

Linux Process and Disk Utilities

Welcome to our comprehensive guide on commonly used process and disk utilities in Linux. Learn how to optimize your system with these powerful commands.

SYSTEM <ul style="list-style-type: none"> uname -a =>Display linux system information uname -r =>Display kernel release information uptime =>Show how long the system has been running + load hostname =>Show system host name hostname -i =>Display the IP address of the host last reboot =>Show system reboot history date =>Show the current date and time cal =>Show this month calendar w =>Display who is online whoami =>Who you are logged in as finger user =>Display information about user 	FILE PERMISSION RELATED <ul style="list-style-type: none"> chmod octal file-name =>Change the permissions of file to octal Example chmod 777 /data/test.c =>Set rwx permission for owner,group,world chmod 755 /data/test.c =>Set rwx permission for owner,rx for group and world chown owner-user file =>Change owner of the file chown owner-user:owner-group file-name =>Change owner and group owner of the file chown owner-user:owner-group directory =>Change owner and group owner of the directory
HARDWARE <ul style="list-style-type: none"> dmesg =>Detected hardware and boot messages cat /proc/cpuinfo =>CPU model cat /proc/meminfo =>Hardware memory cat /proc/interrupts =>Lists the number of interrupts per CPU per I/O device lshw =>Displays information on hardware configuration of the system lsblk =>Displays block device related information in Linux free -m =>Used and free memory (-m for MB) lspci -tv =>Show PCI devices lsusb -tv =>Show USB devices dmidecode =>Show hardware info from the BIOS hdparm -i /dev/sda =>Show info about disk sda hdparm -T /dev/sda =>Do a read speed test on disk sda badblocks -s /dev/sda =>Test for unreadable blocks on disk sda 	NETWORK <ul style="list-style-type: none"> ip addr show =>Display all network interfaces and ip address (a iproute2 command,powerful than ifconfig) ip address add 192.168.0.1 dev eth0 =>Set ip address ethtool eth0 =>Linux tool to show ethernet status mii-tool eth0 =>Linux tool to show ethernet status ping host =>Send echo request to test connection whois domain =>Get who is information for domain dig domain =>Get DNS information for domain dig -x host =>Reverse lookup host host google.com =>Lookup DNS ip address for the name hostname -i =>Lookup local ip address wget file =>Download file netstat -tupl =>Listing all active listening ports
USERS <ul style="list-style-type: none"> id =>Show the active user id with login and group last =>Show last logins on the system who =>Show who is logged on the system groupadd admin =>Add group "admin" useradd -c "Sam Tomshir" -g admin -m sam #Create user "sam" userdel sam =>Delete user sam adduser sam =>Add user "sam" usermod =>Modify user information 	COMPRESSION / ARCHIVES <ul style="list-style-type: none"> tar cf home.tar home =>Create tar named home.tar containing home/ tar xf file.tar =>Extract the files from file.tar tar czf file.tar.gz files =>Create a tar with gzip compression gzip file =>Compress file and renames it to file.gz
FILE COMMANDS <ul style="list-style-type: none"> ls -al =>Display all information about files/ directories pwd =>Show the path of current directory mkdir directory-name =>Create a directory rm file-name =>Delete file rm -r directory-name =>Delete directory recursively rm -f file-name =>Forcefully remove file rm -rf directory-name =>Forcefully remove directory recursively cp file1 file2 =>Copy file1 to file2 cp -r dir1 dir2 =>Copy dir1 to dir2, create dir2 if it doesn't exist mv file1 file2 =>Rename source to dest / move source to directory ln -s /path/to/file-name link-name #Create symbolic link to file-name touch file =>Create or update file cat > file =>Place standard input into file more file =>Output contents of file head file =>Output first 10 lines of file tail file =>Output last 10 lines of file tail -f file =>Output contents of file as it grows starting with the last 10 lines gpg -c file =>Encrypt file gpg file.gpg =>Decrypt file wc =>print the number of bytes, words, and lines in files xargs =>Execute command lines from standard input 	INSTALL PACKAGE <ul style="list-style-type: none"> rpm -i pkgname.rpm =>Install rpm based package rpm -e pkgname =>Remove package
PROCESS RELATED <ul style="list-style-type: none"> ps =>Display your currently active processes ps aux grep 'telnet' =>Find all process id related to telnet process prmp =>Memory map of process top =>Display all running processes kill pid =>Kill process with mentioned pid killall proc =>Kill all processes named proc pkill process-name =>Send signal to a process with its name bg =>Resumes suspended jobs without bringing them to foreground fg =>Brings the most recent job to foreground fg n =>Brings job n to the foreground 	INSTALL FROM SOURCE <ul style="list-style-type: none"> ./configure make make install
FILE PERMISSION RELATED <ul style="list-style-type: none"> grep pattern files =>Search for pattern in files grep -r pattern dir =>Search recursively for pattern in dir locate file =>Find all instances of file find /home/tom -name 'index*' =>Find files names that start with "index" find /home -size +10000k =>Find files larger than 10000k in /home 	LOGIN (SSH AND TELNET) <ul style="list-style-type: none"> ssh user@host =>Connect to host as user ssh -p port user@host =>Connect to host using specific port telnet host =>Connect to the system using telnet port
FILE TRANSFER <ul style="list-style-type: none"> scp scp file.txt server2:/tmp =>Secure copy file.txt to remote host /tmp folder rsync rsync -a /home/apps /backup/ =>Synchronize source to destination 	DISK USAGE <ul style="list-style-type: none"> df -h =>Show free space on mounted filesystems df -i =>Show free inodes on mounted filesystems fdisk -l =>Show disks partitions sizes and types du -ah =>Display disk usage in human readable form du -sh =>Display total disk usage on the current directory findmnt =>Displays target mount point for all filesystem mount device-path mount-point =>Mount a device
DIRECTORY TRAVERSE <ul style="list-style-type: none"> cd .. =>To go up one level of the directory tree cd cd /test 	



```
16) SIGSTKFLT  17) SIGCHLD  18) SIGCONT  19) SIGSTOP  20) SIGTSTP
21) SIGTTIN   22) SIGTTOU  23) SIGURG   24) SIGXCPU  25) SIGXFSZ
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
48) SIGRTMIN+14 49) SIGRTMIN+15 50) SIGRTMAX-14 51) SIGRTMAX-13 52) SIGRTMAX-12
53) SIGRTMAX-11 54) SIGRTMAX-10 55) SIGRTMAX-9  56) SIGRTMAX-8  57) SIGRTMAX-7
```

