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NIM : L200170186

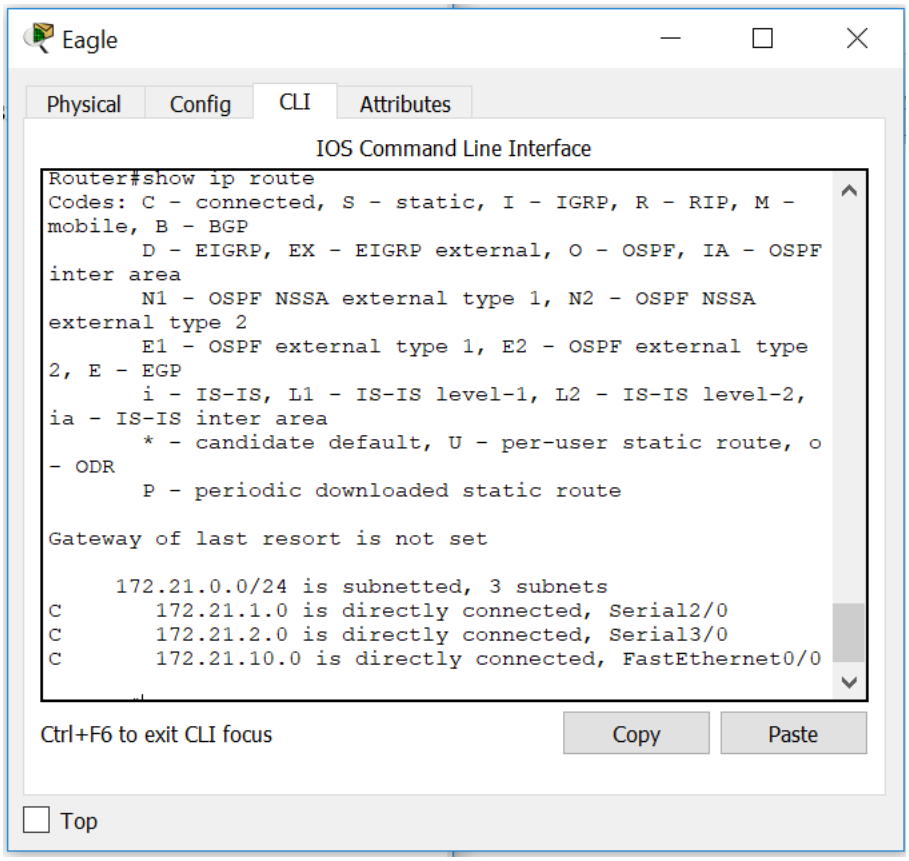
Kelas : D

TUGAS MODUL 7

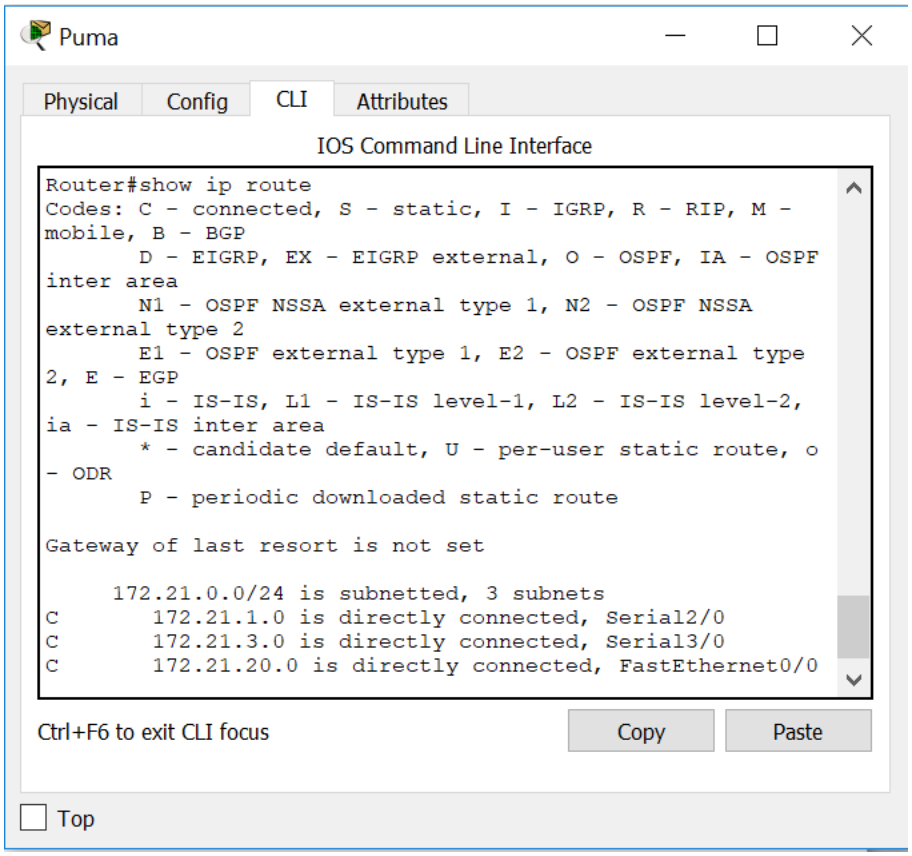
KEGIATAN 1

Tugas 7A :capture hasil tampilan masing –masing router

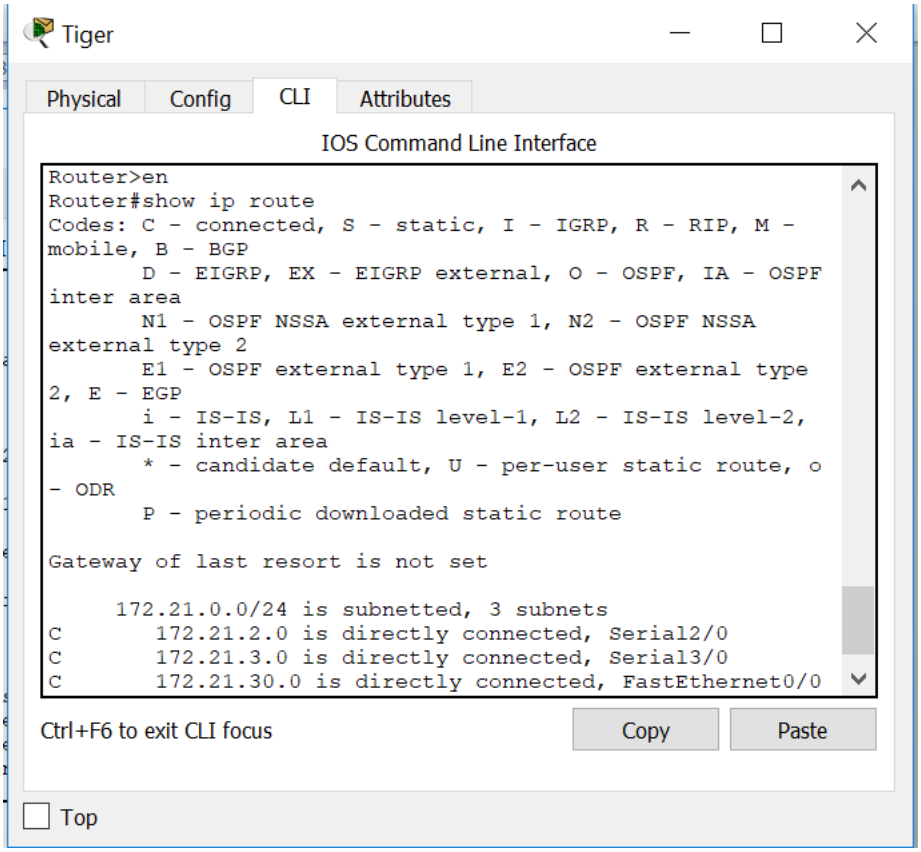
- Router eagle



