Nama : Dewi Rahmawati

NIM : L200170188

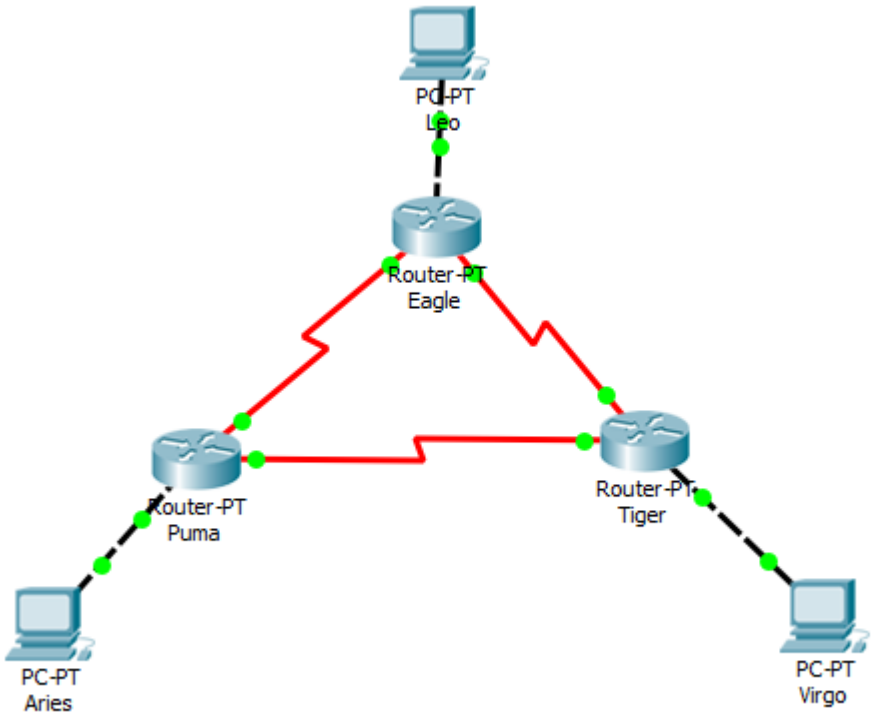
Kelas : D

Modul : 7

JARINGAN KOMPUTER

Kegiatan.1

1. Topologi 1(Static Routing)



2. Konfigurasi masing-masing interface pada tiap router dengan alamat IP berikut:

Konfigurasi Eagle

- eagle (Ethernet 0) = 172.21.10.10/24
- eagle (serial 2) = 172.21.1.1/24
- eagle (serial 3) = 172.21.2.1/24

```
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip add 172.21.10.10 255.255.255.0
Router(config-if)#int se2/0
Router(config-if)#clock rate 2000000
Router(config-if)#ip add 172.21.1.1 255.255.255.0
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#int fa0/0
Router(config-if)#ip add 172.21.10.10 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0,
changed state to up

Router(config-if)#ipiint se3/0
Router(config-if)#clock rate 2000000
Router(config-if)#ip add 172.21.2.1 255.255.255.0
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial3/0, changed state to down
```

Konfigurasi Puma

- puma (Ethernet 0) = 172.21.20.20/24
- puma (serial 2) = 172.21.1.2/24
- puma (serial 3) = 172.21.3.2/24

```
Router(config-if)#int fa0/0
Router(config-if)#ip add 172.21.20.20 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0,
changed state to up

Router(config-if)#int se2/0
Router(config-if)#clock rate 2000000
This command applies only to DCE interfaces
Router(config-if)#ip add 172.21.1.2 255.255.255.0
Router(config-if)#int 3/0
                     ^
% Invalid input detected at '^' marker.

Router(config-if)#no shut

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

