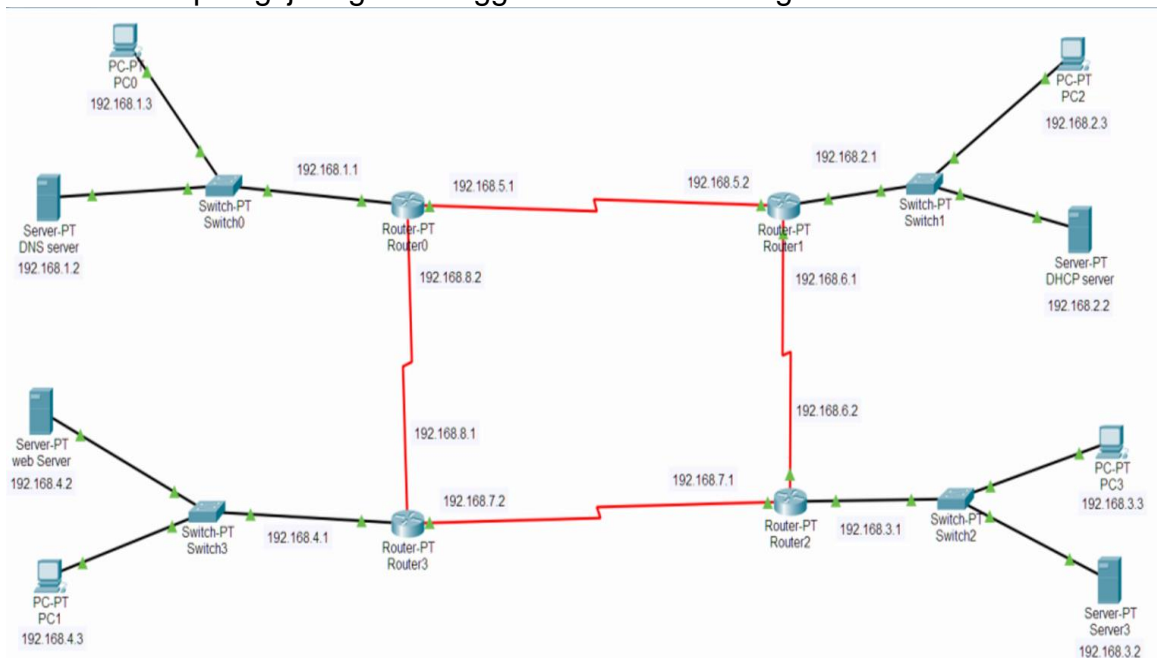


Hesti Putri Utami
L200170009
Kelas A

1. Buatlah topologi jaringan menggunakan router seri generic !



2. Lakukan konfigurasi pengalamatan ip terhadap ROUTER 1,2,3,4 PC 1, 2, 3, dan 4 !

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)		

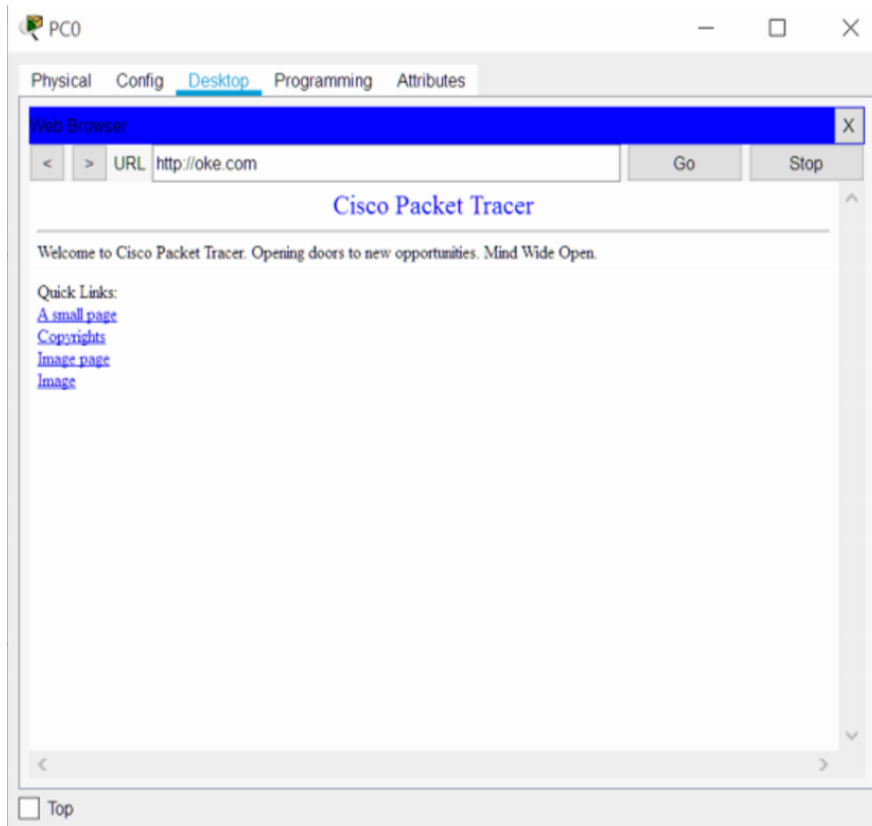
Router 1	Server DHCP	PC 2
SE 2/0 (ip add 192.168.6.1)	Ip add 192.168.2.2	Otomatis sesuai pengaturan dhcp yang dibuat (ip add 192.168.2.3)
SE 3/0 (ip add 192.168.5.2)		
Fa 0/0 (ip add 192.168.2.1)		

