Nama : Nugroho Prihananto
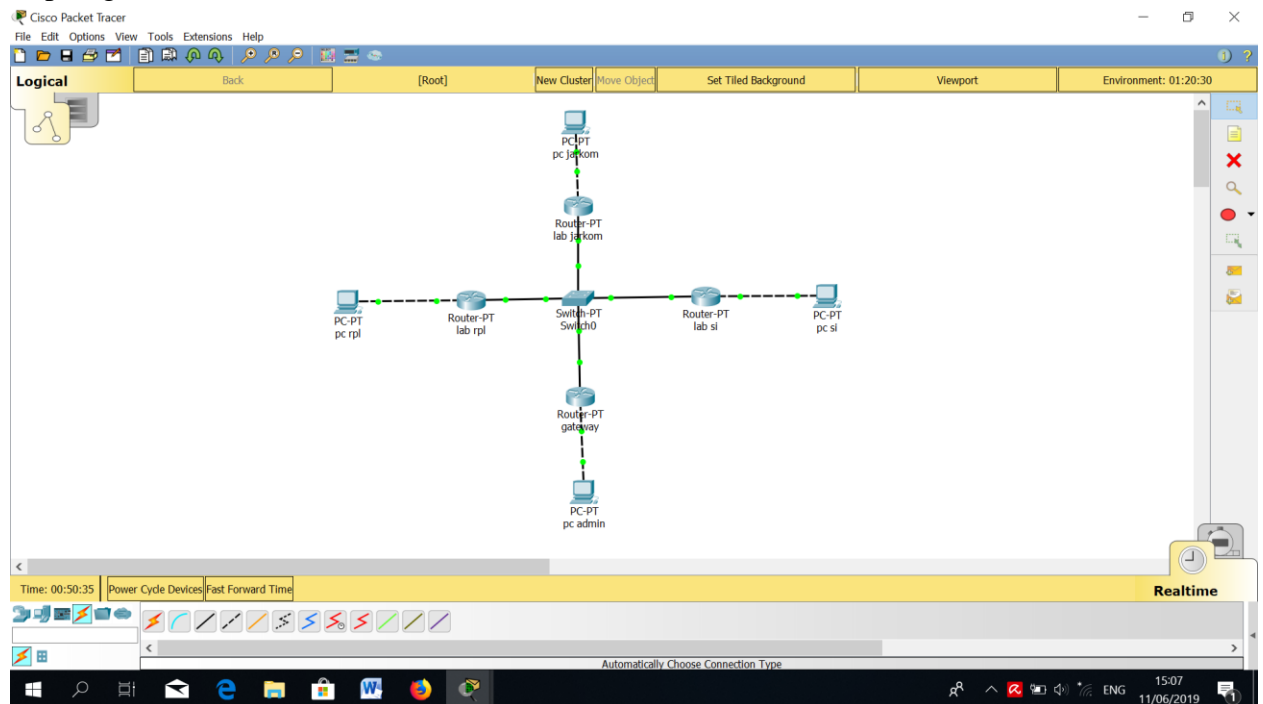
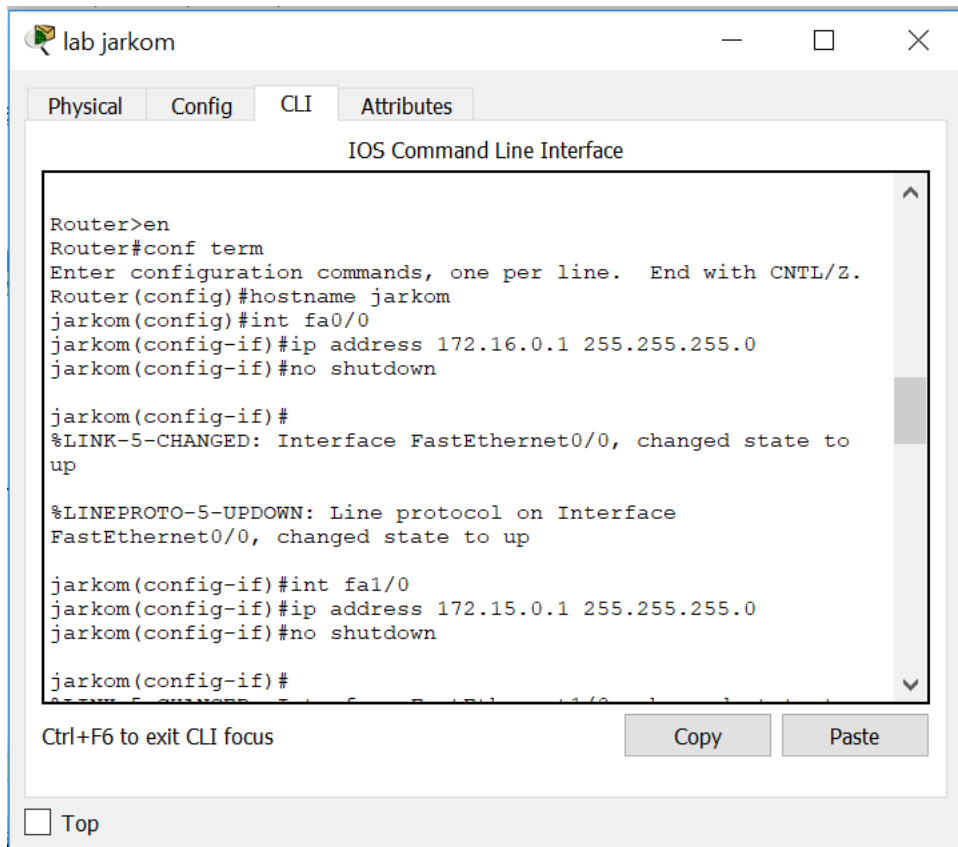**NIM   : L200170186**

