**LINUX**

1. Sudo passwd :To check root password
2. Umask 755 : To give permissions to the newly created files
3. Chmod : to change the permissions the to the existing files
4. Which : shows the full path of the file or Dir
5. Ls : **List files in the directory**
6. Ls -a : **List all files**:
7. Pwd : present working directory
8. Mkdir
9. **Rename a file : MV [file\_name1] to [file\_name2]**
10. **Touch /Cat/more/less/ head /tail : display contents**
11. AWT : Install and manage packages in Ubuntu
12. Gpg –c f1 : encrypt a file
13. WC file : count of Lines, words and characters
14. Cut command : Cut specific field, letter in a file –c,-b,-f
15. Grep command : ^ -beginning of line $- end of line
16. AWK command : <https://www.freecodecamp.org/news/the-linux-awk-command-linux-and-unix-usage-syntax-examples/>

{print $1 first field in all line } $NF last field

awk ‘ { prinit $1}’ file.txt

1. Shred –u file name : the **shred** to [overwrite](https://www.computerhope.com/jargon/o/overwrit.htm) a file to hide its contents,
2. Diff f1 f2 : display differences of two files
3. Tar command : creates an archive file

**Process Related**

1. **PS :See a snapshot of active processes**
2. **PSTREE : Show processes in a tree-like diagram**
3. **PMAP :Display a memory usage map of processes**
4. **TOP : See all running processes:**
5. **KILL PID :Terminate a Linux process under a given ID:**
6. **PKILL PNAME :Terminate a process under a specific name:**
7. **BG :List and resume stopped jobs in the background:**
8. **FG :Bring the most recently suspended job to the foreground:**
9. **FG jbname : Bring a particular job to the foreground:**
10. **LSOF : List files opened by running processes:**
11. **Trap : Catch a system error signal in a shell script:**
12. **Nohup : Run a Linux process in the background:**

### System Management and Information

1. Uname –r :Show **system information**:
2. Uname –a : **Display how long the system has been running,**

**including load average**

1. Hostname –I : **Show the IP address of the system:**
2. **Last reboot : List system reboot history**
3. **W : List logged in users:**
4. Finger : **Show information about a particular user:**
5. **Add a new kernel module:** modprobe [module-name]

### Disk Usage

1. **Df –h :See free and used space on mounted systems:**
2. **Df –I : Show free inodes on mounted filesystems**
3. **Fdisk –l : Display disk partitions, sizes, and types with the command:**
4. **Du –ah :See disk usage for all files and directory**
5. **Du –sh : Show disk usage of the directory you are currently in**
6. **Findmnt : Display target mount point for all filesystem:**

### Network

**45. ip addr show :ist IP addresses and network interfaces:**

**46. ipconfig : Display IP addresses of all network interfaces with**

**47.**  Netstat –pnltu : **See active (listening) ports with the netstat command**

**48.** netstat –nutlp : **Show tcp and udp ports and their programs:**

**49. Whois :Display more information about a domain:**

50 .DIG :**Show DNS information about a domain using the dig**

**51. Do a reverse lookup on domain:** dig -x host

**52. Do reverse lookup of an IP address:** dig -x [ip\_address]

**53. Show the local IP address:** hostname –I

54 . **Download a file from a domain nd:wget filename**

**55. NSLOOKUP: Receive information about an internet domain**

**1. SCP command   –**securely Copy Files Using SCP, with examples.

2. FIND/Locate - find command allows you to search a specific file by

its name

3. **Uptime command –** shows system uptime and load average.

4. **top command –**shows an overall system view.

5. **vmstat command –**shows system memory, processes, interrupts, paging, block

I/O, and CPU info.

5. **htop command –** interactive process viewer and manager.

6. **dstat command –** view processes, memory, paging, I/O, CPU, etc., in real-time.

All- in-one for vmstat, iostat, netstat, and ifstat.

7. **iftop command –** network traffic viewer.

8. **nethogs command –** network traffic analyzer.

9.  **gzip command –** file compression and decompression.

10.  **b2zip –** similar to gzip. It uses a different compression algorithm.

11. **zip command –** for packaging and compressing (to archive) files.

12. **cron command –** set up scheduled tasks to run.

13.  **nmcli command –**network management.

14.**ping command –** send ICMP ECHO\_REQUEST to network hosts.

