

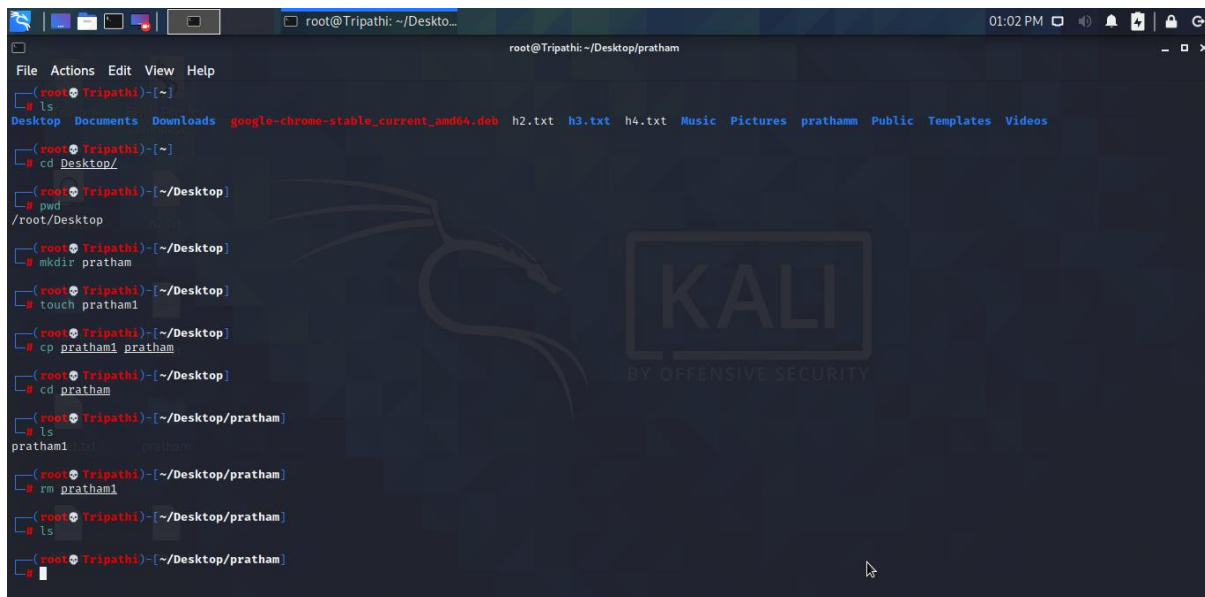
LINUX COMMAND LIST ASSESSMENT

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1. ls: List files and directories
2. cd: Change directory
3. pwd: Print working directory
4. mkdir: Make directory
5. touch: Create an empty file
6. cp: Copy files and directories
7. mv: Move or rename files and directories
8. rm: Remove files and directories
9. find



```
root@Tripathi: ~/Desktop/
File Actions Edit View Help
root@Tripathi: ~[~]
# ls
Desktop Documents Downloads google-chrome-stable_current_amd64.deb h2.txt h3.txt h4.txt Music Pictures pratham Public Templates Videos
root@Tripathi: ~[~]
# cd Desktop/
root@Tripathi: ~/Desktop
# pwd
/root/Desktop
root@Tripathi: ~/Desktop
# mkdir pratham
root@Tripathi: ~/Desktop
# touch pratham1
root@Tripathi: ~/Desktop
# cp pratham1 pratham
root@Tripathi: ~/Desktop
# cd pratham
root@Tripathi: ~/Desktop/pratham
# ls
pratham1.txt pratham
root@Tripathi: ~/Desktop/pratham
# rm pratham1
root@Tripathi: ~/Desktop/pratham
# ls
root@Tripathi: ~/Desktop/pratham
#
```



```
Full documentation https://www.gnu.org/software/coreutils/chmod>
or available locally via: info '(coreutils) chmod invocation'

root@Tripathi: ~/Desktop
# find h2.txt
h2.txt
root@Tripathi: ~/Desktop
```

Using cat: Concatenate and display file content of the file present on the desktop.