Kelas : D

TUGAS MODUL 11

1. Buatlah topologi jaringan serupa dengan gambar 10.1, namun metode routing yang digunakan adalah metode routing statis.
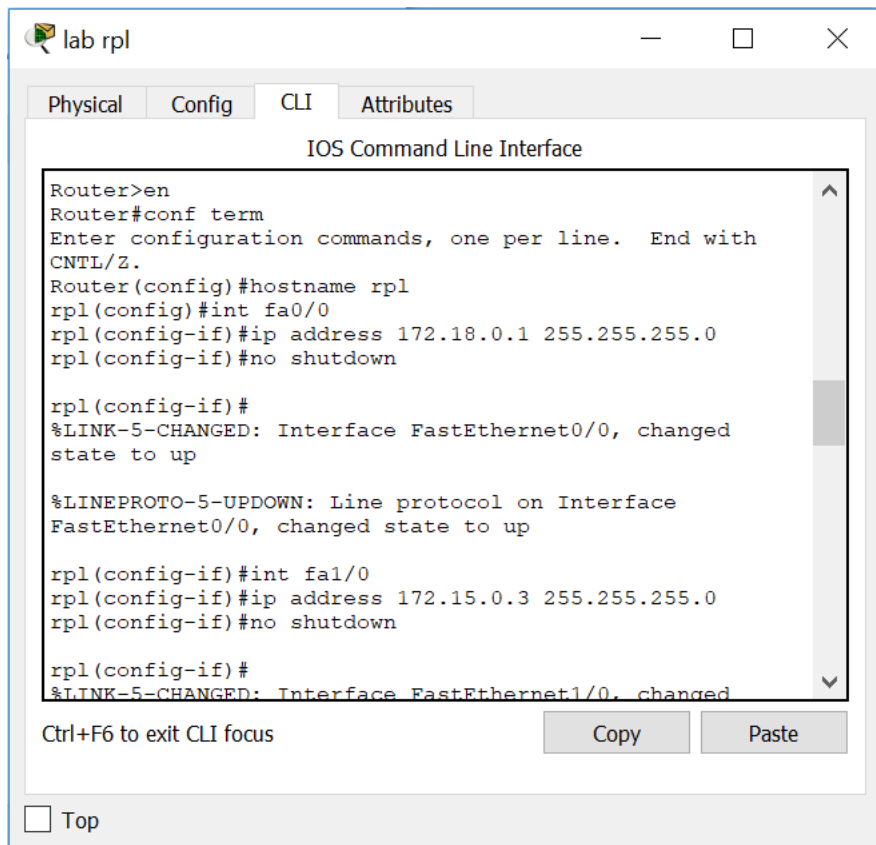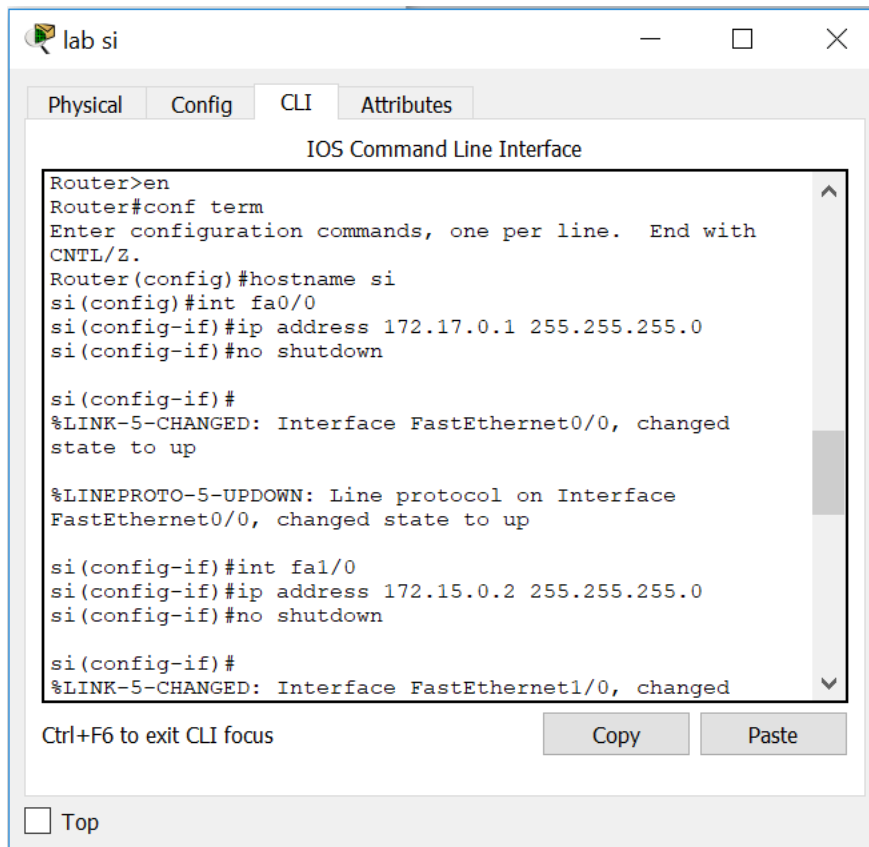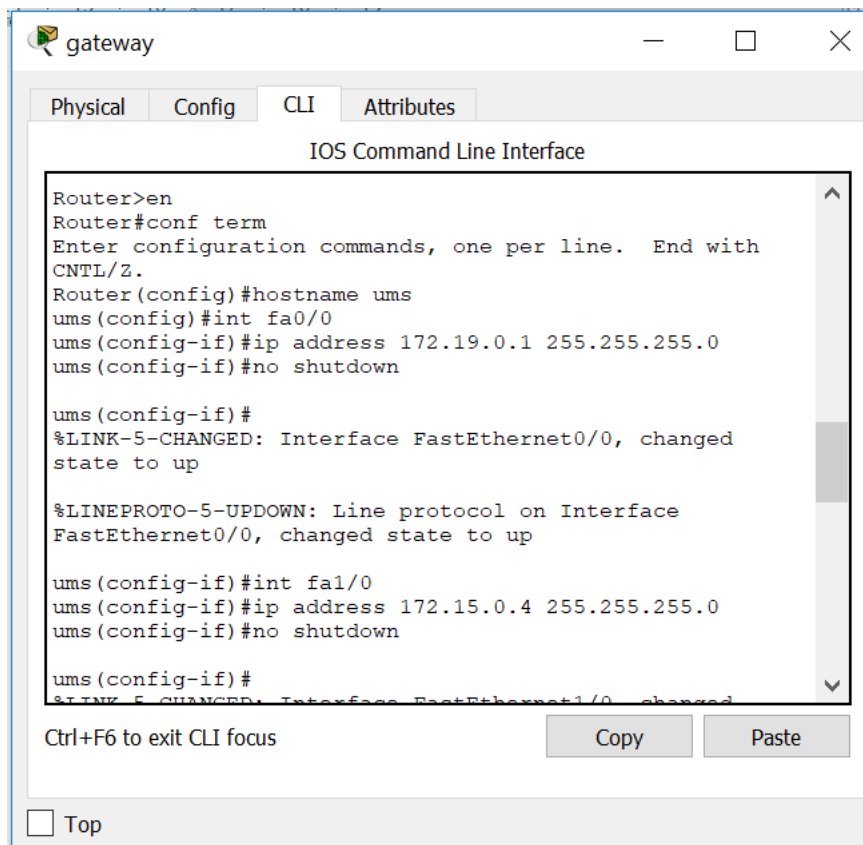   a. Topologi

   b. Konfigurasi router jarkom

c. Konfigurasi router rpl

```
lab rpl                                        —    □    ✕

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)#hostname rpl
rpl(config)#int fa0/0
rpl(config-if)#ip address 172.18.0.1 255.255.255.0
rpl(config-if)#no shutdown

rpl(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed
state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/0, changed state to up

rpl(config-if)#int fa1/0
rpl(config-if)#ip address 172.15.0.3 255.255.255.0
rpl(config-if)#no shutdown

rpl(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed

Ctrl+F6 to exit CLI focus            Copy        Paste

☐ Top
```

d. Konfigurasi router si

```
lab si                              —   □   ✕

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)#hostname si
si(config)#int fa0/0
si(config-if)#ip address 172.17.0.1 255.255.255.0
si(config-if)#no shutdown

si(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed
state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/0, changed state to up

si(config-if)#int fa1/0
si(config-if)#ip address 172.15.0.2 255.255.255.0
si(config-if)#no shutdown

si(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed

Ctrl+F6 to exit CLI focus        Copy        Paste

□ Top
```

e. Konfigurasi router gateway

```
gateway                                              —    □    ×

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)#hostname ums
ums(config)#int fa0/0
ums(config-if)#ip address 172.19.0.1 255.255.255.0
ums(config-if)#no shutdown

ums(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed
state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/0, changed state to up

ums(config-if)#int fa1/0
ums(config-if)#ip address 172.15.0.4 255.255.255.0
ums(config-if)#no shutdown

ums(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed

Ctrl+F6 to exit CLI focus              Copy        Paste

☐ Top
```

