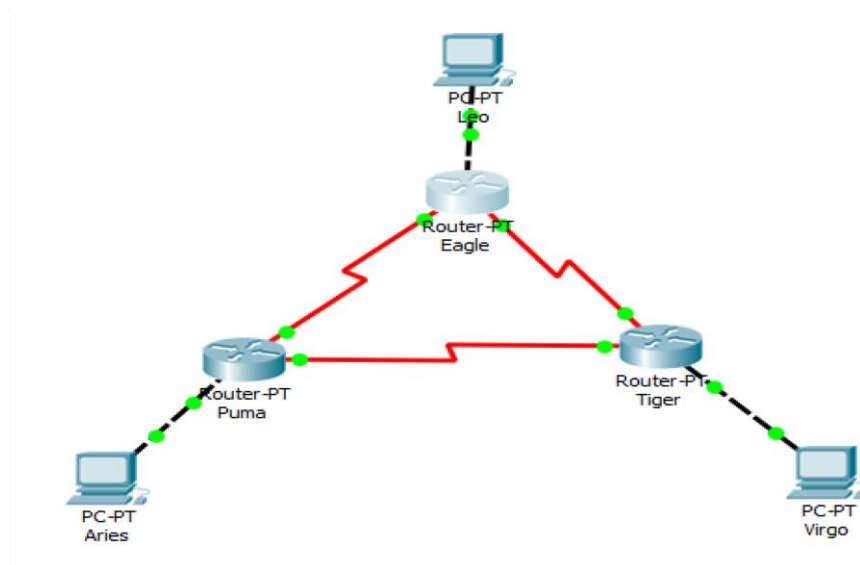


NAMA : KHAIRUL NOVIYANTI
NIM : L200170178
KELAS : D

Praktikum Jaringan Komputer

Tugas Modul 7

Kegiatan 1 : Static Routing.

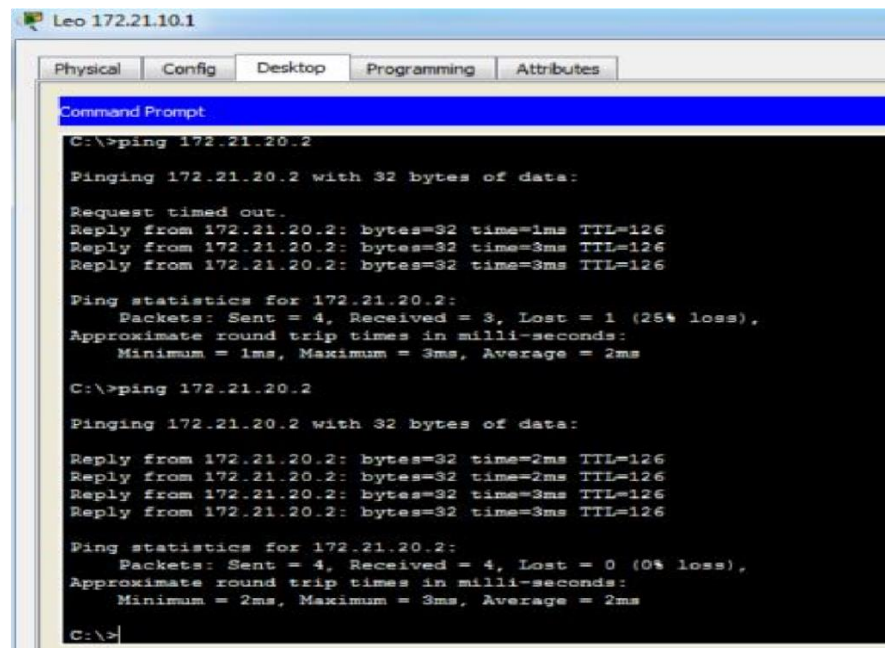
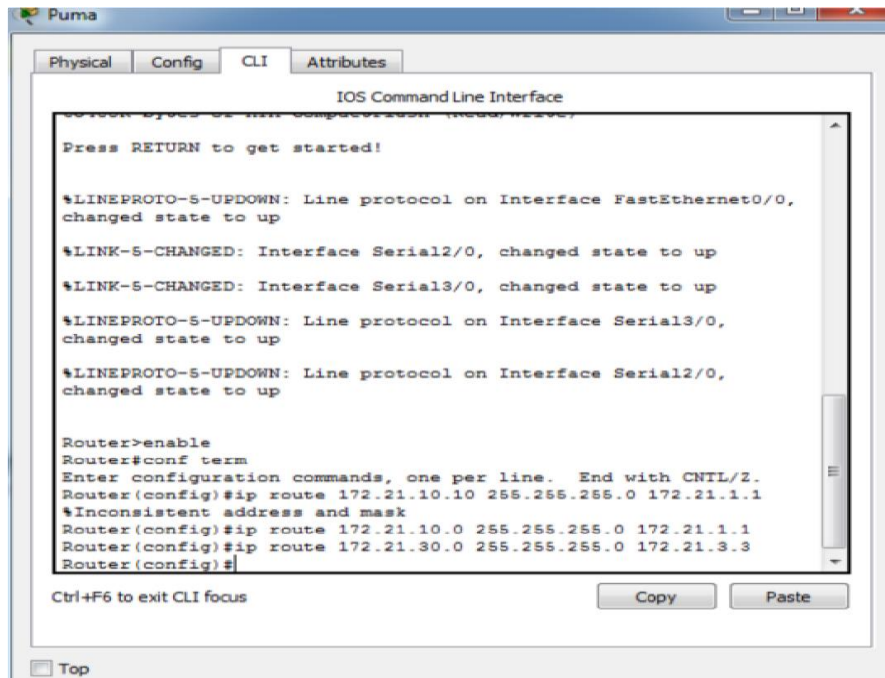


Tugas 11A: Tuliskan langkah penambahan route table (static route) pada router puma dan eagle.

```
Eagle
Physical Config CLI Attributes
IOS Command Line Interface
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)
Press RETURN to get started!

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0,
changed state to up
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0,
changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0,
changed state to up

Router>enable
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)#
```



Tugas 12A: Apakah mendapat tanggapan dari leo? Jelaskan secara singkat mengapa demikian.
Jawab : Ya mendapatkan. Karena sudah dibuat routing untuk lewat jalur tersebut.

