

# **Laporan Praktikum**

## **Jaringan Komputer Lanjut**



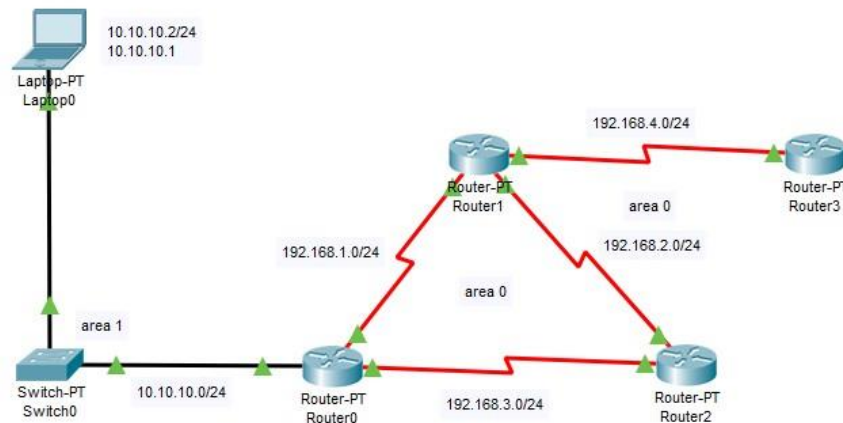
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**KELAS 2F PRODI TEKNIK INFORMATIKA**  
**POLITEKNIK NEGERI BANYUWANGI**  
**2021/2022**

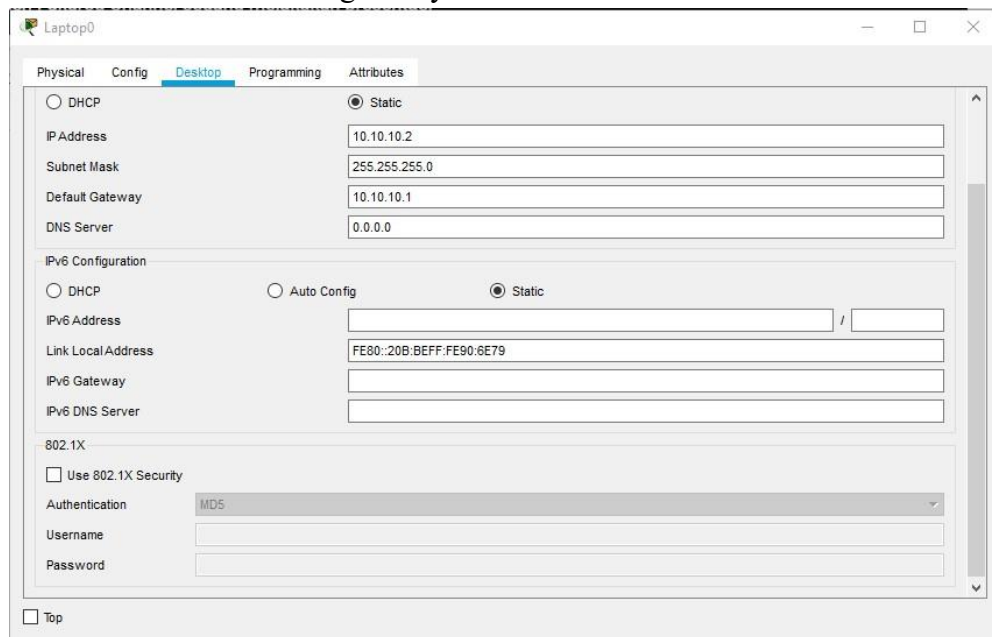
## A. Skema Jaringan

Berikut merupakan gambar dari skema jaringan yang saya buat :



## B. Konfigurasi Router , Laptop, dan Static Routing

Pertama kita konfigurasi Laptop terlebih dahulu dengan ip address 10.10.10.2, subnet mask 255.255.255.0 dan default gateway 10.10.10.1.



Lalu konfigurasi Router 0 pada FastEthernet0/0, kita konfigurasi ip address dan subnet masknya menjadi 10.10.10.1 dan 255.255.255.0.

