

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

```
For more details see sysctl(8).
dhina@dhina-Lenovo-Ideapad-320-15ISK:~$ ping
Usage: ping [-aAbBdDfhLnOqrRUvV64] [-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
Usage: ping -6 [-aAbBdDfhLnOqrRUvV] [-c count] [-i interval] [-I interface]
          [-l preload] [-m mark] [-M pmtudisc_option]
          [-N nodeinfo_option] [-p pattern] [-Q tclass] [-s packetsize]
          [-S sndbuf] [-t ttl] [-T timestamp_option] [-w deadline]
          [-W timeout] destination
dhina@dhina-Lenovo-Ideapad-320-15ISK:~$ sudo apt update
[sudo] password for dhina:
Err:1 http://us.archive.ubuntu.com/ubuntu bionic InRelease
  Could not resolve 'us.archive.ubuntu.com'
Err:2 http://dl.google.com/linux/chrome/deb stable InRelease
  Could not resolve 'dl.google.com'
Err:3 http://security.ubuntu.com/ubuntu bionic-security InRelease
  Could not resolve 'security.ubuntu.com'
Err:4 http://us.archive.ubuntu.com/ubuntu bionic-updates InRelease
  Could not resolve 'us.archive.ubuntu.com'
Err:5 http://us.archive.ubuntu.com/ubuntu bionic-backports InRelease
  Could not resolve 'us.archive.ubuntu.com'
Err:6 http://ppa.launchpad.net/danielrichter2007/grub-customizer/ubuntu bionic InRelease
  Could not resolve 'ppa.launchpad.net'
Reading package lists... Done
Building dependency tree
Reading state information... Done
388 packages can be upgraded. Run 'apt list --upgradable' to see them.
W: Failed to fetch http://us.archive.ubuntu.com/ubuntu/dists/bionic/InRelease Could not resolve 'us.archive.ubuntu.com'
W: Failed to fetch http://us.archive.ubuntu.com/ubuntu/dists/bionic-updates/InRelease Could not resolve 'us.archive.ubuntu.com'
W: Failed to fetch http://us.archive.ubuntu.com/ubuntu/dists/bionic-backports/InRelease Could not resolve 'us.archive.ubuntu.com'
W: Failed to fetch http://security.ubuntu.com/ubuntu/dists/bionic-security/InRelease Could not resolve 'security.ubuntu.com'
W: Failed to fetch http://ppa.launchpad.net/danielrichter2007/grub-customizer/ubuntu/dists/bionic/InRelease Could not resolve 'ppa.launchpad.net'
W: Failed to fetch http://dl.google.com/linux/chrome/deb/dists/stable/InRelease Could not resolve 'dl.google.com'
W: Some index files failed to download. They have been ignored, or old ones used instead.
dhina@dhina-Lenovo-Ideapad-320-15ISK:~$
```

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.

