Linux Interview Questions

October 2019

1. On a uniprocessor machine with preemption disabled, what will happen internally when we say spin_lock()?
2. What is SMP
3. what are the use of L1,L2,L3 Caches
4. what is the difference between binary semaphore and mutex in Linux
5. what is the difference between down_interruptible vs down_killable in semaphore
6. How to change the priority of a process in Linux
7. where are page tables stored
8. what are the minimum requirements of linux to work on a hardware
9. what are the pros and cons of using per cpu variable as synchronization method
10. what is the difference between context switch and preemption?
11. Can i lock a spinlock in one CPU and unlock it another CPU?
12. How do you test whether there are memory leaks in a Linux application
13. On a multiprocessor system, how do you find out which process is running on which processor?
14. what is the maximum amount of time CPU can be in critical section after acquiring spinlock
15. Difference between GFP_KERNEL and GFP_ATOMIC
16. what happens internally during context switch in Linux kernel?
17. Which file in Linux gives you information about memory zones
18. What is buffer/cache?
19. what is the asm-generic folder in Linux source code. What it contains?
20. Difference between IO Mapped IO and Memory Mapped IO
21. Difference between kmalloc and vmalloc
22. Difference between processor and core
23. How can i find out the Count of number of times a process has been preempted in Linux?
24. what does malloc(0) return?
25. what is NUMA?
26. will a module be loaded if it has while(1) loop in module_init function. ?
27. what is the maximum memory that can be allocated using vmalloc?
28. What is the maximum memory that can be allocated using kmalloc?
29. What is the difference between VIRT, RES and SHR fields in top command?
30. what is the system call used by malloc and free
31. What is the maximum memory that I can allocate using malloc
32. The Makefile macro that one sets to identify what file for the kernel Makefile to make into a module is _____. a. obj-m b. obj-y c. target d. list
33. How do you check how many lanes are being used by pcie card in Linux
34. Maximum number of PCI devices that can be connected to a host
35. What are lanes in PCI?
36. How auto detection of PCI devices happen in PCI?
37. What is a PCI bridge
38. Where do executables look for shared objects at runtime?

39. Is PCI serial protocol or parallel protocol. What is the maximum data rate achieved with PCI
40. What is the maximum major number in case of Character and block device driver.
41. How to Create 100 files in a single command.
42. What is cache coherence
43. what is the use of swapper process in Linux
44. how to kill the process which is in TASK_UNINTERRUPTIBLE state?
45. what is cache coherence
46. Difference between USB 2.0 and USB 3.0
47. What is the role of USB core in LINUX?
48. Difference between endpoint and pipe.
49. How will you detect when kernel is continuously restarting
50. Top command and it's states
51. Void pointer and null pointer which is dangerous
52. Init different levels
53. Named pipe and unnamed pipe
54. Pros and cons of function and macro
55. What happens in linker stage
56. When to use malloc and when to use calloc
57. Explain the steps of character driver.
58. Difference between bitwise and and logical and （give example）
59. Macro to toggle a bit in number
60. Memory move code in c, it should handle overlap