

# **MANAJEMEN JARINGAN**



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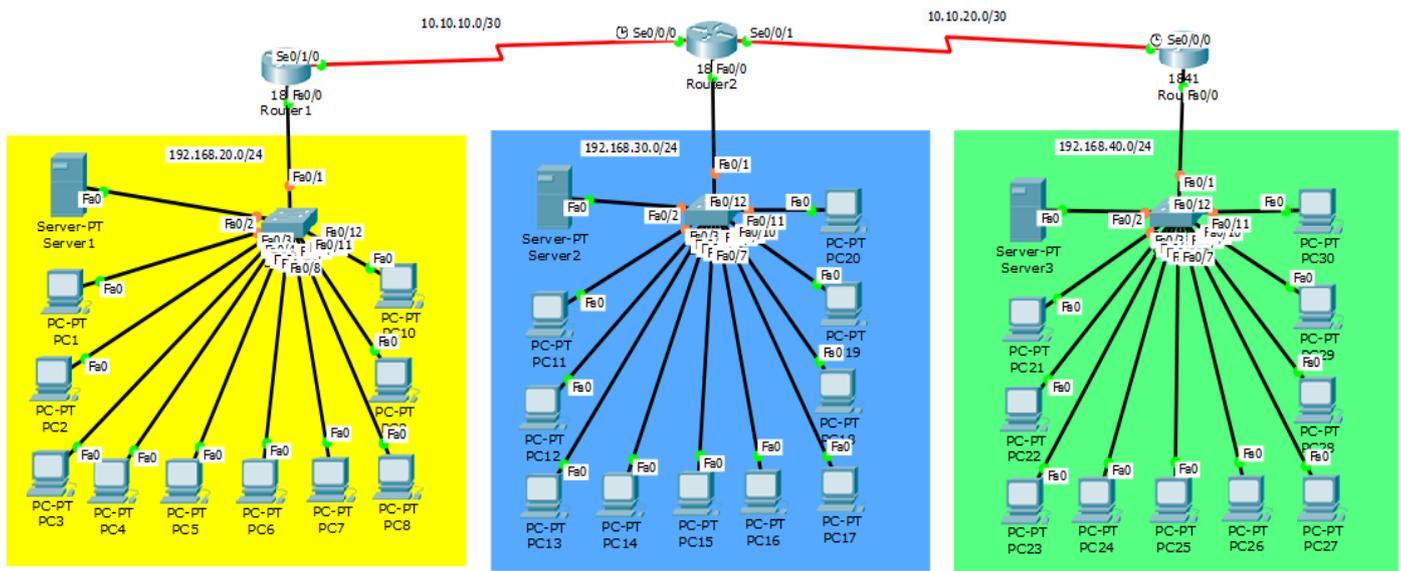
**JURUSAN SISTEM KOMPUTER**

**UNIVERSITAS SRIWIJAYA**

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## Routing RIP dan SNMP 3 Router & 3 Server di Packet Tracer

Topologi network yang dibuat pada routing ini menggunakan 3(tiga) router,3(tiga) server,dan 30 PC (komputer). Berikut hasil gambar topologi yang saya buat.



Dapat dilihat pada gambar diatas konfigurasi IP address yang saya gunakan antara lain sebagai berikut:

- Router 1 (10.10.10.1/30)
- Router 2 (10.10.10.2/30) dan (10.10.20.1/30)
- Router 3 (10.10.20.2/30)
- Pada PC1 sampai PC10 masing-masing dikonfig dengan ip address (192.168.20.2/24), (192.168.20.3/24), (192.168.20.4/24), (192.168.20.5/24), (192.168.20.6/24), (192.168.20.7/24), (192.168.20.8/24), (192.168.20.9/24), (192.168.20.10/24), (192.168.20.254/24).
- Pada PC11 sampai PC20 masing-maisng dikonfig dengan ip address (192.168.30.2/24), (192.168.30.3/24), (192.168.30.4/24), (192.168.30.5/24), (192.168.30.6/24), (192.168.30.7/24), (192.168.30.8/24), (192.168.30.9/24), (192.168.30.10/24), (192.168.30.254/24)

- Pada PC21 sampai PC30 masing-masing dikonfig dengan ip address (192.168.30.2/24), (192.168.30.3/24), (192.168.30.4/24), (192.168.30.5/24), (192.168.30.6/24), (192.168.30.7/24), (192.168.30.8/24), (192.168.30.9/24), (192.168.30.10/24), (192.168.30.254/24)

