

Komunikasi Data dan Jaringan Komputer
(LAPORAN PRAKTIKUM Konfigurasi Routing RIP)

Oleh

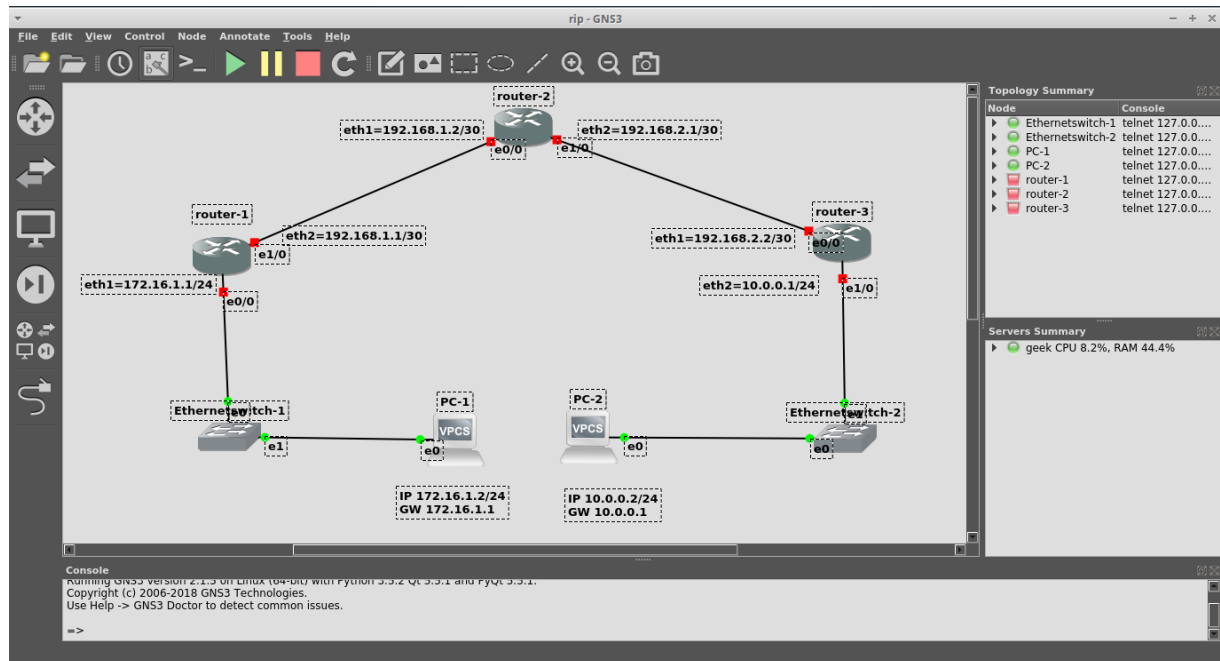
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PROGRAM STUDI D3 MANAJEMEN INFORMATIKA
JURUSAN ILMU KOMPUTER
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN
UNIVERSITAS LAMPUNG
2018

KONFIGURASI ROUTING RIP PADA GNS3

1. Buat Topologi seperti contoh dibawah



- Konfigurasi Pada **router1**

Setting ip pada masing masing ether, dengan perintah

ip address add address=172.16.1.1/24 interface=ether1

ip address add address=192.168.1.2/30 interface=ether2

```
router-1
File Edit View Terminal Tabs Help
hachi@geek: ~ x router-1 x router-2

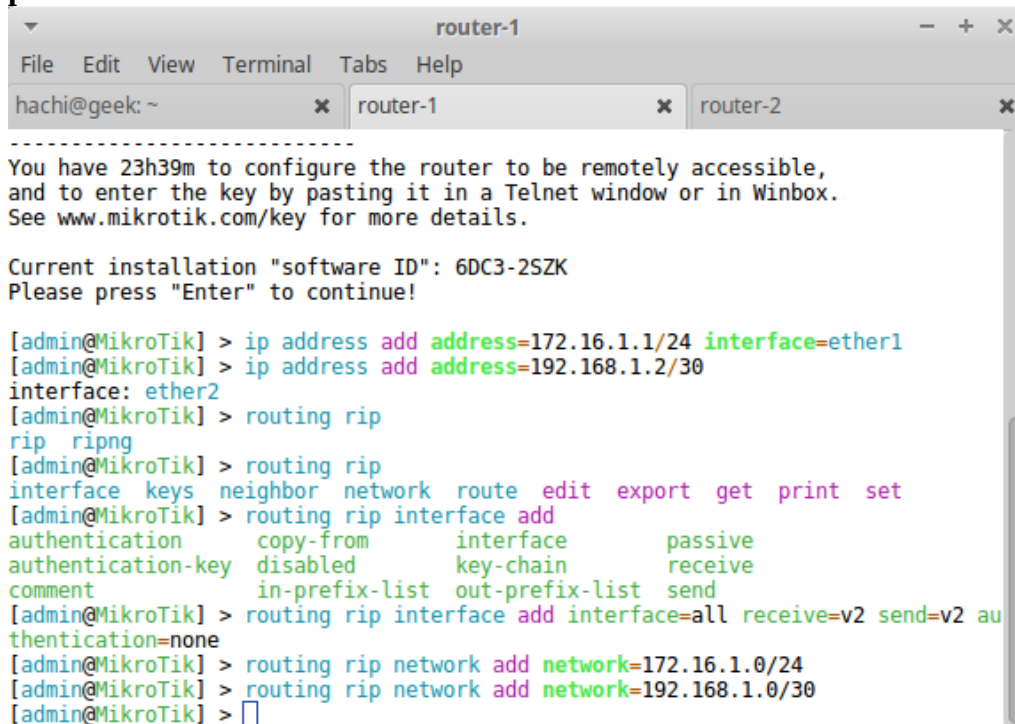
-----
You have 23h39m to configure the router to be remotely accessible,
and to enter the key by pasting it in a Telnet window or in Winbox.
See www.mikrotik.com/key for more details.

Current installation "software ID": 6DC3-2SZK
Please press "Enter" to continue!

[admin@MikroTik] > ip address add address=172.16.1.1/24 interface=ether1
[admin@MikroTik] > ip address add address=192.168.1.2/30
interface: ether2
[admin@MikroTik] > routing rip
rip ripng
[admin@MikroTik] > routing rip
interface keys neighbor network route edit export get print set
[admin@MikroTik] > routing rip interface add
authentication copy-from interface passive
authentication-key disabled key-chain receive
comment in-prefix-list out-prefix-list send
[admin@MikroTik] > routing rip interface add interface=all receive=v2 send=v2 au
thentication=none
[admin@MikroTik] > routing rip network add network=172.16.1.0/24
[admin@MikroTik] > routing rip network add network=192.168.1.0/30
[admin@MikroTik] >
```