Router 2	Server3	PC 3
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)		

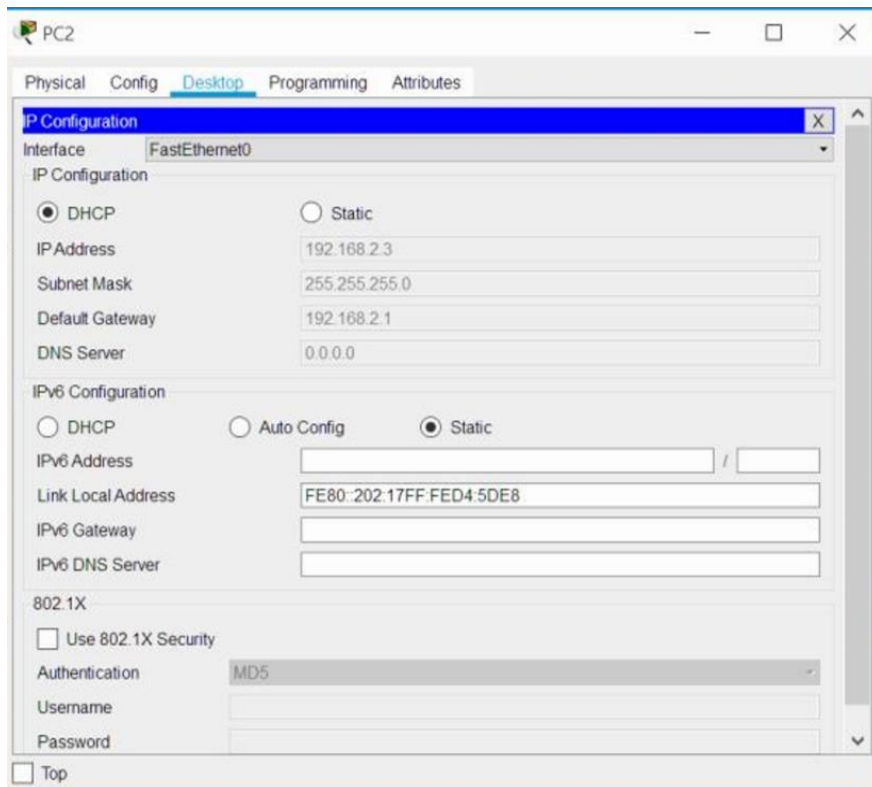
Router 3	Server Web	PC 1
SE 2/0 (ip add 192.168.8.1)	Ip add 192.168.4.2	Ip add 192.168.4.3
SE 3/0 (ip add 192.168.7.2)		
Fa 0/0 (ip add 192.168.4.1)		

