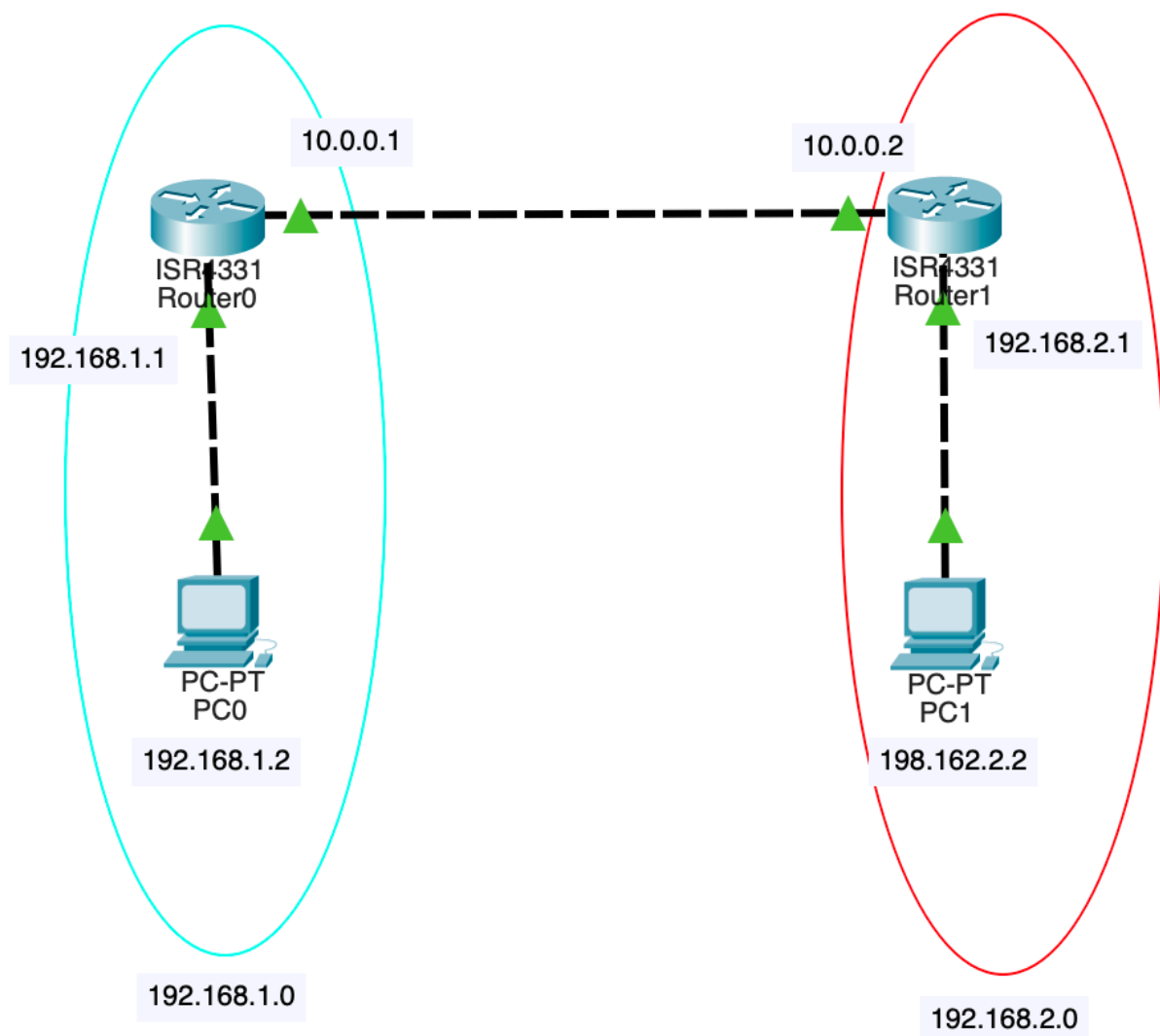


# Lab 1

## Navdeep Sureka 19BCE2679

### # Creating static routing b/w 2 routers

#### Final configuration



## IP routes for both the router

### CLI Code > show ip route

```
Router>show ip route
Codes: L - local, C - connected, S - static, 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

10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       10.0.0.0/8 is directly connected, GigabitEthernet0/0/1
L       10.0.0.1/32 is directly connected, GigabitEthernet0/0/1
192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0/0
L       192.168.1.1/32 is directly connected, GigabitEthernet0/0/0
S       192.168.2.0/24 [1/0] via 10.0.0.2

Router>|