Setting **Routing > RIP > Interface** dengan perintah

routing rip interface add interface=all receive=v2 send=v2 authentication=none



```
router-1
File Edit View Terminal Tabs Help
hachi@geek: ~ x router-1 x router-2 x
-----
You have 23h39m to configure the router to be remotely accessible,
and to enter the key by pasting it in a Telnet window or in Winbox.
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Current installation "software ID": 6DC3-2SZK
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[admin@MikroTik] > ip address add address=172.16.1.1/24 interface=ether1
[admin@MikroTik] > ip address add address=192.168.1.2/30
interface: ether2
[admin@MikroTik] > routing rip
rip ripng
[admin@MikroTik] > routing rip
interface keys neighbor network route edit export get print set
[admin@MikroTik] > routing rip interface add
authentication copy-from interface passive
authentication-key disabled key-chain receive
comment in-prefix-list out-prefix-list send
[admin@MikroTik] > routing rip interface add interface=all receive=v2 send=v2 au
thentication=none
[admin@MikroTik] > routing rip network add network=172.16.1.0/24
[admin@MikroTik] > routing rip network add network=192.168.1.0/30
[admin@MikroTik] > 
```

Lalu tambahkan **Routing > RIP > Network** dengan perintah

routing rip network add network=172.16.1.0/24

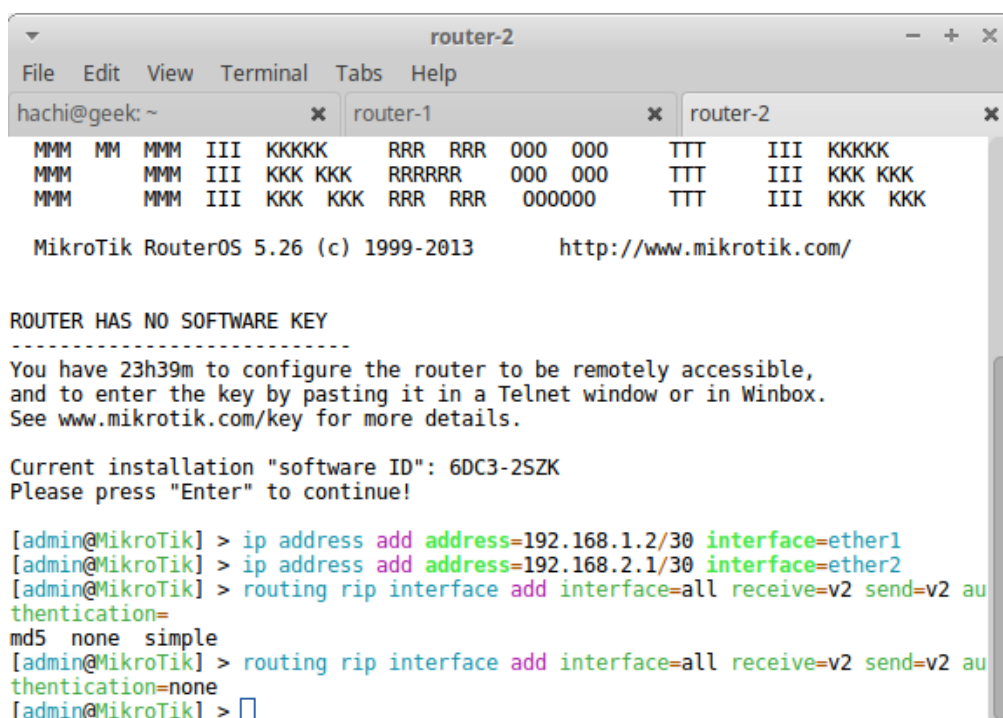
routing rip network add network=192.168.1.0/30

