**1} 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.  
**2} 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 processes are dead but have not been removed from the process table.  
**3} what command should you use to check the number of files and disk space used and each user’s defined quotas?**

repquota

**4} what command is used to remove the password assigned to a group?**

gpasswd –r  
**5} what can you type at a command line to determine which shell you are using?**

echo $SHELL  
**6} write a command to find all of the files which have been accessed within the last 30 days.**

find / -type f -atime -30 > filename.txt  
**7} what is a zombie?**

Zombie is a process state when the child dies before the parent process. In this case the structural information of the process is still in the process table.  
**7} what daemon is responsible for tracking events on your system?**

syslogd  
**8} what do you mean a File System?**

File System is a method to store and organize files and directories on disk. A file system can have 2 different formats called file system types. These formats determine how the information is stored as files and directories.  
9} tell me the name of directory structure hierarchy for Linux

/root /boot /bin /sbin /proc /mnt /usr /var /lib /etc /dev /opt /srv /tmp /media  
**10} what does /boot directory contains?**

The /boot/ directory contains static files required to boot the system, such as the Linux kernel, boot loader configuration files. These files are essential for the system to boot properly.  
**11} if someone deletes /boot directory from your server, than what will happen?**

In that case your server will be in unbootable state. Your Server can’t boot without /boot directory because this directory contains all bootable files  
**12} what does /dev directory contain?**

The /dev directory contains all device files that are attached to system or virtual device files that are provided by the kernel.  
**13} what is the role of udev daemon?**

The udev demon used to create and remove all these device nodes or files in /dev/ directory.  
**14} what kind of files or nodes /dev/ directory contains and how do I access or see device files?**

Block Device Files:-  
Block device files talks to devices block by block [1 block at a time (1 block = 512 bytes to 32KB)]. Examples: – USB disk, CDROM, Hard Disk # ls /dev/sd\*  
brw-rw—- 1 root root 8,0 Mar 15 2009 sda  
brw-rw—- 1 root root 8,1 Mar 15 2009 sda1  
brw-rw—- 1 root root 8,2 Mar 15 2009 sda2  
brw-rw—- 1 root root 8, 3 Mar 15 2009 sda3  
brw-rw—- 1 root root 8, 4 Mar 15 2009 sda4  
brw-rw—- 1 root root 8, 16 Mar 15 2009 sdb  
Character Device Files:-  
Character device files talk to devices character by character. Examples: – Virtual terminals, terminals, serial modems, random numbers #ls /dev/tty\*  
crw-rw—- 1 root root 4, 64 Mar 15 2009 ttyS0  
crw-rw—- 1 root root 4,65 Mar 15 2009 ttyS1  
crw-rw—- 1 root root 4,66 Mar 15 2009 ttyS2  
crw-rw—- 1 root root 4,67 Mar 15 2009 ttyS3  
**15} tell me the name of device file for PS/2 mouse connection.**

/dev/psaux  
**16} tell me the name of device file for parallel port (Printers).**

/dev/lp0  
**17} what does /etc/X11/ directory contains?**

The /etc/X11/ directory is for X Window System configuration files, such asxorg.conf.  
**18} what does /etc/skell directory contains?**

The /etc/skel directory contains files and directories that are automatically copied over to a new user’s home directory when such user is created by the useradd or adduser command.  
19} tell me name of Linux File systems?

Ext2 Ext3 Ext4  
**20} 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.

**21} Any idea about ext4 file system?**

The ext4 or fourth extended filesystem is a journaling file system developed as the successor to ext3. Ext4 filesystem released as a functionally complete and stable filesystem in Linux with kernel version 2.6.28.  
Features of ext4 file system:-  
1. Currently, Ext3 supports 16 TB of maximum file system size and 2 TB of maximum file size. Ext4 have 1 EB of maximum file system size and 16 TB of maximum file size.  
[An EB or exabyte is 1018 bytes or 1,048,576 TB] 2. Fast fsck check than ext3 3 In Ext4 the journaling feature can be disabled, which provides a small performance improvement. 4. Online defragmentation. 5. Delayed allocation Ext4 uses a filesystem performance technique called allocate-on-flush, also known as delayed allocation. It consists of delaying block allocation until the data is going to be written to the disk, unlike some other file systems, which may allocate the necessary blocks before that step.  
**22} How we create ext3 file system on /dev/sda7 disk?**

# mkfs –j /dev/sda7

**23} Can we convert ext2 filesystem to ext3 file system?**

Yes, we can convert ext2 to ext3 file system by tune2fs command.  
tune2fs –j /dev/<Block-Device-Name>  
**24} How we will create ext4 file system?** #

mke2fs -t ext4 /dev/DEV  
**25} Explain /proc filesystem?**

/proc is a virtual filesystem that provides detailed information about Linux kernel, hardware’s and running processes. Files under /proc directory named as Virtual files. Because /proc contains virtual files that’s why it is called virtual file system. These virtual files have unique qualities. Most of them are listed as zero bytes in size. Virtual files such as /proc/interrupts, /proc/meminfo, /proc/mounts, and /proc/partitions provide an up-to-the-moment glimpse of the system’s hardware. Others, like the /proc/filesystems file and the /proc/sys/ directory provide system configuration information and interfaces.  
**26} Can we change files parameters placed under /proc directory?**

Yes To change the value of a virtual file, use the echo command and a greater than symbol (>) to redirect the new value to the file. For example, to change the hostname on the fly, type: echo [**http://www.nextstep4it.com**](http://www.nextstep4it.com/) > /proc/sys/kernel/hostname  
**27} What is the use of sysctl command?**

The /sbin/sysctl command is used to view, set, and automate kernel settings in the /proc/sys/ directory.  
**28} /proc/ directory contains a number of directories with numerical names. What is that?**

These directories are called process directories, as they are named after a program’s process ID and contain information specific to that process.  
**29} What is RAID?**

RAID, stands for Redundant Array of Inexpensive Disks. RAID is a method by which same data or information is spread across several disks, using techniques such as disk striping (RAID Level 0), disk mirroring (RAID Level 1), and disk striping with parity (RAID Level 5) to achieve redundancy, lower latency, increased bandwidth, and maximized ability to recover from hard disk crashes.  
6  
**30} Why should we use RAID?**

System Administrators and others who manage large amounts of data would benefit from using RAID technology.  
Following are the reasons to use RAID – Enhances speed – Increases storage capacity using a single virtual disk – Minimizes disk failure  
**31} What is the difference between hardware RAID and Software** **RAID?**

The hardware-based RAID is independent from the host. A Hardware RAID device connects to the SCSI controller and presents the RAID arrays as a single SCSI drive. An external RAID system moves all RAID handling “intelligence” into a controller located in the external disk subsystem. The whole subsystem is connected to the host via a normal SCSI controller and appears to the host as a single disk.  
Software RAID is implemented under OS Kernel level. The Linux kernel contains an MD driver that allows the RAID solution to be completely hardware independent. The performance of a software-based array depends on the server CPU performance and load.  
**32} Explain RAID 0?**

RAID level 0 works on “striping” technique. In RAID 0 the array is broken down into strips and data is written into strips. RAID 0 allows high I/O performance but provides no redundancy. RAID 0 Array Size is equal to sum of disks in array. If one drive fails then all data in the array is lost.  
**33} Explain RAID 1?**

RAID Level 1 is based on Mirroring technique. Level 1 provides redundancy by writing identical data to each member disk of the array. The storage capacity of the level 1 array is equal to the capacity of one of the mirrored hard disks in a Hardware RAID or one of the mirrored partitions in a Software RAID. RAID 1 provides redundancy means good protection against disk failure. In RAID 1 write speed is slow but read speed is good.  
**34} Explain RAID 5?**

RAID Level 5 is based on rotating parity with striping technique. RAID-5 stores parity information but not redundant data (but parity information can be used to reconstruct data). The storage capacity of Software RAID level 5 is equal to the capacity of the member partitions, minus the size of one of the partitions if they are of equal size. The performance of RAID 5 is based on parity calculation process but with modern CPUs that usually is not a very big problem. In RAID 5 read and write speeds are good.  
7  
**35} Which kernel module is required for Software RAID?** “md” module  
**36} which utility or command is used for creating software RAID’s** **for RHEL5?**

mdadm  
**37} Can we create software RAID during Linux installation?**

Yes, we can create Software RAID during Linux Installation by “Disk Druid”  
**38} What is the role of chunk size for software RAID?**

Chunk size is very important parameter on which RAID performance based. We know stripes go across disk drives. But how big are the pieces of the stripe on each disk? The pieces a stripe is broken into are called chunks.Toget good performance you must have a reasonable chunk size.  
For big I/Os we required small chunks and for small I/Os we required big chunks.  
**39} What is SWAP Space?**

Swap space in Linux is used when the amount of physical memory (RAM) is full. If the system needs more memory resources and the RAM is full, inactive pages in memory are moved to the swap space. While swap space can help machines with a small amount of RAM, it should not be considered a replacement for more RAM. Swap space is located on hard drives, which have a slower access time than physical memory.  
**40} What are the steps to create SWAP files or Partition?** – Create swap partition or file – Write special signature using “mkswap” – Activate swap space by “swapon –a” command – Add swap entry into /etc/fstab file  
**41} How you will create swap file of size 4 GB and explain swap file** **entry in /etc/fstab file?**

Use “dd” command to create swap file.  
dd if=/dev/zero of=/SWAPFILE bs=1024 count=4  
mkswap /SWAPFILE  
8  
swapon –a  
Entry into /etc/fstab file.  
/SWAPFILE swap swap defaults 0 0  
**42} 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.  
**43} 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  
44} How we will check free space on drive /dev/sda with parted command? #parted /dev/sda  
print  
**45} 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.  
**46} 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 p oint are created.  
9  
**47} 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  
**48} What is the difference between LVM and RAID?**

RAID provides redundancy but LVM doesn’t provide Redundancy.  
**49} 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.  
**50} 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.  
**51} 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.  
**52} 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.  
**53} 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.

**54} 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.  
**55} How are snapshots in LVM2 different from LVM1?**

In LVM2 snapshots are read/write by default, whereas in LVM1, snapshots were read only.  
**56} 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.  
**57} 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  
**58} 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  
**59} Which command is used to extend a logical volume?** lvextend –size +<addsize> /dev/<vgname>/<lvname>  
resize2fs /dev/<vgname>/<lvname>  
**60} 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>  
**61} 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.

**62} 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  
**63} What “neat” command will do?**

neat command provides Graphical interface to change network settings for network devices.  
**64} Which protocol is required to allow local printing and print sharing?**

Internet Printing Protocol (IPP) is required to allow local printing and print sharing.  
**65} What is CUPS?**

CUPS stands for “Common UNIX Printing System”. CUPS is a open source printing system developed by Apple Inc. CUPS uses the Internet Printing Protocol (IPP) to allow local printing and print sharing.  
**66} What is the location of log files for CUPS?**

The log files for the CUPS printing system are located in the /var/log/cups/ directory.  
**67} What is YUM?**

YUM stands for Yellow dog Updater, Modified because it is based on YUP, the Yellow dog Updater. Where does the name Yellow dog come from? Yellow Dog is a version of Linux for the Power Architecture hardware and is RPM-based, just like Red Hat Enterprise Linux and Fedora. YUP, and later YUM, were written by the Linux community as a way to maintain an RPM-based system.  
68} What are the advantages of YUM?

