

Top 50 Linux Interview Questions For Beginners In 2021

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Did you know that more than 90% of the World's Fastest Computers use [Linux](#)? No doubt why! Linux is fast, powerful, and a techies' favorite. If you are looking to become a [Linux Administrator](#), then this is the right place for you to prepare for the interview. In this article, I will be discussing some of the most common and important Linux Interview Questions and their Answers.

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This Linux Interview Questions blog is divided into two parts: **Part A-[Theoretical Questions](#)** and **Part B-[Scenario Based Questions](#)**. Let's get started!

Part A-Theoretical Questions

In this part of Linux Interview Questions, we will discuss the most common theoretical and concept based questions.

1. What is Linux?

Linux is an Open-Source Operating System based on Unix. Linux was first introduced by Linus Torvalds. The main purpose of Linux was to provide free and low-cost Operating System for users who could not afford Operating Systems like Windows or iOS or Unix.

2. What is the difference between Linux and Unix?

The main differences between Linux and UNIX are as follows:

Parameter	Linux	Unix
Price	Both free distributions and paid distributions are available.	Different levels of UNIX have a different cost structure
Target User	Everyone (Home user, Developer, etc.)	Mainly Internet Server, Workstations, Mainframes.
File System Support	Ext2, Ext3, Ext4, Jfs, ReiserFS, Xfs, Btrfs, FAT, FAT32, NTFS.	jfs, gpfs, hfs, hfs+, ufs, xfs, zfs, vxfs.
GUI	KDE and Gnome	Common Desktop Environment
Viruses listed	60-100	80-120
Bug Fix Speed	Faster because Linux is Community driven	Slow
Portability	Yes	No
Examples	Ubuntu, Fedora, Red Hat, Kali Linux, Debian, Archlinux, Android, etc.	OS X, Solaris, All Linux

Linux vs. Unix – Linux Interview Questions

3. What is Linux Kernel? Is it legal to edit Linux Kernel?

Linux kernel refers to the low-level system software. It is used to manage resources and provide an interface for user interaction.

Yes, it is legal to edit Linux Kernel. Linux is released under the General Public License (General Public License). Any project released under GPL can be modified and edited by the end users.

4. What is LILO?

LILO stands for **L**inux **L**Oader. LILO is a Linux Boot Loader that loads Linux Operating System into the main memory to begin execution. Most of the computers come with boot loaders for certain versions of Windows or Mac OS. So, when you want to use Linux OS, you need to install a special boot loader for it. LILO is one such boot loader.

When the computer is started, BIOS conducts some initial tests and transfers control to the Master Boot Record. From here, LILO loads the Linux OS and starts it.

The advantage of using LILO is that it allows fast boot of Linux OS.

5. What are the basic components of Linux?

The basic components of Linux are:

- **Kernel:** It is the core component of the Operating System that manages operations and hardware.
- **Shell:** Shell is a Linux interpreter which is used to execute commands.
- **GUI:** GUI stands for **Graphical User Interface** which is another way for a user to interact with the system. But unlike **CLI**, GUI consists of Images, Buttons, TextBoxes for interaction.
- **System Utilities:** These are the software functions that allows the user to manage the computer

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- **fish:** Friendly Interactive **Shell** provides some special features like web-based configuration, auto-suggestions, fully scriptable with clean scripts

7. What is Swap Space?

Swap Space is the additional spaced used by Linux that temporarily holds concurrently running programs when the RAM does not have enough space to hold the programs. When you run a program, it resides on the RAM so that the processor can fetch data quickly. Suppose you are running more programs than the RAM can hold, then these running programs are stored in the Swap Space. The processor will now look for data in the RAM and the Swap Space.

Swap Space is used as an extension of RAM by Linux.

8. What is the difference between BASH and DOS?

There are 3 main differences between **BASH** and **DOS**:

Sl. no.	BASH	DOS
1.	Commands are case-sensitive.	Commands are not case-sensitive.
2.	'/' (forward slash) is used as a directory separator. " (backslash) is used as an escape character.	'/' (forward slash) is used as command argument delimiter. " (backslash) is used as a directory separator.
3.	Follows naming convention: 8 characters for file name postfixed with 3 characters for the extension.	No naming convention.

