

Title: Linux Command List Assessment

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File and Directory Operations:

ls: List files and directories

```
(dharma@kali)-[~]  
$ ls  
Desktop Documents Downloads Music Pictures Public Templates Videos
```

cd: Change directory

```
(dharma@kali)-[~]  
$ cd /home/dharma/Documents
```

pwd: Print working
directory

```
(dharma@kali)-[~/Documents]  
$ pwd  
/home/dharma/Documents
```

mkdir: Make directory

```
(dharma@kali)-[~/Documents]  
$ mkdir Assignment1  
  
(dharma@kali)-[~/Documents]  
$ ls  
Assignment1
```

touch: Create an empty file

```
(dharma@kali)-[~/Documents] "One, the more you are able to hear"  
$ touch a.txt  
  
(dharma@kali)-[~/Documents]  
$ ls  
Assignment1 a.txt
```

cp: Copy files and directories

```
(dharma@kali)~[~/Documents]
$ ls
Assignment1  a.txt

(dharma@kali)~[~/Documents]
$ cp a.txt Assignment1

(dharma@kali)~[~/Documents]
$ ls
Assignment1  a.txt
```

mv: Move or rename files and directories

```
(dharma@kali)~[~/Documents/Assignment1]
$ ls
a.txt

(dharma@kali)~[~/Documents/Assignment1]
$ mv a.txt b.txt

(dharma@kali)~[~/Documents/Assignment1]
$ ls
b.txt
```

rm: Remove files and directories

```
(dharma@kali)~[~/Documents/Assignment1]
$ cd /home/dharma/Documents

(dharma@kali)~[~/Documents]
$ ls
Assignment1  a.txt

(dharma@kali)~[~/Documents]
$ rm a.txt

(dharma@kali)~[~/Documents]
$ ls
Assignment1
```

find: Search for files and directories

```
(dharma@kali)~[~/Documents]
$ ls
Assignment1

(dharma@kali)~[~/Documents]
$ find
.
./Assignment1
./Assignment1/b.txt
```

File Viewing and Editing:

cat: Concatenate and display file

content

```
(dharma@kali)~[~/Documents/Assignment1]
$ cat b.txt
This is Dharma Teja
```

less: View file content with pagination

```
(dharma@kali)-[~/Documents/Assignment1]
$ less b.txt
This is Dharma Teja
b.txt (END)
```

head: Display the beginning of a file

```
(dharma@kali)-[~/Documents/Assignment1]
$ head b.txt
This is Dharma Teja
```

tail: Display the end of a file

```
(dharma@kali)-[~/Documents/Assignment1]
$ tail b.txt
This is Dharma Teja
```

nano: Text editor for creating and editing files

```
(dharma@kali)-[~/Documents/Assignment1]
$ nano b.txt
```

vi/vim: Powerful text editor for experienced users

```
File Actions Edit View Help

VIM - Vi IMproved

version 9.0.1165
by Bram Moolenaar et al.
Modified by team+vim@tracker.debian.org
Vim is open source and freely distributable

Sponsor Vim development!
type :help sponsor<Enter> for information
type :q<Enter> to exit
type :help<Enter> or <F1> for on-line help
type :help version9<Enter> for version info

0.0-1 All
```

File Permissions:

chmod: Change file permissions

```
(dharma@kali) - [~/Documents/Assignment1]
$ chmod u+rwx b.txt
```

chown: Change file owner

```
(dharma@kali) - [~/Documents/Assignment1]
$ chown dharma b.txt

(dharma@kali) - [~/Documents/Assignment1]
$ ls -l b.txt
-rwxr--r-- 1 dharma dharma 20 May 23 06:29 b.txt
```

chgrp: Change file group

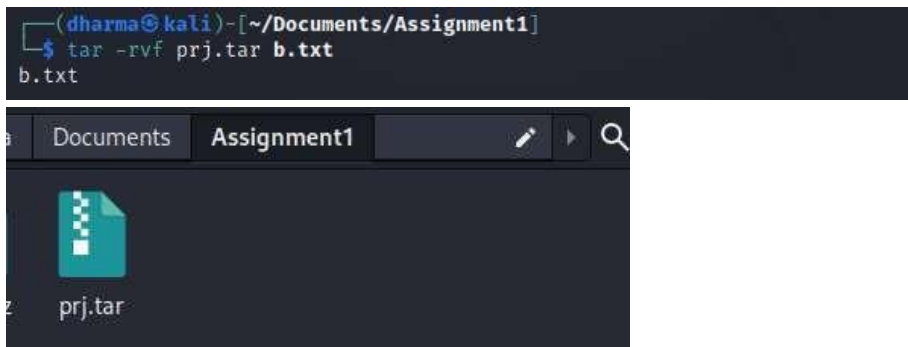
```
(dharma@kali) - [~/Documents/Assignment1]
$ sudo chgrp dharma b.txt

(dharma@kali) - [~/Documents/Assignment1]
$ ls -l
total 4
-rwxr--r-- 1 dharma dharma 20 May 23 06:29 b.txt
```

