

## Computer Networking I.

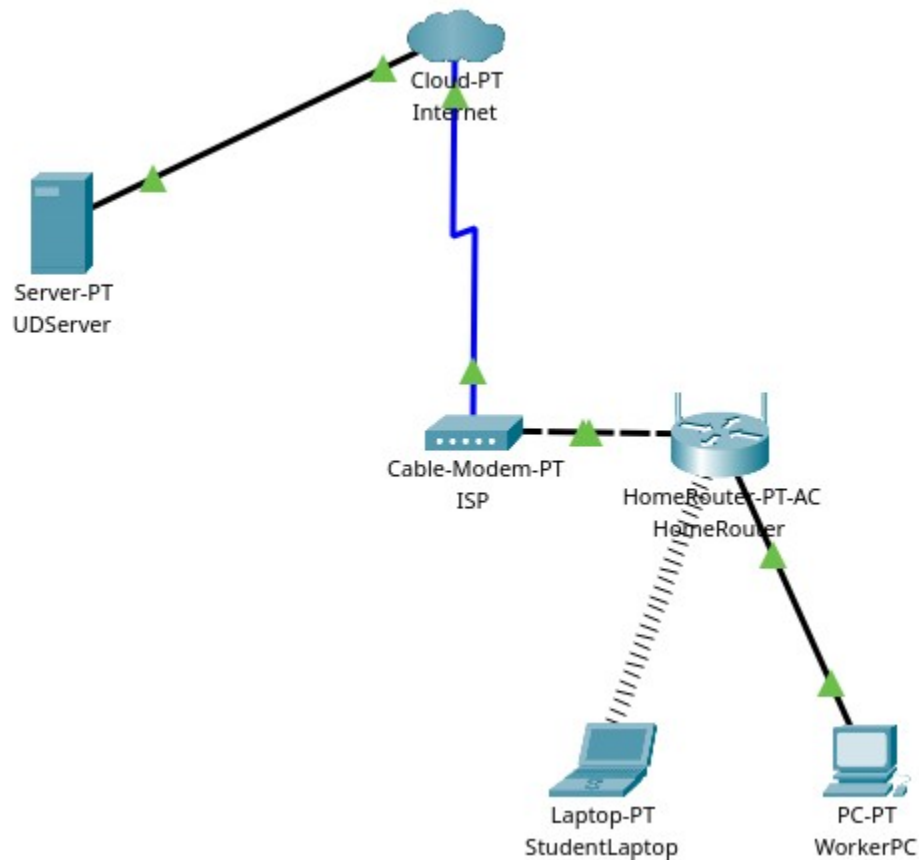
### Workshop No. 1: Packet Tracer Basics

