

20:28:31 nicholas@yel  
tmux-borders  
tmux-bsdauth  
tmux-cfgcur  
tmux-imsg-12  
tmux-imsg1.d  
tmux-imsg2.d  
tmux-modesea  
nicholas@yel

```
tem, 0.0% interrupt, 100% idle  
tem, 0.0% interrupt, 100% idle  
wap: 0K/2055M used/tot  
  
WAIT      TIME    CPU COMMAND  
poll     0:06  0.00% mpd  
poll     1:34  0.00% mpd  
poll     0:00  0.00% mpd  
poll     0:00  0.00% scmpc  
kqread   0:00  0.00% apmd  
select   0:00  0.00% httpd  
select   0:00  0.00% sendmail  
poll     0:01  0.00% logfmon  
select   0:02  0.00% sshd  
nfsd    0:02  0.00% nfsd  
nfsd    0:01  0.00% nfsd  
poll     0:00  0.00% tmux  
select   0:00  0.00% cron  
ttyin   0:00  0.00% ksh  
poll     0:00  0.00% syslogd  
poll     0:00  0.00% ncmpc  
select   0:00  0.00% emacs
```

# Process and Disk Utilities in Linux

Welcome to our guide on commonly used process and disk utilities in Linux. Learn how to manage processes and disk space effectively with these powerful command-line tools.

 by Vamshi Polisetty

```
client_ctx *cctx)  
t client_ctx *cctx)
```

nicholas@yelena 0 1 ^\$

```
NULL, 0);
```

nicholas@yelena 0 1 ^\$

```
x)
```

nicholas@yelena 0 1 ^\$

```
);
```

nicholas@yelena 0 1 ^\$

```
NULL, 0);
```

```
) Hg-0 (Diff)-----
```

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```
s1 5:ksh 6:ksh 7:ksh 8:ksh* 9:ksh 10:ksh 11:ksh
```

# Process Utilities

- 1 — **ps**  
Display information about running processes
- 2 — **top**  
Real-time view of system processes and resource usage
- 3 — **htop**  
Interactive process viewer with a user-friendly interface
- 4 — **kill**  
Terminate processes by sending signals

# Process Utilities (contd.)

- 1 —— **pkill**  
Signal processes by name
- 2 —— **pstree**  
Display process hierarchy in a tree structure
- 3 —— **pgrep**  
Search for processes by name
- 4 —— **renice**  
Change the priority of a running process

# Process Utilities (contd.)

1

— **nice**

Launch a process with a specified priority

# Disk Utilities

1 —— **df**

Display disk space usage information

2 —— **du**

Calculate and display disk usage of files and directories

3 —— **fdisk**

Disk partitioning utility

# Disk Utilities (contd.)

1 —— **parted**

Interactive disk partitioning interface

2 —— **mkfs**

Create a filesystem on a partition

3 —— **mount**

Mount filesystems to mount points

# Disk Utilities (contd.)

1

umount

Unmount mounted filesystems

```
new user: y
: Marquez
:
: (again):
rld

.. OK, you are logged in.
> view
t user [enter = yourself]:
edit
: note 1
 my number one note!
quit
again: y

... OK, you are logged in.
> view
t user [enter = yourself]: incal

number one note!
```

## Process Utilities - ps

The "ps" command displays information about running processes. Use the "ps" command followed by desired options to view process status with details like process ID (PID), CPU usage, memory usage, and more.

