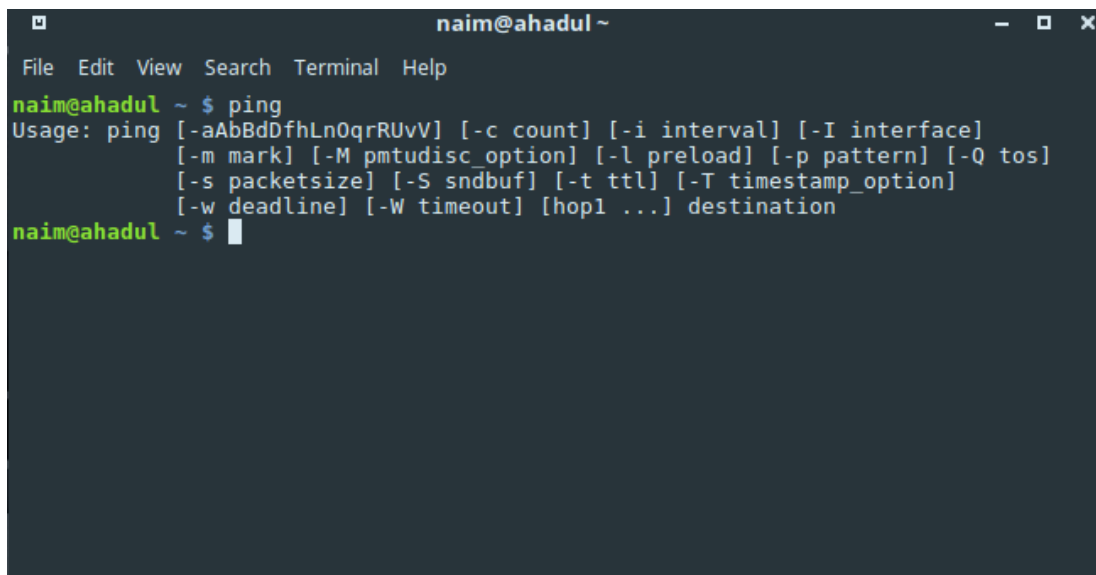


Ping: Ping is a computer network administration software utility used to test the reachability of a host on an Internet Protocol network. It is available for virtually all operating systems that have networking capability, including most embedded network administration software.

A terminal window titled 'naim@ahadul ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The prompt is 'naim@ahadul ~ \$'. The user has entered 'ping', and the terminal displays the usage information for the ping command. The usage text is: 'Usage: ping [-aAbBdDfhLnOqrRUvV] [-c count] [-i interval] [-I interface] [-m mark] [-M pmtudisc_option] [-l preload] [-p pattern] [-Q tos] [-s packetsize] [-S sndbuf] [-t ttl] [-T timestamp_option] [-w deadline] [-W timeout] [hop1 ...] destination'. The prompt is now 'naim@ahadul ~ \$' with a cursor.

```
naim@ahadul ~  
File Edit View Search Terminal Help  
naim@ahadul ~ $ ping  
Usage: ping [-aAbBdDfhLnOqrRUvV] [-c count] [-i interval] [-I interface]  
          [-m mark] [-M pmtudisc_option] [-l preload] [-p pattern] [-Q tos]  
          [-s packetsize] [-S sndbuf] [-t ttl] [-T timestamp_option]  
          [-w deadline] [-W timeout] [hop1 ...] destination  
naim@ahadul ~ $
```

