

Top 50 Linux Interview Questions For Beginners In 2023

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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 and Unix-like operating system kernel that serves as the core component of many operating systems known as Linux distributions, or distros. Linux is known for its stability, security, and versatility, and it is widely used across various devices and platforms.

2. Who invented Linux? Explain the history of Linux.

On August 25, 1991, a Finnish computer science student named Linus Torvalds first released it. In fact, Linux is the result of the combined efforts of a large number of programmers from all over the world. Linux's origins lie in the open-source and free software movements of the early 1990s.

1. Origins of Unix: The story of Linux starts with the development of the Unix operating system in the late 1960s and early 1970s at AT&T's Bell Labs. Unix became widely popular

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25, 1991, and made the source code freely available under the GNU General Public License (GPL).

4. **GNU/Linux Collaboration:** Linus's Linux kernel filled the gap in the GNU Project's operating system, and soon the Linux kernel was combined with the GNU software to create a complete and functional operating system. This combination of the GNU software and the Linux kernel gave rise to what is commonly known as "GNU/Linux" or simply "Linux." The name "Linux" is often used to refer to the entire operating system, although the kernel itself is technically just one component.
5. **Rise of Open Source Movement:** The open-source nature of Linux encouraged a global community of developers to contribute to its development. This collaboration led to rapid improvements and widespread adoption of Linux.
6. **Commercial Success and Distributions:** Throughout the 1990s and early 2000s, Linux gained popularity and became a viable option for servers and workstations. Many companies started providing commercial support for Linux, and various distributions (or distros) of Linux emerged, catering to different user needs. Some popular Linux distributions include Ubuntu, Fedora, Debian, CentOS, and Red Hat Enterprise Linux.
7. **Linux Today:** As of my last update in September 2021, Linux has become one of the most widely used operating systems in the world. It powers a vast array of devices, from servers, supercomputers, and smartphones to embedded systems and Internet of Things (IoT) devices. Linux's open-source nature, stability, security, and versatility have contributed to its success and continued development by the global open-source community.

The success of Linux demonstrates the power of collaboration and the impact of the open-source philosophy on the world of technology. It serves as a prominent example of how a freely shared and community-driven project can become a fundamental part of modern computing.

3. 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
	Ubuntu, Fedora, Red Hat, Kali Linux.	



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5. What is BASH?

The BASH (Bourne Again SHell) command-line interpreter and scripting language runs on Linux and macOS, among other Unix-based platforms. It has advanced scripting capabilities and a user-friendly command line interface, with support for things like variables, control structures, and tab completion. On Unix and Linux systems, BASH is commonly used for a variety of automation, administration, and interactive purposes.

6. What are two types of Linux User Mode?

In Linux, there are two primary user modes, known as User Mode and Kernel Mode.

- 1. User Mode:** User Mode is the default mode in which user-level applications, processes, and programs run. In this mode, applications have restricted access to the system's hardware and resources. They interact with the kernel through system calls to request services or perform privileged operations. User Mode provides a level of isolation and protection, preventing user-level processes from interfering with critical system operations.
- 2. Kernel Mode:** Kernel Mode, also known as Supervisor Mode or Privileged Mode, is the mode in which the operating system's kernel executes. In this mode, the kernel has access to the full range of hardware and system resources, and it can execute privileged instructions and perform critical tasks, such as managing memory, handling interrupts, and controlling hardware devices. Kernel Mode is more privileged than User Mode and is responsible for managing the system and providing services to user-level processes.

The transition between User Mode and Kernel Mode occurs through system calls. When a user-level process needs to perform a privileged operation or access hardware resources, it requests the kernel's assistance through a system call. The kernel then switches to Kernel Mode to fulfill the request, and after completing the operation, it returns control to User Mode.

The separation of User Mode and Kernel Mode helps ensure system stability, security, and protection, as the kernel controls and manages critical operations while user-level processes operate in a more restricted environment.

7. What is LILO?

LILO stands for **L**inux **I**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.

8. 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.



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run programs, and perform various tasks through the terminal.

