

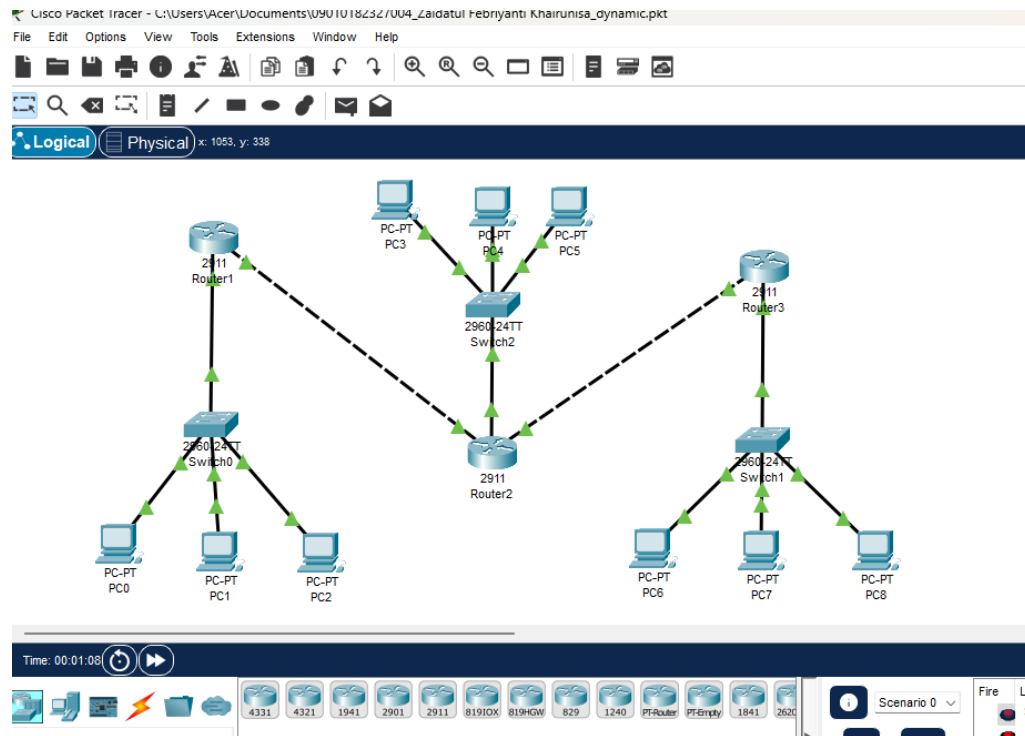
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Topologi



Melihat table routing 1

```
Router1
Physical Config CLI Attributes
IOS Command Line Interface
3 Gigabit Ethernet interfaces
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)
Press RETURN to get started!

%LINEPROTO-S-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-S-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-S-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to down
%LINEPROTO-S-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

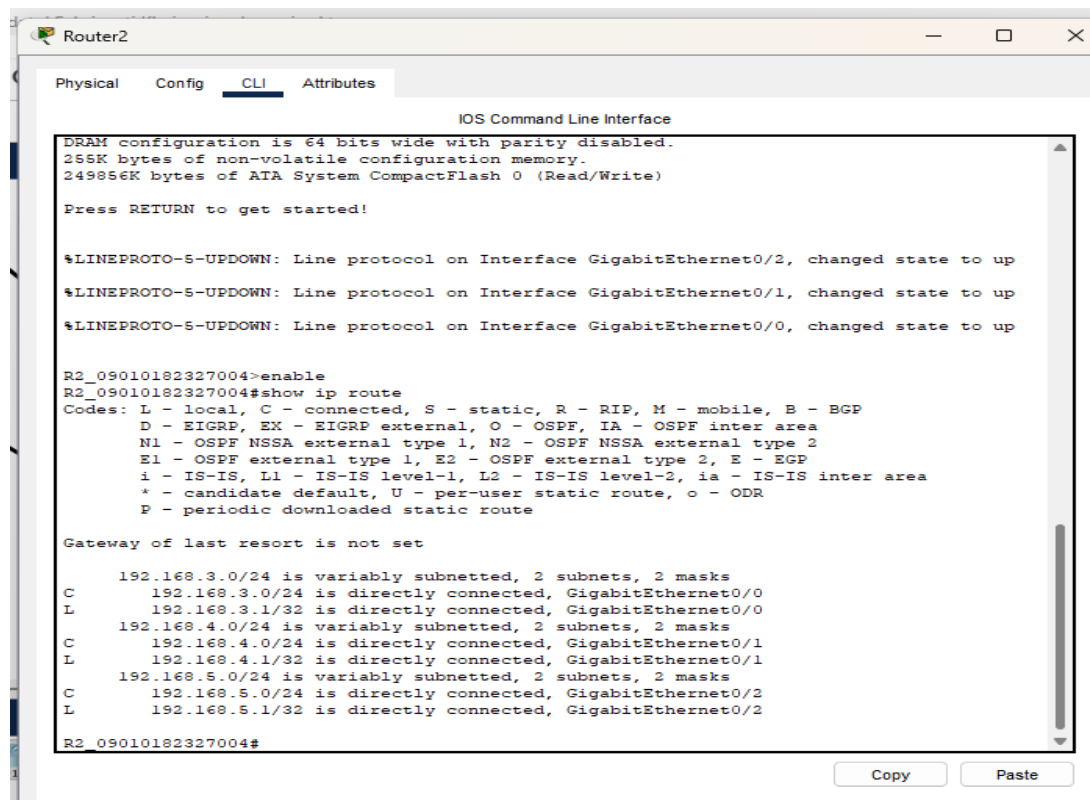
R1_09010182327004>enable
R1_09010182327004#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external 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

    192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0
L       192.168.1.1/32 is directly connected, GigabitEthernet0/0
    192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.2.0/24 is directly connected, GigabitEthernet0/1
L       192.168.2.1/32 is directly connected, GigabitEthernet0/1

R1_09010182327004#
```