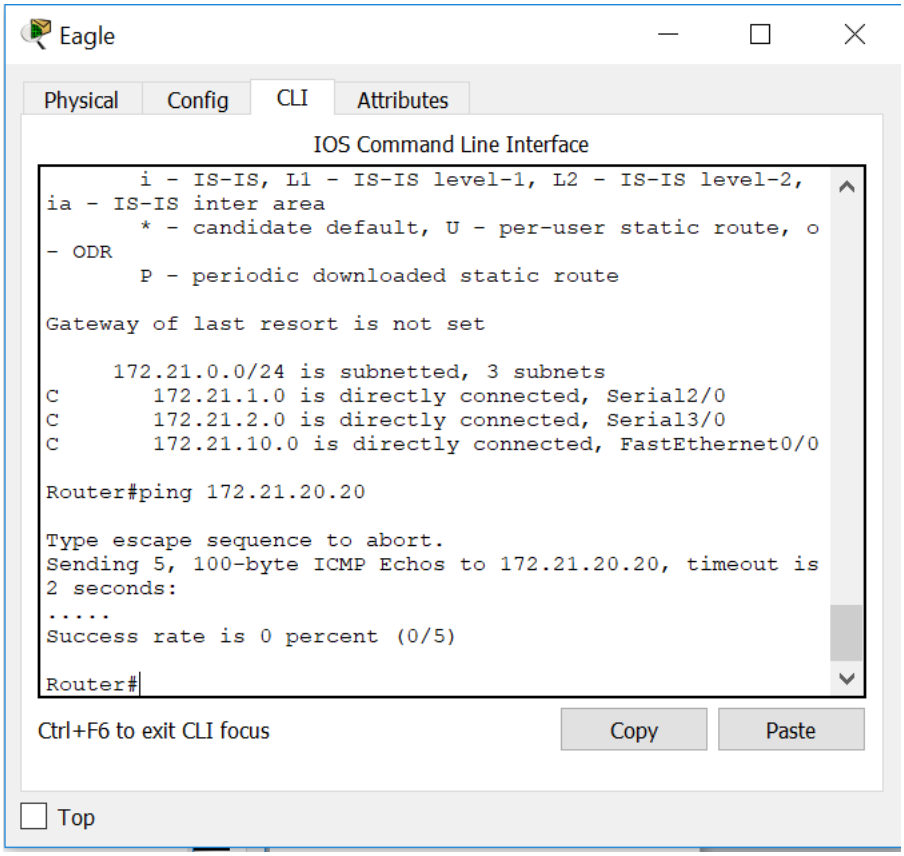
- Router puma



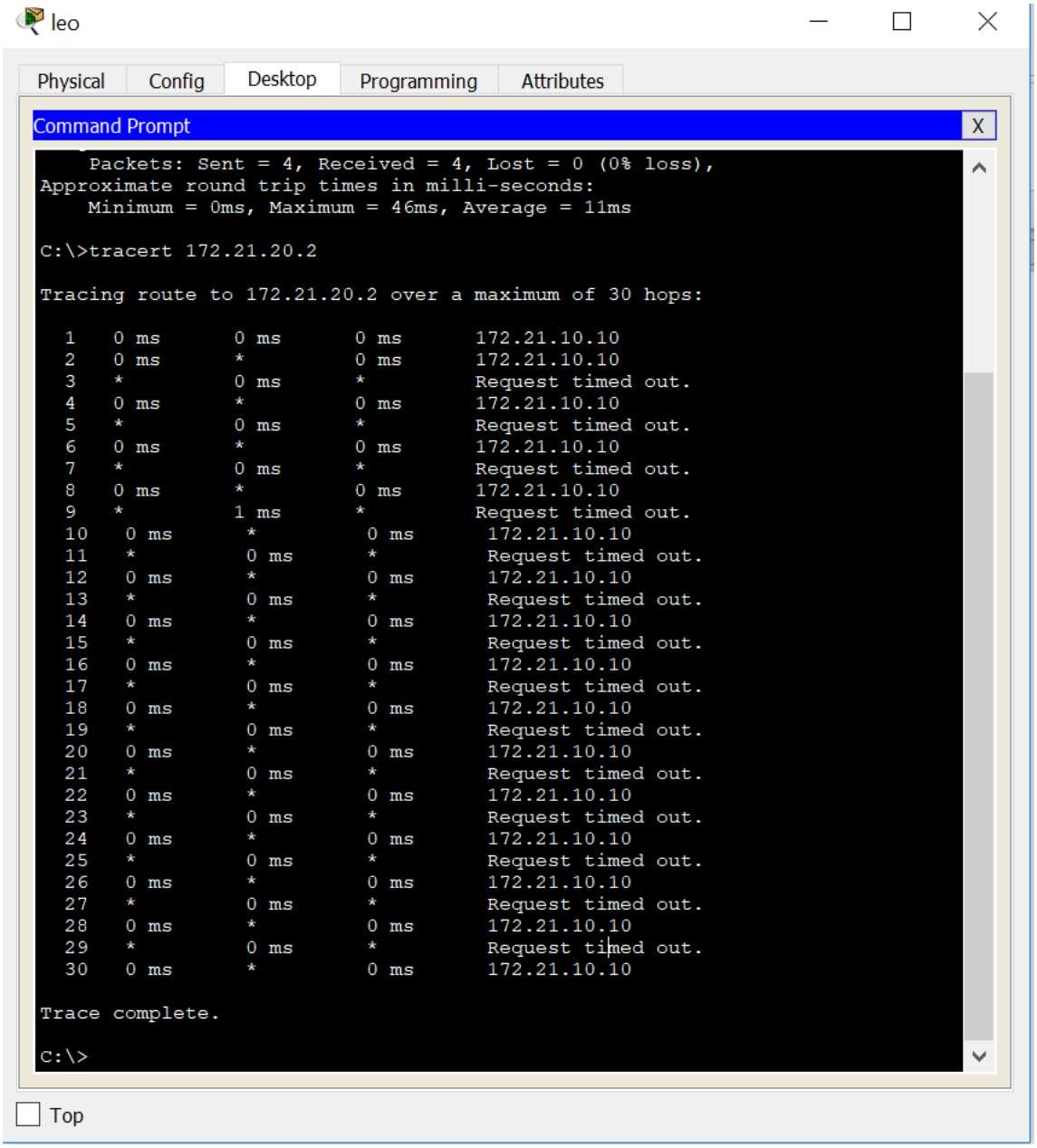
- Router tiger



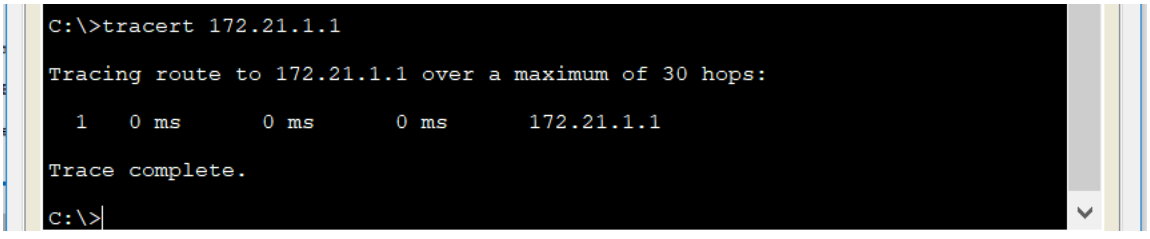
Tugas 8A: apakah mendapat tanggapan dari puma



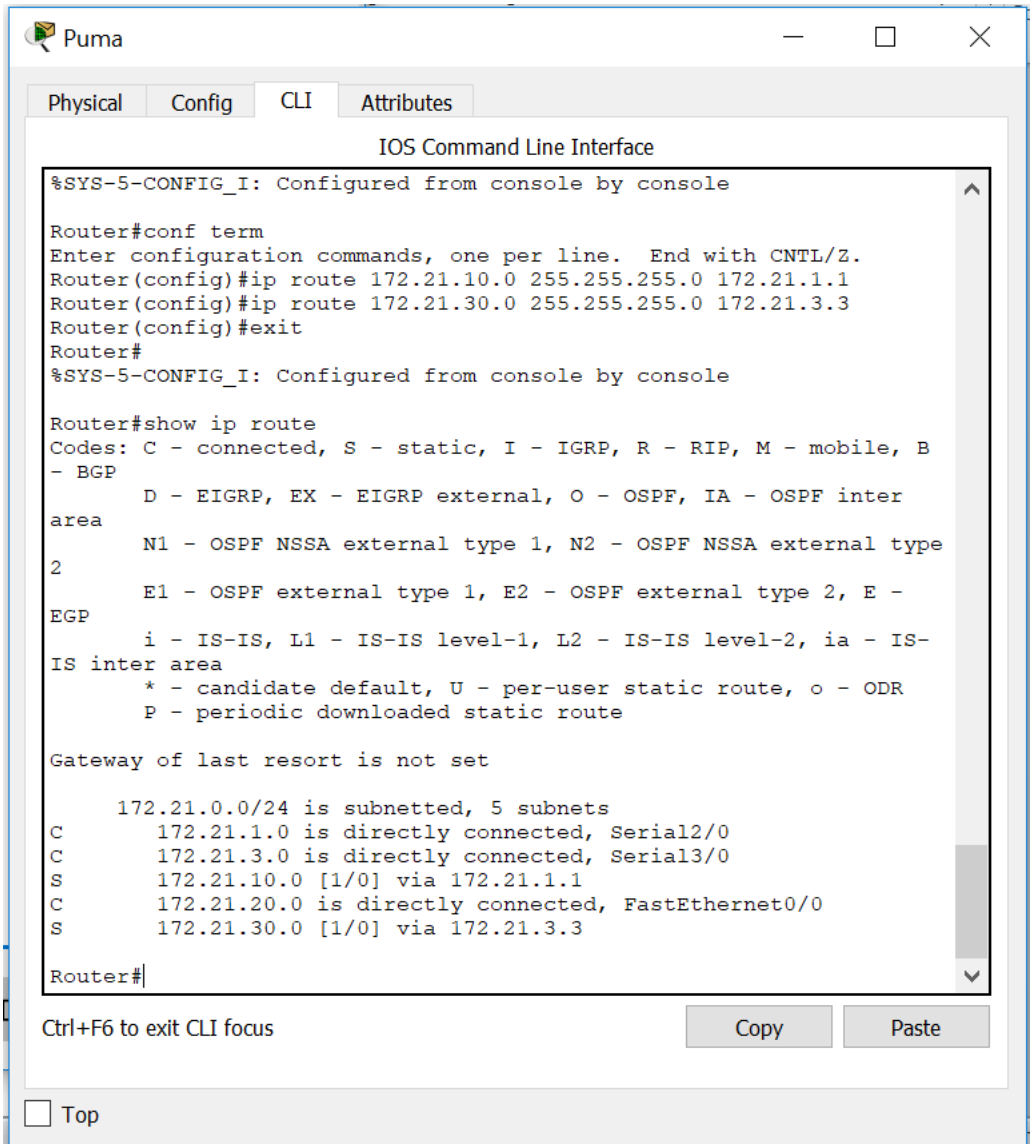
Tugas 9A : Apakah yang didapat dari hasil trace

