**1. Write command to list all the links from a directory?**

**Ans:** ls -lrt | grep "^l"

**2. Create a read-only file in your home directory?**

**Ans:** touch file and chmod 400 file

**3. How will you find which operating system your system is running on in UNIX?**

**Ans:** uname -a

**4. How will you run a process in background? How will you bring that into foreground and how will you kill that process?**

**Ans:** For running a process in background use "&" in command line. For bringing it back in foreground use command "fg jobid"and for getting job id you use command "jobs", for killing that process find PID and use kill -9 PID command. This is indeed a good Unix Command interview questions because many of programmer not familiar with background process in UNIX.

**5. How do you know if a remote host is alive or not?**

**Ans:** You can check these by using either “ping” or “telnet” command in UNIX.

**6. How do you see command line history in UNIX?**

**Ans:** use history command along with [grep command in unix](http://javarevisited.blogspot.com/2011/06/10-examples-of-grep-command-in-unix-and.html)to find any relevant command you have already executed. Purpose of this Unix Command Interview Questions is probably to check how familiar candidate is from available tools in UNIX operation system.

**7. How do you copy file from one host to other?**

**Ans:** Many options but you can say by using "**scp**" command. You can also use **rsync** command to answer this UNIX interview question or even **sftp** would be ok.

**8. How do you find which process is taking how much CPU?**

**Ans:** By using "top" command in UNIX, there could be multiple follow-up UNIX command interview questions based upon response of this because “TOP” command has various interactive options to [sort](http://javarevisited.blogspot.com/2011/08/unix-sort-command-example-tutorial.html) result based upon various parameter.

**9.** **How do you check how much space left in current drive?**

**Ans:** By using "df" command in UNIX. For example "df -h ." will list how full your current drive is. This is part of anyone day to day activity so I think this Unix Interview question will be to check anyone who claims to working in UNIX but not really working on it.

**10. What is the difference between Swapping and Paging?**

**Swapping:**

Whole process is moved from the swap device to the main memory for execution. Process size must be less than or equal to the available main memory. It is easier to implementation and overhead to the system. Swapping systems does not handle the memory more flexibly as compared to the paging systems.

**Paging:**

Only the required memory pages are moved to main memory from the swap device for execution. Process size does not matter. Gives the concept of the virtual memory. It provides greater flexibility in mapping the virtual address space into the physical memory of the machine. Allows more number of processes to fit in the main memory simultaneously. Allows the greater process size than the available physical memory. Demand paging systems handle the memory more flexibly.

**11. What is difference between ps -ef and ps -auxwww?**

**Ans:** ps -ef will omit process with very long command line while ps -auxwww will list those process as well.

**12. How do you find how many cpu are in your system and there details?**

**Ans:** cat /proc/cpuinfo

**13. What is difference between SoftLink and HardLink in UNIX?**

|  |  |  |
| --- | --- | --- |
|  | **Soft Link** | **Hard Link** |
| 1 | Size of the link is equal to number of characters in the name of original file | Size of both is same |
| 2 | Can be created across the partition | Can’t be created across the partition |
| 3 | Inode number of source and link file is diferent | Inode number of both file is same |
| 4 | If original file is deleted, link is broken and data is lost | If original file is deleted then also link will contain data |
| 5 | Shortcut File | Backup File |

**14. What is Zombie process in UNIX? How do you find Zombie process in UNIX?**

**Ans:** When a program forks and the child finishes before the parent, the kernel still keeps some of its information about the child in case the parent might need it - for example, the parent may need to check the child's exit status. To be able to get this information, the parent calls 'wait()'; In the interval between the child terminating and the parent calling 'wait()', the child is said to be a 'zombie' (If you do 'ps', the child will have a 'Z' in its status field to indicate this)

**Zombie:** The process is dead but has not been removed from the process table.

**15. What is "chmod" command? What do you understand by this line**

**“r-- -w- --x?**

**16. There is a file some where in your system which contains word "UnixCommandInterviewQuestions” How will find that file in Unix?**

**Ans:** By using find command in UNIX

**17. In a file word UNIX is appearing many times? How will you count number?**

**Ans:** grep -c "Unix" filename

**18. How do you set environment variable which will be accessible form sub shell?**

**Ans:** By using **export** for example export count=1 will be available on all sub shell.

**19. How do you check if a particular process is listening on a particular port on remote host?**

**Ans:** By using telnet command for example “telnet hostname port”, if it able to successfully connect then some process is listening on that port

**20. How do you find whether your system is 32 bit or 64 bit ?**

**Ans:** uname -a or arch

**21. How do you find which processes are using a particular file?**

**Ans:** By using “lsofcommand” in UNIX. It wills list down PID of all the process which is using a particular file.

**22. How do you find which remote hosts are connecting to your host on a particular port say 10123?**

**Ans:** By using netstat command execute netstat -a | grep "port" and it will list the entire host which is connected to this host on port 10123.

**23. What is nohup in UNIX?**

**Ans:**

**24. What is ephemeral port in UNIX?**

**Ans:** Ephemeral ports are port used by Operating system for client sockets. There is a specific range on which OS can open any port specified by ephemeral port range.

**25. If one process is inserting data into your MySQL database? How will you check how many rows inserted into every second?**

**Ans:** Purpose of this Unix Command Interview is asking about "watch" command in UNIX which is repeatedly execute command provided with specified delay.

**26. There is a file Unix\_Test.txt which contains words Unix, how will you replace all Unix to UNIX?**

**Ans:** by using SED command, for example “sed s/Unix/UNIX/g filename”

**27. You have a tab separated file which contains Name, Address and Phone Number, list down all Phone Number without there name and Addresses?**

**Ans:** You can use either AWK or CUT command. CUT use tab as default separator so you can use “cut -f3 filename”

**28. Your application home directory is full? How will you find which directory is taking how much space?**

**Ans:** By using disk usage (DU) command in Unix for example “du –sh . | grep G” will list down all the directory which has GIGS in Size.

**29. How do you find for how many days your Server is up?**

**Ans:** By using “uptime” command

**30. You have an IP address in your network how will you find hostname and vice versa?**

**Ans:** By using “nslookup” command

**31. Linux Introduction**

**Ans:** Linux is an open source operating system based on UNIX, and was first introduced by Linus Torvalds.

**32. What is** **the difference** **between UNIX and LINUX?**

**Ans:** UNIX originally began as a propriety operating system from Bell Laboratories, which later on spawned into different commercial versions. but Linux is free, open source and intended as a non-propriety operating system.

**33. What is BASH?**

**Ans:** BASH is short for “Bourne Again Shell”. It was written by Steve Bourne as a replacement to the original Bourne Shell (represented by /bin/sh). It combines all the features from the original version of Bourne Shell, plus additional functions to make it easier and more convenient to use. It has since been adapted as the default shell for most systems running Linux.

**34. What is Linux Kernel?**

**Ans:** The Linux Kernel is a low-level systems software whose main role is to manage hardware resources for the user. It is also used to provide an interface for user-level interaction.

**35. What is LILO?**

**Ans:** LILO is a boot loader for Linux. It is used mainly to load the Linux operating system into main memory so that it can begin its operations.

**36. What is a** **swap space?**

**Ans:** A swap space is a certain amount of space used by Linux to temporarily hold some programs that are running concurrently. This happens when RAM does not have enough memory to hold all running programs.

**37. What are the basic components of Linux?**

**Ans:** Linux has: kernel, shells, GUIs, system utilities, and application program.

**38. Describe the root account.**

**Ans:** The root account is a Linux system administrator account, and allows full control of the system. When Linux is installed by default root account is created.

**39. What is CLI?**

**Ans:** CLI is the Command Line Interface which allows user to type commands to instruct the computer to perform operations.

**40. How to find** **memory a Linux System is using**?

**Ans:** From the shell #cat /proc/meminfo

**41. What is typical size for a swap partition under a Linux system?**

**Ans:** The preferred size for a swap partition is twice the amount of physical memory available on the system. If this is not possible, then the minimum size should be the same as the amount of memory installed.

**42. What are symbolic links?**

**Ans:** Symbolic links point to programs, files or directories. It allows users instant access to it without having to go directly to the entire path.

**43. Does the Ctrl+Alt+Del key combination work on Linux?**

**Ans:** Yes, it is used to perform a system restart and the reboot is immediate without any confirmation.

**44. How do you refer to the parallel port where devices such as printers are connected?**

**Ans:** Refer to it as /dev/lpX (X is the number of ports available ex 1 , 2 , 3 etc)

**45. Are drives such as hard drive and floppy drives represented with drive letters?**

**Ans:** No they are not represented as drive letters instead they are referred as for example floppy drives are referred to as /dev/fd0 and /dev/fd1. IDE/EIDE hard drives are referred to as /dev/hda, /dev/hdb, /dev/hdc.

**46. How do you change permissions under Linux?**

**Ans:** You can grant permission using the chmod command. Use + symbol to add permission or – symbol to deny permission, along with any of the following letters: u (user), g (group), o (others), a (all), r (read), w (write) and x (execute). For example the command chmodgo+rw FILE1.TXT grants read and write access to the file FILE1.TXT, which is assigned to groups and others.

**47. In Linux, what names are assigned to the different serial ports?**

**Ans:** Serial ports are identified as /dev/ttyS0 to /dev/ttyS7

**48. What are hard links?**

**Ans:** Hard links point directly to the physical file on disk, and not on the path name. This means that if you rename or move the original file, the link will not break, since the link is for the file itself, not the path where the file is located.

**49. What are the filenames that are preceded by a dot?**

**Ans:** filenames that are preceded by a dot are hidden files. These files can be configuration files that hold important data or setup info. Setting these files as hidden makes it less likely to be accidentally deleted.

**50. Explain virtual** [**desktop**](javascript:void(0);)**?**

**Ans:** This serves as an alternative to minimizing and maximizing different windows on the current desktop. Using [virtual desktops](javascript:void(0);), each [desktop](javascript:void(0);) is a clean slate where you can open one or more programs. Rather than minimizing/restoring all those programs as needed, you can simply shuffle between [virtual desktops](javascript:void(0);) with programs intact in each one.

**51. How do you share a program across different** [**virtual desktops**](javascript:void(0);) **under Linux?**

**Ans:** To share a program across different [virtual desktops](javascript:void(0);), in the upper left-hand corner of a program window look for an icon that looks like a pushpin. Pressing this button will “pin” that application in place, making it appear in all [virtual desktops](javascript:void(0);), in the same position onscreen.

**52. What is the pwd command?**

**Ans:** The command prints the present working directory  and is used to [display](javascript:void(0);) the current location in the directory tree.

**53. What are daemons?**

**Ans:** Daemons are services that provide several functions that may not be available under the base operating system. Its main task is to listen for service request and at the same time to act on these requests. After the service is done, it is then disconnected and waits for further requests.

**55. What are the kinds of permissions under Linux?**

**Ans:** There are 3 kinds of permissions under Linux

1. Read: users may read the files or list the directory
2. Write: users may write to the file of new files to the directory
3. Execute: users may run the file or lookup a specific file within a directory

**56. What are the different modes when using VI editor?**

**Ans:** There are 3 modes under vi

1. Command mode – this is the mode where you start in
2. Edit mode – this is the mode that allows you to do text editing
3. Ex mode-this is the mode wherein you interact with vi with instructions to process a file

**57. Is it possible to use shortcut for a long pathname?**

**Ans:** Yes, there is. A feature known as filename expansion allows you do this using the TAB key.For example, if you have a path named /home/raj/game directory, you would type as follows: /ho[tab]/ra[tab]/ga[tab] . This, however, assumes that the path is unique, and that the shell you’re using supports this feature.

**58. What is redirection?**

**Ans:** Redirection is the process of directing data from one output to another. It can also be used to direct an output as an input to another process.

**59. What is grep command?**

**Ans:** grep a search command that makes use of pattern-based searching. It makes use of options and parameters that is specified along the command line and applies this pattern into searching the required file output.

**60. What are the contents in /usr/local?**

**Ans:** It contains locally installed files. This directory actually matters in environments where files are stored on the network. Specifically, locally-installed files go to /usr/local/bin, /usr/local/lib, etc.). Another application of this directory is that it is used for software packages installed from source, or software not officially shipped with the distribution.

**61. How do you terminate an ongoing process?**

**Ans:** Every process in the system is identified by a unique process id or pid. Use the kill command followed by the pid in order to terminate that process. To terminate all process at once, use kill 0.

