

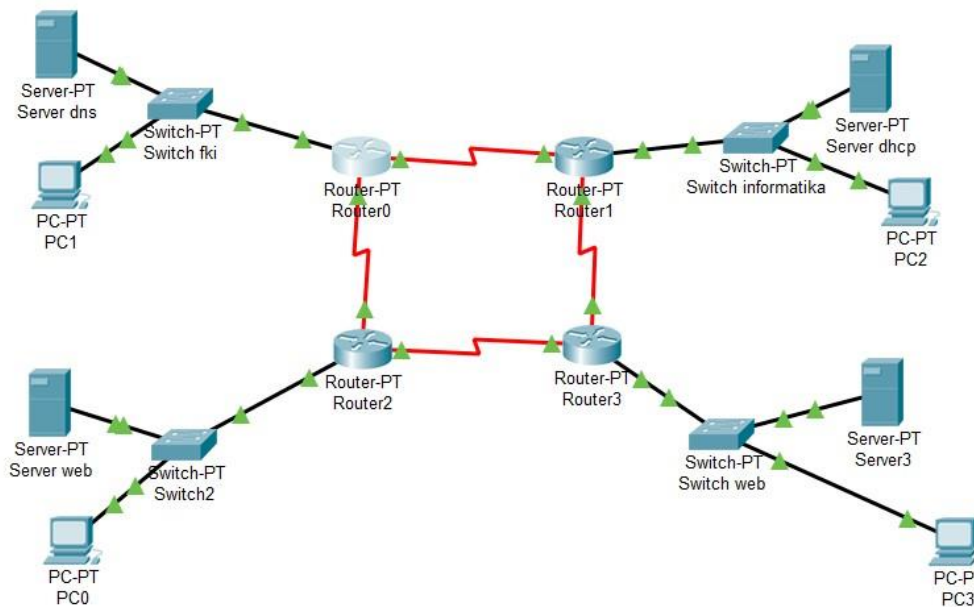
# Laporan Praktikum Jaringan Komputer

## UAS

Nama : Sugiyo  
NIM : L200170002  
Kelas : A

No.1

Membuat topologi jaringan sebagai berikut:



No.2

Konfigurasi pengalamatan ip(sesuai gambar diatas(no.1)) a)

Router 0	Server DNS	PC 0
SE 2/0 (ip add 192.168.5.1)	Ip add 192.168.1.2	Ip add 192.168.1.3
SE 3/0 (ip add 192.168.8.2)		
Fa 0/0 (ip add 192.168.1.1)		

b)

Router 1	Server DHCP	PC 2
SE 2/0 (ip add 192.168.6.1)	Ip add 192.168.2.2	Otomatis sesuai pengaturan dhcp yang dibuat (ip add 192.168.2.3)
SE 3/0 (ip add 192.168.5.2)		
Fa 0/0 (ip add 192.168.2.1)		

c)

Router 2	Server3	PC 3
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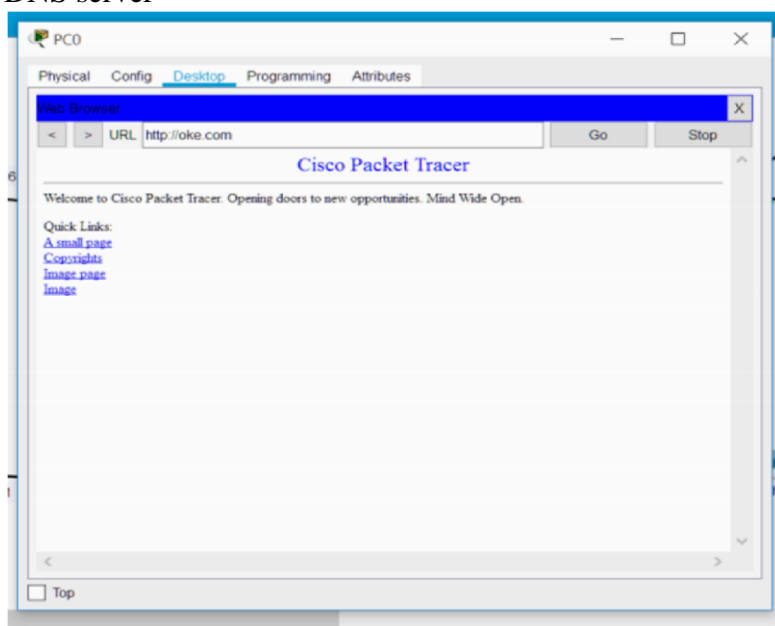
SE 2/0 (ip add 192.168.7.1)	Ip add 192.168.3.2	Ip add 192.168.3.3
SE 3/0 (ip add 192.168.6.2)		
Fa 0/0 (ip add 192.168.3.1)		

d)