Router0

Physical **Config** CLI Attributes

**GLOBAL**  
Settings  
Algorithm Settings  
**ROUTING**  
Static  
RIP  
**INTERFACE**  
FastEthernet0/0  
FastEthernet1/0  
Serial2/0  
Serial3/0  
FastEthernet4/0  
FastEthernet5/0

**FastEthernet0/0**  
Port Status ☒ On  
Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto  
Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto  
MAC Address 000D.BD67.7537  
IP Configuration  
IP Address 10.10.10.1  
Subnet Mask 255.255.255.0  
Tx Ring Limit 10

Equivalent IOS Commands

```
Router>
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
```

☐ Top

Lalu pada bagian Serial2/0, kita konfigurasi ip address dan subnet masknya menjadi 192.168.1.1 dan 255.255.255.0.

Router0

Physical **Config** CLI Attributes

**GLOBAL**  
Settings  
Algorithm Settings  
**ROUTING**  
Static  
RIP  
**INTERFACE**  
FastEthernet0/0  
FastEthernet1/0  
**Serial2/0**  
Serial3/0  
FastEthernet4/0  
FastEthernet5/0

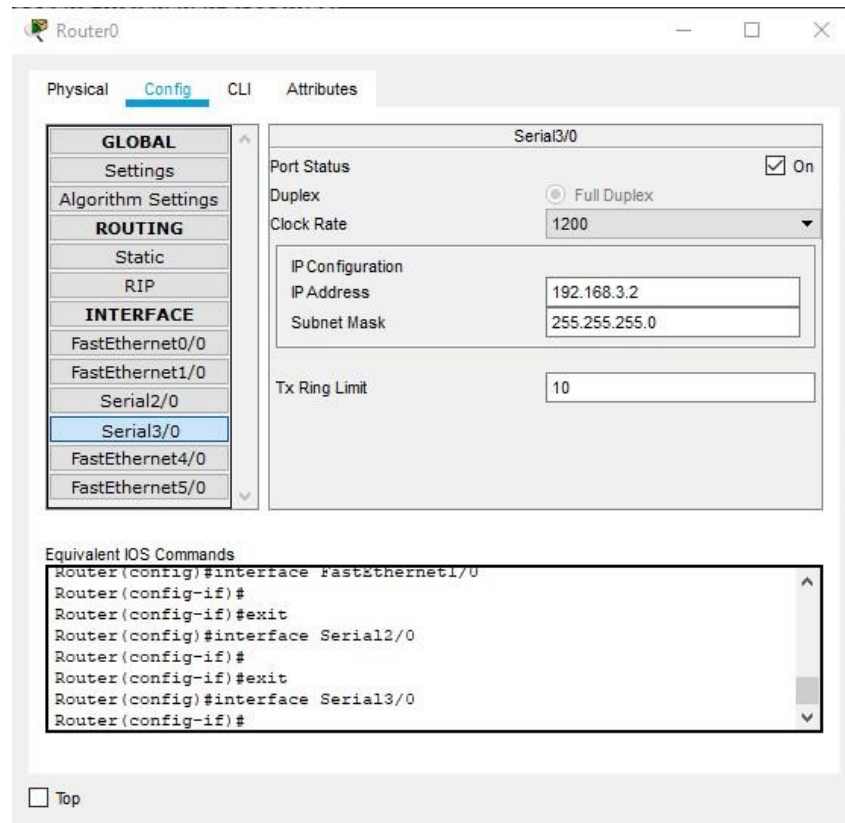
**Serial2/0**  
Port Status ☒ On  
Duplex ☒ Full Duplex  
Clock Rate 1200  
IP Configuration  
IP Address 192.168.1.1  
Subnet Mask 255.255.255.0  
Tx Ring Limit 10