**62. What is command grouping and how does it work?**

**Ans:** You can use parentheses to group commands. For example, if you want to send the current date and time along with the contents of a file named BINGO to a second file named ANGLES, you can apply command grouping as follows: (date cat BINGO) > ANGLES

**63. How do you execute more than one command or program from a single command line entry?**

**Ans:** You can combine several commands by separating each command or program using a semicolon symbol. For example, you can issue such a series of commands in a single entry:  
ls –l cd .. ls –a MYWORK  
which is equivalent to 3 commands:  
ls -l  
cd..  
ls -a MYWORK  
Note : this will be executed one after the other, in the order specified

**64. Write a command that will look for files with an** **extension** **“c”, and has the occurrence of the string “man” in it?**

**Ans:** #Find ./ -name “\*.c” | xargsgrep –i “man”

**65. Write a command that will** [**display**](javascript:void(0);) **all .txt files, including its individual permission?**

**Ans:** # ls -a -l \*.txt

**66. Write a command that will do the following?**

1. look for all files in the current and subsequent directories with an extension c,v
2. strip the,v from the result (you can use sed command)
3. Use the result and use a grep command to search for all occurrences of the word DON in the files.

**Ans:** Find ./ -name “\*.c,v” | sed ‘s/,v//g’ | xargsgrep “DON”

**67. What command is used to remove the password assigned to a group?**

**Ans:** gpasswd –r

**68. What is the minimum number of partitions you need to install Linux?**

**Ans:** ROOT, BOOT, SWAP.

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

**Ans:** Dmesg: The dmesg command displays the system messages contained in the kernel ring buffer. By using this command immediately after booting your computer, you will see the boot messages.

**70. What command you execute to** [**display**](javascript:void(0);) **the last five commands you have entered?**

**Ans:** history | tail -5

**71. Which partitions might you creates on** [**mail server**](javascript:void(0);) **HDDs other than the root, swap and boot partitions?**

**Ans:** /var

**72. Which partitioning tool is available in all distributions?**

**Ans:** fdisk, parted

**73. Which two commands can you use to delete** **directories?**

**Ans:** rm, rmdir.

**74. Which file defines all users on your system?**

**Ans:** /etc/passwd

**75. What is contained in the** **directory** **/proc?**

**Ans:** System information

The /proc directory is a virtual file system that contains system information.

**76. In order to improve your system’s security you decide** **to implement** **shadow passwords. What command should you use?**

**Ans:** Pwconv, The pwconv command creates the file /etc/shadow and changes all passwords to ‘x’ in the /etc/passwd file. /etc/passwd file already exists there. So, give passwords by “passwd”

**77. How to give permission for a user to shutdown the system?**

**Ans:** Add his username to the /etc/shutdown.allow file. Any user who is listed in the /etc/shutdown.allow [file will](javascript:void(0);) be able to run the shutdown command without being root.

**78. You locate a command in the /bin directory but do not know what it does. What command can you use to determine its purpose?**

**Ans:** Whatis, The whatis command displays a summary line from the man [page](javascript:void(0);) for the specified command.  We can use man and info commands

**79. What utility can you use to show a dynamic listing of running processes?**

**Ans:** Top, The top utility shows a listing of all running processes that is dynamically updated. Top utility is used. Butps –ef command can also be used.

**80. What command would you type to use the cpio to create a backup called backup.cpio of all the user’s home directories?**

**Ans:** find /home | cpio –o > [backup](javascript:void(0);).cpio:  The find command is used to create a list of the files and directories contained in home. This list is then piped to the cpio utility as a list of files to include and the output is saved to a file called backup.cpio.

**81. What file defines the levels of messages written to system log files?**

**Ans:** kernel.h, To determine the various levels of messages that are defined on your system, examine the kernel.h file.

**82. You want to create a compressed**[**backup**](javascript:void(0);)**of the users’ home directories. What utility should you use?**

**Ans:** Tar, You can use the z modifier with tar to compress your archive at the same time as creating it. Tar –zcvf filename.tgz file1 file2, This command is used to take a compress [backup](javascript:void(0);).

**83. You routinely compress old log files. You now need to examine a log from two months ago. In order to view its contents without first having to decompress it which utility is used?**

**Ans:** Zcat, The zcat utility allows you to examine the contents of a compressed file much the same way that cat displays a file. Grep is preffered over zcat.

**84. What command can you use to determine the directory structure was stored for a tar file?**

**Ans:** tartvftarfile, The t switch will list the files contained in the tar file. Using the v modifier will [display](javascript:void(0);) the stored directory structure.

**85. You suspect that you have two commands with the same name as the command is not producing the expected results. What command can you use to determine the location of the command being run?**

**Ans:** which, The which command searches your path until it finds a command that matches the command you are looking for and displays its full path.

**86. The top utility can be used to change the priority of a running process? Another utility that can also be used to change priority is?**

**Ans:** nice, Both the top and nice utilities provide the capability to change the priority of a running process. Nice can be used. For already existing process, renice is used.

**87. While logged on as a regular user, your boss calls up and wants you to create a new user account immediately. How can you do this without first having to close your work, log off and logon as root?**

**Ans:** Issue the command su and type exit when finished. You can use the su command to imitate any user including root. You will be prompted for the password for the root account. Once you have provided it you are logged in as root and can do any administrative duties.

**88. In order to prevent a user from logging in, you can add a(n) \_\_\_\_\_\_\_\_at the beginning of the password field?**

**Ans:** asterisk, If you add an asterisk at the beginning of the password field in the /etc/passwd file, that user will not be able to log in. You can also use passwd -l with the username to lock his account.

**89. You have a file called**[**phone**](javascript:void(0);)**no’s that is almost 4,000 lines long. What text filter can you use to split it into four pieces each 1,000 lines long?**

**Ans:** split, the split text filter will divide files into equally sized pieces. The default length of each piece is 1,000 lines.

**90. You have the /var directory on its own partition. You have run out of space. What should you do?**

**Ans:** Delete the partition and recreate it with a larger size. The only way to enlarge a partition is to delete it and recreate it. You will then have to restore the necessary files from backup. If we feel that we may need to enlarge the partition in future then we can use LVM partitions LVM partitions can be used to enlarge to reduce the partitions LVM can be used with RAID too We can also redirect the log files path, so we can store log files on any other partition or on any other system.

**91. You changed /etc/lilo.conf to cause a boot: prompt to show, however, when you restart your computer you still do not have a prompt. What should you do?**

**Ans:** Install the configuration changes by issuing the command /sbin/lilo, You have to reinstall LILO in order for any configuration changes to take effect. This is done by running /sbin/lilo without any options. Install LILO RPM and change the default option to 1 from 0 in Grub file.

**92. What is the core of Linux Operating System?**

**A) Shell**

**B) Kernel**

**C) Command**

**D) Script**

**E) Terminal**

(**B** - Kernel is the core of Linux Operating System. Shell is a command Line Interpreter, Command is user Instruction to Computer, Script is collection of commands stored in a file and Terminal is a command Line Interface)

**93. What Linux Torvalds Created?**

**A) Fedora**

**B) Slackware**

**C) Debian**

**D) Gentoo**

**E) Linux**

(**E** - Linux Torvalds created Linux, which is the kernel (heart) of all of the above Operating System and all other Linux Operating System)

**94. Torvalds, Wrote most of the Linux Kernel in C++ programming Language, do you agree?**

**Ans:** No! Linux Kernel contains 12,020,528 Lines of codes out of which 2,151,595 Lines are comments. So remaining 9,868,933 lines are codes and out of 9,868,933 Lines of codes 7,896,318 are written in C Programming Language.

The remaining Lines of code 1,972,615 is written in C++, Assembly, Perl, Shell Script, Python, Bash Script, HTML, awk, yacc, lex, sed, etc.

**Note:** The Number of Lines of codes varies on daily basis and an average of more than 3,509 lines are being added to Kernel.

**95. Linux initially was developed for intel X86 architecture but has been ported to other hardware platform than any other Operating System. Do you agree?**

**Ans:** Yes, I do agree. Linux was written for x86 machine, and has been ported to all kind of platform. Today’s more than 90% of supercomputers are using Linux. Linux made a very promising future in mobile phone, Tablets. In-fact we are surrounded by Linux in remote controls, space science, Research, Web, Desktop Computing. The list is endless.

**96. Is it legal to edit Linux Kernel?**

**Ans:** Yes, Kernel is released under General Public License (GPL), and anyone can edit Linux Kernel to the extent permitted under GPL. Linux Kernel comes under the category of Free and Open Source Software (FOSS).

**97. What is the basic difference between UNIX and Linux Operating System?**

**Ans:** Linux Operating System is Free and Open Source Software, the kernel of which is created by Linus Torvalds and community. Well you can not say UNIX Operating System doesn’t comes under the category of Free and Open Source Software, BSD, is a variant of UNIX which comes under the category of FOSS. Moreover Big companies like Apple, IBM, Oracle, HP, etc. are contributing to UNIX Kernel.

**100. Choose the odd one out.**

**A) HP-UX**

**B) AIX**

**C) OSX**

**D) Slackware**

**E) Solaris**

(**D** - Slackware is the odd in the above list. HP-UX, AIX, OSX, Solaris are developed by HP, IBM, APPLE, Oracle respectively and all are UNIX variant. Slackware is a Linux Operating System)

**101. Is Linux Operating system Virus free?**

**Ans:** No! There doesn’t exist any Operating System on this earth that is virus free. However Linux is known to have least number of Viruses, till date, yes even less than UNIX OS. Linux has had about 60-100 viruses listed till date. None of them actively spreads nowadays. A rough estimate of UNIX viruses is between 85 -120 viruses reported till date.

**102. Linux is which kind of Operating System?**

**A) Multi User**

**B) Multi Tasking**

**C) Multi Process**

**D) All of the above**

**E) None of the above**

(**D** - All of the Above. Linux is an Operating System which supports Multi User, Running a Number of Processes performing different tasks simultaneously)

**103. Syntax of any Linux command is?**

**Ans:** Command [options] [arguments]

**104. Choose the odd one out.**

**A) Vi**

**B) vim**

**C) cd**

**D) nano**

(**C** - The odd one in the above list is cd. Vi, vim and nano are editors which is useful in editing files, while cd command is used for changing directory)

**105. You need to see the last fifteen lines of the files dog, cat and horse. What command should you use?**

**Ans:** tail -15 dog cat horse, The tail utility displays the end of a file. The -15 tells tail to display the last fifteen lines of each specified file.

**106. Who owns the data dictionary?**

**Ans:** The SYS user owns the data dictionary. The SYS and SYSTEM users are created when the database is created.

**107. You routinely compress old log files. You now need to examine a log from two months ago. In order to view its contents without first having to decompress it, use the \_\_\_\_\_\_\_\_\_ utility.**

**Ans:** zcat, the zcat utility allows you to examine the contents of a compressed file much the same way that cat displays a file.

**108. You suspect that you have two commands with the same name as the command is not producing the expected results. What command can you use to determine the location of the command being run?**

**Ans:** which, The which command searches your path until it finds a command that matches the command you are looking for and displays its full path.

**109. You locate a command in the /bin directory but do not know what it does. What command can you use to determine its purpose?**

**Ans:** whatis, the whatis command displays a summary line from the man page for the specified command.

**110. You wish to create a link to the /data directory in bob's home directory so you issue the command ln /data /home/bob/datalink but the command fails. What option should you use in this command line to be successful?**

**Ans:** Use the -F option, In order to create a link to a directory you must use the -F option.

**111. When you issue the command ls -l, the first character of the resulting display represents the file's?**

**Ans:** type, the first character of the permission block designates the type of file that is being displayed.

**112. What utility can you use to show a dynamic listing of running processes?**

**Ans:** top, the top utility shows a listing of all running processes that is dynamically updated.

**113. Where standard output is usually directed?**

**Ans:** to the screen or display, by default your shell directs standard output to your screen or display.

**114. You wish to restore the file memo.ben which was backed up in the tar file MyBackup.tar. What command should you type?**

**Ans:** tar -xf MyBackup.tar memo.ben, this command uses the x switch to extract a file. Here the file memo.ben will be restored from the tar file MyBackup.tar.