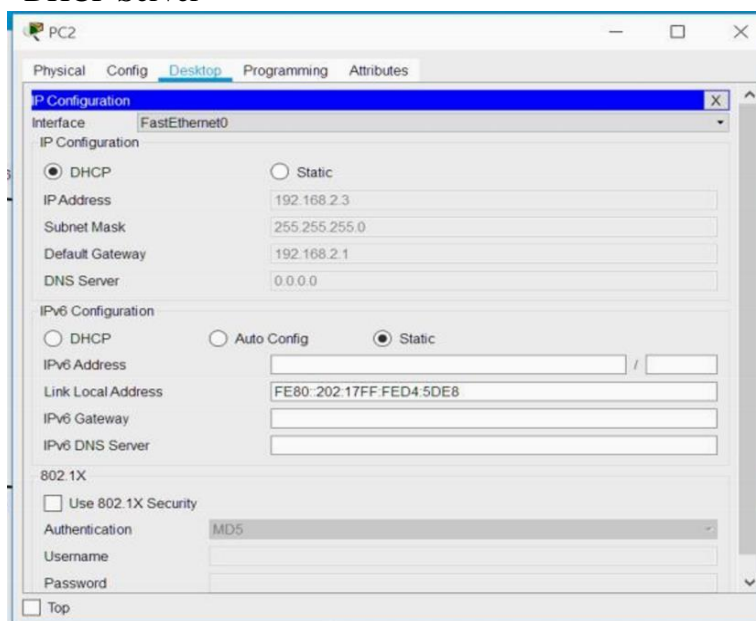
Router 3	Server Web	PC 1
SE 2/0 (ip add 192.168.8.1)	Ip add 192.168.4.2	Ip add 192.168.4.3
SE 3/0 (ip add 192.168.7.2)		
Fa 0/0 (ip add 192.168.4.1)		