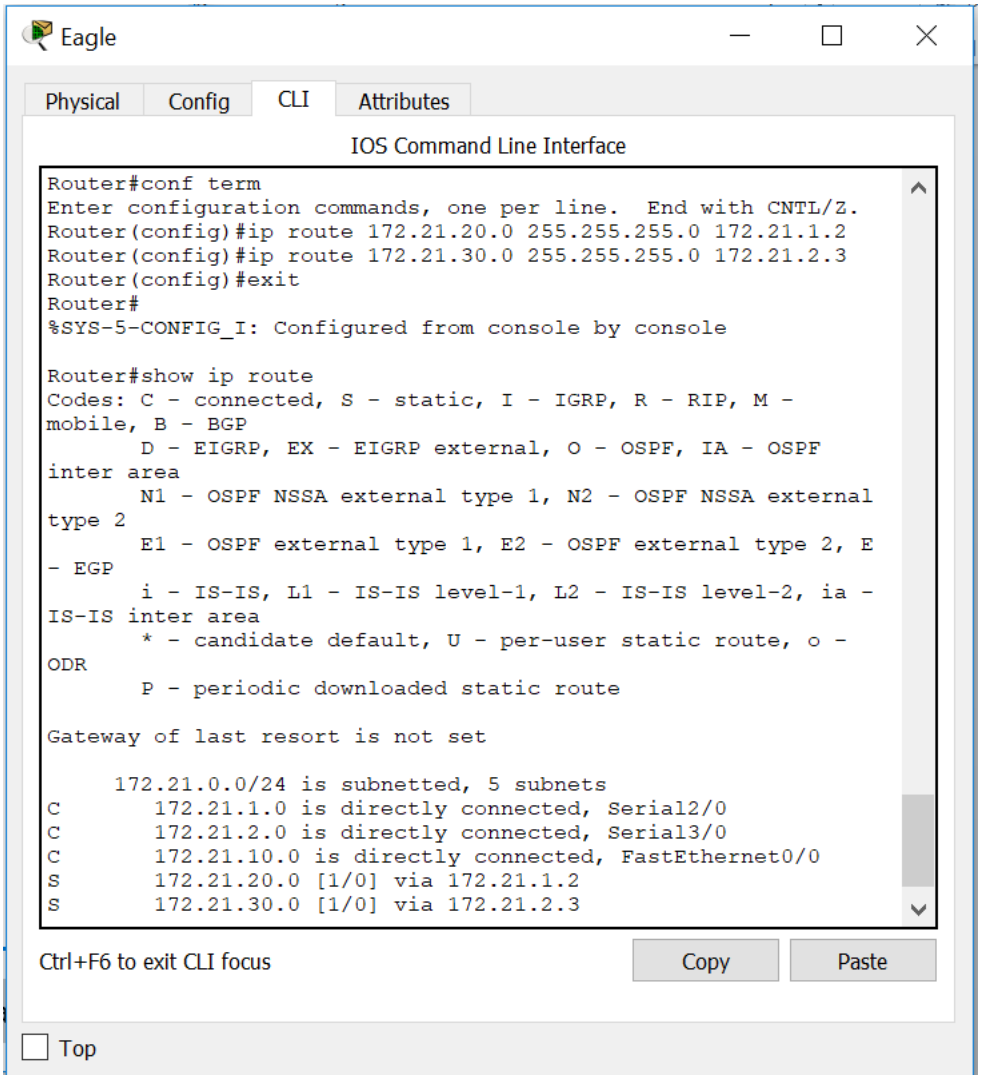


Tugas 10A : apa yang didapat dari hasil trace



Tugas 11A : Tuliskan langkah penambahan route table (static route) pada router puma dan eagle)


Puma
Physical
Config
CLI
Attributes
IOS Command Line Interface
%SYS-5-CONFIG_I: Configured from console by console
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)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
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, 5 subnets
C 172.21.1.0 is directly connected, Serial2/0
C 172.21.3.0 is directly connected, Serial3/0
S 172.21.10.0 [1/0] via 172.21.1.1
C 172.21.20.0 is directly connected, FastEthernet0/0
S 172.21.30.0 [1/0] via 172.21.3.3
Router#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top



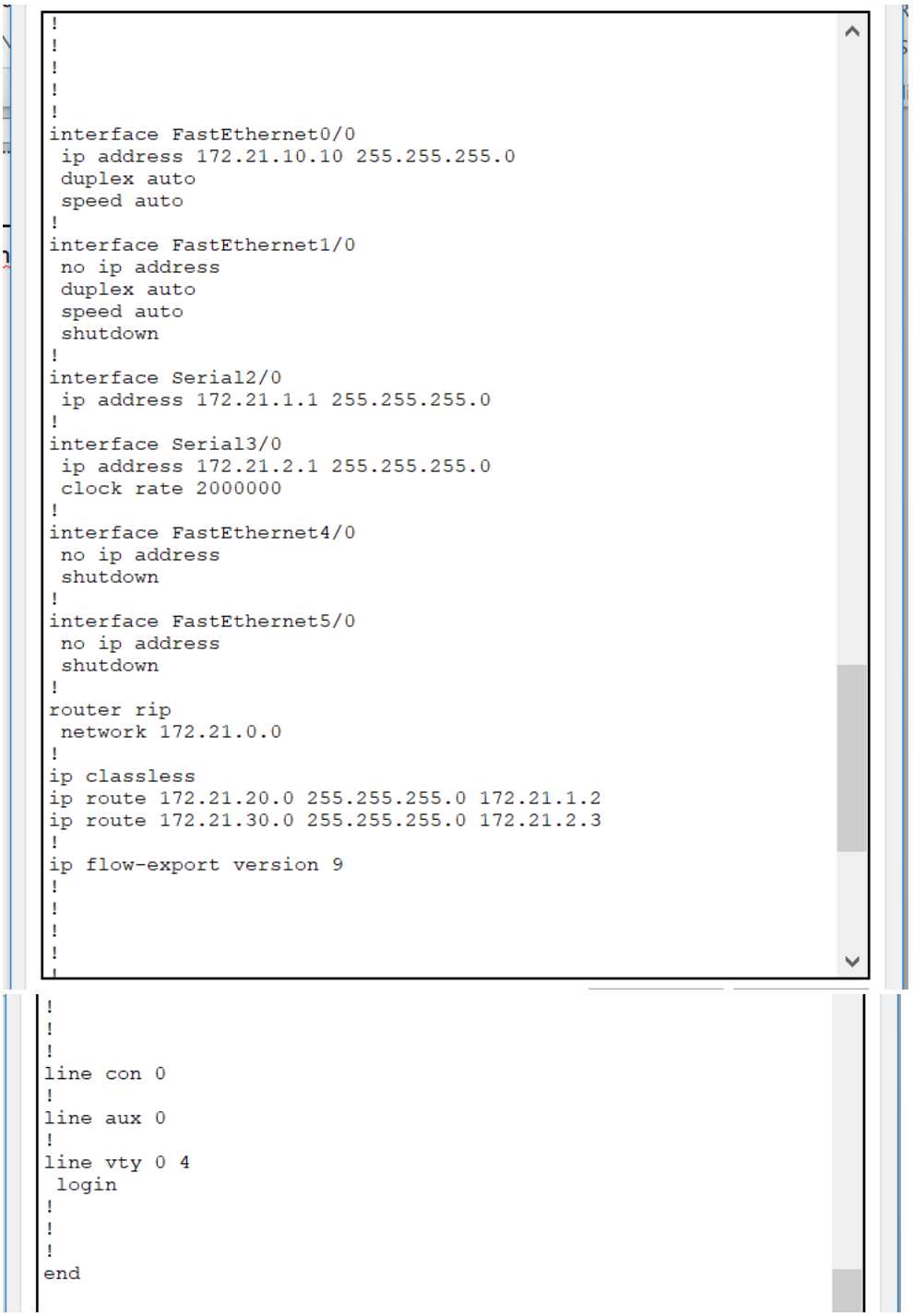
Tugas 12A: Apakah mendapat tanggapan dari leo? Jelaskan secara singkat mengapa demikian.
Jawab : Iya, Hal ini dikarenakan telah dibuat peroutingan untuk data lewat melalui jalur yang mana.

