

Day - 1 (Download And Install Docker On Window & CLI)

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★ Installing Docker On Window:

You can install it from google: [Docker Desktop](#)



★ Open The Terminal:

- Write first to list all the commands: **docker --help**

```
PS C:\Users\ayush> docker --help

Usage:  docker [OPTIONS] COMMAND

A self-sufficient runtime for containers

Common Commands:
run      Create and run a new container from an image
exec     Execute a command in a running container
ps       List containers
build    Build an image from a Dockerfile
pull     Download an image from a registry
push     Upload an image to a registry
images   List images
login    Log in to a registry
logout   Log out from a registry
search   Search Docker Hub for images
version  Show the Docker version information
info     Display system-wide information

Management Commands:
builder  Manage builds
buildx*  Docker Buildx
compose* Docker Compose
container Manage containers
context  Manage contexts
debug*   Get a shell into any image or container
dev*     Docker Dev Environments
extension* Manages Docker extensions
feedback* Provide feedback, right in your terminal!
```

★ Installing Docker On Linux:

- Define Version Of Ubuntu: `cat /etc/os-release`

```
ubuntu@ip-172-31-51-74:~$ cat /etc/os-release
PRETTY_NAME="Ubuntu 24.04 LTS"
NAME="Ubuntu"
VERSION_ID="24.04"
VERSION="24.04 LTS (Noble Numbat)"
VERSION_CODENAME=noble
ID=ubuntu
ID_LIKE=debian
HOME_URL="https://www.ubuntu.com/"
SUPPORT_URL="https://help.ubuntu.com/"
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/"
PRIVACY_POLICY_URL="https://www.ubuntu.com/legal/terms-and-policies/privacy-policy"
UBUNTU_CODENAME=noble
LOGO=ubuntu-logo
```

- **Version Check:** `lsb_release -cs`

```
ubuntu@ip-172-31-51-74:~$ lsb_release -cs
No LSB modules are available.
noble
```

- **Verify Processor Architecture:** `uname -m`

```
ubuntu@ip-172-31-51-74:~$ uname -m
x86_64
```

★ Guide: <https://docs.docker.com/engine/install/ubuntu/>

- Different Architecture Installation Process Is Different.

★ Check the machine (Ubuntu):

Commands Are:

- To Check the Machine Name: `cat /etc/os-release`

```
ayush-sharma@ayush-sharma-VirtualBox:~$ cat /etc/os-release
PRETTY_NAME="Ubuntu 24.04 LTS"
NAME="Ubuntu"
VERSION_ID="24.04"
VERSION="24.04 LTS (Noble Numbat)"
VERSION_CODENAME=noble
ID=ubuntu
ID_LIKE=debian
HOME_URL="https://www.ubuntu.com/"
SUPPORT_URL="https://help.ubuntu.com/"
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/"
PRIVACY_POLICY_URL="https://www.ubuntu.com/legal/terms-and-policies/privacy-policy"
UBUNTU_CODENAME=noble
LOGO=ubuntu-logo
```

- To check the version: `lsb_release -cs`

```
ayush-sharma@ayush-sharma-VirtualBox:~$ lsb_release -cs
No LSB modules are available.
noble
```

- To check the processor architecture: **uname -m**

```
ayush-sharma@ayush-sharma-VirtualBox:~$ uname -m
x86_64
```

★ Install Docker In CLI:

- Update Information About Packages: **sudo apt-get update**

```
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo apt-get update
[sudo] password for ayush-sharma:
Warning: The unit file, source configuration file or drop-ins of apt-news.service
changed on disk. Run 'systemctl daemon-reload' to reload units.
Warning: The unit file, source configuration file or drop-ins of esm-cache.servi
ce changed on disk. Run 'systemctl daemon-reload' to reload units.
Hit:1 http://in.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Hit:3 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:4 http://in.archive.ubuntu.com/ubuntu noble-backports InRelease
Get:5 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [348
kB]
Get:6 http://in.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages
[323 kB]
Fetched 797 kB in 4s (226 kB/s)
Reading package lists... Done
```

