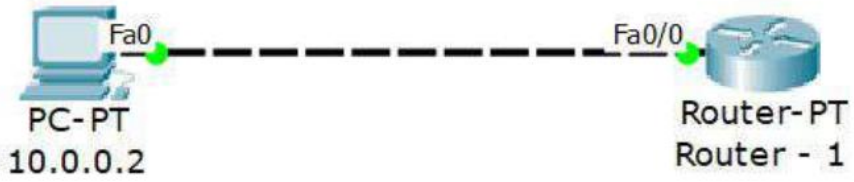
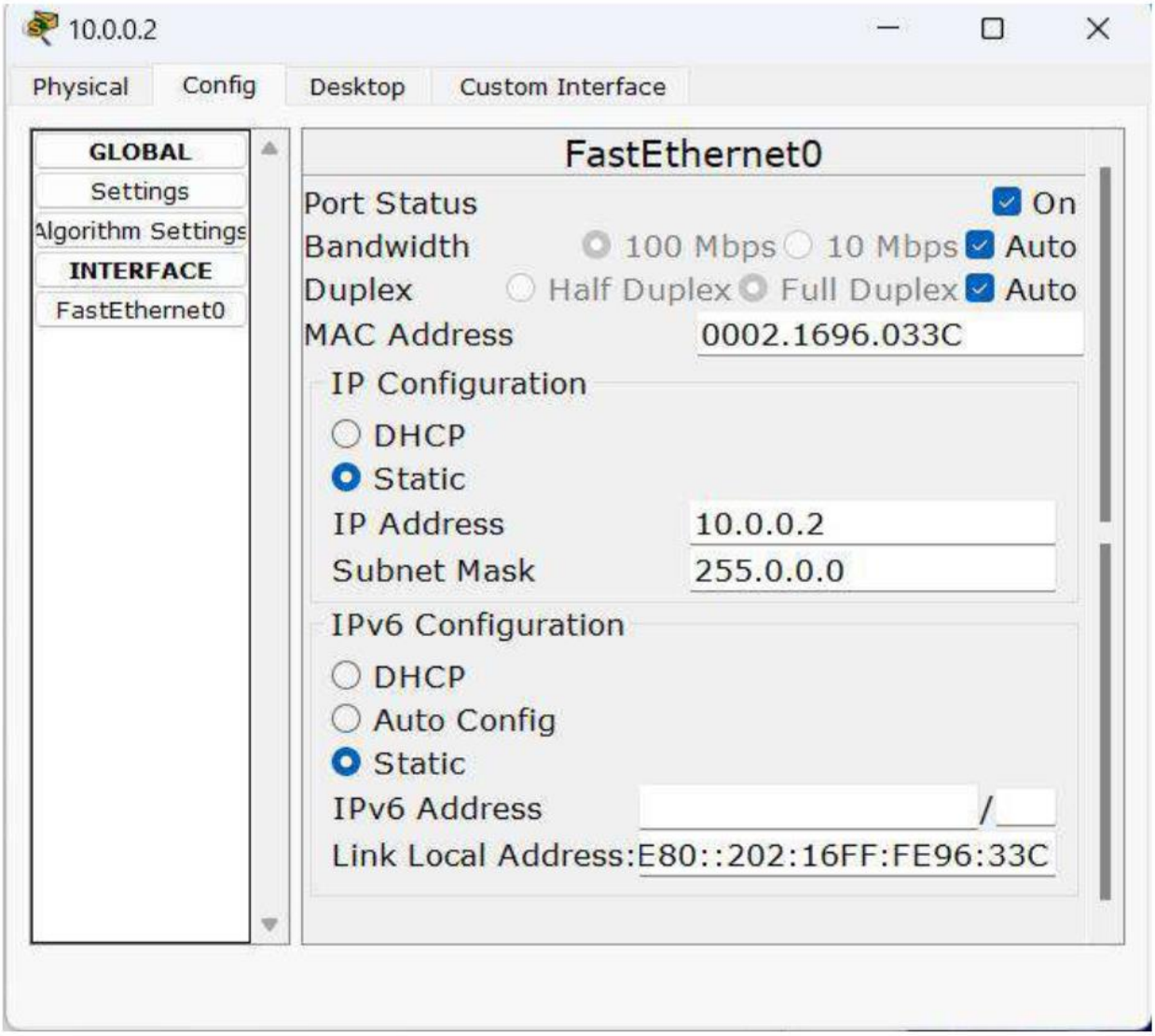
Lab 10

To understand the operation of TELNET by accessing the router in server room from a PC in IT office

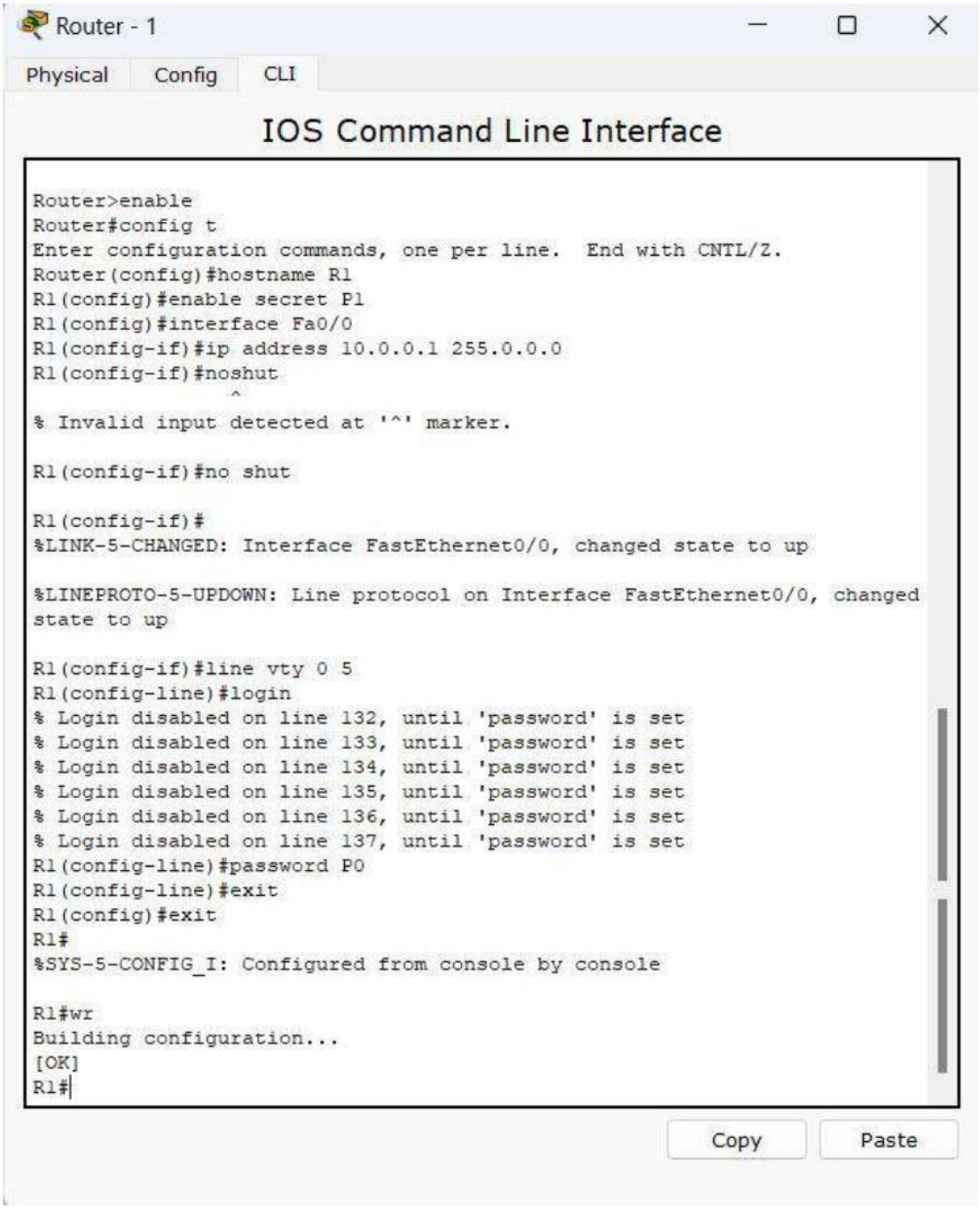
Topology:



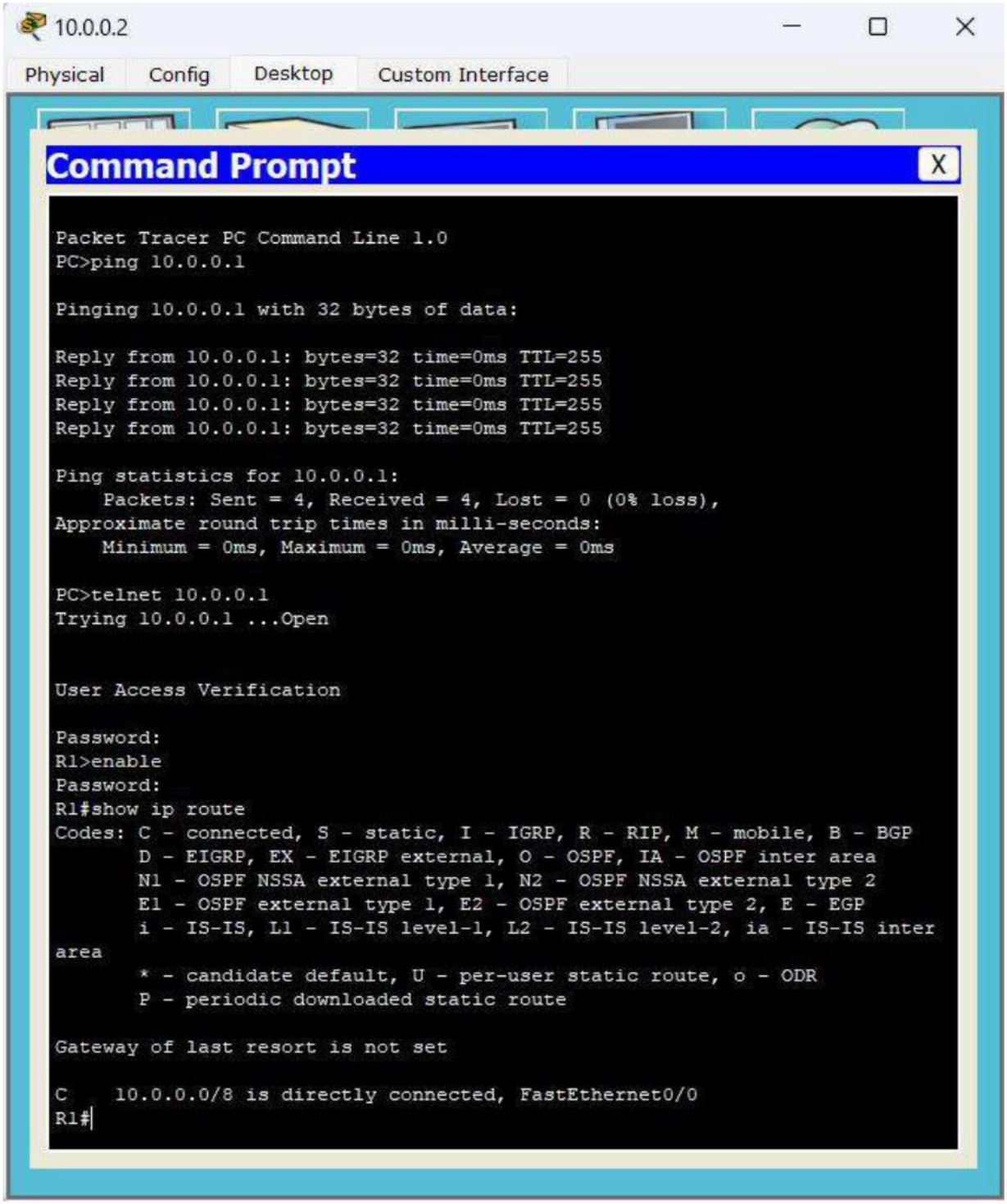
PC - 1 Configuration:



Router - 1 Configuration:



PC - 1 (Command Prompt):

