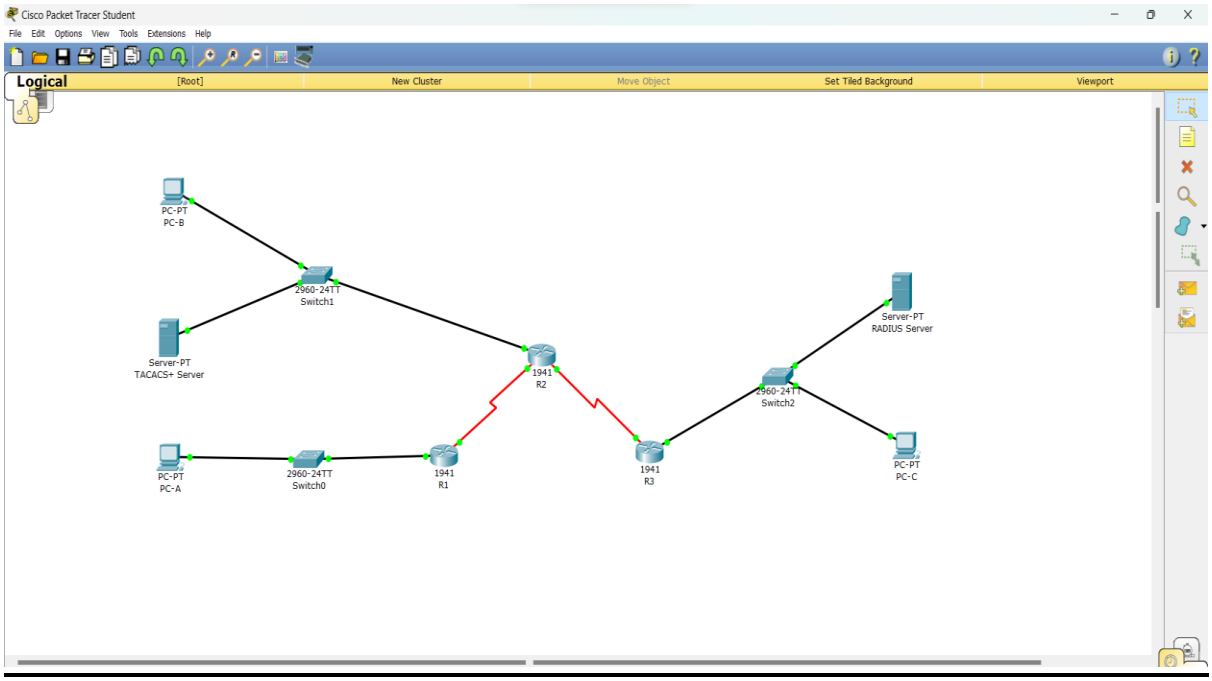
Date: 17/01/2024 **Security in Computing**

Practical 2:

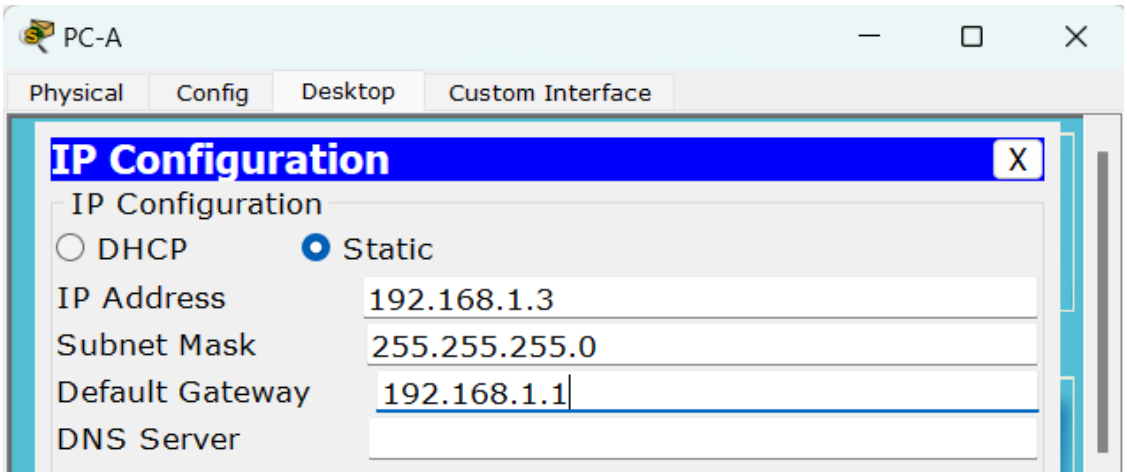
- **Aim: Configure AAA Authentication.**
  a. Configure a local user account on Router and configure authenticate on the console and vty lines using local AAA.
  b. Verify local AAA authentication from the Router console and the PC-A client.

