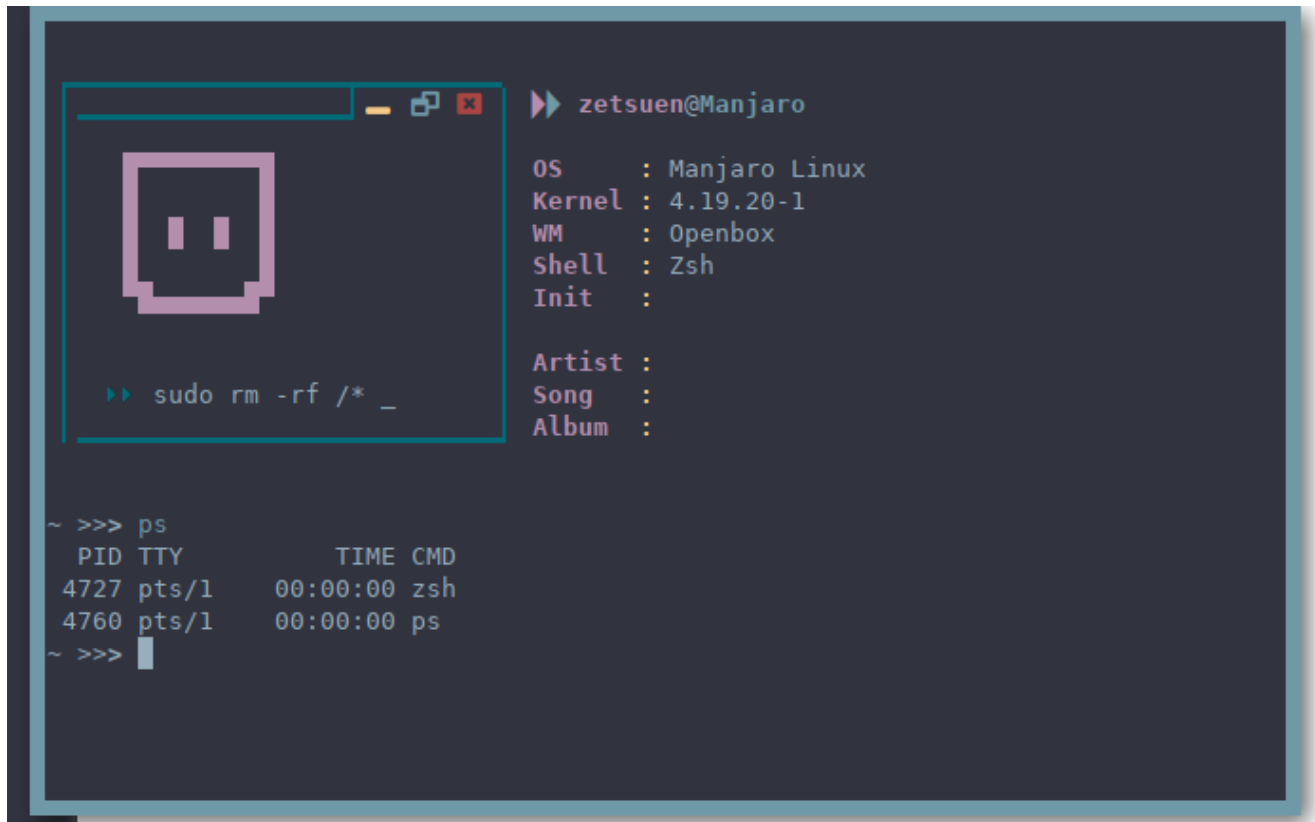


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Linux Command to show Threads

1. PS => to display processes for the current shell



The screenshot shows a terminal window titled 'zetsuen@Manjaro'. On the left, there is a window icon with a pink border and a pink smiley face. Below the icon, the command `sudo rm -rf /* _` is entered. On the right, system information is displayed:

```
OS      : Manjaro Linux
Kernel  : 4.19.20-1
WM      : Openbox
Shell   : Zsh
Init    :

Artist  :
Song    :
Album   :
```

At the bottom, the output of the `ps` command is shown:

```
~ >>> ps
  PID TTY          TIME CMD
  4727 pts/1        00:00:00 zsh
  4760 pts/1        00:00:00 ps
~ >>> █
```

2. htop => to display data of various system processes and their resource consumption in a human-readable, color-coded, easy-to-use format

```

1  [|      1.3%]  4  [|      0.7%]  7  [|      0.7%] 10  [      0.0%]
2  [      0.0%]  5  [      0.0%]  8  [      0.0%] 11  [|      1.3%]
3  [|      4.0%]  6  [      0.0%]  9  [|      0.7%] 12  [|      0.7%]
Mem[|||||]      896M/7.63G  Tasks: 76, 232 thr; 1 running
Swp[          ]      0K/0K  Load average: 1.14 1.41 1.02
                          Uptime: 00:19:56

