VASAVI COLLEGE OF ENGINEERING
(AUTONOMOUS)
(Affiliated to Osmania University)
Hyderabad - 500 031.

DEPARTMENT OF : CSE

NAME OF THE LABORATORY : ~~HM~~ CN

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→ Understanding the basic commands: WEEK-1

1) **if config**: Interface Configuration

This command will display information about your network interfaces; including their IP addresses, MAC addresses and other network details.

2) **ipconfig**:

This command is used to display the configuration of a computer's network interfaces, including IP addresses, subnet masks, default gateways etc.

3) **netstat**: Network Statistics

'netstat' is a command-line network utility available on most Unix-like and Windows Os.
It provides a variety of information and statistics about network connections, routing tables etc.

4) **ping**: Packet Internet Groper.
Used to test the reachability and round trip time of a network host using ICMP packets.

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5) **arp:** **Address Resolution Protocol:**

Primary purpose is to map an IP (Internet Protocol) address to a corresponding physical MAC address on a network.

6) **telnet:** Telecommunication Network.

allows you to establish a remote connection to another device or computer over a network typically the internet.

7) **tftp:** Trivial file transfer protocol:

Simplified version of FTP and is designed for simplicity and minimal resource usage. Used when basic file transfer service is needed. Such as network device configuration and bootstrapping processes.

8) **ftp:** **File Transfer Protocol:**

Used for transferring data/files between a client and a server. Operates on application layer of OSI model.

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9) **nslookup**: Name Server lookup

Commandline tool and network utility used in computer networks to query Domain Name System servers to obtain information about domain names or IP addresses.

10) **dig**: Domain Information Groper.

Used for querying DNS servers to retrieve information about domain names; such as IP addresses etc.

1. ipconfig

```
 Connection-specific DNS Suffix  . : Dlink
 IPv6 Address. . . . . . . . . . . : fd01::4780:7b43:4b99:32db
 Temporary IPv6 Address. . . . . . : fd01::29d4:b9dc:e615:f97b
 Link-local IPv6 Address . . . . . : fe80::2518:ecd5:f3df:e179%16
 IPv4 Address. . . . . . . . . . . : 192.168.0.144
 Subnet Mask . . . . . . . . . . . : 255.255.255.0
 Default Gateway . . . . . . . . . : 192.168.0.1
```

