Top 30 Linux Interview Questions and Answers

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Are you preparing for Linux interview? If yes, we are presenting 30 must-read Linux interview questions with detailed answers based on various scenarios.

These Linux interview questions will undoubtedly add enough knowledge so that you can crack your Linux interview and you will be able to answer them with confidence. We have a series of interview questions and answers for your Linux interview preparation based on various levels of **basic, advanced, technical, admin, kernel, and commands**.

So, to start with, first of all, we are going to answer some of basic Linux interview questions, and we will move to more and more level up so that you can prepare well for the Linux interview and your performance will be highly appreciated. These Linux interview questions will be helpful for you in last minute interview preparation.

Basic Linux Interview Questions and Answers

Here we have few basic questions and answers asked in Linux interview. These questions are important from the interviewer's perspective, and you should be ready for the below questions for your Linux interview preparation.

1. What is Linux and also explain the basic components of Linux?

Answer: Linux is the most commonly used operating system that is open source and free. For any computer, the operating system acts as the backbone, and it is most important software that is required for any computer. From network routers, television, video games console, smartwatches, smartphones, desktops, laptops to any other electronic device, Linux is everywhere.

Linux operating system is consist of 3 components which are as below:

- **Kernel:** Linux is a monolithic kernel that is free and open source software that is responsible for managing hardware resources for the users.
- **System Library:** System Library plays a vital role because application programs access Kernels feature using system library.
- **System Utility:** System Utility performs specific and individual level tasks.

2. What are the differences between UNIX and Linux Operating System?

Answer: To understand the differences between UNIX and Linux Operating system, first of all, we should know that Linux is a UNIX clone, the Kernel of which is created by Linus Torvalds. There are so many differences between Linux and UNIX operating system which are as follows:

- Open Source Operating System:

The most significant difference between UNIX and Linux operating system is Linux is an open source operating system. The open-source operating system that means Linux source code is available for use so that developers can modify it as per their requirement. But UNIX operating system doesn't come under the broad category of an open-source operating system for which developers can edit it.

- Free of Cost:

One of the biggest reason that it is broadly used is Linux operating system is free of cost. Linux operating system is free, but UNIX Operating system is not free. We can download it from the internet.

- Compatibility and Flexibility:

If we compare the flexibility and compatibility of both opera d that Linux is more flexible than UNIX operating system and more compatible with different types of hardware as compared to UNIX operating System.

3. Describe BASH.

Answer: BASH stands for Bourne Again Shell. BASH is the UNIX shell for the GNU operating system. So, BASH is the command language interpreter that helps you to enter your input, and thus you can retrieve information. In a straightforward language, we can say that it is a program that will understand the data entered by the user and execute the command and gives output.

4. What is crontab and explain its functionality and explain the format of crontab?

Answer: Cron is a scheduler that executes the commands at a regular interval as per the specific date and time defined. We have multiple users in Linux, and all the users can have their crontab separately. The crontabs files are saved at a particular location that is /var/spool/cron/crontabs.

There are six fields in the format for the crontab that is as below:

<Minute><Hour><Day_of_the_Month><Month_of_the_Year><Day_of_the_Week><command/program to execute>

5. What do you understand by CLI?

Answer: CLI is an acronym for Command Line Interface. We have to provide the information to the computer so that it can perform the function accordingly. In Linux, CLI is the interface that provides the user an interface so that user can type the commands and it complete the tasks. CLI is very easy to use, but it should be typed very precisely.

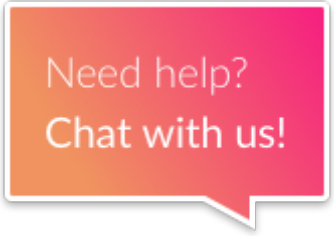
Advanced Linux Interview Questions and Answers

Whenever you are going for a Linux interview, you can expect to be asked advanced level questions, so here we have explained some advanced level question for your Linux interview preparation.