```

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
1072	zetsuen	9	-11	816M	12172	8824	S	0.0	0.2	0:00.18	/usr/bin/pulseaudi
2461	zetsuen	20	0	13192	4852	3868	R	2.0	0.1	0:00.49	htop
635	avahi	20	0	11176	4644	3480	S	1.3	0.1	0:08.71	avahi-daemon: runn
1646	zetsuen	20	0	1181M	221M	134M	S	0.7	2.8	0:10.95	/usr/lib/chromium/
1635	zetsuen	20	0	1181M	221M	134M	S	0.7	2.8	0:33.35	/usr/lib/chromium/
691	root	20	0	647M	75888	59752	S	1.3	0.9	0:27.92	/usr/lib/Xorg :0 -
2379	zetsuen	20	0	398M	40468	30012	S	0.7	0.5	0:00.30	termite
1027	zetsuen	20	0	217M	22216	16224	S	0.0	0.3	0:00.28	/usr/lib/polkit-gn
1110	zetsuen	20	0	3064M	64164	40344	S	0.0	0.8	0:00.06	synapse -s
1077	zetsuen	20	0	259M	22216	15560	S	0.0	0.3	0:00.48	xfsettingsd
989	zetsuen	20	0	154M	12300	3228	S	0.0	0.2	0:06.14	compton -b
2512	zetsuen	20	0	13976	4432	3552	S	0.7	0.1	0:00.10	top
2479	zetsuen	20	0	10756	6336	4260	S	0.0	0.1	0:00.15	/bin/zsh
2474	zetsuen	20	0	398M	39964	29796	S	0.0	0.5	0:00.17	termite


F1 Help F2 Setup F3 Search F4 Filter F5 Tree F6 SortBy F7 Nice - F8 Nice + F9 Kill F10 Quit

3. top => Display and update information about the top CPU processes

```
top - 13:26:32 up 13 min, 1 user, load average: 0,52, 0,92, 0,67
Tasks: 270 total, 1 running, 269 sleeping, 0 stopped, 0 zombie
%Cpu0 :  0,0 us,  0,0 sy,  0,0 ni, 99,7 id,  0,0 wa,  0,0 hi,  0,3 si,  0,0 st
%Cpu1 :  0,0 us,  0,0 sy,  0,0 ni,100,0 id,  0,0 wa,  0,0 hi,  0,0 si,  0,0 st
%Cpu2 :  0,0 us,  0,3 sy,  0,0 ni, 99,7 id,  0,0 wa,  0,0 hi,  0,0 si,  0,0 st
%Cpu3 :  0,0 us,  0,3 sy,  0,0 ni, 99,7 id,  0,0 wa,  0,0 hi,  0,0 si,  0,0 st
%Cpu4 :  0,0 us,  0,3 sy,  0,0 ni, 99,7 id,  0,0 wa,  0,0 hi,  0,0 si,  0,0 st
%Cpu5 :  0,0 us,  0,0 sy,  0,0 ni,100,0 id,  0,0 wa,  0,0 hi,  0,0 si,  0,0 st
%Cpu6 :  0,0 us,  0,0 sy,  0,0 ni,100,0 id,  0,0 wa,  0,0 hi,  0,0 si,  0,0 st
%Cpu7 :  0,7 us,  1,0 sy,  0,0 ni, 98,3 id,  0,0 wa,  0,0 hi,  0,0 si,  0,0 st
%Cpu8 :  0,3 us,  0,3 sy,  0,0 ni, 99,0 id,  0,0 wa,  0,0 hi,  0,3 si,  0,0 st
%Cpu9 :  0,3 us,  0,3 sy,  0,0 ni, 99,3 id,  0,0 wa,  0,0 hi,  0,0 si,  0,0 st
%Cpu10 : 0,0 us,  0,0 sy,  0,0 ni, 86,3 id, 13,7 wa,  0,0 hi,  0,0 si,  0,0 st
%pull :  0,0 us,  0,0 sy,  0,0 ni,100,0 id,  0,0 wa,  0,0 hi,  0,0 si,  0,0 st
KiB Mem : 8004852 total, 6047724 free, 712460 used, 1244668 buff/cache
KiB Swap:  0 total,  0 free,  0 used. 6702556 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1635	zetsuen	20		1217976	227564	137828	S	1,3	2,8	0:29.54	/usr/lib/chromium/chr+
635	avahi	20		11176	4644	3480	S	0,7	0,1	0:05.94	avahi-daemon: running+
691	root	20		722596	88076	74252	S	0,7	1,1	0:15.63	/usr/lib/Xorg :0 -sea+
1242	zetsuen	20		408504	40716	29936	S	0,7	0,5	0:01.37	termite
72	root	20					S	0,3		0:00.04	[ksoftirqd/8]
452	root	-51					S	0,3		0:01.18	[irq/126-iwlwifi]
454	root	-51					S	0,3		0:00.11	[irq/128-iwlwifi]
460	root	-51					S	0,3		0:00.80	[irq/132-iwlwifi]

4. `ps -A` => Display every active process on a Linux system in generic (Unix/Linux) format.



The image shows a terminal window with a dark background. In the top-left corner, there is a small window icon with a red 'X' and a yellow bar. Below it is a square icon with two vertical bars. To the right of these icons is the prompt `zetsuen@Manjaro`. Further right, system information is displayed in a list format: `OS : Manjaro Linux`, `Kernel : 4.19.20-1`, `WM : Openbox`, `Shell : Zsh`, `Init :`, `Artist :`, `Song :`, and `Album :`. Below this, a command prompt `~ >>>` is followed by the command `ps -a`. The output of the command is displayed in a table format with columns `PID`, `TTY`, `TIME`, and `CMD`. The first row of output is `3040 pts/2 00:00:00 ps`. Below the output, another command prompt `~ >>>` is followed by a cursor.

