Computer Networks
Lab Task #7
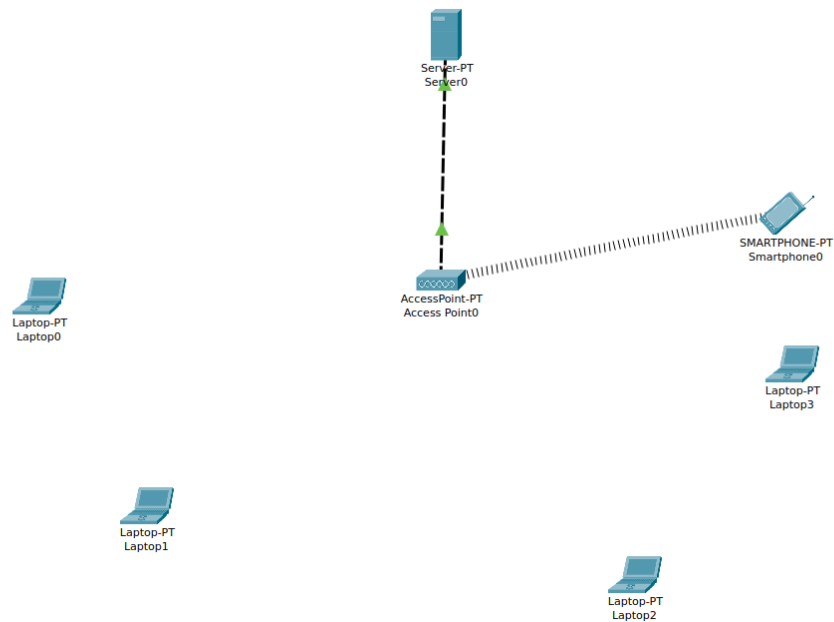Saad Ahmad
20P-0051

Task#1

Add 4x Laptops, 1x Access point and 1x Server.

Connect them with cables.

Now assign the static IP to the DHCP Server

IP: 192.168.1.2

Subnet mask: 255.255.255.0

And now create the pool in DHCP

Placing the Wireless Interface Card to the Laptops:

Turn off the laptop and remove the classical Ethernet and instead of it place Wireless Interface Card (WPC300N) and then power on the laptop again.

Laptop3

Physical　　Config　　Desktop　　Programming　　Attributes

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-LAPTOP-NM-1W-A
PT-LAPTOP-NM-1W-AC
PT-LAPTOP-NM-3G/4G
PT-HEADPHONE
PT-MICROPHONE