The shell interprets user input (commands) and converts them into system calls that the Linux kernel can understand. It also provides features like command history, tab completion, scripting capabilities, and environment variable management.

There are several types of shells available in Linux, including:

1. **Bash (Bourne Again SHell):** Bash is the default and most widely used shell in Linux. It is a powerful and versatile shell with extensive scripting capabilities. Bash is backward-compatible with the original Bourne shell and is known for its ease of use and rich set of features.
2. **Sh (Bourne Shell):** The Bourne shell is one of the earliest Unix shells and served as the inspiration for many modern shells, including Bash. Though less feature-rich than Bash, it remains available in many Unix and Linux systems.
3. **Csh (C Shell):** The C Shell provides a C-like syntax and additional features, such as command-line history and job control. Some users frequently use it for interactive tasks.
4. **Ksh (Korn Shell):** The Korn shell is an improved version of the Bourne shell, providing more features and better scripting capabilities. It is particularly popular among Unix and Linux system administrators.
5. **Zsh (Z Shell):** Zsh is an extended version of Bash with additional features, including improved tab completion, powerful globbing, and advanced customization options.
6. **Fish (Friendly Interactive SHell):** Fish is designed to be user-friendly with a focus on providing a better interactive experience. It offers features like autosuggestions, syntax highlighting, and a simplified scripting language.

Each shell has its unique features, syntax, and advantages, making them suitable for different user preferences and specific tasks. The choice of shell depends on individual needs and familiarity with their respective features. Bash remains the default shell for most Linux distributions due to its widespread usage, extensive support, and compatibility with scripts written for the Bourne shell.

10. Which are the Shells used in Linux?

The most common Shells used in Linux are

- **bash:** Bourne Again Shell is the default for most of the Linux distributions
- **ksh:** Korn Shell is a high-level programming language shell
- **csh:** C Shell follows C like syntax and provides spelling correction and Job Control
- **zsh:** Z Shell provides some unique features such as filename generation, startup files, login/logout watching, closing comments etc.
- **fish:** Friendly Interactive Shell provides some special features like web-based configuration, auto-suggestions, fully scriptable with clean scripts



11. What is Swap Space?

Swap Space is the additional space 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.



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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

13. 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`

14. What is a maximum length for a filename under Linux?

In Linux, the maximum length for a filename depends on the filesystem being used. Different filesystems have different limitations on filename length. Here are some common Linux filesystems and their maximum filename lengths:

1. **ext2/ext3/ext4 (Linux Standard Filesystems):** The maximum filename length for ext2, ext3, and ext4 filesystems is typically 255 characters. However, this length may be reduced due to other factors like the pathname length or directory structure.
2. **XFS (XFS Filesystem):** XFS supports filenames up to 255 bytes (not characters) in length.
3. **Btrfs (Btrfs Filesystem):** Btrfs allows filenames up to 255 bytes in length.
4. **NTFS (Windows NT File System):** If you have a dual-boot system with Linux and Windows, and the filesystem is NTFS, the maximum filename length is 255 characters.

It's important to note that the maximum filename length includes the full pathname, including the directory names and separators. Long filenames can be convenient, but it's essential to ensure compatibility with different filesystems and operating systems when dealing with file and directory names. It's a good practice to keep filenames reasonably short and avoid using special characters or spaces to enhance cross-platform compatibility and readability.

15. 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**



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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.

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
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
```

16. 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.

17. What is LVM? Its a requirement in Linux?

LVM, which stands for Logical Volume Manager, is a storage management technology used in Linux and other Unix-like operating systems. It provides a flexible and advanced method for managing storage devices, allowing administrators to create, resize, and manage logical volumes that span multiple physical disks.

Key concepts and features of LVM include:

1. **Physical Volumes (PVs):** Physical volumes are the underlying physical storage devices, such as hard drives or solid-state drives. LVM combines multiple physical volumes into a



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LVM is not a strict requirement for Linux, and the operating system can be installed and used without LVM. However, LVM provides significant benefits in terms of storage flexibility and management, making it highly recommended for servers and systems with dynamic storage requirements. LVM is commonly used in enterprise environments and in scenarios where administrators need to manage storage efficiently and without disrupting existing data.

Using LVM can simplify tasks such as adding storage space, resizing volumes, and managing storage resources across multiple disks. It provides a higher level of abstraction for storage management, allowing administrators to work with logical volumes independently of the physical hardware.

Overall, while LVM is not an absolute necessity, it is a valuable tool for storage management in Linux and offers advantages for those seeking flexible and dynamic storage solutions.

18. 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>`

19. 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.



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21. What 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.

22. 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.

23. 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.



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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.

24. 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:



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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

26. 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.

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

Suppose the content of the file is as follows:

```
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.

```
edureka@edureka:~$ echo "This is the overwritten line in the file">>sample.txt
edureka@edureka:~$ cat sample.txt
This is the overwritten line in the file
edureka@edureka:~$
```

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

```
edureka@edureka:~$ echo "This is the appended line in the file">>>sample.txt
edureka@edureka:~$ cat sample.txt
This is the overwritten line in the file
This is the appended line in the file
edureka@edureka:~$
```



27. 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



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3. Make decisions based on conditions and jump to new different instructions based on the decision.

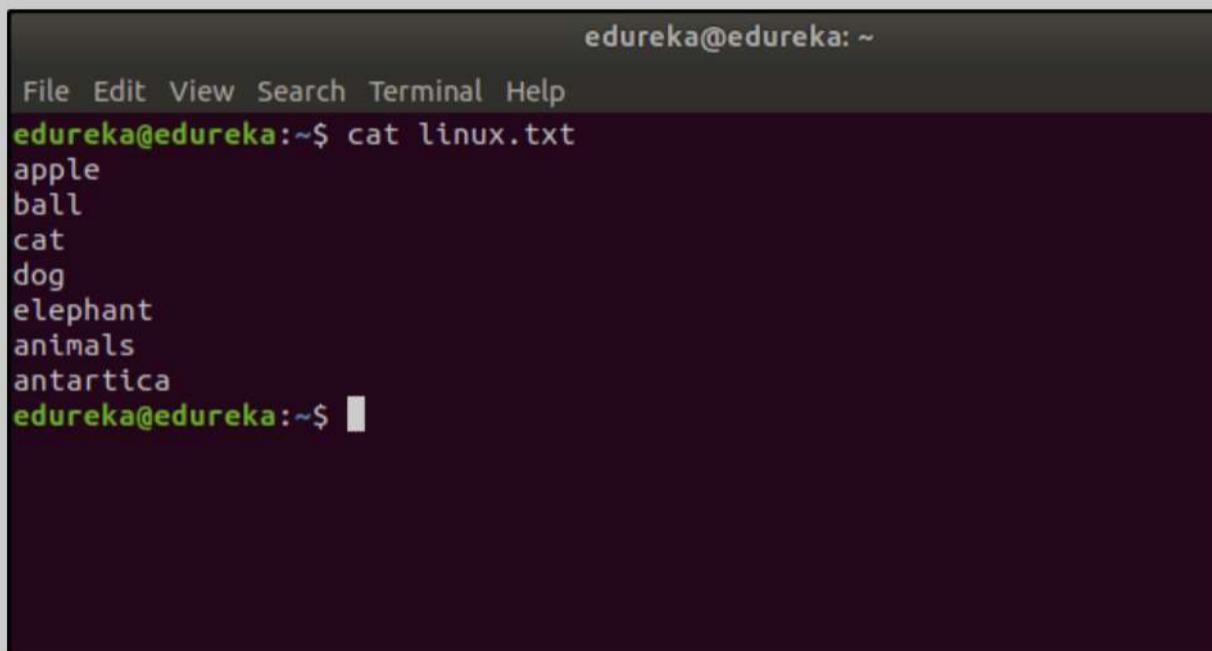
30. Explain Regular Expressions and Grep

