

Nama : Aldo Brian Granada

NIM : L200170182

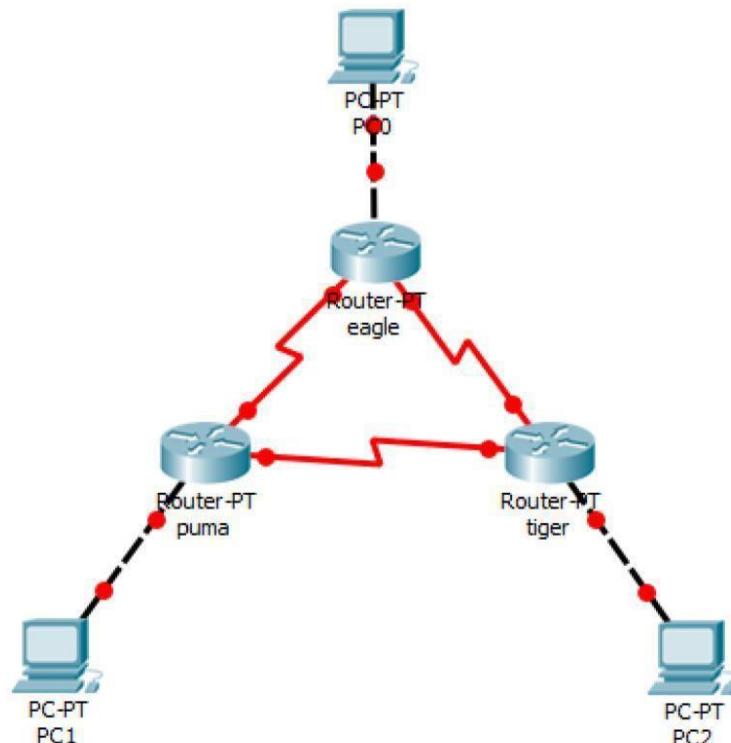
Kelas : D

**Laporan Praktikum
Jaringan Komputer**

Modul 7

KEGIATAN 1 STATIC ROUTING

1. Buat topologi
2. Beri nama



3. - Konfigurasi IP address interface ethernet 0 untuk router eagle

```
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
```

- Konfigurasi IP address interface serial 0 dan serial 1 untuk router eagle

```
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)#[
```

- Konfigurasi IP address interface ethernet 0 untuk router puma

```
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
```

- Konfigurasi IP address interface serial 0 dan serial 1 untuk router puma

```
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

Router(config-if)#int se3/0
Router(config-if)#cl
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0,
changed state to up
% Ambiguous command: "c"
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)#[
```

- Konfigurasi IP address interface ethernet 0 untuk router tiger

```
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
```