Physical Device View

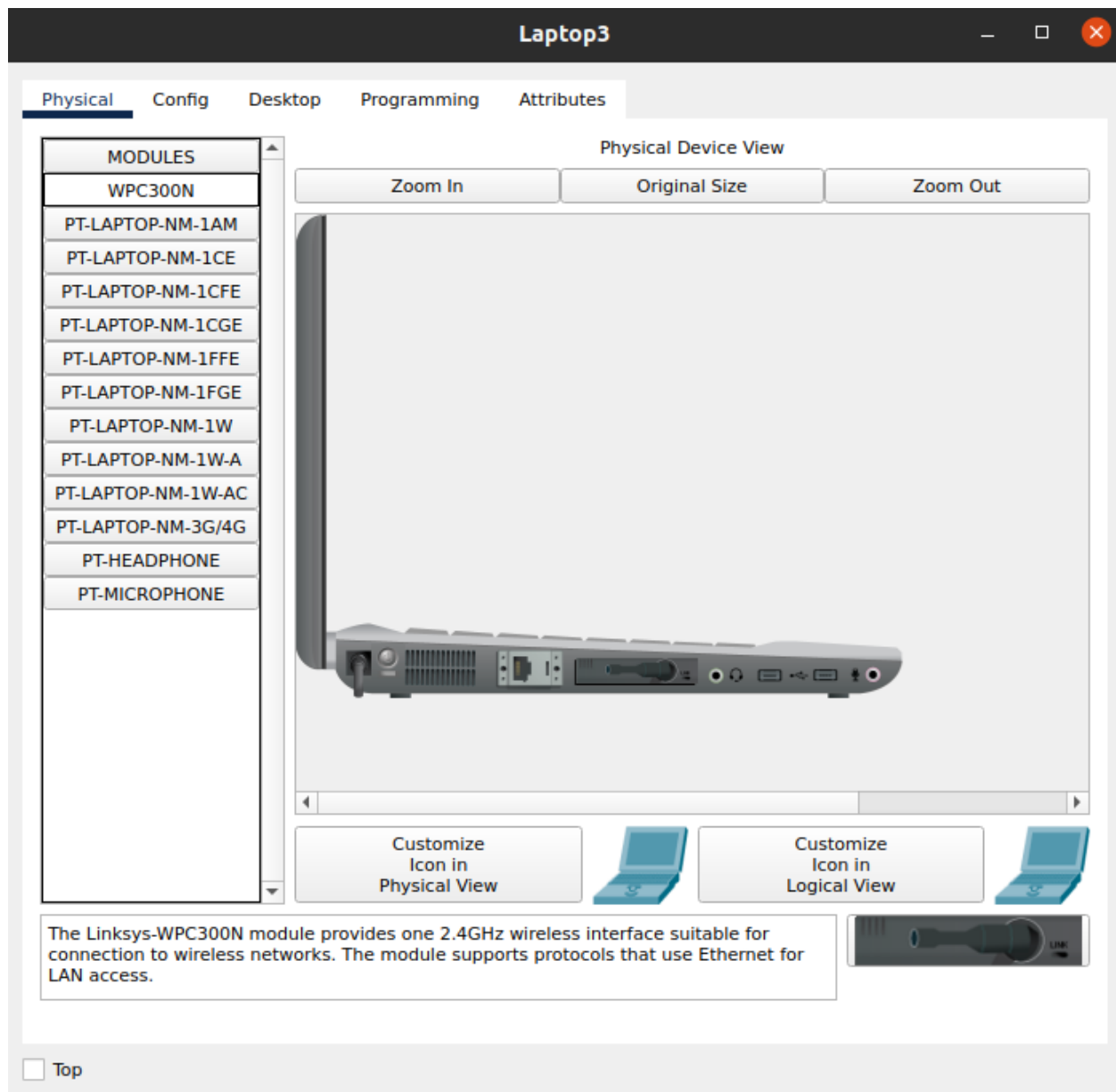| Zoom In	Original Size	Zoom Out

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.
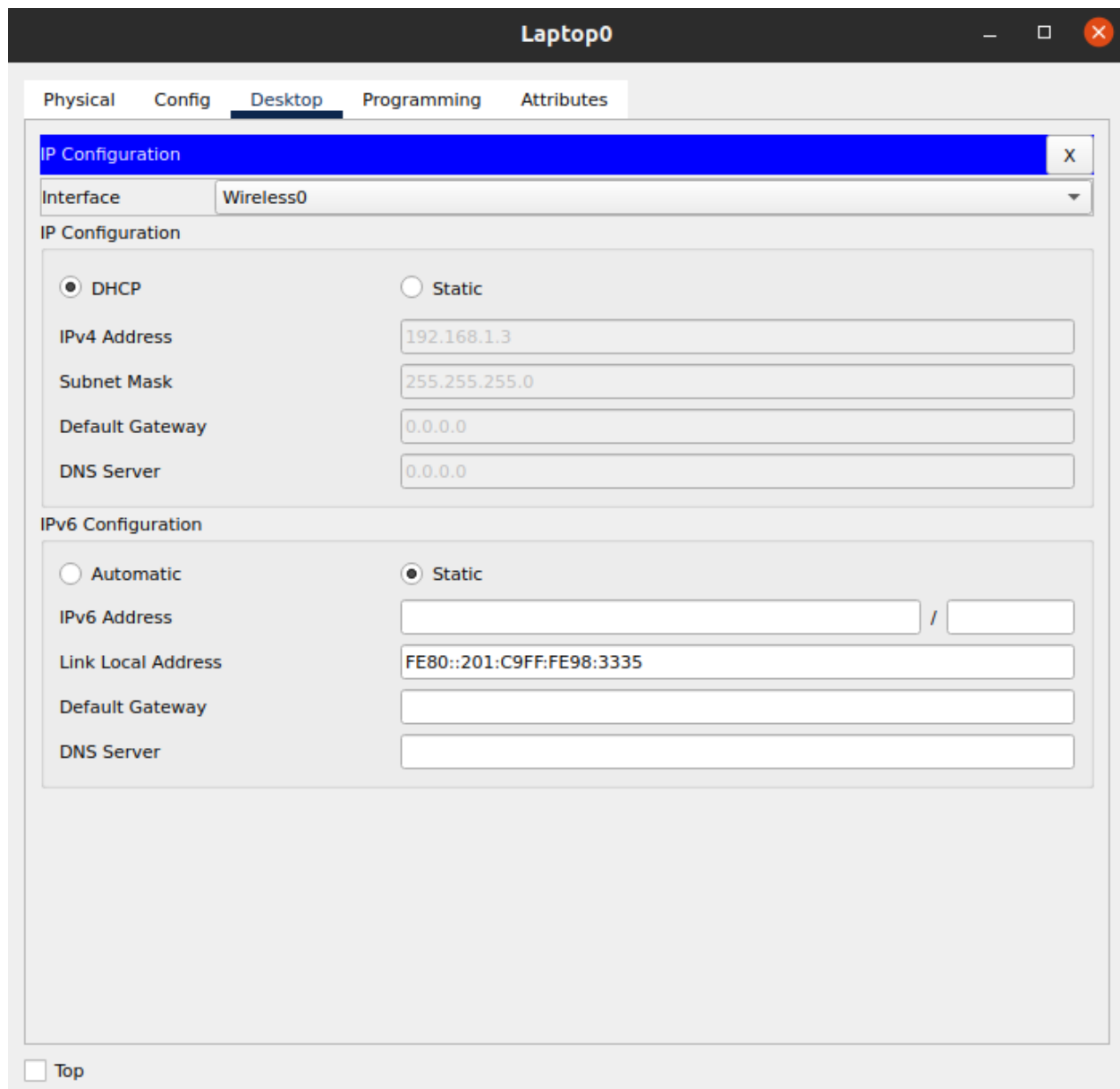
☐ Top

Do this for all the remaining laptops.

Now the assign the laptops IPs using the DHCP pool which we had created.

