Hasil Tugas Praktikum JKL Modul 1

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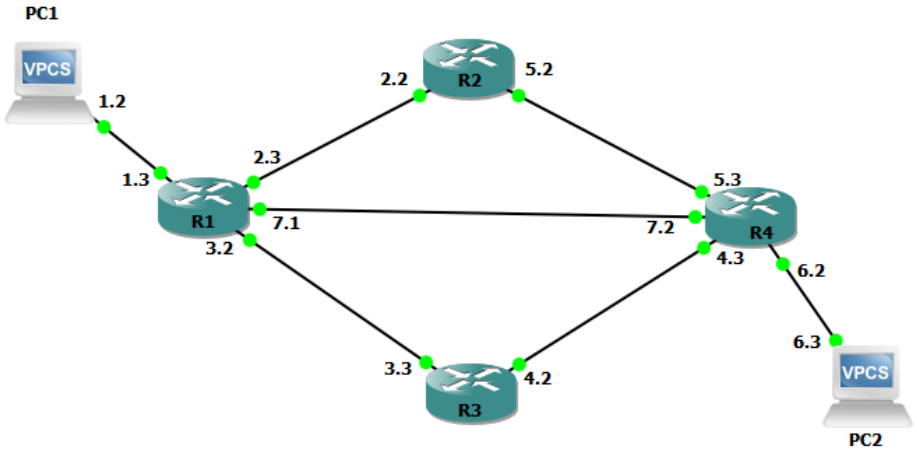
Kelompok : 18

1. RIP

1.1. Topology



Gambar 1.1 Topology Tugas RIP

1.2. Setting Hostname Router

a) Router 1

```
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#hostname 060
% Hostname contains one or more illegal characters.

060(config)#
```

Gambar 1.2 Setting Hostname Router 1

b) Router 2

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#hostname 060
% Hostname contains one or more illegal characters.

060(config)#
```

Gambar 1.3 Setting Hostname Router 2

c) Router 3

```
R3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#hostname 060
% Hostname contains one or more illegal characters.

060(config)#
```

Gambar 1.4 Setting Hostname Router 3

d) Router 4

```
R4#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R4(config)#hostname 060
% Hostname contains one or more illegal characters.

060(config)#
```

Gambar 1.5 Setting Hostname Router 4

1.3. Konfigurasi IP

a) Setting IP PC1

PC1

```
PC1> ip 192.168.1.2/24 192.168.1.3
Checking for duplicate address...
PC1 : 192.168.1.2 255.255.255.0 gateway 192.168.1.3

PC1> save
Saving startup configuration to startup.vpc
.  done

PC1>
```

Gambar 1.6 Setting IP pada PC1

b) Setting IP PC2

PC2

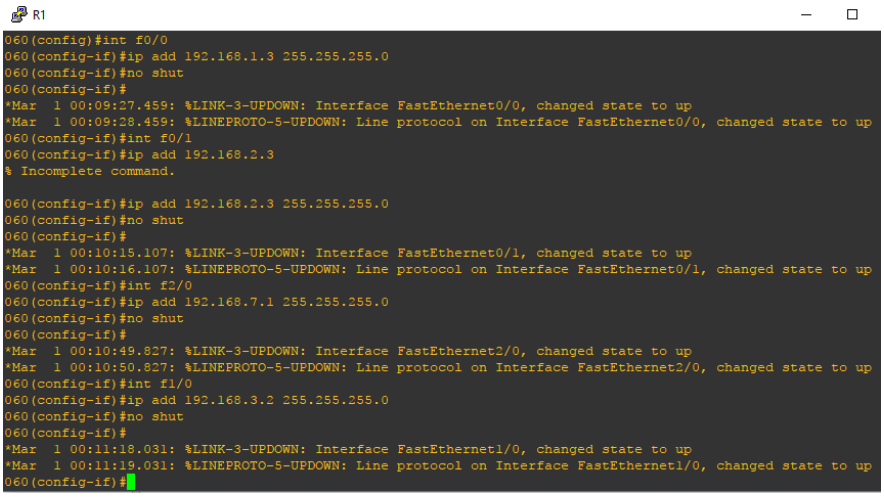
```
PC2> ip 192.168.6.3/24 192.168.6.2
Checking for duplicate address...
PC1 : 192.168.6.3 255.255.255.0 gateway 192.168.6.2