“h2.txt”



```
Mobile view
Developers
Statistics
Cookie statement

Wikimedia Foundation
Powered by MediaWiki

root@Tripathi: ~/Desktop
# cat h2.txt
ah,dbvjh sjdaldj afjdv j jv alj vak dsj
root@Tripathi: ~/Desktop
#
```

Using tail: Display the end of a file

```
(root@Tripathi) ~/Desktop
# tail h2.txt
Contact Wikipedia
Mobile view
Developers
Statistics
Cookie statement

Wikimedia Foundation
Powered by MediaWiki

(root@Tripathi) ~/Desktop
# cat tail h2.txt
```

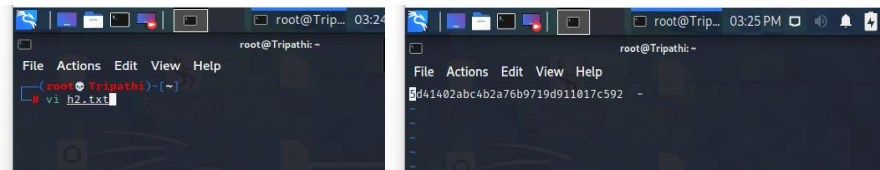
Using head: Display the beginning of a file “h2.txt”

```
File Actions Edit View Help
(root@Tripathi) ~/Desktop
# head h2.txt
$y$9T$W82wBYtwDlBtrwqLap16/$wMt31rWdcNcFoGGD/gDbupoIs57Z0fzhx8gS3ZLEKXD

Michael Jeffrey Jordan (born February 17, 1963), also known by his initials MJ,[9] is an American former professional basketball player and businessman. His biography on the official National Basketball Association (NBA) website states: "By acclamation, Michael Jordan is the greatest basketball player of all time." [10] He played fifteen seasons in the NBA, winning six NBA championships with the Chicago Bulls. Jordan is the principal owner and chairman of the Charlotte Hornets of the NBA and of 23XI Racing in the NASCAR Cup Series. He was integral in popularizing the basketball sport and the NBA around the world in the 1980s and 1990s, [11] becoming a global cultural icon. [12]

Jordan played college basketball for three seasons under coach Dean Smith with the North Carolina Tar Heels. As a freshman, he was a member of the Tar Heels' national championship team in 1982. [5] Jordan joined the Bulls in 1984 as the third overall draft pick [5] [13] and quickly emerged as a league star, entertaining crowds with his prolific scoring while gaining a reputation as one of the game's best defensive players. [14] His leaping ability, demonstrated by performing slam dunks from the free-throw line in Slam Dunk Contests, earned him the nicknames "Air Jordan" and "His Airness". [5] [13] Jordan won his first NBA title with the Bulls in 1991 and followed that achievement with titles in 1992 and 1993, securing a three-peat. Jordan abruptly retired from basketball before the 1993–94 NBA season to play Minor League Baseball but returned to the Bulls in March 1995 and led them to three more championships in 1996, 1997, and 1998, as well as a then-record 72 regular season wins in the 1995–96 NBA
```

vi/vim: Powerful text editor for experienced users



File Permissions:

chmod: Change file permissions

Here we have chosen a file h2.txt and using the chmod cmd to change it to executable mode.

```
File Actions Edit View Help
-v, --verbose output a diagnostic for every file processed
--no-preserve-root do not treat '/' specially (the default)
--preserve-root fail to operate recursively on '/'
--reference=RFILE use RFILE's mode instead of MODE values
-R, --recursive change files and directories recursively
--help display this help and exit
--version output version information and exit

Each MODE is of the form '[ugoa]*([-+]*([rwxXst]*[ugo]))*([-+]*[0-7]*)'.

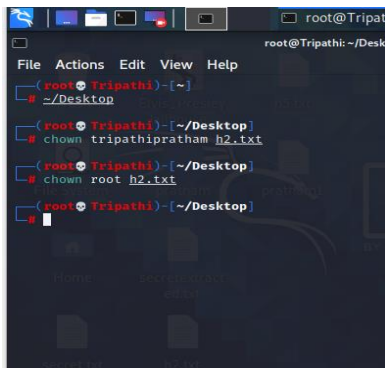
GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
Full documentation <https://www.gnu.org/software/coreutils/chmod>
or available locally via: info '(coreutils) chmod invocation'

(root@Tripathi) ~/Desktop
# chmod +x h2.txt

(root@Tripathi) ~/Desktop
# ls
kivis_Presley_Jailhouse_Rock.jpg h2.txt pratham secret.txt
h2.txt pratham secretextracted.txt

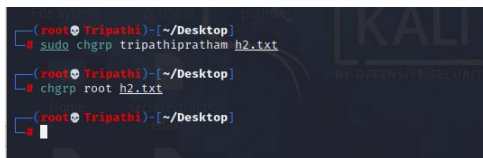
(root@Tripathi) ~/Desktop
```

chown: Change file owner



```
root@Tripathi: ~  
# cd ~/Desktop  
root@Tripathi: ~/Desktop  
# chown tripathipratham h2.txt  
root@Tripathi: ~/Desktop  
# chown root h2.txt  
root@Tripathi: ~/Desktop  
#
```

chgrp: Change file group



```
root@Tripathi: ~/Desktop  
# sudo chgrp tripathipratham h2.txt  
root@Tripathi: ~/Desktop  
# chgrp root h2.txt  
root@Tripathi: ~/Desktop  
#
```

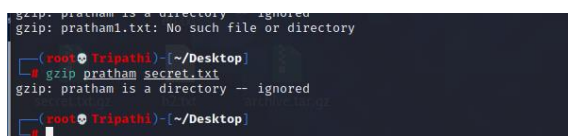
File Compression and Archiving:

tar: Archive files



```
root@Tripathi: ~/Desktop  
tar: pratham: Cannot open: Is a directory  
tar: Error is not recoverable: exiting now  
root@Tripathi: ~/Desktop  
# tar -czvf archive.tar.gz pratham  
pratham/  
secret.txt h2.txt archive.tar.gz  
root@Tripathi: ~/Desktop  
#
```

gzip: Compress files



```
gzip: pratham is a directory -- ignored  
gzip: pratham1.txt: No such file or directory  
root@Tripathi: ~/Desktop  
# gzip pratham secret.txt  
gzip: pratham is a directory -- ignored  
root@Tripathi: ~/Desktop  
#
```

Process Management:

ps: List running processes

top: Display real-time system information and processes

```

root@Tripathi: ~/Desktop
# ps
  PID TTY          TIME CMD
 237 pts/0    00:00:00 ssh
2682 pts/0    00:00:00 ps

root@Tripathi: ~/Desktop
# top
top - 16:09:09 up 4:51, 1 user, load average: 0.00, 0.00, 0.00
Tasks: 236 total, 1 running, 235 sleeping, 0 stopped, 0 zombie
  CPU(s): 15.4 us, 2.7 sy, 0.0 ni, 81.6 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 2968.0 total, 1972.0 free, 443.7 used, 551.5 buff/cache
MiB Swap: 979.0 total, 979.0 free, 0.0 used, 2330.6 avail Mem

  PID USER      PR  NI  VIRT  RES  SHR S  %CPU  %MEM    TIME+  COMMAND
 237 root        20   0 310312 2532   4044 S   0.0   0.1   0:00.01 xfdesktop
 525 root        20   0 635712 100504 51312 S   4.0   3.3   0:21.46 Xorg
 932 root        20   0 509360 48444 32644 S   1.0   1.3   0:18.95 panel-16-pulse
 888 root        20   0 478556 76320 59820 S   0.7   2.5   0:04.43 xfwm4
 918 root        20   0 317908 48280 31952 S   0.7   1.3   0:02.98 xfce4-panel

top - 16:09:36 up 4:52, 1 user, load average: 0.12, 0.03, 0.01
Tasks: 236 total, 1 running, 235 sleeping, 0 stopped, 0 zombie
  CPU(s): 0.3 us, 0.3 sy, 0.0 ni, 99.3 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 2968.0 total, 1995.0 free, 422.6 used, 550.4 buff/cache