Laptop0

Physical **Config** **Desktop** **Programming** **Attributes**

IP Configuration   X

| Interface | Wireless0 | ▼ |

IP Configuration

◉ DHCP   ○ Static

IPv4 Address	192.168.1.3
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

IPv6 Configuration

○ Automatic   ◉ Static

IPv6 Address		/
Link Local Address	FE80::201:C9FF:FE98:3335
Default Gateway	
DNS Server	

☐ Top

Laptop1

Physical Config **Desktop** Programming Attributes

IP Configuration   X

| Interface | Wireless0 | ▼ |

IP Configuration

◉ DHCP   ○ Static

IPv4 Address	192.168.1.5
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

IPv6 Configuration

○ Automatic   ◉ Static
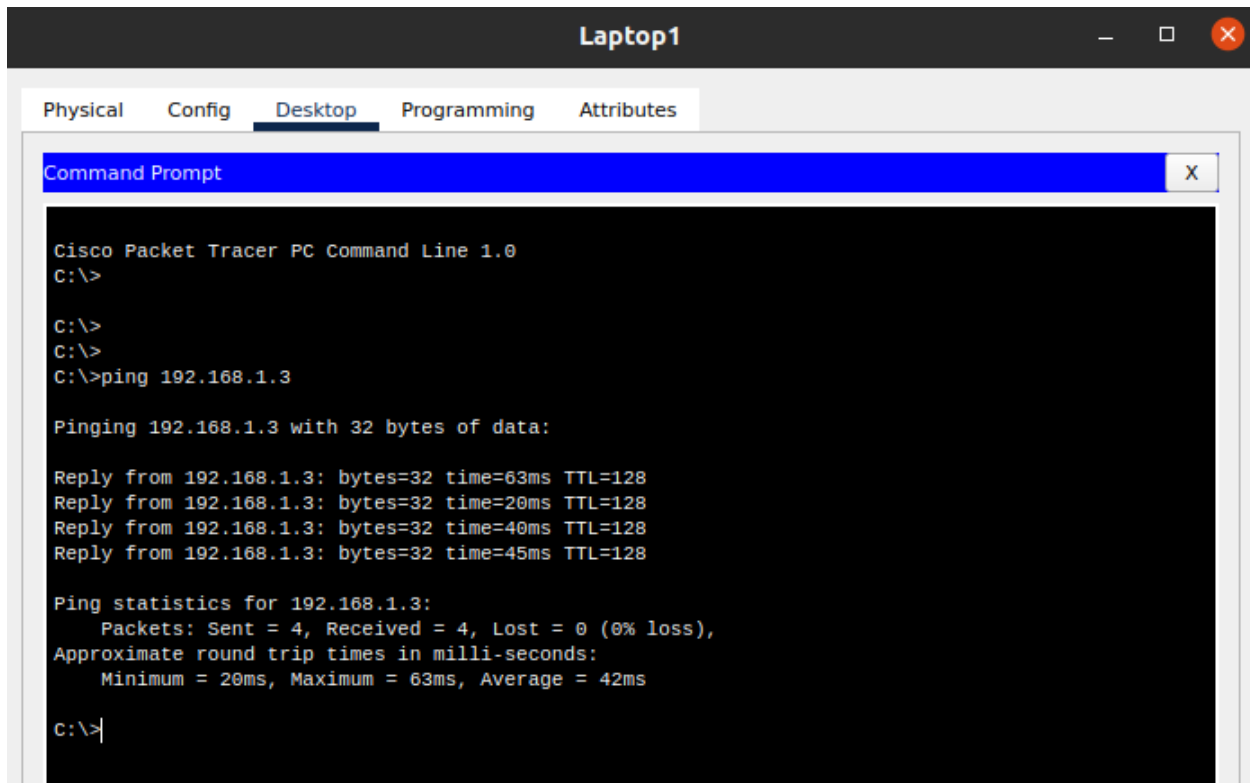
IPv6 Address		/
Link Local Address	FE80::290:21FF:FEA6:2905
Default Gateway	
DNS Server	

☐ Top

And now ping the laptop to check the connection.

Task #2

Add 2x Laptops, 1x PCs, 1x Wireless Router, 1x Router and 1x Server.

Connect them with cables.
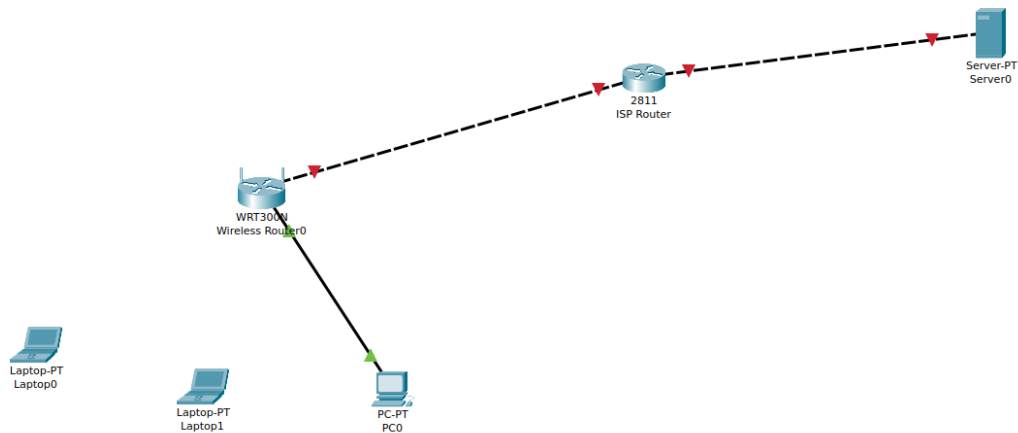
Placing the Wireless Interface Card to the Laptops:

Turn off the laptop and remove the classical Ethernet and instead of it place Wireless Interface Card (WPC300N) and then power on the laptop again.