- Install Some Packages: **sudo apt-get install ca-certificates curl**

```
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo apt-get install ca-certificates curl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20240203).
ca-certificates set to manually installed.
The following NEW packages will be installed:
  curl
0 upgraded, 1 newly installed, 0 to remove and 1 not upgraded.
Need to get 227 kB of archives.
After this operation, 532 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 curl amd64 8.
5.0-2ubuntu10.2 [227 kB]
Fetched 227 kB in 3s (67.2 kB/s)
Selecting previously unselected package curl.
(Reading database ... 147884 files and directories currently installed.)
Preparing to unpack .../curl_8.5.0-2ubuntu10.2_amd64.deb ...
Unpacking curl (8.5.0-2ubuntu10.2) ...
Setting up curl (8.5.0-2ubuntu10.2) ...
Processing triggers for man-db (2.12.0-4build2) ...
```

- Other Commands:

```
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo install -m 0755 -d /etc/apt/keyring
s
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo curl -fsSL https://download.docker.
com/linux/ubuntu/gpg -o /etc/apt/keyrings/docker.asc
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo chmod a+r /etc/apt/keyrings/docker.
asc
ayush-sharma@ayush-sharma-VirtualBox:~$ echo \
"deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.asc
] https://download.docker.com/linux/ubuntu \
$(. /etc/os-release && echo "$VERSION_CODENAME") stable" | \
sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
```

- Update Information About Packages:


```
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo apt-get update
Warning: The unit file, source configuration file or drop-ins of apt-news.servic
e changed on disk. Run 'systemctl daemon-reload' to reload units.
Warning: The unit file, source configuration file or drop-ins of esm-cache.servi
ce changed on disk. Run 'systemctl daemon-reload' to reload units.
Get:1 https://download.docker.com/linux/ubuntu noble InRelease [48.8 kB]
Hit:2 http://in.archive.ubuntu.com/ubuntu noble InRelease
Get:3 https://download.docker.com/linux/ubuntu noble/stable amd64 Packages [12.4
kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Hit:6 http://in.archive.ubuntu.com/ubuntu noble-backports InRelease
Get:7 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [294
kB]
Fetched 608 kB in 2s (325 kB/s)
Reading package lists... Done
```

- **Install Docker Packages:** (Docker Community Engine)

```
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo apt-get install docker-ce docker-ce
-cli containerd.io docker-buildx-plugin docker-compose-plugin
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  docker-ce-rootless-extras git git-man liberror-perl libslirp0 pigz
  slirp4netns
Suggested packages:
  aufs-tools cgroupfs-mount | cgroup-lite git-daemon-run | git-daemon-sysvinit
  git-doc git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  containerd.io docker-buildx-plugin docker-ce docker-ce-cli
  docker-ce-rootless-extras docker-compose-plugin git git-man liberror-perl
  libslirp0 pigz slirp4netns
0 upgraded, 12 newly installed, 0 to remove and 2 not upgraded.
Need to get 127 MB of archives.
After this operation, 461 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 https://download.docker.com/linux/ubuntu noble/stable amd64 containerd.io
```

- **Running Docker Image:** `sudo docker run hello-world`

```
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
c1ec31eb5944: Pull complete
Digest: sha256:53cc4d415d839c98be39331c948609b659ed725170ad2ca8eb36951288f81b75
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
1. The Docker client contacted the Docker daemon.
2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
   (amd64)
3. The Docker daemon created a new container from that image which runs the
   executable that produces the output you are currently reading.
4. The Docker daemon streamed that output to the Docker client, which sent it
   to your terminal.
```

- **Check Images:** `sudo docker images`

```
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
hello-world         latest         d2c94e258dcb   15 months ago  13.3kB
```

- **Run Another Container:** `sudo docker run ubuntu`

```
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo docker run ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
31e907dcc94a: Pull complete
Digest: sha256:8a37d68f4f73ebf3d4efafbcf66379bf3728902a8038616808f04e34a9ab63ee
Status: Downloaded newer image for ubuntu:latest
```