- Konfigurasi IP address interface serial 0 dan serial 1 untuk router tiger

```
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)#int se3/0
Router(config-if)#ip add 162
*LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0,
changed state to up

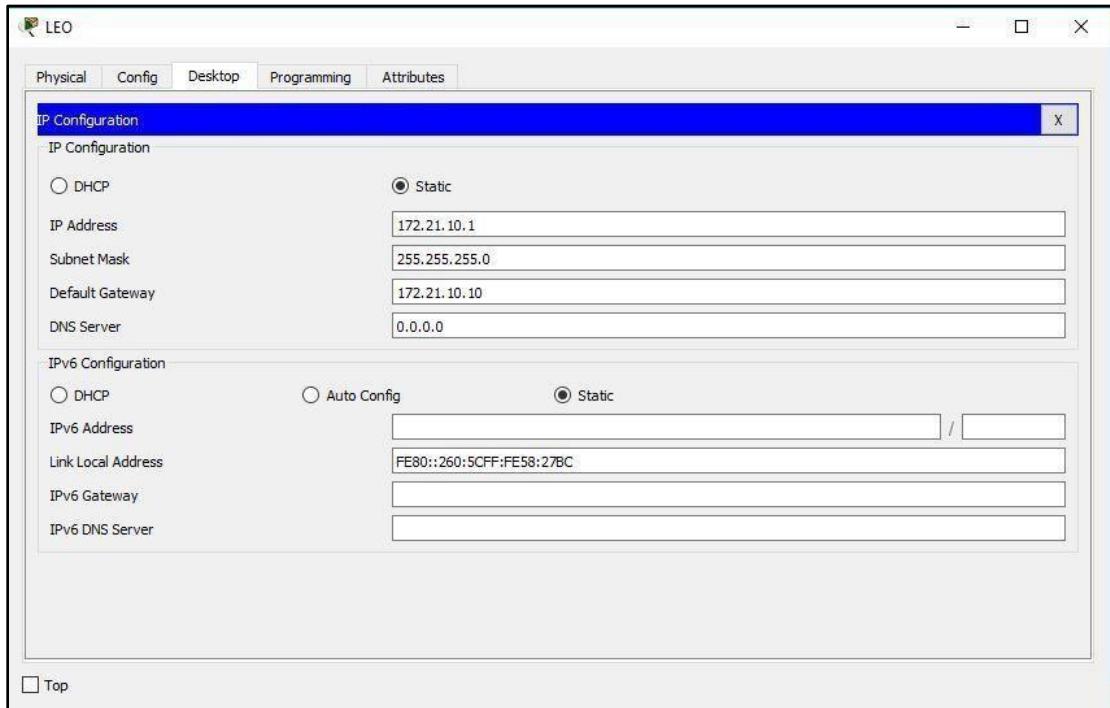
^
* Invalid input detected at '^' marker.

Router(config-if)#ip add 172.21.3.3 255.255.255.0
Router(config-if)#no shutdown

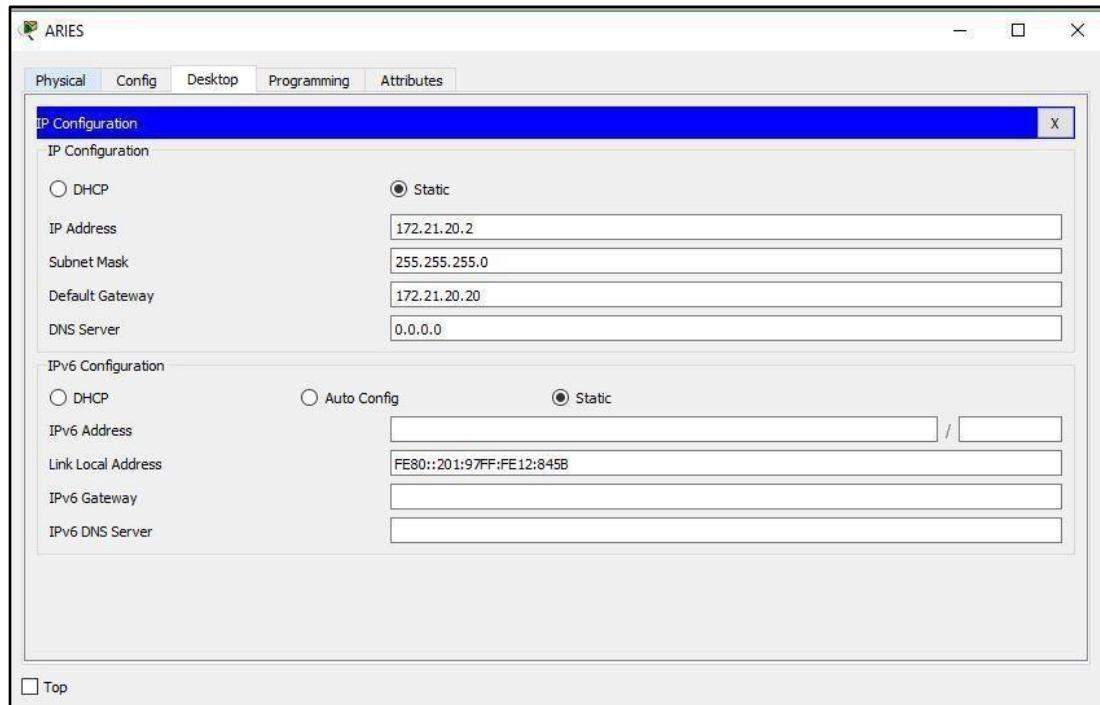
Router(config-if)#
*LINK-5-CHANGED: Interface Serial3/0, changed state to up

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

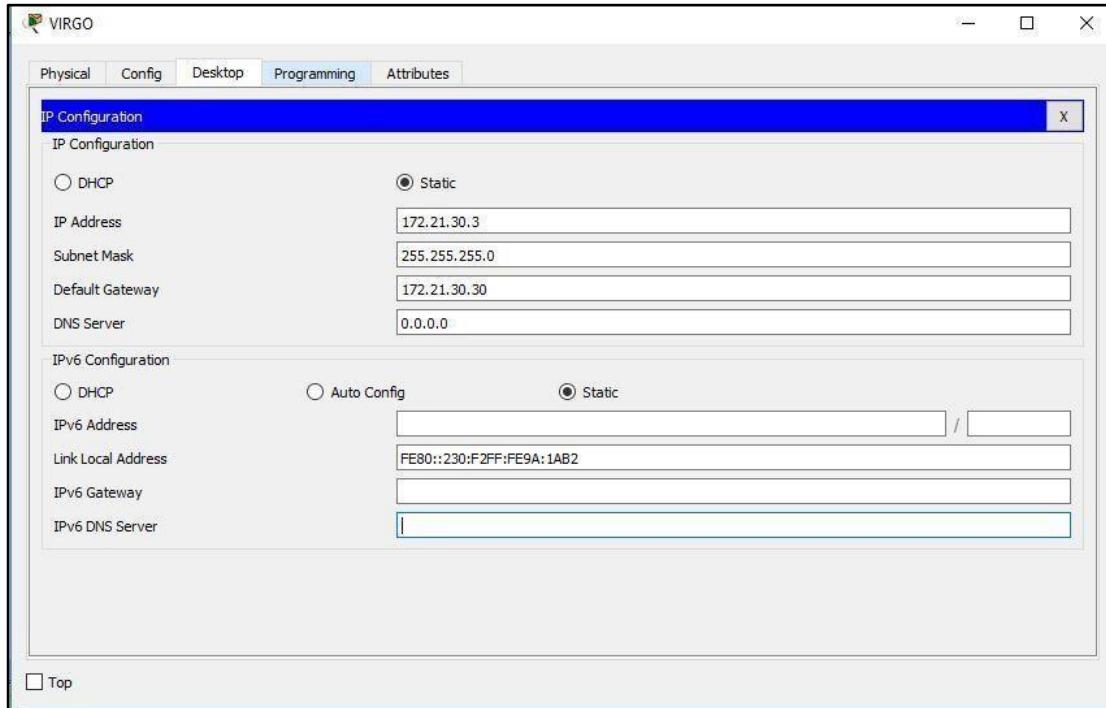
4. - Konfigurasi IP address PC Leo



- Konfigurasi IP address PC Aries



- Konfigurasi IP address PC Virgo



5. Lakukang ping dari PC leo ke router eagle

```
C:\>ping 172.21.1.1

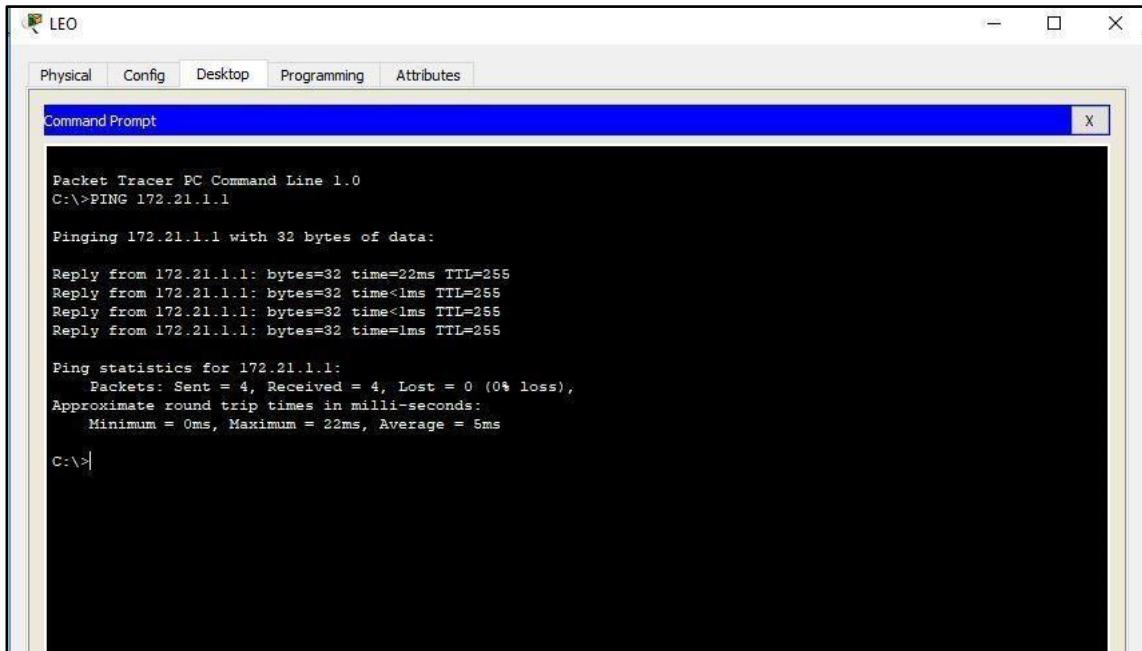
Pinging 172.21.1.1 with 32 bytes of data:

Reply from 172.21.1.1: bytes=32 time=1ms TTL=255
Reply from 172.21.1.1: bytes=32 time<1ms TTL=255
Reply from 172.21.1.1: bytes=32 time<1ms TTL=255
Reply from 172.21.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.21.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>|
```

- Lakukan ping dari PC aries ke router puma



```
Packet Tracer PC Command Line 1.0
C:\>PING 172.21.1.1

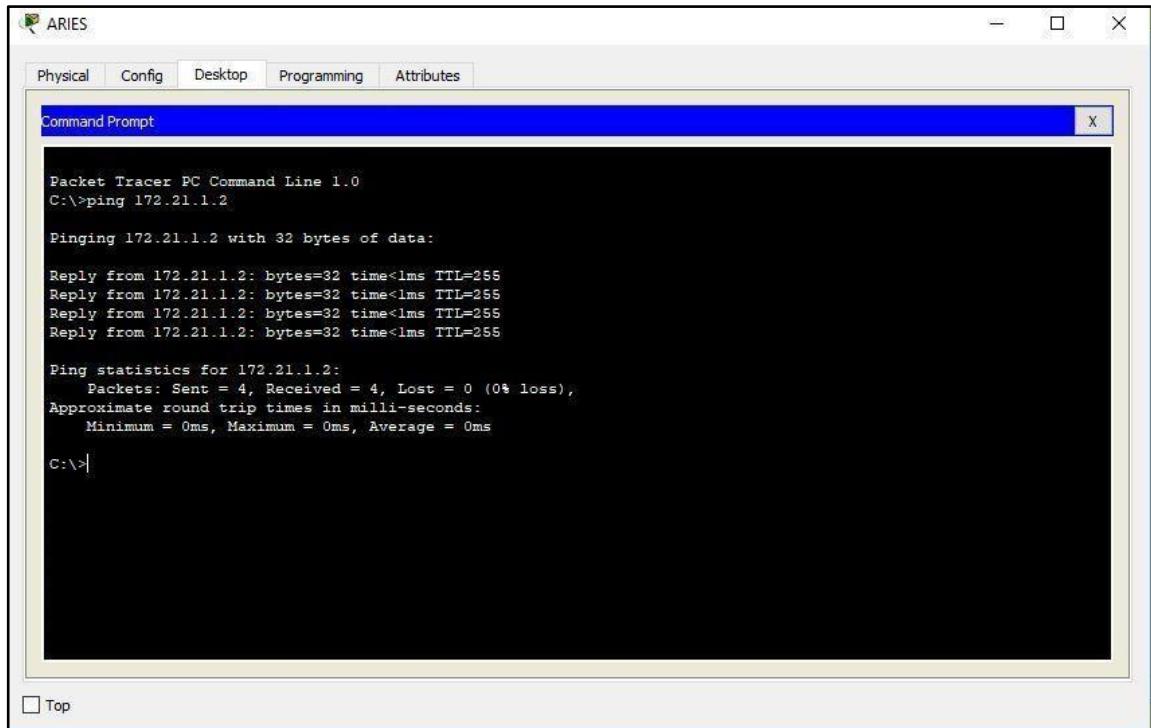
Pinging 172.21.1.1 with 32 bytes of data:

Reply from 172.21.1.1: bytes=32 time=22ms TTL=255
Reply from 172.21.1.1: bytes=32 time<1ms TTL=255
Reply from 172.21.1.1: bytes=32 time<1ms TTL=255
Reply from 172.21.1.1: bytes=32 time=1ms TTL=255

Ping statistics for 172.21.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 22ms, Average = 5ms

C:\>
```

- Lakukan ping dari PC arieske router puma



```
Packet Tracer PC Command Line 1.0
C:\>ping 172.21.1.2

Pinging 172.21.1.2 with 32 bytes of data:

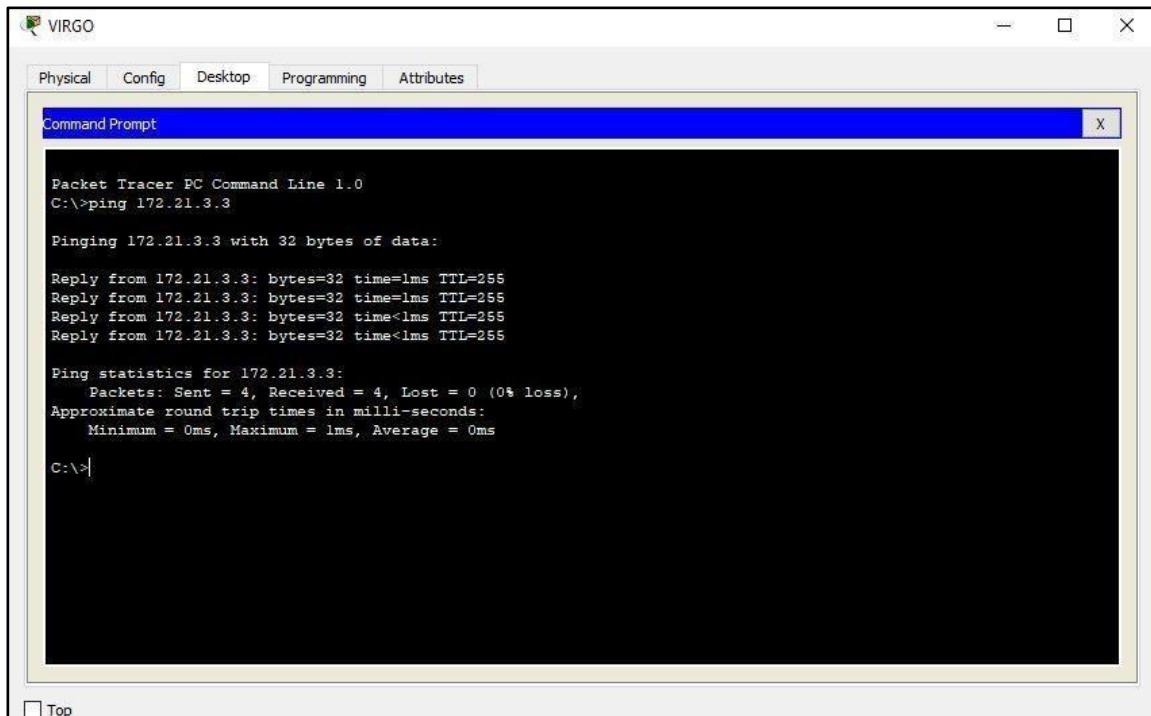
Reply from 172.21.1.2: bytes=32 time<1ms TTL=255