Equivalent IOS Commands

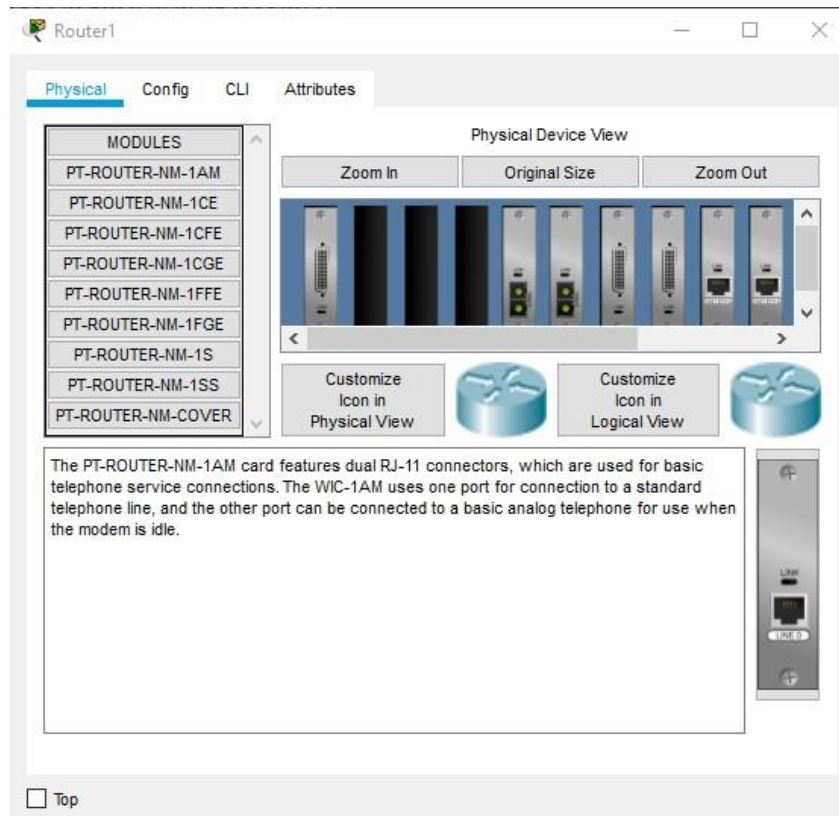
```
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
```

☐ Top

Selanjutnya pada bagian Serial3/0, kita konfigurasi ip address dan subnet masknya menjadi 192.168.3.2 dan 255.255.255.0.



Nah sehubung router 1 harus memiliki 3 sambungan yang menghubungkan ke router 0, router 2 dan router 3, dikarenakan maksimal router memiliki 2 batas sambungan maka kita ganti pyshical router agar bisa menghubungkan 3 kabel, disini saya menggunakan pyshical PT-Router-NM-1S.



Lalu kita lanjut konfigurasi pada router 1 pada bagian Serial2/0, kita konfigurasi ip address dan subnet masknya menjadi 192.168.1.2 dan 255.255.255.0.

The screenshot shows the configuration window for the Serial2/0 interface on Router1. 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, Serial9/0). The Serial2/0 interface is selected. The main panel shows the following settings:

- Port Status: ☒ On
- Duplex: ☒ Full Duplex
- Clock Rate: 2000000
- IP Configuration:
  - IP Address: 192.168.1.2
  - Subnet Mask: 255.255.255.0
- Tx Ring Limit: 10

Below the settings is a text box for "Equivalent IOS Commands" containing the following commands:

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
```

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

Pada bagian Serial3/0, kita konfigurasi ip address dan subnet masknya menjadi 192.168.2.1 dan 255.255.255.0.

The screenshot shows the configuration window for the Serial3/0 interface on Router1. The left sidebar is the same as in the previous screenshot, but Serial3/0 is now selected. The main panel shows the following settings:

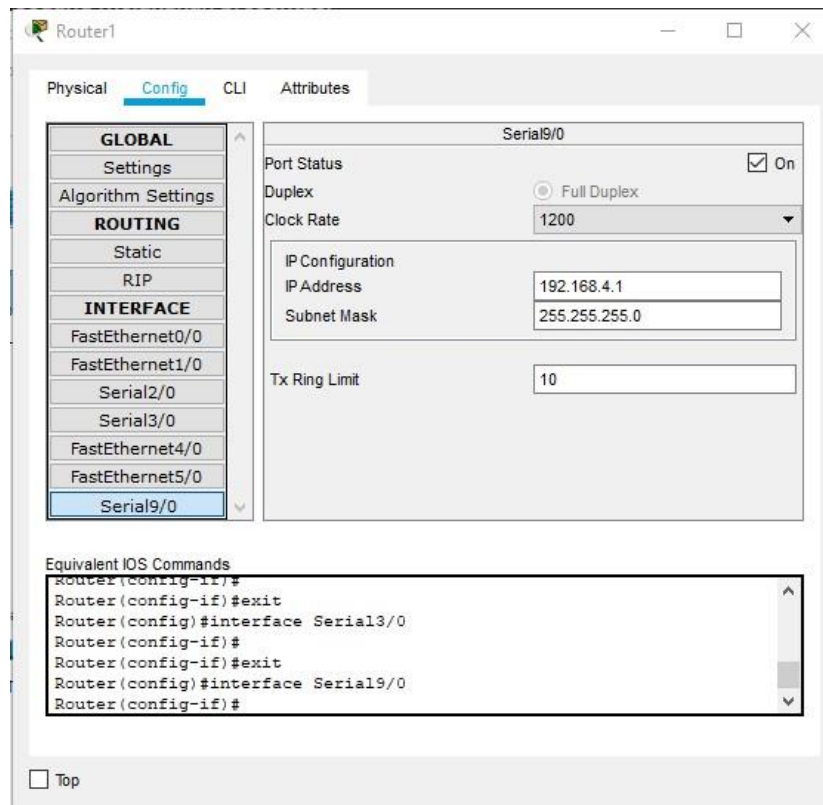
- Port Status: ☒ On
- Duplex: ☒ Full Duplex
- Clock Rate: 1200
- IP Configuration:
  - IP Address: 192.168.2.1
  - Subnet Mask: 255.255.255.0
- Tx Ring Limit: 10

Below the settings is a text box for "Equivalent IOS Commands" containing the following commands:

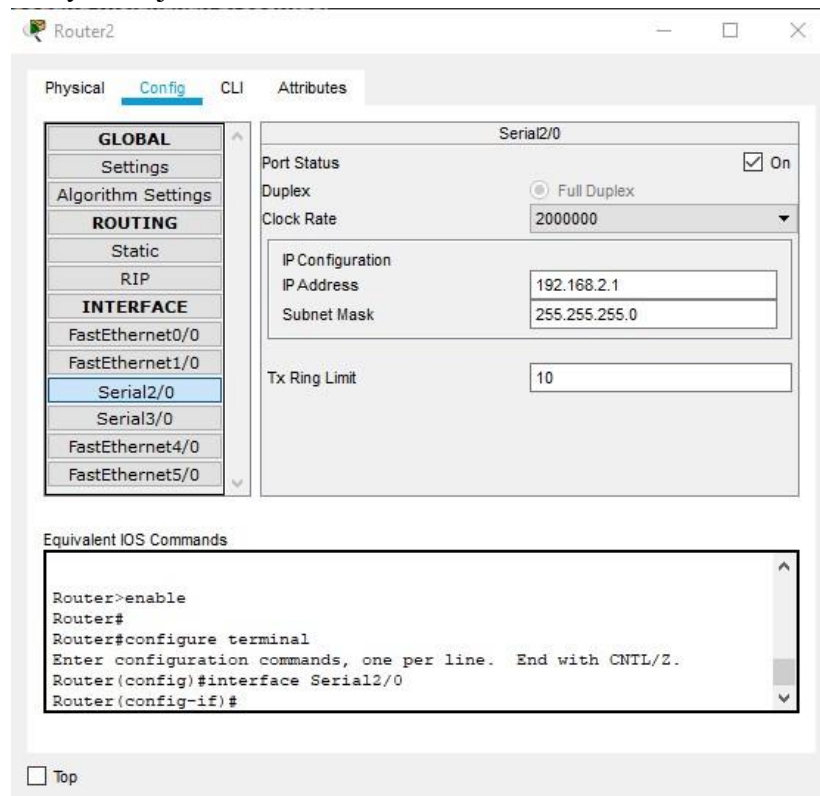
```
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
```