```
fa.wikipedia.org  
g (208.80.152.2) 56(84) bytes of data.
```

```
ping statistics ---  
received, 0% packet loss, time 0ms  
28/540.528/540.528/0.000 ms
```

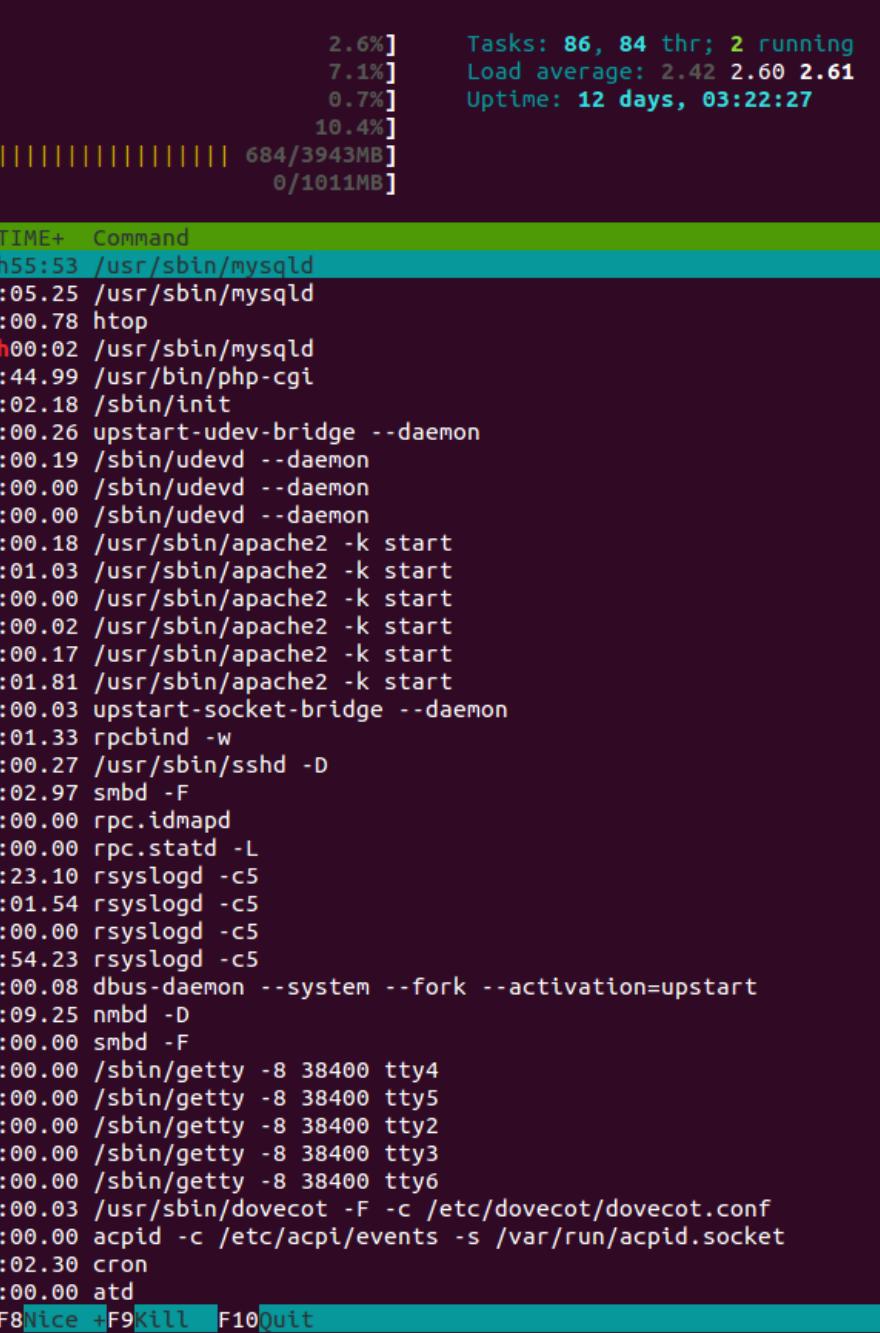
```
6 Jul 30 22:43 .  
6 Sep 14 20:42 ..  
6 May 14 00:15 account  
6 Jul 31 22:26 cache  
6 May 18 16:03 db  
6 May 18 16:03 empty  
6 May 18 16:03 games  
6 Jun 2 18:39 gdm  
6 May 18 16:03 lib  
6 May 18 16:03 local  
1 May 14 00:12 lock -> ../run/lock  
6 Sep 14 20:42 log  
9 Jul 30 22:43 mail -> spool/mail  
6 May 18 16:03 nis  
6 May 18 16:03 opt  
6 May 18 16:03 preserve  
6 Jul 1 22:11 report  
6 May 14 00:12 run -> ../run  
6 May 18 16:03 spool  
6 Sep 12 23:50 tmp  
6 May 18 16:03 yp  
arch wiki  
resto, refresh-packagekit, remove-with-leaves  
ry_db
```

73% [=====

] 62 |

## Process Utilities - top

The "top" command provides a real-time view of system processes and their resource usage. It offers a dynamic and customizable interface that allows monitoring and management of processes efficiently.



# Process Utilities - htop

The "htop" command is an interactive process viewer with a user-friendly interface. It allows you to monitor processes, CPU usage, memory usage, and other system information in real-time.