- **Topology Daigram:**

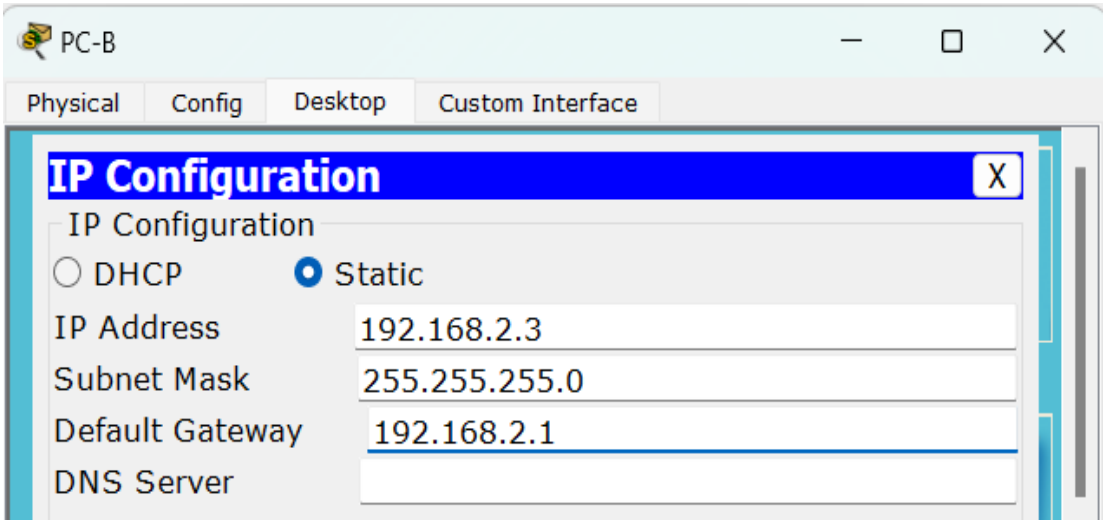


- **Assigning IP Address:**

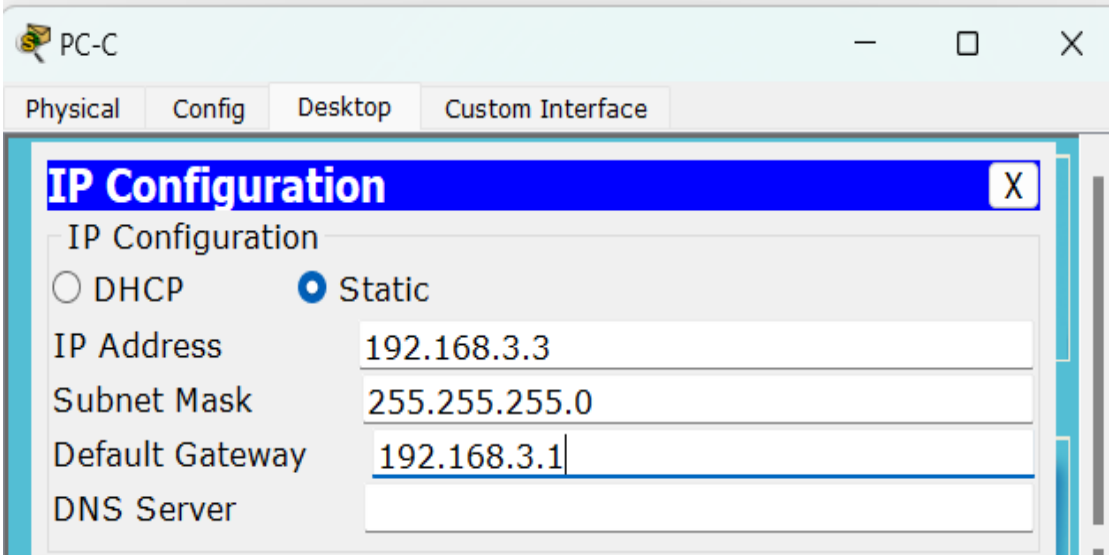
1. **PC-A**



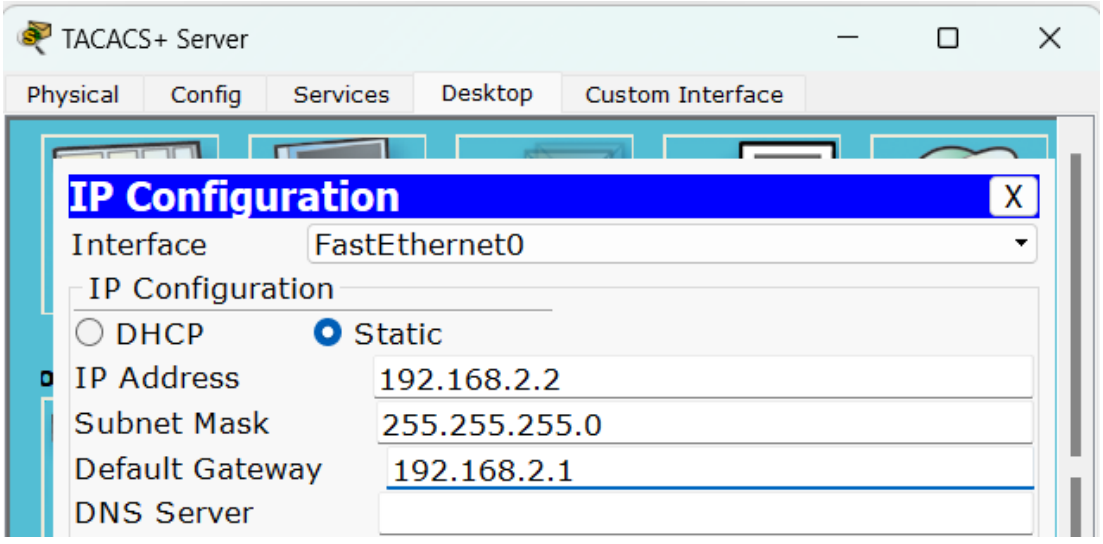
2. PC-B



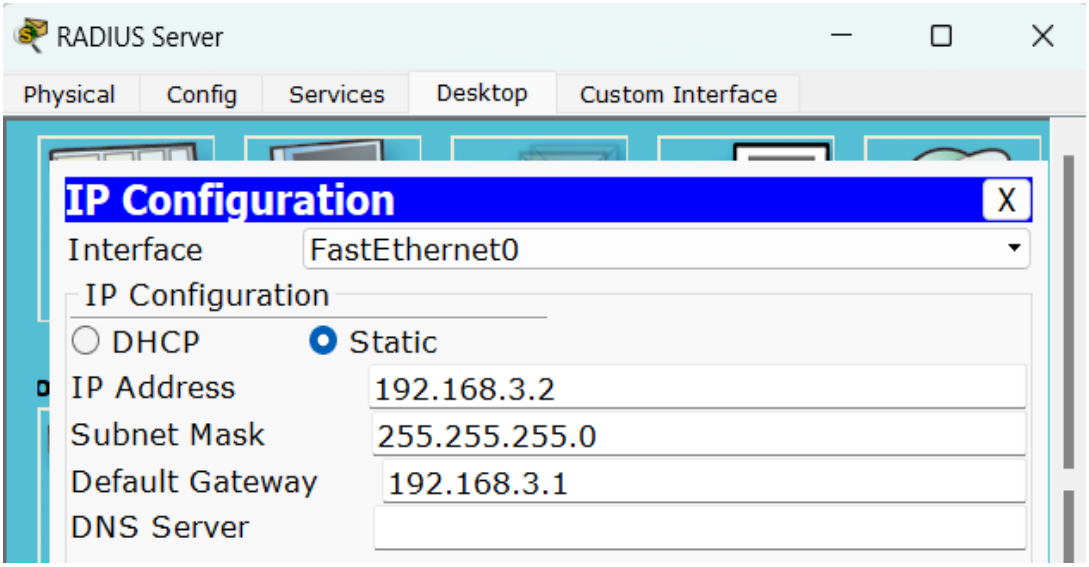
3. PC-C



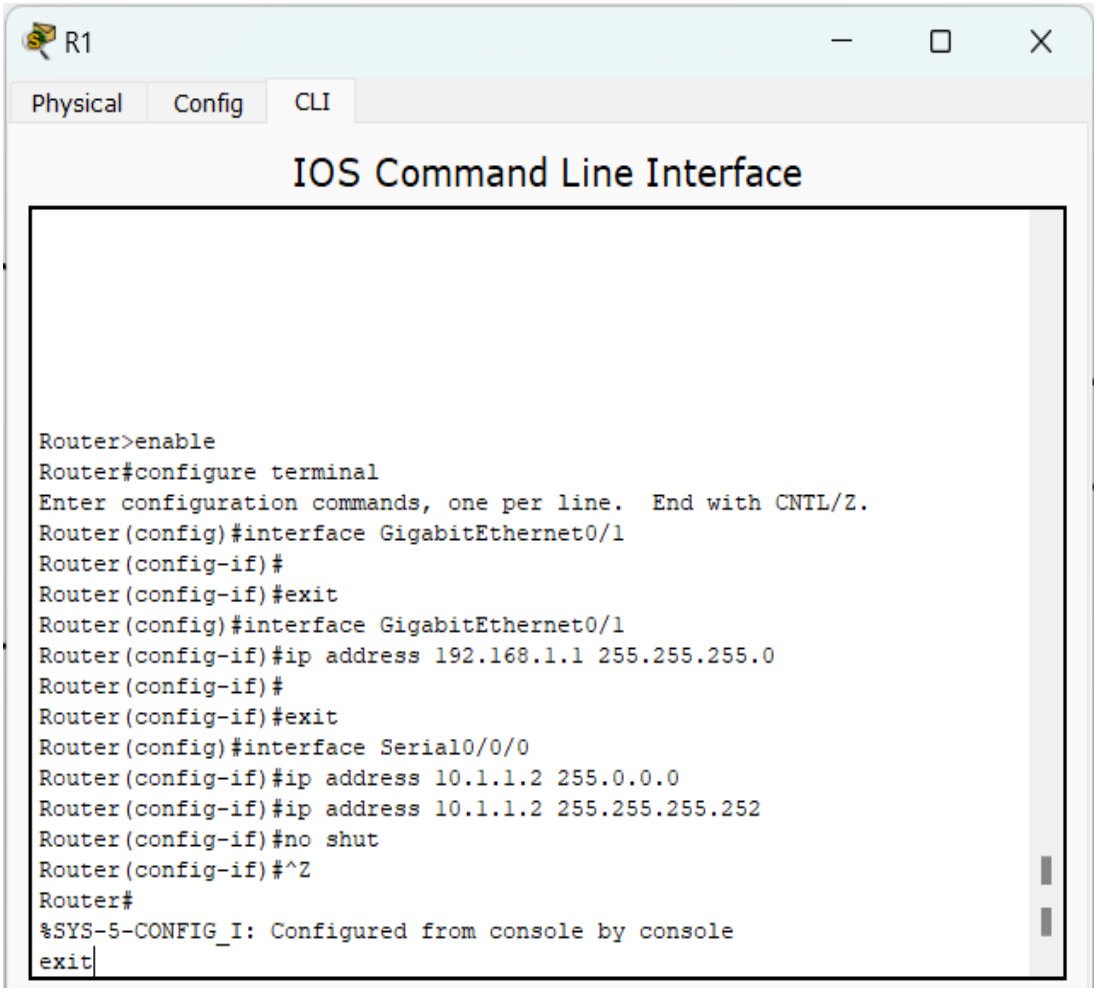
4. TACACS+ Server



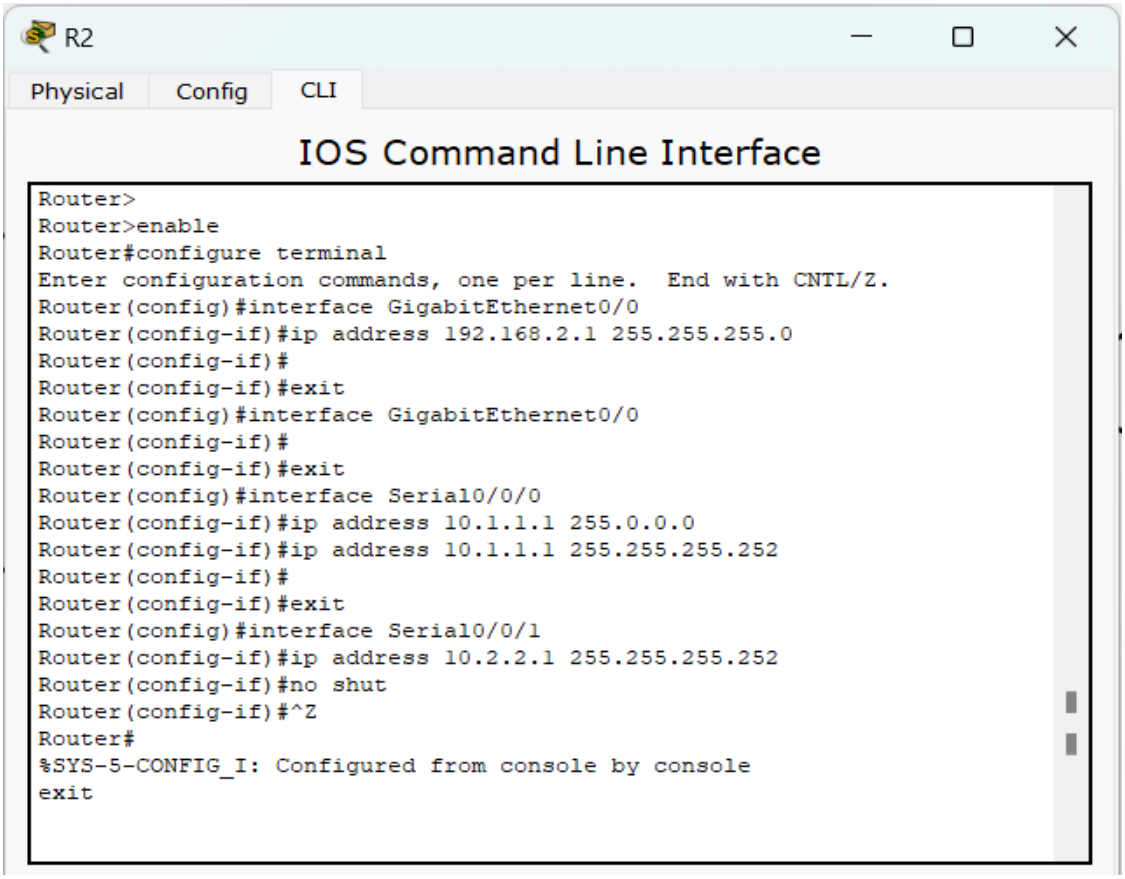
5. RADIUS Server



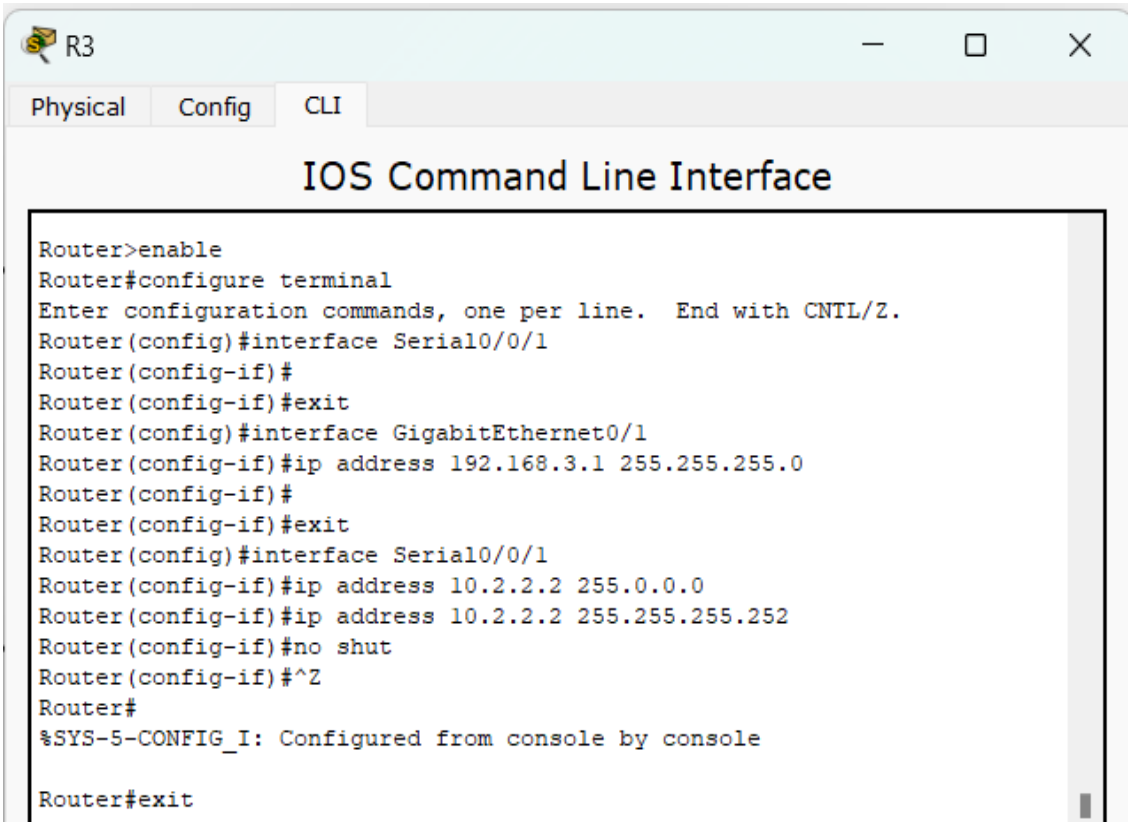
6. R1



7. R2

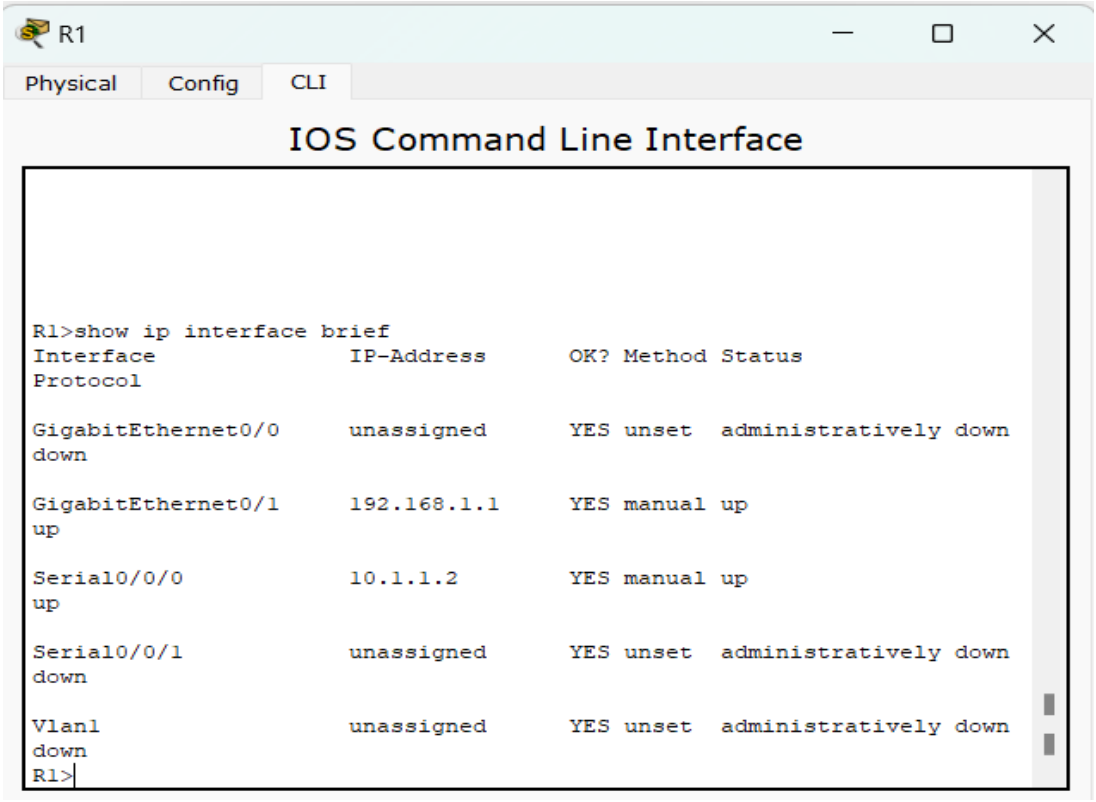