sudo apt upgrade: 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. ... So when you run update command, it downloads the package information from the Internet.

```

naim@ahadul ~ $ sudo apt upgrade
sudo: unable to resolve host ahadul
[sudo] password for naim:
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages were automatically installed and are no longer required:
  cinnamon-common cinnamon-control-center cinnamon-control-center-data
  cinnamon-l10n cinnamon-screensaver cinnamon-screensaver-pam-helper
  cinnamon-settings-daemon cjs gir1.2-caribou-1.0 gir1.2-cinnamondesktop-3.0
  gir1.2-clutter-1.0 gir1.2-cmenu-3.0 gir1.2-cogl-1.0 gir1.2-coglpango-1.0
  gir1.2-cvc-1.0 gir1.2-gtkclutter-1.0 gir1.2-keybinder-3.0
  gir1.2-meta-muffin-0.0 gir1.2-nmgtk-1.0 gnome-online-accounts
  libcaribou-common libcaribou0 libcinnamon-control-center1
  libcinnamon-desktop4 libcinnamon-menu-3-0 libcjs0f libcscreensaver0 libcvc0
  libgoa-backend-1.0-1 libkeybinder-3.0-0 libmozjs-38-0 libmuffin0
  muffin-common nemo-data streamer xawtv-plugins
Use 'sudo apt autoremove' to remove them.
The following packages will be upgraded:
  accountsservice adobe-flashplugin apport aptdaemon aptdaemon-data
  ca-certificates chromium-browser chromium-codecs-ffmpeg-extra
  distro-info-data firefox firefox-locale-en gir1.2-accountsservice-1.0
  gir1.2-packagekitglib-1.0 initramfs-tools initramfs-tools-bin
  initramfs-tools-core libaccountsservice0 libfreetype6 libpackagekit-glib2-16
  libpam-modules libpam-modules-bin libpam-runtime libpam-systemd libpam0g
  libperl5.22 libproxy-tools libproxyl-plugin-gsettings
  libproxyl-plugin-networkmanager libproxylv5 libpulse-mainloop-glib0
  libpulse0 libpulsedsp libpython2.7 libpython2.7-minimal libpython2.7-stdlib
  libpython3.5 libpython3.5-minimal libpython3.5-stdlib libsmbclient
  libssl1.0.0 libsystemd0 libudev1 libwbclient0 linux-libc-dev
  mysql-client-5.7 mysql-client-core-5.7 mysql-common mysql-server
  mysql-server-5.7 mysql-server-core-5.7 openssl perl perl-base
  perl-modules-5.22 pulseaudio pulseaudio-module-bluetooth
  pulseaudio-module-x11 pulseaudio-utils python-aptdaemon
  python-aptdaemon.gtk3widgets python-cryptography python2.7 python2.7-minimal
  python3-apport python3-aptdaemon python3-aptdaemon.gtk3widgets

```

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`.

```
naim@ahadul ~  
File Edit View Search Terminal Help  
naim@ahadul ~ $ curl -version  
curl: no URL specified!  
curl: try 'curl --help' or 'curl --manual' for more information
```

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

```
naim@ahadul ~ $ wget https://www.w3schools.com/bootstrap/  
--2020-11-27 14:22:16-- https://www.w3schools.com/bootstrap/  
Resolving www.w3schools.com (www.w3schools.com)... 192.229.179.87  
Connecting to www.w3schools.com (www.w3schools.com)|192.229.179.87|:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 86724 (85K) [text/html]  
Saving to: 'index.html'  
  
index.html      100%[=====] 84.69K  422KB/s   in 0.2s  
2020-11-27 14:22:17 (422 KB/s) - 'index.html' saved [86724/86724]
```

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. Shaping may be more than lowering the available bandwidth - it is also used to smooth out bursts in traffic for better network behavior.

```
naim@ahadul ~ $ 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 }
```

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.

```

naim@ahadul ~ $ 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

```

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 X11 applications can also be run securely over SSH from a remote location.

```

naim@ahadul ~ $ ssh
usage: ssh [-1246AaCfGgKkMNNqsTtVvXxYy] [-b bind_address] [-c cipher_spec]
          [-D [bind_address:]port] [-E log_file] [-e escape_char]
          [-F configfile] [-I pkcs11] [-i identity_file] [-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]