```
26) SIGVTALRM  27) SIGPROF    28) SIGWINCH   29) SIGIO        30) SIGPWR  
31) SIGSYS     34) SIGRTMIN   35) SIGRTMIN+1 36) SIGRTMIN+2 37) SIGRTMIN+3  
38) SIGRTMIN+4 39) SIGRTMIN+5 40) SIGRTMIN+6 41) SIGRTMIN+7 42) SIGRTMIN+8  
43) SIGRTMIN+9 44) SIGRTMIN+10 45) SIGRTMIN+11 46) SIGRTMIN+12 47) SIGRTMIN+13
```

## Process Utilities - kill

The "kill" command is used to terminate processes by sending signals. By specifying the desired signal and the process ID (PID), you can gracefully or forcefully stop unwanted processes.

3:deepu@deepu-fedora: ~/workspace/XL/blueprints

4: deepu@deepu-fedora: /usr

# Process Utilities - pkill

The "pkill" command provides a convenient way to signal processes by their name. Simply specify the process name as an argument, and pkill will send the specified signal to all matching processes.

```
ayank
ount /dev/sda3 /media/mayank
ank/
ls -l

:20 131026
:22 131026.zip
015 2bba7caff301510c5056f12f
:58 config.bin
:41 Entertainment
:06 Games
:12 Nirav
:36 Programming
014 $RECYCLE.BIN
:08 Sem-1
:19 Sem-2
015 Sem-3
:21 Sem-4
:08 Sem-5
015 Sets.pdf
:02 Side Readings
:42 Software
:29 Sahum Backup
014 System Volume Information
:36 trysh
015 vcredist-MSI_vc_red.msi.txt
```

## Process Utilities - pstree

The "pstree" command displays processes in a hierarchical tree structure, making it easier to visualize the relationships between parent and child processes. Use "pstree" to get a clearer overview of process hierarchy.

ick@dell:~/bin

```
ell:~/bin$ cal  
March 2017  
Tu We Th Fr Sa  
1 2 3 4  
7 8 9 10 11  
14 15 16 17 18  
21 22 23 24 25  
28 29 30 31
```

```
ell:~/bin$ cal -A 2  
March 2017          April 2017          Ma  
Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa   Su Mo Tu  
1 2 3 4           2 3 4 5 6 7 8       1 1 2  
7 8 9 10 11      9 10 11 12 13 14 15   7 8 9  
14 15 16 17 18    16 17 18 19 20 21 22  14 15 16  
21 22 23 24 25    23 24 25 26 27 28 29  21 22 23  
28 29 30 31      30                         28 29 30
```

```
ell:~/bin$ cal 2018  
                           2018  
January                  February                 M  
Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa   Su Mo Tu  
2 3 4 5 6           1 2 3                   1  
9 10 11 12 13      4 5 6 7 8 9 10     4 5 6  
16 17 18 19 20      11 12 13 14 15 16 17  11 12 13  
23 24 25 26 27      18 19 20 21 22 23 24  18 19 20  
30 31                25 26 27 28                   25 26 27
```

## Process Utilities - pgrep

The "pgrep" command allows you to search for processes by their name. By providing a process name as an argument, pgrep will list the process IDs (PIDs) of all matching processes.

# Process Utilities - renice

The "renice" command enables you to change the priority of a running process. By specifying the desired priority and the process ID (PID), you can adjust the scheduling priority to allocate system resources effectively.

```
ver.pem ec2-user@13.112.191.175
191.175 (13.112.191.175)' can't be established.
60v2VvZXAxCU3kWJ21/DthHPY1xRhr7SN0jJtFzagS0.
e connecting (yes/no)? yes
12.191.175' (ECDSA) to the list of known hosts.
ion denied (publickey).
ver.pem ubuntu@13.112.191.175
NU/Linux 4.4.0-1074-aws x86_64)
```

ubuntu.com  
cape.canonical.com  
.com/advantage

Advantage Cloud Guest:  
ss/services/cloud

untu system are free software;  
each program are described in the  
oc/\*copyright.

WARRANTY, to the extent permitted by

(user "root"), use "sudo <command>".

## Process Utilities - nice

The "nice" command allows you to launch a process with a specified priority. By providing a priority level and the command to execute, nice ensures that the process runs with the desired priority.