```
Router(config-if)#int se3/0
Router(config-if)#clock rate 2000000
Router(config-if)#ip add 172.21.3.2 255.255.255.0
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0,
changed state to up
```

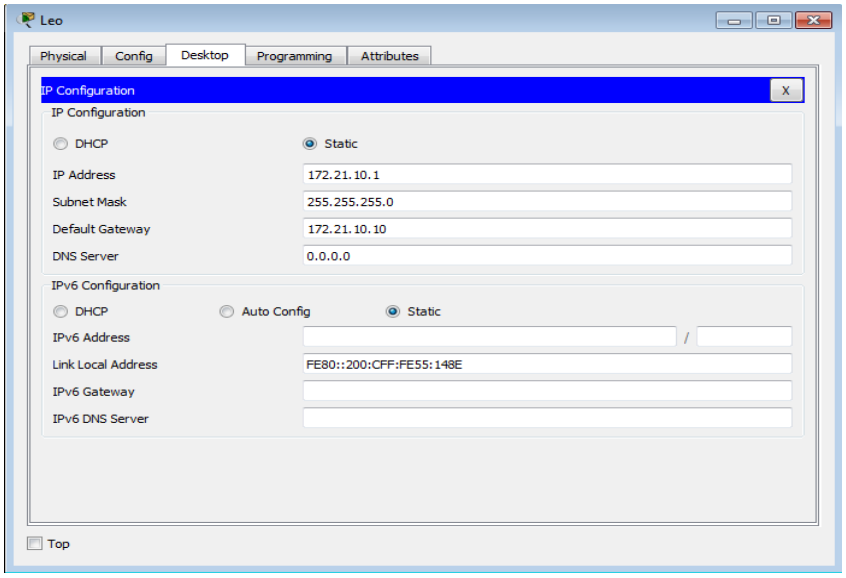
Konfigurasi Tiger

- tiger (Ethernet 0) = 172.21.30.20/24
- tiger (serial 2) = 172.21.2.3/24
- tiger (serial 3) = 172.21.3.3/24

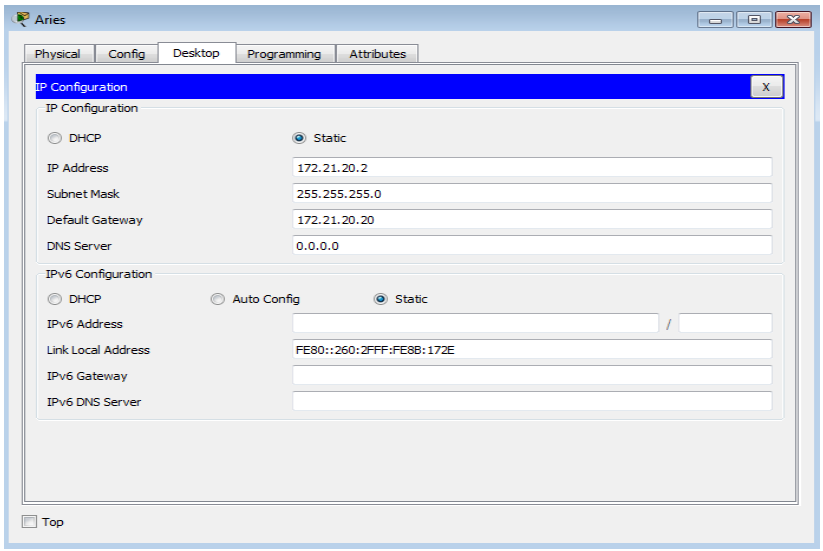
```
Router(config-if)#int fa0/0
Router(config-if)#ip add 172.21.30.30 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0,
changed state to up

Router(config-if)#int se2/0
Router(config-if)#ip add 172.21.2.3 255.255.255.0
Router(config-if)#no shut

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

Router(config-if)#int se 3/0
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0,
changed state to up

