

Nama : Listian Prihutomo

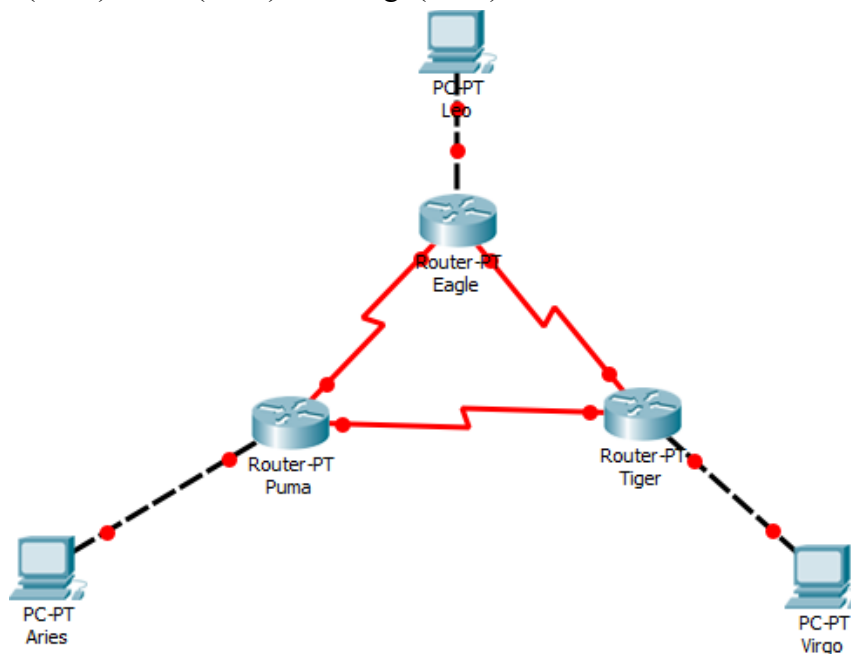
NIM : L200170175

Kelas : D

Kegiatan Praktikum Modul VII

Kegiatan 1. Topologi 1 (Static Routing)

1. Membuat topologi seperti gambar dibawah ini. Beri nama masing-masing router dengan Eagle(router 1), Puma(router 2) dan Tiger(router 3) serta beri nama masing-masing PC dengan Leo(PC 1), Aries(PC 2) dan Virgo(PC 3).



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

- Eagle (ethernet 0) = 172.21.10.10/24

```
Router>en
Router#conf term
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)#no shutdown

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
```

- Eagle (serial 0) = 172.21.1.1/24 dan Eagle (serial 1) = 172.21.2.1/24

```
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 shutdown

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

%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

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

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

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

- Puma (ethernet 0) = 172.21.20.20/24

```
Router>en
Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip add 172.21.20.20 255.255.255.0
Router(config-if)#no shutdown

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
```

- Puma (serial 0) = 172.21.1.2/24 dan Puma (serial 1) = 172.21.3.2/24

```
Router(config-if)#int se2/0
Router(config-if)#ip add 172.21.1.2 255.255.255.0
Router(config-if)#no shutdown

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

%LINEPROTO-5-UPDOWN: Line protocol on 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 shutdown

%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
```

- Tiger (ethernet 0) = 172.21.30.30/24

```
Router>en
Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip add 172.21.30.30 255.255.255.0
Router(config-if)#no shutdown

