Network Commands

For more information on the use of these commands, append /? to the command name in question. For example, entering ping /? Will provide more information on the ping command.

1. HOSTNAME:-
Displays the host name of the computer currently logged into

2. GETMAC:-
Lists the MAC (Media Access Control) Address on the computer network interfaces; available in Windows XP only

4. NSLOOKUP :- "Name Server Lookup"
Enables a user to do a reverse lookup on an IP address of a domain or host on a network.
Syntax:
nslookup {hostname}
Find out the DNS name resolves to an IP - a way to test your DNS server
Example: nslookup techflock.blogspot.com

5. ARP:-
Displays or manipulates the ARP information on a network device or computer
Displays and modifies the IP-to-Physical address translation tables used by Address Resolution Protocol (ARP)

ARP -s inet_addr eth_addr [if_addr]
ARP -d inet_addr [if_addr]
ARP -a [inet_addr] [-N if_addr]

Option	Description
-a	Displays current ARP entries by interrogating the current protocol data. If inet_addr is specified, the IP and Physical addresses for only the specified computer are displayed. If more than one network interface uses ARP, entries for each ARP table are displayed.
-g	Same as –a
inet_addr	Specifies an internet address
-N	if_addr Displays the ARP entries for the network interface specified by if_addr
-d	Deletes the host specified by inet_addr. inet_addr may be wildcarded with * to delete all hosts
-s	Adds the host and associates the Internet address inet_addr with the Physical address eth_addr. The Physical address is given as 6 hexadecimal bytes separated by hyphens. The entry is permanent
eth_addr	Specifies a physical address
if_addr	If present, this specifies the Internet address of the interface whose address

	translation table should be modified. If not present, the first applicable interface will be used

Example:
```
> arp -s 157.55.85.212   00-aa-00-62-c6-09        Adds a static entry.
> arp -a                                          Displays the arp table.
```

6. IPCONFIG:-

Shows IP address, subnet mask, default gateway, your network interfaces, transferred and received data information, the network settings currently assigned and given by a network

This command can be utilized to verify a network connection as well as to verify your network settings.

Option	Description
/?	Display this help message
/all	Display full configuration information
/release	Release the IP address for the specified adapter
/renew	Renew the IP address for the specified adapter
/flushdns	Purges the DNS Resolver cache
/registerdns	Refreshes all DHCP leases and re-registers DNS names
/displaydns	Display the contents of the DNS Resolver Cache
/showclassid	Displays all the dhcp class IDs allowed for adapter
/setclassid	Modifies the dhcp class id

7. PING :-

Packet Internet Groper - sends a packet an address to test if address is accessible
The ping command sends echo requests to the host you specify on the command line, and lists the responses received their round trip time. It checks whether your internet connection is alive or lost. Ping allows a user to ping another network IP address. This can help determine if the network is able to communicate with the network.

ping ip or host_name
To stop ping (otherwise it goes forever) use CTRL-C (break)

Option	Description
-t	Pings the specified host until stopped. To see statistics and continue - type Control-Break; To stop - type Control-C
-a	Resolve addresses to hostnames.
-n count	Number of echo requests to send.
-l size	Send buffer size.
-f	Set Don't Fragment flag in packet.
-i TTL	Time To Live.
-v TOS	Type Of Service.
-r count	Record route for count hops.
-s count	Timestamp for count hops.
-j host-list	Loose source route along host-list.
-k host-list	Strict source route along host-list.
-w timeout	Timeout in milliseconds to wait for each reply.

8. NETSTAT :-
Displays protocol statistics and current TCP/IP network connections
It will tell you what is the status of ports ie. open, closed, waiting, masquerade connections.

netstat -a
Find out all the open ports on your machine

netstat -nt
Display all the TCP based established connections on your machine

Option	Description
-a	Displays all connections and listening ports.
-e	Displays Ethernet statistics. This may be combined with the -s option.
-n	Displays addresses and port numbers in numerical form.
-p	proto Shows connections for the protocol specified by proto; proto may be TCP or UDP. If used with the -s option to display per-protocol statistics, proto may be TCP, UDP, or IP.
-r	Displays the routing table.
-s	Displays per-protocol statistics. By default, statistics are shown for TCP, UDP and IP; the -p option may be used to specify a subset of the default.
interval	Redisplays selected statistics, pausing interval seconds between each display. Press CTRL+C to stop redisplaying statistics. If omitted, netstat will print the current configuration information once.
-o	Displays the owning process ID associated with each connection

9. DIG:-
Domain information groper provides DNS related information. It is more advanced than hostname

dig {hostname}
Example: dig techflock.blogspot.com

To find the host name for a given IP address (ie. a reverse lookup), use dig with the `-x' option
dig -x 100.42.30.95
This will look up the address (which may or may not exist) and return the address of the host, for example if that was the address of dig takes a huge number of options (at the point of being too many)

10. TRACERT / TRACEROUTE :-
The tracert command is used to visually see a network packet being sent and received and the amount of hops required for that packet to get to its destination.
Displays route taken by an ICMP to a remote host
Traces a packet from your computer to an Internet host showing each hop
Lets you trace packets and find if your connection is broken beyond your ip address. Also can be used to track the number of hops to get to the hostname

It shows the route of a packet. It attempts to list the series of hosts through which your packets travel on their way to a given destination.
You can view a listing of how a network packet travels through the network and where it may fail or slow down. Using this information you can determine the computer, router, switch or other network device possibly causing your network issues.