Router(config-if)#int se3/0
Router(config-if)#ip add 172.21.3.3 255.255.255.0
```

4.Konfigurasi IP pada PC dengan alamat IP berikut :

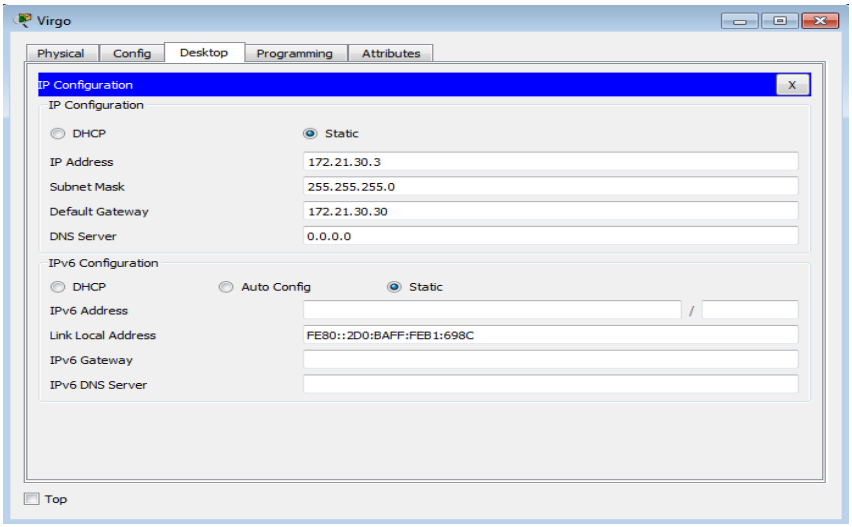
- Leo (172.21.1.1/24) dan default gatwey 172.21.10.10



- Aries (172.21.20.2/24) dan default gateway 172.21.20.20

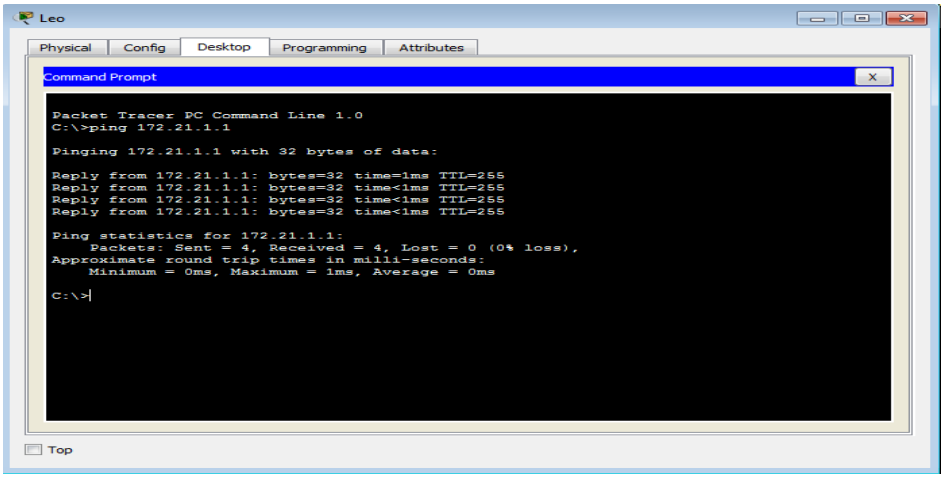


- Virgo (172.21.30.3/24) dan default gateway 172.21.30.30

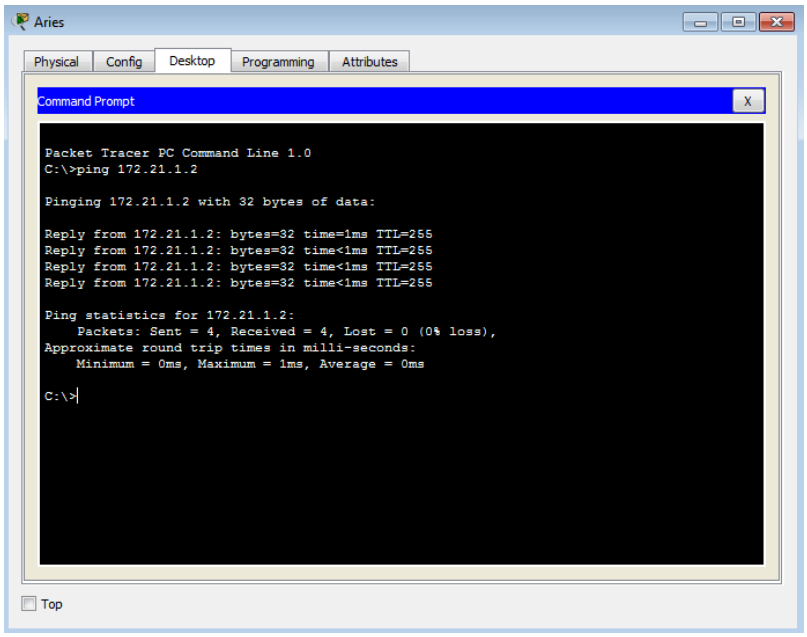


5. Melakukan pengujian untuk memastikan kesesuaian konfigurasi.

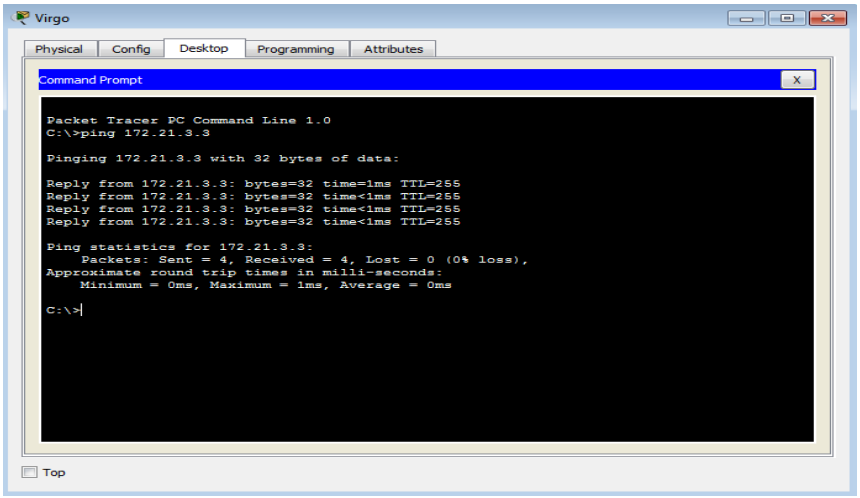
- PC Leo ke Router Eagle



- PC Aries ke Router Puma



- PC Virgo ke Router Tiger



- Router Eagle ke Router Puma

```
Router#ping 172.21.1.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.21.1.2, timeout is 2
seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/6
ms
```

- Router Eagle ke Router Tiger

```
Router#ping 172.21.2.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.21.2.3, timeout is 2
seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
1/3/12 ms
```

- Router Puma ke Router Tiger

```
Router>ping 172.21.3.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.21.3.3, timeout is 2
seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/9
ms