Test no.2

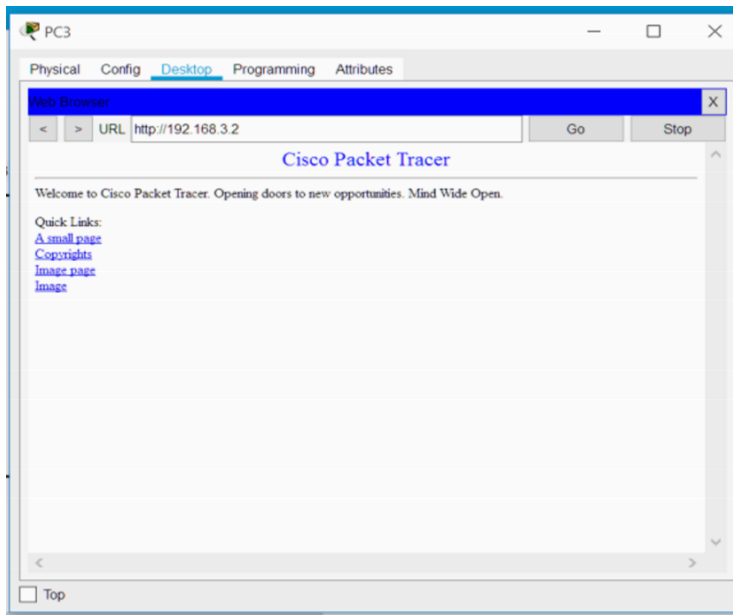
- DNS server



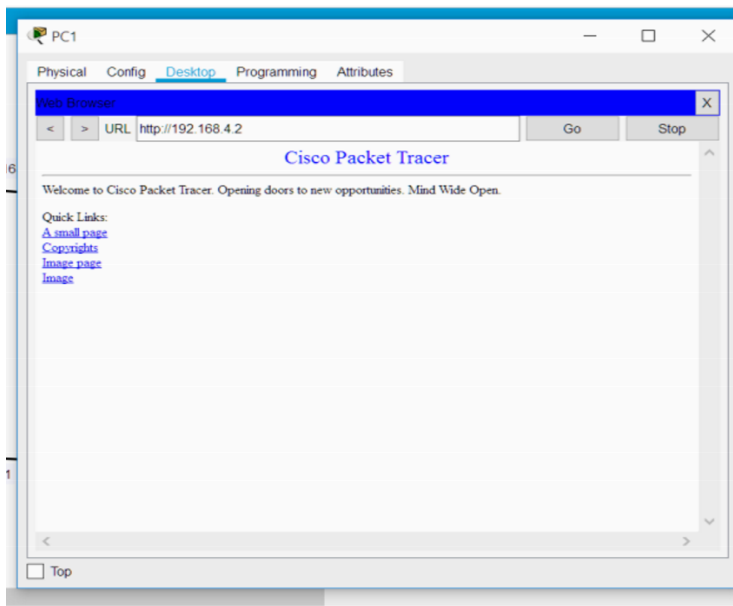
- DHCP Server



- Server3



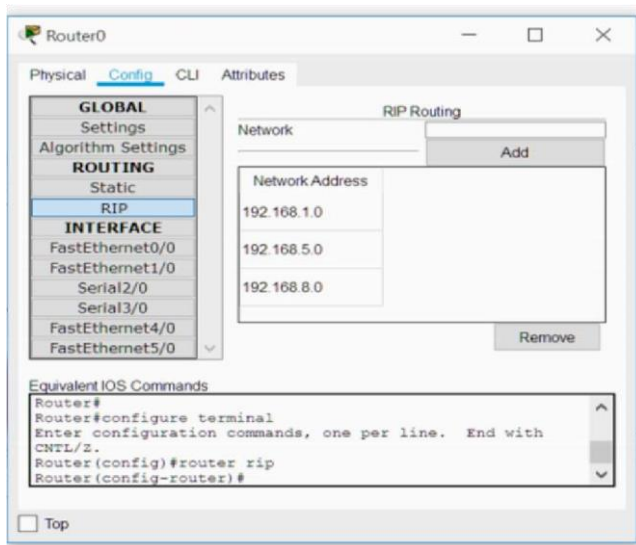
- Server Web



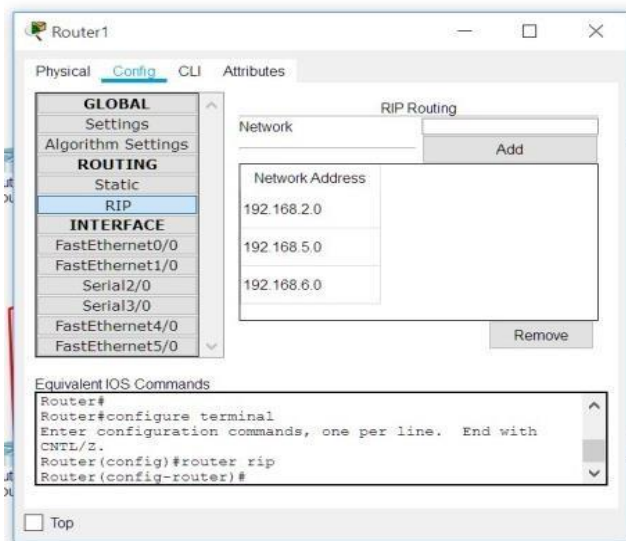
No.3

Konfigurasi routing dinamis

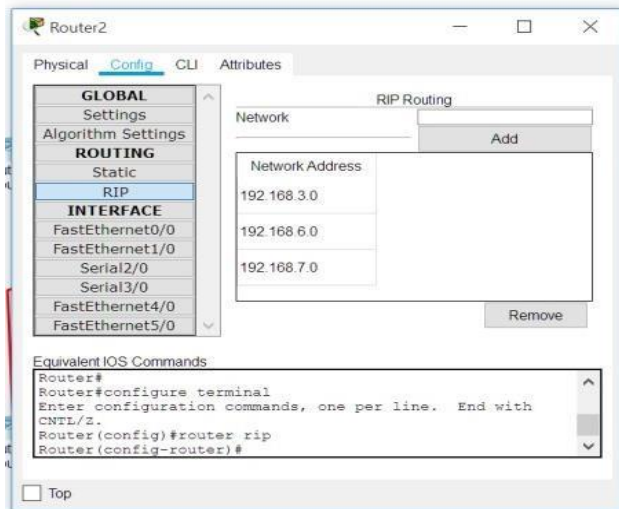
a)router 0



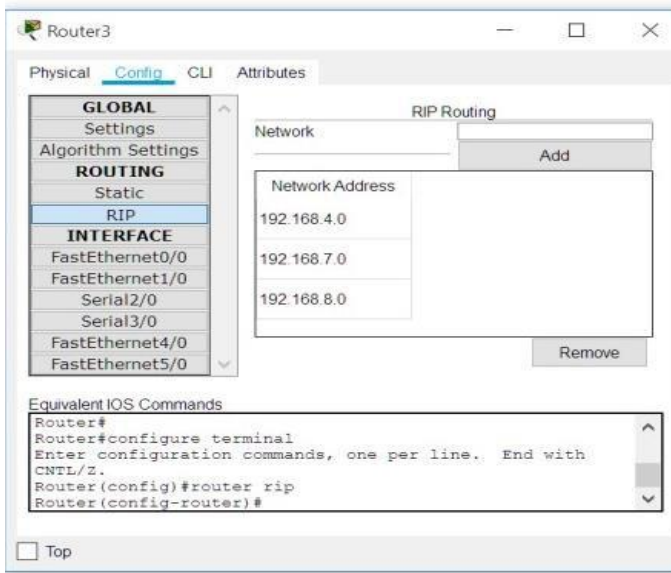
b)router 1



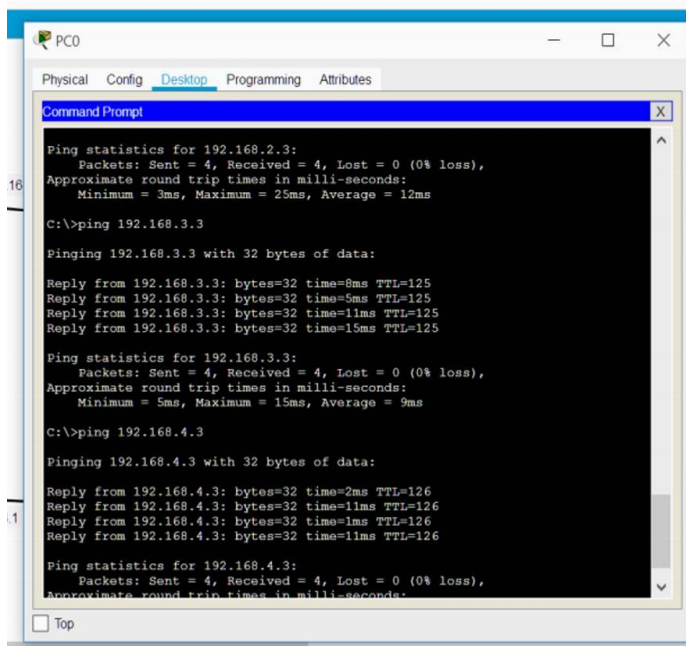
c)router 2



d)router 3



### Test no.3 router dinamis (uji konektivitas antar PC)



PC0

Physical Config Desktop Programming Attributes

Command Prompt

```
Ping statistics for 192.168.2.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 3ms, Maximum = 25ms, Average = 12ms

C:\>ping 192.168.3.3

Pinging 192.168.3.3 with 32 bytes of data:

Reply from 192.168.3.3: bytes=32 time=8ms TTL=125
Reply from 192.168.3.3: bytes=32 time=5ms TTL=125
Reply from 192.168.3.3: bytes=32 time=11ms TTL=125
Reply from 192.168.3.3: bytes=32 time=15ms TTL=125

Ping statistics for 192.168.3.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 5ms, Maximum = 15ms, Average = 9ms

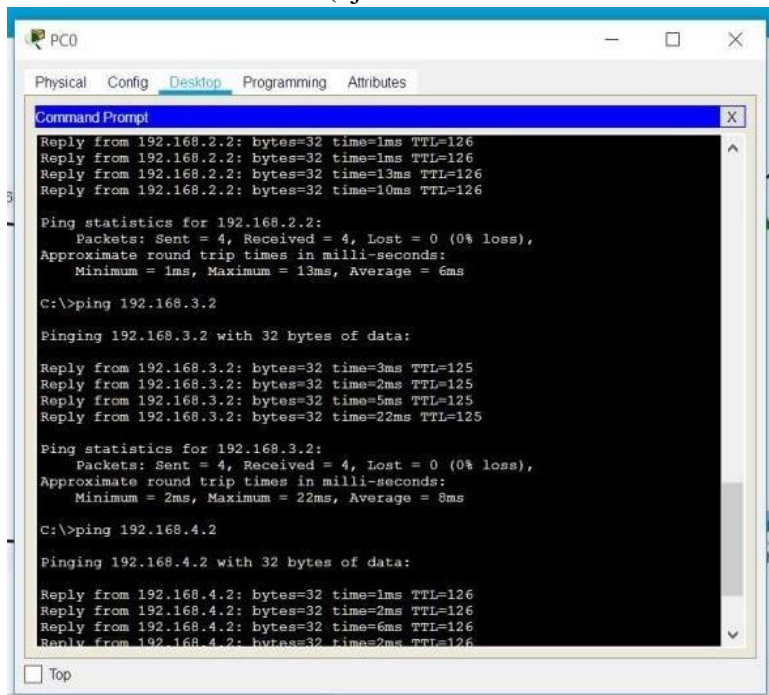
C:\>ping 192.168.4.3

Pinging 192.168.4.3 with 32 bytes of data:

Reply from 192.168.4.3: bytes=32 time=2ms TTL=126
Reply from 192.168.4.3: bytes=32 time=1ms TTL=126
