COMPUTER NETWORKS PRACTICUM 7



By:

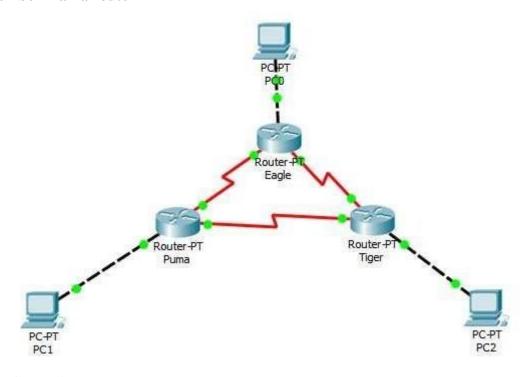
Motwkel Mhmoud Mohmed Adam

NIM: L200184220

INFORMATION TECHNOLOGY FACULTY OF COMMUNICATION AND INFORMATICS UNIVERSITY OF MUHAMMADIYAH SURAKARTA 2020

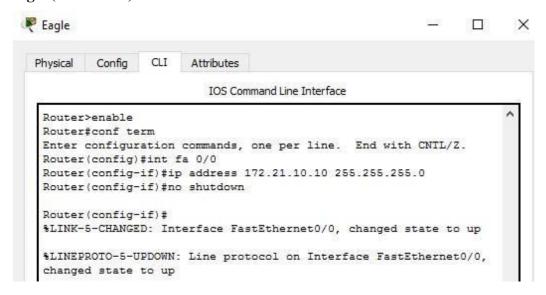
#ACTIVITY 1

- A. Membuat topologi
- B. Memberi nama router

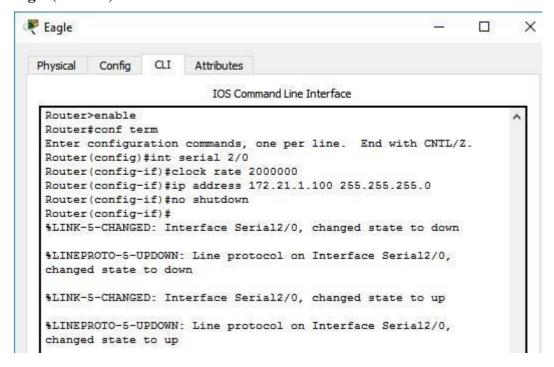


C. Konfigurasi IP Router

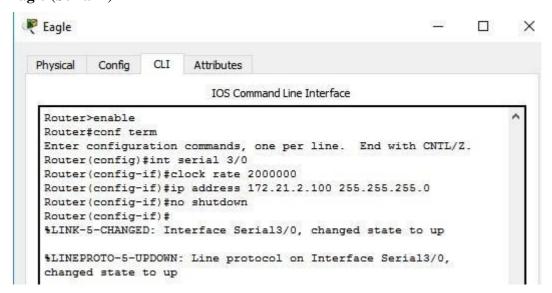
> Eagle (Ethernet 0)



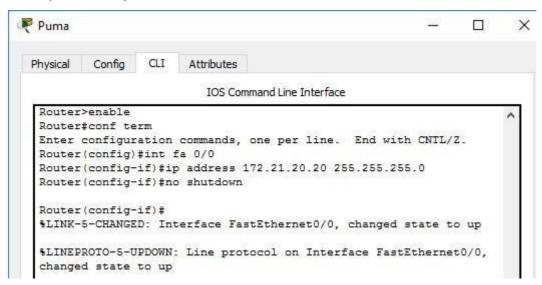
Eagle (Serial 0)



