**http://venkataraoss.blogspot.in/2011/02/unixlinux-system-admin-interview\_7110.html**

**Q: - Tell me the steps to remove the swap file?**  
  
Firstly disable the swap file by “swapoff” command.  
Remove Swap file entry from /etc/fstab file.  
Now remove the swap file by “rm” command.  
  
  
**Q: - What can we do with “parted” command or utility?**  
  
- View the existing partition table  
- Add partitions from free space or additional hard drives  
- Change the size of existing partitions

**Q: - How we will check free space on drive /dev/sda with parted command?**  
  
#parted /dev/sda

print

**Q: - Can we resize the size of a partition?**  
  
Yes, we can resize the size of partition by “parted” command.  
**#parted /dev/sda**

**print**

To resize the partition, use the resize command followed by the minor number for the partition, the starting place in megabytes, and the end place in megabytes. For example:

resize 3 1024 2048

After resizing the partition, use the print command to confirm that the partition has been resized correctly, is the correct partition type, and is the correct file system type.

**Q: - What is LVM?**  
  
LVM stands for Logical Volume Manager. LVM, is a storage management solution that allows administrators to divide hard drive space into physical volumes (PV), which can then be combined into logical volume groups (VG), which are then divided into logical volumes (LV) on which the filesystem and mount point are created.

**Q: - What are the steps to create LVM?**  
  
- Create physical volumes by “pvcreate” command

#pvcreate /dev/sda2  
- Add physical volume to volume group by “vgcreate” command

#vgcreate VLG0 /dev/sda2  
- Create logical volume from volume group by “lvcreate” command.

#lvcreate -L 1G -n LVM1 VLG0  
Now create file system on /dev/sda2 partition by “mke2fs” command.

#mke2fs -j /dev/VLG0/LVM1

**Q: - What is the difference between LVM and RAID?**  
  
RAID provides redundancy but LVM doesn’t provide Redundancy.

**Q: - What are LVM1 and LVM2?**  
  
LVM1 and LVM2 are the versions of LVM.  
LVM2 uses device mapper driver contained in 2.6 kernel version.  
LVM 1 was included in the 2.4 series kernels.

**Q: - What is Volume group (VG)?**  
  
The Volume Group is the highest level abstraction used within the LVM. It gathers together a collection of Logical Volumes and Physical Volumes into one administrative unit.

**Q: - What is physical extent (PE)?**  
  
Each physical volume is divided chunks of data, known as physical extents; these extents have the same size as the logical extents for the volume group.

**Q: - What is logical extent (LE)?**  
  
Each logical volume is split into chunks of data, known as logical extents. The extent size is the same for all logical volumes in the volume group.

**Q: - Explain LVM snapshot?**  
  
LVM snapshots allow the administrator to create a new block device which presents an exact copy of a logical volume, frozen at some point in time.

****Q: - Can we resize the size of a partition?****

Yes, we can resize the size of partition by “parted” command.  
**#parted /dev/sda**

**print**

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Q: - ****Explain LVM snapshot?****

LVM snapshots allow the administrator to create a new block device which presents an exact copy of a logical volume, frozen at some point in time.

****Q: - How you will check on Your server or system device-mapper is installed or not?****

Check the following file.  
#cat /proc/misc

if this file contains "device-mapper" term it means device mapper is installed on your system.

Q: - ****How are snapshots in LVM2 different from LVM1?****

In LVM2 snapshots are read/write by default, whereas in LVM1, snapshots were read only

Q: - ****What is the maximum size of a single LV?****

For 2.4 based kernels, the maximum LV size is 2TB.   
For 32-bit CPUs on 2.6 kernels, the maximum LV size is 16TB.  
For 64-bit CPUs on 2.6 kernels, the maximum LV size is 8EB.