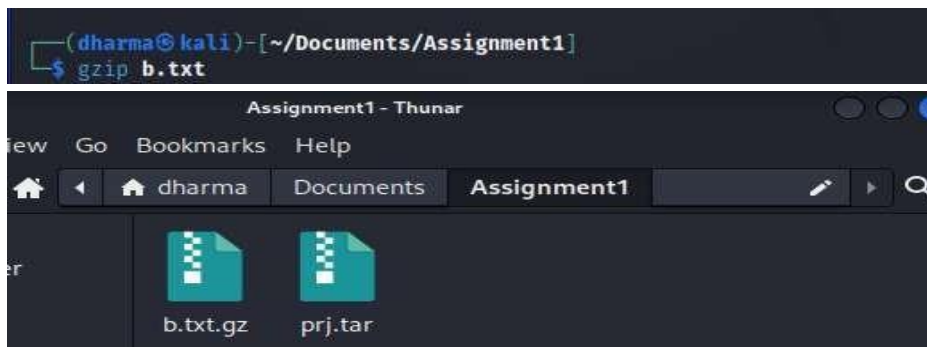
File Compression and Archiving:

tar: Archive

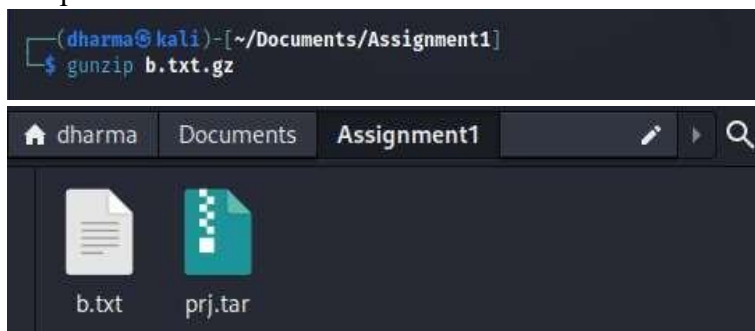
files



gzip: Compress
files

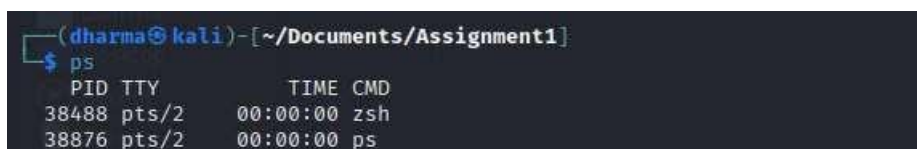


unzip: Extract files from a ZIP archive



Process Management:

ps: List running
processes



top: Display real-time system information and
processes

```
(dharma@kali)-[~/Documents/Assignment1]
$ top
```

File Actions Edit View Help

top - 07:20:05 up 1:26, 1 user, load average: 0.20, 0.07, 0.02
Tasks: 144 total, 1 running, 143 sleeping, 0 stopped, 0 zombie
%Cpu(s): 1.0 us, 2.0 sy, 0.0 ni, 96.9 id, 0.0 wa, 0.0 hi, 0.0 si,
MiB Mem : 3920.9 total, 2500.1 free, 971.3 used, 692.0 buff/cache
MiB Swap: 975.0 total, 975.0 free, 0.0 used. 2949.6 avail Mem

| PID | USER | PR | NI | VIRT | RES | SHR | S | %CPU | %MEM | TIME+ |
|------|--------|----|-----|--------|--------|-------|---|------|------|---------|
| 572 | root | 20 | 0 | 452824 | 132544 | 74848 | S | 1.0 | 3.3 | 0:45.30 |
| 900 | dharma | 20 | 0 | 217956 | 2392 | 2044 | S | 0.3 | 0.1 | 0:09.48 |
| 957 | dharma | 20 | 0 | 647072 | 103280 | 78092 | S | 0.3 | 2.6 | 0:14.80 |
| 1013 | dharma | 20 | 0 | 357664 | 38164 | 22224 | S | 0.3 | 1.0 | 0:10.11 |
| 1 | root | 20 | 0 | 167732 | 12296 | 9064 | S | 0.0 | 0.3 | 0:00.92 |
| 2 | root | 20 | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.00 |
| 3 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 |
| 4 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 |
| 5 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 |
| 6 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 |
| 8 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 |
| 10 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 |
| 11 | root | 20 | 0 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 |
| 12 | root | 20 | 0 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 |
| 13 | root | 20 | 0 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 |
| 14 | root | 20 | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.43 |