6. Explain Network Bonding and also explain the different types of Network bonding?

Answer: Network Bonding as the name implies that it is the process of bonding or joining two or more than two network interfaces to create one interface. It helps in improving the network throughput, bandwidth, redundancy, load balancing as in case any of the interfaces is down; the other one will continue to work. Several types of Network Bonding are available that are based on the kind of bonding method.

Below are the different bonding types in Linux:



- **balance-rr or mode 0 –** This is the default mode of network bonding that works on the round-robin policy that means from the first slave to the last, and it is used for fault tolerance and load balancing.
- **active-backup or mode 1 –** This type of network bonding works on the active-backup policy that means only one slave will be active and other will work just when another slave fails. This mode is also used for fault tolerance.
- **balance-xor or mode 2 –**This type of network bonding sets an exclusive or mode that means source MAC address is XOR'd with the destination address, and thus it provides fault tolerance and load balancing.
- **broadcast or mode 3 –**This mode sets a broadcast mode to provide fault tolerance, and it should be used for particular purposes. In this type of network bonding, all transmissions are sent to all slave interfaces.
- **802.3ad or mode 4 –**This mode will create the aggregation groups, and all the groups will share the same speed. For this, mode sets an IEEE 802.3ad dynamic link aggregation mode. It is done by particular switch support that supports IEEE 802.3ad dynamic link.
- **balance-tlb or mode 5 –**This mode sets a transmit load balancing mode for fault tolerance and load balancing and does not require any switch support.
- **balance-alb or mode 6 –**This mode sets an active load balancing to achieve fault tolerance and load balancing.

7. What is the similarity and difference between cron and anacron? Which one would you prefer to use?

Answer: Here we are going to discuss the similarity and the differences between cron and anacron. So, let's start with the analogy:

Cron and Anacron are used to schedule the tasks in cron jobs. Both of these are the daemons that are used to schedule the execution of commands or tasks as per the information provided by the user.

Differences between cron and anacron:

1. One of the main difference between cron and anacron jobs is that cron works on the system that are running continuously that means it is designed for the system that is running24*7. While anacron is used for the systems that are not running continuously.
2. Other difference between the two is cron jobs can run every minute, but anacron jobs can be run only once a day.
3. Any normal user can do the scheduling of cron jobs, but the scheduling of anacron jobs can be done by the superuser only.
4. Cron should be used when you need to execute the job at a specific time as per the given time in cron, but anacron should be used in when there is no any restriction for the timing and can be executed at any time.
5. If we think about which one is ideal for servers or desktop[s] [u]sed for servers while anacron should be used for desktops or laptops.

8. What is the issue behind getting an error "filesystem is full" while there is space available when you check it through "df" command? How will you rectify this

problem?

Answer: When all the inodes are consumed then even though you have free space, you will get the error that filesystem is full. So, to check whether there is space available, we have to use the command df –i. Sometimes, it may happen file system or storage unit contains the substantial number of small files, and each of the files takes 128 bytes of the inode structure then inode structure fills up, and we will not be able to copy any more file to the disk. So, to rectify the problem, you need to free the space in inode storage, and you will be able to save more files.

9. Where is password file located in Linux and how can you improve the security of password file?

Answer: This is an important question that is generally asked by the interviewers. User information along with the passwords in Linux is stored in/etc/passwd that is a compatible format. But this file is used to get the user information by several tools. Here, security is at risk. So, we have to make it secured.

To improve the security of the password file, instead of using a compatible format we can use shadow password format. So, in shadow password format, the password will be stored as single "x" character which is not the same file (/etc/passwd). This information is stored in another file instead with a file name /etc/shadow. So, to enhance the security, the file is made word readable and also, this file is readable only by the root user. Thus security risks are overcome to a great extent by using the shadow password format.