ps - Process Status

Syntax

`ps [options]`

Example

`ps aux`

Explanation

The `ps` command displays information about running processes.

```
drwxr-xr-x.  3 root root 4096 May 18 16:03 empty
drwxr-xr-x.  2 root root 4096 May 18 16:03 games
drwxrwx--T.  2 root gdm  4096 Jun  2 18:39 gdm
drwxr-xr-x. 38 root root 4096 May 18 16:03 lib
drwxr-xr-x.  2 root root 4096 May 18 16:03 local
lrwxrwxrwx.  1 root root   11 May 14 00:12 lock -> ../run/lock
drwxr-xr-x. 14 root root 4096 Sep 14 20:42 log
lrwxrwxrwx.  1 root root   10 Jul 30 22:43 mail -> spool/mail
drwxr-xr-x.  2 root root 4096 May 18 16:03 nis
drwxr-xr-x.  2 root root 4096 May 18 16:03 opt
drwxr-xr-x.  2 root root 4096 May 18 16:03 preserve
```

top - Dynamic Process Viewer

Syntax

top

Example

top

Explanation

top provides a real-time view of system processes and their resource usage.

htop - Interactive Process Viewer

Syntax

htop

Example

htop

Explanation

htop is an interactive process viewer similar to top but with a more user-friendly interface.

```
[1]+  Stopped                  sudo strace -f -p 31915
krd@ubuntu:~$ ps axw | grep strace
34169 pts/4      T      0:00 sudo strace -f -p 31915
34170 pts/4      T      0:00 strace -f -p 31915
34211 pts/4      S+     0:00 grep --color=auto strace
```

kill - Terminate Processes

Syntax

kill [signal] PID

Example

kill -9 1234

Explanation

kill sends signals to processes, and -9 is used to forcefully terminate a process.

pgill - Signal Processes by Name

Syntax

```
pgill [options]  
process_name
```

Example

```
pgill -SIGTERM  
process_name
```

Explanation

pgill sends signals to processes that match the specified name.

ps tree - Display Process Hierarchy

Syntax

`ps tree [options]`

Example

`ps tree`

Explanation

`ps tree` displays processes in a hierarchical tree structure.

pgrep - Search for Processes by Name

Syntax

```
pgrep [options]  
process_name
```

Example

```
pgrep -l process_name
```

Explanation

pgrep lists the PIDs of processes matching the name.

renice - Change Process Priority

Syntax

```
renice [-n] priority [-g|-p|-  
u] process_name
```

Example

```
renice +10 -p 1234
```

Explanation

renice changes the priority of a running process.