Bash vs Dos – Linux Interview Questions

9. What command would you use to check how much memory is being used by Linux?

You can use any of the following commands:

- `free -m`
- `vmstat`
- `top`
- `htop`

10. Explain file permission in Linux.

There are 3 kinds of permission in Linux:

1. **Read:** Allows a user to open and read the file
2. **Write:** Allows a user to open and modify the file
3. **Execute:** Allows a user to run the file.

You can change the permission of a file or a directory using the `chmod` command. There are two modes of using the `chmod` command:

1. **Symbolic mode**
2. **Absolute mode**

Symbolic mode

The general syntax to change permission using Symbolic mode is as follows:

```
$ chmod <target>(+/-/=<permission> <filename>
```

where `<permissions>` can be **r: read; w: write; x: execute**.

`<target>` can be **u : user; g: group; o: other; a: all**

'+' is used for adding permission

'-' is used for removing permission

'=' is used for setting the permission

For example, if you want to set the permission such that the user can read, write, and execute it and members of your group can read and execute it, and others may only read it.

Then the command for this will be:

```
$ chmod u=rwx,g=rx,o=r filename
```

Absolute mode

The general syntax to change permission using Absolute mode is as follows:

```
$ chmod <permission> filename
```

The Absolute mode follows octal representation. The leftmost digit is for the user, the middle digit is for the user group and the rightmost digit is for all.

Below is the table that explains the meaning of the digits that can be used and their effect.

0	No permission	-- -
1	Execute permission	-- x
2	Write permission	-w -
3	Execute and write permission: 1 (execute) + 2 (write) = 3	- wx
4	Read permission	r--
5	Read and execute permission: 4 (read) + 1 (execute) = 5	r-x

5	Read and execute permission: 4 (read) + 1 (execute) = 5	r - x
6	Read and write permission: 4 (read) + 2 (write) = 6	rw -
7	All permissions: 4 (read) + 2 (write) + 1 (execute) = 7	rwX

For example, if you want to set the permission such that the user can read, write, and execute it and members of your group can read and execute it, and others may only read it.

Then the command for this will be:

```
$ chmod 754 filename
```

11. What are inode and process id?

inode is the unique name given by the operating system to each file. Similarly, **process id** is the unique id given to each process.

12. Which are the Linux Directory Commands?

There are 5 main Directory Commands in Linux:

pwd: Displays the path of the present working directory.

Syntax: `$ pwd`

ls: Lists all the files and directories in the present working directory.

Syntax: `$ ls`

cd: Used to change the present working directory.

Syntax: `$ cd <path to new directory>`

mkdir: Creates a new directory

Syntax: `$ mkdir <name (and path if required) of new directory>`

rmdir: Deletes a directory

Syntax: `$ rmdir <name (and path if required) of directory>`

13. What is Virtual Desktop?

Virtual Desktop is a feature that allows users to use the desktop beyond the physical limits of the screen. Basically, Virtual Desktop creates a virtual screen to expand the limitation of the normal screen.

There are two ways Virtual Desktop can be implemented:

1. Switching Desktops
2. Oversized Desktops

Switching Desktops

In the case of Switching Desktops, you can create discrete virtual desktops to run programs. Here, each virtual desktop will behave as an individual desktop and the programs running on each of these desktops is accessible only to the users who are using that particular desktop.

Oversized Desktops

Oversized Desktops do not offer a discrete virtual desktop but it allows the user to pan and scroll around the desktop that is larger in size than the physical screen.

14. Which are the different modes of vi editor?

There are 3 modes of **vi editor**:

1. **Regular/Command mode**: Lets you view the content
2. **Insertion/edit mode**: Lets you delete or insert content
3. **Replacement mode**: Lets you overwrite content

15. What are daemons?

for that are daemons.