– Automatic resolution of software dependencies. – Multiple software locations at one time. – Ability to specify particular software versions or architectures.  
**69} How you will install software by YUM?**

yum install <pkgname>  
**70} Which option is required to assume the answer “yes” to any questions asked during installation of package dependencies for YUM?**

The “-y” option is used to assume the answer “yes”.  
For Example  
yum -y install squid  
**71} How to remove a software by YUM?**

yum remove <pkgname>  
**72} How Many Run Levels present in Linux?**

There are 7 run levels, with each having its own properties.  
– 0: Halt the system –

1: Single-user mode

2: Not used –

3: Multi-user mode with text login –

4: Not used –

5: Multi-user mode with graphical login –

6: Reboot  
**73} Which configuration file is required to change the Run Level of Server or system?**

/etc/inittab  
To change the default run level, modify this line.  
id:5:initdefault:  
**74} Explain architectures required for RPMs?**

noarch Architecture-independent, can run on any architecture  
i386 Generic build for a 32-bit x86 system  
i586 Sometimes used when building kernels for older x86 processors Intel® Pentium ® II, Intel Pentium III, Intel Pentium 4, AMD Athlon, and  
i686 AMD Duron systems (Most RPMs for these architectures are built using the i386 architecture, with the kernel for these architectures being built with the i686 for optimal performance.)  
x86\_64 64-bit processors such as AMD Athlon64, AMD Opteron, and Intel EM64T  
ia64 Intel® Itanium  
ppc 32-bit IBM® POWER, IBM eServer„ pSeries®, and IBM eServer iSeries  
s390x 64-bit IBM eServer System z  
**75} How to install Linux software’s by RPM?**

rpm -ivh test-1.0-1.i386.rpm  
test ######################### [100%]  
**76} If a file associated with test-1.0-1.i386.rpm deleted, than How we will recover that file?**

We can reinstall this rpm again.  
**77} If you are getting error “package is already installed” but you have to install package any how. what option you will use?**

rpm -ivh test-1.0-1.i386.rpm  
Preparing… ########################################### [100%] package test-1.0-1 is already installed  
In this case you can use “–replacepkgs” option.  
rpm -ivh –replacepkgs test-1.0-1.i386.rpm

**78} Which options are required to upgrade a RPM?** Upgrading a package is similar to installing one. Type the following command at a shell prompt:  
rpm -Uvh test-2.0-1.i386.rpm  
**79} Explain the command “rpm -qa”?**

It will queries all currently installed packages.  
/var/lib/rpm  
**81} Explain the command “rpm -qf “?**

it queries the RPM database for which package owns <filename>. When specifying a file, specify the absolute path of the file.

**82} How to verify all installed packages?**

rpm –Va  
**83} How to verify the signature of an rpm?**

rpm -K test-1.0-1.i386.rpm  
**84} How to list PCI Devices on your server or System?**

use “lspci” command.  
**85} What is the role of “Kudzu”?**

Kudzu is used to Detect new Hardware  
**86} What happens when you add a new device after installation?**

The Kudzu program runs each time the system boots and performs a hardware probe. If new hardware is found, Kudzu attempts to map it to a kernel module. If successful, the information is saved, and the device is configured.  
**87} How to Enable ACLs for /home partition?**

Add following entry in /etc/fstab  
LABEL=/home /home ext3 acl 1 2  
Now remount /home partition with acl option.  
mount -t ext3 -o acl /dev/sda3 /home

**88} How to View ACLs for a file(test file)?**

getfacl test\_file  
**89} How to remove an ACL?**

setfacl –remove-all <file-name>  
**90} What is the difference between pop3 and imap protocols?**

POP3 (Post Office Protocol) is the most commonly used internet mailprotocol.It works on 110 port. It is easy to configure and use. With a POP account you download the mail to your local computer and keep it there. Most of the time it gets deleted off of the mail server after being downloaded. One disadvantage of POP is that once you download it to your computer you won’t be able to check your mail from a different computer since it will already be downloaded onto your own computer. It tends to be slower than IMAP as well.  
IMAP (Internet Message Access Protocol) uses a method where all the mailboxes and messages are maintained on the server. Therefore you can access your e-mail from any location with an internet connection. IMAP is faster than POP because the mail client reads all of the message headers without having to download the entire message. IMAP is also supported in a variety of clients just like POP. One thing to keep in mind is the amount of disk space allocated to your mail on the server may not be enough to hold all of your mail.IMAP supports the folder synchronization option e.g if you create any folder on the client m/c in outlook(mail client) then that folder will automatically created on the mailserver for the account  
POP works best when you are using only a single computer, since you don’t have to worry about checking your e-mail from multiple locations. Plus it is faster as well.  
IMAP would suit you better if you need to check your e-mail from multiple locations if you travel a lot. To use IMAP your ISP/mail provider must offer that type of account.  
**91} How to Disable a User Account in Linux?**

# passwd <username> -l  
This might be useful in the situation where you don’t want to permanently remove the user, but you just want it disabled and no longer able to use the system. The user will still receive emails for example, but he will not be able to login and check them out.  
To re-enable the account ,just use below command  
16  
# passwd <username> -u  
**92} How to detect CPU architecture/bitmode (32-bit or 64-bit) for Linux ?**

# cat /proc/cpuinfo | grep flags  
you will find one of them with name “tm(transparent mode)” or “rm(real mode)” or “lm(long mode)” 1. rm tells ,it is a 16 bit processor 2. tm tells, it is a 32 bit processor 3. lm tells, it is a 64 bit processor  
**93} What is the difference between SSH and Telnet ?**  
The Primary difference between SSH and Telnet is of security i.e in ssh data transfer between the systems is in encrypted form so it is difficult for the hackers to understand what is going on network.  
In Telnet data transfer between the systems is in plain text.  
SSH uses a public key for authentication while Telnet does not use any authentication.  
Due to the security measures that were necessary for SSH to be used in public networks, each packet contains less data to make room for the data of the security mechanisms. In order to transmit the same amount of data, you would need to take-up a lot more bandwidth. This is called overhead..  
SSH adds a bit more overhead to the bandwidth compared to Telnet.

**94} What is difference between AT and CRON?**  
Cron command is used to schedule the task daily at the same time repeatedly ,  
at command is used to schedule the task only once i.e to run only one time.

**95} What is network bonding in Linux and steps to configure network bonding ?**

Network interface card (NIC) bonding (also referred to as NIC teaming) is the bonding together of two or more physical NICs so that they appear as one logical device. This allows for improvement in network performance by increasing the link speed beyond the limits of one single NIC and increasing the redundancy for higher availability. For example, you can use two 1-gigabit NICs bonded together to establish a 2-gigabit connection to a central file server.  
When bonded together, two or more physical NICs can be assigned one IP address. And they will represent the same MAC address. If one of the NICs fails, the IP address remains accessible  
because it is bound to the local NIC rather than to a single physical NIC. Steps to configure :  
Step #1: Create a bond0 configuration file  
Red Hat Linux stores network configuration in /etc/sysconfig/network-scripts/ directory. First, you need to create bond0 config file:  
# vi /etc/sysconfig/network-scripts/ifcfg-bond0  
Append following lines to it:  
DEVICE=bond0 IPADDR=192.168.1.20 NETWORK=192.168.1.0 NETMASK=255.255.255.0 USERCTL=no BOOTPROTO=none ONBOOT=yes  
Replace above IP address with your actual IP address. Save file and exit to shell prompt.  
Step #2: Modify eth0 and eth1 config files:  
Open both configuration using vi text editor and make sure file read as follows for eth0 interface # vi /etc/sysconfig/network-scripts/ifcfg-eth0 Modify/append directive as follows: DEVICE=eth0 USERCTL=no ONBOOT=yes MASTER=bond0 SLAVE=yes BOOTPROTO=none  
Open eth1 configuration file using vi text editor:  
# vi /etc/sysconfig/network-scripts/ifcfg-eth1Make sure file read as follows for eth1 interface:  
DEVICE=eth1 USERCTL=no ONBOOT=yes MASTER=bond0 SLAVE=yes BOOTPROTO=none  
Save file and exit to shell prompt.  
Step # 3: Load bond driver/module  
Make sure bonding module is loaded when the channel-bonding interface (bond0) is brought up. You need to modify kernel modules configuration file:  
# vi /etc/modprobe.conf Append following two lines:  
alias bond0 bonding options bond0 mode=balance-alb miimon=100  
Step # 4: Test configuration  
First, load the bonding module: # modprobe bonding Restart networking service in order to bring up bond0 interface: # service network restart  
Verify everything is working: # less /proc/net/bonding/bond0Output:  
Bonding Mode: load balancing (round-robin)  
MII Status: up  
MII Polling Interval (ms): 0  
Up Delay (ms): 0  
Down Delay (ms): 0  
Slave Interface: eth0  
MII Status: up  
Link Failure Count: 0  
Permanent HW addr: 00:0c:29:c6:be:59  
Slave Interface: eth1  
MII Status: up  
Link Failure Count: 0  
Permanent HW addr: 00:0c:29:c6: be: 63

**96} 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.

**97} 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.  
**98} How to verify the signature of an rpm ?**  
rpm -K test-1.0-1.i386.rpm

**99} 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  
**100} 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.

**101} 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.  
20  
**102} 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.

**103} How are devices represented in UNIX?**

All devices are represented by files called special files that are located in /dev directory.  
**104} 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 structures  
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”.

**105} What is Greylisting ?**

Greylisting (or graylisting) is a method of defending e-mail users against spam. A mail transfer agent (MTA) using greylisting will “temporarily reject” any email from a sender it does not recognize. If the mail is legitimate the originating server will, after a delay, try again and, if sufficient time has elapsed, the email will be accepted. If the mail is from a spam sender, sending to many thousands of email addresses, it will probably not be retried.

**106} Can we have two apache servers having diff versions?**

Yes, you can have two different apache servers on one server, but they can’t listen to the same port at the same time.Normally apache listens to port 80 which is the default HTTP port. The second apache version should listen to another port with the Listen option in httpd.conf, for example to port 81.  
For testing a new apache version before moving your sites from one version to another, this might be a good option.You just type[**http://www.example.com:81**](http://www.example.com:81/) in the browser window and you will be connected to the second apache instance.  
**107} 22.cmd to clear cache**

echo 3 > /proc/sys/vm/drop\_caches  
**108} 24.how to redirect standard output and standard error**  
Cat kapil >> /tmp/kapil  
**110} 19.which file contain ssh log**

/var/log/secure – Contains information related to authentication and authorization privileges. For example, sshd logs all the messages here, including unsuccessful login.

**111} is it possible to sort file with respect to their size and then sort top 10 maximum size file?**  
Find Out The Top 10 Memory Consuming Process  
22  
# ps -auxf | sort -nr -k 4 | head -10  
Find Out top 10 CPU Consuming Process  
# ps -auxf | sort -nr -k 3 | head -10  
**112} how to check running kernel?**  
Uname –r

**NFS SERVER**  
**1} Explain this entry /shared 192.168.1.0/255.255.255.0(sync,rw)**  
allows all systems with 192.168.1.\* IP addresses read-write access to the /shared/ directory:

**2} What will happened if a space is given inbetween allowed\_hosts and (options)?**

If a space is included, the options are applied to any and all IP addresses, which can be quite dangerous if write permission is granted.

**3} What is the role of “sync” option for NFS server?**

If sync is specified, the server waits until the request is written to disk before responding to the client. The sync option is recommended because it follows the NFS protocol.

