

Linux & Cloud Interview Questions

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1. What is the Linux kernel?

- Answer: The Linux kernel is the core component of the Linux operating system. It manages system resources and hardware communication, providing essential services to system processes.

2. Explain the difference between a Linux shell and a kernel.

- Answer: The kernel is the core part of the operating system, managing resources and hardware. The shell is a user interface that interprets and executes commands entered by users or scripts.

3. What is a root account?

- Answer: The root account is the administrative user in Linux with full privileges to perform any action on the system, including installing software, changing configurations, and managing users.

4. How do you check disk usage in Linux?

- Answer: You can use the df command to check file system disk space usage and the du command to estimate file and directory space usage.

5. Explain what inode is in Linux.

- Answer: An inode is a data structure on a filesystem on Linux that stores information about a file or a directory except its name or its actual data.

6. How do you create a symbolic link in Linux?

- Answer: Use the `ln -s` command followed by the target file and the link name. Example: `ln -s /path/to/target /path/to/link`.

7. What is the purpose of the cron daemon?

- Answer: The cron daemon is used to schedule and automate repetitive tasks by executing commands or scripts at specified times and intervals.

8. How do you check for open ports in Linux?

- Answer: Use the `netstat`, `ss`, or `lsof` commands to list open ports and associated processes.

9. What is SELinux?

- Answer: SELinux (Security-Enhanced Linux) is a security module in the Linux kernel that provides a mechanism for supporting access control security policies, including mandatory access controls (MAC).

10. How can you find the process ID (PID) of a running program?

- Answer: Use the `ps` command with options like `ps aux` or `ps -ef` and `grep` for the program's name, or use the `pidof` command.

Cloud Interview Questions

1. What is cloud computing?

- Answer: Cloud computing is the delivery of computing services over the internet, including storage, processing power, and applications, on a pay-as-you-go basis.

2. What are the main types of cloud deployment models?

- Answer: The main types are public cloud, private cloud, hybrid cloud, and multi-cloud.

3. Explain the difference between IaaS, PaaS, and SaaS.

- Answer:
- IaaS (Infrastructure as a Service): Provides virtualized computing resources over the internet.
- PaaS (Platform as a Service): Offers hardware and software tools over the internet, usually for application development.
- SaaS (Software as a Service): Delivers software applications over the internet, on a subscription basis.

4. What is serverless computing?

- Answer: Serverless computing allows developers to build and run applications without managing server infrastructure. The cloud provider dynamically manages the server allocation.

5. What are some benefits of using cloud services?

- Answer: Scalability, cost-efficiency, flexibility, disaster recovery, and accessibility are key benefits of cloud services.

6. How do you secure data in the cloud?

- Answer: Implementing encryption, using strong authentication and access controls, regular audits, and compliance with security standards and regulations.

7. What is a virtual private cloud (VPC)?

- Answer: A VPC is a private cloud environment within a public cloud, providing greater isolation and security for resources and applications.

8. Explain the concept of autoscaling in cloud computing.

- Answer: Autoscaling is a feature that automatically adjusts the number of compute resources based on the current load and traffic, ensuring optimal performance and cost management.

9. What is a container, and how is it different from a virtual machine?

- Answer: A container is a lightweight, portable unit of software that packages code and its dependencies. Unlike virtual machines, containers share the host OS kernel and are more efficient in terms of resource utilization.

10. What are some common cloud service providers?

- Answer: Major providers include Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform (GCP), and IBM Cloud.

Linux Interview Questions

11. What command is used to change file permissions in Linux?

- Answer: The chmod command is used to change file permissions.

Example: `chmod 755 filename`.

12. How do you find and kill a process by name?

- Answer: Use `ps aux | grep process_name` to find the PID, then kill PID to terminate it. Alternatively, use `pkill process_name`.

13. What is the difference between a soft link and a hard link?

- Answer:
- Soft Link (Symbolic Link): A pointer to the file name. Deleting the original file breaks the link.
- Hard Link: A pointer to the file data. Both the original and hard link remain functional even if one is deleted.

14. How do you check system uptime?

- Answer: Use the uptime command.

15. What is swap space?

- Answer: Swap space is a portion of the hard disk used as virtual memory when the physical RAM is full.

16. Explain what a package manager is in Linux.

- Answer: A package manager is a tool that automates the process of installing, updating, configuring, and removing software packages.

17. How do you view running processes in Linux?

- Answer: Use the ps, top, or htop commands.

18. What is the purpose of the fstab file?

- Answer: The fstab file contains information about disk drives and partitions, including how they should be automatically mounted.

19. How do you check the current runlevel in Linux?

- Answer: Use the runlevel command.

20. What is a daemon in Linux?

- Answer: A daemon is a background process that starts during boot and handles requests for services.

21. What is the command to display the current date and time in Linux?

- Answer: Use the date command.