- Konfigurasi pada **Router 2**

Setting ip pada router 2 dengan perintah

ip address add address=192.168.1.2/30 interface=ether1

ip address add address=192.168.2.1/30 interface=ether2



```
router-2
File Edit View Terminal Tabs Help
hachi@geek: ~ x router-1 x router-2 x
-----
MMM MM MMM III KKKKK RRR RRR 000 000 TTT III KKKKK
MMM MMM III KKK KKK RRRRRR 000 000 TTT III KKK KKK
MMM MMM III KKK KKK RRR RRR 000000 TTT III KKK KKK

MikroTik RouterOS 5.26 (c) 1999-2013 http://www.mikrotik.com/

ROUTER HAS NO SOFTWARE KEY
-----
You have 23h39m to configure the router to be remotely accessible,
and to enter the key by pasting it in a Telnet window or in Winbox.
See www.mikrotik.com/key for more details.

Current installation "software ID": 6DC3-2SZK
Please press "Enter" to continue!

[admin@MikroTik] > ip address add address=192.168.1.2/30 interface=ether1
[admin@MikroTik] > ip address add address=192.168.2.1/30 interface=ether2
[admin@MikroTik] > routing rip interface add interface=all receive=v2 send=v2 au
thentication=
md5 none simple
[admin@MikroTik] > routing rip interface add interface=all receive=v2 send=v2 au
thentication=none
[admin@MikroTik] > 
```

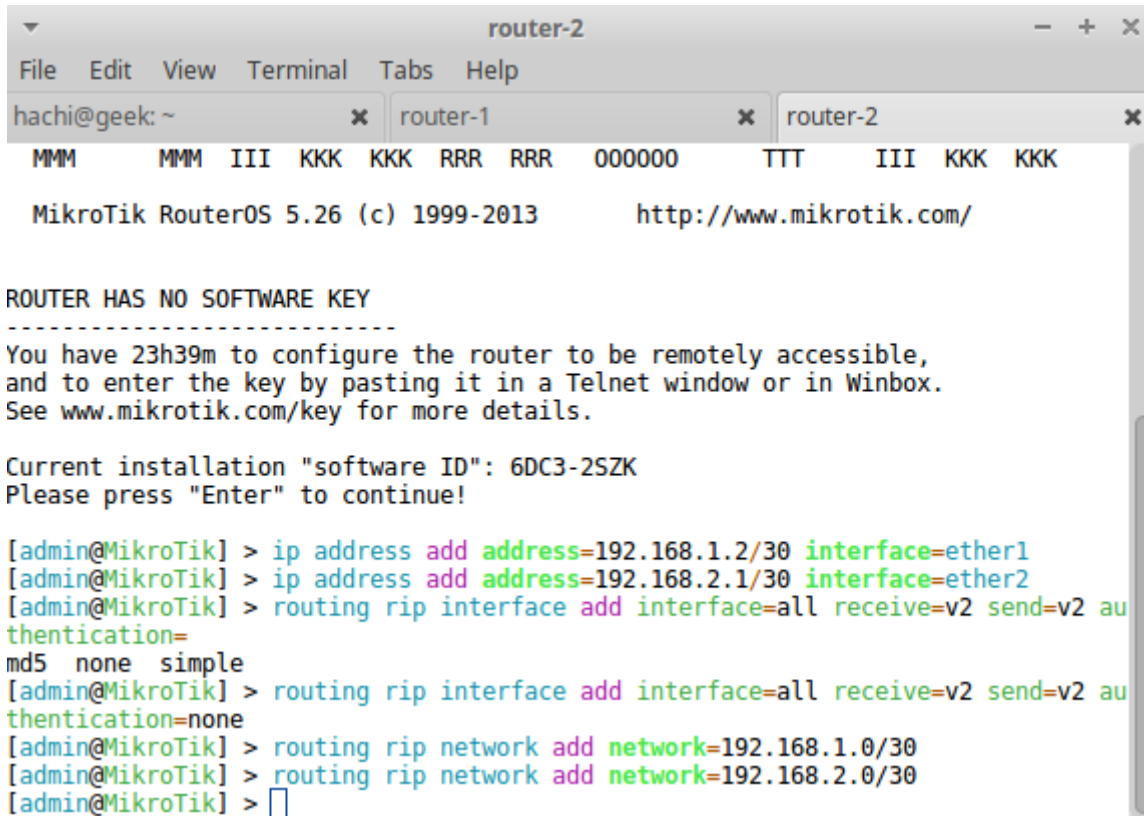
Setting **Routing > RIP > Interface** dengan perintah

