Laporan Praktikum Jaringan Komputer

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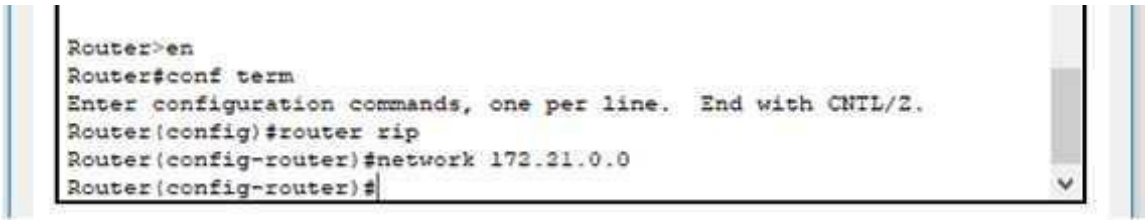
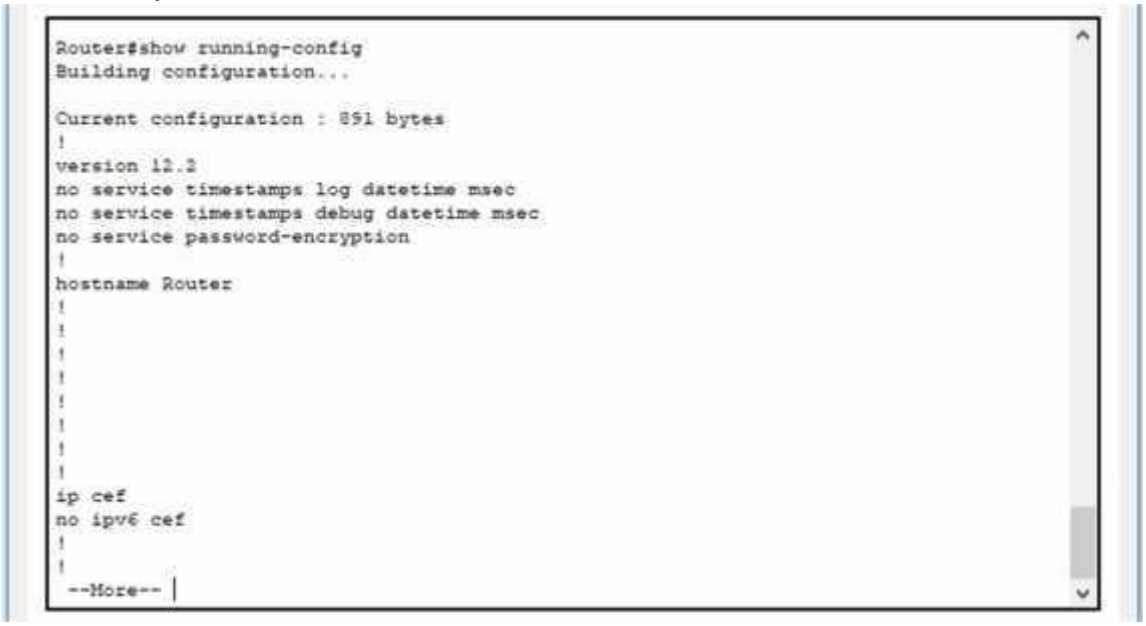
Modul : 7

Kegiatan 2. RIP (Routing Information Protocol)

Pada mode configuration, konfigurasi routing RIP pada Router Eagle.



*Lihat Konfigurasi routing RIP yang telah dibuat dengan perintah "**show running-config**" pada mode user. Perhatikan konfigurasi pada bagian "Router rip".*



```
!
interface FastEthernet0/0
 ip address 172.21.10.10 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet1/0
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial2/0
 ip address 172.21.1.1 255.255.255.0
 clock rate 2000000
!
interface Serial3/0
 ip address 172.21.2.1 255.255.255.0
 clock rate 2000000
!
interface FastEthernet4/0
 no ip address
 shutdown
!
 --More--
```

```
!
interface FastEthernet5/0
 no ip address
 shutdown
!
router rip
 network 172.21.0.0
!
ip classless
ip route 172.21.20.0 255.255.255.0 172.21.1.2
ip route 172.21.30.0 255.255.255.0 172.21.2.3
!
ip flow-export version 9
!
!
!
!
!
!
!
!
line con 0
!
line aux 0
 --More--
```