PC2> save
Saving startup configuration to startup.vpc
.  done

PC2>
```

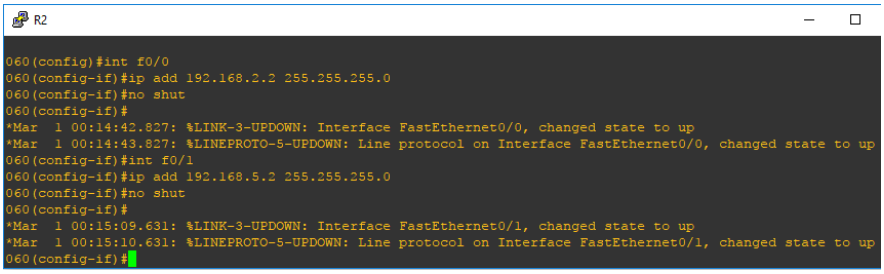
Gambar 1.7 Setting IP pada PC2

c) Setting IP pada Interface R1



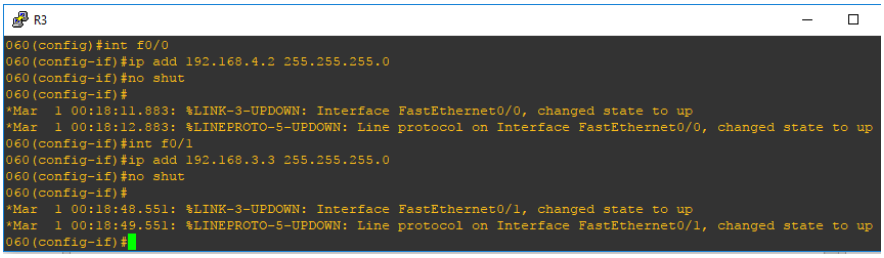
Gambar 1.8 Konfigurasi pada Tiap Interface di Router1

d) Setting IP pada Interface R2



Gambar 1.9 Konfigurasi pada Tiap Interface di Router2

e) Setting IP pada Interface R3



Gambar 1.10 Konfigurasi pada Tiap Interface di Router3

f) Setting IP pada Interface R4

R4

```
060(config)#int f0/0
060(config-if)#ip add 192.168.5.3 255.255.255.0
060(config-if)#no shut
060(config-if)#
*Mar  1 00:20:18.835: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar  1 00:20:19.835: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
060(config-if)#int f0/1
060(config-if)#ip add 192.168.4.3 255.255.255.0
060(config-if)#no shut
060(config-if)#
*Mar  1 00:21:06.399: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up
*Mar  1 00:21:07.399: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
060(config-if)#int f1/0
060(config-if)#ip add 192.168.7.2 255.255.255.0
060(config-if)#no shut
060(config-if)#
*Mar  1 00:21:31.331: %LINK-3-UPDOWN: Interface FastEthernet1/0, changed state to up
*Mar  1 00:21:32.331: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
060(config-if)#int f2/0
060(config-if)#ip add 192.168.6.2 255.255.255.0
060(config-if)#no shut
060(config-if)#
*Mar  1 00:21:58.539: %LINK-3-UPDOWN: Interface FastEthernet2/0, changed state to up
*Mar  1 00:21:59.539: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/0, changed state to up
060(config-if)#
```

Gambar 1.11 Konfigurasi pada Tiap Interface di Router4

g) Hasil Konfigurasi IP Masing-masing Device

PC1

```
PC1> show

NAME   IP/MASK              GATEWAY           MAC                LPORT  RHOST:PORT
PC1    192.168.1.2/24       192.168.1.3       00:50:79:66:68:00  10016  127.0.0.1:10017
       fe80::250:79ff:fe66:6800/64
```

Gambar 1.12 Show IP PC1

PC2

```
PC2> show

NAME   IP/MASK              GATEWAY           MAC                LPORT  RHOST:PORT
PC2    192.168.6.3/24       192.168.6.2       00:50:79:66:68:01  10014  127.0.0.1:10015
       fe80::250:79ff:fe66:6801/64
```

Gambar 1.13 Show IP PC2

R1

