Project 3

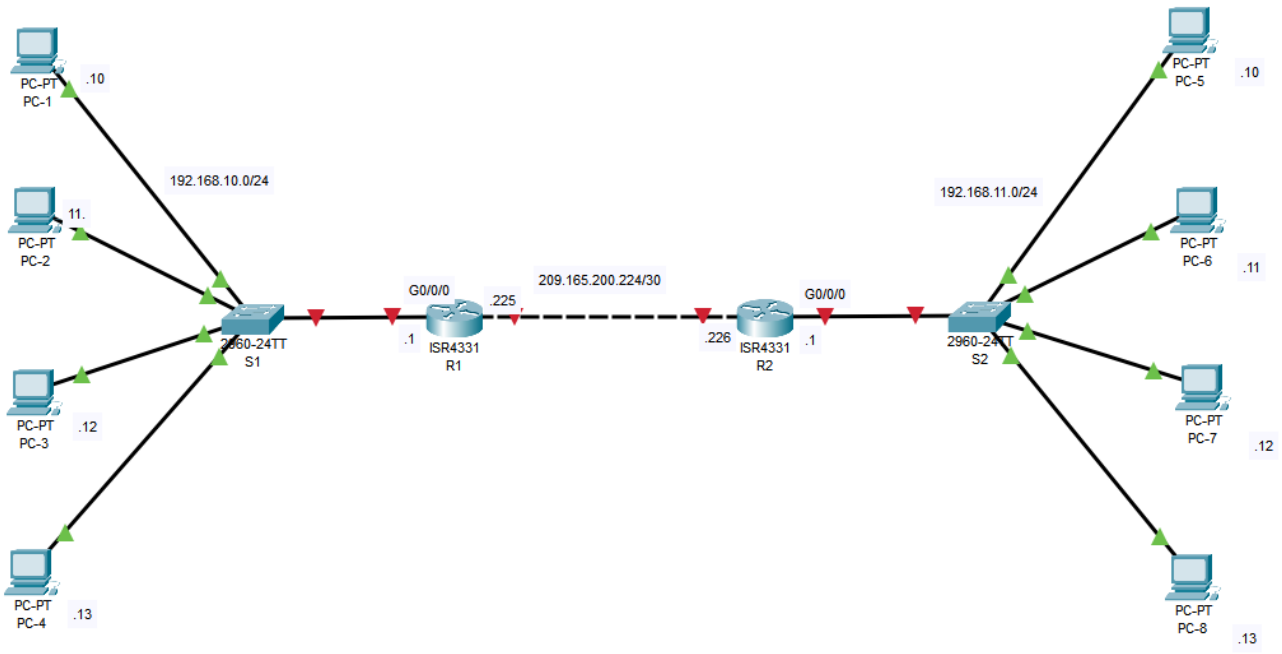
Static routing of two networks

Project description:

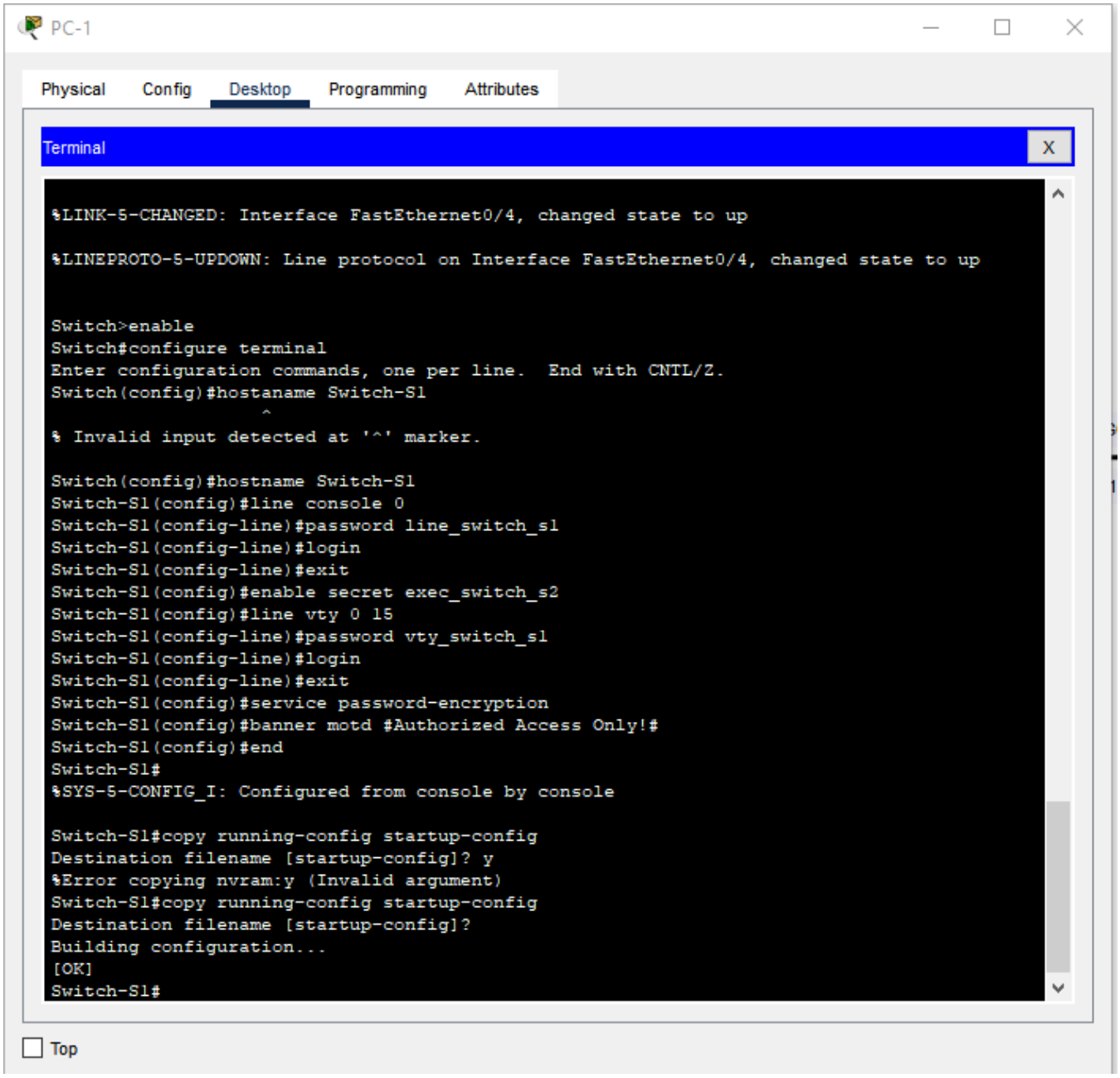
Create 2 local networks (LAN) and perform basic configuration of switch, basic configuration of router. Configure static routing.

Steps:

- Create a topology of two local networks:

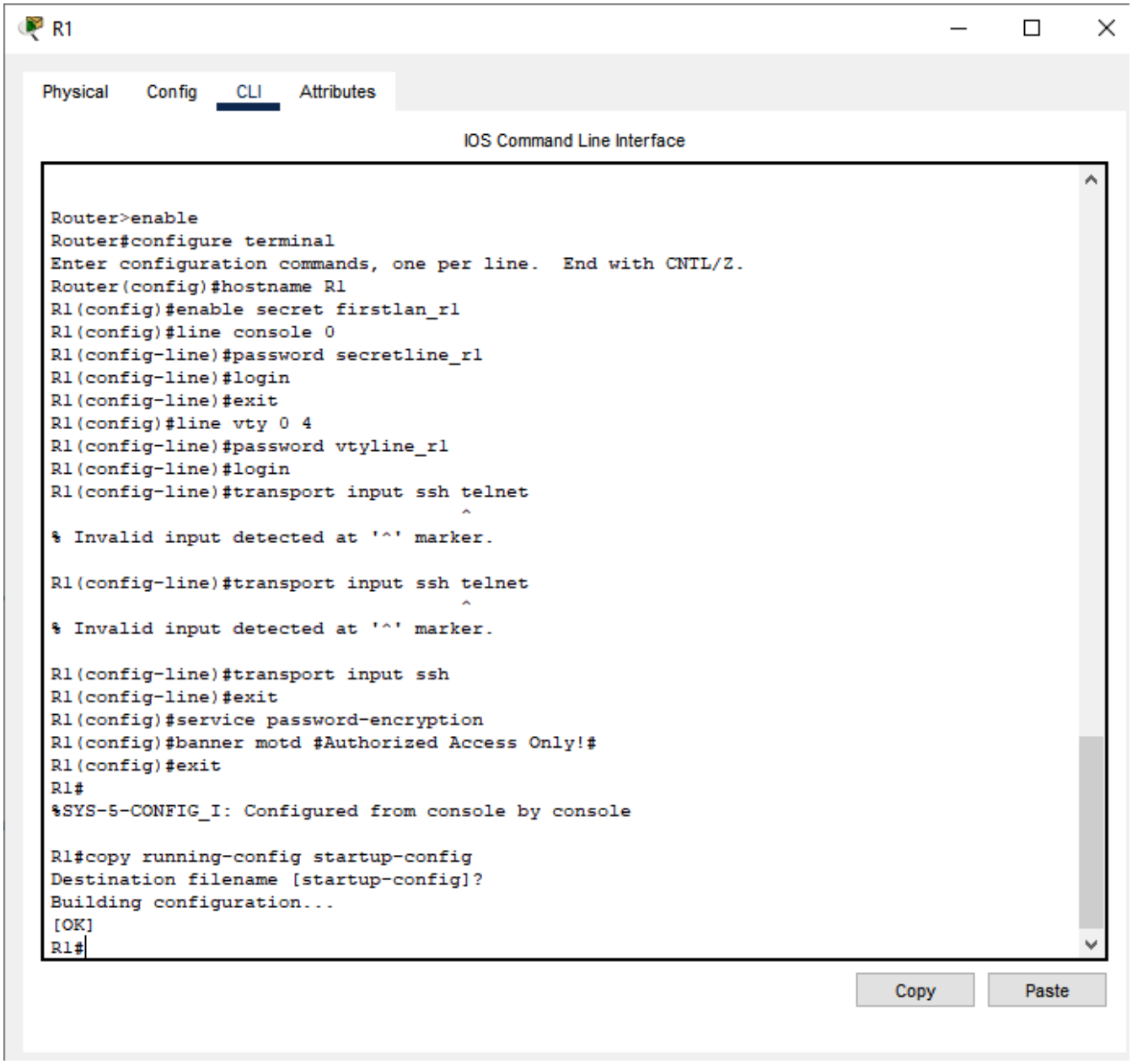


- Assign addresses to PC hosts. Configure the basic configuration of the switches:
  1. Assign a device name.
  2. Secure user EXEC mode access.
  3. Secure privileged EXEC mode access.
  4. Secure VTY access.
  5. Encrypt all plaintext passwords.
  6. Display a login banner.
  7. Save Configurations