- (History Of Containers) Docker that exited: `sudo docker ps -a`
`sudo docker container ls -a`

```
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo docker ps -a
```

| CONTAINER ID | IMAGE | COMMAND | CREATED | STATUS |
|--------------|-------------|-------------|----------------|---------------------------|
| f49f6a8026a2 | ubuntu | "/bin/bash" | 3 minutes ago | Exited (0) 3 minutes ago |
| aea3cd02ad3f | hello-world | "/hello" | 25 minutes ago | Exited (0) 25 minutes ago |

- Log In Ubuntu Container: `sudo docker run -it ubuntu`

```
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo docker run -it ubuntu
root@7e249e64aa24:/#
```

Now docker in running state. You can check it using (**sudo docker ps**)

- List All Files In Ubuntu Container: **ls**

```
ayush-sharma@ayush-sharma-VirtualBox:~$ sudo docker run -it ubuntu
root@7e249e64aa24:/# ls
bin  dev  home  lib64  mnt  proc  run  srv  tmp  var
boot  etc  lib   media  opt  root  sbin  sys  usr
```

Inside Bin Files Use Command (**ls bin**)

- Echo Command:

```
root@7e249e64aa24:/# echo "Hello From Ubuntu Container"
Hello From Ubuntu Container
```

- **hostname -i**: It show Ip Address

```
root@7e249e64aa24:/# hostname
7e249e64aa24
root@7e249e64aa24:/# hostname -i
172.17.0.2
```

★ Running BusyBox Container:

- Pull Docker Image By Run Command:

```
PS C:\Users\ayush> docker run busybox
Unable to find image 'busybox:latest' locally
latest: Pulling from library/busybox
a46fbb00284b: Pull complete
Digest: sha256:768e5c6f5cb6db0794eec98dc7a967f40631746c32232b78a3105fb946f3ab83
Status: Downloaded newer image for busybox:latest
```

Images Have Specific Tag

- List Some Commands In BusyBox Image:

```
PS C:\Users\ayush> docker run -it busybox
/ #
/ #
/ #
/ #
```

BusyBox is not a fully featured of linux and it is set of utilities of linux operating system.

```
/ # ls
bin      dev      etc       home      lib       lib64     proc      root      sys       tmp       usr       var
/ # ls bin
[
[[
acpid    dos2unix  ifconfig  mknod     rmmmod    test
add-shell dpkg      ifdown    mkpasswd  route     tftpd
addgroup dpkg-deb ifenslave mkswap    rpm       tftpd
adduser  du        ifplugd   mktemp    rpm2cpio  time
adjtimex dumpkmap  ifup      modinfo   rtcwake   timeout
ar        dumpleases  inetd     modprobe  run-init  top
arch     echo       init      more      run-parts touch
arp      ed         insmod    mount     runlevel  tr
egrep    install    mountpoint runsv     traceroute
eject    ionice     mpstat    runsvdir  traceroute6
```

```
/ # echo "Hello From BusyBoc"
Hello From BusyBoc
/ # uptime
05:17:04 up 18 min,  0 users,  load average: 0.01, 0.03, 0.00
/ #
```

