Laporan Praktikum Jaringan Komputer

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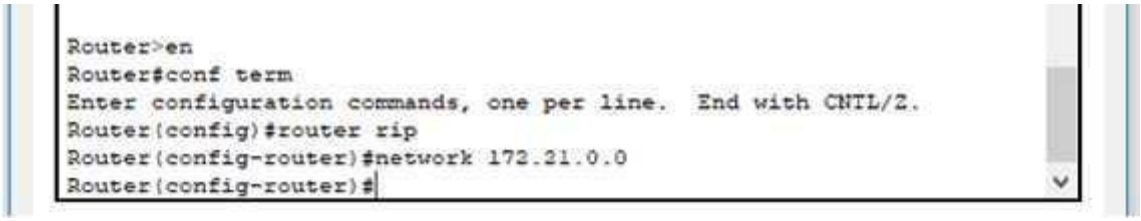
Kelas :C

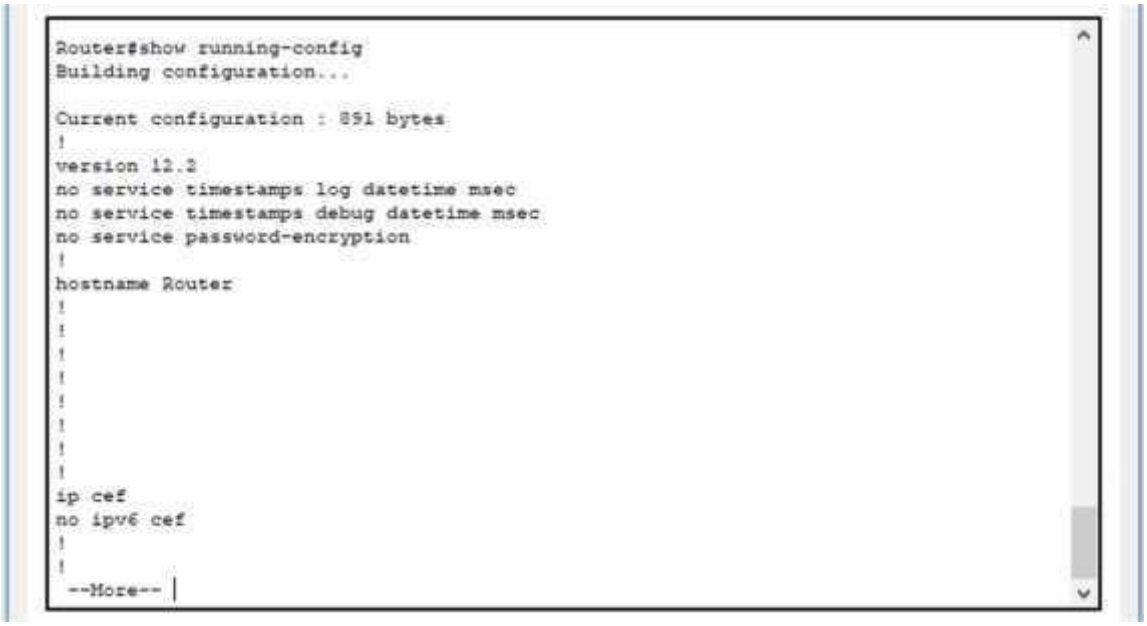
Modul :7 (Static Router, RIP dan IGRP)

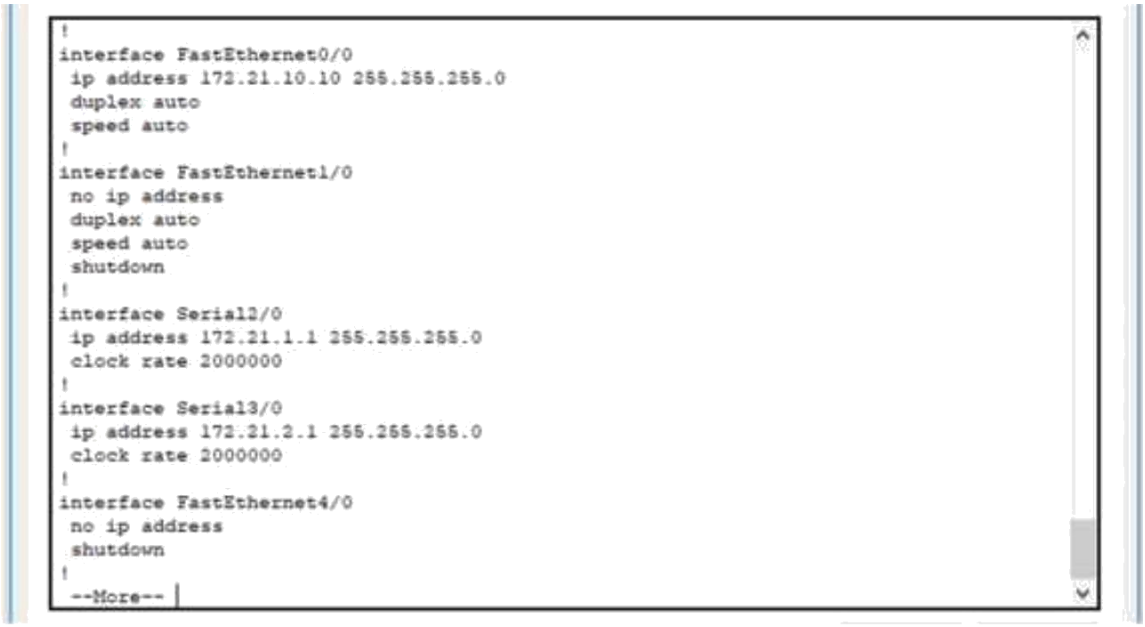
- **Kegiatan 2. RIP (Routing Information Protocol)**