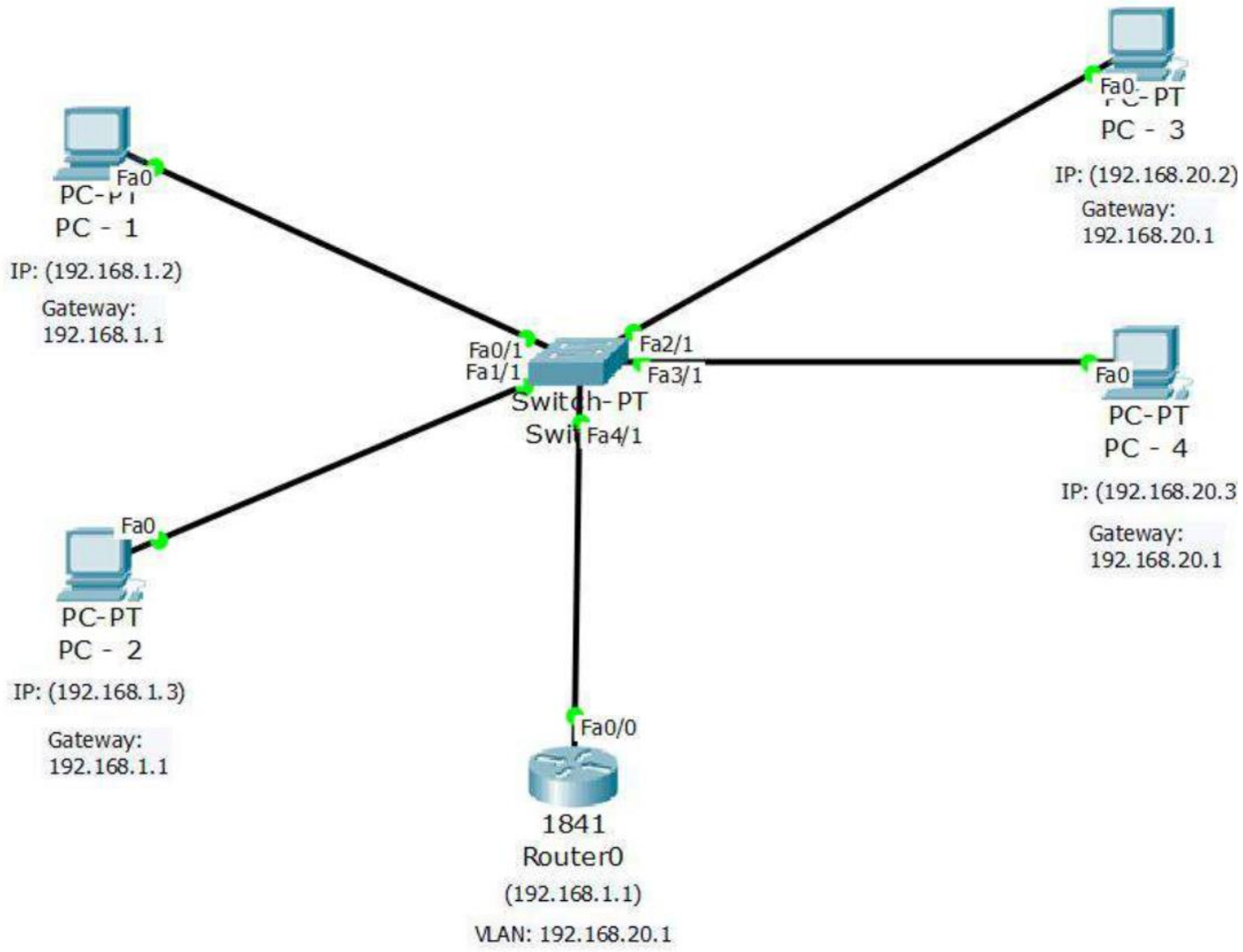


Password for User Access Verification is: **P0**
Password for enable is: **P1**

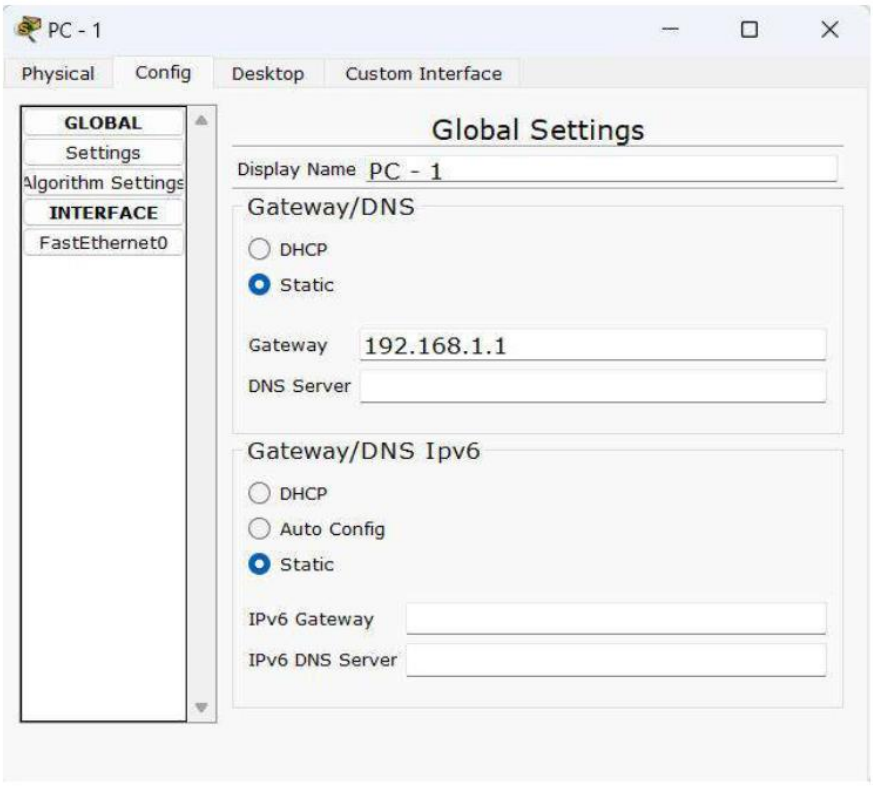
Lab 11

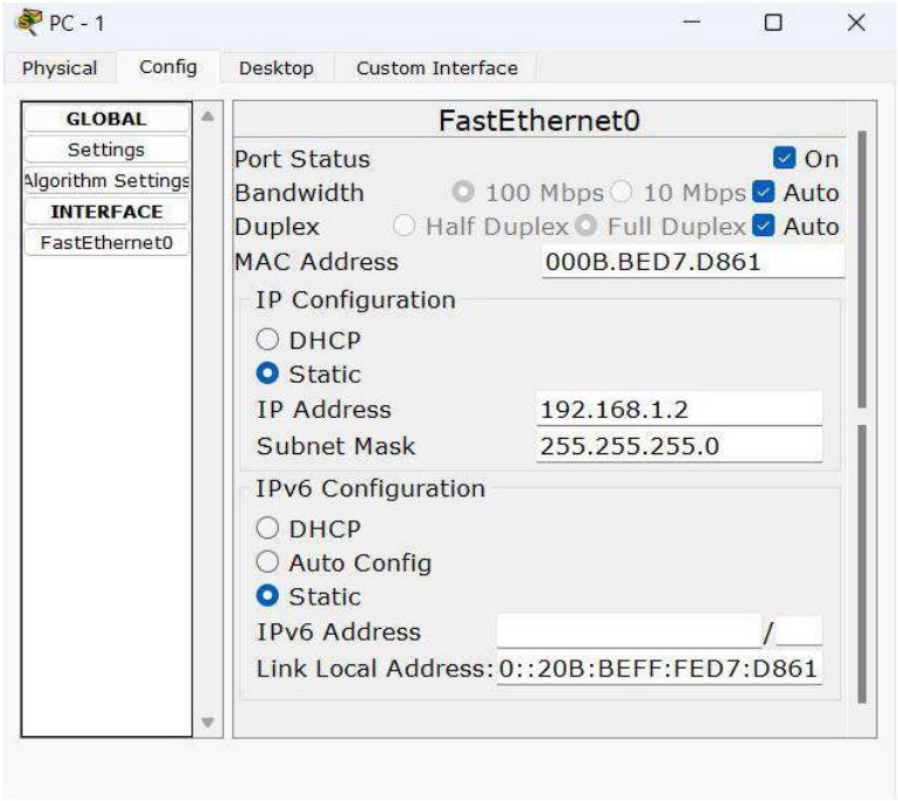
To construct a VLAN and make the PC's communicate among a VLAN

Topology:

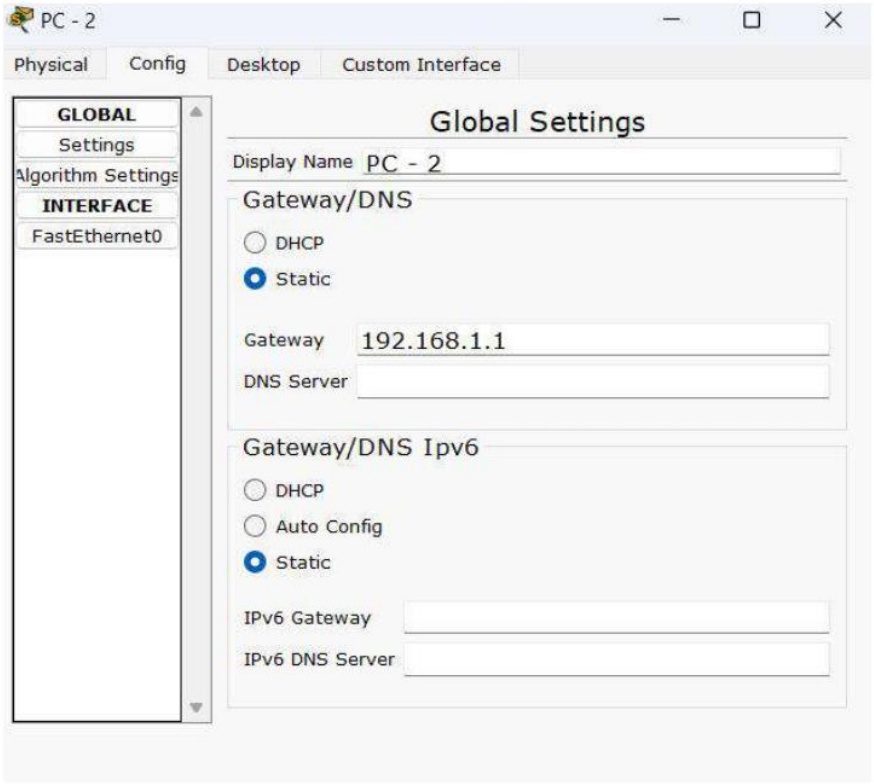


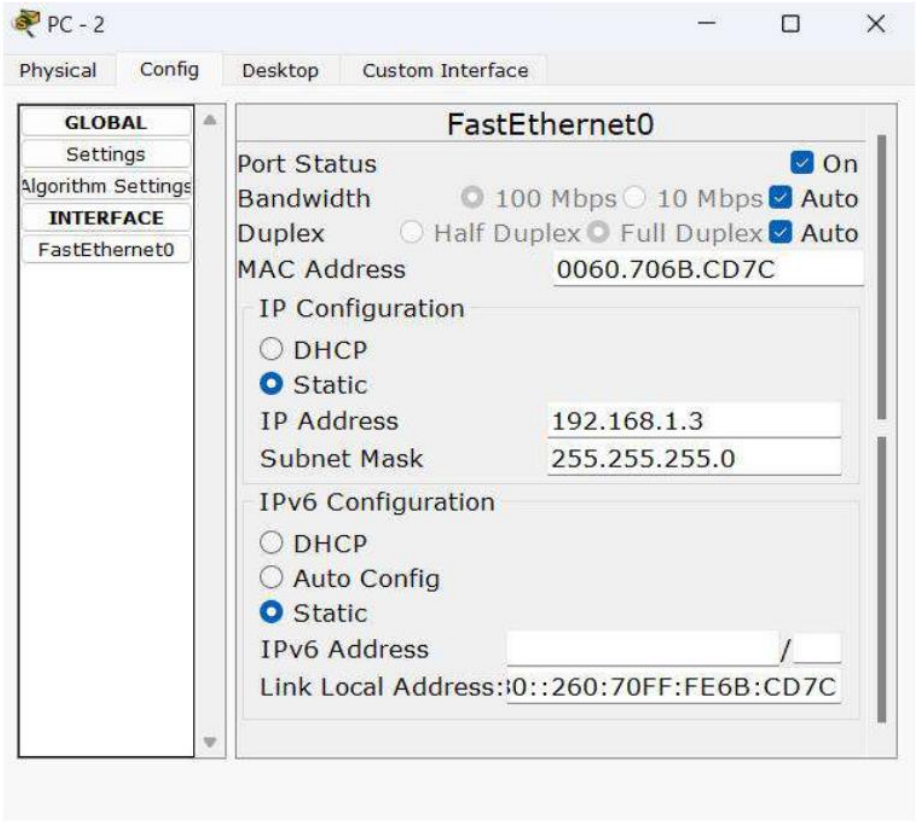
PC - 1 Configuration:



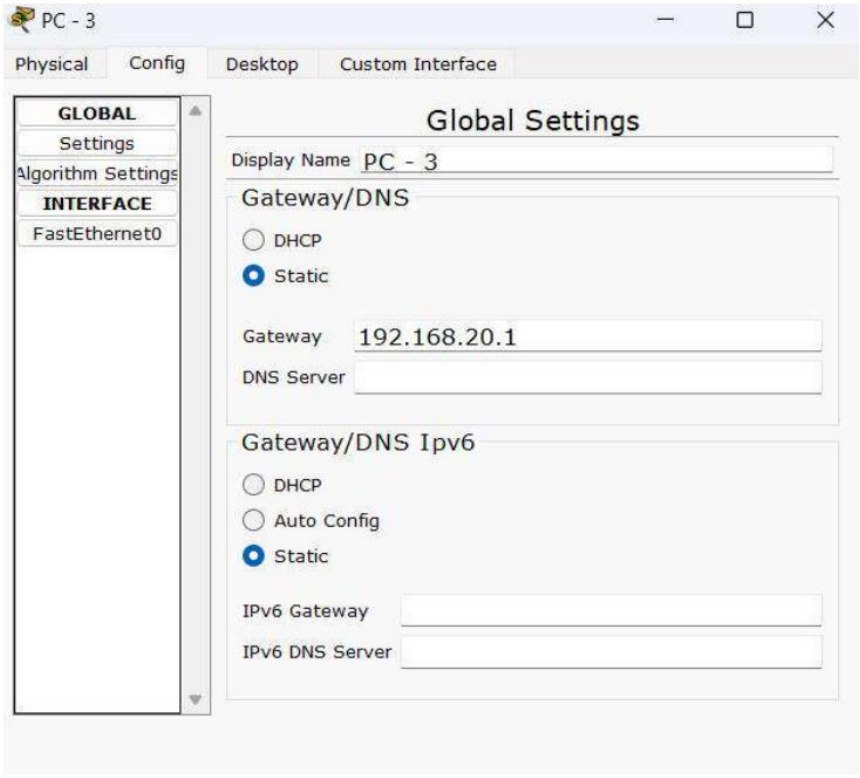


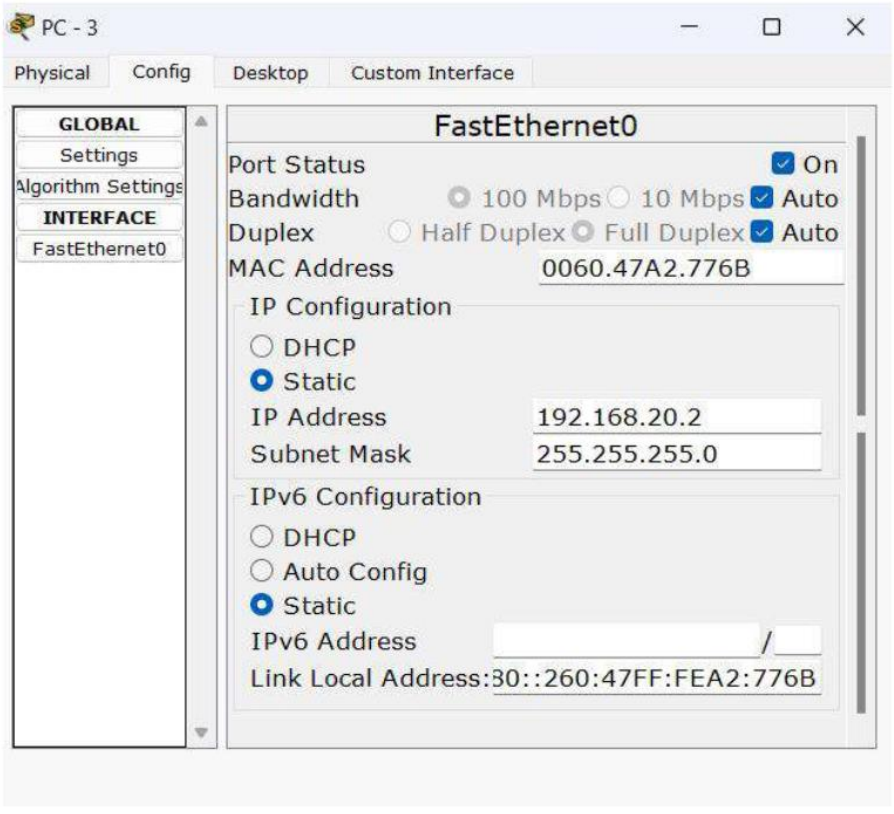
PC - 2 Configuration:



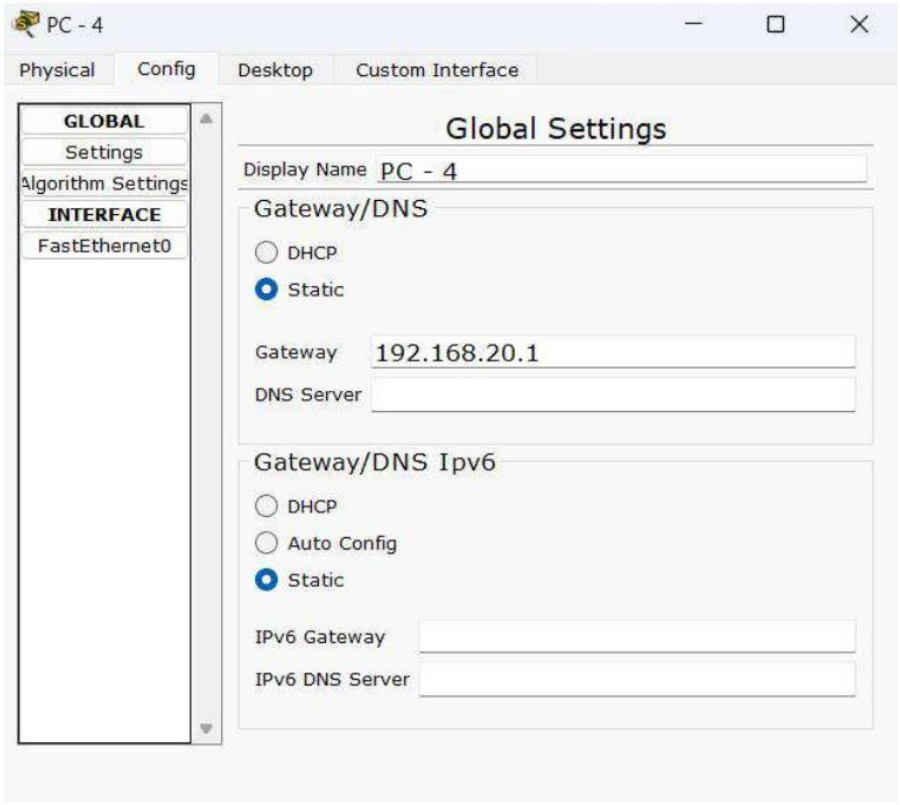


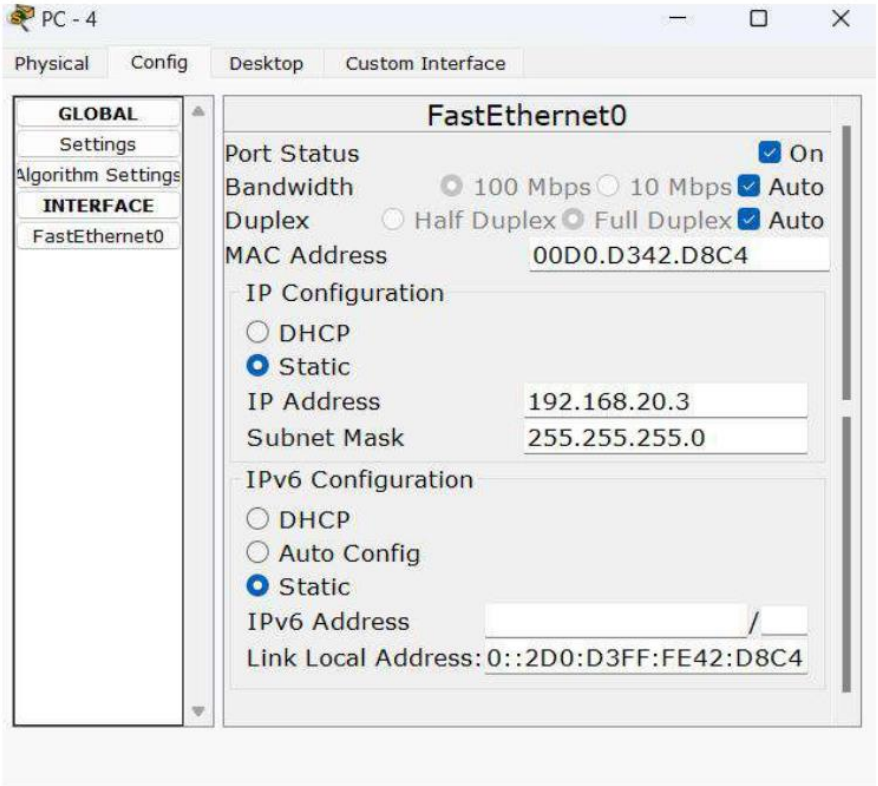
PC - 3 Configuration:



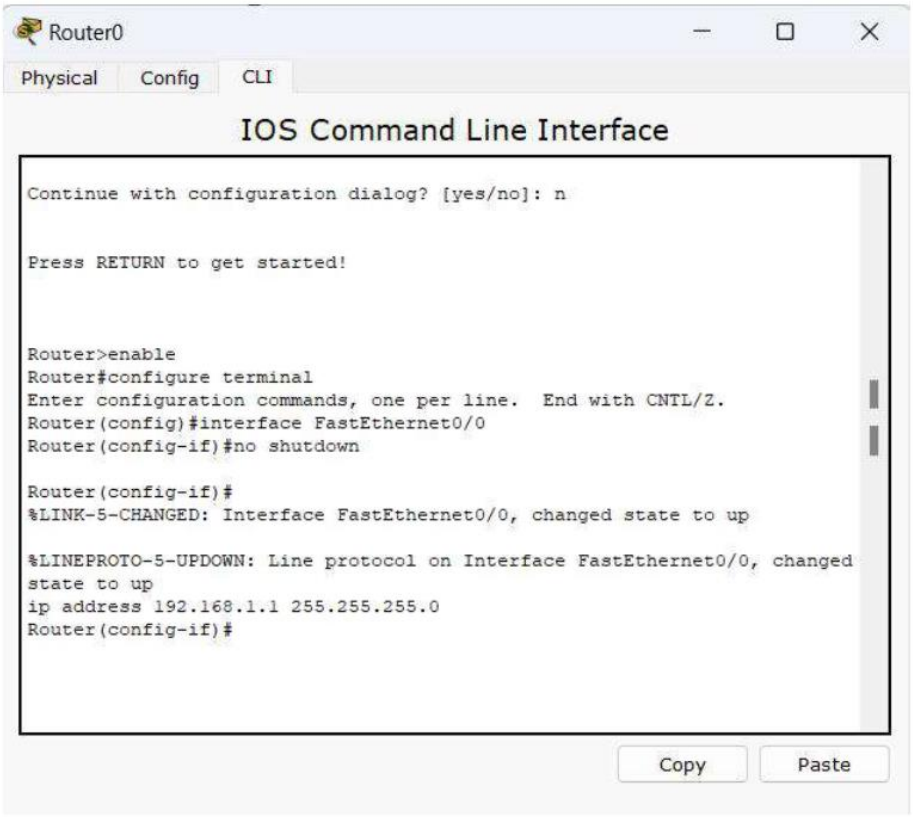


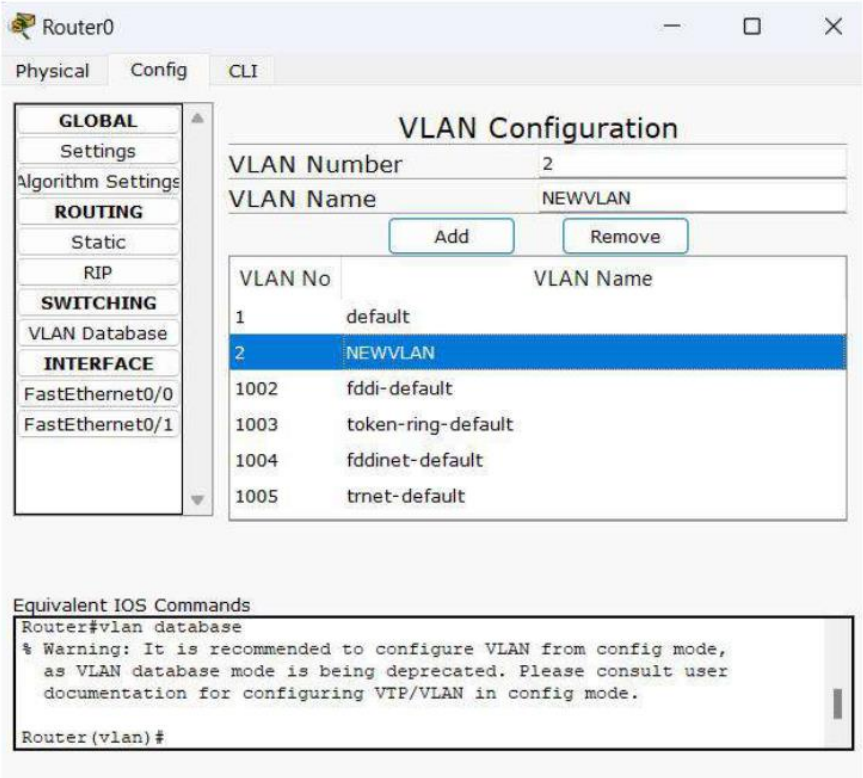
PC - 4 Configuration:

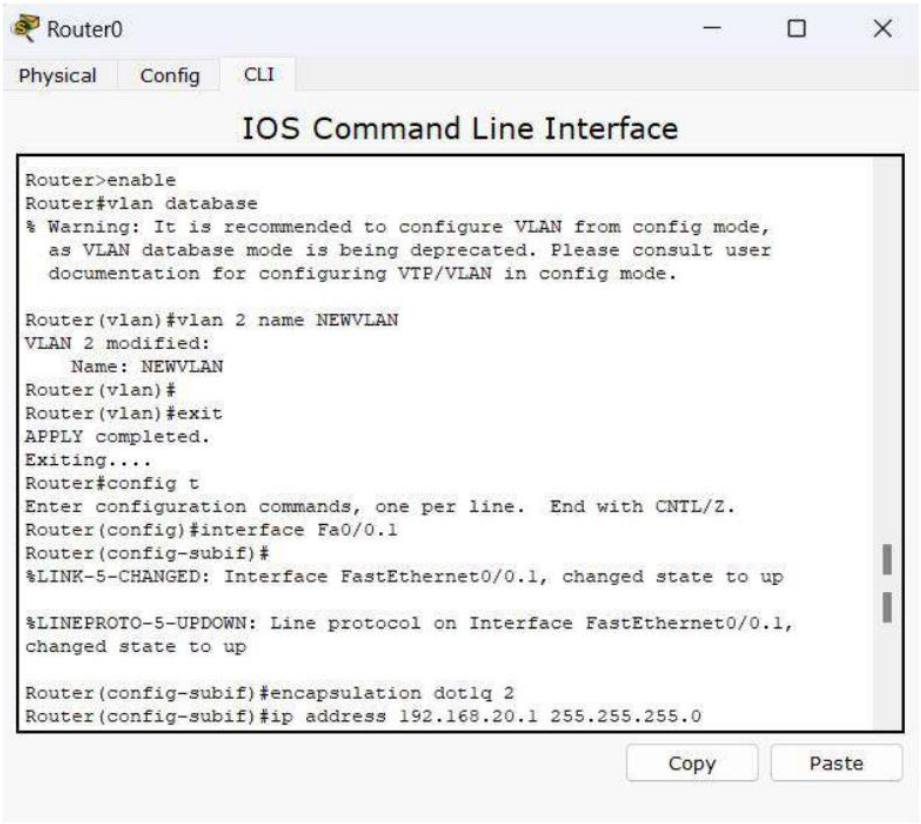


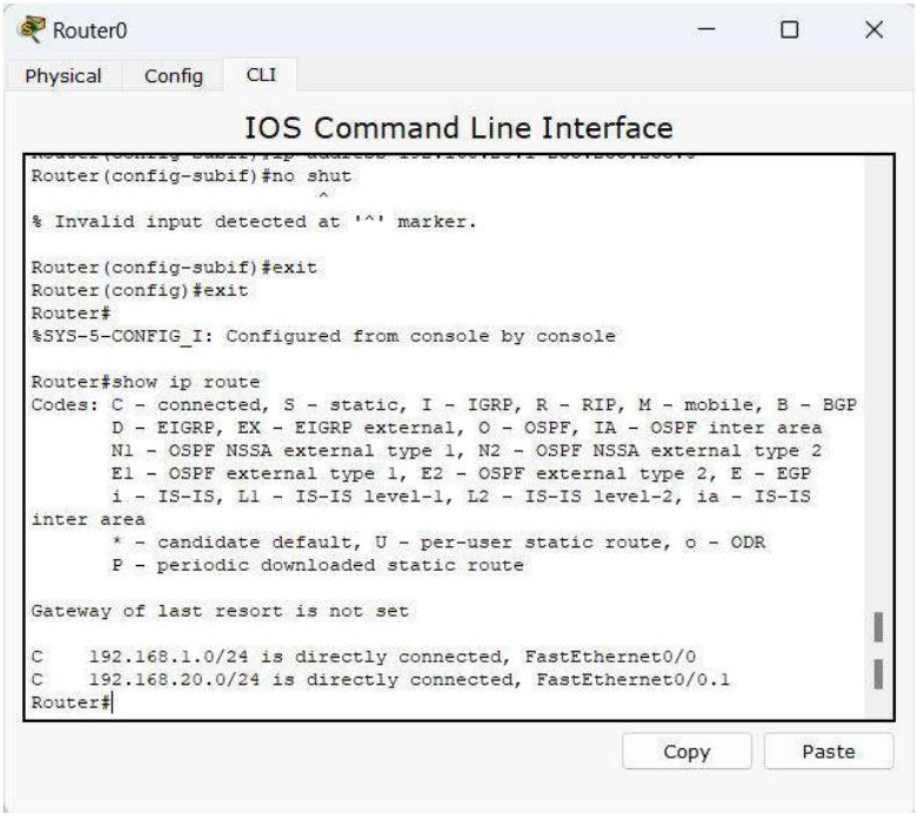


Router - 1 Configuration:

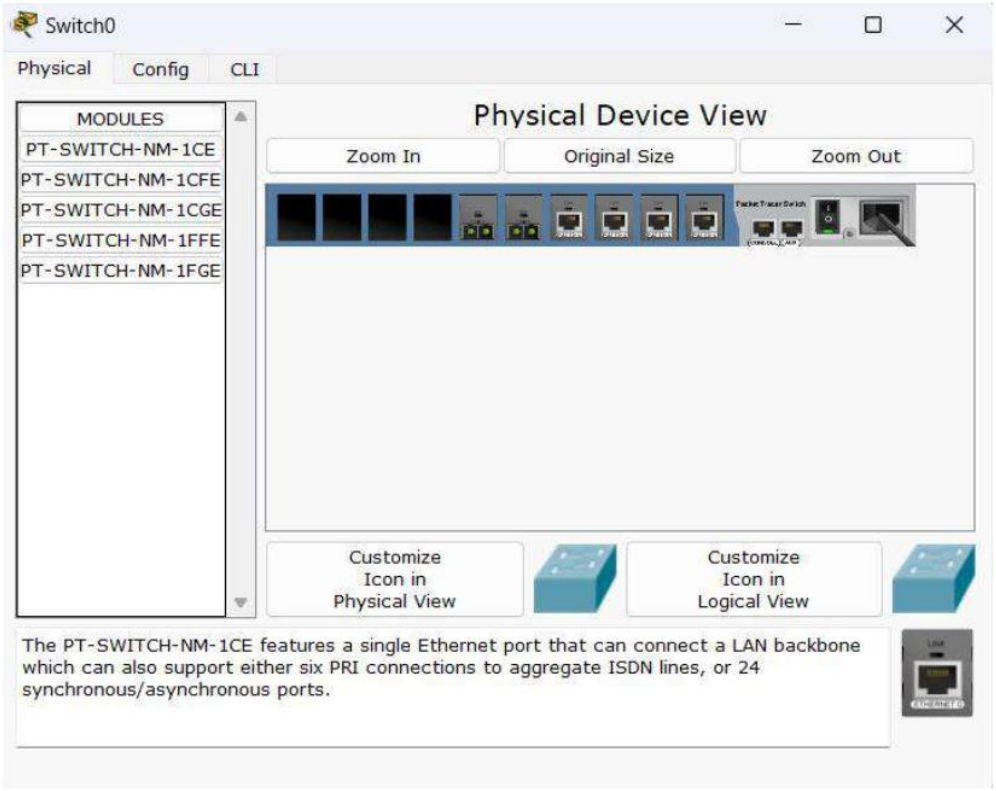


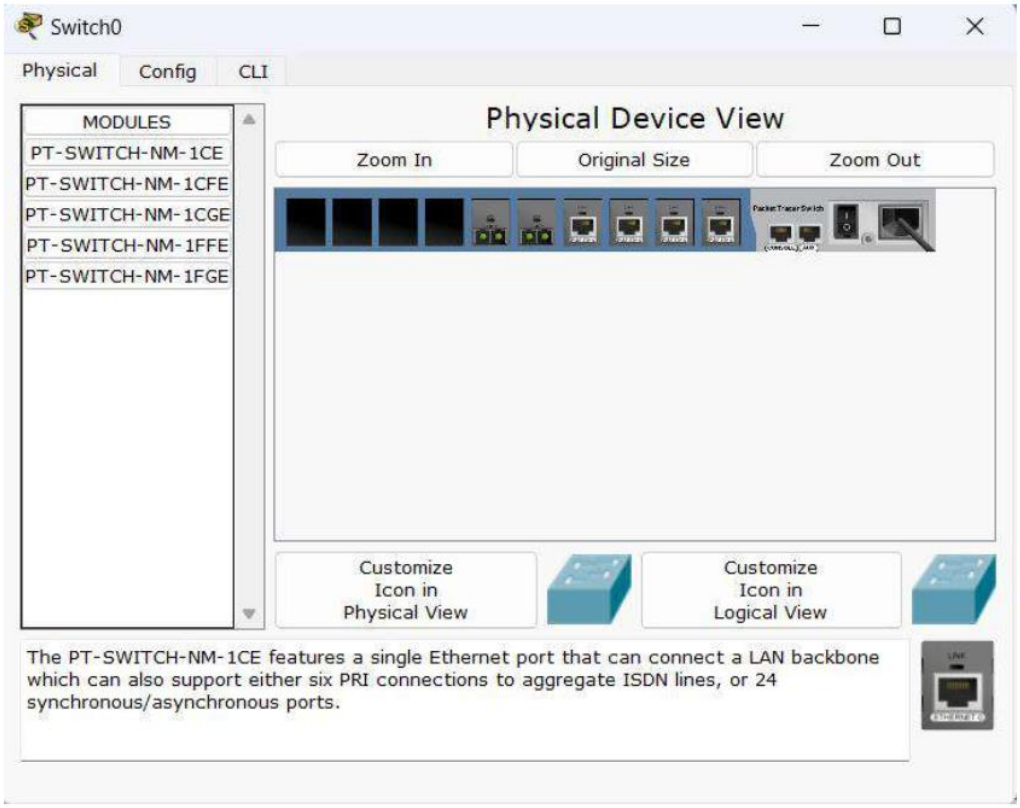


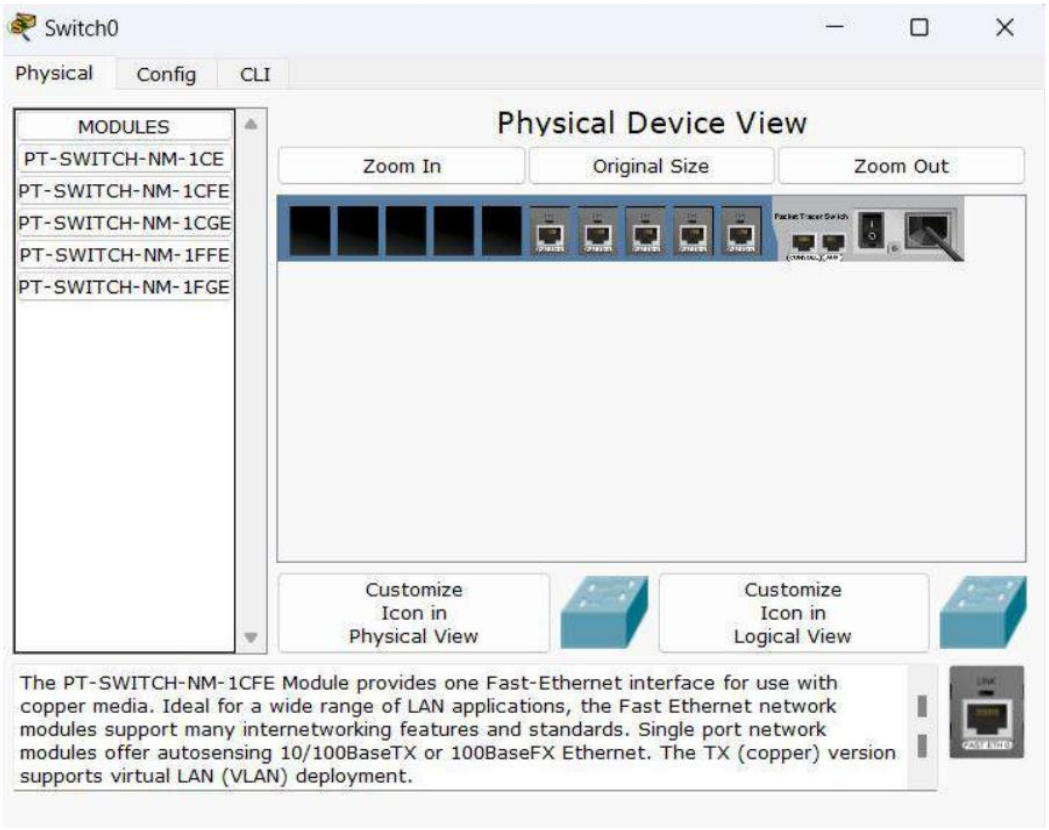

Router0
Physical
Config
CLI
IOS Command Line Interface
Router>enable
Router#vlan database
% Warning: It is recommended to configure VLAN from config mode,
as VLAN database mode is being deprecated. Please consult user
documentation for configuring VTP/VLAN in config mode.
Router(vlan)#vlan 2 name NEWVLAN
VLAN 2 modified:
Name: NEWVLAN
Router(vlan)#
Router(vlan)#exit
APPLY completed.
Exiting....
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface Fa0/0.1
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.1,
changed state to up
Router(config-subif)#encapsulation dot1q 2
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Copy
Paste