**115. You need to view the contents of the tar file called MyBackup.tar. What command would you use?**

Ans : tar tf MyBackup.tar

(The t switch tells tar to display the contents and the f modifier specifies which file to examine)

**116. You want to create a compressed backup of the users' home directories. What utility should you use?**

Ans : tar

(You can use the z modifier with tar to compress your archive at the same time as creating it)

**117. What daemon is responsible for tracking events on your system?**

Ans : syslogd

(The syslogd daemon is responsible for tracking system information and saving it to specified log files)

**118. You have a file called phonenos that is almost 4,000 lines long. What text filter can you use to split it into four pieces each 1,000 lines long?**

Ans : split

(The split text filter will divide files into equally sized pieces. The default length of each piece is 1,000 lines)

**119. You would like to temporarily change your command line editor to be vi. What command should you type to change it?**

Ans : set -o vi

(The set command is used to assign environment variables. In this case, you are instructing your shell to assign vi as your command line editor. However, once you log off and log back in you will return to the previously defined command line editor)

**120. What account is created when you install Linux?**

Ans : root

(Whenever you install Linux, only one user account is created. This is the super user account also known as root)

**121. What command should you use to check the number of files and disk space used and each user's defined quotas?**

Ans : repquota

(The repquota command is used to get a report on the status of the quotas you have set including the amount of allocated space and amount of used space)

**122. In order to run fsck on the root partition, the root partition must be mounted as**

Ans : read-only

(You cannot run fsck on a partition that is mounted as read-write)

**123. In order to improve your system's security you decide to implement shadow passwords. What command should you use?**

Ans : pwconv

(The pwconv command creates the file /etc/shadow and changes all passwords to 'x' in the /etc/passwd file)

**124. Bob Armstrong, who has a username of boba, calls to tell you he forgot his password. What command should you use to reset his command?**

Ans : passwd boba

(The passwd command is used to change your password. If you do not specify a username, your password will be changed)

**125. The top utility can be used to change the priority of a running process? Another utility that can also be used to change priority is \_\_\_\_\_\_\_\_\_\_\_?**

Ans : nice

(Both the top and nice utilities provide the capability to change the priority of a running process)

**126. What command should you type to see all the files with an extension of 'mem' listed in reverse alphabetical order in the /home/ben/memos directory.**

Ans : ls -r /home/ben/memos/\*.mem

(The -c option used with ls results in the files being listed in chronological order. You can use wildcards with the ls command to specify a pattern of filenames)

**127. What file defines the levels of messages written to system log files?**

Ans : kernel.h

(To determine the various levels of messages that are defined on your system, examine the kernel.h file)

**128. What command is used to remove the password assigned to a group?**

Ans : gpasswd –r

(The gpasswd command is used to change the password assigned to a group. Use the -r option to remove the password from the group)

**129. What command would you type to use the cpio to create a backup called backup.cpio of all the users' home directories?**

Ans : find /home | cpio -o > backup.cpio

(The find command is used to create a list of the files and directories contained in home. This list is then piped to the cpio utility as a list of files to include and the output is saved to a file called backup.cpio)

**130. What can you type at a command line to determine which shell you are using?**

Ans : echo $SHELL

(The name and path to the shell you are using is saved to the SHELL environment variable. You can then use the echo command to print out the value of any variable by preceding the variable's name with $. Therefore, typing echo $SHELL will display the name of your shell)

**131. What type of local file server can you use to provide the distribution installation materials to the new machine during a network installation?**

**A) Inetd**

**B) FSSTND**

**C) DNS**

**D) NNTP**

**E) NFS**

(**E** - You can use an NFS server to provide the distribution installation materials to the machine on which you are performing the installation. Answers a, b, c, and d are all valid items but none of them are file servers. Inetd is the super daemon which controls all intermittently used network services. The FSSTND is the Linux File System Standard. DNS provides domain name resolution, and NNTP is the transfer protocol for usenet news)

**132. You are covering for another system administrator and one of the users asks you to restore a file for him. You locate the correct tar file by checking the backup log but do not know how the directory structure was stored. What command can you use to determine this?**

**A) tar fx tarfile dirname**

**B) tar tvf tarfile filename**

**C) tar ctf tarfile**

**D) tar tvf tarfile**

(**D** - The t switch will list the files contained in the tar file. Using the v modifier will display the stored directory structure)

**133. You have the /var directory on its own partition. You have run out of space. What should you do?**

**A) Reconfigure your system to not write to the log files.**

**B) Use fips to enlarge the partition.**

**C) Delete all the log files.**

**D) Delete the partition and recreate it with a larger size.**

(**D** - The only way to enlarge a partition is to delete it and recreate it. You will then have to restore the necessary files from backup)

**134. You have a new application on a CD-ROM that you wish to install. What should your first step be?**

**A) Read the installation instructions on the CD-ROM.**

**B) Use the mount command to mount your CD-ROM as read-write.**

**C) Use the umount command to access your CD-ROM.**

**D) Use the mount command to mount your CD-ROM as read-only.**

(**D** - Before you can read any of the files contained on the CD-ROM, you must first mount the CD-ROM)

**135. When you create a new partition, you need to designate its size by defining the starting and ending \_\_\_\_\_\_\_\_\_\_\_\_\_?**

Ans : cylinders

(When creating a new partition you must first specify its starting cylinder. You can then either specify its size or the ending cylinder)

**136. What key combination can you press to suspend a running job and place it in the background?**

Ans : ctrl-z

(Using ctrl-z will suspend a job and put it in the background)

**137. The easiest, most basic form of backing up a file is to \_\_\_\_\_ it to another location.**

Ans : copy

(The easiest most basic form of backing up a file is to make a copy of that file to another location such as a floppy disk)

**138. What type of server is used to remotely assign IP addresses to machines during the installation process?**

**A) SMB**

**B) NFS**

**C) DHCP**

**D) FT**

**E) HTTP**

(**C** - You can use a DHCP server to assign IP addresses to individual machines during the installation process. Answers a, b, d, and e list legitimate Linux servers, but these servers do not provide IP addresses. The SMB, or Samba, tool is used for file and print sharing across multi-OS networks. An NFS server is for file sharing across Linux net-works. FTP is a file storage server that allows people to browse and retrieve information by logging in to it, and HTTP is for the Web)

**139. Which password package should you install to ensure that the central password file couldn't be stolen easily?**

**A) PAM**

**B) tcp\_wrappers**

**C) shadow**

**D) securepass**

**E) ssh**

(**C** - The shadow password package moves the central password file to a more secure location. Answers a, b, and e all point to valid packages, but none of these places the password file in a more secure location. Answer d points to an invalid package)

**140. When using useradd to create a new user account, which of the following tasks is not done automatically.**

**A) Assign a UID.**

**B) Assign a default shell.**

**C) Create the user's home directory.**

**D) Define the user's home directory.**

(**C** - The useradd command will use the system default for the user's home directory. The home directory is not created, however, unless you use the -m option)

**141. You want to enter a series of commands from the command-line. What would be the quickest way to do this?**

**A) Press enter after entering each command and its arguments**

**B) Put them in a script and execute the script**

**C) Separate each command with a semi-colon (;) and press enter after the last command**

**D) Separate each command with a / and press enter after the last command**

(**C** - The semi-colon may be used to tell the shell that you are entering multiple commands that should be executed serially. If these were commands that you would frequently want to run, then a script might be more efficient. However, to run these commands only once, enter the commands directly at the command line)

**142. You attempt to use shadow passwords but are unsuccessful. What characteristic of the /etc/passwd file may cause this?**

**A) The login command is missing.**

**B) The username is too long.**

**C) The password field is blank.**

**D) The password field is prefaced by an asterisk.**

(**C** - The password field must not be blank before converting to shadow passwords)

**143. When you install a new application, documentation on that application is also usually installed. Where would you look for the documentation after installing an application called MyApp?**

**A) /usr/MyApp**

**B) /lib/doc/MyApp**

**C) /usr/doc/MyApp**

**D) In the same directory where the application is installed.**

(**C** - The default location for application documentation is in a directory named for the application in the /usr/doc directory)

**144. What file would you edit in your home directory to change which window manager you want to use?**

**A) Xinit**

**B) .xinitrc**

**C) XF86Setup**

**D) xstart**

**E) xf86init**

(**B** - The ~/.xinitrc file allows you to set which window man-ager you want to use when

Logging in to X from that account. Answers a, d, and e are all invalid files. Answer c is the main X server configuration file)

**145. What command allows you to set a processor-intensive job to use less CPU time?**

**A) ps**

**B) nice**

**C) chps**

**D) less**

**E) more**

(**B** - The nice command is used to change a job's priority level, so that it runs slower or faster. Answers a, d, and e are valid commands but are not used to change process information. Answer c is an invalid command)

**146. While logged on as a regular user, your boss calls up and wants you to create a new user account immediately. How can you do this without first having to close your work, log off and logon as root?**

**A) Issue the command rootlog.**

**B) Issue the command su and type exit when finished.**

**C) Issue the command su and type logoff when finished.**

**D) Issue the command logon root and type exit when finished.**

(**B** - You can use the su command to imitate any user including root. You will be prompted for the password for the root account. Once you have provided it you are logged in as root and can do any administrative duties)

**147. There are seven fields in the /etc/passwd file. Which of the following lists all the fields in the correct order?**

**A) username, UID, GID, home directory, command, comment**

**B) username, UID, GID, comment, home directory, command**

**C) UID, username, GID, home directory, comment, command**

**D) username, UID, group name, GID, home directory, comment**

(**B** - The seven fields required for each line in the /etc/passwd file are username, UID, GID, comment, home directory, command. Each of these fields must be separated by a colon even if they are empty)

**148. Which of the following commands will show a list of the files in your home directory including hidden files and the contents of all subdirectories?**

**A) ls -c home**

**B) ls -aR /home/username**

**C) ls -aF /home/username**

**D) ls -l /home/username**

(**B** - The ls command is used to display a listing of files. The -a option will cause hidden files to be displayed as well. The -R option causes ls to recurse down the directory tree. All of this starts at your home directory)

**149. In order to prevent a user from logging in, you can add a(n) \_\_\_\_\_\_\_\_at the beginning of the password field.**

Ans : asterick

(If you add an asterick at the beginning of the password field in the /etc/passwd file, that user will not be able to log in)

**150. You have a directory called /home/ben/memos and want to move it to /home/bob/memos so you issue the command mv /home/ben/memos /home/bob. What is the result of this action?**

**A) The files contained in /home/ben/memos are moved to the directory /home/bob/memos/memos**

**B) The files contained in /home/ben/memos are moved to the directory /home/bob/memos**

**C) The files contained in /home/ben/memos are moved to the directory /home/bob/**

**D) The command fails since a directory called memos already exists in the target directory**

(**A** - When using the mv command to move a directory, if a directory of the same name exists then a subdirectory is created for the files to be moved)

**151. Which of the following tasks is not necessary when creating a new user by editing the /etc/passwd file?**

**A) Create a link from the user's home directory to the shell the user will use.**

**B) Create the user's home directory**

**C) Use the passwd command to assign a password to the account.**

**D) Add the user to the specified group.**

(**A** - There is no need to link the user's home directory to the shell command. Rather, the specified shell must be present on your system)

**152. You issue the following command useradd -m bobm But the user cannot logon. What is the problem?**

**A) You need to assign a password to bobm's account using the passwd command.**

**B) You need to create bobm's home directory and set the appropriate permissions.**

**C) You need to edit the /etc/passwd file and assign a shell for bobm's account.**

**D) The username must be at least five characters long.**

(**A** - The useradd command does not assign a password to newly created accounts. You will still need to use the passwd command to assign a password)

**153. You wish to print the file vacations with 60 lines to a page. Which of the following commands will accomplish this?**

**A) pr -l60 vacations | lpr**

**B) pr -f vacations | lpr**

**C) pr -m vacations | lpr**

**D) pr -l vacations | lpr**

(**A** - The default page length when using pr is 66 lines. The -l option is used to specify a different length)

**154. Which file defines all users on your system?**

**A) /etc/passwd**

**B) /etc/users**

**C) /etc/password**

**D) /etc/user.conf**

(**A** - The /etc/passwd file contains all the information on users who may log into your system. If a user account is not contained in this file, then the user cannot log in)

**155. Which two commands can you use to delete directories?**

**A) rm**

**B) rm -rf**

**C) rmdir**

**D) rd**

**E) rd -rf**

(**B** & **C** - You can use rmdir or rm -rf to delete a directory. Answer a is incorrect, because the rm command without any specific flags will not delete a directory, it will only delete files. Answers d and e point to a non-existent command)

**156. Which partitioning tool is available in all distributions?**

**A) Disk Druid**

**B) fdisk**

**C) Partition Magic**

**D) FAT32**

**E) System Commander**

(**B** - The fdisk partitioning tool is available in all Linux distributions. Answers a, c, and e all

handle partitioning, but do not come with all distributions. Disk Druid is made by Red Hat and used in its distribution along with some derivatives. Partition Magic and System Commander are tools made by third-party companies. Answer d is not a tool, but a file system type. Specifically, FAT32 is the file system type used in Windows 98)

**157. Which partitions might you create on the mail server's hard drive(s) other than the root, swap, and boot partitions?**