22. How do you compress files in Linux?

- Answer: Use gzip, bzip2, xz, or tar commands.

23. How do you extract files in Linux?

- Answer: Use gunzip, bunzip2, unxz, or tar -xvf commands.

24. How do you display the first few lines of a file in Linux?

- Answer: Use the head command.

25. How do you display the last few lines of a file in Linux?

- Answer: Use the tail command.

26. How do you count the number of lines, words, and characters in a file?

- Answer: Use the wc command.

27. What is the grep command used for?

- Answer: The grep command searches for patterns within files.

28. How do you change ownership of a file in Linux?

- Answer: Use the chown command. Example: chown user:group filename.

29. What is the difference between su and sudo?

- Answer:
- su: Switches to the superuser or another user.

- `sudo`: Executes a command as the superuser or another user.

30. How do you view the contents of a file in Linux?

- Answer: Use `cat`, `less`, `more`, or `view` commands.

31. What is a kernel panic?

- Answer: A kernel panic is a safety measure taken by an operating system's kernel upon detecting an internal fatal error from which it cannot safely recover.

32. How do you create a new user in Linux?

- Answer: Use the `useradd` command followed by the username. Example:
`useradd newuser.`

33. How do you delete a user in Linux?

- Answer: Use the `userdel` command followed by the username. Example:
`userdel username.`

34. How do you change a user's password in Linux?

- Answer: Use the `passwd` command followed by the username. Example:
`passwd username.`

35. What is the `env` command used for?

- Answer: The env command prints the environment variables of the current shell.

36. How do you create an alias in Linux?

- Answer: Use the alias command. Example: alias ll='ls -l'.

37. What is the df command used for?

- Answer: The df command displays the amount of disk space available on file systems.

38. What is the du command used for?

- Answer: The du command estimates file and directory space usage.

39. How do you list hidden files in Linux?

- Answer: Use the ls -a command.

40. What is a shebang in a shell script?

- Answer: A shebang is the character sequence `#!/` at the beginning of a script that specifies the interpreter to be used.

41. How do you make a shell script executable?

- Answer: Use the chmod +x command followed by the script name.

42. What is the crontab command used for?

- Answer: The crontab command is used to schedule commands to be executed periodically.

43. How do you check the memory usage in Linux?

- Answer: Use the free or top command.

44. What is the iptables command used for?

- Answer: The iptables command is used to set up, maintain, and inspect the tables of IP packet filter rules.

45. How do you display the IP address of a system?

- Answer: Use the ip addr or ifconfig command.

46. What is the ssh command used for?

- Answer: The ssh command is used to connect to a remote server using the SSH protocol.

47. How do you copy files between two systems using scp?

- Answer: Use the scp command followed by the source and destination paths. Example: scp file.txt user@remote:/path/.

48. What is the rsync command used for?

- Answer: The rsync command is used for fast and versatile file copying and synchronization.

49. How do you set environment variables in Linux?

- Answer: Use the export command. Example: export VAR=value.

50. What is a mount point in Linux?

- Answer: A mount point is a directory where a file system is mounted.

51. How do you mount a file system in Linux?

- Answer: Use the mount command. Example: mount /dev/sda1 /mnt.

52. How do you unmount a file system in Linux?

- Answer: Use the umount command followed by the mount point.
Example: umount /mnt.

53. What is the passwd file?

- Answer: The passwd file stores user account information.

54. What is the shadow file?

- Answer: The shadow file stores secure user password information.

55. How do you check for listening ports in Linux?

- Answer: Use the netstat, ss, or lsof command.

56. What is the vim editor?

- Answer: vim is a highly configurable text editor built to enable efficient text editing.

57. How do you search for a file in Linux?

- Answer: Use the find command. Example: find / -name filename.

58. What is the awk command used for?

- Answer: The awk command is a programming language for pattern scanning and processing.

59. How do you rename a file in Linux?

- Answer: Use the mv command. Example: mv oldname newname.

60. What is the purpose of the /etc/hosts file?

- Answer: The /etc/hosts file maps IP addresses to hostnames.

61. How do you change the hostname of a Linux system?

- Answer: Use the hostnamectl set-hostname newhostname command.

62. What is the purpose of the `/etc/resolv.conf` file?

- Answer: The `/etc/resolv.conf` file specifies DNS servers for name resolution.

63. How do you display the manual page of a command?

- Answer: Use the `man` command followed by the command name.
Example: `man ls`.

64. What is the `curl` command used for?

- Answer: The `curl` command is used to transfer data from or to a server using various protocols.

65. How do you list all installed packages in a Debian-based system?

- Answer: Use the `dpkg -l` command.

66. How do you list all installed packages in an RPM-based system?

- Answer: Use the `rpm -qa` command.

67. How do you install a package in a Debian-based system?

- Answer: Use the `apt-get install` command. Example: `apt-get install package_name`.