**G. H. RAISONI COLLEGE OF ENGG., NAGPUR**

**(An Autonomous Institute)**

**Department of Computer Science & Engg.**



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**Practical Details: Practical Number-3;**

| Practical Aim | To Test and Study the basic network and Network Configuration Commands |
| --- | --- |
| Theory & Syntax | 1. Ping  Ping is used to testing a network host capacity to interact with another host. Just enter the command Ping, followed by the target host’s name or IP address. The ping utilities seem to be the most common network tool. This is performed by using the Internet Control Message Protocol, which allows the echo packet to be sent to the destination host and a listening mechanism. If the destination host reply to the requesting host, that means the host is reachable. This utility usually gives a basic image of where there may be a specific networking issue.  target :-This is the destination IP address or a hostname user want to ping.  -a :-This option resolves the hostname of an IP address target.  -t :-This ping command option will ping the target until you stop it by pressing Ctrl-C.  -n count :-This option is used to set the number of ICMP Echo Requests to send, from 1 to 4294967295. If -n is not specified, the ping command will return 4 by default.  -l size :-This option is used to set the size, in bytes, of the echo-request packet from 32 to 65,527. If the -l option is not specified, the ping command will send a 32-byte echo request.  -s count :-This option is used to report the time in the Internet Timestamp format that each echo request is received and an echo reply is sent. The maximum count value is 4, i.e. only the first four hops can be time stamped.  -r count //  -i TTL :-This ping command option sets the Time to Live (TTL) value; the maximum value is 255.  -p :-To ping a Hyper-V Network Virtualization provider address.  -S srcaddr :-This option is used to specify the source address.  2. NetStat  Netstat is a Common TCP – IP networking command-line method present in most Windows, Linux, UNIX, and other operating systems. The netstat provides the statistics and information in the use of the current TCP-IP Connection network about the protocol.  3. Ip Config  The command IP config will display basic details about the device’s IP address configuration. Just type IP config in the Windows prompt and the IP, subnet mask and default gateway that the current device will be presented. If you have to see full information, then type on command prompt config-all and then you will see full information. There are also choices to assist you in resolving DNS and DHCP issues.  4. Hostname  To communicate with each and other, the computer needs a unique address. A hostname can be alphabetic or alphanumeric and contain specific symbols used specifically to define a specific node or device in the network. For example, a hostname should have a domain name (TLD) of the top-level and a distance between one and 63 characters when used in a domain name system (DNS) or on the Internet  5. Tracert  The tracert command is a Command Prompt command which is used to get the network packet being sent and received and the number of hops required for that packet to reach to target. This command can also be referred to as a traceroute. It provides several details about the path that a packet takes from the source to the specified destination.  6. Nslookup  The Nslookup, which stands for name server lookup command, is a network utility command used to obtain information about internet servers. It provides name server information for the DNS (Domain Name System), i.e. the default DNS server’s name and IP Address.  8. ARP  ARP stands for Address Resolution Protocol. Although network communications can readily be thought of as an IP address, the packet delivery depends ultimately on the media access control (MAC). This is where the protocol for address resolution comes into effect. You can add the remote host IP address, which is an arp -a command, in case you have issues to communicate with a given host. The ARP command provides information like Address, Flags, Mask, IFace, Hardware Type, Hardware Address, etc.  9. Path Ping  We discussed the Ping command and the Tracert command. There are similarities between these commands. The pathping command which provides a combination of the best aspects of Tracert and Ping. |
| Program | C:\Users\anand>ping 8.8.8.8  C:\Users\anand>netstat  C:\Users\anand>ipconfig  C:\Users\anand>nslookup  C:\Users\anand>route |
| Output |  |
| Conclusion | learned some basic networking and configuration commands. |