**4} How to retrieve a list of clients connected to the NFS server ?**

To retrieve a list of clients connected to the NFS server, use the showmount command from a shell prompt. To also show the directories the clients are connected to, use the showmount -a command.

**5} What is meaning of “no\_root\_squash” option ?**

Treat remote root user as local root. Do not map requests from root to the anony- mous user and group ID.

**6} What is NFS ?**

NFS stands for Network File System. NFS was originally developed by Sun Microsystems in the 1980’s. NFS allows remote hosts to mount file systems over a network and interact with those file systems as though they are mounted locally. This enables system administrators to consolidate resources onto centralized servers on the network.  
**7} Which NFS versions are available ?**

NFS Version 2 NFS Version 3 NFS Version 4

**8} What is different between NFS Version 2 & 3 ?**

nfs 2 default 8kb transfer rate,it did not check the authentication at the time connection.client wants to access unauthorized file it shows error messages like “write error”,”read error” nfs 3 32kb transfer rate. It check at the time connection- ACL Support

**9} Can we grant access by Username and password for nfs share?**  
No, access is granted only for IP address.

**10} What is the role of “all\_squash” option?**

Treat all client users as anonymous users. Map all user and group IDs to the anonymous user and group ID.

**11} What is the role of “root\_squash” option?**

All requests from the user root are translated or mapped as if they came from the user anonymous (default).

**12} Explain option “all\_squash”?**  
The UID and GID of exported files are mapped to the user anonymous. It is good for public directories.  
**13} Explain “exportfs” command?**

The exportfs command is used to maintain the current table of exported file systems for NFS.

**14} Explain command “/usr/sbin/exportfs -f”?**

It will flush everything out of the kernels export table. Any clients that are active will get new entries added by mountd when they make their next request.

**15} Which option is used with exportfs command to display the current export list, also displays the list of export options?**  
exportfs -v

1**6} Which option is used with exportfs command to re-export all directories?**  
exportfs -r

**17} How you will export directory (/data) to host 192.168.1.51, allowing asynchronous writes without adding the entry in /etc/exports file?**

# exportfs -o async 192.168.1.51:/data

**18} Is rpc.mountd daemon supports TCP\_WRAPPERS?**

Yes, The rpc.mountd daemon is protected by the tcp\_wrappers. You have to give the clients access to rpc.mountd if they should be allowed to use NFS Server

**19} Explain “nfsstat” command?**

The nfsstat command displays the statistics about NFS client and NFS server activity.

**20} What do you understand by “nfsstat -o all -234” command?**

It will Show all information about all versions of NFS.

**21} What do you understand by “nfsstat –nfs –server -3” command?**

It will show statistics for NFS version 3 server.

**22} Can NFS share mounted on Window XP and Justify your answer?**  
No, Window XP operating system doesn’t support nfs protocol.

**23} 192.168.1.51:/data is exported by NFS Server and i want to add this NFS share to client /etc/fstab file. How you will add this entry in /etc/fstab file?**  
# device mount-point fs-type options dump fsckorder  
192.168.1.51:/data /mnt nfs rw 0 0

**24} Explain “Soft Mounting” option at NFS Client?**

if a file request fails, the NFS client will report an error to the process on the client machine requesting the file access. if it cannot be satisfied (for example, the server is down), then it quits. This is called soft mounting.

**25} Explain “Hard Mounting” option at NFS Client?**

If a file request fails, the NFS client will report an error to the process on the client machine requesting the file access. if it cannot be satisfied, then it will not quit until the request is satisfied. This is called Hard mounting.

**26} What is “portmap”?**  
The portmapper keeps a list of what services are running on what ports. This list is used by a connecting machine to see what ports it wants to talk to access certain services.  
**27} How you will check “portmap” service is running or not?**  
rpcinfo -p

**28} I am unable to mount a NFS share. How will you trace out the reason?**  
Firstly, check that you have permissions to mount nfs share or not. Check /etc/exports file.  
Secondly you can get RPC error: Program Not Registered (or another “RPC” error)  
For this check your NFS server and portmap service running or not by “rpcinfo -p”

**29} Can I modify export permissions without needing to remount clients in order to have them take effect?**  
Yes. The safest thing to do is edit /etc/exports and run “exportfs -r”.  
**FTP SERVER**

**1} How to deny specific users access to the FTP server?**

To deny specific users access to the FTP server, add their usernames to the /etc/vsftpd/ ftpusers file. By default, system users such as root and nobody are included in this list.

**2} Can we create logs for ftp authenticated sessions?**

Yes, If the xferlog\_enable directive in vsftpd.conf is set to YES, file transfers using the FTP protocol are logged to /var/log/xferlog. Information such as a time stamp, IP address of the client, the file being transferred, and the username of the person who authenticated the connection is included in the log entry.

**3} What is meaning of max\_clients parameter?**

Maximum number of clients that can connect at one time. If set to 0, the number of clients is unlimited.

**4} On which port VSFTP server works ?**

FTP uses two ports, 20 and 21. By default, the FTP server listens for requests on port 21. After a connection is established, the client sends commands to the server on port 21. However, port 20 is used when the server sends data back to the client.

**5} How to restart VSFTP server ?**

service vsftpd restart  
**6} How to allow Anonymous FTP ?**

Anonymous FTP is enabled by default by setting the anonymous\_enable directive in /etc/vsftpd/vsftpd.conf to YES.

**7} what is FTP?**

FTP stands for File Transfer Protocol. An FTP server allows clients to connect to it either anonymously or with a username and password combination. After successful authentication, files can be transferred back and forth between the server and client. The files are neither encrypted nor compressed.

**8} For Redhat Linux or Fedora which package is required for FTP service ?**

Red Hat Enterprise Linux 5 or FEDORA includes the vsftpd FTP service.  
vsftpd-2.0.5-12.el5 (For Redhat)

**9} Important Configuration file for vsftp server ?**

The FTP server uses the /etc/vsftpd/vsftpd.conf configuration file. Using this file, you can set options for displaying a custom banner message after users log in, setting the default file permissions for uploaded files, and setting the port on which to listen for incoming connections.

**10} what is FTP?**

FTP client connects to the FTP server by establishing an FTP control connection to port 21 of the server. Your commands such as ‘ls’ and ‘get’ are sent over this connection. Whenever the client requests data over the control connection, the server initiates data transfer connections back to the client. The source port of these data transfer connections is always port 20 on the server, and the destination port is a high port (greater than 1024) on the client.

**11} What is Passive mode?**

Passive mode, like active mode, is initiated by the FTP client application. When requesting data from the server, the FTP client indicates it wants to access the data in passive mode and the server provides the IP address and a random, unprivileged port (greater than 1024) on the server. The client then connects to that port on the server to download the requested information.

**12} Explain directive “session\_support”?**

When enabled, vsftpd attempts to maintain login sessions for each user through Pluggable Authentication Modules (PAM).

**3} Is there any way to monitor clients connected to vsftpd?** Yes. We actually have two slightly different methods to monitor vsftpd clients. First, make sure you have enabled the config option, “setproctitle\_enable=YES” like in our example above and restart your vsftpd server. Then run the command “watch ps -Cvsftpd -o user, pid, stime, cmd” to watch the processes including ip, username and actions like idle or data retrieval.

1**4} I want to copy multiple files with out prompting for any info, how can I do that one?**

ftp -i ftpserver

**15} Local users cannot log in. How to resolve this issue?** Check “local\_enable=YES” in your /etc/vsftpd/vsftpd. conf to allow local users to log in.

**16} How to change vsftpd default port?**

Set “listen\_port” option in “vsftpd.conf”

**17} How to restrict some IP’s not use my FTP server?**

Use TCP\_WRAPPERS  
**18} Does vsftpd support IPv6?**

Yes  
**DNS SERVER**

**1} which are the important configuration files for DNS server?**

BIND uses /etc/named.conf as its main configuration file, the /etc/rndc.conffile as the configuration file for name server control utility rndc, and the /var/named/ directory for zone files and the like.

**2} What is BIND?**

BIND stands for Berkeley Internet Name Domain which is the most commonly used Domain Name System (DNS) server on the Internet.

**3} On which version of bind u have worked?**

BIND 9

**4} What is the role of DNS?**

A DNS server, or name server, is used to resolve an IP address to a hostname or vice versa.

**5} On which port DNS server works?**

DNS servers use port 53 by default. Incoming and outgoing packets should be allowed on port 53. Also allow connections on port 921 if you configure a lightweight resolver server. The DNS control utility, rndc, connects to the DNS server with TCP port 953 by default. If you are running rndc on the name server, connections on this TCP port from localhost should be allowed. If you are running rndc on additional systems, allow connections to port 953 (or whatever port you have chosen to configure) from these additional systems.

**6} What is round robin DNS?**

Round robin DNS is usually used for balancing the load of geographically distributed Web servers. For example, a company has one domain name and three identical home pages residing on three servers with three different IP addresses. When one user accesses the home page it will be sent to the first IP address. The second user who accesses the home page will be sent to the next IP address, and the third user will be sent to the third IP address. In each case, once the IP address is given out, it goes to the end of the list. The fourth user, therefore, will be sent to the first IP address, and so forth.

**7} What is Name Server?**

A name server keeps information for the translation of domain names to IP addresses and IP addresses to domain names. The name server is a program that performs the translation at the request of a resolver or another name server.

**8} What is Primary name server or primary master server?**

Primary name server/primary master is the main data source for the zone. It is the authoritative server for the zone. This server acquires data about its zone from databases saved on a local disk. The primary server must be published as an authoritative name server for the domain in the SOA resource record, while the primary master server does not need to be published.

**9}What is Secondary name server/slave name server?**

Secondary name server/slave name server acquires data about the zone by copying the data from the primary name server (respectively from the master server) at regular time intervals. It makes no sense to edit these databases on the secondary name servers, although they are saved on the local server disk because they will be rewritten during further copying.

**10} what is Root name server?**

Root name server is an authoritative name server for the root domain (for the dot). Each root name server is a primary server, which differentiates it from other name servers.

**11} what is Stealth name server?**

Stealth name server is a secret server. This type of name server is not published anywhere. It is only known to the servers that have its IP address statically listed in their configuration. It is an authoritative server. It acquires the data for the zone with the help of a zone transfer. It can be the main server for the zone. Stealth servers can be used as a local backup if the local servers are unavailable.

I**12} What do you mean by “Resource Records”?**

Information on domain names and their IP addresses, as well as all the other information distributed via DNS is stored in the memory of name servers as Resource Records (RR).

**13} Explain “TTL”?**

Time to live. A 32-bit number indicating the time the particular RR can be kept valid in a server cache. When this time expires, the record has to be considered invalid. The value 0 keeps nonauthoritative servers from saving the RR to their cache memory.

**14} Tell me 5 Types of DNS records?**

A, NS, CNAME, SOA, PTR, MX.

**15} explain “SOA Record”?**

The Start of Authority (SOA) record determines the name server that is an authoritative source of information for the particular domain. There is always only one SOA record in the file, and it is placed at the beginning of the file of authoritative resource records.

**16} what is “A Record”?**

A (Address) records assign IP addresses to domain names of computers. The IP address cannot have a dot at the end.

**17} Explain “CNAME Record”?**

Synonyms to domain names can be created using CNAME records. This is often referred to as ‘creating aliases for computer names’.

