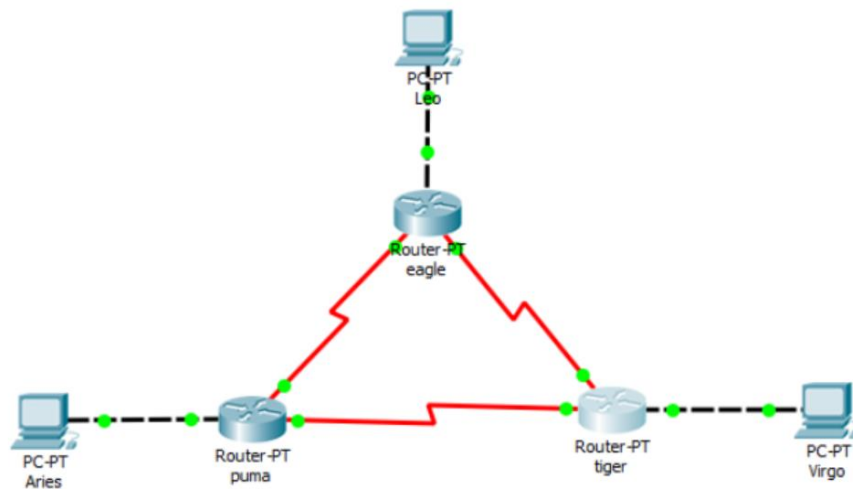


Nama : Irfananda Irsyad A  
NIM : L200180096  
Kelas : C

## Praktikum Jarkom modul 7

### Kegiatan 1. Static routing

#### 1. Rancangan Jaringan



#### 2. Show ip route

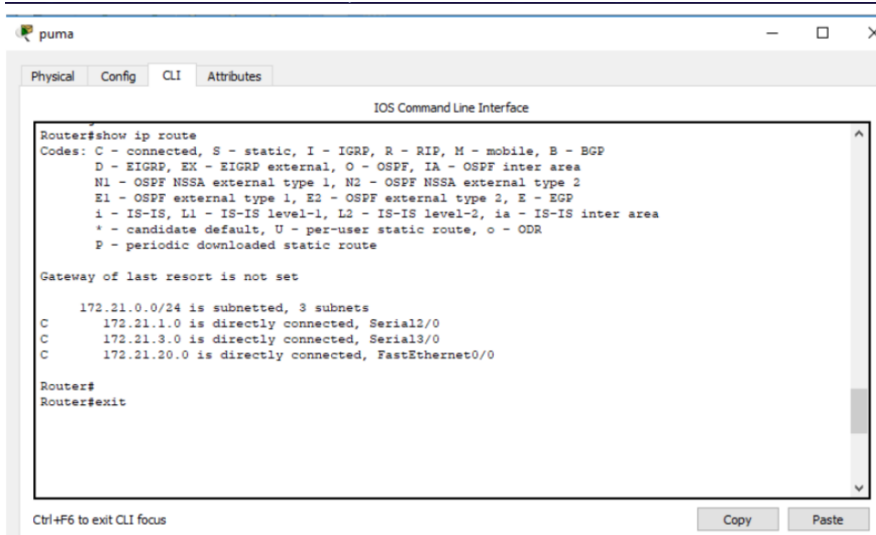
```
eagle
Physical Config CLI Attributes
IOS Command Line Interface

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

 172.21.0.0/24 is subnetted, 3 subnets
C       172.21.1.0 is directly connected, Serial2/0
C       172.21.2.0 is directly connected, Serial3/0
C       172.21.10.0 is directly connected, FastEthernet0/0

Router#exit
```