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
```

- Tiger (serial 0) = 172.21.2.3/24 dan Tiger (serial 1) = 172.21.3.3/24

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

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

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

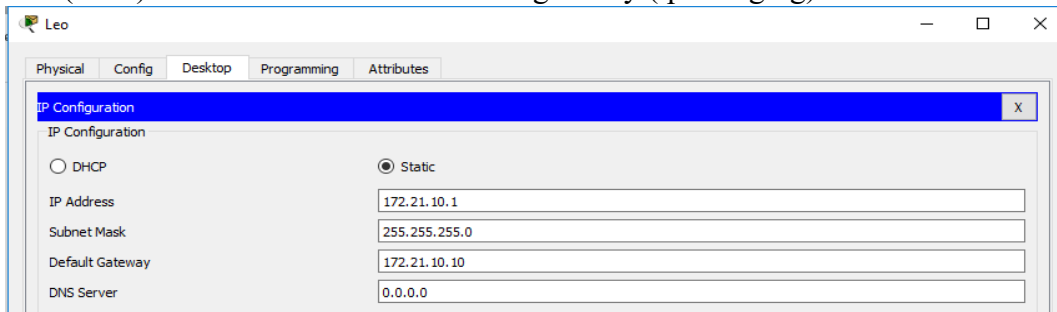
Router(config-if)#int se3/0
Router(config-if)#ip add 172.21.3.3 255.255.255.0
Router(config-if)#no shutdown

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

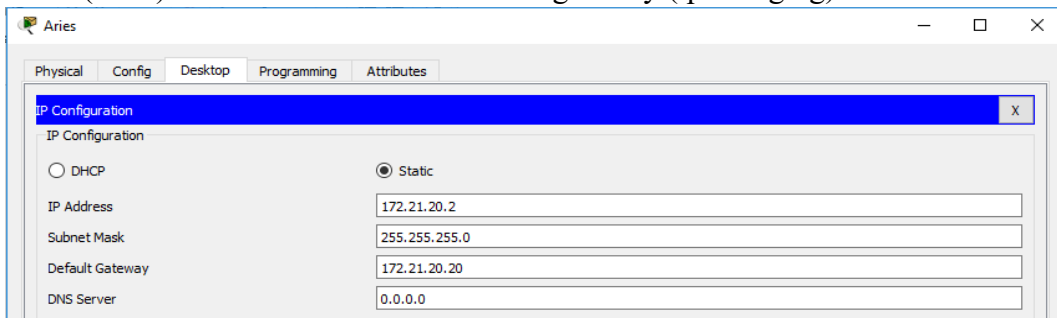
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0,
changed state to up
```

3. Konfigurasi masing-masing PC dengan alamat IP berikut ini:

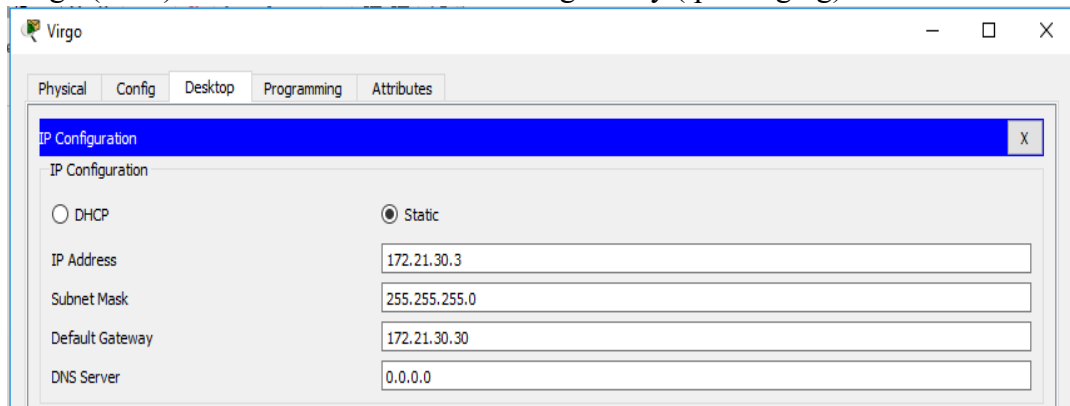
- Leo (PC 1) = 172.21.10.1/24 dan default gateway (ipconfig/dg) 172.21.10.10



