Linux Interview Questions
Test - 1

1) What command is used to count the total number of lines, words, and characters contained in a file?

A. countw

B. wcount

C. wc

D. count p

E. None of the above

Ans)

2)What command is used to remove files?

A. dm

B. rm

C. delete

D. erase

E. None of the above

Ans)

3)What command is used to remove the directory?

A. rdir

B. remove

C. rd

D. rmdir

E. None of the above

Ans)

4)What command is used with vi editor to delete a single character?

A. x

B. y

C. a

D. z

Ans)

5)Which of the following command can you execute to count the number of lines in a file?

A. lc

B. wc - l

C. cl

D. count

E. None of the above

Ans)

6) Which of the following is not a communication command?

A. grep

B. mail

C. mesg

D. write

E. None of the above

Ans) grep

7) What command is used to display the characteristics of a process?

A. au

B. ps

C. du

D. pid

E. None of the above

Ans)

8) What command is used to list contents of directories?

A. tar

B. dir

C. lp

D. ls

E. None of the above

Ans) ls

9) Command used to create an empty file.
  A. mtfile
  B. touch
  C. intouch
  D. file
Ans) touch

10) ....command is used to show the logger or user
A. ?
B. Who
C. No of
D. ???

Ans)who

11. What command clears the contents of your terminal display?
Ans)

12. what is the command to create the ssh key?
Ans)

13. What do you type in to move to the parent directory?
Ans)

14. What command is used to change directories?
Ans)

15. What command is used to get the ip address of all interfaces on a server?
Ans)

16. What command is used to change ownership of a file?
Ans)

17. What command is used to copy a file?
Ans)

18. What command(s) shows you disk partitions and percentage of disk space used?
Ans)

19. What command shows you how long it has been since the server was rebooted?
Ans)

20. What command shows you what directory you are in?
Ans)

21. What command creates an empty directory?
Ans)

22. What command displays your current username?
Ans)

23. What command shows you CPU and memory utilization for running processes?
Ans)

24. What command allows you to open and view a file one page at a time?
Ans)

25. Which command(s) show users that are logged in?
Ans)

26. What command is used to change a file name?
Ans)

27. What is the command to switch to the root user account?
Ans)

28. What command is used to change the permissions of a file?
Ans)

29. What is the command to change your password?
Ans)

30. What command is used to display your previous commands?
Ans)

Test - 2

1) What can you type at a command line to determine which shell you are using?
Ans)

2) What is RPM?
Ans)

3) What is apt-get?
Ans)

4) What is the command to create user in Linux server?
Ans)

5) What is the difference between rm and rmdir commands?
Ans)

6) What is the command to display the user information like (users login name, real name, terminal name,shell)
Ans)

7) What is the command to download any software from internet?
Ans)

8) What is the command to display the jobs that you are running in the background and in the foreground?
Ans)

9) How to check the status if one service?
Ans)

10) What is the command which will gives the description about any command?
Ans)

Test 3

Explain the file system hierarchy in Linux system?
Ans)

What is mkdir command and what is the -v, -p and -m options with mkdir command?
Ans)

What is ls -ltr? In this what is l,t and r?
Ans)

How to list all hidden files and hidden directories?
Ans)ls -a | grep '^\.'
    ls -ld .*

How to display only directories?
Ans) ls -d */ --> It will display only directories.
       ls -l | grep '^d'
       ls -l | grep d

How to display only files?
Ans) ls -l | egrep -v '^d'

What is cd -?
Ans)

What is cd ~?
Ans)

What is cd?
Ans)

Which user account is created on Linux while installation?
Ans) root user

What is the use of file command?
Ans)

How to check the RAM size?
Ans) Using free command

How to check the server resources utilisation?
Ans) Using top command

How to check the CPU and Memory statistics?
Ans) Using vmstat command

How to search the files with various conditions like empty files, based on size...?
Ans)

How to set the permissions for files or directories?
Ans) Using chmod command

What is Umask?
Ans) Default file and directory permissions.

How to set the umask permanently for aa user?
Ans) vim ~/.bashrc

How to check open ports on local system?
Ans) netstat -tunlp

How to check open ports on remote server?
Ans) nmap -A serverIp

How to check which services are enable across reboot?
Ans) chkconfig --list

What is load average in Linux?
Ans) Load average is defined as the average sum of the number of process waiting in the ru queue and number of process currently executing over the period of 1, 5and 15 minutes.using the 'top' and 'uptime' command we find the load average of a Linux server.

