ASSIGNMENT
ON
NETWORKING & SYSTEM ADMINISTRATION LAB

SUBMITTED TO,

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ROLL NO - 13

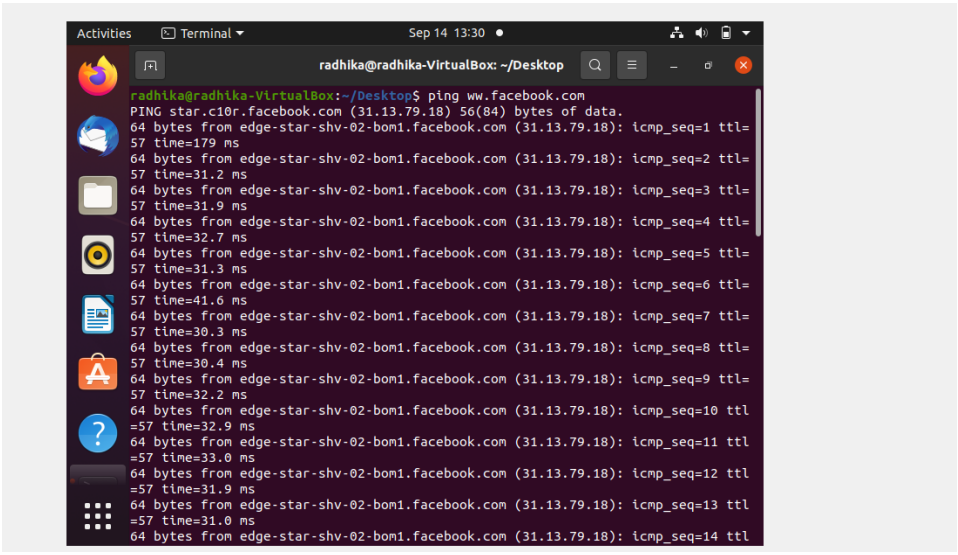
RMCA-B S2

Q1. Ping, route, traceroute,nslookup, IpConfig, NetStat

LINUX

1. Ping

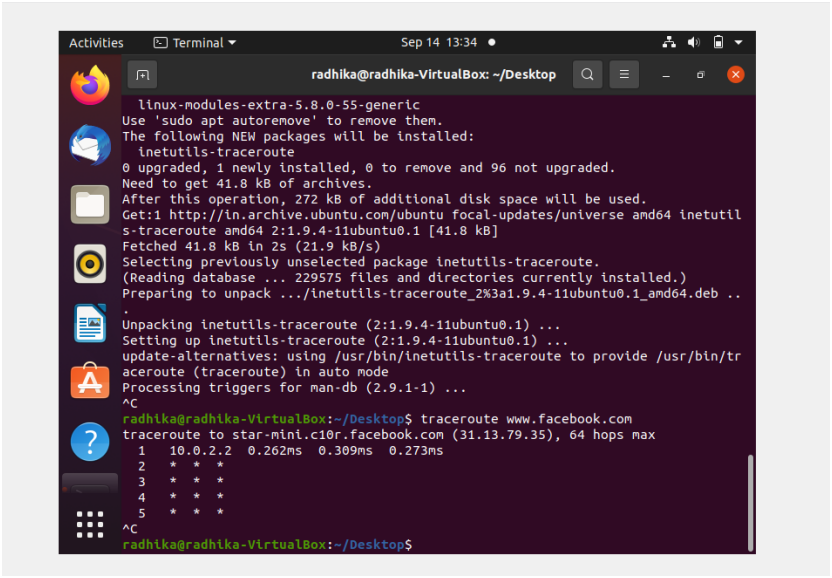
ping is the primary TCP/IP command used to troubleshoot connectivity, reachability, and name resolution. Used without parameters, this command displays Help content.