R2
Physical
Config
CLI
IOS Command Line Interface
Router>
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0/0
Router(config-if)#ip address 10.1.1.1 255.0.0.0
Router(config-if)#ip address 10.1.1.1 255.255.255.252
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0/1
Router(config-if)#ip address 10.2.2.1 255.255.255.252
Router(config-if)#no shut
Router(config-if)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit

8. R3

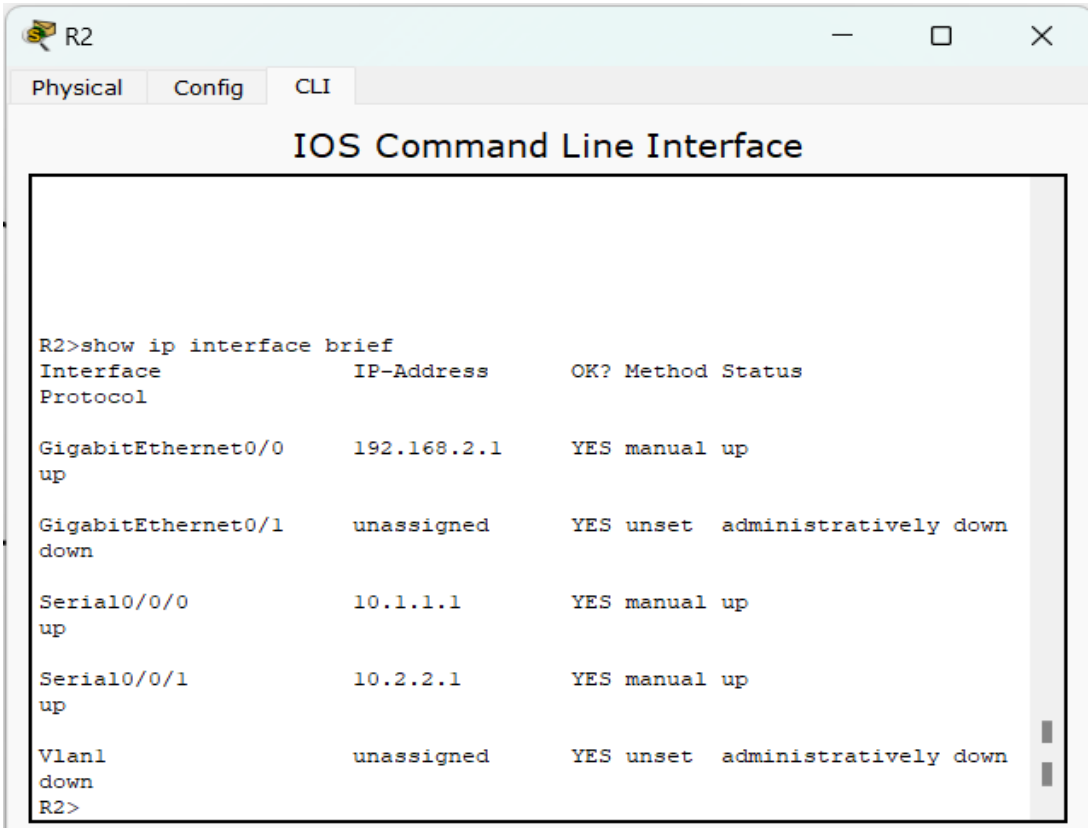

R3
Physical
Config
CLI
IOS Command Line Interface
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface Serial0/0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#ip address 192.168.3.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0/1
Router(config-if)#ip address 10.2.2.2 255.0.0.0
Router(config-if)#ip address 10.2.2.2 255.255.255.252
Router(config-if)#no shut
Router(config-if)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#exit