Laptop0

Physical | Config | Desktop | Programming | Attributes

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-LAPTOP-NM-1W-A
PT-LAPTOP-NM-1W-AC
PT-LAPTOP-NM-3G/4G
PT-HEADPHONE
PT-MICROPHONE

Physical Device View

Zoom In | Original Size | Zoom Out

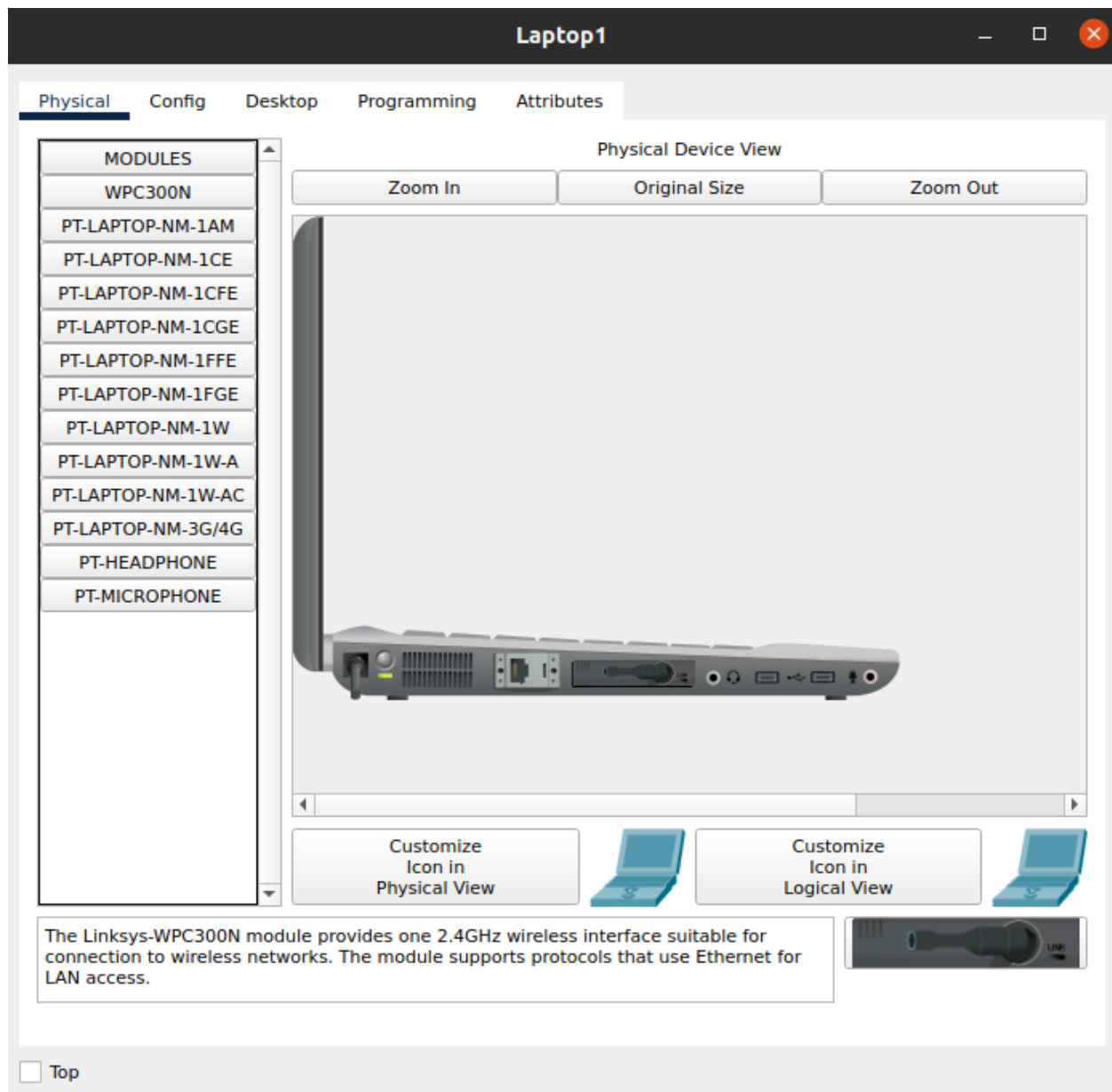Customize Icon in Physical View

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.
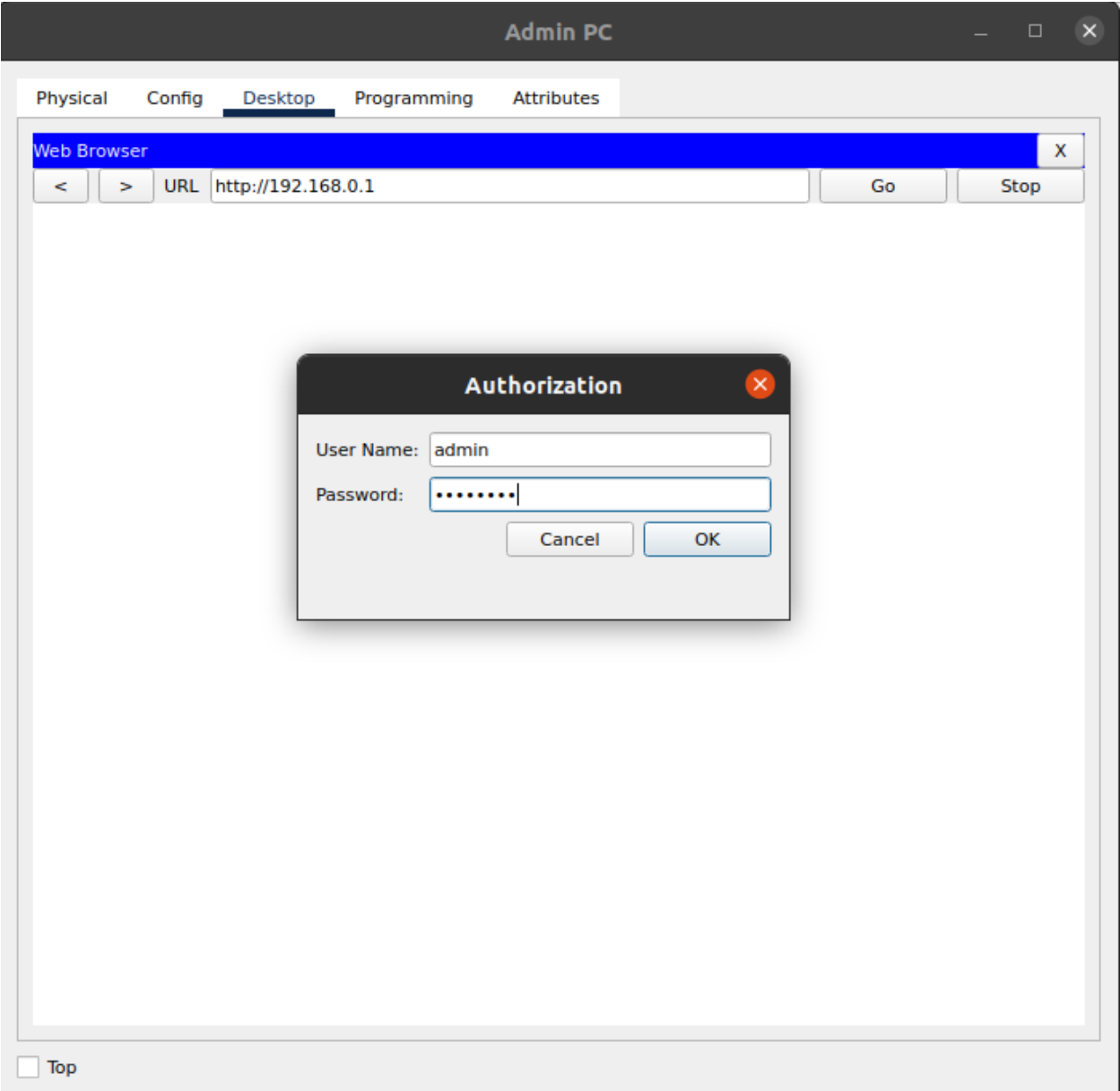
☐ Top

Next, we're going to do some settings on the wireless router to create a LAN then connect it to the internet.

So, for that go to the admin PC and open the browser and type the IP in the address bar

IP: 192.168.0.1

Admin PC

Physical   Config   **Desktop**   Programming   Attributes

Web Browser   X

< | > | URL | http://192.168.0.1 | Go | Stop

Authorization

User Name: | admin
Password: | ••••••••

Cancel | OK

☐ Top

And now you will see the following window

And now assign the IPs to the laptops:

Laptop0

Physical Config **Desktop** Programming Attributes

IP Configuration | X

| Interface | Wireless0 ▼ |

IP Configuration

- ◉ DHCP   ◯ Static

IPv4 Address	192.168.0.101
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
DNS Server	0.0.0.0

IPv6 Configuration

- ◯ Automatic   ◉ Static

IPv6 Address		/
Link Local Address	FE80::230:A3FF:FE4B:9838
Default Gateway	
DNS Server	

☐ Top

Now by default the router password is admin so we can change it in the Administration tab

Plus, we can change the DHCP server setting in the wireless router under the setup tab:

Now to check the connection between the two laptops:
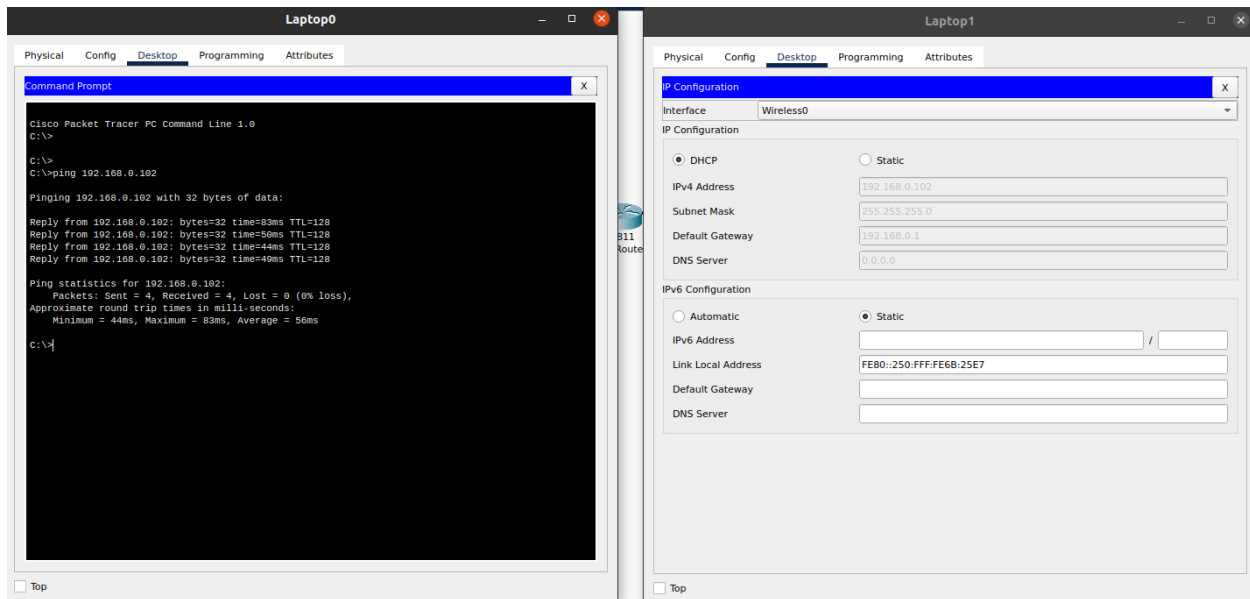
we can also change the name of our Wi-Fi and add the security to our network:

go to the wireless setting and change the SSID and go to the sub tab of wireless setting and select wireless security and select the security mode WPA Personal and then add the Passphrase:

Wireless Router0

Physical   Config   GUI   Attributes

Wireless-N Broadband Router

Firmware Version: v0.93.3

Wireless	Setup	Wireless	Security	Access Restrictions	Applications & Gaming	Administration	Status

Wireless-N Broadband Router   WRT300N

Basic Wireless Settings   Wireless Security   Guest Network   Wireless MAC Filter   Advanced Wireless Settings

Basic Wireless Settings

Help...

