Ping: Ping is a command-line utility, available on virtually any operating system with network connectivity, that acts as a test to see if a networked device is reachable.

Sudo apt upgrade: You run sudo-apt upgrade to install available upgrades of all packages currently installed on the system from the sources configured via sources. list file. New packages will be installed if required to satisfy dependencies, but existing packages will never be removed.

Curl-version: To check whether the Curl package is installed on your system, open up your console, type curl and press enter. If you have curl installed, the system will print curl: try 'curl --help' or 'curl -manual' for more information . Otherwise, you will see something like curl command not found.

```
arif@arif-HP-ProBook-6570b: ~
File  Edit  View  Search  Terminal  Help
arif@arif-HP-ProBook-6570b:~$ curl -version
curl: no URL specified!
curl: try 'curl --help' or 'curl --manual' for more information
arif@arif-HP-ProBook-6570b:~$
```

wget: wget is a free utility for non-interactive download of files from the web.It supports HTTP,HTTPS, and FTP protocols.

```
arif@arif-HP-ProBook-6570b: ~
File  Edit  View  Search  Terminal  Help
arif@arif-HP-ProBook-6570b:~$ wget https://classroom.google.com/u/0/c/MTg0Mzg5MDQ4Njc0
--2020-12-08 18:16:52--  https://classroom.google.com/u/0/c/MTg0Mzg5MDQ4Njc0
Resolving classroom.google.com (classroom.google.com)... 172.217.163.46, 2404:6800:4007:80b::200e
Connecting to classroom.google.com (classroom.google.com)|172.217.163.46|:443... connected.
HTTP request sent, awaiting response... 302 Moved Temporarily
Location: https://accounts.google.com/ServiceLogin?service=classroom&passive=1209600&continue=https://classro
om.google.com/u/0/c/MTg0Mzg5MDQ4Njc0&followup=https://classroom.google.com/u/0/c/MTg0Mzg5MDQ4Njc0 [following]
--2020-12-08 18:16:53--  https://accounts.google.com/ServiceLogin?service=classroom&passive=1209600&continue=
https://classroom.google.com/u/0/c/MTg0Mzg5MDQ4Njc0&followup=https://classroom.google.com/u/0/c/MTg0Mzg5MDQ4N
jc0
Resolving accounts.google.com (accounts.google.com)... 142.250.71.45, 2404:6800:4007:813::200d
Connecting to accounts.google.com (accounts.google.com)|142.250.71.45|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [text/html]
Saving to: 'MTg0Mzg5MDQ4Njc0.1'

MTg0Mzg5MDQ4Njc0.1      [ <=>                    ] 60.52K  46.1KB/s    in 1.3s

2020-12-08 18:16:56 (46.1 KB/s) - 'MTg0Mzg5MDQ4Njc0.1' saved [61972]

arif@arif-HP-ProBook-6570b:~$
```

Tc: Tc is used to configure Traffic Control in the Linux kernel. Traffic Control consists of the following: SHAPING When traffic is shaped, its rate of transmission is under control.

```
arif@arif-HP-ProBook-6570b: ~
File  Edit  View  Search  Terminal  Help
arif@arif-HP-ProBook-6570b:~$ tc
Usage: tc [ OPTIONS ] OBJECT { COMMAND | help }
       tc [-force] -batch filename
where  OBJECT := { qdisc | class | filter | action | monitor | exec }
       OPTIONS := { -s[tatistics] | -d[etails] | -r[aw] | -p[retty] | -b[atch] [filename] | -n[etns] name |
                  -nm | -nam[es] | { -cf | -conf } path } | -j[son]
arif@arif-HP-ProBook-6570b:~$
```