routing rip interface add interface=all receive=v2 send=v2 authentication=none

Lalu tambahkan **Routing > RIP > Network** dengan perintah

routing rip network add network=192.168.1.0/30

routing rip network add network=192.168.2.0/30



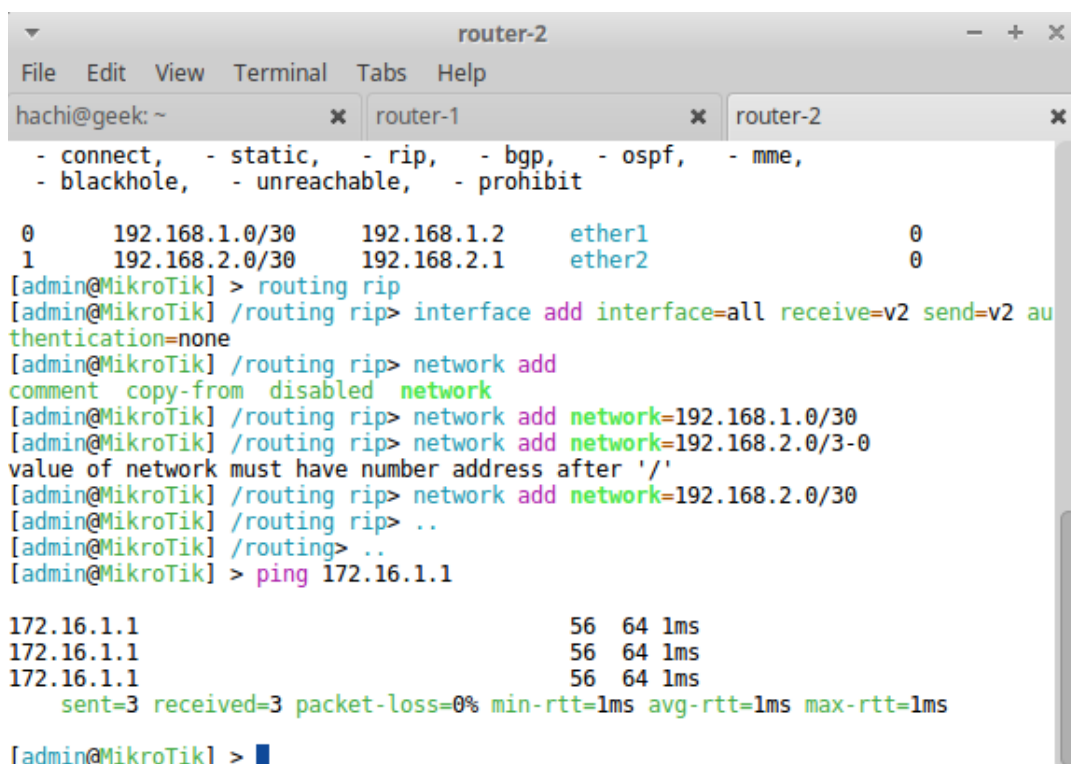
```
router-2
File Edit View Terminal Tabs Help
hachi@geek: ~ x router-1 x router-2 x
MMM MMM III KKK KKK RRR RRR 000000 TTT III KKK KKK
MikroTik RouterOS 5.26 (c) 1999-2013 http://www.mikrotik.com/

ROUTER HAS NO SOFTWARE KEY
-----
You have 23h39m to configure the router to be remotely accessible,
and to enter the key by pasting it in a Telnet window or in Winbox.
See www.mikrotik.com/key for more details.

Current installation "software ID": 6DC3-2SZK
Please press "Enter" to continue!

[admin@MikroTik] > ip address add address=192.168.1.2/30 interface=ether1
[admin@MikroTik] > ip address add address=192.168.2.1/30 interface=ether2
[admin@MikroTik] > routing rip interface add interface=all receive=v2 send=v2 au
thentication=
md5 none simple
[admin@MikroTik] > routing rip interface add interface=all receive=v2 send=v2 au
thentication=none
[admin@MikroTik] > routing rip network add network=192.168.1.0/30
[admin@MikroTik] > routing rip network add network=192.168.2.0/30
[admin@MikroTik] > 
```

Setelah terkonfigurasi selesai kita coba ping dari **router 2 ke router 1**, dengan perintah **ping 172.16.1.1**



```
router-2
File Edit View Terminal Tabs Help
hachi@geek: ~ x router-1 x router-2 x
- connect, - static, - rip, - bgp, - ospf, - mme,
- blackhole, - unreachable, - prohibit

0 192.168.1.0/30 192.168.1.2 ether1 0
1 192.168.2.0/30 192.168.2.1 ether2 0
[admin@MikroTik] > routing rip
[admin@MikroTik] /routing rip> interface add interface=all receive=v2 send=v2 au
thentication=none
[admin@MikroTik] /routing rip> network add
comment copy-from disabled network
[admin@MikroTik] /routing rip> network add network=192.168.1.0/30
[admin@MikroTik] /routing rip> network add network=192.168.2.0/30
value of network must have number address after '/'
[admin@MikroTik] /routing rip> network add network=192.168.2.0/30
[admin@MikroTik] /routing rip> ..
[admin@MikroTik] /routing> ..
[admin@MikroTik] > ping 172.16.1.1

172.16.1.1 56 64 1ms
172.16.1.1 56 64 1ms
172.16.1.1 56 64 1ms
sent=3 received=3 packet-loss=0% min-rtt=1ms avg-rtt=1ms max-rtt=1ms

[admin@MikroTik] > 
```

Jika berhasil koneksi berari antar router tersebut sudah terhubung

- Konfigurasi **router 3**

Lakukan Konfigurasi **IP** , **ROUTING RIP** > **Interface** , **Routing RIP** > **Network** seperti konfigurasi pada **router 1** dan **router 2**

```
router-3
File Edit View Terminal Tabs Help
hachi@geek: ~ x router-1 x router-2 x router-3 x

Current installation "software ID": 6DC3-2SZK
Please press "Enter" to continue!

[admin@MikroTik] > ip address add address=192.168.2.2/30 interface=ether1
[admin@MikroTik] > ip address add address=10.0.0.1/24 interface=ether2
[admin@MikroTik] > routing rip interface add
authentication copy-from interface passive
authentication-key disabled key-chain receive
comment in-prefix-list out-prefix-list send
[admin@MikroTik] > routing rip interface add interface=all send=v2 receive=v2 au
thentication=none
[admin@MikroTik] > routing rip network add network=192.168.2.0/30
[admin@MikroTik] > routing rip network add network=10.0.0.0/24
[admin@MikroTik] > ping 172.16.1.1

172.16.1.1 56 63 3ms
172.16.1.1 56 63 3ms
172.16.1.1 56 63 3ms
172.16.1.1 56 63 3ms
172.16.1.1 56 63 3ms
sent=5 received=5 packet-loss=0% min-rtt=3ms avg-rtt=3ms max-rtt=3ms

[admin@MikroTik] > 
```