10. What is Key-based authentication? Explain.

There are various methods to enter into the servers. One of the ways to log in is using password-based authentication, but that is not secure. So, we need a method that is secured.

One of the ways to achieve the security is to use Key-based authentication. To use this type of authentication, we have to disable the password-based authentication. So, there is a procedure to set up this authentication which is as follows:

We have to get the SSH key pair using below command:

$ ssh-keygen -t rsa

It will generate the public/private rsa key pair.

Enter file where you want to save this generated key (/home/us

It will prompt you for the same location, i.e. **~/.ssh/id_rsa** for t you want to confirm the same location. Else, if you want to provide any other location, enter that and onfirm the same.

Now copy ~/.ssh/id_rsa.pub into the ~/.ssh/authorized_keys that will be located where you have to connect.

Now, we have to provide the permissions to the file as per below command:

$ chmod 600 ~/.ssh/authorized_keys

Now try to sshthe machine you want to connect, and you will see that you are able to login to the machine without a password.

If you are confirmed that key-based authentication is working fine, disable the password-based authentication.

Go to the path /etc/ ssh/sshd_config

set the following property as no.

PasswordAuthentication no

Admin-level Linux Interview Questions and Answers

Here we have a comprehensive list of Linux interview questions and answers that are useful for admin level. So, here are few Linux questions that can help you with the Linux interview preparation.

11. Explain the logical steps to increase the size of LVM partition?

Answer: Some logical steps need to be followed to increase the size of LVM partition. These are as follows:

- Run the command as per given format:

lvextend -L +500M /dev/<Name of the LVM Partition>

Here, we are extending the size of LVM partition by 500MB.

- resize2fs /dev/<Name of the LVM Partition>
- You can check the size of partition using 'df -h' command

12. Using which utility you can create a partition from the raw disk?

Answer: To create the partition from the raw disk, you have to u the steps to create a partition from the raw disk:

Step 1: Run the below command:

fdisk /dev/hd* (IDE) or /dev/sd* (SCSI)
Step 2: Type n to create a new partition
Step 3: Now partition has been created, and we have to write the changes to the partition table, so type w command to write the changes.

13.What are the default port numbers used for SMTP, FTP,DNS, DHCP, SSH?
Answer:

Service	Port
SMTP	25
FTP	20 for data transfer and 21 for Connection established
DNS	53
DHCP	67/UDP(for DHCP server, 68/UDPfor DHCP client
SSH	22

14. How do you create a new user account and set the password for a user from a shell prompt in Linux?

Answer: To create a new user account from a shell prompt follow the below steps:

- Log in as root user if you are not logged in as root using su – command.
- Enter the root user password
- The useradd command is used to create a new user in Linux. So, type command useradd and give the username you want to create as given below:

Useradd smith

- To set the password of the user smith type the command: passwd smith
- It will prompt for the new password. Enter the new password for user smith.
- It will ask to retype the password. So, retype the same password and password is set for the user.

15. Explain all the fields in the/etc/passwd file?

Answer: /etc/passwd file contains the useful information for all the system users who log in. We have many fields in /etc/passwd file such as username, password, user ID, group ID, comment or user ID info, home directory, command /shell, etc. So, this file contains sensitive information regarding all the user accounts. There is a single line per user in this file. Colon (:) separates the fields in /etc/passwd. Below is the explanation of the fields.

- Username: First field is the username that contains the username which is 1 to 32 length characters.
- Password: This field does not show the actual password as the password is encrypted. Here, x character shows that password is encrypted that is located in /etc/shadow file.
- User ID (UID): All the users created in Linux is given a user ID whenever the user is created. UID 0 is fixed and reserved for the root user.
- Group ID (GID): This field specifies the name of the group to which the user belongs. The group information is also stored in a file /etc/group.
- User ID Info: Here you can add comments and you can add any extra information related to the users like full name, contact number, etc.
- Home directory: This field provides the path where the user is directed after the login. For example, /home/smith.
- Command/shell: This field provides the path of a command/shell and denotes that user has access to this shell i.e. /bin/bash.