[illegible]

```

Do you want to continue? [Y/n] y
Err:1 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 base-files amd64 10.1ubuntu2.10
    Could not resolve 'us.archive.ubuntu.com'
Ign:2 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 bsdtar amd64 1:2.31.1-0.4ubuntu3.7
Err:3 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 dpkg amd64 1.19.0.5ubuntu2.3
    Could not resolve 'us.archive.ubuntu.com'
Err:4 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 initramfs-tools-bin amd64 0.130ubuntu3.11
    Could not resolve 'us.archive.ubuntu.com'
Ign:5 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 initramfs-tools-core all 0.130ubuntu3.11
Ign:6 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 initramfs-tools all 0.130ubuntu3.11
Ign:7 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libext2fs2 amd64 1.44.1-1ubuntu1.3
Ign:8 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 e2fsprogs amd64 1.44.1-1ubuntu1.3
Ign:9 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 busybox-initramfs amd64 1:1.27.2-2ubuntu3.3
Ign:10 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 cpio amd64 2.12+dfsg-6ubuntu0.18.04.1
Err:11 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 knod amd64 24-1ubuntu3.5
    Could not resolve 'us.archive.ubuntu.com'
Err:12 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libkmod2 amd64 24-1ubuntu3.5
    Could not resolve 'us.archive.ubuntu.com'
Ign:13 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 linux-base all 4.5ubuntu1.2
Err:14 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 grep amd64 3.1-2build1
    Could not resolve 'us.archive.ubuntu.com'
Err:2 http://security.ubuntu.com/ubuntu bionic-updates/main amd64 bsdtar amd64 1:2.31.1-0.4ubuntu3.7
    Could not resolve 'us.archive.ubuntu.com'
Ign:15 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libperl5.26 amd64 5.26.1-6ubuntu0.5
Ign:16 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 perl amd64 5.26.1-6ubuntu0.5
Err:7 http://security.ubuntu.com/ubuntu bionic-updates/main amd64 libext2fs2 amd64 1.44.1-1ubuntu1.3
    Could not resolve 'us.archive.ubuntu.com'
Err:8 http://security.ubuntu.com/ubuntu bionic-updates/main amd64 e2fsprogs amd64 1.44.1-1ubuntu1.3
    Could not resolve 'us.archive.ubuntu.com'
Ign:17 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 perl-base amd64 5.26.1-6ubuntu0.5
Ign:18 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 perl-modules-5.26 all 5.26.1-6ubuntu0.5
Err:9 http://security.ubuntu.com/ubuntu bionic-updates/main amd64 busybox-initramfs amd64 1:1.27.2-2ubuntu3.3
    Could not resolve 'us.archive.ubuntu.com'
Ign:19 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libuuid1 amd64 2.31.1-0.4ubuntu3.7
Err:10 http://security.ubuntu.com/ubuntu bionic-updates/main amd64 cpio amd64 2.12+dfsg-6ubuntu0.18.04.1
    Could not resolve 'us.archive.ubuntu.com'
Ign:20 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libblkid1 amd64 2.31.1-0.4ubuntu3.7
Err:15 http://security.ubuntu.com/ubuntu bionic-updates/main amd64 libperl5.26 amd64 5.26.1-6ubuntu0.5
    Could not resolve 'us.archive.ubuntu.com'
Ign:21 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libfdisk1 amd64 2.31.1-0.4ubuntu3.7
Err:16 http://security.ubuntu.com/ubuntu bionic-updates/main amd64 perl amd64 5.26.1-6ubuntu0.5
    Could not resolve 'us.archive.ubuntu.com'
Ign:22 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libmount1 amd64 2.31.1-0.4ubuntu3.7
Err:17 http://security.ubuntu.com/ubuntu bionic-updates/main amd64 perl-base amd64 5.26.1-6ubuntu0.5
    Could not resolve 'us.archive.ubuntu.com'
Ign:23 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libsmartcols1 amd64 2.31.1-0.4ubuntu3.7
Err:19 http://security.ubuntu.com/ubuntu bionic-updates/main amd64 libuuid1 amd64 2.31.1-0.4ubuntu3.7
    Could not resolve 'us.archive.ubuntu.com'

```

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

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

```
--2020-11-13 07:42:58-- https://cdn.kernel.org/pub/linux/kernel/v4.x/linux-4.17.2.tar.xz
Resolving cdn.kernel.org (cdn.kernel.org)... 151.101.9.176, 2a04:4e42:2::432
Connecting to cdn.kernel.org (cdn.kernel.org)|151.101.9.176|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 102167060 (97M) [application/x-xz]
Saving to: 'linux-4.17.2.tar.xz'

linux-4.17.2.tar.xz      0%[                  ] 119.16K  13.1KB/s    eta 3d 16h
```

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

```
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ 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]
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ dig

; <<>> DiG 9.11.3-1ubuntu1.8-Ubuntu <<>>
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: SERVFAIL, id: 58050
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;.                               IN      NS

;; Query time: 0 msec
;; SERVER: 127.0.0.53#53(127.0.0.53)
;; WHEN: Sun Nov 22 03:17:09 +06 2020
;; MSG SIZE rcvd: 28
```

Whois: In Linux, the who is 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

```
dhina@dhina-Lenovo-ideapad-320-15ISK:~$
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ 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

```
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ ssh
usage: ssh [-46AaCfGgKkMMNnqsTtVvXxYy] [-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]
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ █
```

```
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ scp
usage: scp [-346BCpqrv] [-c cipher] [-F ssh_config] [-i identity_file]
          [-l limit] [-o ssh_option] [-P port] [-S program]
          [[user@]host1:]file1 ... [[user@]host2:]file2
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ █
```

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.