➢ Displaying IP Address Details of Routers

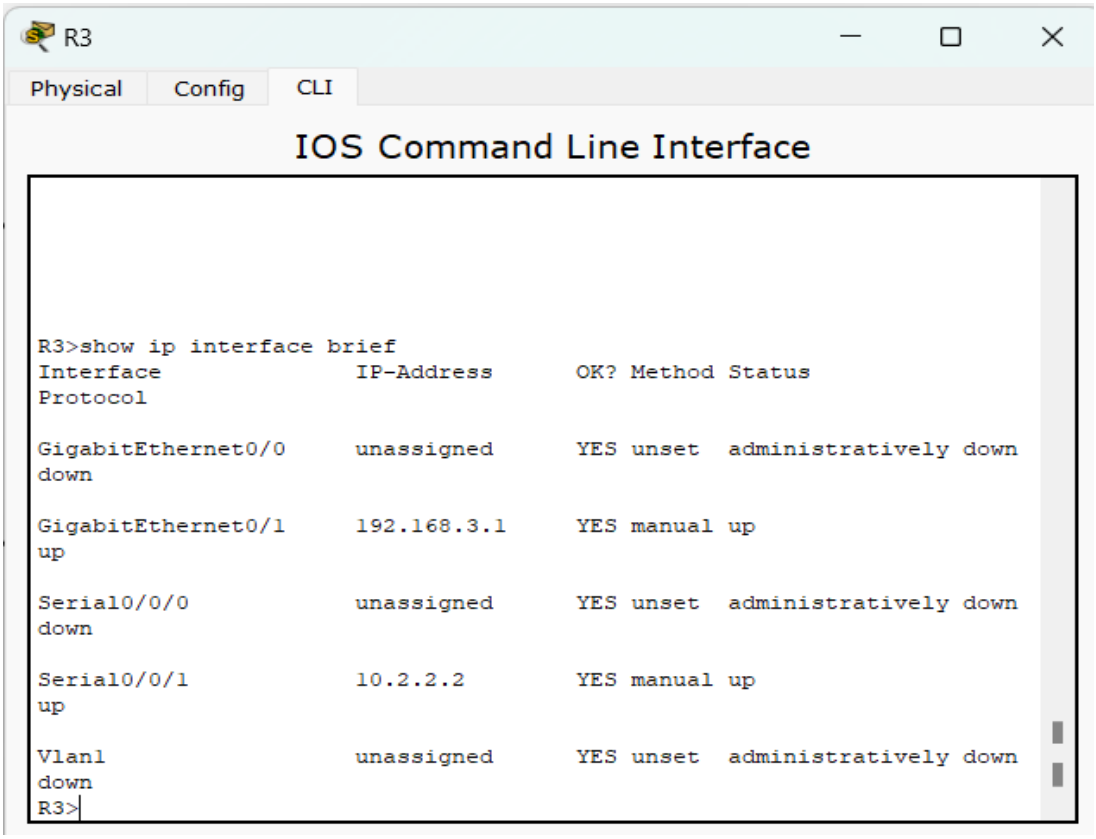
1. R1



2. R2

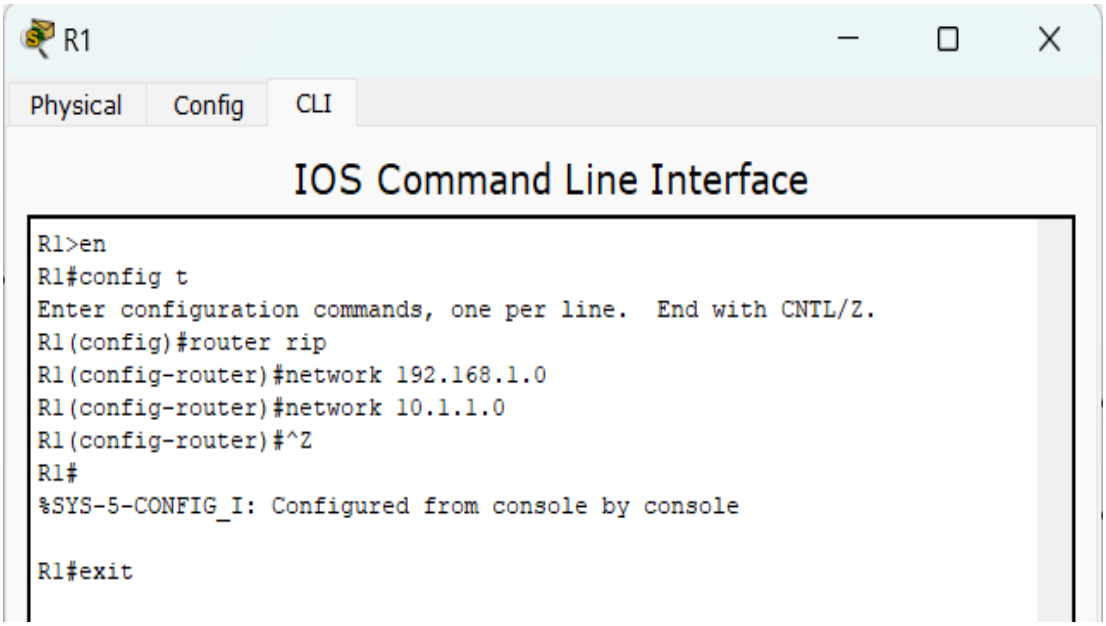


3. R3

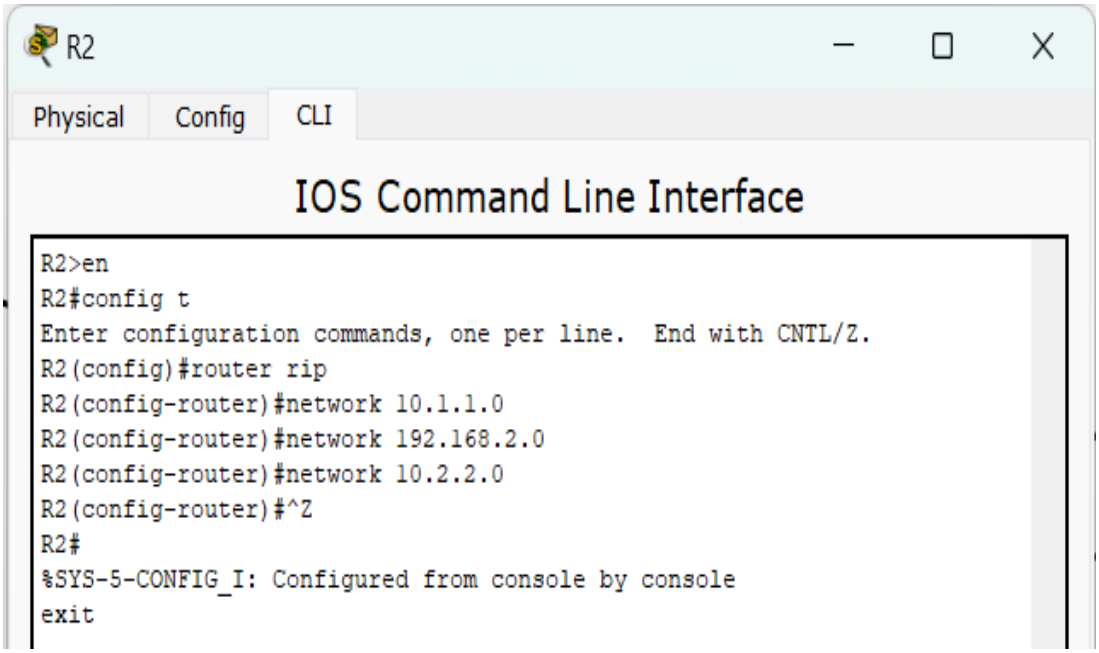


➢ Configure RIP on routers

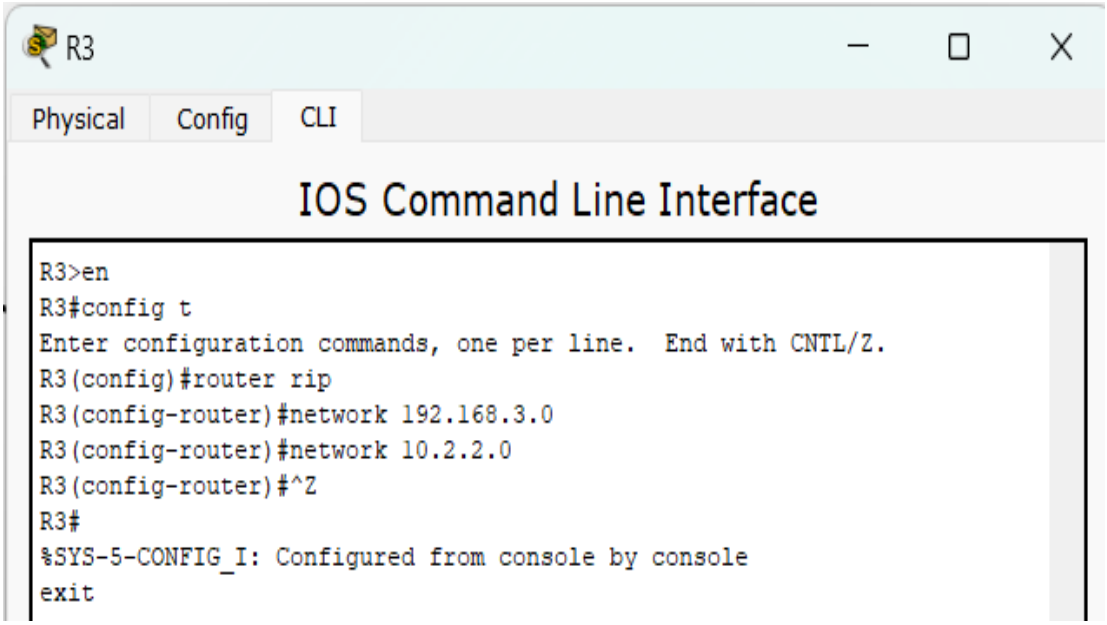
1. R1



2. **R2**

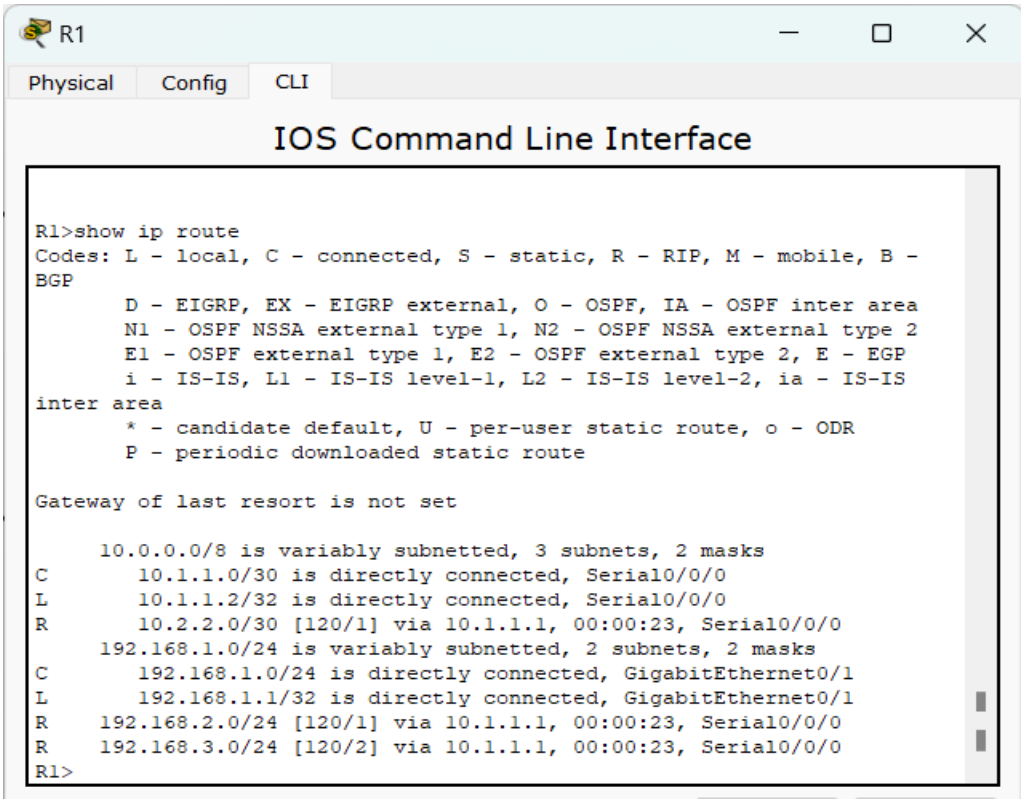

R2
Physical
Config
CLI
IOS Command Line Interface
R2>en
R2#config t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#router rip
R2(config-router)#network 10.1.1.0