Kill: Terminate processes

```
(dharma@kali)-[~/Documents/Assignment1]
$ kill -l
```

HUP INT QUIT ILL TRAP IOT BUS FPE KILL USR1 SEGV USR2 PIPE ALRM TERM STKFLT
CHLD CONT STOP TSTP TTIN TTOU URG XCPU XFSZ VTALRM PROF WINCH POLL PWR SYS

bg: Run processes in the background

```
(dharma@kali)-[~/Documents/Assignment1]
$ bg
```

bg: no current job

fg: Bring background processes to the foreground

```
(dharma@kali)-[~/Documents/Assignment1]
$ fg
```

fg: no current job

System Information:

uname: Print system

information

```
(dharma@kali)-[~/Documents/Assignment1]
$ uname
```

Linux

df: Display disk space usage


```
(dharma@kali)~[~/Documents/Assignment1]
$ df
Filesystem      1K-blocks      Used Available Use% Mounted on
udev            1966956         0   1966956  0% /dev
tmpfs           401504         960    400544  1% /run
/dev/sda1       64753252 12741508  48689992 21% /
tmpfs           2007512         0   2007512  0% /dev/shm
tmpfs           5120          0      5120  0% /run/lock
tmpfs           401500         80    401420  1% /run/user/1000
```

free: Display memory usage

```
(dharma@kali)~[~/Documents/Assignment1]
$ free
              total        used        free      shared  buff/cache   avail
Mem:         4015024      977568      2421316         23960        865664        303
Swap:         998396           0         998396
```

uptime: Show system uptime

```
(dharma@kali)~[~/Documents/Assignment1]
$ uptime
07:24:42 up 1:31, 1 user, load average: 0.04, 0.04, 0.00
```

who: Display logged-in users

```
(dharma@kali)~[~/Documents/Assignment1]
$ who
```

w: Display logged-in users and their activities

```
(dharma@kali)~[~/Documents/Assignment1]
$ w
07:24:48 up 1:31, 1 user, load average: 0.03, 0.04, 0.00
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU WHAT
dharma    tty7     :0             05:54    1:31m 46.98s 0.88s xfce4-sessi
```

Networking:

ifconfig: Configure network

interfaces

```
(dharma@kali)~[~/Documents/Assignment1]
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::a00:27ff:fe92:197c prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:92:19:7c txqueuelen 1000 (Ethernet)
    RX packets 1103 bytes 975667 (952.7 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 763 bytes 92025 (89.8 KiB)
    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 4 bytes 240 (240.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 4 bytes 240 (240.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

ping: Send ICMP echo requests to a network host

```
(dharmat@kali) - [~/Documents/Assignment1]
$ ping 192.168.32.02
PING 192.168.32.02 (192.168.32.2) 56(84) bytes of data.
From 115.244.41.193 icmp_seq=1 Destination Net Unreachable
From 115.244.41.193 icmp_seq=3 Destination Net Unreachable
From 115.244.41.193 icmp_seq=7 Destination Net Unreachable
From 115.244.41.193 icmp_seq=10 Destination Net Unreachable
From 115.244.41.193 icmp_seq=13 Destination Net Unreachable
From 115.244.41.193 icmp_seq=17 Destination Net Unreachable
From 115.244.41.193 icmp_seq=18 Destination Net Unreachable
From 115.244.41.193 icmp_seq=26 Destination Net Unreachable
```

```
(dharmat@kali) - [~/Documents/Assignment1]
$ ping 127.0.0.1
PING 127.0.0.1 (127.0.0.1) 56(84) bytes of data.
64 bytes from 127.0.0.1: icmp_seq=1 ttl=64 time=0.016 ms
64 bytes from 127.0.0.1: icmp_seq=2 ttl=64 time=0.040 ms
64 bytes from 127.0.0.1: icmp_seq=3 ttl=64 time=0.044 ms
64 bytes from 127.0.0.1: icmp_seq=4 ttl=64 time=0.050 ms
64 bytes from 127.0.0.1: icmp_seq=5 ttl=64 time=0.039 ms
64 bytes from 127.0.0.1: icmp_seq=6 ttl=64 time=0.047 ms
64 bytes from 127.0.0.1: icmp_seq=7 ttl=64 time=0.044 ms
64 bytes from 127.0.0.1: icmp_seq=8 ttl=64 time=0.043 ms
64 bytes from 127.0.0.1: icmp_seq=9 ttl=64 time=0.035 ms
64 bytes from 127.0.0.1: icmp_seq=10 ttl=64 time=0.053 ms
64 bytes from 127.0.0.1: icmp_seq=11 ttl=64 time=0.043 ms
64 bytes from 127.0.0.1: icmp_seq=12 ttl=64 time=0.046 ms
64 bytes from 127.0.0.1: icmp_seq=13 ttl=64 time=0.048 ms
64 bytes from 127.0.0.1: icmp_seq=14 ttl=64 time=0.044 ms
```