★ Compare Alpine And Busybox:

```
PS C:\Users\ayush> docker run busybox
PS C:\Users\ayush> docker run -it busybox
/ # ls
/ # ls /bin
[
[[
acpid    expr      linux32   poweroff  sysctl    sync
add-shell factor    linux64   powertop  syslogd   syslogd
addgroup fakeidntd linuxrc    printenv  tac
adduser  fallocate ln         ps        tail
adjtimex fatattr   loadfont  pscan     taskset   tar
ar        fbset     logger    pstree    tc        taskset
arch      fbsplash login      pwd        tcpsvd    tee
arp       fdflush  logname   raidautorun tee
arping    fdformat logread   rdate     telnet    telnetd
asci      fdisk    losetup   rdev      test      test
ash       fgconsole lpd        readahead test       tftpd
awk       fgrep    lq        readlink  tftpd     time
base32    find     lnr       readprofile tftpd     timeout
base64    findfs   ls         realpath  time      top
basename flock    lsattr    reboot    timeout   touch
bc         fold     lsm       reformime tr
beep      free     lsof      remove-shell tr
blkdiscard freeramdisk lspci     renice    traceroute
blkid     fsck     lsusb     reset     traceroute6
blockdev  fsck.minix lzcat     resize    tree
bootchartd fsfreeze lzma      rev       truncate
brctl     fstirm   lzop      rm        tr
bunzip2   fsync    lzop      rm        tr
busybox   ftpd     makefs    rmdir     ts
bzcat     ftpget   makemime  rmm       tsz
bzcat     ftpget   man        route    tty
bzcat     ftpget   md5sum    rpm       tty
bzcat     ftpget   mdev      rpm2cpio  tty
bzcat     ftpget   mesg      rtcwake  ubiattach
bzcat     ftpget   microcom  run-init  ubidetach
bzcat     ftpget   mim       run-parts ubidmvol
bzcat     ftpget   mkdir     runlevel  ubirename
bzcat     ftpget   mkdosfs  runsv     ubirmvol
bzcat     ftpget   mke2fs   runsvdir  ubirsvol
bzcat     ftpget   mkfifo   rx         ubiupdatevol
bzcat     ftpget   mkfs.ext2 script     udhcpc
bzcat     ftpget   mkfs.minix scriptreplay udhcpc6
bzcat     ftpget   sed       udhcpd    udev
bzcat     ftpget   mkmod    seeding  udevd
bzcat     ftpget   mkpasswd sendmail  udevd
bzcat     ftpget   mkswap   seq       umount
bzcat     ftpget   mktemp   setarch   uname
bzcat     ftpget   modinfo  setconsole unexpand
bzcat     ftpget   modprobe setfattr  uniq
bzcat     ftpget
```

```
PS C:\Users\ayush> docker run alpine
PS C:\Users\ayush> docker run -it alpine
/ # ls
/ # ls /bin
[
[[
arch      dmesg      hostname  makemime  pipe_progress  stat
ash       dnsdomainname ionice    mkdir     printenv      stty
base64    dumpkmap   iostat    mknod     ps             su
bbconfig  echo       ipcalc    mktemp    pwd            sync
busybox   egrep      kbd_mode  more      reformime      tar
cat        false      kill      mount     rev            touch
chattr     fatattr    link      mountpoint rm             true
chgrp     fdflush    linux32   mpstat    rmdir          umount
chmod     fgrep      linux64   mv         run-parts      uname
chown     fsync      login     netstat   sed            usleep
cp        getopt     ls        nice      setpriv        watch
date      grep       ls        pidof     setserial      zcat
dd         gunzip     lsattr    ping      sh
df         gzip       lzop      ping6     sleep
/ # cat /etc/os-release
NAME="Alpine Linux"
ID=alpine
VERSION_ID=3.20.3
PRETTY_NAME="Alpine Linux v3.20"
HOME_URL="https://alpinelinux.org/"
BUG_REPORT_URL="https://gitlab.alpinelinux.org/alpine/aports/-/issues"
/ # ls etc
alpine-release  inittab      network      protocols      ssl1.1
apk             issue        nsswitch.conf resolv.conf    systcl.conf
busybox-paths.d logrotate.d  os-release   secfixes.d     systcl.d
cronabs         modprobe.d  passwd       security        udhcpc
fstab           modules     periodic     services
group          modules-load.d profile      shadow
hostname        motd        profile.d    shells
hosts          mtab        profile.d    ssl
/ # ls -la bin
total 800
drwxr-xr-x  2 root   root      4096 Sep  6 11:34 .
drwxr-xr-x  1 root   root      4096 Oct  5 05:36 ..
lrwxrwxrwx  1 root   root        12 Sep  6 11:34 arch -> /bin/busybox
lrwxrwxrwx  1 root   root        12 Sep  6 11:34 ash -> /bin/busybox
lrwxrwxrwx  1 root   root        12 Sep  6 11:34 base64 -> /bin/busybox
lrwxrwxrwx  1 root   root        12 Sep  6 11:34 bbconfig -> /bin/busybox
-rwxr-xr-x  1 root   root    808712 Jun 10 07:11 busybox
lrwxrwxrwx  1 root   root        12 Sep  6 11:34 cat -> /bin/busybox
lrwxrwxrwx  1 root   root        12 Sep  6 11:34 chattr -> /bin/busybox
lrwxrwxrwx  1 root   root        12 Sep  6 11:34 chgrp -> /bin/busybox
lrwxrwxrwx  1 root   root        12 Sep  6 11:34 chmod -> /bin/busybox
lrwxrwxrwx  1 root   root        12 Sep  6 11:34 chown -> /bin/busybox
lrwxrwxrwx  1 root   root        12 Sep  6 11:34 cp -> /bin/busybox
```