puma

Physical Config CLI Attributes

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

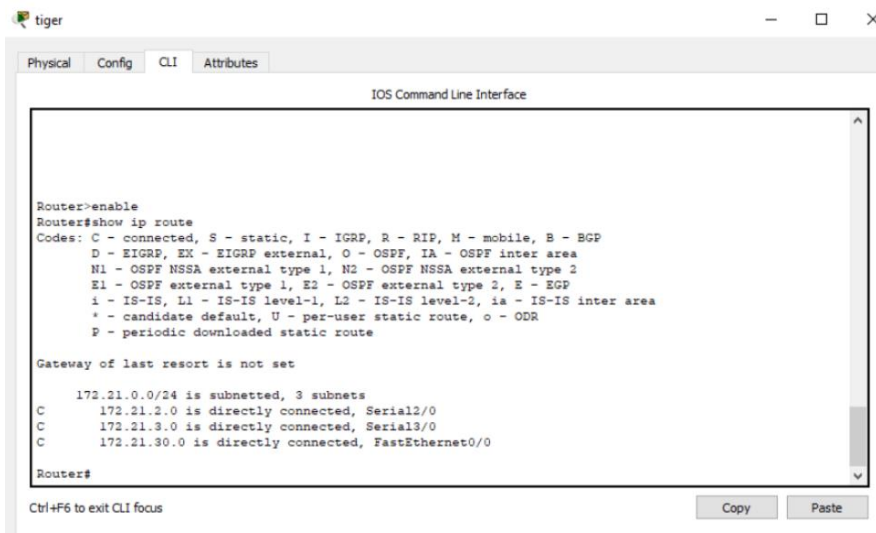
Gateway of last resort is not set

 172.21.0.0/24 is subnetted, 3 subnets
C       172.21.1.0 is directly connected, Serial2/0
C       172.21.3.0 is directly connected, Serial3/0
C       172.21.20.0 is directly connected, FastEthernet0/0

Router#
Router#exit
```

Ctrl+F6 to exit CLI focus

Copy Paste



tiger

Physical Config CLI Attributes

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

 172.21.0.0/24 is subnetted, 3 subnets
C       172.21.2.0 is directly connected, Serial2/0
C       172.21.3.0 is directly connected, Serial3/0
C       172.21.30.0 is directly connected, FastEthernet0/0

Router#
```

Ctrl+F6 to exit CLI focus

Copy Paste

3. Melakukan ping dari router eagle ke router puma



eagle

Physical Config CLI Attributes

IOS Command Line Interface

```
Press RETURN to get started.

Router>ping 172.21.20.20
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.21.20.20, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)

Router>
```

Ctrl+F6 to exit CLI focus

Copy Paste

4. Lakukan trace dari PC leo ke PC aries

```
Leo
Physical Config Desktop Programming Attributes
Command Prompt
Approximate round trip times in Milliseconds:
Minimum = 0ms, Maximum = 2ms, Average = 0ms
C:\>tracert 172.21.20.2

Tracing route to 172.21.20.2 over a maximum of 30 hops:
  0  1 ms    0 ms    0 ms    172.21.10.10
  1  46 ms   *      0 ms    172.21.10.10
  2  *      0 ms   *      Request timed out.
  3  0 ms    *      0 ms    172.21.10.10
  4  *      0 ms   *      Request timed out.
  5  0 ms    *      0 ms    172.21.10.10
  6  *      0 ms   *      Request timed out.
  7  0 ms    *      0 ms    172.21.10.10
  8  *      0 ms   *      Request timed out.
  9  0 ms    *      0 ms    172.21.10.10
 10  *      0 ms   *      Request timed out.
 11  0 ms    *      0 ms    172.21.10.10
 12  *      0 ms   *      Request timed out.
 13  0 ms    *      0 ms    172.21.10.10
 14  *      0 ms   *      Request timed out.
 15  0 ms    *      0 ms    172.21.10.10
 16  *      0 ms   *      Request timed out.
 17  0 ms    *      0 ms    172.21.10.10
 18  *      0 ms   *      Request timed out.
 19  0 ms    *      0 ms    172.21.10.10
 20  *      0 ms   *      Request timed out.
 21  0 ms    *      0 ms    172.21.10.10
 22  *      0 ms   *      Request timed out.
 23  0 ms    *      0 ms    172.21.10.10
 24  *      0 ms   *      Request timed out.
 25  0 ms    *      0 ms    172.21.10.10
 26  *      0 ms   *      Request timed out.
 27  0 ms    *      0 ms    172.21.10.10
 28  *      0 ms   *      Request timed out.
 29  0 ms    *      0 ms    172.21.10.10
 30  *      0 ms   *      Request timed out.

Trace complete.
C:\>
```