```
tmpfs on /run type tmpfs (rw,noexec,nosuid,size=10%,mode=0755)
none on /run/lock type tmpfs (rw,noexec,nosuid,nodev,size=5242880)
none on /run/shm type tmpfs (rw,nosuid,nodev)
none on /run/user type tmpfs (rw,noexec,nosuid,nodev,size=104857600,mod
none on /sys/fs/pstore type pstore (rw)
systemd on /sys/fs/cgroup/systemd type cgroup (rw,noexec,nosuid,nodev,n
systemd)
```

Location: /media/ashutosh  
Volume: 2.0 GB Volume  
Free space: 2.0 GB

# Disk Utilities - df

The "df" command displays disk space usage information. Use it to get an overview of available disk space, usage percentages, and the file system types of mounted partitions.

5 root	0	-20	0	0	0 S	0.0	0.0	0:00.00	kworker/u0:0
6 root	20	0	0	0	0 S	0.0	0.0	0:00.00	kworker/u56:0
8 root	20	0	0	0	0 S	0.0	0.0	0:52.26	rcu_sched
9 root	20	0	0	0	0 S	0.0	0.0	0:00.00	rcu_bh
10 root	rt	0	0	0	0 S	0.0	0.0	0:01.06	migration/0

## Disk Utilities - du

The "du" command calculates and displays disk usage for files and directories. Utilize it to identify space-consuming files or directories, and determine where disk space is being utilized efficiently.

```
● ● ● sebastian — sebastian@srv-iobroker1: /opt/iobroker — ssh sebastian@192.168.243.43 — 90x24
[Befehl (m für Hilfe): a
Selected partition 1
The bootable flag on partition 1 is enabled now.

[Befehl (m für Hilfe): p
Medium /dev/sda: 50 GiB, 53687091200 Bytes, 104857600 Sektoren
Einheiten: sectors von 1 * 512 = 512 Bytes
Sektorengröße (logisch/physisch): 512 Bytes / 512 Bytes
I/O Größe (minimal/optimal): 512 Bytes / 512 Bytes
Typ der Medienbezeichnung: dos
Medienkennung: 0x21f731dd
```

# Disk Utilities - fdisk

```
Gerät      Ba      Kert      End      Sektore     Größ      Typ
/dev/sda1  *      2048    104857500  10485552  50G 83 Linux
```

The "fdisk" command is a disk partitioning utility. It provides a command-line interface to create, modify, and delete disk partitions on storage devices attached to the system.

```
[Befehl (m für Hilfe): w
Die Partitionstabelle wurde geändert.
Calling ioctl() to re-read partition table.
Re-reading the partition table failed.: Das Gerät oder die Ressource ist belegt
```

The kernel still uses the old table. The new table will be used at the next reboot or after you run partprobe(8) or kpartx(8).

```
sebastian@srv-iobroker1:/opt/iobroker$
```

```
ed) quit
archiso ~ # fdisk -l

Disk /dev/sda: 465.8 GiB, 500107862016 bytes, 976773168 sectors
: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
Transfer size (minimum/optimal): 4096 bytes / 4096 bytes
Filesystem type: gpt
Identifier: 3596AB7F-46E9-4D0A-987D-3A6DEACF35B8

Device Start End Sectors Size Type
/dev/sda1 2048 2050047 2048000 1000M Windows recovery environment
/dev/sda2 2050048 2582527 532480 260M EFI System
/dev/sda3 2582528 4630527 2048000 1000M unknown
/dev/sda4 4630528 4892671 262144 128M Microsoft reserved
/dev/sda5 4892672 459132927 454240256 216.6G Microsoft basic data
/dev/sda6 459132928 902154239 443021312 211.3G Microsoft basic data
/dev/sda7 902156288 954585087 52428800 25G Microsoft basic data
/dev/sda8 954585088 976773119 22188032 10.6G Windows recovery environment

Disk /dev/sdb: 1.9 GiB, 2038431744 bytes, 3981312 sectors
: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
Transfer size (minimum/optimal): 512 bytes / 512 bytes
Filesystem type: dos
Identifier: 0x612a5c68

