**Exp: no: 1**

**Department of Computer Science and Engineering U18CSI5201Computer Networks Laboratory**

**Reg: no:22BCS308**

Demonstrate the working of network tools such as Ping, TCP Dump, Traceroute, Netstat. [Write the syntax, execute and place the screenshot for all the commands you work.]

**Aim:**

* Demonstrate the different *ipconfig* commands used to explore a system’s IP address.

*Sol:*

a)Name of the command: ipconfig

Ipconfig (standing for "Internet Protocol configuration") is a console application program of some computer operating systems that displays all current TCP/IP network configuration values and refreshes Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS) settings.



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**b) To identify all the ip address**

Name of the command: ipconfig/all

This will show all the information about your network adapter: Physical Address: This is the MAC address of your network adapter. DHCP Enabled: Indicates if the network connection is using DHCP or Static IP Address.



**c) To reset the ip address**

Name of the command: ipconfig/release

First, ipconfig /release is executed to force the client to immediately give up its lease by sending the server a DHCP release notification which updates the server's status information and marks the old client's IP address as "available". Then, the command ipconfig /renew is executed to request a new IP address.



Name of the command: ipconfig/renew

The ipconfig /renew command is used in Windows operating systems to renew the DHCP (Dynamic Host Configuration Protocol) lease of the network adapter. This command essentially tells your computer to request a new IP address from the DHCP server, which can be useful for resolving network connectivity issues.



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* Write the use of *ping* command and show the any 5 variants of the command.

*Sol:*

Uses of ping command:

* **Check Network Connectivity**:
* You can use the ping command to see if a particular host is reachable. For example, ping google.com will send packets to Google's servers and report if they are reachable.
* **Measure Latency**:
* The command measures the time it takes for packets to travel to the destination and back. This is useful for determining the latency or delay in your network.
* **Diagnose Network Issues**:
* ping can help identify where a network issue may be occurring. If you can ping your router but not an external website, the issue might be with your internet service provider.
* **Verify Network Configuration**:
* After configuring network settings, you can use ping to ensure that the configuration is correct and the network is operational.

**5 Variants of the command:**

* Google:



* YouTube:



* Amazon:



* Flip kart:

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* Whatsapp:



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* Write the use of *tcpdump(windump)* command execute the following commands.
* windump -i 1
* windump -i 1 port 80
* windump -i 1 -w C:\net\fcap.pcap Sol:

**Use of tcpdump (windump):**Tcpdump is also available for Windows where it is called WinDump. Tcpdump is commonly used on UNIX-based firewalls as a troubleshooting utility. Tcpdump allows you to filter and capture live network traffic in real time.

a)



b)



c)



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* Write the use of traceroute command and show any 5 variants of the command.

USE OF TRACEROUTE COMMAND

The traceroute command is a network diagnostic tool used to track the pathway packets take from one computer to another over an IP network. It identifies each hop along the route to the destination and measures the time it takes for the packet to travel from one hop to the next. This helps in diagnosing network issues and understanding the network topology.

VARIANTS OF COMMAND