Router>
```

7. Pada mode user, lihat tabel pada masing-masing router.

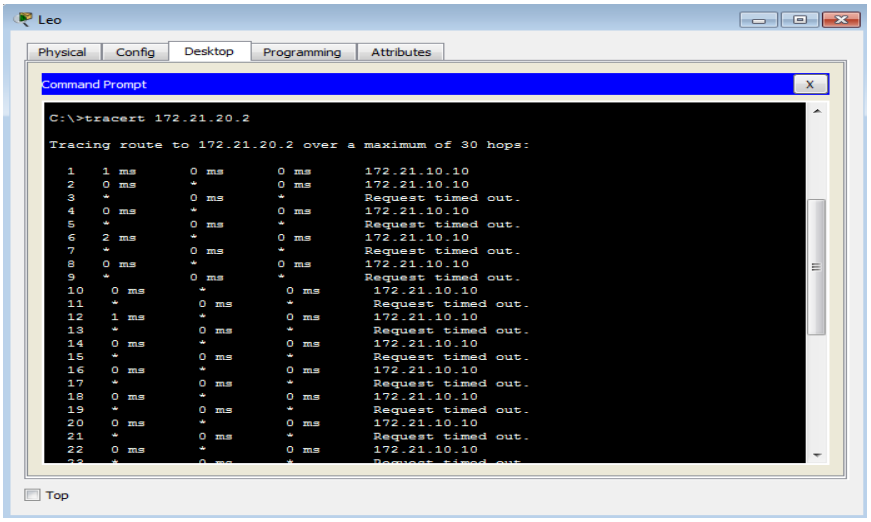
```
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile,
B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter
area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external
type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E -
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

     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
```

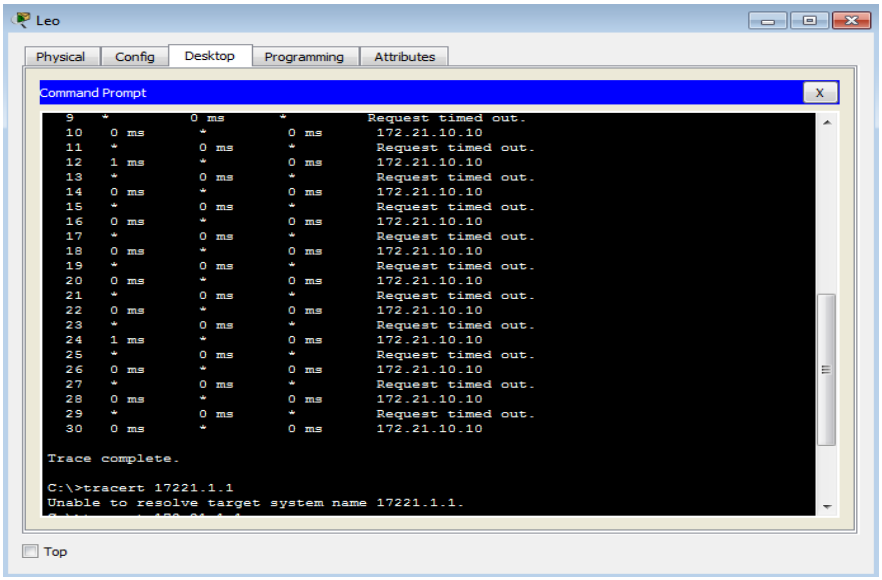
8. Ping Router Eagle ke alamat Interface e0 router puma(172.21.20.20)

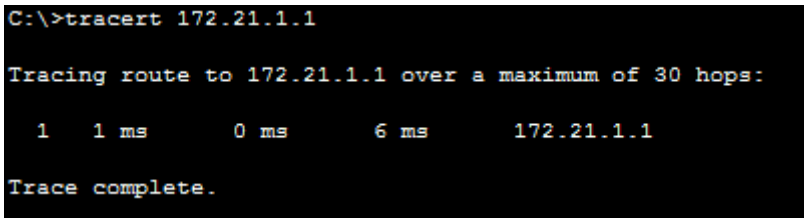
```
Router#ping 172.21.20.20

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)
```

.

9. Dari PC Leo lakukan trace ke PC Aries







10. Lakukan trace dari PC leo ke alamat interface s0 router eagle(172.21.1.1)

```
C:\>tracert 172.21.1.1

Tracing route to 172.21.1.1 over a maximum of 30 hops:

  1    0 ms      0 ms      0 ms      172.21.1.1

Trace complete.

C:\>
```

11. Menambahkan route table pada router eagle

```
Router#en
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 172.21.20.0 255.255.255.0 172.21.1.2
Router(config)#ip route 172.21.30.0 255.255.255.0 172.21.2.3
Router(config)#
```

Menambahkan route table pada router puma

```
Router>en
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 172.21.10.0 255.255.255.0 172.21.1.1
Router(config)#ip route 172.21.30.0 255.255.255.0 172.21.3.3
Router(config)#
```

Menambahkan route table pada router tiger