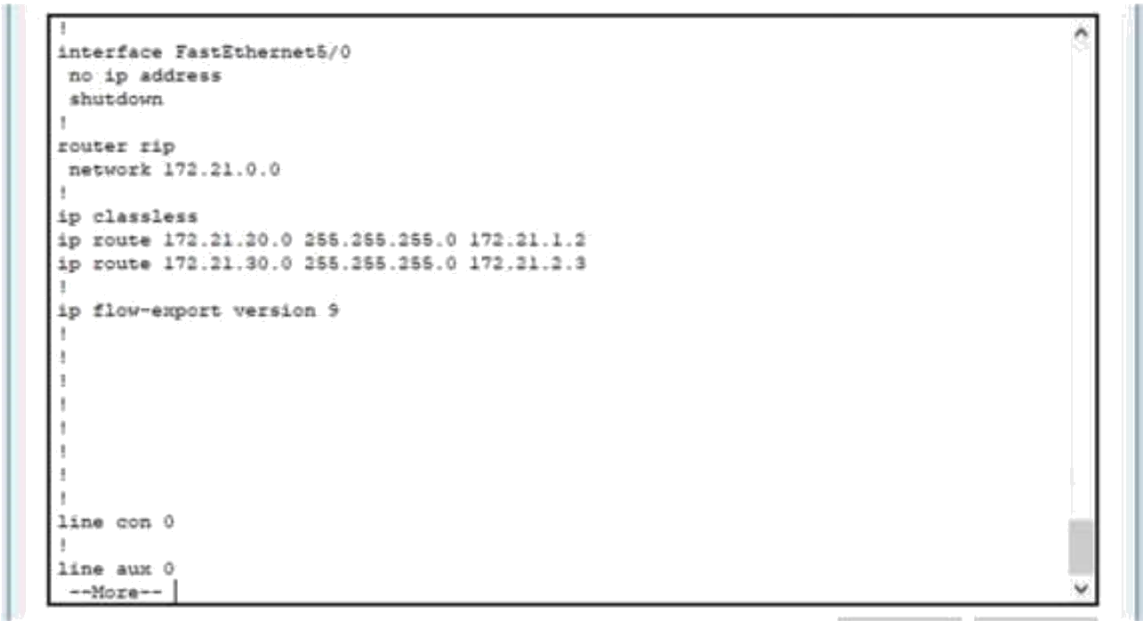
Pada mode configuration, konfigurasi routing RIP pada Router Eagle.



