ITBrain Interview Questions.

**Linux Interview Questions: Installation**

 **What is kickstart installation?**

**Ans-** The Red Hat **Kickstart installation** method is used primarily (but not exclusively) by the Red Hat Enterprise Linux operating system to automatically perform unattended operating system **installation** and configuration. Red Hat publishes Cobbler as a tool to automate the **Kickstart** configuration process.

 **What is daemon of kickstart ?**

Ans-

 **Where can you find the sample kickstart file on the server ?**

Ans- /root

 **What is PXE boot, let us know the steps.**

**Ans- used for network boot**

 **What are the minumm partitions required to install Linux?**

Ans- /,swap and /root

 **How to verify the validity of kickstart file?**

 **What is major and minor nos**

**Ans-To represent the character and block devices, cat /proc/devices file**

### Linux Interview Questions: Kernel and Modules

* **How to check the machine’s architecture ?**
* **Ans- uname -m**
* **How to check the current kernel version running ?**
* **Ans- uname -v**
* **How to see whether a module is loaded or no ?**
* **Ans- lsmod command**
* **How to load/unload a module ?**
* **Ans- from modpeobe command can load and modprobe –r can remove**
* **Where are kernel modules stored ?**
* **Ans-** Sometimes, **modules** are referred to as Loadable**Kernel Modules** (LKMs) because they can be loaded without changing the **kernel**. **Modules** are **stored**under /lib/**modules**/ this directory has a directory for each **installed kernel**. The **module** files themselves end in ".ko" which stands for "**Kernel**Object".
* lib/modules/
* **How to find information about a module ?**
* **Ans- from modinfo command eg.modinfo nfs**
* **How to upgrade your kernel ?**
* **Ans- yum update all**
* **How to set kernel parameters?**
* **Ans-** Temporarily Add a **Kernel** Boot **Parameter** for Testing. Restart your system, or shut it down and then power it on again. Press and hold down the SHIFT key immediately and keep it held down while the system starts to boot, in order to force the "GNU GRUB" menu to appear

### Linux Interview Questions: FTP & Logs

* **How to create ftp users ?**
* **Ans-**
* **On which port ftp works, configuration file, service name ?**
* **Ans- tcp port 21,** **/etc/vsftpd/vsftpd.conf,vsftpd**
* **How to enable or disable a ftp user ?**
* **Ans-** # echo username >> /etc/vsftpd/ftpusers or # echo username >> /etc/ftpuser
* **What is difference between sftp and vsftp ?**
* **Ans-** well they are totally different protocols. sftp emulates the ftp synatx, but it's not actually ftp at all, just running through ssh instead. you can ftp (with or without ssl) to a vsftpd server, but you can't ftp to an sftp server, you only sftp / scp to it, so your client needs very different capabilities.
* **Where are system logs stored ?**
* **Ans-** Most log files are located in the /var/log/
* **Where are sudo and su logs stored ?**
* **Where does mail server related logs stored ?**
* **Where are the logs stored for system start up ?**
* **Ans- cat /var/log/boot.log**
* **What is dmesg command ?**
* **What is the configuration file to configure log paths**
* **Which service needs to be running to configure logging**
* **How to set up remote logging ?**
* **How log rotation works ?**
* **How to monitor the log files ?**

### Linux Interview Questions: SSH

* **On which port ssh works?**
* **Ans-** port 22 TCP/IP.
* **Which package needs to be installed for ssh ?**

**Ans** Two RPM are required to configure and run OpenSSH server.

* openssh-server
* openssh
* **What is configuration file for ssh ?**
* **Ans- /etc/ssh/sshd\_config**
* **How will you Allow/Deny a user to ssh in your server ?**
* The syntax is:  
  **DenyUsers user1 user2 user3**
* The syntax is:  
  **AllowUsers user1 user2 add in /etc/ssh/sshd\_config.**
* **What is difference between ssh and telnet ?**
* **How to make ssh work on a different port ?**
* **How to connect ssh server on the new port ?**
* **How to make password less authentication ?**
* **What is ssh known\_hosts file ?**
* **Ans- /root/.ssh/known\_hosts**
* **What is SFTP, on which port it works ?**
* **Ans- SFTP** - another, completely different file transfer protocol that has nothing to do with FTP. **SFTP** runs over an SSH session, usually on TCP **port** 22.
* **How to restrict a user/host for ssh on the server ?**
* Ans- Restricting which users can log in
* The syntax is:  
   **DenyUsers user1 user2 user3**
* **DenyGroups group1 group2**
* Allowing selected users or group explicitly to log in
* The syntax is:  
   **AllowUsers user1 user2**
* **what is ssh-add command ?**
* **Ans- ssh-add command used to add private keys in authorized**
* **what is sshpass command ?**