- Aries (PC 2) = 172.21.20.2/24 dan default gateway (ipconfig/dg) 172.21.20.20

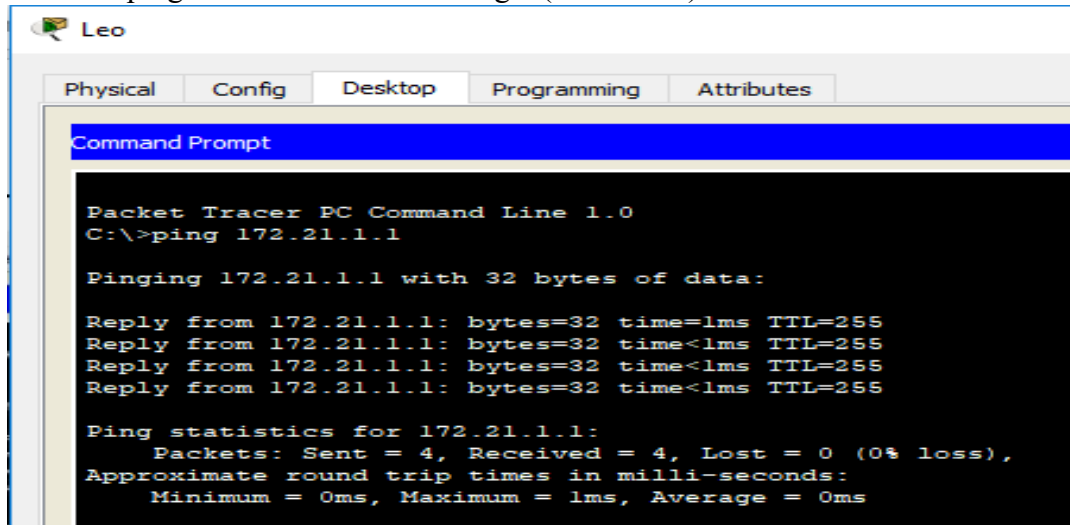


- Virgo (PC 3) = 172.21.30.3/24 dan default gateway (ipconfig/dg) 172.21.30.30

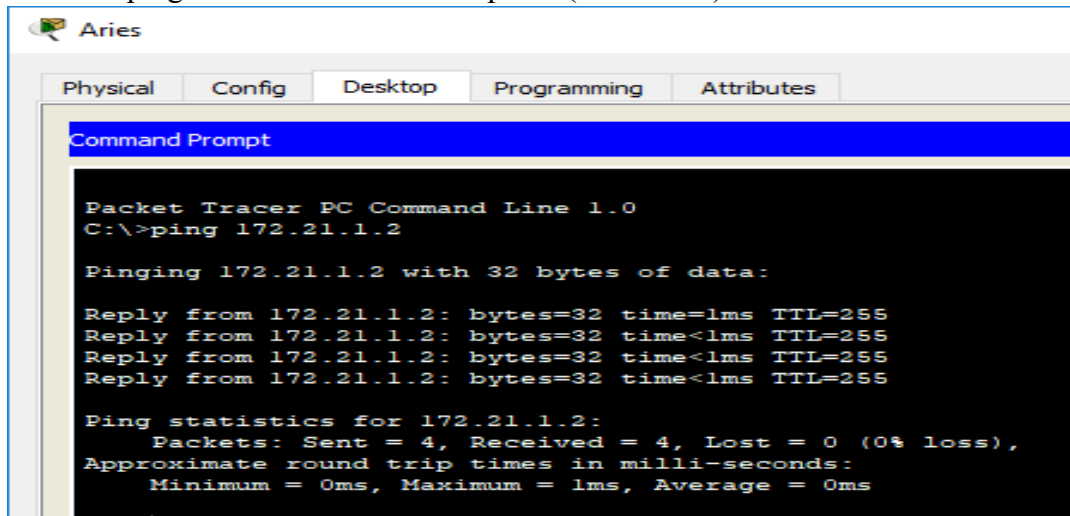


4. Langkah pengujian untuk memastikan kesesuaian konfigurasi.

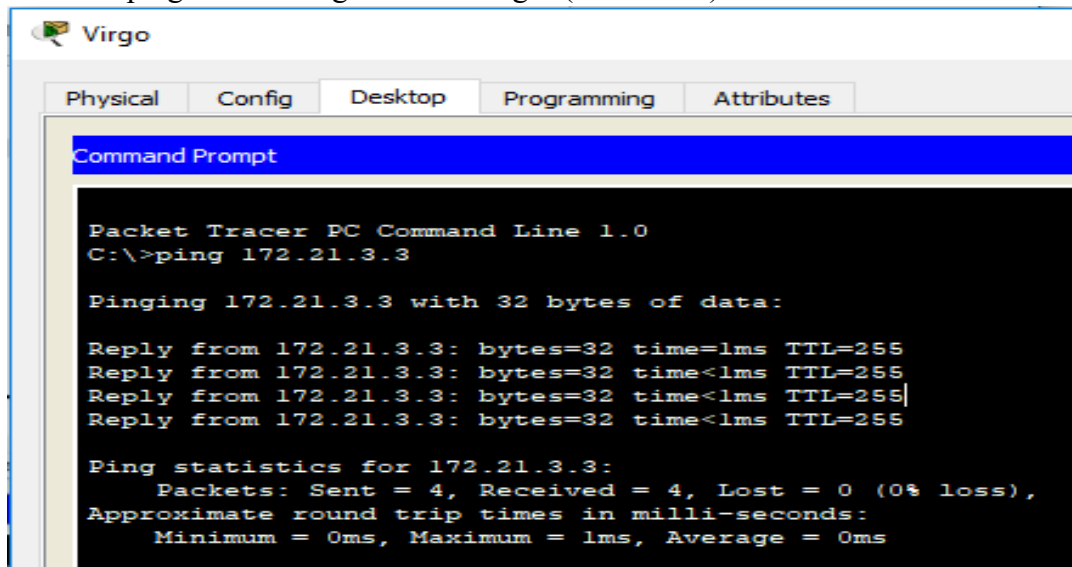
- Lakukan ping dari PC leo ke router eagle (172.21.1.1)



