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## DevOps Shack

### 200 scenario-based Linux interview questions

#### Basic Linux Administration

1. **User Management:** A user complains they cannot log in. How will you troubleshoot?
2. **File Permissions:** A script is executable by one user but not another. How do you resolve this?
3. **Process Management:** A service is consuming 100% CPU. How will you find and fix it?
4. **SSH Issues:** You cannot SSH into a remote machine. How do you debug?
5. **Disk Space Full:** / partition is full. How do you find and delete large files safely?
6. **File Corruption:** A log file is showing junk characters. How will you check and recover it?
7. **Crontab Not Running:** A scheduled job is not executing. How do you debug?
8. **Package Installation Failing:** `yum` or `apt` is failing. How will you resolve it?
9. **User Cannot Sudo:** A user was added to `sudoers`, but `sudo` still doesn't work. What could be wrong?
10. **Kernel Panic:** How do you troubleshoot and recover from a kernel panic?
11. **Zombie Processes:** How do you identify and remove zombie processes?

12. Too Many Open Files Error: How do you fix "Too many open files" in Linux?
13. Finding and Killing Processes: A process is causing high memory usage. How do you locate and stop it?
14. Home Directory Missing: A user's home directory is missing. How will you restore it?
15. Time Sync Issues: The server time is incorrect. How do you fix NTP sync?
16. Finding Recently Changed Files: How do you find all files modified in the last 10 minutes?
17. Deleting Large Files But Space Not Freeing Up: What could be the reason?
18. Checking System Load: How do you analyze high system load issues?
19. NFS Mount Issues: How do you troubleshoot an NFS mount not working?
20. Hostname Resolution Issues: **ping** is working, but **ssh** is failing by hostname. Why?

## File System & Storage

21. How do you extend a partition without unmounting it?
22. What steps are needed to add a new disk to a Linux server?
23. How to check which processes are writing to a file in real time?
24. How to recover a deleted file in Linux?
25. How to check disk I/O performance in Linux?



26. A directory is taking too much space. How do you analyze it?
27. How do you remount a filesystem in read-write mode without rebooting?
28. What happens when a file is deleted but is still in use by a process?
29. How do you create and mount a swap file?
30. How do you find large unused files across multiple partitions?
31. How do you fix a corrupted file system using `fsck`?
32. What is inode exhaustion, and how do you resolve it?
33. You need to copy a huge file across servers. What's the fastest way?
34. Your `df -h` and `du -sh` show different disk usage. Why?
35. How do you find out which directory is consuming the most in `/var`?
36. A file is not getting deleted despite `rm -f`. Why?
37. How do you enable disk quotas for users?
38. A RAID-5 disk has failed. How do you replace and rebuild it?
39. How do you check bad sectors on a disk?
40. A user needs 500GB storage. How do you allocate it using LVM?

## Networking & Security

41. How do you check which ports are open on a server?



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42. How to configure a static IP in Linux?
  43. How to allow a port through the firewall permanently?
  44. A service is listening on an unintended port. How do you investigate?
  45. How do you capture network packets using tcpdump?
  46. How do you check which process is using a specific port?
  47. How do you block an IP from accessing your server?
  48. SSH keeps disconnecting. How do you fix it?
  49. How do you check and renew an expired SSL certificate?
  50. How do you securely transfer files between two servers?
  51. How do you monitor real-time network bandwidth usage per process?
  52. A user reports slow SSH login. How do you troubleshoot?
  53. How to check if your DNS resolution is working correctly?
  54. How do you limit network bandwidth usage for a specific process?
  55. How do you find the default gateway of a Linux server?
  56. How do you detect ARP spoofing on a Linux system?
  57. How do you allow only specific users to SSH into a server?
  58. How to configure failover between two network interfaces?
  59. How to prevent brute-force attacks on SSH?

60. How do you configure IP forwarding in Linux?

## Performance & Optimization

- 61. How do you optimize Linux performance for a high-load server?
- 62. What do the **load average** values mean in **top**?
- 63. How to find the highest CPU-consuming process?
- 64. How do you reduce swap usage on a system?
- 65. What are **ulimit** settings, and how do you use them?
- 66. How do you benchmark disk read/write speeds?
- 67. How do you tune Linux for a high-performance database?
- 68. How do you reduce the startup time of a Linux server?
- 69. How do you monitor real-time CPU and memory usage?
- 70. How to debug an application consuming high memory?
- 71. How do you enable huge pages for memory optimization?
- 72. A process is leaking memory. How do you identify and fix it?
- 73. How do you find the I/O bottleneck on a server?
- 74. What is **vm.swappiness**, and how does it affect performance?
- 75. How do you check if the CPU is throttling?
- 76. How do you disable a specific CPU core for testing?



77. How do you monitor Linux system health in real-time?
78. How do you configure Linux for low-latency workloads?
79. How do you limit resource usage for a specific user or group?
80. How do you detect and fix a memory leak in a running process?

## Automation & Troubleshooting

81. How do you automate log rotation?
82. How do you create a systemd service for a custom script?
83. How do you schedule a job to run every Sunday at midnight?
84. How do you find why a system rebooted unexpectedly?
85. A user's process keeps getting killed. How do you find the reason?
86. How do you troubleshoot a stuck SSH session?
87. How do you automate patch management?
88. How do you take a backup of all users and groups?
89. How do you check why a systemd service failed?
90. How do you debug a frozen Linux system?
91. How do you use Ansible to configure Linux servers?
92. How do you log all sudo commands executed by users?
93. How do you recover from a lost root password?

94. How do you configure an automated backup using rsync?
95. How do you migrate a Linux server to a new host with minimal downtime?
96. How do you enable and debug SELinux policies?
97. How do you safely upgrade a running Linux system?
98. How do you audit security logs for suspicious activity?
99. How do you create a chroot jail for an application?
100. How do you recover a corrupted **grub** bootloader?

