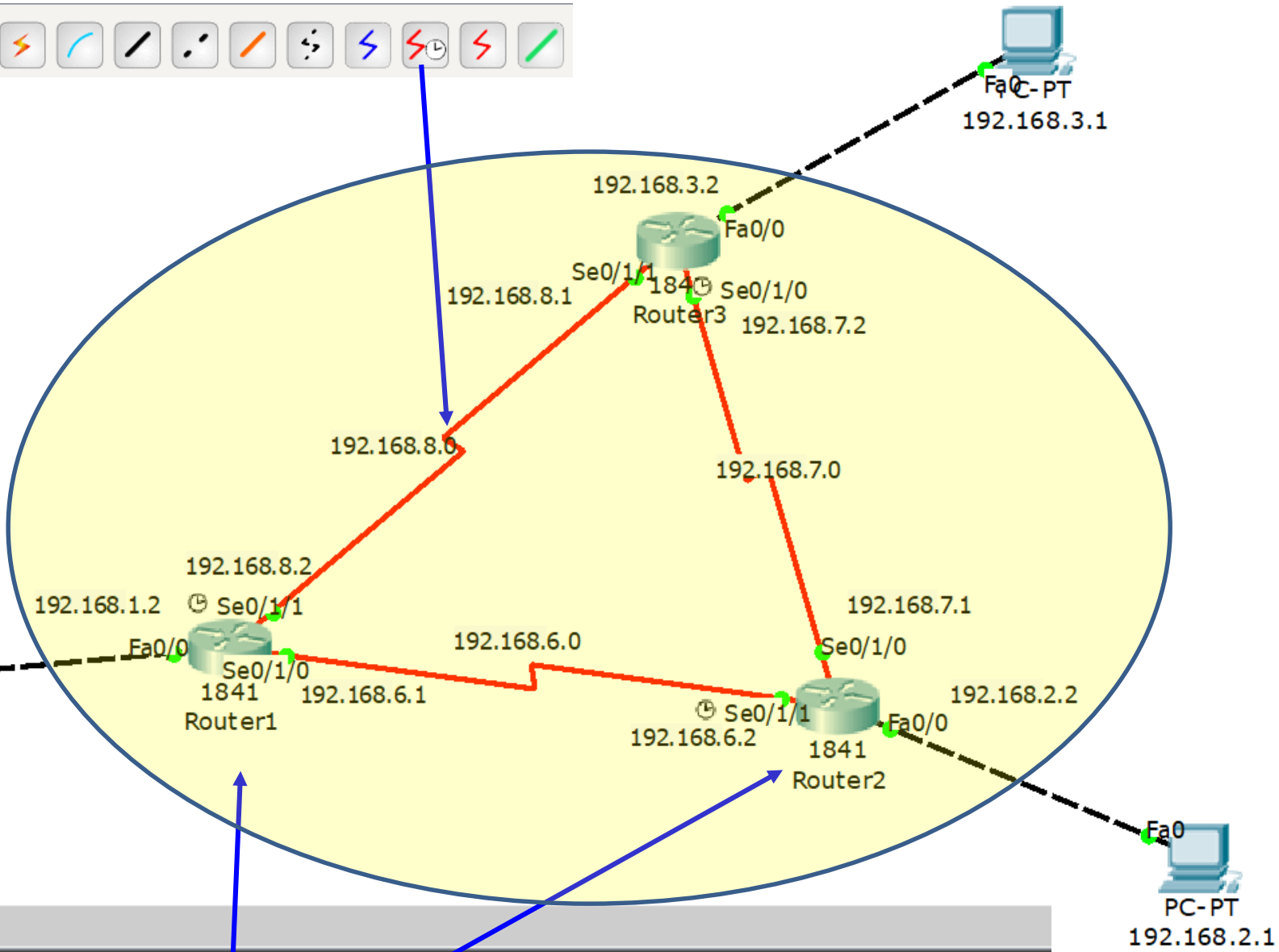


# **Implementation of OSPF (Open Shortest Path First) Algorithm**

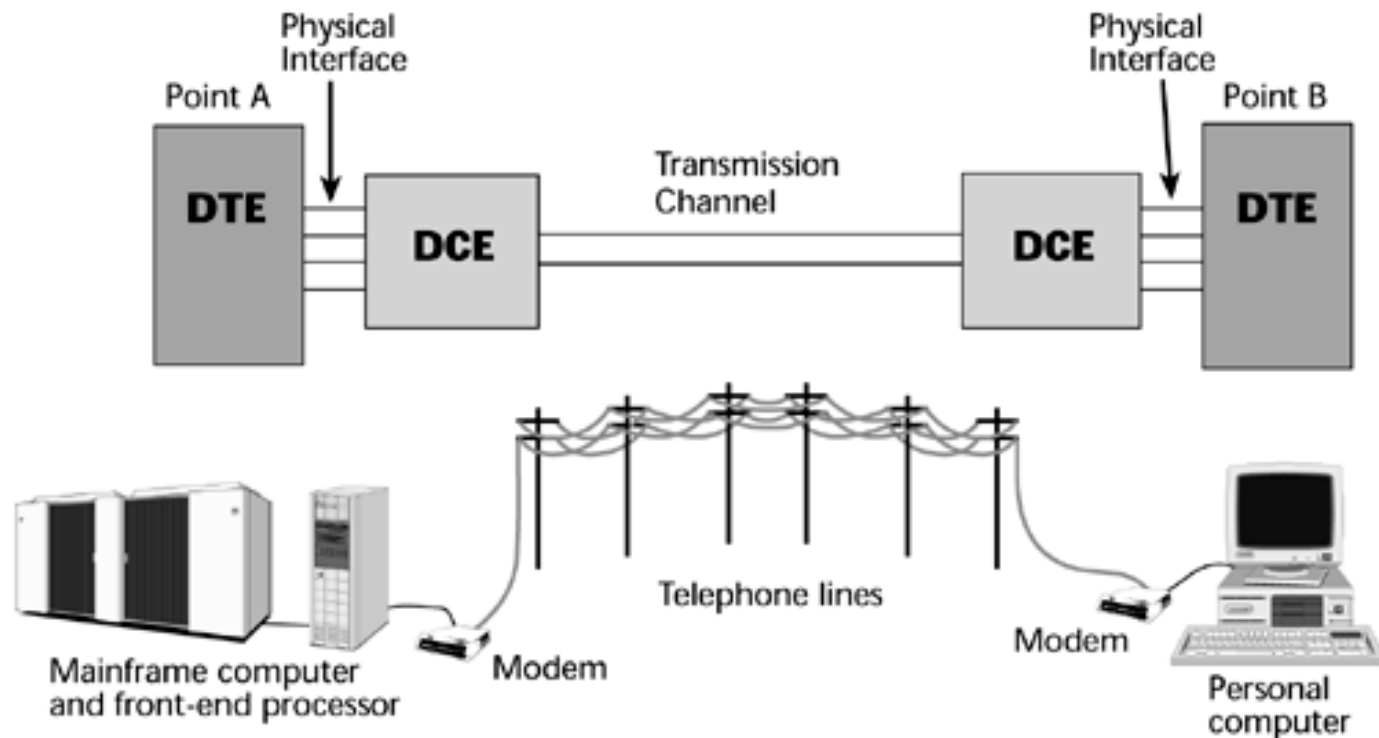