15.  **trace route command –**check the route packets take to a specified host.

16. **mtr command –** network diagnostic tool. ( Ping+ trace route)

17. **nslookup command –** query Internet name servers (NS) interactively.

18.**Sort by CPU Utilisation:**Press (Shift+P) to sort processes as per CPU utilization

**TEXT PROCESSING TOOLS:**

1. SED :

2.GREP :

3.AWK :

4.CUT :

1. Redirection : **process of using the input/output of a file or command to use it as an input for another file**
2. /Bin : Bin files often used for distributing executable files for program installations
3. /SBIN : **a standard subdirectory of the root directory in Linux and other Unix-like operating systems that contains executable (i.e., ready to run) programs**. They are mostly administrative tools, that should be made available only to the root (i.e., administrative) user
4. /usr/bin : programs executed by normal users which are not needed for booting or for repairing the system
5. /usr/sbin : Same as above, but for binaries with superuser (root) privileges required.
6. /home : **a directory for a particular user of the system and consists of individual files**. It is also referred to as the login directory. This is the first place that occurs after logging into a Linux system.
7. /etc : **a Linux system's configuration files live**.
8. /var : var **contains variable data files**. This includes spool directories and files, administrative and logging data, and transient and temporary files. Some portions of /var are not shareable between different systems
9. Sticky Bit : When this is set on a directory, the files in that directory can only be removed by the owner. A typical use of this is ‘/tmp/.’ The /tmp directory can be written to by any user, but other users cannot delete the files of others. Chmod +t (Dirname)

### Setgid: group g+s /g-s and setuid: user setuid u+s /u-s chmod +t/-t (sticky bit)

# Linux Debugging

### Where system logs are located? : /Var/Log

### What are you using for troubleshooting and debugging network issues?

### : ifconfig,dig, netstat , dstat,ping, traceroute, net- tools, arp

### What are you using for troubleshooting and debugging disk & file system issues?

### :

### What are you using for troubleshooting and debugging process issues?

### What are you using for debugging CPU related issues?

### You get a call from someone claiming “my system is SLOW”. What do you do?

### Explain iostat output

### How to debug binaries?

### What is the difference between CPU load and utilization?

### How you measure time execution of a program? Time

# Linux Kernel

A Kernel is a computer program that is the heart and core of an Operating System. Since the Operating System has control over the system so, the Kernel also has control over everything in the system is the main layer between the OS and hardware, and it helps with process and memory management, file systems, device control and networking.

### How do you find out which Kernel version your system is using? : uname –r

### What is a Linux kernel module and how do you load a new module?

### ;modprobe module

### Explain user space vs. kernel space

### Kernel space is strictly reserved for running a privileged operating system kernel, kernel extensions, and most device drivers. In contrast, user space is the memory area where application software and some drivers execute

### What are system calls? What system calls are you familiar with?

### the programmatic way in which a computer program requests a service from the kernel of the operating system on which it is executed.

### Open , read , write , close , wait , exec , fork , exit , and kill

# Linux SSH

### What is SSH? How to check if a Linux server is running SSH?

### PS -ef / grep sshd

### Why SSH is considered better than telnet?

### Telnet transfers the data in simple plain text. On other hand SSH uses Encrypted format to send data and also uses a secure channel. No authentication or privileges are provided for user's authentication. As SSH is more secure so it uses public key encryption for authentication

### What is stored in ~/.ssh/known\_hosts?

### ssh/known\_hosts file contains the SSH fingerprints of machines you've logged into.

### What is the difference between SSH and SSL?

### SSH vs SSL is that SSH is used for creating a secure tunnel to another computer from which you can issue commands, transfer data, etc. On the other end, SSL is used for securely transferring data between two parties

### What ssh-keygen is used for?

### ssh-keygen is a standard component of the Secure Shell (SSH) protocol suite found on Unix, Unix-like and Microsoft Windows computer systems used to establish secure shell sessions between remote computers over insecure networks, through the use of various cryptographic techniques.

### What is SSH port forwarding?

### SSH Port forwarding is a method used for securing TCP/IP connections. The TCP/IP packets can be tunneled through a SSH link making the data obscure thus protecting the link from attacks. SSH Port forwarding can be also seen as a form of Virtual Private Network(VPN)

1. **Tell me everything you know about the Linux boot process**

BIOS. BIOS stands for Basic Input/Output System.-> MBR. MBR stands for Master Boot Record, and is responsible for loading and executing the GRUB boot loader.->GRUB->.Kernel->Init->Runlevel programs.