```
zetsuen@Manjaro
OS      : Manjaro Linux
Kernel  : 4.19.20-1
WM      : Openbox
Shell   : Zsh
Init    :

Artist  :
Song    :
Album   :

~ >>> ps -a
PID TTY      TIME CMD
3040 pts/2    00:00:00 ps
~ >>> 
```

5. `ps au` => Display all processes in BSD format.

```
Unnamed Window

[Terminal Window Icon] zetsuen@Manjaro

OS      : Manjaro Linux
Kernel  : 4.19.20-1
WM       : Openbox
Shell    : Zsh
Init     :

Artist  :
Song     :
Album    :

~ >>> sudo rm -rf /* _

~ >>> ps au
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         691  2.5  0.9 644068 74576 tty7      Ssl+  13:13   0:33 /usr/lib/Xorg :0
zetsuen    2953  5.0  0.0  10748  6400 pts/1    Ss   13:34   0:00 /bin/zsh
zetsuen    2987  0.0  0.0  13268  3528 pts/1    R+   13:34   0:00 ps au

~ >>> 
```

6. `ps -eF` => to display process based on flag

```
~ >>> ps -ef
UID      PID  PPID  C  STIME TTY          TIME CMD
root         1      0  0  13:12 ?        00:00:01 /sbin/init
root         2      0  0  13:12 ?        00:00:00 [kthreadd]
root         3      2  0  13:12 ?        00:00:00 [rcu_gp]
root         4      2  0  13:12 ?        00:00:00 [rcu_par_gp]
root         6      2  0  13:12 ?        00:00:00 [kworker/0:0H-kblockd]
root         7      2  0  13:12 ?        00:00:01 [kworker/u24:0-i915]
root         8      2  0  13:12 ?        00:00:00 [mm_percpu_wq]
root         9      2  0  13:12 ?        00:00:00 [ksoftirqd/0]
root        10      2  0  13:12 ?        00:00:01 [rcu_preempt]
root        11      2  0  13:12 ?        00:00:00 [rcu_sched]
root        12      2  0  13:12 ?        00:00:00 [rcu_bh]
root        13      2  0  13:12 ?        00:00:00 [rcuc/0]
root        14      2  0  13:12 ?        00:00:00 [rcub/0]
root        15      2  0  13:12 ?        00:00:00 [migration/0]
root        16      2  0  13:12 ?        00:00:00 [idle_inject/0]
root        18      2  0  13:12 ?        00:00:00 [cpuhp/0]
root        19      2  0  13:12 ?        00:00:00 [cpuhp/1]
root        20      2  0  13:12 ?        00:00:00 [idle_inject/1]
root        21      2  0  13:12 ?        00:00:00 [migration/1]
root        22      2  0  13:12 ?        00:00:00 [rcuc/1]
root        23      2  0  13:12 ?        00:00:00 [ksoftirqd/1]
```

7. `ps -x` => to display processes owned by user