Connections



Time: 01:00:22 | Power Cycle Devices Fast Forward Time

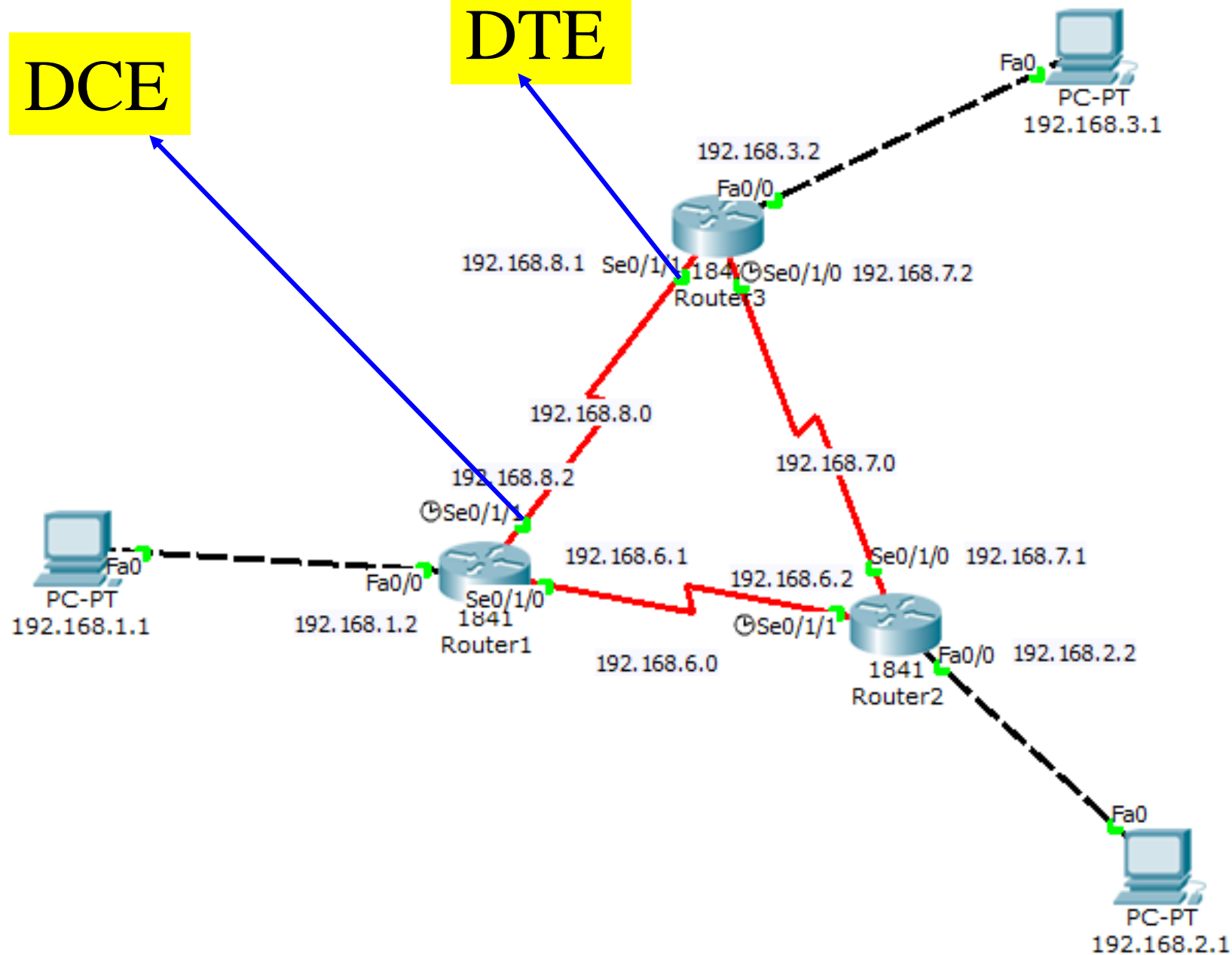
Routers

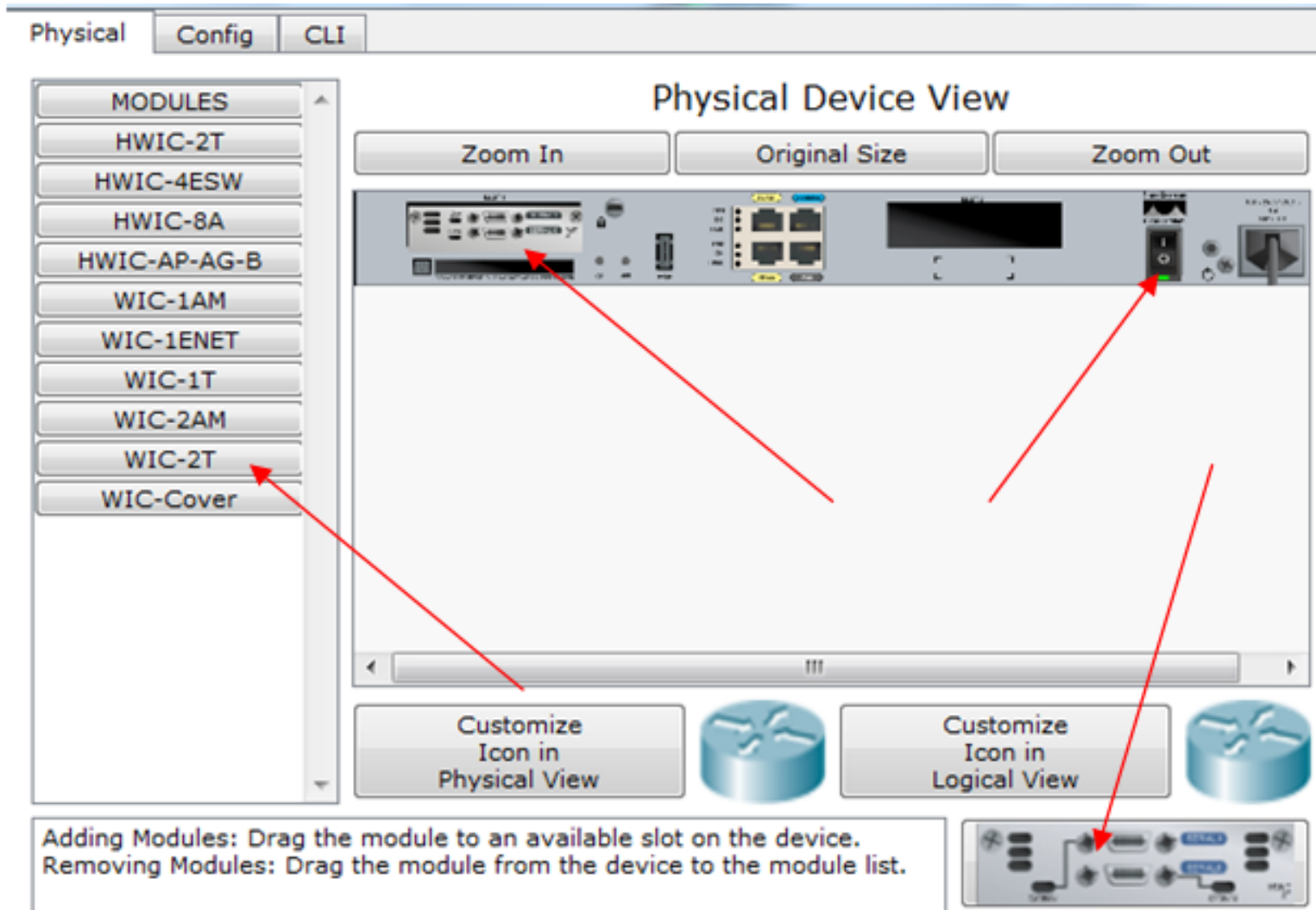
DTE (Data Terminal EQUIPMENT) and DCE (Data Communications EQUIPMENT) both are serial ports, where DCE, makes **signal conversion, coding, and line clocking**, i.e. controls the data rate like MODEM, and the other side (DTE) only receives or sends data at the clock rate provided by DCE like PC.