Network Mode: Mixed

Network Name (SSID):   Saad

Radio Band: Auto

Wide Channel: Auto

Standard Channel: 1 - 2.412GHz

SSID Broadcast: ● Enabled   ○ Disabled

☐ Top

As we have added the security to our network now go to the laptop and select PC Wireless and select the connect tab and there you will see you network name:
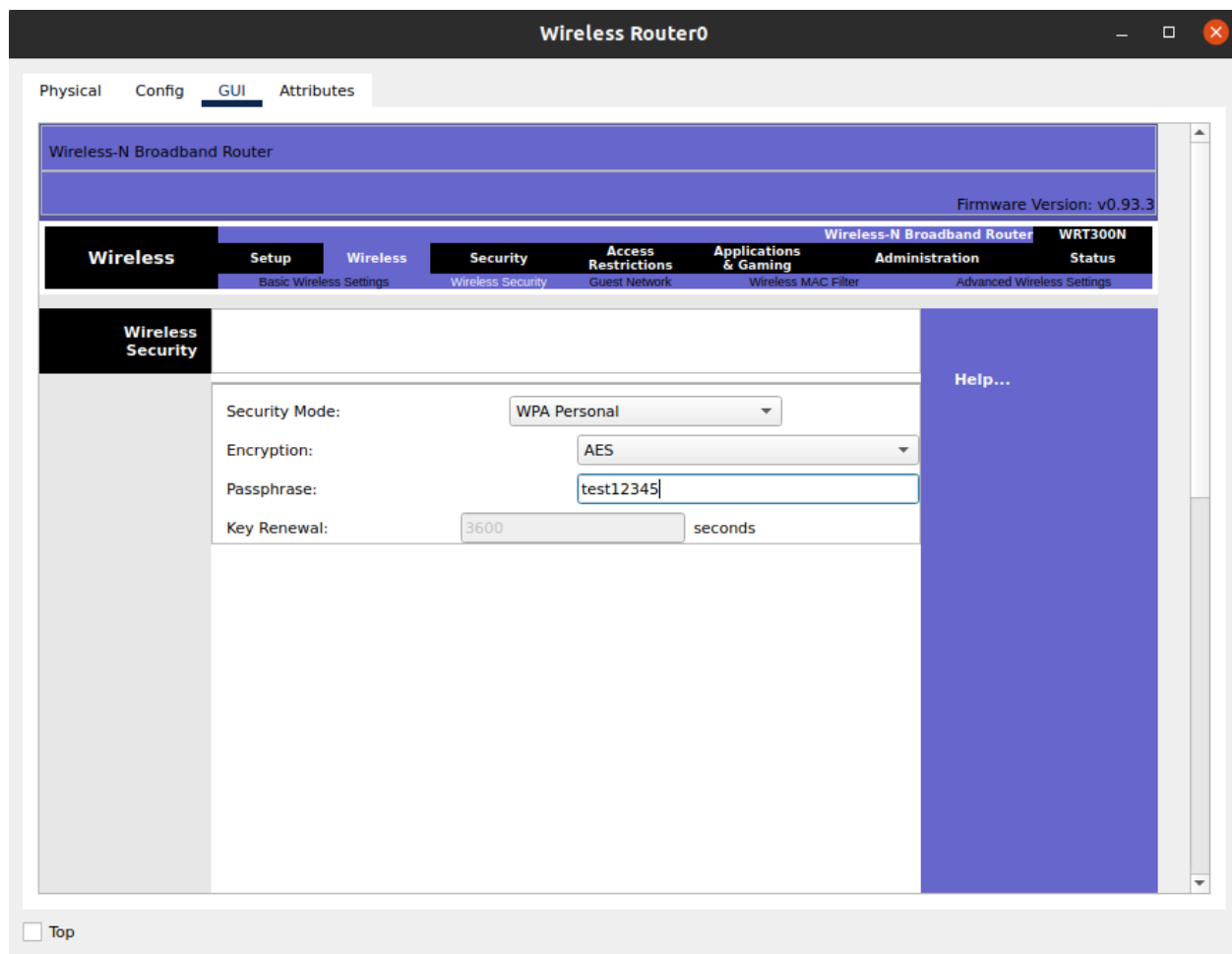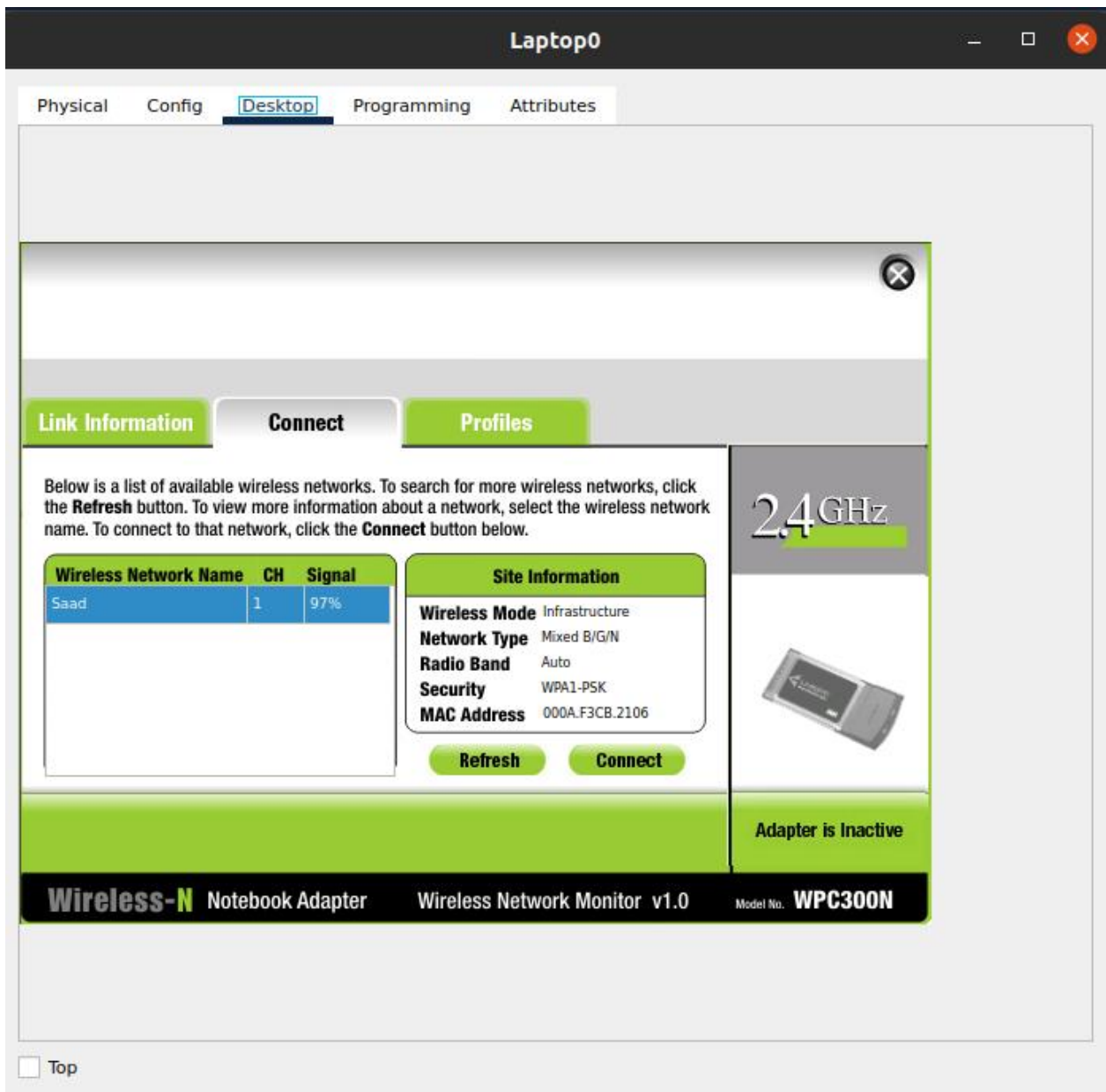
Now select the network and click on connect and then enter your password:

Physical   Config   Desktop   Programming   Attributes

WPA-Personal Needed for Connection

This wireless network has WPA-Personal, also know as Pre-Shared Key, enabled. To connect to this network, select the encryption type. Enter the required Pre-Shared Key in the appropriate field below. Then click the **Connect**.