f.   Routing router jarkom

```
lab jarkom                                    —    □    ✕

  Physical    Config    CLI    Attributes
                    IOS Command Line Interface

 jarkom>en
 jarkom#conf term
 Enter configuration commands, one per line.  End with CNTL/Z.
 jarkom(config)#ip route 172.18.0.0 255.255.255.0 172.15.0.3
 jarkom(config)#ip route 172.17.0.0 255.255.255.0 172.15.0.2
 jarkom(config)#ip route 172.19.0.0 255.255.255.0 172.15.0.4
 jarkom(config)#



 jarkom con0 is now available



  Ctrl+F6 to exit CLI focus              Copy          Paste


  ☐ Top
```

g. Routing router rpl

h. Routing router si

```
lab si                                    —  □  ✕

Physical   Config   CLI   Attributes
                IOS Command Line Interface
si(config)#ip route 172.16.0.0 255.255.255.0 172.15.0.1
si(config)#ip route 172.18.0.0 255.255.255.0 172.15.0.3
si(config)#ip route 172.19.0.0 255.255.255.0 172.15.0.4
si(config)#




si con0 is now available




Press RETURN to get started.


Ctrl+F6 to exit CLI focus              Copy        Paste


□ Top
```

i.   Routing router gateway

j. Konfigurasi pc jarkom

k. Konfigurasi pc rpl

l. Konfigurasi pc si

m. Konfigurasi pc admin

n. Uji konektivitas
- Pc admin ke pc jarkom


```
Pinging 172.16.0.2 with 32 bytes of data:

Reply from 172.16.0.2: bytes=32 time<1ms TTL=126
Reply from 172.16.0.2: bytes=32 time=10ms TTL=126
Reply from 172.16.0.2: bytes=32 time=16ms TTL=126
Reply from 172.16.0.2: bytes=32 time=11ms TTL=126

Ping statistics for 172.16.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 16ms, Average = 9ms
```

- Pc admin ke pc si

```
C:\>ping 172.17.0.2

Pinging 172.17.0.2 with 32 bytes of data:

Reply from 172.17.0.2: bytes=32 time=1ms TTL=126
Reply from 172.17.0.2: bytes=32 time<1ms TTL=126
Reply from 172.17.0.2: bytes=32 time=4ms TTL=126
Reply from 172.17.0.2: bytes=32 time=12ms TTL=126

Ping statistics for 172.17.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 12ms, Average = 4ms
```