What is partial backup?
Ans)

when you select single partition for single folder for backup on your server.
Ans)

How can we review boot message?
Ans) dmesg command

What are the fields in the/etc/passwd file?
Ans) user:pass:uid:gid:comment for user:user's home dir:user's login shell.

How to check which RPM provides/etc/shadow file?
Ans) rpm -gf /etc/passwd

In which file the password are saved for each user?
Ans)

In which file user information is saved?
Ans)

What is Inode? What is the use?
Ans)

/etc/resolve.config
Explain and if we not declared here what will happen?
Ans)

What is Vcpu,if vcpu % more than 1 what will happen?
Ans)

How you will find out memory details and explain about swap memory?
Ans)

Write a command for 5 days older files with extension of .log , those files want to move it different directory?
Ans)

What is Inode? What is the use of Inode?
Ans)

Booting process? Explain about run levels? what is default run levels?
Ans)

How will you find out top ten process?
Ans)

How to check open files in sever?
Ans) By using lsof command

Directory special permissions?
Ans)

What is sticky bit?
Ans)

What is NFS?
Ans)

What it gives/displays if you execute mount -a?
Ans)

I have a file in some location. How to find that file. in that file how to display the

particular content(already I know the content) ?
Ans)

How to find a port that is enable or not?
Ans)

What is SSL?
Ans)

What is GRUB?
Ans)

Explain soft link and hard link? What is the difference? When you use?
Ans)

What is the first statement in shell scripting?
Ans)

Explan about Process and threads?
Ans)

What is zombie proces?
Ans)

How will you find out what are the files using by particular process?
Ans)

What is zone file?
Ans)

How can you prevent anyone from scheduling a cronjob?
A) Delete the file /etc/cron.deny
B) Create an empty file called /etc/cron.deny
C) Create two empty files: /etc/cron.deny and /etc/cron.allow
D) Create an empty file called /etc/cron.allow

Ans) D

Using command substitution, how would you display the value of the present working directory?
A) echo $(pwd)
B) echo pwd
C) $pwd
D) pwd|echo

Ans) A

Explanation: The echo command can be used to display the contents of variables. The present working directory is held in the pwd variable. echo $(pwd) will display the contents of the pwd variable. Other commands that would work are echo $ PWD and echo "$PWD".
Reference: http://www.bolthole.com/solaris/ksh-beforeyoustart.html
Incorrect Answers:

B:echo pwd would display the text 'pwd'.
C:$pwd doesn't do anything although $PWD would work.
D:pwd | echo doesn't do anything.

Which file contains the default environment variables when using the bash shell?

A) ~/.profile
B) /bash
C) /etc/profile
D) ~/bash

Ans) C

Explanation:
The /etc/profile file contains the system default environment variables for the bash shell.

What is Crontab?
Ans)

Whats is vmstat and memstat?
Ans)

How to change run levels?
Ans)

What is Linux Loader?
Ans)

Otherethan LILO , we have LOADLIN (LOAD LINux) and GRUB (GRand Unified Bootloader).

What is stateless Linux server?
Ans)

A process is identified by a unique
a)pid
b)id
c)processid
d)proid

Ans)

Which of the following is the BEST way to set up SSH(Secure Shell) for communicating between Systems without needing passwords?

A) Use ssh-keygen for generating public-private keys.
B) Disable passwords on specific accounts that will use SSH.
C) Both A and B
D) None of the above

Ans)

Given a file, replace all occurrence of word "mithun" with "manan" from 5th line till end in only those lines that contains word "ruthvik"
Ans)
Given file is mithuntechnologies.txt
sed -n `5,$p` mithuntechnologies.txt | sed '/ ruthvik/s/ mithun/manan/

1) In Ubuntu server I have fired a command "cat /etc/lsb-release", what it will gives me?
Ans) It will give the version of the software and release name like below.

```
root@b3d60c26b7d0:/etc# cat lsb-release
DISTRIB_ID=Ubuntu
DISTRIB_RELEASE=16.04
DISTRIB_CODENAME=xenial
DISTRIB_DESCRIPTION="Ubuntu 16.04.3 LTS"
root@b3d60c26b7d0:/etc# cat os-release
NAME="Ubuntu"
VERSION="16.04.3 LTS (Xenial Xerus)"
ID=ubuntu
ID_LIKE=debian
PRETTY_NAME="Ubuntu 16.04.3 LTS"
VERSION_ID="16.04"
HOME_URL="http://www.ubuntu.com/"
SUPPORT_URL="http://help.ubuntu.com/"
BUG_REPORT_URL="http://bugs.launchpad.net/ubuntu/"
VERSION_CODENAME=xenial
UBUNTU_CODENAME=xenial
root@b3d60c26b7d0:/etc#
```