**Ans- sshpass** is a utility designed for running **ssh** using the mode referred to as "keyboard-interactive" password authentication, but in non-interactive mode.ssh uses direct TTY access to make sure that the password is indeed issued by an interactive keyboard user.

### Interview Questions: NFS and Samba

* **What is hard and soft mounting?**

**Ans :- In Soft mount system try to mount 2-3 times, but in Hard mount system try to mount infinitely on system start.**

* **What are daemons for NFS ?**
* **Ans-**

| **Daemon** | **Description** |
| --- | --- |
| Nfsd | The NFS daemon which services requests from NFS clients. |
| mountd | The NFS mount daemon which carries out requests received from nfsd. |
| rpcbind | This daemon allows NFS clients to discover which port the NFS server is using. |

* **What is No Stale error in NFS ?**

**Ans :- when the shared directory is removed then on client side, when run df –h command then nfs mounted directory gives No Stale error.**

* **How to see which version of NFS is presently running ?**
* **Ans-** rpm -qa|grep -i nfs
* **What is impact of version mismatch ?**
* **What is no\_root\_squash ?**
* **Ans- no root squash**
* **What is difference between nfs V3 and V4 ?**

**Ans :- V2 can’t work on static port, there is a service called portmapper which dynamically generates port number for nfs v2.**

**V3 can work on static port.**

**V4 can work on static port and portmapper service removed permanently.**

* **How to change nfs port in v3 ?**
* **Why Samba is required?**
* **Ans- For data transfer between windows and linux**
* **What are Samba ports ?**
* **Ans- Samba** runs on TCP **ports** 139 and 445 and UDP **ports** 137 and 138.
* **What is CIFS ?**
* **Ans :- CIFS is Common Internet File System.**

### Interview Questions: File Permissions

* **What is meaning for rwx permissions for a directory.**
* **Ans- 0777**
* **What are special permissions?**
* **Ans- suid,guid,sticky bit.**
* **What are the permissions on** **/etc/passwd, /etc/shadow and /etc/group**
* **Ans-Permissions on /etc/passwd is,-rw-r--r--& on /etc/shadowis,---------- & on /etc/group is, -rw-r--r--**
* **What are ACLs and how to apply them ?**
* **Ans- Acl- A**ccess **C**ontrol **L**ist (ACL) provides an additional, more flexible permission mechanism for file systems. It is designed to assist with UNIX file permissions. ACL allows you to give permissions for any user or group to any disc resource.

**How to apply ACL-** # setfacl -m "u:*user:permissions*" <file/dir>

* **How to set inherited ACLs ?**

**Ans-** # setfacl -dm "*entry*" <dir>

* **How to change the file permissions ?**
* **Ans-** chmod 755 filename
* **What is umask value? How to see it, change it ?**
* **Ans-** umask is a command that determines the settings of a mask that controls which file permissions are set for [files](javascript:void(0);) and directories when they are created.by #umask command you can see it and You can change your default umask value by maing changes to the below files  
  # vi /etc/profile
* **How to set file attributes ?**

Ans- Chattr is a command used to set / unset file attributes in Linux. Using chattr it is possible to make a file immutable. That is, even a root user will be prohibited from deleting the file.  
  
The trick lies in setting the appropriate attribute for the file.

chattr command is similar to the attrib command in DOS but much more powerful and flexible.

To prevent anyone - even a root user - from deleting a file, you set the immutable bit of the file using the chattr command as follows - 

# chattr +i filename

The immutable bit option +i can only be set by the root user. So either you should have root priviledges or you need to use sudo to execute the command.