```
060#sh ip int br
Interface                  IP-Address      OK? Method Status                Protocol
FastEthernet0/0            192.168.1.3     YES NVRAM  up                    up
FastEthernet0/1            192.168.2.3     YES NVRAM  up                    up
FastEthernet1/0            192.168.3.2     YES NVRAM  up                    up
FastEthernet2/0            192.168.7.1     YES NVRAM  up                    up
060#
```

Gambar 1.14 Daftar IP Interface pada Router1

R2

```
060#sh ip int br
Interface                  IP-Address      OK? Method Status                Protocol
FastEthernet0/0            192.168.2.2     YES NVRAM  up                    up
FastEthernet0/1            192.168.5.2     YES NVRAM  up                    up
FastEthernet1/0            unassigned      YES NVRAM  administratively down down
FastEthernet2/0            unassigned      YES NVRAM  administratively down down
060#
```

Gambar 1.15 Daftar IP Interface pada Router2

R3

```
060#sh ip int br
Interface                  IP-Address      OK? Method Status                Protocol
FastEthernet0/0            192.168.4.2     YES NVRAM  up                    up
FastEthernet0/1            192.168.3.3     YES NVRAM  up                    up
FastEthernet1/0            unassigned      YES NVRAM  administratively down down
FastEthernet2/0            unassigned      YES NVRAM  administratively down down
060#
```

Gambar 1.16 Daftar IP Interface pada Router3

R4

```
060#sh ip int br
Interface                  IP-Address      OK? Method Status                Protocol
FastEthernet0/0            192.168.5.3     YES NVRAM  up                    up
FastEthernet0/1            192.168.4.3     YES NVRAM  up                    up
FastEthernet1/0            192.168.7.2     YES NVRAM  up                    up
FastEthernet2/0            192.168.6.2     YES NVRAM  up                    up
060#
```

Gambar 1.17 Daftar IP Interface pada Router4

1.4. Konfigurasi RIP

a) Konfigurasi RIP R1

R1

```
060#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
060(config)#router rip
060(config-router)#net
060(config-router)#network 192.168.1.0
060(config-router)#network 192.168.2.0
060(config-router)#network 192.168.7.0
060(config-router)#network 192.168.3.0
060(config-router)#end
060#
```

Gambar 1.18 Konfigurasi RIP pada Router1

b) Konfigurasi RIP R2

R2

```
060#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
060(config)#router rip
060(config-router)#net
060(config-router)#network 192.168.2.0
060(config-router)#network 192.168.5.0
060(config-router)#end
060#
```

Gambar 1.19 Konfigurasi RIP pada Router2

c) Konfigurasi RIP R3

R3

```
060#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
060(config)#router rip
060(config-router)#net
060(config-router)#network 192.168.3.0
060(config-router)#network 192.168.4.0
060(config-router)#end
060#
```

Gambar 1.20 Konfigurasi RIP pada Router3

d) Konfigurasi RIP R4

R4

```
060#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
060(config)#router rip
060(config-router)#net
060(config-router)#network 192.168.5.0
060(config-router)#network 192.168.7.0
060(config-router)#network 192.168.4.0
060(config-router)#network 192.168.6.0
060(config-router)#end
060#
```

Gambar 1.21 Konfigurasi RIP pada Router4

e) Hasil Konfigurasi RIP

R1

```
R    192.168.4.0/24 [120/1] via 192.168.7.2, 00:00:17, FastEthernet2/0
                    [120/1] via 192.168.3.3, 00:00:11, FastEthernet1/0
R    192.168.5.0/24 [120/1] via 192.168.7.2, 00:00:17, FastEthernet2/0
                    [120/1] via 192.168.2.2, 00:00:19, FastEthernet0/1
R    192.168.6.0/24 [120/1] via 192.168.7.2, 00:00:17, FastEthernet2/0
C    192.168.7.0/24 is directly connected, FastEthernet2/0
C    192.168.1.0/24 is directly connected, FastEthernet0/0
C    192.168.2.0/24 is directly connected, FastEthernet0/1
C    192.168.3.0/24 is directly connected, FastEthernet1/0
060#
```

Gambar 1.22 Tabel Routing Router1

R2

```
C     192.168.5.0/24 is directly connected, FastEthernet0/1
C     192.168.2.0/24 is directly connected, FastEthernet0/0
060#
```

Gambar 1.23 Tabel Routing Router2

R3