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 langkah-langkah tersebut harus dilakukan?

Jawab : 1. Lakukan konfigurasi pada router eagle.

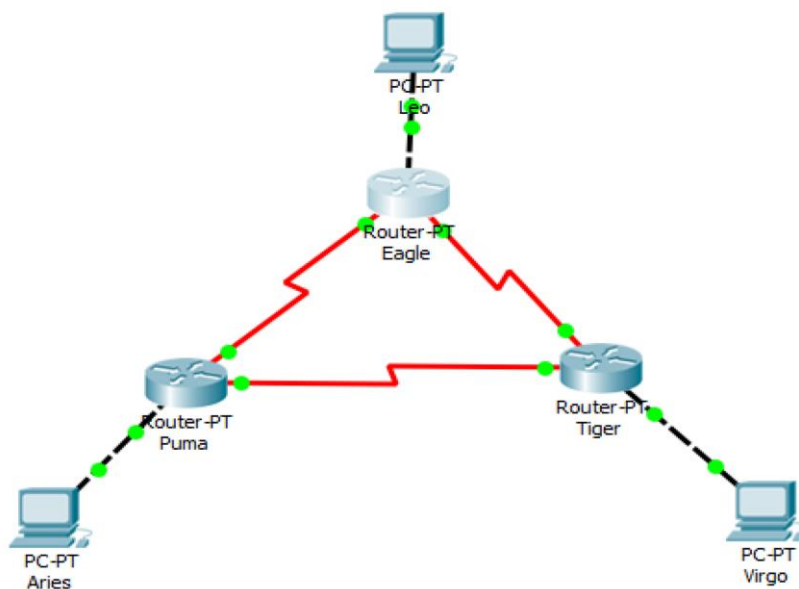
2. Lakukan konfigurasi pada PC Leo dan ubah default gateway.

3. Lakukan routing pada masing masing router sesuai dengan blok ip pc.

4. Lakukan pengecekan dengan cara (ping)

Kegiatan 2 : Rip (Routing Information Protocol)

1. Dari Packet Tracer, buka(load) topolohi NetMap yang dipakai **Kegiatan 1**.



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

```
!
interface FastEthernet5/0
  no ip address
  shutdown
!
router rip
  network 172.21.0.0
!
ip classless
!
ip flow-export version 9
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
  login
```

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 network 172.21.0.0 sudah mencakup semua alamat jaringan lain.

Tugas 5A : Jelaskan secara singkat proses tersebut.

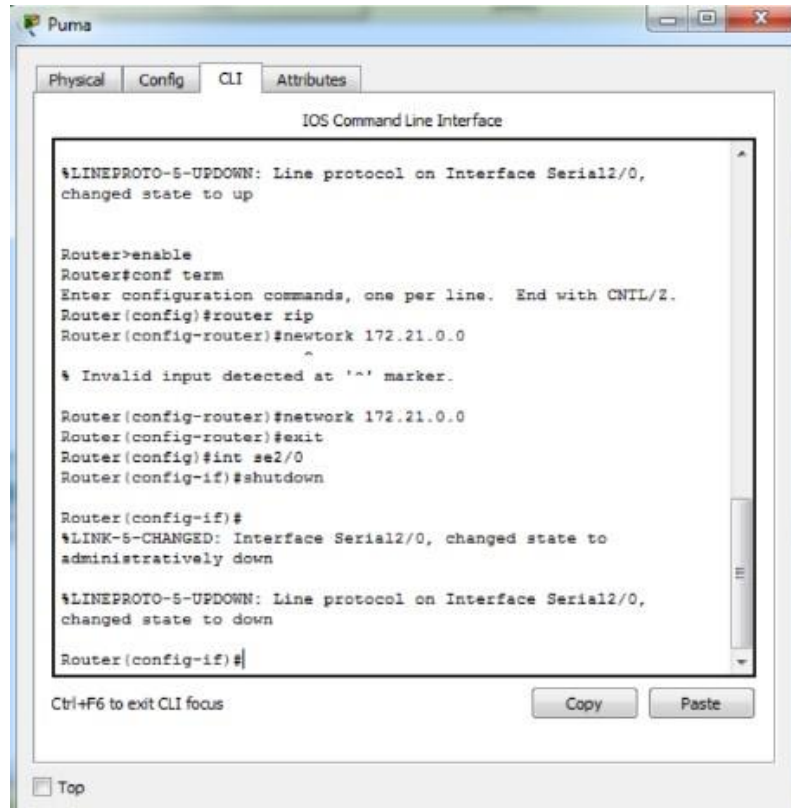
```
Router#
Router#
Router#debug ip rip
RIP protocol debugging is on
Router#RIP: sending v1 update to 255.255.255.255 via
FastEthernet0/0 (172.21.10.10)
RIP: build update entries
    network 172.21.1.0 metric 1
    network 172.21.2.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial2/0
(172.21.1.1)
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

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
```