```
(dharmat@kali) - [~/Documents/Assignment1]
$ ping 172.18.158.220
PING 172.18.158.220 (172.18.158.220) 56(84) bytes of data.
64 bytes from 172.18.158.220: icmp_seq=1 ttl=127 time=1.19 ms
64 bytes from 172.18.158.220: icmp_seq=2 ttl=127 time=1.44 ms
64 bytes from 172.18.158.220: icmp_seq=3 ttl=127 time=1.14 ms
64 bytes from 172.18.158.220: icmp_seq=4 ttl=127 time=1.65 ms
```

```
(dharmat@kali) - [~/Documents/Assignment1]
$ ping 172.19.49.115
PING 172.19.49.115 (172.19.49.115) 56(84) bytes of data.
64 bytes from 172.19.49.115: icmp_seq=1 ttl=127 time=0.990 ms
64 bytes from 172.19.49.115: icmp_seq=2 ttl=127 time=1.22 ms
64 bytes from 172.19.49.115: icmp_seq=3 ttl=127 time=1.13 ms
64 bytes from 172.19.49.115: icmp_seq=4 ttl=127 time=0.992 ms
64 bytes from 172.19.49.115: icmp_seq=5 ttl=127 time=1.07 ms
64 bytes from 172.19.49.115: icmp_seq=6 ttl=127 time=1.31 ms
64 bytes from 172.19.49.115: icmp_seq=7 ttl=127 time=1.19 ms
64 bytes from 172.19.49.115: icmp_seq=8 ttl=127 time=1.16 ms
64 bytes from 172.19.49.115: icmp_seq=9 ttl=127 time=1.48 ms
64 bytes from 172.19.49.115: icmp_seq=10 ttl=127 time=1.30 ms
64 bytes from 172.19.49.115: icmp_seq=11 ttl=127 time=1.35 ms
64 bytes from 172.19.49.115: icmp_seq=12 ttl=127 time=1.36 ms
64 bytes from 172.19.49.115: icmp_seq=13 ttl=127 time=1.07 ms
64 bytes from 172.19.49.115: icmp_seq=14 ttl=127 time=1.44 ms
64 bytes from 172.19.49.115: icmp_seq=15 ttl=127 time=1.11 ms
64 bytes from 172.19.49.115: icmp_seq=16 ttl=127 time=0.743 ms
64 bytes from 172.19.49.115: icmp_seq=17 ttl=127 time=0.705 ms
64 bytes from 172.19.49.115: icmp_seq=18 ttl=127 time=1.17 ms
64 bytes from 172.19.49.115: icmp_seq=19 ttl=127 time=0.918 ms
64 bytes from 172.19.49.115: icmp_seq=20 ttl=127 time=0.955 ms
64 bytes from 172.19.49.115: icmp_seq=21 ttl=127 time=1.25 ms
64 bytes from 172.19.49.115: icmp_seq=22 ttl=127 time=0.890 ms
```

ssh: Securely connect to a remote system

```
(dharmat@kali) - [~/Documents/Assignment1]
$ ssh dharmat@172.18.158.220
ssh: connect to host 172.18.158.220 port 22: Connection refused
```

scp: Securely copy files between systems


```
(dharma@kali)-[~/Documents/Assignment1]
$ scp b.txt dharma@172.18.158.220:/home/dharma
ssh: connect to host 172.18.158.220 port 22: Connection refused
scp: Connection closed
```

wget: Download files from the web

```
(dharma@kali)-[~/Documents/Assignment1]
$ wget http://ftp.gnu.org/gnu/wget/wget2-2.0.0.tar.gz
--2023-05-23 07:47:43-- http://ftp.gnu.org/gnu/wget/wget2-2.0.0.tar.gz
Resolving ftp.gnu.org (ftp.gnu.org)... 209.51.188.20, 2001:470:142:3::b
Connecting to ftp.gnu.org (ftp.gnu.org)|209.51.188.20|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3565643 (3.4M) [application/x-gzip]
Saving to: 'wget2-2.0.0.tar.gz'

wget2-2.0.0.tar.gz 100%[====>] 3.40M 1.03MB/s in 3.3s

2023-05-23 07:47:47 (1.03 MB/s) - 'wget2-2.0.0.tar.gz' saved [3565643/3565643]
```

System Administration:

sudo: Execute commands with superuser privileges

