Computer Networking: Concepts

(CSE 3751)

Experiment 7

Aim:

Implementation of DHCP, APIPA and analysis of FTP packets using Cisco Packet Tracer

Objectives:

1. Understanding the use of Dynamic Host Control Protocol (DHCP) and Automatic Private IP Addressing (APIPA).
2. An overview on message communication between two end hosts using FTP packets.
3. Configuring a server device as DHCP server in a network that dynamically assigns IP addresses to client PCs and verifying the connectivity in the network using ***ping*** command.
4. Demonstrating the generation and verification of IP address using **APIPA**, when a host fails to obtain an IP address from a DHCP server.
5. Configuring a router (in the absence of a server) in a network that implements DHCP protocol for allocation of IP address to hosts dynamically and verifying the working of DHCP.
6. Configuring a client–server network using FTP server and analysing the message communication (packets) exchanged between the client and server.

Exercises:

1. What is DHCP snooping? What are the main advantages of using DHCP in a network?
2. Set up a network with a router and two PCs using Cisco Packet Tracer. Configure DHCP on the router with the following settings:
    a. Network Address: 192.168.100.0/24
    b. DHCP Pool: Start IP: 192.168.100.20, End IP: 192.168.10.40
    c. Default Gateway: 192.168.100.1
    d. DNS Server: 8.8.8.8
3. State the use of APIPA highlighting its advantages.What is the range of IP addresses for APIPA?Write the APIA address generated for your device in this experiment.
4. Mention true/false.
    a. FTP uses two TCP connections.
    b. FTP sends exactly one file over the data connection.
    c. FTP server is stateless.
    d. FTP is a secure protocol.