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Lab Assignment - 10

Title: DHCP, DNS and Web server Configuration

Aim: Configure networks using Dynamic Host Configuration Protocol (DHCP) and web server. Use ping utility to test connectivity

Objectives: 1) To learn the DHCP installation and understand the practical use of DHCP, DNS and Web Server.
2) To learn the mechanism to access the remote machine by using ping utility to test connectivity.

Theory:-

1) Dynamic Host Configuration Protocol (DHCP)

⇒ DHCP is a client/server protocol that automatically provides an Internet Protocol host with its IP address and other related configuration information such as the subnet mask and default gateway.

2) The need of DHCP:

⇒ DHCP reduces the chances of common errors occuring when IP addresses are assigned manually. It also ensures no two host can have same IP addresses. DHCP plays an important role in managing small networks where mobile devices are used and require IP addresses on a non-permanent basis.

3) DHCP Message format:

⇒ It is based on BOOTP message format although DHCP uses some of the fields in significantly different ways. The numbers in parenthesis indicates the size of each field in bytes.

4) DHCP operations:

⟹ It falls into four phases: server discovery, IP lease offer, IP lease request, and IP lease acknowledgement. These stages are often abbreviated as DORA for discovery, offer request and acknowledgement.

5) DNS and Email server:

⟹ An email address is matched to a domain name and this needs to be matched to an IP address to be able to send the data. So the mail server uses DNS to match the address on the 'envelope' to its destination and deliver the email.

Students Observation:

Thus, we have configured network using DHCP, DNS and Web Server use Ping Utility to test connectivity.

FAQ's

Ans 1) First, click on your start menu and type command prompt and press enter. A window will open where you type: "ipconfig /all" and press enter. Your ipv4 address is the IP address.

Ans 2) Either a static or dynamic IP address is assigned to a device when it connects to internet. This goes same way when we host dedicated server.

Ans 3) A public IP address identifies you to the wider internet so that all the information you are searching for can find you. A private IP address is used within a private network to connect securely to other devices within that same network.

Public = 1 to 191, Private: class A: 10.0.0.0 to 10.255.255.255

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Ans 4) DNS is an internet service that translates domain names into IP addresses. DHCP is a protocol for automatically assigning IP addresses and other configuration to devices when they connect to a network.