NPS LAB EXPERIMENT-11

Step 1: Open cisco packet tracer and drag and drop the following devices.

3-pc’s

2pt--switches

1 pt-server

Router

Step 2:

* + Click on each PC (PC0, PC1, PC2) and go to the Desktop tab.
  + Open the IP Configuration and set IP addresses manually or leave it for DHCP configuration (if you plan to configure a DHCP server).
  + Example:
    - PC0: 192.168.1.2
    - PC1: 192.168.1.3
    - PC2: 192.168.1.4
  + Set the default gateway (e.g., 192.168.1.1) to match the router's LAN interface IP.

Step 3:

**Configure Router (Router0) Interfaces**:

* + Click on the router, then go to Config or CLI.
  + Configure IP addresses for the router's interfaces connected to different networks.
    - Interface Gig0/0/0 (to Switch0): Assign IP 192.168.1.1
    - Interface Gig0/0/1 (to Switch1): Assign IP 192.168.2.1
  + Enable the interfaces by typing no shutdown in the CLI if using command-line configuration.

1. **Assign IP Address to Server (Server0)**:
   * Click on Server0 and go to the Desktop tab.
   * Open IP Configuration and assign an IP (e.g., 192.168.2.2) if manually configured.
   * Set the default gateway as the router’s IP on this network (e.g., 192.168.2.1).

Step 4:

**Configure DHCP Server on Server0**

1. **Enable DHCP**:
   * Click on Server0, go to Services > DHCP.
   * Turn on DHCP service.
   * Configure a DHCP pool with details:
     + Pool name: Network1
     + Default gateway: 192.168.1.1
     + DNS server: 192.168.2.2 (Server0’s IP)
     + IP range: Set starting and ending addresses, e.g., 192.168.1.2 to 192.168.1.254.
   * Click on Save.

Step 5:

**Configure DNS Server on Server0**

1. **Enable DNS**:
   * Go to Server0, then Services > DNS.
   * Turn on DNS service.
   * Add records for hostnames you wish to resolve, such as:
     + www.example.com pointing to the server’s IP 192.168.2.2.
   * Click on Save.

Step 6:

**Configure FTP and HTTP Servers on Server0**

1. **Enable FTP**:
   * Go to Server0, then Services > FTP.
   * Turn on FTP service.
   * Add a user with a username and password for FTP access.
2. **Enable HTTP**:
   * Go to Server0, then Services > HTTP.
   * Turn on HTTP service.
   * Optionally, you can modify the webpage content to test.

Step 7:

**Configure Syslog Server on Server0**

1. **Enable Syslog**:
   * Go to Server0, then Services > Syslog.
   * Turn on Syslog service to log messages from network devices like the router and switches.

Step 8:

**Set Up Routing on Router (Optional for Static Routes)**

1. **Static Routes (If Needed)**:
   * If you have more networks, configure static routes to reach other networks.
   * For example, on Router0 CLI:

plaintext

Copy code

ip route 192.168.2.0 255.255.255.0 <next hop IP>

**Step 7: Test Connectivity**

1. **Test DHCP**:
   * Go to each PC (PC0, PC1, PC2), open IP Configuration, and set to DHCP.
   * Verify that each PC receives an IP address in the specified range.
2. **Test DNS Resolution**:
   * On any PC, go to the Desktop tab and open the Command Prompt.
   * Use the ping www.example.com command to verify DNS resolution.
3. **Test FTP and HTTP Access**:
   * On any PC, open the web browser (in the Desktop tab).
   * Type http://192.168.2.2 to check the HTTP server.
   * Use ftp 192.168.2.2 from the Command Prompt to test FTP access.
4. **Check Syslog Logs**:
   * Any system logs from the router or switches should appear on Server0 under the Syslog tab if configured correctly.