Ping statistics for 172.21.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Top

- Lakukan ping dari PC virgo ke router tiger



Packet Tracer PC Command Line 1.0
C:\>ping 172.21.3.3

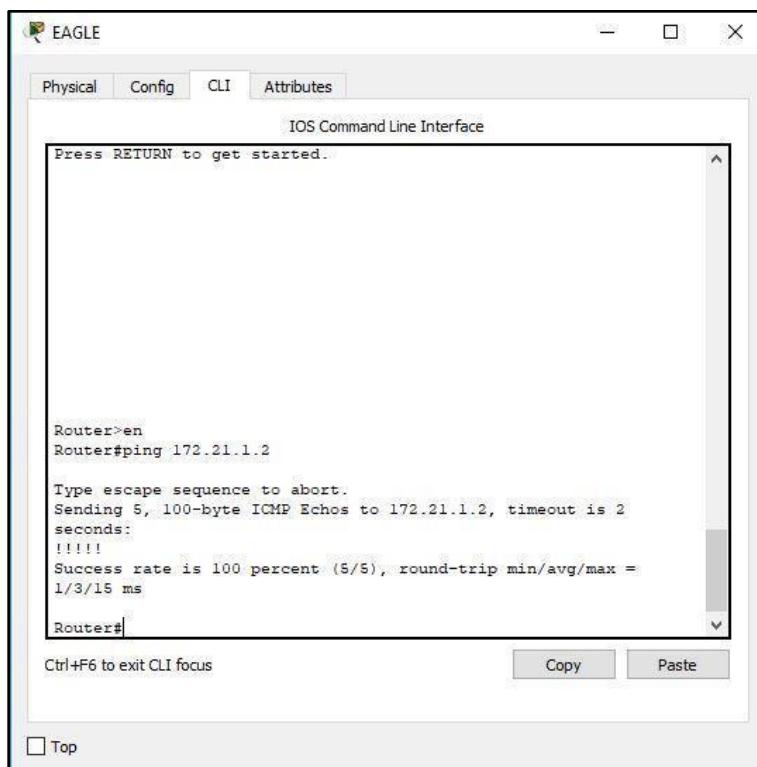
Pinging 172.21.3.3 with 32 bytes of data:

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

C:\>

- Lakukan ping dari router eagle ke router puma



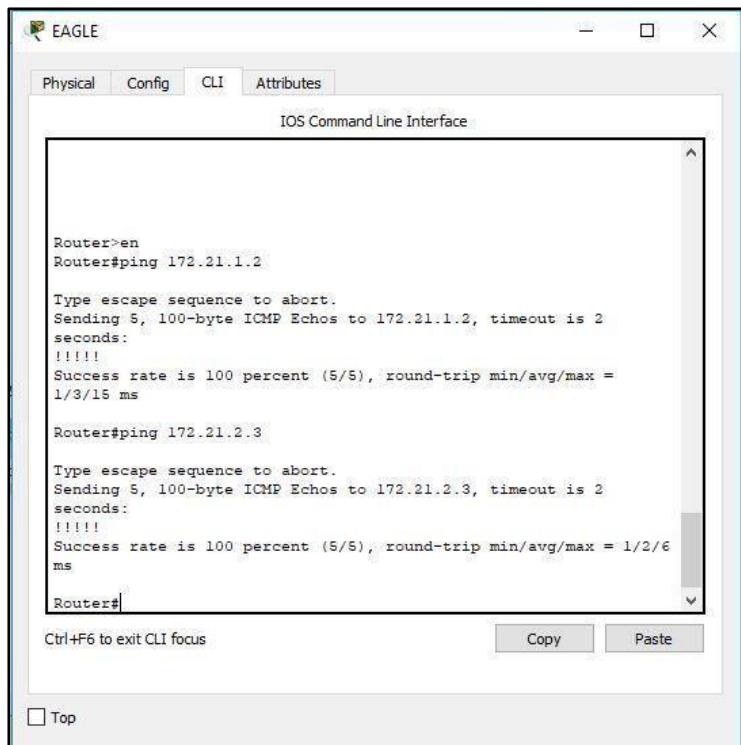
IOS Command Line Interface
Press RETURN to get started.

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 =
1/3/15 ms

Router#

- Lakukan ping dari router eagle ke router tiger



The screenshot shows the EAGLE software interface with the title bar "EAGLE". Below it is a tab bar with "Physical", "Config", "CLI" (which is selected), and "Attributes". The main window is titled "IOS Command Line Interface". Inside the interface, the following command history is displayed:

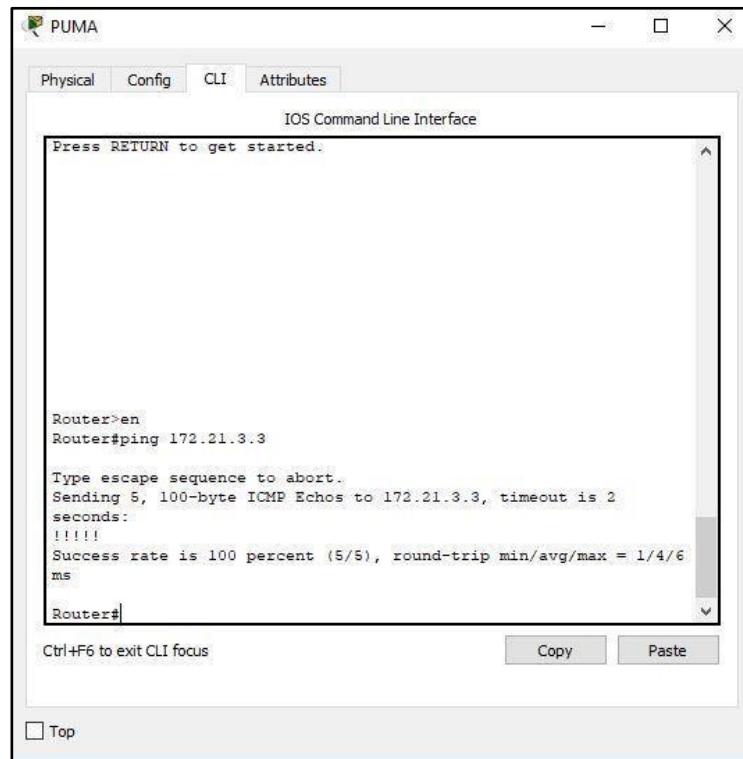
```
Router>en
Router#ping 172.21.1.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.21.1.2, timeout is 2
seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max =
1/3/15 ms

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 = 1/2/6
ms

Router#
```

At the bottom of the interface, there are buttons for "Copy" and "Paste", and a checkbox labeled "Top". A status message "Ctrl+F6 to exit CLI focus" is also present.

- Lakukan ping dari router puma ke router tiger



The screenshot shows the PUMA software interface with the title bar "PUMA". Below it is a tab bar with "Physical", "Config", "CLI" (which is selected), and "Attributes". The main window is titled "IOS Command Line Interface". Inside the interface, the following command history is displayed:

```
Press RETURN to get started.

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 = 1/4/6
ms

Router#
```

At the bottom of the interface, there are buttons for "Copy" and "Paste", and a checkbox labeled "Top". A status message "Ctrl+F6 to exit CLI focus" is also present.

6. Simpan konfigurasi seluruh device yang telah dilakukan
7. - Melihat route table router eagle

```

ms

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

Router#

```

Top

- Melihat route table router puma

```

ms

Router#
Router#sh ip rout
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

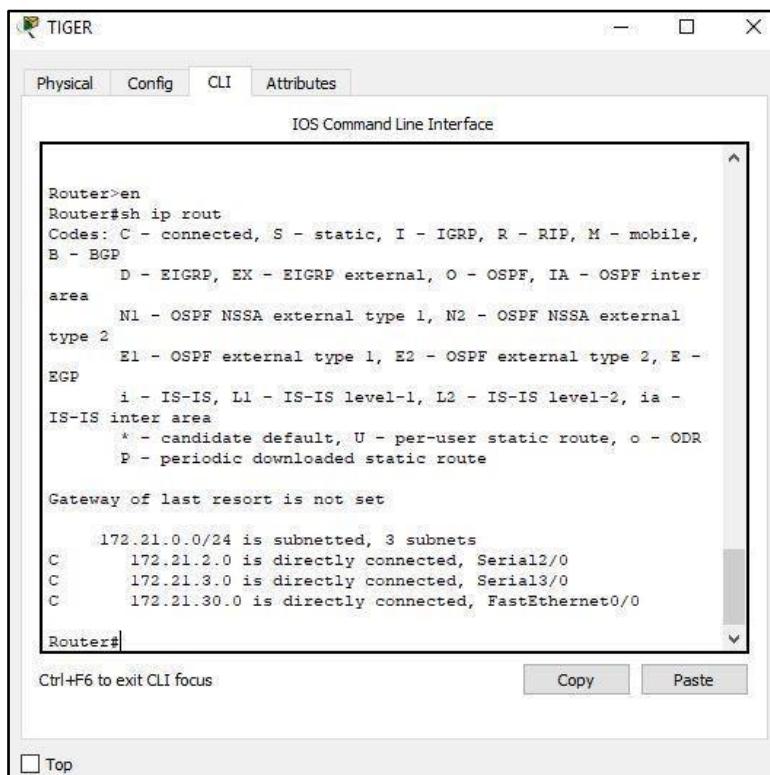
      172.21.0.0/24 is subnetted, 3 subnets
C        172.21.1.0 is directly connected, Serial2/0
C        172.21.3.0 is directly connected, Serial3/0
C        172.21.20.0 is directly connected, FastEthernet0/0

Router#

```

Top

- Melihat route table router tiger



The screenshot shows the TIGER software interface with the 'CLI' tab selected. The main window displays the output of the 'sh ip rout' command. The output includes route codes and descriptions, a list of directly connected interfaces, and a note that the gateway of last resort is not set. At the bottom of the window, there are 'Copy' and 'Paste' buttons.

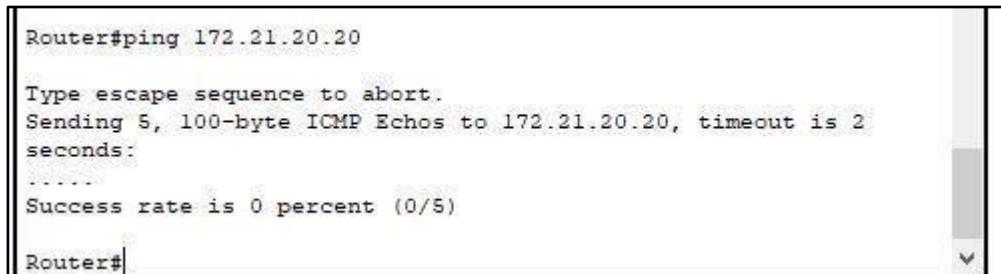
```
Router>en
Router#sh ip rout
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile,
B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter
area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external
type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2,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

Router#
```

8. Lakukan ping dari router eagle kealamat interface S0 router puma(172.21.20.20)



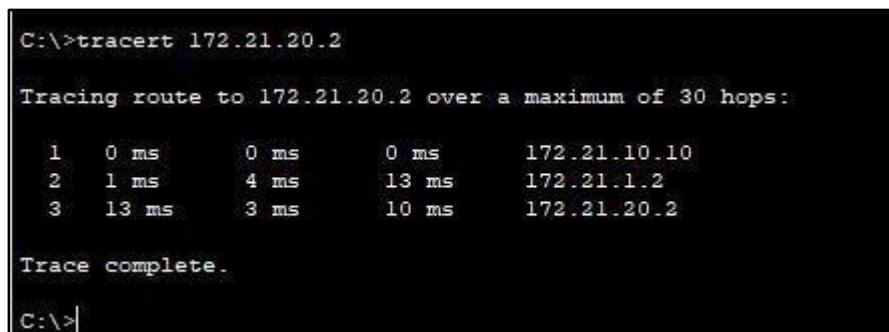
The screenshot shows the TIGER software interface with the 'CLI' tab selected. The main window displays the output of the 'ping 172.21.20.20' command. It shows the sending of 5 ICMP Echoes to the target address, a success rate of 0 percent, and 0/5 packets sent.

```
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)

Router#
```