```

```
Router>show ip route
Codes: L - local, C - connected, S - static, 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

10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       10.0.0.0/8 is directly connected, GigabitEthernet0/0/1
L       10.0.0.2/32 is directly connected, GigabitEthernet0/0/1
S       192.168.1.0/24 [1/0] via 10.0.0.1
192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.2.0/24 is directly connected, GigabitEthernet0/0/0
L       192.168.2.1/32 is directly connected, GigabitEthernet0/0/0

Router>
```

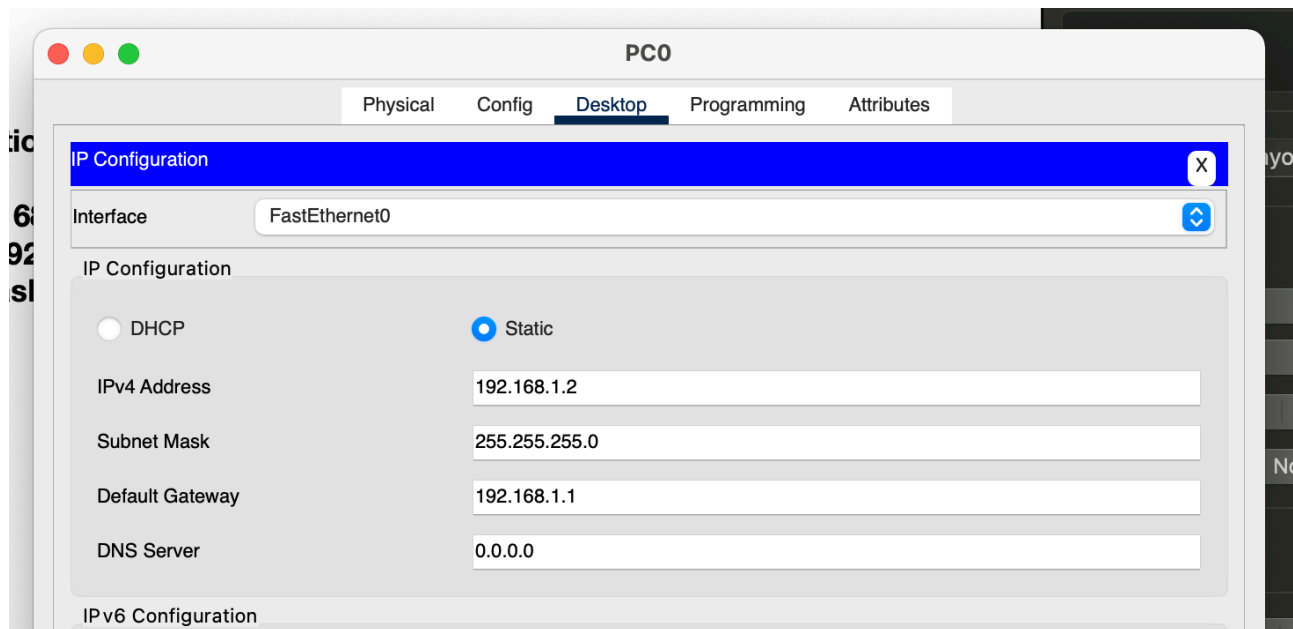
Command+F6 to exit CLI focus

## Configuration of network 192.168.1.0

1 pc (192.168.1.2) -> default gateway (192.168.1.1)