Once the +i bit is set, even root user won't be able to delete or tamper with the file.  
  
To unset the immutable flag -

# chattr -i filename

Every file in Linux have a number of attributes associated with it. The immutable bit attribute being just one of them. To see what all attributes are set for a particular file, you run the lsattr command as follows.

# lsattr filename

----i-------- filename

If the immutable flag is set, there will be an i in the listing. 

The chattr command is used by system administrators to restrict the users from changing a file in a particular way or even the administrator can by mistake delete a critical file because of a mis-typed command. But if the immutable flag is set, these mistakes can be avoided.

chattr can be used to set/unset many more file attributes.   
  
For example, if you want to allow everybody to just append data to a file and not change already entered data, you can set the append bit as follows:

# chattr +a filename

Now the filename can only be opened in append mode for writing data. You can unset the append attribute as follows:

# chattr -a filename

### Interview Questions: User Management

* **How to add a user to a group**
* **How to lock/unlock a user**
* **All fields of /etc/passwd and /etc/shadow**
* **What is meaning of setting group password**
* **How to check password status of a user**
* **How to set passwod policy of a user**
* **What is /etc/skel and login.defs file**
* **What is the flow of user login**
* **What will be the ownership of files owned by a deleted user**
* **How to change user’s home direcroty, login shell, uid , gid etc.**
* **How to set ACLs so that the directory’s created in a ACL applied directory get inherited ACLs set.**
* **Explain /etc/default/useradd**
* **How to assign a duplicate uid to a user ?**
* **How to recover a corruted/damaged password file ?**
* **pwconv and pwunconv command**
* **how will you differentiate a primary and secondary group?**
* **How to add more than one secondary group to user ?**
* **finger command**
* **How to force a user to change its password on first login attempt.**
* **Can you edit /etc/passwd, /etc/shadow and /etc/group files ?**
* **What is configuration file for sudo and how to write in it ?**
* **How to assign sudo access to a user ?**
* **What is the meaning for three ALLs in assigning sudo access ?**
* **How to assign the sudo access so that the self password is not asked while running the command ?**
* **What is User, Host and Command aliases in sudo?**
* **How to give access to entire system group ?**
* **How to neglect a specific user/host/command from the alias or group ?**
* **which one take precedence login.defs or pam ?**
* **How to authenticate your Linux system with openldap server ?**
* **How to authenticate your linux system with AD server ?**

### Interview Questions: Package Management

* **Difference between yum and rpm**
* **Up2date command**
* **What is satellite server**
* **Ans- It works for software,config channel**
* **How to update kernel**
* **Difference between rpm –U and rpm –F**
* **Ans- rpm –U install without check packages and –F will check first**
* **How to check which packages provides the specific file or feature ?**
* **Ans- yum what provides file name**
* **How to use yum for packages residing locally on the machine**
* **Ans- yum localinstall packages name**
* **How to register your server with rhn/satellite**
* **Explain the configuration file of yum repository?**
* **Ans- [title]**
* **Name=**
* **Baseurl=**
* **Gpgcheck=0**
* **Enabled=1**
* **How many repositories are available on your server ?**
* **Ans- Yum repolist**
* **Where is rpm database stored ?**
* **Ans- /var/lib/rpm**
* **How to check architecture of rpm package ?**
* **Ans- x86,64.rpm-32 bit, i368,i686-32 bit**
* **Without installing the package, how to check what files, it will install ?**
* **Ans- rpm –ql rpm name, rpm –qf filename will tell from which package it came**
* **Rpm –qpl packagename to check which files will come before install packages**
* **How to upgrade version from RHEL 5.2 to 5.8**
* **Ans- yum update**
* **Yum check update to check the updated packages**
* **Redhat support upgrade on minor version only,we can upgrade from 6.\* to 6.\* only,not from 6.\* to 7 version**
* **Can you edit /etc/redhat-release ?**
* **How to check os version?**
* **Ans cat /etc/issue, cat /etc/redhat-release,**
* **Lsb – release**
* **Rpm –qf /etc/redhat-release**
* **How many packages are currently installed in the system ?**
* **What do you understand with gpg check in repo file.**
* **How to see which installed packages on your system needs updates ?**
* **How to update all the packages and dependencies in system ?**
* **How to list all the available repositories ?**
* **Ans- Yum list**
* **How to rebuild the corrupted rpm database ?**
* **How to find the entire information of an installed package ?**
* **How to check the installation date of packages ?**
* **Ans- rpm –qa -last**
* **What is yumdb command ?**

