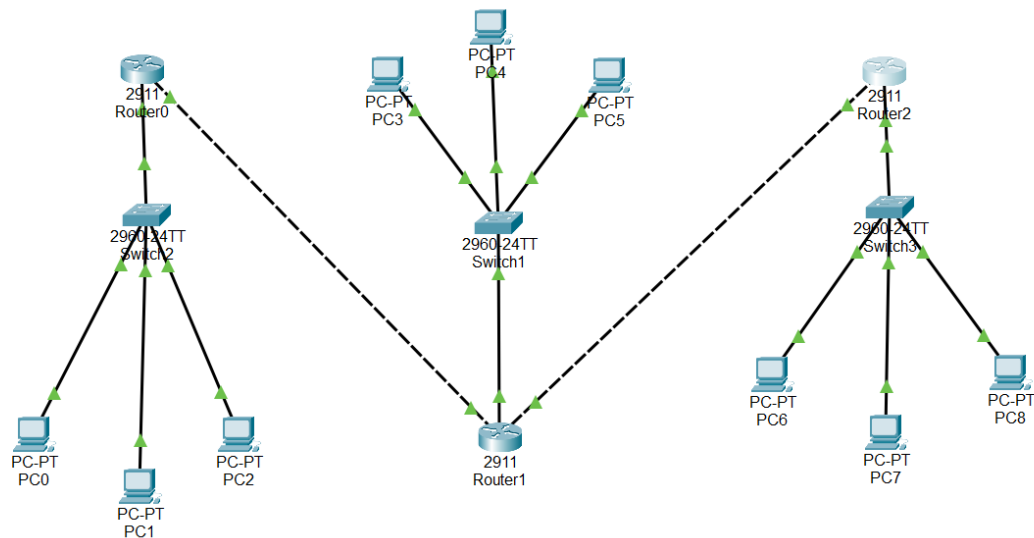**Nama**   : M Rayhan Naufal Putra

NIM   : 09010282327037

Kelas   : MI 3A

PRAKTIKUM JARINGAN KOMPUTER

- **Tabel routing 1**

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#Hostname R1
R1(config)#banner motd #Selamat Datang di R1 I#
R1(config)#interface GigabitEthernet0/0
R1(config-if)#interface gigabitEthernet 0/0
R1(config-if)#ip address 192.168.2.1 255.255.255.0
R1(config-if)#no shutdown

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

R1(config-if)#exit
R1(config)#interface gigabitEthernet 0/1
R1(config-if)#ip address 10.10.10.1 255.255.255.252
R1(config-if)#no shutdown

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

R1(config-if)#exit
R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```

- **Tabel routing 2**

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#Hostname R2
R2(config)#banner motd #Selamat Datang di R2 I#
R2(config)#interface gigabitEthernet 0/0
R2(config-if)#ip address 192.168.20.1 255.255.255.0
R2(config-if)#no shutdown

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

R2(config-if)#exit
R2(config)#interface gigabitEthernet 0/1
R2(config-if)#ip address 10.10.10.2 255.255.255.252
R2(config-if)#no shutdown

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

R2(config-if)#exit
R2(config)#interface gigabitEthernet 0/2
R2(config-if)#ip address 10.20.10.1 255.255.255.252
R2(config-if)#no shutdown

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

R2(config-if)#exit
R2(config)#exit
R2#
%SYS-5-CONFIG_I: Configured from console by console

R2#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```

- **Tabel routing 3**

```
09010282327037_R3>enable
09010282327037_R3#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
09010282327037_R3(config)#interface gigabitEthernet 0/0
09010282327037_R3(config-if)#ip address 192.168.40.1 255.255.255.0
09010282327037_R3(config-if)#no shutdown

09010282327037_R3(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

09010282327037_R3(config-if)#exit
09010282327037_R3(config)#interface gigabitEthernet 0/2
09010282327037_R3(config-if)#ip address 10.20.10.2
% Incomplete command.
09010282327037_R3(config-if)#ip address 10.20.10.2 255.255.255.252
09010282327037_R3(config-if)#no shutdown

09010282327037_R3(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up

09010282327037_R3(config-if)#exit
09010282327037_R3(config)#exit
09010282327037_R3#
%SYS-5-CONFIG_I: Configured from console by console

09010282327037_R3#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```

Tes Koneksi ICMP (catat hasil yang anda dapatkan)

No	Sumber	Tujuan	Hasil	
			Ya	Tidak

		PC2	Ya	
1.	PC1	PC3	Ya	
		PC4	Ya	
		PC5	Ya	
		PC6	Ya	
		PC7	Ya	
		PC8	Ya	
		PC9	Ya	
2.	PC4	PC1	Ya	
		PC2	Ya	
		PC3	Ya	
		PC5	Ya	
		PC6	Ya	
		PC7	Ya	
		PC8	Ya	
		PC9	Ya	
3.	PC7	PC1	Ya	
		PC2	Ya	
		PC3	Ya	
		PC4	Ya	
		PC5	Ya	
		PC6	Ya	
		PC8	Ya	
		PC9	Ya	

Hasil screenshot

- PC1 > PC5

```
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 = 0ms, Average = 0ms
```

- PC1 > PC7

```
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

```
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
```

- PC4 > PC8

```
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

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

- PC7 > PC9

```
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:

- o 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.
  - o Router menunjukkan entri "S" dalam tabel routing yang menunjukkan rute statis.
- Tes Koneksi ICMP:
  - o Koneksi ICMP berhasil
  - o 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.