```

rsync: rsync is a fast and versatile command-line utility for synchronizing files and directories between two locations over a remote shell, or from/to a remote Rsync daemon. It provides fast incremental file transfer by transferring only the differences between the source and the destination.

```
naim@ahadul ~ $ rsync
rsync version 3.1.1 protocol version 31
Copyright (C) 1996-2014 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
-R, --relative              use relative path names
--no-implied-dirs           don't send implied dirs with --relative
-b, --backup                make backups (see --suffix & --backup-dir)
--backup-dir=DIR            make backups into hierarchy based in DIR
--suffix=SUFFIX             set backup suffix (default ~ w/o --backup-dir)
-u, --update                skip files that are newer on the receiver
--inplace                   update destination files in-place (SEE MAN PAGE)
--append                    append data onto shorter files
--append-verify             like --append, but with old data in file checksum
-d, --dirs                  transfer directories without recursing
-l, --links                 copy symlinks as symlinks
-L, --copy-links            transform symlink into referent file/dir
--copy-unsafe-links         only "unsafe" symlinks are transformed
--safe-links                ignore symlinks that point outside the source tree
--munge-links               munge symlinks to make them safer (but unusable)
-k, --copy-dirlinks         transform symlink to a dir into referent dir
-K, --keep-dirlinks         treat symlinked dir on receiver as dir
```

```

--contimeout=SECONDS    set daemon connection timeout in seconds
-I, --ignore-times      don't skip files that match in size and mod-time
-M, --remote-option=OPTION  send OPTION to the remote side only
    --size-only          skip files that match in size
    --modify-window=NUM  compare mod-times with reduced accuracy
-T, --temp-dir=DIR      create temporary files in directory DIR
-y, --fuzzy              find similar file for basis if no dest file
    --compare-dest=DIR   also compare destination files relative to DIR
    --copy-dest=DIR      ... and include copies of unchanged files
    --link-dest=DIR      hardlink to files in DIR when unchanged
-z, --compress          compress file data during the transfer
    --compress-level=NUM explicitly set compression level
    --skip-compress=LIST skip compressing files with a suffix in LIST
-C, --cvs-exclude       auto-ignore files the same way CVS does
-f, --filter=RULE        add a file-filtering RULE
-F                        same as --filter='dir-merge /.rsync-filter'
                        repeated: --filter='- .rsync-filter'
    --exclude=PATTERN   exclude files matching PATTERN
    --exclude-from=FILE  read exclude patterns from FILE
    --include=PATTERN   don't exclude files matching PATTERN
    --include-from=FILE  read include patterns from FILE
    --files-from=FILE    read list of source-file names from FILE
-0, --from0              all *-from/filter files are delimited by 0s
-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
    --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(1556) [client=3.1.1]

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.

```
naim@ahadul ~ $ ngrep
wlo1: You don't have permission to capture on that device (socket: Operation not permitted): Operation not permitted
```

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.` ... So when you run update command, it downloads the package information from the Internet.

```
naim@ahadul ~
File Edit View Search Terminal Help
naim@ahadul ~ $ sudo apt update
sudo: unable to resolve host ahadul
[sudo] password for naim:
Ign:1 http://packages.linuxmint.com sylvia InRelease
Hit:2 http://archive.ubuntu.com/ubuntu xenial InRelease
Hit:3 http://packages.linuxmint.com sylvia Release
Hit:4 http://archive.canonical.com/ubuntu xenial InRelease
Hit:6 http://archive.ubuntu.com/ubuntu xenial-updates InRelease
Hit:7 http://archive.ubuntu.com/ubuntu xenial-backports InRelease
Hit:8 http://security.ubuntu.com/ubuntu xenial-security InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
99 packages can be upgraded. Run 'apt list --upgradable' to see them.
naim@ahadul ~ $
```

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

```
naim@ahadul ~ $ ifconfig
enol      Link encap:Ethernet  HWaddr ac:e2:d3:50:a4:3e
          UP BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:2852 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2852 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:334668 (334.6 KB)  TX bytes:334668 (334.6 KB)

wlo1      Link encap:Ethernet  HWaddr d4:25:8b:aa:ca:df
          inet addr:192.168.0.106  Bcast:192.168.0.255  Mask:255.255.255.0
          inet6 addr: fe80::42ee:871a:a139:b6fd/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:258123 errors:0 dropped:0 overruns:0 frame:0
          TX packets:156885 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:362883165 (362.8 MB)  TX bytes:20327084 (20.3 MB)
```

Route: route command in Linux is used when you want to work with the IP/kernel routing table. It is mainly used to set up static routes on specific hosts or networks via an interface. It is used for showing or update the IP/kernel routing table.

```
naim@ahadul ~ $ route
Kernel IP routing table
Destination    Gateway         Genmask         Flags Metric Ref    Use Iface
default        192.168.0.1    0.0.0.0         UG    600    0      0 wlo1
link-local     *              255.255.0.0     U     1000    0      0 wlo1
192.168.0.0    *              255.255.255.0   U     600    0      0 wlo1
naim@ahadul ~ $
```