```

dhina@dhina-Lenovo-ideapad-320-15ISK:~$ 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
-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 existing files

```


--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
-H, --hard-links	preserve hard links
-p, --perms	preserve permissions
-E, --executability	preserve the file's executability
--chmod=CHMOD	affect file and/or directory permissions
-A, --acls	preserve ACLs (implies --perms)
-X, --xattrs	preserve extended attributes
-o, --owner	preserve owner (super-user only)
-g, --group	preserve group
--devices	preserve device files (super-user only)
--copy-devices	copy device contents as regular file
--specials	preserve special files
-D	same as --devices --specials
-t, --times	preserve modification times
-O, --omit-dir-times	omit directories from --times
-J, --omit-link-times	omit symlinks from --times
--super	receiver attempts super-user activities
--fake-super	store/recover privileged attrs using xattrs
-S, --sparse	handle sparse files efficiently
--preallocate	allocate dest files before writing them
-n, --dry-run	perform a trial run with no changes made
-W, --whole-file	copy files whole (without delta-xfer algorithm)
-x, --one-file-system	don't cross filesystem boundaries
-B, --block-size=SIZE	force a fixed checksum block-size
-e, --rsh=COMMAND	specify the remote shell to use
--rsync-path=PROGRAM	specify the rsync to run on the remote machine
--existing	skip creating new files on receiver
--ignore-existing	skip updating files that already exist on receiver
--remove-source-files	sender removes synchronized files (non-dirs)
--del	an alias for --delete-during
--delete	delete extraneous files from destination dirs
--delete-before	receiver deletes before transfer, not during
--delete-during	receiver deletes during the transfer
--delete-delay	find deletions during, delete after
--delete-after	receiver deletes after transfer, not during

```

--delete-before receiver deletes before transfer, not during
--delete-during receiver deletes during the transfer
--delete-delay find deletions during, delete after
--delete-after receiver deletes after transfer, not during
--delete-excluded also delete excluded files from destination dirs
--ignore-missing-args ignore missing source args without error
--delete-missing-args delete missing source args from destination
--ignore-errors delete even if there are I/O errors
--force force deletion of directories even if not empty
--max-delete=NUM don't delete more than NUM files
--max-size=SIZE don't transfer any file larger than SIZE
--min-size=SIZE don't transfer any file smaller than SIZE
--partial keep partially transferred files
--partial-dir=DIR put a partially transferred file into DIR
--delay-updates put all updated files into place at transfer's end
-m, --prune-empty-dirs prune empty directory chains from the file-list
--numeric-ids don't map uid/gid values by user/group name
--usermap=STRING custom username mapping
--groupmap=STRING custom groupname mapping
--chown=USER:GROUP simple username/groupname mapping
--timeout=SECONDS set I/O timeout in seconds
--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

```

```

--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]
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ █

```

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

```

dhina@dhina-Lenovo-ideapad-320-15ISK:~$ ngrep

Command 'ngrep' not found, but can be installed with:

sudo apt install ngrep

dhina@dhina-Lenovo-ideapad-320-15ISK:~$ tcpdump
tcpdump: any: You don't have permission to capture on that device
(socket: Operation not permitted)
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ █

```

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.