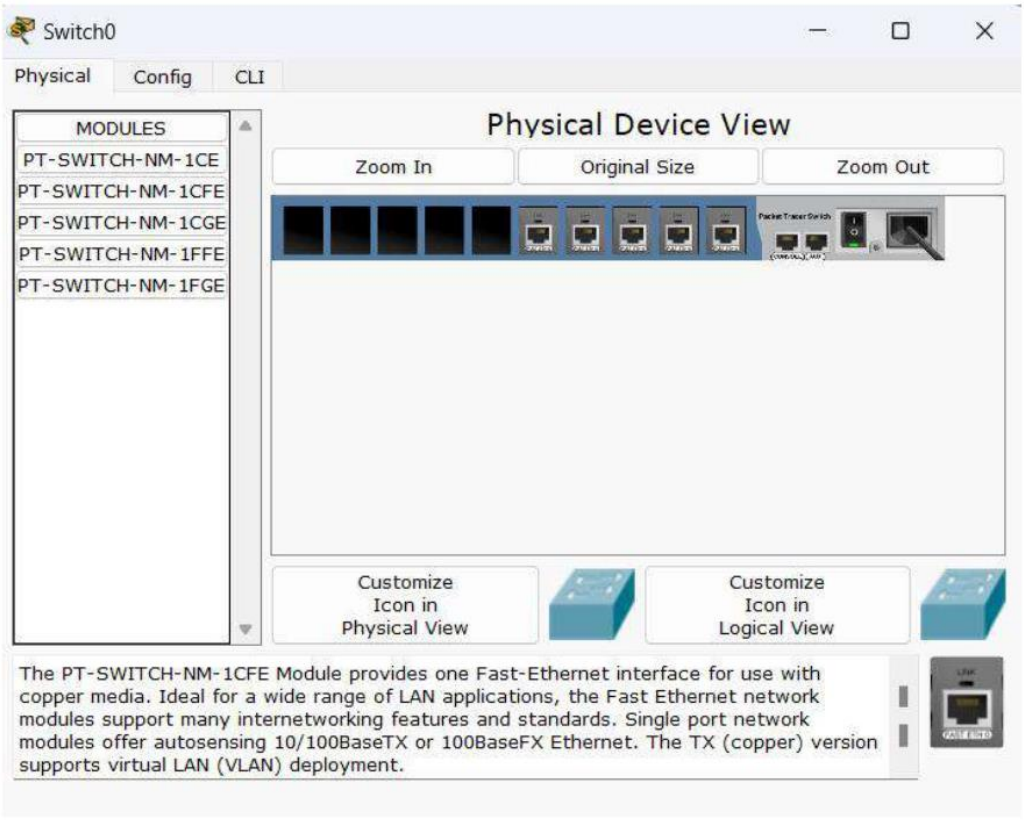

Router0
Physical
Config
CLI
IOS Command Line Interface
Router(config-subif)#no shut
^
% Invalid input detected at '^' marker.
Router(config-subif)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - 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
C 192.168.1.0/24 is directly connected, FastEthernet0/0
C 192.168.20.0/24 is directly connected, FastEthernet0/0.1
Router#
Copy
Paste

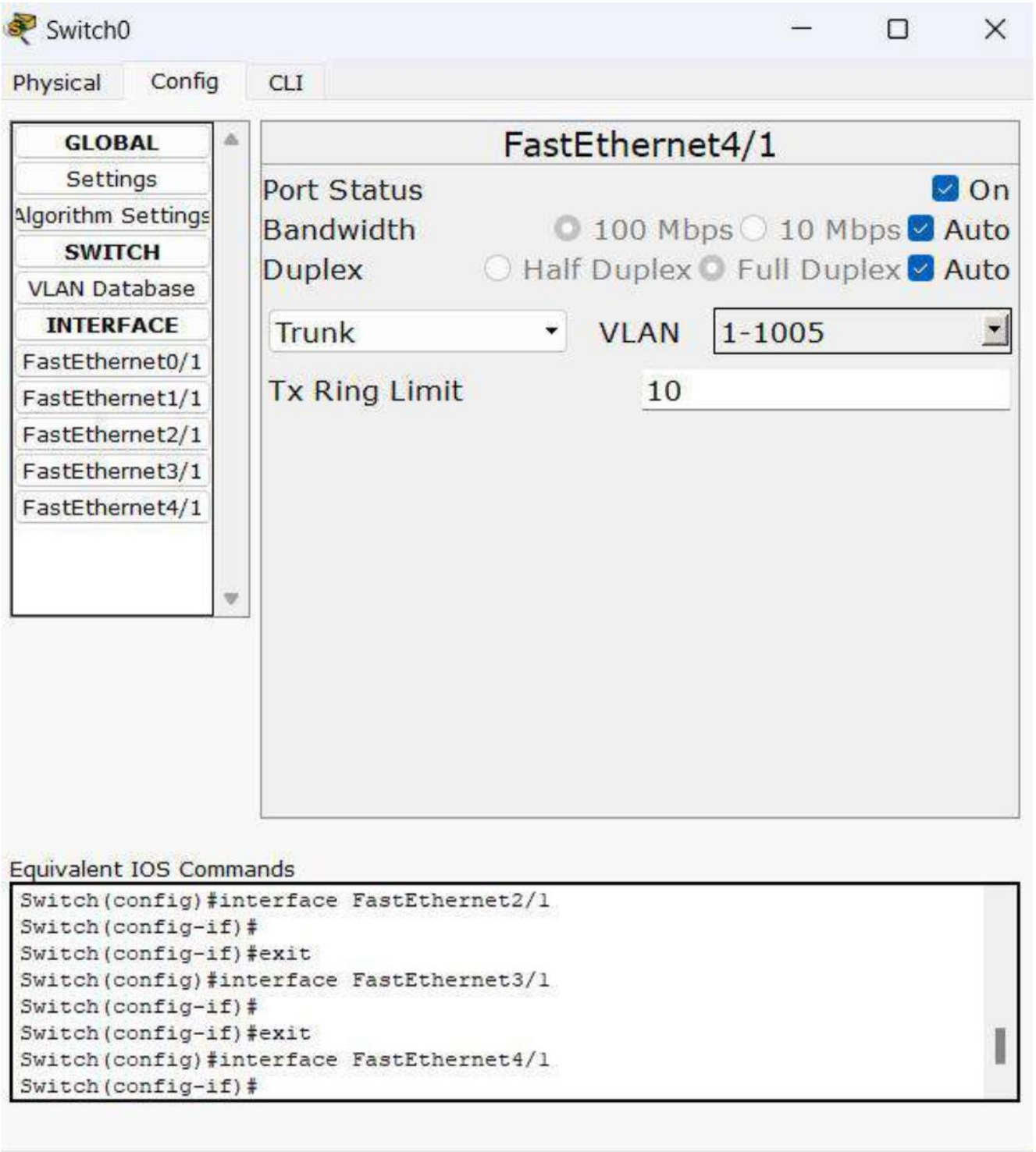
Switch - 1 Configuration:

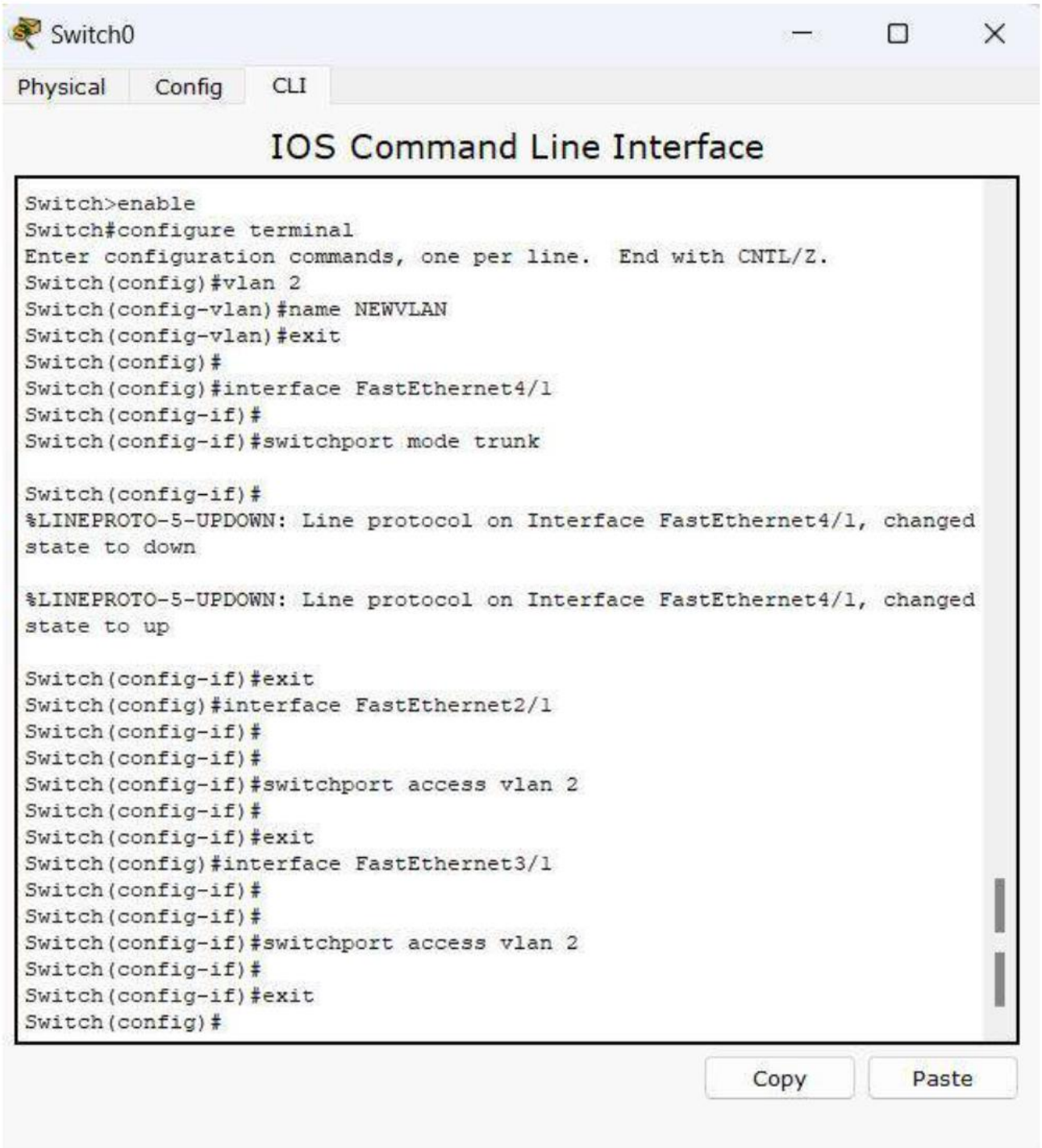


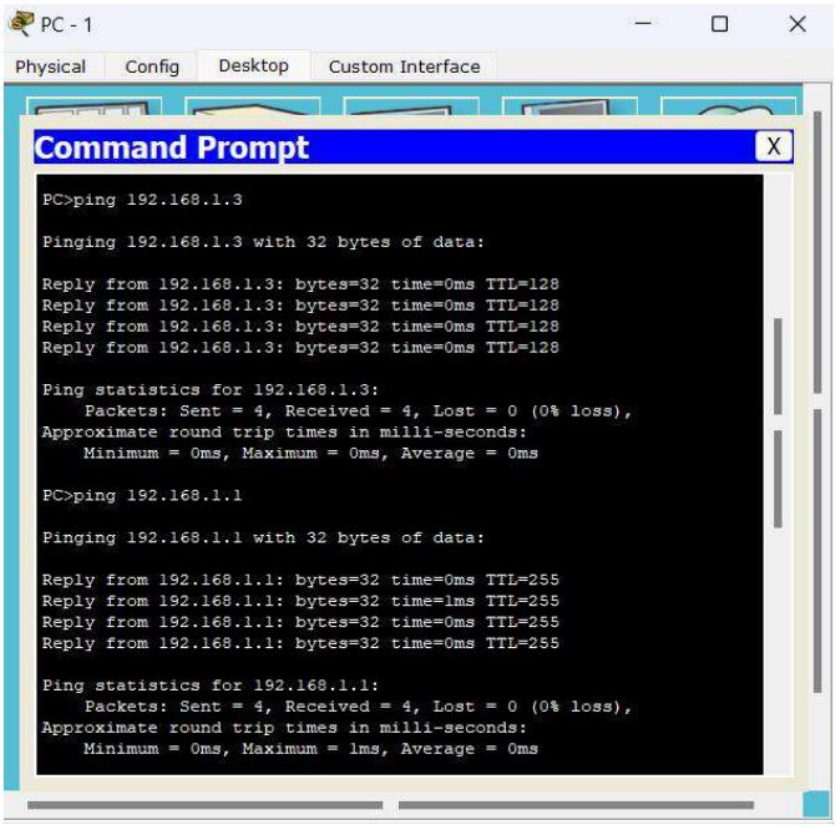


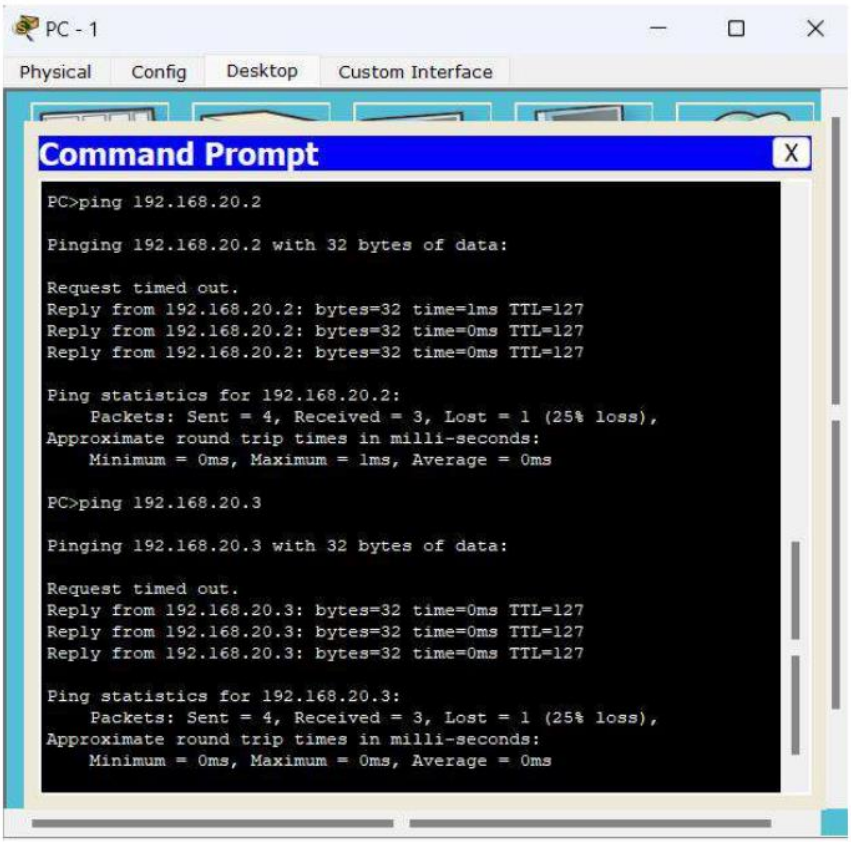

Switch0
Physical
Config
CLI
MODULES
PT-SWITCH-NM-1CE
PT-SWITCH-NM-1CFE
PT-SWITCH-NM-1CGE
PT-SWITCH-NM-1FFE
PT-SWITCH-NM-1FGE
Physical Device View
Zoom In
Original Size
Zoom Out
Customize Icon in Physical View
Customize Icon in Logical View
The PT-SWITCH-NM-1CFE Module provides one Fast-Ethernet interface for use with copper media. Ideal for a wide range of LAN applications, the Fast Ethernet network modules support many internetworking features and standards. Single port network modules offer autosensing 10/100BaseTX or 100BaseFX Ethernet. The TX (copper) version supports virtual LAN (VLAN) deployment.