LSB: Linux Standard Base tools

2) The command uname –a what it will gives me?
Ans) uname command will print the system information like kernel, hardware, operation system info…etc

uname -a : it will print all information like kernel-name, kernel-release, node hostname…etc

```
[LandmarkTechnology@ip-172-31-24-30 ~]$ uname -s
Linux
[LandmarkTechnology@ip-172-31-24-30 ~]$ uname -n
ip-172-31-24-30.ec2.internal
[LandmarkTechnology@ip-172-31-24-30 ~]$ uname -r
4.18.0-193.el8.x86_64
[LandmarkTechnology@ip-172-31-24-30 ~]$ uname -v
#1 SMP Fri Mar 27 14:35:58 UTC 2020
[LandmarkTechnology@ip-172-31-24-30 ~]$ uname -m
x86_64
[LandmarkTechnology@ip-172-31-24-30 ~]$ uname -p
x86_64
[LandmarkTechnology@ip-172-31-24-30 ~]$ uname -i
x86_64
[LandmarkTechnology@ip-172-31-24-30 ~]$ uname -a
Linux ip-172-31-24-30.ec2.internal 4.18.0-193.el8.x86_64
[LandmarkTechnology@ip-172-31-24-30 ~]$ |
```

3) Let say that I have one shell script, I wanted to be executed whenever the system boot time, it should not be executing at any other time, it exacted only boot time. In this scenario what will do?
Ans)

4) What is the difference between bash_profile and bashrc file in user home directory?
Ans)

5) What is Login Shell and Non Login shell
Ans)

6) Can you explain me the contents in /etc/shadow file?
Ans)
- The /etc/shadow file stores user account information. Like username, password, last password changes etc.
- Password is stored in encrypted format.
- All fields are separated by a colon (:) symbol.

#cat /etc/shadow

```
[root@e763009607d9:/# cat /etc/shadow
root:$6$tnhB/Tvd$fMlnDf3TzcX8zQ0NpgCXPlYtw2TxaXTN0k.B8iKuh1rWf1OZemgTW3glRGDrcbNC9RSCKsijRUUHhQH5jm1iu.:17434:0:99999:7:::
daemon:*:17357:0:99999:7:::
bin:*:17357:0:99999:7:::
sys:*:17357:0:99999:7:::
sync:*:17357:0:99999:7:::
games:*:17357:0:99999:7:::
man:*:17357:0:99999:7:::
lp:*:17357:0:99999:7:::
mail:*:17357:0:99999:7:::
news:*:17357:0:99999:7:::
uucp:*:17357:0:99999:7:::
proxy:*:17357:0:99999:7:::
www-data:*:17357:0:99999:7:::
backup:*:17357:0:99999:7:::
list:*:17357:0:99999:7:::
irc:*:17357:0:99999:7:::
gnats:*:17357:0:99999:7:::
nobody:*:17357:0:99999:7:::
systemd-timesync:*:17357:0:99999:7:::
systemd-network:*:17357:0:99999:7:::
systemd-resolve:*:17357:0:99999:7:::
systemd-bus-proxy:*:17357:0:99999:7:::
_apt:*:17357:0:99999:7:::
devops:$6$v.WfL9xy$P1WlKwThn5HNReFyCALQxT2OIxUullD/Fubg3mWQGtoWsCF2A.WogFf6xu/niCtG1tHE3u/aYJsF4Hej.8tn0:17434:2:99:7:::
root@e763009607d9:/#
```

7) How is your knowledge on Linux File System?
Ans)

8) Have you worked on /srv directory?
Ans)

9) What is the difference between /bin and /sbin directory?
 Ans)

10) What configuration we have to set to do for normal user and root user differentiation?
Ans)

11) There is some settings which makes doesn't show some advanced commands to normal user? What are those settings?
Ans)

12) What is PATH and what does it do?
Ans)

13) Which lang u prefer?
Ans)

14) Difference between $* and $@
Ans)

15) Explain about Cron Job?
Ans)

16) How to check one software where is installed in Linux machine? Suppose take Jenkins.
Ans)

17) How to set the path which is accessible by the all the users?
Ans)

18) How to create the user?
Ans) We can create the user by using the command **'useradd'**
useradd <<User Name>>
useradd LandmarkTechnology

Here mithun is the username.