```

dhina@dhina-Lenovo-ideapad-320-15ISK:~$ sudo apt update
Err:1 http://us.archive.ubuntu.com/ubuntu bionic InRelease
  Could not resolve 'us.archive.ubuntu.com'
Err:2 http://security.ubuntu.com/ubuntu bionic-security InRelease
  Could not resolve 'security.ubuntu.com'
Err:3 http://ppa.launchpad.net/danielrichter2007/grub-customizer/ubuntu bionic InRelease
  Could not resolve 'ppa.launchpad.net'
Err:4 http://us.archive.ubuntu.com/ubuntu bionic-updates InRelease
  Could not resolve 'us.archive.ubuntu.com'
Err:5 http://us.archive.ubuntu.com/ubuntu bionic-backports InRelease
  Could not resolve 'us.archive.ubuntu.com'
Err:6 http://dl.google.com/linux/chrome/deb stable InRelease
  Could not resolve 'dl.google.com'
Reading package lists... Done
Building dependency tree
Reading state information... Done
388 packages can be upgraded. Run 'apt list --upgradable' to see them.
W: Failed to fetch http://us.archive.ubuntu.com/ubuntu/dists/bionic/InRelease Could not resolve 'us.archive.ubuntu.com'
W: Failed to fetch http://us.archive.ubuntu.com/ubuntu/dists/bionic-updates/InRelease Could not resolve 'us.archive.ubuntu.com'
W: Failed to fetch http://us.archive.ubuntu.com/ubuntu/dists/bionic-backports/InRelease Could not resolve 'us.archive.ubuntu.com'
W: Failed to fetch http://security.ubuntu.com/ubuntu/dists/bionic-security/InRelease Could not resolve 'security.ubuntu.com'
W: Failed to fetch http://ppa.launchpad.net/danielrichter2007/grub-customizer/ubuntu/dists/bionic/InRelease Could not resolve 'ppa.launchpad.net'
W: Failed to fetch http://dl.google.com/linux/chrome/deb/dists/stable/InRelease Could not resolve 'dl.google.com'
W: Some index files failed to download. They have been ignored, or old ones used instead.
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ █

```

```

dhina@dhina-Lenovo-ideapad-320-15ISK:~$ sudo apt install wireshark
Reading package lists... Done
Building dependency tree
Reading state information... Done

```

```
Reading state information... Done
The following additional packages will be installed:
  libc-ares2 libmaxminddb0 libnl-route-3-200 libqgsttools-p1 libqt5multimedia5
  libqt5multimedia5-plugins libqt5multimediawidgets5 libqt5opengl5
  libqt5sprintsupport5 libsmi2ldbl libwireshark-data libwireshark11 libwiretap8
  libwscodec2 libwsutil9 wireshark-common wireshark-qt
Suggested packages:
  mmdns-bin snmp-mibs-downloader wireshark-doc
The following NEW packages will be installed:
  libc-ares2 libmaxminddb0 libnl-route-3-200 libqgsttools-p1 libqt5multimedia5
  libqt5multimedia5-plugins libqt5multimediawidgets5 libqt5opengl5
  libqt5sprintsupport5 libsmi2ldbl libwireshark-data libwireshark11 libwiretap8
  libwscodec2 libwsutil9 wireshark wireshark-common wireshark-qt
0 upgraded, 18 newly installed, 0 to remove and 0 not upgraded.
Need to get 20.3 MB of archives.
After this operation, 106 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us.archive.ubuntu.com/ubuntu bionic/universe amd64 libmaxminddb0 amd64 1.3.1-1 [25.6 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 libnl-route-3-200 amd64 3.2.29-0ubuntu3 [146 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu bionic/universe amd64 libqt5multimedia5 amd64 5.9.5-0ubuntu1 [293 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libqt5opengl5 amd64 5.9.5+dfsg-0ubuntu2.5 [132 kB]
Get:5 http://us.archive.ubuntu.com/ubuntu bionic/universe amd64 libqt5multimediawidgets5 amd64 5.9.5-0ubuntu1 [36.6 kB]
Get:6 http://us.archive.ubuntu.com/ubuntu bionic/universe amd64 libqgsttools-p1 amd64 5.9.5-0ubuntu1 [72.4 kB]
Get:7 http://us.archive.ubuntu.com/ubuntu bionic/universe amd64 libqt5multimedia5-plugins amd64 5.9.5-0ubuntu1 [194 kB]
Get:8 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libqt5sprintsupport5 amd64 5.9.5+dfsg-0ubuntu2.5 [178 kB]
Get:9 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 libsmi2ldbl amd64 0.4.8+dfsg2-15 [100 kB]
Get:10 http://us.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 libwireshark-data all 2.6.10-1-ubuntu18.04.0 [1,425 kB]
Get:11 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 libc-ares2 amd64 1.14.0-1 [37.1 kB]
Get:12 http://us.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 libwsutil9 amd64 2.6.10-1-ubuntu18.04.0 [55.5 kB]
Get:13 http://us.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 libwiretap8 amd64 2.6.10-1-ubuntu18.04.0 [177 kB]
Get:14 http://us.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 libwscodec2 amd64 2.6.10-1-ubuntu18.04.0 [17.8 kB]
Get:15 http://us.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 libwireshark11 amd64 2.6.10-1-ubuntu18.04.0 [13.6 MB]
```