Switch0
Physical
Config
CLI
MODULES
PT-SWITCH-NM-1CE
PT-SWITCH-NM-1CFE
PT-SWITCH-NM-1CGE
PT-SWITCH-NM-1FFE
PT-SWITCH-NM-1FGE
Physical Device View
Zoom In
Original Size
Zoom Out
Customize Icon in Physical View
Customize Icon in Logical View
The PT-SWITCH-NM-1CFE Module provides one Fast-Ethernet interface for use with copper media. Ideal for a wide range of LAN applications, the Fast Ethernet network modules support many internetworking features and standards. Single port network modules offer autosensing 10/100BaseTX or 100BaseFX Ethernet. The TX (copper) version supports virtual LAN (VLAN) deployment.


Switch0
Physical
Config
CLI
GLOBAL
Settings
Algorithm Settings
SWITCH
VLAN Database
INTERFACE
FastEthernet0/1
FastEthernet1/1
FastEthernet2/1
FastEthernet3/1
FastEthernet4/1
FastEthernet4/1
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
Trunk
VLAN
1-1005
Tx Ring Limit
10
Equivalent IOS Commands
Switch(config)#interface FastEthernet2/1
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#interface FastEthernet3/1
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#interface FastEthernet4/1
Switch(config-if)#

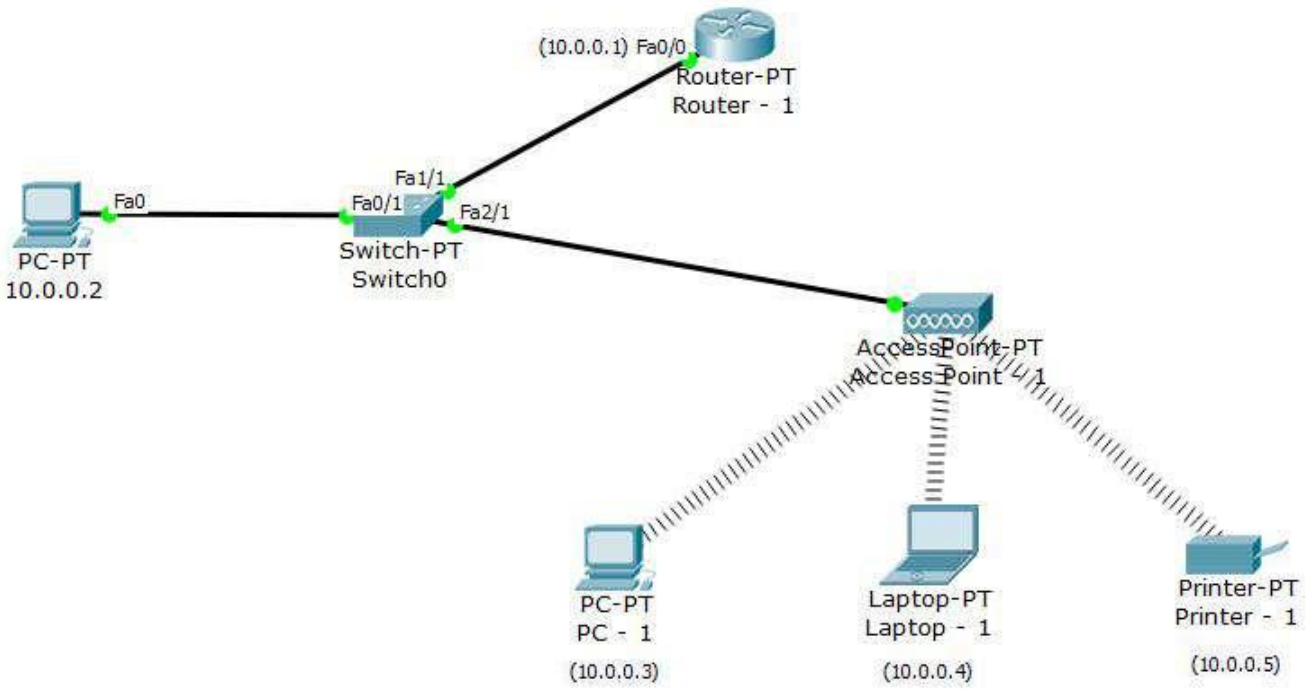

Switch0
Physical
Config
CLI
IOS Command Line Interface
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 2
Switch(config-vlan)#name NEWVLAN
Switch(config-vlan)#exit
Switch(config)#
Switch(config)#interface FastEthernet4/1
Switch(config-if)#
Switch(config-if)#switchport mode trunk
Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet4/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet4/1, changed state to up
Switch(config-if)#exit
Switch(config)#interface FastEthernet2/1
Switch(config-if)#
Switch(config-if)#
Switch(config-if)#switchport access vlan 2
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#interface FastEthernet3/1
Switch(config-if)#
Switch(config-if)#
Switch(config-if)#switchport access vlan 2
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#
Copy
Paste


PC - 1
Physical
Config
Desktop
Custom Interface
Command Prompt
X
PC>ping 192.168.1.3
Pinging 192.168.1.3 with 32 bytes of data:
Reply from 192.168.1.3: bytes=32 time=0ms TTL=128
Reply from 192.168.1.3: bytes=32 time=0ms TTL=128
Reply from 192.168.1.3: bytes=32 time=0ms TTL=128
Reply from 192.168.1.3: bytes=32 time=0ms TTL=128
Ping statistics for 192.168.1.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>ping 192.168.1.1
Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time=0ms TTL=255
Reply from 192.168.1.1: bytes=32 time=1ms TTL=255
Reply from 192.168.1.1: bytes=32 time=0ms TTL=255
Reply from 192.168.1.1: bytes=32 time=0ms TTL=255
Ping statistics for 192.168.1.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms

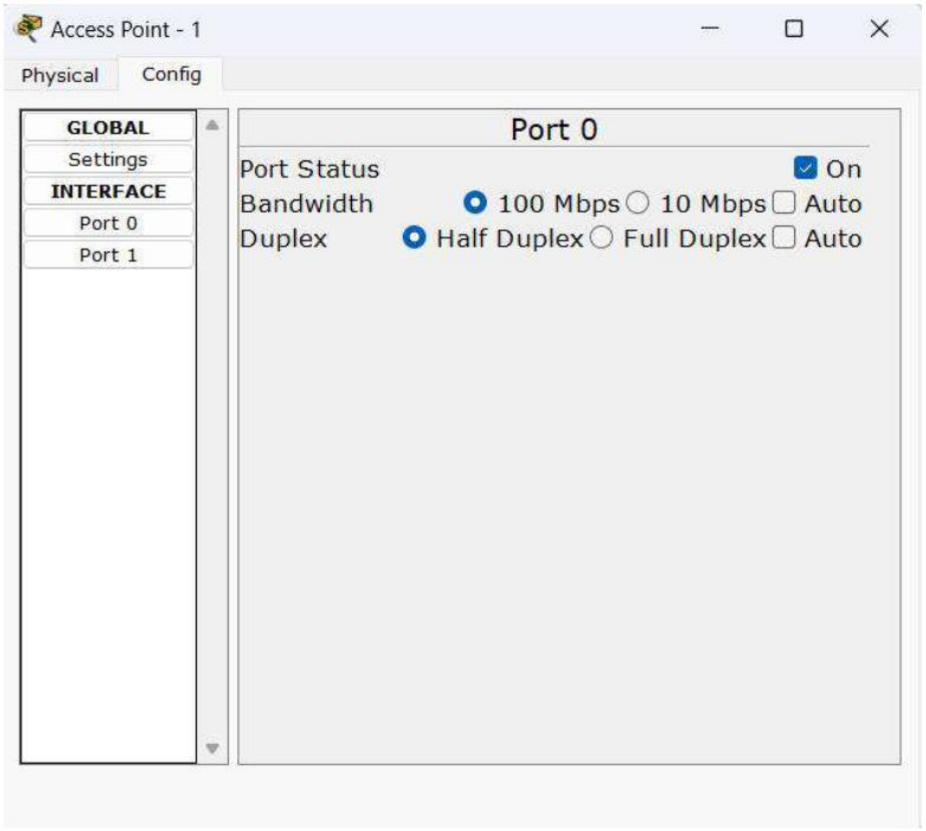

PC - 1
Physical
Config
Desktop
Custom Interface
Command Prompt
X
PC>ping 192.168.20.2
Pinging 192.168.20.2 with 32 bytes of data:
Request timed out.
Reply from 192.168.20.2: bytes=32 time=1ms TTL=127
Reply from 192.168.20.2: bytes=32 time=0ms TTL=127
Reply from 192.168.20.2: bytes=32 time=0ms TTL=127
Ping statistics for 192.168.20.2:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
PC>ping 192.168.20.3
Pinging 192.168.20.3 with 32 bytes of data:
Request timed out.
Reply from 192.168.20.3: bytes=32 time=0ms TTL=127
Reply from 192.168.20.3: bytes=32 time=0ms TTL=127
Reply from 192.168.20.3: bytes=32 time=0ms TTL=127
Ping statistics for 192.168.20.3:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms

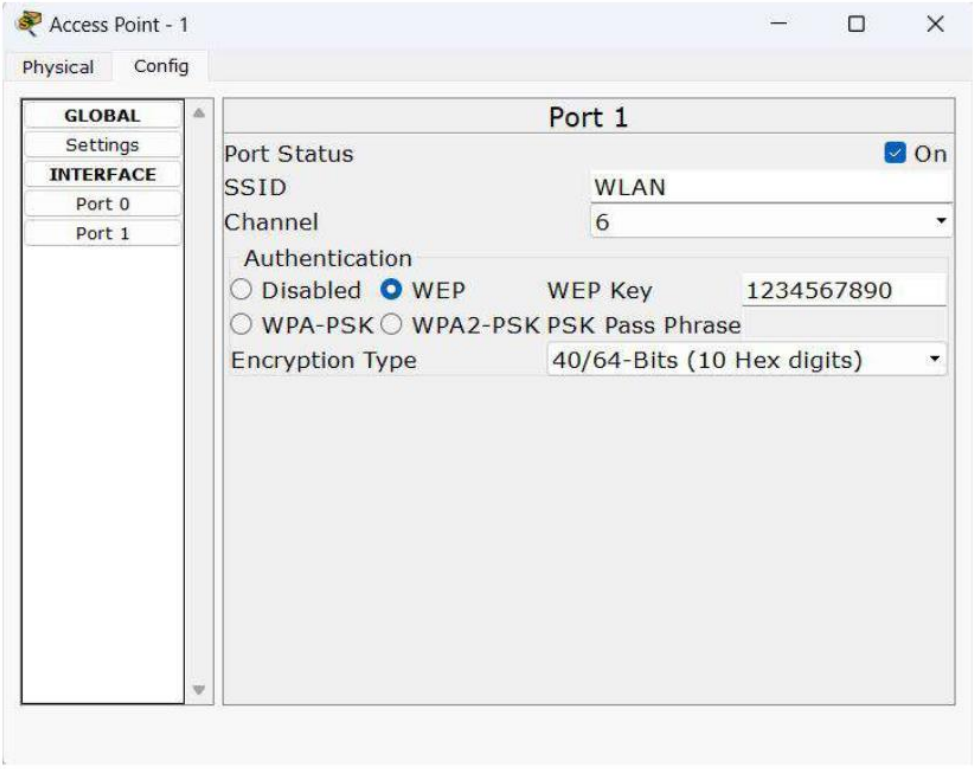
Lab 12

To construct a WLAN and make the nodes communicate wirelessly.

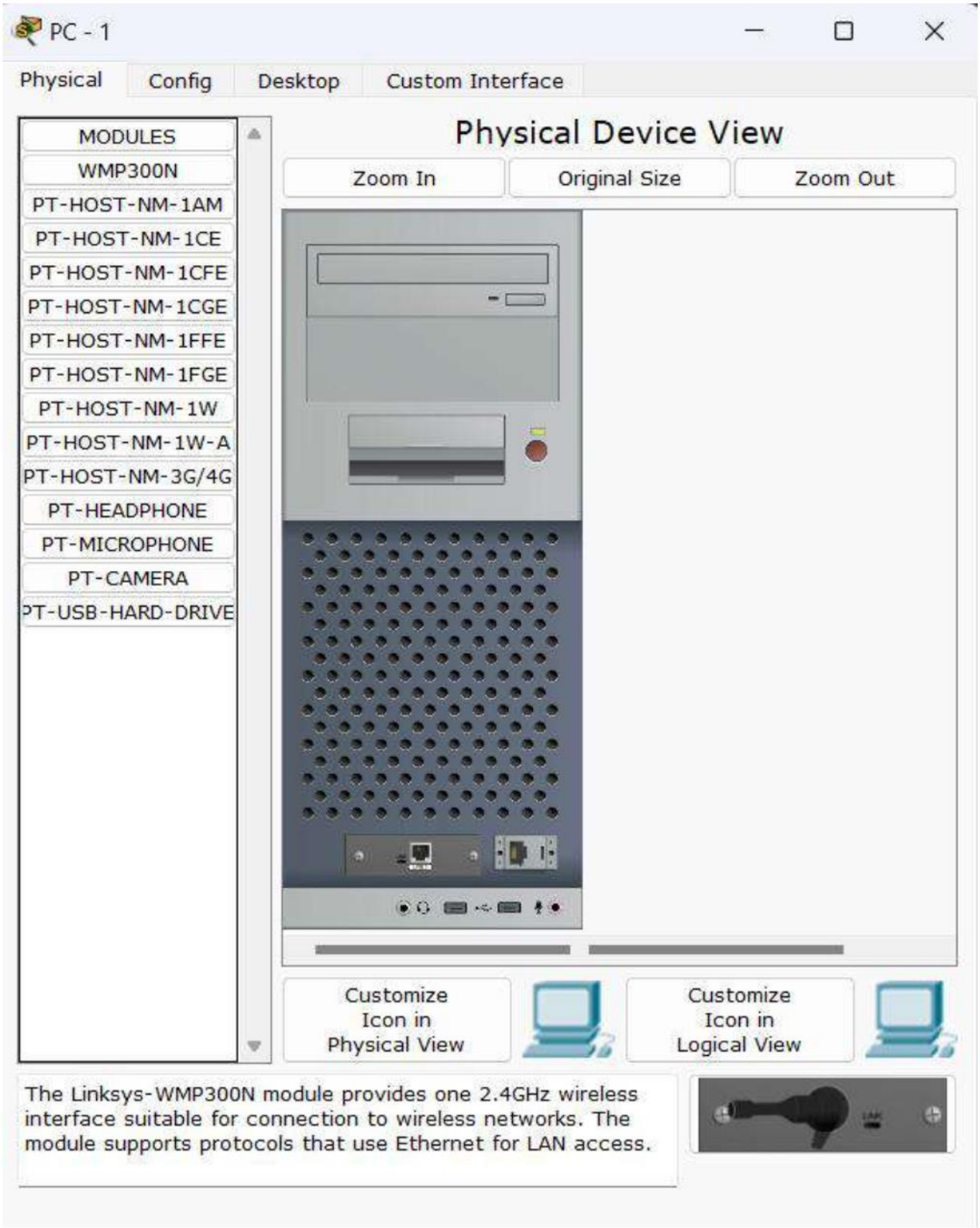


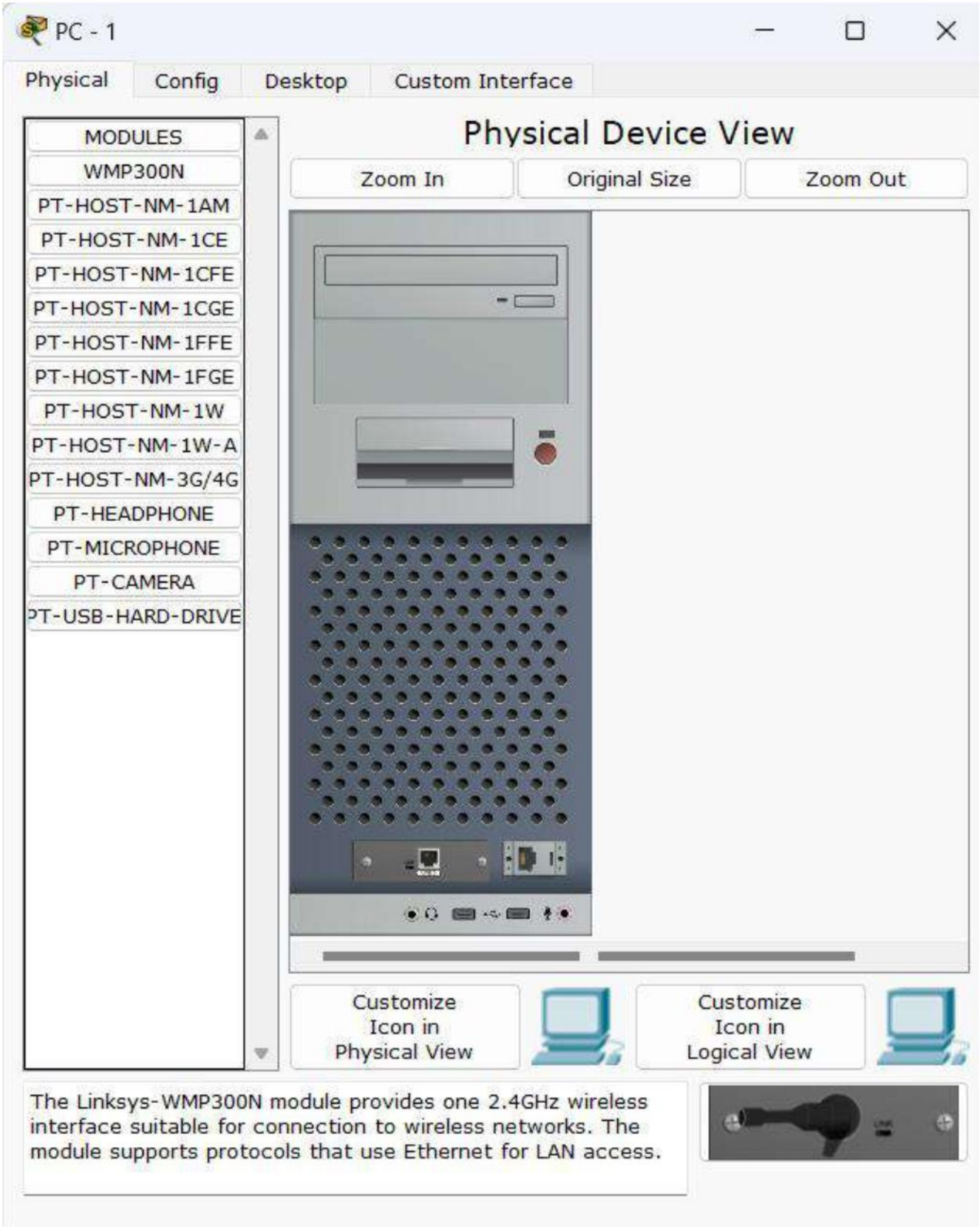
Access Point - 1 Configuration:

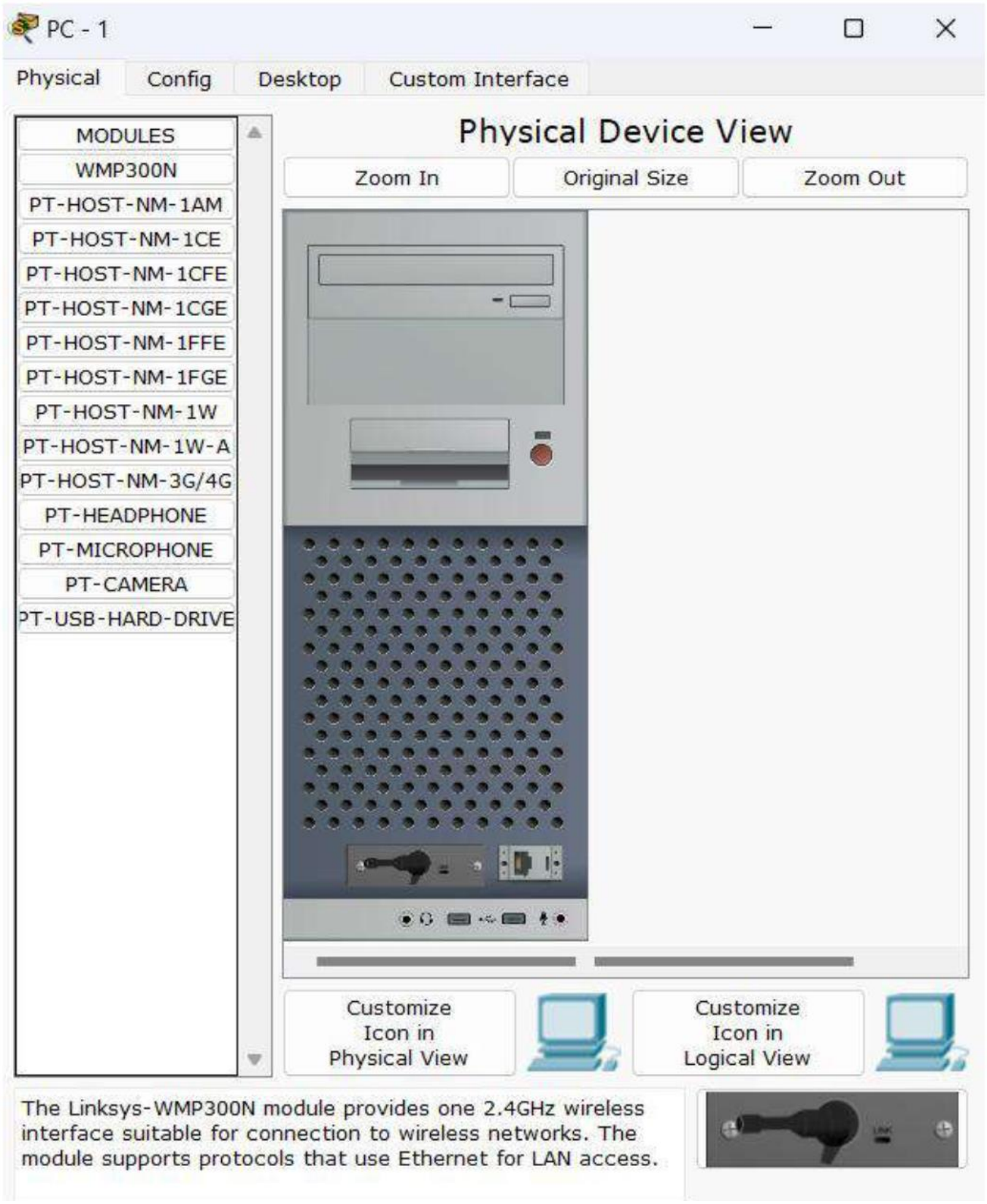




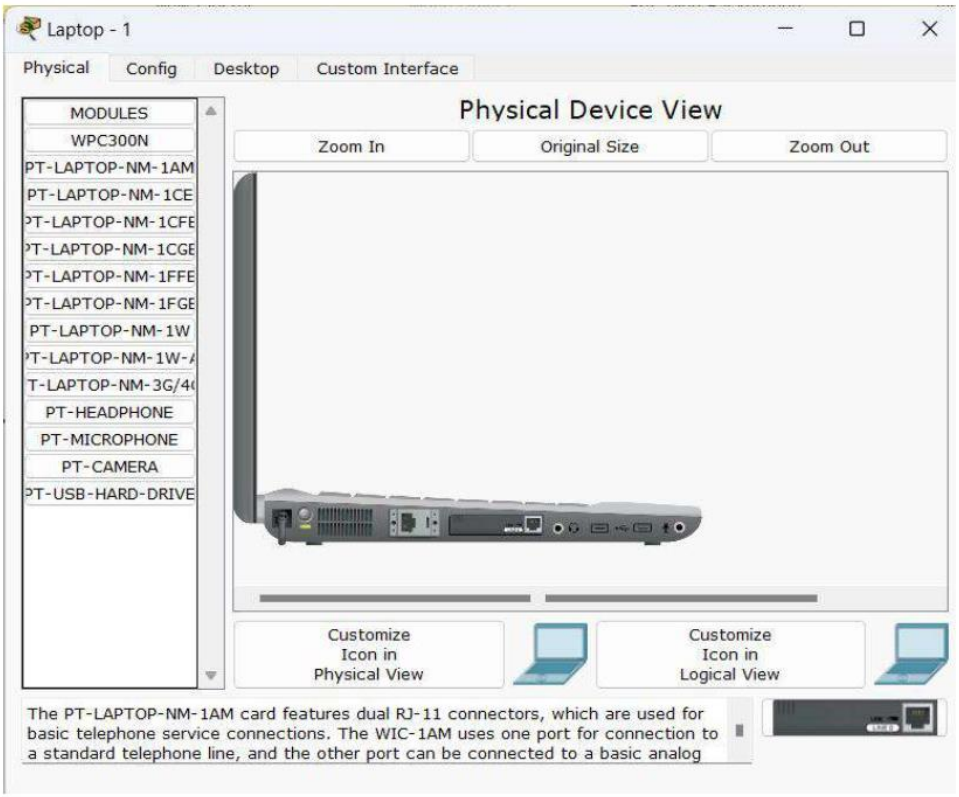
PC - 1 Configuration:

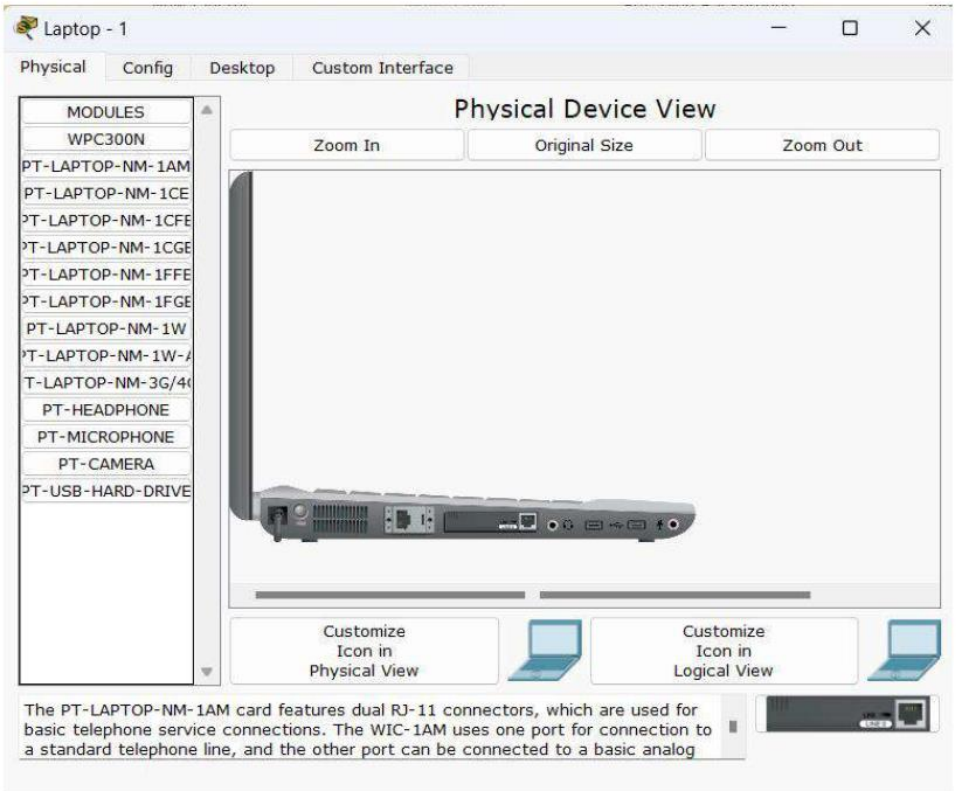


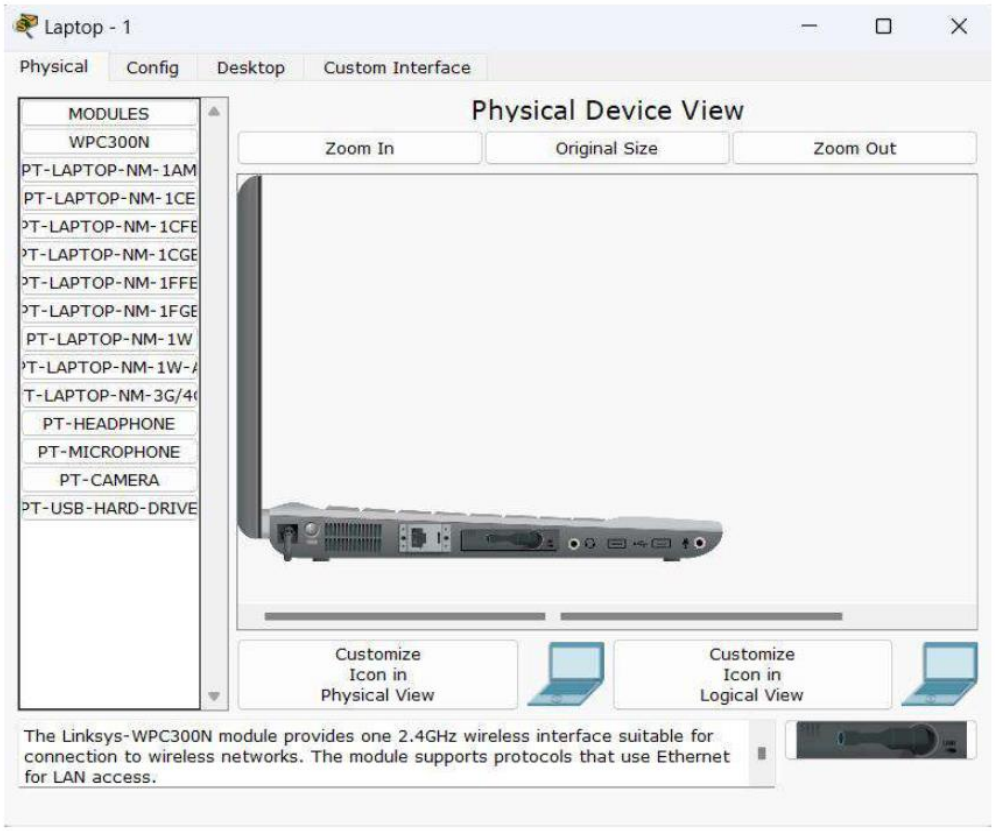

PC - 1
Physical
Config
Desktop
Custom Interface
MODULES
WMP300N
PT-HOST-NM-1AM
PT-HOST-NM-1CE
PT-HOST-NM-1CFE
PT-HOST-NM-1CGE
PT-HOST-NM-1FFE
PT-HOST-NM-1FGE
PT-HOST-NM-1W
PT-HOST-NM-1W-A
PT-HOST-NM-3G/4G
PT-HEADPHONE
PT-MICROPHONE
PT-CAMERA
PT-USB-HARD-DRIVE
Physical Device View
Zoom In
Original Size
Zoom Out
Customize Icon in Physical View
Customize Icon in Logical View
The Linksys-WMP300N module provides one 2.4GHz wireless interface suitable for connection to wireless networks. The module supports protocols that use Ethernet for LAN access.


PC - 1
Physical
Config
Desktop
Custom Interface
MODULES
WMP300N
PT-HOST-NM-1AM
PT-HOST-NM-1CE
PT-HOST-NM-1CFE
PT-HOST-NM-1CGE
PT-HOST-NM-1FFE
PT-HOST-NM-1FGE
PT-HOST-NM-1W
PT-HOST-NM-1W-A
PT-HOST-NM-3G/4G
PT-HEADPHONE
PT-MICROPHONE
PT-CAMERA
PT-USB-HARD-DRIVE
Physical Device View
Zoom In
Original Size
Zoom Out
Customize Icon in Physical View
Customize Icon in Logical View
The Linksys-WMP300N module provides one 2.4GHz wireless interface suitable for connection to wireless networks. The module supports protocols that use Ethernet for LAN access.