Test no.2

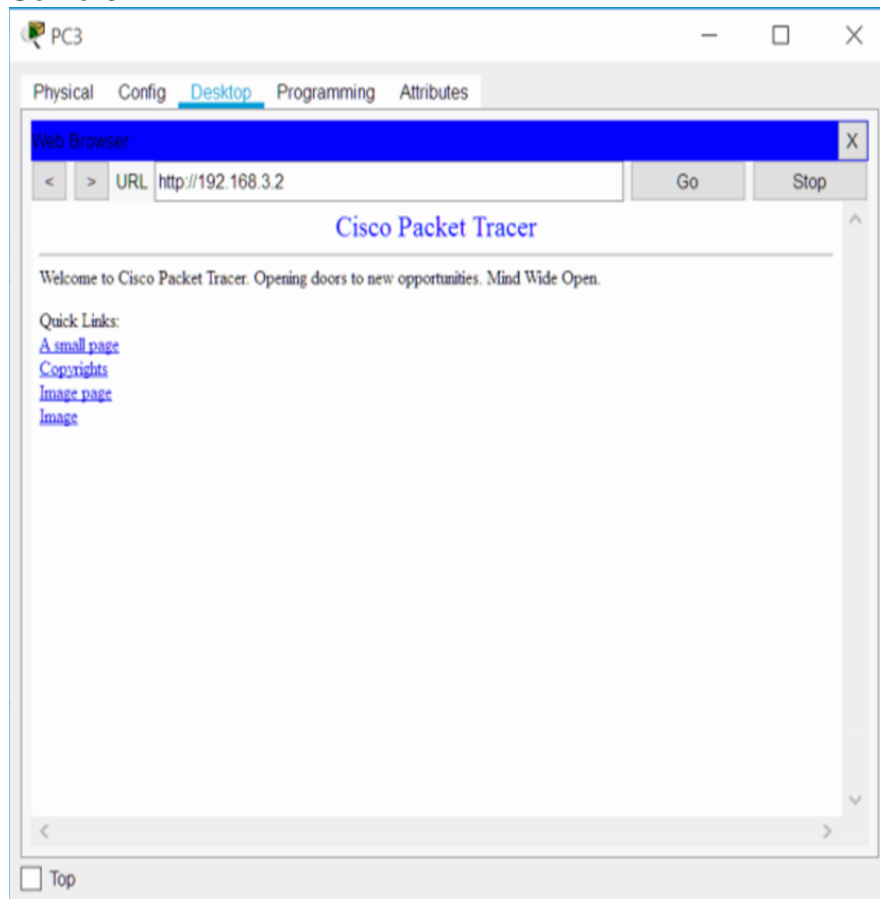
- DNS server



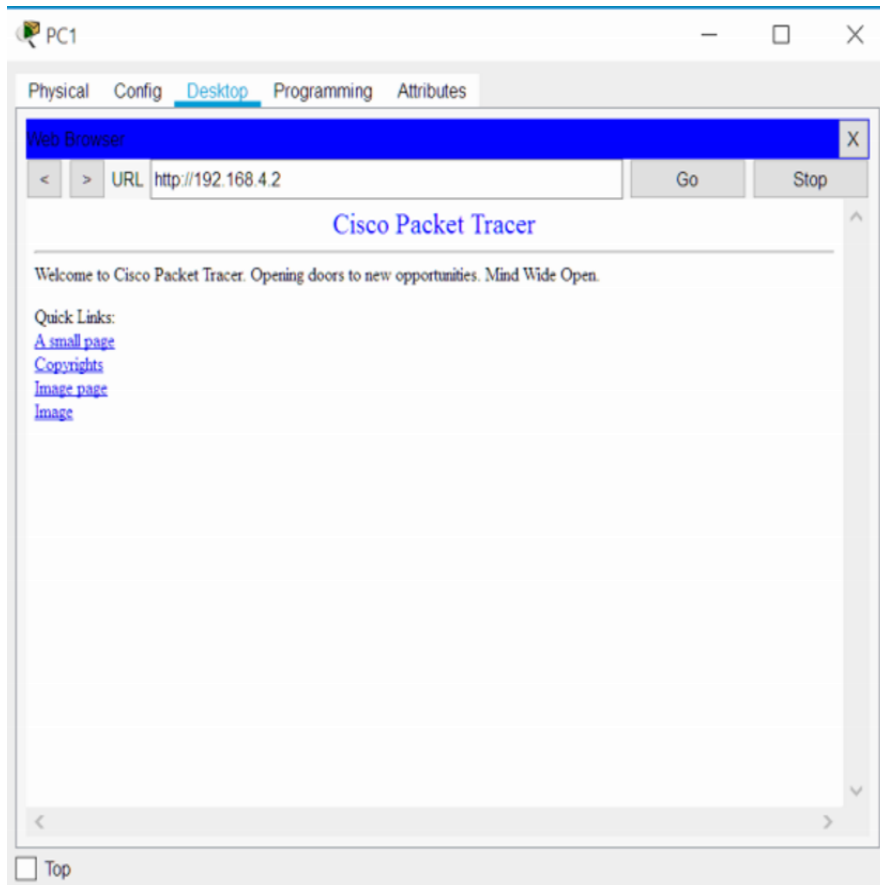
- DHCP Server



- Server3



- Server Web



3. Lakukan konfigurasi routing dinamis menggunakan protocol routing RIP pada 4 router tersebut !
- a. router 0

The screenshot shows the configuration window for Router0. The 'Config' tab is active, and the 'ROUTING' section is expanded, with 'RIP' selected. The 'RIP Routing' section shows a list of network addresses: 192.168.1.0, 192.168.5.0, and 192.168.8.0. Below this list is a 'Remove' button. The 'Equivalent IOS Commands' section shows the following commands:

```
Router#
Router#configure terminal
Enter configuration commands, one per line. End with
CNTL/Z.
Router(config)#router rip
Router(config-router)#
```

At the bottom left, there is a 'Top' button.

- b. router 1

The screenshot shows the configuration window for Router1. The 'Config' tab is active, and the 'ROUTING' section is expanded, with 'RIP' selected. The 'RIP Routing' section shows a list of network addresses: 192.168.2.0, 192.168.5.0, and 192.168.6.0. Below this list is a 'Remove' button. The 'Equivalent IOS Commands' section shows the following commands:

```
Router#
Router#configure terminal
Enter configuration commands, one per line. End with
CNTL/Z.
Router(config)#router rip
Router(config-router)#
```

At the bottom left, there is a 'Top' button.

c. router 2

The screenshot shows the configuration window for Router2. The 'Config' tab is active, and the 'RIP' option under the 'ROUTING' section is selected. The 'RIP Routing' section displays a list of network addresses: 192.168.3.0, 192.168.6.0, and 192.168.7.0. An 'Add' button is visible next to the list, and a 'Remove' button is at the bottom right. The 'Equivalent IOS Commands' section shows the following commands:

```
Router#
Router#configure terminal
Enter configuration commands, one per line. End with
CNTL/Z.
Router(config)#router rip
Router(config-router)#
```

At the bottom left, there is a 'Top' button.