Reply from 192.168.4.3: bytes=32 time=1ms TTL=126
Reply from 192.168.4.3: bytes=32 time=11ms TTL=126

Ping statistics for 192.168.4.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
```

### Test no.3 router dinamis (uji konektivitas PC ke server antar router)



PC0

Physical Config Desktop Programming Attributes

Command Prompt

```
Reply from 192.168.2.2: bytes=32 time=1ms TTL=126
Reply from 192.168.2.2: bytes=32 time=1ms TTL=126
Reply from 192.168.2.2: bytes=32 time=13ms TTL=126
Reply from 192.168.2.2: bytes=32 time=10ms TTL=126

Ping statistics for 192.168.2.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 13ms, Average = 6ms

C:\>ping 192.168.3.2

Pinging 192.168.3.2 with 32 bytes of data:

Reply from 192.168.3.2: bytes=32 time=3ms TTL=125
Reply from 192.168.3.2: bytes=32 time=2ms TTL=125
Reply from 192.168.3.2: bytes=32 time=5ms TTL=125
Reply from 192.168.3.2: bytes=32 time=22ms TTL=125

Ping statistics for 192.168.3.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 22ms, Average = 8ms

C:\>ping 192.168.4.2

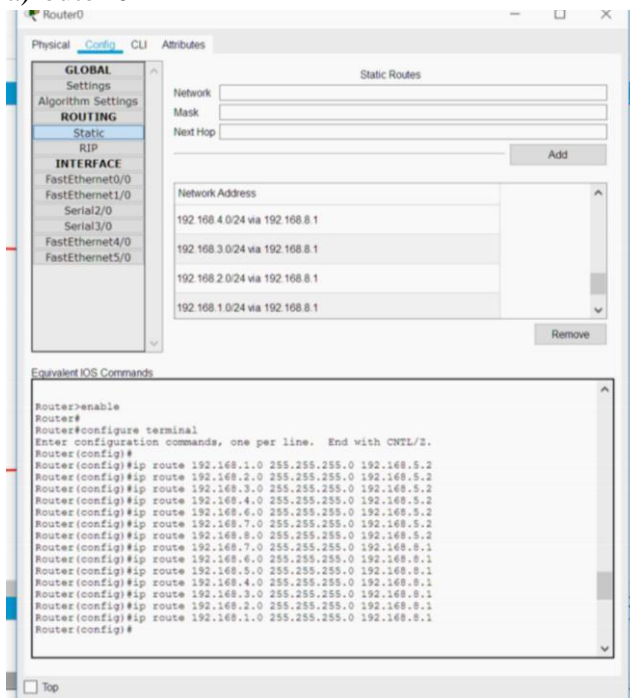
Pinging 192.168.4.2 with 32 bytes of data:

Reply from 192.168.4.2: bytes=32 time=1ms TTL=126
Reply from 192.168.4.2: bytes=32 time=2ms TTL=126
Reply from 192.168.4.2: bytes=32 time=6ms TTL=126
Reply from 192.168.4.2: bytes=32 time=2ms TTL=126
```