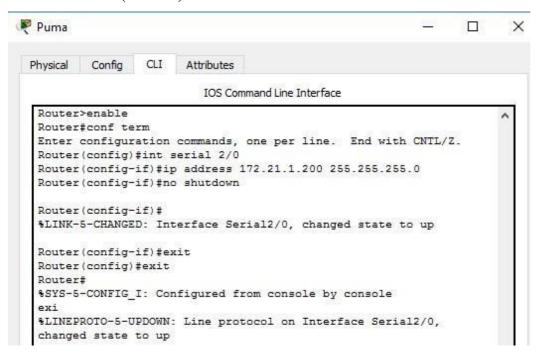
Eagle (Serial 1)



Puma (Ethernet 0)

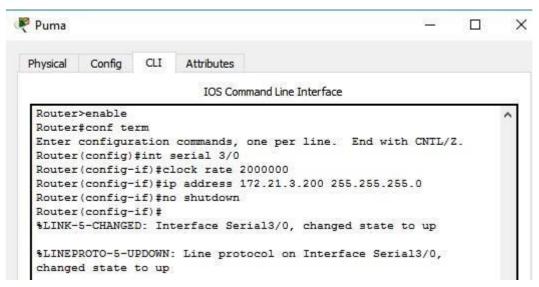


> Puma (Serial 0)

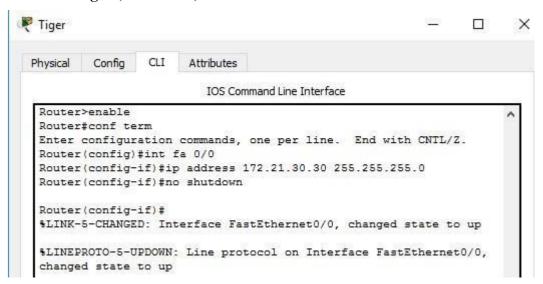


➣

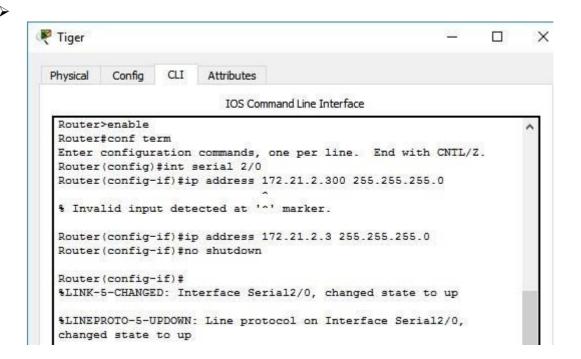
Puma (Serial 1)



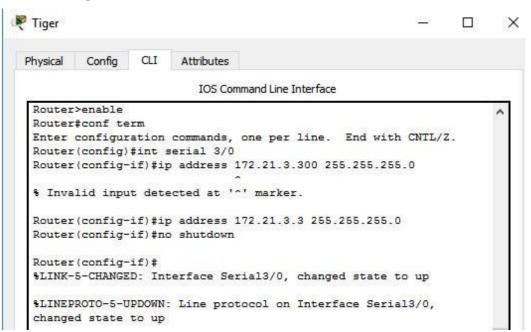
➤ Tiger (Ethernet 0)



Tiger (Serial 0)

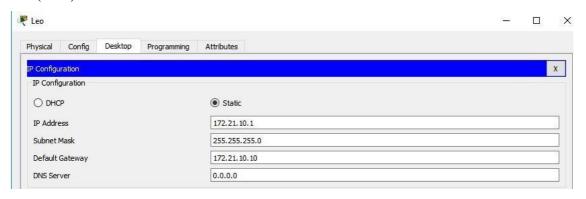


➤ Tiger (Serial 1)

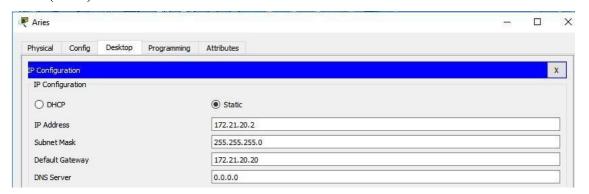


D. Konfigurasi PC

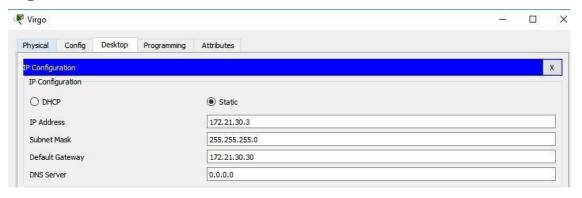
➤ Leo (PC1)



