

✓ MODULE-WISE INTERVIEW QUESTIONS COMPENDIUM

✓ Module 3 - System Access and File System

◆ Basics

1. What is the default Linux file system structure? Explain /bin, /etc, /var, /home, /tmp.
 - /etc is an file where we store the configuration , authentication folders and etc
 - /var - they store the variable that are used to store data that changed frequently
 - /home - they are the personal directory of the user where we having all the personal documents and downloads of the user
 - /tmp they are temporary files that are used to store temp logs and stuff and these files are deleted when the system gets shutdown or rebooted
2. What are absolute vs. relative file paths?
 - Absolute path - start with an / and they are marking from the current directory to the total path
 - Relative path - they don't start with the / and they are used for moving one directory are a time
3. How do you navigate the file system using CLI?
 - Cd , pwd , tree , ls
4. How do you list all hidden files in the current directory?
 - Ls -a is the command used to display the hidden files
5. What's the difference between find and locate?
 - Find is used to find an particular file in an current path and thereis no db connected to it
 - Locate on the other hand contains an db that is related to it so the search happens to the whole machine if the db is not updated use the command updatedb

◆ Real-Time Scenarios

6. You created a file, but ls doesn't show it. What might have gone wrong?

- Maybe u created with an dot in the front which causes the file to be hidden so use the command `ls -a` to find the file

7. What command will find all .log files modified in the last 24 hours?

- `find /var/logs -type f -name ".log" -mtime +1`

8. What is the difference between hard link and soft link?

- Hardlink are they type which are directly related to the inode that is present so when the original file is deleted they can be restored from the link that is present
- Soft link are those where they are not directly related to the inode and when the original file is delete the link is also destroyed
- Soft link / symbolic link - `ln -s filename linkname`
- Hardlink - `ln filename linkname`

9. How do you split a 5GB file into 1GB chunks and then combine them?

- `split -b 1gb bigfile.txt chunks_`
`cat chunks*_ > combinedfile.txt`

◆ Practical

10. How would you connect a Linux server using PuTTY? What details are required?

- Use the command `ifconfig` to get the ipaddress and then go to the putty and enter the hostname as ip address and then get the username and password and then login into the respected user
- If u have an authentication file like key pair then go to auth and then us the keypair as an security and then login into the machine

✓ Module 4 - Linux Fundamentals

◆ Core Commands

11. What is the difference between `chmod 755` and `chmod 644`?

- 755 - is where the user is having full permissions and the group and other have read and execute permissions

- 644 - the user have read and write permissions and the group and others have only the read permissions

12. Explain user, group, and others in the permission context.

- Users are the individual member of the machine where they can have the at most permissions to no permissions and have all permission over the file or directory they create
- Groups are those which contain multiple user in it where files are shared among the users present with specific permissions
- Other are those which are not related to the user or the group

13. What is the difference between chown and chgrp?

- Chown is used to change ownership of the files present
chown jash filename - user changed to jash
- Chgrp is used to change the group permissions of the file
chgrp devgroup filename

chown jash:devgroup filename

◆ Data Handling

14. What does the | (pipe) symbol do in Linux?

- Pipe command is used in the place of ordering multiple command that work together
- Here the second command always depends on the output of the first command
- Ls -ltr | wc -l

15. How do you count the number of lines, words, and characters in a file using one command?

- Cat filename.txt | wc -l | wc -w | wc -c

16. How does grep work and how can you make it case-insensitive?

- Grep command is used find characters in the file that you want to find
- grep "error" /var/log/backup_log.log
- to make it case insensitive add an i
- grep -I "error" /var/log/backup_log.log

◆ Practical Questions

17. A file has duplicate lines — how do you remove duplicates?

- `Sort filename.txt | uniq`
- `Uniq` command is used to remove duplicate from the file

18. Compare the output of two config files. Which command will you use?

- `Compare output1.txt output2.txt`

19. How do you append and overwrite text in a file using `>` and `>>`?

- `touch outputfile.txt`
- `echo "hello" > outputfile.txt`
- `echo "hello again" >> outputfile.txt`

20. How do you view the last 20 lines of a log file that is actively being written to?

- `Tail -n 20 filename.txt`

✓ Module 5 – System Administration

◆ System Monitoring & Processes

21. What is the difference between `ps`, `top`, and `htop`?

- `Ps` - is used to list all the running process in the machine and we can use `rpm -qa` command to view the specific process
- `top` command is used to show many details such as `cpu usage in percent` , `memory usage in percent` , `ram usage` , `userid` . `nice value` etc
- `htop` they are used to monitor the `cpu usage` , `running process` etc

22. What does `nice` and `renice` do?

- `Nice` command is used to add up increase the `nice value` or the `priority` of the process that is present from `-20` to `19` here they highest priority is `-20` and the lowest is the `+19`
`nice -n 10 myscript.sh`

- Renice is the command to remove the added priority or the nice value that is present
renice -n 10 myscript.sh

23.Explain the role of crontab. How do you schedule a job to run every day at 5PM?

- Crontab is used for the process of automation of the job that are needed to be run on a specific time
- Crontab -e - to open cron editor
- 00 17 * * * echo "hello" > /tmp/output/cronoutputfile.txt

24.What is the difference between kill, killall, and pkill?

- Kill command is used to stop the process using the pid and options the options are SIGTERM , SIGKILL etc
- Killall and pkill are used when the process id are not known

25.How do you check the CPU and memory utilization of a process?

- Use the command top,htop,ps it shows every detail that you need to monitor

◆ User & Authentication

26.How do you create a new user with home directory and shell?

- Useradd newuser
passwd newuser

27.What is the difference between su, sudo, and sudo su?