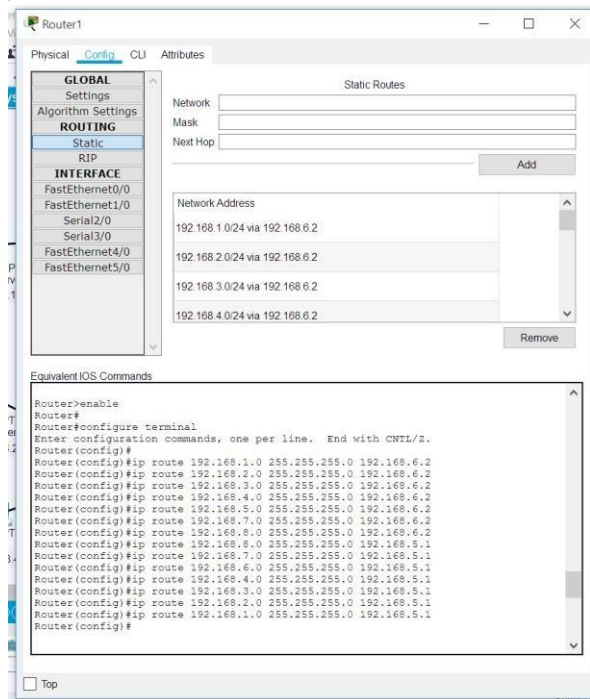
No.4

## Konfigurasi router statis

a)router 0



b)router 1



### c)router 2

The screenshot shows the configuration window for Router2. The 'Config' tab is active, and the 'Static Routes' section is selected. The 'Network Address' list contains four entries: 192.168.1.0/24 via 192.168.7.2, 192.168.2.0/24 via 192.168.7.2, 192.168.3.0/24 via 192.168.7.2, and 192.168.4.0/24 via 192.168.7.2. The 'Equivalent IOS Commands' section shows the following commands:

```

Router#
Router#configure terminal
Router(config)#
Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.7.2
Router(config)#ip route 192.168.2.0 255.255.255.0 192.168.7.2
Router(config)#ip route 192.168.3.0 255.255.255.0 192.168.7.2
Router(config)#ip route 192.168.4.0 255.255.255.0 192.168.7.2
Router(config)#ip route 192.168.5.0 255.255.255.0 192.168.7.2
Router(config)#ip route 192.168.6.0 255.255.255.0 192.168.7.2
Router(config)#ip route 192.168.8.0 255.255.255.0 192.168.7.2
Router(config)#ip route 192.168.7.0 255.255.255.0 192.168.6.1
Router(config)#ip route 192.168.5.0 255.255.255.0 192.168.6.1
Router(config)#ip route 192.168.4.0 255.255.255.0 192.168.6.1
Router(config)#ip route 192.168.3.0 255.255.255.0 192.168.6.1
Router(config)#ip route 192.168.2.0 255.255.255.0 192.168.6.1
Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.6.1
Router(config)#
Router(config)#
Router(config)#
Router(config)#

```

### c)router 3

The screenshot shows the configuration window for Router3. The 'Config' tab is active, and the 'Static Routes' section is selected. The 'Network Address' list contains four entries: 192.168.1.0/24 via 192.168.7.1, 192.168.2.0/24 via 192.168.7.1, 192.168.3.0/24 via 192.168.7.1, and 192.168.4.0/24 via 192.168.7.1. The 'Equivalent IOS Commands' section shows the following commands:

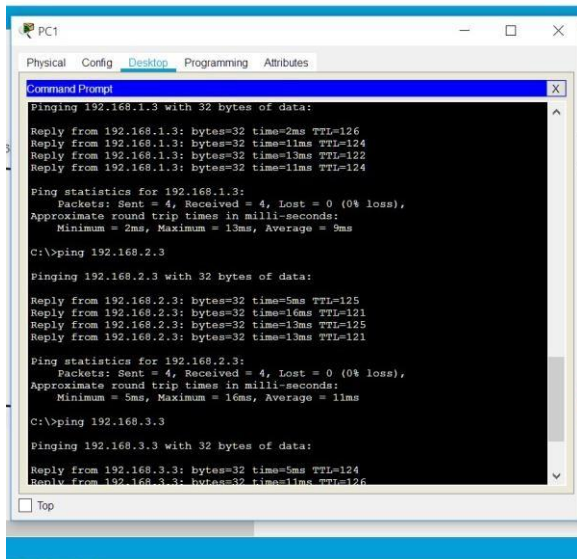
```

Router>enable
Router#
Router#configure terminal
Router(config)#
Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.7.1
Router(config)#ip route 192.168.2.0 255.255.255.0 192.168.7.1
Router(config)#ip route 192.168.3.0 255.255.255.0 192.168.7.1
Router(config)#ip route 192.168.4.0 255.255.255.0 192.168.7.1
Router(config)#ip route 192.168.5.0 255.255.255.0 192.168.7.1
Router(config)#ip route 192.168.6.0 255.255.255.0 192.168.7.1
Router(config)#ip route 192.168.8.0 255.255.255.0 192.168.7.1
Router(config)#ip route 192.168.7.0 255.255.255.0 192.168.8.2
Router(config)#ip route 192.168.6.0 255.255.255.0 192.168.8.2
Router(config)#ip route 192.168.5.0 255.255.255.0 192.168.8.2
Router(config)#ip route 192.168.4.0 255.255.255.0 192.168.8.2
Router(config)#ip route 192.168.3.0 255.255.255.0 192.168.8.2
Router(config)#ip route 192.168.2.0 255.255.255.0 192.168.8.2
Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.8.2
Router(config)#
Router(config)#
Router(config)#
Router(config)#

