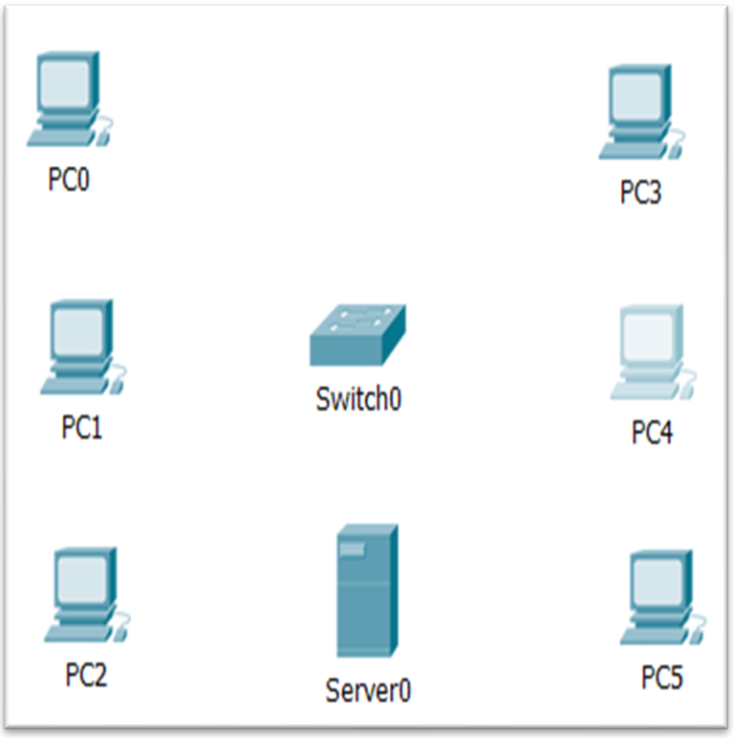
Week 03 Practice Lab

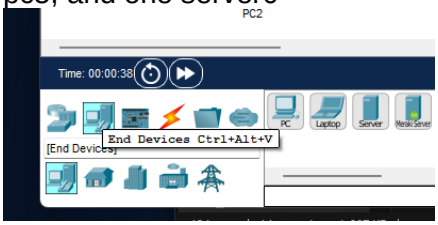
Optional extra practice task – NOT GRADED

Task 1: Build a simple LAN network

1- Start PacketTracer with a blank workspace.
2- Create the following topology shown on the right-hand side as follows:

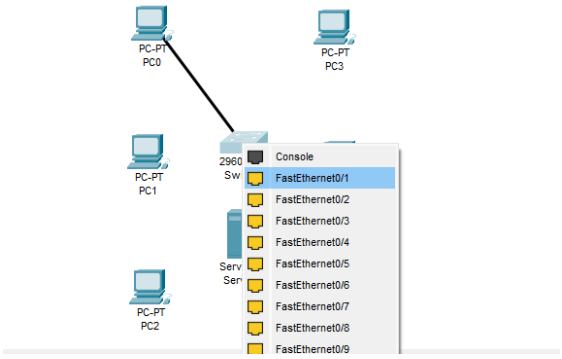


a) Click End Devices as shown in the figure and place six copies of PC: pc0, pc1, pc2, pc3, pc4, pc5, and one server0



b) Click Network components and then click switches and select 2960

3-Connect all PCs and server0 to the switch0 with the correct cable type. Use the switch ports: FastEthernet0/1, FastEthernet0/2, …

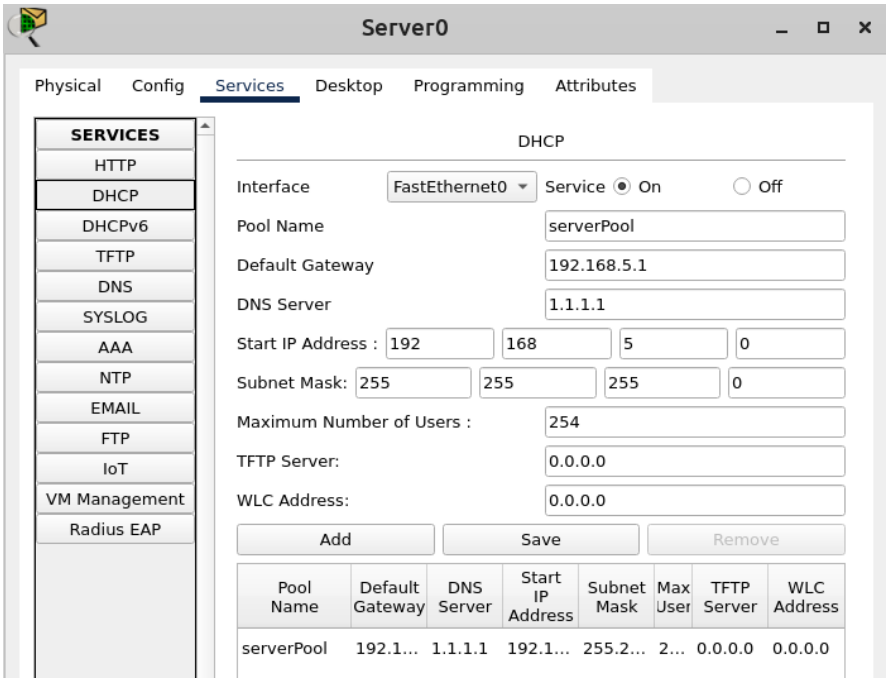


4-Check the IP addresses of PCs (Click **PC** -> **Desktop** -> **IP Configuration**). They should be **blank** and no IP address