## Advanced User & Process Management

101. How do you list all users who have logged into a system?
102. A user is unable to change their password. How do you troubleshoot?
103. How do you expire a user's password immediately?
104. How do you lock and unlock a user account?
105. How do you check which users are using the most disk space?
106. How do you create a user with no shell access?
107. A process gets killed due to an "OOM (Out of Memory)" error. How do you diagnose and fix it?
108. How do you schedule a script to run when CPU usage goes above 80%?
109. How do you set CPU affinity for a process?
110. How do you find the total number of processes running on a system?



111. How do you prevent a user from executing certain commands?
112. How do you restart a crashed process automatically?
113. How do you run a process in the background and ensure it keeps running after logout?
114. A user wants to execute a script on system startup. How do you configure it?
115. How do you allow a user to run only specific commands with **sudo**?
116. How do you enable core dumps for debugging a process crash?
117. How do you analyze a core dump file?
118. How do you check the parent process of a given PID?
119. How do you create a new group and assign users to it?
120. How do you configure a system to automatically remove inactive user accounts?

## File & Directory Operations

121. How do you find files that haven't been accessed in the last 30 days?
122. How do you remove all empty directories inside a given directory?
123. How do you create a compressed tarball while excluding certain files?
124. How do you extract only specific files from a tar archive?





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125. How do you split a large file into smaller parts and merge them back?
  126. How do you create a symbolic link and a hard link?
  127. How do you determine if a given path is a file, directory, or symlink?
  128. How do you securely delete a file to prevent recovery?
  129. How do you copy files from one server to another while preserving permissions and timestamps?
  130. How do you find duplicate files in a directory?
  131. How do you count the number of lines in multiple files?
  132. How do you merge multiple text files into a single file?
  133. How do you replace a specific word inside multiple files?
  134. How do you rename multiple files in bulk based on a pattern?
  135. How do you identify and remove trailing spaces from a text file?
  136. How do you create a read-only directory that only the root user can modify?
  137. How do you prevent accidental deletion of important files?
  138. How do you compare two files and highlight the differences?
  139. How do you count the occurrence of a specific word in a file?
  140. How do you find and replace text inside a

compressed file without extracting it?

## Networking & Security

141. How do you permanently change the hostname of a Linux machine?
142. How do you check and modify the MTU of a network interface?
143. How do you diagnose a network latency issue?
144. How do you verify if a remote server is reachable on a specific port?
145. How do you check which network services are running on a machine?
146. How do you configure a Linux firewall to block traffic from a specific country?
147. How do you limit the number of simultaneous SSH connections?
148. How do you generate and install a self-signed SSL certificate?
149. How do you monitor incoming and outgoing network connections?
150. How do you restrict SSH access to only a specific IP range?
151. How do you troubleshoot a failing VPN connection?
152. How do you disable IPv6 on a Linux machine?
153. How do you check for open and listening ports on a server?
154. How do you set up a basic IDS (Intrusion Detection System) on Linux?
155. How do you set up a VPN tunnel using OpenVPN?



- 156. How do you prevent unauthorized USB device usage on a Linux system?
- 157. How do you encrypt a file using GPG?
- 158. How do you securely share a file with another user without using a password?
- 159. How do you find and remove hidden backdoors on a compromised Linux server?
- 160. How do you detect unauthorized logins to a server?

## Troubleshooting & Performance Optimization

- 161. How do you diagnose an unresponsive Linux system?
- 162. How do you troubleshoot slow SSH login times?
- 163. How do you identify memory leaks in a running application?
- 164. How do you debug a high CPU usage issue on a production server?
- 165. How do you analyze and optimize disk performance?
- 166. How do you fix a corrupted MySQL database on a Linux server?
- 167. How do you monitor real-time I/O activity?
- 168. How do you analyze logs efficiently for debugging?
- 169. How do you find the most resource-hungry user on a system?
- 170. How do you optimize a Linux server for low-latency networking?
- 171. How do you configure a system for maximum power efficiency?



- 172. How do you enable automatic system updates?
- 173. How do you check the health of a hard disk?
- 174. How do you limit the CPU usage of a specific process?
- 175. How do you analyze a system crash dump?
- 176. How do you identify and kill runaway processes?
- 177. How do you troubleshoot a system where commands are executing very slowly?
- 178. How do you configure Linux for high-performance computing workloads?
- 179. How do you reduce the boot time of a Linux system?
- 180. How do you analyze a server freeze that happened in the past?

## Automation, Monitoring & Cloud

- 181. How do you automate log file cleanup using a script?
- 182. How do you configure a Linux system to send email alerts on high CPU usage?
- 183. How do you use Ansible to deploy software across multiple servers?
- 184. How do you create a cron job that runs only on weekdays?
- 185. How do you use **rsync** to create an incremental backup?
- 186. How do you set up log forwarding to a centralized log server?
- 187. How do you configure a Linux system to auto-reboot on kernel panic?



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188. How do you monitor the uptime of a Linux system?
  189. How do you configure automatic disk cleanup for temporary files?
  190. How do you use Prometheus and Grafana to monitor system performance?
  191. How do you configure system alerts for failed services?
  192. How do you troubleshoot a slow web application running on Linux?
  193. How do you monitor system logs in real time?
  194. How do you create a cloud-init script for provisioning cloud instances?
  195. How do you automate user creation across multiple Linux servers?
  196. How do you configure auto-scaling for a Linux-based cloud environment?
  197. How do you manage multiple servers using SaltStack or Chef?
  198. How do you set up a private container registry on a Linux server?
  199. How do you configure Kubernetes nodes to optimize Linux networking?
  200. How do you create a high-availability cluster on Linux?