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

Kemudian pada bagian Serial9/0, kita konfigurasi ip address dan subnet masknya menjadi 192.168.4.1 dan 255.255.255.0.

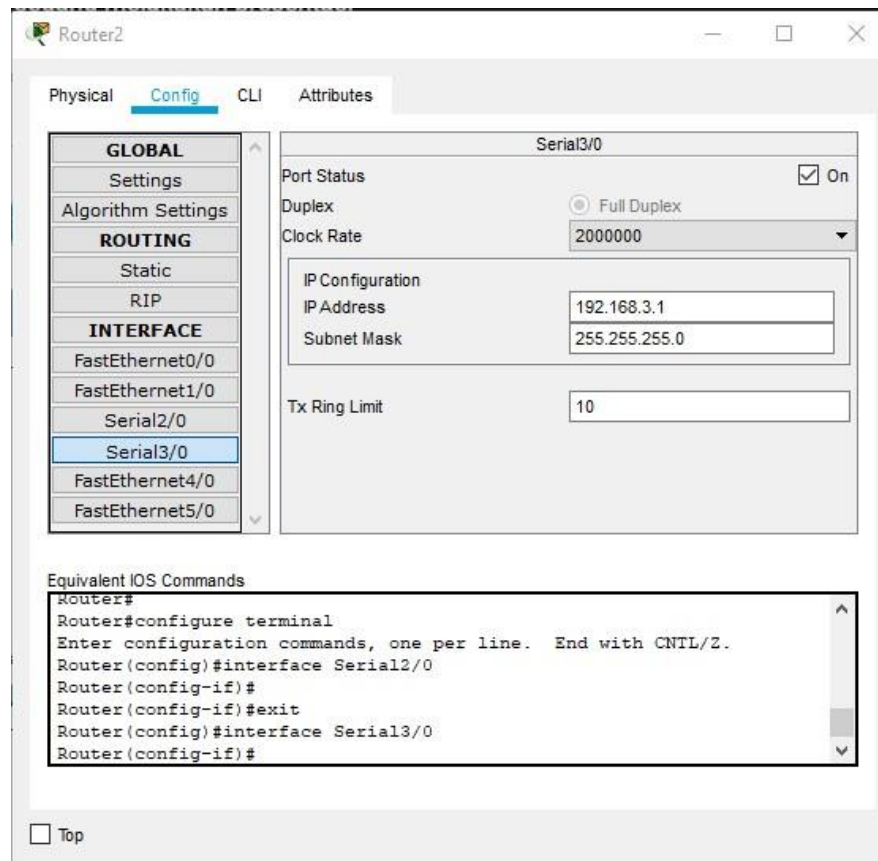


Nah lanjut mengkonfigurasi router 2 pada bagian Serial2/0, kita konfigurasi ip address dan subnet masknya menjadi 192.168.2.1 dan 255.255.255.0.

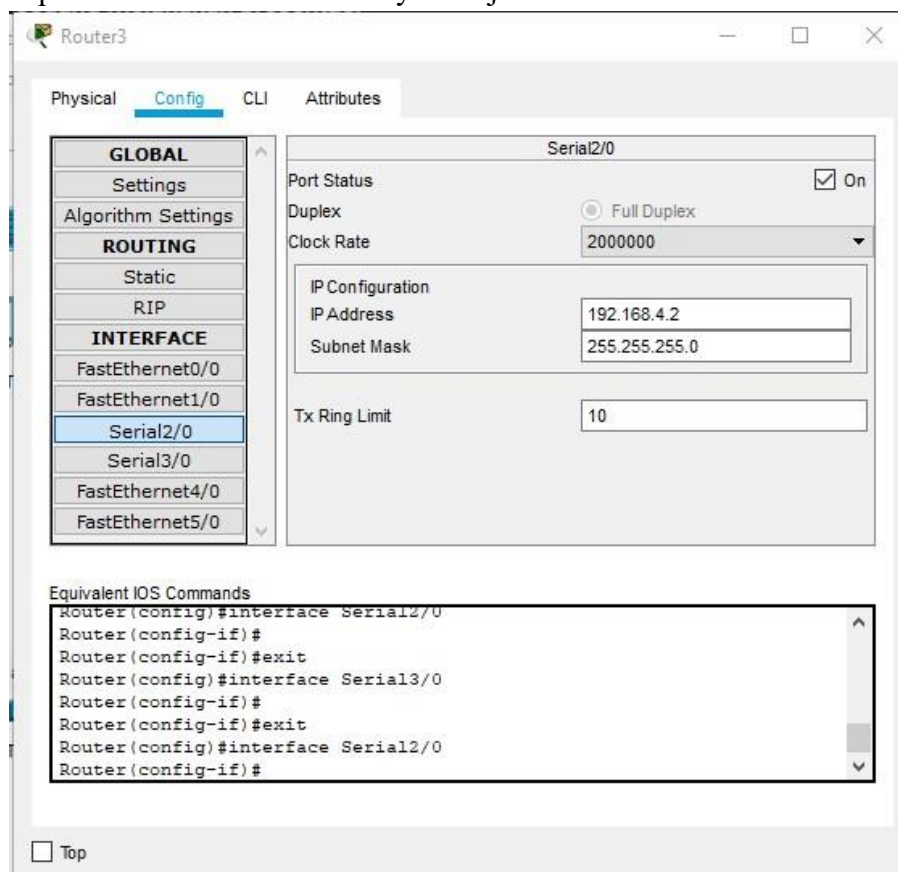


Lalu ubah pada bagian Serial3/0, kita konfigurasi ip address dan subnet masknya menjadi 192.168.3.1 dan 255.255.255.0.





Dan kita konfigurasi router yang terakhir yakni router 3 pada bagian Serial2/0, kita konfigurasi ip address dan subnet masknya menjadi 192.168.4.2 dan 255.255.255.0.



Selanjutnya kita config router supaya setiap route dapat terhubung dan bisa berkomunikasi dengan baik, saya akan config route pada route 0 terlebih dahulu.