- Lakukan ping dari PC aries ke router puma (172.21.1.2)



- Lakukan ping dari PC virgo ke router tiger (172.21.3.3)



```

Virgo
Physical Config Desktop Programming Attributes
Command Prompt

Packet Tracer PC Command Line 1.0
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
Reply from 172.21.3.3: bytes=32 time<1ms TTL=255
Reply from 172.21.3.3: bytes=32 time<1ms TTL=255
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 = 1ms, Average = 0ms

```

- Lakukan ping dari router eagle ke router puma (172.21.1.2)

```

Router>en
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 = 1/1/3
ms

```

- Lakukan ping dari router eagle ke router tiger (172.21.2.3)

```

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 = 1/1/4
ms

```

- Lakukan ping dari router puma ke router tiger (172.21.3.3)

```

Router>en
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 = 1/1/4
ms

```

5. Simpan konfigurasi seluruh device yang telah dilakukan



6. Pada mode user atau mode privileged, lihat route pada masing-masing router

- Eagle

```
Router>en
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

```
Router>en
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
```

- Tiger

```
Router>en
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
```

7. Dari router eagle lakukan ping 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)
```

8. Dari PC leo lakukan trace ke PC aries

```
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:

  1    1 ms      0 ms      0 ms      172.21.10.10
  2    0 ms      *          0 ms      172.21.10.10
  3    *         0 ms      *          Request timed out.
  4    0 ms      *          0 ms      172.21.10.10
  5    *         0 ms      *          Request timed out.
  6    0 ms      *          0 ms      172.21.10.10
  7    *         0 ms      *          Request timed out.
  8    0 ms      *          0 ms      172.21.10.10
  9    *         3 ms      *          Request timed out.
 10   0 ms      *          0 ms      172.21.10.10
 11   *         0 ms      *          Request timed out.
 12   1 ms      *          0 ms      172.21.10.10
 13   *         0 ms      *          Request timed out.
 14   0 ms      *          1 ms      172.21.10.10
 15   *         0 ms      *          Request timed out.
 16   0 ms      *          0 ms      172.21.10.10
 17   *         0 ms      *          Request timed out.
 18   0 ms      *          1 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      *          3 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.
```

9. Dari PC leo lakukan trace 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    1 ms      0 ms      0 ms      172.21.1.1

Trace complete.
```


10. Pada mode user atau mode privileged, tambahkan route table pada masing-masing rote untuk setiap alamat jaringan yang tidak terhubung secara langsung dengan interface router

- Eagle

```
Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 172.21.20.20 255.255.255.0 172.21.1.2
%Inconsistent address and mask
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)#ex
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       172.21.2.0 is directly connected, Serial3/0
C       172.21.10.0 is directly connected, FastEthernet0/0
S       172.21.20.0 [1/0] via 172.21.1.2
S       172.21.30.0 [1/0] via 172.21.2.3
```

- 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)#ex
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
```

- Tiger

```
Router>en
Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 172.21.10.0 255.255.255.0 172.21.2.1
Router(config)#ip route 172.21.20.0 255.255.255.0 172.21.3.2
Router(config)#ex
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       172.21.2.0 is directly connected, Serial2/0
C       172.21.3.0 is directly connected, Serial3/0
S       172.21.10.0 [1/0] via 172.21.2.1
S       172.21.20.0 [1/0] via 172.21.3.2
C       172.21.30.0 is directly connected, FastEthernet0/0
```

11. Dari PC leo lakukan ping ke PC aries, dan lakukan pula trace dari PC leo ke aries

```
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=4ms TTL=126
Reply from 172.21.20.2: bytes=32 time=3ms TTL=126
Reply from 172.21.20.2: bytes=32 time=1ms TTL=126
Reply from 172.21.20.2: bytes=32 time=14ms 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 = 14ms, Average = 5ms

C:\>tracert 172.21.20.2

Tracing route to 172.21.20.2 over a maximum of 30 hops:

  0  1 ms    0 ms    5 ms    172.21.10.10
  1  5 ms    1 ms    0 ms    172.21.1.2
  2  4 ms    1 ms    0 ms    172.21.20.2

Trace complete.
```