> Aries (PC2)



Virgo (PC3)



E. Memastikan kesesuaian konfigurasi

> Ping dari PC Leo ke router Eagle

```
Physical Config Desktop Programming Attributes

Command Prompt

C:\>ping 172.21.1.100

Pinging 172.21.1.100 with 32 bytes of data:

Reply from 172.21.1.100: bytes=32 time<1ms TTL=255

Ping statistics for 172.21.1.100:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Ping dari PC Aries ke router Puma

```
Physical Config Desktop Programming Attributes

Command Prompt

C:\>ping 172.21.1.200

Pinging 172.21.1.200 with 32 bytes of data:

Reply from 172.21.1.200: bytes=32 time<1ms TTL=255

Ping statistics for 172.21.1.200:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Ping dari PC Virgo ke router Tiger

```
Physical Config Desktop Programming Attributes

Command Prompt

C:\>ping 172.21.3.3

Pinging 172.21.3.3 with 32 bytes of data:

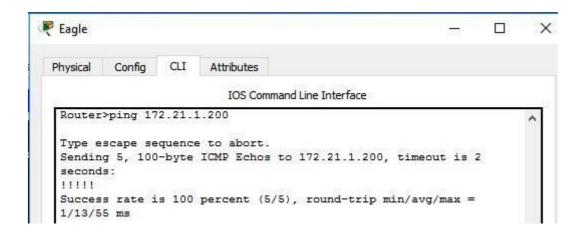
Reply from 172.21.3.3: bytes=32 time<1ms TTL=255

Ping statistics for 172.21.3.3:

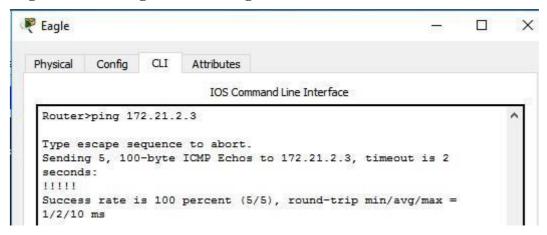
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

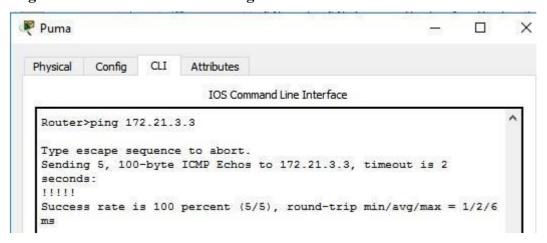
> Ping dari router Eagle ke router Puma



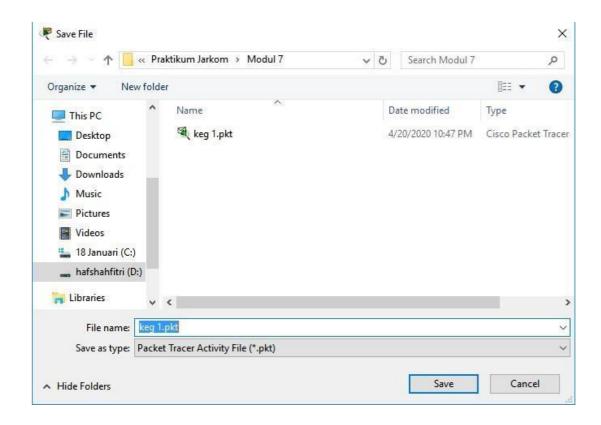
> Ping dari router Eagle ke router Tiger



➤ Ping dari router Puma ke router Tiger



F. Simpan konfigurasi



G. Tugas 7A. Melihat route table masing-masing router

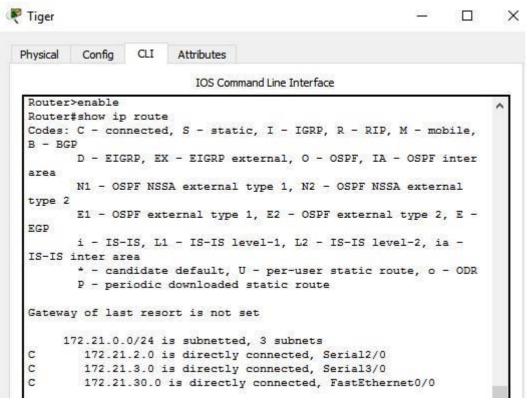
> Eagle