```
~ >>> ps -x
  PID TTY          STAT TIME   COMMAND
  943 ?        Ss     0:00   /usr/lib/systemd/systemd --user
  945 ?        S       0:00   (sd-pam)
  953 ?        SLL    0:00   /usr/bin/gnome-keyring-daemon --daemonize --login
  957 ?        Ss     0:02   /usr/bin/openbox --startup /usr/lib/openbox/openbox-au
  970 ?        Ss     0:00   /usr/bin/dbus-daemon --session --address=systemd: --no
  989 ?        Ss     0:08   compton -b
1021 ?        S       0:00   tint2 -c /home/zetsuen/.config/tint2/liness/liness.tin
1026 ?        Sl     0:00   volumeicon
1027 ?        Sl     0:00   /usr/lib/polkit-gnome/polkit-gnome-authentication-agen
1034 ?        Ssl    0:00   /usr/lib/gvfsd
1039 ?        Sl     0:00   /usr/lib/gvfsd-fuse /run/user/1000/gvfs -f -o big_writ
1047 ?        Ssl    0:00   /usr/lib/at-spi-bus-launcher
1051 ?        Sl     0:00   /usr/lib/xfce4/xfconf/xfconfd
1058 ?        S       0:00   /usr/bin/dbus-daemon --config-file=/usr/share/defaults
1060 ?        Sl     0:00   /usr/lib/at-spi2-registryd --use-gnome-session
1061 ?        Sl     0:01   synapse -s
1072 ?        S<sl   0:00   /usr/bin/pulseaudio --daemonize=no
1073 ?        Sl     0:04   thunar --daemon
1077 ?        Ssl    0:00   xfsettingsd
1086 ?        Ssl    0:00   xcape -e Super_L Alt_L F1
1088 ?        Sl     0:00   /usr/lib/evolution-3.0/daemon-agent
```

8. `ps -fU =>`to display processes by real user ID(RUID) or name.

```
~ >>> ps -fU 1000 [1]
UID      PID  PPID  C  STIME TTY          TIME CMD
zetsuen   943    1   0  13:14 ?        00:00:00 /usr/lib/systemd/systemd --user
zetsuen   945   943   0  13:14 ?        00:00:00 (sd-pam)
zetsuen   953    1   0  13:14 ?        00:00:00 /usr/bin/gnome-keyring-daemon --d
zetsuen   957   934   0  13:14 ?        00:00:02 /usr/bin/openbox --startup /usr/l
zetsuen   970   943   0  13:14 ?        00:00:00 /usr/bin/dbus-daemon --session --
zetsuen   989    1   0  13:14 ?        00:00:08 compiton -b
zetsuen  1021    1   0  13:14 ?        00:00:00 tint2 -c /home/zetsuen/.config/ti
zetsuen  1026    1   0  13:14 ?        00:00:00 volumeicon
zetsuen  1027    1   0  13:14 ?        00:00:00 /usr/lib/polkit-gnome/polkit-gnom
zetsuen  1034   943   0  13:14 ?        00:00:00 /usr/lib/gvfsd
zetsuen  1039   943   0  13:14 ?        00:00:00 /usr/lib/gvfsd-fuse /run/user/100
zetsuen  1047   943   0  13:14 ?        00:00:00 /usr/lib/at-spi-bus-launcher
zetsuen  1051   943   0  13:14 ?        00:00:00 /usr/lib/xfce4/xfconf/xfconfd
zetsuen  1058  1047   0  13:14 ?        00:00:00 /usr/bin/dbus-daemon --config-fil
zetsuen  1060   943   0  13:14 ?        00:00:00 /usr/lib/at-spi2-registryd --use-
zetsuen  1061    1   0  13:14 ?        00:00:01 synapse -s
zetsuen  1072   943   0  13:14 ?        00:00:00 /usr/bin/pulseaudio --daemonize=n
zetsuen  1073    1   0  13:14 ?        00:00:04 thunar --daemon
zetsuen  1077    1   0  13:14 ?        00:00:00 xfsettingsd
zetsuen  1086    1   0  13:14 ?        00:00:00 xcaps -e Super_L Alt_L F1
zetsuen  1088    1   0  13:14 ?        00:00:00 /usr/lib/geoclue-2.0/demos/agent
zetsuen  1090    1   0  13:14 ?        00:00:00 pamac-trav
```


9. `ps -U root -u root` => to display every process running with root privileges.