**A) /var/spool**

**B) /tmp**

**C) /proc**

**D) /bin**

**E) /home**

(**A**, **B**, **E** - Separating /var/spool onto its own partition helps to ensure that if something goes wrong with the mail server or spool, the output cannot overrun the file system. Putting /tmp on its own partition prevents either software or user items in the /tmp directory from overrunning the file system. Placing /home off on its own is mostly useful for system re-installs or upgrades, allowing you to not have to wipe the /home hierarchy along with other areas. Answers c and d are not possible, as the /proc portion of the file system is virtual-held in RAM-not placed on the hard drives, and the /bin hierarchy is necessary for basic system functionality and, therefore, not one that you can place on a different Partition)

**158. When planning your backup strategy you need to consider how often you will perform a backup, how much time the backup takes and what media you will use. What other factor must youconsider when planning your backup strategy?**

Ans : what to backup

(Choosing which files to backup is the first step in planning your backup strategy)

**159. What utility can you use to automate rotation of logs?**

Ans : logrotate

(The logrotate command can be used to automate the rotation of various logs)

**160. In order to display the last five commands you have entered using the history command, you would type?**

Ans : history 5

(The history command displays the commands you have previously entered. By passing it an argument of 5, only the last five commands will be displayed)

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

Ans: dmesg

(The dmesg command displays the system messages contained in the kernel ring buffer. By using this command immediately after booting your computer, you will see the boot message)

**162. What is the minimum number of partitions you need to install Linux?**

Ans : 2

(Linux can be installed on two partitions, one as / which will contain all files and a swap partition)

**163. What is the name and path of the main system log?**

Ans : /var/log/messages

(By default, the main system log is /var/log/messages)

**164. Of the following technologies, which is considered a client-side script?**

**A) JavaScript**

**B) Java**

**C) ASP**

**D) C++**

(**A** - JavaScript is the only client-side script listed. Java and C++ are complete programming

Languages. Active Server Pages are parsed on the server with the results being sent to the client in HTML)

**165. If you type the command cat dog & > cat what would you see on your display?**

**A) Any error messages only**

**B) The contents of the file dog**

**C) The contents of the file dog and any error messages**

**D) Nothing as all output is saved to the file cat**

(**D** - When you use & > for redirection, it redirects both the standard output and standard error. The output would be saved to the file cat)

## 166. Which account is created on Linux installation?

## Ans: With the installation of Linux, a super user account is created called as ‘root’.

## 167. Which daemon tracks events on your system?

**Ans:** The syslogd daemon tracks the system information and saves it to specified log files.

## 168. Which command would you use if you want to remove the password assigned to a group?

## Ans: gpasswd – r removes the password from the group. Here, the gpasswd changes the password of the group and when it is accompanied by –r, the password gets removed.

## 169. You wish to print a file ‘draft’ with 60 lines to a page. What command would you use?

## Ans: The command that I would use is: pr -l60 draft, the default page length when using pr is 66 lines. The -l option specifies a different length.

## 170. Which file would you examine to determine the levels of messages written to system log files?

## Ans: kernel.h

## 171. You are logged on as a regular user. Without logging off and logging on as root, you are required to create a new user account immediately. How would you do it?

**Ans:** This can be achieved by issuing the su command. This will prompt you for the password of the root account. Providing the password, logs you in as root. Now, you can perform any administrative duties.

## 172. You are required to restore the file memo.ben. It was backed up in the tar file MyBackup.tar. Which command would you use to do it?

**Ans:** The command that we would use is: tar xf MyBackup.tar memo.ben. It uses the x switch to extract a file.

## 173. What is partial backup?

**Ans:** When you select only a portion of your file hierarchy or a single partition to back up, it is called partial back up.

## 174. What is the fastest way to enter a series of commands from the command-line?

**Ans:** Write the commands, each separated by a semi-colon. Press enter after the last command. The semi-colon would inform the shell that multiple commands are being entered at the command line, to be executed serially.

## 175. What are the qualities of soft links?

A) Soft link files have different inode numbers than source file  
B) The soft link file will be of no use if original file is deleted  
C) Soft links are not updated  
D) They can create links between directories  
E) They can cross file system boundaries

## 176. Differentiate between Cron and Anacron?

A) Minimum granularity with Cron is minute while it is in days with Anacron.   
B) Cron job can be scheduled by any normal user while Anacron can be scheduled only by the super user.   
C) Cron expects the system to be up and running while the Anacron doesn’t expect the system to be up and running all the time. In case of anacron if a job is scheduled and the system is down that time, it will execute the job as soon as the system is up and running.   
D) Cron is ideal for servers while Anacron is ideal for desktops and laptops.   
E) Cron should be used when you want a job to be executed at a particular hour and minute while Anacron should be used in when the job can be executed irrespective of the hour and minute.

## 177. What is an INODE?

**Ans:** It is a structure which has the description of all the files and pointers to the data blocks of file stored in it. The information contained is file-size, access and modification time, permission and so on.

## 178. Which command is used to check the number of files and disk space used and the each user’s defined quota?

**Ans:** “repquota” command is used to check the status of the user’s quota along with the disk space and number of files used. This command gives a summary of the user’s quota that how much space and files are left for the user. Every user has a defined quota in Linux. This is done mainly for the security, as some users have only limited access to files. This provides a security to the files from unwanted access. The quota can be given to a single user or to a group of users.

## 179. What is the name and path of the main system log?

**Ans:** By default the main system log is /var/log/messages. This file contains all the messages and the script written by the user. By default all scripts are saved in this file. This is the standard system log file, which contains messages from all system software, non-kernel boot issues, and messages that go to 'dmesg'. dmesg is a system file that is written upon system boot.

## 180. How secured is Linux?

**Ans:** Security is the most important aspect of an operating system. Due to its unique authentication module, Linux is considered as more secured than other operating systems. Linux consists of PAM. PAM is Pluggable Authentication Modules. It provides a layer between applications and actual authentication mechanism. It is a library of loadable modules which are called by the application for authentication. It also allows the administrator to control when a user can log in. All PAM applications are configured in the directory "/etc/pam.d" or in a file "/etc/pam.conf". PAM is controlled using the configuration file or the configuration directory.

## 181. Can Linux computer be made a router so that several machines may share a single Internet connection?

**Ans:** Yes a Linux machine can be made a router. This is called "IP Masquerade." IP Masquerade is a networking function in Linux similar to the one-to-many (1: Many) NAT (Network Address Translation) servers found in many commercial firewalls and network routers. The IP Masquerade feature allows other "internal" computers connected to this Linux box (via PPP, Ethernet, etc.) to also reach the Internet as well. Linux IP Masquerading allows this functionality even if the internal computers do not have IP addresses.  
The IP masquerading can be done by the following steps-  
  
1. The Linux PC must have an internet connection and a connection to LAN. Typically, the Linux PC has two network interfaces-an Ethernet card for the LAN and a dial-up PPP connection to the Internet (through an ISP).  
  
2. All other systems on your LAN use the Linux PC as the default gateway for TCP/IP networking. Use the same ISP-provided DNS addresses on all systems.  
  
3. Enable IP forwarding in the kernel. By default the IP forwarding is not enabled. To ensure that IP forwarding is enabled when you reboot your system, place this command in the /etc/rc.d/rc.local file.  
  
4. Run /sbin/iptables-the IP packet filter administration program-to set up the rules that enable the Linux PC to masquerade for your LAN.

## 182. What is the minimum number of partitions you need to install Linux?

**Ans:** Minimum 2 partitions are needed for installing Linux. The one is / or root which contains all the files and the other is swap. Linux file system is function specific which means that files and folders are organized according to their functionality. For example, all executables are in one folder, all devices in another, all libraries in another and so on. / or ‘root’ is the base of this file system. All the other folders are under this one. / can be consider as C: .Swap is a partition that will be used as virtual memory. If there is no more available RAM a Linux computer will use an area of the hard disk, called swap, to temporarily store data. In other words it is a way of expanding your computers RAM.

## 183. Which command is used to review boot messages?

**Ans:** “dmesg” command is used to review boot messages. This command will display system messages contained in the kernel ring buffer. We can use this command immediately after booting to see boot messages. A ring buffer is a buffer of fixed size for which any new data added to it overwrites the oldest data in it. Its basic syntax is “dmesg [options]” Invoking dmesg without any of its options causes it to write all the kernel messages to standard output. This usually produces far too many lines to fit into the display screen all at once, and thus only the final messages are visible. However, the output can be redirected to the less command through the use of a pipe, thereby allowing the startup messages to be viewed on one screen at a time “dmesg | less”

## 184. Which utility is used to make automate rotation of a log?

**Ans:** “logrotate” command is used to make automate rotation of log. Syntax: logrotate [-dv] [-f|] [-s|] config\_file+, It allows automatic rotation, compression, removal, and mailing of log files. This command is mainly used for rotating and compressing log files. This job is done every day when a log file becomes too large. This command can also be run by giving on command line. We can done force rotation by giving –f option with this command in command line. This command is also used for mailing. We can give –m option for mailing with this command. This option takes two arguments one is subject and other is recipient name.

## 185. What are the partitions created on the mail server hard drive?

**Ans:** The main partitions are done firstly which are root, swap and boot partition. But for the mail server three different partitions are also done which are as follows:  
1. /var/spool- This is done so that if something goes wrong with the mail server or spool than the output cannot overrun the file system.  
2. /tmp- putting this on its own partition prevents any user item or software from overrunning the system files.  
3. /home- putting this on its own is useful for system upgrades or reinstalls. It allow not to wipe off the /home hierarchy along with other areas.

## 186. What are the fields in the/etc/passwd file?

**Ans:** It contains all the information of the users who log into the system. It contains a list of the system's accounts, giving for each account some useful information like user ID, group ID, home directory, shell, etc. It should have general read permission as many utilities, like ls use it to map user IDs to user names, but write access only for the super user (root). The main fields of /etc/passwd file are-  
1. Username: It is used when user logs in. It should be between 1 and 32 characters in length.  
2. Password: An x character indicates that encrypted password is stored in /etc/shadow file.  
3. User ID (UID): Each user must be assigned a user ID (UID). UID 0 (zero) is reserved for root and UIDs 1-99 are reserved for other predefined accounts. Further UID 100-999 are reserved by system for administrative and system accounts/groups.  
4. Group ID (GID): The primary group ID (stored in /etc/group file)  
5. User ID Info: The comment field. It allows you to add extra information about the users such as user's full name, phone number etc. This field use by finger command.  
6. Home directory: The absolute path to the directory the user will be in when they log in. If this directory does not exists then users directory becomes /  
7. Command/shell: The absolute path of a command or shell (/bin/bash). Typically, this is a shell.

## 187. Which commands are used to set a processor-intensive job to use less CPU time?

**Ans:** “nice” command is used for changing priority of the jobs. Syntax: nice [OPTION] [COMMAND [ARG]...], Range of priority goes from -20 (highest priority) to 19 (lowest).Priority is given to a job so that the most important job is executed first by the kernel and then the other least important jobs. This takes less CPU times as the jobs are scheduled and are given priorities so the CPU executes fast. The priority is given by numbers like -20 describe the highest priority and 19 describe the least priority.

## 188. How to change window manager by editing your home directory?

**Ans:** /.xinitrc file allows changing the window manager we want to use when logging into X from that account. The dot in the file name shows you that the file is a hidden file and doesn't show when you do a normal directory listing. For setting a window manager we have to save a command in this file. The syntax of command is: exec windowmanager.After this, save the file. Next time when you run a startx a new window manager will open and become default. The commands for starting some popular window managers and desktop environments are:  
-KDE = startkde  
-Gnome = gnome-session  
-Blackbox = blackbox  
-FVWM = fvwm  
-Window Maker = wmaker  
-IceWM = icewm

## 189. How documentation of an application is stored?

**Ans:** When a new application is installed its documentation is also installed. This documentation is stored under the directory named for application. For example if my application name is App1 then the path of the documentation will be /user/doc/App1. It contains all the information about the application. It contains date of creating application, name of application and other important module of the application. We can get the basic information of application from the documentation.

## 190. How shadow passwords are given?

**Ans:** pwconv command is used for giving shadow passwords. Shadow passwords are given for better system security. The pwconv command creates the file /etc/shadow and changes all passwords to ‘x’ in the /etc/passwd file. First, entries in the shadowed file which don't exist in the main file are removed. Then, shadowed entries which don't have `x' as the password in the main file are updated. Any missing shadowed entries are added. Finally, passwords in the main file are replaced with `x'. These programs can be used for initial conversion as well to update the shadowed file if the main file is edited by hand.

## 191. How do you create a new user account?

**Ans:** “useradd” command is used for creating a new user account. When invoked without the -D option, the useradd command creates a new user account using the values specified on the command line and the default values from the system. The new user account will be entered into the system files as needed, and initial files copied, depending on the command line options. This command uses the system default as home directory. If –m option is given then the home directory is made.