```
Eagle
                                                                  П
                                                                        X
 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
          172.21.1.0 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
```

Puma

```
Puma
                                                                 X
          Config CLI
 Physical
                       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
          172.21.1.0 is directly connected, Serial2/0
          172.21.3.0 is directly connected, Serial3/0
  C
  C
         172.21.20.0 is directly connected, FastEthernet0/0
```

> Tiger



H. Tugas 8A. Ping dari Eagle ke interface e0 router Puma JELASIN

```
Physical Config CLI Attributes

IOS Command Line Interface

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)
```

I. Tugas 9A. Trace PC Leo ke PC Aries JELASIN

```
P Leo
                                                                                                                                             X
 Physical Config Desktop Programming
                                                  Attributes
  Command Prompt
                                                                                                                                                 Х
   C:\>tracert 172.21.20.2
   Tracing route to 172.21.20.2 over a maximum of 30 hops:
          3 ms
0 ms
*
                                    0 ms
0 ms
                        0 ms
                                                  172.21.10.10
     172.21.10.10
                       0 ms
                                                  Request timed out. 172.21.10.10
                                                  Request timed out.
172.21.10.10
                        0 ms
                                     26 ms
                        0 ms
                                                  Request timed out. 172.21.10.10
           0 ms
                                     0 ms
                                                  Request timed out.
172.21.10.10
                        0 ms
           0 ms
                                      0 ms
                                                   Request timed out.
172.21.10.10
                         0 ms
            0 ms
                                      0 ms
                                                   Request timed out.
172.21.10.10
            0 ms
                                      0 ms
                         0 ms
                                                   172.21.10.10
Request timed out.
            0 ms
                                      55 ms
                         0 ms
            0 ms
                                      0 ms
                                                   172.21.10.10
Request timed out.
                         0 ms
                                                   172.21.10.10
            0 ms
                                      84 ms
                         48 ms
                                                   Request timed out 172.21.10.10
            0 ms
                                                   Request timed out.
172.21.10.10
                         0 ms
                         0 ms
                                                   Request timed out. 172.21.10.10
                                      0 ms
                                                   Request timed out.
172.21.10.10
                         0 ms
                                      0 ms
     29
30
                                                   Request timed out. 172.21.10.10
                         0 ms
            0 ms
                                      0 ms
    Trace complete.
```

J. Tugas 10A. Trace PC Leo ke interface s0 router Eagle JELASIN

```
Physical Config Desktop Programming Attributes

Command Prompt

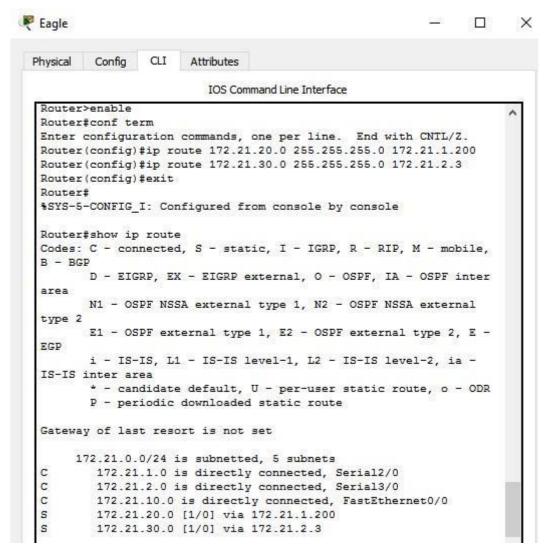
C:\>tracert 172.21.1.100

Tracing route to 172.21.1.100 over a maximum of 30 hops:

1 0 ms 0 ms 0 ms 172.21.1.100

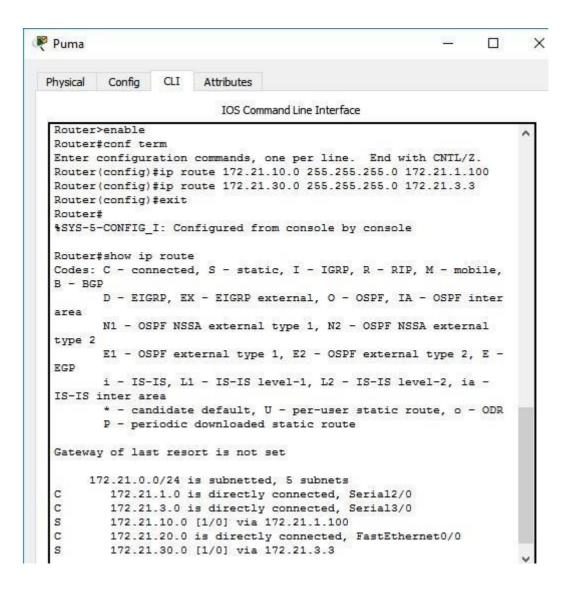
Trace complete.
```

K. Route table untuk masing-masing router

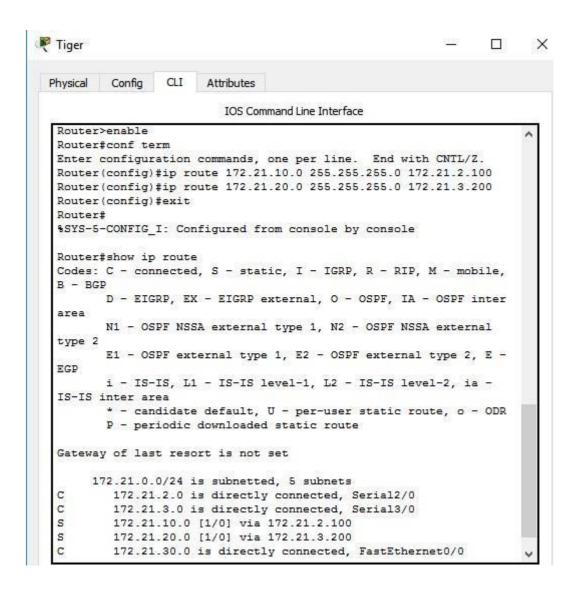


* Tugas 11A

Langkah penambahan route table pada router Puma



Langkah penambahan route table pada router Tiger



L. Tugas 12A.

> Ping PC Leo ke PC Aries

```
Physical Config Desktop Programming Attributes

Command Prompt

C:\>ping 172.21.20.2

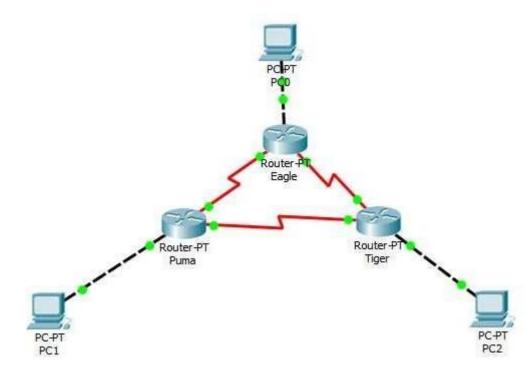
Pinging 172.21.20.2 with 32 bytes of data:

Reply from 172.21.20.2: bytes=32 time=2ms TTL=126
Reply from 172.21.20.2: bytes=32 time=13ms TTL=126
Reply from 172.21.20.2: bytes=32 time=5ms TTL=126
Reply from 172.21.20.2: bytes=32 time=5ms TTL=126
Reply from 172.21.20.2: bytes=32 time=7ms TTL=126
Reply from 172.21.20.2: bytes=32 time=6ms TTL=126
Reply from 172.21.20.2: bytes=32 time=7ms TTL=126
Reply from 172.
```

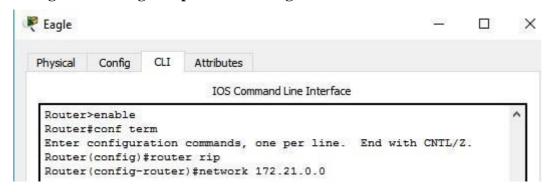
> Trace PC Leo ke PC Aries JELASKAN

#ACTIVITY 2

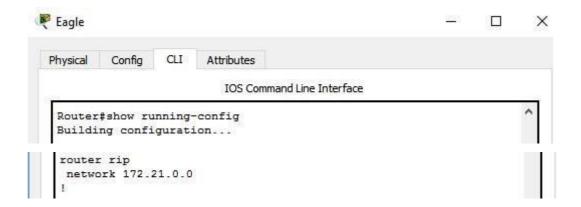
- A. Membuka topologi kegiatan 1
- B. Load konfigurasi seluruh device yang disimpan pada langkah 6 kegiatan 1



C. Konfigurasi routing RIP pada router Eagle



D. Melihat konfigurasi routing RIP



❖ Tugas 4A. Nomer alamat jaringan yang terdaftar pada konfigurasi routing RIP

172.21.0.0

❖ Tugas 4B. Mengapa alamat jaringan yang terhubung dengan interface e0, s0, dan s1 tidak didaftarkan ke konfigurasi routing RIP GATAU

E. Proses update routing RIP