9. Lakukan trace dari PC leoke PC aries



The screenshot shows a Windows Command Prompt window with the command 'tracert 172.21.20.2' entered. The output shows the tracing route to the destination IP address, passing through three routers with increasing hop counts and decreasing latency times.

```
C:\>tracert 172.21.20.2

Tracing route to 172.21.20.2 over a maximum of 30 hops:

 1  0 ms       0 ms       0 ms       172.21.10.10
 2  1 ms       4 ms      13 ms      172.21.1.2
 3  13 ms      3 ms      10 ms      172.21.20.2

Trace complete.

C:\>
```

10. Lakukan trace dari PC leokealamat interface s0 router eagle(172.21.1.1)

```
C:\>tracert 172.21.1.1

Tracing route to 172.21.1.1 over a maximum of 30 hops:

  1  0 ms      0 ms      0 ms      172.21.1.1

Trace complete.

C:\>
```

11. - Menambahkan route table pada router eagle

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

- Menambahkan route table pada router puma

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

- Menambahkan route table pada router tiger

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

12. Lakukan ping dari PC leoke PC aries, danlakukan pula trace dari PC leokearies

```
C:\>tracert 172.21.1.1

Tracing route to 172.21.1.1 over a maximum of 30 hops:

  1  0 ms      0 ms      0 ms      172.21.1.1

Trace complete.

C:\>ping 172.21.20.2

Pinging 172.21.20.2 with 32 bytes of data:

Reply from 172.21.20.2: bytes=32 time=1ms TTL=126
Reply from 172.21.20.2: bytes=32 time=2ms TTL=126
Reply from 172.21.20.2: bytes=32 time=1ms TTL=126
Reply from 172.21.20.2: bytes=32 time=1ms TTL=126

Ping statistics for 172.21.20.2:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 2ms, Average = 1ms
```

```
C:\>tracert 172.21.20.2

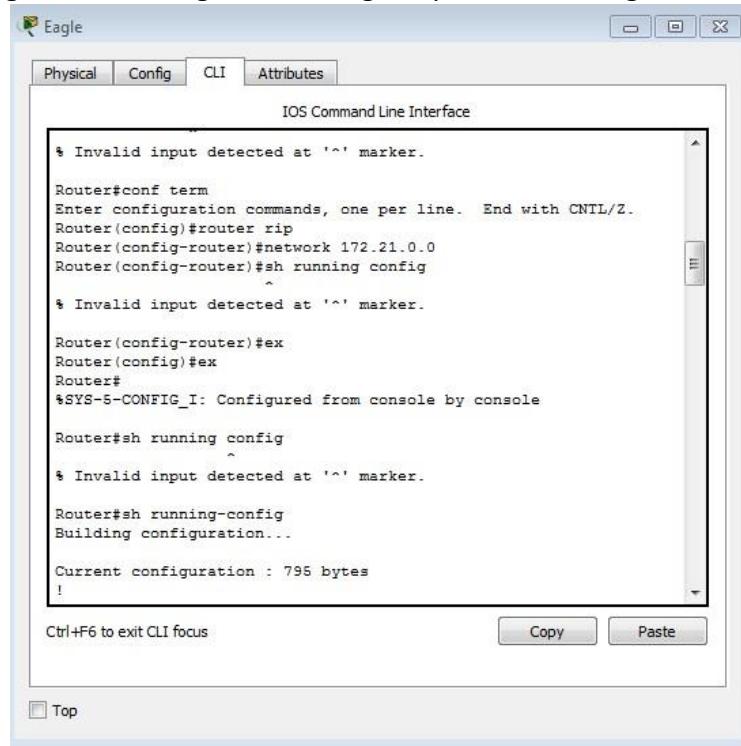
Tracing route to 172.21.20.2 over a maximum of 30 hops:
  1  0 ms      0 ms      0 ms      172.21.10.10
  2  1 ms      4 ms     13 ms      172.21.1.2
  3  13 ms     3 ms     10 ms      172.21.20.2

Trace complete.

C:\>
```

KEGIATAN 2 RIP (Routing Information Protocol)

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

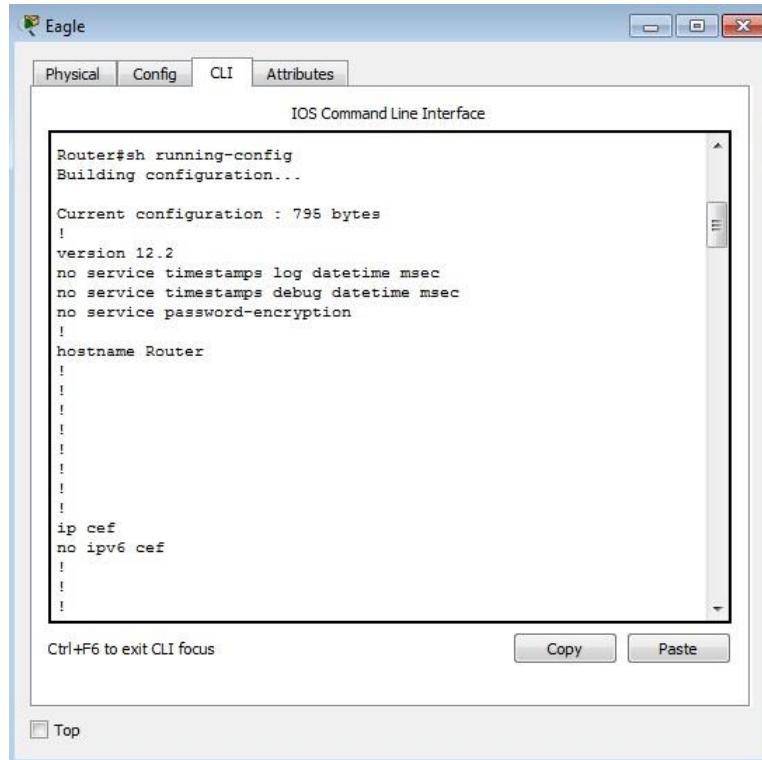


The screenshot shows the Cisco IOS Command Line Interface (CLI) running on a virtual machine named 'Eagle'. The window title is 'IOS Command Line Interface'. The tabs at the top are 'Physical', 'Config' (which is selected), 'CLI', and 'Attributes'. The main text area displays the following configuration session:

```
% Invalid input detected at '^' marker.  
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)#sh running config  
^  
% Invalid input detected at '^' marker.  
Router(config-router)#ex  
Router(config)#ex  
Router#  
%SYS-5-CONFIG_I: Configured from console by console  
Router#sh running config  
^  
% Invalid input detected at '^' marker.  
Router#sh running-config  
Building configuration...  
  
Current configuration : 795 bytes  
!
```

