Basic Firewall Configuration in Cisco Packet Tracer

A firewall is a hardware or software network security device that monitors all incoming and outgoing traffic based on a defined set of security rules, it accepts, rejects, or drops that specific traffic.

- **Accept**: Allow traffic.
- **Reject**: Block traffic but respond with "reachable error".
- **Drop:** Block unanswered traffic firewall establishes a barrier between secure internal networks and untrusted external networks, such as the Internet.

Steps to Configure and Verify Firewall in Cisco Packet Tracer:

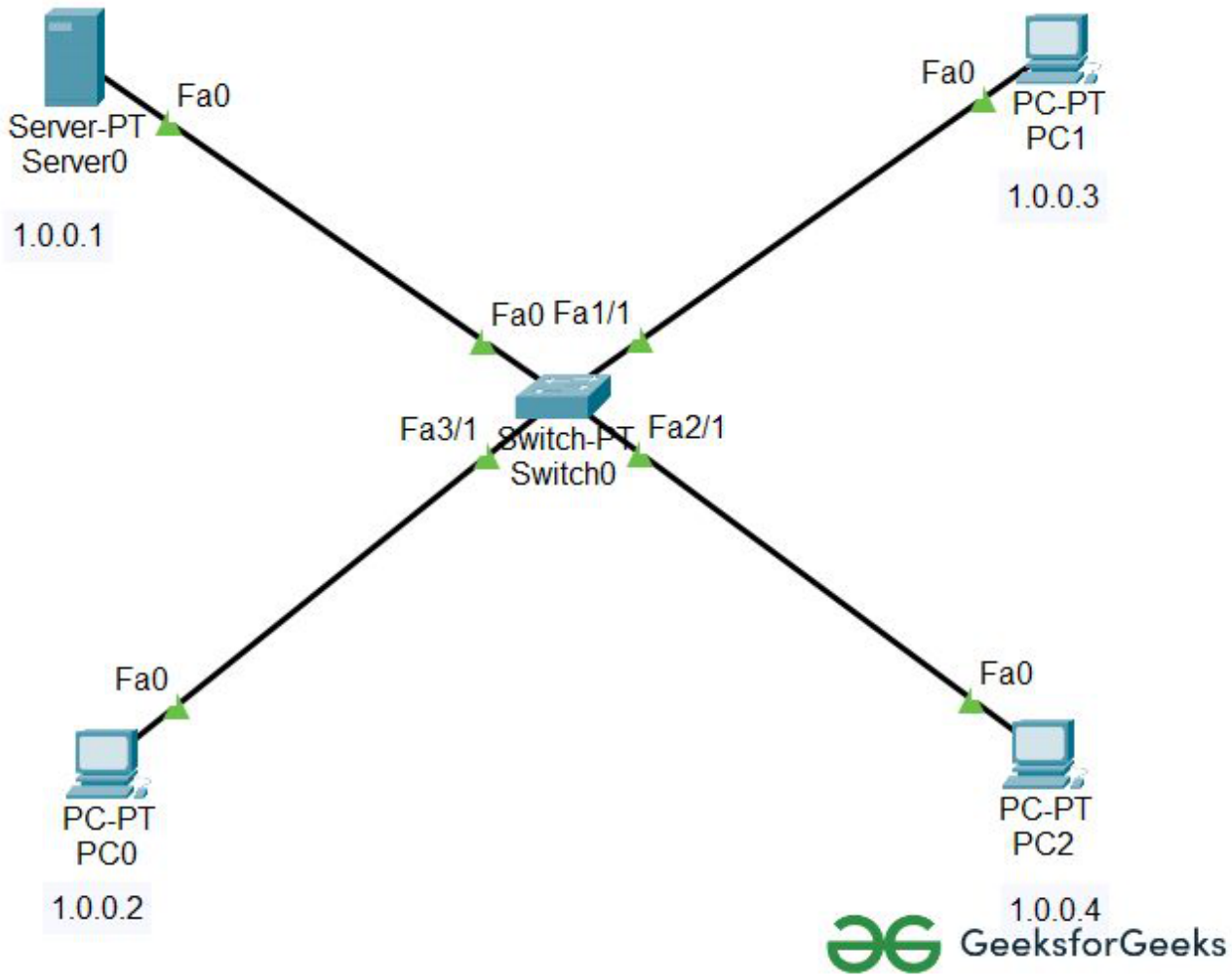
Step 1: First, open the Cisco packet tracer desktop and select the devices given below:

S.NO	Device	Model Name	Quantity
1.	PC	PC	3
2.	server	PT-Server	1
3.	switch	PT-Switch	1

IP Addressing Table:

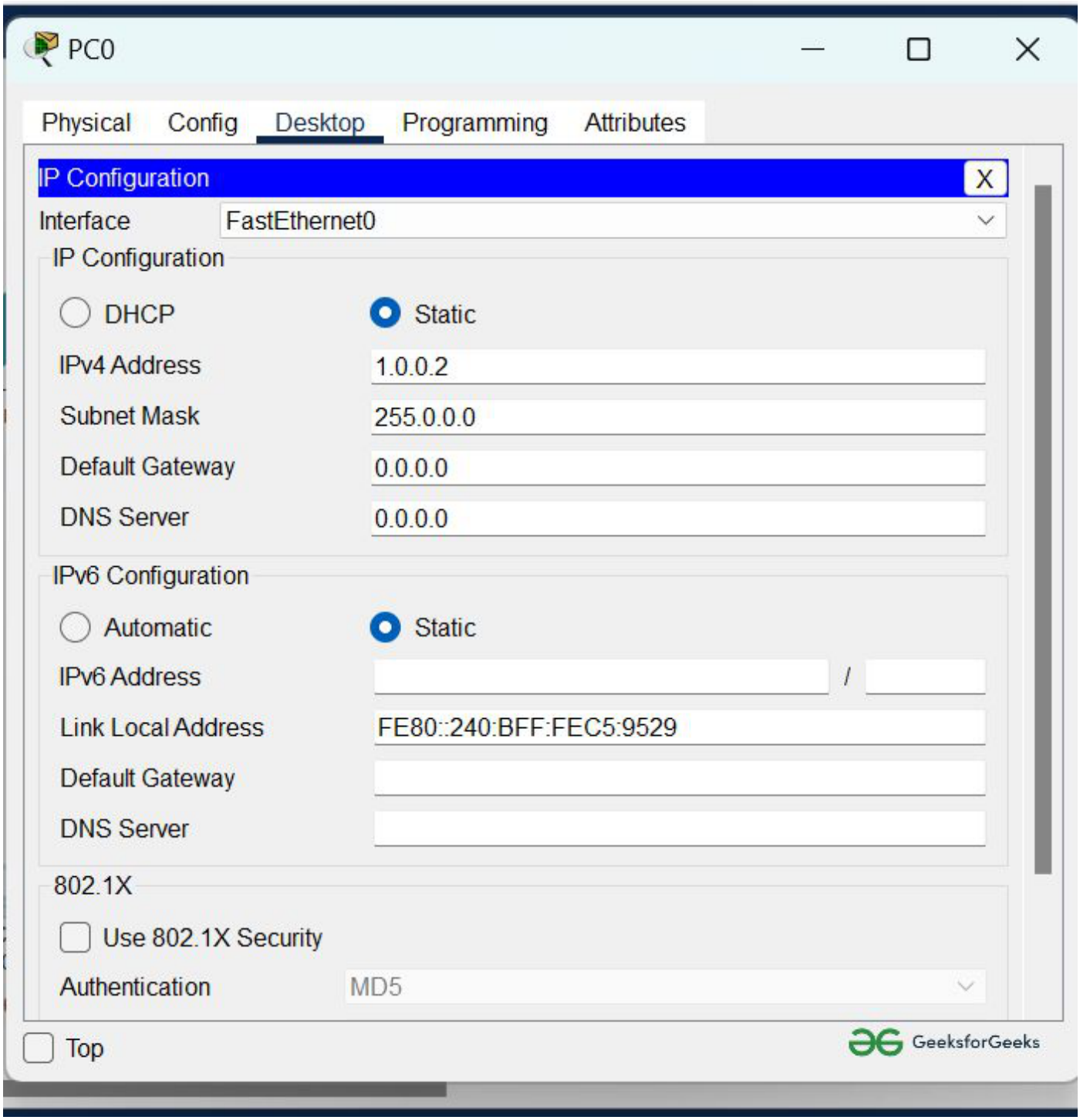
S.NO	Device	IPv4 Address	Subnet Mask
1.	Server	1.0.0.1	255.0.0.0
2.	PC0	1.0.0.2	255.0.0.0
3.	PC1	1.0.0.3	255.0.0.0
4.	PC2	1.0.0.4	255.0.0.0

- Then, create a network topology as shown below the image.
- Use an Automatic connecting cable to connect the devices with others.