Whois: In Linux, the whois command line utility is a WHOIS client for communicating with the WHOIS server (or database host) which listen to requests on the well-known port number **43**, which stores and delivers database content in a human-readable format.

```
                              arif@arif-HP-ProBook-6570b: ~

 File  Edit  View  Search  Terminal  Help
arif@arif-HP-ProBook-6570b:~$ whois
Usage: whois [OPTION]... OBJECT...

-h HOST, --host HOST    connect to server HOST
-p PORT, --port PORT    connect to PORT
-H                      hide legal disclaimers
      --verbose         explain what is being done
      --help            display this help and exit
      --version         output version information and exit

These flags are supported by whois.ripe.net and some RIPE-like servers:
-l                      find the one level less specific match
-L                      find all levels less specific matches
-m                      find all one level more specific matches
-M                      find all levels of more specific matches
-c                      find the smallest match containing a mnt-irt attribute
-x                      exact match
-b                      return brief IP address ranges with abuse contact
-B                      turn off object filtering (show email addresses)
-G                      turn off grouping of associated objects
-d                      return DNS reverse delegation objects too
-i ATTR[,ATTR]...       do an inverse look-up for specified ATTRibutes
-T TYPE[,TYPE]...       only look for objects of TYPE
-K                      only primary keys are returned
-r                      turn off recursive look-ups for contact information
-R                      force to show local copy of the domain object even
                        if it contains referral
-a                      also search all the mirrored databases
-s SOURCE[,SOURCE]...   search the database mirrored from SOURCE
-g SOURCE:FIRST-LAST    find updates from SOURCE from serial FIRST to LAST
-t TYPE                 request template for object of TYPE
-v TYPE                 request verbose template for object of TYPE
-q [version|sources|types]  query specified server info
arif@arif-HP-ProBook-6570b:~$
```

ssh: ssh Command in linux- the ssh command provides a secure encrypted connection between two hosts over an insecure network. This connection can also be used for terminal access,file transfer,and for tunneling other applications. Graphical X**11** applications can also be run securely over SSH from a remote location.

```
                              arif@arif-HP-ProBook-6570b: ~

 File  Edit  View  Search  Terminal  Help
arif@arif-HP-ProBook-6570b:~$ ssh
usage: ssh [-46AaCfGgKkMNnqsTtVvXxYy] [-b bind_address] [-c cipher_spec]
           [-D [bind_address:]port] [-E log_file] [-e escape_char]
           [-F configfile] [-I pkcs11] [-i identity_file]
           [-J [user@]host[:port]] [-L address] [-l login_name] [-m mac_spec]
           [-O ctl_cmd] [-o option] [-p port] [-Q query_option] [-R address]
           [-S ctl_path] [-W host:port] [-w local_tun[:remote_tun]]
           [user@]hostname [command]
arif@arif-HP-ProBook-6570b:~$
```