DCE

DTE



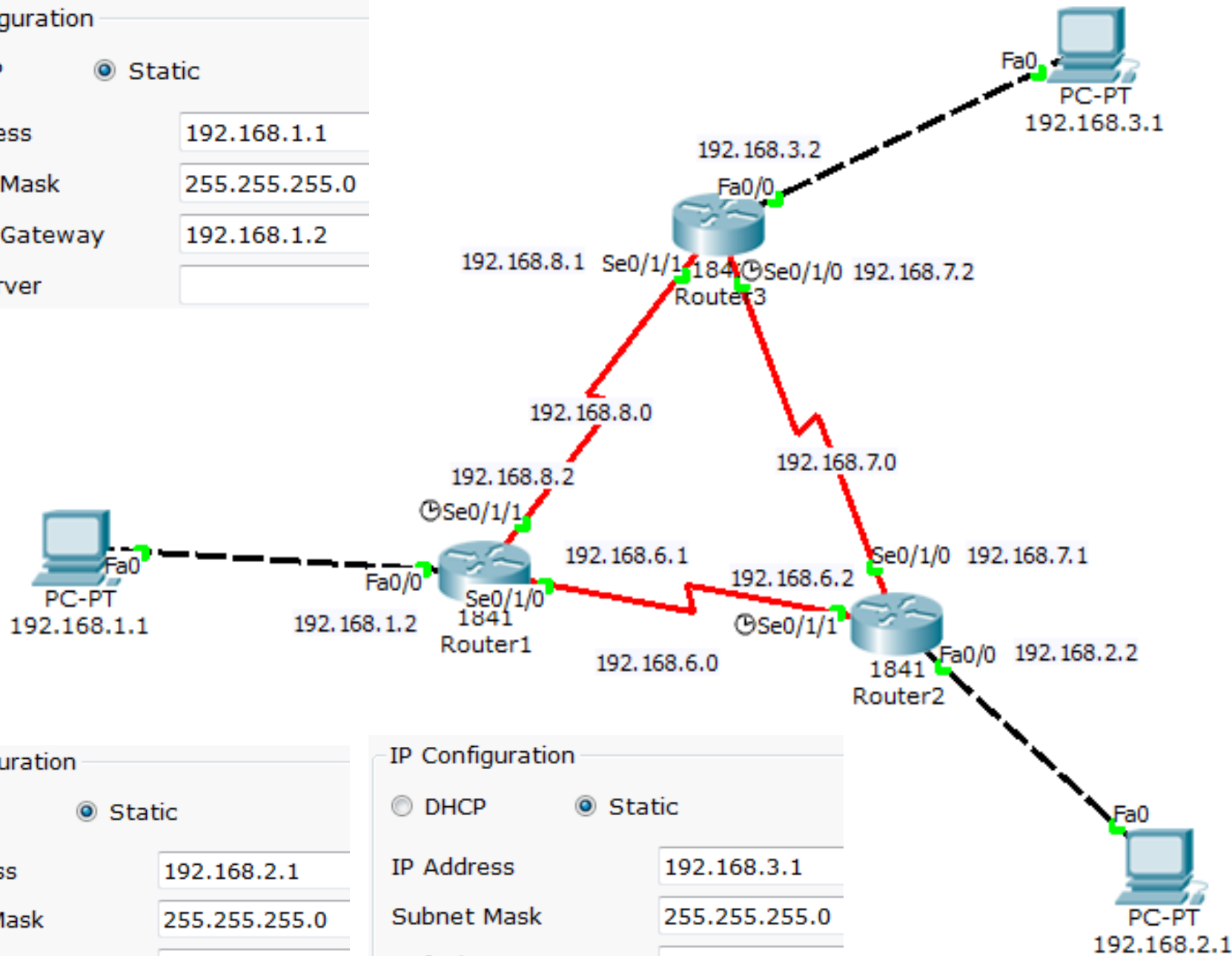


Two port Serial WAN Interface Card (WIC-2T) provides two serial ports using the Smart Serial connector.

IP Configuration

☐ DHCP
 ☒ Static

IP Address: 192.168.1.1  
 Subnet Mask: 255.255.255.0  
 Default Gateway: 192.168.1.2  
 DNS Server:



IP Configuration

☐ DHCP
 ☒ Static

IP Address: 192.168.2.1  
 Subnet Mask: 255.255.255.0  
 Default Gateway: 192.168.2.2  
 DNS Server:

IP Configuration

☐ DHCP
 ☒ Static

IP Address: 192.168.3.1  
 Subnet Mask: 255.255.255.0  
 Default Gateway: 192.168.3.2  
 DNS Server:

# Router-1

Router>en

Router#conf t

Router(config)#int fa 0/0

Router(config-if)#ip ad 192.168.1.2 255.255.255.0

Router(config-if)#no shut

Router(config-if)#exit

Router(config)# int se0/1/0

Router(config-if)#ip add 192.168.6.1 255.255.255.0

Router(config-if)#no shut

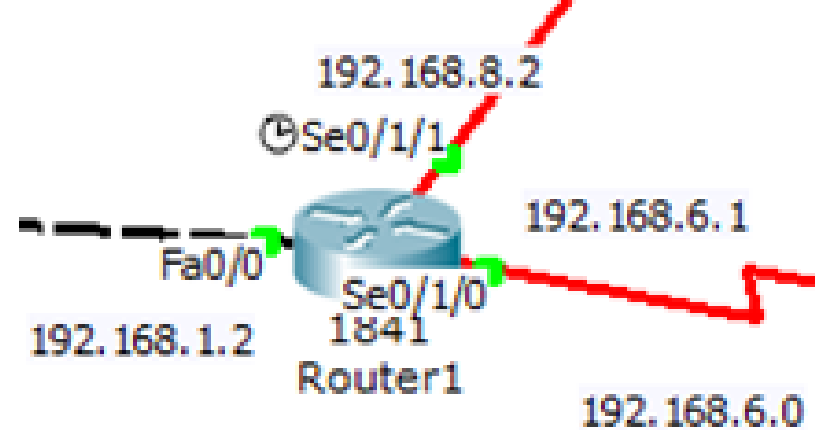
Router(config-if)#exit

Router(config)# int se0/1/1

Router(config-if)#ip add 192.168.8.2 255.255.255.0

Router(config-if)#clock rate 64000

Router(config-if)#no shut



```
Router(config-if)#exit
```

```
Router(config)#exit
```

```
Router#
```

```
Router#copy running-config startup-config
```

```
Router#
```

```
Router#conf t
```

```
Router(config)#router ospf 1
```