2. Traceroute

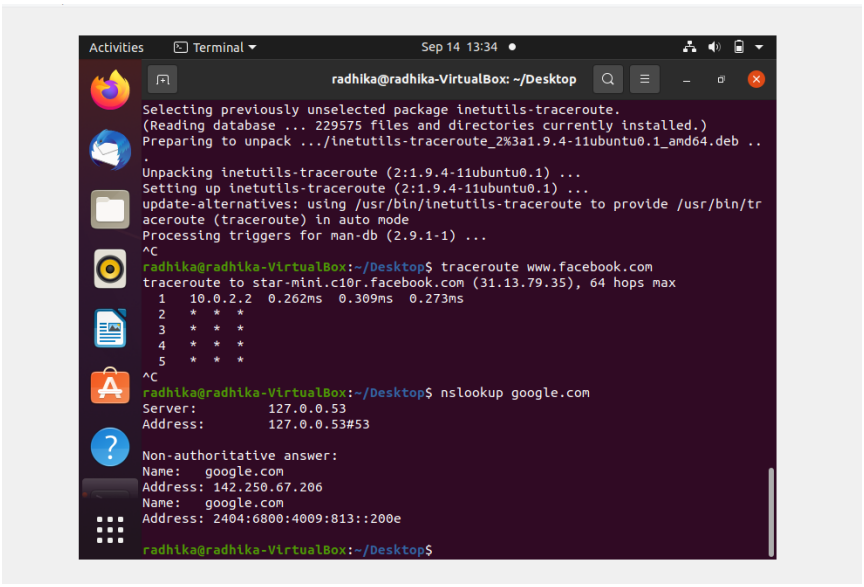
Traceroute is a network diagnostic tool used to track in real-time the pathway taken by a packet on an IP network from source to destination, reporting the IP addresses of all the routers it pinged in between. Traceroute also records the time taken for each hop the packet makes during its route to the destination.

The difference between **tracert(windows)** and **traceroute(linux)** is that:
tracert(windows) will only use ICMP echo requests. traceroute(linux) [and somewhat dependent on linux distro] default to UDP echo requests.



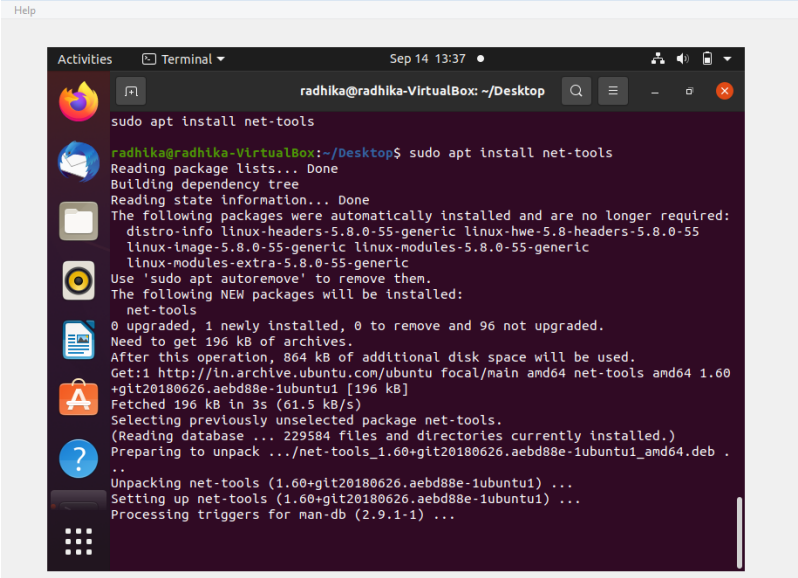
3. Nslookup

Nslookup (stands for “Name Server Lookup”) is a **useful command for getting information from DNS server**. It is a network administration tool for querying the Domain Name System (DNS) to obtain domain name or IP address mapping or any other specific DNS record.