Tugas 12B: Jika alamat jaringan pada segmen leo diubah dari 172.21.10.0/24 menjadi 172.21.100./24. Tuliskan langkah perubahan konfigurasi yang dilakukan pada setiap router agar PC leo dapat dihubungi (ping) dari PC aries dan virgo. Mengapa langkahlangkah tersebut harus dilakukan?
Jawab :
1. Lakukan konfigurasi pada router eagle.
2. Lakukan konfigurasi pada PC Leo dan ubah default gateway.
3. Lakukan routing pada masing masing router sesuai dengan blok ip pc
4. Lakukan pengecekan dengan cara (ping)

KEGIATAN 2

Tugas 4A : Berapa nomor alamat jaringan yang terdaftar pada konfigurasi routing RIP?

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

Current configuration : 869 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
!
!
!
!
!
!
!
!
!
```



```
!
!
!
!
!
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
!
interface Serial3/0
 ip address 172.21.2.1 255.255.255.0
 clock rate 2000000
!
interface FastEthernet4/0
 no ip address
 shutdown
!
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
!
line vty 0 4
 login
!
!
!
end
```

Tugas 4B : Mengapa alamat jaringan yang langsung terhubung dengan interface e0(172.21.10.0), s0(172.21.1.0), dan s1(172.21.2.0) tidak di daftarkan ke konfigurasi routing RIP?
Jawab : Karena pada 172.21.0.0 mencakup semua alamat jaringan.

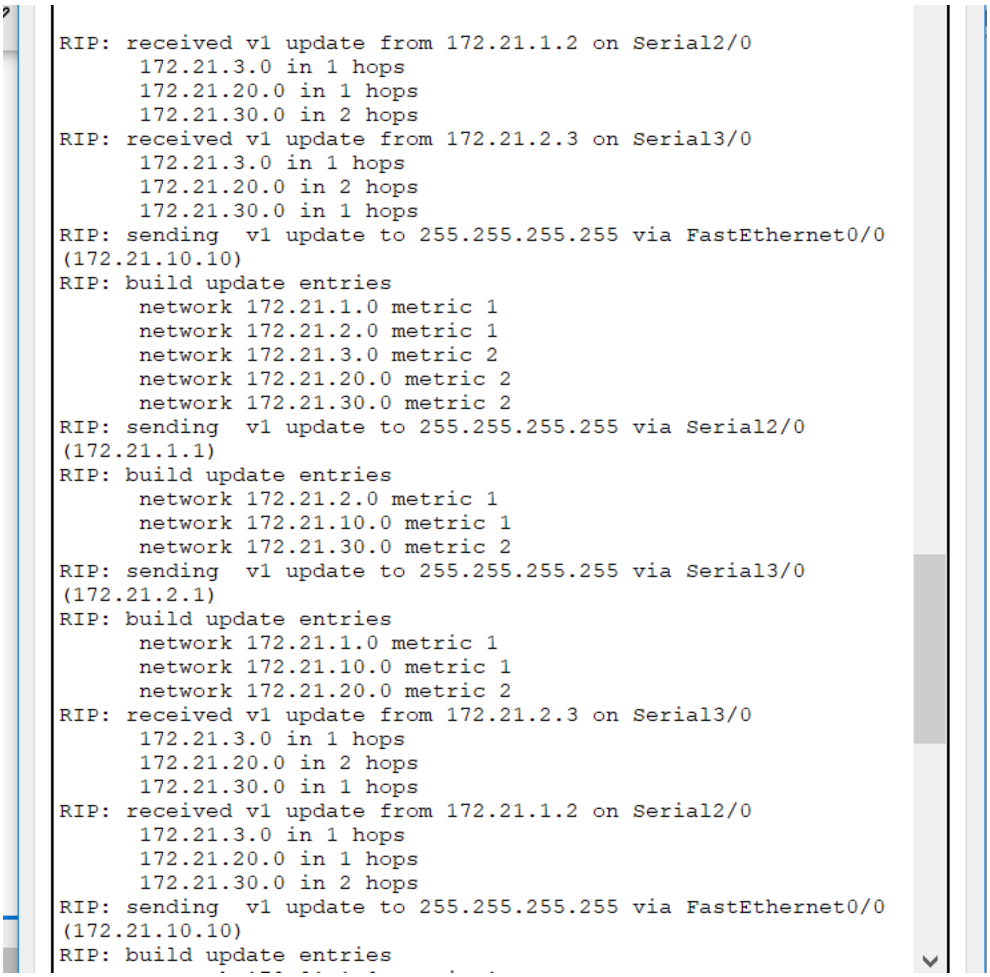
Tugas 5A : Jelaskan secara singkat proses tersebut?

```
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
      network 172.21.1.0 metric 1
      network 172.21.10.0 metric 1
```

Tugas 6A : Tuliskan langkah konfigurasi routing RIP yang dilakukan pada salah satu router(puma atau 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)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

Tugas 6B : Jelaskan secara singkat proses update yang terjadi pada router eagle ketika konfigurasi salah satu router(puma atau tiger) dilakukan. (Perhatikan bagian "RIP: Received updated from 172.21.X.X on SerialX" dan tambahan subnet yang terjadi)



```
RIP: received v1 update from 172.21.1.2 on Serial2/0
      172.21.3.0 in 1 hops
      172.21.20.0 in 1 hops
      172.21.30.0 in 2 hops
RIP: received v1 update from 172.21.2.3 on Serial3/0
      172.21.3.0 in 1 hops
      172.21.20.0 in 2 hops
      172.21.30.0 in 1 hops
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
      network 172.21.3.0 metric 2
      network 172.21.20.0 metric 2
      network 172.21.30.0 metric 2
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
      network 172.21.30.0 metric 2
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
      network 172.21.20.0 metric 2
RIP: received v1 update from 172.21.2.3 on Serial3/0
      172.21.3.0 in 1 hops
      172.21.20.0 in 2 hops
      172.21.30.0 in 1 hops
RIP: received v1 update from 172.21.1.2 on Serial2/0
      172.21.3.0 in 1 hops
      172.21.20.0 in 1 hops
      172.21.30.0 in 2 hops
RIP: sending  v1 update to 255.255.255.255 via FastEthernet0/0
(172.21.10.10)
RIP: build update entries
```

Tugas 6C : Jika alamat jaringan pada segmen leo diubah dari 172.21.100.0/24. Apakah perlu dilakukan perubahan konfigurasi pada setiap router agar PC leo dapat dihubungi (ping) dari PC aries dan virgo? Mengapa demikian?
Jawab : Tidak perlu. Hal tersebut karena network yang dipakai adalah 172.21.0.0 yang dimana masih dalam satu jaringan

Tugas 8A : Jelaskan secara singkat proses update yang terjadi pada router eagle. (Perhatikan bagian "RIP : Received Updated from 172.21.2.3 on Serial1" dan perubahan hops dari subnet 172.21.20.0 yang terjadi)
Jawab : Routing otomatis di downkan dan dimana melalui serial 3/0 yang terjadi di mana hops juga berubah.

KEGIATAN 3

Tugas 4A : Berapa nomor alamat jaringan yang terdaftar pada konfigurasi routing EIGRP?

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

Current configuration : 922 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
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
interface FastEthernet0/0
 ip address 172.21.10.10 255.255.255.0
 duplex auto
 speed 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
!
interface Serial3/0
 ip address 172.21.2.1 255.255.255.0
 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
!
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
!
line vty 0 4
 login
!
!
!
end
```

Tugas 5A : Jelaskan secara singkat proses tersebut?