*Lihat proses update routing RIP pada Router Eagle dengan perintah "**debug ip rip**" pada mode user. Tunggu beberapa saat untuk melihat proses yang terjadi.*

```
Router#debug ip rip
RIP protocol debugging is on
Router#RIP: sending  v1 update to 255.255.255.255 via FastEthernet0/0 (172.21.10.10)
RIP: build update entries
      network 172.21.1.0 metric 1
      network 172.21.2.0 metric 1
RIP: sending  v1 update to 255.255.255.255 via Serial2/0 (172.21.1.1)
RIP: build update entries
      network 172.21.2.0 metric 1
      network 172.21.10.0 metric 1
RIP: sending  v1 update to 255.255.255.255 via Serial3/0 (172.21.2.1)
RIP: build update entries
      network 172.21.1.0 metric 1
      network 172.21.10.0 metric 1
RIP: sending  v1 update to 255.255.255.255 via FastEthernet0/0 (172.21.10.10)
RIP: build update entries
      network 172.21.1.0 metric 1
      network 172.21.2.0 metric 1
RIP: sending  v1 update to 255.255.255.255 via Serial2/0 (172.21.1.1)
RIP: build update entries
      network 172.21.2.0 metric 1
      network 172.21.10.0 metric 1
RIP: sending  v1 update to 255.255.255.255 via Serial3/0 (172.21.2.1)
RIP: build update entries
```

Lakukan konfigurasi routing RIP pada Router Puma dan Tiger. Perhatikan proses update routing RIP pada Router Eagle ketika konfigurasi Router Puma dan Tiger dilakukan.

Router Puma

```
Router>en
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 172.21.0.0
Router(config-router)#
```

Router Tiger

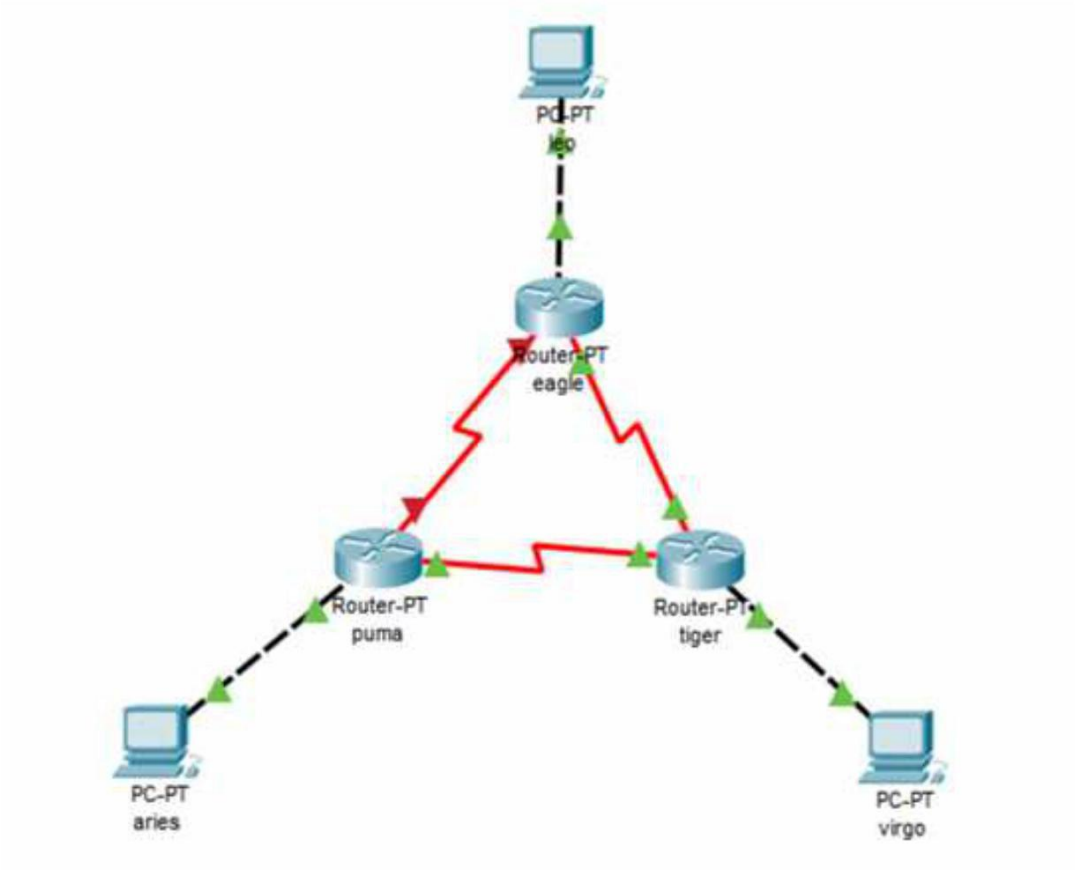
```
Router>en
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 172.21.0.0
Router(config-router)#
```