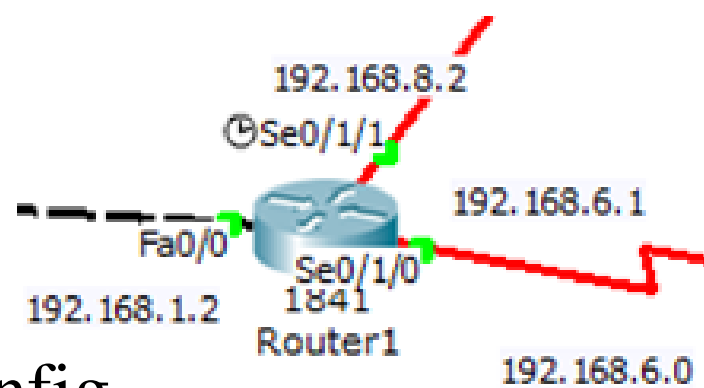
**%wildcard mask for network advertising**

```
Router(config-router)#network 192.168.1.0 0.0.0.255 area 0
```

```
Router(config-router)#network 192.168.6.0 0.0.0.255 area 0
```

```
Router(config-router)#network 192.168.8.0 0.0.0.255 area 0
```

```
Router(config-router)#
```





## Router-2

Router>en

Router#conf t

Router(config)#int fa 0/0

Router(config-if)#ip add 192.168.2.2 255.255.255.0

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#int se0/1/0

Router(config-if)#ip add 192.168.7.1 255.255.255.0

Router(config-if)#no shut

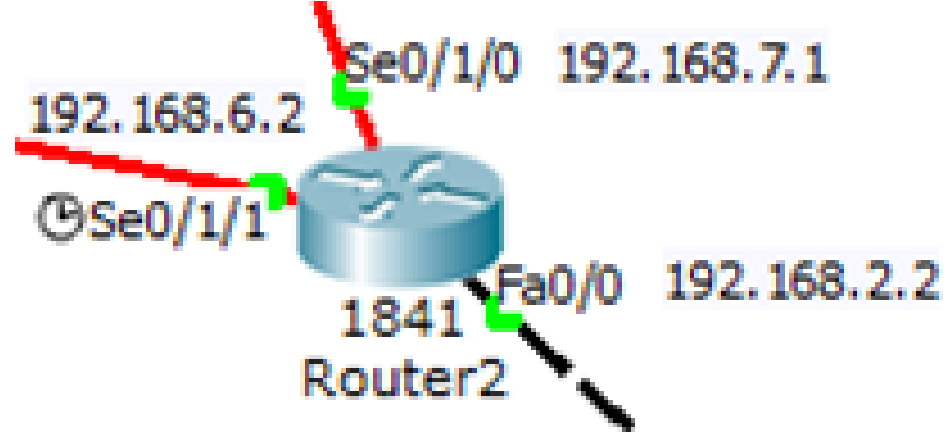
Router(config-if)#exit

Router(config)# int se0/1/1

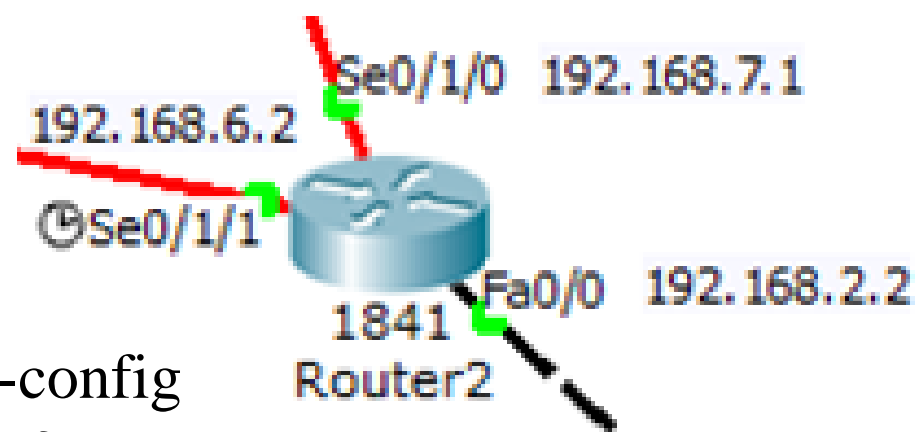
Router(config-if)#ip add 192.168.6.2 255.255.255.0