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

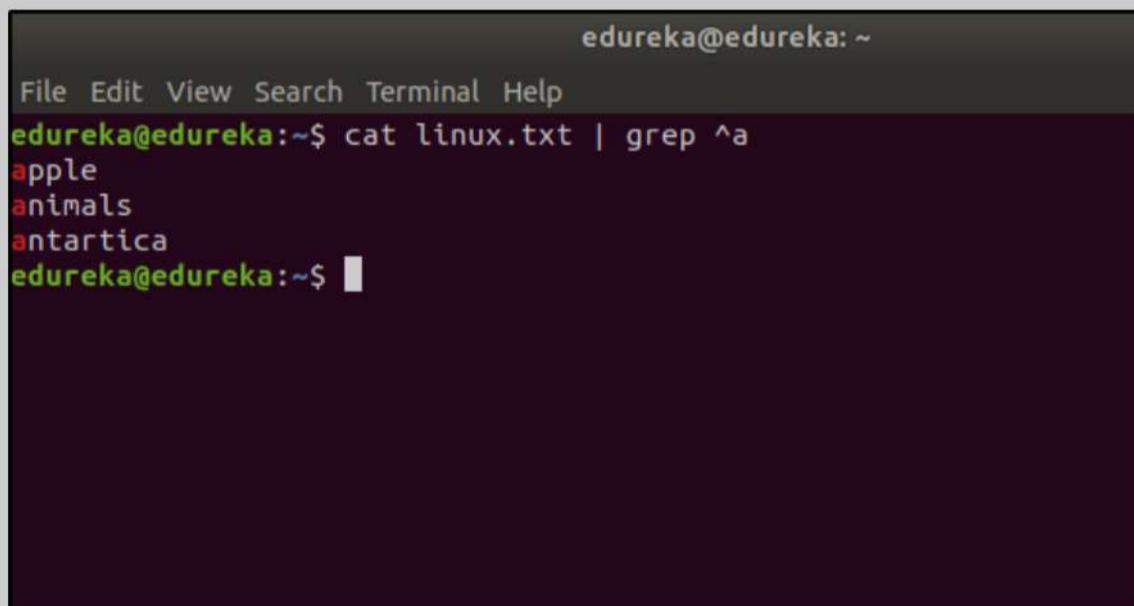
Suppose the content of a file is as follows:



```
edureka@edureka: ~
File Edit View Search Terminal Help
edureka@edureka:~$ cat linux.txt
apple
ball
cat
dog
elephant
animals
antartica
edureka@edureka:~$
```

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

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



```
edureka@edureka: ~
File Edit View Search Terminal Help
edureka@edureka:~$ cat linux.txt | grep ^a
apple
animals
antartica
edureka@edureka:~$
```