Step 2: Configure the PCs (hosts) and server with IPv4 address and Subnet Mask according to the IP addressing table given above.

- To assign an IP address in PC0, click on PC0.
- Then, go to desktop and then IP configuration and there you will IPv4 configuration.
- Fill IPv4 address and subnet mask.
- Repeat the same procedure with the server



- Assigning an IP address using the ipconfig command, or we can also assign an IP address with the help of a command.
- Go to the command terminal of the PC.
- Then, type iPConfig <IPv4 address><subnet mask><default gateway>(if needed)

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Example: ipconfig 1.0.0.2 255.0.0.0
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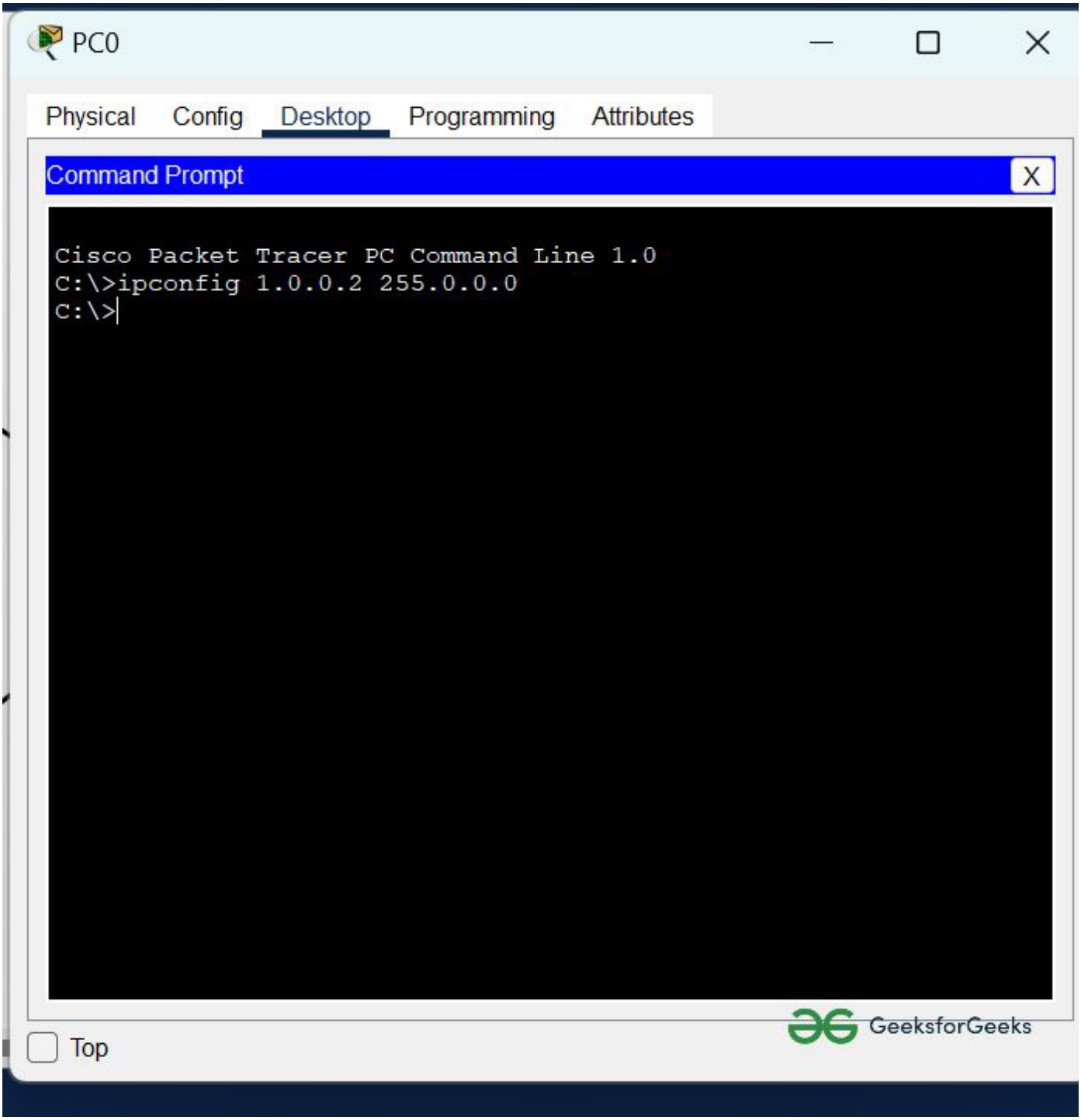
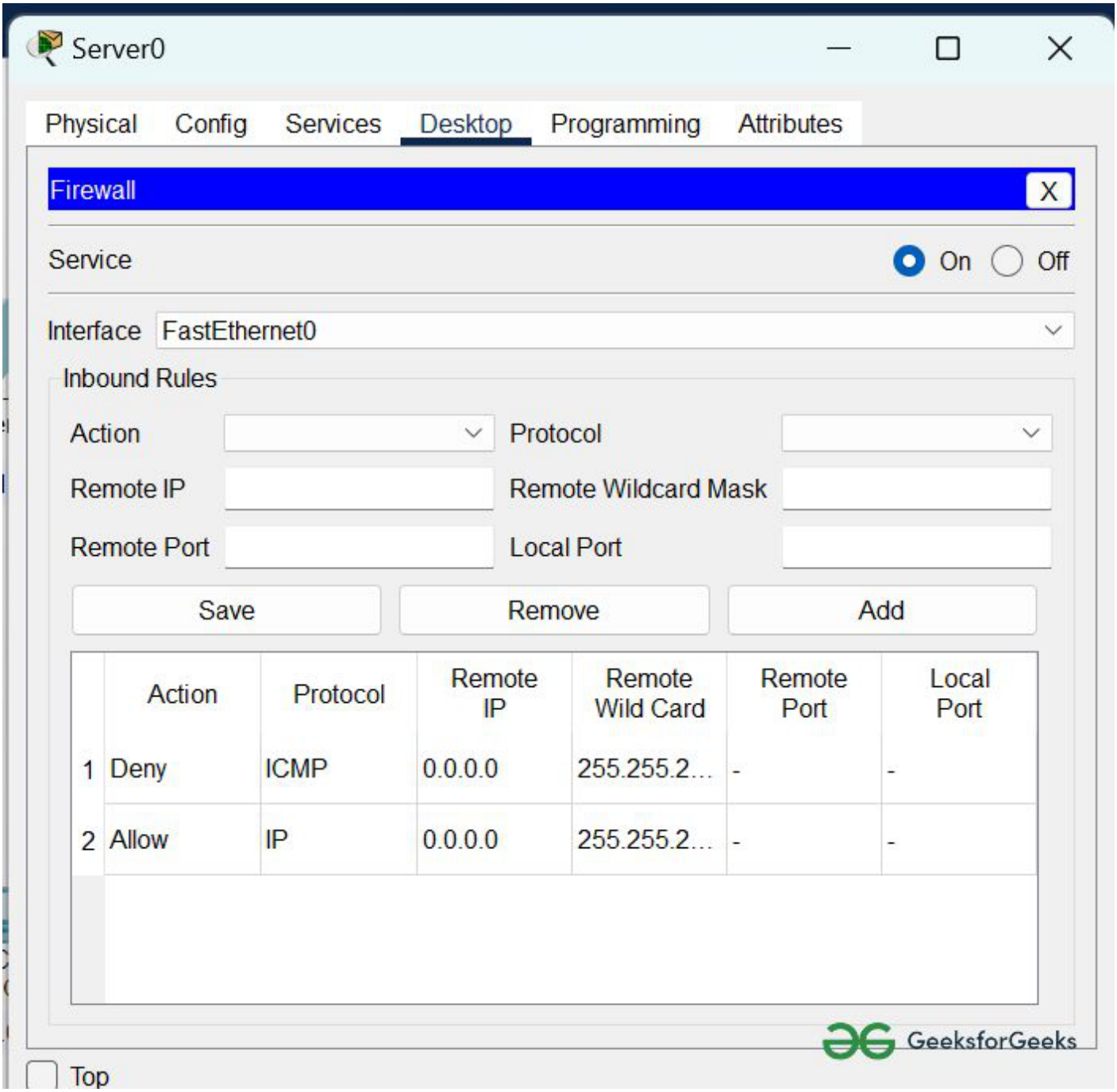


- Repeat the same procedure with other PCs to configure them thoroughly.

Step 3: Configuring the firewall in a server and blocking packets and allowing web browser.