R2(config-router)#network 192.168.2.0
R2(config-router)#network 10.2.2.0
R2(config-router)#^Z
R2#
%SYS-5-CONFIG_I: Configured from console by console
exit

3. **R3**

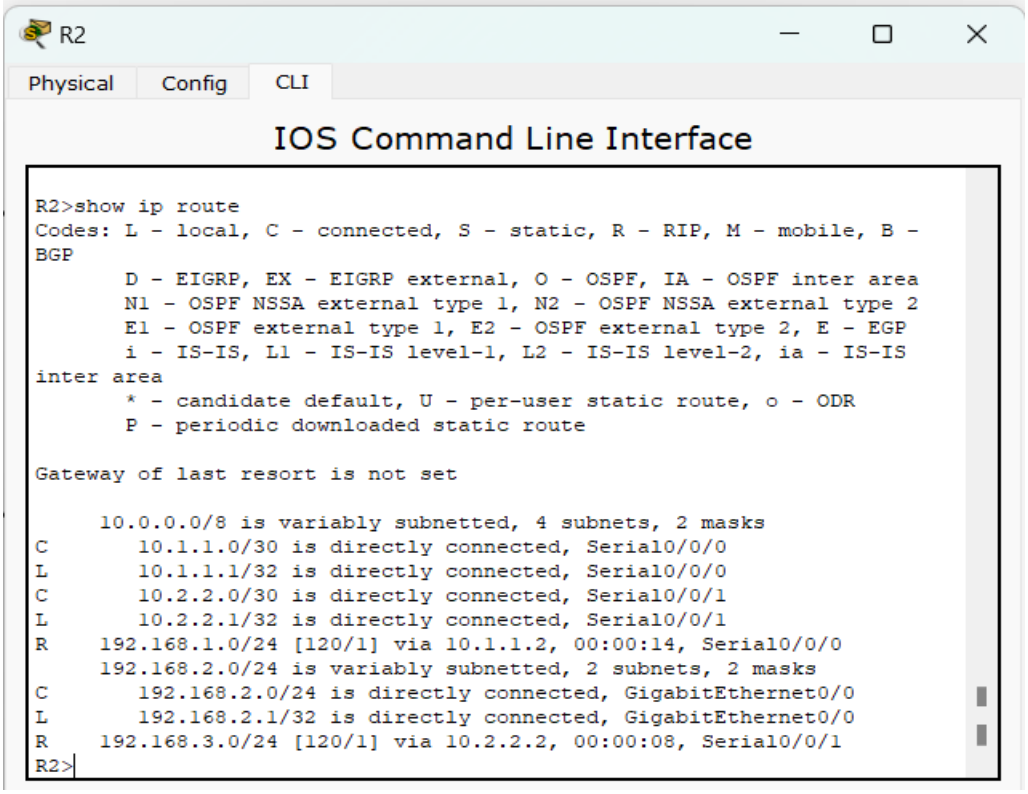

R3
Physical
Config
CLI
IOS Command Line Interface
R3>en
R3#config t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#router rip
R3(config-router)#network 192.168.3.0
R3(config-router)#network 10.2.2.0
R3(config-router)#^Z
R3#
%SYS-5-CONFIG_I: Configured from console by console
exit