19) How to create the group?
Ans) We can create the group by using the command **'groupadd'**
groupadd <<Group Name>>
groupadd devopsteam

20) How to add user to group?
Ans)   using usermod commnd we can add the user to group as follows.
usermod –g <<Group Name>> <<User Name>>

21) How to check CPU utilization?
Ans) We can check the cpu utilization using **top** command or **mpstat** command.

22) What is load average?
Ans) In UNIX computing, the system load is a measure of the amount of computational work that a computer system performs. The load average represents the average system load over a period of time. It conventionally appears in the form of three numbers which represent the system load during the last 1, 5 and 15 minute periods.

Using below command we can find the load average.
uptime
top
cat /proc/loadavg
w
23) What is the difference between load average and cpu load?
Ans)

24) What is load average?
Ans) Below commands will give the load average values.

#cat /proc/loadavg

#w

#uptime

#top

load average 3.00 in prod server, but things are running fine? What is this?
Ans) On multi-processor system, the load is relative to the number of processor cores available. The "100% utilization" mark is 1.00 on a single-core system, 2.00, on a dual-core, 4.00 on a quad-core, etc.

A load of 1.00 is 100% CPU utilization on single-core box. On a dual-core box, a load of 2.00 is 100% CPU utilization.

25) What is Inode?
Ans) Inode is a data structure that contains information of a file.
The inode contains a list of all the blocks in which a file is stored, the owner information for that file, permissions, and all other attributes that are set for the file. In a sense, you could say that a file really *is* the inode, and names are attached to these inodes to make it easier for humans to work with them.

26) What is Sticky bit?
Ans) A Sticky bit is a permission bit that is set on a file or a directory that lets only the owner of the file/directory or the root user to delete or rename the file. No other user is given privileges to delete the file created by some other user.

To set the sticky bit for file or directory will follow like below.
chmod +o file/directory

example:
chmod o+devops.txt
chmod 1777 devops.txt

```
[LandmarkTechnology@ip-172-31-24-30 ~]$ chmod o+t devops.txt
[LandmarkTechnology@ip-172-31-24-30 ~]$
[LandmarkTechnology@ip-172-31-24-30 ~]$ ll
total 0
-rw-rw-r-T. 1 LandmarkTechnology LandmarkTechnology 0 Oct 10 22:49 de
vops.txt
-rwxrwxrwt. 1 LandmarkTechnology LandmarkTechnology 0 Oct 10 22:48 te
xt
[LandmarkTechnology@ip-172-31-24-30 ~]$
[LandmarkTechnology@ip-172-31-24-30 ~]$ chmod 1777 devops.txt
[LandmarkTechnology@ip-172-31-24-30 ~]$
[LandmarkTechnology@ip-172-31-24-30 ~]$ ls -l
total 0
-rwxrwxrwt. 1 LandmarkTechnology LandmarkTechnology 0 Oct 10 22:49 devops.txt
-rwxrwxrwt. 1 LandmarkTechnology LandmarkTechnology 0 Oct 10 22:48 text
[LandmarkTechnology@ip-172-31-24-30 ~]$
```

After setting Sticky Bit to a file/folder, if you see 'T' in the file permission area that indicates the file/folder does not have executable permissions for others on that particular file/folder.

27) How to check process is in waiting state or not?

Ans) In Linux a process can be in any of the below states.

  R running or runnable (on run queue)
  D uninterruptible sleep (usually IO)
  S interruptible sleep (waiting for an event to complete)
  Z defunct/zombie, terminated but not reaped by its parent
  T stopped, either by a job control signal or because
    it is being traced
  W paging (not valid since the 2.6.xx kernel)
  X dead (should never be seen)

A process starts its life in an R "running" state and finishes after its parent reaps it from the Z "zombie" state.