**18} What are “HINFO and TXT Records”?**

HINFO and TXT records are for information only. An HINFO record has two items in its data part. The first item is information about hardware, and the second one is information about software. A TXT record contains a general data string in its data part. Example : test.com IN SOA … … mail IN A 192.1.1.2 IN HINFO My\_Server UNIX IN TXT my server …  
**19} what are “MX Records”?**

MX records specify the mailing server of the domain. An MX record shows to which computer a mail of a particular domain should be sent. The MX record also includes a priority number, which can be used to determine several computers where the mail for the domain can be sent. The first attempt is to deliver the mail to the computer with the highest priority (lowest value). If this attempt fails, the mail goes to the next computer (with a higher priority value), and so on. test.com IN SOA … … mail IN A 192.1.1.2 IN HINFO AlphaServer UNIX IN TXT my server IN MX 30 mail2.nextstep4it.com IN MX 20 mail3.nextstep4it.com IN MX 10 mail2.nextstep4it.com

**20} Explain “PTR Records”?**

A Pointer Record (PTR) is used to translate an IP address into a domain name.  
21} What is Dynamic DNS? Dynamic DNS a method of keeping a domain name linked to a changing IP address as not all computers use static IP addresses. Typically, when a user connects to the Internet, the user’s ISP assigns an unused IP address from a pool of IP addresses, and this address is used only for the duration of that specific connection. This method of dynamically assigning addresses extends the usable pool of available IP addresses. A dynamic DNS service provider uses a special program that runs on the user’s computer, contacting the DNS service each time the IP address provided by the ISP changes and subsequently updating the DNS database to reflect the change in IP address.

**22} What is the role of “named-checkconf Utility”?**

The named-checkconf utility checks the syntax of the named.confconfiguration file.  
Syntax: named-checkconf [-t directory] [filename]  
**23} what is the role of “named-checkzone Utility”?**

The named-checkzone utility checks the syntax and consistency of the zone file. Syntax: named-checkzone [-dgv] [-c class] zone [filename]  
**SAMBA SERVER**

**1}which SELinux security context used for SAMBA?**  
Samba\_share\_t

**2}On which port SAMBA server work ?**

-UDP port 137 for netbios-ns,the NETBIOS Name server  
-UDP port 138 for netbios-dgm,the NETBIOS Datagram service  
-TCP port 139 for netbios-ssn, the NETBIOS session service  
-TCP port 445 for Microsoft-ds, the Microsoft Domain service  
3} what are the Security or authentication Mode for SAMBA server?  
ADS DOMAIN  
SERVER  
USER  
**4} How to Manually Create Machine Trust Accounts ?**

/usr/sbin/useradd -g machines -d /var/lib/nobody -c “machine nickname” -s /bin/false machine\_name$  
passwd -l machine\_name$

**5} What are the SAMBA server Types ?**

– Primary Domain Controller (PDC) – Backup Domain Controller (BDC) – ADS Domain Controller  
6} Which protocol SAMBA server uses ? SMB, which stands for Server Message Block, is a protocol for sharing files, printers, serial ports, and communications abstractions such as named pipes and mail slots between computers.

**7} How Does a Workstation find its Domain Controller?**

There are two different mechanisms to locate a domain controller: one method is used when NetBIOS over TCP/IP is enabled and the other when it has been disabled in the TCP/IP network configuration. Where NetBIOS over TCP/IP is disabled, all name resolution involves the use of DNS, broadcast messaging over UDP, as well as Active Directory communication technologies.

**8} Can Samba Be a Backup Domain Controller to an NT4 PDC?**

No. The native NT4 SAM replication protocols have not yet been fully implemented.

**9} How Do I Replicate the smbpasswd File?**

Replication of the smbpasswd file is sensitive. It has to be done whenever changes to the SAM are made. Every user’s password change is done in the smbpasswd file and has to be replicated to the BDC. So replicating the smbpasswd file very often is necessary.As the smbpasswd file contains plaintext password equivalents, it must not be sent unencrypted over the wire. The best way to set up smbpasswd replication from the PDC to the BDC is to use the utility rsync. rsync can use ssh as a transport. ssh itself can be set up to accept only rsync transfer without requiring the user to type apassword.As said a few times before, use of this method is broken and awed. Machine trust accounts will go out of sync, resulting in a broken domain. This method is not recommended. Try using LDAP instead.  
**10} Can Samba fully replace my Windows NT server that is not a Primary Domain Controller (PDC)?**  
Samba can completely serve files and printers to Windows, just as a Windows NT server would.

**11} Can Samba replaces my Windows NT PDC?**  
Not completely. Samba domain control capabilities for a Windows 9x client are solid and complete, and so these clients would probably never know the difference. The domain control support for Windows NT/2000 clients is still being developed. Currently, enough has been implemented to allow a Windows NT client to join a Samba-controlled domain, but there is more to domain control than that. The most conspicuous absence is the lack of support for Windows NT trust relationships and the SAM replication protocol used between NT PDCs and Backup Domain Controllers (BDCs).

**12} What TCP and UDP ports required for NetBIOS over TCP/IP use?**  
The NBT name service uses port 137/udp, the NBT session service uses port 139/tcp, and the NBT datagram service uses port 138/udp.  
**13} How SMB protocol works?**  
There will be three stages in creating an SMB connection between a client and a specific share on a server.  
The first stage in connecting to an SMB share is to negotiate the SMB protocol dialect to use. In the request packet, the client sends a text listing of all the SMB dialects that it understands. The server selects the most advanced protocol that it knows and responds to the client, specifying the protocol number from the list. At this point, the client and server have agreed that SMB commands can be used for the remainder of the conversation.  
The second stage is to create a session connection between the client and server. To do this, the client issues a session setup request, which includes a sername and some proof of validity, such as a password. The server attempts to validate requesting user. If successful, the server then returns a session UID to client. This UID is unique for each session and has no relation to the server internal representation of users.  
The third stage before access to files on a remote share is allowed is for the client to make a successful tree connection to the shared resource. The client sends to the server a tree connect request, which includes the UID previously issued by the server. At this stage the server verifies that the authenticated user is authorized to access the requested resource. If the user has sufficient privileges to access the share, the client is issued a tree connection ID (TID). The TID is used in all requests to access files contained in the resource to which the TID refers. In this way SMB protocol works.

**14} How man sections samba configuration file (smb.conf) contains?**  
smb.conf file contains three sections.  
1. [global] Contains settings that determine Samba overall behavior. 2. [homes] A default share for providing a home directory for all users. 3. [printers] A default share for exporting all printers on the host via CIFS.

**15} If a netbios name is not defined in smb.conf, than what will be netbios name?**  
If a netbios name is not defined, Samba will use the IP hostname of the server by default.

**16} I want to use User level security for my samba server than what i have to add in smb.conf file?**  
security = user  
**17} How you will verify that your smb.conf file doesn’t have any mistakes and misspellings?**

“testparm ” tool that verifies the syntax of a configuration file(smb.conf).  
testparm -s smb.conf

**18} What is the use of “smbclient” command?**

“smbclient” is used to display the list of shares on your server. This verifies that smbd is running and functioning correctly. The -L option instructs smbclient to enumerate the shares on the server rather than actually connecting to one. The -N switch instructs smbclient to use an anonymous login rather than the login name of the current user.  
smbclient -L localhost -N  
Antother use of “smbclient” command to connect the samba share.  
smbclient //<server>/<share> -U <username>

1**9} Explain “smbstatus” command?**  
The smbstatus utility displays information about connected users and currently locked files.

**20} Is it possible for Samba to share file systems that have been mounted using NFS?**  
Yes. However, this can be problematic if the NFS server that provides the file system fails, causing the Samba server to hang. It is always safer to use Samba to share a local file system.

**21} How many simultaneous connections can a Samba server support?**  
In theory, there is no limit. In practice, the limit is determined by the server’s hardware, specifically the total amount of available RAM and the CPU power. It might also depend on the amount of activity from the smbd processes.

**22} Can Samba be a member of more than one workgroup at the same time?**  
No, Samba can be a member of only one workgroup.

**23} What is SWAT?**  
SWAT is GUI Based administration tool for samba server.

**24} I am trying to use SWAT, but I keep getting the message There was no response. The server could be down or not responding. What is the problem?**

The most likely cause is that SWAT is not listening to connections, or you have used the wrong URL in trying to connect to SWAT. SWAT usually lives behind port 901, so the URL you should use is[**http://ID\_ADDRESS\_OF\_SERVER:901/**](http://id_address_of_server:901/)

**25} Can i set empty password for samba user?**  
yes, If you want to set the value to an empty password, you must change  
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX:XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  
to  
NOPASSWORDXXXXXXXXXXXXXXXXXXXXX:XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX in your smbpasswd file.  
Note: – if you have edited the smbpasswd file by hand, make sure that the LAN Manager and NT password fields contain exactly 32 characters, no more and no fewer. If these fields do not have exactly 32 characters, Samba will not be able to correctly read the entry.  
or You can modify by “smbpasswd” command.  
smbpasswd -n USER\_NAME  
Also you have to set the null passwords parameter to yes in the [global] section of smb.conf:  
null passwords = yes

**26} Does Samba support PAM?**  
Yes

**27} What is role of “NTLM”?**

The challenge/response authentication protocol available to Windows clients and servers for validating connection requests.

**28} Explain “force group” parameter used in smb.conf?**

It will define the group id to be used for all file access in the place of the user’s primary group.  
Submitted By:-Varun Email-ID: -kumar.varun123@yahoo.com  
**: – Explain “force user” parameter used in smb.conf?**

It will define the user id to be used for all file access.

**29} Explain “write list” parameter used in smb.conf?**

A list of users and/or groups that should be given write access even if the read only parameter has been enabled.

**30} My clients are getting the error message that the Disk is Full when trying to print to my Samba server, but there is plenty of space. What is the problem?**  
If smbd is unable to write the spooled file to the directory defined by the path parameter for a printer if the write permission were denied, for example it would respond to the client with the message, Disk is Full. Samba will also return this error message if the amount of free disk space in the spool directory has fallen below the value specified by the min print space parameter.

**31} When I click on my Samba server in the network neighborhood, I am continually prompted for a password to the IPC$ share no matter what I enter.**  
The Windows client is attempting to use encrypted passwords. However, the Samba server is configured to support only clear-text passwords. You should either enable encrypted passwords on the server or enable clear-text passwords on the Windows client.

**32} Why is security = domain better than security = server?**  
There are three reasons why security = domain is better. The first is because this method enables the Samba server to participate in domain trust relationships. This is impossible with server-level security. The second reason is that, under server-level security, each smbd process must keep an open connection with the authentication server. This can drain a Windows NT PDC quickly. Under domain-level security, this connection is maintained only long enough to perform the validation, thus conserving valuable resources. The final reason is that, as a domain member, the Samba server has access to much more information about user accounts, which can be used to automate the creation and deletion of user accounts upon demand.  
**33} what is nmbd daemon?**  
This daemon handles all name registration and resolution requests. It is the primary vehicle involved in network browsing. It handles all UDP-based protocols. The nmbd daemon should be the first command started as part of the Samba startup process.  
**34} What is smdb daemon?**  
This daemon handles all TCP/IP-based connection services for file- and print-based operations. It also manages local authentication. It should be started immediately following the startup of nmbd.

**35} What is winbindd daemon?**  
This daemon should be started when Samba is a member of a Windows NT4 or ADS domain. It is also needed when Samba has trust relationships with another domain. The winbindd daemon will check the smb.conf file for the presence of the idmap uid and idmap gid parameters. If they are found, winbindd will use the values specified for UID and GID allocation. If these parameters are not specified, winbindd will start but it will not be able to allocate UIDs or GIDs.