5-Click **server0** and choose Desktop tab then IP configuration
Set the following **static** IP address for **server0**:

IP address= 192.168.5.10
Subnet mask=255.255.255.0
Default gateway= 192.168.5.1
DNS=1.1.1.1

6-Now click on the **service** tab and choose **DHCP**

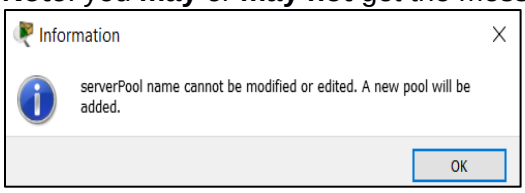


Note: Start IP address and the **subnet mask** have already filled up.

Set the following information:
Pool name = **serverPool** (default)
Maximum number of users = **254**.
Default Gateway = **192.168.5.1**
DNS = **1.1.1.1**

7-Click on **Save** to save the **DHCP pool** settings.

Note: you **may** or **may not** get the message below; click **ok**



8-Now click **on** service button, to turn on the service

9-click on **X** to close the window.

10-Go to each PC and configure the IP address as following:
The IP window shows the **Static** option. Click on **DHCP** button and wait for a few seconds. All PCs should have a new IP, subnet mask, Default Gateway and DNS address.

Note: To request a new IP address, you can select **static** and then **DHCP** again.

11-Test the ping from the different PC's to other PC's and to the server. (**PC** -> **Desktop** -> **Command Prompt**)

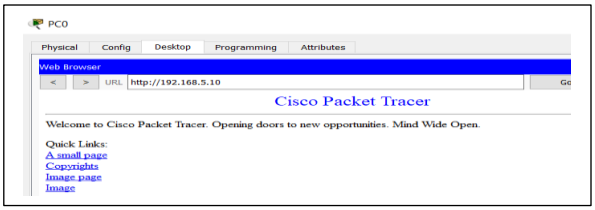
Task 2: Communication with a Web server in the local network (HTTP protocol)

1- Use the resulted packet tracer activity obtained in task one:

Make sure **PC0** can ping **server0,** with the right IP address, otherwise this part will not work
When you open the PT, by default, you are in **Realtime** mode.

2- Click **PC0** -> **Desktop** -> **Web Browser**

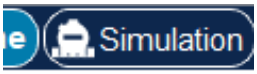
3- In the URL box type **server0**'s IP address and press ENTER to browse.



You see an **HTTP** web page opens from the **server0**.
You are connected to a Web server and requested a web page (Welcome Cisco Packet racer).

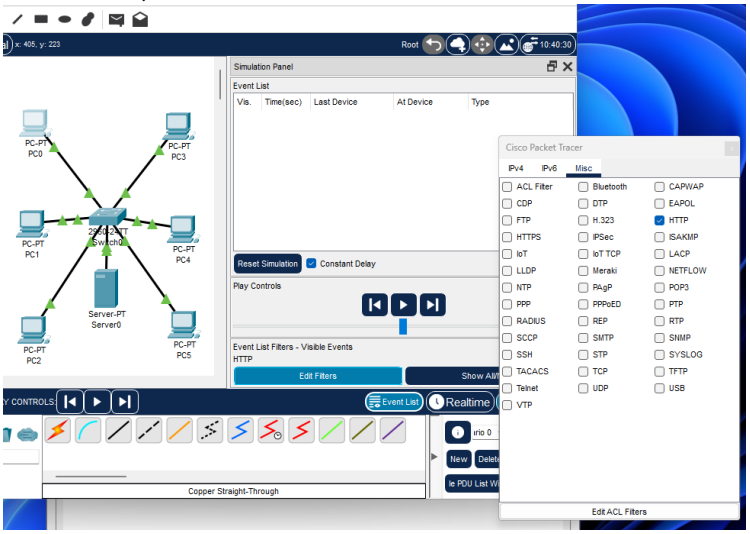
4- Minimize the **PC0** screen for now.

5- In PT, change **Realtime** mode to **Simulation** mode, by clicking on the **simulation** icon on the bottom right:



6- In **simulation** mode click on **Edit Filters** and then on the **Misc** tab

7- You will see many protocols with check marks. Make sure they are **unchecked** except **HTTP**. (tip: click **show all/none** next to the Simulation button, then select **http**).
When done, close the filters window.