- Pc admin ke pc rpl

```
C:\>ping 172.18.0.2

Pinging 172.18.0.2 with 32 bytes of data:

Reply from 172.18.0.2: bytes=32 time<1ms TTL=126
Reply from 172.18.0.2: bytes=32 time=12ms TTL=126
Reply from 172.18.0.2: bytes=32 time=12ms TTL=126
Reply from 172.18.0.2: bytes=32 time=11ms TTL=126

Ping statistics for 172.18.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 12ms, Average = 8ms
```
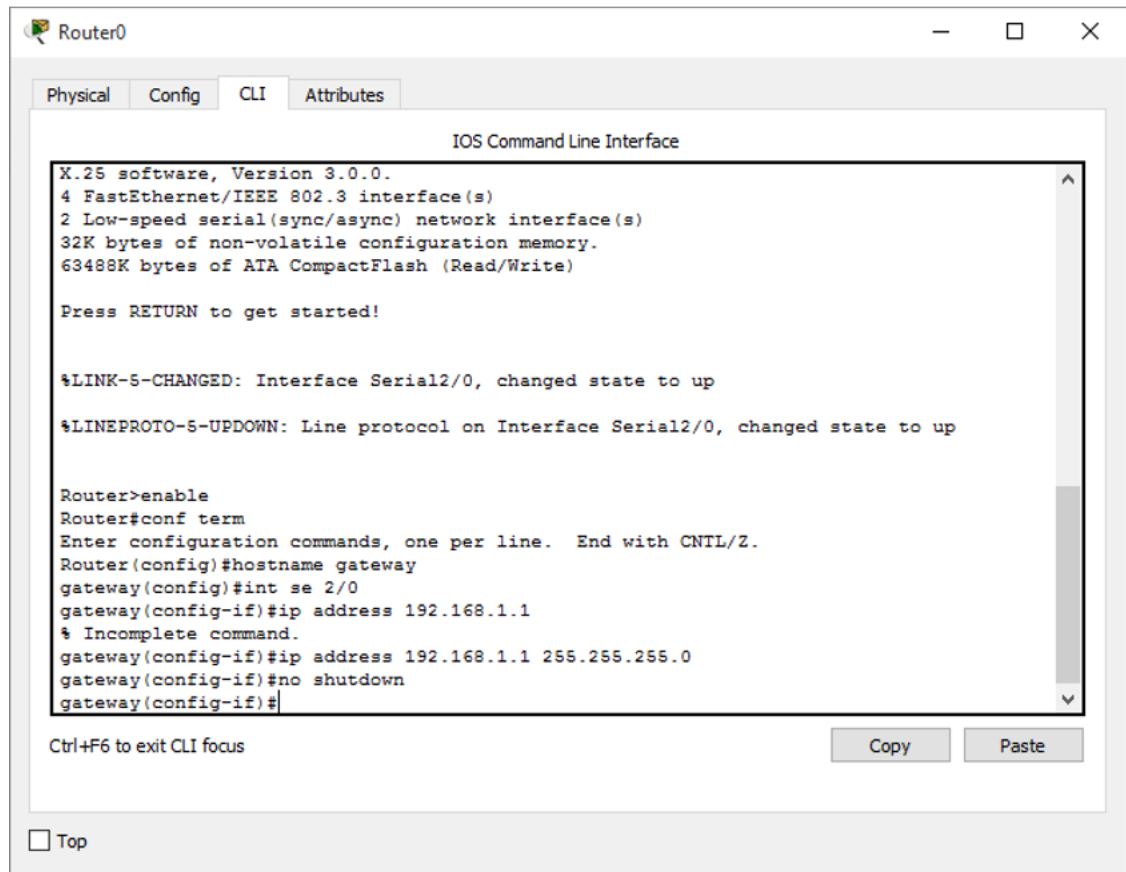
2. Buatlah topologi jaringan BUS untuk membangun sebuah laboratotium komputer yang terdiri
   dari tiga router (jarkom, rpl, si) dan berpusat pada satu router gateway, dengan metode
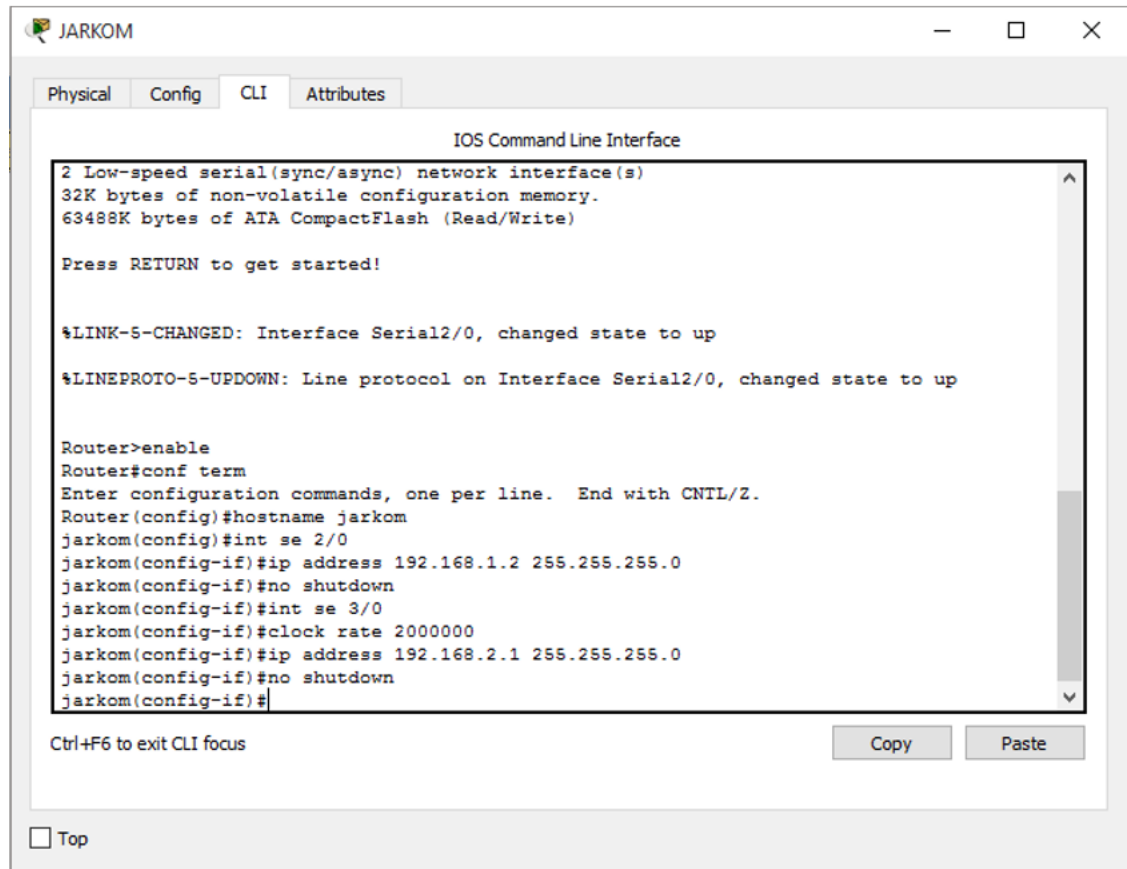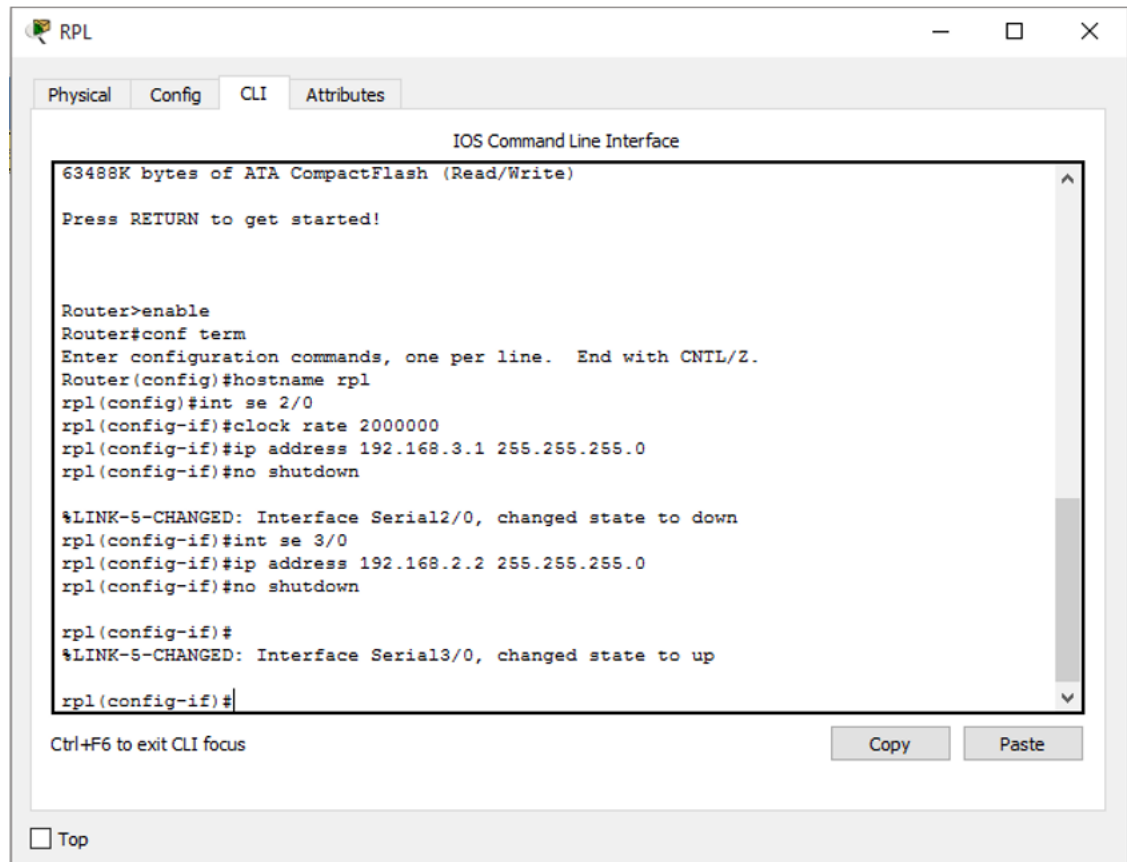   routing:
   a. STATIC
      - Topologi
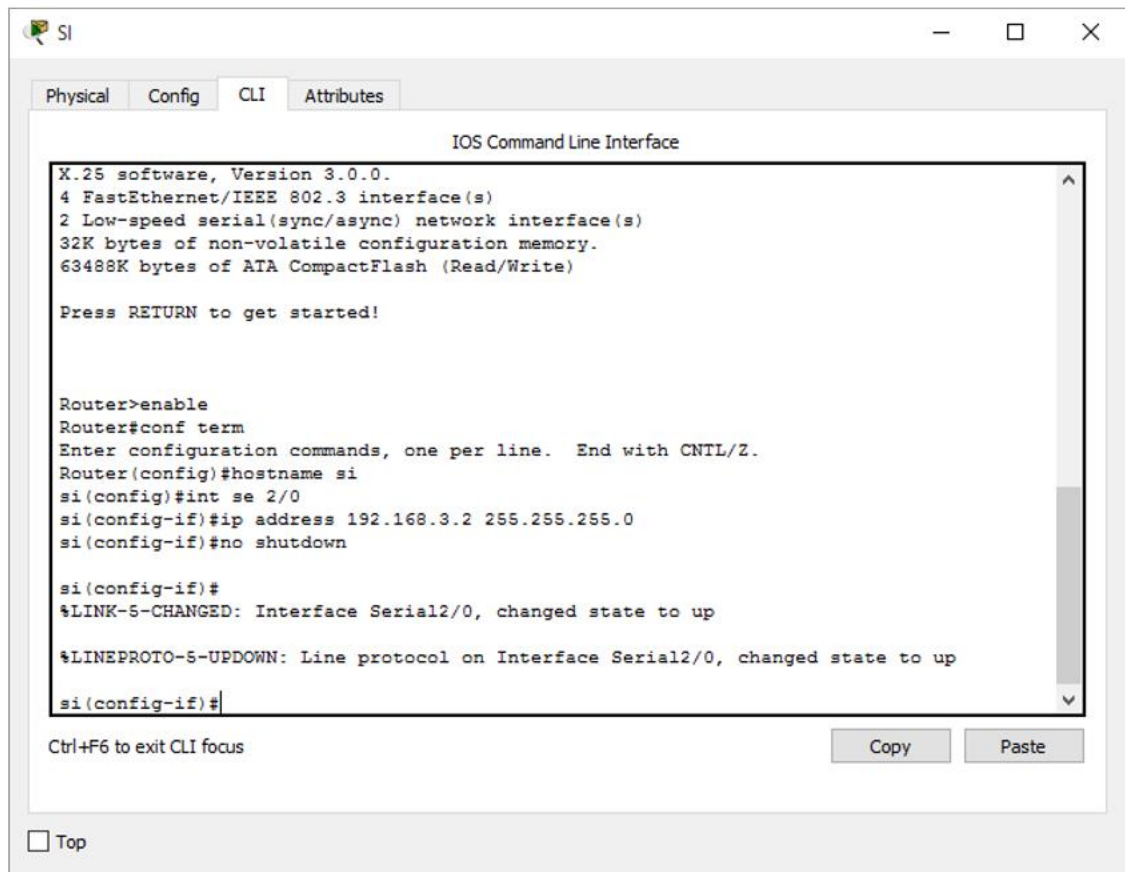