A daemon is a computer program that runs as a background process to provide functions that might not be available in the base Operating System. Daemons are usually used to run services in the background without directly being in control of interactive users. The purpose of Daemons are to handle periodic requests and then forward the requests to appropriate programs for execution.

16. What are the process states in Linux?

The process states are as follows:

- **Ready:** The process is created and is ready to run
- **Running:** The process is being executed
- **Blocked or wait:** Process is waiting for input from the user
- **Terminated or Completed:** Process completed execution, or was terminated by the Operating System
- **Zombie:** Process terminated, but the information still exists in the process table.

17. Explain grep command.

Grep stands for **Global Regular Expression Print**. The grep command is used to search for a text in a file by pattern matching based on regular expression.

Syntax: `grep [options] pattern [files]`

Example:

```
$ grep -c "linux" interview.txt
```

This command will print the count of the word **"linux"** in the **"interview.txt"** file.

18. Explain Process Management System Calls in Linux

The System Calls to manage the process are:

- **fork ()** : Used to create a new process
- **exec()** : Execute a new program
- **wait()** : Wait until the process finishes execution
- **exit()** : Exit from the process

And the System Calls used to get Process ID are:

- **getpid()**:- get the unique process id of the process
- **getppid()**:- get the parent process unique id

19. Explain the 'ls' command in Linux

The **ls** command is used to list the files in a specified directory. The general syntax is:

```
$ ls <options> <directory>
```

For example, if you want to list all the files in the **Example** directory, then the command will be as follows:

```
$ ls Example/
```

There are different options that can be used with the **ls** command. These options give additional information about the file/folder. For example:

- l lists long format (shows the permissions of the file)
- a lists all files including hidden files
- i lists files with their inode number
- s lists files with their size
- S lists files with their size and sorts the list by file size
- t sorts the listed files by time and date

20. Explain the redirection operator.

The redirection operator is used to redirect the output of a particular command as an input to another command or file.

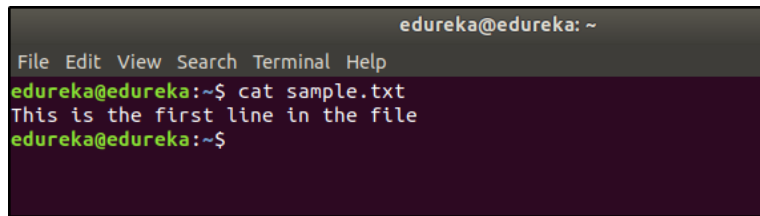
There are two ways of using this:

'>' overwrites the existing content of the file or creates a new file

< overwrites the existing content of the file or creates a new file.

'>>' appends the new content to the end of the file or creates a new file.

Suppose the content of the file is as follows:

A terminal window with a dark background and light text. The title bar reads 'edureka@edureka: ~'. The menu bar shows 'File Edit View Search Terminal Help'. The prompt is 'edureka@edureka:~\$'. The command 'cat sample.txt' has been entered, and the output is 'This is the first line in the file'. The prompt is now 'edureka@edureka:~\$'.

```
edureka@edureka: ~
File Edit View Search Terminal Help
edureka@edureka:~$ cat sample.txt
This is the first line in the file
edureka@edureka:~$
```

Now when you use the '>' redirection operator, the contents of the file are overwritten.



and when you use '>>', the contents are appended:



21. Why is the tar command used?

The **tar** command is used to extract or create an archived file.

Suppose you want to extract all the files from the archive named sample.tar.gz, then the command will be:

```
$ tar -xvzf sample.tar.gz
```

Suppose you want to create an archive of all the files stored in the path /home/linux/, then the command will be:

```
$ tar -cvzf filename.tar.gz
```

where **c: create archive, x: extract, v: verbose, f: file**

22. What is a Latch?

A Latch is a temporary storage device controlled by timing signal which can either store 0 or 1. A Latch has two stable states (high-output or 1, and low-output or 0) and is mainly used to store state information. A Latch can store one bit of data as long as it is powered on.