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### Workshop Development

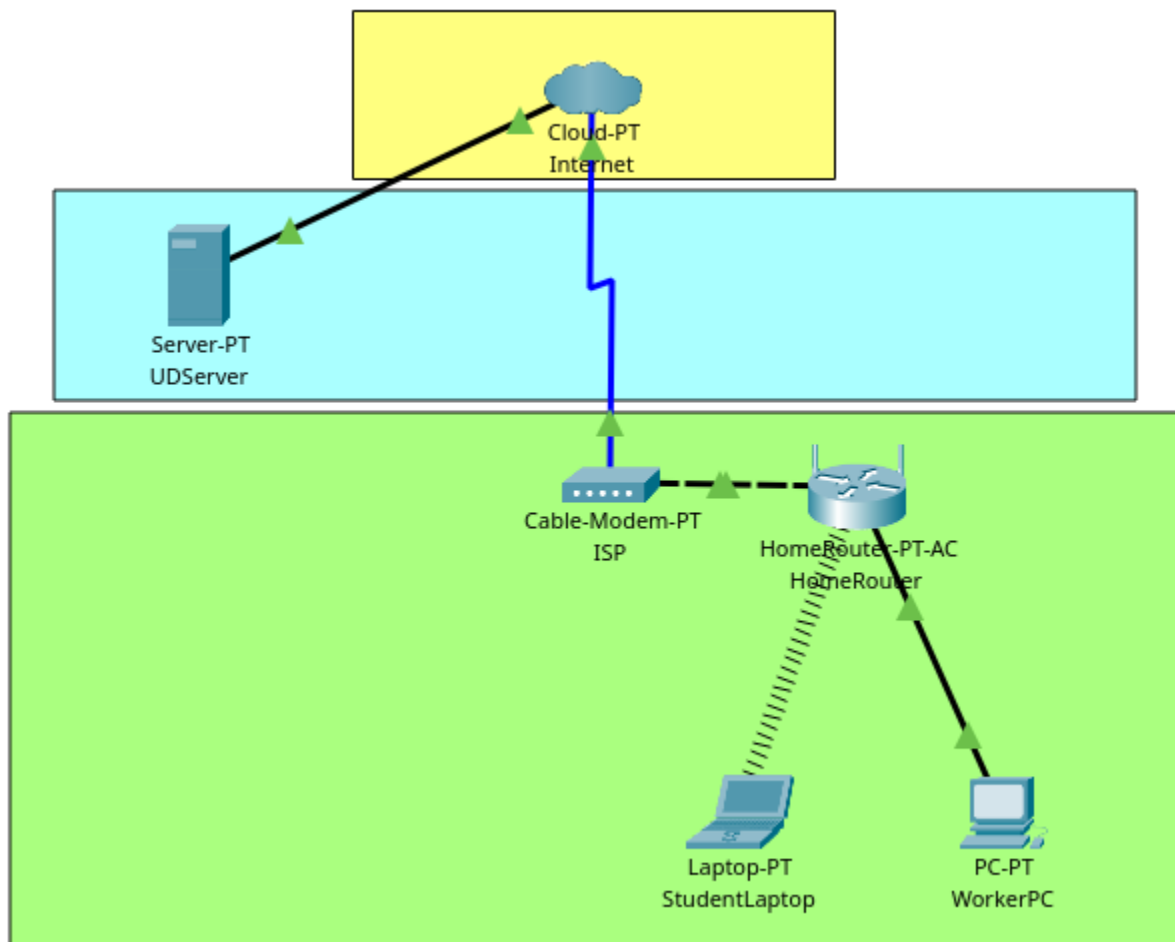
- *Network Design*



**Figure 1.**

Network design.

The network design was chosen because it was required to add a Cloud-PT, Server-PT, Cable-Modem-PT, a HomeRouter-PT-AC, a Laptop-PT and a PC-PT, and according to the 3-layer model, these devices should be organized as follows:



**Figure 2.**

Network design with layer identification.

Where the Cloud-PT belongs to in the 1<sup>st</sup> layer (core layer), the Server-PT belongs in the 2<sup>nd</sup> layer (distribution layer) and the Cable-Modem-PT, HomeRouter-PT-AC, Laptop-PT and the PC-PT belong in the 3<sup>rd</sup> layer (access layer).

- **Server**

The server configuration (IP address, submask, DNS and default gateway) was done following the instructions on the document given for this workshop. Then, for the HTTP service, all the HTML files but the index.html were deleted, then a CSS was created for the page styles and an PNG image was imported because it was used for the page.

1. Server configuration

UDServer

PhysicalConfigServicesDesktopProgrammingAttributes

IP Configuration

IP Configuration

☐ DHCP

☒ Static

IPv4 Address

193.168.100.200

Subnet Mask

255.255.255.0

Default Gateway

193.168.100.201

DNS Server

193.168.100.200

Figure 3.

Server configuration.

2. HTTP Service

HTTP

HTTP

☒ On☐ Off

HTTPS

☒ On☐ Off

File Manager

	File Name	Edit	Delete
1	Escudo_UD.png		(delete)
2	index.html	(edit)	(delete)
3	styles.css	(edit)	(delete)

Figure 4.

HTTP Service configuration.

3. DNS Service

DNS

DNS Service

☒ On☐ Off

Resource Records

Name

Type

A Record

Address

Add

Save

Remove

No.	Name	Type	Detail
0	www.udistrital.edu.co	A Record	193.168.100.200

Figure 5.

DNS Service configuration.

- **Home Router**

The Home Router was configured just as indicated on the document given. On the GUI tab, the Internet Connection in the Internet Setup was set to **Automatic Configuration – DHCP**, then the **Router IP Address** was set to **192.168.0.1** with the submask **255.255.255.0**, the **DHCP Server** was set to **Enabled** and the parameters for **Start IP Address** were also set up.