## 192. Which password package is installed for the security of central password?

**Ans:** Shadow password packages are used for security of central passwords. Security is the most important aspect of every operating system. When this package is not installed the user information including passwords is stored in the /etc/passwd file. The password is stored in an encoded format. These encoded forms can be easily identified by the System crackers by randomly encoding the passwords from dictionaries. The Shadow Package solves the problem by relocating the passwords to another file (usually /etc/shadow). The /etc/shadow file is set so that it cannot be read by just anyone. Only root will be able to read and write to the /etc/shadow file.

## 193. Which shell do you assign to a POP3 mail-only account?

**Ans:** POP3 mail only account is assigned to the /bin/false shell. However, assigning bash shell to a POP3 mail only gives user login access, which is avoided. /bin/nologin can also be used. This shell is provided to the user when we don’t want to give shell access to the user. The user cannot access the shell and it reject shell login on the server like on telnet. It is mainly for the security of the shells. POP3 is basically used for downloading mail to mail program. So for illegal downloading of emails on the shell this account is assigned to the /bin/false shell or /bin/nologin. These both shells are same they both do the same work of rejecting the user login to the shell. The main difference between these two shells is that false shell shows the incorrect code and any unusual coding when user login with it. But the nologin shell simply tells that no such account is available. So nologin shell is used mostly in Linux.

## 194. Which daemon is responsible for tracking events on Linux system?

**Ans:** “syslogd” is responsible for tracking system information and save it to the desired log files. It provides two system utilities which provide system logging and kernel message trapping. Internet and UNIX domain sockets support enable this utility package to support both local and remote logging. Every logged message contains at least a time and a hostname field, normally a program name field, too. So to track these information this daemon is used. syslogd mainly reacts to the set of signals given by the user. These are the signals given to syslogd: SIGHUP: This lets syslogd perform a re-initialization. All open files are closed, the configuration file (default is /etc/syslog.conf) will be reread and the syslog facility is started again. SIGTERM: The syslogd will die. SIGINT, SIGQUIT: If debugging is enabled these are ignored, otherwise syslogd will die. SIGUSR1: Switch debugging on/off. This option can only be used if syslogd is started with the - d debug option. SIGCHLD: Wait for Childs if some were born, because of waiting messages.

## 195. Which daemon is used for scheduling of the commands?

**Ans:** The crontab command is used for scheduling of the commands to run at a later time. Syntax: crontab [ -u user ] file, crontab [ -u user ] { -l | -r | -e }  
  
Options:  
-l List - display the current crontab entries.  
  
-r Remove the current crontab.  
-e Edit the current crontab using the editor specified by the VISUAL or EDITOR environment variables. When user exits from the editor, the modified crontab will be installed automatically. Each user can have their own crontab, and though these are files in /var, they are not intended to be edited directly. If the –u option is given than the crontab gives the name of the user whose crontab is to be tweaked. If it is given without this then it will display the crontab of the user who is executing the command.

## 196. How environment variable is set so that the file permission can be automatically set to the newly created files?

**Ans:** “umask command is used to set file permission on newly created files automatically.   
Syntax: umask [-p] [-S] [mode], It is represented in octal numbers. We can simply use this command without arguments to see the current file permissions. To change the permissions, mode is given in the arguments. The default umask used for normal user is 0002. The default umask for the root user is 0022. For calculating the original values, the values shown by the umask must be subtracted by the default values. It is mainly used for masking of the file and directory permission. The /etc/profile script is where the umask command is usually set for all users. The –S option can be used to see the current default permissions displayed in the alpha symbolic format. For example, umask 022 ensures that new files will have at most 755 permissions (777 NAND 022). The permissions can be calculated by taking the NAND of original value with the default values of files and directories.

**197.** [**What is LILO?**](http://careerride.com/Linux-Loader-LILO.aspx)

**Ans:** LILO is Linux Loader is a boot loader for Linux. It is used to load Linux into the memory and start the Operating system.

**198.** [**What is the difference between home directory and working directory?**](http://careerride.com/Linux-home-working-directory.aspx)

**Ans:** Home directory is the default working directory when a user logs in. On the other hand, working directory is the user’s current directory.

**199.** [**What is the difference between internal and external commands?**](http://careerride.com/Linux-internal-external-commands.aspx)

**Ans:** Internal commands are commands that are already loaded in the system. They can be executed any time and are independent.

**200.** [**Explain the difference between a static library and a dynamic library.**](http://careerride.com/Linux-Static-dynamic-library.aspx)

**Ans:** Static libraries are loaded when the program is compiled and dynamically-linked libraries are loaded in while.

**201.** [**What is LD\_LIBRARY\_PATH?**](http://careerride.com/Linux-LD_LIBRARY_PATH.aspx)

**Ans:** LD\_LIBRARY\_PATH is an environment variable. It is used for debugging a new library or a non standard library.

##### **202.** [**What is NFS? What is its purpose?**](http://careerride.com/Linux-NFS.aspx)

**Ans:** NFS is Network File system. It is a file system used for sharing of files over a network.

##### **203.** [**How do I send email with Linux?**](http://careerride.com/Linux-send-email.aspx)

**Ans:** Email can be sent in Linux using the mail command.

##### **204.** [**Explain RPM (Red Hat Package Manager) features?**](http://careerride.com/Linux-RPM.aspx)

**Ans:** RPM is a package managing system (collection of tools to manage software packages).

##### **205.** [**What is Kernel? Explain the task it performs?**](http://careerride.com/Linux-Kernel.aspx)

**Ans:** Kernel is used in UNIX like systems and is considered to be the heart of the operating system.

##### **207.** [**What are Pipes? Explain use of pipes?**](http://careerride.com/Linux-pipes.aspx)

**Ans:** A pipe is a chain of processes so that output of one process (stdout) is fed an input (stdin) to another.

##### **208.** [**What Stateless Linux server? What feature it offers?**](http://careerride.com/Linux-Stateless-Server.aspx)

**Ans:** A stateless Linux server is a centralized server in which no state exists on the single workstations.

##### **209.** [**What does nslookup do? Explain its two modes?**](http://careerride.com/Linux-nslookup.aspx)

**Answer -**Nslookup is used to find details related to a Domain name server. Details like IP addresses of a machine, MX records.

##### **210.** [**What is Bash Shell?**](http://careerride.com/Linux-Bash-Shell.aspx)

**Ans:** Bash is a free shell for UNIX. It is the default shell for most UNIX systems. It has a combination of the C and Korn shell features.

##### **211.** [**Explain some Network-Monitoring Tools in Linux: ping, traceroute, tcpdump, ntop**](http://careerride.com/Linux-Network-Monitoring-Tools.aspx)**?**

**Ans:** Network monitoring tools are used to monitor the network, systems present on the network, traffic etc.

##### **212.** [**How does the Linux file system work?**](http://careerride.com/Linux-file-system.aspx)

**Ans:** Linux file structure is a tree like structure. It starts from the root directory, represented by '/', and then expands into sub-directories.

##### **213.** [**What is a zombie?**](http://careerride.com/Linux-zombie.aspx)

**Ans:** 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.

**214.** [**What is the file server in Linux server?**](http://careerride.com/Linux-file-server.aspx)

**215.** [**What is Linux Shell? What is Shell Script?**](http://careerride.com/Linux-Shell.aspx)

**216.** [**Explain trap, shift, getopts**](http://careerride.com/Linux-command.aspx) **commands?**

**217. Why LVM is required?**

**Ans:** LVM stands for Logical Volume Manager, to resize file system’s size online we required LVM partition in Linux. Size of LVM partition can be extended and reduced using the lvextend & lvreduce commands respectively.

**218. How to check Memory stats and CPU stats?**

**Ans:**  Using “free” & “vmstat” command we can display the physical and virtual memory statistics respectively. With the help of “sar” command we see the CPU utilization & other stats.

**219. What does Sar provides and at which location Sar logs are stored?**

**Ans:** Sar Collect, report, or save system activity information. The default version of the sar command (CPU utilization report) might be one of the first facilities the user runs to begin system activity investigation, because it monitors major system resources. If CPU utilization is near 100 percent (user + nice + system), the workload sampled is CPU-bound.By default log files of Sar command is located at /var/log/sa/sadd file, where the dd parameter indicates the current day.

**220. How to increase the size of LVM partition?**

**Ans:** Use the lvextend command (lvextend -L +100M /dev/<Name of the LVM Partition>, in this example we are extending the size by 100MB. resize2fs /dev/<Name of the LVM Partition, check the size of partition using ‘df -h’ command.

**221. How to create file system?**

**Ans:** mkfs.[type of file system] [device name] ex= mkfs.ext4 /dev/sda2

**222. How to create a new user?**

**Ans:** useradd [user name] ex= useradd kumar

**223. How to change directory of perticular user?**

**Ans:** usermod -d [/home/directory name] [user name]

**224. How to know the kernel version?**

**Ans:** uname -r (or) uname -a

**225. How to know the architecture of the o/s?**

**Ans:** arch (or) uname -m

**226. How to know the o/s version?**

**Ans:** cat /etc/redhat-release

**227. One user login into the perticular server, but getting error what are the reasons?**

**Ans:** may be password expired,

May be root user lock that user with help of ---->usermod -L [user name]

May be root user lock that user with help of ---->usermod -s [shell name] [user name]

May be user's home directory is full

**228. How to make permanent mount?**

**Ans:** make a entry in /etc/fstab

**229. What are the fields in /etc/fstab?**

**Ans:** it contains mainly 6 fields, those are: what to mount (device name), where to mount (directory), type of the file system, mounting options, dumping, file system check sequence.

**230. Which file contains the user information?**

**Ans:** /etc/passwd

**231. What are the default permissions of /etc/passwd file?**

**Ans:** 644

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

**Ans:** it contains mainly 7 fields, those are: name of the user, link to passwd file i.e /etc/shadow, UID, GID, comment, home directory, shell.

**233. Which file contains the user's passwd information?**

**Ans:** /etc/shadow

**234. What are the default permissions of /etc/shadow file?**

**Ans:** 000

**235. What are the fields in /etc/shadow?**

**Ans:** it contains mainly 7 fields, those are: name of the user, encrypted passwd, days since that passwd was last changed, days after passwd must be changed, days before passwd is to expire that user is warned, days after the passwd is expires that user is disabled, reserved fields.

**236. Which file contains the user's primary group information?**

**Ans:** /etc/passwd

**237. Which file contains the user's secondary group information?**

**Ans:** /etc/group

**238. What are default permissions of /etc/group file?**

**Ans:** 644

**239. What are default permissions of /etc/gshadow file?**

**Ans:** 000

**240. How to change the permissions of particular file or directory?**

**Ans:** chmod [permissions] [file or dir name] ex= chmod 774 /linux

**241. What is the default umask value of root user?**

**Ans:** 0022

**242. What are default permissions of files and directories created by root user?**

**Ans:** for file= 644 and for dir= 755

**243. What is the default umask value of normal user?**

**Ans:** 0002

**244. What are default permissions of files and directories created by normal user?**

**Ans:** for file= 664 and for dir= 775

**You need to see the last fifteen lines of the files dog, cat and horse. What command should you use?**

**Ans:** tail -15 dog cat horse

The tail utility displays the end of a file. The -15 tells tail to display the last fifteen lines of each specified file.

**Who owns the data dictionary?**

**Ans:** The SYS user owns the data dictionary. The SYS and SYSTEM users are created when the database is created.

**You routinely compress old log files. You now need to examine a log from two months ago. In order to view its contents without first having to decompress it, use the \_\_\_\_\_\_\_\_\_ utility.**

**Ans:** zcat, the zcat utility allows you to examine the contents of a compressed file much the same way that cat displays a file.

**You suspect that you have two commands with the same name as the command is not producing the expected results. What command can you use to determine the location of the command being run?**

**Ans:** which, the which command searches your path until it finds a command that matches the command you are looking for and displays its full path.

**You locate a command in the /bin directory but do not know what it does. What command can you use to determine its purpose.**

**Ans:** whatis, the whatis command displays a summary line from the man page for the specified command.

**You wish to create a link to the /data directory in bob's home directory so you issue the command ln /data /home/bob/datalink but the command fails. What option should you use in this command line to be successful.**

**Ans:** Use the -F option, In order to create a link to a directory you must use the -F option.

**When you issue the command ls -l, the first character of the resulting display represents the file's?**

**Ans:** type, the first character of the permission block designates the type of file that is being displayed.

**What utility can you use to show a dynamic listing of running processes?**

**Ans:** top, the top utility shows a listing of all running processes that is dynamically updated.

**Where is standard output usually directed?**

**Ans:** to the screen or display, by default your shell directs standard output to your screen or display.

**You wish to restore the file memo.ben which was backed up in the tarfile MyBackup.tar. What command should you type?**

**Ans:** tar xf MyBackup.tar memo.ben, this command uses the x switch to extract a file. Here the file memo.ben will be restored from the tarfile MyBackup.tar.