Routing RIP (Routing Information Protocol) merupakan salah satu distance vektor routing yang melakukan advertise informasi routing dengan jalan mengirim routing update keluar melalui interface pada router. Informasi update ini berisi sederetan informasi yang mewakili subnet dan subnet metric. Metric mewakili beberapa rute terbaik atau jalur terbaik menurut perspective router tersebut, dengan semakin kecil harga metrik semakin bagus pula jalur atau rute tersebut. Gambar-gambar dibawah akan saya tunjukkan hasil dari routing rip versi 1 yang saya gunakan.

```

Router1
Physical Config CLI
IOS Command Line Interface

Router#show ip route
Codes: C - connected, S - static, I - IGRP, 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

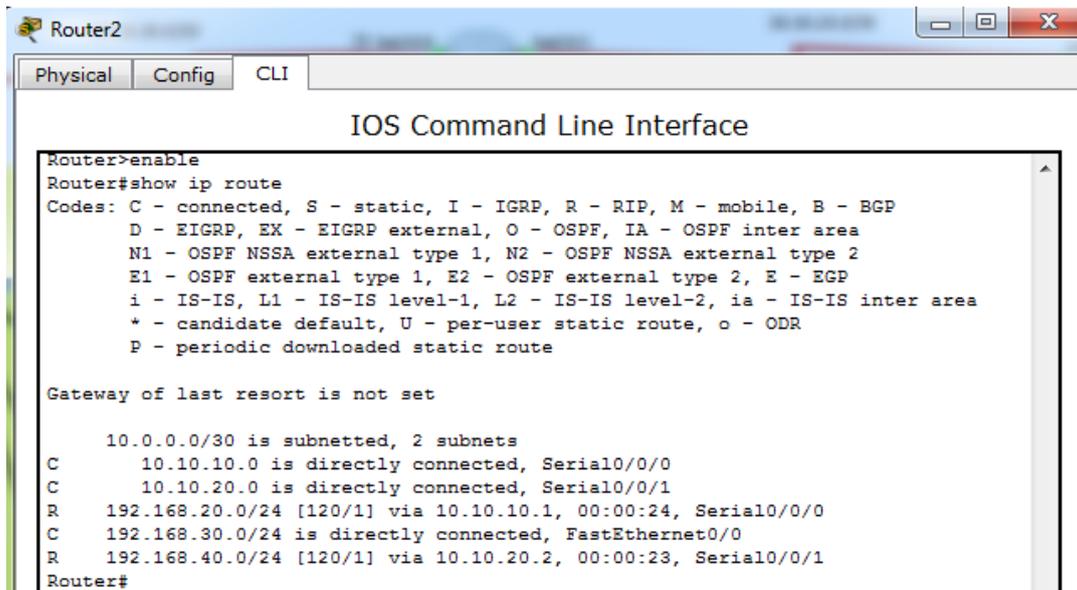
Gateway of last resort is not set

 10.0.0.0/30 is subnetted, 2 subnets
 C    10.10.10.0 is directly connected, Serial0/1/0
 R    10.10.20.0 [120/1] via 10.10.10.2, 00:00:03, Serial0/1/0
 C    192.168.20.0/24 is directly connected, FastEthernet0/0
 R    192.168.30.0/24 [120/1] via 10.10.10.2, 00:00:03, Serial0/1/0
 R    192.168.40.0/24 [120/2] via 10.10.10.2, 00:00:03, Serial0/1/0
Router#

```

### Routing RIP Router 1

Kode R pada hasil menampilkan ip route pada Router 1 menunjukkan bahwa routing RIP telah terhubung pada masing-masing interface fastethernet yang ada. Begitupun pada Router 2 dan Router 3.

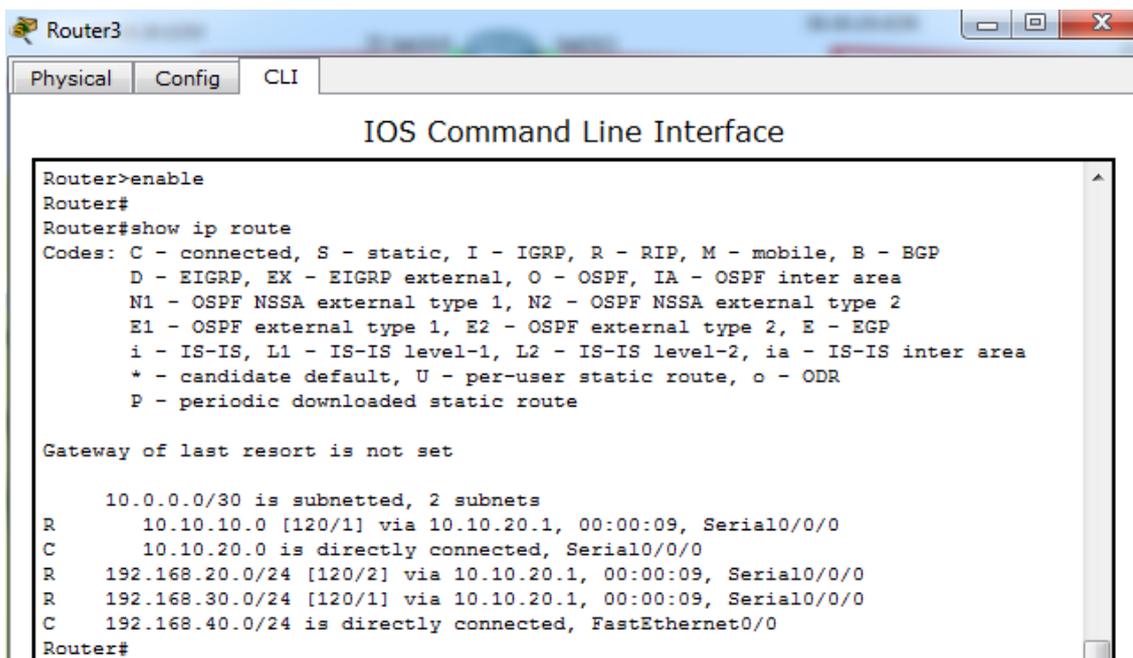


```
Router2
Physical Config CLI
IOS Command Line Interface
Router>enable
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 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

    10.0.0.0/30 is subnetted, 2 subnets
C       10.10.10.0 is directly connected, Serial0/0/0
C       10.10.20.0 is directly connected, Serial0/0/1
R       192.168.20.0/24 [120/1] via 10.10.10.1, 00:00:24, Serial0/0/0
C       192.168.30.0/24 is directly connected, FastEthernet0/0
R       192.168.40.0/24 [120/1] via 10.10.20.2, 00:00:23, Serial0/0/1
Router#
```