```

kill: Terminate processes

bg: Run processes in the background

fg: Bring background processes to the foreground

```

root@Tripathi: ~/Desktop
# kill -9 935

root@Tripathi: ~/Desktop
# bg
bg: no current job

root@Tripathi: ~/Desktop
# fg
fg: no current job

root@Tripathi: ~/Desktop
#

```

System Information:

uname: Print system information

df: Display disk space usage

free: Display memory usage

uptime: Show system uptime

who: Display logged-in users

w: Display logged-in users and their activities

```

root@Tripathi: ~/Desktop
# uname
Linux

root@Tripathi: ~/Desktop
# df
Filesystem      1K-blocks    Used Available Use% Mounted on
udev             1484736      0   1484736   0% /dev
tmpfs            303924      928    302996   1% /run
/dev/sda1       32098084  9707560  20730460  32% /
tmpfs            1519612      0   1519612   0% /dev/shm
tmpfs            5120        0     5120   0% /run/lock
tmpfs            303920      60    303860   1% /run/user/0

root@Tripathi: ~/Desktop
# free
             total        used        free      shared  buff/cache   available
Mem:       3039224      430756      2044700      14840      563768      2419720
Swap:      998396           0       998396

root@Tripathi: ~/Desktop
# uptime
16:19:49 up 5:02, 1 user, load average: 0.13, 0.03, 0.01

root@Tripathi: ~/Desktop
# who
root    tty7        2023-05-28 11:20 (:0)

root@Tripathi: ~/Desktop
# w
16:20:08 up 5:02, 1 user, load average: 0.10, 0.03, 0.01
USER      TTY      FROM              LOGIN@   IDLE   JCPU   PCPU   WHAT
root     tty7      :0                11:20    5:02m  23.55s 23.55s  /usr/lib/xorg/Xorg :

```

Networking:

ifconfig: Configure network interfaces

ping: Send ICMP echo requests to a network host

```
root@Tripathi: ~/Desktop
File Actions Edit View Help
-
root@Tripathi:~/Desktop
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:fe3:b059 prefixlen 64 scopeid 0<20<link>
    ether 08:00:27:ff:b0:59 txqueuelen 1000 (Ethernet)
    RX packets 1 bytes 590 (590.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 11 bytes 1146 (1.1 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 0<10<host>
    loop txqueuelen 1000 (local loopback)
    RX packets 24 bytes 1200 (1.1 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 24 bytes 1200 (1.1 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@Tripathi:~/Desktop
ping google.com
PING google.com (142.250.77.206) 56(84) bytes of data:
64 bytes from google.com (142.250.77.206): icmp_seq=1 ttl=117 time=32.4 ms
64 bytes from google.com (142.250.77.206): icmp_seq=2 ttl=117 time=44.8 ms
64 bytes from google.com (142.250.77.206): icmp_seq=3 ttl=117 time=34.9 ms
64 bytes from google.com (142.250.77.206): icmp_seq=4 ttl=117 time=62.1 ms
64 bytes from google.com (142.250.77.206): icmp_seq=5 ttl=117 time=62.8 ms
64 bytes from google.com (142.250.77.206): icmp_seq=6 ttl=117 time=31.8 ms
64 bytes from google.com (142.250.77.206): icmp_seq=7 ttl=117 time=33.9 ms
64 bytes from google.com (142.250.77.206): icmp_seq=8 ttl=117 time=42.9 ms
64 bytes from google.com (142.250.77.206): icmp_seq=9 ttl=117 time=33.1 ms
64 bytes from google.com (142.250.77.206): icmp_seq=10 ttl=117 time=32.1 ms
```

wget: Download files from the web

```
root@Tripathi: ~
File Actions Edit View Help
-
root@Tripathi:~
# wget http://192.168.43.106:9000/hello.py
--2023-05-28 16:29:42-- http://192.168.43.106:9000/hello.py
Connecting to 192.168.43.106:9000 ...
```