1. Dari Packet Tracker, buka (load) topologi NetMap Kegiatan 1.

-
- The diagram illustrates a network topology with three routers: Router-PT Eagle, Router-PT Puma, and Router-PT Tiger. These routers are connected in a triangular mesh. Three PCs are connected to the routers: PC-PT Leo to Router-PT Eagle, PC-PT Aries to Router-PT Puma, and PC-PT Virgo to Router-PT Tiger. The connections between the PCs and routers are shown as dashed black lines. The connections between the routers are shown as solid red lines, representing the paths for the three different types of flooding (flooding, distance vector, and link state) being compared.

- ```
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#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
!
!
!
!
!
!
router rip
network 172.21.0.0
!
ip classless
!
ip flow-export version 9
!
!
```

- ```
Router#debug ip rip
RIP protocol debugging is on
Router#
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
```

- Konfigurasi routing RIP Puma

```
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#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
!
!
!
!
!
!
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
!
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 rip
network 172.21.0.0
!
ip classless
!
ip flow-export version 9
!
end
```

- Update router RIP Puma

```
Router#debug ip rip
RIP protocol debugging is on
Router#RIP: received v1 update from 172.21.1.1 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
(172.21.1.2)
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
(172.21.3.2)
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
```

- Konfigurasi routing RIP 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
```

|                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <pre>Router#show running-config Building configuration...  Current configuration : 755 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 ! ! ! ! ! ! ! ! ! !</pre> | <pre>interface FastEthernet0/0 ip address 172.21.30.30 255.255.255.0 duplex auto speed auto ! interface FastEthernet1/0 no ip address duplex auto speed auto shutdown ! interface Serial2/0 ip address 172.21.2.3 255.255.255.0 ! interface Serial3/0 ip address 172.21.3.3 255.255.255.0 ! interface FastEthernet4/0 no ip address shutdown ! interface FastEthernet5/0 no ip address shutdown ! router rip network 172.21.0.0 ! ip classless ! ip flow-export version 9 ! ! !</pre> | <pre>! ! line con 0 ! line aux 0 ! line vty 0 4 login ! ! ! end</pre> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|

- Update router RIP Tiger

```
Router#debug ip rip
RIP protocol debugging is on
Router#RIP: received v1 update from 172.21.3.2 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
 network 172.21.2.0 metric 1
 network 172.21.10.0 metric 2
 network 172.21.30.0 metric 1

Router#no debug ip RIP: received v1 update from 172.21.2.1 on
Serial2/0
 172.21.1.0 in 1 hops
 172.21.10.0 in 1 hops
 172.21.20.0 in 2 hops
```

% Incomplete command.

6. Dari PC leo lakukan trace ke PC aries

```
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:

 1 10 ms 0 ms 0 ms 172.21.10.10
 2 1 ms 0 ms 1 ms 172.21.1.2
 3 * 0 ms 0 ms 172.21.20.2

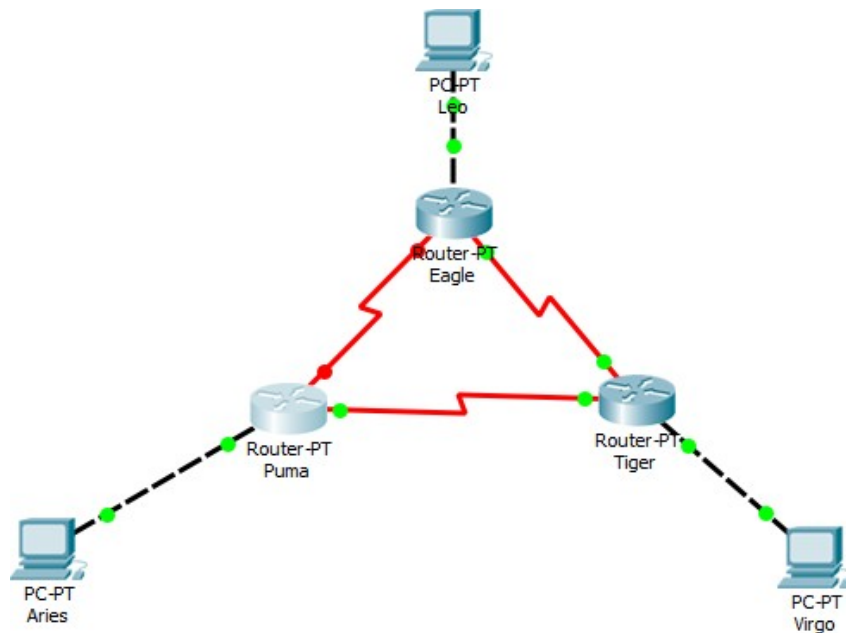
Trace complete.
```

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