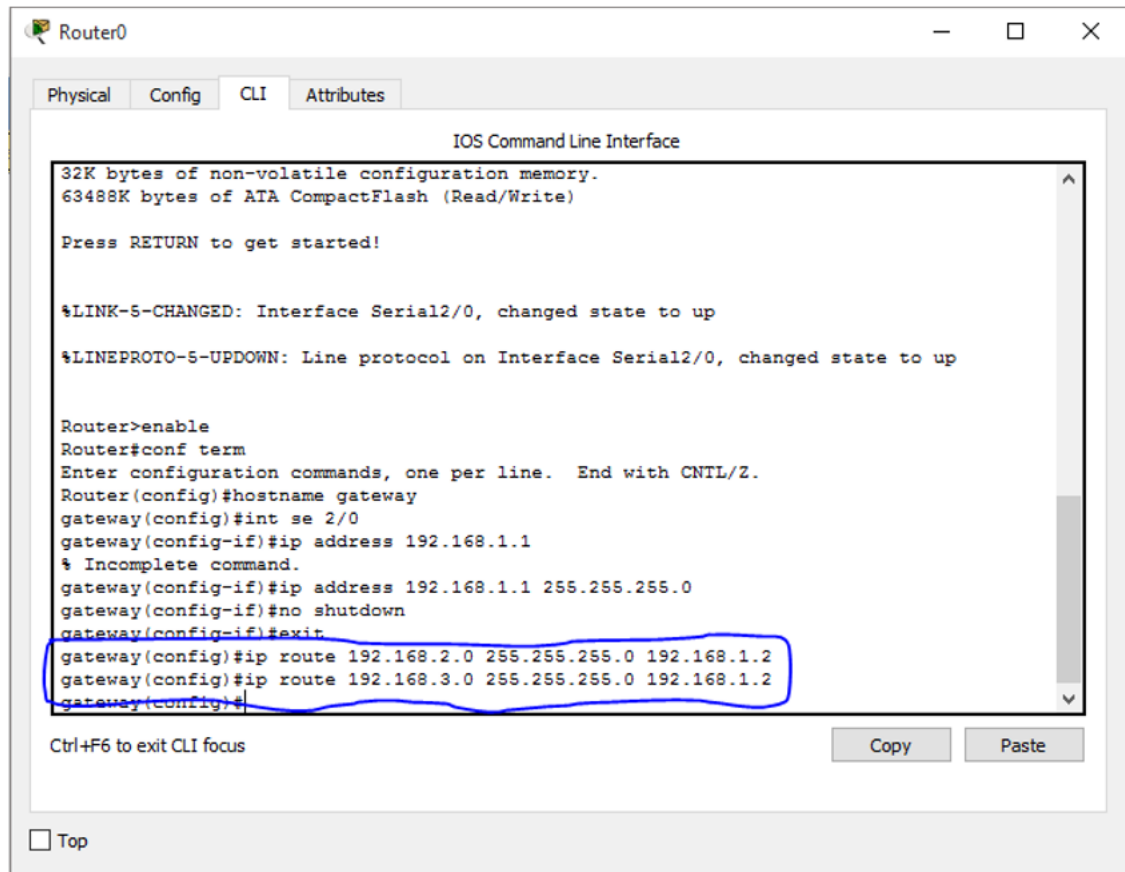   - Konfigurasi router gateway
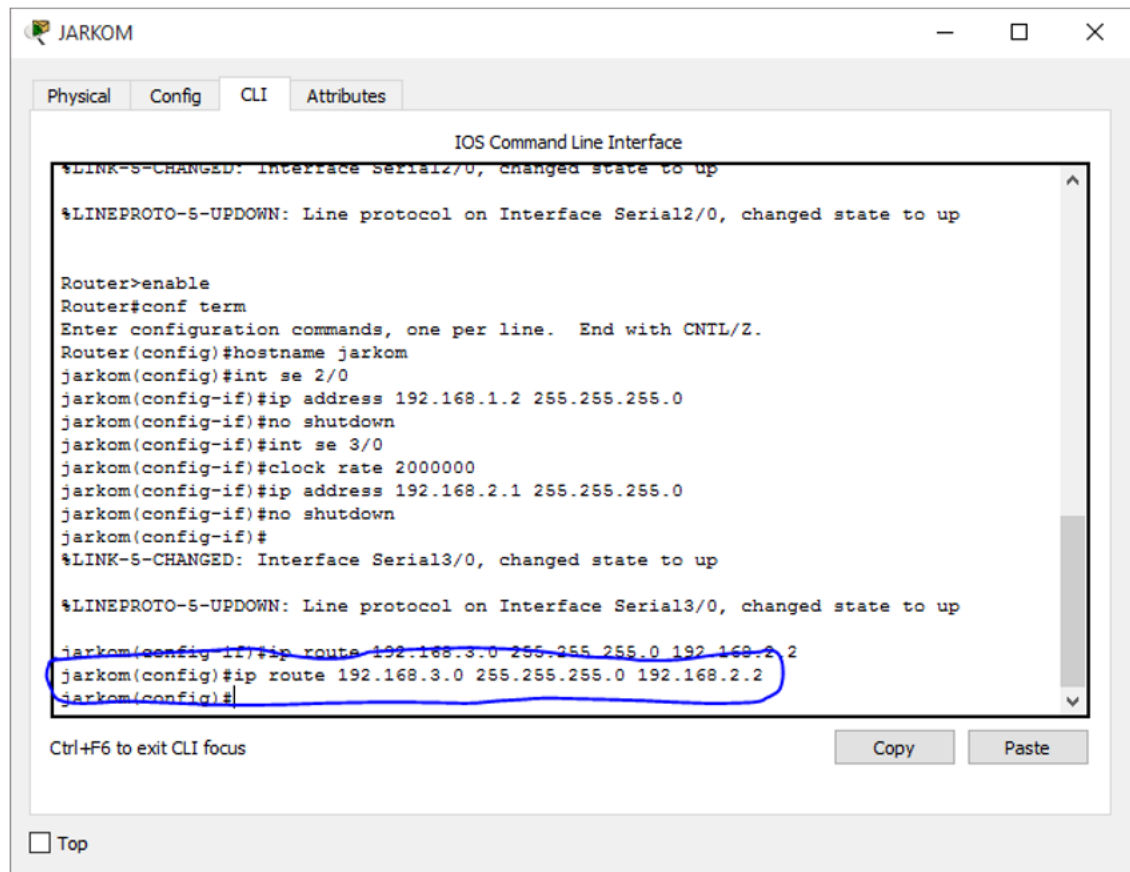
- Konfigurasi router jarkom
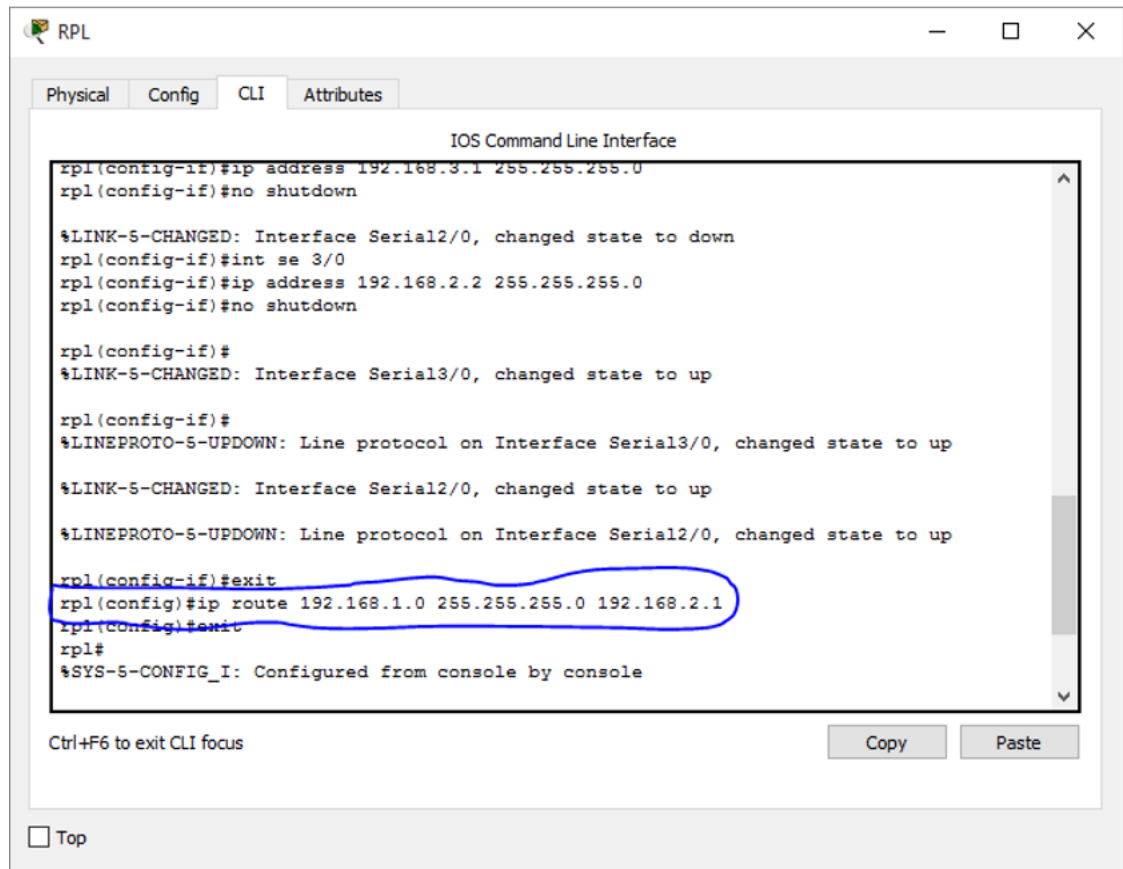
- Konfigurasi router rpl