Kita bisa test apakah kita terhubung dengan **router 1** atau tidak dengan mengetik perintah **ping 172.16.1.1** . Kita juga bisa melihat alamat routing yang telah ada dengan mengetik perintah **ip router print**

```
router-3
File Edit View Terminal Tabs Help
hachi@geek: ~ x router-1 x router-2 x router-3 x

comment in-prefix-list out-prefix-list send
[admin@MikroTik] > routing rip interface add interface=all send=v2 receive=v2 au
thentication=none
[admin@MikroTik] > routing rip network add network=192.168.2.0/30
[admin@MikroTik] > routing rip network add network=10.0.0.0/24
[admin@MikroTik] > ping 172.16.1.1

172.16.1.1 56 63 3ms
172.16.1.1 56 63 3ms
172.16.1.1 56 63 3ms
172.16.1.1 56 63 3ms
172.16.1.1 56 63 3ms
sent=5 received=5 packet-loss=0% min-rtt=3ms avg-rtt=3ms max-rtt=3ms

[admin@MikroTik] > ip route print
Flags: - disabled, - active, - dynamic,
- connect, - static, - rip, - bgp, - ospf, - mme,
- blackhole, - unreachable, - prohibit

0 10.0.0.0/24 10.0.0.1 ether2 0
1 172.16.1.0/24 192.168.2.1 120
2 192.168.1.0/30 192.168.2.1 120
3 192.168.2.0/30 192.168.2.2 ether1 0
[admin@MikroTik] > 
```

Kita juga bisa melihat saat terjadi nya ping **ip** kita melewati berapa proses routing untuk mencapai **ip tujuan** dengan mengetik perintah **tools traceroute**

```
router-3
File Edit View Terminal Tabs Help
hachi@geek: ~ x router-1 x router-2 x router-3 x

172.16.1.1          56 63 3ms
172.16.1.1          56 63 3ms
172.16.1.1          56 63 3ms
172.16.1.1          56 63 3ms
172.16.1.1          56 63 3ms
sent=5 received=5 packet-loss=0% min-rtt=3ms avg-rtt=3ms max-rtt=3ms

[admin@MikroTik] > ip route print
Flags: - disabled, - active, - dynamic,
- connect, - static, - rip, - bgp, - ospf, - mme,
- blackhole, - unreachable, - prohibit

0 10.0.0.0/24 10.0.0.1 ether2 0
1 172.16.1.0/24 192.168.2.1 120
2 192.168.1.0/30 192.168.2.1 120
3 192.168.2.0/30 192.168.2.2 ether1 0
[admin@MikroTik] > tool traceroute
address: 172.16.1.1

1 192.168.2.1 2ms 4ms 1ms
2 172.16.1.1 3ms 3ms 2ms

[admin@MikroTik] > 
```

Setelah semua **router terkonfigurasi** selanjut nya kita setting pada pc kita
Dengan perintah pada **PC 1** perintah nya **ip 172.16.1.2/24 172.16.1.1** lalu ketik **save** untuk menyimpan konfigurasi

```
PC-1
File Edit View Terminal Tabs Help
router-1 x router-2 x router-3 x PC-1 x PC-2 x

Executing the startup file

PC-1> ip 172.16.1.2/24 172.16.1.1
Checking for duplicate address...
PC1 : 172.16.1.2 255.255.255.0 gateway 172.16.1.1

PC-1> save
Saving startup configuration to startup.vpc
. done

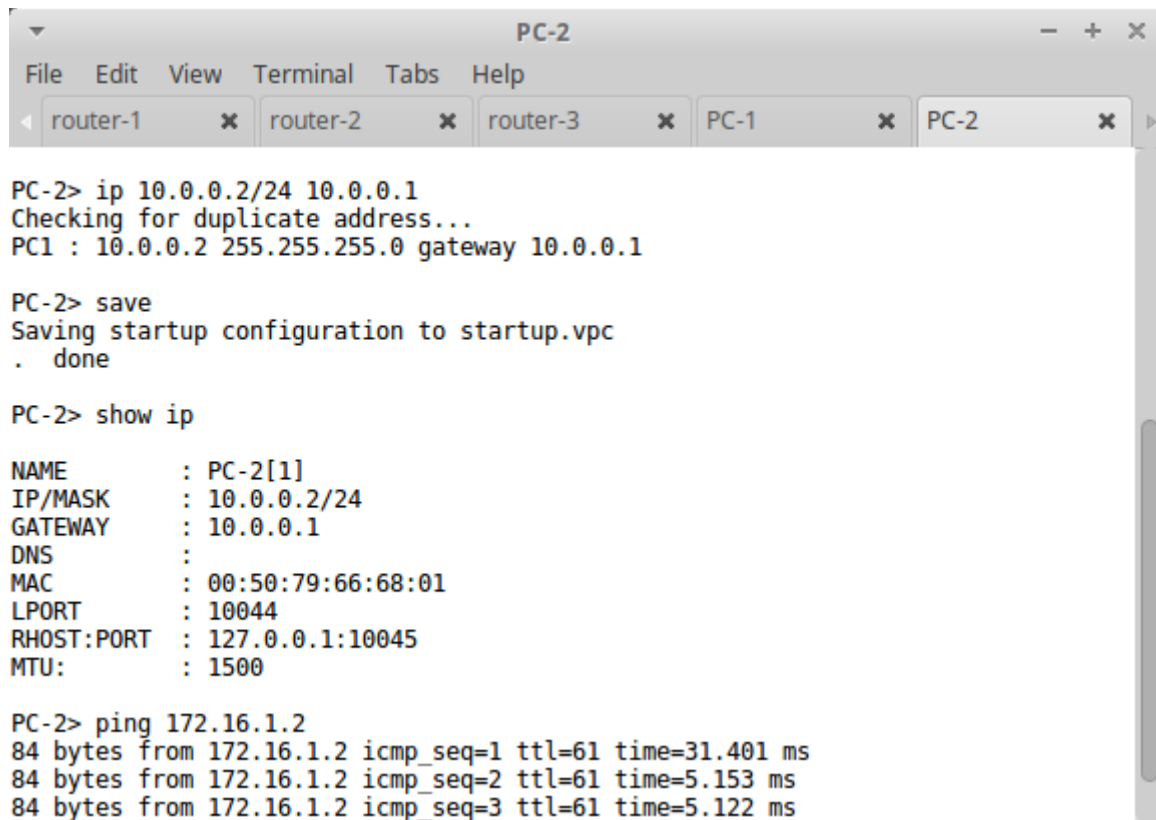
PC-1> show ip

NAME      : PC-1[1]
IP/MASK   : 172.16.1.2/24
GATEWAY   : 172.16.1.1
DNS       :
MAC       : 00:50:79:66:68:00
LPORT     : 10042
RHOST:PORT : 127.0.0.1:10043
MTU       : 1500

PC-1> 
```