```
C    192.168.4.0/24 is directly connected, FastEthernet0/0
R    192.168.5.0/24 [120/1] via 192.168.4.3, 00:00:11, FastEthernet0/0
R    192.168.6.0/24 [120/1] via 192.168.4.3, 00:00:11, FastEthernet0/0
R    192.168.7.0/24 [120/1] via 192.168.4.3, 00:00:11, FastEthernet0/0
                    [120/1] via 192.168.3.2, 00:00:21, FastEthernet0/1
R    192.168.1.0/24 [120/1] via 192.168.3.2, 00:00:21, FastEthernet0/1
R    192.168.2.0/24 [120/1] via 192.168.3.2, 00:00:21, FastEthernet0/1
C    192.168.3.0/24 is directly connected, FastEthernet0/1
060#
```

Gambar 1.24 Tabel Routing Router3

R4

```
C    192.168.4.0/24 is directly connected, FastEthernet0/1
C    192.168.5.0/24 is directly connected, FastEthernet0/0
C    192.168.6.0/24 is directly connected, FastEthernet2/0
C    192.168.7.0/24 is directly connected, FastEthernet1/0
R    192.168.1.0/24 [120/2] via 192.168.4.2, 00:00:09, FastEthernet0/1
R    192.168.2.0/24 [120/1] via 192.168.5.2, 00:00:09, FastEthernet0/0
R    192.168.3.0/24 [120/1] via 192.168.4.2, 00:00:09, FastEthernet0/1
060#
```

Gambar 1.25 Tabel Routing Router4

1.5. Hasil Penerapana RIP

PC1

```
PC1> trace 192.168.6.3
trace to 192.168.6.3, 8 hops max, press Ctrl+C to stop
 1   192.168.1.3   9.275 ms  8.989 ms  10.290 ms
 2     *192.168.7.2   42.349 ms  30.211 ms
 3     **192.168.6.3   40.141 ms (ICMP type:3, code:3, Destination port unreachable)
```

Gambar 1.26 Uji Trace ke PC2

PC2

```
PC2> trace 192.168.1.2
trace to 192.168.1.2, 8 hops max, press Ctrl+C to stop
 1   192.168.6.2   7.315 ms  9.714 ms  10.749 ms
 2   192.168.7.1   33.279 ms  19.574 ms  20.704 ms
 3   *192.168.1.2   30.995 ms (ICMP type:3, code:3, Destination port unreachable)
```

Gambar 1.27 Uji Trace ke PC1

1.6. Konfigurasi Passive Interface

a) Konfigurasi Interface f2/0 Router 1 Sebagai Passive Interface

R1

```
060#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
060(config)#router rip
060(config-router)#pas
060(config-router)#passive-interface f2/0
060(config-router)#end
060#
```

Gambar 1.28 Konfigurasi Interface f2/0 Router 1 Sebagai Passive Interface

b) Hasil Penerapan Passive Interface

R4

```
*Mar  1 01:19:06.615: RIP: received v1 update from 192.168.5.2 on FastEthernet0/0
*Mar  1 01:19:06.615:      192.168.1.0 in 2 hops
*Mar  1 01:19:06.619:      192.168.2.0 in 1 hops
*Mar  1 01:19:06.619:      192.168.3.0 in 2 hops
060#
*Mar  1 01:19:11.475: RIP: received v1 update from 192.168.4.2 on FastEthernet0/1
*Mar  1 01:19:11.475:      192.168.1.0 in 2 hops
*Mar  1 01:19:11.475:      192.168.2.0 in 2 hops
*Mar  1 01:19:11.479:      192.168.3.0 in 1 hops
060#
```

Gambar 1.29 Hasil Penerapan Passive Interface

1.7. Konfigurasi Static Neighbor

a) Konfigurasi Static Neighbor

R2