At the bottom of the window, there are buttons for 'Copy' and 'Paste', and a status message 'Ctrl+F6 to exit CLI focus'.

4. Lihat konfigurasi routing RIP yang telah dibuat dengan perintah "**Show running-config**" pada mode user.



The screenshot shows the Cisco IOS Command Line Interface (CLI) running on a virtual machine named 'Eagle'. The window title is 'IOS Command Line Interface'. The tabs at the top are 'Physical', 'Config' (which is selected), 'CLI', and 'Attributes'. The main text area displays the full running configuration of the router:

```
Router#sh 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  
!  
!
```

At the bottom of the window, there are buttons for 'Copy' and 'Paste', and a status message 'Ctrl+F6 to exit CLI focus'.

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

Perhatikan konfigurasi pada bagian “**Router RIP**”.

```
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
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 172.21.2.0 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
```

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

```
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
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
```

6. Lakukan konfigurasi routing RIP pada router puma dan tiger. Perhatikan proses update routing RIP pada router eagle ketika konfigurasi router puma dan tiger dilakukan.

```
Puma
Physical Config CLI Attributes
IOS Command Line Interface
Router#<CR>
Router>conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#<CR>router rip
Router(config-router)#<CR>network 172.21.0.0
Router(config-router)#<CR>exit
Router(config)#<CR>exit
Router#<CR>
SYS-5-CONFIG_I: Configured from console by console
Router#running-config
Building configuration...
Current configuration : 776 bytes
!
version 12.2
no service timestamp log datetime msec
no service timestamp debug datetime msec
no service password-encryption
!
hostname Router
!
!
Ctrl+F6 to exit CLI focus      Copy      Paste
Top

Puma
Physical Config CLI Attributes
IOS Command Line Interface
!
ip cef
no ipv6 cef
!
!
!
!
interface FastEthernet0/0
 ip address 172.21.20.20 255.255.255.0
Ctrl+F6 to exit CLI focus      Copy      Paste
Top

Puma
Physical Config CLI Attributes
IOS Command Line Interface
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
!
end
Ctrl+F6 to exit CLI focus      Copy      Paste
Top
```

```
Puma
Physical Config CLI Attributes
IOS Command Line Interface
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
Ctrl+F6 to exit CLI focus      Copy      Paste
Top
```

7. Dari PC leo lakukan trace ke PC aries.

Packet Tracer PC Command Line 1.0
C:\>tracert 172.21.20.0
Tracing route to 172.21.20.0 over a maximum of 30 hops:
1 1 ms 0 ms 0 ms 172.21.10.10
2 0 ms 1 ms 2 ms 172.21.1.2
Trace complete.
c:\>

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

Langkah pengoperasian

-Masuk ke router puma

-Masuk ke mode interface s0

-Ketik shutdown

```
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
RIP: received v1 update from 172.21.3.3 on Serial3/0
    172.21.1.0 in 16 hops
RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0
(172.21.20.20)
RIP: build update entries
    network 172.21.2.0 metric 16
    network 172.21.3.0 metric 1
    network 172.21.10.0 metric 16
    network 172.21.30.0 metric 2
RIP: sending v1 update to 255.255.255.255 via Serial3/0
(172.21.3.2)
RIP: build update entries
```

9. 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      2 ms      1 ms      172.21.2.3
 3  0 ms      2 ms      1 ms      172.21.3.2
 4  0 ms      0 ms      0 ms      172.21.20.2

Trace complete.

C:\>
```

KEGIATAN 3 IGRP (Interior Gateway Routing Protocol)

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

Eagle

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>en
Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router eigrp 100
Router(config-router)#network 172.21.0.0
Router(config-router)#ex
Router(config)#ex
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#sh running-config
Building configuration...

Current configuration : 848 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router
!
!
```

Ctrl+F6 to exit CLI focus

Copy Paste

4. Lihat konfigurasi routing EIGRP yang telah dibuat dengan perintah “**Show running-config**” pada mode user. Perhatikan konfigurasi pada bagian “**router rip**”

The figure displays three separate windows of the Cisco IOS CLI interface, all titled "Eagle". Each window has tabs for "Physical", "Config", "CLI", and "Attributes", with "CLI" being the active tab. The windows show different stages of a configuration session:

- Window 1:** Shows the initial configuration mode prompt: Router#> running-config. It lists basic configuration details like version, no service timestamps log, and no service password-encryption.
- Window 2:** Shows the configuration mode after adding interfaces FastEthernet0/0, FastEthernet1/0, Serial1/2/0, Serial1/3/0, and FastEthernet4/0. It includes IP addresses (172.21.10.10, 172.21.10.11, 172.21.1.1, 172.21.2.1, 172.21.10.25), subnet masks (255.255.255.0), and clock rates (4000000).
- Window 3:** Shows the configuration mode after adding a line configuration for VTY 0-4, setting the login privilege level to 1, and ending the session with an "end" command.

In each window, there are "Copy" and "Paste" buttons at the bottom right, and a "Ctrl+F6 to exit CLI focus" message at the bottom left. The status bar at the bottom of each window shows "Top".

5. Lihat proses transaksi routing EIGRP pada router eagle dengan perintah "debug EIGRP transactions" pada mode user. Tunggu beberapa saat untuk melihat informasi transaksi routing EIGRP yang terjadi.