Lakukan hal yang sama pada **PC2**

Kalau sudah kita bisa test koneksi dari **PC 2 ke PC 1** dengan perintah **ping 172.16.1.2**



```
PC-2
File Edit View Terminal Tabs Help
router-1 x router-2 x router-3 x PC-1 x PC-2 x

PC-2> ip 10.0.0.2/24 10.0.0.1
Checking for duplicate address...
PC1 : 10.0.0.2 255.255.255.0 gateway 10.0.0.1

PC-2> save
Saving startup configuration to startup.vpc
. done

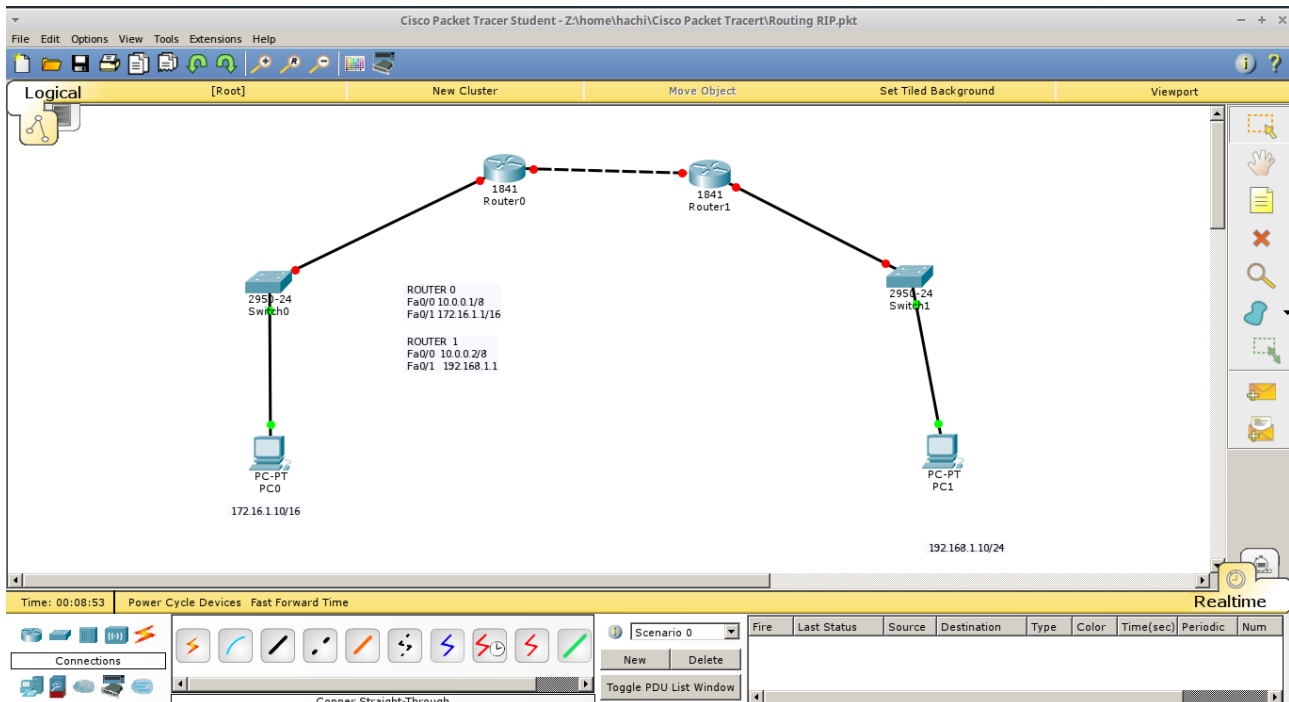
PC-2> show ip

NAME       : PC-2[1]
IP/MASK    : 10.0.0.2/24
GATEWAY    : 10.0.0.1
DNS        :
MAC        : 00:50:79:66:68:01
LPORT     : 10044
RHOST:PORT : 127.0.0.1:10045
MTU        : 1500

PC-2> ping 172.16.1.2
84 bytes from 172.16.1.2 icmp_seq=1 ttl=61 time=31.401 ms
84 bytes from 172.16.1.2 icmp_seq=2 ttl=61 time=5.153 ms
84 bytes from 172.16.1.2 icmp_seq=3 ttl=61 time=5.122 ms
```