**You need to view the contents of the tarfile called MyBackup.tar. What command would you use?**

**Ans:** tar tf MyBackup.tar, The t switch tells tar to display the contents and the f modifier specifies which file to examine.

**You want to create a compressed backup of the users' home directories. What utility should you use?**

**Ans:** tar, you can use the z modifier with tar to compress your archive at the same time as creating it.

**What daemon is responsible for tracking events on your system?**

**Ans:** syslogd, the syslogd daemon is responsible for tracking system information and saving it to specified log files.

**You have a file called phonenos that is almost 4,000 lines long. What text filter can you use to split it into four pieces each 1,000 lines long?**

**Ans:** split, the split text filter will divide files into equally sized pieces. The default length of each piece is 1,000 lines.

**You would like to temporarily change your command line editor to be vi. What command should you type to change it?**

**Ans:** set -o vi, the set command is used to assign environment variables. In this case, you are instructing your shell to assign vi as your command line editor. However, once you log off and log back in you will return to the previously defined command line editor.

**What account is created when you install Linux?**

**Ans:** root, whenever you install Linux, only one user account is created. This is the superuser account also known as root.

**What command should you use to check the number of files and disk space used and each user's defined quotas?**

**Ans:** repquota**,** the repquota command is used to get a report on the status of the quotas you have set including the amount of allocated space and amount of used space.

**In order to run fsck on the root partition, the root partition must be mounted as**

**Ans:** readonly, you cannot run fsck on a partition that is mounted as read-write.

**In order to improve your system's security you decide to implement shadow passwords. What command should you use?**

**Ans:** pwconv, the pwconv command creates the file /etc/shadow and changes all passwords to 'x' in the /etc/passwd file.

**Bob Armstrong, who has a username of boba, calls to tell you he forgot his password. What command should you use to reset his command?**

**Ans:** passwd boba, the passwd command is used to change your password. If you do not specify a username, your password will be changed.

**The top utility can be used to change the priority of a running process? Another utility that can also be used to change priority is \_\_\_\_\_\_\_\_\_\_\_?**

**Ans:** nice, both the top and nice utilities provide the capability to change the priority of a running process.

**What command should you type to see all the files with an extension of 'mem' listed in reverse alphabetical order in the /home/ben/memos directory.**

**Ans:** ls -r /home/ben/memos/\*.mem, the -c option used with ls results in the files being listed in chronological order. You can use wildcards with the ls command to specify a pattern of filenames.

**What file defines the levels of messages written to system log files?**

**Ans:** kernel.h, to determine the various levels of messages that are defined on your system, examine the kernel.h file.

**What command is used to remove the password assigned to a group?**

**Ans:** gpasswd –r, the gpasswd command is used to change the password assigned to a group. Use the -r option to remove the password from the group.

**What command would you type to use the cpio to create a backup called backup.cpio of all the users' home directories?**

**Ans:** find /home | cpio -o > backup.cpio, the find command is used to create a list of the files and directories contained in home. This list is then piped to the cpio utility as a list of files to include and the output is saved to a file called backup.cpio.

**What can you type at a command line to determine which shell you are using?**

**Ans:** echo $SHELL, the name and path to the shell you are using is saved to the SHELL environment variable. You can then use the echo command to print out the value of any variable by preceding the variable's name with $. Therefore, typing echo $SHELL will display the name of your shell.

**What type of local file server can you use to provide the distribution installation materials to the new machine during a network installation?**

**A) Inetd**

**B) FSSTND**

**C) DNS**

**D) NNTP**

**E) NFS**

**Ans:** E - You can use an NFS server to provide the distribution installation materials to the machine on which you are performing the installation. Answers a, b, c, and d are all valid items but none of them are file servers. Inetd is the super daemon which controls all intermittently used network services. The FSSTND is the Linux File System Standard. DNS provides domain name resolution, and NNTP is the transfer protocol for usenet news.

**If you type the command cat dog & > cat what would you see on your display?**

**a. Any error messages only.**

**b. The contents of the file dog.**

**c. The contents of the file dog and any error messages.**

**d. Nothing as all output is saved to the file cat.**

**Ans:** d - When you use & > for redirection, it redirects both the standard output and standard error. The output would be saved to the file cat.

**You are covering for another system administrator and one of the users asks you to restore a file for him. You locate the correct tarfile by checking the backup log but do not know how the directory structure was stored. What command can you use to determine this?**

**a. tar fx tarfile dirname**

**b. tar tvf tarfile filename**

**c. tar ctf tarfile**

**d. tar tvf tarfile**

**Ans:** d - The t switch will list the files contained in the tarfile. Using the v modifier will display the stored directory structure.

**You have the /var directory on its own partition. You have run out of space. What should you do?**

**a. Reconfigure your system to not write to the log files.**

**b. Use fips to enlarge the partition.**

**c. Delete all the log files.**

**d. Delete the partition and recreate it with a larger size.**

**Ans:** d - The only way to enlarge a partition is to delete it and recreate it. You will then have to restore the necessary files from backup.

**You have a new application on a CD-ROM that you wish to install. What should your first step be?**

**a. Read the installation instructions on the CD-ROM.**

**b. Use the mount command to mount your CD-ROM as read-write.**

**c. Use the umount command to access your CD-ROM.**

**d. Use the mount command to mount your CD-ROM as read-only.**

**Ans:** d - Before you can read any of the files contained on the CD-ROM, you must first mount the CD-ROM.

**When you create a new partition, you need to designate its size by defining the starting and ending?**

**Ans:** cylinders, when creating a new partition you must first specify its starting cylinder. You can then either specify its size or the ending cylinder.

**What key combination can you press to suspend a running job and place it in the background?**

**Ans:** ctrl-z, Using ctrl-z will suspend a job and put it in the background.

**The easiest, most basic form of backing up a file is to \_\_\_\_\_ it to another location.**

**Ans:** Copy, the easiest most basic form of backing up a file is to make a copy of that file to another location such as a floppy disk.

**What type of server is used to remotely assign IP addresses to machines during the installation process?**

**A) SMB**

**B) NFS**

**C) DHCP**

**D) FT**

**E) HTTP**

**Ans:** C - You can use a DHCP server to assign IP addresses to individual machines during the installation process. Answers a, b, d, and e list legitimate Linux servers, but these servers do not provide IP addresses. The SMB, or Samba, tool is used for file and print sharing across multi-OS networks. An NFS server is for file sharing across Linux net-works. FTP is a file storage server that allows people to browse and retrieve information by logging in to it, and HTTP is for the Web.

**Which password package should you install to ensure that the central password file couldn't be stolen easily?**

**A) PAM**

**B) tcp\_wrappers**

**C) shadow**

**D) securepass**

**E) ssh**

**Ans:** C - The shadow password package moves the central password file to a more secure location. Answers a, b, and e all point to valid packages, but none of these places the password file in a more secure location. Answer d points to an invalid package.

**When using useradd to create a new user account, which of the following tasks is not done automatically.**

**a. Assign a UID.**

**b. Assign a default shell.**

**c. Create the user's home directory.**

**d. Define the user's home directory.**

**Ans:** c - The useradd command will use the system default for the user's home directory. The home directory is not created, however, unless you use the -m option.

**You want to enter a series of commands from the command-line. What would be the quickest way to do this?**

**a. Press enter after entering each command and its arguments**

**b. Put them in a script and execute the script**

**c. Separate each command with a semi-colon (;) and press enter after the last command**

**d. Separate each command with a / and press enter after the last command**

**Ans:** c - The semi-colon may be used to tell the shell that you are entering multiple commands that should be executed serially. If these were commands that you would frequently want to run, then a script might be more efficient. However, to run these commands only once, enter the commands directly at the command line.

**You attempt to use shadow passwords but are unsuccessful. What characteristic of the /etc/passwd file may cause this?**

**a. The login command is missing.**

**b. The username is too long.**

**c. The password field is blank.**

**d. The password field is prefaced by an asterisk.**

**Ans:** c - The password field must not be blank before converting to shadow passwords.

**When you install a new application, documentation on that application is also usually installed. Where would you look for the documentation after installing an application called MyApp?**

**a. /usr/MyApp**

**b. /lib/doc/MyApp**

**c. /usr/doc/MyApp**

**d. In the same directory where the application is installed.**

**Ans:** c - The default location for application documentation is in a directory named for the application in the /usr/doc directory.

**What file would you edit in your home directory to change which window manager you want to use?**

**A) Xinit**

**B) .xinitrc**

**C) XF86Setup**

**D) xstart**

**E) xf86init**

**Ans:** B - The ~/.xinitrc file allows you to set which window man-ager you want to use when

logging in to X from that account.

Answers a, d, and e are all invalid files. Answer c is the main X server configuration file.

**What command allows you to set a processor-intensive job to use less CPU time?**

**A) ps**

**B) nice**

**C) chps**

**D) less**

**E) more**

**Ans:** B - The nice command is used to change a job's priority level, so that it runs slower or faster. Answers a, d, and e are valid commands but are not used to change process information. Answer c is an invalid command.

**While logged on as a regular user, your boss calls up and wants you to create a new user account immediately. How can you do this without first having to close your work, log off and logon as root?**

**a. Issue the command rootlog.**

**b. Issue the command su and type exit when finished.**

**c. Issue the command su and type logoff when finished.**

**d. Issue the command logon root and type exit when finished.**

**Ans:** b - You can use the su command to imitate any user including root. You will be prompted for the password for the root account. Once you have provided it you are logged in as root and can do any administrative duties.

**There are seven fields in the /etc/passwd file. Which of the following lists all the fields in the correct order?**

**a. username, UID, GID, home directory, command, comment**

**b. username, UID, GID, comment, home directory, command**

**c. UID, username, GID, home directory, comment, command**

**d. username, UID, group name, GID, home directory, comment**

**Ans:** b - The seven fields required for each line in the /etc/passwd file are username, UID, GID, comment, home

directory, command. Each of these fields must be separated by a colon even if they are empty.

**Which of the following commands will show a list of the files in your home directory including hidden files and the contents of all subdirectories?**

**a. ls -c home**

**b. ls -aR /home/username**

**c. ls -aF /home/username**

**d. ls -l /home/username**

**Ans:** b - The ls command is used to display a listing of files. The -a option will cause hidden files to be displayed as well. The -R option causes ls to recurse down the directory tree. All of this starts at your home directory.

**In order to prevent a user from logging in, you can add a(n) \_\_\_\_\_\_\_\_at the beginning of the password field.**

**Ans:** asterick

If you add an asterick at the beginning of the password field in the /etc/passwd file, that user will not be able to log in.

**You have a directory called /home/ben/memos and want to move it to /home/bob/memos so you issue the command mv /home/ben/memos /home/bob. What are the results of this action?**

**a. The files contained in /home/ben/memos are moved to the directory /home/bob/memos/memos.**

**b. The files contained in /home/ben/memos are moved to the directory /home/bob/memos.**

**c. The files contained in /home/ben/memos are moved to the directory /home/bob/.**

**d. The command fails since a directory called memos already exists in the target directory.**

**Ans:** a - When using the mv command to move a directory, if a directory of the same name exists then a subdirectory is created for the files to be moved.

**Which of the following tasks is not necessary when creating a new user by editing the /etc/passwd file?**

**a. Create a link from the user's home directory to the shell the user will use.**

**b. Create the user's home directory**

**c. Use the passwd command to assign a password to the account.**

**d. Add the user to the specified group.**

**Ans:** a - There is no need to link the user's home directory to the shell command. Rather, the specified shell must be present on your system.

**You issue the following command useradd -m bobm But the user cannot logon. What is the problem?**

**a. You need to assign a password to bobm's account using the passwd command.**

**b. You need to create bobm's home directory and set the appropriate permissions.**

**c. You need to edit the /etc/passwd file and assign a shell for bobm's account.**

**d. The username must be at least five characters long.**

**Ans:** a - The useradd command does not assign a password to newly created accounts. You will still need to use the passwd command to assign a password.

**You wish to print the file vacations with 60 lines to a page. Which of the following commands will accomplish this?**

**a. pr -l60 vacations | lpr**

**b. pr -f vacations | lpr**

**c. pr -m vacations | lpr**

**d. pr -l vacations | lpr**

**Ans:** a - The default page length when using pr is 66 lines. The -l option is used to specify a different length.

**Which file defines all users on your system?**

**a. /etc/passwd**

**b. /etc/users**

**c. /etc/password**

**d. /etc/user.conf**

**Ans:** a - The /etc/passwd file contains all the information on users who may log into your system. If a user account is not contained in this file, then the user cannot log in.