1 router (192.168.1.1)

subnet mask : 255.255.255.0

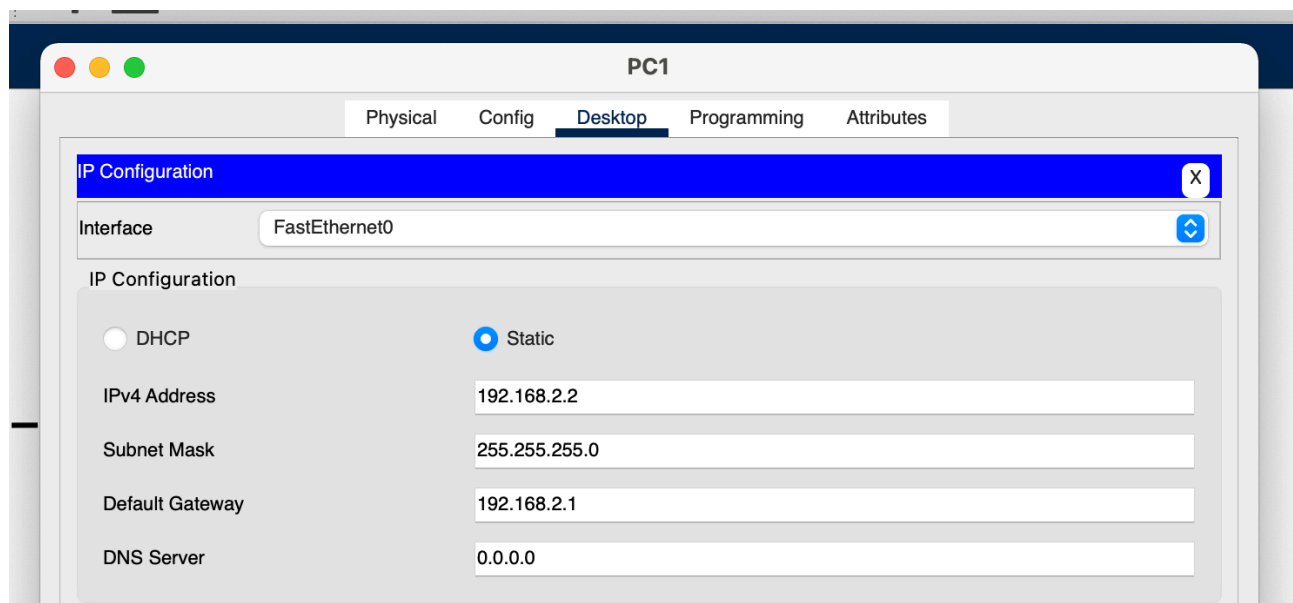


## Configuration of network 192.168.2.0

1 pc (192.168.2.2) -> default gateway (192.168.2.1)

1 router (192.168.2.1)

subnet mask : 255.255.255.0



## Router 0 config to create static routing table.

Router>enable

Router#

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#

Router(config)#ip route 192.168.2.0 255.255.255.0 10.0.0.2

Router(config)#

Static Routes	
Network	192.168.2.0
Mask	255.255.255.0
Next Hop	10.0.0.2
<div>Add</div>	
Network Address	
192.168.2.0/24 via 10.0.0.2	

## Router 1 config to create static routing table.

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 10.0.0.1

Router(config)#

Static Routes	
Network	192.168.1.0
Mask	255.255.255.0
Next Hop	10.0.0.1
<div>Add</div>	
Network Address	
192.168.1.0/24 via 10.0.0.1	

# Issues and Trouble Shooting

## Issue #1

While connecting the router to device using automatic connection, sometimes connect the router's fe/0/1 to pc's fe/0/0.

This cause the problem while configuring the IP in the router and establishing the connection

## Solution #1

Use the specific connection and it will show the port in which we want to make the connection, such that we will not make errors.

## Issue #2

Establishing connection within the network is easy (just connecting wire) but connecting 2 routers require route table configure, which can be trick and hard.

Making CLI command sometimes result in error and may not connect.