```
060#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
060(config)#router rip
060(config-router)#ve
060(config-router)#version 2
060(config-router)#nei
060(config-router)#neighbor 192.168.2.0
060(config-router)#end
060#
```

Gambar 1.30 Konfigurasi Static Neighbor

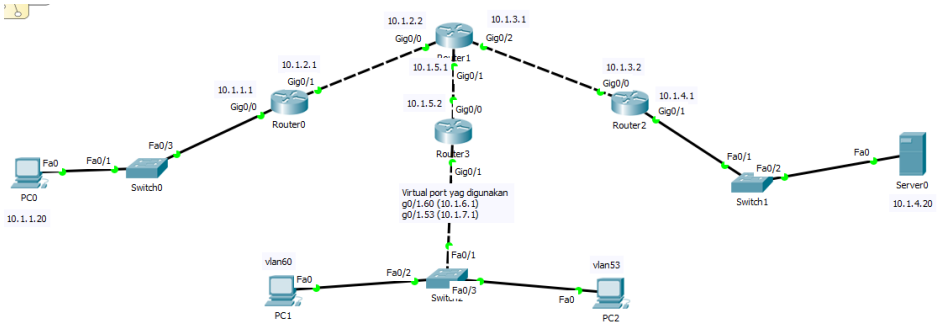
b) Hasil Penerapan Static Neighbor

```
R2
060#debug ip rip events
RIP event debugging is on
060#
*Mar  1 01:30:07.779: RIP: sending v2 update to 224.0.0.9 via FastEthernet0/0 (192.168.2.2)
*Mar  1 01:30:07.783: RIP: Update contains 3 routes
*Mar  1 01:30:07.783: RIP: Update queued
*Mar  1 01:30:07.783: RIP: sending v2 update to 192.168.2.0 via FastEthernet0/0 (192.168.2.2)
*Mar  1 01:30:07.783: RIP: Update contains 3 routes
*Mar  1 01:30:07.783: RIP: Update queued
*Mar  1 01:30:07.783: RIP: Update sent via FastEthernet0/0
*Mar  1 01:30:07.783: RIP: Update sent via FastEthernet0/0
060#
*Mar  1 01:30:12.935: RIP: sending v2 update to 224.0.0.9 via FastEthernet0/1 (192.168.5.2)
*Mar  1 01:30:12.935: RIP: Update contains 3 routes
*Mar  1 01:30:12.939: RIP: Update queued
*Mar  1 01:30:12.939: RIP: Update sent via FastEthernet0/1
060#
```

Gambar 1.31 Hasil Penerapan Static Neighbor

2. Static Routing

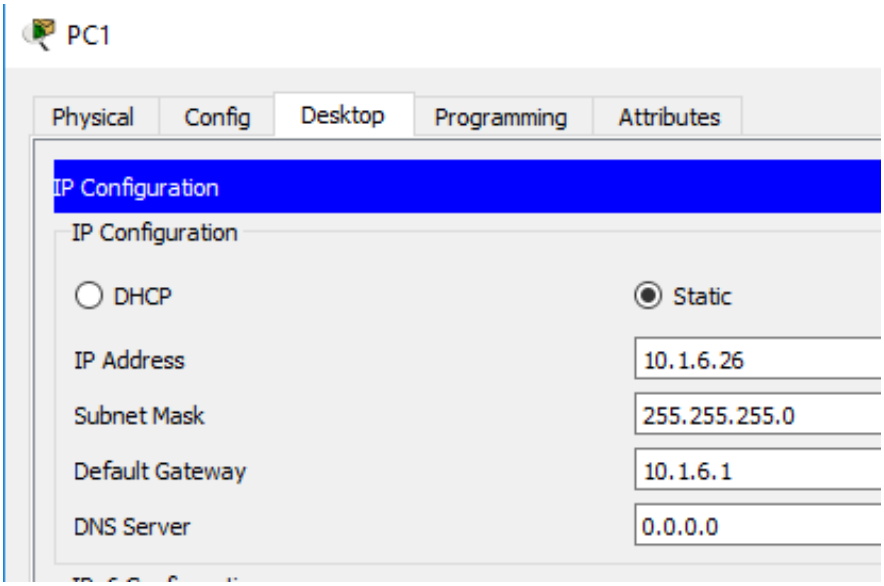
2.1. Topology (tambahan device: Router3, Switch2, PC1, dan PC2)



Gambar 2.1 Topology Tugas Static Route

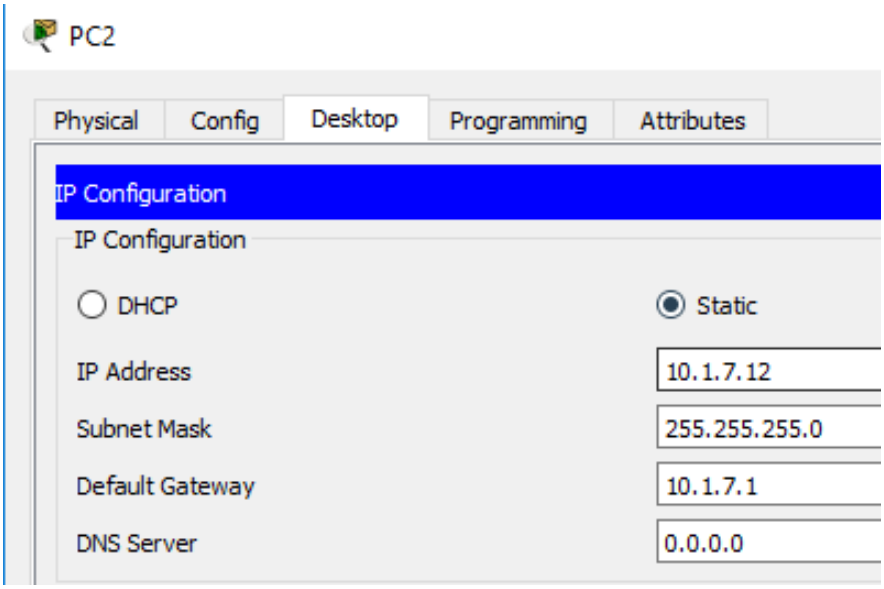
2.2. Konfigurasi IP

a) Setting IP PC1



Gambar 2.2 Setting IP PC1

b) Setting IP PC2



Gambar 2.3 Setting IP PC2

c) Tambahan Konfigurasi IP Interface Pada Router1