5. Lakukan trace dari PC leo ke router eagle

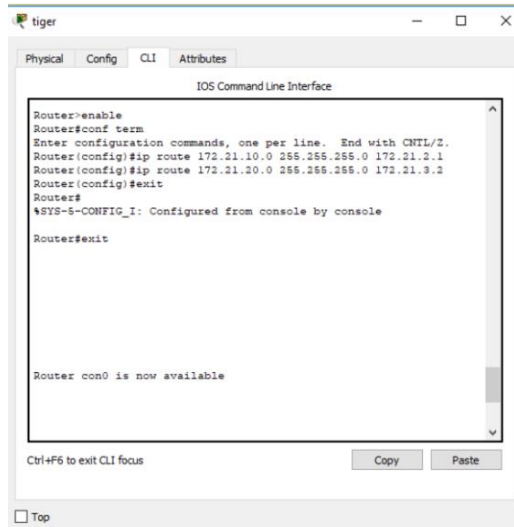
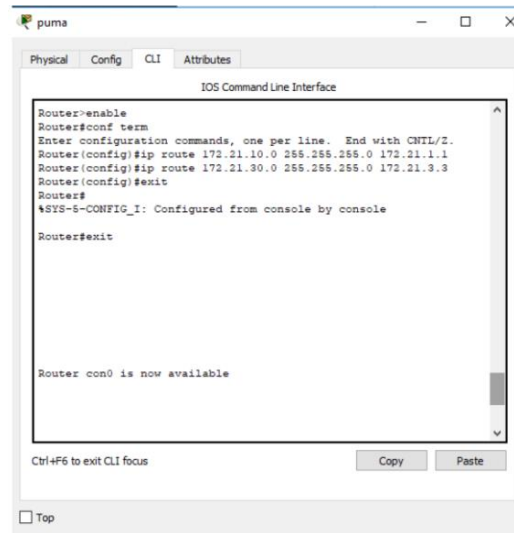
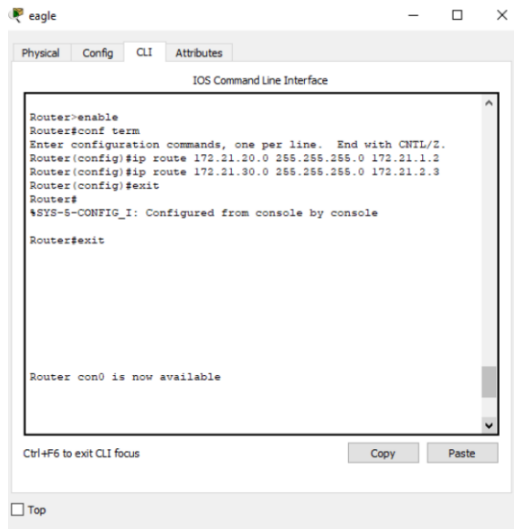
```
Leo
Physical Config Desktop Programming Attributes
Command Prompt
16  0 ms    *      0 ms    172.21.10.10
17  *      0 ms   *      Request timed out.
18  0 ms    *      0 ms    172.21.10.10
19  *      0 ms   *      Request timed out.
20  0 ms    *      0 ms    172.21.10.10
21  *      0 ms   *      Request timed out.
22  0 ms    *      0 ms    172.21.10.10
23  *      0 ms   *      Request timed out.
24  0 ms    *      0 ms    172.21.10.10
25  *      0 ms   *      Request timed out.
26  0 ms    *      0 ms    172.21.10.10
27  *      0 ms   *      Request timed out.
28  0 ms    *      0 ms    172.21.10.10
29  *      0 ms   *      Request timed out.
30  0 ms    *      0 ms    172.21.10.10

Trace complete.
C:\>tracert 172.21.1.1

Tracing route to 172.21.1.1 over a maximum of 30 hops:
  0  0 ms    1 ms    0 ms    172.21.1.1
  1  0 ms    1 ms    0 ms    172.21.1.1

Trace complete.
C:\>
```