➢ Displaying routing tables of routers

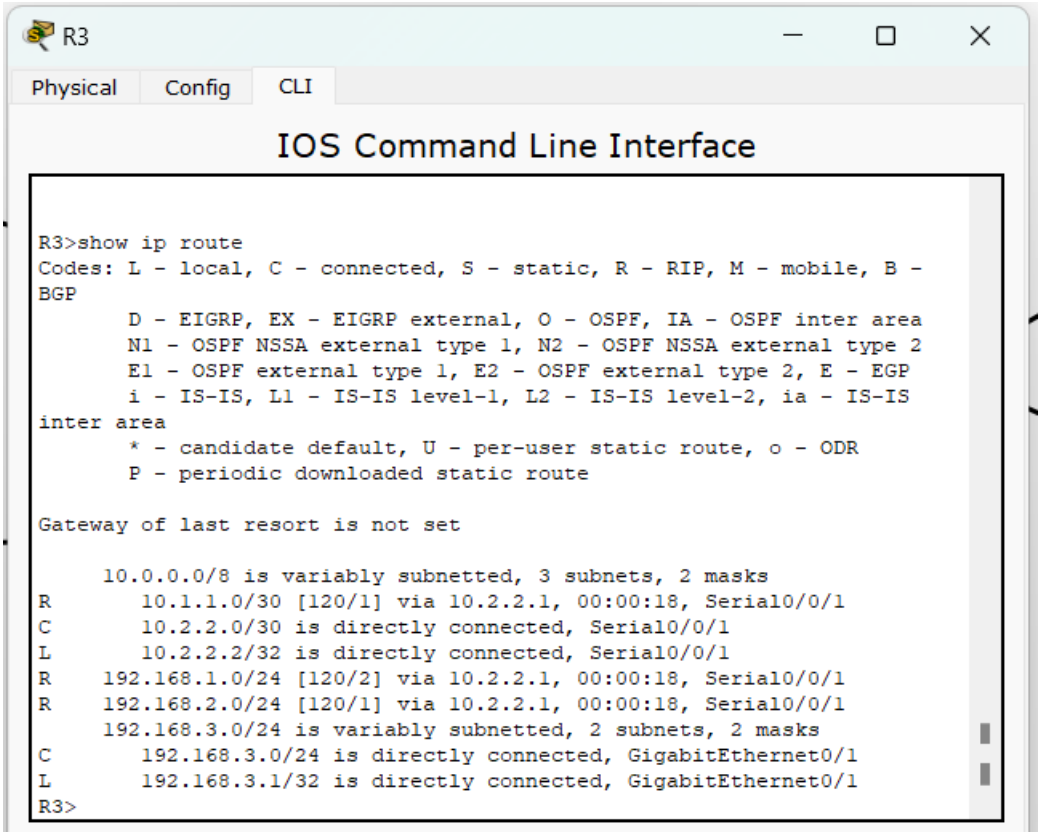
1. R1



2. R2

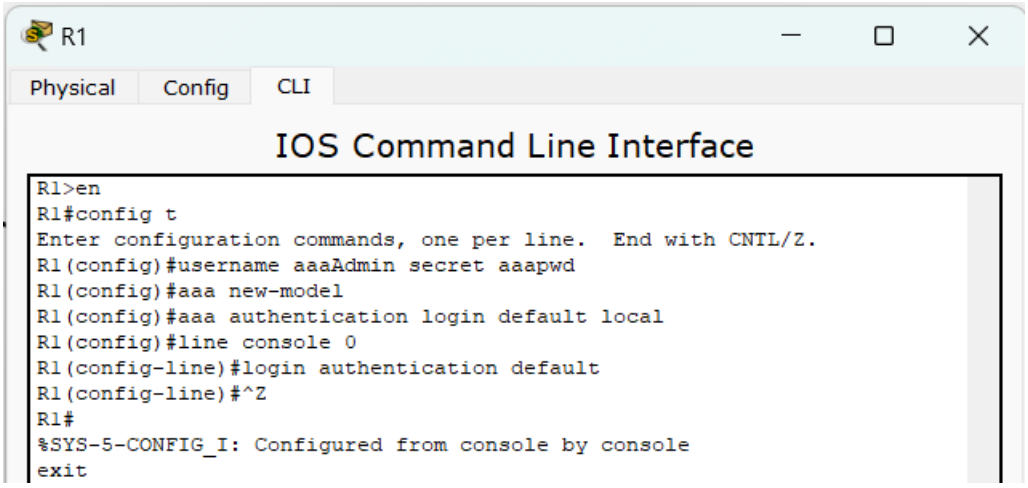


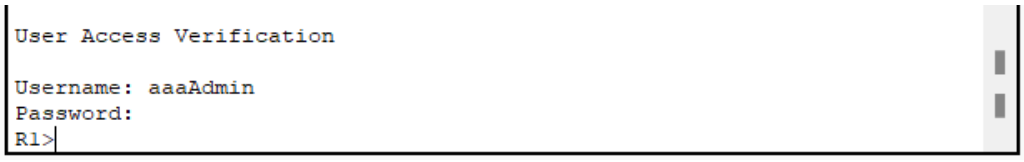
3. R3



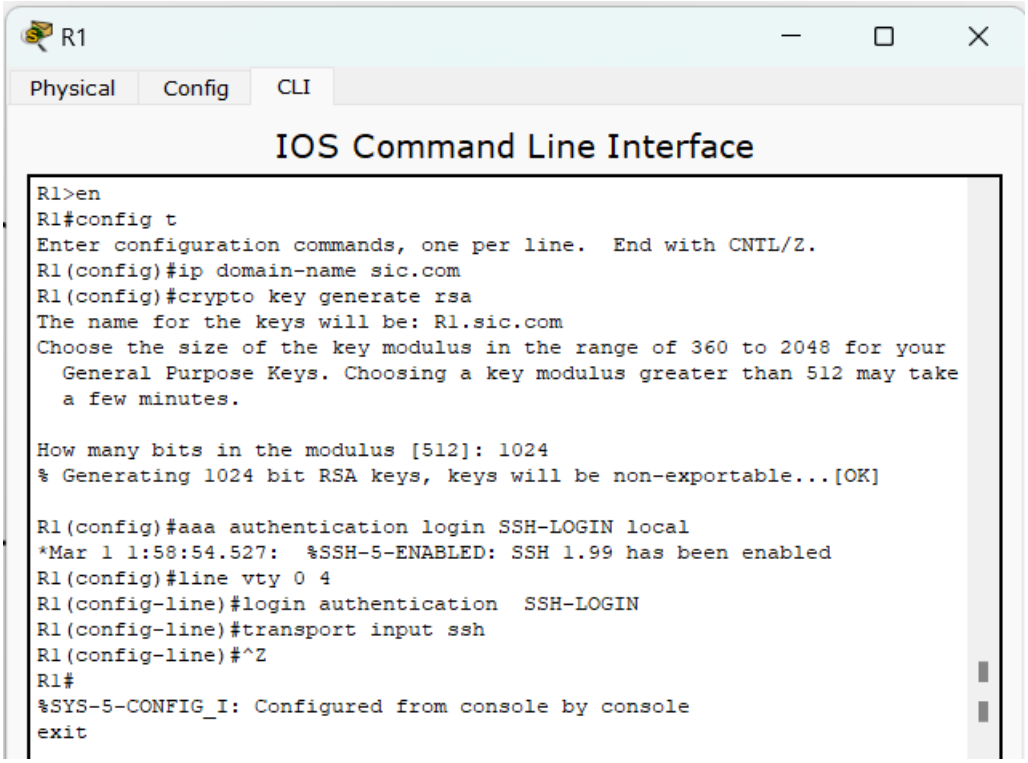
➢ Configure Local AAA Authentication for Console Line on R1