Technical Linux Interview Questions and Answers

Here we have some popular questions for a technical-level Linux interview that you can expect to be asked in the Linux interview. So, prepare with these interview questions and crack your Linux interview.

16. What is the advantage of executing the running processes in the background? How can you do that?

Answer: The most significant advantage of executing the running process in the background is that you can do any other task simultaneously while other processes are running in the background. So, more processes can be completed in the background while you are working on different processes. It can be achieved by adding a special character '&' at the end of the command.

17. List the differences between BASH and DOS?

Answer: There are many differences between BASH and DOS that are as below:

1. Out of these two commands, BASH is case sensitive while DOS is not case sensitive.
2. In BASH '/' acts the directory separator while in DOS '/' acts as the command argument delimiter.
3. In BASH '\' is used as the escape character while in DOS '\' acts as the directory separator.
4. In BASH, there is a file convention used while in DOS, there is no any file convention used.

18. Explain system calls used for process management?

Answer: There are some system calls used in Linux for process as follows:

Fork(): It is used to create a new process

Exec(): It is used to execute a new process

Wait(): It is used to make the process to wait

Exit(): It is used to exit or terminate the process

Getpid(): It is used to find the unique process ID

Getppid(): It is used to check the parent process ID

Nice(): It is used to bias the currently running process property

19. How can multiple machines share a single internet connection in Linux?

Answer: Linux machine can be made as a router so that multiple devices can share a single internet connection. For this, we have to use a feature called **"IP Masquerade."** This functionality will help to connect multiple computers to connect to the Linux machine as well as internet. This functionality will also allow those internal computers to connect who do not have IP addresses.

20. If a volume group already exists and we need to extend the volume group to some extent. How will you achieve this?

Answer: Linux provide the facility to increase the size of a volume group even if it already exists. For this, we need to run a command.

First of all, we have to create a physical volume (/dev/sda1)

Size of the physical volume should be the size you want the size of the logical volume.

Now, run the below command:

vgextend VG1 /dev/sda1

Here VG1 is the name of the volume group.

Linux Kernel Interview Questions and Answers

Here is a list of kernel-based Linux interview questions and answers that will let you understand what is Linux Kernel, its types and you can do Linux interview pr questions that are normally asked in Linux interview.

21. What do you understand about Linux Kernel a

Answer: Linux Kernel is the component that manages the hardware resources for the user and that provides essential services and interact with the user commands. Linux Kernel is an open source software and free, and it is released under General Public License so we can edit it and it is legal.

22. What are the different types of Kernels? Explain

Answer: We can build kernels by many different types, but 3 of the types of kernels are most commonly used: monolithic, microkernel and hybrid.

Microkernel: This type of kernel only manages CPU, memory, and IPC. This kind of kernel provides portability, small memory footprint and also security.

Monolithic Kernel: Linux is a monolithic kernel. So, this type of kernel provides file management, system server calls, also manages CPU, IPC as well as device drivers. It provides easier access to the process to communicate and as there is not any queue for processor time, so processes react faster.

Hybrid Kernel: In this type of kernels, programmers can select what they want to run in user mode and what in supervisor mode. So, this kernel provides more flexibility than any other kernel but it can have some latency problems.

23. Explain Linux Boot Sequence.

Answer: There are six levels of a Linux Boot Sequence. These are as follows:

BIOS: Full form of BIOS is Basic Input or Output System that performs integrity checks and it will search and load and then it will execute the bootloader.

MBR: MBR means Master Boot Record. MBR contains the information regarding GRUB and executes and loads this bootloader.

GRUB: GRUB means Grand Unified Bootloader. In case, many kernel images are installed on your system then you can select which one you want to execute.

Kernel: Root file system is mounted by Kernel and executes the /sbin/init program.