Jawab : Terjadi suatu transaksi yang mengirim tanda ataupun sapa untuk router lain dan komputer melalui fa dan serial.

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

Tugas 5A : Jelaskan secara singkat proses tersebut

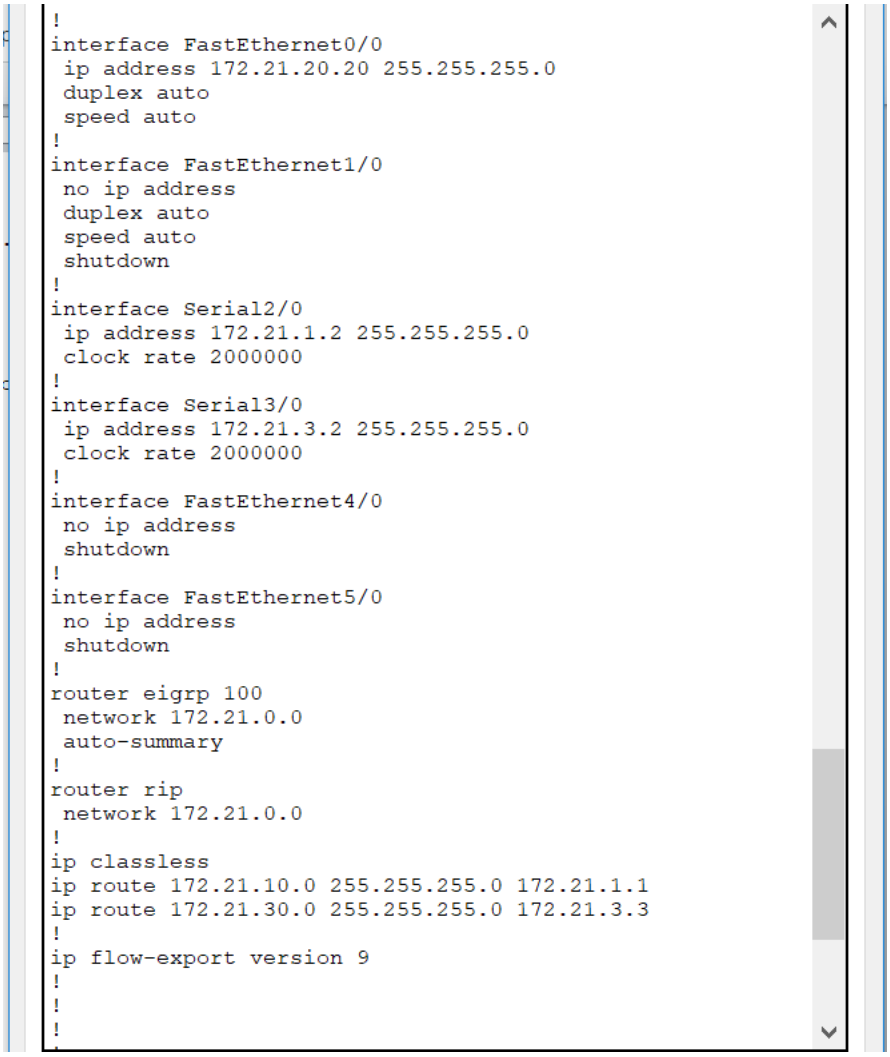
Jawab : Terjadi suatu transaksi yang mengirim tanda ataupun sapa untuk router lain dan komputer melalui fa dan serial.


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


Tugas 7A : Tuliskan langkah konfigurasi routing EIGRP yang dilakukan pada salah satu router(puma atau tiger).

Jawab :

```
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

Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#show running-config
Building configuration...

Current configuration : 942 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
!
!
!
!
!
!
!
```



```
!
interface FastEthernet0/0
 ip address 172.21.20.20 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet1/0
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial2/0
 ip address 172.21.1.2 255.255.255.0
 clock rate 2000000
!
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
!
router rip
 network 172.21.0.0
!
ip classless
ip route 172.21.10.0 255.255.255.0 172.21.1.1
ip route 172.21.30.0 255.255.255.0 172.21.3.3
!
ip flow-export version 9
!
!
!
```

```
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
 login
!
!
!
end
```

Tugas 7B : Jelaskan secara singkat proses update yang terjadi pada router eagle ketika konfigurasi salah satu router(puma atau tiger) dilakukan. (perhatikan bagian "EIGRP : Received updated from 172.21.X.X on SerialX" dan tambahan subnet yang terjadi)

Jawab : Setelah router puma di konfigurasi maka di router eagle otomatis meng-update kemudian mengirim ACK hingga proses selesai.

Tugas 7C : Jika alamat jaringan pada segmen leo diubah dari 172.21.10.0/24 menjadi 172.21.100.0/24. Apakah perlu dilakukan perubahan konfigurasi pada setiap router agar PC leo dapat dihubungi(ping) dari PC aries dan virgo? Mengapa demikian?
Jawab : Tidak perlu. Karena tetap berada pada jaringan yang sama dan routing sudah dinamis.

Tugas 9A : Jelaskan secara singkat proses update yang terjadi pada router eagle.(perhatikan bagian"EIGRP : Received updated from 172.21.2.3 on Serial1")
Jawab : Setelah pemutusan pada router puma dan eagle pada router puma, maka akan ada notifikasi dan update pada router eagle.

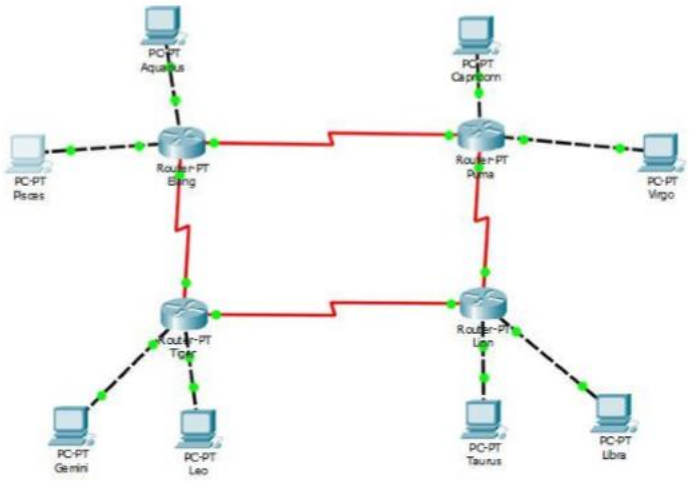
```
EIGRP: Sending HELLO on FastEthernet0/0
  AS 100, Flags 0x0, Seq 18/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial3/0
  AS 100, Flags 0x0, Seq 18/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Received HELLO on Serial3/0 nbr 172.21.2.3
  AS 100, Flags 0x0, Seq 16/0 idbQ 0/0

EIGRP: Sending HELLO on Serial3/0
  AS 100, Flags 0x0, Seq 18/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on FastEthernet0/0
  AS 100, Flags 0x0, Seq 18/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Received HELLO on Serial3/0 nbr 172.21.2.3
  AS 100, Flags 0x0, Seq 16/0 idbQ 0/0

EIGRP: Sending HELLO on Serial3/0
  AS 100, Flags 0x0, Seq 18/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on FastEthernet0/0
  AS 100, Flags 0x0, Seq 18/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Received HELLO on Serial3/0 nbr 172.21.2.3
  AS 100, Flags 0x0, Seq 16/0 idbQ 0/0
```

Tugas 10A : Apakah hasil yang diperoleh berbeda dengan langkah 8 diatas(ketika langkah 9 belum dilakukan)? Jelaskan secara singkat mengapa demikian.
Jawab : Setelah router terputus waktu yang dibutuhkan untuk mengirim data menjadi berbeda. Juga terdapat perbedaan pada hops atau jalan yang dilalui.