**36} Explain the parameter “wins support = Yes” used in smb.conf?**  
If the Samba server was configured to provide WINS support (“wins support = Yes”), then the WINS server is able to provide name resolution for all of the hosts that are not listed in the /etc/hosts file or within the DNS. Making this adjustment in the Name Service Switch configuration file (/etc/nsswitch.conf) allows the Linux system to query the WINS server for local name resolution. This saves manual adjustments to host files.

**37} How to automate SMB share mounting during system startup?**  
Add smb share entry in /etc/fstab file.  
//IP\_ADDRESS\_OF\_SERVER/Shared /shared smbfs noauto,defaults 0 0

**38} how to start and stop samba server?**  
/etc/init.d/smb restart

**SENMAIL SERVER**

**1} How to start sendmail server ?**

service sendmail restart  
**2} On which ports sendmail and senmail with SSL works ?**

By default, Sendmail uses TCP and UDP port 25 for non-encrypted transfers. If the Sendmail server is configured to use SSL for encrypting email sent and received, it uses port 465.

**3} Explain use of “trusted-users” file ?**

List of users that can send email as other users without a warning including system users such as apache for the Apache HTTP Server.

**4} Explain the use of “local-host-names” file ?**

If the email server should be known by different hostnames, list the host- names in this file, one line per hostname. Any email sent to addresses at these hostnames is treated as local mail. The FEATURE(`use\_cw\_fileâ€™) option must be enabled in the sendmail.mc file for this file to be referenced.  
**5} explain the use of /etc/aliases file ?**

/etc/aliases, can be used to redirect email from one user to another. By default, it includes redirects for system accounts to the root user. It can then be used to redirect all email for the root user to the user account for the system administrator.  
**6} Can we use SSL Encryption with Sendmail ?**

Yes, Sendmail can be configured to encrypt email sent and received using SSL (secure sockets layer).  
**7} What is Sendmail?**

Sendmail is an MTA, meaning it accepts email messages sent to it using the SMTP proto- col and transports them to another MTA email server until the messages reach their destinations. It also accepts email for the local network and delivers them to local mail spools, one for each user.  
**8} What is the role of MUA9} Which are the important configuration files for Sendmail server??**

An MUA (Mail User Agent) with access to the mailbox file, directly or through a network file  
system, can read messages from the disk and display them for the user. This is generally a console or webmail application running on the server.

The /etc/mail/ directory contains all the Sendmail configuration files, withsendmail.cf and submit.cf being the main configuration files. Thesendmail.cf file includes options for the mail transmission agent and accepts SMTP connections for sending email. The submit.cf file configures the mail submission program.

**10} How to configure sendmail to accept mail for local delivery that is addressed to other hosts?**  
Create a /etc/mail/local-host-names file. Put into that file the hostnames and domain names for which sendmail should accept mail for local delivery. Enter the names with one hostname or domain name per line. And also make sure that Sendmail configuration file should contain “use\_cw\_file” option.  
dnl Load class $=w with other names for the local host FEATURE(`use\_cw\_file’)

**11} When an organization stores aliases on an LDAP server, how you will configure sendmail to read aliases from the LDAP server?**  
Use “sendmail -bt -d0” command to check the sendmail compiler options. If sendmail was not compiled with LDAP support, recompile and reinstall sendmail.  
Add an ALIAS\_FILE define, containing the string ldap to the sendmail configuration.  
# Set the LDAP cluster value define(`confLDAP\_CLUSTER’, `wrotethebook.com’) # Tell sendmail that aliases are available via LDAP define(`ALIAS\_FILE’, `ldap:’)

**12} How to forward emails of a local user to external address?**  
Add an alias to the aliases file for each user whose mail must be forwarded to another system. The recipient field of the alias entry must be a full email address that includes the host part. After adding the desired aliases, rebuild the aliases database file with the newaliases command.

**13} You have been asked to create a sendmail configuration that sends all local mail to a mail hub, while directly delivering mail addressed to external systems.**

Create a sendmail configuration containing the MAIL\_HUB define to identify the mail relay host for local mail. Use the LOCAL\_USER command to exempt the root user’s mail from relaying.  
dnl Define a relay server for local mail define(`MAIL\_HUB’, `smtp.test.com’) dnl Users whose mail is not passed to the mail hub LOCAL\_USER(root)  
Rebuild and reinstall sendmail.cf, and then restart sendmail.

**14} How to configure multiple mail queues?**

mkdir /var/spool/mqueue/queue.1 mkdir /var/spool/mqueue/queue.2 mkdir /var/spool/mqueue/queue.3  
chmod 700 /var/spool/mqueue/queue.1 chmod 700 /var/spool/mqueue/queue.2 chmod 700 /var/spool/mqueue/queue.3  
Add the QUEUE\_DIR define to the sendmail configuration to use the new queue directories.  
dnl Declare the queue directory path define(`QUEUE\_DIR’, `/var/spool/mqueue/queue.\*’)

**15} How to disable certain SMTP commands?**  
Add the confPRIVACY\_FLAGS define to the sendmail configuration to set Privacy Options that disable unwanted, optional SMTP commands. Here we will disables the EXPN, VRFY, VERB, and ETRN commands.  
dnl Disable EXPN, VRFY, VERB and ETRN define(`confPRIVACY\_FLAGS’, `noexpn,novrfy,noverb,noetrn’)  
Rebuild and reinstall sendmail.cf, and then restart sendmail.

**16} In which Sendmail configuration file we have to make changes?**  
we will make the changes only in the sendmail.mc file, and the changes will be moved into the sendmail.cf file for us.

**17} When Sendmail dispatches your email, it places the servers hostname behind your username, which becomes the “from address” in the email (ie. user@mail.test.com).But we want to use the domain name and not the hostname?**  
define(`confDOMAIN\_NAME’, `test.com’)dnlFEATURE(`relay\_entire\_domain’)dnl

**18} What does /etc/mail/access file contains?**  
The access database (“/etc/mail/access”) is a list of IP addresses and domainnames of allowable connections.  
FEATURE(`access\_db’,`hash -T<TMPF> -o /etc/mail/access.db’)dnl  
and cat /etc/mail/access  
localhost.localdomain RELAY localhost RELAY 127.0.0.1 RELAY 192.168.0 RELAY test.com RELAY

**19} How to restrict sendmail to sending a big file?**

define(`confMAX\_MESSAGE\_SIZE’,`52428800′)dnl  
or If you are using a PHP based webmail application like SquirrelMail, you can adjust the max file size in php.ini file.  
vi php.ini  
post\_max\_size = 50M upload\_max\_filesize = 50M memory\_limit = 64M

**20} How to set 25 recipients for each email?**  
define(`confMAX\_RCPTS\_PER\_MESSAGE’,`50′)dnl

**21} Which antivirus you have integrated with sendmail ?**  
ClaimAV

**22} What is Clamav-Milter?**

Clamav-Milter is a tool to integrate sendmail and clamAV antivirus.

**23} Which configuration files are required to integrate sendmail and ClaimAV antivirus?**  
milter.conf and clamav-milter

**24} How to test sendmail integration with ClaimAV?**  
grep Milter /var/log/maillog  
You have to get following type of messages.  
sendmail: Milter add: header: X-Virus-Scanned: ClamAV version 0.88.2, clamav-milter version 0.88.2 on mail.test.com sendmail: Milter add: header: X-Virus-Status: Clean

**25} Which tool you have used to block spamming?**  
SpamAssassin

**26} What does “/etc/mail/” directory contains?**  
The /etc/mail/ directory contain all the Sendmail configuration files, withsendmail.cf and submit.cf being the main configuration files.

**27} Explain the use of /etc/mail/relay-domains file?**  
The /etc/mail/relay-domains file is used to determine domains from which it will relay mail. The contents of the relay-domains file should be limited to those domains that can be trusted not to originate spam.

**28} What is the name of spamassassin configuration file?**  
/etc/mail/spamassassin/local.cf

**29} How to check mail Queue of sendmail?**  
/usr/lib/sendmail -bp  
or  
mailq  
**30} How to use m4 macro processor to generate a new sendmail.cf?**  
m4 /etc/mail/sendmail.mc > /etc/mail/sendmail.cf

**QMAIL SERVER**

**1} Which qmail process use “concurrecylocal” control file?**  
qmail-send

**2} What is maildir?**

Maildir is a mailbox format created by Dan Bernstein to address the shortcomings of the mbox format. A maildir mailbox is a directory containing three subdirectories, new, cur, and tmp. Each message in a maildir mailbox is in a separate file in one of the subdirectories, depending upon its status: new is for unread messages, cur is for messages that have been seen, and tmp is for messages in the process of being delivered.

**3} What is procmail?**

procmail is a popular Message Delivery Agent (MDA). The function of an MDA is to accept a message from the MTA for a specific user or mailbox, and deliver the message according to the user’s desires. procmail can be used to “filter” messages by the content of various header fields or the body of the message.

**4} Which Groups and Users are required to start QMAIL Server ?**

Groups :- nofiles qmail  
Users :- qmaild alias qmaill qmailp qmailq qmailr qmails

**5} What is the role of “qmail-send” process ?**

qmail-send – deliver mail messages from the queue

**6} How to check, qmail server is up or down ?**

We can use qmailctl command to check the status of qmail server.  
# qmailctl stat  
/service/qmail-send: up (pid 30303) 187 seconds /service/qmail-send/log: up (pid 30304) 187 seconds  
47  
/service/qmail-smtpd: up (pid 30305) 187 seconds /service/qmail-smtpd/log: up (pid 30308) 187 seconds messages in queue: 0 messages in queue but not yet preprocessed: 0

**7} What is QMAIL?**

qmail is a mail transfer agent that runs on Unix/Linux. It was written, starting December 1995, by Daniel J. Bernstein as a more secure replacement for the popular Sendmail program. qmail’s source code is released to the public domain, making qmail free software.

**8} What is Courier-imap?**

A server that provides IMAP access to Maildir mailboxes. This IMAP server does NOT handle traditional mailbox files (/var/spool/mail, and derivatives), it was written for the specific purpose of providing IMAP access to Maildirs.

**9} What is the location of qmail control files ?**

/var/qmail/control

**10} Tell me the name of five Important Qmail daemons?**  
qmail-queue qmail-send qmail-clean qmail-lspawn qmail-rspawn qmail-local qmail-remote

**11} Explain the working of qmail?**  
For mail arriving from remote systems, tcpserver runs as a daemon listening for incoming connections on the SMTP port. Each time a connection arrives, it runs qmail-smtpd, which receives a message via SMTP and calls qmail-queue to queue the message. Regardless of where the message originates, qmail-queue writes the message to a temporary file in the queue/todo directory, putting a new Received: line at the top, and also saves the envelope sender and recipient addresses to files. Then it notifies qmail-send by writing a byte to a “trigger” socket file. qmail-send takes the message out of queue/todo, and analyzes each recipient address to see if it’s local, remote, or virtual. For local addresses, it notifies qmail-lspawn to run qmail-local to do the local deliveries. For each remote address, qmail-send notifies qmail-rspawn to run qmail-remote to do the remote deliveries. For virtual addresses, qmail-send rewrites each virtual address as a modified local address, using the information from the virtualdomains files.

**12} What is “ucspi-tcp”?**  
A package for servers that respond to incoming TCP connections, as an alternative to the old inetd daemon. It used to be optional, but its tcpserver is now the only supported way to run qmail’s SMTP daemon.