2. netstat

```
Active Connections

 Proto  Local Address          Foreign Address        State
 TCP    192.168.0.144:49424    20.198.119.143:https   ESTABLISHED
 TCP    192.168.0.144:56090    52.123.253.109:https   ESTABLISHED
 TCP    192.168.0.144:56680    52.182.141.63:https    TIME_WAIT
 TCP    192.168.0.144:56683    52.182.141.63:https    TIME_WAIT
 TCP    192.168.0.144:56685    a23-44-10-75:https     ESTABLISHED
 TCP    192.168.0.144:56687    52.109.124.112:https   TIME_WAIT
 TCP    192.168.0.144:56689    144.2.12.25:https      ESTABLISHED
 TCP    192.168.0.144:56690    152.195.38.76:http     ESTABLISHED
 TCP    192.168.0.144:56696    40.99.71.210:https     TIME_WAIT
 TCP    192.168.0.144:56707    104.18.37.228:https    TIME_WAIT
 TCP    192.168.0.144:56708    181:https              TIME_WAIT
 TCP    192.168.0.144:56709    ec2-44-209-16-165:https  TIME_WAIT
 TCP    192.168.0.144:56710    ec2-44-209-16-165:https  TIME_WAIT
 TCP    192.168.0.144:56712    maa05s20-in-f14:https  TIME_WAIT
 TCP    192.168.0.144:56714    maa03s29-in-f3:https   TIME_WAIT
 TCP    192.168.0.144:56715    maa03s28-in-f14:https  TIME_WAIT
 TCP    192.168.0.144:56716    20.189.173.9:https     ESTABLISHED
 TCP    192.168.0.144:56717    maa05s25-in-f14:https  TIME_WAIT
 TCP    192.168.0.144:56718    40.99.71.210:https     ESTABLISHED
 TCP    192.168.0.144:56719    52.182.141.63:https    ESTABLISHED
 TCP    192.168.0.144:56720    52.182.141.63:https    ESTABLISHED
 TCP    192.168.0.144:56721    52.182.141.63:https    ESTABLISHED
 TCP    192.168.0.144:56722    52.168.117.168:https   ESTABLISHED
 TCP    192.168.0.144:56723    52.123.170.33:https    TIME_WAIT
 TCP    192.168.0.144:56727    maa05s25-in-f14:https  TIME_WAIT
 TCP    192.168.0.144:56728    maa05s24-in-f14:https  TIME_WAIT
 TCP    192.168.0.144:56729    maa03s45-in-f13:https  TIME_WAIT
 TCP    192.168.0.144:56730    maa03s45-in-f13:https  TIME_WAIT
 TCP    192.168.0.144:56731    maa03s29-in-f3:https   TIME_WAIT
 TCP    192.168.0.144:56732    a104-95-97-43:https    ESTABLISHED
 TCP    192.168.0.144:56733    1drv:https             ESTABLISHED
 TCP    192.168.0.144:56734    static:https           TIME_WAIT
 TCP    192.168.0.144:56736    maa05s25-in-f14:https  TIME_WAIT
 TCP    192.168.0.144:63662    40.99.34.210:https     ESTABLISHED
 TCP    192.168.0.144:63899    20.198.118.190:https   ESTABLISHED
 TCP    192.168.0.144:63935    20.198.118.190:https   ESTABLISHED
 TCP    192.168.0.144:63977    196:7500               ESTABLISHED
 TCP    192.168.0.144:64045    52.114.15.120:https    ESTABLISHED
 TCP    192.168.0.144:64052    52.114.44.79:https     ESTABLISHED
 TCP    192.168.0.144:64078    sc-in-f188:5228        ESTABLISHED
```

3. ping

```
C:\Users\ksisi>ping google.com

Pinging google.com [142.250.196.14] with 32 bytes of data:
Reply from 142.250.196.14: bytes=32 time=14ms TTL=57
Reply from 142.250.196.14: bytes=32 time=14ms TTL=57
Reply from 142.250.196.14: bytes=32 time=14ms TTL=57
Reply from 142.250.196.14: bytes=32 time=13ms TTL=57

Ping statistics for 142.250.196.14:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 13ms, Maximum = 14ms, Average = 13ms
```

4. arp –a

```
C:\Users\ksisi>arp -a

Interface: 192.168.0.144 --- 0x10
  Internet Address      Physical Address      Type
  192.168.0.1           e0-1c-fc-10-b5-f9     dynamic
  192.168.0.120         f6-c5-d2-b7-56-73     dynamic
  192.168.0.255         ff-ff-ff-ff-ff-ff     static
  224.0.0.2             01-00-5e-00-00-02     static
  224.0.0.22            01-00-5e-00-00-16     static
  224.0.0.251           01-00-5e-00-00-fb     static
  224.0.0.252           01-00-5e-00-00-fc     static
  224.0.2.3             01-00-5e-00-02-03     static
  228.8.8.8             01-00-5e-08-08-08     static
  239.255.255.250       01-00-5e-7f-ff-fa     static
  239.255.255.253       01-00-5e-7f-ff-fd     static
  255.255.255.255       ff-ff-ff-ff-ff-ff     static
```

5. nslookup

```
C:\Users\ksisi>nslookup google.com
Server:   UnKnown
Address:  fe80::e21c:fcff:fe10:b5f9

Non-authoritative answer:
Name:     google.com
Addresses: 2404:6800:4007:829::200e
          142.250.195.238
```