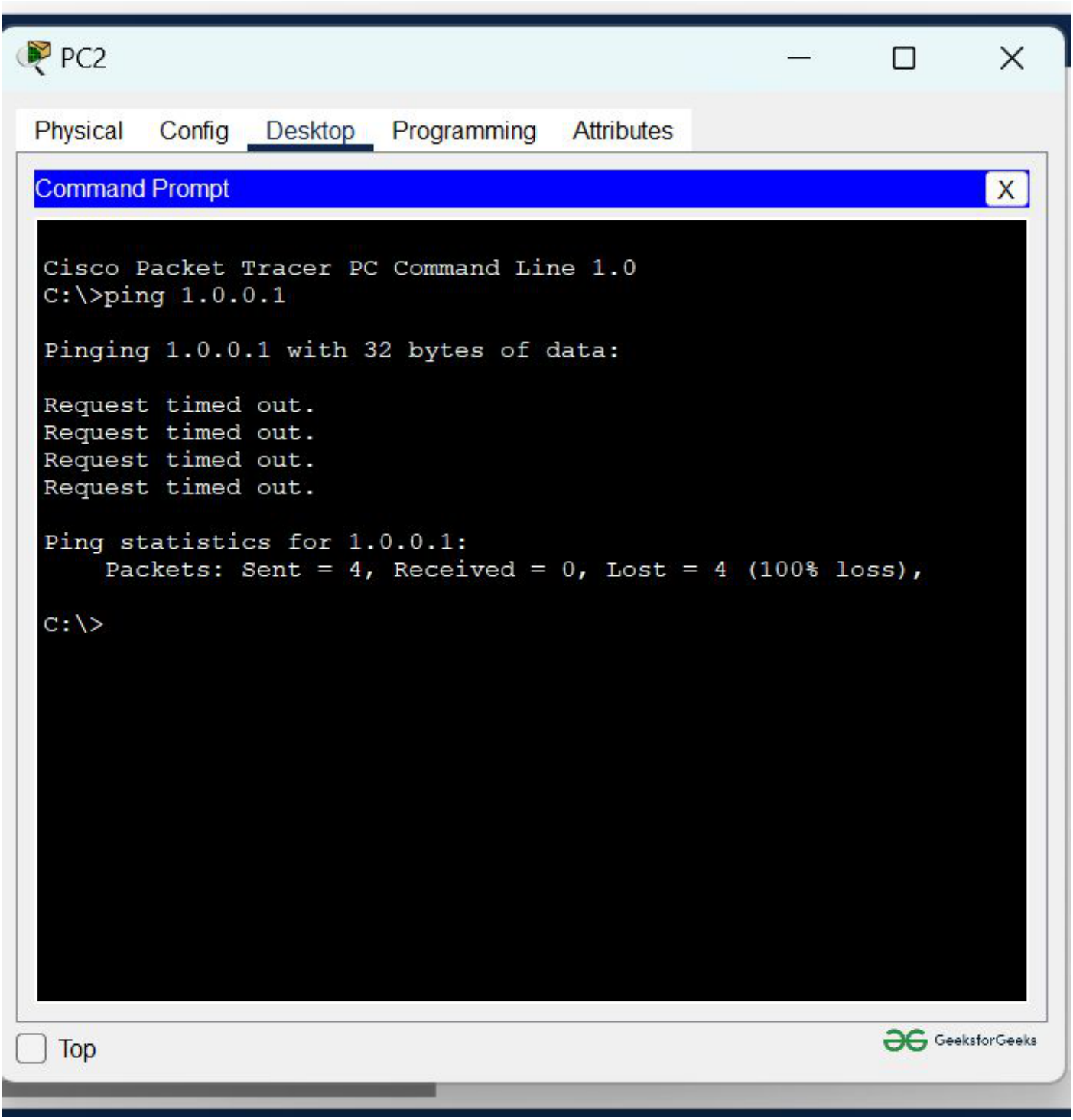
- Click on server0 then go to the desktop.
- Then click on firewall IPv4.
- Turn on the services.
- First, Deny the ICMP protocol and set remote IP to 0.0.0.0 and Remote wildcard mask to 255.255.255.255.
- Then, allow the IP protocol and set remote IP to 0.0.0.0 and Remote wildcard mask to 255.255.255.255.

- And add them.