- Konfigurasi router si

- Routing router gateway

```
Router0                                                          —   □   ✕

 Physical   Config   CLI   Attributes

                        IOS Command Line Interface
 32K bytes of non-volatile configuration memory.
 63488K bytes of ATA CompactFlash (Read/Write)

 Press RETURN to get started!


 %LINK-5-CHANGED: Interface Serial2/0, changed state to up

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


 Router>enable
 Router#conf term
 Enter configuration commands, one per line.  End with CNTL/Z.
 Router(config)#hostname gateway
 gateway(config)#int se 2/0
 gateway(config-if)#ip address 192.168.1.1
 % Incomplete command.
 gateway(config-if)#ip address 192.168.1.1 255.255.255.0
 gateway(config-if)#no shutdown
 gateway(config-if)#exit
 gateway(config)#ip route 192.168.2.0 255.255.255.0 192.168.1.2
 gateway(config)#ip route 192.168.3.0 255.255.255.0 192.168.1.2
 gateway(config)#

 Ctrl+F6 to exit CLI focus                              Copy      Paste


 ☐ Top
```

- Routing router jarkom

JARKOM — □ ×

Physical | Config | CLI | Attributes

IOS Command Line Interface

```
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

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


Router>enable
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname jarkom
jarkom(config)#int se 2/0
jarkom(config-if)#ip address 192.168.1.2 255.255.255.0
jarkom(config-if)#no shutdown
jarkom(config-if)#int se 3/0
jarkom(config-if)#clock rate 2000000
jarkom(config-if)#ip address 192.168.2.1 255.255.255.0
jarkom(config-if)#no shutdown
jarkom(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

jarkom(config-if)#ip route 192.168.3.0 255.255.255.0 192.168.2.2
jarkom(config)#ip route 192.168.3.0 255.255.255.0 192.168.2.2
jarkom(config)#
```
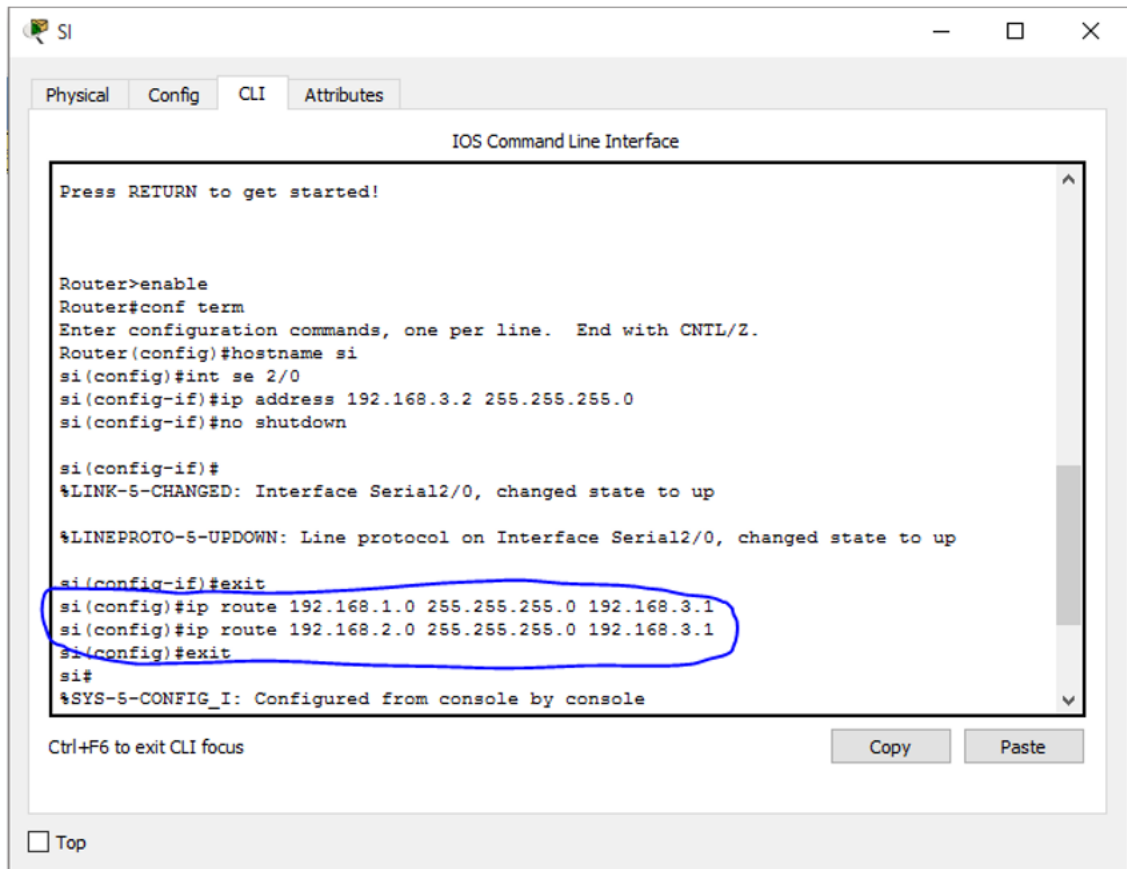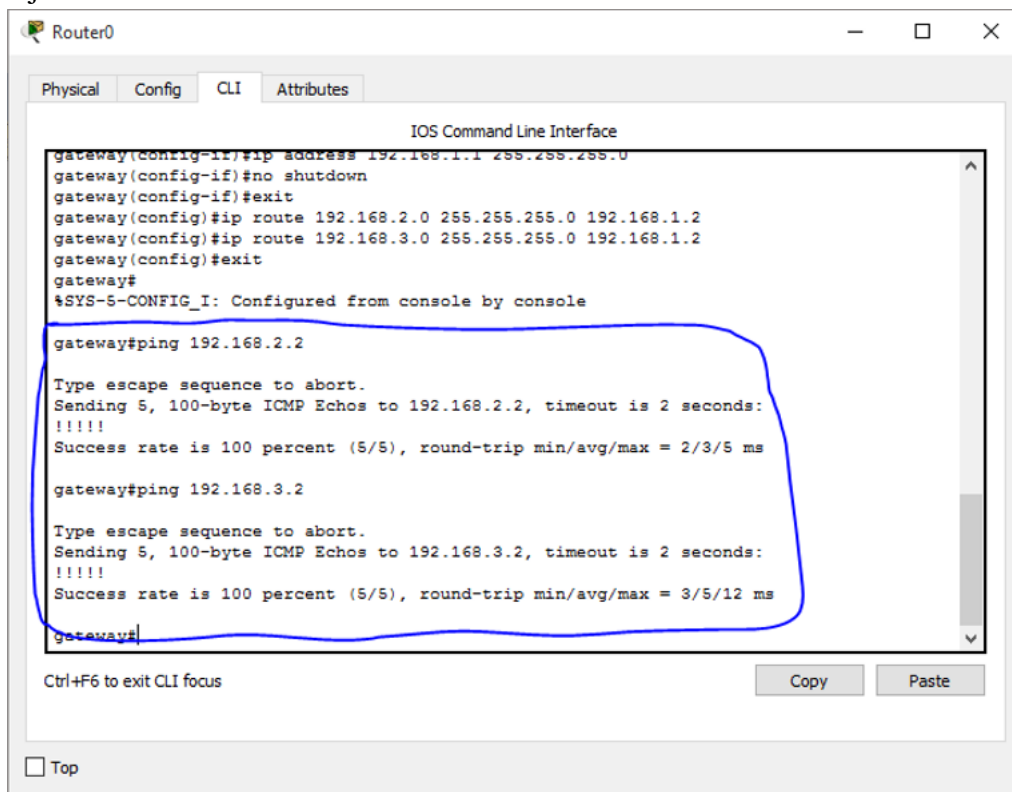
Ctrl+F6 to exit CLI focus   Copy   Paste
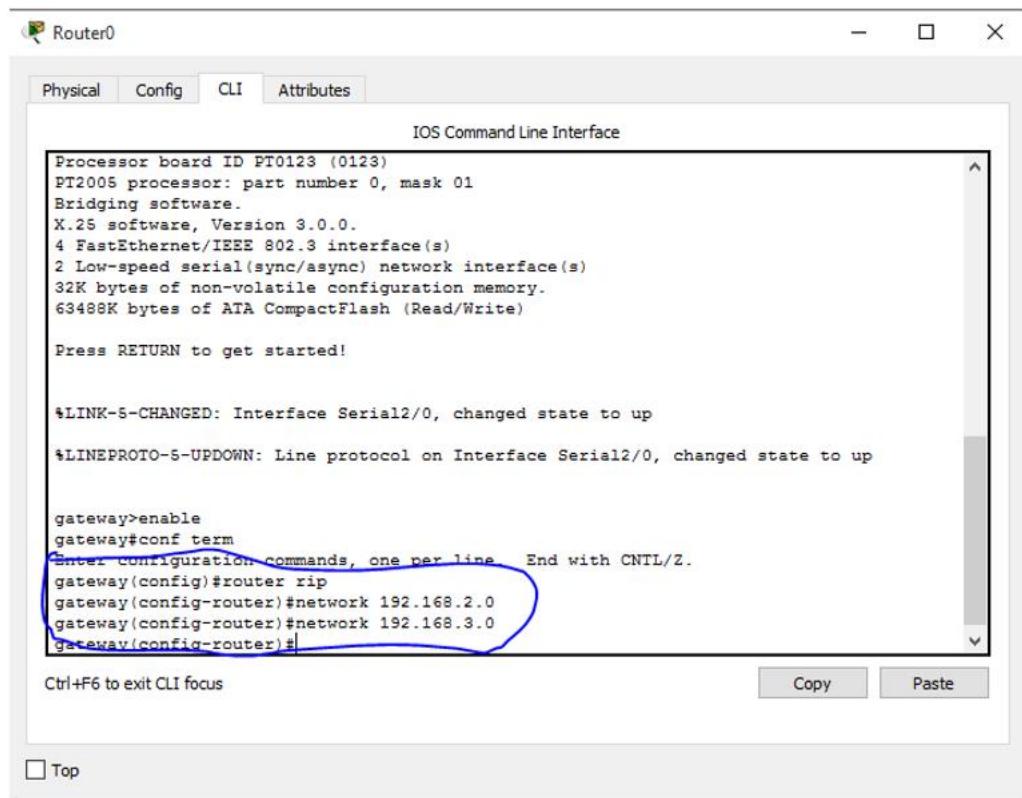
☐ Top