```
Eagle
                                                                 X
          Config CLI
 Physical
                        Attributes
                          IOS Command Line Interface
  Router>enable
  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
  (172.21.1.100)
  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
  (172.21.2.100)
  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
  (172.21.1.100)
```

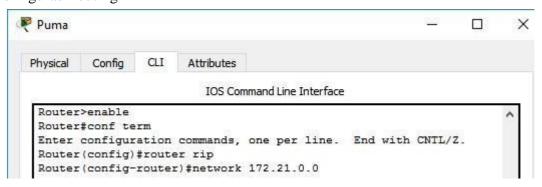
```
RIP: build update entries
      network 172.21.2.0 metric 1
     network 172.21.10.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial3/0
(172.21.2.100)
RIP: build update entries
     network 172.21.1.0 metric 1
     network 172.21.10.0 metric 1
RIP: sending v1 update to 255.255.255.255 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
(172.21.1.100)
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
(172.21.2.100)
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
```

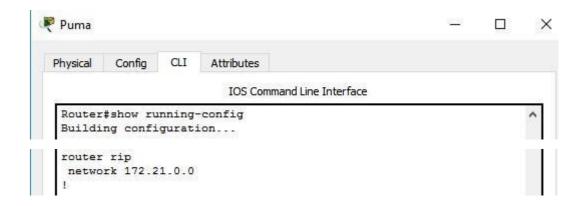
❖ Tugas 5A. Penjelasan singkat proses update routing RIP

F. Konfigurasi routing RIP pada puma dan tiger

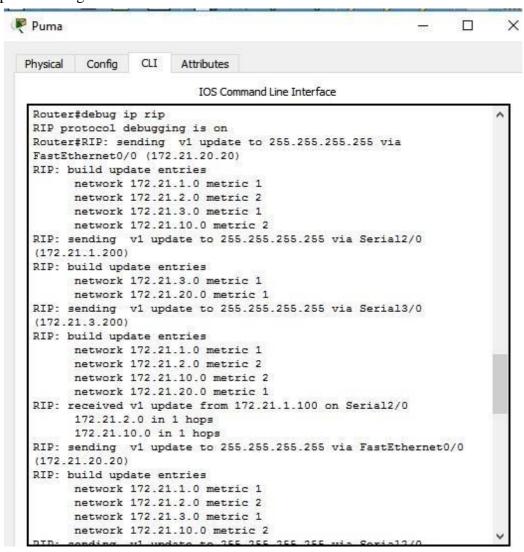
> PUMA

• Konfigurasi routing RIP





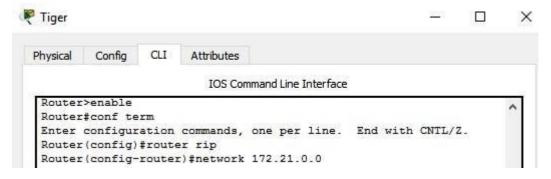
• Update routing RIP



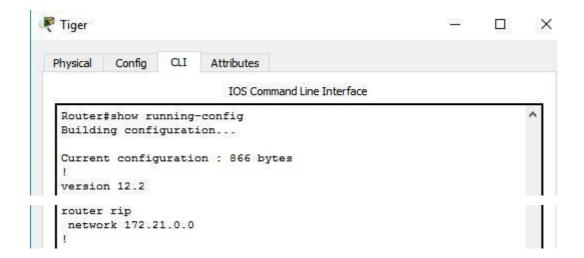
```
RIP: sending
             v1 update to 255.255.255.255 via Serial3/0
(172.21.3.200)
RIP: build update entries
     network 172.21.1.0 metric 1
     network 172.21.2.0 metric 2
     network 172.21.10.0 metric 2
     network 172.21.20.0 metric 1
RIP: received v1 update from 172.21.1.100 on Serial2/0
      172.21.2.0 in 1 hops
     172.21.10.0 in 1 hops
RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0
(172.21.20.20)
RIP: build update entries
     network 172.21.1.0 metric 1
     network 172.21.2.0 metric 2
     network 172.21.3.0 metric 1
     network 172.21.10.0 metric 2
RIP: sending v1 update to 255.255.255.255 via Serial2/0
(172.21.1.200)
RIP: build update entries
     network 172.21.3.0 metric 1
     network 172.21.20.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial3/0
(172.21.3.200)
RIP: build update entries
     network 172.21.1.0 metric 1
     network 172.21.2.0 metric 2
     network 172.21.10.0 metric 2
     network 172.21.20.0 metric 1
RIP: received v1 update from 172.21.1.100 on Serial2/0
      172.21.2.0 in 1 hops
      172 21 10 0 in 1 hops
```

> TIGER

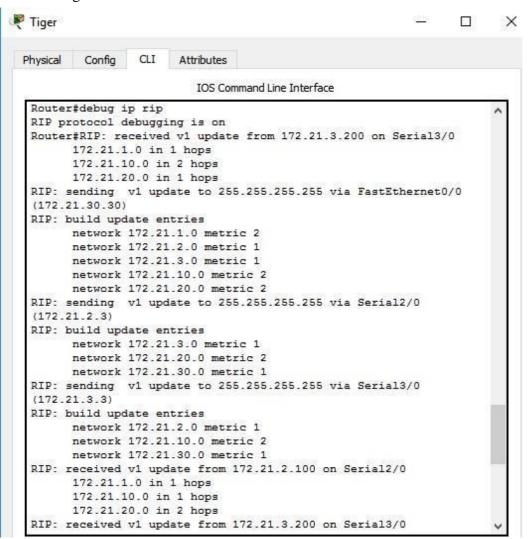
• Konfigurasi routing RIP



• Melihat konfigurasi routing RIP



Update routing RIP