```

Router(config)#router ospf 10
Router(config-router)#network 10.10.10.0 0.0.0.255 area 1
Router(config-router)#network 192.168.1.0 0.0.0.255 area 0
Router(config-router)#network 192.168.3.0 0.0.0.255 area 0
Router(config-router)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]

```

Kemudian lanjut config router pada router 1.

```

Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 10
Router(config-router)#network 192.168.1.0 0.0.0.255 area 0
Router(config-router)#
00:02:46: %OSPF-5-ADJCHG: Process 10, Nbr 10.10.10.1 on Serial2/0
from LOADING to FULL, Loading Done

Router(config-router)#network 192.168.2.0 0.0.0.255 area 0
Router(config-router)#network 192.168.4.0 0.0.0.255 area 0
Router(config-router)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]

```

Lalu config router pada router 2.

```

Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 10
Router(config-router)#network 192.168.2.0 0.0.0.255 area 0
Router(config-router)#network 192.168.3.0 0.0.0.255 area 0
Router(config-router)#network 192.168.3.0 0.0.0.255 area 0network
192.168.3.0 0.0.0.255 area 0
^
% Invalid input detected at '^' marker.

Router(config-router)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]

```

Dan yang terakhir config router pada router 3.

```

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 10
Router(config-router)#network 192.168.4.0 0.0.0.255 area 0
Router(config-router)#
01:47:48: %OSPF-5-ADJCHG: Process 10, Nbr 192.168.4.1 on Serial2/0
from LOADING to FULL, Loading Done

Router(config-router)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]

```

Selanjutnya kita ketikkan show route, untuk mengetahui route yang sudah terhubung.



```

Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B -
BGP
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
        i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
inter area
        * - candidate default, U - per-user static route, o - ODR
        P - periodic downloaded static route

Gateway of last resort is not set

    10.0.0.0/24 is subnetted, 1 subnets
O IA   10.10.10.0 [110/65] via 192.168.1.1, 00:07:30, Serial2/0
C       192.168.1.0/24 is directly connected, Serial2/0
C       192.168.2.0/24 is directly connected, Serial3/0
O       192.168.3.0/24 [110/128] via 192.168.1.1, 00:07:30, Serial2/0
C       192.168.4.0/24 is directly connected, Serial9/0

```

Kemudian ketik show running-config untuk mengetahui konfigurasi yang sedang berjalan pada router.