Rsync: rsync is a utility for efficiently transferring and synchronizing files between a computer and an external hard drive and across network computers by comparing the modification times and sizes of files.

```
                          arif@arif-HP-ProBook-6570b: ~

File  Edit  View  Search  Terminal  Help
arif@arif-HP-ProBook-6570b:~$ rsync
rsync  version 3.1.2  protocol version 31
Copyright (C) 1996-2015 by Andrew Tridgell, Wayne Davison, and others.
Web site: http://rsync.samba.org/
Capabilities:
    64-bit files, 64-bit inums, 64-bit timestamps, 64-bit long ints,
    socketpairs, hardlinks, symlinks, IPv6, batchfiles, inplace,
    append, ACLs, xattrs, iconv, symtimes, prealloc

rsync comes with ABSOLUTELY NO WARRANTY.  This is free software, and you
are welcome to redistribute it under certain conditions.  See the GNU
General Public Licence for details.

rsync is a file transfer program capable of efficient remote update
via a fast differencing algorithm.

Usage: rsync [OPTION]... SRC [SRC]... DEST
  or   rsync [OPTION]... SRC [SRC]... [USER@]HOST:DEST
  or   rsync [OPTION]... SRC [SRC]... [USER@]HOST::DEST
  or   rsync [OPTION]... SRC [SRC]... rsync://[USER@]HOST[:PORT]/DEST
  or   rsync [OPTION]... [USER@]HOST:SRC [DEST]
  or   rsync [OPTION]... [USER@]HOST::SRC [DEST]
  or   rsync [OPTION]... rsync://[USER@]HOST[:PORT]/SRC [DEST]
The ':' usages connect via remote shell, while '::' & 'rsync://' usages connect
to an rsync daemon, and require SRC or DEST to start with a module name.

Options
 -v, --verbose               increase verbosity
     --info=FLAGS            fine-grained informational verbosity
     --debug=FLAGS           fine-grained debug verbosity
     --msgs2stderr           special output handling for debugging
 -q, --quiet                 suppress non-error messages
     --no-motd               suppress daemon-mode MOTD (see manpage caveat)
 -c, --checksum              skip based on checksum, not mod-time & size
 -a, --archive               archive mode; equals -rlptgoD (no -H,-A,-X)
     --no-OPTION             turn off an implied OPTION (e.g. --no-D)
 -r, --recursive             recurse into directories
```

```
                          arif@arif-HP-ProBook-6570b: ~

File  Edit  View  Search  Terminal  Help
 -s, --protect-args          no space-splitting; only wildcard special-chars
     --address=ADDRESS       bind address for outgoing socket to daemon
     --port=PORT             specify double-colon alternate port number
     --sockopts=OPTIONS      specify custom TCP options
     --blocking-io           use blocking I/O for the remote shell
     --stats                 give some file-transfer stats
 -8, --8-bit-output          leave high-bit chars unescaped in output
 -h, --human-readable        output numbers in a human-readable format
     --progress              show progress during transfer
 -P                          same as --partial --progress
 -i, --itemize-changes       output a change-summary for all updates
     --out-format=FORMAT     output updates using the specified FORMAT
     --log-file=FILE         log what we're doing to the specified FILE
     --log-file-format=FMT   log updates using the specified FMT
     --password-file=FILE    read daemon-access password from FILE
     --list-only             list the files instead of copying them
     --bwlimit=RATE          limit socket I/O bandwidth
     --stop-at=y-m-dTh:m     Stop rsync at year-month-dayThour:minute
     --time-limit=MINS       Stop rsync after MINS minutes have elapsed
     --outbuf=N|L|B          set output buffering to None, Line, or Block
     --write-batch=FILE      write a batched update to FILE
     --only-write-batch=FILE like --write-batch but w/o updating destination
     --read-batch=FILE       read a batched update from FILE
     --protocol=NUM          force an older protocol version to be used
     --iconv=CONVERT_SPEC    request charset conversion of filenames
     --checksum-seed=NUM     set block/file checksum seed (advanced)
     --noatime               do not alter atime when opening source files
 -4, --ipv4                  prefer IPv4
 -6, --ipv6                  prefer IPv6
     --version               print version number
(-h) --help                 show this help (-h is --help only if used alone)

Use "rsync --daemon --help" to see the daemon-mode command-line options.
Please see the rsync(1) and rsyncd.conf(5) man pages for full documentation.
See http://rsync.samba.org/ for updates, bug reports, and answers
rsync error: syntax or usage error (code 1) at main.c(1569) [client=3.1.2]
arif@arif-HP-ProBook-6570b:~$
```

Ngrep: Ngrep (network grep) is a simple yet powerful network packet analyzer. It allows you to specify an extended regular or hexadecimal expression to match against data payloads (the actual information or message in transmitted data, but not auto-generated metadata) of packets.

update: The sudo apt-get update command is used to download package information from all configured sources. The sources often defined in /etc/apt/sources. list file and other files located in **/etc/apt/sources.**

ifconfig : stands for "interface configuration." It is used to view and change the configuration of the network interfaces on your system.

Route: route command in Linux is used when you want to work with the IP/kernel routing table.