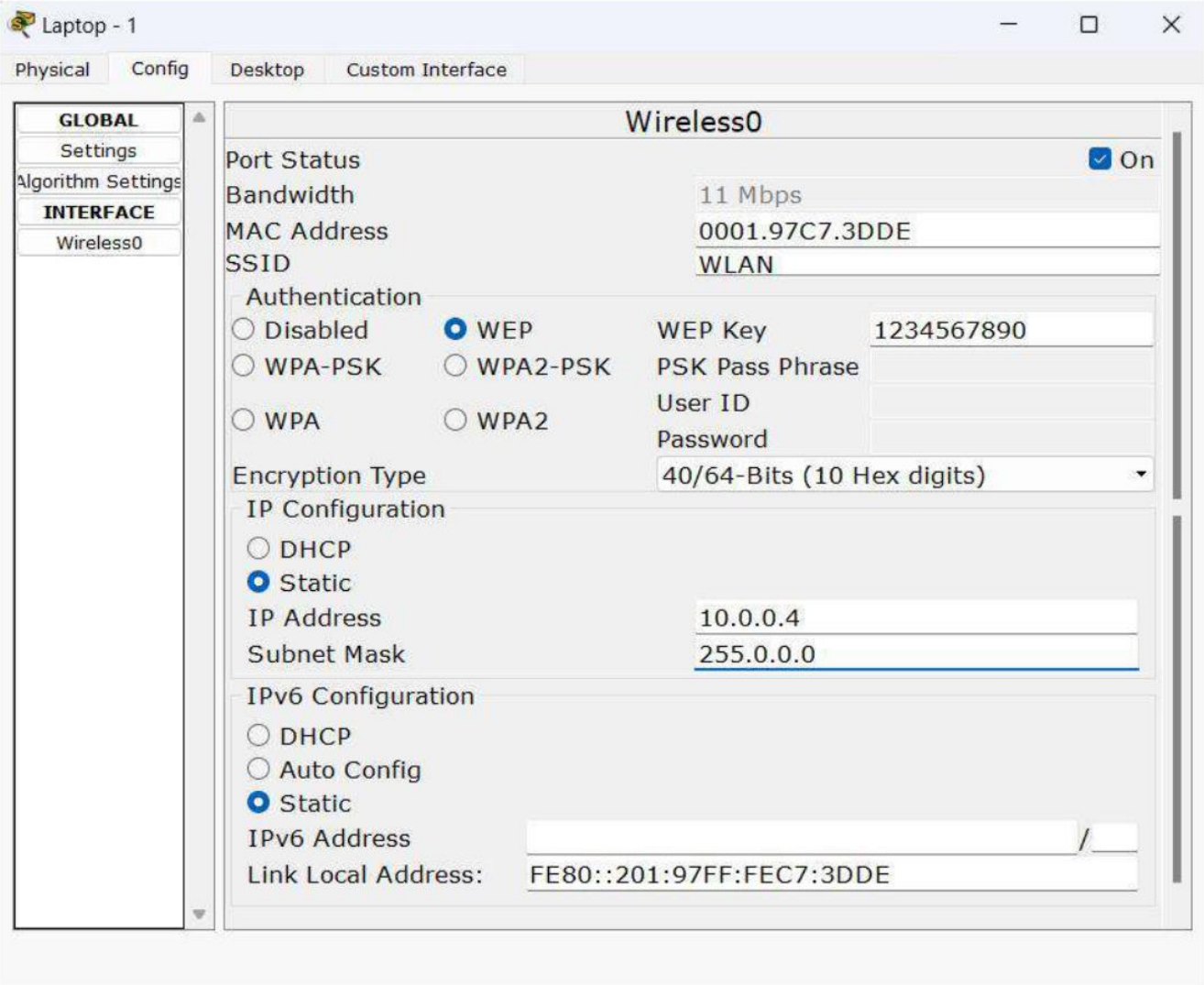
Laptop - 1 Configuration:



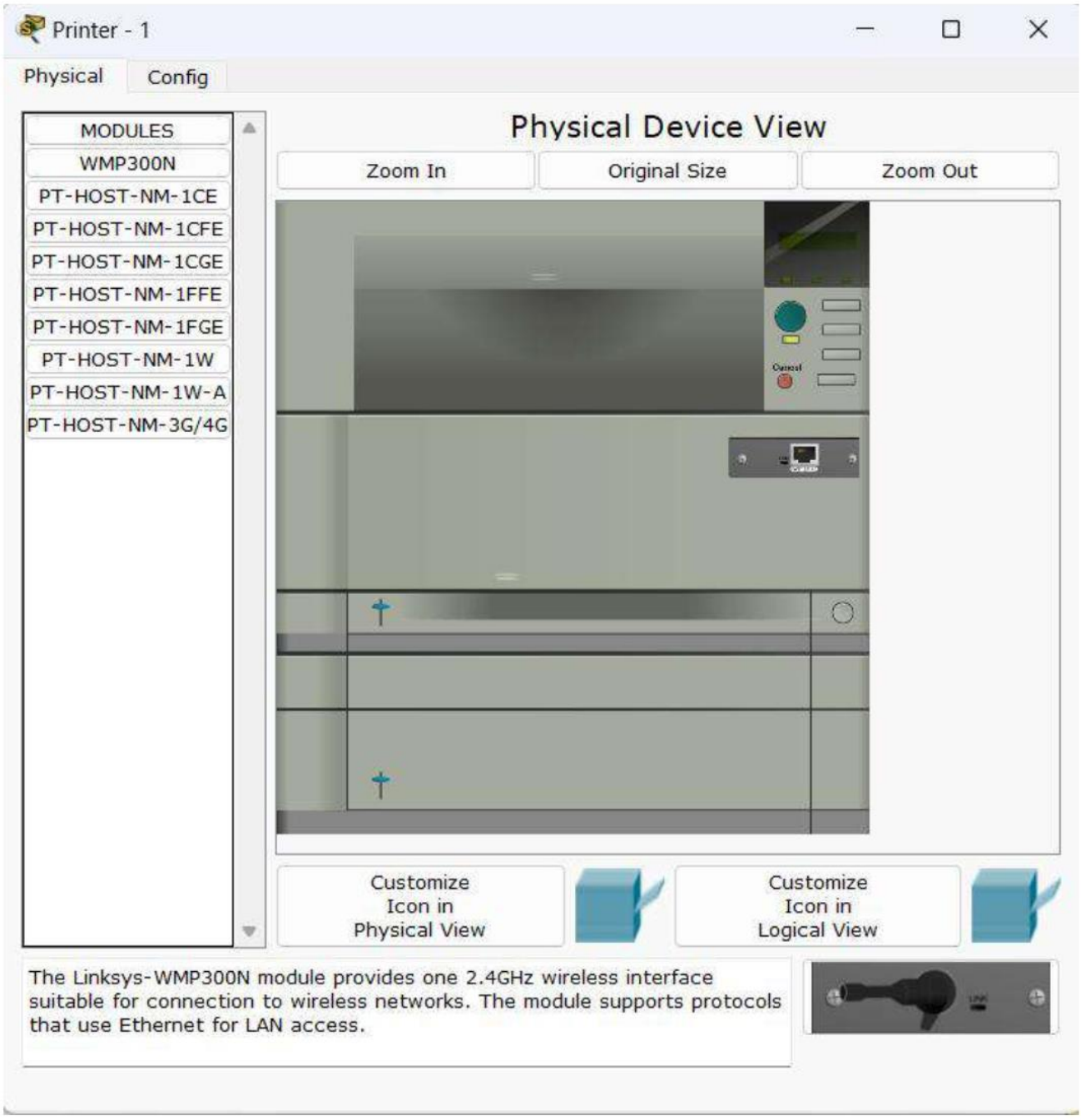


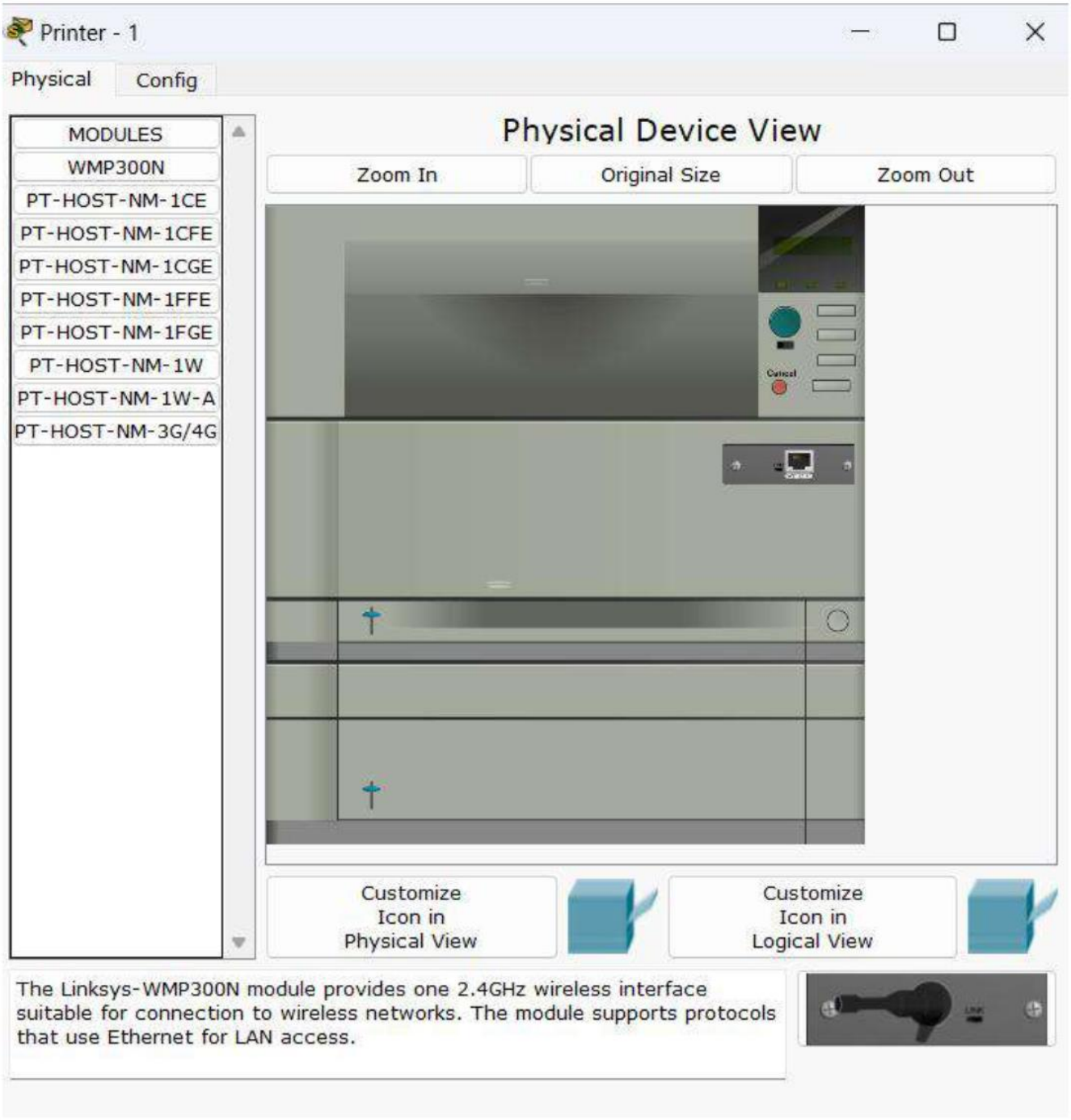

Laptop - 1
Physical
Config
Desktop
Custom Interface
MODULES
WPC300N
PT-LAPTOP-NM-1AM
PT-LAPTOP-NM-1CE
PT-LAPTOP-NM-1CFE
PT-LAPTOP-NM-1CGE
PT-LAPTOP-NM-1FFE
PT-LAPTOP-NM-1FGE
PT-LAPTOP-NM-1W
PT-HEADPHONE
PT-MICROPHONE
PT-CAMERA
Physical Device View
Zoom In
Original Size
Zoom Out
Customize Icon in Physical View
Customize Icon in Logical View
The Linksys-WPC300N module provides one 2.4GHz wireless interface suitable for connection to wireless networks. The module supports protocols that use Ethernet for LAN access.

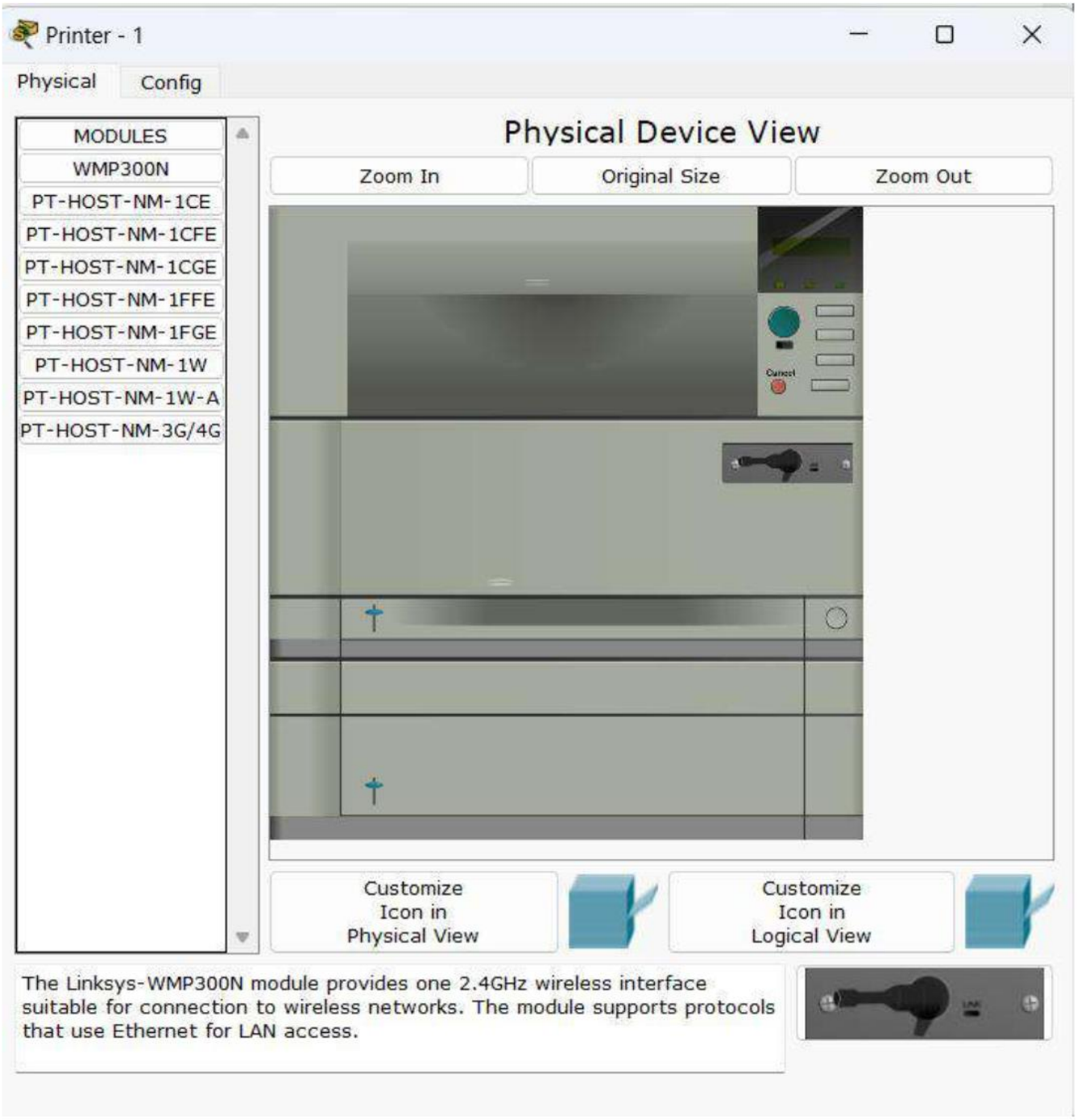

Laptop - 1
Physical
Config
Desktop
Custom Interface
MODULES
WPC300N
PT-LAPTOP-NM-1AM
PT-LAPTOP-NM-1CE
PT-LAPTOP-NM-1CFE
PT-LAPTOP-NM-1CGE
PT-LAPTOP-NM-1FFE
PT-LAPTOP-NM-1FGE
PT-LAPTOP-NM-1W
PT-HEADPHONE
PT-MICROPHONE
PT-CAMERA
Physical Device View
Zoom In
Original Size
Zoom Out
Customize Icon in Physical View
Customize Icon in Logical View
The Linksys-WPC300N module provides one 2.4GHz wireless interface suitable for connection to wireless networks. The module supports protocols that use Ethernet for LAN access.