8- Still in simulation mode, open **PC0** page again (web browser page), in the URL box type http://192.168.5.10 (web server IP address), click **Go** and capture the **HTTP** packets in simulation mode.

9- Click on the **Capture/Forward** ( ) button to have the simulation step forward and the PDU progress through the network.

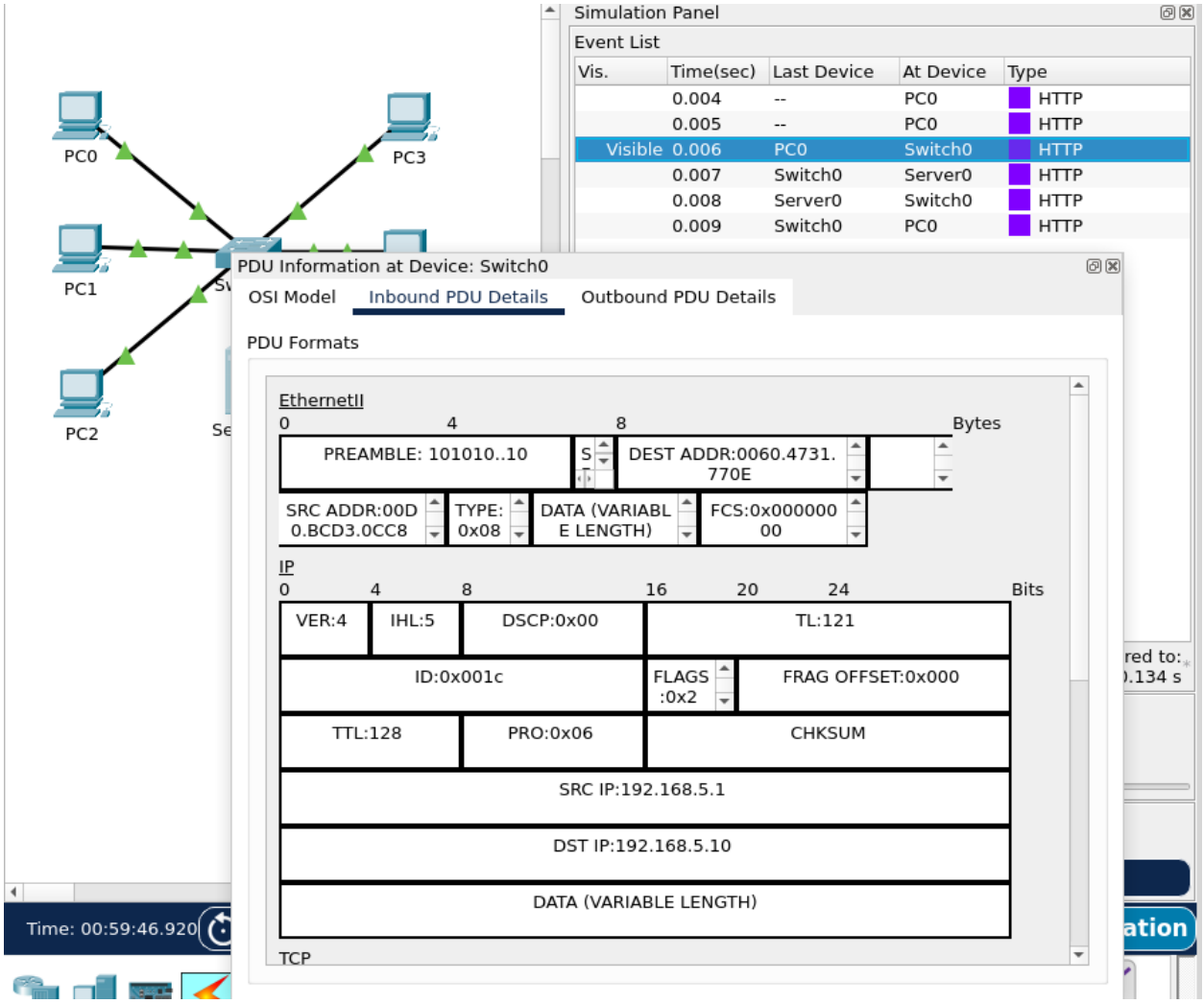
If you progress until completion, the list of events may look like this:

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.004	--	PC0	HTTP
	0.005	--	PC0	HTTP
	0.006	PC0	Switch0	HTTP
	0.007	Switch0	Server0	HTTP
	0.008	Server0	Switch0	HTTP
Visible	0.009	Switch0	PC0	HTTP

10- Now double click on the event where the PDU's last device is **PC0**, and it is at device: **Switch 0** to see the details of the PDU:



Investigate the different PDU details and answer the following questions:

1. Which layer of OSI model show the MAC address?
2. What is the Ethernet Header?
3. What protocol did you capture?
4. This protocol used by which layer of the OSI model?
5. What are the SRC IP and DEST IP address?
6. Which devices to they belong to?
7. What is the destination port?