```
(dharma@kali)-[~/Documents/Assignment1]
$ sudo
usage: sudo -h | -K | -k | -v
usage: sudo -v [-ABkNnS] [-g group] [-h host] [-p prompt] [-u user]
usage: sudo -l [-ABkNnS] [-g group] [-h host] [-p prompt] [-u user] [-u user] [command [arg ...]]
usage: sudo [-ABbEHKnPS] [-r role] [-t type] [-C num] [-D directory] [-g group] [-h host] [-p prompt] [-R directory] [-T timeout] [-u user] [VAR=value] [-i | -s] [command [arg ...]]
usage: sudo -e [-ABkNnS] [-r role] [-t type] [-C num] [-D directory] [-g group] [-h host] [-p prompt] [-R directory] [-T timeout] [-u user] file ...
```

apt-get: Package management for Debian-based distributions

```
File Actions Edit View Help

remove - Remove packages
purge - Remove packages and config files
autoremove - Remove automatically all unused packages
dist-upgrade - Distribution upgrade, see apt-get(8)
dselect-upgrade - Follow dselect selections
build-dep - Configure build-dependencies for source packages
satisfy - Satisfy dependency strings
clean - Erase downloaded archive files
autoclean - Erase old downloaded archive files
check - Verify that there are no broken dependencies
source - Download source archives
download - Download the binary package into the current directory
changelog - Download and display the changelog for the given package

See apt-get(8) for more information about the available commands.
Configuration options and syntax is detailed in apt.conf(5).
Information about how to configure sources can be found in sources.list(5).
Package and version choices can be expressed via apt_preferences(5).
Security details are available in apt-secure(8).

This APT has Super Cow Powers.
```

yum: Package management for Red Hat-based distributions

```
(dharma@kali)-[~/Documents/Assignment1]
$ yum search firefox
Command 'yum' not found, did you mean:
  command 'sum' from deb coreutils
  command 'zum' from deb perforate
  command 'uum' from deb freewnn-jserver
  command 'num' from deb quickcal
Try: sudo apt install <deb name>
```

systemctl: Manage system services

```
File Actions Edit View Help
UNIT
proc-sys-fs-binfmt_misc.automount
sys-devices-pci0000:00-0000:00:01.1-ata3-host2-target2:0:0-2:0:0:0-block-
sys-devices-pci0000:00-0000:00:03.0-net-eth0.device
sys-devices-pci0000:00-0000:00:05.0-sound-card0-controlC0.device
sys-devices-pci0000:00-0000:00:0d.0-ata1-host0-target0:0:0-0:0:0:0-block-
sys-devices-pci0000:00-0000:00:0d.0-ata1-host0-target0:0:0-0:0:0:0-block-
sys-devices-pci0000:00-0000:00:0d.0-ata1-host0-target0:0:0-0:0:0:0-block-
sys-devices-platform-serial8250-tty-ttyS0.device
sys-devices-platform-serial8250-tty-ttyS1.device
sys-devices-platform-serial8250-tty-ttyS2.device
sys-devices-platform-serial8250-tty-ttyS3.device
sys-devices-virtual-misc-rfkill.device
sys-module-configfs.device
sys-module-fuse.device
sys-subsystem-net-devices-eth0.device
-.mount
dev-hugepages.mount
dev-mqueue.mount
proc-sys-fs-binfmt_misc.mount
run-credentials-systemd\x2dsysctl.service.mount
log file: |
```

crontab: Schedule recurring tasks

```
(dharma@kali)-[~/Documents/Assignment1]
$ crontab -l
no crontab for dharma
```

useradd: Add a new user

```
(dharma@kali)-[~/Documents/Assignment1]
$ sudo useradd dharma1
[sudo] password for dharma:
nm-openconnect:x:131:138:NetworkManager OpenConnect plugin,,:/var/lib/Netw
orkManager:/usr/sbin/nologin
dharma:x:1000:1000:Dharma Teja,,:/home/dharma:/usr/bin/zsh
dharma1:x:1001:1001::/home/dharma1:/bin/sh
```

passwd: Change user password

```
(dharma@kali)-[~/Documents/Assignment1]
$ passwd
Changing password for dharma.
Current password:
New password:
Retype new password:
passwd: password updated successfully
```