KONFIGURASI ROUTING RIP Pada Cisco Packet Tracert

1. Buat topologi seperti contoh dibawah



2. Setting ip pada masing masing PC

PC0

Physical Config Desktop Custom Interface

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address: 172.16.1.10

Subnet Mask: 255.255.0.0

Default Gateway: 172.16.1.1

DNS Server:

IPv6 Configuration

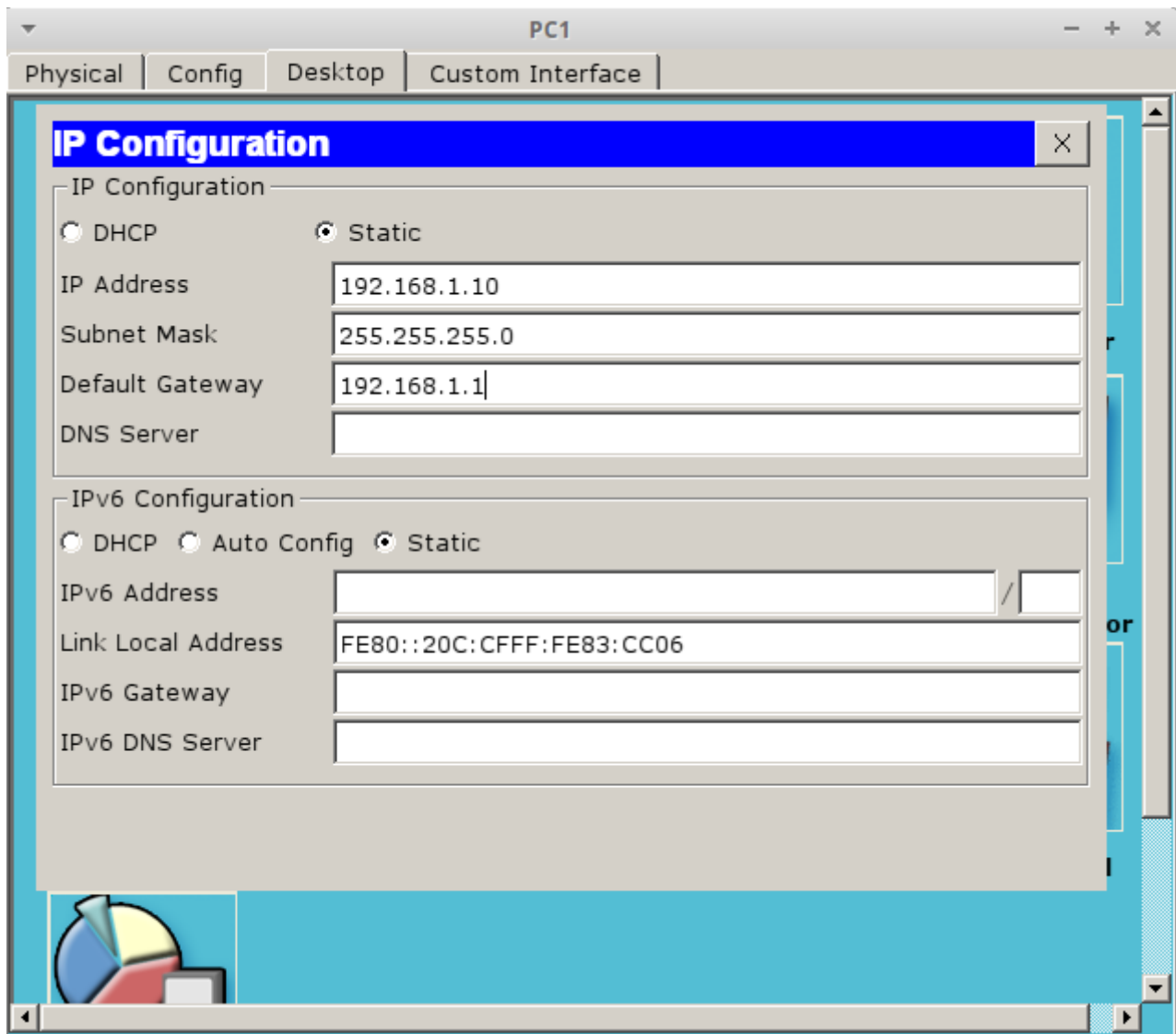
☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address:

Link Local Address: FE80::230:A3FF:FE2B:C9E2

IPv6 Gateway:

IPv6 DNS Server:



Kalau sudah

3. Konfigurasi pada **router 2**

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface FastEthernet0/0

Router(config-if)#ip address 10.0.0.1 255.0.0.0

Router(config-if)#exit

Router(config)#interface FastEthernet0/1

Router(config-if)#ip address 172.16.1.1 255.255.0.0

Router(config-if)#no sh

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#router rip

Router(config-router)#version 2

Router(config-router)#network 10.0.0.0

```
Router(config-router)#network 172.12.0.0
Router(config-router)#network 192.168.1.0
Router(config-router)#exit
Router(config)#eixt
^
% Invalid input detected at '^' marker.
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#cop
Router#copy run
Router#copy running-config star
Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
```

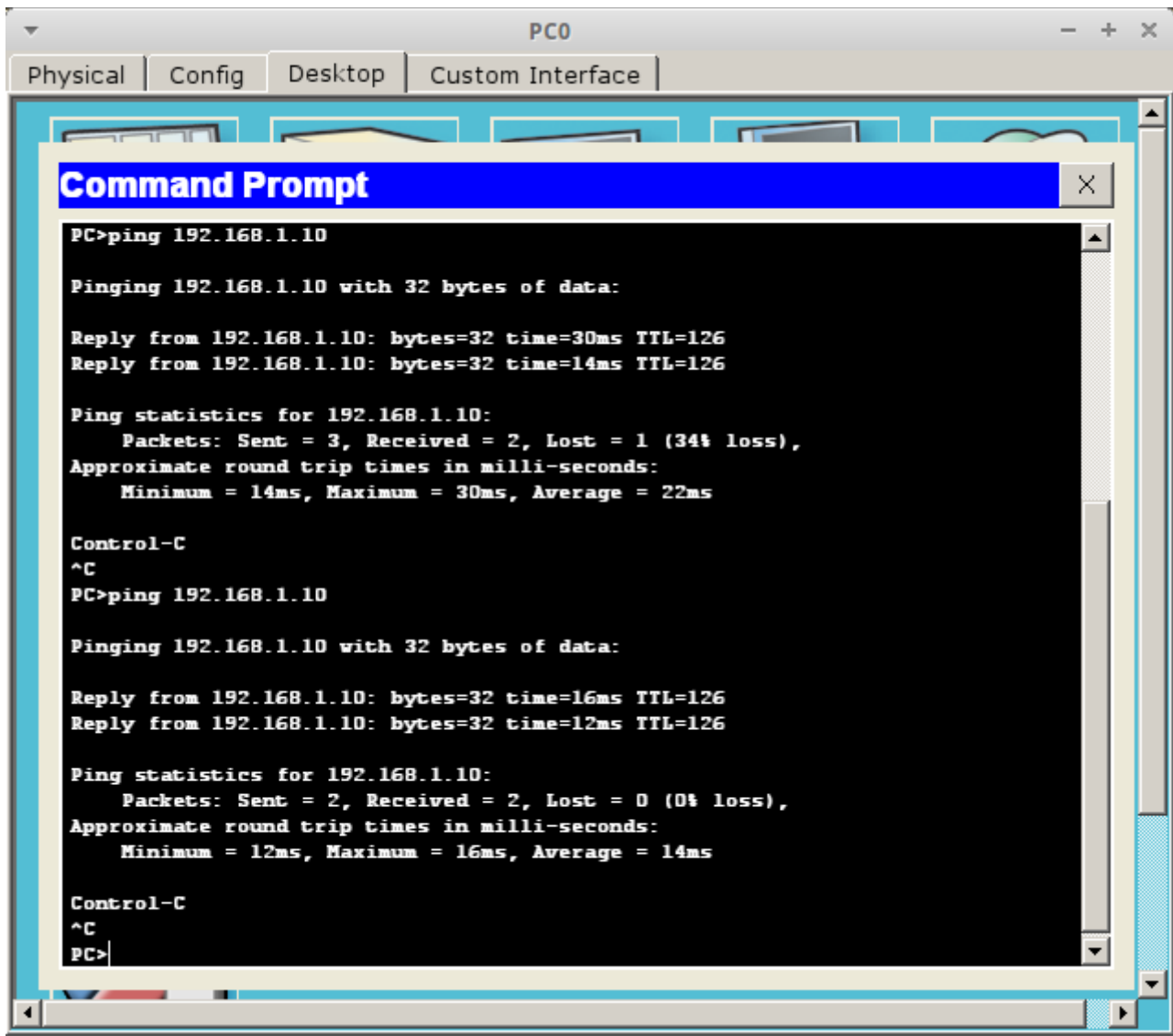
3. Konfigurasi pada **router 3**

Router>enable

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 10.0.0.2 255.0.0.0
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#network 10.0.0.0
Router(config-router)#network 192.168.1.0
Router(config-router)#network 172.16.0.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#copy running-config start
Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```

Router#

Kita coba lakukan koneksi dari **PC0** ke **PC1**



```
PC0
Physical Config Desktop Custom Interface
Command Prompt
PC>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time=30ms TTL=126
Reply from 192.168.1.10: bytes=32 time=14ms TTL=126

Ping statistics for 192.168.1.10:
    Packets: Sent = 3, Received = 2, Lost = 1 (34% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 30ms, Average = 22ms

Control-C
^C
PC>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time=16ms TTL=126
Reply from 192.168.1.10: bytes=32 time=12ms TTL=126

Ping statistics for 192.168.1.10:
    Packets: Sent = 2, Received = 2, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 12ms, Maximum = 16ms, Average = 14ms

Control-C
^C
PC>
```

Berhasil? Kalau sudah berhasil selamat anda telah membuat proses Routing RIP (Dynamic) pada Cisco Packet Tracer