```
~ >>> ps -U root -u root
PID TTY          TIME CMD
  1 ?            00:00:01 systemd
  2 ?            00:00:00 kthreadd
  3 ?            00:00:00 rcu_gp
  4 ?            00:00:00 rcu_par_gp
  6 ?            00:00:00 kworker/0:0H-kblockd
  7 ?            00:00:01 kworker/u24:0-events_unbound
  8 ?            00:00:00 mm_percpu_wq
  9 ?            00:00:00 ksoftirqd/0
 10 ?            00:00:01 rcu_preempt
 11 ?            00:00:00 rcu_sched
 12 ?            00:00:00 rcu_bh
 13 ?            00:00:00 rcuc/0
 14 ?            00:00:00 rcub/0
 15 ?            00:00:00 migration/0
 16 ?            00:00:00 idle_inject/0
 18 ?            00:00:00 cpuhp/0
 19 ?            00:00:00 cpuhp/1
 20 ?            00:00:00 idle_inject/1
 21 ?            00:00:00 migration/1
 22 ?            00:00:00 rcuc/1
 23 ?            00:00:00 ksoftirqd/1
 25 ?            00:00:00 kworker/0:0H-kblockd
```

10. `ps -e --forest` => to display proces tree that show how processes on the system linked each other.

```
~ >>> ps -e --forest
PID TTY          TIME CMD
  2 ?           00:00:00 kthreadd
  3 ?           00:00:00 \_ rcu_gp
  4 ?           00:00:00 \_ rcu_par_gp
  6 ?           00:00:00 \_ kworker/0:0H-kblockd
  7 ?           00:00:01 \_ kworker/u24:0-i915
  8 ?           00:00:00 \_ mm_percpu_wq
  9 ?           00:00:00 \_ ksoftirqd/0
 10 ?           00:00:01 \_ rcu_preempt
 11 ?           00:00:00 \_ rcu_sched
 12 ?           00:00:00 \_ rcu_bh
 13 ?           00:00:00 \_ rcuc/0
 14 ?           00:00:00 \_ rcub/0
 15 ?           00:00:00 \_ migration/0
 16 ?           00:00:00 \_ idle_inject/0
 18 ?           00:00:00 \_ cpuhp/0
 19 ?           00:00:00 \_ cpuhp/1
 20 ?           00:00:00 \_ idle_inject/1
 21 ?           00:00:00 \_ migration/1
 22 ?           00:00:00 \_ rcuc/1
 23 ?           00:00:00 \_ ksoftirqd/1
 25 ?           00:00:00 \_ kworker/1:0H-kblockd
```

11. ps -fL =>to print all threads of a process.

```
Unnamed Window
~ >>> ps -fL -C chromium [1]
UID      PID  PPID  LWP  C  NLWP  STIME  TTY      TIME  CMD
zetsuen  1635  1625  1635  1   30  13:19  ?        00:00:30 /usr/lib/chromium/chro
zetsuen  1635  1625  1636  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1641  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1642  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1643  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1646  1   30  13:19  ?        00:00:25 /usr/lib/chromium/chro
zetsuen  1635  1625  1647  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1648  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1649  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1650  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1651  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1652  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1659  0   30  13:19  ?        00:00:01 /usr/lib/chromium/chro
zetsuen  1635  1625  1660  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1662  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1663  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1664  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1666  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1667  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1668  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1680  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
zetsuen  1635  1625  1681  0   30  13:19  ?        00:00:00 /usr/lib/chromium/chro
```

12. `ps -eo =>` to display pid, ppid, username and command of a process.

```
~ >>> ps -fL -C httpd
UID          PID  PPID  LWP  C NLWP STIME TTY          TIME CMD
~ >>> ps -eo comm,etime,user | grep chromium [1]
chromium          27:22 zetsuen
chromium          27:12 zetsuen
chromium          27:12 zetsuen
chromium          27:11 zetsuen
chromium          27:07 zetsuen
chromium          12:25 zetsuen
chromium          12:22 zetsuen
~ >>> █
```

13.pstree => to show processes tree.

```

zeitgeist-daemo—2*[{zeitgeist-daemo}]
zeitgeist-fts—2*[{zeitgeist-fts}]
systemd-journal
systemd-logind
systemd-timesyn—{systemd-timesyn}
systemd-udev
termite—zsh—top
      2*[{termite}]
termite—zsh—sudo—su—bash—pstree
      2*[{termite}]
termite—zsh
      2*[{termite}]
termite—zsh—oosplash—soffice.bin—20*[{soffice.bin}]
      2*[{oosplash}]
      2*[{termite}]
thunar—2*[{thunar}]
tint2
udisksd—4*[{udisksd}]
volumeicon—3*[{volumeicon}]
wpa_supplicant
xcap—{xcap}
xfsettingsd—2*[{xfsettingsd}]
zeitgeist-datah—14*[{zeitgeist-datah}]

```

[Manjaro zetsuen]#