The screenshot displays the HomeRouter configuration interface. At the top, there are tabs for 'Physical', 'Config', 'GUI' (which is active), and 'Attributes'. The main content area is divided into two sections: 'Internet Setup' and 'Network Setup'.

**Internet Setup:**

- Internet Connection:** A dropdown menu is set to 'Automatic Configuration - DHCP'.
- Optional Settings (required by some):**
  - Host Name:** An empty text input field.
  - Domain Name:** An empty text input field.
  - MTU:** A dropdown menu.
  - Size:** A text input field containing '1500'.

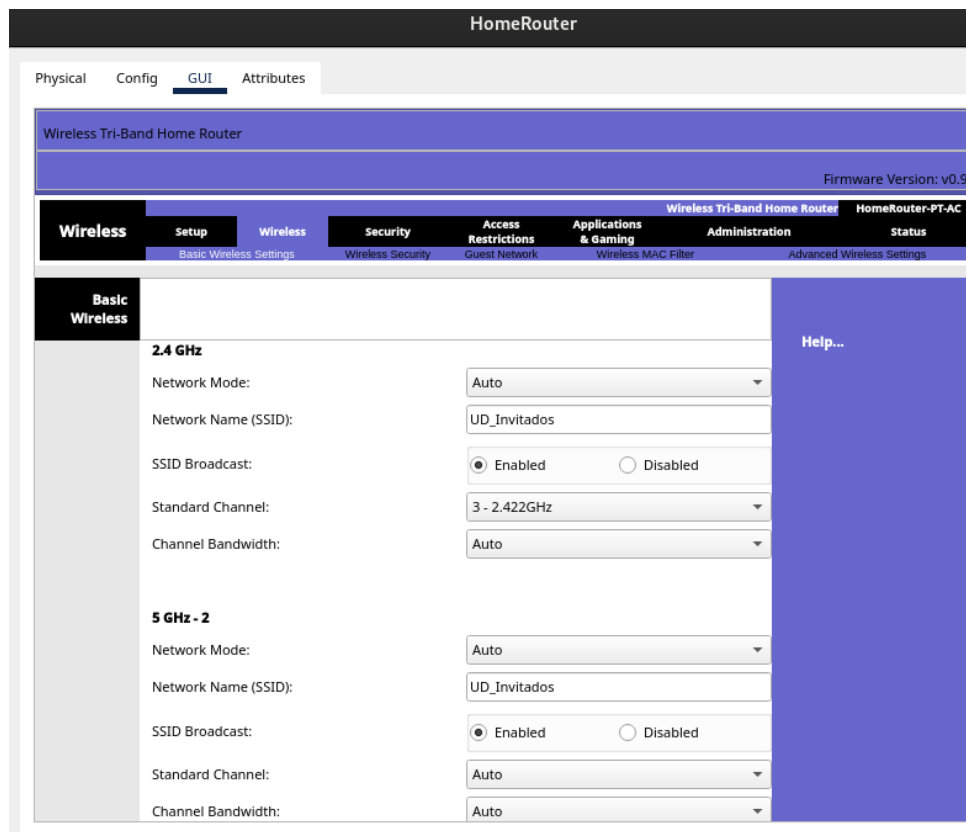
**Network Setup:**

- Router IP:**
  - IP Address:** Four input fields containing '192', '168', '0', and '1' respectively.
  - Subnet Mask:** A dropdown menu set to '255.255.255.0'.
- DHCP Server Settings:**
  - DHCP Server:** Two radio buttons, 'Enabled' (selected) and 'Disabled'.
  - DHCP Reservation:** A button.
  - Start IP Address:** Two input fields containing '192.168.0.' and '100'.
  - Maximum number of Users:** An input field containing '50'.
  - IP Address Range:** Displays '192.168.0. 100 - 149'.
  - Client Lease Time:** An input field containing '0' followed by the text 'minutes (0 means one day)'.
  - Static DNS 1:** Four input fields containing '193', '168', '100', and '200'.
  - Static DNS 2:** Four empty input fields.
  - Static DNS 3:** Four empty input fields.

**Figure 6.**

### Home Router Internet and Network Setup

The wireless configuration was also set for 2.4 GHz and 5 GHz with **network mode** on **Auto**, **network name** “UD\_Invitados” and the rest of the parameters were left by default. The rest of the parameters on the other tabs were also left just as they were.