Melihat table routing 2



The screenshot shows the CLI of Router2. The user has entered the command `show ip route` after enabling the router. The output displays the routing table with various network entries and their statuses. The router's configuration includes three GigabitEthernet interfaces (0/0, 0/1, 0/2) and a memory configuration of 249856K bytes of ATA System CompactFlash 0 (Read/Write).

```
Router2
Physical Config CLI Attributes
IOS Command Line Interface

DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)

Press RETURN to get started!

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

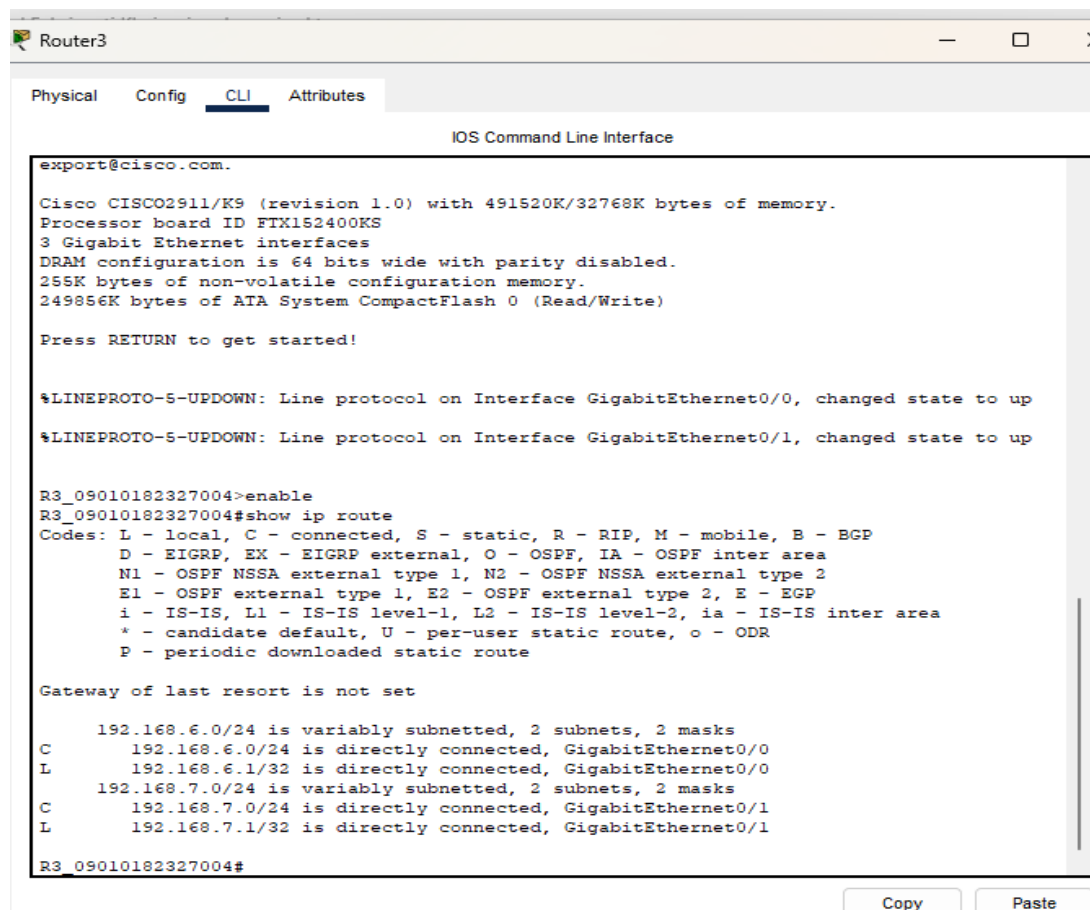
R2_09010182327004>enable
R2_09010182327004#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 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

    192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.0/24 is directly connected, GigabitEthernet0/0
L       192.168.3.1/32 is directly connected, GigabitEthernet0/0
    192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.4.0/24 is directly connected, GigabitEthernet0/1
L       192.168.4.1/32 is directly connected, GigabitEthernet0/1
    192.168.5.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.5.0/24 is directly connected, GigabitEthernet0/2
L       192.168.5.1/32 is directly connected, GigabitEthernet0/2

R2_09010182327004#
```