Security   WPA-Personal   ▾   Please select the wireless security method used by your existing wireless network.

Encryption   AES   ▾   Please select an encryption type used to protect your wireless data transmissions.

Pre-shared Key   test12345   Please enter a Pre-shared Key that is 8 to 63 characters in length.

Cancel | Connect   ctive

Wireless-N Notebook Adapter   Wireless Network Monitor v1.0   Model No. **WPC300N**

☐ Top

and now we will configure our router:

```
Router(config)#int
Router(config)#interface fas
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip add 155.21.21.1 255.255.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#
Router(config-if)#exit
Router(config)#interfa
Router(config)#interface fas
Router(config)#interface fastEthernet 0/1
Router(config-if)#ip add 1
                        ^
% Invalid input detected at '^' marker.

Router(config-if)#ip add 192.168.2.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Router(config-if)#ip dhcp pool mypool
Router(dhcp-config)#net 155.21.0.0 255.255.0.0
Router(dhcp-config)#default-router 155.21.21.1
Router(dhcp-config)#dns-server 0.0.0.0
Router(dhcp-config)#
```

assign the static IP to you sever:
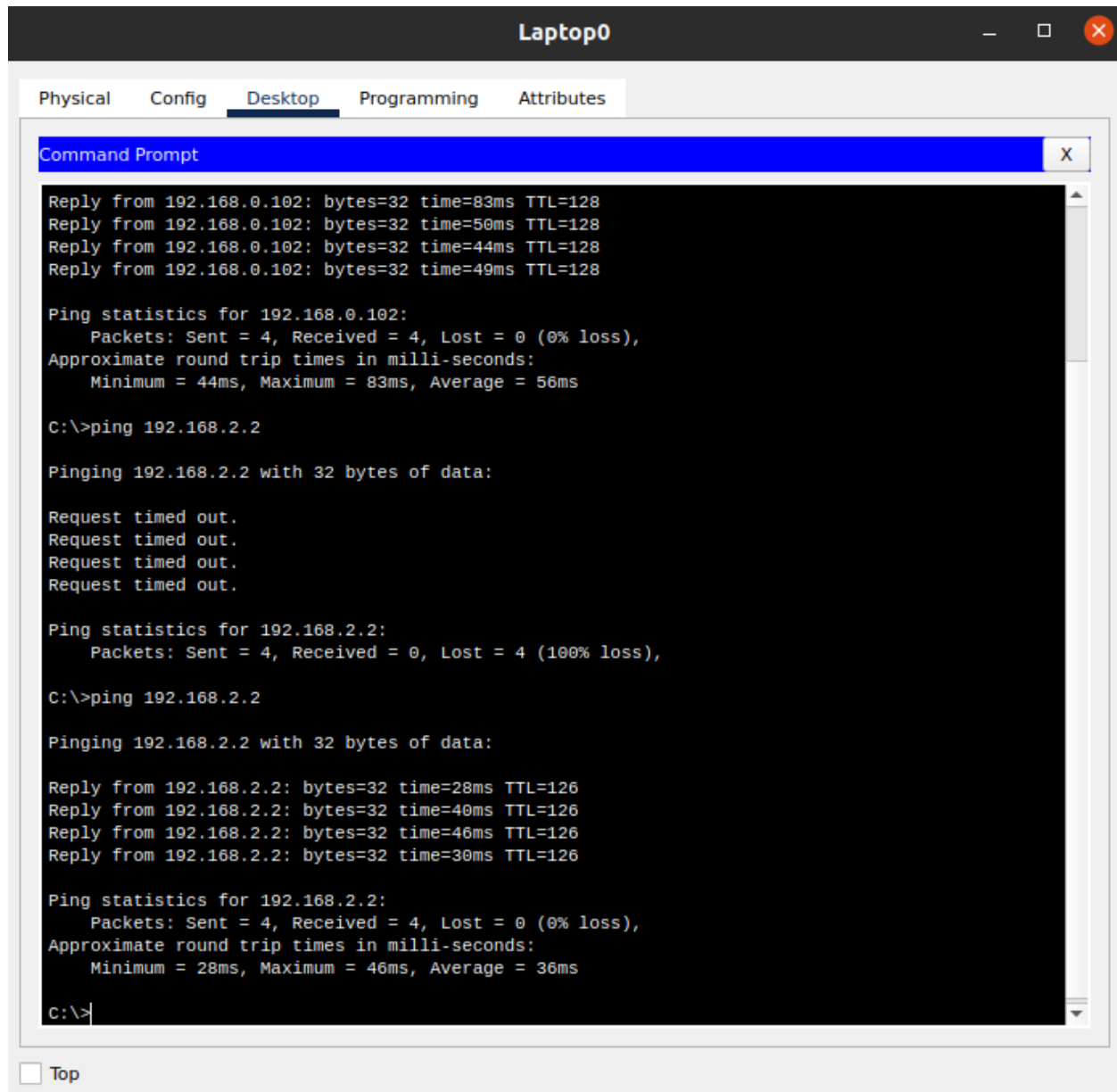
and finally, we will check the connection whether it work or not so for that ping the server from laptop:

Ta da it's working.