1. R1

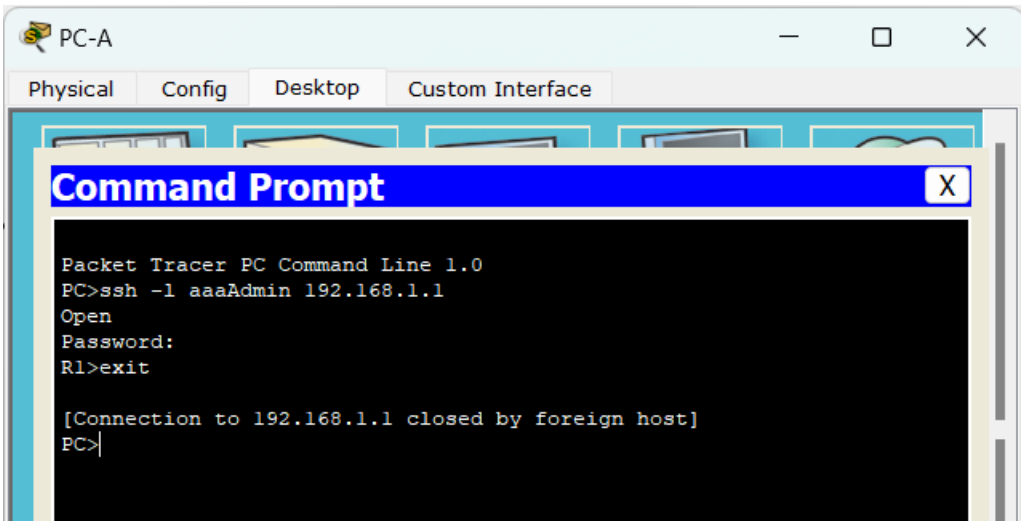




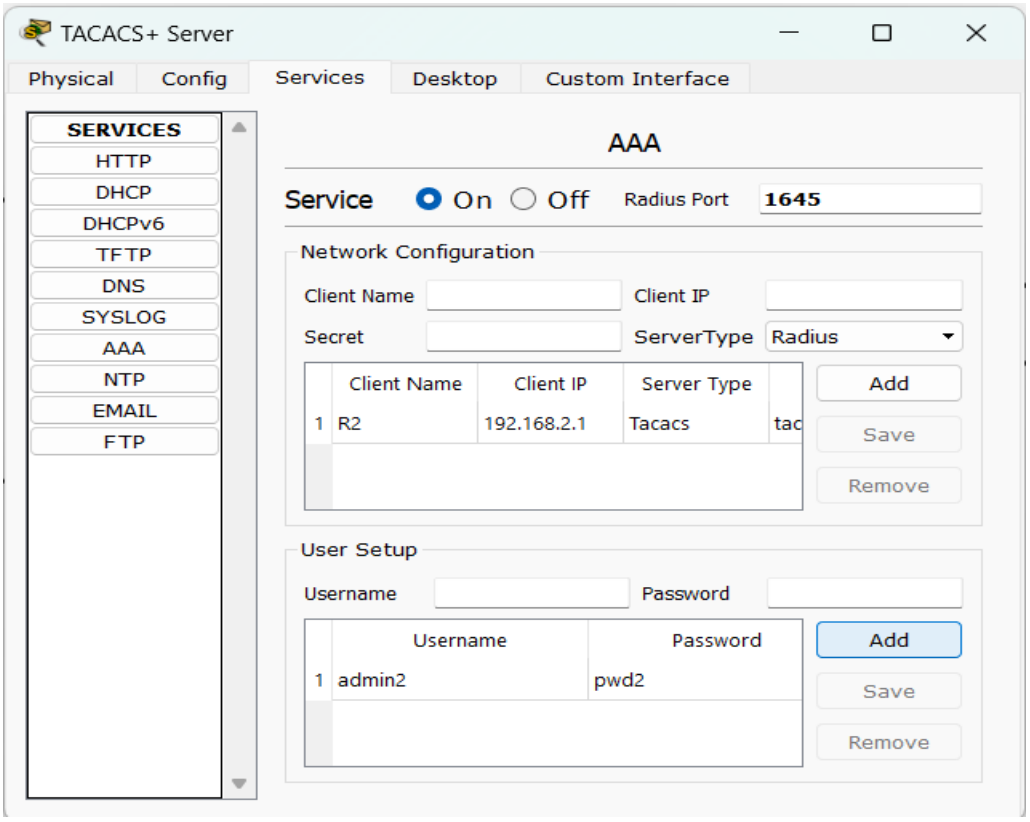
➢ Configure Local AAA Authentication for vty Lines on R1

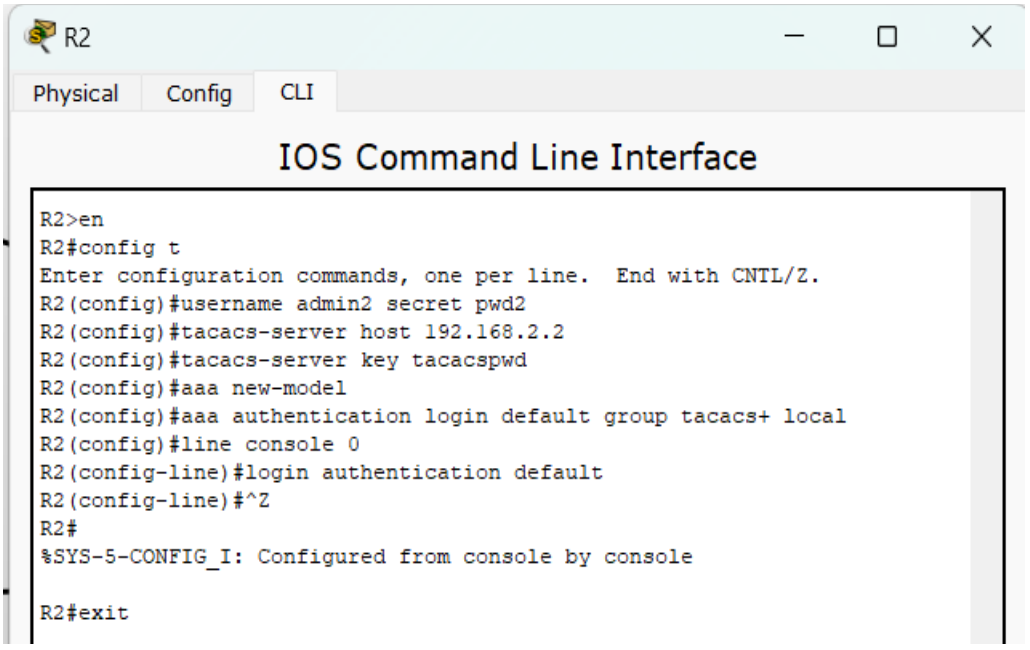


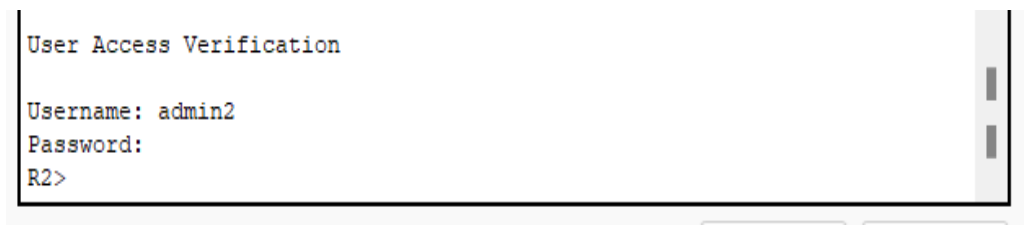
PC-A



➢ Configure Server-Based AAA Authentication Using TACACS+ on R2







➢ Configure Server-Based AAA Authentication Using RADIUS on R3