```
Router>en
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
```



8. Dari PC leo lakukan trace 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 4 ms 172.21.2.3
 3 10 ms 1 ms 6 ms 172.21.3.2
 4 11 ms 14 ms 13 ms 172.21.20.2

Trace complete.
```

1. Dari Packet Tracker, buka (load) topologi NetMap Kegiatan 1

- 
- The diagram illustrates a network topology for a packet trace. It features three routers: Router-PT Puma, Router-PT Eagle, and Router-PT Tiger, connected in a triangular mesh. PC-PT Aries is connected to Router-PT Puma, PC-PT Leo to Router-PT Eagle, and PC-PT Virgo to Router-PT Tiger. A red path highlights the packet's journey from PC-PT Leo to Router-PT Puma, then to Router-PT Tiger, and finally back to Router-PT 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)#
```

- ```
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
!
!
!
!
!
!
!
router eigrp 100
network 172.21.0.0
auto-summary
!
ip classless
!
ip flow-export version 9
!
!
```
- ```
interface FastEthernet1/0
no ip address
duplex auto
speed auto
shutdown
!
interface Serial2/0
ip address 172.21.1.1 255.255.255.0
clock rate 2000000
!
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
!
line con 0
!
line aux 0
!
line vty 0 4
login
!
!
end
```


4. Lihat proses transaksi routing EIGRP pada router eagle dengan perintah “debug eigrp packets”

```
Router#debug eigrp packet
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 Serial2/0
  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
```

5. Lakukan konfigurasi routing EIGRP pada router puma dan tiger

- Konfigurasi routing EIGRP Puma

```
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#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
!
!
!
!
!
!
router eigrp 100
network 172.21.0.0
auto-summary
!
ip classless
!
ip flow-export version 9
!
end
```

- Update pada routing EIGRP Puma

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

EIGRP: Received HELLO on Serial2/0 nbr 172.21.1.1
      AS 100, Flags 0x0, Seq 6/0 idbQ 0/0
```

- Konfigurasi routing EIGRP Tiger

```
Router>en
Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router eigrp 100
      ^
% Invalid input detected at '^' marker.

Router(config)#router eigrp 100
Router(config-router)#network 172.21.0.0
      ^
% Invalid input detected at '^' marker.

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

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
!
!
!
!
!
!
interface FastEthernet0/0
ip address 172.21.30.30 255.255.255.0
duplex auto
speed auto
!
interface FastEthernet1/0
no ip address
duplex auto
speed auto
shutdown
!
interface Serial2/0
ip address 172.21.2.3 255.255.255.0
!
interface Serial3/0
ip address 172.21.3.3 255.255.255.0
!
interface FastEthernet4/0
no ip address
shutdown
!
!
!
interface FastEthernet5/0
no ip address
shutdown
!
!
!
router eigrp 100
network 172.21.0.0
auto-summary
!
!
!
ip classless
!
!
ip flow-export version 9
!
!
end
```

- Update pada routing EIGRP 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 11/0 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: Sending HELLO on FastEthernet0/0
AS 100, Flags 0x0, Seq 11/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial2/0
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
```

6. Dari PC leo lakukan trace ke PC aries

```
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:

  1  25 ms    0 ms    0 ms    172.21.10.10
  2   1 ms    4 ms    0 ms    172.21.1.2
  3   *       0 ms    3 ms    172.21.20.2

Trace complete.
```

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

```
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

Router#debug eigrp packets
EIGRP Packets debugging is on
(UPDATE, REQUEST, QUERY, REPLY, HELLO, ACK )
Router#
EIGRP: Received HELLO on Serial3/0 nbr 172.21.3.3
AS 100, Flags 0x0, Seq 16/0 idbQ 0/0

EIGRP: Sending HELLO on FastEthernet0/0
AS 100, Flags 0x0, Seq 16/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial3/0
AS 100, Flags 0x0, Seq 16/0 idbQ 0/0 iidbQ un/rely 0/0
```

8. Dari PC leo lakukan trace 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   0 ms    1 ms    1 ms    172.21.2.3
  3   2 ms    5 ms    0 ms    172.21.3.2
  4  13 ms    1 ms   11 ms    172.21.20.2

Trace complete.
```