```



#### Test no.4 router statis(uji konektivitas antar PC)



```
PC1
Physical Config Desktop Programming Attributes
Command Prompt
Pinging 192.168.1.3 with 32 bytes of data:
Reply from 192.168.1.3: bytes=32 time=2ms TTL=126
Reply from 192.168.1.3: bytes=32 time=11ms TTL=124
Reply from 192.168.1.3: bytes=32 time=13ms TTL=122
Reply from 192.168.1.3: bytes=32 time=11ms TTL=124

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 13ms, Average = 9ms

C:\>ping 192.168.2.3

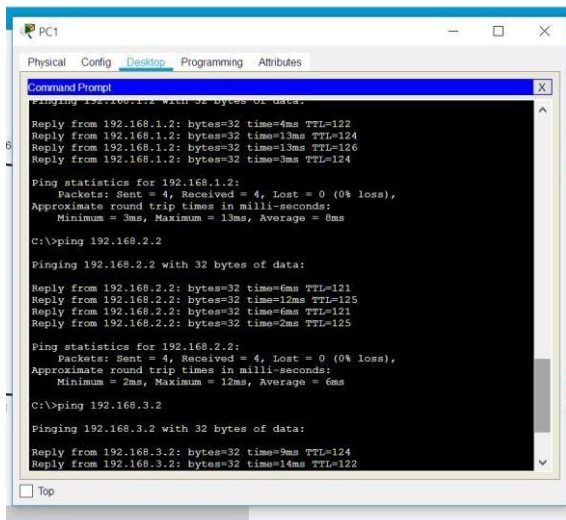
Pinging 192.168.2.3 with 32 bytes of data:
Reply from 192.168.2.3: bytes=32 time=5ms TTL=125
Reply from 192.168.2.3: bytes=32 time=16ms TTL=121
Reply from 192.168.2.3: bytes=32 time=13ms TTL=125
Reply from 192.168.2.3: bytes=32 time=13ms TTL=121

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 5ms, Maximum = 16ms, Average = 11ms

C:\>ping 192.168.3.3

Pinging 192.168.3.3 with 32 bytes of data:
Reply from 192.168.3.3: bytes=32 time=5ms TTL=124
Reply from 192.168.3.3: bytes=32 time=11ms TTL=126
```

#### Test no.4 router statis (uji konektivitas PC ke server antar router)



```
PC1
Physical Config Desktop Programming Attributes
Command Prompt
Pinging 192.168.1.2 with 32 bytes of data:
Reply from 192.168.1.2: bytes=32 time=4ms TTL=122
Reply from 192.168.1.2: bytes=32 time=13ms TTL=124
Reply from 192.168.1.2: bytes=32 time=13ms TTL=126
Reply from 192.168.1.2: bytes=32 time=3ms TTL=124

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 13ms, Average = 8ms

C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:
Reply from 192.168.2.2: bytes=32 time=6ms TTL=121
Reply from 192.168.2.2: bytes=32 time=12ms TTL=125
Reply from 192.168.2.2: bytes=32 time=6ms TTL=121
Reply from 192.168.2.2: bytes=32 time=2ms TTL=125

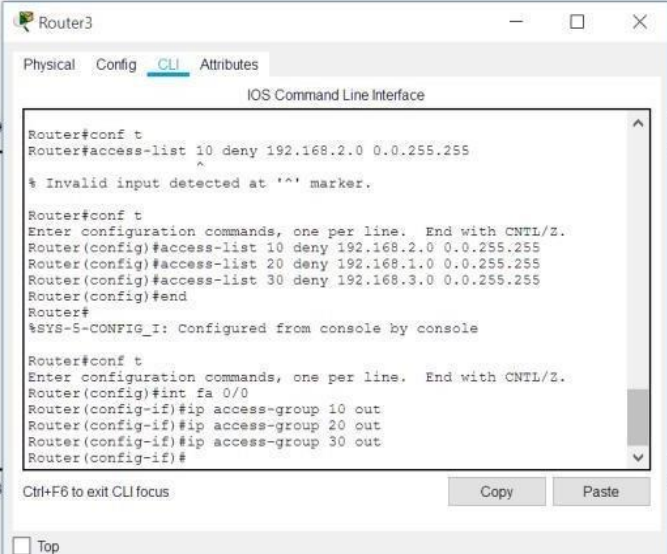
Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 12ms, Average = 6ms

C:\>ping 192.168.3.2

Pinging 192.168.3.2 with 32 bytes of data:
Reply from 192.168.3.2: bytes=32 time=9ms TTL=124
Reply from 192.168.3.2: bytes=32 time=14ms TTL=122
```

No.5

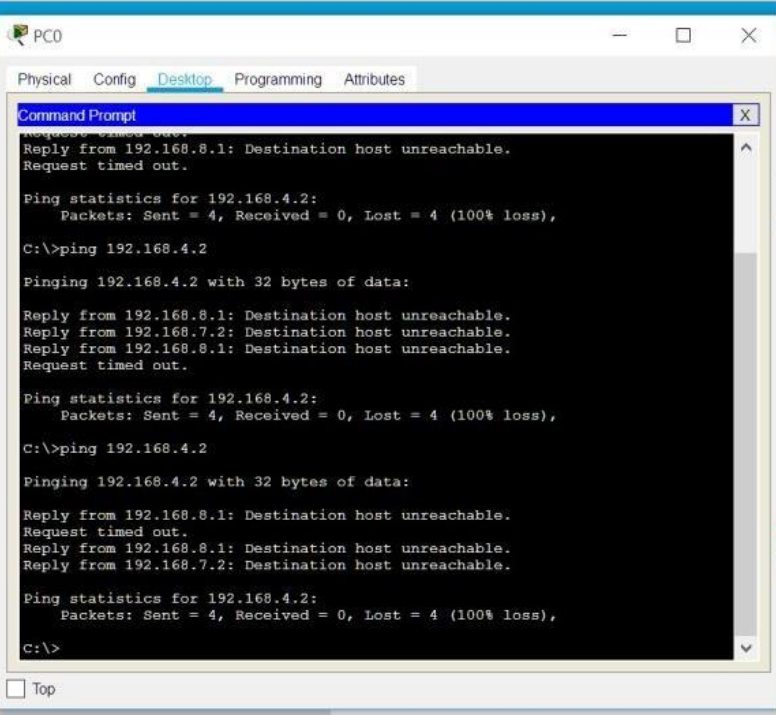
Menggunakan access list untuk membatasi 1 PC saja yang dapat mengakses server web