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```
edureka@edureka:~  
File Edit View Search Terminal Help  
edureka@edureka:~$ cat linux.txt | grep n  
elephant  
animals  
antartica  
edureka@edureka:~$
```

31. 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 – Linux OS internals Interview Questions

1. What is a “/proc” file system?

The “/proc” file system is a virtual file system in Linux that provides real-time information about running processes and kernel configurations. It is a dynamic interface, representing data in memory rather than physical files on disk. It is valuable for monitoring, debugging, and accessing system information.

For example, to view information about the current CPU utilization, you can read the “/proc/stat” file. To see the memory usage of a specific process with PID 12345, you can check the “/proc/12345/status” file.

Overall, the “/proc” file system is a powerful and dynamic interface that provides valuable system information and insights for system administrators, developers, and monitoring tools in Linux-based systems.



2. daemon that controls the print spooling process.

The daemon that controls the print spooling process in Linux is called the “CUPS” daemon. CUPS stands for Common Unix Printing System. It is a modular printing system that provides a standard interface for printing on Unix-like operating systems, including Linux.

The CUPS daemon, typically named ‘cupsd’, manages the print queues, processes print jobs, and handles communication with printers. It allows users to send print jobs to printers connected to the system or network and provides features like print job scheduling, printer sharing, and support for various print protocols.



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OpenOffice.org), and other productivity tools.

The Sun Java Desktop System's main goal was to provide an alternative to standard operating systems like Windows and give business users a familiar and efficient desktop environment. However, not many people used it, and Oracle stopped producing it after purchasing Sun Microsystems in 2010.

Please keep in mind that even though Sun Java Desktop System was built on Linux, it was a program made by Sun Microsystems and not a different Linux distribution like Ubuntu, Fedora, or CentOS.

4. Name the Linux that is specially designed by Sun Microsystems.

Sun Microsystems designed the Unix-based operating system called "Solaris." It was known for its scalability and advanced features.

5. Under the Linux system, what is the typical size for swap partitions?

The size of the swap partition in a Linux system typically depends on various factors, including the system's RAM size, intended use, and specific requirements. However, a common rule of thumb for setting the swap partition size is to make it equal to or slightly larger than the system's RAM.

Here are some general recommendations for swap partition size:

1. **RAM <= 2GB:** For systems with 2GB of RAM or less, a swap partition size of 2 times the RAM size is often recommended. For example, if the system has 1GB of RAM, the swap partition size can be set to 2GB.
2. **RAM > 2GB and <= 8GB:** For systems with more than 2GB of RAM but less than or equal to 8GB, a swap partition size equal to the RAM size is usually sufficient.
3. **RAM > 8GB:** For systems with more than 8GB of RAM, a swap partition size of 8GB or less is often considered adequate. Some users may choose to set it even lower, depending on their specific use case.

It's important to note that modern systems with ample RAM may not heavily rely on swap space unless they handle memory-intensive tasks or run specific applications that require significant memory usage.

Additionally, if the system has a solid-state drive (SSD), some users opt to reduce the swap partition size or avoid using a dedicated swap partition altogether to minimize unnecessary wear on the SSD. In such cases, a swap file (a file used as swap space) may be used instead of a dedicated swap partition.

Ultimately, the ideal swap partition size depends on the system's RAM, workload, and the administrator's preferences. It's essential to strike a balance between having enough swap space for emergency situations and avoiding excessive use of swap, which can impact performance on systems with plenty of RAM.

6. What is a Zombie Process?



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- Tasks scheduled with `cron` run at specified times or intervals (e.g., every hour, daily, weekly) and require the system to be continuously running. If the system is powered off during the scheduled time, the task is not executed until the next scheduled interval.
- `cron` is suitable for tasks that need to run regularly and predictably on a system that is always powered on, such as system maintenance, log rotation, and backups.

2. **anacron:**

- `anacron` is also a time-based job scheduler like `cron`, but it is designed to handle tasks that are meant to be executed on systems that may not be continuously running, such as laptops or desktop computers that are regularly powered off or in sleep mode.

- Tasks scheduled with `anacron` have more flexibility in execution time and do not depend on specific intervals. Instead, they have a defined delay before execution, typically measured in days. When the system is powered on, `anacron` checks if the specified delay has passed since the last execution, and if so, it runs the task.

- Unlike `cron`, `anacron` ensures that tasks are executed regardless of whether the system was powered off during the scheduled time. It is designed to prevent tasks from being missed due to system downtime.

7. **What is load average in Linux?**

Load average in Linux represents the average number of processes in the run queue over different time periods: 1-minute, 5-minute, and 15-minute intervals. It indicates system activity and resource utilization, helping identify potential bottlenecks and capacity planning.

8. **What do you mean by Shell Script?**