1. What is the difference between GRUB and GRUB2?

**While the legacy version of Grub requires that its config files are manually created, the config files for Grub2 are created automatically by a scripting process**. Grub2 includes basic scripting which means that it can dynamically collect OS and hardware resource information.

1. A hard link is a file all its own, and the file references or points to the exact spot on a hard drive where the Inode stores the data. A soft link isn't a separate file, it points to the name of the original file, rather than to a spot on the hard drive.

# Linux Performance Analysis

### How to check what is the current load average? : uptime

### How to check process usage? PS

**How To Check CPU Usage from Linux Command Line**

1. top Command to View Linux CPU Load. Open a terminal window and enter the following: top. ...
2. mpstat Command to Display CPU Activity. ...
3. sar Command to Show CPU Utilization. ...

### How to check disk I/O?

### How to check how much free memory a system has? How to check memory consumption by each process?

# Linux Processes

### How can you find how much memory a specific process consumes?

### : PMAP

### What signal is used by default when you run ‘kill process id‘? SGKILLI / -9

### What signals are you familiar with?

### What kill 0 does?

### kill all processes in the current group

### What kill -0 does?

### What is a trap?

### defines and activates handlers to run when the shell receives signals or other special conditions

### Every couple of days, a certain process stops running. How can you look into why it’s happening?

### What happens when you press ctrl + c?

### which cancels or terminates the currently-running program.

### What is a Daemon in Linux?

### A daemon is a service process that runs in the background and supervises the system or provides functionality to other processes. Traditionally, daemons are implemented following a scheme originating in SysV Unix

### What are the possible states of a process in Linux?

Running or Runnable (R)-Uninterruptible Sleep (D)-Interruptable Sleep (S)-Stopped (T)-

Zombie (Z)

### How do you kill a process in D state?

### You cannot kill "D" state processes, even with SIGKILL or kill -9. As the name implies, they are uninterruptible. You can only clear them by rebooting the server or waiting for the I/O to respond. It is normal to see processes in a "D" state when the server performs I/O intensive operations

### What is a zombie process?

### Zombie processes in Linux are sometimes also referred to as defunct or dead processes. They're processes that have completed their execution, but their entries are not removed from the process table.waiting for child process to exit.

### How to get rid of zombie processes?

### A zombie is already dead, so you cannot kill it. To clean up a zombie, it must be waited on by its parent, so killing the parent should work to eliminate the zombie. (After the parent dies, the zombie will be inherited by pid 1, which will wait on it and clear its entry in the process table.)

### What is the init process?

### In Unix-based computer operating systems, init (short for initialization) is the first process started during booting of the computer system. Init is a daemon process that continues running until the system is shut down.

### Can you describe how processes are being created?

### Fork(),exec()

### How to change the priority of a process? Why would you want to do that?

### Nice command nice –n 10 u/g 1

### Can you explain how network process/connection is established and how it’s terminated?

### What strace does? What about ltrace?

### Both strace and ltrace are powerful command-line tools for debugging and troubleshooting programs on Linux: Strace captures and records all system calls made by a process as well as the signals received, while ltrace does the same for library calls

### How would you split a 50 lines file into 2 files of 25 lines each?

### Split command

### What is a file descriptor? What file descriptors are you familiar with?

### a file descriptor (FD, less frequently fildes) is a unique identifier (handle) for a file or other input/output resource, such as a pipe or network socket.

### What is NTP? What is it used for?

### Network Time Protocol (NTP) is an internet protocol used to synchronize with computer clock time sources in a network. It belongs to and is one of the oldest parts of the TCP/IP suite. The term NTP applies to both the protocol and the client-server programs that run on computers.

# Linux Security

### What is chroot? In what scenarios would you consider using it?

### hroot command in Linux/Unix system is used to change the root directory. Every process/command in Linux/Unix like systems has a current working directory called root directory. It changes the root directory for currently running processes as well as its child processes. A process/command that runs in such a modified environment cannot access files outside the root directory. This modified environment is known as “[chroot jail](https://www.geeksforgeeks.org/linux-virtualization-using-chroot-jail/)” or **“jailed directory”**. Some root user and privileged process are allowed to use chroot command.