Routing RIP Router 2



```
Router3
Physical Config CLI
IOS Command Line Interface
Router>enable
Router#
Router#show ip route
Codes: C - connected, S - static, I - IGRP, 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

    10.0.0.0/30 is subnetted, 2 subnets
R       10.10.10.0 [120/1] via 10.10.20.1, 00:00:09, Serial0/0/0
C       10.10.20.0 is directly connected, Serial0/0/0
R       192.168.20.0/24 [120/2] via 10.10.20.1, 00:00:09, Serial0/0/0
R       192.168.30.0/24 [120/1] via 10.10.20.1, 00:00:09, Serial0/0/0
C       192.168.40.0/24 is directly connected, FastEthernet0/0
Router#
```

Routing RIP Router 3

Setelah masing-masing LAN pada router tersebut telah terhubung, maka selanjutnya dilakukan proses ping atau memanggil pc dari router 1 ke router 2 dan begitupun sebaliknya. Hasil testing ping yang didapatkan akan ditampilkan beberapa saja, antara lain:

PC4

Physical Config Desktop Software/Services

**Command Prompt** X

```
PC>ping 192.168.30.7

Pinging 192.168.30.7 with 32 bytes of data:

Reply from 192.168.30.7: bytes=32 time=22ms TTL=126
Reply from 192.168.30.7: bytes=32 time=11ms TTL=126
Reply from 192.168.30.7: bytes=32 time=15ms TTL=126
Reply from 192.168.30.7: bytes=32 time=14ms TTL=126

Ping statistics for 192.168.30.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 22ms, Average = 15ms
```

Hasil ping dari PC4 ke PC16

PC19

Physical Config Desktop Software/Services

**Command Prompt** X

```
PC>ping 192.168.40.5

Pinging 192.168.40.5 with 32 bytes of data:

Reply from 192.168.40.5: bytes=32 time=27ms TTL=126
Reply from 192.168.40.5: bytes=32 time=13ms TTL=126
Reply from 192.168.40.5: bytes=32 time=11ms TTL=126
Reply from 192.168.40.5: bytes=32 time=14ms TTL=126

Ping statistics for 192.168.40.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 27ms, Average = 16ms
```

Hasil ping dari PC19 ke PC24

PC30

Physical Config Desktop Software/Services

**Command Prompt** X

```
PC>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Reply from 192.168.20.2: bytes=32 time=13ms TTL=125
Reply from 192.168.20.2: bytes=32 time=14ms TTL=125
Reply from 192.168.20.2: bytes=32 time=59ms TTL=125
Reply from 192.168.20.2: bytes=32 time=13ms TTL=125

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 13ms, Maximum = 59ms, Average = 24ms
```

Hasil ping dari PC30 ke PC1



Router2

Physical Config CLI

### IOS Command Line Interface

```

Router#
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname snmp-server
snmp-server(config)#snmp-server community satish ro
%SNMP-5-WARMSTART: SNMP agent on host snmp-server is undergoing a warm start
snmp-server(config)#snmp-server community tiwary rw
snmp-server(config)#^Z
snmp-server#
%SYS-5-CONFIG_I: Configured from console by console

```

---

**MIB Browser**

Address: 10.10.10.2    OID: .1.3.6.1.2.1.1.1.0

Advanced...    Operations: Get    GO

SNMP MIBs

- └─ MIB Tree
  - └─ router\_std MIBs
    - └─ .iso
      - └─ .org
        - └─ .dod
          - └─ .internet
            - └─ .mgmt
              - └─ .mib-2
                - └─ .system
                  - .sys...
                  - .interfa...

**Result Table**

| Name/OID              | Value                            | Type        |
|-----------------------|----------------------------------|-------------|
| .1.3.6.1.2.1.1.1.0... | Cisco IOS Software, 1841 Soft... | OctetString |

|               |   |
|---------------|---|
| Name :        | .sysDescr                                       |
| OID :         | .1.3.6.1.2.1.1.1.0                              |
| Syntax :      | DisplayString                                   |
| Access :      | read-only                                       |
| Description : | A textual description of the entity. This value |

.iso.org.dod.internet.mgmt.mib-2.system.sysDescr.0

SNMP pada Router 2