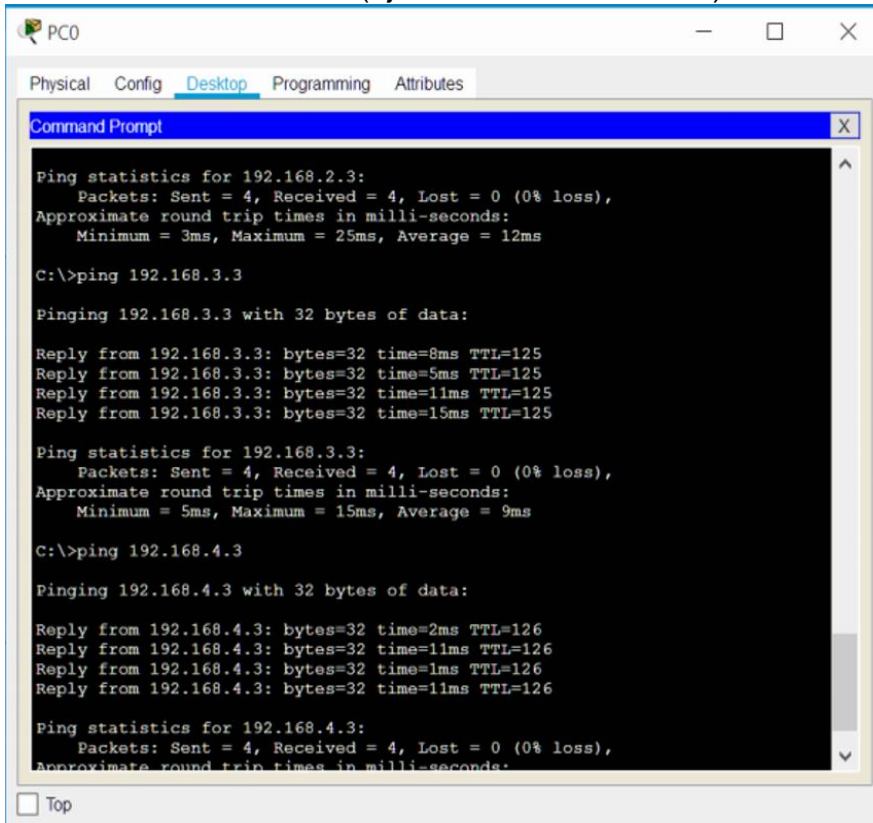
d. router 3

The screenshot shows the configuration window for Router3. The 'Config' tab is active, and the 'RIP' option under the 'ROUTING' section is selected. The 'RIP Routing' section displays a list of network addresses: 192.168.4.0, 192.168.7.0, and 192.168.8.0. An 'Add' button is visible next to the list, and a 'Remove' button is at the bottom right. The 'Equivalent IOS Commands' section shows the following commands:

```
Router#
Router#configure terminal
Enter configuration commands, one per line. End with
CNTL/Z.
Router(config)#router rip
Router(config-router)#
```

At the bottom left, there is a 'Top' button.

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



The screenshot shows a Command Prompt window titled "PC0" with tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active. The Command Prompt displays the following text:

```
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

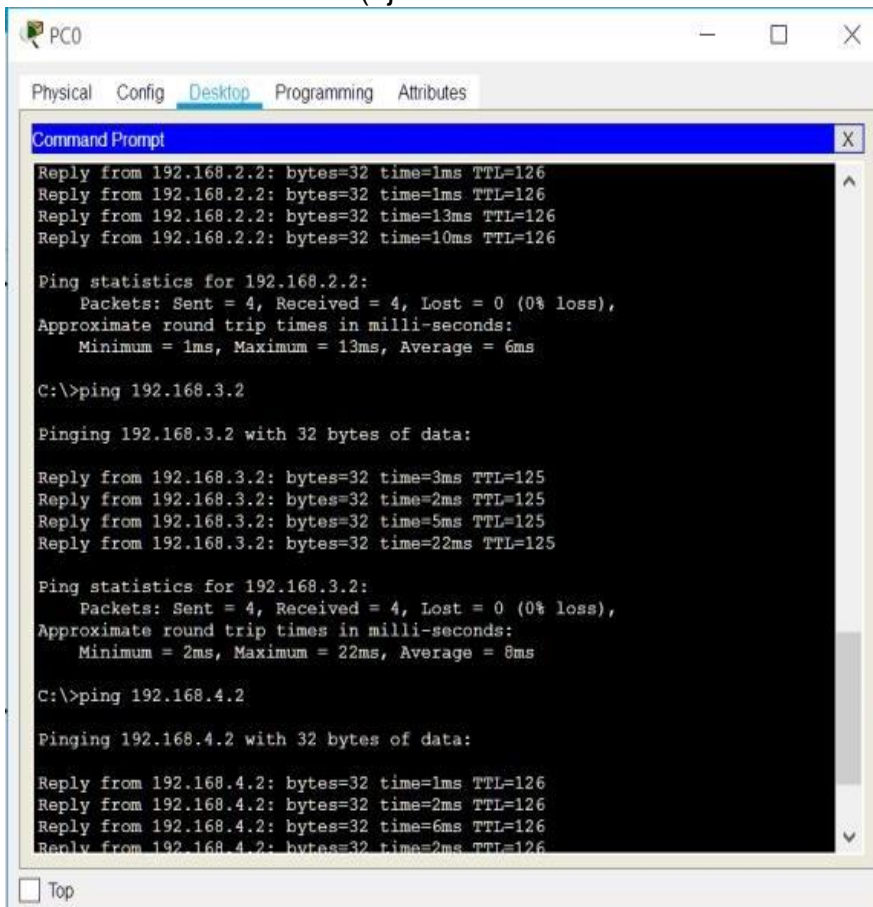
C:\>ping 192.168.4.3

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=11ms 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)



The screenshot shows a Command Prompt window titled "PC0" with tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active. The Command Prompt displays the following text:

```
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
```


4. Lakukan uji koneksi untuk melihat konektivitas antar PC, dan lakukan konfigurasi routing statis pada 4 router tersebut !
- a. router 0

The screenshot shows the configuration window for Router0. The left sidebar has a tree view with categories: GLOBAL (Settings, Algorithm Settings), ROUTING (Static, RIP), and INTERFACE (FastEthernet0/0, FastEthernet1/0, Serial2/0, Serial3/0, FastEthernet4/0, FastEthernet5/0). The 'Static' option under ROUTING is selected. The main area is titled 'Static Routes' and contains input fields for 'Network', 'Mask', and 'Next Hop', followed by an 'Add' button. Below these is a list of configured static routes under the heading 'Network Address':

- 192.168.4.0/24 via 192.168.8.1
- 192.168.3.0/24 via 192.168.8.1
- 192.168.2.0/24 via 192.168.8.1
- 192.168.1.0/24 via 192.168.8.1

At the bottom, there is a 'Remove' button and a section titled 'Equivalent IOS Commands' containing a list of commands:

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.5.2
Router(config)#ip route 192.168.2.0 255.255.255.0 192.168.5.2
Router(config)#ip route 192.168.3.0 255.255.255.0 192.168.5.2
Router(config)#ip route 192.168.4.0 255.255.255.0 192.168.5.2
Router(config)#ip route 192.168.6.0 255.255.255.0 192.168.5.2
Router(config)#ip route 192.168.7.0 255.255.255.0 192.168.5.2
Router(config)#ip route 192.168.8.0 255.255.255.0 192.168.5.2
Router(config)#ip route 192.168.7.0 255.255.255.0 192.168.8.1
Router(config)#ip route 192.168.6.0 255.255.255.0 192.168.8.1
Router(config)#ip route 192.168.5.0 255.255.255.0 192.168.8.1
Router(config)#ip route 192.168.4.0 255.255.255.0 192.168.8.1
Router(config)#ip route 192.168.3.0 255.255.255.0 192.168.8.1
Router(config)#ip route 192.168.2.0 255.255.255.0 192.168.8.1
Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.8.1
Router(config)#
```

- b. router 1

The screenshot shows the configuration window for Router1. The left sidebar is identical to Router0, with 'Static' selected under ROUTING. The 'Static Routes' section has the same input fields and 'Add' button. The 'Network Address' list contains:

- 192.168.1.0/24 via 192.168.6.2
- 192.168.2.0/24 via 192.168.6.2
- 192.168.3.0/24 via 192.168.6.2
- 192.168.4.0/24 via 192.168.6.2

The 'Equivalent IOS Commands' section shows the following commands:

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.6.2
Router(config)#ip route 192.168.2.0 255.255.255.0 192.168.6.2
Router(config)#ip route 192.168.3.0 255.255.255.0 192.168.6.2
Router(config)#ip route 192.168.4.0 255.255.255.0 192.168.6.2
Router(config)#ip route 192.168.5.0 255.255.255.0 192.168.6.2
Router(config)#ip route 192.168.7.0 255.255.255.0 192.168.6.2
Router(config)#ip route 192.168.8.0 255.255.255.0 192.168.6.2
Router(config)#ip route 192.168.8.0 255.255.255.0 192.168.5.1
Router(config)#ip route 192.168.7.0 255.255.255.0 192.168.5.1
Router(config)#ip route 192.168.6.0 255.255.255.0 192.168.5.1
Router(config)#ip route 192.168.4.0 255.255.255.0 192.168.5.1
Router(config)#ip route 192.168.3.0 255.255.255.0 192.168.5.1
Router(config)#ip route 192.168.2.0 255.255.255.0 192.168.5.1
Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.5.1
Router(config)#
```

c. router 2

The screenshot shows the configuration window for Router2. The left sidebar has a tree view with 'GLOBAL' (Settings, Algorithm Settings), 'ROUTING' (Static, RIP), and 'INTERFACE' (FastEthernet0/0, FastEthernet1/0, Serial2/0, Serial3/0, FastEthernet4/0, FastEthernet5/0). The 'Static' option under 'ROUTING' is selected. The main area is titled 'Static Routes' and contains input fields for 'Network', 'Mask', and 'Next Hop', followed by an 'Add' button. Below these is a list of configured static routes under the heading 'Network Address':

- 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
- 192.168.4.0/24 via 192.168.7.2

A 'Remove' button is at the bottom right of the list. At the bottom of the window is a 'Top' button.

Equivalent IOS Commands

