

# Assignment - 4

Title: DHCP Server

Problem Statement:

Write a program to install and configure DHCP server & software on a remote machine.

Objectives:

- To install and configure a DHCP server.

Outcomes:

- We will be able to configure a DHCP server.

Requirements:

Linux, Wireshark packet analyzer.

Theory:

DHCP stands for Dynamic Host Configuration Protocol. It is a standardized network protocol used on IP network for dynamically distributing network configuration parameters such as IP addresses for interfaces and services. DHCP server assigns IP addresses automatically to the clients.

The & DHCP is standard network service

that enables host computers to be automatically assigned settings from server as opposed to manually to every single machine in the network.

DHCP is apt for system as network administrator who is managing thousands of systems. Computers configured to DHCP clients have no control over the settings they receive from the DHCP server and configuration is transport to computer's user.

The most known common settings provided by the DHCP server includes:

- IP address and network
- IP address of the default gateway to use
- IP address of DNS server to use
- Host name
- Domain name
- Time server
- Print server

The DHCP server can provide configuration settings using the fol. methods:

### 1. MAC (Manual Allocation):

This method entails using DHCP to identify the unique hardware address of each network card connected to the network and then continually supplying a constant configuration each time and the DHCP client make a request the DHCP server using that network device.

### 2. Dynamic Allocation:

In this method, the DHCP server will assign an IP address from pool of addresses for a period of time or lease, that is configured on the server until the client informs the server that it does not need the address anymore. This way, the clients will be receiving their configuration properties dynamically on a first come first serve basis.

### 3. Automatic Allocation:

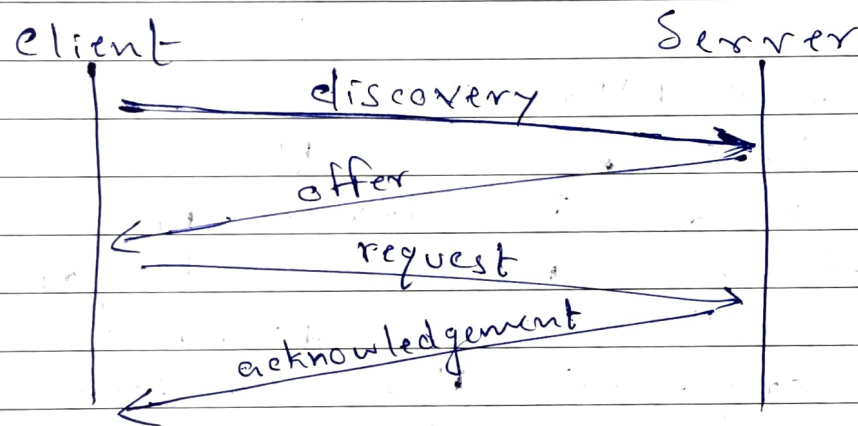
Using this method the DHCP automatically assigns the IP address permanently to a device, selecting from a pool of available addresses usually is used to assign a temporary address to a



a client. :

The last 2 methods can be considered automatically because the DHCP server assigns an address with no extra information needed.

Diagrammatically :



Conclusion:

Therefore we have successfully learnt and configured DHCP server and installed a software on a remote machine.