### What is SELiunx?

### Security-Enhanced Linux (SELinux) is a security architecture for Linux® systems that allows administrators to have more control over who can access the system.

### What is Kerberos?

### Kerberos is a computer network security protocol that authenticates service requests between two or more trusted hosts across an untrusted network, like the internet. It uses secret-key cryptography and a trusted third party for authenticating client-server applications and verifying users' identities.

### What is nftables?

### nftables is a subsystem of the Linux kernel providing filtering and classification of network packets/datagrams/frames.

### What firewalld daemon is responsible for?

### firewalld is the firewall daemon. It provides a dynamically managed firewall with support for network/firewall “zones” to assign a level of trust to a network and its associated connections, interfaces or sources. It has support for IPv4, IPv6, Ethernet bridges and also for IPSet firewall settings.

### How to list all the interfaces?

### Ip, nmcli, netstat,

### What is the loopback (lo) interface?

### A loopback interface is a virtual interface that is always up and reachable as long as at least one of the IP interfaces on the switch is operational. As a result, a loopback interface is useful for debugging tasks since its IP address can always be pinged if any other switch interface is u

### What the following commands are used for?

ip addr:

ip route: p route is **used to manipulate entries in the kernel routing tables**. Route types: unicast the route entry describes real paths to the destinations covered by the route prefix. unreachable - these destinations are unreachable. Packets are discarded and the ICMP message host unreachable is generated.

ip link: In IPMP terminology, an IP link is **a communication facility or medium over which nodes can communicate at the data-link layer of the Internet protocol suite**. Types of IP links might include simple Ethernets, bridged Ethernets, hubs, or Asynchronous Transfer Mode (ATM) networks.

Ping: The 'ping' command is **used to troubleshoot and diagnose network connectivity issues**. It is used to check whether the host is reachable. It's available on all the Operating Systems. 'ping' reports the round-trip time for the messages sent from the source to the destination.

Netstat:Netstat is **a command line utility to display all the network connections on a system**. It displays all the tcp, udp and unix socket connections. Apart from connected sockets it also displays listening sockets that are waiting for incoming connections

Traceroute:

### What is a network namespace? What is it used for?

### Network namespaces provide isolation of network controllers, system resources associated with networking, firewall and routing tables. This allows container to use separate virtual network stack, loopback device and process space.

### How to check if a certain port is being used?

### netstat -ano -p tcp.

### How can you turn your Linux server into a router?

### What is a virtual IP? In what situation would you use it?

1. Which port is used in each of the following protocols?:

SSH : 22 SMTP : 25 HTTP : 80 DNS :53 HTTPS :443

### What is telnet and why is it a bad idea to use it in production? (or at all)

### What is the routing table? How do you view it?

### How can you send an HTTP request from your shell?

### What are packet sniffers? Have you used one in the past? If yes, which packet sniffers have you used and for what purpose?