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

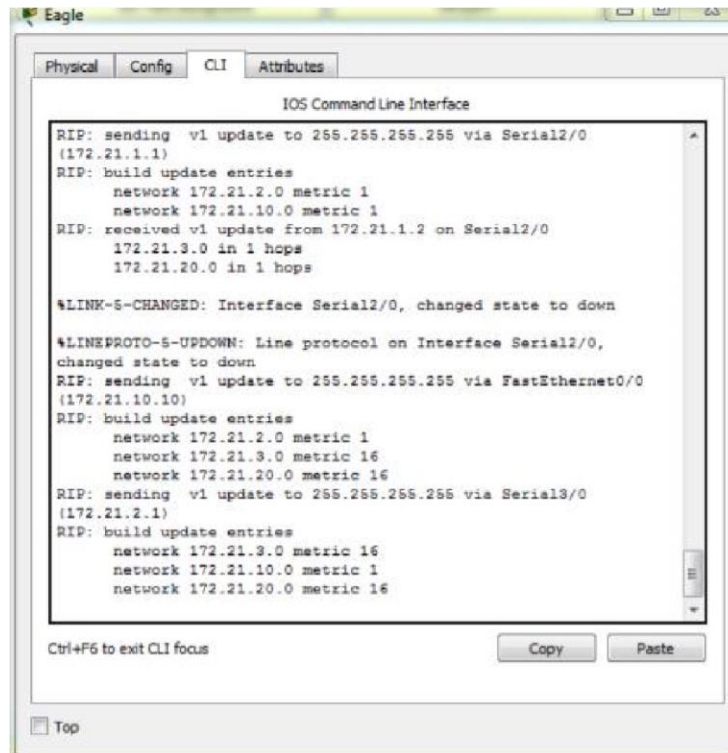
Tugas 6B : Jelaskan secara singkat proses update yang terjadi pada router eagle ketika konfigurasi salah satu router(puma atau tiger) dilakukan. (Perhatikan bagian "RIP: Received updated from 172.21.X.X on SerialX" dan tambahan subnet yang terjadi)



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)



Tugas 9A : Apakah hasil yang diperoleh berbeda dengan langkah 8 diatas(ketika langkah 8 belum dilakukan)? Jelaskan secara singkat mengapa demikian.

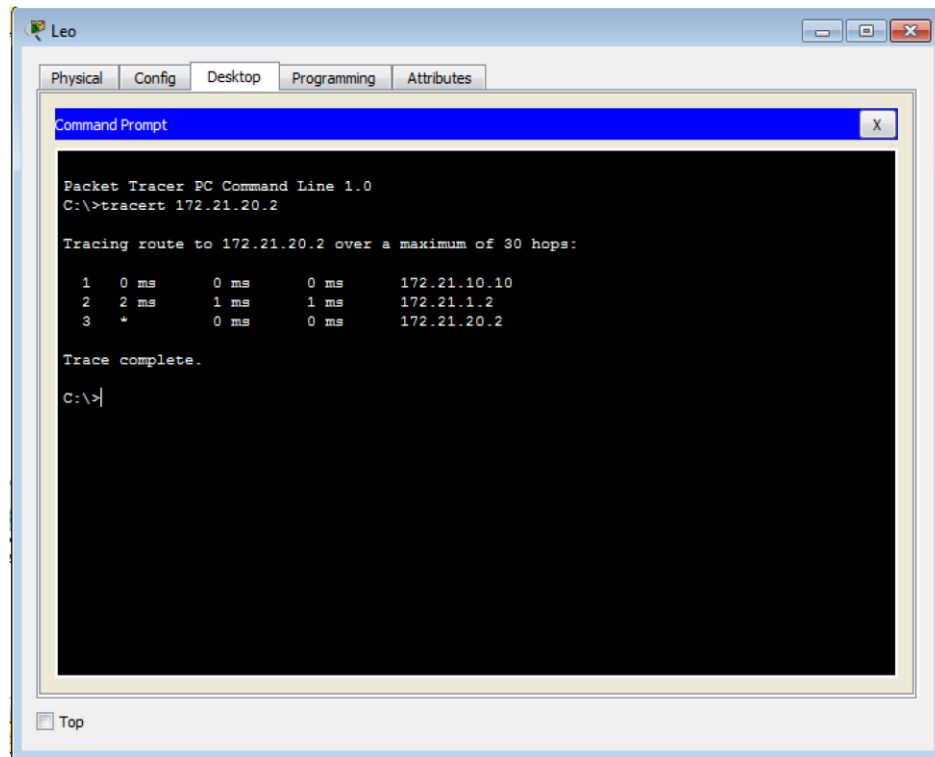
```
C:\>tracert 172.21.20.2

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    2 ms    1 ms    172.21.2.3
  2  0 ms    2 ms    1 ms    172.21.3.2
  3  0 ms    0 ms    0 ms    172.21.20.2

Trace complete.

C:\>|
```

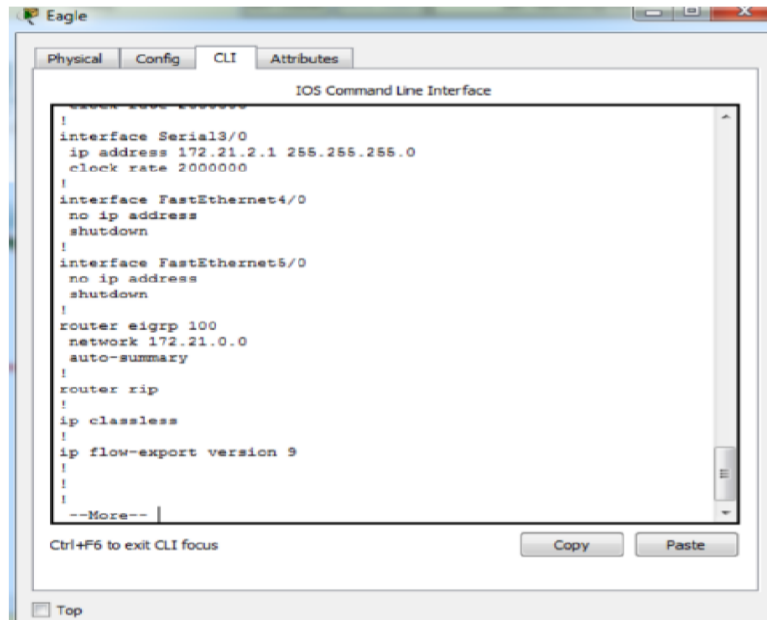


Dikarenakan hubungan di downkan maka hasil routing yang berawal dari dimulai menjadi berhenti dan menghasilkan RTO karena jaringan tidak terhubung.

Kegiatan 3.