A Shell Script is a script or program written in a coding language called "shell," which is used as a command-line processor in Unix-like operating systems like Linux. It's a list of orders put in a plain text file that the shell can run to automate jobs and do other things. Users can mix multiple shell commands and control structures like loops and conditionals to make scripts that are more complicated and powerful. They are often used to automate jobs that are done over and over again, to handle systems, files, and do other things that require interaction with the operating system.

Shell scripts are flexible and make it easy to work with the command-line interface of a machine. They are small, easy to write, and used by system managers, coders, and power users on Unix-based systems to improve workflows and get things done quickly.

9. **What is CLI and GUI?**

CLI and GUI are two different types of user interfaces used to interact with a computer system:

	CLI (Command-Line Interface)	GUI (Graphical User Interface)
Definition	Text-based interface with commands	Visual interface with windows, icons, etc.



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CLI and GUI are both ways to talk to a computer system, but they are different. CLI uses text-based orders and replies, while GUI uses graphical features to show the user what to do. Each system has its own benefits and is used in different situations depending on what the user wants and how hard the job is. CLI is often preferred by experienced users and system administrators because it is fast and can be automated. On the other hand, because it is simple to use and attractive, GUI is popular with casual users.

Part C- Linux Networking Interview Question

1. Why `/etc/resolv.conf` and `/etc/hosts` files are used?

The `/etc/resolv.conf` and `/etc/hosts` files are used in Unix-like operating systems, including Linux, to handle network-related configurations and name resolution.

1. `/etc/resolv.conf`:

- The `/etc/resolv.conf` file is used to configure the Domain Name System (DNS) resolver on the system. DNS is a system that translates human-readable domain names (e.g., www.example.com) into IP addresses (e.g., 192.168.1.1) that computers can understand.
- The `resolv.conf` file contains information about DNS name servers that the system should use to resolve domain names. It specifies the IP addresses of one or more DNS servers to be queried for name resolution.

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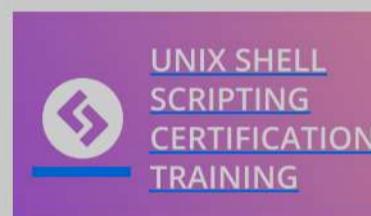
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- When a user or application on the system tries to access a website or connect to a remote server using a domain name, the system consults the `resolv.conf` file to find the DNS servers to use for name resolution.

2. `/etc/hosts`:

- The `/etc/hosts` file is a simple text file that maps IP addresses to hostnames. It serves as a local DNS lookup table for the system, allowing users to define hostname-to-IP address mappings without relying on external DNS servers.



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NIC teaming, also known as network interface card teaming or bonding, is a technique used to combine multiple network interfaces into a single logical interface. This aggregation offers several advantages for improving network performance, redundancy, and load balancing. Some of the key advantages of using NIC teaming are:

- 1. Increased Bandwidth:** By combining multiple network interfaces, NIC teaming provides higher aggregate bandwidth. This increased bandwidth can be beneficial in high-traffic environments, allowing for faster data transfers and reduced network congestion.
- 2. Load Balancing:** NIC teaming distributes network traffic across multiple interfaces, evenly distributing the load among them. This load balancing mechanism ensures that no single network interface is overwhelmed, leading to improved network performance and reduced bottlenecks.
- 3. Redundancy and High Availability:** NIC teaming offers redundancy by creating a failover configuration. If one network interface fails, the traffic is automatically routed through the remaining functional interfaces, ensuring continuous network connectivity and reducing downtime.
- 4. Fault Tolerance:** With NIC teaming, if a network interface or cable becomes faulty or disconnected, the remaining interfaces in the team can seamlessly handle the network traffic, preventing service interruptions.
- 5. Improved Network Reliability:** The combination of higher bandwidth, load balancing, and redundancy contributes to improved network reliability and robustness, ensuring smooth network operations even under heavy loads or in the event of hardware failures.
- 6. Simplified Network Management:** NIC teaming simplifies network management by presenting multiple physical interfaces as a single logical interface to the operating system and applications. Administrators can manage and configure the team as a whole, rather than dealing with individual interfaces separately.
- 7. Efficient Resource Utilization:** NIC teaming optimizes resource utilization by utilizing all available network interfaces effectively. This can be particularly advantageous in server environments where network-intensive applications or virtual machines are running.

Overall, NIC teaming enhances network performance, reliability, and availability, making it a valuable technique for organizations that require high-bandwidth, fault-tolerant, and resilient network configurations. It is commonly used in server environments, data centers, and other critical network infrastructure setups.

3. What do you mean by Network bonding?

Network bonding, also known as NIC bonding or link aggregation, is a technique that combines multiple network interfaces into a single logical interface. This virtual interface offers increased bandwidth, load balancing, and redundancy for improved network performance and reliability. By distributing network traffic across multiple interfaces and providing failover capabilities, network bonding enhances overall network efficiency and ensures continuous connectivity even if one interface fails. It is commonly used in server environments and data centers to optimize network utilization and achieve high availability.

4. What are the different network bonding modes used in Linux?

In Linux, network bonding supports several bonding modes, each designed to offer different functionalities and benefits. The bonding modes available in Linux are:



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aggregation with compatible network switches. It provides dynamic link aggregation, load balancing, and failover.

6. **Balance-TLB (mode 5):** Transmit Load Balancing (TLB) mode uses active-backup for outgoing traffic and load balancing for incoming traffic. It balances traffic across the bonded interfaces based on the current load of each interface.
7. **Balance-ALB (mode 6):** Adaptive Load Balancing (ALB) mode is similar to Balance-TLB but includes both transmit and receive load balancing. It adapts to changing network conditions and provides improved load balancing.

Each bonding mode serves different purposes and is suitable for specific network scenarios. The choice of bonding mode depends on the network requirements, the capabilities of the network equipment, and the desired balance between performance, load distribution, and redundancy. Administrators can select the most appropriate bonding mode based on their network environment and application needs.

5. Name default ports used for DNS, SMTP, FTP, SSH, DHCP and squid.

Here are the default ports used for some common network services:

1. **DNS (Domain Name System):** Port 53 (both TCP and UDP) is used for DNS queries and responses.
2. **SMTP (Simple Mail Transfer Protocol):** Port 25 is the default port for SMTP, used for sending outgoing email.
3. **FTP (File Transfer Protocol):** Port 21 is used for the FTP control connection. Data transfers may use other ports, depending on the FTP mode (active or passive).
4. **SSH (Secure Shell):** Port 22 is the default port for SSH, used for secure remote access to a system.
5. **DHCP (Dynamic Host Configuration Protocol):** Port 67 (DHCP server) and Port 68 (DHCP client) are used for DHCP messages, allowing automatic IP address assignment to devices on a network.
6. **Squid (Web Proxy Cache):** Port 3128 is often used as the default HTTP port for Squid, a popular web proxy cache server.

It's important to note that while these are the default port numbers, some services and applications may be configured to use different ports based on administrator preferences or specific network configurations. Additionally, for services running over SSL/TLS, different port numbers may be used for the secure versions (e.g., SMTPS over port 465, HTTPS over port 443).



6. What is SSH? How we can connect to a remote server via SSH.

SSH, which stands for Secure Shell, is a cryptographic network protocol used for secure remote access to computers and servers over a network. It provides a secure and encrypted communication channel between a client (your local machine) and a server (remote machine) to enable secure data exchange and remote command execution.

To connect to a remote server via SSH, follow these steps:

1. **Open a Terminal (Linux/macOS) or SSH client (Windows):** Launch the terminal or SSH client on your local machine. For Windows users, popular SSH clients include PuTTY and



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server. It may prompt you to accept the remote server's fingerprint for the first

connection, ensuring that you are connecting to the correct server.

4. **Enter Password or Use SSH Key:** Depending on the server's configuration, you may be prompted to enter your password for the remote server. Alternatively, if you have set up SSH key-based authentication, you can use an SSH key pair to log in without a password.
5. **Connected to Remote Server:** If the authentication is successful, you will be connected to the remote server's command-line interface. You can now execute commands on the remote server as if you were physically logged in.
6. **Exit the SSH Session:** To exit the SSH session and return to your local machine's command-line interface, simply type `exit` and press Enter.

Keep in mind that SSH is a powerful tool that allows remote access to a server. Ensure that you have proper authorization to access the remote server, and always use strong passwords or SSH key pairs to enhance security. Additionally, if you are connecting to a remote server on a public network, consider using a VPN or other security measures to further protect your communication.

7. Write the difference between Soft and Hard links?

Soft links (symbolic links) and hard links are two types of links used in Unix-like operating systems, including Linux. They both allow multiple directory entries (filenames) to point to the same underlying file, but they have some key differences:

	Soft Link (Symbolic Link)	Hard Link
Type of Link	A reference to the target file/directory	Additional directory entry to the same file
Data	Does not contain the actual data	Shares the same data with the original file
Impact on Target	Deleting the link does not affect target	Deleting any link does not affect data or other links
Cross File Systems	Can span across different file systems	Limited to the same file system
Supported for	Works for both files and directories	Only supported for files, not directories

In short, soft links are references to the target file or directory, but hard links are new directory entries going directly to the same physical data. Hard links are confined to files and cannot traverse file system borders, but soft links can bridge file systems and work for files and directories. Furthermore, deleting a soft link leaves the target file or directory untouched, whereas hard links keep the data accessible as long as at least one hard link exists.

8. Name three standard streams in Linux.

Apologies for the repetition. The three standard streams in Linux are:

1. **Standard Input (stdin):** Represented by file descriptor 0 (zero). It is used for receiving input data, typically from the keyboard or through input redirection from files.
2. **Standard Output (stdout):** Represented by file descriptor 1. It is used for displaying output data, such as program results or messages, usually on the terminal or through output redirection to files.
3. **Standard Error (stderr):** Represented by file descriptor 2. It is used for displaying error messages and diagnostic information, separate from regular output. Like stdout, it can be



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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
```