6. Konfigurasi static routing pada masing-masing router eagle



7. Lakukan ping dari PC le ke PC aries dan trancert dari leo ke aries

```
Leo
Physical Config Desktop Programming Attributes
Command Prompt
Trace complete.
C:\>ping 172.21.20.2

Pinging 172.21.20.2 with 32 bytes of data:

Reply from 172.21.20.2: bytes=32 time=2ms TTL=126
Reply from 172.21.20.2: bytes=32 time=1ms TTL=126
Reply from 172.21.20.2: bytes=32 time=1ms TTL=126
Reply from 172.21.20.2: bytes=32 time=10ms TTL=126

Ping statistics for 172.21.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 10ms, Average = 3ms

C:\>tracert 172.21.20.2

Tracing route to 172.21.20.2 over a maximum of 30 hops:

  0  1 ms    0 ms    0 ms   172.21.10.10
  1  1 ms    0 ms    0 ms   172.21.1.2
  2  4 ms    0 ms    1 ms   172.21.20.2

Trace complete.

C:\>
```

```
C:\>tracert 172.21.20.2

Tracing route to 172.21.20.2 over a maximum of 30 hops:

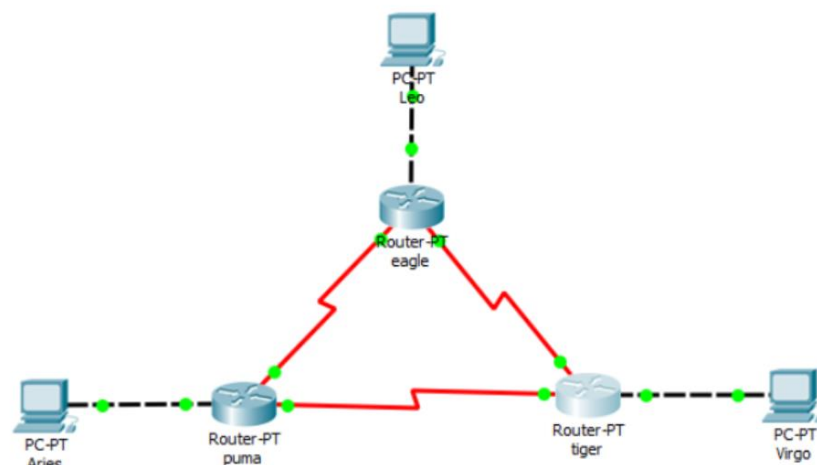
  0  0 ms    0 ms    0 ms   172.21.10.10
  1  1 ms    4 ms   13 ms   172.21.1.2
  2  13 ms   3 ms   10 ms   172.21.20.2

Trace complete.

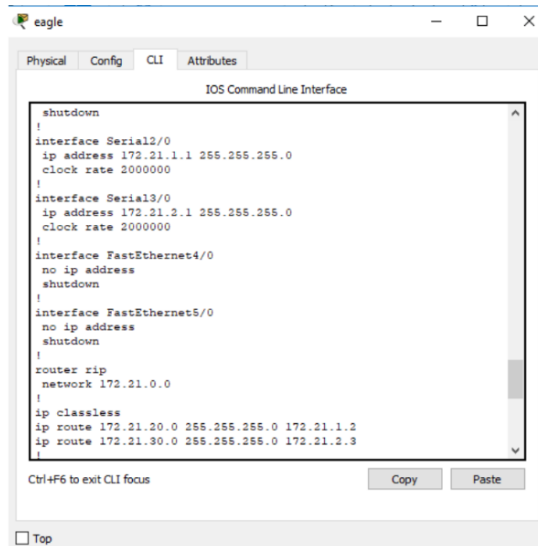
C:\>
```

## Kegiatan 2. RIP (Routing Information Protocol)

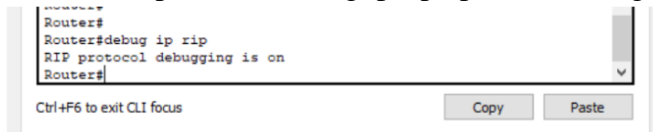
### 1. Rancangan Jaringan



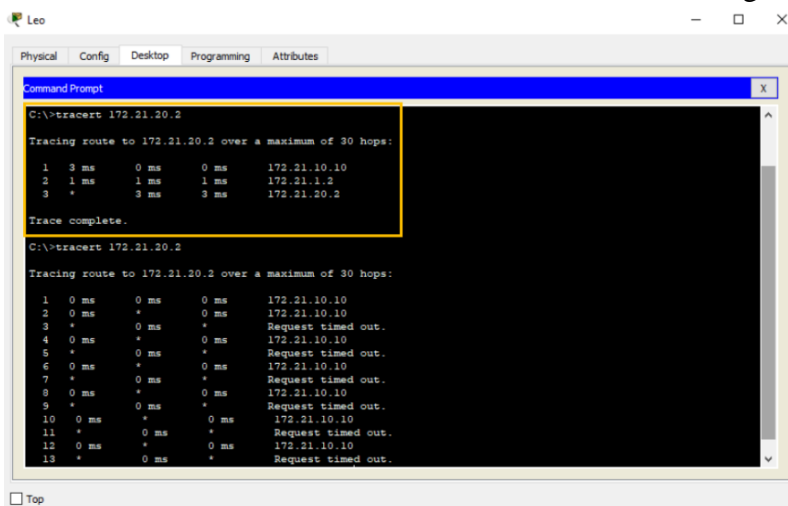
### 2. Nomor alamat jaringan pada konfigurasi routing RIP