```
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 172.21.10.0 255.255.255.0 172.21.2.1
Router(config)#ip route 172.21.20.0 255.255.255.0 172.21.3.2
Router(config)#
```

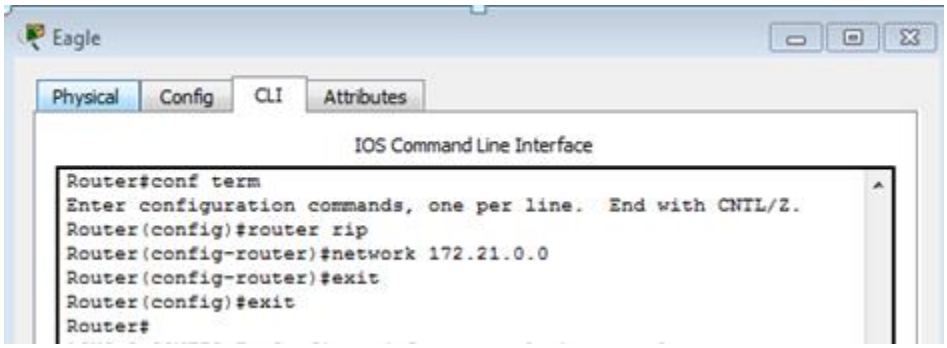
12. Lakukan ping dari PC leo ke PC aries, dan lakukan pula trace dari PC leo ke aries

```
C:\>tracert 172.21.1.1

Tracing route to 172.21.1.1 over a maximum of 30 hops:

  1    0 ms      0 ms      0 ms      172.21.1.1

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=1ms TTL=126
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

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 = 2ms, Average = 1ms
```

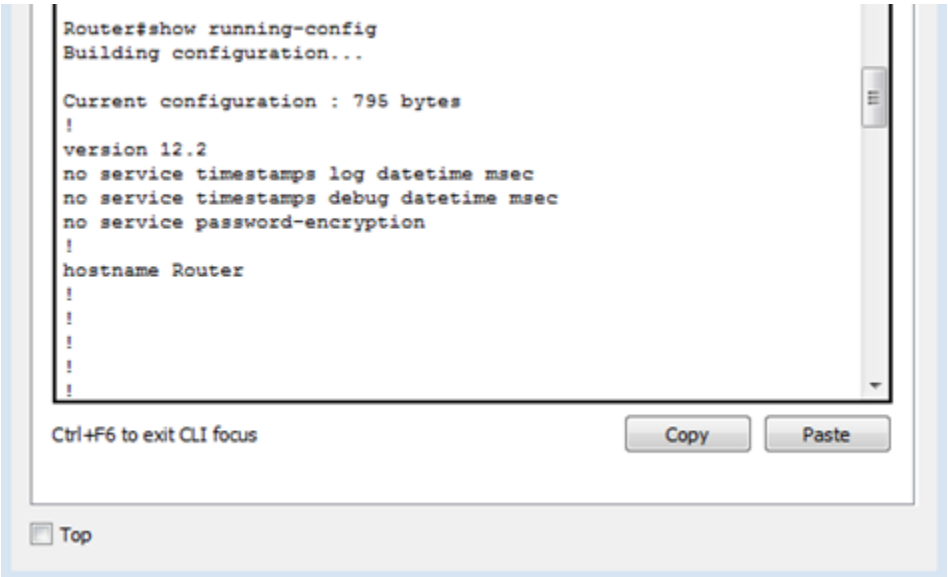
```
C:\>tracert 172.21.20.2

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      4 ms      13 ms     172.21.1.2
  3    13 ms     3 ms      10 ms     172.21.20.2

Trace complete.