```
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
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 192.168.8.0 255.255.255.0 192.168.6.1
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)#
Router(config)#
```

d. router 3

The screenshot shows the configuration window for Router3. The left sidebar is identical to Router2, with 'Static' selected under 'ROUTING'. The 'Static Routes' section has the same input fields and 'Add' button. The 'Network Address' list contains:

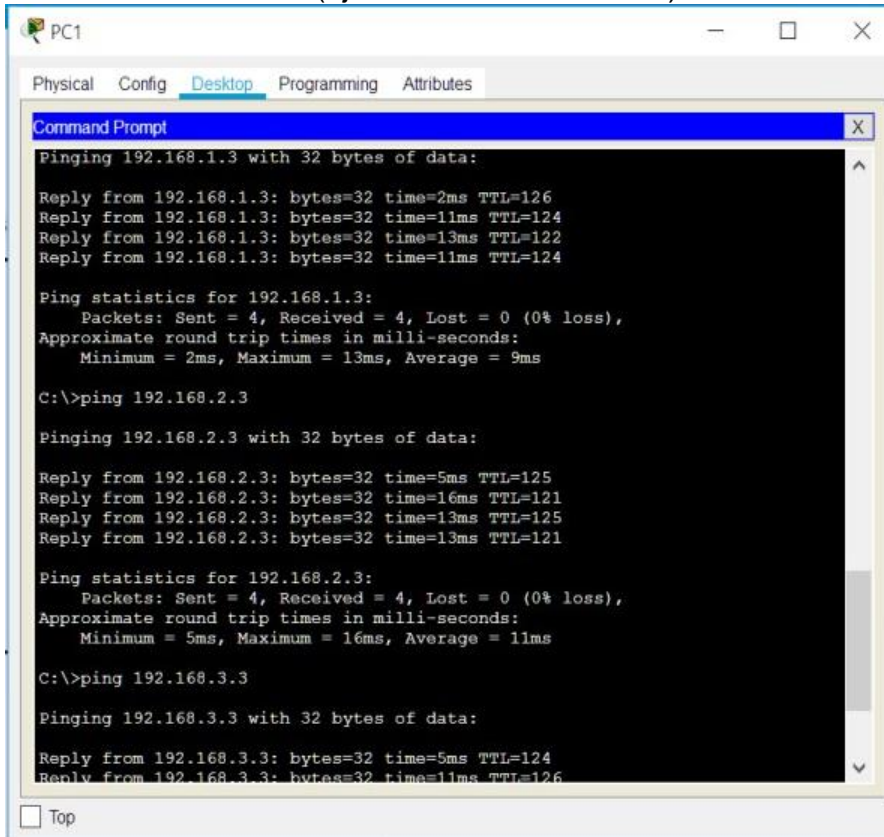
- 192.168.1.0/24 via 192.168.7.1
- 192.168.2.0/24 via 192.168.7.1
- 192.168.3.0/24 via 192.168.7.1
- 192.168.4.0/24 via 192.168.7.1

A 'Remove' button is at the bottom right of the list. At the bottom of the window is a 'Top' button.

Equivalent IOS Commands

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
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)#
```


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



The screenshot shows a Windows Command Prompt window titled "PC1" with tabs for Physical, Config, Desktop, Programming, and Attributes. The "Desktop" tab is active. The command prompt displays the results of three ping commands. The first command is "ping 192.168.1.3", which shows four successful replies with times ranging from 2ms to 13ms and a TTL of 124. The second command is "ping 192.168.2.3", showing four successful replies with times ranging from 5ms to 16ms and a TTL of 121. The third command is "ping 192.168.3.3", showing two successful replies with times of 5ms and 11ms and a TTL of 124. Ping statistics are provided for each command, indicating 0% loss.

```
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

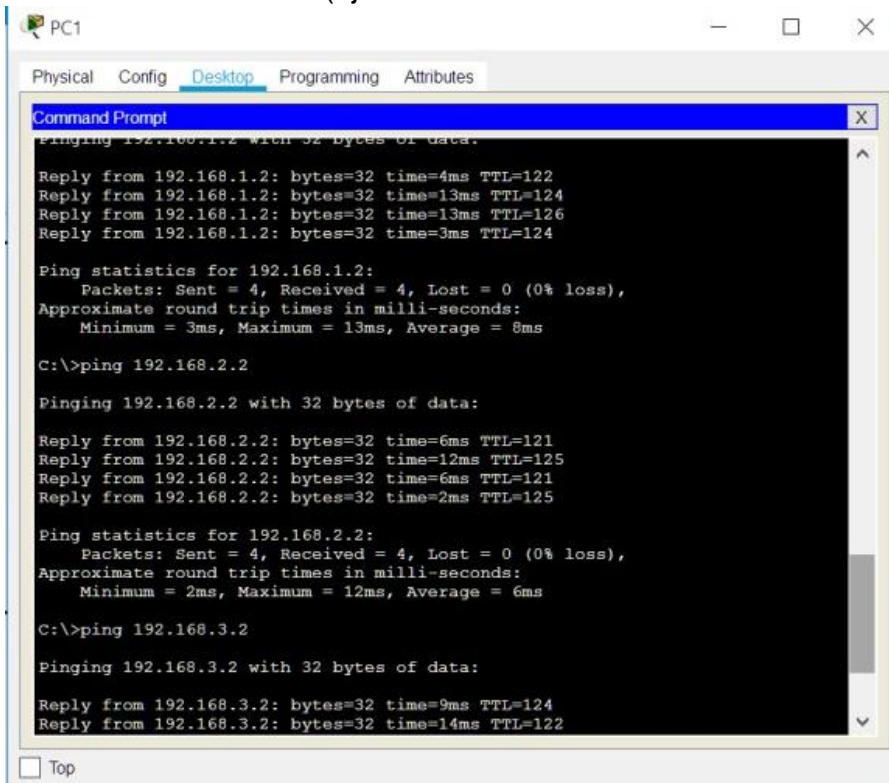
Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 5ms, Maximum = 16ms, Average = 11ms

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)



The screenshot shows a Windows Command Prompt window titled "PC1" with tabs for Physical, Config, Desktop, Programming, and Attributes. The "Desktop" tab is active. The command prompt displays the results of three ping commands. The first command is "ping 192.168.1.2", which shows four successful replies with times ranging from 3ms to 13ms and a TTL of 124. The second command is "ping 192.168.2.2", showing four successful replies with times ranging from 2ms to 12ms and a TTL of 125. The third command is "ping 192.168.3.2", showing two successful replies with times of 9ms and 14ms and a TTL of 124. Ping statistics are provided for each command, indicating 0% loss.