Dari PC Leo lakukan trace ke PC Aries

```
C:\>tracert 172.21.20.2

Tracing route to 172.21.20.2 over a maximum of 30 hops:

  1    0 ms      0 ms      0 ms      172.21.10.10
  2    8 ms      2 ms      1 ms      172.21.1.2
  3    1 ms      6 ms      9 ms      172.21.20.2

Trace complete.
```

Buat hubungan antara Router Eagle dan Puma terputus dan perhatikan proses update routing RIP yangterjadi.

```
Router>en
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int se2/0
Router(config-if)#shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to
administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed
state to down
```



Dari PC Leo lakukan trace ke PC Aries

```
C:\>tracert 172.21.20.2

Tracing route to 172.21.20.2 over a maximum of 30 hops:

  1    0 ms      0 ms      0 ms      172.21.10.10
  2    10 ms     1 ms      4 ms      172.21.2.2
  3    1 ms      1 ms      1 ms      172.21.3.2
  4    0 ms      10 ms     10 ms     172.21.20.2

Trace complete.
```

Kegiatan 3. IGRP (Internet Gateway Routing Protocol)

Pada mode configuration, konfigurasi routing RIP pada Router Eagle

```
Router>
Router>en
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router igrp 100
                      ^
% Invalid input detected at '^' marker.

Router(config)#router igrp 100
                      ^
% Invalid input detected at '^' marker.

Router(config)#router eigrp 100
Router(config-router)#network 172.21.0.0
Router(config-router)#
```

*Lihat konfigurasi routing IGRP yang telah dibuat dengan perintah "**show running-config**" pada mode user. Perhatikan konfigurasi pada bagian "Router rip"*

```
Router#
Router#show running-config
Building configuration...

Current configuration : 810 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
 --More--
```

```
!
interface Serial3/0
 ip address 172.21.2.1 255.255.255.0
!
interface FastEthernet4/0
 no ip address
 shutdown
!
interface FastEthernet5/0
 no ip address
 shutdown
!
router eigrp 100
 network 172.21.0.0
 auto-summary
!
router rip
!
ip classless
!
ip flow-export version 9
!
!
!
!
```

*Lihat proses transaksi routing IGRP pada Router Eagle dengan perintah "**debug ip igrp transactions**" pada mode user. Tunggu beberapa saat untuk melihat*
informasi transaksi routing IGRP yang terjadi.

```
EIGRP: Sending HELLO on FastEthernet0/0
  AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial2/0
  AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial3/0
  AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on FastEthernet0/0
  AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial2/0
  AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial3/0
  AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on FastEthernet0/0
  AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial2/0
  AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iidbQ un/rely 0/0
```

*Lihat proses transaksi routing IGRP pada Router Eagle dengan perintah "**debug ip igrp transactions**" pada mode user. Tunggu beberapa saat untuk melihat*
informasi transaksi routing IGRP yang terjadi.

***Catatan:** Hasil tampilan perintah "**debug ip igrp transactions**" memperlihatkan informasi update routing IGRP secara detail. Untuk melihat informasi update routing IGRP secara lebih ringkas digunakan perintah "**debug ip igrp events**" (dengan lebih dahulu menonaktifkan "**debug ip igrp transaction**" dengan perintah "**no debug ip igrp transactions**")*

Lakukan konfigurasi ruting IGRP pada Router Puma dan Tiger. Perhatikan proses update routing IGRP pada Router Eagle (secara detail) ketika konfigurasi Router Puma dan Tiger dilakukan.

Router Puma:
Konfigurasi routing EIGRP pada Router Puma

```
Router>
Router>
Router>en
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router eigrp 100
Router(config-router)#network 172.21.0.0
Router(config-router)#
%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 172.21.1.1 (Serial2/0) is up:
new adjacency
```

Melihat konfigurasi EIGRP yang telah dibuat

```
 shutdown
!
interface Serial2/0
 ip address 172.21.1.2 255.255.255.0
!
interface Serial3/0
 ip address 172.21.3.2 255.255.255.0
 clock rate 2000000
!
interface FastEthernet4/0
 no ip address
 shutdown
!
interface FastEthernet5/0
 no ip address
 shutdown
!
router eigrp 100
 network 172.21.0.0
 auto-summary
!
ip classless
!
ip flow-export version 9
 --More--
```

