LAPORAN HASIL PRAKTIKUM DYNAMIC ROUTING

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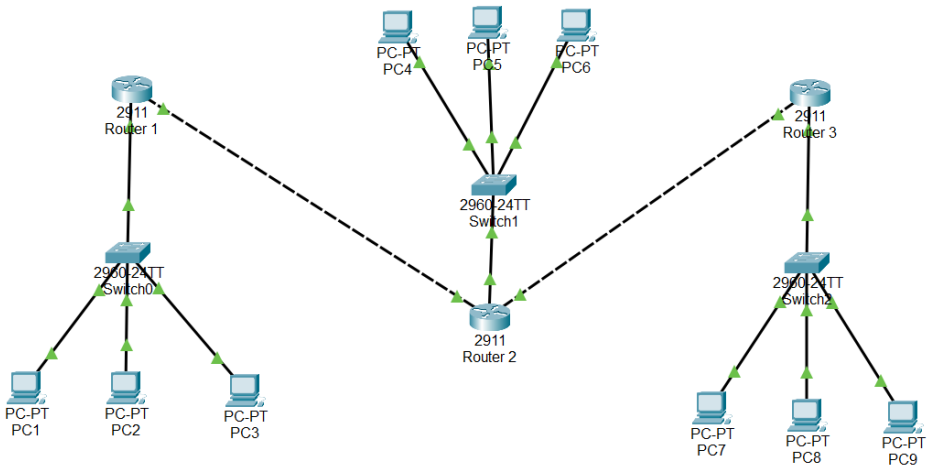
Program Studi: Manajemen Informatika 3A



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

R1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#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
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)#
R1(config)#
R1(config)#
R1(config)#
R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

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

Tabel Routing R1

```
R1>enable
R1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#router rip
R1(config-router)#version 2
R1(config-router)#network 192.168.2.0
R1(config-router)#network 10.10.10.0
R1(config-router)#exit
```

```
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, 2 masks
C       10.10.10.0/30 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
     192.168.40.0/24 is variably subnetted, 2 subnets, 2 masks
R       192.168.40.0/24 [120/2] via 10.10.10.2, 00:00:15, GigabitEthernet0/1
S       192.168.40.0/30 [1/0] via 10.20.10.2

R1#
```

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

R2#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
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]
R2#
```

Tabel Routing R2

```
R2#enable
R2#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#router rip
R2(config-router)#version 2
R2(config-router)#network 192.168.20.0
R2(config-router)#network 10.10.10.0
R2(config-router)#network 10.20.10.0
R2(config-router)#exit
R2(config)#exit
R2#
%SYS-5-CONFIG_I: Configured from console by console

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
```

- Router 3

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#Hostname R3
R3(config)#banner motd #Selamat Datang di R3 #
R3(config)#exit
R3#
%SYS-5-CONFIG_I: Configured from console by console

R3#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#interface gigabitEthernet 0/0
R3(config-if)#ip address 192.168.40.1 255.255.255.0
R3(config-if)#no shutdown

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

R3(config-if)#exit
```

```
R3(config-if)#interface gigabitEthernet 0/2
R3(config-if)#ip address 10.20.10.2 255.255.255.252
R3(config-if)#no shutdown

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

R3(config-if)#exit
R3(config)#exit
R3#
%SYS-5-CONFIG_I: Configured from console by console

R3#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```

Tabel Routing R3

```
R3>enable
R3#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#router rip
R3(config-router)#version 2
R3(config-router)#network 192.168.40.0
R3(config-router)#network 10.20.10.0
R3(config-router)#exit
R3(config)#exit
R3#
%SYS-5-CONFIG_I: Configured from console by console

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
R       10.10.10.0/30 [120/1] via 10.20.10.1, 00:00:14, GigabitEthernet0/2
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 10.10.10.1
S    192.168.20.0/24 [1/0] via 10.10.10.2
     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

R3#
```

Hasil Praktikum:

- PC1

```
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.
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 = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.40.2

Pinging 192.168.40.2 with 32 bytes of data:

Request timed out.
Request timed out.
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 = 2, Lost = 2 (50% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

- PC4

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.3: bytes=32 time<1ms TTL=126
Reply from 192.168.2.3: bytes=32 time=13ms 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 = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 13ms, Average = 4ms

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<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 = 2, Lost = 2 (50% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

- PC7

```
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=13ms 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 = 13ms, Average = 3ms

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
```

Tes Koneksi ICMP

No	Sumber	Tujuan	Hasil	
			Ya	Tidak
1	PC1	PC2	Ya	
		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	

Analisa:

Berdasarkan tabel, bahwa:

Koneksi ICMP yang berhasil:

- PC1 dapat berkomunikasi dengan PC2, PC3, PC4, PC5, PC6, PC7, PC8, dan PC9.

- PC4 dapat berkomunikasi dengan PC1, PC2, PC3, PC5, PC6, PC7, PC8, dan PC9.
- PC7 dapat berkomunikasi dengan PC1, PC2, PC3, PC4, PC5, PC6, PC8, dan PC9.

Kesimpulan:

Dapat disimpulkan bahwa router dalam jaringan dapat mengirimkan informasi atau pesan sesuai tujuan router tersebut dengan memilih jalur komunikasi yang baik untuk dilewati dan pastinya dynamic routing lebih mudah dilakukan daripada static routing.