```
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

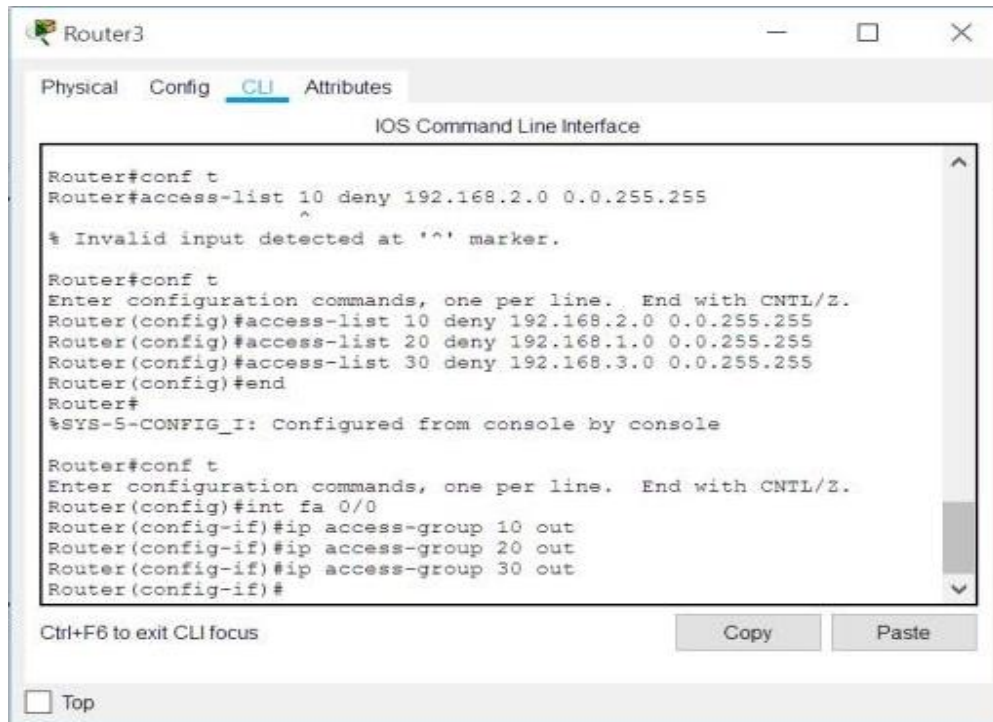
Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 12ms, Average = 6ms

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
```

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



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

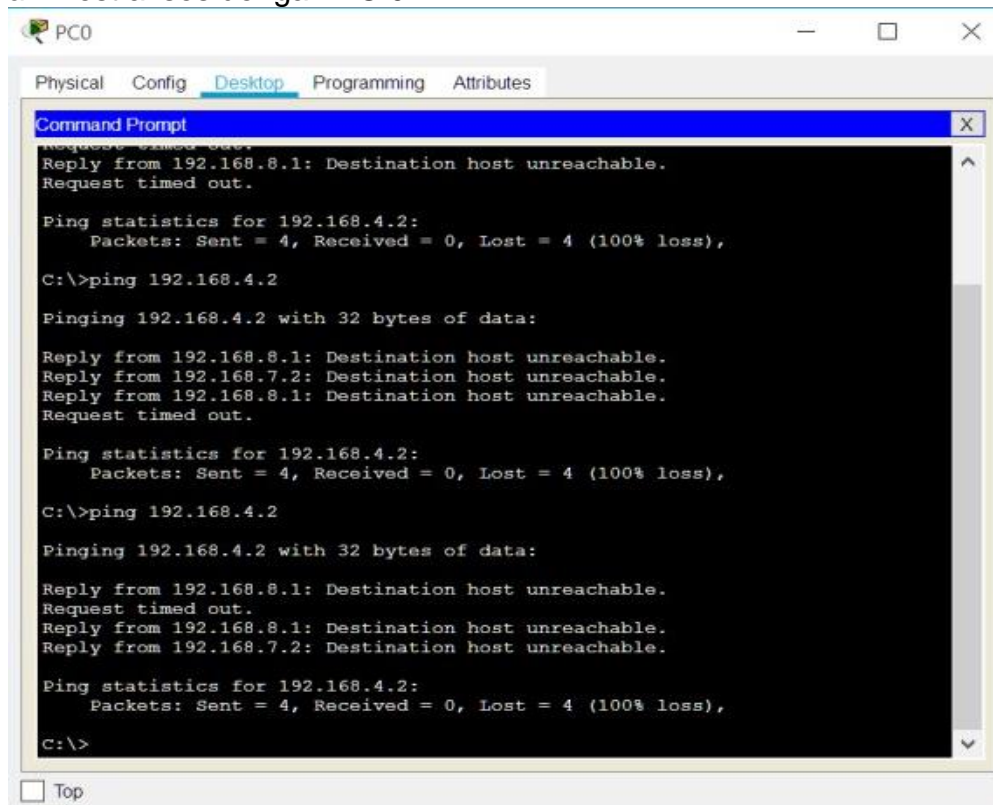
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa 0/0
Router(config-if)#ip access-group 10 out
Router(config-if)#ip access-group 20 out
Router(config-if)#ip access-group 30 out
Router(config-if)#
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

- a. Test akses dengan PC 0



PC0

Physical Config **Desktop** Programming Attributes

Command Prompt