| | | | | | | | | | | |
|--|-------------|---------------|-------------------|----------------------|----------|---|------|------|----------------|-------------------------------|
| cpio | hush | more | setfont | unix2dos | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | date -> /bin/busybox |
| crc32 | hwclock | mount | setkeycodes | unlink | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | dd -> /bin/busybox |
| crond | i2cdetect | mountpoint | setlogcons | unlзма | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | df -> /bin/busybox |
| crontab | i2cdump | mpstat | setpriv | unshare | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | dmesg -> /bin/busybox |
| cryptpw | i2cget | mt | setserial | unxz | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | dnsdomainname -> /bin/busybox |
| cattyhack | i2cset | mv | setsid | unzip | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | dumpmap -> /bin/busybox |
| cut | i2ctransfer | nameif | setuidgid | uptime | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | echo -> /bin/busybox |
| date | id | nanddump | sh | users | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | egrep -> /bin/busybox |
| dc | ifconfig | nandwrite | shalsum | usleep | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | false -> /bin/busybox |
| dd | ifdown | nbd-client | sha256sum | uudecode | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | fatattr -> /bin/busybox |
| deallocvt | ifenslave | nc | sha3sum | uuencode | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | fdflush -> /bin/busybox |
| delgroup | ifplugd | netstat | sha512sum | vconfig | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | fgrep -> /bin/busybox |
| deluser | ifup | nice | showkey | vi | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | fsync -> /bin/busybox |
| depmod | inetd | nl | shred | vlock | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | getopt -> /bin/busybox |
| devmem | init | meter | shuf | volname | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | grep -> /bin/busybox |
| df | insmod | nohup | slattach | w | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | gunzip -> /bin/busybox |
| dhcprelay | install | nologin | sleep | wall | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | gzip -> /bin/busybox |
| diff | ionice | nproc | smemcap | watch | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | hostname -> /bin/busybox |
| dirname | iostat | nsenter | softlimit | watchdog | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | ionice -> /bin/busybox |
| dmesg | ip | nslookup | sort | wc | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | iostat -> /bin/busybox |
| dnsd | ipaddr | ntpd | split | wget | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | ipcalc -> /bin/busybox |
| dnsdomainname | ipcalc | od | ssl_client | which | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | kbd_mode -> /bin/busybox |
| dos2unix | ipcrm | openvt | start-stop-daemon | who | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | kill -> /bin/busybox |
| dpkg | ipcs | partprobe | stat | whoami | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | mkdir -> /bin/busybox |
| dpkg-deb | iplink | passwd | strings | whois | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | linux32 -> /bin/busybox |
| du | ipneigh | paste | stty | xargs | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | linux64 -> /bin/busybox |
| dumpmap | iproute | patch | su | xxd | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | ln -> /bin/busybox |
| dumpleases | iprule | pgrep | sulogin | xz | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | login -> /bin/busybox |
| echo | iptunnel | pidof | sum | xxcat | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | ls -> /bin/busybox |
| ed | kbd_mode | ping | sv | yes | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | lsattr -> /bin/busybox |
| egrep | kill | ping6 | svc | zcata | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | lzo -> /bin/busybox |
| eject | killall | pipe_progress | svlogd | zcip | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | makeime -> /bin/busybox |
| env | killall5 | pivot_root | svok | | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | mkdir -> /bin/busybox |
| envdir | klogd | pkill | swapoff | | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | mkmod -> /bin/busybox |
| envuidgid | last | popm | swapon | | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | mktemp -> /bin/busybox |
| ether-wake | less | popmaildir | switch_root | | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | more -> /bin/busybox |
| # cat /etc/os-release | | | | | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | mount -> /bin/busybox |
| cat: can't open '/etc/os-release': No such file or directory | | | | | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | mountpoint -> /bin/busybox |
| # ls etc | | | | | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | mpstat -> /bin/busybox |
| group | hosts | mtab | nsswitch.conf | resolv.conf | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | mv -> /bin/busybox |
| hostname | localtime | network | passwd | shadow | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | netstat -> /bin/busybox |
| # ls -la bin | | | | | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | nice -> /bin/busybox |
| total 40828u | | | | | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | mkdir -> /bin/busybox |
| dwxr-xr-x | 2 | root | root | 12288 Sep 26 21:31 | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | ping -> /bin/busybox |
| dwxr-xr-x | 1 | root | root | 4096 Oct 5 05:36 | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | ping6 -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | pipe_progress -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | printenv -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | ps -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | pwd -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | reformime -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | rev -> /bin/busybox |