Router(config-if)#clock rate 64000

Router(config-if)#no shut



```
Router(config-if)#
Router(config-if)#exit
Router(config)#exit
Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```



```
Router#conf t
Router(config)#router ospf 1
```

**%wildcard mask for network advertising**

```
Router(config-router)#network 192.168.2.0 0.0.0.255 area 0
Router(config-router)#network 192.168.7.0 0.0.0.255 area 0
Router(config-router)#network 192.168.6.0 0.0.0.255 area 0
Router(config-router)#
```

## Router-3

Router>en

Router#conf t

Router(config)#int fa 0/0

Router(config-if)#ip add 192.168.3.2 255.255.255.0

Router(config-if)#no shut

Router(config-if)#exit

Router(config)# int se0/1/0

Router(config-if)#ip add 192.168.7.2 255.255.255.0

Router(config-if)#clock rate 64000

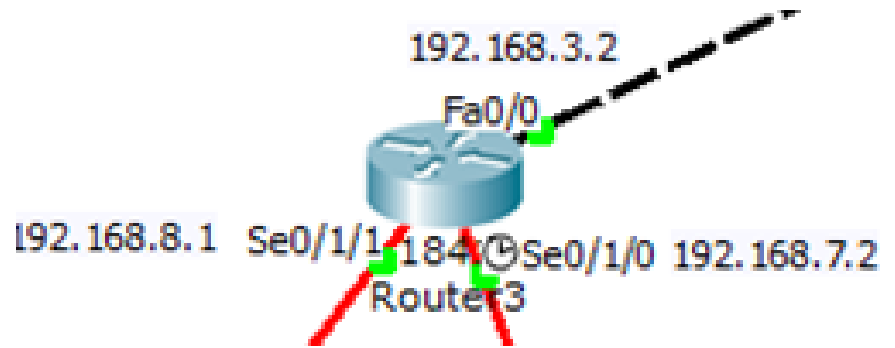
Router(config-if)#no shut

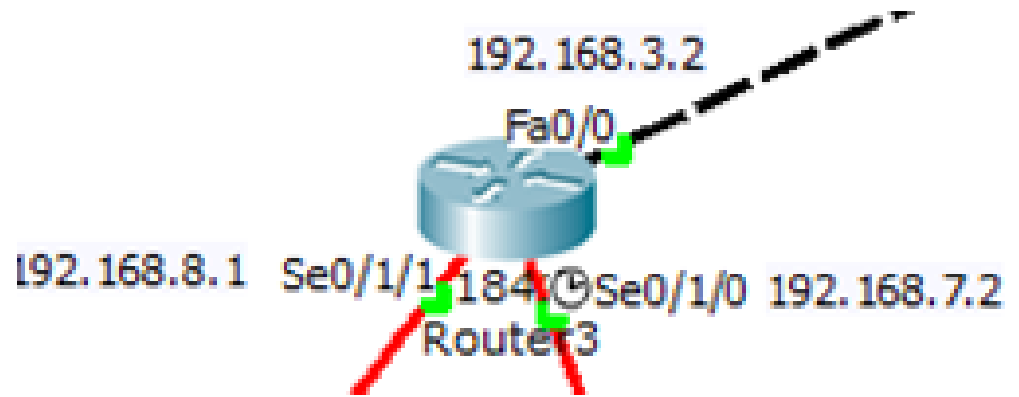
Router(config-if)#exit

Router(config)# int se0/1/1

Router(config-if)#ip add 192.168.8.1 255.255.255.0

Router(config-if)#no shut





```
Router(config-if)#exit
```

```
Router(config)#exit
```

```
Router#copy running-config startup-config
```

```
Router#
```

```
Router#conf t
```

```
Router(config)#router ospf 1
```

**%wildcard mask for network advertising**

```
Router(config-router)#network 192.168.3.0 0.0.0.255 area 0
```

```
Router(config-router)#network 192.168.8.0 0.0.0.255 area 0
```

```
Router(config-router)#network 192.168.7.0 0.0.0.255 area 0
```

```
Router(config-router)#
```

Verify the network in simulation mode or using ping.