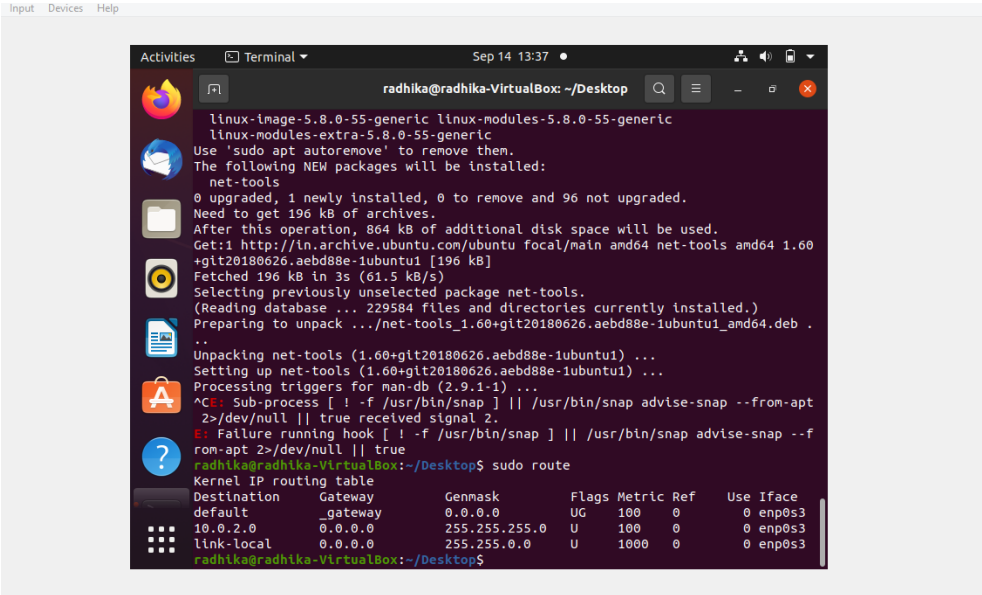
4. netstat -l

The netstat command symbolically **displays the contents of various network-related data structures for active connections**. The Interval parameter, which is specified in seconds, continuously displays information regarding packet traffic on the configured network interfaces.



5. route

The route command allows **you to make manual entries into the network routing tables**. The route command distinguishes between routes to hosts and routes to networks by interpreting the network address of the Destination variable, which can be specified either by symbolic name or numeric address.

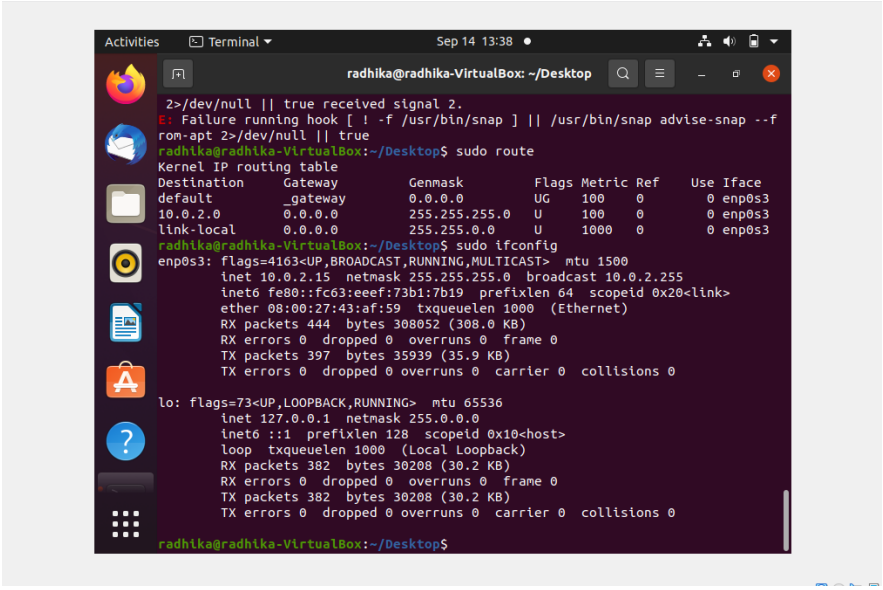


6.ipconfig

- 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.