| | | | | | | | | | | | |
|------------|-----|------|------|----------------------|-------------------|----------|---|------|------|----------------|---------------------------|
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | sha256sum | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | rw -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | sha3sum | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | rmddir -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | sha512sum | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | run-parts -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | showkey | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | sed -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | shred | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | setpriv -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | shuf | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | setserial -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | slattach | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | sh -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | sleep | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | sleep -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | smemcap | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | stat -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | softlimit | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | stty -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | sort | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | su -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | split | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | sync -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | ssl_client | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | tar -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | start-stop-daemon | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | touch -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | stat | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | true -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | strings | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | umount -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | stty | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | uname -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | su | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | usleep -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | sum | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | watch -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | sv | lwwxwxwx | 1 | root | root | 12 Sep 6 11:34 | xxcat -> /bin/busybox |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | svlogd | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | svok | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | swapoff | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | swapon | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | switch_root | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | sysctl | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | syslogd | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | tac | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | tail | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | tar | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | taskset | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | tc | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | tcpd | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | tee | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | telnet | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | telnetd | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | test | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | tfcp | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | tfcpd | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | time | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | timeout | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | top | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | touch | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | tr | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | traceroute | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | traceroute6 | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | true | lwwxwxwx | 1 | root | root | | |
| -rwxr-xr-x | 405 | root | root | 1029688 Sep 26 21:31 | true | lwwxwxwx | 1 | root | root | | |

BusyBox v1.36.1 (2024-06-10 07:11:47 UTC) multi-call binary.
 BusyBox is copyrighted by many authors between 1998-2015.
 Licensed under GPLv2. See source distribution for detailed
 copyright notices.

 Usage: busybox [function [arguments]...]
 or: busybox --list[=full]
 or: function --install [-s] [DIR]
 or: function [arguments]...

 BusyBox is a multi-call binary that combines many common Unix
 utilities into a single executable. Most people will create a
 link to busybox for each function they wish to use and BusyBox
 will act like whatever it was invoked as.