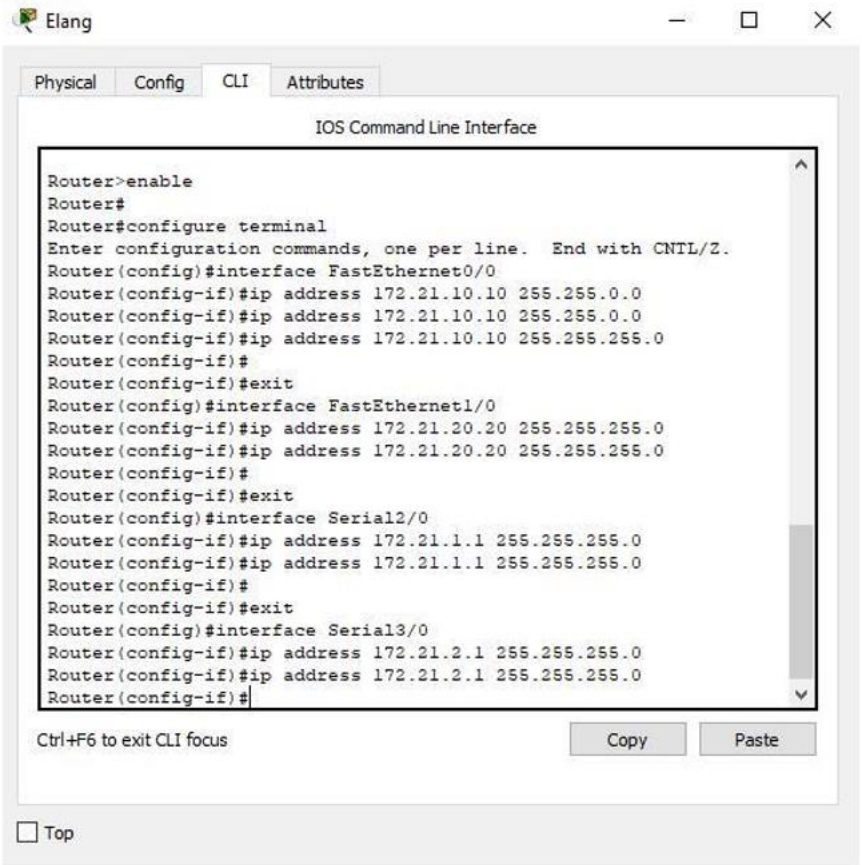
```
C:\>tracert 172.21.20.2

Tracing route to 172.21.20.2 over a maximum of 30 hops:

  1    1 ms      0 ms      0 ms      172.21.10.10
  2    7 ms      2 ms      3 ms      172.21.2.3
  3    1 ms      2 ms      1 ms      172.21.3.2
  4    0 ms      1 ms      1 ms      172.21.20.2

Trace complete.

C:\>
```