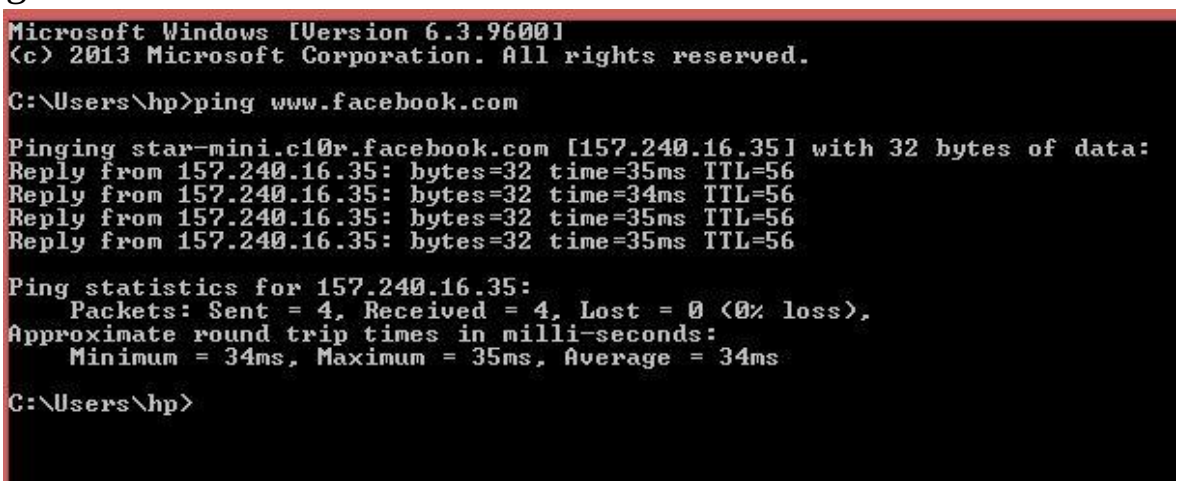
- Ifconfig(interface configuration) command is used to configure the kernel-resident network interfaces. It is used at the boot time to set up the interfaces as necessary. After that, it is usually used when needed during debugging or when you need system tuning. Also, this command is used to assign the IP address and netmask to an interface or to enable or disable a given interface.

- The ifconfig command is supported by Unix-based operating systems. Functionality: The ipconfig command **displays all the currently connected network interfaces whether they are active or not**. On the other hand, the ifconfig command displays only the enabled network interfaces that are connected to the system.