Melihat table routing 3



The screenshot shows the CLI of Router3. The user has entered the command `show ip route` after enabling the router. The output displays the routing table with various network entries and their statuses. The router's configuration includes three GigabitEthernet interfaces (0/0, 0/1, 0/2) and a memory configuration of 249856K bytes of ATA System CompactFlash 0 (Read/Write).

```
Router3
Physical Config CLI Attributes
IOS Command Line Interface

export@cisco.com.

Cisco CISCO2911/K9 (revision 1.0) with 491520K/32768K bytes of memory.
Processor board ID FTX152400KS
3 Gigabit Ethernet interfaces
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)

Press RETURN to get started!

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

R3_09010182327004>enable
R3_09010182327004#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

    192.168.6.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.6.0/24 is directly connected, GigabitEthernet0/0
L       192.168.6.1/32 is directly connected, GigabitEthernet0/0
    192.168.7.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.7.0/24 is directly connected, GigabitEthernet0/1
L       192.168.7.1/32 is directly connected, GigabitEthernet0/1

R3_09010182327004#
```

Tes koneksi ICMP

NO	Sumber	Tujuan	Hasil	
			Ya	Tidak
1	PC1	PC2	Ya	
		PC3	Ya	
		PC4		Tidak
		PC5		Tidak
		PC6		Tidak
		PC7		Tidak
		PC8		Tidak
		PC9		Tidak

2	PC4	PC1	Tidak	
		PC2	Tidak	
		PC3	Tidak	
		PC5		Ya
		PC6		Ya
		PC7	Tidak	
		PC8	Tidak	
		PC9	Tidak	

3	PC7	PC1	Tidak	
		PC2	Tidak	
		PC3	Tidak	
		PC5	Tidak	
		PC6	Tidak	
		PC7		Ya
		PC8		Ya
		PC9		ya

Screenshot hasil ping pada cmd PC:

```

PC0
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Reply from 192.168.2.2: bytes=32 time=18ms TTL=128
Reply from 192.168.2.2: bytes=32 time=12ms TTL=128
Reply from 192.168.2.2: bytes=32 time=33ms TTL=128
Reply from 192.168.2.2: bytes=32 time=13ms TTL=128

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 12ms, Maximum = 33ms, Average = 19ms

C:\>ping 192.168.20.5

Pinging 192.168.20.5 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.20.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
  
```

PC3

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Reply from 192.168.20.2: bytes=32 time<1ms TTL=128
Reply from 192.168.20.2: bytes=32 time=52ms TTL=128
Reply from 192.168.20.2: bytes=32 time=33ms TTL=128
Reply from 192.168.20.2: bytes=32 time=13ms TTL=128

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 52ms, Average = 24ms

C:\>ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.40.3

Pinging 192.168.40.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.40.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

PC6

Physical Config Desktop Programming Attributes

Command Prompt

```
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=22ms TTL=128
Reply from 192.168.40.2: bytes=32 time<1ms TTL=128
Reply from 192.168.40.2: bytes=32 time<1ms TTL=128
Reply from 192.168.40.2: bytes=32 time=12ms TTL=128

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 = 22ms, Average = 8ms

C:\>ping 192.168.2.4

Pinging 192.168.2.4 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.2.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

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 = 1ms, Average = 0ms
```

Analisa: Dalam percobaan ini, dilakukan konfigurasi topologi jaringan menggunakan protokol RIP untuk mengatur routing dinamis antar router. RIP, yang merupakan protokol distance-vector, menggunakan hop count sebagai metrik utama dalam menentukan jalur terpendek. Setiap router dikonfigurasi untuk saling bertukar informasi routing agar paket data dapat mencapai tujuan dengan hop yang seminimal mungkin. Selain itu, RIP versi 2 (RIPv2) digunakan untuk mendukung pengalaman yang lebih modern dan mengurangi kemungkinan looping dengan menetapkan batas hop maksimum.

Pada pengujian konektivitas, dilakukan tes ICMP antara beberapa PC untuk memastikan setiap perangkat di jaringan dapat berkomunikasi satu sama lain setelah routing diaktifkan. Hasil ping dari beberapa perangkat (misalnya, PC1 ke PC5, PC4 ke PC8) menunjukkan apakah jalur antar perangkat terbentuk dengan baik.

Kesimpulan: Percobaan berhasil menunjukkan bahwa konfigurasi RIP pada router memungkinkan routing dinamis yang efisien dalam jaringan berskala kecil hingga menengah. Penggunaan RIP memungkinkan jaringan untuk menyesuaikan jalur berdasarkan topologi yang ada tanpa perlu konfigurasi manual berulang. Namun, batas hop maksimal RIP sebesar 15 membuatnya kurang cocok untuk jaringan besar. Tes koneksi ICMP yang berhasil membuktikan bahwa konfigurasi RIP sudah berfungsi dan routing antara perangkat sudah terjalin dengan baik.