EIGRP(Interior Gateway Routing Protocol)

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



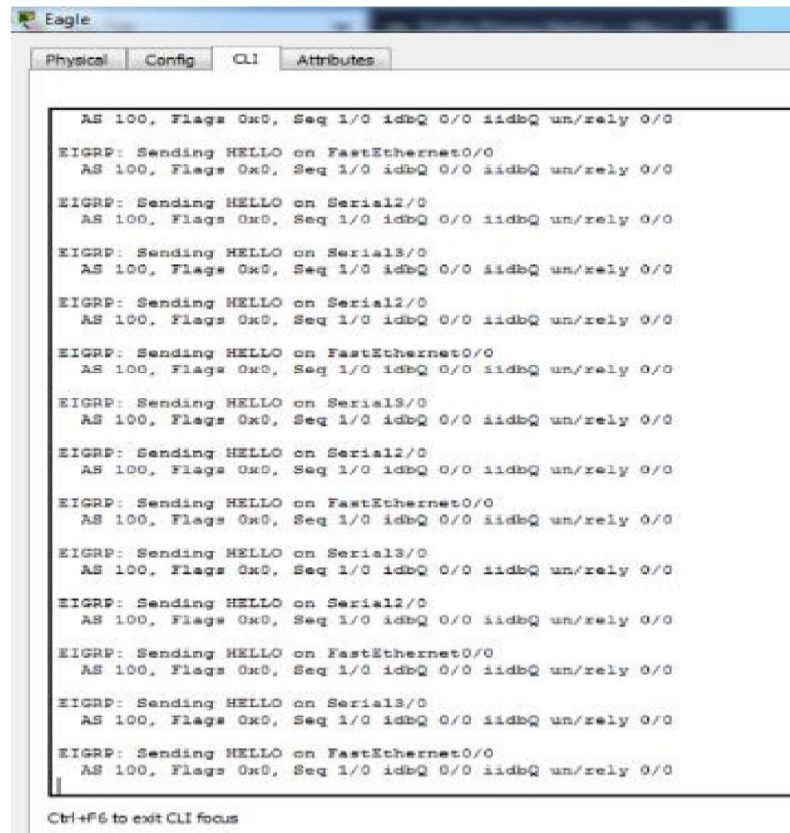
```
!
interface Serial13/0
 ip address 172.21.2.1 255.255.255.0
 clock rate 2000000
!
interface FastEthernet4/0
 no ip address
 shutdown
!
interface FastEthernet5/0
 no ip address
 shutdown
!
router eigrp 100
 network 172.21.0.0
 auto-summary
!
router rip
!
 ip classless
!
 ip flow-export version 9
!
!
--More--
```

Ctrl+F6 to exit CLI focus

Copy Paste

Top

- Tugas 5A : Jelaskan secara singkat proses tersebut?



- Tugas 6A : Jelaskan secara singkat proses tersebut

```
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
```

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

```
Eagle
Physical Config CLI Attributes
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on FastEthernet0/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on Serial2/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on Serial3/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on Serial2/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on FastEthernet0/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on Serial3/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on Serial2/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on FastEthernet0/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on Serial3/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on Serial2/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on FastEthernet0/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on Serial3/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
EIGRP: Sending HELLO on FastEthernet0/0
AS 100, Flags 0x0, Seq 1/0 idbQ 0/0 iadbQ un/rely 0/0
Ctrl+F6 to exit CLI focus
```

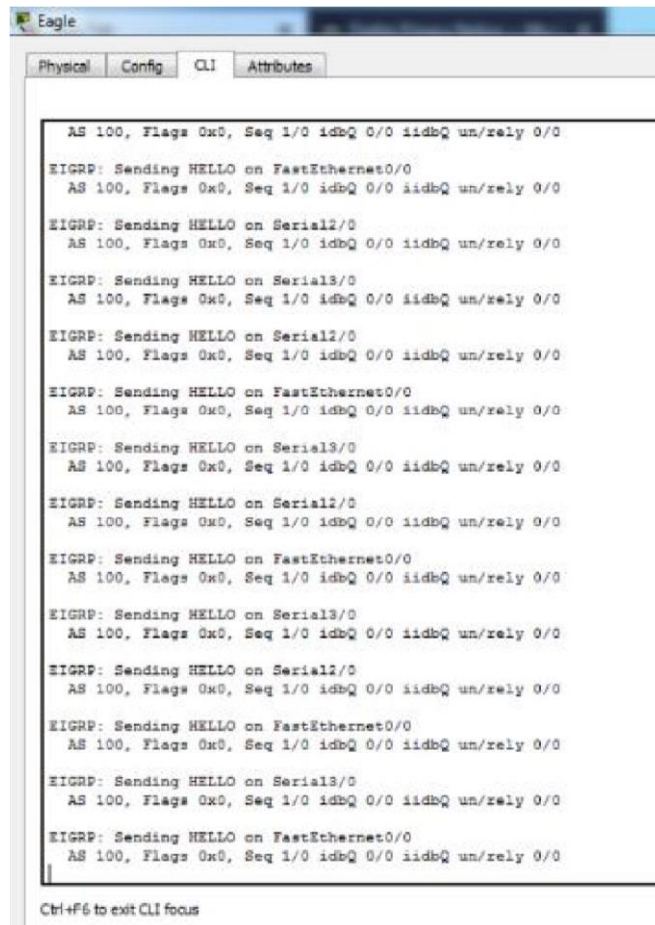
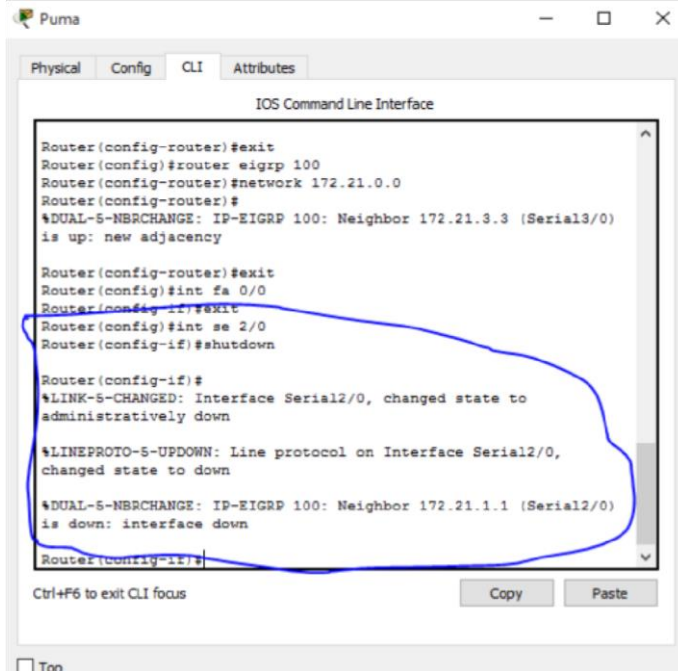
- Tugas 7B : Jelaskan secara singkat proses update yang terjadi pada router eagle ketika konfigurasi salah satu router(puma atau tiger) dilakukan. (perhatikan bagian "EIGRP : Jawab : Received updated from 172.21.X.X on SerialX" dan tambahan subnet yang terjadi)

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?