 Currently defined functions:
 [, [[, acpid, add-shell, addgroup, adduser, adjtimex, arch, arp, arping, ash, awk, base64,
 basename, bbconfig, bc, beep, blkdiscard, blkid, blockdev, brctl, bunzip2, bzip2, cal,
 cat, chattr, chgrp, chmod, chown, chpasswd, chroot, chvt, cksum, clear, cmp, comm, cp, cpio,
 crond, crontab, cryptpw, cut, date, dc, dd, deallocvt, delgroup, deluser, depmod, df, diff,
 dirname, dmesg, dnsdomainname, dos2unix, du, dumpmap, echo, egrep, eject, env, ether-wake,
 expand, expr, factor, falloccat, false, fatattr, fbsset, fbsplash, fdflush, fdisk, fgrep,
 find, findfs, flock, fold, free, fsck, fstirm, fsync, fuser, getopt, getty, grep, groups,
 gunzip, gzip, halt, hd, head, hexdump, hostid, hostname, hwclock, id, ifconfig, ifdown,
 ifenslave, ifup, init, inotifyd, insmod, install, ionice, iostat, ip, ipaddr, ipcalc, ipcrm,
 ipcs, iplink, ipneigh, iproute, iprule, iptunnel, kbd_mode, kill, killall, killall5, klogd,
 last, less, link, linux32, linux64, ln, loadfont, loadmap, logger, login, logread, losetup,
 ls, lsattr, lsmdev, lsusb, lzcat, lzma, lzop, lzopcat, makeime, md5sum, mdev, mesg,
 microcom, mknod, mkdosfs, mkfifo, mkfs.vfat, mkmod, mkpasswd, mkswap, mktmp, modinfo,
 modprobe, more, mount, mountpoint, mpstat, mv, nameif, nanddump, nandwrite, nbd-client, nc,

```

-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 ubiattach
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 ubidetach
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 ubidetachvol
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 ubirename
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 ubirwvol
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 ubirsvol
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 ubiupdatevol
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 udhccp
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 udhccp6
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 udhccpd
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 udcpsd
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 uevent
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 umount
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 uname
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 unexpand
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 uniq
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 unix2dos
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 unlink
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 unlzma
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 unshare
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 unxz
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 unzip
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 uptime
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 users
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 usleep
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 uudecode
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 uuecode
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 vconfig
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 vi
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 vlock
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 volname
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 w
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 wall
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 watch
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 watchdog
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 wc
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 wget
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 which
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 who
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 whoami
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 whois
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 xargs
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 xxd
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 xz
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 xzcat
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 yes
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 zcat
-TWKI-XF-X 405 root root 1029688 Sep 26 21:31 zcip
/ # apk
sh: apk: not found
/ #

```

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readahead, readlink, realpath, reboot, reformime, remove-shell, renice, reset, resize, rev,
rfkill, rm, rmdir, rmdir, route, run-parts, sed, sendmail, seq, setconsole, setfont,
setkeycodes, setlogcons, setpriv, setserial, setuid, sh, sha1sum, sha256sum, sha3sum,
sha512sum, showkey, shred, shuf, slattach, sleep, sort, split, stat, strings, stty, su, sum,
swapon, swapoff, swapon, switch_root, sync, sysctl, syslogd, tac, tail, tar, tee, test, time,
timeout, top, touch, tr, traceroute, traceroute6, tree, true, truncate, tty, ttysize, tuncctl,
udhccp, udhccp6, umount, uname, unexpand, uniq, unix2dos, unlink, unlzma, unlzop, unshare,
unxz, unzip, uptime, usleep, uudecode, uuecode, vconfig, vi, vlock, volname, watch,
watchdog, wc, wget, which, who, whoami, whois, xargs, xxd, xzcat, yes, zcat, zcip

/ # apk
apk-tools 2.14.4, compiled for x86_64.

usage: apk [<OPTIONS>...] COMMAND [<ARGUMENTS>...]

Package installation and removal:
add      Add packages to WORLD and commit changes
del      Remove packages from WORLD and commit changes

System maintenance:
fix      Fix, reinstall or upgrade packages without modifying WORLD
update   Update repository indexes
upgrade  Install upgrades available from repositories
cache    Manage the local package cache

Querying package information:
info     Give detailed information about packages or repositories
list     List packages matching a pattern or other criteria
dot      Render dependencies as graphviz graphs
policy   Show repository policy for packages
search   Search for packages by name or description

Repository maintenance:
index    Create repository index file from packages
fetch    Download packages from repositories to a local directory
manifest Show checksums of package contents
verify   Verify package integrity and signature

Miscellaneous:
audit    Audit system for changes
stats    Show statistics about repositories and installations
version  Compare package versions or perform tests on version strings

This apk has coffee making abilities.
For more information: man 8 apk
/ # busybox ping google.com
PING google.com (142.250.194.238): 56 data bytes
64 bytes from 142.250.194.238: seq=0 ttl=63 time=19.488 ms
64 bytes from 142.250.194.238: seq=1 ttl=63 time=19.486 ms
64 bytes from 142.250.194.238: seq=2 ttl=63 time=19.376 ms
64 bytes from 142.250.194.238: seq=3 ttl=63 time=18.224 ms
64 bytes from 142.250.194.238: seq=4 ttl=63 time=17.854 ms

```