23. What is a Microprocessor?

A Microprocessor is a device that executes instructions. It is a single-chip device that fetches the instruction from the memory, decodes it and executes it. A Microprocessor can carry out 3 basic functions:

1. Mathematical operations like addition, subtraction, multiplication, and division
2. Move data from one memory location to another
3. Make decisions based on conditions and jump to new different instructions based on the decision.

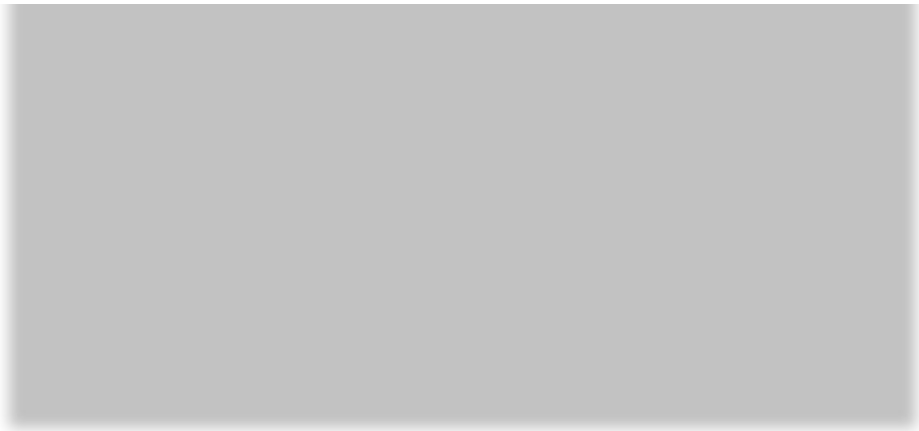
24. Explain Regular Expressions and Grep

Regular Expressions are used to search for data having a particular pattern. Some of the commands used with Regular Patterns are: **tr, sed, vi** and **grep**.

Some of the common symbols used in Regular Expressions are:

.	Match any character
^	Match the beginning of the String
\$	Match the end of the String
*	Match zero or more characters
	Represents special characters
?	Match exactly one character

Suppose the content of a file is as follows:



If you want to list the entries that start with the character 'a', then the command would be:

```
$ cat linux.txt | grep ^a
```



If you want to list the entries that start has the character 'n', then the command would be:

```
$ cat linux.txt | grep n
```



25. What is the minimum number of disk partitions required to install Linux?

The minimum number of partitions required is 2.

One partition is used as the local file system where all the files are stored. This includes files of the OS, files of applications and services, and files of the user. And the other partition is used as Swap Space which acts as an extended memory for RAM.

Part B – Scenario Based Questions

Interviewers will ask scenario based questions along with theoretical questions to check how much hands-on knowledge you have. In this part of Linux Interview Questions, we will discuss such questions.

1. How to copy a file in Linux?

You can use the **cp** command to copy a file in Linux. The general syntax is:

```
$ cp <source> <destination>
```

Suppose you want to copy a file named **questions.txt** from the directory **/new/linux** to **/linux/interview**, then the command will be:

```
$ cp questions.txt /new/linux /linux/interview
```

2. How to terminate a running process in Linux?

Every process has a unique **process id**. To terminate the process, we first need to find the process id. The **ps** command will list all the running processes along with the process id. And then we use the **kill** command to terminate the process.

The command for listing down all the processes:

```
$ ps
```

Suppose the process id of the process you want to terminate is 3849, then you will have to terminate it like this:

```
$ kill 3849
```

3. How to rename a file in Linux?

There is no specific command to rename a file in Linux. But you use the copy or move command to rename the file.

Using the Move command

```
$ mv <oldname> <newname>
```

Using the Copy command

```
$ cp <oldname> <newname>
```

And then delete the old file.

```
$ rm <oldname>
```

4. How to write the output of a command to a file?

You can use the **redirection** operator (>) to do this.

Syntax: `$ (command) > (filename)`

5. How to see the list of mounted devices on Linux?

By running the following command:

```
$ mount -l
```

6. How to find where a file is stored in Linux?

You can use the **locate** command to find the path to the file.