### Interview Questions: Generic

* **What is the difference between tar, cpio and zip ?**
* **On which port ssh, telnet, ftp, dhcp, dns , http, https, smtp , IMAP, LDAP works?**
* **What is tcp wrapper**
* **How to install a kernel ?**
* **Your password files has been deleted/corrupted. How will you restore ?**
* **While unmounting there is a error, filesystem busy. What are the remediation steps ?**
* **How to create tar archive, how to see the archived contents and how to extract ?**
* **How to recover root password**
* **How to check kernel and os version running**
* **What is your default shell and how to change it ?**
* **How to check serial no. of server ?**
* **What are file attributes ? How to list and how to change ?**
* **What are backup types? Difference between incremental and differential backups ?**
* **How to change the time zone ?**
* **How to remount the / filesystem in writable mode.**
* **How to extend the filesystem when lun is extended by storage team ?**
* **What is sosreport and cfg2html**
* **When the /etc/passwd file replicates to passwd-**
* **What are global variables**

### Interview Questions: Process and Services Management

* + **How to start/stop a service ?**
  + **How to apply the changes without restarting a service?**
  + **What are transient and standalone services?**
  + **How to check all the running services in a runlevel?**
  + **How to check all the running process in a server?**
  + **What is a zombie process and how to tackle it ?**
  + **How to restart a hung process ?**
  + **What are various kill signals ?**
  + **What are xinetd services? How to enable telnet service on linux server ?**
  + **How to change kernel parameters in linux ?**
  + **What is /etc/security/limits.conf file ?**
  + **How to check resource limits ?**
  + **How to run a process in background ?**
  + **What is Ctrl+C, Ctrl+D and Ctrl +Z signals in Linux ?**
  + **How to see all the logged in users on server ?**
  + **How to enable the service to be reboot persistent ?**
  + **what all information you can see with top command ?**
  + **What is nice value, how to change it ?**
  + **What is priority of a process and how to change it ?**
  + **What is syntax of cron scheduling?**
  + **What is anacron?**
  + **How to schedule cron in seconds ?**
  + **what is at command ?**

### Interview Questions: Linux Network Configuration

* **What is the network configuration file ?**
* **How to check the status of network interfaces ?**
* **How to set the default gateway ?**
* **How to create the reboot persistent routes ?**
* **What is bonding and how to create it ?**
* **How to check the status of bond0 ?**
* **How to change the parameters of ethernets ?**
* **How to monitor the network performance?**
* **What are various bonding modes ?**
* **What is virtual ip and how to set it ?**
* **What are various IP address classes ?**
* **How to find the installed NIC in a server?**
* **What is a network socket ?**
* **What is /etc/nsswitch.conf file ?**
* **What is /etc/resolv.conf file ?**
* **How to remove network card out of bond ?**
* **On which port DNS and DHCP works ? Ans. 53 & 68**
* **What is scan ports on a remote machine ?**
* **What is tcpdump command ?**
* **What is nslookup and traceroute command used for ?**
* **How to find the Ethernet card’s driver and firmware versions ?**

### Interview Questions: SAN & Multipathing

* **How to find the WWWN no. ?**

**Ans- cat /sys/class/fc\_host/host1/port\_name**

**Systool –c fc\_host -v**

* **What is meaning of WWNN and WWPN nos ?**

**Ans- world wide node name and world wide port name**

* **How to scan for new Luns ?**

**Ans-** echo "- - -" > /sys/class/scsi\_host/host2/scan

**echo "- - -" > /sys/class/scsi\_host/host2/scan**

The three values stand for channel, SCSI target ID, and LUN. The dashes act as wildcards meaning "rescan everything"