```
R1>en
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int g0/1
R1(config-if)#ip add 10.1.5.1 255.255.255.0
R1(config-if)#no shut
```

Gambar 2.4 Setting IP int g0/1 Router1

d) Konfigurasi IP Interface g0/0 Pada Router3

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int g0/0
Router(config-if)#ip add 10.1.5.2 255.255.255.0
Router(config-if)#no shut
```

Gambar 2.5 Setting IP int g0/0 Router3

e) Konfigurasi Router on Stick pada Interface g0/1 Router3

```
Router(config)#int g0/1.60
Router(config-subif)#enc
Router(config-subif)#encapsulation do
Router(config-subif)#encapsulation dot1Q 60
Router(config-subif)#ip add 10.1.6.1 255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#int g0/1.53
Router(config-subif)#enc
Router(config-subif)#encapsulation do
Router(config-subif)#encapsulation dot1Q 53
Router(config-subif)#ip add 10.1.7.1 255.255.255.0
Router(config-subif)#exit
Router(config)#int g0/1
Router(config-if)#no shut
```

Gambar 2.6 Membuat Router on Stick pada int g0/1 Router3

2.3. Konfigurasi VLAN pada Switch2

a) Membuat VLAN

```
Switch>en
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 60
Switch(config-vlan)#name amri
Switch(config-vlan)#exit
Switch(config)#vlan 53
Switch(config-vlan)#name rifkhi
Switch(config-vlan)#exit
```

Gambar 2.7 Membuat VLAN Baru

b) Menentukan Switchport Mode

```
Switch(config)#int fa0/2
Switch(config-if)#swi
Switch(config-if)#switchport mod
Switch(config-if)#switchport mode ac
Switch(config-if)#switchport mode access
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access
Switch(config-if)#switchport access vlan 60
Switch(config-if)#exit
```

Gammbar 2.8 Memberi Mode Access untuk Vlan 60 pada int fa0/2 SW2

```
Switch(config)#int fa0/3
Switch(config-if)#sw
Switch(config-if)#switchport mod
Switch(config-if)#switchport mode ac
Switch(config-if)#switchport mode access
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access
Switch(config-if)#switchport access vlan
Switch(config-if)#switchport access vlan 53
Switch(config-if)#exit
```

Gambar 2.9 Memberi Mode Access untuk Vlan 53 pada int fa0/3 SW2

```
Switch(config)#int fa0/1
Switch(config-if)#sw
Switch(config-if)#switchport m
Switch(config-if)#switchport mode tr
Switch(config-if)#switchport mode trunk
```