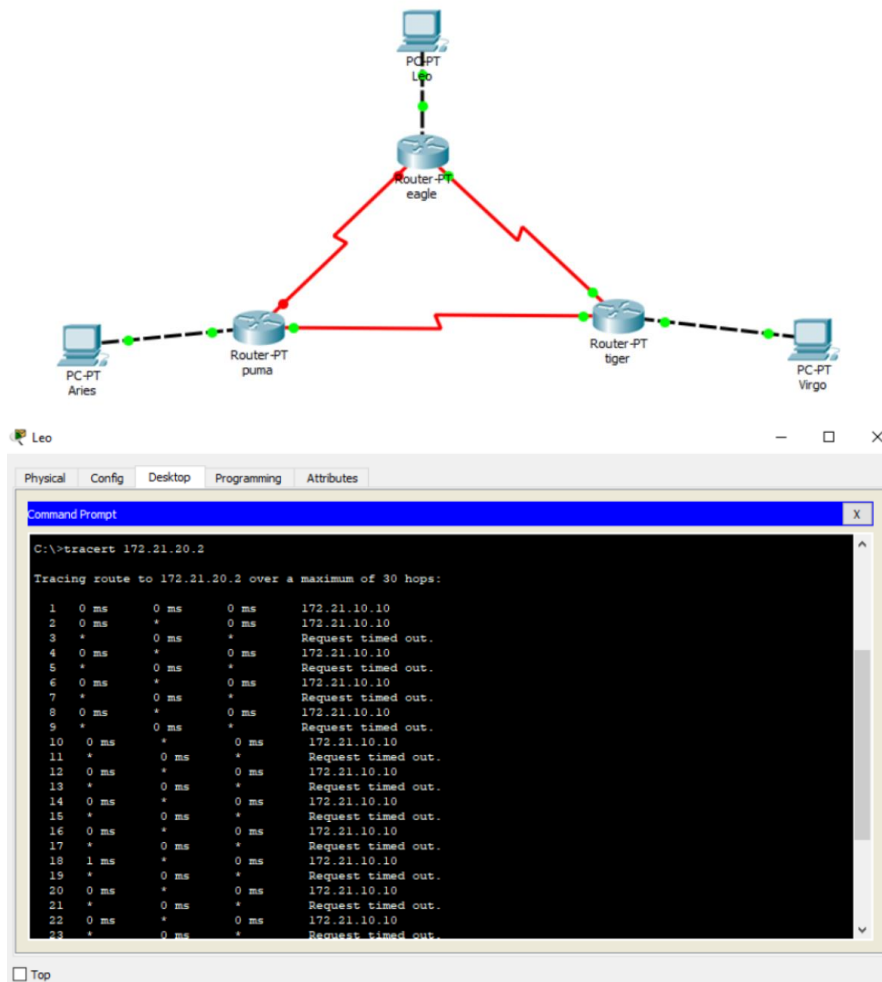
- Melakukan perintah “debug ip rip” pada route eagle



- Trace dari PC leo ke PC aries sebelum memutus router eagle ke router puma

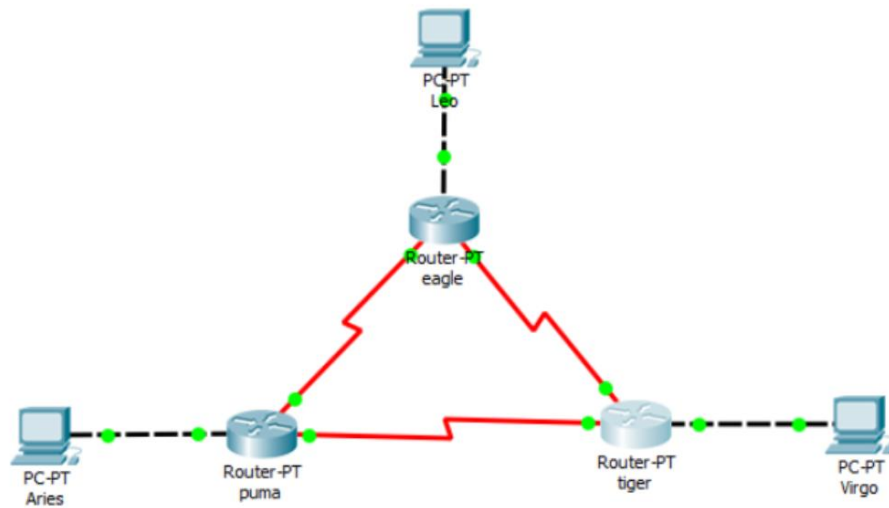


- Trace dari PC leo ke PC aries setelah diputus antara router eagle ke router puma