**Which two commands can you use to delete directories?**

**A) rm**

**B) rm -rf**

**C) rmdir**

**D) rd**

**E) rd -rf**

**Ans:** B, C - You can use rmdir or rm -rf to delete a directory. Answer a is incorrect, because the rm command without any specific flags will not delete a directory, it will only delete files. Answers d and e point to a non-existent command.

**Which partitioning tool is available in all distributions?**

**A) Disk Druid**

**B) fdisk**

**C) Partition Magic**

**D) FAT32**

**E) System Commander**

**Ans:** B - The fdisk partitioning tool is available in all Linux distributions. Answers a, c, and e all handle partitioning, but do not come with all distributions. Disk Druid is made by Red Hat and used in its distribution along with some derivatives. Partition Magic and System Commander are tools made by third-party companies. Answer d is not a tool, but a file system type. Specifically, FAT32 is the file system type used in Windows 98.

**Which partitions might you create on the mail server's hard drive(s) other than the root, swap, and boot partitions?**

**A) /var/spool**

**B) /tmp**

**C) /proc**

**D) /bin**

**E) /home**

**Ans:** A, B, E - Separating /var/spool onto its own partition helps to ensure that if something goes wrong with the mail server or spool, the output cannot overrun the file system. Putting /tmp on its own partition prevents either software or user items in the /tmp directory from overrunning the file system. Placing /home off on its own is mostly useful for system re-installs or upgrades, allowing you to not have to wipe the /home hierarchy along with other areas. Answers c and d are not possible, as the /proc portion of the file system is virtual-held in RAM-not placed on the hard drives, and the /bin hierarchy is necessary for basic system functionality and, therefore, not one that you can place on a different partition.

**What utility can you use to automate rotation of logs?**

**Ans:** logrotate, the logrotate command can be used to automate the rotation of various logs.

**In order to display the last five commands you have entered using the history command, you would type?**

**Ans:** history 5, the history command displays the commands you have previously entered. By passing it an argument of 5, only the last five commands will be displayed.

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

**Ans:** dmesg, the dmesg command displays the system messages contained in the kernel ring buffer. By using this command immediately after booting your computer, you will see the boot messages.

**What is the minimum number of partitions you need to install Linux?**

**Ans:** 2, Linux can be installed on two partitions, one as / which will contain all files and a swap partition.

**What is the name and path of the main system log?**

**Ans:** /var/log/messages, by default the main system log is /var/log/messages.

**Of the following technologies, which is considered a client-side script?**

**A) JavaScript**

**B) Java**

**C) ASP**

**D) C++**

**Ans:** A - JavaScript is the only client-side script listed. Java and C++ are complete programming languages. Active Server Pages are parsed on the server with the results being sent to the client in HTML.

**What command is used to determine which shell you are using?**

**Ans:** echo $SHELL

**How to find all the files which have been accessed within the last 10 days?**

**Ans:** find / -type f -atime -10 > filename.txt

**How to check the number of files and disk space used and each user’s defined quotas?**

**Ans:** repquota

**What command is used to remove the password assigned to a group?**

**Ans:** gpasswd -r

**What daemon is responsible for tracking events on your system?**

**Ans:** syslogd

**Name all the directory structure hierarchy in Linux?**

**Ans:** /root, /boot, /bin, /sbin, /proc, /mnt, /usr, /var, /lib, /etc, /dev, /opt, /srv, /tmp, /media

**What does /dev directory contain?**

**Ans:** The /dev directory contains all device files that are attached to system or virtual device files.

**Which is the device file for PS/2 mouse connection?**

**Ans:** /dev/psaux

**Which is the device file for parallel port (Printers)?**

**Ans:** /dev/lp0

**What does /etc/skell directory contains?**

**Ans:** The /etc/skel directory contains files and directories that are automatically copied to a new user’s home directory when a user is created.

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

**Ans:** 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 (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 doesn’t need a file system check after an unclean system restart/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.

**What is the Linux ext4 file system?**

**Ans:** 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:-

  Currently, Ext3 supports 16 TB of maximum file system size and 2 TB of maximumfile 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]

  Fast fsck check than ext3

  In Ext4 the journaling feature can be disabled, which provides a small performanceimprovement.

  Online defragmentation.

  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.

**How we create ext3 file system on /dev/sda1 disk?**

**Ans:** mkfs.ext3 /dev/sda1

**How to convert ext2 filesystem to ext3 file system?**

**Ans:** tune2fs –j /dev/

**What is the use of sysctl command?**

**Ans:** The /sbin/sysctl command is used to view, set, and automate kernel settings in the /proc/sys/ directory.

**Describe RAID?**

**Ans:** 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.  
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

**What is SWAP Space?**

**Ans:** When the amount of physical memory (RAM) is full swap is used. 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.

**How to create SWAP files or Partition?**

**Ans:** Create swap partition or file  
- Execute “mkswap”  
- Activate swap space by “swapon –a” command  
- Add swap entry into /etc/fstab file

**Create a swap file of size 2 GB with swap file entry in /etc/fstab file?**

**Ans:** Use “dd” command to create swap file.  
dd if=/dev/zero of=/SWAPFILE bs=1024 count=2  
mkswap /SWAPFILE  
swapon –a  
Edit /etc/fstab file.  
/SWAPFILE swap swap defaults 0 0

**How to remove the swap file?**

**Ans:** Disable the swap file by “swapoff” command.  
Remove Swap file entry from /etc/fstab file.  
Next remove the swap file by “rm” command.

**What is LVM?**

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

**How to reduce or shrink the size of LVM partition ?**  
Ans: Below are the logical Steps to reduce size of LVM partition :  
-Umount the filesystem using umount command,  
-use resize2fs command , e.g resiz2fs /dev/mapper/myvg-mylv 10G  
-Now use the lvreduce command , e.g lvreduce -L 10G /dev/mapper/myvg-mylv

Above Command will shrink the size & will make the filesystem size 10GB.

**How to create partition from the raw disk ?**  
Ans: Using fdisk utility we can create partitions from the raw disk.Below are the steps to create partition from the raw dsik :  
– fdisk  /dev/hd\* (IDE) or /dev/sd\* (SCSI)  
– Type n to create a new partition  
–  After creating partition , type w command to write the changes to the partition table.

**Where the kernel modules are located ?**  
Ans: The ‘/lib/modules/kernel-version/’ directory stores all kernel modules or compiled drivers in Linux operating system. Also with ‘lsmod’ command we can see all the installed kernel modules.

**Q:8 What is umask ?**  
Ans: umask stands for ‘User file creation mask’, which determines the settings of a mask that controls which file permissions are set for files and directories when they are created.

**Q:9 How to set the umask permanently for a user?**  
Ans: To set this value permanently for a user, it has to be put in the appropriate profile file which depends on the default shell of the user.

**Q:10 How to change the default run level in linux ?**  
Ans: To change the run level we have to edit the file “/etc/inittab” and change initdefault entry ( id:5:initdefault:). Using ‘init’ command we change the run level temporary like ‘init 3′ , this command will move the system in runlevl 3.

**Q:11 How to share a directory using nfs ?**  
Ans: To share a directory using nfs , first edit the configuration file ‘/etc/exportfs’ , add a entry like  
‘/<directory-name>  <ip or Network>(Options)’ and then restart the nfs service.

**Q:12 How to check and mount nfs share ?**  
Ans: Using ‘showmount’ command we can see what directories are shared via nfs e.g ‘showmount -e <ip address of nfs server>’.Using mount command we can mount the nfs share on linux machine.

**Q:13 What are the default ports used for SMTP,DNS,FTP,DHCP,SSH and squid ?**  
Ans: Service      Port  
SMTP          25  
DNS            53  
FTP             20 (data transfer) , 21 ( Connection established)  
DHCP         67/UDP(dhcp server) , 68/UDP(dhcp client)  
SSH            22  
Squid         3128

**Q:14 What is Network Bonding ?**  
Ans: Network bonding is the aggregation of multiple Lan cards into a single bonded interface to provide fault tolerance and high performance. Network bonding is also known as NIC Teaming.

**Q:15 What  are the different modes of Network bonding in Linux ?**  
Ans: Below are list of modes used in Network Bonding :

balance-rr or 0 – round-robin mode for fault tolerance and load balancing.  
active-backup or 1 – Sets active-backup mode for fault tolerance.  
balance-xor or 2 – Sets an XOR (exclusive-or) mode for fault tolerance and load balancing.  
broadcast or 3 – Sets a broadcast mode for fault tolerance. All transmissions are sent on all slave interfaces.  
802.3ad or 4  – Sets an IEEE 802.3ad dynamic link aggregation mode. Creates aggregation groups that share the same speed & duplex settings.  
balance-tlb or 5 –  Sets a Transmit Load Balancing (TLB) mode for fault tolerance & load balancing.  
balance-alb or 6 –  Sets an Active Load Balancing (ALB) mode for fault tolerance & load balancing.

**Q:16 How to check and verify the status the bond interface.** Ans: Using the command ‘cat /proc/net/bonding/bond0′ , we can check which mode is enabled and what lan cards are used in this bond. In this example we have one only one bond interface but we can have multiple bond interface like bond1,bond2 and so on.

**Q:17 How to check default route and routing table ?**  
Ans: Using the Commands ‘netstat -nr’ and ‘route -n’ we can see the default route and routing tables.

**Q:18 How to check which ports are listening in my Linux Server ?**  
Asn:  Use the Command ‘netstat –listen’ and ‘lsof -i’

**Q:19 List the services that are enabled at a particular run level in linux server ?**  
Ans: With the help of command ‘chkconfig –list | grep 5:on’ we can list all the service that are enabled in run level5. For other run levels just replace 5 with the respective run level.

**Q:20 How to enable a service at a particular run level ?**  
Ans: We can enable a service using the Command ‘chkconfig <Service-Name> on –level 3′

**Q:21 How to upgrade Kernel in Linux ?**  
Ans: We should never upgrade Linux Kernel; always install the new New kernel using rpm command because upgrading a kenel can make your linux box in a unbootable state.

**Q:22 How To scan newly assigned luns on Linux box without rebooting?**  
Ans: There are two ways to scan newly assigned luns:   
Method: 1 if sg3 rpm is installed, then run the command ‘rescan-scsi-bus.sh’  
Method: 2 Run the Command, echo” – – –” > /sys/class/scsi\_host/hostX/scan

**Q:23 How  to find WWN numbers of HBA cards in Linux Server ?**  
Ans: We can find the WWN numbers of HBA cards using the command ‘systool -c fc\_host -v | grep port\_name’

**Q:24 How to add & change the Kernel parameters ?**  
Ans: To Set the kernel parameters in linux , first edit the file ‘/etc/sysctl.conf’ after making the changes save the file and run the command ‘sysctl -p’ , this command will make the changes permanently without rebooting the machine.

**Q:25 What is Puppet Server ?**  
Ans: Puppet is open-source & enterprise software for configuration management toll in UNIX like operating system.  Puppet is an IT automation software used to push configuration to its clients (puppet agents) using code. Puppet code can do a variety of tasks from installing new software, to check file permissions, or updating user accounts & lots of other tasks**.**

**Q:26 What are manifests in Puppet ?**  
Ans: Manifests, in Puppet, are the files in which the client configuration is specified.

**Q:27 Which Command is used to sign requested certificates in Puppet Server ?**  
Ans: ‘puppetca  –sign hostname-of-agent’ in (2.X)  & ‘puppet ca  sign hostname-of-agent’ in  (3.X)

**Q:28  At which location  Puppet Master Stores Certificates ?**  
Ans:  /var/lib/puppet/ssl/ca/signed

**Q:29 How to find all the regular files in a directory  ?**  
Ans: using the command ‘find /<directory -type f’.

**Q:30 What is load average in a Linux ?**  
Ans: Load  Average is defined as the average sum of the number of process waiting in the run queue and number of process currently executing over the period of 1,5 and 15  minutes. Using the ‘top’ and ‘uptime’ command we find the load average of a linux sever.

**31.Like Us On FacebookWhat is Kerberos used for?**  
Kerberos is used for secure network logon.

**32. Which partition store system configuration files in Linux system?**  
/etc partition stores system configuration files in Linux.

**33.What is the purpose of the MD5 option on passwords?**  
MD5 is an encryption method that encrypts the password before saving.  
Name any four general password rules for user account.  
Include at least eight total characters  
Use the string in an unrepeated way  
Avoid use words that can be found in the dictionary  
Avoid use dates of significance, such as a birthday or anniversary  
A better method of password security is to create difficult-to-break passwords that are easy for the users to remember.

**34.What is the alternative method to a GUI installation in Linux ?**  
Linux provides text base installation as the alternative method of GUI installation.