**13} What is “checkpassword”?**  
If you’re using qmail’s built-in POP3 server, you want Dan’s checkpassword program, which validates user logins as well. Even if you’re installing an alternative checkpassword, it’s nice to have Dan’s checkpassword installed for testing.

**14} Which Mailbox Format is used by Qmail?**  
Qmail supports two mailbox formats: the traditional mbox and Dan’s newer Maildir.

**15}Explain qmail control file “me”?**

The name of this host, e.g., mail.test.com. This provides the default to use for many other configuration files.

**16} Explain about qmail control file “locals”?**

Domain names to be delivered locally, one per line. Mail to any domain listed in locals is delivered by treating the mailbox part as a local address. This usually contains the name of the host and the name of the domain used for user mailboxes, such as test.com and mail.test.com.

**17} Explain about qmail control file “rcpthosts”?**

Domains for which this host should accept mail via SMTP. This generally contains all of the domains in locals, as well as any virtual domains and any domains for which this host is a backup mail server. If rcpthosts does not exist, qmail accepts and delivers mail for any domain, a severe misconfiguration known as an “open relay,” which will be hijacked by spammers. Be sure your rcpthosts file exists before starting qmail. If you haven’t defined any virtual domains, just copy locals to rcpthosts.

**18} Explain about qmail control file “badmailfrom”?**

This qmail control file is used by qmail-smtpd. Envelope addresses not allowed to send mail. If the envelope from address on an incoming message matches an entry in badmailfrom, the SMTP daemon will reject every recipient address. Entries may be either email addresses, or @domain to reject every address in a domain. This is a primitive form of spam filtering.

**19}What is the use of “bouncefrom” qmail control file?**  
This qmail control file is used by qmail-send daemon. This file contains the mailbox of the return address to put in bounce messages.

**20} What is use of “concurrencylocal” qmail control file?**  
This qmail control file is used by qmail-send daemon. This file contains the maximum number of simultaneous local deliveries. The default value is 10.

**21} What is use of “concurrencyremotel” qmail control file?**  
This qmail control file is used by qmail-send daemon. This file contains the maximum number of simultaneous remote deliveries. The default value is 20.

**22} What is the use of “queuelifetime” qmail control file?**  
This qmail control file is used by qmail-send daemon. In this file we define how long to keep trying to deliver a message. The default value is 604800 seconds (a week).

**23}What is the use of “timeoutconnect” qmail control file?**  
This qmail control file is used by qmail-remote daemon. In this file we define how long to wait for a remote server to accept the initial connection to send mail. The default value is 60 seconds.

**24} What is the use of “virtualdomains” qmail control file?**  
The list of virtual users and domains for which this system receives mail. The default value in this file is none.

**25}How to rebuild the SMTP access database?**

qmailctl cdb or tcprules /etc/tcp.smtp.cdb /etc/tcp.smtp.tmp < /etc/tcp.smtp chmod 644 /etc/tcp.smtp\*

**26} Which mailing list you have configured with qmail?**  
EZmlm

**27} Have you installed autoresponder & what is the use of autoresponder?** Yes, this is a simple program to automatically respond to emails.

**28} what is vpopmail?**  
vpopmail is a free GPL software package, to provide an easy way to manage virtual e-mail domains and non /etc/passwd e-mail accounts on your qmail server.

**29} Why vpopmail?**  
vpopmail provides a good set of management tools and a reasonably well designed structure which saves you implementing your own. vpopmail has also been around for a long time and enjoys support from a lot of other software packages related to mail which makes integration fairly simple.

**30} Tell me the location of vpopmail binaries?**  
/home/vpopmail/bin

**31}What is the use of vadddomain command?**  
Vadddomain command is used to adds a new domain to the qmail server

**32} What is “vchkpw”?**  
vchkpw is the authentication mechanism used by qmail to check passwords required for downloading mail, and in the case of SMTP\_AUTH, sending mail.

**33} can vpopmail integrated with MySQL database?**  
Yes

**34} Which web based interface you have used to manage vpopmail?**  
Vqadmin

**35} What is maildrop?**

Maildrop is a mail filtering agent which can be used to filter messages as they arrive on the server.

**36} What is Qmailadmin?**  
Qmailadmin is going to provide us with a nice web based interface for administering mail accounts once they are setup through Vpopmail (or Vqadmin). From Qmailadmin we can create mailboxes, aliases, forwards, mail robots, mailing lists.

**37} Which antivirus you have used with Qmail?**  
ClamAV antivirus

**38} Where Clam AV quarantines the e-mails?**  
Clam AV quarantines the e-mails in /var/spool/qmailscan/quarantine

**39} By which user we run ClamAV?**

qscand user

**40} Can I have Spamassassin tag suspected spam with a custom subject line?**  
Yes. Edit the /var/qmail/bin/qmail-scanner-queue.pl file and find the following line:  
my $spamc\_subject=`:SPAM:`;  
Now type a custom spam subject. This subject line will be added to any mails that Spamassassin tags as suspected spam. Here’s an example:  
my $spamc\_subject=`This is Spam Mail`;

**41}When compiling qmail, I get the following error:**  
qmail-remote.c:36: openssl/ssl.h: No such file or directory what’ s wrong there?  
openssl and libssl-dev packages are required for qmail compiling. Check these packages are installed or not

**42}How can I disable qmail from conducting reverse DNS lookups on SMTP connections?**  
This can be done by adding a “-H” flag to the tcpserver call within the qmail-smtpd supervise script.  
/usr/local/bin/tcpserver -v -R -H -l “$LOCAL” -x /etc/tcp.smtp.cdb -c “$MAXSMTPD” \

**43} I am running qmail-scanner with Spamassassin and ClamAV. When I run the qmail-scanner test script or when I view my logs, I see the following error: qmail-inject: fatal: qq temporary problem Bad error. qmail-inject died**

This can be fixed by raising the “softlimit” setting within the /var/qmail/supervise/qmail-smtpd file.  
**44} I’m getting the following error concerning Vpopmail: configure: error: No vpopmail etc/lib\_deps file. Upgrade to vpopmail-4.9.8 or above…. What’s wrong?**  
This error is usually caused when installing Vpopmail over a previous Vpopmail installation. Try completely removing the /home/vpopmail directory and then install a fresh copy of Vpopmail. That should clear it up.t qmail-scanner, I get an error that states: “can’t do suid”. What’s wrong?

Your server is not set up to allow for setuid execution of scripts. The easiest way to fix this is to install the “perl-suidperl” package. If you’re running Redhat, you can download the latest RPM of perl-suidperl.

**POSTFIX SERVER**

**1} What is the location of postfix mailserver Queue ?**

By default, the Postfix mail queues are located in the /var/spool/postfix directory. Each message queue is created as a separate subdirectory within this directory. Each message is stored as a separate file in the subdirectory, using a unique identifier for the filename.

**2}What is LMTP ?**

The Local Mail Transport Protocol (LMTP) is a different mail transport protocol described in RFC 2033. LMTP utilizes a set protocol similar to SMTP for delivering messages to the local host. Postfix can be configured to deliver messages to local users using LMTP if desired.

**3}What is canonical Table ?**

The cleanup program uses the canonical table to rewrite message addresses contained in the message header.The mail administrator can use one canonical lookup table for both received messages and sent messages or separate tables for each. The canonical table is often used in conjunction with the alias file to provide address header rewriting of outgoing mail messages.

**4} who is the creater of Postfix?**

Wietse Venema wrote Postfix as a complete MTA package

**5} What is the difference between postfix and sendmail?**

The main difference between Postfix and Sendmail is Postfixâ€™s modularity. Just as the Unix system broke up e-mail functionality between modules, Postfix extends that practice to the MTA program. Postfix uses several different programs to implement the MTA functionality.This allows each modular program to be smaller and quicker than one large monolithic program would be.  
Postfix is more secure than sendmail.Postfix requires a separate userid to be added to the mail server. Each module runs under this userid. If an intruder compro-mises a Postfix module, he most likely will still not be able to break out of the module and gain control of the mail server.  
Instead of one large compiled configuration file, Postfix uses multiple files that use plaintext parameter and value names to define functionality. Most of the parameters used in Postfix default to common-sense values that allow the mail administrator to configure a complete mail server with a minimal amount of effort.

**6} what is qmgr?**

Once the valid message is rewritten and placed in the incoming message queue, the qmgr program ensures that the message is delivered to the proper destinations. The qmgr program then examines message headers and passes them to the appropriate delivery program depending on the destination addresses. Currently, the qmgr program can forward messages to the local, smtp, and pipe programs.

**7}Tell me about latest Version of Postfix on which u have worked ?**

postfix 2.6  
**8} What are the important files for postfix server ?**

/etc/postfix/main.cf /etc/postfix/access /etc/postfix/aliases

**9} Where postfix mail server logs created ?**

/var/log/maillog

**10} Explain the working of local mail submission for postfix?**

When a local email message enters the postfix system. Local messages are deposited into the maildrop directory of the Postfix queue by the postdrop command, usually through the sendmail compatibility program. The pickup daemon reads the message from the queue and feeds it to the cleanup daemon. The cleanup daemon processes all inbound mail and notifies the queue manager after it has placed the cleaned-up message into the incoming queue. The queue manager then invokes the appropriate delivery agent to send the message to its next hop or ultimate destination.

**11} What are the benefits of using SMTP AUTH? –**

Using SMTP AUTH we can make it possible for clients, colleagues, and ourselves to relay messages from everywhere in the world using only one (our) SMTP server.  
– Being a mobile user, we don’t have to deal with the hassle to find a SMTP server that permits us to relay.  
– We can make use of scripts and daemons that run on our server and provide services that we need e.g. server-side virus scanning.

1**2} by using postconf command, how you will set fully qualified hostname(mail4.test.com)?**

# postconf -e myhostname=mail.example.com

The -e option tells postconf to edit the configuration with the parameters and values specified.

**13} Which command checks for configuration problems?**  
# postfix check

**14} Which command checks for configuration problems?**  
# postfix check

**15} How can I clear postfix mail server queue?**

# postsuper -d ALL

**16} How you will reload the postfix queue?**  
# postsuper -r ALL

**17} Can postfix server configured with MySQL database?**  
Yes

1**8} which command is used to find out that postfix is complied with mysql or not?**

# postconf -m  
nis regexp environ mysql btree unix hash

**19} What steps required to get Postfix to connect to the MySQL database?**

– define the MySQL alias\_maps entry in the main.cf configuration file  
alias\_maps = hash:/etc/postfix/aliases, mysql:/etc/postfix/mysql-aliases.cf  
– The configuration file mysql-aliases.cf defines the parameters necessary for postfix to connect to the MySQL database.  
**20} Explain smtpd\_recipient\_limit parameter? And what is the default value for this parameter?**

The smtpd\_recipient\_limit parameter can limit the number of recipients allowed in a single incoming message.  
The default value for this parameter is 1000.

**21} Explain smtpd\_timeout Parameter?**

The smtpd\_timeout parameter limits the amount of time Postfix waits for an SMTP client request after sending a response. This allows the Postfix administrator to quickly disconnect SMTP servers that “camp out” on the SMTP connection, utilizing system resources for the SMTP connection without actually sending a message.  
smtpd\_timeout = value  
By default, Postfix will assume the value is in seconds.

**22} Explain queue\_run\_delay Parameter?**  
The queue\_run\_delay parameter sets the time interval (in seconds) that Postfix scans the deferred message queue for messages to be delivered. The default value for this is 1,000 seconds.