System Administration:

sudo: Execute commands with superuser privileges

```
root@Tripathi: ~
File Actions Edit View Help
-
root@Tripathi:~
# sudo rm h5.txt
rm: cannot remove 'h5.txt': No such file or directory

root@Tripathi:~
# sudo nano /etc/shadow
```

apt-get: Package management for Debian-based distributions

```
root@Tripathi: ~
File Actions Edit View Help
-
root@Tripathi:~
# sudo rm h5.txt
rm: cannot remove 'h5.txt': No such file or directory

root@Tripathi:~
# sudo nano /etc/shadow

root@Tripathi:~
# apt-get install cmatrix
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  cmatrix-xfont
The following NEW packages will be installed:
  cmatrix
0 upgraded, 1 newly installed, 0 to remove and 1528 not upgraded.
Need to get 17.5 kB of archives.
```

yum: Package management for Red Hat-based distributions

YUM (Yellowdog Updater Modified) is an open-source command-line as well as graphical-based package management tool for **RPM (RedHat Package Manager)** based Linux systems.

It allows users and system administrators to easily install, update, remove or search software packages on a system. It was developed and released by **Seth Vidal** under **GPL (General Public License)** as an open-source, which means anyone can be allowed to download and access the code to fix bugs and develop customized packages.

systemctl: Manage system services

```
root@Tripathi: ~  
File Actions Edit View Help  
-# yum install chrome  
Command 'yum' not found, did you mean:  
  command 'sun' from deb coreutils  
  command 'zum' from deb perforate  
  command 'uum' from deb freewnn-jserver  
  command 'yums' from deb nextgen-yum4  
  command 'num' from deb quickcal  
Try: apt install <deb name>  
-# sudo systemctl start apache2  
-# sudo systemctl status apache2  
apache2.service - The Apache HTTP Server  
Loaded: loaded (/lib/systemd/system/apache2.service; disabled; vendor preset: disabled)  
Active: active (running) since Sun 2023-05-28 16:49:02 IST; 19s ago  
Docs: https://httpd.apache.org/docs/2.4/  
Process: 3175 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)  
Main PID: 3186 (apache2)  
Tasks: 6 (limit: 2479)  
Memory: 17.9M  
CPU: 87ms  
CGroup: /system.slice/apache2.service  
├─3186 /usr/sbin/apache2 -k start  
├─3189 /usr/sbin/apache2 -k start  
├─3190 /usr/sbin/apache2 -k start  
├─3191 /usr/sbin/apache2 -k start  
├─3192 /usr/sbin/apache2 -k start  
└─3193 /usr/sbin/apache2 -k start  
May 28 16:49:02 Tripathi systemd[1]: Starting The Apache HTTP Server ...  
May 28 16:49:02 Tripathi apachectl[3185]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 1  
May 28 16:49:02 Tripathi systemd[1]: Started The Apache HTTP Server.
```

crontab: Schedule recurring tasks

useradd: Add a new user

passwd: Change user password

```
(root@Tripathi)~  
-# crontab -e  
no crontab for root - using an empty one  
Select an editor. To change later, run 'select-editor'.  
 1. /bin/nano ← easiest  
 2. /usr/bin/vim.basic  
 3. /usr/bin/vim.tiny  
Choose 1-3 [1]: q  
Choose 1-3 [1]: 1  
No modification made  
(tripathipratham@Tripathi)-[/root]  
$ sudo passwd  
[sudo] password for tripathipratham:  
New password:  
Retype new password:  
passwd: password updated successfully  
(tripathipratham@Tripathi)-[/root]  
$ su root  
Password:  
(root@Tripathi)~
```