```
File Edit View Search Terminal Help
Unpacking libwireshark-data (2.6.10-1~ubuntu18.04.0) ...
Selecting previously unselected package libc-ares2:amd64.
Preparing to unpack .../10-libc-ares2_1.14.0-1_amd64.deb ...
Unpacking libc-ares2:amd64 (1.14.0-1) ...
Selecting previously unselected package libwsutil9:amd64.
Preparing to unpack .../11-libwsutil9_2.6.10-1~ubuntu18.04.0_amd64.deb ...
Unpacking libwsutil9:amd64 (2.6.10-1~ubuntu18.04.0) ...
Selecting previously unselected package libwiretap8:amd64.
Preparing to unpack .../12-libwiretap8_2.6.10-1~ubuntu18.04.0_amd64.deb ...
Unpacking libwiretap8:amd64 (2.6.10-1~ubuntu18.04.0) ...
Selecting previously unselected package libwscodecs2:amd64.
Preparing to unpack .../13-libwscodecs2_2.6.10-1~ubuntu18.04.0_amd64.deb ...
Unpacking libwscodecs2:amd64 (2.6.10-1~ubuntu18.04.0) ...
Selecting previously unselected package libwireshark11:amd64.
Preparing to unpack .../14-libwireshark11_2.6.10-1~ubuntu18.04.0_amd64.deb ...
Unpacking libwireshark11:amd64 (2.6.10-1~ubuntu18.04.0) ...
Selecting previously unselected package wireshark-common.
Preparing to unpack .../15-wireshark-common_2.6.10-1~ubuntu18.04.0_amd64.deb ...
Unpacking wireshark-common (2.6.10-1~ubuntu18.04.0) ...
Selecting previously unselected package wireshark-qt.
Preparing to unpack .../16-wireshark-qt_2.6.10-1~ubuntu18.04.0_amd64.deb ...
Unpacking wireshark-qt (2.6.10-1~ubuntu18.04.0) ...
Selecting previously unselected package wireshark.
Preparing to unpack .../17-wireshark_2.6.10-1~ubuntu18.04.0_amd64.deb ...
Unpacking wireshark (2.6.10-1~ubuntu18.04.0) ...
Setting up libnl-route-3-200:amd64 (3.2.29-0ubuntu3) ...
Setting up libqt5printsupport5:amd64 (5.9.5+dfsg-0ubuntu2.5) ...
Setting up libqt5opengl5:amd64 (5.9.5+dfsg-0ubuntu2.5) ...
Setting up libqt5multimedia5:amd64 (5.9.5-0ubuntu1) ...
Setting up libsmi2ldbl:amd64 (0.4.8+dfsg2-15) ...
Setting up libwsutil9:amd64 (2.6.10-1~ubuntu18.04.0) ...
Setting up libwireshark-data (2.6.10-1~ubuntu18.04.0) ...
Setting up libwscodecs2:amd64 (2.6.10-1~ubuntu18.04.0) ...
Setting up libc-ares2:amd64 (1.14.0-1) ...
Setting up libmaxminddb0:amd64 (1.3.1-1) ...
Setting up libqt5multimediawidgets5:amd64 (5.9.5-0ubuntu1) ...
Setting up libqgsttools-p1:amd64 (5.9.5-0ubuntu1) ...
Setting up libwiretap8:amd64 (2.6.10-1~ubuntu18.04.0) ...
```