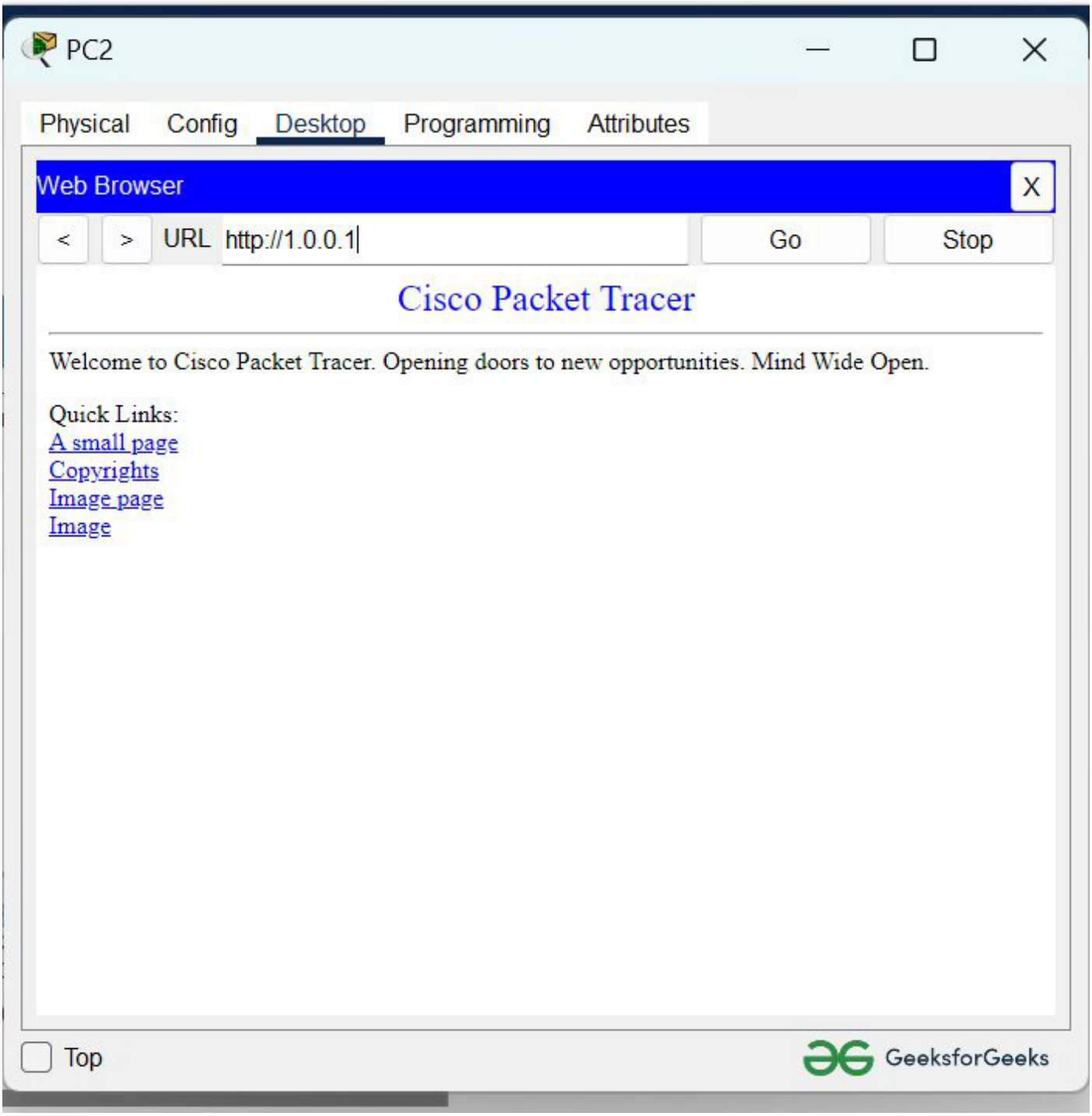
Step 4: Verifying the network by pinging the IP address of any PC.

- We will use the ping command to do so.
- First, click on PC2 then Go to the command prompt.
- Then type ping <IP address of targeted node>.
- We will ping the IP address of the server0.
- As we can see in the below image we are getting no replies which means the packets are blocked.



Check the web browser by entering the IP address in the URL.

- Click on PC2 and go to desktop then web browser.


PC2
Physical
Config
Desktop
Programming
Attributes
Web Browser
X
<
>
URL
http://1.0.0.1
Go
Stop
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