Gambar 2.10 Memberi Mode Trunk pada int fa0/1 SW2

c) Daftar VLAN Hasil Konfigurasi

```
Switch(config)#do sh vlan

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                 Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                 Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                                 Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                                 Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                                 Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                                 Gig0/1, Gig0/2
53   rifkhi                            active
60   amri                              active
1002 fddi-default                      act/unsup
1003 token-ring-default                act/unsup
1004 fddinet-default                   act/unsup
1005 trnet-default                     act/unsup
```

Gambar 2.11 Daftar VLAN di SW2

2.4. Konfigurasi Static Route

a) Menambahkan Static Route Baru ke Tabel Routing Router1

```
R1>en
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip route 10.1.6.0 255.255.255.0 10.1.5.2
R1(config)#ip route 10.1.7.0 255.255.255.0 10.1.5.2
```

Gambar 2.12 Memberi Tambahan Static Route pada Router1

b) Menambahkan Static Route Baru ke Tabel Routing Router2

```
R2(config)#ip route 10.1.5.0 255.255.255.0 10.1.3.1
R2(config)#ip route 10.1.6.0 255.255.255.0 10.1.3.1
R2(config)#ip route 10.1.7.0 255.255.255.0 10.1.3.1
```

Gambar 2.13 Memberi Tambahan Static Route pada Router2

c) Menambahkan Static Route pada Router3

```
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 10.1.3.0 255.255.255.0 10.1.5.1
Router(config)#ip route 10.1.4.0 255.255.255.0 10.1.5.1
Router(config)#ip route 10.1.2.0 255.255.255.0 10.1.5.1
Router(config)#ip route 10.1.1.0 255.255.255.0 10.1.5.1
```

Gambar 2.14 Konfigurasi Static Route pada Router3

d) Hasil Penambahan Static Route

```
     10.0.0.0/8 is variably subnetted, 10 subnets, 2 masks
S       10.1.1.0/24 [1/0] via 10.1.2.0
                    [1/0] via 10.1.2.1
C       10.1.2.0/24 is directly connected, GigabitEthernet0/0
L       10.1.2.2/32 is directly connected, GigabitEthernet0/0
C       10.1.3.0/24 is directly connected, GigabitEthernet0/2
L       10.1.3.1/32 is directly connected, GigabitEthernet0/2
S       10.1.4.0/24 [1/0] via 10.1.3.2
C       10.1.5.0/24 is directly connected, GigabitEthernet0/1
L       10.1.5.1/32 is directly connected, GigabitEthernet0/1
S       10.1.6.0/24 [1/0] via 10.1.5.2
S       10.1.7.0/24 [1/0] via 10.1.5.2
```

Gambar 2.15 Tabel Routing Router1

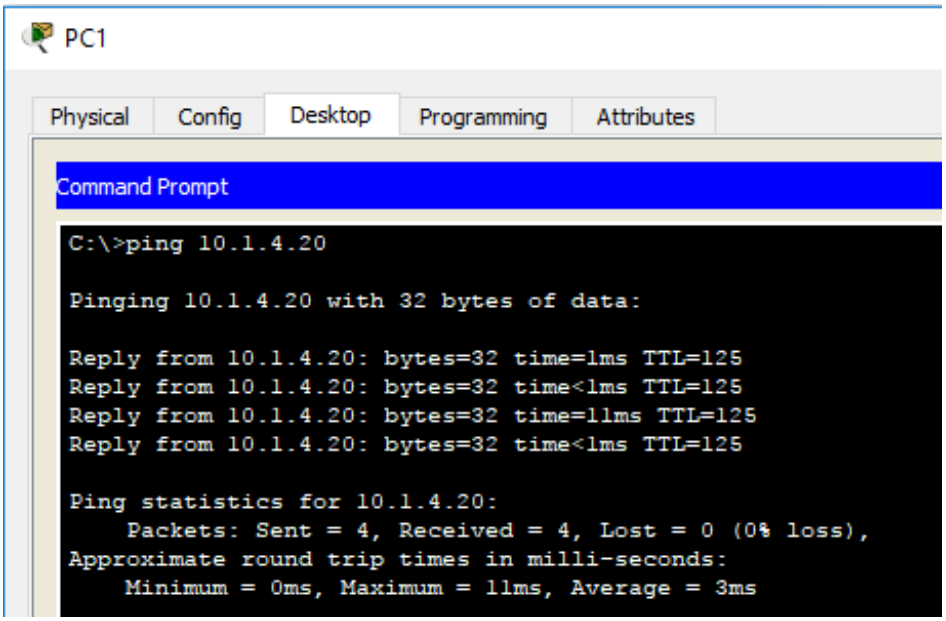
```
     10.0.0.0/8 is variably subnetted, 9 subnets, 2 masks
S       10.1.1.0/24 [1/0] via 10.1.3.1
S       10.1.2.0/24 [1/0] via 10.1.3.1
C       10.1.3.0/24 is directly connected, GigabitEthernet0/0
L       10.1.3.2/32 is directly connected, GigabitEthernet0/0
C       10.1.4.0/24 is directly connected, GigabitEthernet0/1
L       10.1.4.1/32 is directly connected, GigabitEthernet0/1
S       10.1.5.0/24 [1/0] via 10.1.3.1
S       10.1.6.0/24 [1/0] via 10.1.3.1
S       10.1.7.0/24 [1/0] via 10.1.3.1
```

