Linux System Information Gethering:
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hostname:

```
# To check the hostname
$ hostname

# Check the hostname ip
$ hostname -i

# view the hostname and edit the hostname details
$ hostnamectl

# Set the hostname
$ hostnamectl set-hostname <name>
```

Uname:

```
# check the kind of operting system
$ uname -m (kind of archeticuter)
$ uname -a (it dispaly all the details)
$ uname -n (check ip address)

# check the os details , kernal details , process details:
$ uname -a (a -> all)

# Running status of linux machine, CPU Load average.
$ uptime
```

Timezone:

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# Check the timezone and edit the timezone
- view the time zone details
  $ timedatectl

- list avaliable timezone details
  $ timedatectl list-timezones
  $ timedatectl list-timezone | grep Asia
sudo timedatectl set-timezone Asia/Calcutta

- set the time zones
  $ timedatectl set-timezone

# ntp -> network time protocal -> it is fetch the internet time
  timedatectl set-ntp 1 (active)  1 or on
  timedatectl set-ntp 0 (deactive)
Note: if ntp server is active , we cant change the local time.
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```
# set the time
$ timedatectl set-time ""

# set the date
$ timedatectl set-date ""


Cal
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# view the calendare
$ cal
# Want to view particular month and year
$ cal <month> <year>
eg: cal 5 2023

w
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# To the check list of user login, which process
$ w

# check the which user your are login
$ whoami
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Linux Performance Monitoring & statistics:
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For memory -> free

Disk size -> du

Process -> top

free
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# check the Ram usage,

$ free
$ free -h <human readable (gb)>
$ free -m <mb formate>

Note:
-> buffer/cache Memory-> it is stored the frequantly access file, so that
performance of i/o will be good.
-> Swap which is used to if ram memory full, swap memory will use. ,Once swap memory
increase we need to increase the RAM size.

df: disk free (overall disk)
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# to check the filesystem sizes
$ df -h
$ df -hT  ( types of file system)
$ df -hTx (view the list of disk size executed the tmp files)

du: diskusage
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# used to check the seprate files and directories utilized space in hard disk.
$ du -h <path>
eg: du -h /home/ec2-user
$ du -sh <path>   -> it is used to view overall disk size of the particular path.

top
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- CPU utilization ,
- Memory Utilization ,
- Current Memory Avaliable,
- all the process running status

Note: CPU Load Average ( 1 mins 5mins 15mins)
      Zombie Process Means the child process of main process, if zombie process we
need to kill.

$ top

$ top -u <username>  (check the particular username process)
  eg ->  top -u ec2-user

LinuxProcess Management:
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What is Process?
   Process which is nothing but to run a program
   for every program there is a process id, we can identify the particular process
based on the process id.

PS: process status
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$ ps     -> it shows the current path process ip
$ ps -ef  -> it shows the all user
$ ps -ef | grep <top>  -> filter out the particular process.
$ ps -aux  -> it gives some more details compare to ef
$ ps -eo pid,cmd,%cpu,%mem   -> to check the customize view

Note: ? -> which is system process


kill
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- Terimnate the process,
- it will send the signal and kill the all the child process id and parent process
```

id

$ kill <pid>
$ kill -f <pid> (kill forcefully)
$ pkill <process name> (it will kill based on the process name)

Here is the list of common yet important set of Linux commands.

ls : shows the list of all files in the current directory.

cd : it is used to "***Change directory***"

pwd : Print the current working directory.

cp : Copy files or directories from source to destination.

mv : Move/rename files or directories from source to destination .

rm : Remove/delete files or directories irrespective of files present in it or not.

mkdir : Used to create a new directory.

touch : Creates an empty file.

nano : Text editor to open and edit files.

cat : Display the contents of a file.

grep : Search for a pattern in a file.

find : It is also used to search but instead of a pattern it search the location of a file.

chmod : Change the file permission "rwx" or we can use 777, r-4, w-2, x-1.

ps : Display information about active processes.

kill : Used to terminate a process by process ID (PID).

df : Display disk space usage.

tar : It is used to create or extract tar archives.

wget : Download files from the internet.

ssh : Connect to a remote server using Secure Shell (SSH).

history : Display command history.

echo : Print a message to the terminal.

uptime : Display system uptime and load averages.

whoami : Display the current username like "ubuntu".

ifconfig : Display network configuration interface.

ping: Check network connectivity to a host.

curl : Transfer data from or to a server.

sudo : Execute a command with superuser privileges.

top : Display real-time system information.

ps : Display a snapshot of current processes.

cp : Copy files or directories with progress.

mv : Move files or directories with progress.

wget : Download a file and save it with a different name.

du : Display the size of a directory and its subdirectories.

df : Display disk space usage for a specific filesystem.

grep : Search for a pattern recursively in all files in a directory.

ln : Create a symbolic link to a file, there are two types of link - hard link and soft link.

df : Display disk space usage and available space.

who : Display information about logged-in users.

echo: Append text to a file.

head : Display the first few lines of a file.

tail : Display the last few lines of a file with real-time updates.