### How to list active connections?

### How to trigger neighbor discovery in IPv6?

### What is network interface bonding and do you know how it’s performed in Linux?

### What network bonding modes are there?

### What is a bridge? How it’s added in Linux OS?

# Linux DNS

### How to check what is the hostname of the system?

### What the file /etc/resolv.conf is used for? What does it include?

### What commands are you using for performing DNS queries (or troubleshoot DNS related issues)?

# Linux Packaging

### Do you have experience with packaging? (as in building packages) Can you explain how does it works?

### How packages installation/removal is performed on the distribution you are using?

### RPM: explain the spec format (what it should and can include)

### How do you list the content of a package without actually installing it?

### How to know to which package a file on the system belongs to? Is it a problem if it doesn’t belongs to any package?

### Where repositories are stored? (based on the distribution you are using)

### What is an archive? How do you create one in Linux?

### How to extract the content of an archive?

### Why do we need package managers? Why not simply creating archives and publish them?

# Linux DNF

### How to look for a package that provides the command /usr/bin/git? (the package isn’t necessarily installed)

### Linux Applications and Services

### What can you find in /etc/services?

### How to make sure a Service starts automatically after a reboot or crash?

### You run ssh 127.0.0.1 but it fails with “connection refused”. What could be the problem?

### How to print the shared libraries required by a certain program? What is it useful for?

### What is CUPS?

### What types of web servers are you familiar with?

# Linux Users and Groups

### What is a “superuser” (or root user)? How is it different from regular users?

### How do you create users? Where user information is stored?

### Which file stores information about groups?

### How do you change/set the password of a user?

### Which file stores users passwords? Is it visible for everyone?

### Do you know how to create a new user without using adduser/useradd command?

### What information is stored in /etc/passwd? explain each field

### How to add a new user to the system without providing him the ability to log-in into the system?

### How to switch to another user? How to switch to the root user?

### What is the UID the root user? What about a regular user?

### What can you do if you lost/forogt the root password?

### What is /etc/skel?

### How to see a list of who logged-in to the system?

### Explain what each of the following commands does:

* useradd
* usermod
* whoami
* id

# Linux Hardware

### Where can you find information on the processor?

### How can you print information on the BIOS, motherboard, processor and RAM?

### How can you print all the information on connected block devices in your system?

# Linux – Random

### Give 5 commands which are two letters long

### What ways are there for creating a new empty file?

### How cd - works? How does it knows the previous location?

### List three ways to print all the files in the current directory

### How to count the number of lines in a file? What about words?

### You define x=2 in /etc/bashrc and x=6 ~/.bashrc you then login to the system. What would be the value of x?

### What is the difference between man and info?

### Explain “environment variables”. How do you list all environment variables?

### How to create your own environment variables?

### What a double dash (–) mean?

# Linux – AWK

### What the awk command does? Have you used it? What for?

### How to print the 4th column in a file?

### How to print every line that is longer than 79 characters?

### What the lsof command does? Have you used it? What for?

### What is the difference between find and locate?

# System Calls

### Explain the fork() system call

### Explain the exec() system call

### What system call is used for listing files?

### What system call is used for creating a new process?

### What are the differences between exec() and fork()?

### Why do we need the wait system call?

### What execve() does?

### What is the return value of malloc?

### Explain the pipe() system call. What does it used for?

### What happens when you execute ls -l?

### What happens when you execute ls -l \*.log?

### What readdir() system call does?

### What exactly the command alias x=y does?

# Linux Filesystem & Files

### How to create a file of a certain size?

### What does the following block do?:

### open(“/my/file”) = 5

### read(5, “file content”)

### Describe three different ways to remove a file (or its content)

### What is the difference between a process and a thread?

### What is context switch?

### You found there is a server with high CPU load but you didn’t find a process with high CPU. How is that possible?

# Linux Advanced – Networking

### When you run ip a you see there is a device called ‘lo’. What is it and why do we need it?

### What the traceroute command does? How does it works?

### What is network bonding? What types are you familiar with?

### How to link two separate network namespaces so you can ping an interface on one namespace from the second one?

### What are cgroups?

### Explain Process Descriptor and Task Structure

### What are the differences between threads and processes?

### Explain Kernel Threads

### What happens when socket system call is used?

### You executed a script and while still running, it got accidentally removed. Is it possible to restore the script while it’s still running?

# Linux Memory

### What is the difference between MemFree and MemAvailable in /proc/meminfo?

### What is the difference between paging and swapping?

### Explain what is OOM killer

# Distribution

### What is a Linux distribution?

### What Linux distributions are you familiar with?

### What are the components of a Linux distribution?

# Linux Misc

### Wildcards are implemented on user or kernel space?

### If I plug a new device into a Linux machine, where on the system, a new device entry/file will be created?

### Why there are different sections in man? What is the difference between the sections?

### What is User-mode Linux?

### Linux Nerds

### Under which license Linux is distributed?

### Linux Master Application

### A completely free application for testing your knowledge on Linux

1. What is Linux?
2. What are Linux OS Flavors?
3. Difference between Debian & RPM based OS?
4. What is Kernel?
5. Explain the boot process of Linux OS?
6. How is RHEL different from CentOS?
7. What is the Latest version of RHEL?
8. What is Grub?
9. Difference between Grub & Grub2?
10. What is boot loader?
11. Do you think the boot process in RHEL 7 is faster than RHEL 6? If yes, How?
12. What is .rpm & .deb?
13. What is RPM?
14. What is YUM?
15. Different methods to install the rpm based packages?
16. What is Bash?
17. What is SHell?
18. How many types of SHells are there? Explain the daily used basic commands like cp, mv, rm?
19. Explain the process/work behind hitting the google.com? how you access google.com?
20. How many types of permissions are there? What is chmod?
21. What is sticky bit ?
22. What is ACLs?
23. Location where all the user information are stored? passwd
24. File where user password are stored? **/etc/passwd**
25. What is the default permission of a file? 644 umask
26. What is the significance of -rvf?
27. What is PV, VG & LV?