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```
edureka@edureka:~$ cat abc.conf
conf 1
conf 2
conf 3
conf abc

edureka@edureka:~$ cat xyz.conf
conf 1
conf 2
conf 3
conf xyz
edureka@edureka:~$ diff abc.conf xyz.conf
4,5c4
< conf abc
<
< ...
> conf xyz
edureka@edureka:~$
```

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>
```



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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.



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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?



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

24. How do you start and stop a service?

To start:

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

To stop:

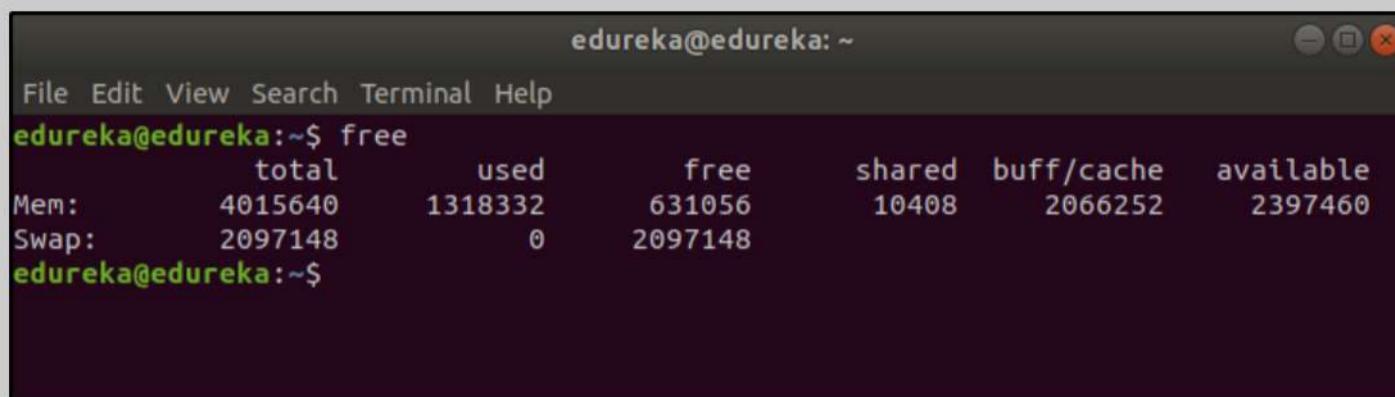
```
$ service <servicename> stop
```

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
```



	total	used	free	shared	buff/cache	available
Mem:	4015640	1318332	631056	10408	2066252	2397460
Swap:	2097148	0	2097148			

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Ramesh Adapwar says:

Sep 3, 2022 at 11:43 am GMT

rest all commands are very useful for interview
thank you !

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onkar mhetre says:

Apr 27, 2022 at 10:48 am GMT

I love this Q&A really very nice it is...

[Reply](#)



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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