**23} Explain maximal\_queue\_lifetime Parameter?**  
The maximal\_queue\_lifetime parameter sets the amount of time (in days) that a message remains in the deferred message queue before being returned as undeliverable. The default value is 5 days. Once this value is reached, Postfix returns the message to the sender.

**24} Explain minimal\_backoff\_time Parameter?**

The minimal\_backoff\_time parameter sets one value that has two uses: the minimum amount of time used to hold a message in the deferred message queue and the minimum amount of time for which a host can be marked unreachable. The default value for this parameter is 1,000 seconds.

**25} Explain maximal\_backoff\_time Parameter?**  
The maximal\_backoff\_time value sets an upper limit to the amount of time a message is left in the deferred message queue without a delivery attempt. The default value for this parameter is 4,000 seconds.

**26} Explain default\_destination\_concurrency\_limit Parameter?**  
The default\_destination\_concurrency\_limit parameter defines the maximum number of concurrent SMTP sessions that can be established with any remote host. This parameter is related to the SMTP maxprocess parameter in the master.cf configuration file. The maximum number of concurrent SMTP sessions cannot exceed the maxprocess value set for the maximum number of SMTP client processes. Thus, if the default maxprocess value of 50 is used, setting the default\_destination\_concurrency\_limit greater than 50 has no effect.

**27} Explain initial\_destination\_concurrency Parameter?**  
The initial number of concurrent SMTP sessions Postfix will establish with a remote host is defined by the initial\_destination\_concurrency parameter. The default value for this parameter is 2.

**APACHE SERVER**

**1} what is location of log files for apache server?**  
/var/log/httpd

**2} what are the types of virtual hosts?**  
Name-based and IP-based.  
Name –based virtual host means that multiple names are running on each IP address.  
IP-based virtual host means that a defferent IP address exists for each website served. Most configurations are named-based because it only requires one IP address.

**3} how to restart apache web server ?**  
Service httpd restart

**4} How to check the version of Apache server ?**

rpm -qa |grep httpd

**5} What is meaning of “Listen” in httpd.conf file ?**

Port number on which to listen for nonsecure (http) transfers.

**6} What is DocumentRoot ?**

it is a location of files which are accessible by clients. By default, the Apache HTTP server in RedHat Enterprise Linux is configured to serve files from the /var/www/html/ directory.

**7} On which port Apache server works ?**

http – port 80 https – port 443

8**}Tell me name of main configuration file of Apache server ?**

httpd.conf  
**9}On which version of apache you have worked ?**

httpd-2.2.3

**10} What do you mean by a valid ServerName directive?**

The DNS system is used to associate IP addresses with domain names. The value of ServerName is returned when the server generates a URL. If you are using a certain domain name, you must make sure that it is included in your DNS system and will be available to clients visiting your site.

**11} What is the main difference between <Location> and <Directory> sections?**

Directory sections refer to file system objects; Location sections refer to elements in the address bar of the Web page  
**12} What is the difference between a restart and a graceful restart of a web server?**

During a normal restart, the server is stopped and then started, causing some requests to be lost. A graceful restart allows Apache children to continue to serve their current requests until they can be replaced with children running the new configuration.

1**3} What is the use of mod\_perl module?**

mod\_perl scripting module to allow better Perl script performance and easy integration with the Web server.

**14}If you have added “loglevel Debug” in httpd.conf file, than what will happen?**

It will give you more information in the error log in order to debug a problem.

**15} Can you record the MAC (hardware) address of clients that access your server.**

No  
**16} Can you record all the cookies sent to your server by clients in Web Server logs?**

Yes, add following lines in httpd.conf file. CustomLog logs/cookies\_in.log “%{UNIQUE\_ID}e %{Cookie}i” CustomLog logs/cookies2\_in.log “%{UNIQUE\_ID}e %{Cookie2}i”

**17} Can we do automatically roll over the Apache logs at specific times without having to shut down and restart the server?**

Yes  
Use CustomLog and the rotatelogs programs  
Add following line in httpd.conf file. CustomLog “| /path/to/rotatelogs /path/to/logs/access\_log.%Y-%m-%d 86400” combined

**18} What we can do to find out how people are reaching your site?**

Add the following effector to your activity log format. %{Referer}

**19} If you have only one IP address, but you want to host two web sites on your server. What will you do?**

In this case I will use Name Based Virtual hosting.  
ServerName 10.111.203.25 NameVirtualHost \*:80  
<VirtualHost \*:80> ServerName web1.test.com DocumentRoot /var/www/html/web1 </VirtualHost> <VirtualHost \*:80> ServerName web2.test2.com DocumentRoot /var/www/html/web2 </VirtualHost>

**20} If you have to more than one URL map to the same directory but you don’t have multiple Alias directives. What you will do?**

In this case I will use “AliasMatch” directives. The AliasMatch directive allows you to use regular expressions to match arbitrary patterns in URLs and map anything matching the pattern to the desired URL.  
**21} How you will put a limit on uploads on your web server?**

This can be achieved by LimitRequestBody directive.  
<Directory “/var/www/html/data\_uploads”> LimitRequestBody 100000 </Directory>  
Here I have put limit of 100000 Bytes

**22} I want to stop people using my site by Proxy server. Is it possible?**<Directory proxy:[**http://www.test.com/myfiles&gt**](http://www.test.com/myfiles&gt); Order Allow,Deny  
Deny from all Satisfy All </Directory>

**23} What is mod\_evasive module?**

mod\_evasive is a third-party module that performs one simple task, and performs it very well. It detects when your site is receiving a Denial of Service (DoS) attack, and it prevents that attack from doing as much damage. mod\_evasive detects when a single client is making multiple requests in a short period of time, and denies further requests from that client. The period for which the ban is in place can be very short, because it just gets renewed the next time a request is detected from that same host.

**24}How t to enable PHP scripts on your server?**

If you have mod\_php installed, use AddHandler to map .php and .phtml files to the PHP handler. AddHandler application/x-httpd-php .phtml .php

**25} Which tool you have used for Apache benchmarking?**

ab (Apache bench)  
ab -n 1000 -c 10 [**http://www.test.com/test.html**](http://www.test.com/test.html)

**26} Can we cache files which are viewed frequently?**

Yes we can do it by using mod\_file\_cache module. CacheFile /www/htdocs/index.html

**27} Can we have two apache servers having diff versions?**

Yes, you can have two different apache servers on one server, but they can’t listen to the same port at the same time.Normally apache listens to port 80 which is the default HTTP port. The second apache version should listen to another port with the Listen option in httpd.conf, for example to port 81.

**LDAP SERVER**

**1} Is there Graphical editors for LDAP?**

Yes, Following are some GUI based tools for LDAP – GQ – Java LDAP Browser/Editor – Softerra LDAP Browser

**2} What can i do if my application doesn’t speak to LDAP ?**

Gateway that translate one directory access protocol into another.

**3} How can i join information contained in different directories ?**

Distributed, Multivendor directories glued together by referrals and references.  
**4}What is “LDIF”?**

The LDAP Interchange Format (LDIF) is a standard text file format for storing LDAP configuration information and directory contents. LDIF files are often used to import new data into your directory or make changes to existing data.  
**5} Name the object class types?**

– Structural Object class – Auxiliary Object class – Abstract object classes  
**6} What is the name of main configuration file name for LDAP server ?**slapd.conf

**7} What is LDAP?**

LDAP stands for Lightweight Directory Access Protocol. In plain and simple terms, its a database whereby it has all the details of all of organizations, individuals, and other resources such as files and devices in a network, whether on the Internet or on corporate intranetand whether or not you know the domain name, IP address, or geographic whereabouts. An LDAP directory can be distributed among many servers on a network, then replicated and synchronized regularly. An LDAP server is also known as a Directory System Agent (DSA). Its a not a relational database. Outlook and other email programs uses LDAP to search for a recipient in an organization.

**8} Whats the relation ship between LDAP and JNDI?**

JNDI has classes provided by SUN that will help ur appln interact with and LDAP server. JNDI appln work similarly to JDBC applns once and be free to use ‘drivers’ from different vendors. SUN provides the “driver” that will help interact with the LDAP server. Sun also provides “drivers” for other naming services (like CORBA).

**9} Why LDAP is called light weight?**

LDAP (Lightweight Directory Access Protocol) is a protocol for communications between LDAP servers and LDAP clients. LDAP servers store “directories” which are access by LDAP clients. LDAP is called lightweight because it is a smaller and easier protocol which was derived from the X.500 DAP (Directory Access Protocol) defined in the OSI network protocol stack.

**10} what is SLAPD?**

SLAPD stands for Stand-Alone LDAP.Clients connect to the server over the LDAP protocol, usually using a network-based connection (though SLAPD provides a UNIX socket listener).

**11} Which daemons are required for LDAP server?**

slapd and slurpd

**12}Tell me the name of three LDAP Client utilities or Applications**

ldapsearch ldapadd ldapmodify

**13} Define Schemas?**

Schemas provide definitions of the different object classes and attribute types that OpenLDAP should support. Using these, OpenLDAP can determine what entries it is allowed to store, whether any given entry is valid, and how entries should optimally be stored.

**14} Explain modulepath directive?**

The modulepath directive provides the full path to the directory where the modules (the compiled libraries) are stored.

**15}Explain moduleload directive?**

The moduleload directive instructs OpenLDAP to load a particular module.

**16}What is HDB?**  
HDB is the new generation storage mechanism for OpenLDAP. Like its predecessor, the BDB backend, HDB uses the Oracle BerkeleyDB database for storage, but HDB stores entries hierarchically, a perfect fit for LDAP’s tree structure. The old BDB backend is still supported, and you can use it by specifying bdb instead of hdb in the database directive.

**17} Which utility is used to Encrypt the password?**

ldappasswd  
**18} How you will verify LDAP configuration file?**

Use “slaptest” utility.  
slaptest -v -f /etc/ldap/slapd.conf

**19} Which configuration file is required for LDAP clients?**

ldap.conf

**20} Explain “SIZELIMIT” directive?**

This directive indicates the upper limits on the number of records returned.

**21} Explain “TIMELIMIT” directive?**

This directive will give the information about the amount of time the client will wait for the server to respond.

**22} Tell me the name of logical operators which are used in ldap filters.**

AND (&), OR (|), and NOT (!)

**23} What Does slapadd Do?**

The slapadd utility reads the slapd.conf file, loads the appropriate backend databases, and then reads LDIF data.

**24} Which web based tool you have used for LDAP?**

phpLDAPadmin

**SQUID SERVER**

**1} On Which port Proxy server work ?** **Can we change proxy server port ?**

By default proxy server runs on 3128 port. yes we can change proxy server port.  
vi /etc/squid/squid.conf http\_port 3128

**2} How to block Some domains by Squid server ?**

Make a file  
vi /etc/squid/bad\_domains  
.xxx.com .abcd.com .sexy.com  
Now make following changes in Squid.conf file  
acl BAD\_DOMAINS dstdom\_regex -i “/etc/squid/bad\_domains” http\_access deny BAD\_DOMAINS

**3} How to clear Cache in Squid proxy?** Firstly stop squid server.  
service squid stop  
rm -rf /var/lib/squid/cache/\*  
squid -z

**4} How to restart squid server ?**

service squid restart  
**5} What is the name of main configuration file for Squid server ?**/etc/squid/squid.conf

**6} How to restrict web access by Time ?**

acl MY\_TIME time M T W H F 9:00-17:00  
http\_access allow MY\_TIME

**7} What is Squid ?**

SQUID is a webcache and proxy server for Linux and UNIX. Users configure their web browsers to use the Squid proxy server instead of going to the web directly. The Squid server then checks its web cache for the web information requested by the user. It will return any matching information that finds in its cache, and if not, it will go to the web to find it on behalf of the user. Once it finds the information, it will populate its cache with it and also forward it to the user’s web browser.