**How to Create LVM Partition in Linux – LVM Tutorial**

Select or Identify the correct disks to be used for LVM.

Create a Physical Volumes(PV) on the disk.

Create the Volume Group(VG) on the Physical Volumes.

Create Logical Volumes(LV) on the Volume Group.

Create a filesystem for the logical volumes.

1. What are the types of file system?

* Disk file systems. Flash file systems. Tape file systems.Database file systems.

Transactional file systems.Network file systems. Shared disk file systems.Special file systems.

1. What is XFS?

FS is **a highly scalable, high-performance file system** which was originally designed at Silicon Graphics, Inc. XFS is the default file system for Red Hat Enterprise Linux 7. Main Features of XFS. XFS supports metadata journaling, which facilitates quicker crash recovery.

1. Can we reduce XFS file system?

**After an XFS file system is created, its size cannot be reduced**. However, it can still be enlarged using the xfs\_growfs command

1. How can we extend LV?

Extend the LV **with the lvextend command**. The lvextend command allows you to extend the size of the Logical Volume from the Volume Group.

1. Command to check RAM usage?
2. Command to check Disk usage?
3. Difference between ps -aux & top command?
4. What are the ways to check CPU usage?
5. How to check CPU details?
6. Explain the steps to create a partition & how to format with file system?
7. Explain the steps to create LV?
8. Explain steps to reduce XFS & EXT files systems?
9. Significance of .bashrc file?
10. How you check the kernel version?
11. How you check the Red hat release version?
12. Significance of resolv.conf file?
13. What is DNS? How you resolve DNS? Types of DNS records?
14. Difference between Nginx & HTTP Server?
15. Port no of HTTP, FTP, SSH, HTTPS?
16. What is SSH? How you generate SSH-keys?
17. What is Private & public key? How they authenticate?
18. Configuration file of SSH?
19. Configuration file of HTTP?
20. What is Virtual Hosting? How you configure virtual hosting?
21. Explain ifconfig command?
22. Difference between IPv4 & IPv6?
23. What is MAC address? can we change the physical address?
24. How to check system uptime?
25. How to check memory information?
26. What is SWAP?
27. What is the exact memory free in your system?
28. What is cache memory?
29. What if you can do rm -rvf /?
30. Kinds of permission in Linux?
31. What is vim & vi?
32. What is pipe |?
33. What is grep command?
34. What Find command does?
35. How to redirect commands output?
36. What is systemd in Linux?
37. What does systemctl do?
38. If you run a command like nautilus in terminal, whether it will block your terminal or not?
39. If yes, whats the solution of this to not to unblock the terminal without closing the command application?
40. What is rsyslog?
41. What is SSH-tunnel?
42. How to set history size?
43. How to extend VG?
44. What are logical & extended partitions?
45. Explain the steps to reset root password at boot time?
46. What are run-levels? How many types of run levels are there?
47. How we change the run level?
48. How to check the logs?
49. Difference between Journalctl & tail command?
50. What does the subscription-manager do?
51. How to archive a file?
52. What is umask?
53. How to kill a process?
54. How to assign IP address manually?
55. How to assign static IP address to a system?
56. Explain the different types of Linux process states?
57. What is a Zombie process?
58. What is KVM?
59. What is hypervisor?
60. Difference between MBR & GPT?
61. How you can mount a file system permanently?
62. What is cron? How to setup a cron job?
63. What is Kickstart?
64. How to create a network bridge in Linux?
65. Difference between iptables & firewalld
66. What is SElinux?
67. What is ISCSI & targetcli?
68. Difference between NFS & SAMBA?
69. What is nfsnobody?
70. What is SSHFS?
71. What is Kerberos?
72. How to secure NFS with Kerberos?
73. What is the difference between telnet & SSH?
74. What is DHCP?
75. What is Kickstart file?
76. What is NTP Server? How to configure NTP?
77. script/command to delete last word from every line in a file  
    2.script/command to find the files with more than 1gb size
78. What is Swap Space?
79. What is the maximum length for a file name in Linux?
80. Which partition stores the system configuration files in Linux system?
81. Which command is used to uncompress gzip files?
82. What is the difference between soft and hard mounting points?
83. What are the file permissions in Linux?
84. more questions are from sed, find and awk .
85. How to check Memory stats and CPU stats as a Linux admin?  
    11.How to reduce or shrink the size of LVM partition?
86. How can you enhance the security of password file?
87. What is the difference between Cron and Anacron?
88. What command is used to check the number of files, disk space and each user’s defined quota?
89. how can you manage memory in linux machines?
    1. What is the name and path of the main system log?
90. how to manage logical volumes?
91. Explain /proc filesystem?
92. What are the fields in the/etc/passwd file?
93. How do you terminate an ongoing process?
94. How can you know the execution time of a command?
95. How can you append one file to another in Linux?