## Solution #2

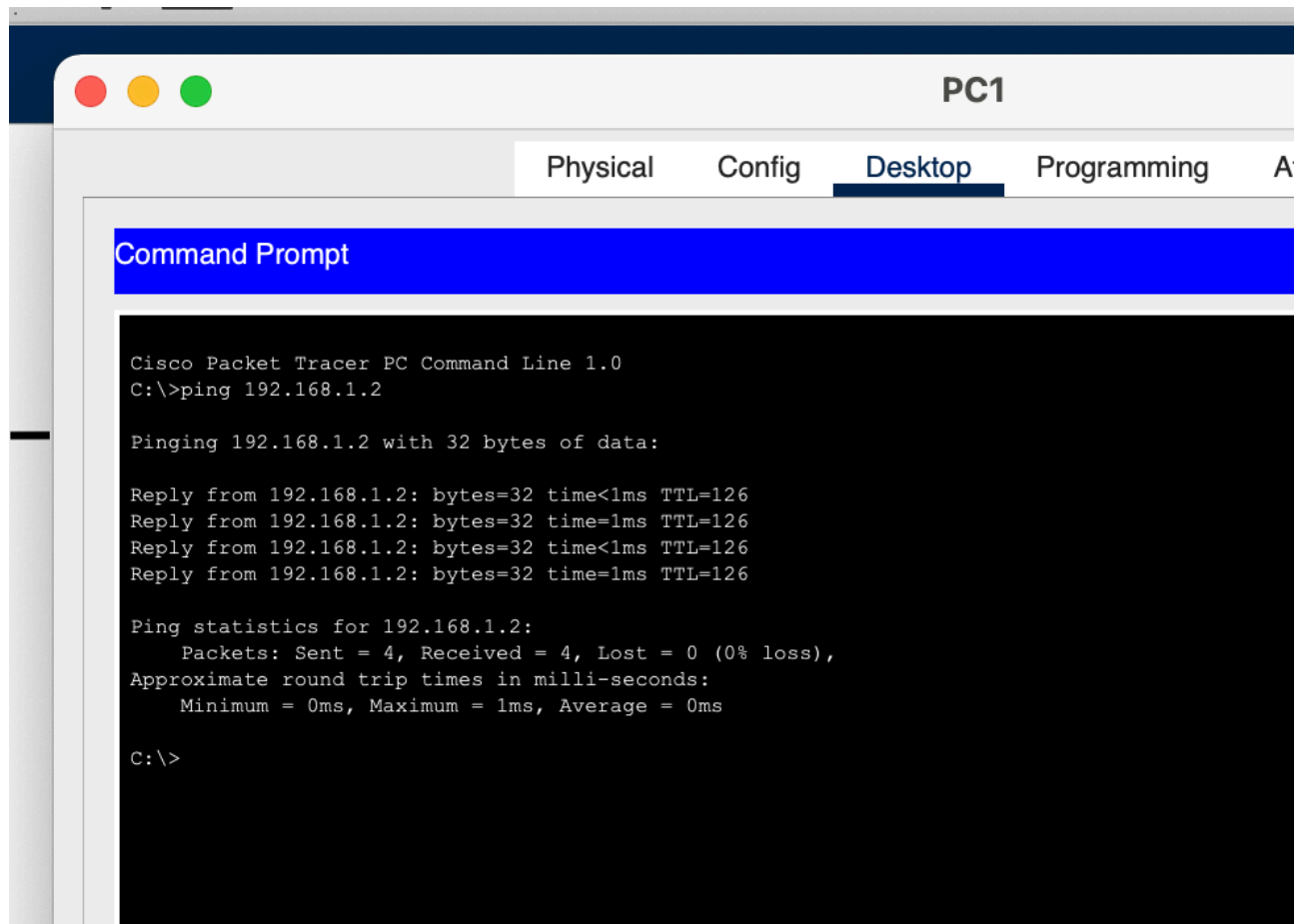
To troubleshoot, we can use the GUI and set the static ip and just check that the connections are right or not.

We can find the static routing table setup in router's setting option.

**Note:** Always make sure that the route is working by a ping command.

```
>ping { I.P }
```

## Ping 192.168.2.2 from 192.168.1.2



**We receive the response which confirm that our connection is on and we communication can be established.**

### # Issue #3

**Sometimes in the new connection, the first packet get's dropped.**

### # Solution #3

**This is not a problem and first packet get lost while establishing connection (hardly in static routing) but all the following packets will reach and until we get 95% package, it is ok.**