### Kegiatan 3. IGRP

#### 1. Rancangan Jaringan



2. Konfigurasi routing RIP pada router eagle

```
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)#ex
Router(config)#ex
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

3. Lakukan perintah “show running-config” pada mode user

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

Current configuration : 815 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--
```

4. Lakukan perintah “debug ip igrp transactions” pada mode user dan di router eagle.  
Tunggu beberapa saat untuk melihat informasi transaksi routing EIGRP yang terjadi



```

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

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

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

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

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

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

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

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

EIGRP: Sending HELLO on Serial2/0

```

5. Melakukan konfigurasi routing EIGRP pada router puma dan tiger

Router puma

- Konfigurasi routing EIGRP pada router puma

```

changed state to up

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 routing EIGRP yang telah di buat

```

Router#show running-config
Building configuration...

Current configuration : 795 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 puma

```

Router#debug eigrp packets
EIGRP Packets debugging is on
  (UPDATE, REQUEST, QUERY, REPLY, HELLO, ACK )
Router#
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 Serial3/0
      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

```

Router tiger

- Konfigurasi routing EIGRP pada router tiger

```

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 routing EIGRP yang telah di buat

```

Router#show running-config
Building configuration...

Current configuration : 775 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

```

Router#debug eigrp packets
EIGRP Packets debugging is on
  (UPDATE, REQUEST, QUERY, REPLY, HELLO, ACK )
Router#
EIGRP: Received HELLO on Serial2/0 nbr 172.21.2.1
      AS 100, Flags 0x0, Seq 9/0 idbQ 0/0

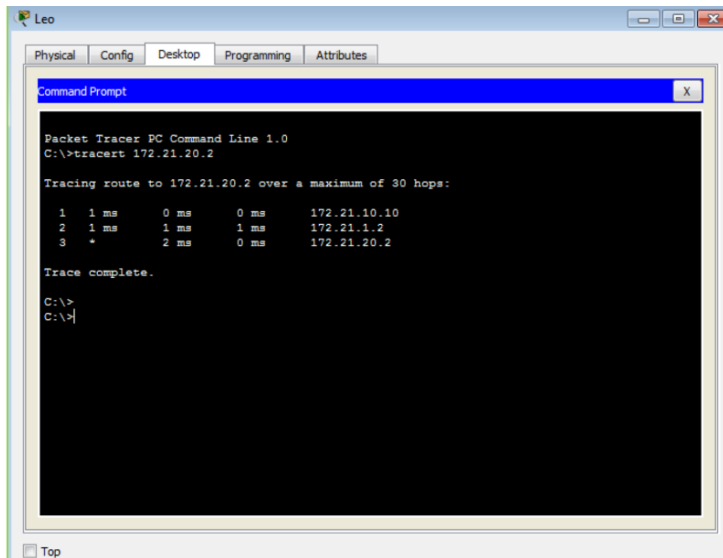
EIGRP: Sending HELLO on Serial3/0
      AS 100, Flags 0x0, Seq 11/0 idbQ 0/0 iidbQ un/rely 0/0

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 FastEthernet0/0
      AS 100, Flags 0x0, Seq 11/0 idbQ 0/0 iidbQ un/rely 0/0

```

6. Melakukan tracer dari PC leo ke PC aries



7. Membuat hubungan antara router eagle dan puma terputus

```

Router#no debug eigrp packets
EIGRP Packets debugging is off
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

%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 172.21.1.1 (Serial2/0)
is down: interface down

```

8. Melakukan trace dari PC leo 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	1 ms	1 ms	0 ms	172.21.2.3
3	1 ms	2 ms	0 ms	172.21.3.2
4	1 ms	0 ms	0 ms	172.21.20.2

```
Trace complete.
```

```
C:\>
```