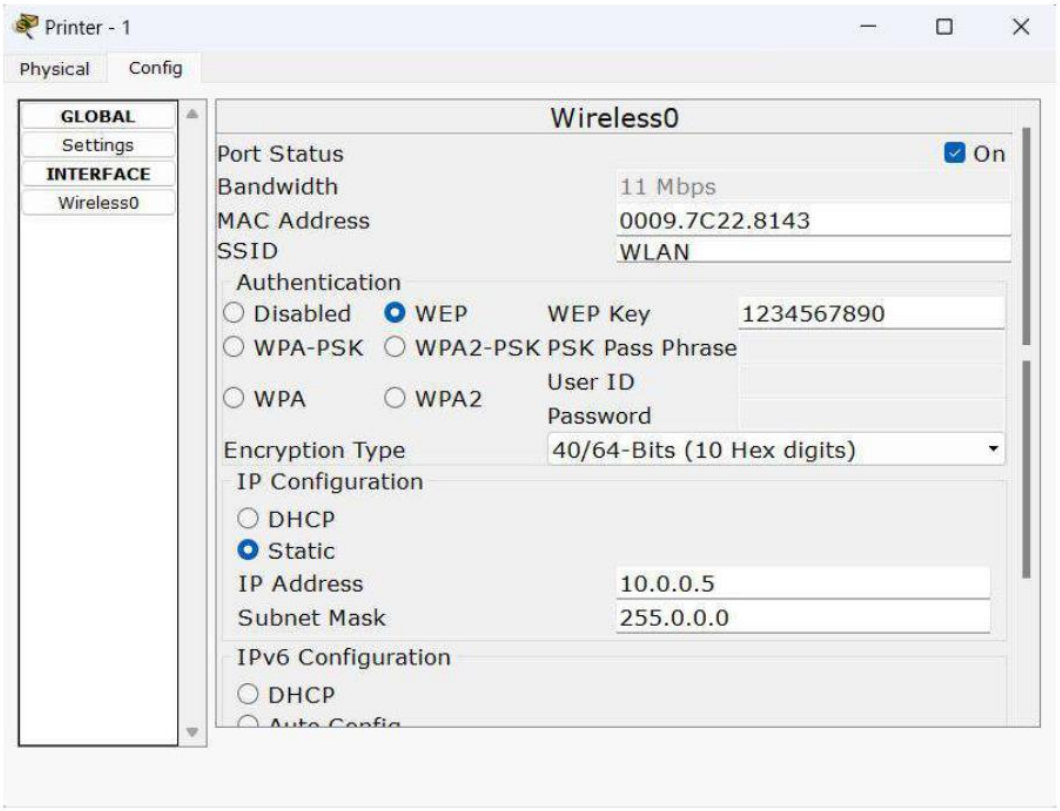

Laptop - 1
Physical
Config
Desktop
Custom Interface
GLOBAL
Settings
Algorithm Settings
INTERFACE
Wireless0
Wireless0
Port Status
On
Bandwidth
11 Mbps
MAC Address
0001.97C7.3DDE
SSID
WLAN
Authentication
Disabled
WEP
WPA-PSK
WPA2-PSK
WPA
WPA2
WEP Key
1234567890
PSK Pass Phrase
User ID
Password
Encryption Type
40/64-Bits (10 Hex digits)
IP Configuration
DHCP
Static
IP Address
10.0.0.4
Subnet Mask
255.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address:
FE80::201:97FF:FEC7:3DDE

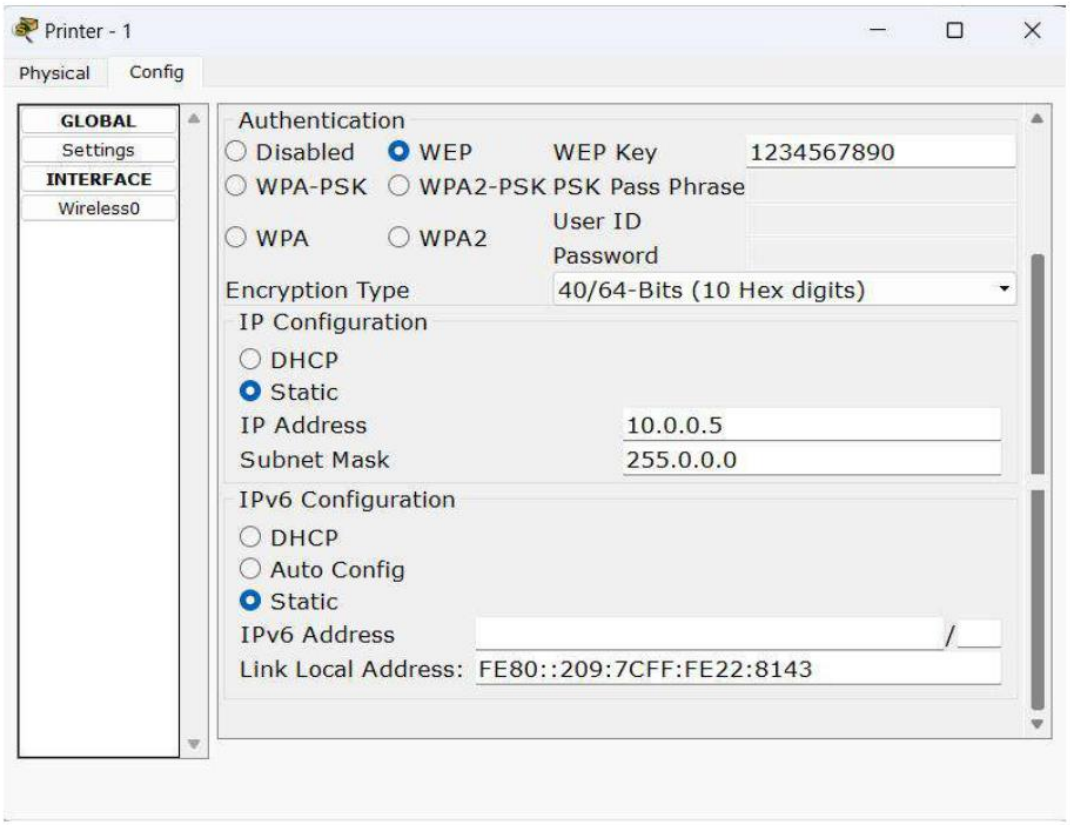
Printer - 1 Configuration:



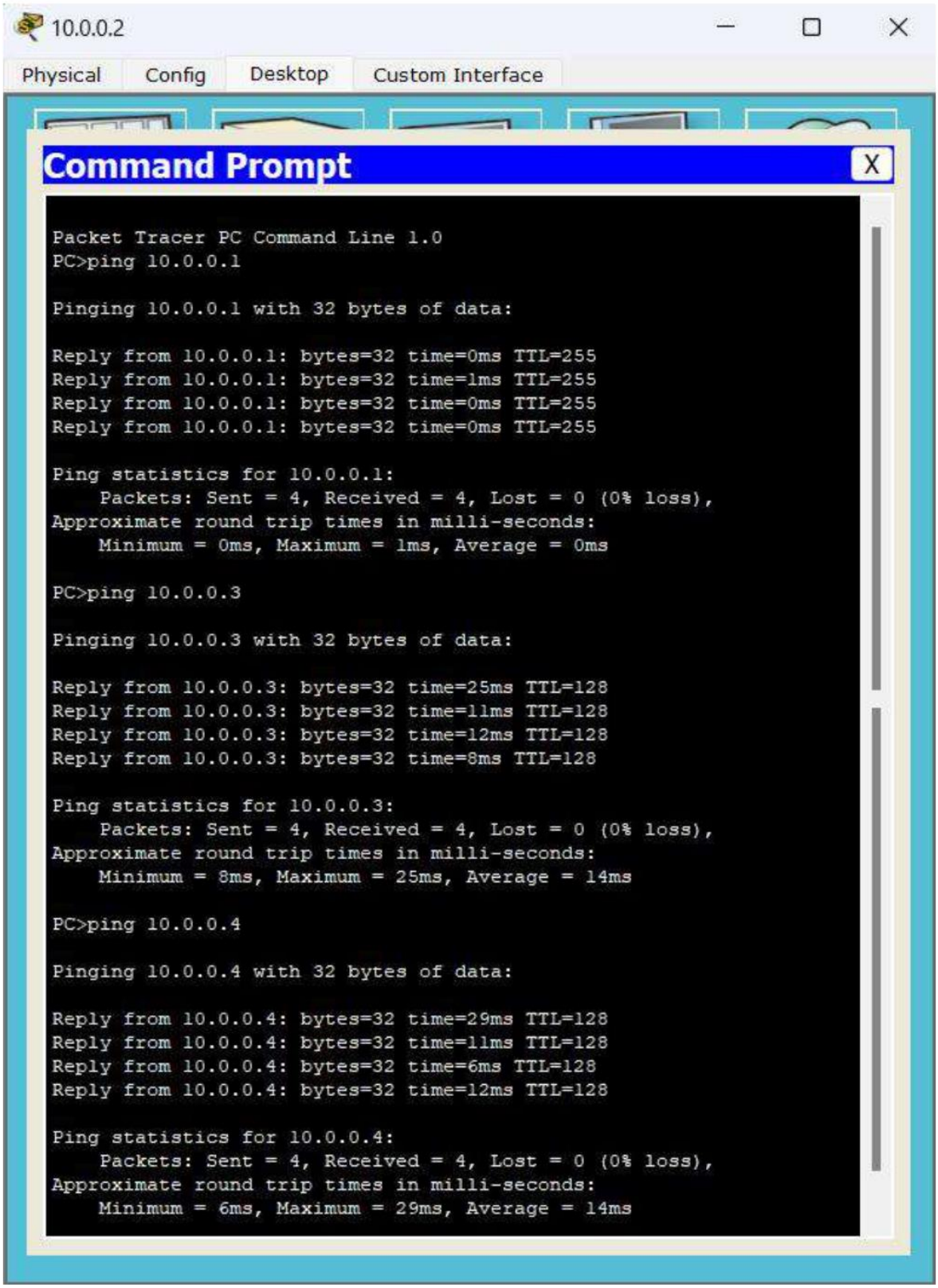

Printer - 1
Physical
Config
MODULES
WMP300N
PT-HOST-NM-1CE
PT-HOST-NM-1CFE
PT-HOST-NM-1CGE
PT-HOST-NM-1FFE
PT-HOST-NM-1FGE
PT-HOST-NM-1W
PT-HOST-NM-1W-A
PT-HOST-NM-3G/4G
Physical Device View
Zoom In
Original Size
Zoom Out
Customize Icon in Physical View
Customize Icon in Logical View
The Linksys-WMP300N module provides one 2.4GHz wireless interface suitable for connection to wireless networks. The module supports protocols that use Ethernet for LAN access.

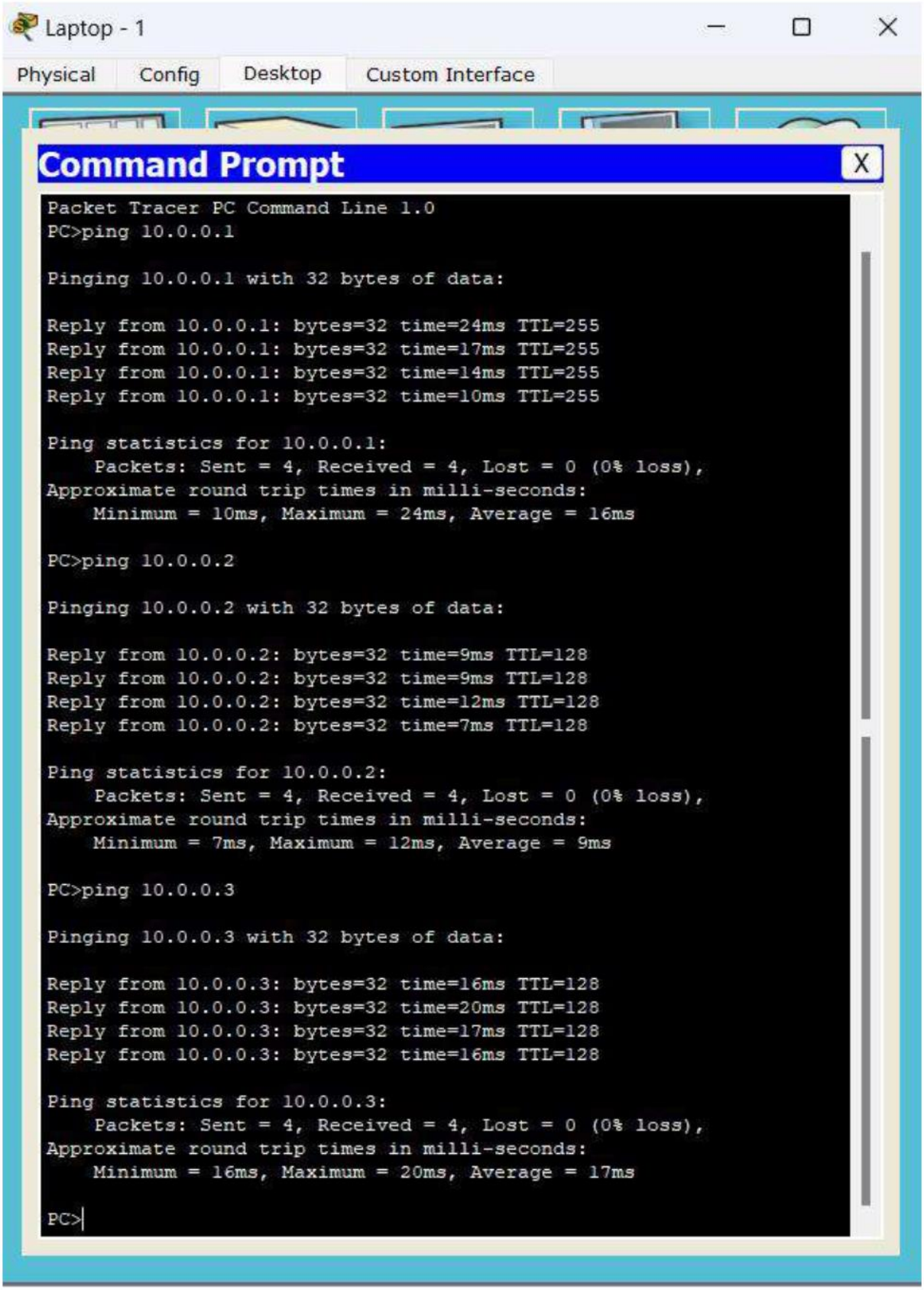

Printer - 1
Physical
Config
MODULES
WMP300N
PT-HOST-NM-1CE
PT-HOST-NM-1CFE
PT-HOST-NM-1CGE
PT-HOST-NM-1FFE
PT-HOST-NM-1FGE
PT-HOST-NM-1W
PT-HOST-NM-1W-A
PT-HOST-NM-3G/4G
Physical Device View
Zoom In
Original Size
Zoom Out
Customize Icon in Physical View
Customize Icon in Logical View
The Linksys-WMP300N module provides one 2.4GHz wireless interface suitable for connection to wireless networks. The module supports protocols that use Ethernet for LAN access.


Printer - 1
Physical
Config
GLOBAL
Settings
INTERFACE
Wireless0
Wireless0
Port Status
On
Bandwidth
11 Mbps
MAC Address
0009.7C22.8143
SSID
WLAN
Authentication
Disabled
WEP
WEP Key
1234567890
WPA-PSK
WPA2-PSK
PSK Pass Phrase
WPA
WPA2
User ID
Password
Encryption Type
40/64-Bits (10 Hex digits)
IP Configuration
DHCP
Static
IP Address
10.0.0.5
Subnet Mask
255.0.0.0
IPv6 Configuration
DHCP


Printer - 1
Physical
Config
GLOBAL
Settings
INTERFACE
Wireless0
Authentication
Disabled
WEP
WEP Key
1234567890
WPA-PSK
WPA2-PSK
PSK Pass Phrase
WPA
WPA2
User ID
Password
Encryption Type
40/64-Bits (10 Hex digits)
IP Configuration
DHCP
Static
IP Address
10.0.0.5
Subnet Mask
255.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address:
FE80::209:7CFF:FE22:8143

Ping From PC to all other devices:




Laptop - 1
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.1
Pinging 10.0.0.1 with 32 bytes of data:
Reply from 10.0.0.1: bytes=32 time=24ms TTL=255
Reply from 10.0.0.1: bytes=32 time=17ms TTL=255
Reply from 10.0.0.1: bytes=32 time=14ms TTL=255
Reply from 10.0.0.1: bytes=32 time=10ms TTL=255
Ping statistics for 10.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 10ms, Maximum = 24ms, Average = 16ms
PC>ping 10.0.0.2
Pinging 10.0.0.2 with 32 bytes of data:
Reply from 10.0.0.2: bytes=32 time=9ms TTL=128
Reply from 10.0.0.2: bytes=32 time=9ms TTL=128
Reply from 10.0.0.2: bytes=32 time=12ms TTL=128
Reply from 10.0.0.2: bytes=32 time=7ms TTL=128
Ping statistics for 10.0.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 7ms, Maximum = 12ms, Average = 9ms
PC>ping 10.0.0.3
Pinging 10.0.0.3 with 32 bytes of data:
Reply from 10.0.0.3: bytes=32 time=16ms TTL=128
Reply from 10.0.0.3: bytes=32 time=20ms TTL=128
Reply from 10.0.0.3: bytes=32 time=17ms TTL=128
Reply from 10.0.0.3: bytes=32 time=16ms TTL=128
Ping statistics for 10.0.0.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 16ms, Maximum = 20ms, Average = 17ms
PC>

```
C:\Users\Acer\Desktop\Notes (4th Semester)\Labs\Computer Networks (CN)\Cycle 2\Experiment - 4>python ServerUDP.py
The server is ready to receive

Sent contents of  ServerUDP.py
```

```
C:\Users\Acer\Desktop\Notes (4th Semester)\Labs\Computer Networks (CN)\Cycle 2\Experiment - 4>python ClientUDP.py

Enter file name:  ServerUDP.py

Reply from Server:

from socket import *
serverPort = 12000
serverSocket = socket(AF_INET, SOCK_DGRAM)
serverSocket.bind(("127.0.0.1", serverPort))
print ("The server is ready to receive")
while 1:
     sentence, clientAddress = serverSocket.recvfrom(2048)
     sentence = sentence.decode("utf-8")
     file=open(sentence,"r")
     con=file.read(2048)

     serverSocket.sendto(bytes(con,"utf-8"),clientAddress)

     print ('\nSent contents of ', end = ' ')
     print (sentence)
    #  for i in sentence:
        #  print (str(i), end = '')
     file.close()
```