**8} What is location of Cache directories for SQUID ?**

/var/spool/squid

9} What this command “squid -z” will do ?

This command will create cache directories.

**10} Explain “maximum\_object\_size” directive?**

It defines maximum size for objects to be stored in the disk.The value are specified in kilobytes, and the default is 4MB.

**11} Explain “cache\_dir” directive?**  
This is used to define cache directory, its path, type and size.  
cache\_dir Type Directory-Name Mbytes Level1 Level2

**12} What is ufs?**  
ufs is a squid storage format.

**MYSQL SERVER**

**1} What is REPLCAE statement, and how do I use it?**

The REPLACE statement is the same as using an INSERT INTO command. The syntax is pretty much the same. The difference between an INSERT statement and a REPLACE statement is that MySQL will delete the old record and replace it with the new values in a REPLACE statement, hence the name REPLACE.

**2} MySQL has a lot of neat functions. What if I need one that isn’t there?**MySQL is so flexible that it allows you to create your own functions. These user-defined functions act the same way that MySQL’s own intrinsic functions operate. It is also possible to recompile your functions into the application so that you will always have them, no matter how many times you install.

**3} Do all unique keys have to be primary keys?**

No. MySQL permits only one primary key per table, but there may be a number of unique keys. Both unique keys and primary keys can speed up the selecting of data with a WHERE clause, but a column should be chosen as the primary key if this is the column by which you want to join the table with other tables.

**4} How many databases can one MySQL RDBMS contain?**

Because MySQL uses the file system of the operating system, there really is no limit to the number of databases contained within a single MySQL RDBMS. The size of the database is limited by the operating system. The database tables can only be as big as the OS’s file system will allow.

**5} I want to sort the values of my ENUM and SET columns. How do I do this?** The sort order depends on the order in which the values were inserted. ENUM and SET types are not case sensitive. The value that is inserted reverts to the value that you used when you created the ENUM or SET.

**6} What can I do with the contents of a mysqldump file?**

This file is a complete replica of your database in SQL format. You can do a lot of things with this data. You could re-create your database in Microsoft SQL Server or Sybase by simply cutting and pasting the contents of the file. You could also restore your database by using the dump file and the batching ability of the mysql program.

**7} What are features of MYSQL?**

MySQL is a full-featured relational database management system. It is very stable and has proven itself over time. MySQL has been in production for over 10 years.  
– MySQL is a multithreaded server. Multithreaded means that every time someone establishes a connection with the server, the server program creates a thread or process to handle that client’s requests. This makes for an extremely fast server. In effect, every client who connects to a MySQL server gets his or her own thread.  
– MySQL is also fully ANSI SQL92-compliant. It adheres to all the standards set forth by the American National Standards Institute.  
– another feature of MySQL is its portability—it has been ported to almost every platform. This means that you don’t have to change your main platform to take advantage of MySQL. And if you do want to switch, there is probably a MySQL port for your new platform.  
– MySQL also has many different application programming interfaces (APIs). They include APIs for Perl, TCL, Python, C/C++, Java (JDBC), and ODBC.

**8} What do I do if I forget the MySQL root password?**

First log in to the system as the same person who is running the mysqld daemon (probably root). Kill the process, using the kill command. Restart MySQL with the following arguments: bin/mysqld Skip-grant USE mysql; UPDATE user SET password = password(‘newpassword’) WHERE User = ‘root’; Exit bin/mysqladmin reload  
The next time you log in, you will use your new password

**9} Where is the data stored in a MySQL database?**

MySQL uses files to store data. These files are under the data/databasename directory, where databasename is the name of the database. There are three file types: .ISM, .FRM, and .ISD. The .FRM file contain the table schema. The .ISD is the file that actually holds the data. The .ISM file is the file that provides quick access between the two of them.

**10} Explain the terms “mysqlimport”, “mysqldump”, “mysqladmin” and “mysqlcheck”?**  
mysqlimport for importing data files, mysqldump for making backups, mysqladmin for server administration, and mysqlcheck for checking the integrity of the database files.

**11} How you will determine the options which are used by mysql?**  
#mysql –help

**12} How you will determine the version of MySQL?**  
mysql –version  
mysql Ver 14.12 Distrib 5.0.77, for redhat-linux-gnu (i386) using readline 5.1

**13} How you will connect to the server at a specific IP address with username and password?**  
mysql –host=10.168.1.33 –user=NAME –password=PASSWORD

**14} What do you think about this command “mysql> STATUS;”**  
It will display information about the current connection to the server, as well as status information about the server itself.

**15} Have you used this command “mysql> HELP contents;”?**

Yes, You can get server-side help from this command.  
mysql> HELP contents;  
You asked for help about help category: “Contents”  
For more information, type ‘help <item>’, where <item> is one of  
the following categories:  
Administration  
Column Types  
Data Definition  
Data Manipulation  
Functions  
Geographic features  
Transactions

**16} What is MySQL Query Browser?**

The MySQL Query Browser is a graphical tool designed to provide a user friendly environment in which to construct and execute SQL statements.

**17} Explain “AUTO\_INCREMENT” attribute?**  
AUTO\_INCREMENT attribute may be added to an integer column definition to create a column for which MySQL automatically generates a new sequence number each time you create a new row. There may be only one AUTO\_INCREMENT column per table, the column must be indexed, and the column must be defined as NOT NULL.

**18} What this command “mysqladmin status variables” will do?**  
This command will display a brief status message, followed by the list of server system variables.

**19}Explain “CHECK TABLE” statement?**  
The CHECK TABLE statement performs an integrity check on table structure and contents. It works for MyISAM and InnoDB tables. For MyISAM tables, it also updates the index statistics. If the table is a view, CHECK TABLE verifies the view definition.

**20} Explain “REPAIR TABLE” statement?**  
The REPAIR TABLE statement corrects problems in a table that has become corrupted. It works only for MyISAM tables.

**21} Explain “ANALYZE TABLE” statement?**  
The ANALYZE TABLE statement updates a table with information about the distribution of key values in the table. This information is used by the optimizer to make better choices about query execution plans. This statement works for MyISAM and InnoDB tables.

**22} Explain “OPTIMIZE TABLE” statement?**  
The OPTIMIZE TABLE statement cleans up a MyISAM table by defragmenting it. This involves reclaiming unused space resulting from deletes and updates, and coalescing records that have become split and stored non-contiguously. OPTIMIZE TABLE also sorts the index pages if they are out of order and updates the index statistics.

**23}What is “mysqlcheck Client Program”?**  
mysqlcheck checks, repairs, analyzes, and optimizes tables. It can perform all these operations on MyISAM tables, and can perform some of them on InnoDB tables. It provides a command-line interface to the various SQL statements that instruct the server to perform table maintenance, such as CHECK TABLE and REPAIR TABLE.

**24} What is “myisamchk Utility”?**  
The myisamchk utility performs table maintenance on MyISAM tables.

**25}What is the use of “INFORMATION\_SCHEMA Database”?**

The INFORMATION\_SCHEMA database provides access to database metadata.INFORMATION\_SCHEMA is a “virtual database” in the sense that it is not stored anywhere on disk. But like any other database, it contains tables, and its tables contain rows and columns that can be accessed by means of SELECT statements.

**26} What is “binary backup”?**  
A binary backup is a copy of the files in which database contents are stored. Copying these files preserves the databases in exactly the same format in which MySQL itself stores them on disk. Restoration involves copying the files back to their original locations. Techniques for making binary backups include file copy commands.

**27} What is “text backup”?**  
A text backup is a dump of database contents into text files. Restoration involves loading the file contents back into databases by processing them through the server. Techniques for making text backups include the SELECT … INTO OUTFILE SQL statement, mysqldump, and MySQL Administrator.

**28} How you will grant the SELECT privilege for all tables in the TEST database to a user named Ravi, who must connect from the local host and use a password of Ravi123?**  
Use following command.  
GRANT SELECT ON TEST.\* TO ‘Ravi’@’localhost’ IDENTIFIED BY ‘Ravi123’;

**29} Explain “REVOKE statement”?**  
The REVOKE statement to revoke privileges from an account.

**30} Explain the command “SHOW GRANTS FOR ‘root’@’localhost’;”**  
It will show the account has global, database-level, and table-level privileges.

**TOMCAT APP SERVER**

**1} I stored a cookie on the browser; why can’t I see it?**

First, check to make sure you spelled the cookie name correctly. Next, make sure the browser has cookies enabled. Also, if you specified a root path for the cookie, make sure that the JSP or servlet reading the cookie is in that path. Remember, too, that if you don’t give the cookie a specific expiration time, the cookie will vanish when the user shuts the browser down.

**2}Why is a new object created whenever I call jsp:useBean?** You probably forgot to specify a scope for the bean. Remember, the default scope for a bean is page, and all beans with page scope disappear when the page finishes executing.

**3} When do I use . and when do I use []?**

Although you can use these operators interchangeably, it is a good idea to use an operator that indicates the kind of data being accessed. For example, if you are accessing a bean property, use the . operator. If you are accessing a map value or an array index, use the [] operator. There are plenty of times when you break this rule, especially in cases where you want a map to look like it is a bean, you want things to make sense to the next person who reads your code. You may know the types of all the variables, but the next person may not.

**4}How do I configure Tomcat to work with IIS and NTLM?**

Follow the standard instructions for when the isapi\_redirector.dll  
Configure IIS to use “integrated windows security”  
In server.xml, make sure you disable tomcat authentication:  
<Connector port=”8009″ enableLookups=”false” redirectPort=”8443″ protocol=”AJP/1.3″ tomcatAuthentication=”false” />

**5}Explain the concepts of Tomcat Servlet Container.**

– Tomcat Servlet Container is a servlet container. The servlets runs in servlet container. – The implementation of Java Servlet and the Java Server Pages is performed by this container. – Provides HTTP web server environment in order to run Java code. – Reduces garbage collection – Native Windows and Unix wrappers for platform integration

**6} Why do I get a ClassNotFoundException when I try to use the ShoppingCart class?**

The JSP engine probably can’t see the class in its classpath. Tomcat uses the system classpath, so if ShoppingCart.class is visible somewhere in the system classpath, they should see it.

**7}What is Tomcat?**

Tomcat is a Java Servlet container and web server from Jakartha project of Apache software foundation. A web server sends web pages as response to the requests sent by the browser client. In addition to the static web pages, dynamic web pages are also sent to the web browsers by the web server. Tomcat is sophisticated in this respect, as it provides both Servlet and JSP technologies. Tomcat provides a good choice as a web server for many web applications and also a free Servlet and JSP engine. Tomcat can be used standalone as well as behind other web servers such as Apache httpd.

**8} What is Jasper?**

Jasper is a program to read the .class files in binary format. This program can generate ASCII files , which can be used along with Jasmin Assembler. Jasper is intended for generating input into a class file browser which can produce the hierarchy of inheritance and composition maps from the .class files.

**9}Can I set Java system properties differently for each webapp?**

No. If you can edit Tomcat’s startup scripts, you can add “-D” options to Java. But there is no way to add such properties in web.xml or the webapp’s context.