WORKSHOP #1

INTEGRANTE:

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Network Design and Testing Report

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1. Introduction

This report details the design and configuration of a network created using Cisco Packet Tracer. The primary goal is to design a network that supports the configuration of a server with the web page of Universidad Distrital Francisco José de Caldas and ensure that this page is accessible from a home network.

2. Network Design

Network Diagram:

Design Description:

- **Web Server:**
  - **IP:** 193.168.100.200
  - **Subnet Mask:** 255.255.255.0
  - **Gateway:** 193.168.100.1
  - **DNS:** 193.168.100.200

The web server is configured with a homepage displaying a welcome message from the university. The HTTP service is enabled and the `index.html` file is loaded.

- **Cable-Modem-PT (ISP):**
  - **Connection:** Port0 connected to Coaxial7 of the Cloud-PT.
- **HomeRouter:**
  - **LAN IP:** 192.168.0.1
  - **Subnet Mask:** 255.255.255.0
  - **SSID:** UD_Invitados

The **HomeRouter** is connected to the **Cable-Modem-PT** and provides connectivity to home devices.

- **Client Devices:**
  - **PC-PT (WorkerPC):** Configured to obtain IP automatically (DHCP).
  - **Laptop-PT (StudentLaptop):** Configured to obtain IP automatically (DHCP) and connected to the wireless network `UD_Invitados`.

3. Technical Decisions

Device Selection:

- **Web Server:**
  - A static IP was chosen for the server to ensure the address remains constant and is accessible from the external network.
- **HomeRouter and Cable-Modem-PT:**
  - Used to connect the local network with the external network (Internet) and provide access to home devices.

Service Configuration:

- **HTTP:**
  - Configured to display the `index.html` file with the university's welcome message.
- **DNS:**
  - Configured to resolve `www.udistrital.edu.co` to the server's IP.
- **DHCP:**
  - Enabled on the **HomeRouter** to automatically assign IP addresses to client devices.

HomeRouter Configuration:

- **LAN IP:** 192.168.0.1
- **Subnet Mask:** 255.255.255.0
- **SSID:** UD_Invitados

4. Testing Results

Connectivity Tests:

1. **Ping to HomeRouter:**
   - **Result:** Successful ping to 192.168.0.1 from **Laptop** and **PC**.

- `ping 192.168.0.1`

2. **Ping to Web Server:**
   - **Result:** Successful ping to 193.168.100.200 from **Laptop** and **PC**.
   - `ping 193.168.100.200`

3. **DNS Test:**
   - **Result:** `nslookup` for `www.udistrital.edu.co` should resolve to 193.168.100.200.
4. **Access to Web Page:**
   - **Result:** Successful access to the web page `www.udistrital.edu.co` from **Laptop** and **PC**.

Problems Found and Solutions:

- **Problem:** "Destination host unreachable" message when pinging external IP addresses.
  - **Solution:** Verify NAT configuration on the **HomeRouter** and routes on the **Cable-Modem-PT**.

5. Conclusions

The design and configuration of the network were successfully completed, meeting all the workshop requirements. The network allows client devices to access the university's web page through the home network. Initial connectivity issues were resolved by adjusting network configurations and verifying routes.