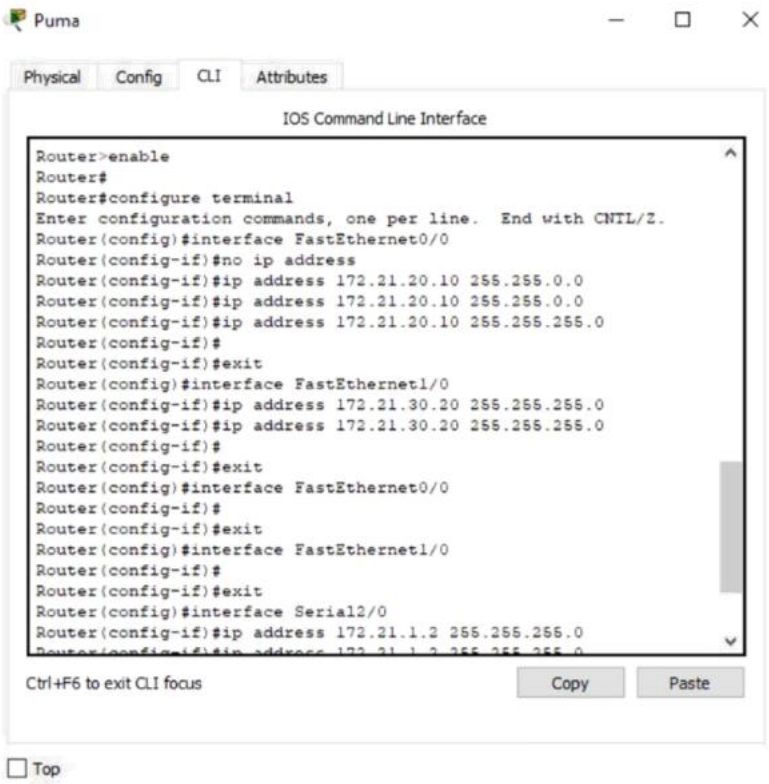
TUGAS MODUL 5

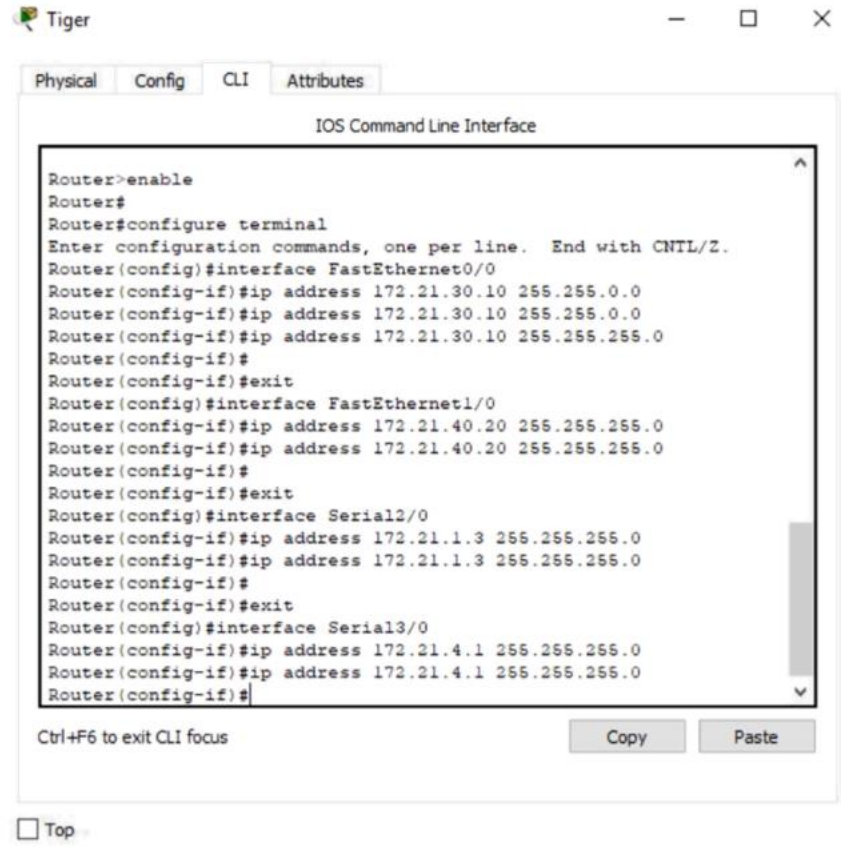
1. Gambar Topologi

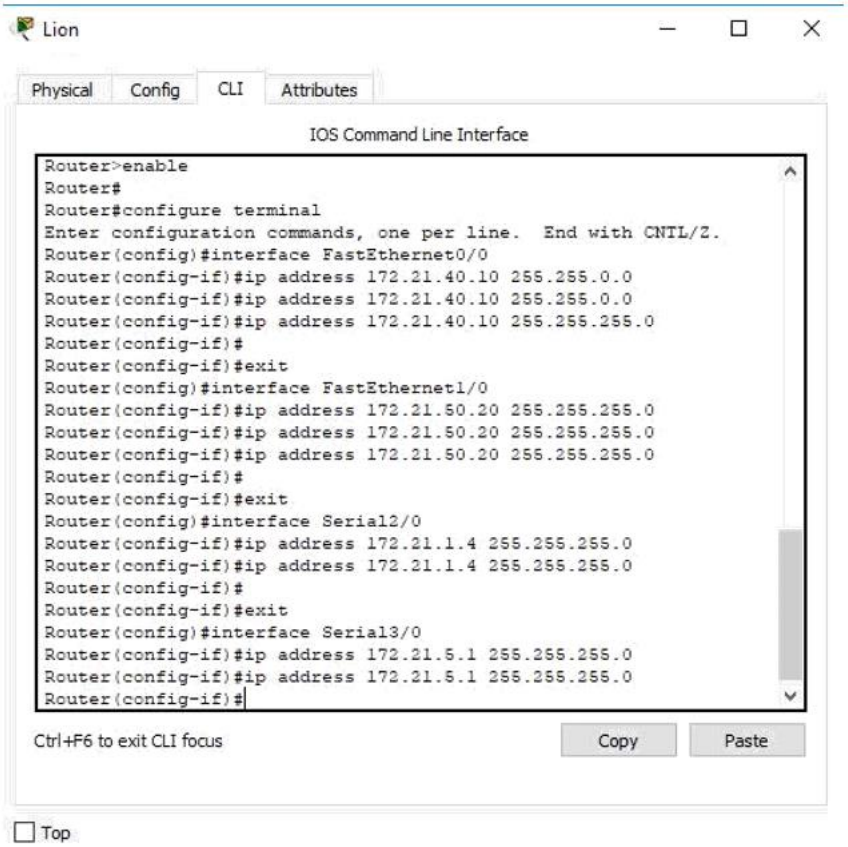


2. Konfigurasi masing masing router.

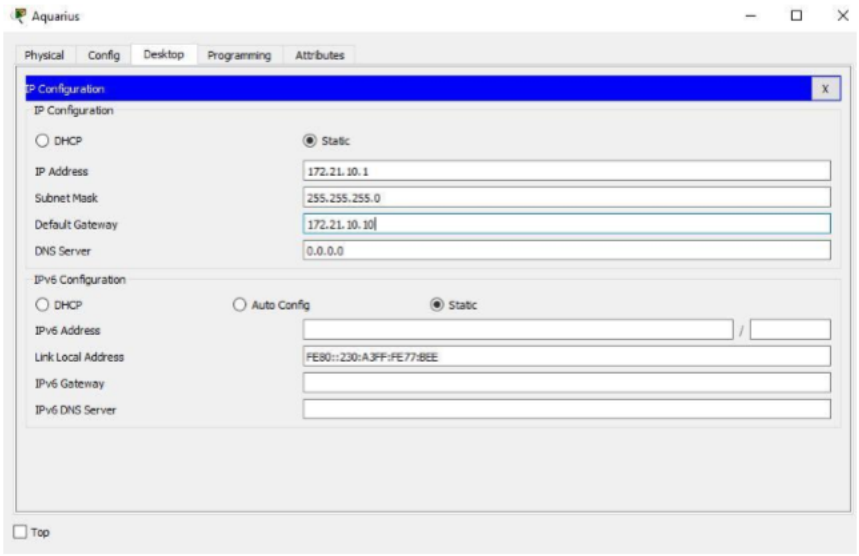



Puma
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#no ip address
Router(config-if)#ip address 172.21.20.10 255.255.0.0
Router(config-if)#ip address 172.21.20.10 255.255.0.0
Router(config-if)#ip address 172.21.20.10 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#ip address 172.21.30.20 255.255.255.0
Router(config-if)#ip address 172.21.30.20 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#ip address 172.21.1.2 255.255.255.0
Ctrl+F6 to exit CLI focus
Copy
Paste
Top


Tiger
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 172.21.30.10 255.255.0.0
Router(config-if)#ip address 172.21.30.10 255.255.0.0
Router(config-if)#ip address 172.21.30.10 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#ip address 172.21.40.20 255.255.255.0
Router(config-if)#ip address 172.21.40.20 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#ip address 172.21.1.3 255.255.255.0
Router(config-if)#ip address 172.21.1.3 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#ip address 172.21.4.1 255.255.255.0
Router(config-if)#ip address 172.21.4.1 255.255.255.0
Router(config-if)#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top



3. Konfigurasi pada setiap PC.



4. Cek koneksi

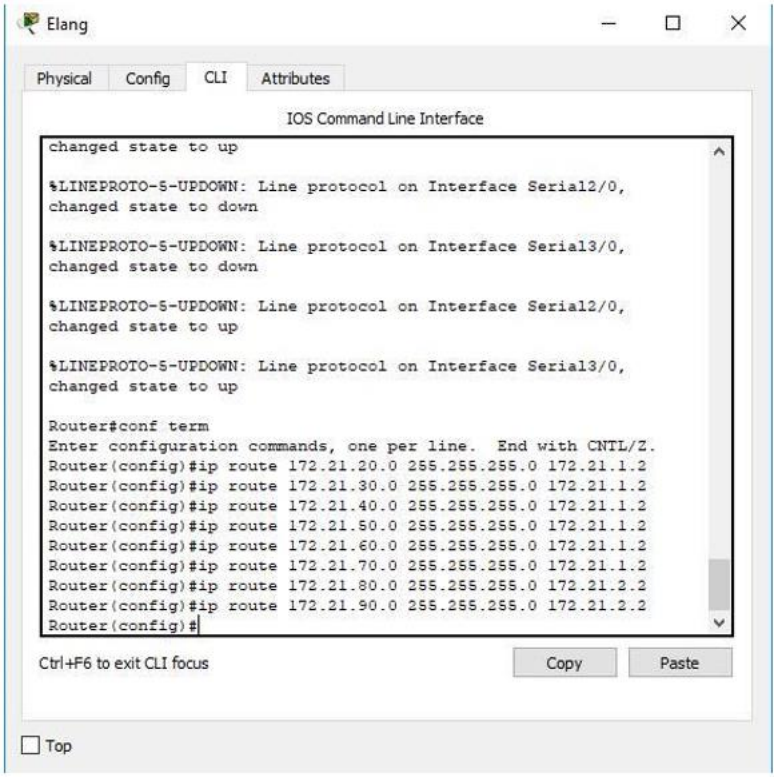
dari PC Aquarius ke Router Elang.

```
C:\>ping 172.21.10.10

Pinging 172.21.10.10 with 32 bytes of data:

Reply from 172.21.10.10: bytes=32 time=108ms TTL=255
Reply from 172.21.10.10: bytes=32 time<1ms TTL=255
Reply from 172.21.10.10: bytes=32 time<1ms TTL=255
Reply from 172.21.10.10: bytes=32 time<1ms TTL=255

Ping statistics for 172.21.10.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 108ms, Average = 27ms
```

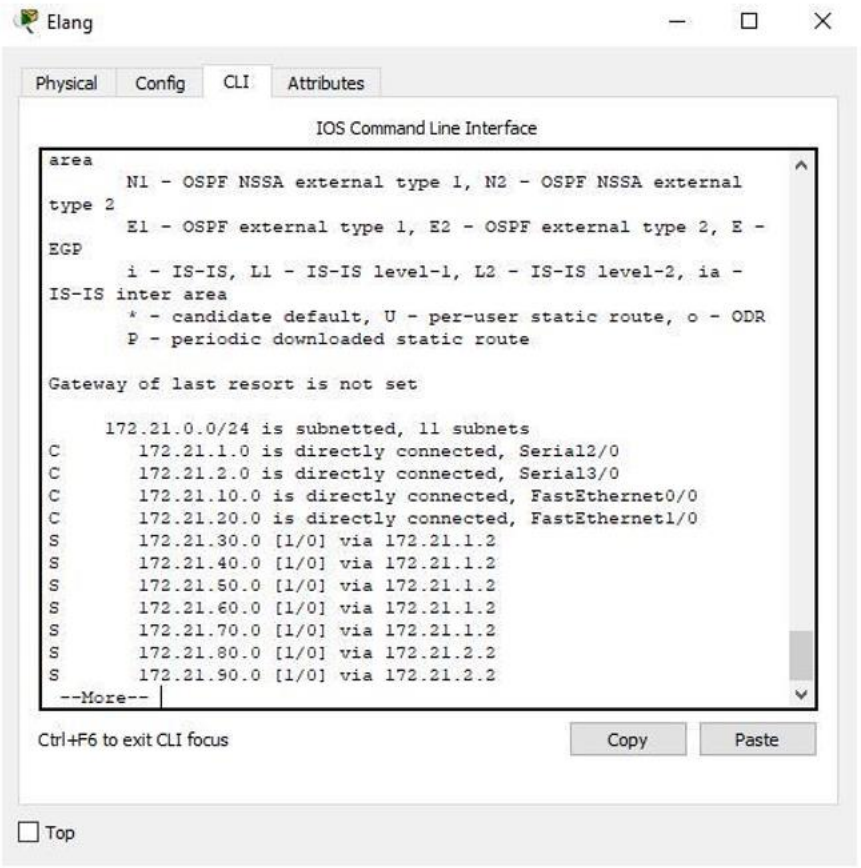
dari Router Elang ke Router Puma.

```
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 =
1/3/11 ms
```