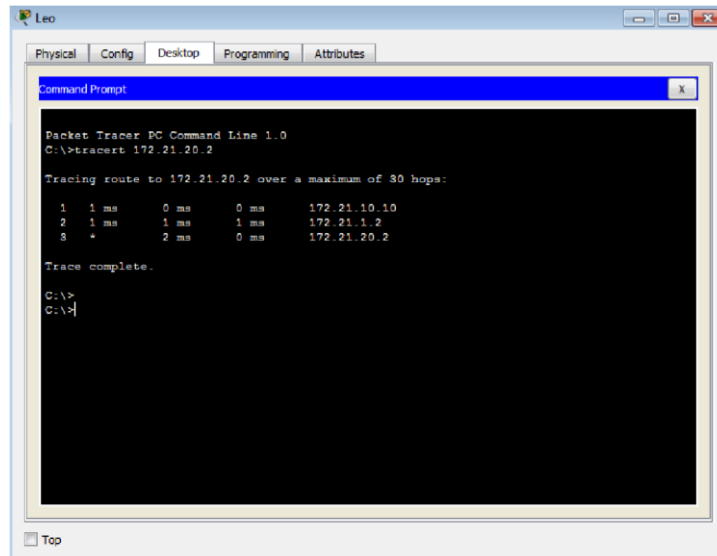
Jawab : Tidak perlu. Kan tetap berada pada jaringan yang sama dan karena peroutingan sudah dinamis.

- Tugas 9A : Jelaskan secara singkat proses update yang terjadi pada router eagle.(perhatikan bagian"EIGRP : Received updated from 172.21.2.3 on Serial1")



Setelah pemutusan pada router puma dan eagle pada router puma, maka akan ada notifikasi dan update pada router eagle.

- Tugas 10A : Apakah hasil yang diperoleh berbeda dengan langkah 8 diatas(ketika langkah 9 belum dilakukan)? Jelaskan secara singkat mengapa demikian.



```
Leo
Physical Config Desktop Programming Attributes
Command Prompt
Packet Tracer PC Command Line 1.0
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    1 ms    1 ms    172.21.1.2
  2  *        2 ms    0 ms    172.21.20.2

Trace complete.
C:\>
C:\>
```

```
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

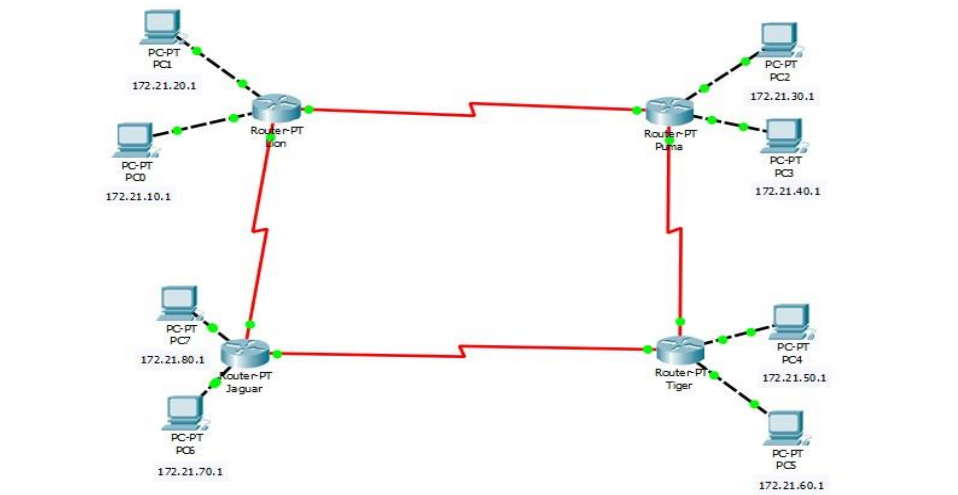
Trace complete.
C:\>
```

D. TUGAS MODUL 5

1. Buatlah konfigurasi static routing dan dynamic routing yang terdiri dari 4 router dan setiap router terdiri dari 2 pc. Dengan ip address sesuai kebutuhan!

Static Routing.

