

Hands-on A3: Packet Tracer Step-by-Step Guide

Follow these steps to set up a simple firewall:

PART 1

1. Start Packet Tracer.
2. Take few minutes to become familiar with the interface. Your lecturer will explain you important parts of the interface.
3. Click on **Switches -> (2950-24)**. Then click on the topology area (centre). A Switch will appear (Switch0).
4. Click on **End Devices -> Generic (PC-PT)**. Then click on the topology area. A PC will appear (PC0).
5. Click on **Connections -> Copper Straight-Through**.
 - a. Click on PC0. Select **FastEthernet0**.
 - b. Click on Switch. Select **FastEthernet0/1**.
 - c. A link will appear between the hub and the PC. This is an Ethernet connection.
6. Similarly add another PC (**PC1**) and connect them to the Switch.
7. Click on PC0. You will see a window with 4 panes (Physical, Config, Desktop and Software/Services). You can switch on/off the pc and configure various software/hardware parameters through this window.
8. Click on **Desktop -> IP Configuration**
 - a. Select '**Static**'
 - b. Enter the IP Address 192.168.1.1
 - c. Enter the sub-net mask 255.255.255.0
 - d. Close the window
9. Similarly, set the IP addresses 192.168.1.2 to PC1.
10. Click on PC0
 - a. Go to **Desktop -> Command Prompt**
 - b. Type **ipconfig** and enter.
 - c. You will see the IP configuration of the computer.
 - d. Type **ping 192.168.1.2** and enter
 - e. You will see echo replies from 192.168.1.2 (PC1).
 - f. You have just tested the network connection between PC1 and PC2.
11. Similarly, tests the network connectivity from PC1 to PC1.
12. You have just implemented a simple network with 2 PCs.

PART 2

1. Click on **Routers**. Select Router (**1941**). Add it to the topology.
2. Click on **End Devices** again -> **Generic (Server-PT)**. Add it to the topology. (Set IP: 192.168.2.1)
3. Connect **GigabitEthernet0/0** and **GigabitEthernet0/1** interfaces of the Router0 to Switch0 and Server0 respectively. (Note: use **Connections -> Copper Cross-Over** for connecting Router to Server).
4. Click on Router1 - Go to **Config**
 - a. Click on **GigabitEthernet0/0**. Set the IP address to 192.168.1.254 and the subnet mast to 255.255.255.0 then Select '**On**.' This will bring up the router interface.
 - b. Click on **GigabitEthernet0/1**. Set the IP address to 192.168.2.254 and the subnet mast to 255.255.255.0 then Select '**On**'
 - c. You have just configured a router connected to two networks with the minimum required configuration.

PART5

1. Go to the command prompt of PC0.
 - a. Can you ping to 192.168.1.254 (interface GigabitEthernet0/0 of the router)?
 - b. Can you ping to 192.168.2.1? If you **cannot ping**, what is the reason?
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 - c. Correct the above issue.
 - d. Now check the connectivity of all networks (ping from PCs to Server and Vice versa)

PART6 – Setting Up **firewall** through Router0.

1. Go to **CLI** of Router1 and enter the following commands: (Press **ctrl+z**. You will see either **Router#** or **Router>** prompt.)

Router>enable
Router#config t
Router(config)# access-list 101 permit tcp any any
Router(config)#interface gig0/0
Router(config-if)#ip access-group 101 in
Router(config-if)#^Z
Router#
2. **The same as 1**, give access permit so that only PC1 can ping the Server (send packet) using commands below:
Go to Config mode and enter:
access-list 1 permit 192.168.1.1 **0.0.0.0** <- This is wildcard mask 0 is exact match - 1 is don't care
Go to interface gig0/0 and enter:
ip access-group 1 in
3. You can see all access list by entering this command:
Router#show access-list
4. Test whether you can ping the Server0 from PC0 and PC1?
5. **Well done**, you have just implemented a simple Firewall.