The screenshot shows the CLI of a router named Router3. The user is in configuration mode, configuring an access list. The commands entered are: `Router#conf t`, `Router#access-list 10 deny 192.168.2.0 0.0.255.255`, `Router#conf t`, `Router(config)#access-list 10 deny 192.168.2.0 0.0.255.255`, `Router(config)#access-list 20 deny 192.168.1.0 0.0.255.255`, `Router(config)#access-list 30 deny 192.168.3.0 0.0.255.255`, `Router(config)#end`, `Router#`, `Router#conf t`, `Router(config)#int fa 0/0`, `Router(config-if)#ip access-group 10 out`, `Router(config-if)#ip access-group 20 out`, `Router(config-if)#ip access-group 30 out`, and `Router(config-if)#`. The output shows the configuration is applied to the interface.

```
Router3
Physical Config CLI Attributes
IOS Command Line Interface
Router#conf t
Router#access-list 10 deny 192.168.2.0 0.0.255.255
^
% Invalid input detected at '^' marker.
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#access-list 10 deny 192.168.2.0 0.0.255.255
Router(config)#access-list 20 deny 192.168.1.0 0.0.255.255
Router(config)#access-list 30 deny 192.168.3.0 0.0.255.255
Router(config)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa 0/0
Router(config-if)#ip access-group 10 out
Router(config-if)#ip access-group 20 out
Router(config-if)#ip access-group 30 out
Router(config-if)#
```

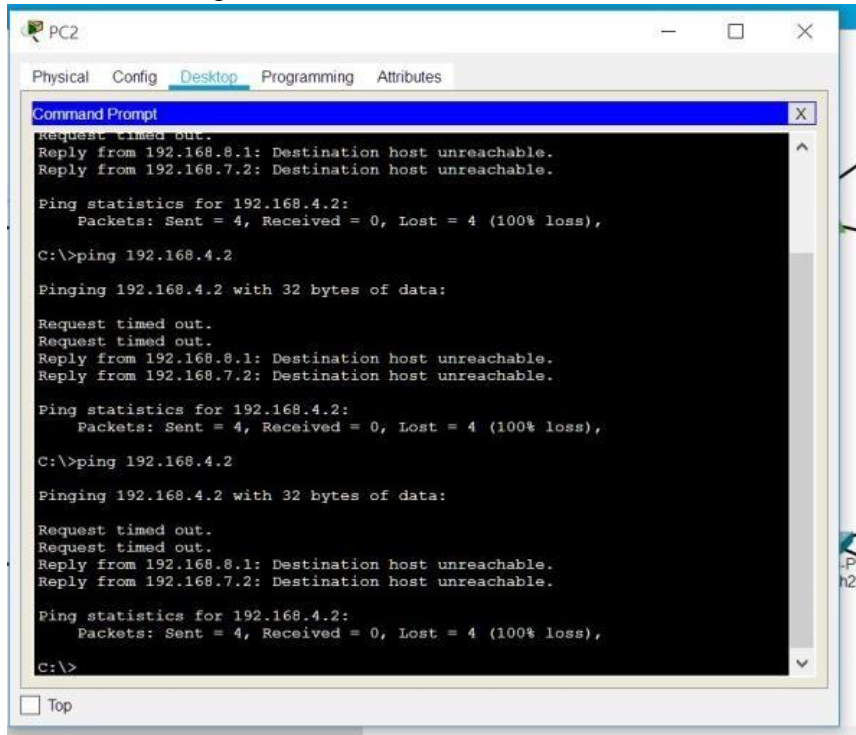
a)Test akses dengan PC 0



The screenshot shows the Command Prompt of a PC named PC0. The user is testing access to a server at 192.168.4.2. The commands entered are: `C:\>ping 192.168.4.2`. The output shows that the destination host is unreachable and the request timed out. The statistics for the ping are: Packets: Sent = 4, Received = 0, Lost = 4 (100% loss).

```
PC0
Physical Config Desktop Programming Attributes
Command Prompt
C:\>ping 192.168.4.2
Pinging 192.168.4.2 with 32 bytes of data:
Reply from 192.168.8.1: Destination host unreachable.
Request timed out.
Ping statistics for 192.168.4.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 192.168.4.2
Pinging 192.168.4.2 with 32 bytes of data:
Reply from 192.168.8.1: Destination host unreachable.
Reply from 192.168.7.2: Destination host unreachable.
Reply from 192.168.8.1: Destination host unreachable.
Request timed out.
Ping statistics for 192.168.4.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 192.168.4.2
Pinging 192.168.4.2 with 32 bytes of data:
Reply from 192.168.8.1: Destination host unreachable.
Request timed out.
Reply from 192.168.8.1: Destination host unreachable.
Reply from 192.168.7.2: Destination host unreachable.
Ping statistics for 192.168.4.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>
```