nice - Launch Process with Priority

Syntax

`nice [-n] priority command`

Example

`nice -n 10 my_command`

Explanation

`nice` starts a command with a specified priority.

df - Disk Space Usage

Syntax

```
df [options] [filesystem]
```

Example

```
df -h
```

Explanation

df displays disk space usage information.

du - Disk Usage of Files and Directories

Syntax

```
du [options] [directory/file]
```

Example

```
du -sh /path/to/directory
```

Explanation

`du` calculates and displays disk usage for files and directories.

fdisk - Disk Partitioning Utility

Syntax

`fdisk [options] device`

Example

`fdisk /dev/sdX`

Explanation

`fdisk` is used for disk partitioning.

parted - Disk Partitioning Utility

Syntax

`parted [options] device`

Example

`parted /dev/sdX`

Explanation

`parted` provides an interactive partitioning interface.

mkfs - Create a Filesystem on a Partition

Syntax

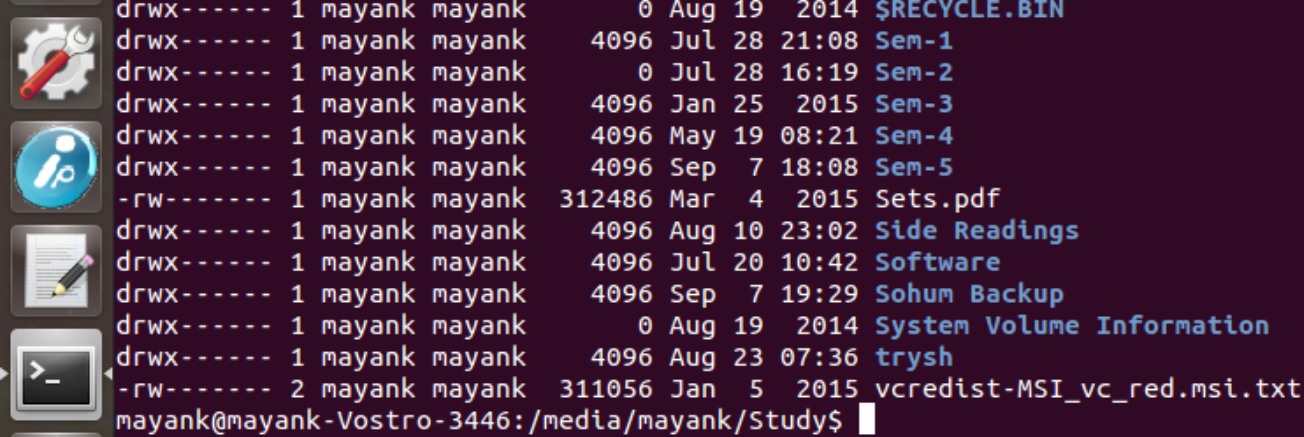
`mkfs [options] device`

Example

`mkfs.ext4 /dev/sdX1`

Explanation

`mkfs` is used to create a filesystem on a partition.



```
drwx----- 1 mayank mayank      0 Aug 19  2014 $RECYCLE.BIN
drwx----- 1 mayank mayank      0 Jul 28 16:19 Sem-2
drwx----- 1 mayank mayank    4096 Jan 25  2015 Sem-3
drwx----- 1 mayank mayank    4096 May 19 08:21 Sem-4
drwx----- 1 mayank mayank    4096 Sep  7 18:08 Sem-5
-rw----- 1 mayank mayank 312486 Mar  4  2015 Sets.pdf
drwx----- 1 mayank mayank    4096 Aug 10 23:02 Side Readings
drwx----- 1 mayank mayank    4096 Jul 20 10:42 Software
drwx----- 1 mayank mayank    4096 Sep  7 19:29 Sohum Backup
drwx----- 1 mayank mayank      0 Aug 19  2014 System Volume Information
drwx----- 1 mayank mayank    4096 Aug 23 07:36 trysh
-rw----- 2 mayank mayank 311056 Jan  5  2015 vcredist-MSI_vc_red.msi.txt
mayank@mayank-Vostro-3446:/media/mayank/Study$
```

mount - Mount Filesystems

Syntax

```
mount [options] device
      mount_point
```

Example

```
mount /dev/sdX1
/mnt/mydisk
```

Explanation

mount attaches a filesystem to a mount point.

umount - Unmount Filesystems

Syntax

```
umount [options]  
mount_point
```

Example

```
umount /mnt/mydisk
```

Explanation

`umount` detaches a mounted filesystem.