Suppose you want to find the locations of a file name sample.txt, then your command would be:

```
$ locate sample.txt
```

7. How to find the difference in two configuration files?

You can use the **diff** command for this:

```
$ diff abc.conf xyz.conf
```



8. Write a bash script to delete all the files in the current directory that contains the word "linux".

```
for i in *linux*; do rm $i; done
```

9. How would you create a text file without opening it?

The **touch** command can be used to create a text file without opening it. The **touch command** will create an empty file. The syntax is as follows:

```
$ touch <filename>
```

Suppose you want to create a file named sample.txt, then the command would be:

```
$ touch sample.txt
```

10. How would you delete a directory in Linux?

There are two commands that can be used to delete a directory in Linux.

- **rmdir**

```
$ rmdir <directory name>
```

- **rm -rf**

```
$ rm -rf <directory name>
```

Note: The command **rm -rf** should be used carefully because it will delete all the data without any warnings.

11. How would you schedule a task in Linux?

There are two commands to schedule tasks in Linux: **cron** and **at**.

The **cron** command is used to repeatedly schedule a task at a specific time. The tasks are stored in a **cron** file and then executed

using the **cron** command. The **cron** command reads the string from this file and schedules the task. The syntax for the string to enter in the **cron file** is as follows:

```
<minute> <hour> <day> <month> <weekday> <command>
```

Suppose you want to run a command at 4 pm every Sunday, then the string would be:

```
0 16 * * 0 <command>
```

The **at** command is used to schedule a task only once at the specified time.

Suppose you want to shut down the system at 6 pm today, then the command for this would be:

```
$ echo "shutdown now" | at -m 18:00
```

12. Suppose you try to delete a file using the rm command and the deletion fails. What could be the possible reason?

- The path specified to the file or the file name mentioned might be wrong
- The user trying to delete the file might not have permissions to delete the file.

13. How do you look at the contents of a file named sample.z?

The **.z** extension means that the file has been compressed. To look at the contents of the compressed file, you can use the **zcat** command. Example:

```
$ zcat sample.z
```

14. How to copy files to a Floppy Disk safely?

Follow these steps to copy files to a Floppy Disk safely:

1. Mount the floppy disk
2. Copy the files
3. Unmount the floppy disk

If you don't unmount the floppy disk, then the data might become corrupted.

15. How to identify which shell you are using?

Open the terminal and run:

```
$ echo $SHELL
```

This will print the name of the Shell being used.

16. How can you login to another system in your network from your system?

SSH can be used for this. The Syntax is as follows:

```
ssh <username>@<ip address>
```

Suppose you want to login into a system with IP address 192.168.5.5 as a user "mike", then the command would be:

```
$ ssh mike@192.168.5.5
```

17. How would you open a file in read-only mode using the vim editor?

```
$ vim -R <filename>
```

18. How would you search for a specific Employee ID in a file using the vim editor?

```
$ vim +/<employee id to be searched> <filename>
```

19. How to jump to a particular line in a file using vim editor?

```
$ vim +<line number> <filename>
```

20. How do you sort the entries in a text file in ascending order?

This can be done using the **sort** command.

```
$ sort sample.txt
```

21. What is the export command used for?

21. What is the export command used for?

The **export** command is used to set and reload the environment variables. For example, if you want to set the Java path, then the command would be:

```
$ export JAVA_HOME = /home/user/Java/bin
```

22. How do you check if a particular service is running?

```
$ service <servicename> status
```

23. How do you check the status of all the services?

```
$ service --status-all
```

24. How do you start and stop a service?

To start:

```
$ service <servicename> start
```

To stop:

```
$ service <servicename> stop
```

25. Explain the free command.

This command is used to display the free, used, swap memory available in the system.

Typical free command output. The output is displayed in bytes.

```
$ free
```



I hope these Linux Interview Questions will help you perform well in your interview. And I wish you all the best!

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Ven says:

Jun 18, 2020 at 8:28 am GMT

Thank you, great Q&A for the interview. I've found a mistake where the command to stop a service is actually to start, just a note:

To stop:

\$ service start——>should be “stop”

Thanks.

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