b) Test akses dengan PC 2



The screenshot shows a Packet Tracer PC window for PC2. The 'Desktop' tab is active, displaying a Command Prompt. The command prompt shows the results of a ping command to 192.168.4.2. The output indicates that the destination host is unreachable, with 100% packet loss.

```
PC2
Physical Config Desktop Programming Attributes
Command Prompt
Request timed out.
Reply from 192.168.8.1: Destination host unreachable.
Reply from 192.168.7.2: Destination host unreachable.

Ping statistics for 192.168.4.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.4.2

Pinging 192.168.4.2 with 32 bytes of data:

Request timed out.
Request timed out.
Reply from 192.168.8.1: Destination host unreachable.
Reply from 192.168.7.2: Destination host unreachable.

Ping statistics for 192.168.4.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.4.2

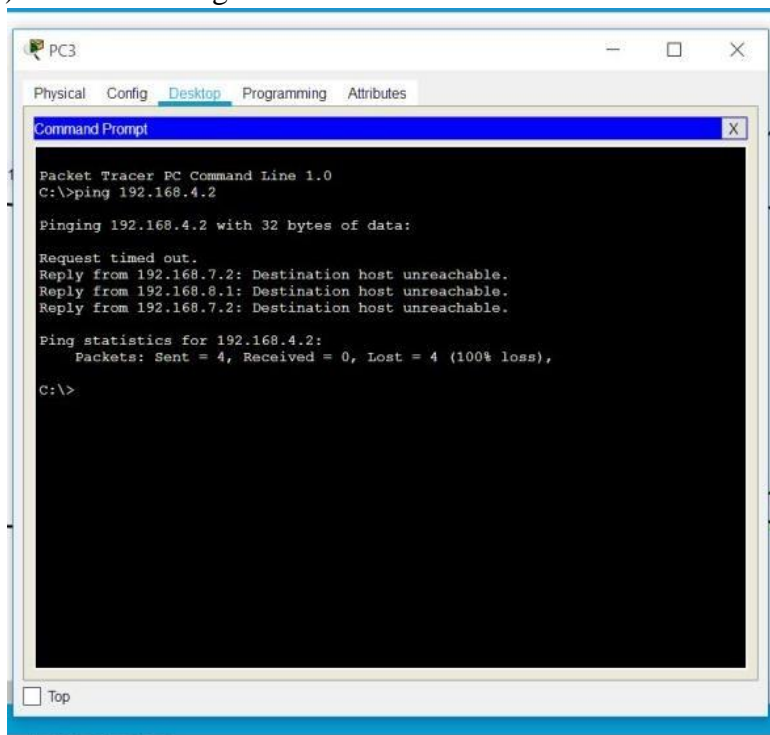
Pinging 192.168.4.2 with 32 bytes of data:

Request timed out.
Request timed out.
Reply from 192.168.8.1: Destination host unreachable.
Reply from 192.168.7.2: Destination host unreachable.

Ping statistics for 192.168.4.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

c) Test akses dengan PC 3



The screenshot shows a Packet Tracer PC window for PC3. The 'Desktop' tab is active, displaying a Command Prompt. The command prompt shows the results of a ping command to 192.168.4.2. The output indicates that the destination host is unreachable, with 100% packet loss.

```
PC3
Physical Config Desktop Programming Attributes
Command Prompt
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.4.2

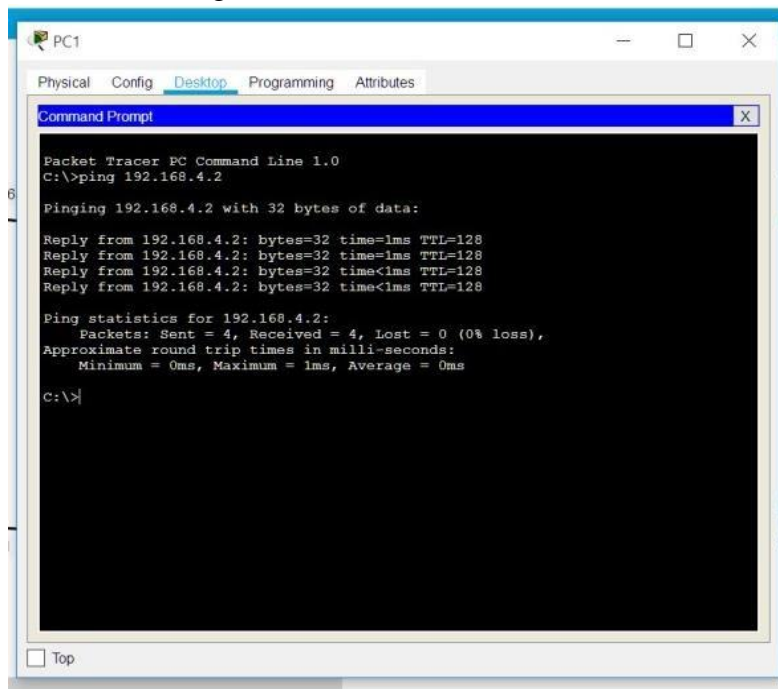
Pinging 192.168.4.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.7.2: Destination host unreachable.
Reply from 192.168.8.1: Destination host unreachable.
Reply from 192.168.7.2: Destination host unreachable.

Ping statistics for 192.168.4.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

d) Test akses dengan PC 1



The screenshot shows a Packet Tracer PC Command Line window for PC1. The window has tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, displaying a Command Prompt. The text in the Command Prompt is as follows:

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.4.2

Pinging 192.168.4.2 with 32 bytes of data:

Reply from 192.168.4.2: bytes=32 time=1ms TTL=128
Reply from 192.168.4.2: bytes=32 time=1ms TTL=128
Reply from 192.168.4.2: bytes=32 time<1ms TTL=128
Reply from 192.168.4.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.4.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

At the bottom left of the window, there is a checkbox labeled "Top" which is currently unchecked.