```
Preparing to unpack .../14-libwireshark11_2.6.10-1~ubuntu18.04.0_amd64.deb ...
Unpacking libwireshark11:amd64 (2.6.10-1~ubuntu18.04.0) ...
Selecting previously unselected package wireshark-common.
Preparing to unpack .../15-wireshark-common_2.6.10-1~ubuntu18.04.0_amd64.deb ...
Unpacking wireshark-common (2.6.10-1~ubuntu18.04.0) ...
Selecting previously unselected package wireshark-qt.
Preparing to unpack .../16-wireshark-qt_2.6.10-1~ubuntu18.04.0_amd64.deb ...
Unpacking wireshark-qt (2.6.10-1~ubuntu18.04.0) ...
Selecting previously unselected package wireshark.
Preparing to unpack .../17-wireshark_2.6.10-1~ubuntu18.04.0_amd64.deb ...
Unpacking wireshark (2.6.10-1~ubuntu18.04.0) ...
Setting up libnl-route-3-200:amd64 (3.2.29-0ubuntu3) ...
Setting up libqt5printsupport5:amd64 (5.9.5+dfsg-0ubuntu2.5) ...
Setting up libqt5opengl5:amd64 (5.9.5+dfsg-0ubuntu2.5) ...
Setting up libqt5multimedia5:amd64 (5.9.5-0ubuntu1) ...
Setting up libsmi2ldbl:amd64 (0.4.8+dfsg2-15) ...
Setting up libwsutil9:amd64 (2.6.10-1~ubuntu18.04.0) ...
Setting up libwireshark-data (2.6.10-1~ubuntu18.04.0) ...
Setting up libwscodecs2:amd64 (2.6.10-1~ubuntu18.04.0) ...
Setting up libc-ares2:amd64 (1.14.0-1) ...
Setting up libmaxminddb0:amd64 (1.3.1-1) ...
Setting up libqt5multimediawidgets5:amd64 (5.9.5-0ubuntu1) ...
Setting up libqgsttools-p1:amd64 (5.9.5-0ubuntu1) ...
Setting up libwiretap8:amd64 (2.6.10-1~ubuntu18.04.0) ...
Setting up libqt5multimedia5-plugins:amd64 (5.9.5-0ubuntu1) ...
Setting up libwireshark11:amd64 (2.6.10-1~ubuntu18.04.0) ...
Setting up wireshark-common (2.6.10-1~ubuntu18.04.0) ...
Setting up wireshark-qt (2.6.10-1~ubuntu18.04.0) ...
Setting up wireshark (2.6.10-1~ubuntu18.04.0) ...
Processing triggers for desktop-file-utils (0.23-1ubuntu3.18.04.2) ...
Processing triggers for libc-bin (2.27-3ubuntu1.3) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Processing triggers for shared-mime-info (1.9-2) ...
Processing triggers for gnome-menus (3.13.3-11ubuntu1.1) ...
Processing triggers for hicolor-icon-theme (0.17-2) ...
Processing triggers for mime-support (3.60ubuntu1) ...
```

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


```
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ ifconfig
enp1s0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
        ether 54:e1:ad:96:bf:2e txqueuelen 1000 (Ethernet)
        RX packets 0 bytes 0 (0.0 B)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 0 bytes 0 (0.0 B)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
        inet 127.0.0.1 netmask 255.0.0.0
        inet6 ::1 prefixlen 128 scopeid 0x10<host>
        loop txqueuelen 1000 (Local Loopback)
        RX packets 3545 bytes 308017 (308.0 KB)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 3545 bytes 308017 (308.0 KB)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

wlp2s0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
        ether f8:94:c2:56:7a:39 txqueuelen 1000 (Ethernet)
        RX packets 0 bytes 0 (0.0 B)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 0 bytes 0 (0.0 B)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

dhina@dhina-Lenovo-ideapad-320-15ISK:~$
```

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.

```

dhina@dhina-Lenovo-ideapad-320-15ISK:~$
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ route
Kernel IP routing table
Destination      Gateway         Genmask         Flags Metric Ref    Use Iface
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ ip
Usage: ip [ OPTIONS ] OBJECT { COMMAND | help }
       ip [ -force ] -batch filename
where  OBJECT := { link | address | addrlabel | route | rule | neigh | ntable |
                  tunnel | tuntap | maddress | mroute | mrule | monitor | xfrm |
                  netns | l2tp | fou | macsec | tcp_metrics | token | netconf | ila |
                  vrf | sr }
       OPTIONS := { -V[ersion] | -s[tatistics] | -d[etails] | -r[esolve] |
                   -h[uman-readable] | -i[ec] |
                   -f[amily] { inet | inet6 | ipx | dnet | mpls | bridge | link } |
                   -4 | -6 | -I | -D | -B | -O |
                   -l[oops] { maximum-addr-flush-attempts } | -br[ief] |
                   -o[neline] | -t[imestamp] | -ts[hort] | -b[atch] [filename] |
                   -rc[vbuf] [size] | -n[etns] name | -a[ll] | -c[olor]}

```