Syntax:
traceroute hostname or ip

Option	Description
-d	Do not resolve addresses to hostnames.
-h maximum_hops	Maximum number of hops to search for target.
-j host-list	Loose source route along host-list.
-w timeout	Wait timeout milliseconds for each reply.

11. ROUTE PRINT:-
Manipulates network routing tables

Option	Description
-f	Clears the routing tables of all gateway entries. If this is used in conjunction with one of the commands, the tables are cleared prior to running the command
-p	When used with the ADD command, makes a route persistent across boots of the system. By default, routes are not preserved when the system is restarted. Ignored for all other commands, which always affect the appropriate persistent routes. This option is not supported in Windows 95
PRINT	Prints a route
ADD	Adds a route
DELETE	Deletes a route
CHANGE	Modifies an existing route
destination	Specifies the host
MASK	Specifies that the next parameter is the 'netmask' value
netmask	Specifies a subnet mask value for this route entry. If not specified, it defaults to 255.255.255.255
gateway	Specifies gateway
interface	the interface number for the specified route
METRIC	specifies the metric, ie. cost for the destination

12. TELNET:-
A terminal emulation program to connect your computer to a remote server, requires logon
Telnet or connect to a machine at the specified port to find out whether that machine/server is working right
Enable user to telnet to another computer from the command prompt.

telnet ip_address(172.16.0.211)
Telnet [host [port]]
Host specifies the hostname or IP address of the remote computer to connect to.
Port specifies the port number or service name.

Option	Description
close	close current connection
display	display operating parameters
open	connect to a site
quit	exit telnet
set	set options (type 'set ?' for a list) NTLM Turn ON NTLM Authentication. LOCAL_ECHO Turn ON LOCAL_ECHO. TERM x (where x is ANSI, VT100, VT52, or VTNT) CRLF Send both CR and LF
status	print status information
unset	unset options (type 'unset ?' for a list) NTLM Turn OFF NTLM Authentication. LOCAL_ECHO Turn OFF LOCAL_ECHO. CRLF Send only CR (no LF is sent)
?/help	print help information

13. FTP :-

File transfer protocol
Transfers files to and from a computer running an FTP server service
To connect to an FTP server

ftp ip_address (open, help, quit)

Option	Description
!	Using this command you will have the capability of toggling back and forth between the operating system and ftp. Once back in the operating system generally typing exit will take you back to the FTP command line.
?	Access the Help screen.
abor	Abort Transfer
append	Append text to a local file.
ascii	Switch to ASCII transfer mode
bell	Turns bell mode on / off.
binary	Switches to binary transfer mode.
bye	Exits from FTP.
cd	Changes directory.
cdup	Change to parent directory on remote system
close	Exits from FTP.
cwd	Change working directory on remote system
dele	Delete file on remote system
delete	Deletes a file.
debug	Sets debugging on / off.
dir	Lists files if connected. dir -C = Will list the files in wide format. dir -1 = Lists the files in bare format in alphabetic order dir -r = Lists directory in reverse alphabetic order. dir -R = Lists all files in current directory and sub directories. dir -S = Lists files in bare format in alphabetic order.
disconnect	Exits from FTP.
get	Get file from the computer connected to.

glob	Sets globbing on / off.
hash	Sets hash mark printing on / off
help	Access the Help screen and displays information about command if command typed after help.
lcd	Displays local directory or if path typed after lcd will change local directory.
list	Send a list of file names in the current directory on the remote system on the data connection.
literal	Sends command line
ls	Lists files if connected.
mdelete	Multiple delete
mdir	Lists contents of multiple remote directories
mget	Get multiple files
mkd	Make directory.
mkdir	Make directory.
mls	Lists contents of multiple remote directories.
mode	Specifies the transfer mode. Available parameters are generally S, B or C.
mput	Sent multiple files
nlst	Send a full directory listing of the current directory on the remote system on the data connection.
open	Opens address.
pass	Supplies a user password.
port	Specify the client port number.
prompt	Enables/disables prompt.
put	Send one file
pwd	Print working directory
quit	Exits from FTP.
quote	Send arbitrary ftp command
recv	Receive file
retr	Get file from remote system.
remotehelp	Get help from remote server
rename	Renames a file
rmdir	Removes a directory
send	Send single file
status	Shows status of currently enabled / disabled options
trace	Toggles packet tracing
type	Set file transfer type
user	Send new user information
verbose	Sets verbose on / off.