96. How you can run an Linux program in the background simultaneously when you start your Linux Server?
97. How to check previous command is success or not ?
98. Give me a command to create a file with specific size
99. What is the name and the UID of the administrator user?
100. How to list all files, including hidden ones, in a directory?
101. What is the Unix/Linux command to remove a directory and its contents?
102. Which command will show you free/used memory? Does free memory exist on Linux?
103. How to search for the string “my konfu is the best” in files of a directory recursively?
104. How to connect to a remote server or what is SSH?
105. How to get all environment variables and how can you use them?
106. I get “command not found” when I run ifconfig -a. What can be wrong?
107. What happens if I type TAB-TAB?
108. What command will show the available disk space on the Unix/Linux system?
109. What commands do you know that can be used to check DNS records?
110. What Unix/Linux commands will alter a files ownership, files permissions?
111. What does chmod +x FILENAME do?
112. What does the permission 0750 on a file mean?
113. What does the permission 0750 on a directory mean?
114. How to add a new system user without login permissions?
115. How to add/remove a group from a user?
116. What is a bash alias?
117. How do you set the mail address of the root/a user?
118. What does CTRL-c do?
119. What does CTRL-d do?
120. What does CTRL-z do?
121. What is in /etc/services?
122. How to redirect STDOUT and STDERR in bash? (> /dev/null 2>&1)
123. What is the difference between UNIX and Linux.
124. What is the difference between Telnet and SSH?
125. Explain the three load averages and what do they indicate. What command can be used to view the load averages?
126. Can you name a lower-case letter that is not a valid option for GNU ls?
127. What is a Linux kernel module?
128. Walk me through the steps in booting into single user mode to troubleshoot a problem.
129. Walk me through the steps you’d take to troubleshoot a 404 error on a web application you administer.
130. What is ICMP protocol? Why do you need to use?
131. What do the following commands do and how would you use them?
132. tr
133. tac
134. watch
135. tcpdump
136. What does an & after a command do?
137. What does & disown after a command do?
138. What is a packet filter and how does it work?
139. What is Virtual Memory?
140. What is swap and what is it used for?
141. What is an A record, an NS record, a PTR record, a CNAME record, an MX record?
142. Are there any other RRs and what are they used for?
143. What is a Split-Horizon DNS?
144. What is the sticky bit?
145. What does the immutable bit do to a file?
146. What is the difference between hardlinks and symlinks? What happens when you remove the source to a symlink/hardlink?
147. What is an inode and what fields are stored in an inode?
148. How to force/trigger a file system check on next reboot?
149. What is SNMP and what is it used for?
150. What is a runlevel and how to get the current runlevel?
151. What is SSH port forwarding?
152. What is the difference between local and remote port forwarding?
153. What are the steps to add a user to a system without using useradd/adduser?
154. What is MAJOR and MINOR numbers of special files?
155. Describe the mknod command and when you’d use it.
156. Describe a scenario when you get a “filesystem is full” error, but ‘df’ shows there is free space.
157. Describe a scenario when deleting a file, but ‘df’ not showing the space being freed.
158. Describe how ‘ps’ works.
159. What happens to a child process that dies and has no parent process to wait for it and what’s bad about this?
160. Explain briefly each one of the process states.
161. How to know which process listens on a specific port?
162. What is a zombie process and what could be the cause of it?
163. You run a bash script and you want to see its output on your terminal and save it to a file at the same time. How could you do it?
164. Explain what echo “1” > /proc/sys/net/ipv4/ip\_forward does.
165. Describe briefly the steps you need to take in order to create and install a valid certificate for the site [https://foo.example.com](https://foo.example.com/).
166. Can you have several HTTPS virtual hosts sharing the same IP?
167. What is a wildcard certificate?
168. Which Linux file types do you know?
169. What is the difference between a process and a thread? And parent and child processes after a fork system call?
170. What is the difference between exec and fork?
171. What is “nohup” used for?
172. What is the difference between these two commands?
173. myvar=hello
174. export myvar=hello
175. How many NTP servers would you configure in your local ntp.conf?
176. What does the column ‘reach’ mean in ntpq -p output?
177. You need to upgrade kernel at 100-1000 servers, how you would do this?
178. How can you get Host, Channel, ID, LUN of SCSI disk?
179. How can you limit process memory usage?
180. What is bash quick substitution/caret replace(^x^y)?
181. Do you know of any alternative shells? If so, have you used any?
182. How can you tell if the httpd package was already installed?
183. How can you list the contents of a package?
184. Can you explain to me the difference between block based, and object based storage?