```
RIP: sending v1 update to 255.255.255.255 via Serial3/0
(172.21.3.3)
RIP: build update entries
     network 172.21.2.0 metric 1
     network 172.21.10.0 metric 2
     network 172.21.30.0 metric 1
RIP: received v1 update from 172.21.2.100 on Serial2/0
      172.21.1.0 in 1 hops
     172.21.10.0 in 1 hops
     172.21.20.0 in 2 hops
RIP: received v1 update from 172.21.3.200 on Serial3/0
     172.21.1.0 in 1 hops
     172.21.10.0 in 2 hops
     172.21.20.0 in 1 hops
RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0
(172.21.30.30)
RIP: build update entries
     network 172.21.1.0 metric 2
     network 172.21.2.0 metric 1
     network 172.21.3.0 metric 1
     network 172.21.10.0 metric 2
     network 172.21.20.0 metric 2
RIP: sending v1 update to 255.255.255.255 via Serial2/0
(172.21.2.3)
RIP: build update entries
     network 172.21.3.0 metric 1
     network 172.21.20.0 metric 2
     network 172.21.30.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial3/0
(172.21.3.3)
RIP: build update entries
```

G. Tracert PC Leo ke PC Aries

H. Memutus hubungan antara router Eagle dan Puma

```
Puma
                                                                  X
          Config CLI
                        Attributes
 Physical
                           IOS Command Line Interface
  Router>enable
  Router#conf term
  Enter configuration commands, one per line. End with CNTL/Z.
  Router(config) #int serial 2/0
  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
```

I. Tracert PC Leo ke PC Aries

```
Physical Config Desktop Programming Attributes

Command Prompt

C:\>tracert 172.21.20.2

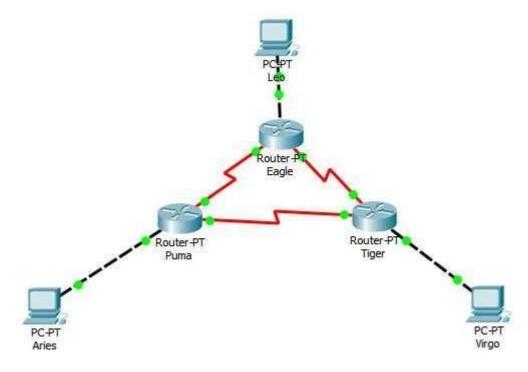
Tracing route to 172.21.20.2 over a maximum of 30 hops:

1 28 ms 0 ms 0 ms 172.21.10.10
2 0 ms 5 ms 1 ms 172.21.2.3
3 1 ms 1 ms 10 ms 172.21.3.200
4 * 14 ms 14 ms 172.21.20.2

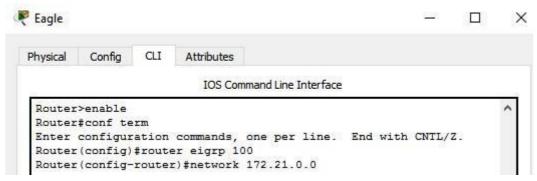
Trace complete.
```

#ACTIVITY 3

- A. Membuka topologi kegiatan 1
- B. Load konfigurasi seluruh device yang disimpan pada langkah 6 kegiatan 1



C. Konfigurasi routing RIP pada router eagle



D. Melihat konfigurasi routing RIP



- E. Melihat transaksi routing IGRP
- F. Gatau
- G. Routing IGRP pada router Puma dan Tiger
 - > PUMA

- Konfigurasi routing RIP
- Melihat konfigurasi routing RIP
- Melihat transaksi routing IGRP

> TIGER

- Konfigurasi routing RIP
- Melihat konfigurasi routing RIP
- Melihat transaksi routing IGRP
- H. Trace PC Leo ke PC Aries
- I. Memutus hubungan antara router Eagle dan Puma
- J. Trace PC Leo ke PC Aries