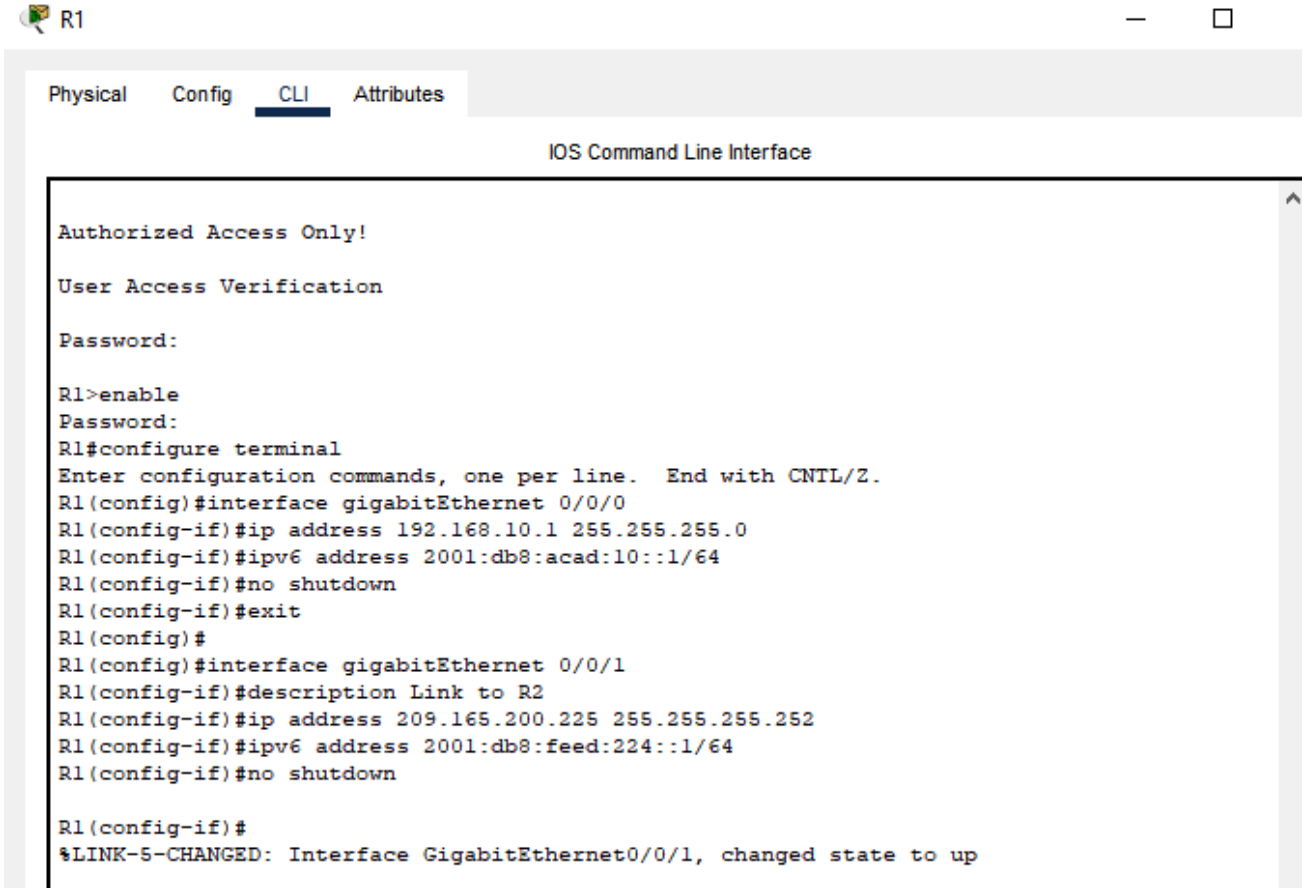


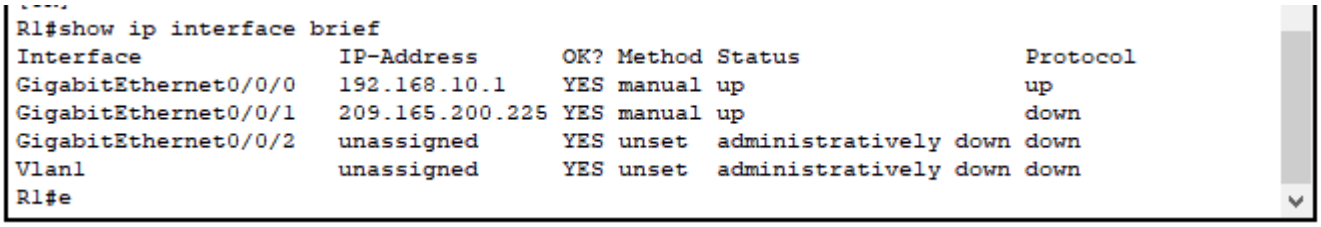
- Configure the basic configuration of routers:

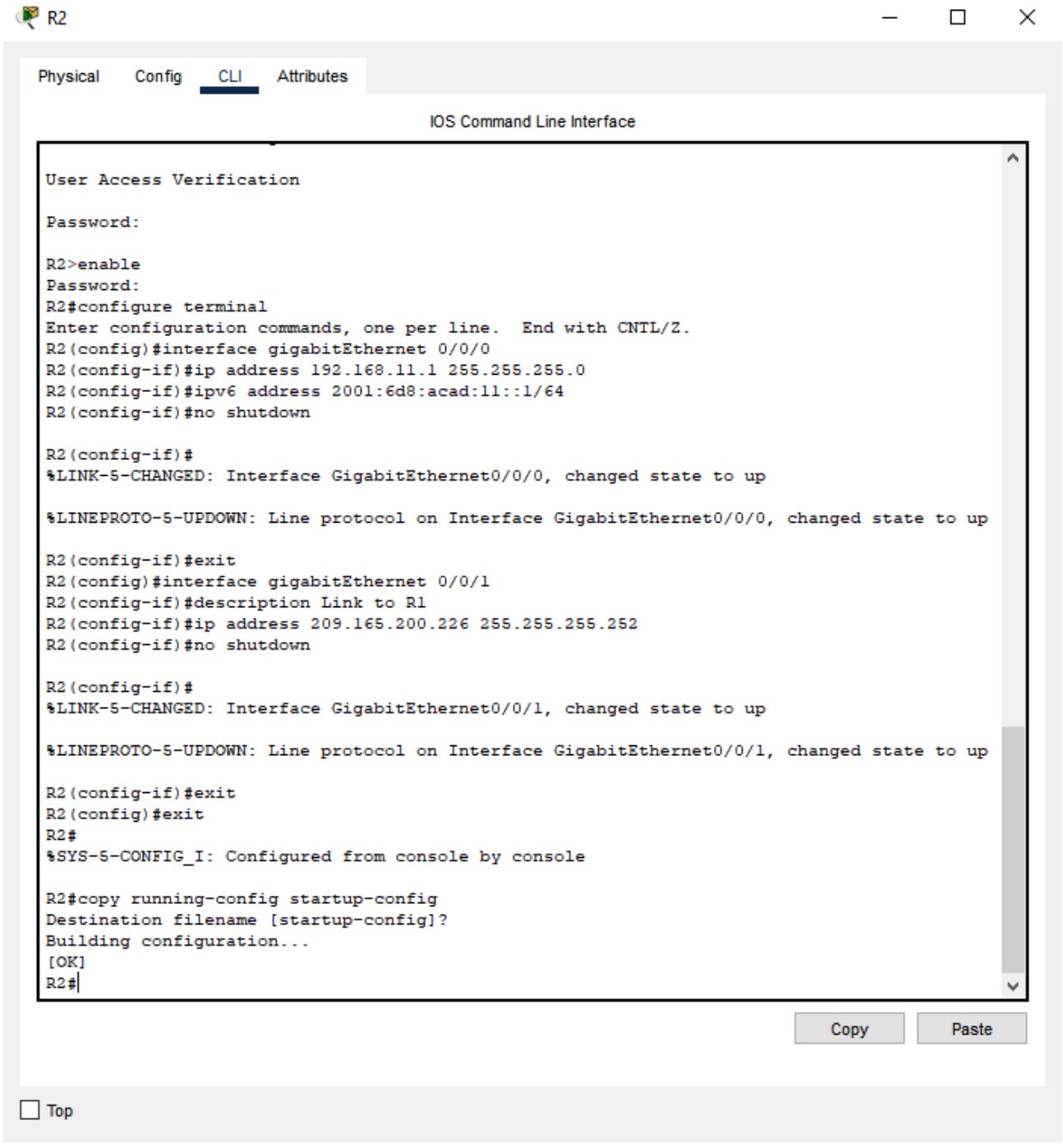
1. Configure the device name.
2. Secure the privileged EXEC mode.
3. Secure and enable remote SSH and Telnet access.
4. Secure all plaintext passwords.
5. Provide legal notification.



- Configuring the incoming interface of the routers (in the LAN network) and the outgoing interfaces (communication line between routers). Check the configuration of interfaces:

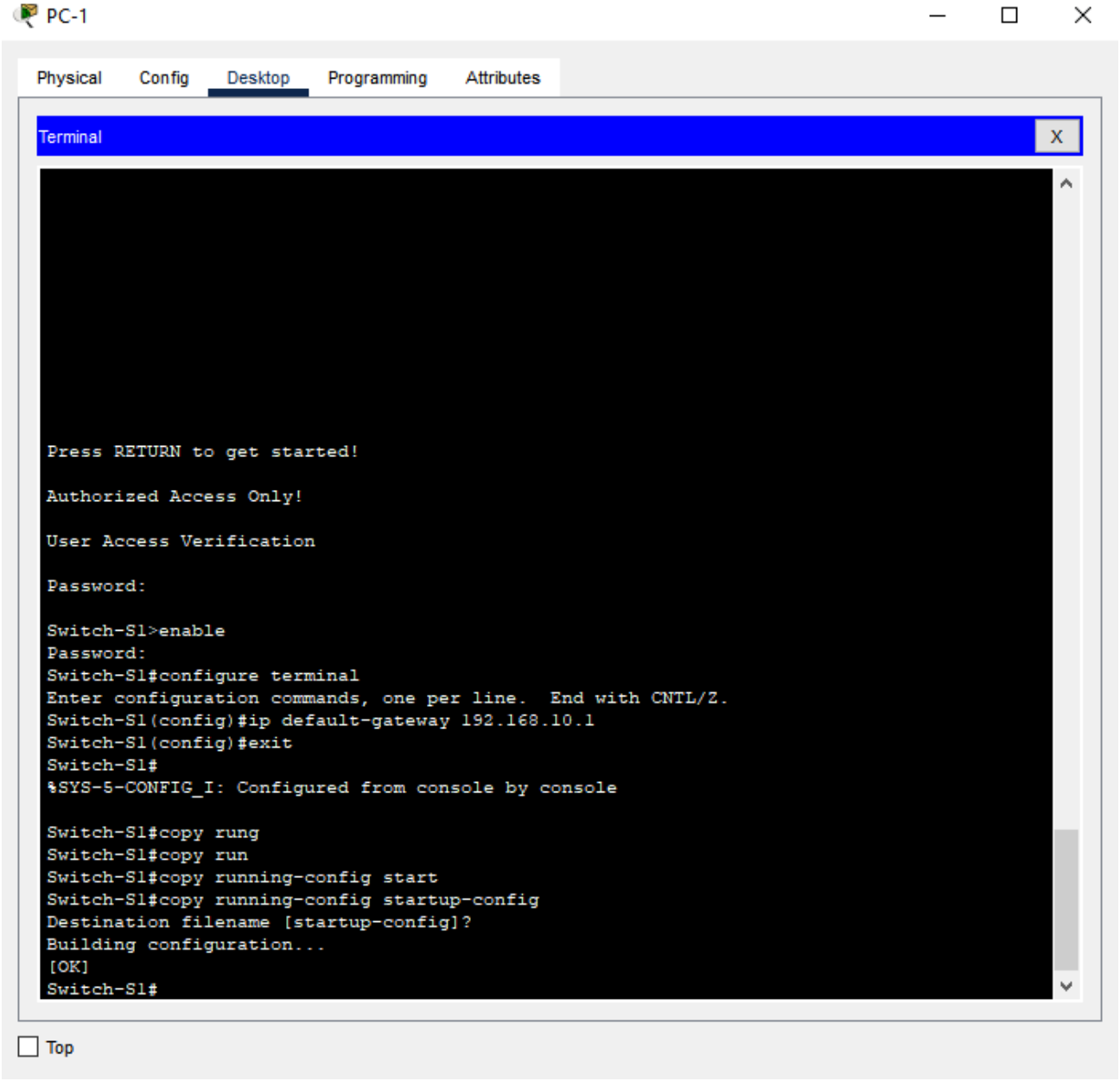


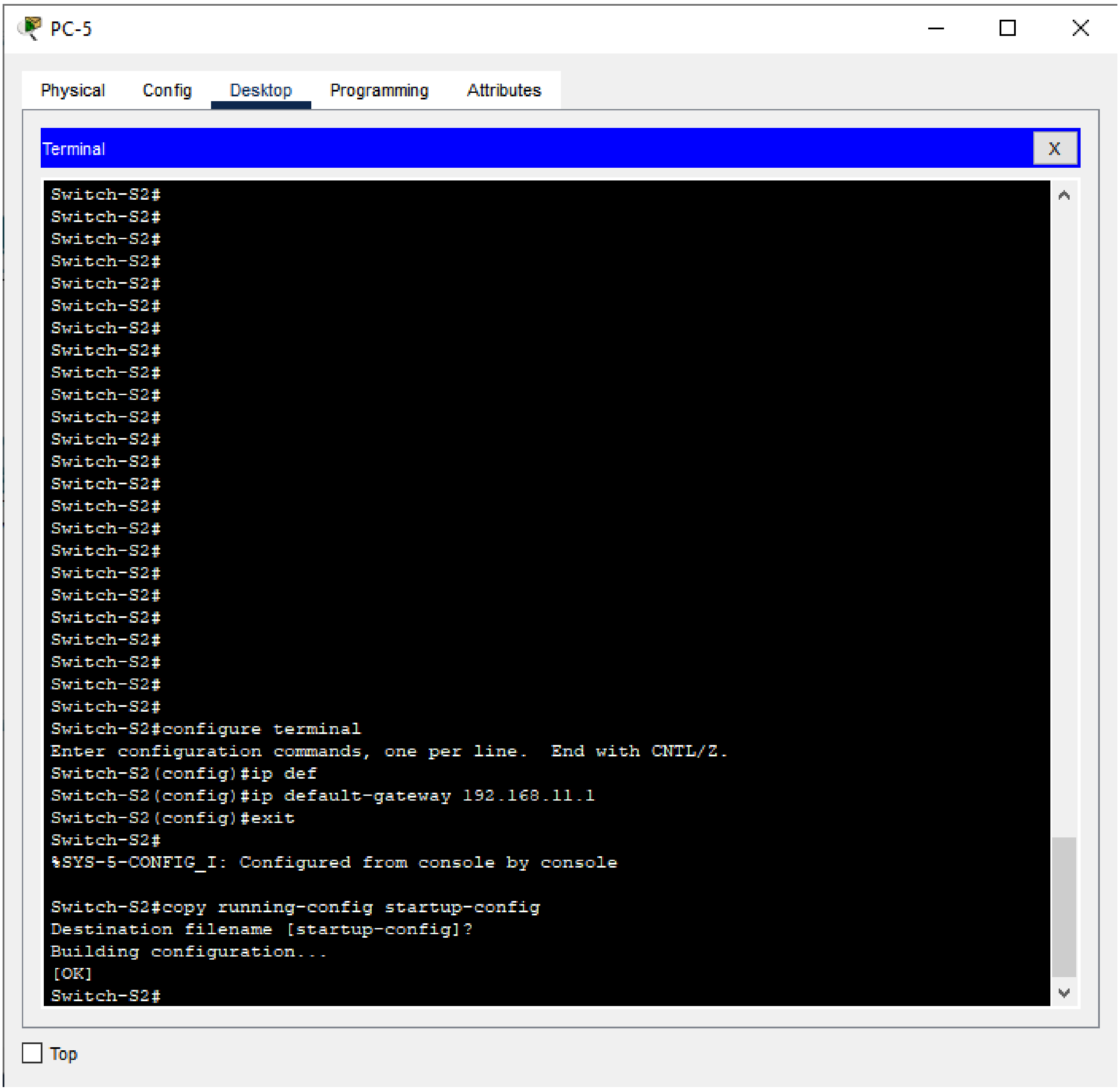





```
R2#show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol
GigabitEthernet0/0/0   192.168.11.1    YES manual up                    up
GigabitEthernet0/0/1   209.165.200.226 YES manual up                    up
GigabitEthernet0/0/2   unassigned      YES unset  administratively down down
Vlan1                  unassigned      YES unset  administratively down down
R2#
```

- Configure the default gateway address in the LAN switch:




PC-5
Physical
Config
Desktop
Programming
Attributes
Terminal
X
Switch-S2#
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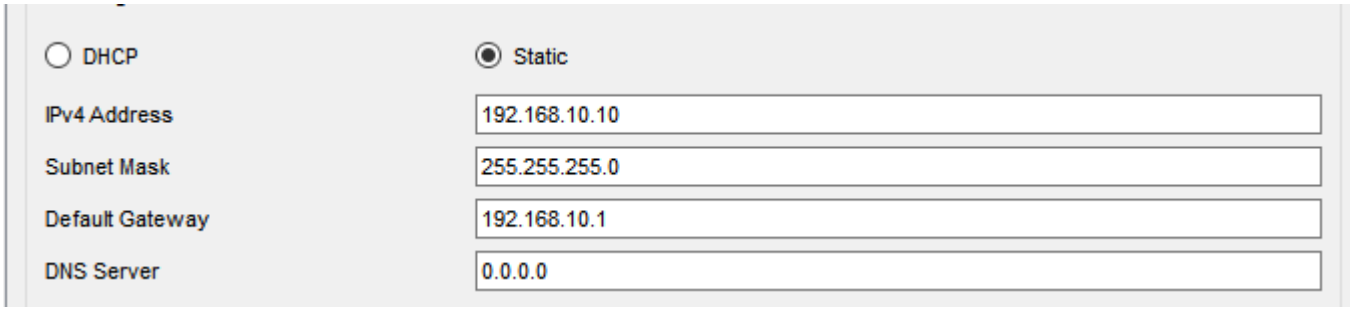
Switch-S2#
Switch-S2#
Switch-S2#
Switch-S2#
Switch-S2#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch-S2(config)#ip def
Switch-S2(config)#ip default-gateway 192.168.11.1
Switch-S2(config)#exit
Switch-S2#
%SYS-5-CONFIG_I: Configured from console by console
Switch-S2#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Switch-S2#
Top

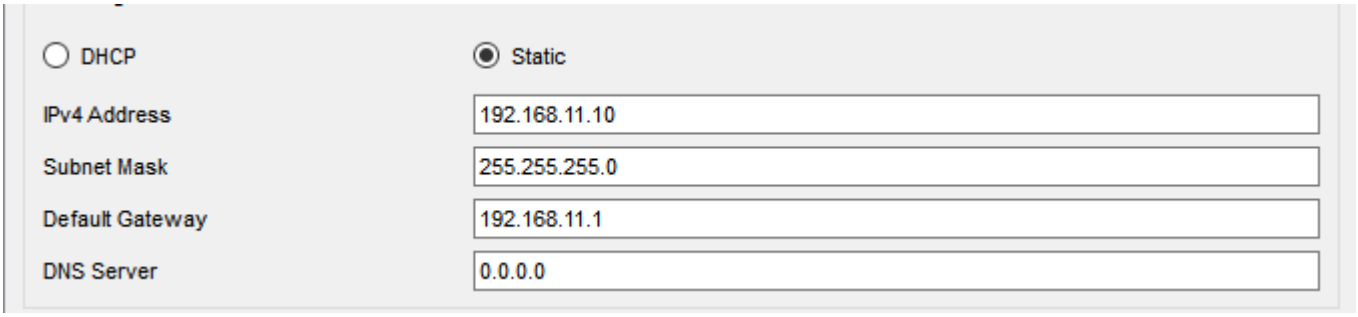
- Configure static routing:

```
R1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip route 192.168.11.0 255.255.255.0 209.165.200.226
R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#cop running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R1#
```

```
R2>enable
Password:
R2#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#ip route 192.168.10.0 255.255.255.0 209.165.200.225
R2(config)#exit
R2#
%SYS-5-CONFIG_I: Configured from console by console

R2#cop running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R2#
```

- Configure addresses on hosts:
    1. IPv4 host
    2. Default IPv4 gateway(LAN router)





- Check network operation using ping:

```
C:\>ping 192.168.11.1

Pinging 192.168.11.1 with 32 bytes of data:

Reply from 192.168.11.1: bytes=32 time<1ms TTL=254
Reply from 192.168.11.1: bytes=32 time<1ms TTL=254
Reply from 192.168.11.1: bytes=32 time<1ms TTL=254
Reply from 192.168.11.1: bytes=32 time<1ms TTL=254

Ping statistics for 192.168.11.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.11.10

Pinging 192.168.11.10 with 32 bytes of data:

Reply from 192.168.11.10: bytes=32 time<1ms TTL=126
Reply from 192.168.11.10: bytes=32 time<1ms TTL=126
Reply from 192.168.11.10: bytes=32 time<1ms TTL=126
Reply from 192.168.11.10: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.11.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Summary:

The network is built, the configuration of switches and routers is configured. Static routing is configured. Packets are successfully sent to another network.