A terminal window displaying a series of EIGRP HELLO messages being sent from a Cisco router. The messages are repeated multiple times, showing the protocol's periodic nature. Each message includes the interface (Serial or FastEthernet), AS number (100), sequence number (Seq 1/0), and various internal identifiers (idbQ, iidbQ, un/rely).

```
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

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

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

EIGRP: Sending HELLO on Serial2/0
```

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

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

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

Router Puma :

- Konfigurasi routing EIGRP pada router puma :

```
changed state to up

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
```

- Melihat konfigurasi routing EIGRP yang telah dibuat.

```
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
!
!
--More-- |
```

- Melihat proses transaksi routing EIGRP pada router puma.

```
Router#debug eigrp packets
EIGRP Packets debugging is on
(UPDATE, REQUEST, QUERY, REPLY, HELLO, ACK )
Router#
EIGRP: Received HELLO on Serial2/0 nbr 172.21.1.1
      AS 100, Flags 0x0, Seq 6/0 idbQ 0/0

EIGRP: Sending HELLO on FastEthernet0/0
      AS 100, Flags 0x0, Seq 6/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial3/0
      AS 100, Flags 0x0, Seq 6/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Sending HELLO on Serial2/0
      AS 100, Flags 0x0, Seq 6/0 idbQ 0/0 iidbQ un/rely 0/0
```

Router Tiger :

- Konfigurasi routing EIGRP pada router tiger.

```
Router>en
Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router eigrp 100
Router(config-router)#network 172.21.0.0
Router(config-router)#
%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 172.21.3.2 (Serial3/0)
is up: new adjacency

%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 172.21.2.1 (Serial2/0)
is up: new adjacency
```

- Melihat konfigurasi routing EIGRP yang telah dibuat.

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

Current configuration : 775 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
--More-- |
```

- Melihat proses transaksi routing EIGRP pada router tiger.

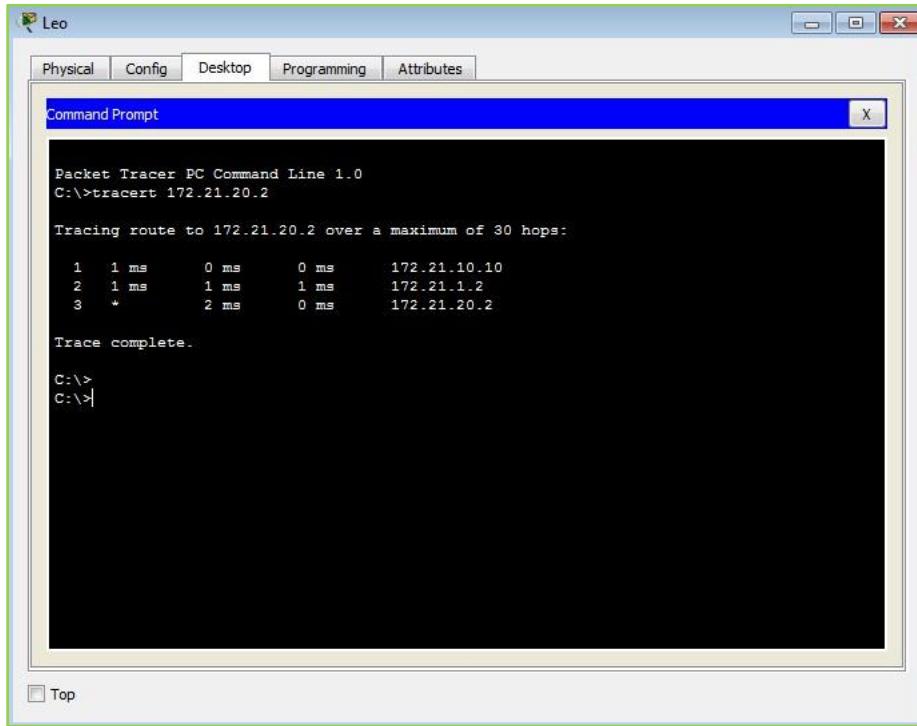
```
Router#debug eigrp packets
EIGRP Packets debugging is on
(UPDATE, REQUEST, QUERY, REPLY, HELLO, ACK )
Router#
EIGRP: Received HELLO on Serial2/0 nbr 172.21.2.1
      AS 100, Flags 0x0, Seq 9/0 idbQ 0/0

EIGRP: Sending HELLO on Serial3/0
      AS 100, Flags 0x0, Seq 11/0 idbQ 0/0 iidbQ un/rely 0/0

EIGRP: Received HELLO on Serial3/0 nbr 172.21.3.2
      AS 100, Flags 0x0, Seq 9/0 idbQ 0/0

EIGRP: Sending HELLO on FastEthernet0/0
      AS 100, Flags 0x0, Seq 11/0 idbQ 0/0 iidbQ un/rely 0/0
```

8. Dari PC Leo lakukan trace ke PC aries



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 1 ms 1 ms 1 ms 172.21.1.2
3 * 2 ms 0 ms 172.21.20.2
Trace complete.
C:\>
C:\>

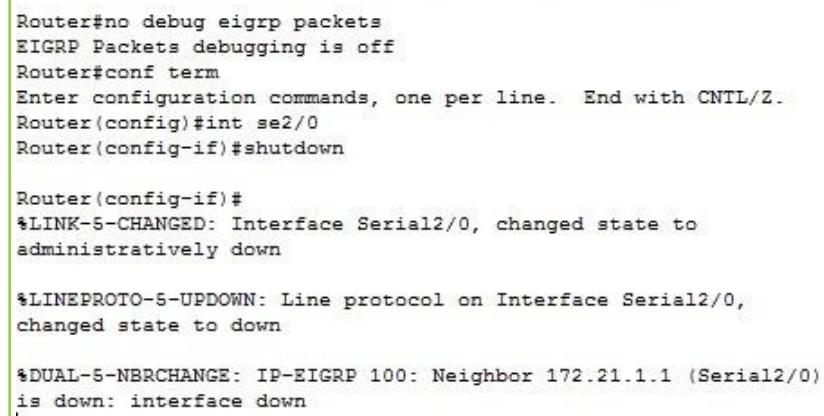
9. Buat hubungan antara router eagle dan puma terputus dan perhatikan proses update routing RIP yang terjadi.

Langkah pengoperasian:

-Masuk ke router puma

-Masuk mode interface s0

-Ketik shutdown



```
Router#no debug eigrp packets
EIGRP Packets debugging is off
Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int se2/0
Router(config-if)#shutdown

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

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

*DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 172.21.1.1 (Serial2/0)
is down: interface down
```

10. Dari pc leo lakukan trace ke PC Aries.

```
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:\>
```