```
Request timed out.
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:

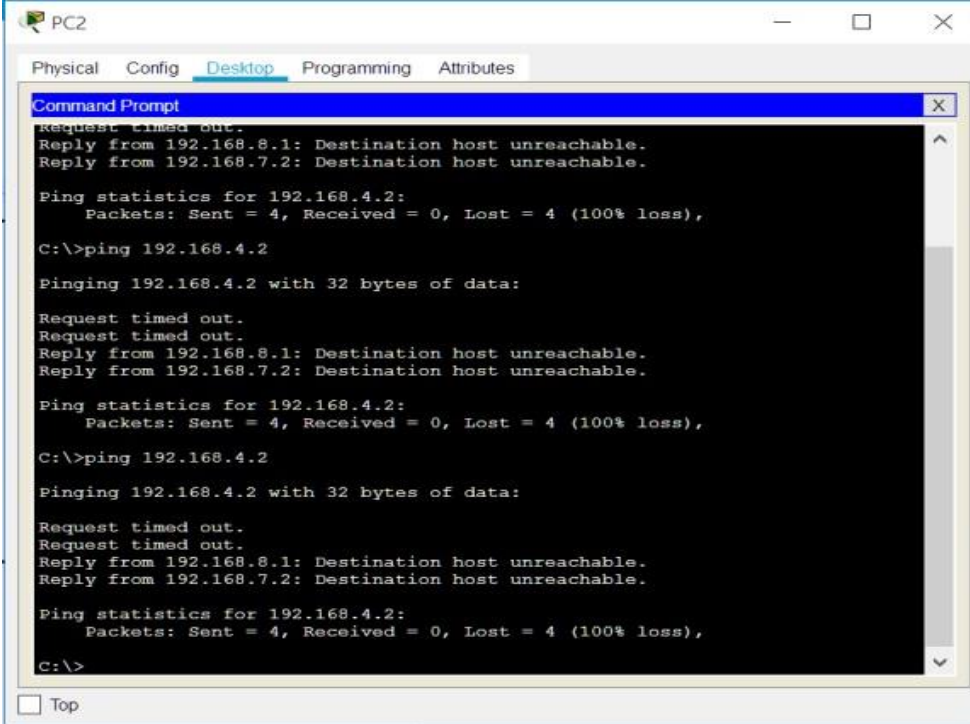
Reply from 192.168.8.1: Destination host unreachable.
Request timed out.
Reply from 192.168.8.1: Destination host unreachable.
Reply from 192.168.7.2: Destination host unreachable.

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

C:\>
```

☐ Top

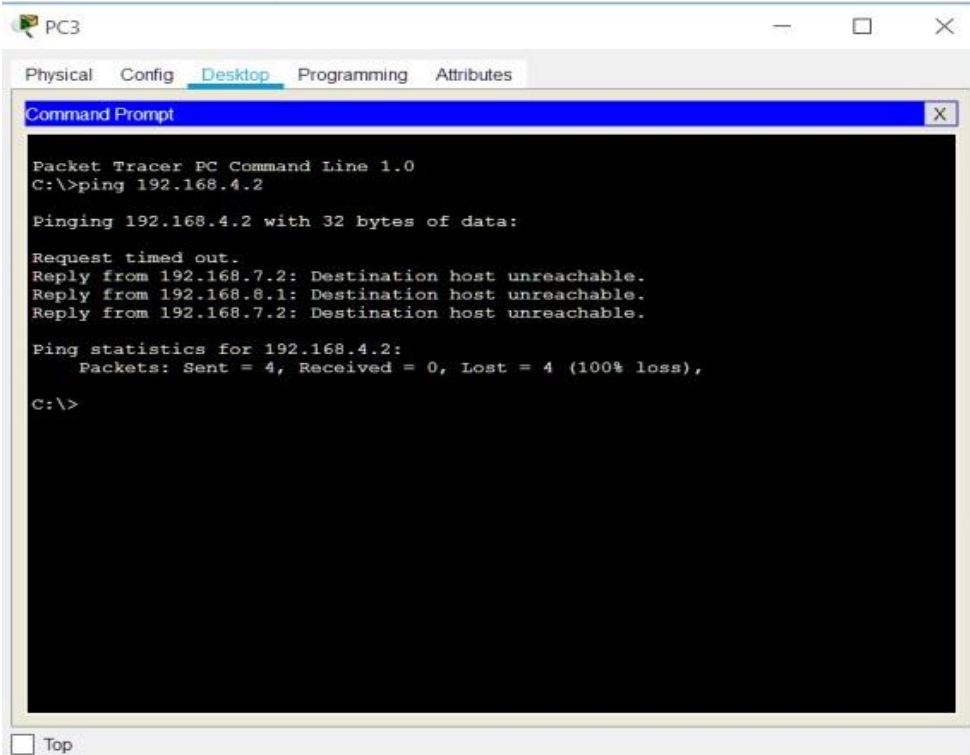
b. Test akses dengan PC 2



The screenshot shows a Packet Tracer PC window for PC2. The 'Desktop' tab is active, displaying a Command Prompt window. 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. The Command Prompt text is as follows:

```
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 window. 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. The Command Prompt text 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:  
  
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