- su is the command to change to the root user with our any environment transfer
- sudo is the command used to run a single command as a root user
- sudo su - is command where we change to root user with all the environment intact

28.What does /etc/passwd and /etc/shadow contain?

- /etc/passwd contains the information of the user and the account information
/etc/shadow - stores all the details about the user's authentication

29.How do you restrict a user from logging in?

- Lock the username
usermod -L <username>
- Change the sbin
usermod -s /sbin/nologin <username>
- Lock password
passwd -L <username>
- Deny the ssh login
Go to /etc/ssh/sshd_config
DenyUser <username>
systemctl restart sshd

◆ File Editors & Scripting

30.How do you edit a file using vi and save it?

- Vi textfile.txt
- Click I for insert mode edit the file
- Click esc and then :wq! To write and quit

31. What is the command to search and replace in vi editor?

- :%s/search_word/replace_word

32.What is the purpose of sed? How do you delete line 5 of a file?

- Sed command is used for data manipulation and data extraction in linux
- sed -i '5d' filename

◆ Miscellaneous

33.How to change the system hostname permanently?

- hostnamectl set-hostname newhostname

34.What is the purpose of uptime and who commands?

- uptime is the command used to find the machine's uptime and also with how many minutes they are up and along with their load average
- who command is used to find the users login and where they are logged in into

35.How do you recover the root password from single-user mode?

- Reboot your system
- Click e and then edit the system u selected
- Use the command
rw init = /sysroot/bin/sh
- Clock ctrl + x
- Then type these command :
 1. chroot /sysroot
 2. passwd root
 3. set new password
 4. exit
 5. reboot

✓ Module 6 – Shell Scripting

◆ Scripting Theory

36.What is a shell? What are the types of shells in Linux?

- Shell is an type of cli that is used to interact with the kernel of the linux to create automation job easier
- Types of shell are , sh , bash , csh

37.How do you create and execute a shell script?

- Vi myscript.sh - to create script file
- After creating an script file
- Then modify permissions chmod a+x myscript.sh
- Now run the script ./myscript.sh

38.What is the use of #!/bin/bash at the top of scripts?

- #!/bin/bash is also known as hashbang they are used to tell the shell interpreter to tell the shell what type of script are you using

39.Explain if, for, and while loops with syntax.

If condition:

if [condition]; then

```

        echo " "
    else
        echo " "
    fi

for loop :
    for i in {1..10}
    do
        echo "${i}"
    done

while loop:
    while[condition]
    do
        echo ""
    done

```

◆ Real-Time Script Questions

40. Write a script to check if a service is running, if not, start it.

```

#!/bin/bash

clear

LOGFILE="/var/log/syslogfile.log"

ITMESTAMP=$(date+%y-%m-%d %H-%M-%S)

if systemctl is-active --quiet httpd; then
    echo " the system prcess is running " >> $LOGFILE

```



```

else

echo " the process is not running" >> $LOGFILE

systemctl restart httpd

if sytemctl is-active --quiet httpd; then

echo " the system prcess is restarting " >> $LOGFILE

else

echo " the process is not restarting" >> $LOGFILE

fi

fi

```

41. Write a shell script to calculate the sum of first 10 natural numbers.

```

#!/bin/bash

clear

sum=0

for i in {1..10}

do

    sum=$((sum + i ))

done

echo "the result is : $sum"

```

42.How do you take user input and pass it to a command in a script?

Read command is used to take in user command and pass it to the script

◆ Error & Debugging

44.What's the difference between \${var} and \$var?

- Simple variable \$var

- Explicit variable \$(var)

45. You get an error "command not found" in a script. How do you debug?

- Check for the typo command
 - Missing command software and package present
 - Incorrect usage of the command
-

✓ **Module 7 – Networking, Servers, and System Updates**

◆ **Networking**

46. How do you check IP address and default gateway in Linux?

- Ifconfig

47. What is the difference between ping and traceroute?

- Ping command is used to check whether the machine or the user has the internet connection
- Traceroute is used to trace the network packages in the machine

48. How do you check whether port 80 is listening on the system?

`netstat -tulnp`

49. What does ethtool show?

- Ethtool is used to check for the ethernet connection link is successful or not
- Ethtool eth0

◆ **System Updates**

51. What is the difference between rpm and yum?

- RPM is an older version of the package manager where the dependencies of the libraries must be done manually
- Yum is the newer version of the package manager where they are automatically installing all dependencies that are required

52.How do you check whether a package is installed?

`Rpm -q | grep "package name"`

if not then install them using yum , apt , dnf package manager

53.What is the purpose of yum update and yum upgrade?

Yum update is used to update the system with new files and system conf

Yum upgrade removes the old files and replace them with new files

54.How do you uninstall a package using yum?

`Yum remove packagename`

history and undo the process - `yum history` , `yum history undo <ID>`

◆ Remote Access & Services

56.What is SSH? What's the difference between password and key-based auth?

- Ssh or secured shell hosting is the process where we login using an password and username and also we can use the process of keypair for extra security

57.What is the difference between SSH and Telnet?

- Ssh and telnet both are used to client connection but telnet is prone to data breaches and they are not secure
- But ssh adds up many layers of security so its not possible for data breaches

58.How do you install and start Apache in CentOS/RedHat?

- `Yum install httpd`
- `Systemctl enable httpd`
- `Systemctl start httpd`

59.How do you check if Apache is running and on which port?

To check if its running - `systemctl status httpd`

Which port = `netstat -tulnp | grep "httpd"`

60. What is chronyd and how does it help in time synchronization?

- Chronyd helps in time sync with an server ping like google.com
- First check the udp server of th ntpd - 123 and then on the conf file
- /etc/chrony.conf add the server. Time.google.com iburst to sync with the google ntp server