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

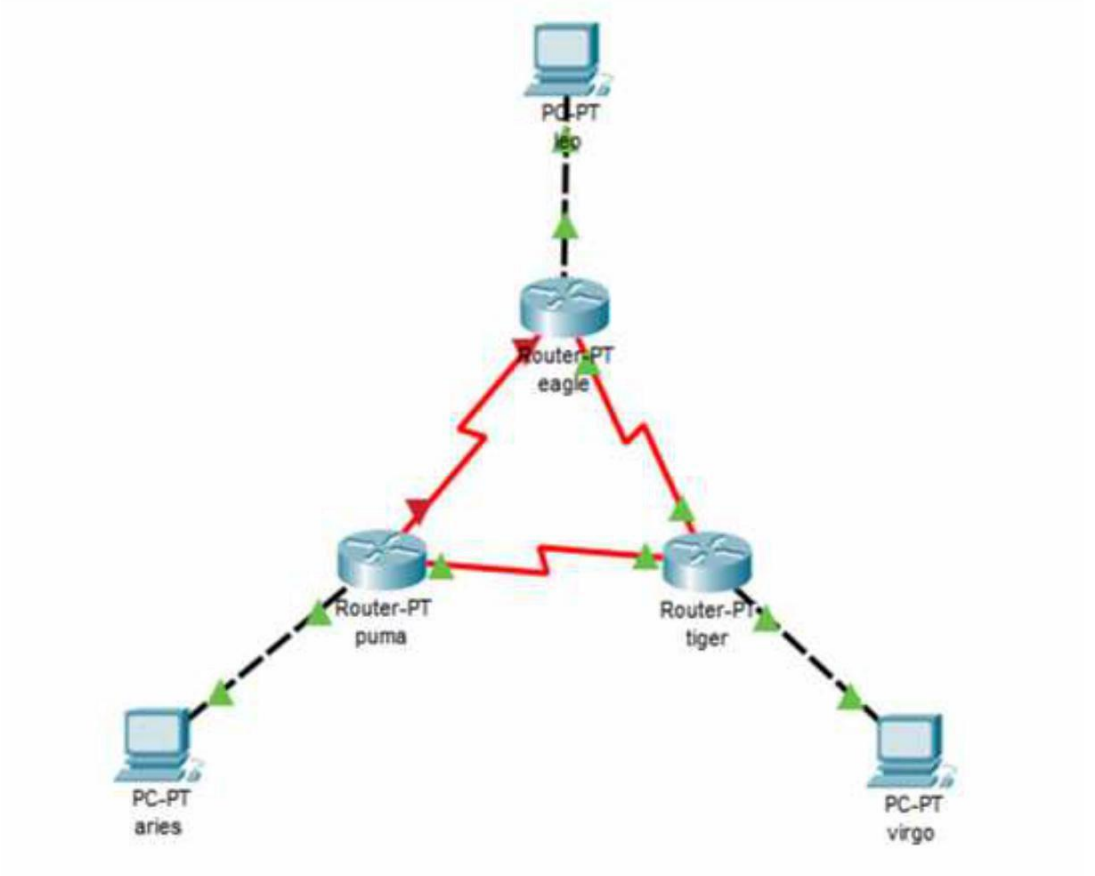
```
Router>en
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 172.21.0.0
Router(config-router)#
```

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   3 ms      2 ms      1 ms      172.21.1.2
  3   1 ms      6 ms      3 ms      172.21.20.2

Trace complete.
```

Buat hubungan antara Router **Eagle** dan **Puma** terputus dan perhatikan proses update routing RIP yang terjadi.

```
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      172.21.2.3
  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 transactions***" dengan perintah "**node bug 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
```

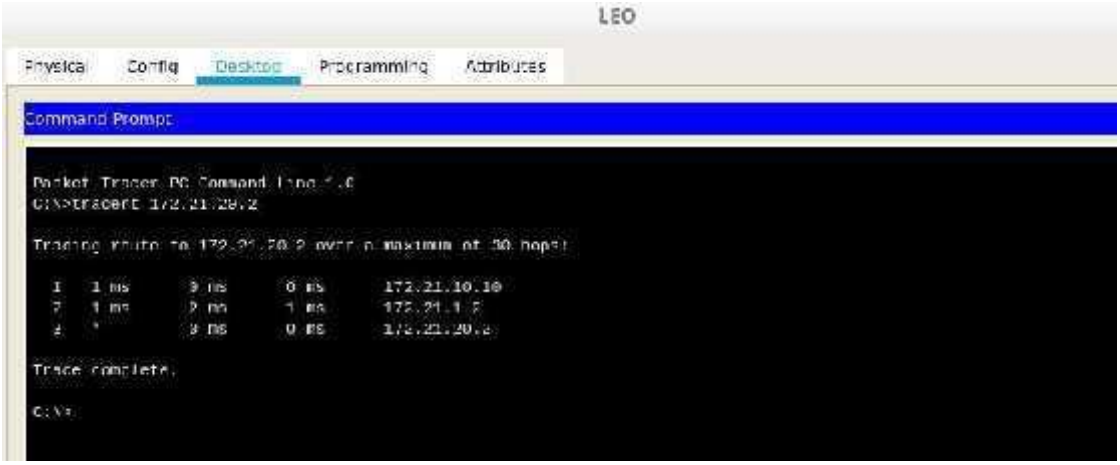
Melihat konfigurasi EIGRP yang telah dibuat

```
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 yang terjadi

```
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**