

65 Operating System Interview Questions to Assess Candidates

Questions

1. What is an operating system and why is it important?
2. Can you explain the difference between a process and a thread?
3. Describe the different types of operating systems.
4. What is virtual memory and how does it work?
5. How does the operating system manage hardware resources?
6. What are system calls and how are they used?
7. Explain the concept of a file system.
8. What is a kernel and what are its functions?
9. How would you check system resource usage in a Linux environment?
10. Explain the purpose of environment variables and how to set them.
11. What steps would you take to troubleshoot a slow-running system?
12. Describe the process of creating and managing user accounts in Windows or Linux.
13. How do you schedule tasks to run automatically in an operating system?
14. What is the significance of file permissions, and how do you modify them?
15. Explain the concept of process priority and how it affects system performance.
16. How would you go about updating the operating system and installed software?
17. What is the purpose of a firewall, and how would you configure basic rules?
18. Describe the steps to mount and unmount a filesystem in Linux.
19. How do you view and manage running processes in an operating system?
20. What is the role of a boot loader, and can you name a few examples?
21. Explain the difference between a full backup and an incremental backup.
22. How would you troubleshoot network connectivity issues at the OS level?
23. What is the purpose of swap space, and how do you manage it?
24. Describe the process of installing and configuring a new device driver.
25. How do you monitor and analyze system logs for potential issues?
26. What steps would you take to optimize system performance?
27. Explain the concept of file fragmentation and how to address it.
28. How would you secure an operating system against common threats?
29. Can you explain the concept of containerization and how it differs from traditional virtualization?
30. How does CPU scheduling work in a multi-core processor environment?
31. Describe the concept of a microkernel and its advantages over a monolithic kernel.
32. How does Copy-on-Write (CoW) work in modern operating systems, and what are its benefits?
33. Explain the concept of a live kernel patch and its implications for system administration.
34. How does NUMA (Non-Uniform Memory Access) architecture affect operating system design and performance?
35. Describe the concept of a hypervisor and the differences between Type 1 and Type 2 hypervisors.
36. How does the operating system handle context switching between processes?
37. Explain the concept of process states and the transitions between them.
38. What is a zombie process and how can it be prevented or removed?
39. Describe the difference between preemptive and non-preemptive scheduling.
40. How does inter-process communication work, and what are some common methods?
41. What is process forking, and how does it differ from creating a new thread?
42. Explain the concept of process synchronization and why it's important.
43. How does the operating system handle deadlocks, and what strategies can prevent them?
44. What is the purpose of process isolation, and how is it implemented?
45. Describe the difference between a long-term and short-term scheduler in process management.
46. How does the operating system handle priority inversion, and why is it a concern?
47. Explain the concept of a process control block and its key components.
48. Can you explain the concept of paging in memory management?
49. What is thrashing in an operating system and how can it be prevented?
50. Describe the difference between internal and external fragmentation.
51. What is the purpose of a Translation Lookaside Buffer (TLB) in memory management?
52. How does the Least Recently Used (LRU) page replacement algorithm work?
53. What is the working set model in memory management?
54. Explain the concept of demand paging.
55. What is the difference between physical and virtual memory?
56. How does memory segmentation differ from paging?
57. You've just received an alert that one of your critical servers is running out of disk space. How would you handle this situation?
58. A user reports that their computer is unusually slow. Walk me through your troubleshooting process.
59. How would you go about implementing a new backup strategy for a medium-sized company?
60. You've discovered a security vulnerability in a critical system. How would you approach patching it without disrupting business operations?
61. How would you approach migrating a critical application from on-premises to the cloud?
62. A critical service is experiencing intermittent outages. How would you investigate and resolve this issue?
63. How would you approach capacity planning for a rapidly growing e-commerce platform?
64. You're tasked with improving the overall security posture of your organization's IT infrastructure. Where would you start?