```

dhina@dhina-Lenovo-ideapad-320-15ISK:~$ tw

```

```

Usage: tw [options] command
Options:
  --debug          enable netlink debugging
  --version        show version (4.14)
Commands:
  help [command]
  event [-t|-r] [-f]
  features
  commands
  phy
  list
  phy <phyname> info
  dev <devname> cac channel <channel> [NOHT|HT20|HT40+|HT40-|5MHz|10MHz|80MHz]
  dev <devname> cac freq <freq> [NOHT|HT20|HT40+|HT40-|5MHz|10MHz|80MHz]
  dev <devname> cac freq <control freq> [5|10|20|40|80|80+80|160] [<center1_freq> [<center2_freq>]]
  dev <devname> cac trigger channel <channel> [NOHT|HT20|HT40+|HT40-|5MHz|10MHz|80MHz]
  dev <devname> cac trigger freq <frequency> [NOHT|HT20|HT40+|HT40-|5MHz|10MHz|80MHz]
  dev <devname> cac trigger freq <frequency> [5|10|20|40|80|80+80|160] [<center1_freq> [<center2_freq>]]
  phy <phyname> channels
  dev <devname> switch channel <channel> [NOHT|HT20|HT40+|HT40-|5MHz|10MHz|80MHz] [beacons <count>] [block-tx]
  dev <devname> switch freq <freq> [NOHT|HT20|HT40+|HT40-|5MHz|10MHz|80MHz] [beacons <count>] [block-tx]
  dev <devname> switch freq <control freq> [5|10|20|40|80|80+80|160] [<center1_freq> [<center2_freq>]] [beacons <count>] [block-tx]
  dev
  dev <devname> info
  dev <devname> del
  dev <devname> interface add <name> type <type> [mesh_id <meshid>] [4addr on|off] [flags <flag*>] [addr <mac-addr>]
  phy <phyname> interface add <name> type <type> [mesh_id <meshid>] [4addr on|off] [flags <flag*>] [addr <mac-addr>]
  dev <devname> ibss join <SSID> <freq in MHz> [NOHT|HT20|HT40+|HT40-|5MHz|10MHz|80MHz] [fixed-freq] [<fixed bssid>] [beacon-interval <TU>]
  dev <devname> ibss leave
  dev <devname> station dump [-v]
  dev <devname> station set <MAC address> mesh_power_mode <active|light|deep>
  dev <devname> station set <MAC address> vlan <ifindex>
  dev <devname> station set <MAC address> plink_action <open|block>
  dev <devname> station del <MAC address> [subtype <subtype>] [reason-code <code>]

```

```
dhina@dhina-Lenovo-ideapad-320-15ISK:~$ sysctl
```

Usage:

```
sysctl [options] [variable[=value] ...]
```

Options:

```
-a, dhina@dhina-Lenovo-ideapad-320-15ISK:~$  
-A, dhina@dhina-Lenovo-ideapad-320-15ISK:~$ nsenter  
-X, dhina@dhina-Lenovo-ideapad-320-15ISK:~$  
    --deprecated      include deprecated parameters to listing  
-b, --binary          print value without new line  
-e, --ignore          ignore unknown variables errors  
-N, --names           print variable names without values  
-n, --values          print only values of a variables  
-p, --load[=<file>]  read values from file  
-f                    alias of -p  
    --system          read values from all system directories  
-r, --pattern <expression>  
                      select setting that match expression  
-q, --quiet           do not echo variable set  
-w, --write           enable writing a value to variable  
-o                    does nothing  
-x                    does nothing  
-d                    alias of -h  
  
-h, --help           display this help and exit  
-V, --version        output version information and exit
```

For more details see sysctl(8).

```
dhina@dhina-Lenovo-ideapad-320-15ISK:~$
```