With help of **top** or **ps** command we can find the process is in which state.

```
[LandmarkTechnology@ip-172-31-24-30 ~]$ top
```

```
Tasks:  92 total,   2 running,  88 sleeping,   2 stopped,   0 zombie
%Cpu(s):  1.0 us,  0.7 sy,  0.0 ni, 98.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :    816.0 total,    124.7 free,    214.4 used,    476.9 buff/cache
MiB Swap:      0.0 total,      0.0 free,      0.0 used.    401.4 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
  12602 apache    20   0 1349320   8840   3772 S   0.3   1.1   0:26.10 httpd
      1 root      20   0   97296  13324   9004 S   0.0   1.6   0:29.75 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.05 kthreadd
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
      6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H
      8 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 mm_percpu_wq
      9 root      20   0       0      0      0 S   0.0   0.0   0:00.85 ksoftirqd/0
     10 root      20   0       0      0      0 R   0.0   0.0   0:01.34 rcu_sched
```

```
[LandmarkTechnology@ip-172-31-24-30 ~]$ ps
    PID TTY          TIME CMD
  78901 pts/0    00:00:00 bash
  79153 pts/0    00:00:00 ps
[LandmarkTechnology@ip-172-31-24-30 ~]$ ps
    PID TTY          TIME CMD
  78901 pts/0    00:00:00 bash
  79154 pts/0    00:00:00 ps
[LandmarkTechnology@ip-172-31-24-30 ~]$ 
```

28) What is process?
Ans) A process is an instance of a program that is being executed. Processes are also frequently referred to as tasks. OR A process is the execution context of a running program.

29) What is thread?
Ans) Threads are "light weight processes" (LWPs).

30) On what process the server will shutdown?
Ans)

31) How to find the empty directories in the current directory and need to delete?
Ans) find . -type d -empty -delete

32) How to find the empty files in current directory?
Ans) find . -type f -empty

33) How to find the empty lines in particular file and need to remove?
Ans) With help of **sed** command.

```
[root@mithuntechnologies devops]# cat devops.txt
Hi Guys,
My name is Mithun Reddy L.

I am working as a DevOps Engineer.

DevOps is not a technology.
[root@mithuntechnologies devops]# sed '/^\s*$/d' devops.txt
Hi Guys,
My name is Mithun Reddy L.
I am working as a DevOps Engineer.
DevOps is not a technology.
[root@mithuntechnologies devops]#
```

34) What is the umask?
Ans) UMASK (User Mask) is the default permission given when a new file or directory is created on a Linux machine. At the point when user create a file or directory under Linux or UNIX, It create with a default set of permissions. Most of the Linux distros give **022 (0022)** as default UMASK. In other words, it is a system default permissions for newly created files/folders in the machine.

```
[LandmarkTechnology@ip-172-31-24-30 ~]$ vi devops.txt
[LandmarkTechnology@ip-172-31-24-30 ~]$
[LandmarkTechnology@ip-172-31-24-30 ~]$
```

35) What is max value of giving to umask?
Ans) The minimum and maximum UMASK value for a folder is **000** and **777**
The minimum and maximum UMASK value for a file is **000** and **666**

36) What is the default permissions to a file?
Ans) It will depends on umask value. By default umask value is 022, so the default file permission ins 644 (rw-r--r--).

```
[LandmarkTechnology@ip-172-31-24-30 ~]$ vi devops.txt
[LandmarkTechnology@ip-172-31-24-30 ~]$
[LandmarkTechnology@ip-172-31-24-30 ~]$ |
```

What is the default permissions to a directory?

Ans)   It will depends on umask value. By default umask value is 022, so the default directory permission ins 755 (rwxr-xr-x).

```
[LandmarkTechnology@ip-172-31-24-30 ~]$ ls -l
total 4
-rwxrwxrwt. 1 LandmarkTechnology LandmarkTechnology 6 Oct 10
 22:58 devops.txt
-rwxrwxrwt. 1 LandmarkTechnology LandmarkTechnology 0 Oct 10
 22:48 text
[LandmarkTechnology@ip-172-31-24-30 ~]$ |
```

37) what is chmod?

Ans) chmod (change mode) is used to set the permissions for files and directories.

38) How to check ports in linux?

Ans)   Using netstat command we can find the all the port numbers in linux server as follows.
netsat -a : It will Shows both listening and non-listening (for TCP this means established connections) sockets.

#netstat -a | grep LISTENING | grep 8080

```
[root@mithuntechnologies devops]# netstat -a | grep LISTENING | grep 20696
unix  2      [ ACC ]     STREAM      LISTENING      20696      private/smtp
[root@mithuntechnologies devops]# █
```

https://vceguide.com/which-file-contains-a-list-of-filesystems-that-can-be-currently-mounted-on-the-system/