****Q: - If a volume group named as VG0 already exists but i need to extend this volume group up to 4GB.Explain all steps?****

Firstly create Physical volume (/dev/sda7) of size 4GB.  
Now run following command.  
vgextend VG0 /dev/sda7

Q: - ****If a volume group VG0 have 3 PV's (/dev/sda6, /dev/sda7, /dev/sda8) but i want to remove /dev/sda7 pv from this VG0?****

vgreduce VG0 /dev/sda7

Q: - ****Which command is used to extend a logical volume?****

lvextend --size +<addsize> /dev/<vgname>/<lvname>  
resize2fs /dev/<vgname>/<lvname>

****Q: - Tell me all steps to remove a LVM?****

To remove a logical volume from a volume group, first unmount it with the umount command:  
umount /dev/<vgname>/<lvname>  
and then use the lvremove command:  
lvremove /dev/<vgname>/<lvname>

Q: - ****Which command is used to create LVM Snapshot?****

vcreate --size <size> -s -n <snapshotname> <lvname>

The lvcreate command is used to create a new logical volume, meaning there must be  
free physical extents in the logical volume group to create a snapshot. The -s option  
means that the LV is a snapshot, <snapshotname> is the name of the new LV created, and  
<lvname> is the name of the LV from which to create the snapshot.

Q: - ****Is there any relation between modprobe.conf file and network devices?****

Yes, This file assigns a kernel module to each network device.

For Example :-   
[root@localhost ~]# cat /etc/modprobe.conf  
alias eth0 b44  
Here b44 is the kernel module for network device eth0.  
We can Confirm by following command (This module “b44” is present or not).  
[root@localhost ~]# lsmod |grep b44   
b44 29005 0

**Unix/Linux System Admin Interview Questions And Answers 9**

**Q: - What is the difference between LILO and GRUB ?**  
1) LILO has no interactive command interface, whereas GRUB does.  
2) LILO does not support booting from a network, whereas GRUB does.  
3) LILO stores information regarding the location of the operating systems it can to load physically on the MBR.

If you change your LILO config file, you have to rewrite the LILO stage one boot loader to the MBR. Compared with GRUB, this is a much more risky option since a misconfigured MBR could leave the system unbootable. With GRUB, if the configuration file is configured incorrectly, it will simply default to the GRUB command-line interface.

**Q: - What is LVM Snapshot ?**  
An LVM snapshot is an exact copy of an LVM partition that has all the data from the LVM volume from the time the snapshot was created. The big advantage of LVM snapshots is that they can be used to greatly reduce the amount of time that your services/databases are down during backups because a snapshot is usually created in fractions of a second. After the snapshot has been created, you can back up the snapshot while your services and databases are in normal operation.

**Q: - How to verify the signature of an rpm ?**

rpm -K test-1.0-1.i386.rpm

**Q: - What is the meaning of Hard & soft mount option in NFS server ?**

**Hard mount**  
- If the NFS file system is hard mounted, the NFS daemons will try repeatedly to contact the server. The NFS daemon retries will not time out, will affect system performance, and you cannot interrupt them

**Soft mount**   
**-** If the NFS file system is soft mounted, NFS will try repeatedly to contact the server until either:

* A connection is established
* The NFS retry threshold is met
* The nfstimeout value is reached

**Q: - What is an inode ?**  
An inode is a data structure on a traditional Unix-style file system such as UFS. An inode stores basic information about a regular file, directory, or other file system object.

When a file system is created, data structures that contain information about files are created. Each file has an inode and is identified by an inode number (often "i-number" or even shorter, "ino") in the file system where it resides. Inodes store information on files such as user and group ownership, access mode (read, write, execute permissions)

and type of file. There is a fixed number of inodes, which indicates the maximum number of files each filesystem can hold.

**Q: - What is the role of udev daemon in Unix ?**  
**udev** is the device manager for the Linux 2.6 kernel series. Primarily, it manages device nodes in /dev. It is the successor of devfs and hotplug, which means that it handles the /dev directory and all user space actions when adding/removing devices, including firmware load.

