

Ex:1

Study of various network command Used in Linux and Windows

AIM:

To Study of various Network command used in Linux and Windows.

Basic Network Commands:

1. **arp -a:-** ARP is short form of address resolution protocol, It will show the IP address of your computer along with the IP address and MAC address of your router.
2. **hostname:** This is the simplest of all TCP/IP commands. It simply displays the name of your computer.
3. **mtr:** MTR (Matt's traceroute) is a program with a command-line interface that serves as a network diagnostic and troubleshooting tool. This command combines the functionality of the ping and traceroute commands. Just like a traceroute, the mtr command will show the route from a computer to a specified host. mtr provides a lot of statistics about each hop, such as response time and percentage. With the mtr command, you will get more information about the route and be able to see problematic devices along the way. If you see a sudden increase in response time or packet loss, then obviously, there is a bad link somewhere.

The syntax of the command is as follows:

mtr <options> hostname/IP

4. **ping:** Ping is a tool that verifies IP-level connectivity to another TCP/IP computer by sending Internet Control Message Protocol (ICMP) Echo Request messages. The receipt of corresponding Echo Reply messages is displayed, along with round-trip times. Ping is the primary TCP/IP command used to troubleshoot connectivity, reachability, and name resolution.

```
[root@server ~]# ping google.com
```

```
PING google.com (216.58.206.174) 56(84) bytes of data.
```

```
64 bytes from sof02s27-in-f14.1e100.net (216.58.206.174): icmp_seq=2  
ttl=56 time=10.2ms
```

```
64 bytes from sof02s27-in-f14.1e100.net (216.58.206.174): icmp_seq=3  
ttl=56 time=10.4ms
```

You need to stop the ping command by pressing CTRL+C. Otherwise, it will ping until you stop it. If you want to ping a host ten times, use the following command:
`[root@server ~]# ping -c 10 google.com`

Configuring an Ethernet connection by using nmcli:

If you connect a host to the network over Ethernet, you can manage the connection's

settings on the command line by using the nmcli utility.

Procedure

1. List the NetworkManager connection profiles:

`nmcli connection show`

NAME	UUID	TYPE	DEVICE
Wired connection 1	a5eb6490-cc20-3668-81f8-0314a27f3f75	ethernet	enp1s0

2. `nmcli connection add con-name <connection-name> ifname <device-name> type ethernet`

Skip this step to modify an existing profile.

3. Optional: Rename the connection profile:

`nmcli connection modify "Wired connection 1"`

Here, "Wired connection 1" is the name of the connection

4. Display the current settings of the connection profile:

`nmcli connection show`

`connection.interface-name: enp1s0`

`connection.autoconnect: yes`

`ipv4.method: auto`

`ipv6.method: auto`

...

5. Configure the IPv4 settings:

- ☐ To use DHCP, enter:

`nmcli connection modify "Wired connection 1" ipv4.method auto`

Skip this step if `ipv4.method` is already set to `auto` (default).

- ☐ To set a static IPv4 address, network mask, default gateway, DNS servers, and search domain, enter:

`nmcli connection modify "Wired connection 1" ipv4.method manual`

`ipv4.addresses 192.0.2.1/24 ipv4.gateway 192.0.2.254 ipv4.dns 192.0.2.200`

`ipv4.dns-search example.com`

6. Configure the IPv6 settings:

- ☐ To use stateless address autoconfiguration (SLAAC), enter:

`nmcli connection modify "Wired connection 1" ipv6.method auto`
Skip this step if ipv6.method is already set to auto (default).

RESULT:

Study of various network commands Used in Linux and Windows has been verified.