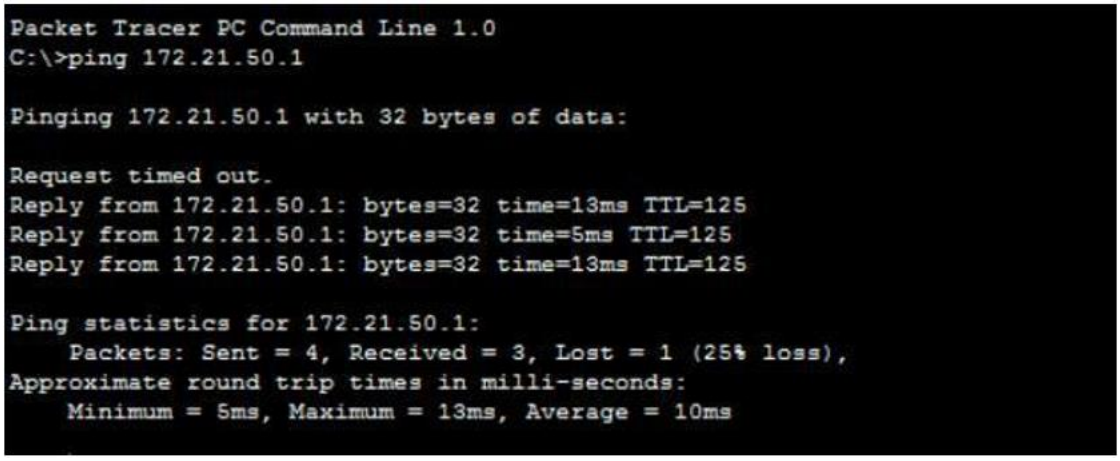
5. Melakukan routing

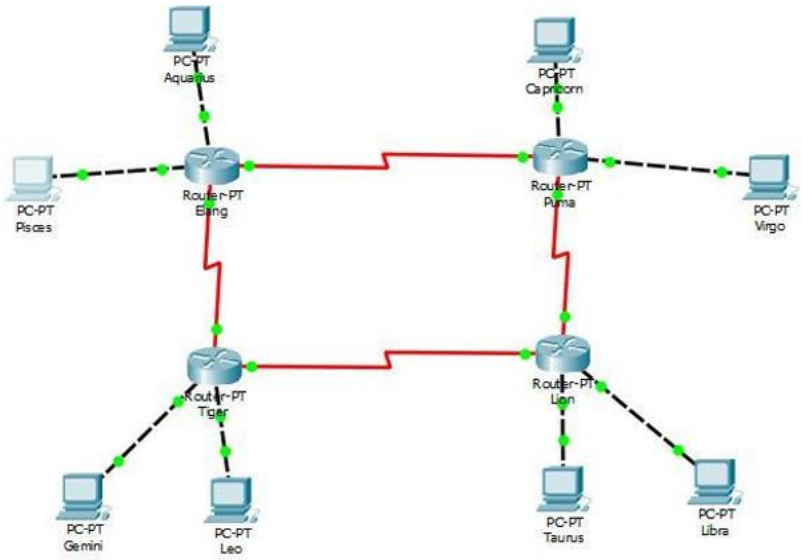


6. Show ip route

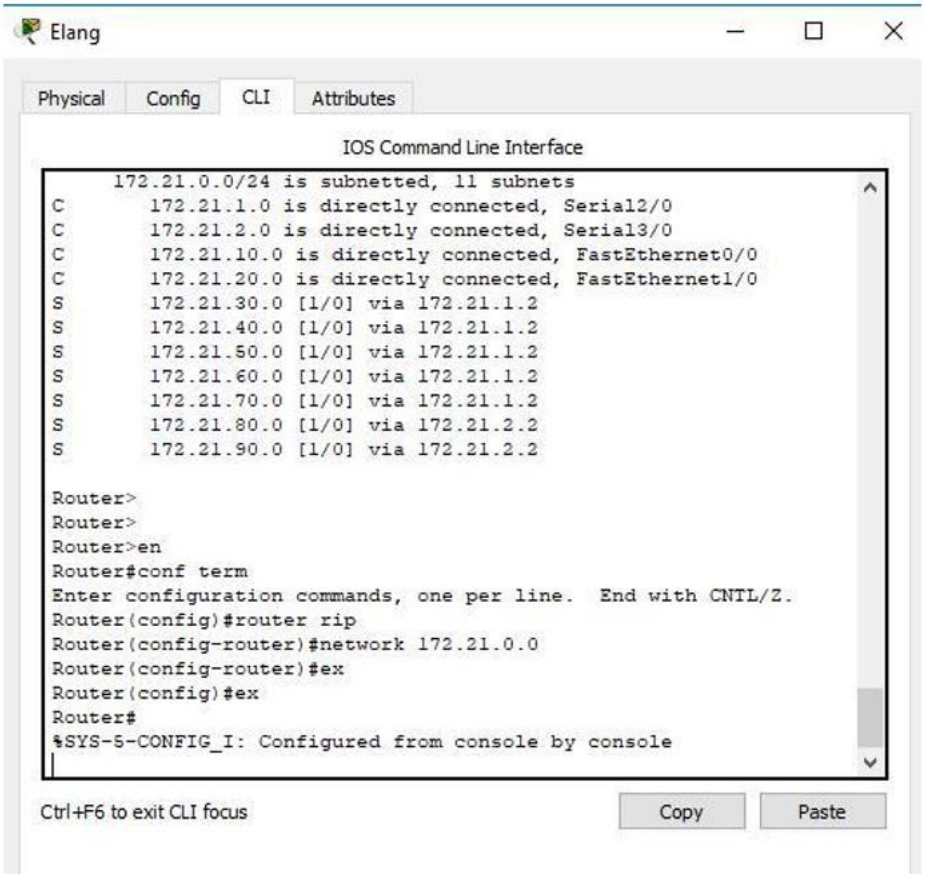


7. PING PC Pisces ke Libra





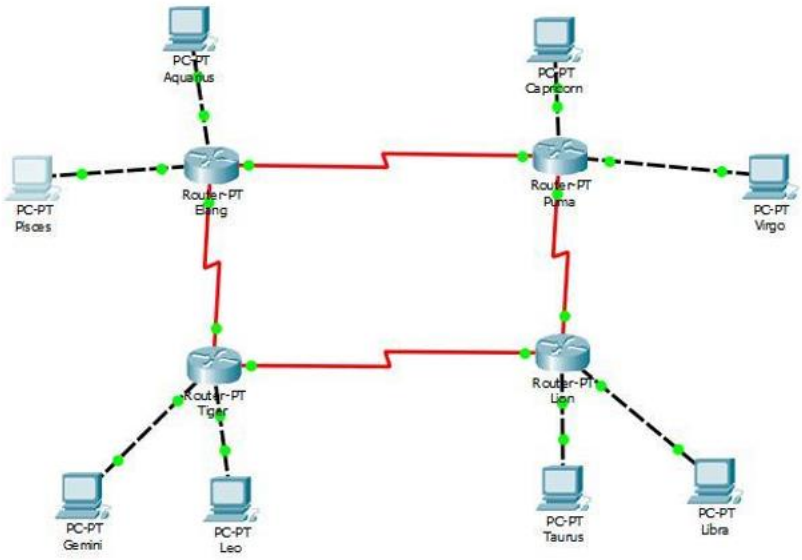
1. Konfigurasi IP dan routing.



2. Melakukan PING PC Gemini ke Capcricorn.

```
C:\>ping 172.21.30.1

Pinging 172.21.30.1 with 32 bytes of data:

Request timed out.
Reply from 172.21.30.1: bytes=32 time=2ms TTL=125
Reply from 172.21.30.1: bytes=32 time=3ms TTL=123
Reply from 172.21.30.1: bytes=32 time=7ms TTL=123

Ping statistics for 172.21.30.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 7ms, Average = 4ms
```

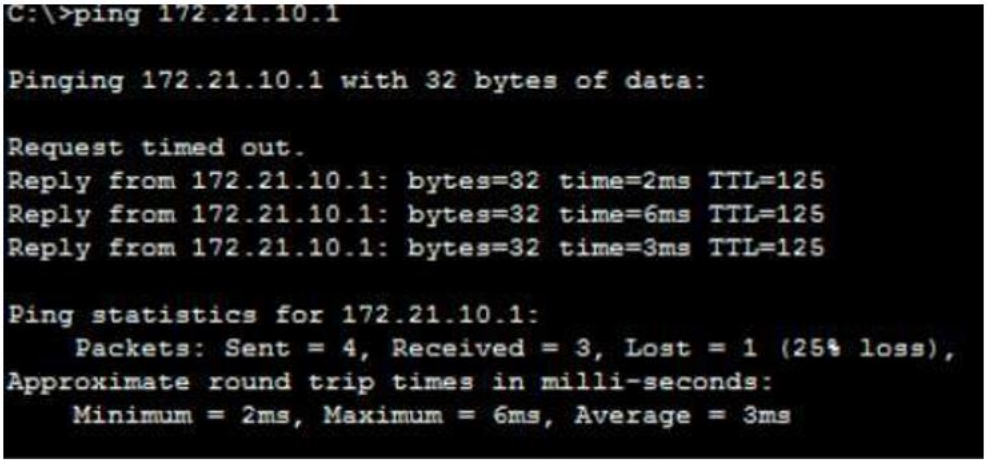
EIGRP



1. Konfigurasi IP dan routing

```
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)#
```

2. Melakukan PING PC Libra ke PC Pisces


C:\>ping 172.21.10.1
Pinging 172.21.10.1 with 32 bytes of data:
Request timed out.
Reply from 172.21.10.1: bytes=32 time=2ms TTL=125
Reply from 172.21.10.1: bytes=32 time=6ms TTL=125
Reply from 172.21.10.1: bytes=32 time=3ms TTL=125
Ping statistics for 172.21.10.1:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 6ms, Average = 3ms