- Routing router rpl

- Routing router si

- Uji konektivitas

b. DINAMIS
   - Routing router gateway


```
Router0                                                    —    □    ×

Physical    Config    CLI    Attributes

                      IOS Command Line Interface

Processor board ID PT0123 (0123)
PT2005 processor: part number 0, mask 01
Bridging software.
X.25 software, Version 3.0.0.
4 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)

Press RETURN to get started!


%LINK-5-CHANGED: Interface Serial2/0, changed state to up

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


gateway>enable
gateway#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
gateway(config)#router rip
gateway(config-router)#network 192.168.2.0
gateway(config-router)#network 192.168.3.0
gateway(config-router)#

Ctrl+F6 to exit CLI focus                          Copy      Paste


☐ Top
```
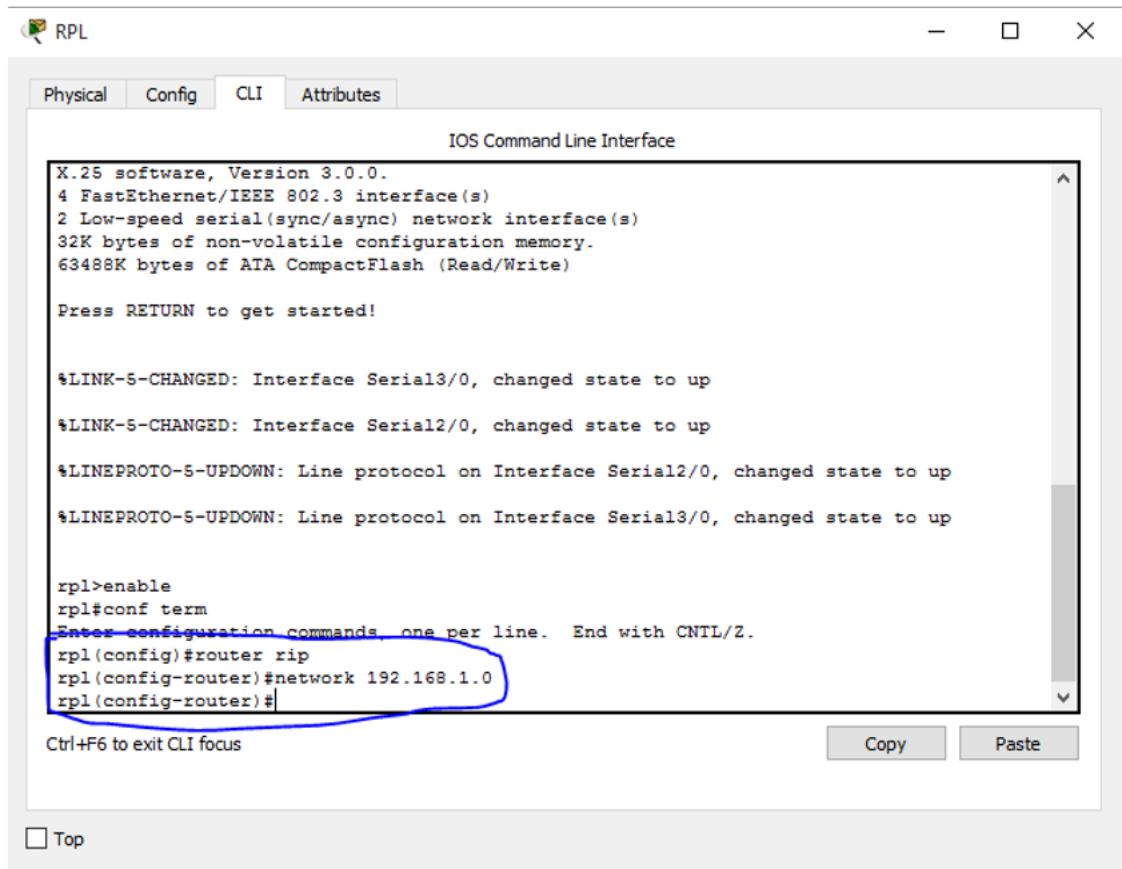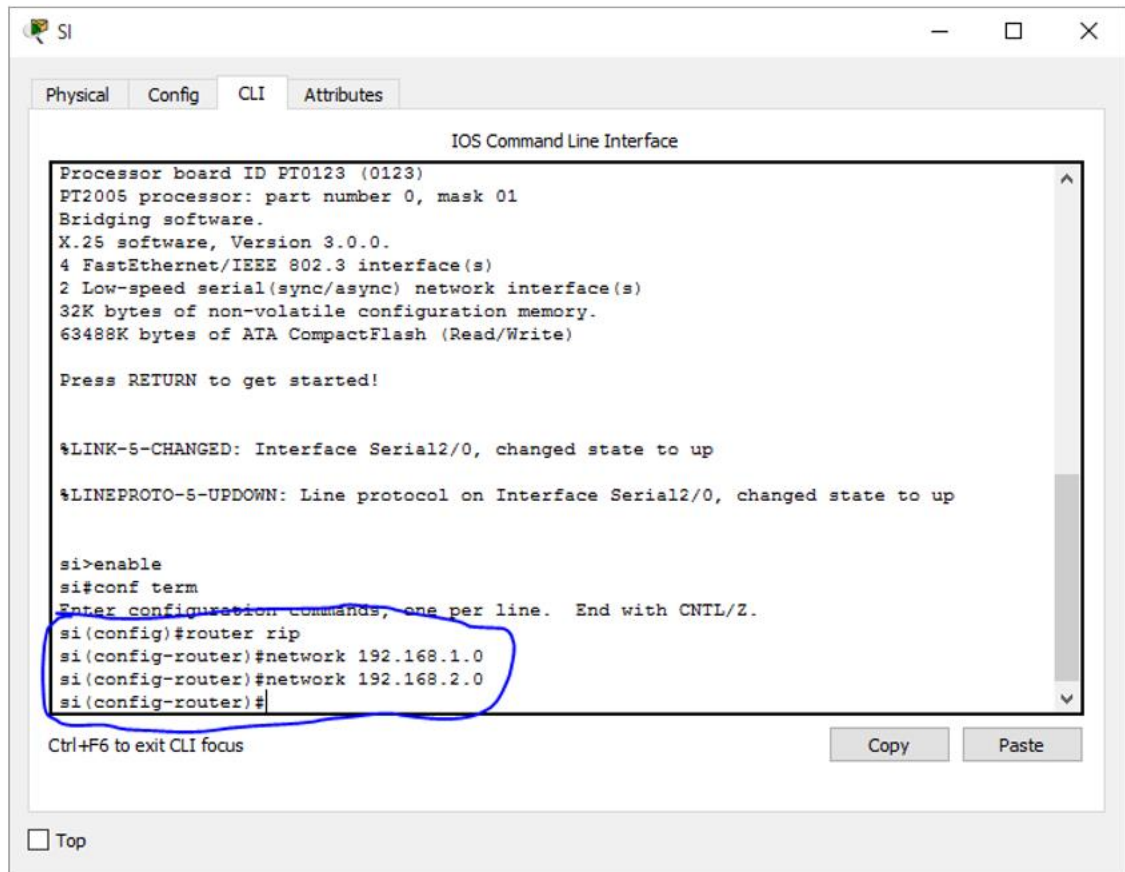
   - Routing router jarkom

- Routing router rpl

- Routing router si

- Uji konektivitas

Router0 — □ ✕

Physical | Config | CLI | Attributes

IOS Command Line Interface

```
%SYS-5-CONFIG_I: Configured from console by console

gateway#ping 192.168.2.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 2/5/10 ms

gateway#ping 192.168.3.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.3.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 5/9/12 ms

gateway#ping 192.168.2.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/6 ms

gateway#
```

Ctrl+F6 to exit CLI focus   Copy   Paste

☐ Top