C:\>
```

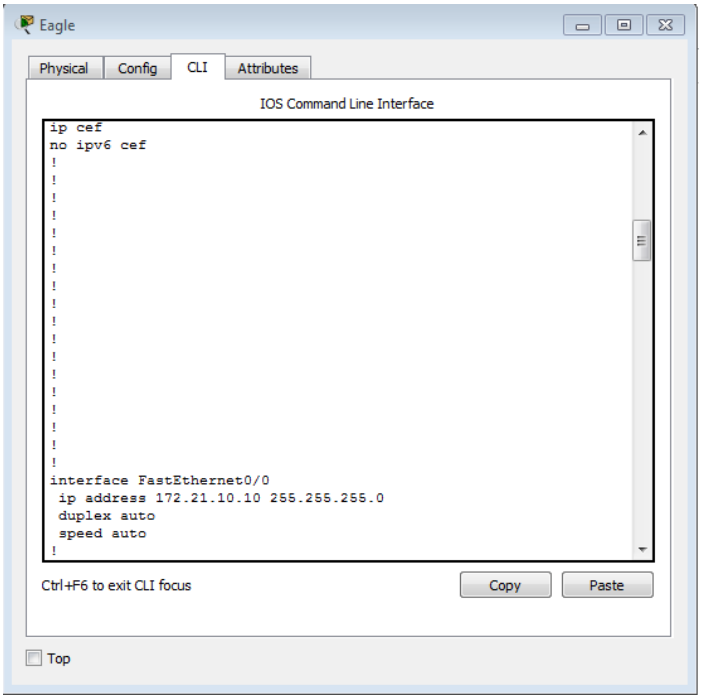
Kegiatan 2.

3. pada mode configuration, konfigurasi routing RIP pada router eagle

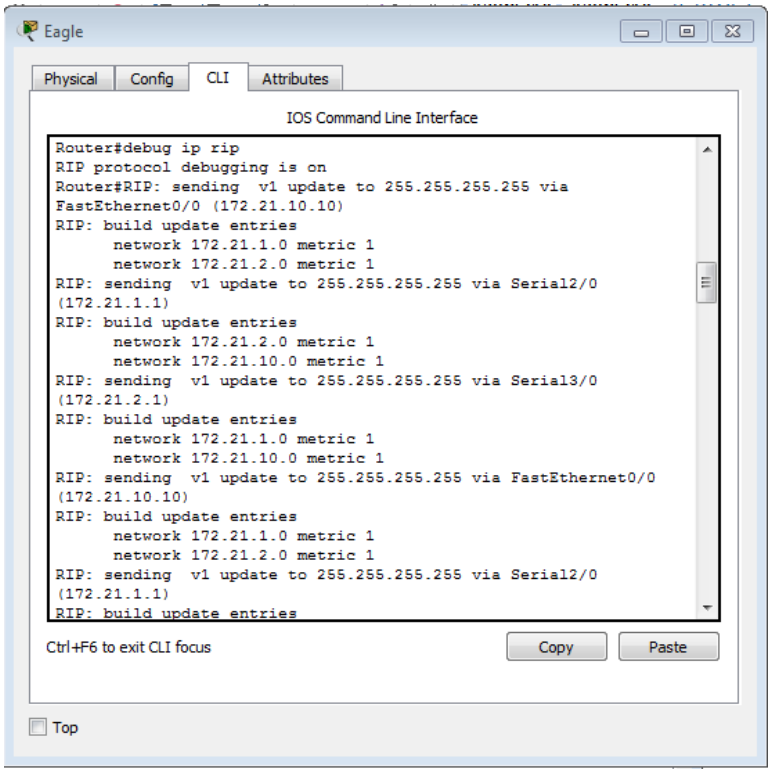


4. Konfigurasi routing RIP yang telah dibuat dengan perintah “show running-config”

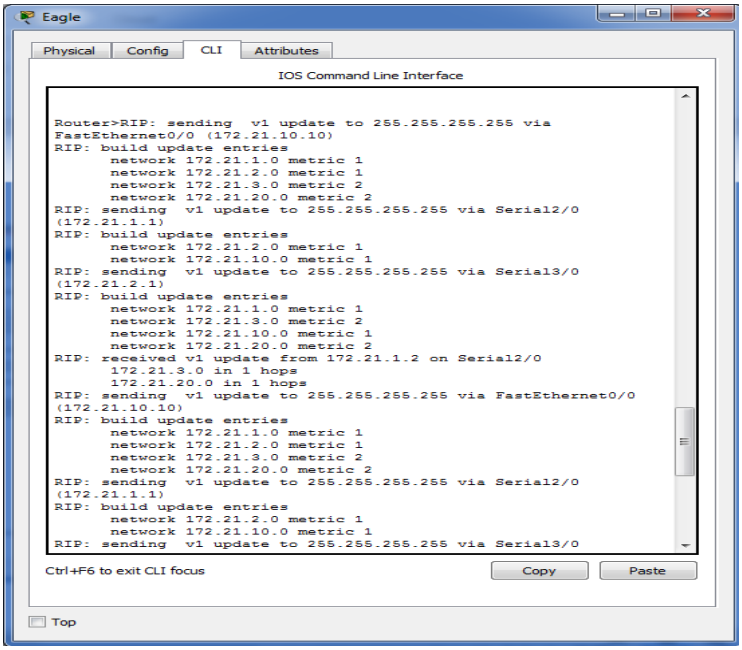


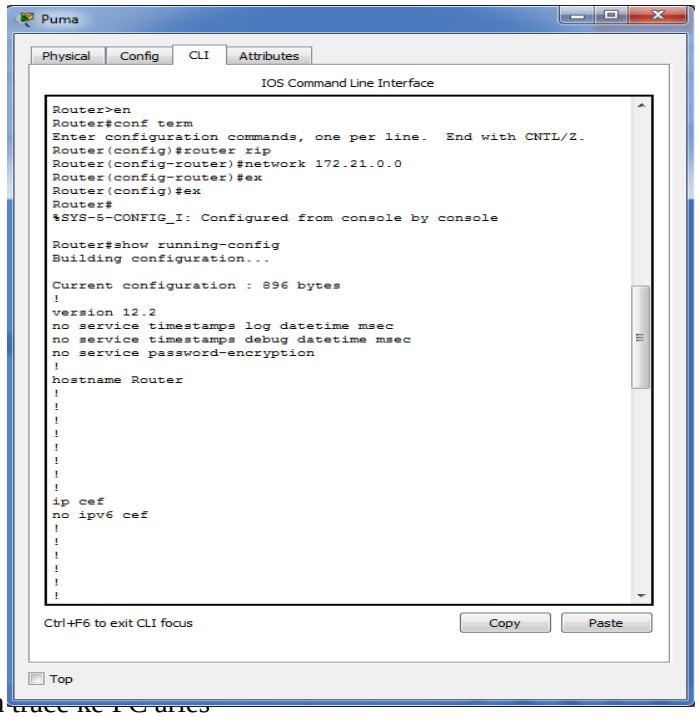


5. proses update routing RIP pada router eagle dengan perintah “debug ip rip”

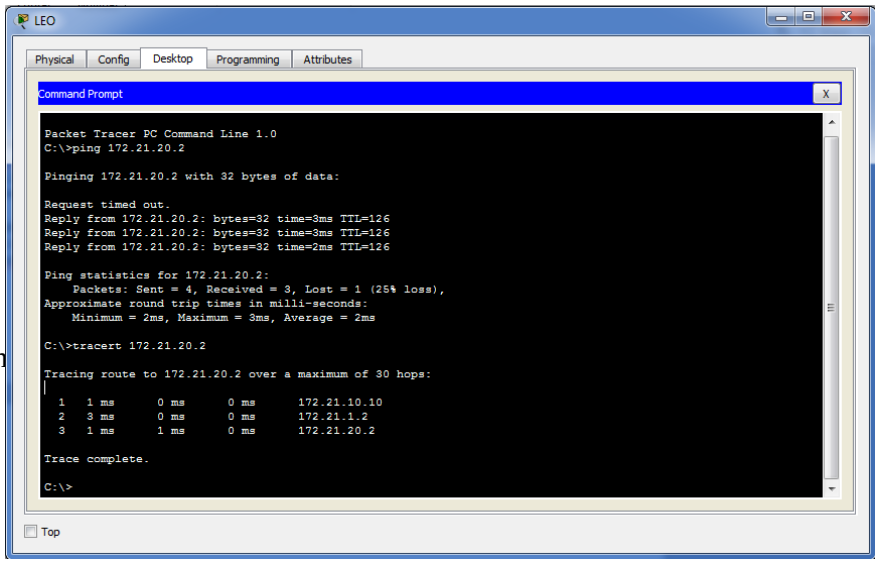