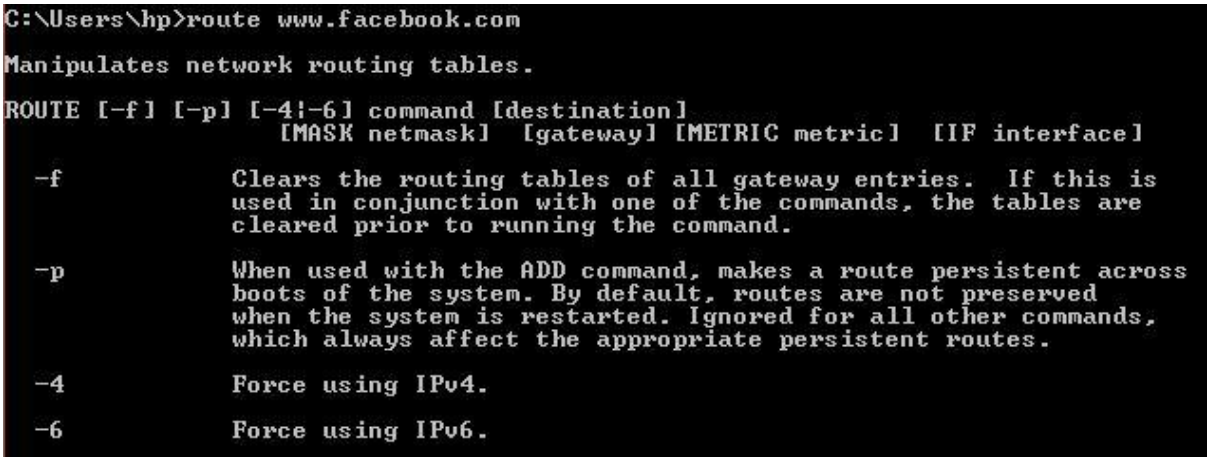


WINDOWS

1. ping

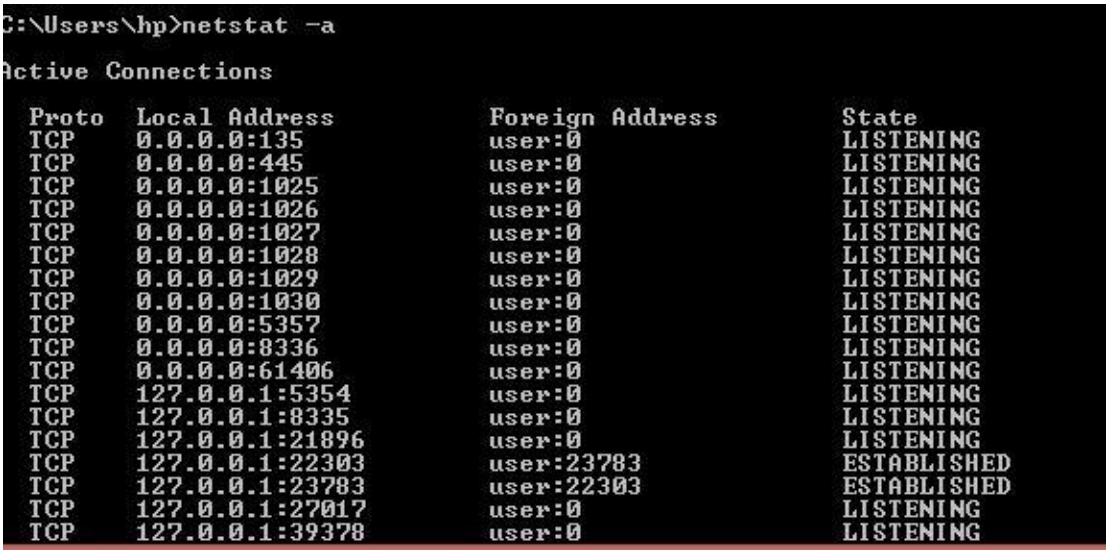


2. route

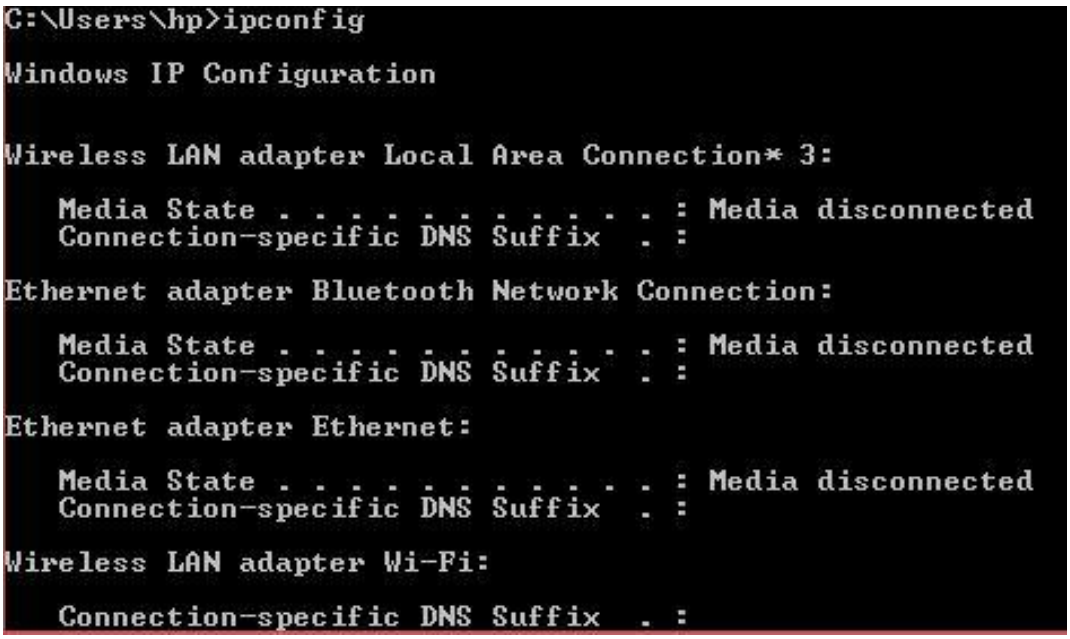


3.tracert

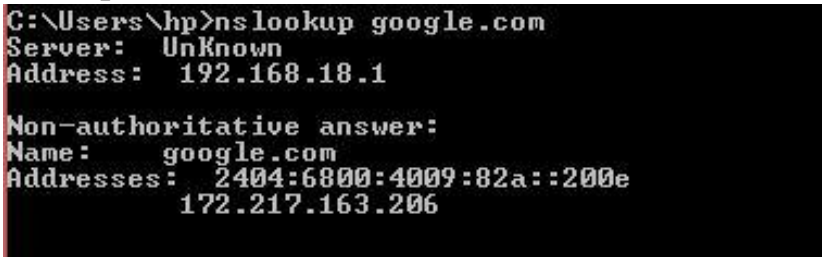
4.netstat



5.ipconfig



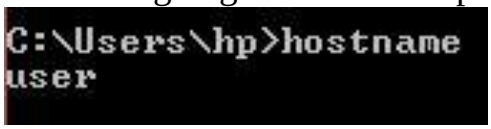
6. nslookup



Q2. Identify and perform 5 more network commands

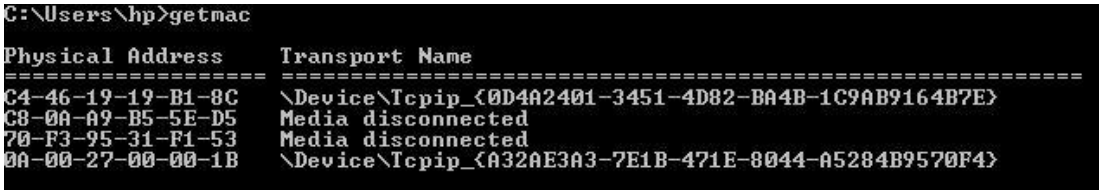
1. hostname

   A very simple command that displays the host name of your machine. This is much quicker than going to the control panel>system route.



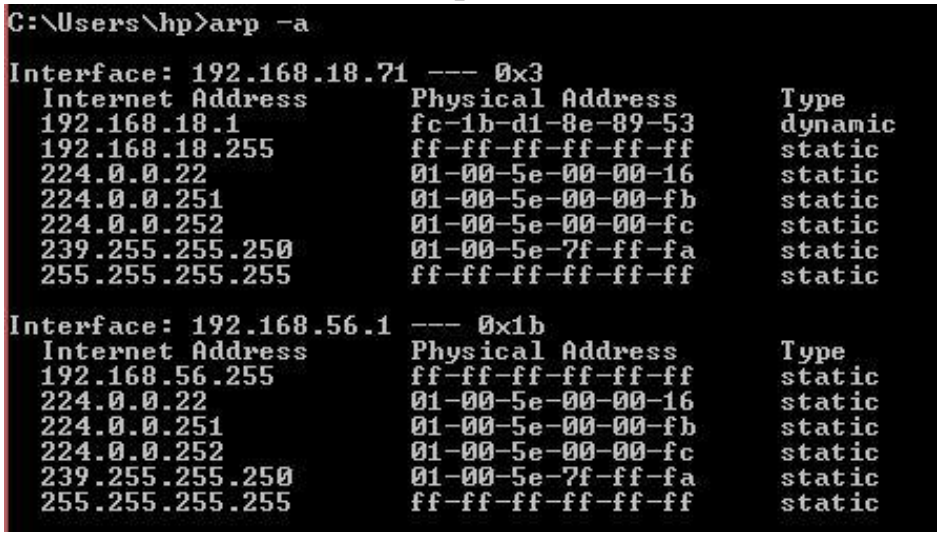
2. getmac

   Another very simple command that shows the MAC address of your network interfaces.



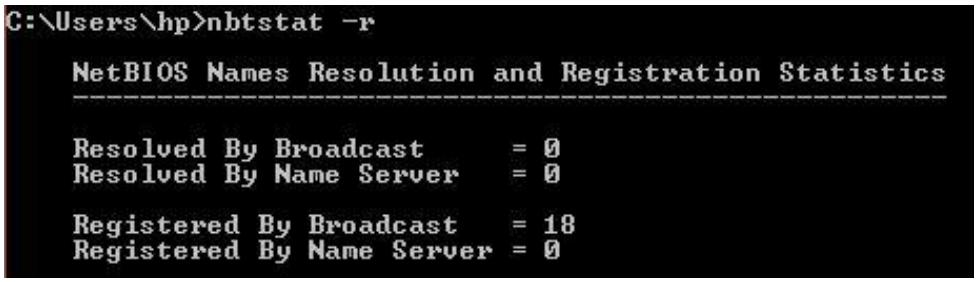
3. arp

   This is used for showing the **address resolution cache**. This command must be used with a command line switch **arp -a** is the most common.



4. nbtstat

The nbtstat command is **a diagnostic tool for NetBIOS over TCP/IP**. Its primary design is to help troubleshoot NetBIOS name resolution problems. The command is included in several versions of Microsoft Windows. ... When a network is functioning normally, NetBIOS over TCP/IP (NetBT) resolves NetBIOS names to IP addresses.



5.path ping

The pathping command which provides a combination of the best aspects of Tracert and Ping. This command takes 300 seconds to gather statistics and then returns reports on latency and packet loss statistics at intermediate hops between the source and the target in more detail than those reports provided by Ping or Tracert commands.