grep mpt /sys/class/scsi\_host/host?/proc\_name to find host

**to rescan echo 1 > /sys/class/scsi\_device/2:0:00/device/rescan**

* **What are three dashes with echo ?**

**Ans- It will scan host,bus and target**

* **What is host0 in /sys/class/scsi\_host**
* **Ans-**
* **How to find how many hba cards you have in the system ?**
* **Ans- lspci | grep –i fibre**
* **Which hba cards you have in your environment ?**
* **Ans- qlogic and emulex**
* **What modules are used for hba cards?**
* **Lsmod | grep qla and lpfc**
* **What is multipathing ?**
* **How to see detailed output of multipath ?**
* **Multipath –ll**
* **mpatha ----**
* **sdb**
* **sdc**
* **How to find whether a disk is local or SAN disk ?**
* **scsi\_info /dev/sda**
* **lsscsi**
* **cat /proc/partition**
* **cat /proc/scsi/scsi**
* **What is difference between SAN and NAS ?**
* **SAN- block level access and file level**
* **NAS- get file level access mount –t nfs ip**
* **What is iscsi and fcoe ?**
* **Internet on scsi and fibre channel on ethernet**

### Interview Questions: RAID Management

* **What is RAID and its most common forms ?**
* **Which one is better – hardware or software raid ?**
* **What is raid 0, 1, 5, 10 and 01 ?**
* **How will you see status of your hardware raid ?**
* **How to configure software raid**
* **How to see status of software raid ?**
* **How will you configure hardware raid ?**
* **How to see specifications of hard disks ?**

### Interview Questions: LVM and Filesystem Basics

* **What is hard link and symbolic link ?**
* **How to identify a link file ?**
* **How to remove a link file ?**
* **what are link counters ?**
* **What are inodes ?**
* **What is journalling ?**
* **What are the differences between ext2, ext3 ,ext4 and xfs ?**
* **What are the steps to create a new filesystem.**
* **Why do I need LVM ?**
* **What is difference between LVM1 and LVM2 ?**
* **How to create a new filesystem using LVM ?**
* **What is PE and LE ?**
* **What is default size of PE and how can you customize it ?**
* **How to save and restore the volume group configuration?**
* **How to activate – deactivate a volume?**
* **How to extend/shrink a LV ?**
* **What is LVM snapshot and its benefits?**
* **What are all mounting options in defaults?**
* **How to restore a corrupted/deleted /etc/fstab file ?**
* **How to specify the pv size while creating a volume group ?**
* **What is LVM mirroring, how to set it ?**
* **How to change the maximum no. of LVs in a volume group ?**
* **How to move a volume group from one system to another ?**
* **How to rename a vg and lv ?**

### Interview Questions : Linux Boot Process

**Boot Process**

* + **What is the boot process ?**
  + **Differentiate various run levels ?**
  + **What is Single User and Rescue mode ?**
  + **What are rc scripts ? How a run level switch happens ?**
  + **What is boot configuration file ?**
  + **How to restore corrupted GRUB?**
  + **What is PXE boot ?**
  + **How to put a boot password?**
  + **What is Single User Mode, Rescue Mode and Emergency Mode?**
  + **How to recreate mkinitrd ?**
  + **Your system is in maintenance mode (asking root password or Ctrl+D), how will you troubleshoot ?**
  + **Someone has made runlevel 6 in the /etc/inittab file. How will you correct the issue ?**
  + **Your system is in read only mode, how will you repair ?**
  + **What is sysV, systemd and upstart boot processes ?**
  + **How to clean inodes ?**
  + **How to take backup of MBR and how to restore it ?What is GPT ?**

### Interview Questions: Linux System Monitoring

1. **Monitoring**

* **How to see all the mounted filesystems?**
* **How to see current memory, cpu and swap utilization?**
* **How to reduce the memory, cpu and swap utilization?**
* **What are the various monitoring commands?**
* **How SAR works?**
* **How to see no. of CPUs installed in the system?**
* **What is a bearable load average ?**
* **How to see current runlevel?**
* **What is inode and superblock**
* **How to see inode utilization and how can they be increased ?**
* **The df –h and du –sh have different space utilization. Why ?**
* **What is proc filesystem ?**

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