6. Melakukan konfigurasi routing RIP pada router tiger dan puma.

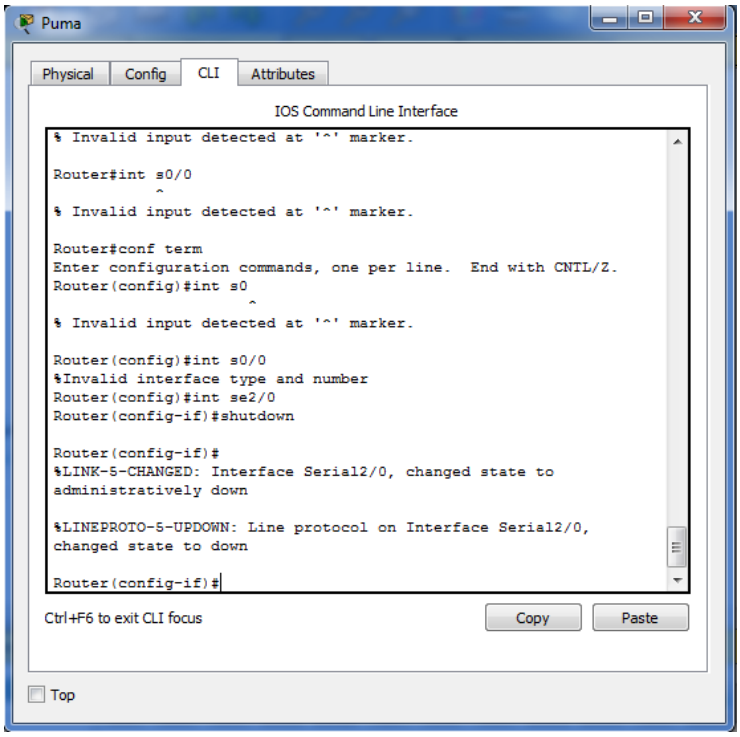




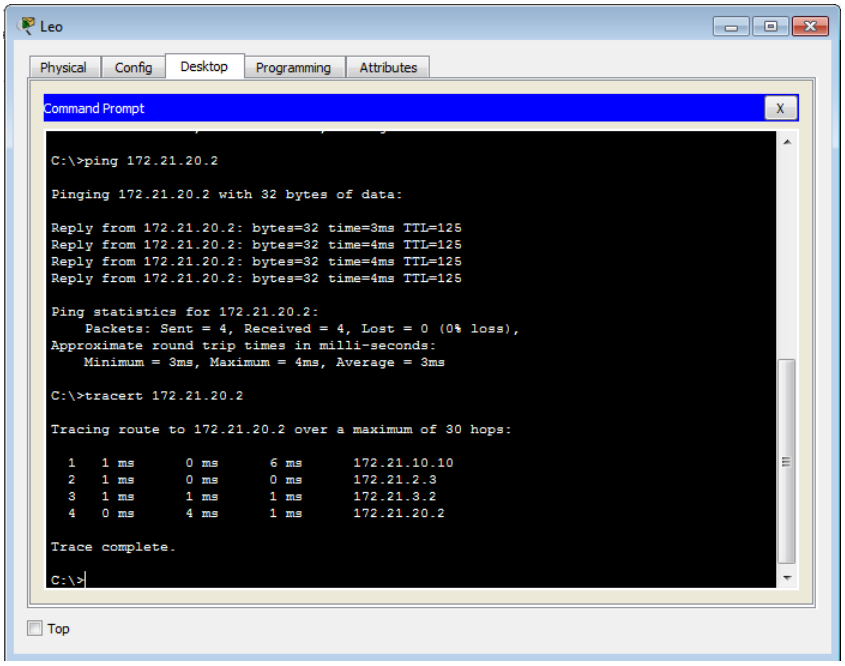
7. Dari PC leo melakukan trace ke PC aries



8. Membuat hubungan



9.Dari PC leo melakukan trace ke PC aries



Kegiatan 3.

2. Load konfigurasi seluruh device yang disimpan pada langkah 6 Kegiatan 1.

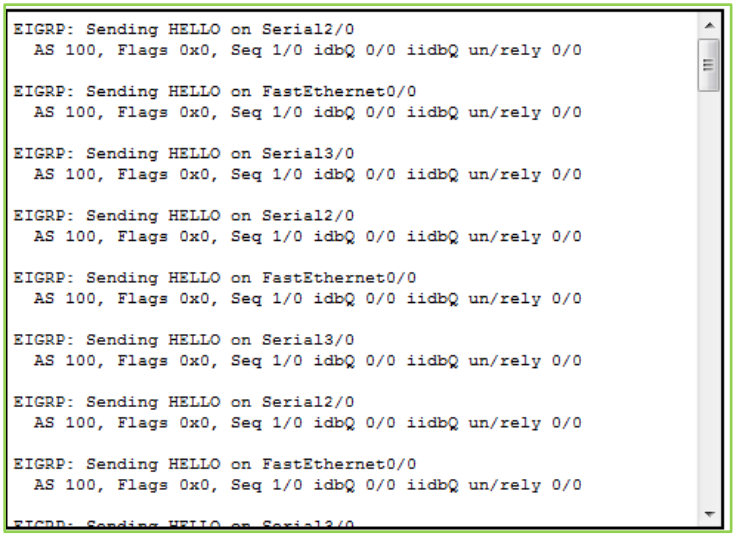
3. Pada mode configuration, konfigurasi routing RIP pada router eagle.