**Q: - What is the difference between ext2 and ext3 file systems?**

The ext3 file system is an enhanced version of the ext2 file system.The most important difference between Ext2 and Ext3 is that Ext3 supports journaling.  
After an unexpected power failure or system crash (**also called an unclean system shutdown**), each mounted ext2 file system on the machine must be checked for consistency by the e2fsck program. This is a time-consuming process and during this time, any data on the volumes is unreachable. The journaling provided by the ext3 file system means that this sort of file system check is no longer necessary after an unclean system shutdown. The only time a consistency check occurs using ext3 is in certain rare hardware failure cases, such as hard drive failures. The time to recover an ext3 file system after an unclean system shutdown does not depend on the size of the file system or the number of files; rather, it depends on the size of the *journal* used to maintain consistency. The default journal size takes about a second to recover, depending on the speed of the hardware.

**Q: - How are devices represented in UNIX?**  
  
  
All devices are represented by files called special files that are located in /dev directory.

**Q: - What is 'inode'?**  
  
  
All UNIX files have its description stored in a structure called 'inode'. The inode contains info about the file-size, its location, time of last access, time of last modification, permission and so on. Directories are also represented as files and have an associated inode

**Q: - What are the process states in Unix?**  
  
  
As a process executes it changes state according to its circumstances. Unix processes have the following states:

Running : The process is either running or it is ready to run .  
Waiting : The process is waiting for an event or for a resource.  
Stopped : The process has been stopped, usually by receiving a signal.  
Zombie : The process is dead but have not been removed from the process table.

**Q: - What is Super Block in Linux/Unix ?**

Each file system is different and they have type like ext2, ext3 etc.Further eachfile system has size like 5 GB, 10 GB and status such as mount status. In short each file system has a superblock, which contains informationabout file system such as:

**File system type**

* **Size**
* **Status**
* **Information about other metadata structure**s

If this information lost, you are in trouble (data loss) so Linux maintains multiple redundant copies of thesuperblock in every file system. This is very important in many emergency situation, for example you can usebackup copies to restore damaged primary super block.

Following command displays primary and backup superblock location on**/dev/sda3:**

**# dumpe2fs /dev/hda3 | grep -i superblock**

**Q: - What is the load average of the server and What is an acceptable Server Load Average ?**

The load average is the sum of the run queue length and the number of jobs currently running on the CPUs. The three load-average values in the first line of top output are the 1-minute, 5-minute and 15-minute average. (These values also are displayed by other commands, such as uptime, not only top.)

There are a few factors involved to determine the server average load. If your server (s) use dual processors, the acceptable Server Load Average is 2.00. This load is considered "optimal".

**What command can you use to review boot messages?**

The **dmesg** command can be used to display the system messages during boot time.

**What are the fields in the /etc/passwd file. Explain them?**

There are 7 fields in /etc/passwd:

**username:x:UID:GID:comment:home directory:shell**  
  
1)Username.  
2)Password. Dummy value x denotes that its using shadow passwords

3)UID.

4)Primary group ID.  
5)Comment /description.  
6)Home directory path.  
7)Shell assigned to the user.

**Whats the journaling data contains in ext3?**

A journaled file system records information in a log area on a disk. It logs the "metadata" i.e ownership, date stamp information etc..Once the log is updated the system then writes the actual data to the appropriate areas of the filesystem and marks an entry in the log to say the data is committed.  
  
After a crash the filesystem can very quickly be brought back on-line using the journal logs

using fsck there is considerably less chance of data loss or corruption.

**How do u extend the LV in Linux?**

First check whether is there free space available in the VG where the LV resides.

# vgdisplay or

# vgs

Now, extend the LV using below command: "L" option to specify the size to be increased.

# lvextend -L +5G /dev/vg00/lv01

Finally, extend the File system space:

# resize2fs /dev/vg00/lv01