```

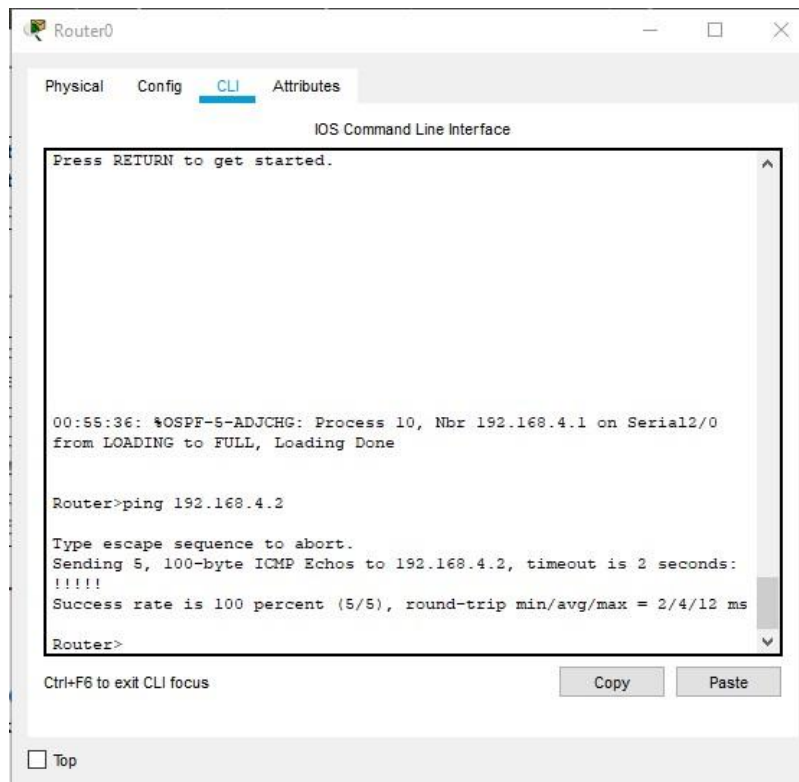
Router#show running-config
Building configuration...

Current configuration : 949 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router
!
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!

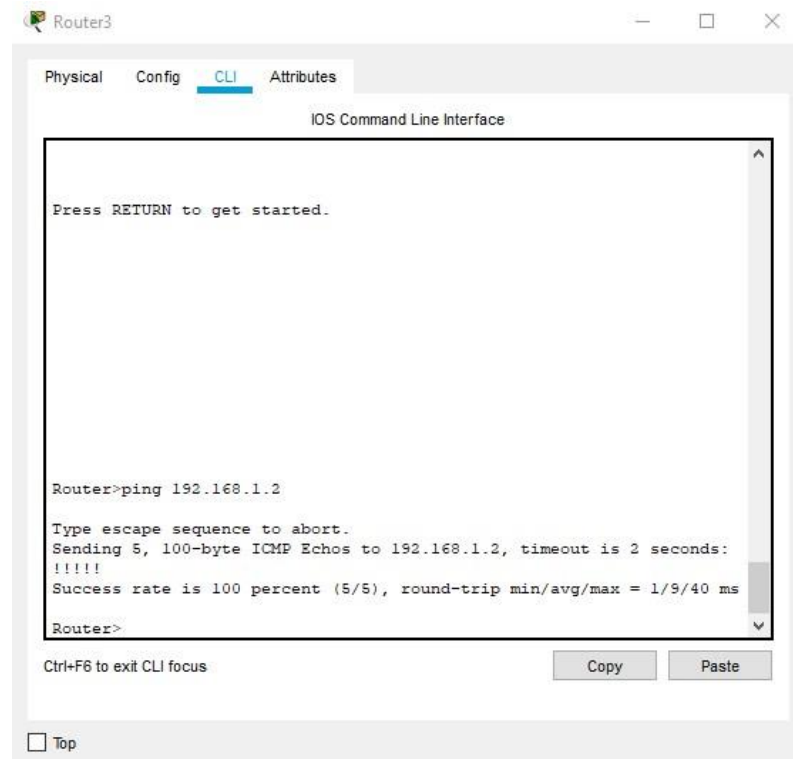
```

## C. Pengecekan hasil konfigurasi

1. Kita ping Router 0 ke Router 3 dengan ip address 192.168.4.2.



2. Kita ping juga router 3 ke router 1 dengan ip address 192.168.1.2.



## D. Kesimpulan

Router 2 bisa terhubung ke Router 3 karena sebelumnya telah melakukan routing config dari network 192.168.1.0/24 ke network 192.168.3.0/24 dan juga Router 3 ke Router 1 bisa terhubung karena sebelumnya telah dilakukan routing dari network 192.168.3.0/24 ke network 192.168.1.0/24.