Gambar 2.16 Tabel Routing Router2

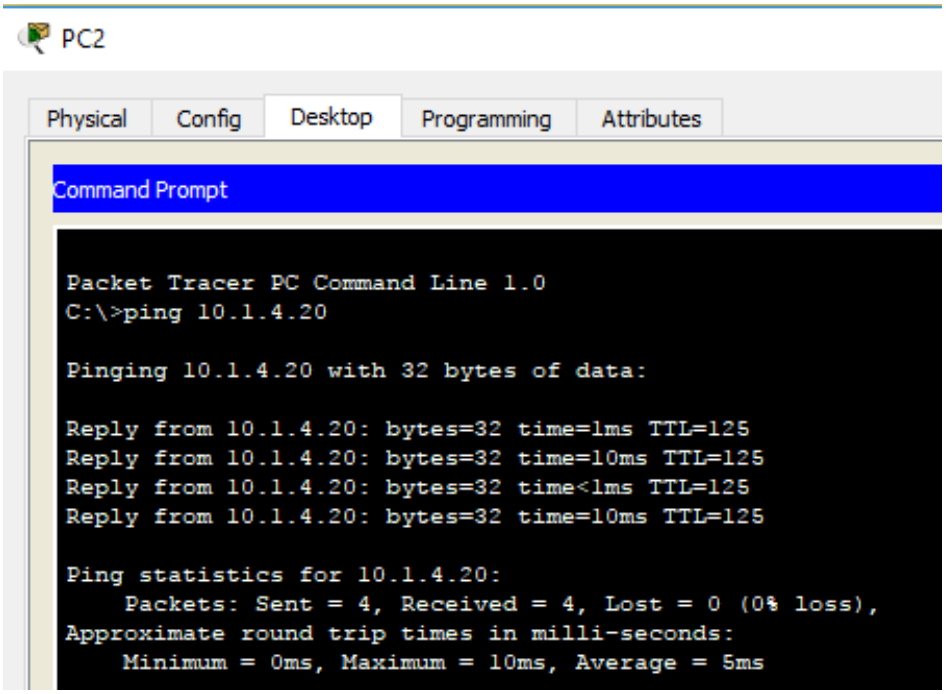
```
    10.0.0.0/8 is variably subnetted, 10 subnets, 2 masks
S       10.1.1.0/24 [1/0] via 10.1.5.1
S       10.1.2.0/24 [1/0] via 10.1.5.1
S       10.1.3.0/24 [1/0] via 10.1.5.1
S       10.1.4.0/24 [1/0] via 10.1.5.1
C       10.1.5.0/24 is directly connected, GigabitEthernet0/0
L       10.1.5.2/32 is directly connected, GigabitEthernet0/0
C       10.1.6.0/24 is directly connected, GigabitEthernet0/1.60
L       10.1.6.1/32 is directly connected, GigabitEthernet0/1.60
C       10.1.7.0/24 is directly connected, GigabitEthernet0/1.53
L       10.1.7.1/32 is directly connected, GigabitEthernet0/1.53
```

Gambar 2.17 Tabel Routing Router3

2.5. Hasil Akhir Konfigurasi



Gambar 2.18 Hasil Ping PC1 ke Server0



Gambar 2.19 Hasil Ping PC2 ke Server0