1. Gambar Topologi



2. Konfigurasi masing masing router.

Elang

Physical Config CLI Attributes

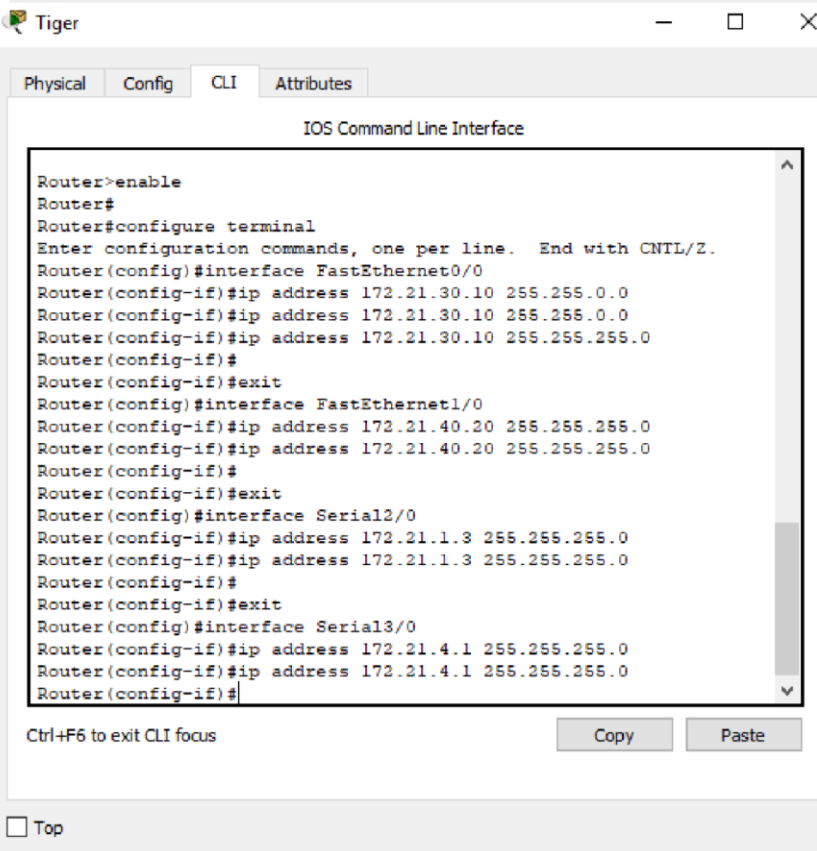
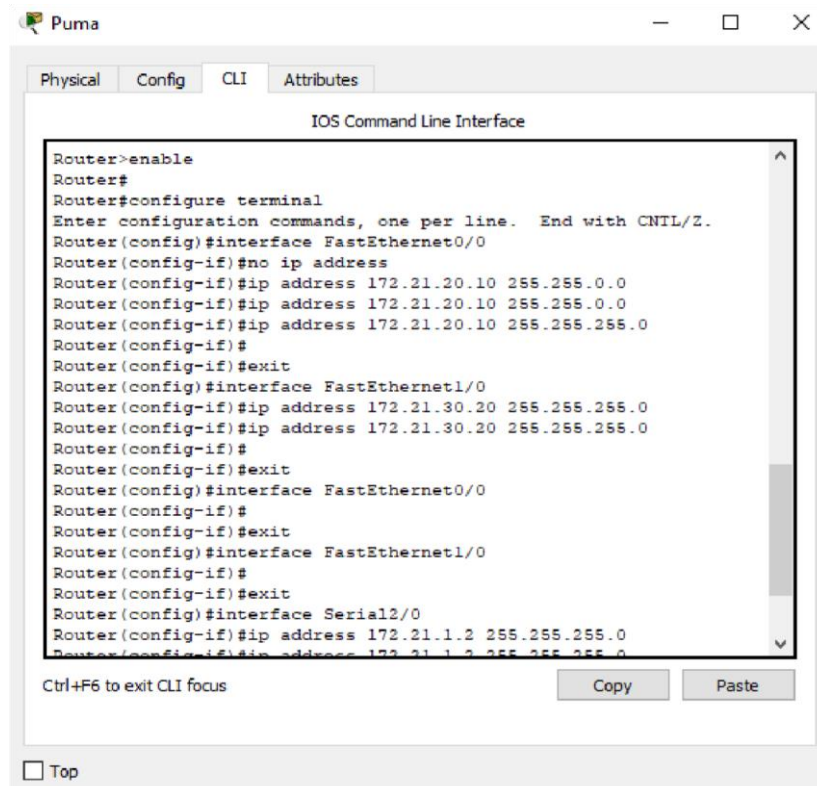
IOS Command Line Interface

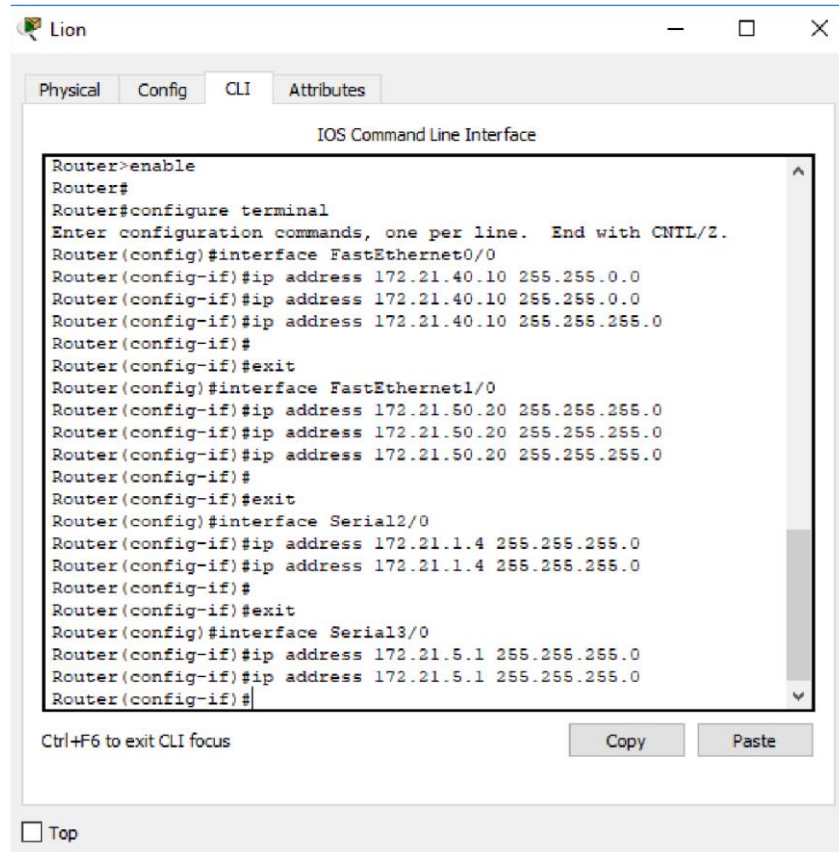
```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 172.21.10.10 255.255.0.0
Router(config-if)#ip address 172.21.10.10 255.255.0.0
Router(config-if)#ip address 172.21.10.10 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#ip address 172.21.20.20 255.255.255.0
Router(config-if)#ip address 172.21.20.20 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#ip address 172.21.1.1 255.255.255.0
Router(config-if)#ip address 172.21.1.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#ip address 172.21.2.1 255.255.255.0
Router(config-if)#ip address 172.21.2.1 255.255.255.0
Router(config-if)#
```