|  |  |
| --- | --- |
| **OBJECT STORAGE** | **BLOCK STORAGE** |
| **PERFORMANCE** | Performs best for big content and high stream throughput | Strong performance with database and transactional data |
| **GEOGRAPHY** | Data can be stored across multiple regions | The greater the distance between storage and application, the higher the latency |
| **SCALABILITY** | Can scale infinitely to petabytes and beyond | Addressing requirements limit scalability |
| **ANALYTICS** | Customizable metadata allows data to be easily organized and retrieved | No metadata |

**It is common for source packages to be downloaded to which directory? /usr/src**

**Using lsof which character is used to filter by host @ (Ans)**

**Uptime shows the load averages of what time periods? 1,5 and 15 minutes (Ans)**

**Which option used with sar will allow you to read from a certain file? -f (Ans)**

**How can we list sockets with netstat -x**

**Which tape device represent a rewindable model? /dev/st**

**How can we use lsof to display open ports? sudo lsof -i**

**Who should the group owner of the wall program be? tty**

**Which option used with sysctl reads and loads the configuration file? -p**

**To expand a tar archive in Linux which option is used ? -x**

**By default which database is used when installing Bacula on Ubuntu?**PostgreSQL

* 1. Kernel: is a computer program which has the control over a system
  2. Name space: is a program which contains the information about MNT, PID, NET,USER
  3. Cgroups: Allocates CPU+RAM to PID
  4. Capability: Assign permission to who use
  5. Docker: H/W ,S/W, Kernel, OS, Name spaces, CGroups and capability. Is an application

containing all resources in it.

* 1. Docker Architecture:

Human --> Docker client --> Docker Server(dockerd) ----> ContainerD --> Kernal

DOCKER INSTALLATION:

Step 1 – Download and Run the script. $ curl -fsSL get.docker.com -o get-docker.sh

$ sudo sh get-docker.sh

Step 2 – Enable Docker

$ sudo systemctl enable docker

Step 3 – Start Docker

$ sudo systemctl start docker

Step 4 – which docker

VM IAMAGE : bootfs+rootfs+usefs+apps

Docker image: rootfs+usefs+apps

Create a docker –

download docker image :docker pull httpd

create container : (docker create httpd)

view container :docker ps -a

view docker :docker images

start container : docker start continer id (stop,pause,killi,un pause, rm)

Interact with container : Docker exec conter id/name ls

docker exec -it c2178aa745e2 /bin/bash

Attach to PID of container :docker attach contener id

Container IP address : Docker inspect containerid

acccess a container from outside : DOCKER RUN HTTPD

systemctl start firewalld

systemctl stop firewalld

create imager-> enter into container->

“create new image from existing container : docker commit m-"up-up-git-apache-java" -a "Rajesh Kumar" a101f0b9d858 up-up-git-apache-java

**AWS**

**1**. Compute

EC2 instance:

MAVEN

* 1. Set environmental variable
  2. Mvn –version mvn –help