Init: Init checks the file **/etc/inittab** and decides the run level. There are seven-run levels available from 0-6. It will identify the default init level and will load the program.

Runlevel programs: As per your default settings for the run lev[illegible] the programs.

24. Explain Interrupts in Linux and also explain Ir[illegible]

Answer: Interrupts means the processor is transferred tempora[illegible] function. When that program is completed, the processor will be given back to that program to complete the task.

Interrupt handler is the function that the kernel runs for a specific interrupt. It is also called Interrupt Service Routine. Interrupts handlers are the function that matches a particular prototype and enables the kernel to pass the handler information accurately.

25. What is page frame?

Answer: A page frame is a block of RAM that is used for virtual memory. It has its page frame number. The size of a page frame may vary from system to system, and it is in the power of 2 in bytes. Also, it is the smallest length block of memory in which an operating system maps memory pages.

Command Based Linux Interview Questions and Answers

Here are the top command-based interview questions and answers that are asked in a Linux interview. Just go through these questions at the time of last minute interview preparation, and you will be able to crack the Linux interview very easily.

26. What is the difference between "rm" and "rm –r"?

Answer. "rm" command is used to delete all the files while "rm –r" command is used to delete all the files in a directory and also in subdirectories.

For Example,

rm file.txt: It will delete the file with name file.txt

rm –r directory: It will remove directories and subdirectories and also their contents.

27. Explain the command and method to change the file permissions in Linux.

Answer: **chmod** command is used to change the permissions of a file. There are three parts to consider to set the file permissions.

1. User (or Owner)
2. Group
3. Other

3 types of file permission that is given to a file.

- **r –** Reading permission
- **w –** Writing permission
- **x –** Execution permission

For example, chmod 751 filename

Then, three number 751 describes permissions given to the user, group and other in the order. Each number is the sum of the values,i.e. 4 for reading, 2 for write, 1 for execute.

Here 751 is the combination of (4+2+1), (4+0+1), (0+0+1).

So, chmod 751 filename will provide read, write and execute permission to the owner; read and execute permission to the group and only execute permission to the others.

28. How can we edit a file without opening in Linux?

Answer: **sed** command is used to edit a file without opening. sed is the acronym for **StreamEditor**. The "sed" command is used to modify or change the contents of a file

For example, we have a text file with below content

>cat file.txt

We want to replace the content of the file and we want to replace "sed" with "vi". So, we will use below command for this.

>sed 's/sed/vi/' file.txt

vi command is used to edit a file.

So, sed is replaced with vi in the text.

29. Explain grep command and its use.

Answer: grep command in Linux is used to search a specific pattern. Grep command will help you to explore the string in a file or multiple files.

The syntax for grep command:

grep 'word' filename

grep 'word' file1 file2 file3

command|grep'string'

For example,

grep "smith" passwd

grep "smith" passwd shadow

netstat -an | grep8083

cat /etc/passwd | grep smith

30. Explain file content commands along with the description.

Answer**:** There are many commands present in Linux which are used to look at the contents of the file.

head: to check the starting of a file.

tail: to check the ending of the file. It is the reverse of head command.

cat: used to view, create, concatenate the files.

rrep: used to find the specific pattern or string in a file.

more: used to display the text in the terminal window in pager form.

less: used to view the text in the backward direction and also provides single line movement.

The demand for Linux is increasing day by day and it opens many doors of jobs for you. The set of above mentioned 30 Linux interview questions and answers would act as a last minute interview preparation guide for you. These questions are useful for the fresher as well as the experienced candidates. So, no need to worry about cracking the Linux interview. Just prepare well for the questions that will be helpful for you.

The certifications play an important role to get a better job. So, get certified now and prepare well for your Linux interview. Whizlabs offers practice material for CompTIA Linux+ (LX0-103) Certification and CompTIA Linux+ (LX0-104) Certification. Prepare with us, get certified, and crack Linux interview fast!