Ctrl+F6 to exit CLI focus

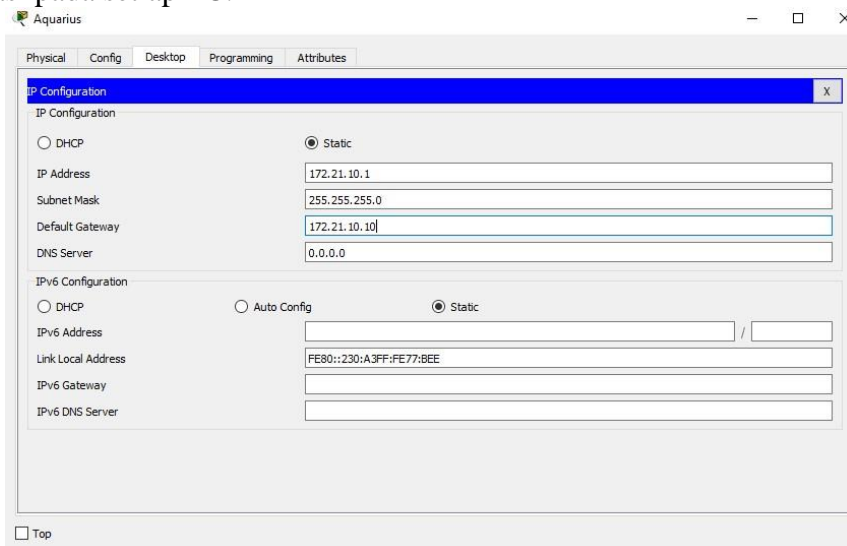
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☐ Top





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

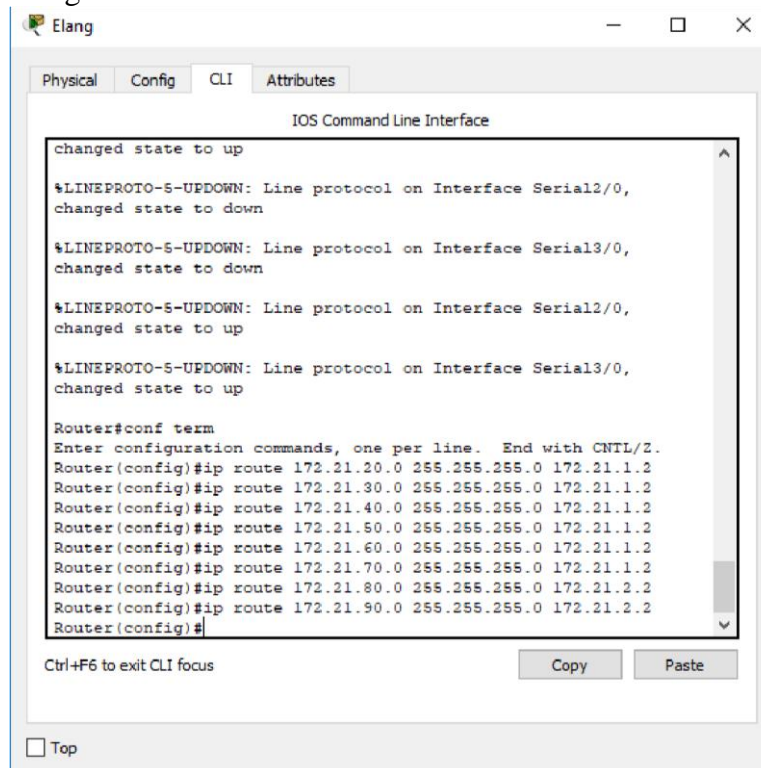
Ping statistics for 172.21.10.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 108ms, Average = 27ms
```

dari Router Elang ke Router Puma.

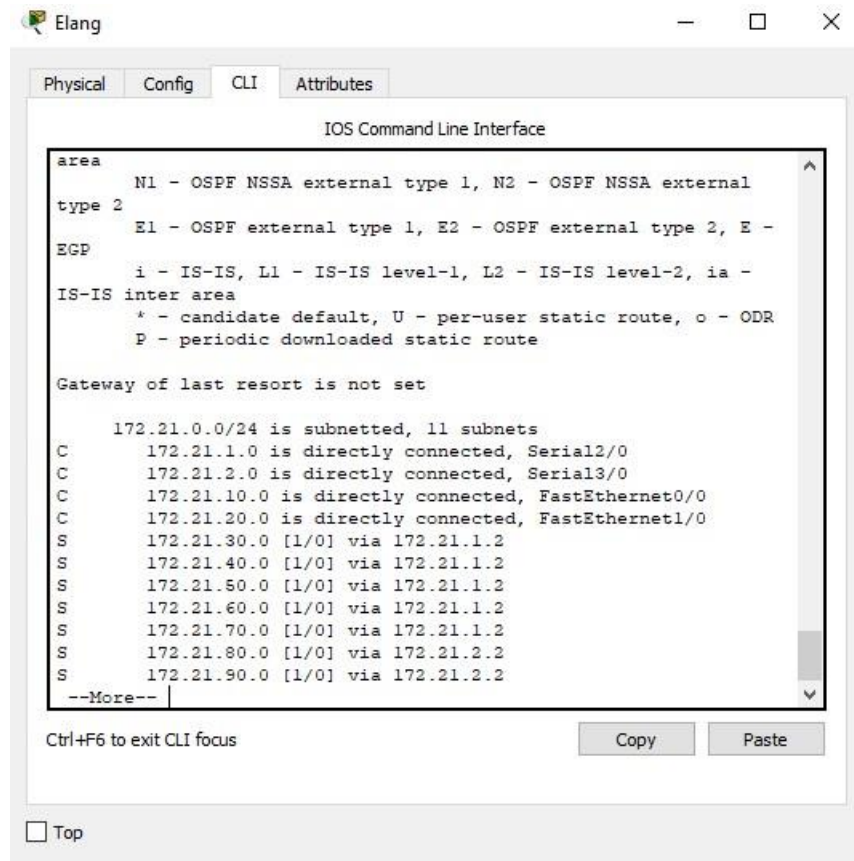
```
Router#ping 172.21.1.2

