Computer Networking: Concepts

(CSE 3751)

Experiment 7

Aim:

Implementation of DHCP, APIPA and analysis of FTP & TELNET 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 and TELNET packets.
3. Implementing APIPA to generate and verify the IPv4 address for a PC connected to a network.
4. Configuring a client - server network and analysing the message communication between them using FTP and TELNET packets.

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: 192.168.10.0/24
    b. DHCP Pool: Start IP: 192.168.10.10, End IP: 192.168.10.50
    c. Default Gateway: 192.168.10.1
    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. Compare FTP and TELNET protocols in terms of functionality and security.
5. 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. Telnet is a general-purpose client-server program
    e. Telnet can be used for file transfer
    f. Telnet is used to establish a connection to TCP port number 23.