Melihat proses transaksi routing EIGRP pada Router Puma

```
EIGRP: Sending HELLO on FastEthernet0/0
  AS 100, Flags 0x0, Seq 6/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial2/0
  AS 100, Flags 0x0, Seq 6/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial3/0
  AS 100, Flags 0x0, Seq 6/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Received HELLO on Serial2/0 nbr 172.21.1.1
  AS 100, Flags 0x0, Seq 6/0 idbQ 0/0

EIGRP: Sending HELLO on FastEthernet0/0
  AS 100, Flags 0x0, Seq 6/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial2/0
  AS 100, Flags 0x0, Seq 6/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial3/0
  AS 100, Flags 0x0, Seq 6/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on FastEthernet0/0
  AS 100, Flags 0x0, Seq 6/0 idbQ 0/0 iidbQ un/rely 0/0
```

Router Tiger:

Konfigurasi routing EIGRP pada Router Tiger

```
Router>
Router>
Router>en
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router eigrp 100
Router(config-router)#network 172.21.0.0
Router(config-router)#
%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 172.21.3.2 (Serial3/0) is up:
new adjacency

%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 172.21.2.1 (Serial2/0) is up:
new adjacency
```

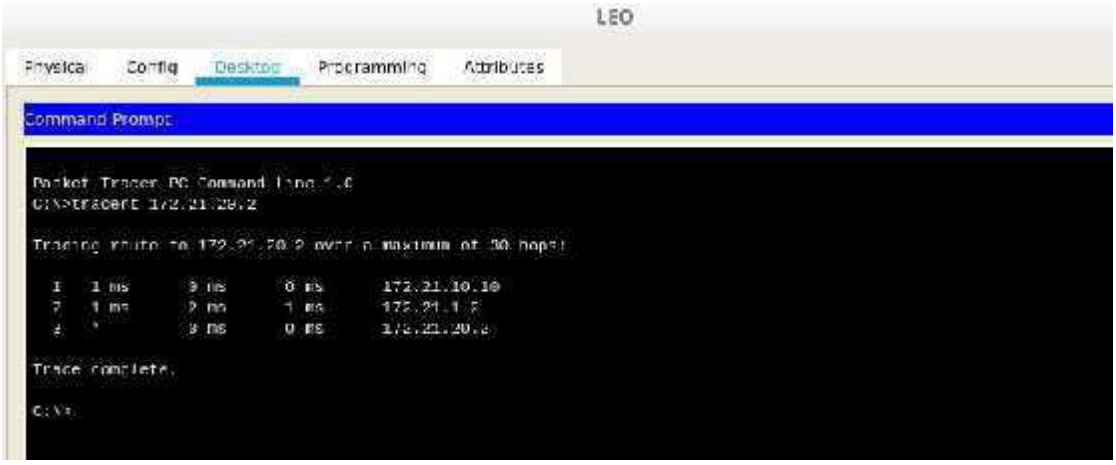
Melihat konfigurasi EIGRP yang telah dibuat

```
Router#
Router#show running-config
Building configuration...

Current configuration : 797 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
 --More--
```

Melihat proses transaksi routing EIGRP pada Router Tiger

```
EIGRP: Sending HELLO on FastEthernet0/0
  AS 100, Flags 0x0, Seq 11/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Received HELLO on Serial3/0 nbr 172.21.3.2
  AS 100, Flags 0x0, Seq 9/0 idbQ 0/0

EIGRP: Sending HELLO on Serial3/0
  AS 100, Flags 0x0, Seq 11/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial2/0
  AS 100, Flags 0x0, Seq 11/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Received HELLO on Serial2/0 nbr 172.21.2.1
  AS 100, Flags 0x0, Seq 9/0 idbQ 0/0

EIGRP: Sending HELLO on FastEthernet0/0
  AS 100, Flags 0x0, Seq 11/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Received HELLO on Serial3/0 nbr 172.21.3.2
  AS 100, Flags 0x0, Seq 9/0 idbQ 0/0

EIGRP: Sending HELLO on Serial3/0
  AS 100, Flags 0x0, Seq 11/0 idbQ 0/0 iidbQ un/rely 0/0
```

Dari PC Leo lakukan trace ke PC Aries



Buat hubungan antara Router Eagle dan Puma terputus dan perhatikan proses update routing RIP yangterjadi

```
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int se2/0
Router(config-if)#shutdown
```

Dari PC Leo lakukan tracer ke PC Aries