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

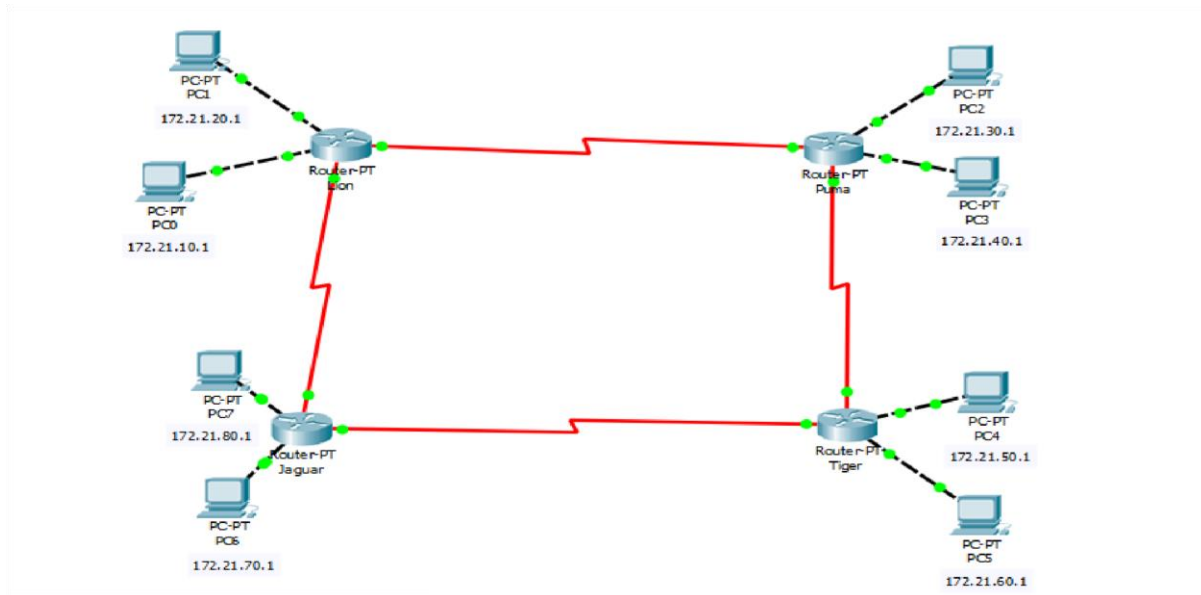
```
Packet Tracer PC Command Line 1.0
C:\>ping 172.21.50.1

Pinging 172.21.50.1 with 32 bytes of data:

Request timed out.
Reply from 172.21.50.1: bytes=32 time=13ms TTL=125
Reply from 172.21.50.1: bytes=32 time=5ms TTL=125
Reply from 172.21.50.1: bytes=32 time=13ms TTL=125

Ping statistics for 172.21.50.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 5ms, Maximum = 13ms, Average = 10ms
```

DinamicRouting Tang.



1. Konfigurasi IP dan routing.

Elang

Physical Config CLI Attributes

IOS Command Line Interface

```
172.21.0.0/24 is subnetted, 11 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
C    172.21.20.0 is directly connected, FastEthernet1/0
S    172.21.30.0 [1/0] via 172.21.1.2
S    172.21.40.0 [1/0] via 172.21.1.2
S    172.21.50.0 [1/0] via 172.21.1.2
S    172.21.60.0 [1/0] via 172.21.1.2
S    172.21.70.0 [1/0] via 172.21.1.2
S    172.21.80.0 [1/0] via 172.21.2.2
S    172.21.90.0 [1/0] via 172.21.2.2

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

Ctrl+F6 to exit CLI focus

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2. Melakukan PING PC Gemini ke Capricorn.

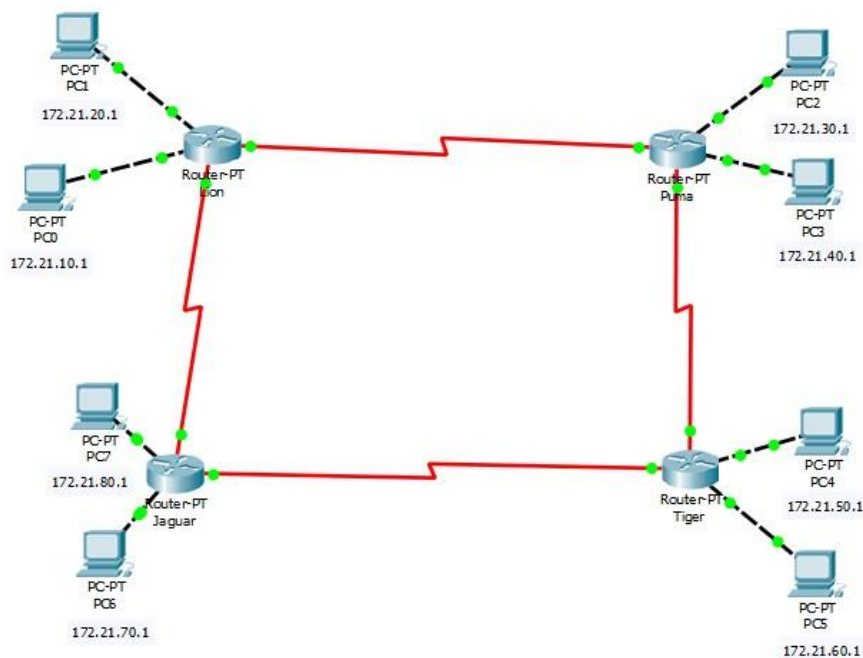
```
C:\>ping 172.21.30.1

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
```