Device Boot Start End Sectors Size Id Type
/dev/sdb1 * 0 1218559 1218560 595M 0 Empty
/dev/sdb2 252 63739 63488 31M ef EFI (FAT-12/16/32)

Disk /dev/loop0: 256.8 MiB, 269234176 bytes, 525848 sectors
: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
Transfer size (minimum/optimal): 512 bytes / 512 bytes
Disk /dev/loop1: 32 GiB, 34359738368 bytes, 67108864 sectors
: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
Transfer size (minimum/optimal): 512 bytes / 512 bytes
Disk /dev/loop2: 256 MiB, 268435456 bytes, 524288 sectors
: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
Transfer size (minimum/optimal): 512 bytes / 512 bytes
Disk /dev/mapper/arch_airootsfs: 32 GiB, 34359738368 bytes, 67108864 sectors
: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
Transfer size (minimum/optimal): 512 bytes / 512 bytes
root@archiso ~ #
```

## Disk Utilities - parted

The "parted" command offers an interactive partitioning interface. It allows for managing disk partitions efficiently, including creating, resizing, deleting, and aligning partitions.

```
        from 's3://redshift.  
ens_06.csv'  
        credentials 'aws_access  
s_key=  
        ACCEPTINVCHARS  
        format as CSV  
        IGNOREBLANKLINES DELIMI  
MAXERROR 0  
DATEFORMAT 'auto'  
TIMEFORMAT 'auto'  
TRUNCATECOLUMNS  
COMPUPDATE ON;  
end transaction;  
DEBUG: uploading file to S3  
8.csv => s3://redshift.  
ns_08.csv  
DEBUG: uploading file to S3  
7.csv => s3://redshift.  
ns_07.csv
```

```
1 [|||100.0%] 9 [|||1  
2 [|||100.0%] 10 [||||  
3 [|||100.0%] 11 [|||1  
4 [|||100.0%] 12 [|||1  
5 [|||100.0%] 13 [|||1  
6 [|||100.0%] 14 [|||1  
7 [|||100.0%] 15 [|||1  
8 [|||100.0%] 16 [|||1  
Mem[|||||156518/60  
Swp[
```

PID	USER	PRI	NI	VI
7854	dfarrell	20	0	111
7859	dfarrell	20	0	110
7861	dfarrell	20	0	109
7858	dfarrell	20	0	110
7856	dfarrell	20	0	112

F1Help F2Setup F3Search F4F

## Disk Utilities - mkfs

The "mkfs" command is used to create a filesystem on a partition. By specifying the desired filesystem type and the device or partition to format, mkfs prepares the partition for data storage.



```
drwx----- 1 mayank mayank 4096 May 19 08:21 Sem-4
drwx----- 1 mayank mayank 4096 Sep 7 18:08 Sem-5
-rw----- 1 mayank mayank 312486 Mar 4 2015 Sets.pdf
drwx----- 1 mayank mayank 4096 Aug 10 23:02 Side Readings
drwx----- 1 mayank mayank 4096 Jul 20 10:42 Software
drwx----- 1 mayank mayank 4096 Sep 7 19:29 Sohum Backup
drwx----- 1 mavank mavank 0 Aug 19 2014 System Volume Information
```

# Disk Utilities - mount

The "mount" command attaches a filesystem to a mount point, making its contents accessible within the directory tree. Use "mount" to connect partitions, network shares, or other storage mediums to a desired location.

# Disk Utilities - umount

The "umount" command detaches a mounted filesystem, ensuring that it is no longer accessible from the specified mount point. Ensure to safely unmount filesystems before removing physical devices to prevent data corruption.

```
uration
General setup
  > selects submenus ---> (or empty submenu)
  > excludes, <M> modularizes features. Pres
  built-in [ ] excluded <M> module < > mod
  > config support
    access to .config through /proc/config.gz
    kernel headers through /sys/kernel/kheaders.tar
    buffer size (16 => 64KB, 17 => 128KB)
    log buffer size contribution (13 => 8 KB,
    per-CPU printk log buffer size (12 => 4KB,
    features ----
    up support --->
    support --->
    restore support
    process group scheduling
    deprecated sysfs features to support old usersp
    > space relay support (formerly relayfs)
    filesystem and RAM disk (initramfs/initrd)
    ramfs source file(s)
    > map to 0 (user root) (NEW)

  < Exit >   < Help >   < Save >   < L

```

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