```
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
```

4. Lihat konfigurasi routing EIGRP yang telah dibuat dengan 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--
```

5. Lihat proses transaksi routing EIGRP pada router eagle dengan perintah "debug ip igrp transactions" pada mode user.



6. Lihat proses transaksi routing EIGRP pada router eagle dengan perintah "debug ip eigrp transasctions" pada mode user. Tunggu beberapa saat untuk melihat informasi transaksi routing EIGRP yang terjadi.

Catatan : Hasil tampilan perintah "debug ip eigrp transactions" memperlihatkan informasi update routing EIGRP secara detil. Untuk melihat informasi update routing EIGRP secara lebih ringkas digunakan perintah "debug ip eigrp events.(dengan lebih dahulu menonaktifkan "debug ip eigrp transactions" dengan perintah "no debug ip eigrp transactions").

7. Lakukan konfigurasi routing EIGRP pada router puma dan tiger. Perhatikan proses update routing EIGRP pada router eagle (secara detail) ketika konfigurasi router puma dan tiger dilakukan.

Router Puma

Konfigurasi 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

a. 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
```

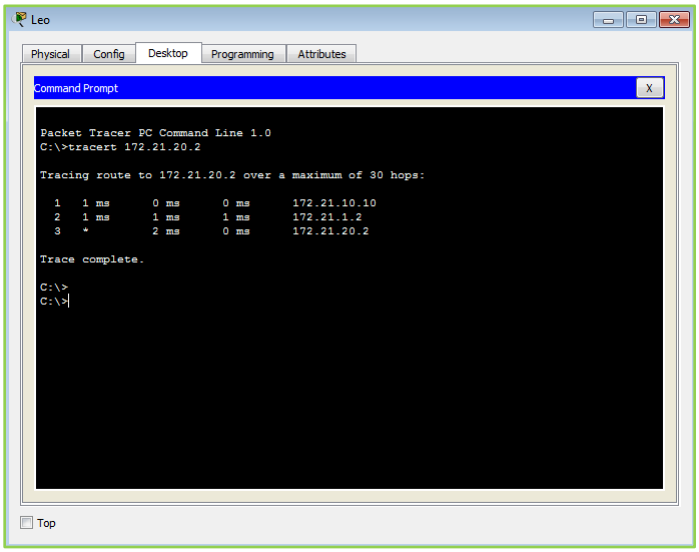
Melihat konfigurasi routing EIGRP .

```
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--
```

a. Melihat proses transaksi routing EIGRP .

```
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
```

8. Dari PC Leo lakukan trace ke PC aries



9. Buat hubungan antara router eagle dan puma terputus dan perhatikan proses update routing RIP yang terjadi.

```
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
```

10. Dari pc leo lakukan trace ke PC Aries.