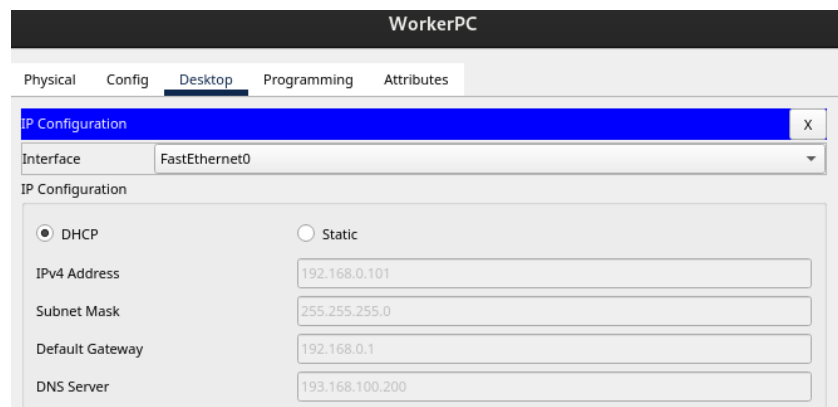


**Figure 7.**

## Home Router Wireless Setup

- **Worker PC**

The only thing that was needed for the Worker PC configuration was to enter IP Configuration on the Desktop tab and set the IP Configuration to DHCP:



**Figure 8.**

## Worker PC IP Configuration.

- **Test result**

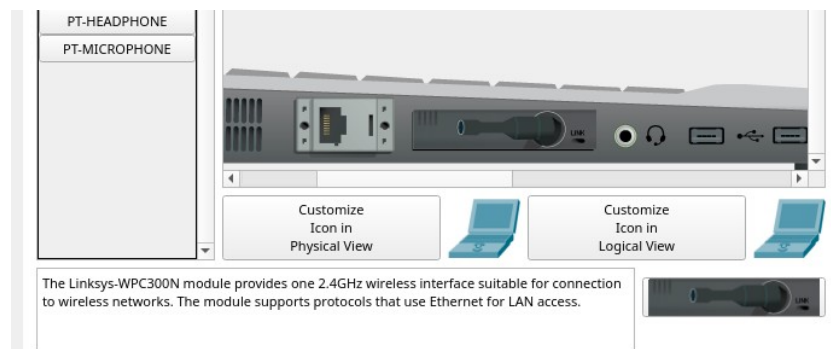


**Figure 9.**

Accessing [www.udistrital.edu.co](http://www.udistrital.edu.co) from the Worker PC.

- **Student Laptop**

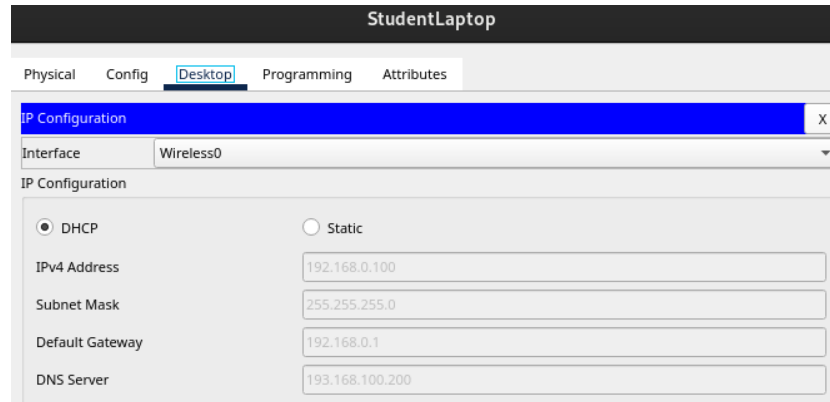
The Student Laptop needed the module for a wireless connection, so on the Physical tab, the **Linksys-WPC300N** module was selected and added to the laptop.



**Figure 10.**

Adding Linksys-WPC300N module to Student Laptop.

Once this was done, the next step was to enter the Desktop tab, then to the PC Wireless to check if the Wireless module was working and then on the IP Configuration option, set the IP Configuration to DHCP, just like it was done with the Worker PC.



**Figure 11.**

Student Laptop IP Configuration.

- **Test result**



**Figura 12.**

Accessing [www.udistrital.edu.co](http://www.udistrital.edu.co) from the Student Laptop