**35.What is the purpose of the swapon command ?  
s**wapon command is used to activate a already created swap partition. It cannot be used to create a new swap partition.

**36.What is gzip?**  
gzip is a compression utility created by the GNU project.

**37.What is tar?**tar is an archive utility that is used to create tape backups.

**38. Which is the standard command used to uncompress gzip files?**  
The standard command used to uncompress gzip files is gunzip.

**39.What is the RPM switch for only installing packages?**  
The command line switch for installing an RPM is -i.

**40. What is the command used to install an RPM package named demofilename2.2-2.i386.rpm?**  
The most common command used to install an RPM package is rpm -ivh. Following command will install the given package  
#rpm -ivh demofilename2.2-2.i386.rpm

**41.What is the command used to remove an RPM package named demofilename2.2-2.i386.rpm?**The most common command used to remove an RPM package is rpm -evh. Following command will remove the given package  
#rpm -evh demofilename2.2-2.i386.rpm

**42. What is the command used to update an RPM package named demofilename2.2-2.i386.rpm?**The most common command used to update an RPM package is rpm -Uvh. Following command will update the given package and remove the old.  
#rpm -Uvh demofilename2.2-2.i386.rpm

**43.Which command is used to see which RPM version of gzip was installed on the system?**  
#rpm -q gzip

**44.Where are the automatically mounted file systems listed?**  
The automatically mounted file systems are listed in the file /etc/fstab.

**45. While installing the new RPM what common steps should take?**  
You should follow these common steps  
Use RPM tools should be used to query or verify the installed packages to  
confirm the installation of any previous packages.  
Check the signature of new package  
RPM should be installed or upgraded by first using the test mode to verify that it works, and then it should be installed  
At the end query the RPM and verify the installation of RPM  
Which organization controls the official releases and updates of the X Window System?  
The X Consortium at [www.x.org](http://www.x.org/) controls the official release and updating of the X Window System

**46. PPP is most often used to create?**  
PPP is most often used to create serial point-to-point connections.

**47.Which service is most likely not functioning properly?**  
DNS

**48.Samba is used to provide support for which protocol?**  
Samba is used to support the Microsoft SMB/CIFS systems.

**49. What command is used to load a module into the kernel?**The insmod command is used to load a module into the kernel  
Name one of the most secure method of remote access.  
SSH is the most secure method of remote access

**50. With respect to a Linux system’s RAM, how large should the swap file be?**  
Generally the size of the swap file should be twice the size of installed RAM.

**51.How would you create a backup of the fstab file to the /backup folder?**  
Use cp command to create the backup.  
#cp /etc/fstab /backup

**52. What command is used to exit the edit mode of VI editor?**The [esc] key is used to exit from the edit mode of VI editor.

**53. What key combination will exit from VI editor and not save the changes made?**  
Esc + q +! Key combination will exit VI without saving the changes.

**54. What command would you use to create a file system on a new hard drive?**The mkfs command is used to create file systems.

**55. What fstab file do?**  
The fstab file is used to automatically mount file systems.

**56. What inittab file do?**  
The /etc/inittab file is used to perform the default state and terminal connections for a Linux system.

**57. What command can you use to verify the current active shell?**  
The env command will display the current active shell.

**58. Where is the file . bashrc located?**  
The . bashrc file is usually located in the /home/username directory.

**59. What function does the .bash\_profile file perform?**  
The function of the .bash\_profile file is to provide login initialization commands.

**60. What function does the .bash\_logout file perform?**  
The function of the .bash\_logout is to provide logout functions

**61. What function does the .bashrc file perform?**  
The function of the .bashrc file is to provide shell configuration commands.

**62. You need to define a macro, a key binding for the existing command. How would you do it?**Answer : There is a command called bind, in bash shell which is capable of defining macro, or binding a key. In order to bind a key with an existing command, we need to generate Character Sequence emitted by the key. Press Ctrl+v and then key F12, I got ^[[24~  
[root@localhost ~]# bind ‘”\e[24~":"date"'  
Note : Different types of terminals or terminal emulators can emit different codes for the same key.

**63. A user is new to Linux and he wants to know full list of available commands, what would you suggest him?**Answer : A command 'compgen ­c' will show a full list of available commands.  
[root@localhost ~]$ compgen -c

l.  
ll  
ls  
which  
if  
then  
else  
elif  
fi  
case  
esac  
for  
select  
while  
until  
do  
done  
…  
**64. Your assistant needs to print directory stack, what would you suggest?**  
Answer : The Linux command 'dirs', will print the directory stack.  
[root@localhost ~]# dirs /usr/share/X11

**65. You have lots of running jobs, how would you remove all the running processes, without restarting the machine?**Answer : The Linux command 'disown -r' will remove all the running Processes.  
**66. What does the command 'hash' is used for in bash Shell?**  
Answer : Linux command 'hash' manages internal hash table, fins and remember full path of the specified command, Display used command names and number of times the command is used.  
[root@localhost ~]# hash

hits    command  
   2    /bin/ls  
   2    /bin/su

6. Which built­in Linux command performs arithmetic operation of Integers in Bash?  
Answer : The 'let' command that performs, arithmetic operation of integer in bash shell.  
#! /bin/bash

...

...

let c=a+b

...

...  
7. You have a large text file, and you need to see one page at a time. What will you do?  
Answer : You can achieve the above result by pipeling the output of 'cat file\_name.txt' with 'more' command.  
[root@localhost ~]# cat file\_name.txt | more

8. Who own the data dictionary?  
Answer : The user 'SYS' owns the data dictionary. Users 'SYS' and 'SYSEM are created by default, automatically.

9. How to know a command summary and useability in Linux?  
Assume you came across a command in /bin directory, which you are completely unaware of, and have no idea what it does. What will you do to know its useability?  
Answer : The command 'whatis' display a summary of its useability from the man page. For example, you would like to see a summary of 'zcat' command which you don't know previously.  
[root@localhost ~]# whatis zcat

zcat [gzip]          (1)  - compress or expand files

10. What command should you use to check the number of files and disk space used by each user's defined quotas?  
Answer : The command 'repquota' comes to rescue here. Command repquota summaries quotas for a file system

What is swap space?  
Ans.  Swap space is supplement to system RAM.

27.    How to set up swap partition?  
Ans.  Steps involved in setting up swap partition.  
         Create a partition using a partitioning program (fdisk/sfdisk/parted)  
         Set partition id type to 0x82.  
         Create the signature on the partition using the mkswap command  
         # mkswap  -v1  /dev/hdb3  
        Add an entry for the swap in /etc/fstab file as:  
        /dev/hdb3   swap   swap   defaults    0   0  
        Activate the swap partition using  
        # swapon -a  
        Check the swap partition status using  
        # swapon  -s

28.    How to create a swap file?  
Ans.  Create a file as  
         # dd  if=/dev/zero  of=swapfile   bs=512  count=N  
         (Where N is the file size in KB)  
         Run the mkswap to create signature  
         Activate the swap file with swapon command (OR) initialize it in the startup  
         script /etc/rc.d/rc.local

29.    Why fsck used?  
Ans.  fsck (filesystem check) is used to maintain filesystem consistency.

30.    When the system runs the fsck and which script invokes it?  
Ans.  When the system boots,  the rc.sysinit script runs the fsck on any filesystems  
         marked for checking in /etc/fstab file. If any of these filesystems are markes as    
         dirty or have data in the journal, fsck will attempt to repair them. If it succeeds,  
         the filesystems will be mounted and boot process continues, else rc.sysinit will   
         run sulogin and will report that fsck needs to be run manually.

31.    What is e2fsck command?  
Ans.  fsck is a front end tool for e2fsck.

3.    Types of journals and their function?  
Ans.  Ordered          :    This is the default and journal only meta-data  
         Journaled        :    Journals data and meta-data  
         Writeback       :    Journal updates are not atomic.

34.    Differentiate ext2 and ext3 file systems?  
Ans.  ext3 filesystem supports journaling concept where ext2 does not.

35.    What is the function of tune2fs command?  
Ans.  This is used to modify the filesystem attributes (Like converting ext2 to ext3).

36.    What is the function of dump2fs command?  
Ans.  Provides a dump of file system information to standard out (Console). Can be  
         redirected to a file.

37.    What is the function of debugfs command?  
Ans.  This utility is used to to examine and debug an ext2 filesystem. This can also be  
         used to manually verify the inode integrity and an aid to recover data.

38.    What is the function of resize2fs command?  
Ans.  This can be used to change the size of an ext2 or ext3 filesystem

How to set environment (PATH) variable permanently in Linux  
There is a time when every Linux Administrator gets stuck at a point of his career when he/she has to set a custom path or any other environment variable permanently in the Linux machine.

Suppose you have added a new path to the PATH variable using the shell but you might observe that every time you switch terminal the PATH variable does not works.

Solution  
To make this issue to be resolved permanently you need to add the variable inside .bashrc or .bash\_profile file inside the home folder of the user.

For example, you want to add a PATH variable for root user so you need to add the path inside ~/.bashrc or ~/.bash\_profile

Now the confusion comes which file should we place the variable or inside both the files?

Difference between .bashrc and .bash\_profile

Every time you login to a Linux (Red Hat) machine .bash\_profile file is executed  
but  
In case you are already logged in and you open a new terminal then .bashrc file is executed

So, basically you can put the environment variable inside any of the two files. As per me I would advice you to put the same inside .bash\_profile.

WHY?

Have a look at .bash\_profile file  
# less ~/.bash\_profile  
# Get the aliases and functions  
if [ -f ~/.bashrc ]; then  
        . ~/.bashrc  
fi

# User specific environment and startup programs

PATH=$PATH:$HOME/bin

export PATH  
export PATH=$PATH:/usr/local/samba/bin

You can see in the highlighted part in blue in the above part, every time .bash\_profile is executed it also runs .bashrc along with it. As you can see I have added an extra PATH variable for my samba so that I do not need to set it every time I log in.

How to mount Windows share on Linux  
Most of us know that we use Samba to share our Linux file system and it can also be accessed under Windows very easily with no much mathematic calculation. But to mount a Windows share on Linux becomes a bit tricky for most of us. Let me show you a simple step to do the same.

NOTE: While accessing a Windows network share you use backward slash (\\) but while mounting a windows share on Linux you need to use forward slash (//)

Points to be considered  
1. You can mount a particular shared folder and not the machine name or IP  
For eg: You can mount //[192.168.0.100/deepak](http://192.168.0.100/deepak) but you cannot mount //[192.168.0.100](http://192.168.0.100/)

2. You need to have login credential for the windows share access even if the share is accessible with full permission for everyone.

On Linux RHEL 5 or above  
# mount -t cifs "//path\_to\_windows\_share/Folder\_name" -o username=deepak,password=my\_password  /mnt

On Linux RHEL 4 or below  
# mount -t smbfs "//path\_to\_windows\_share/Folder\_name" -o username=deepak,password=my\_password  /mnt

Here /mnt is the local mount point on Linux. You can use any other mount point in your case.

Once the above command is executed make sure it ran without any error  
# echo $?  
0

It it returns zero, that means the above command executed successfully and in case the o/p is any other digit that means the earlier command was not executed properly.

Now let us verify if our windows share is mounted  
# mount  
/dev/sda3 on / type ext4 (rw)  
proc on /proc type proc (rw)  
sysfs on /sys type sysfs (rw)  
//[192.168.0.100/deepak](http://192.168.0.100/deepak) on /mnt type cifs (rw)

Now you can use /mnt as any other linux directory.  
# cd /mnt  
# ls

Let me know your success and failures.

What is the filesystem used in Rhel 5 and Rhel 6?  
Show/Hide Answer

2. What is the difference between ext3 and ext4 filesystem?  
Show/Hide Answer

3. What is the command used to check any hardware changes made on the system in Linux?  
Show/Hide Answer

4. Is it possible to increase swap partition? If yes then how?  
Show/Hide Answer

5. What is a swap partition ? What is the recommended swap partition for 8 GB RAM?  
Show/Hide Answer

6. What is the procedure you follow to extend a LVM partition?  
Show/Hide Answer

7. What is the command to view all the available partitions on the system?  
Show/Hide Answer

8. What is the command to view all the mounted partitions on the system?  
Show/Hide Answer

9. What is the use of mtab directory?  
Show/Hide Answer

10. How do you make permanent changes to any file inside /proc directory?  
Show/Hide Answer

11. What is the default mode when you enter single user mode?  
Show/Hide Answer

12. Explain the procedure to fix a case when a system is unable to boot due to improper entry in fstab  
Show/Hide Answer

13. What does the last two sections define in fstab file?  
Show/Hide Answer

14. What is the command to display all the logical volume available in the system?  
Show/Hide Answer

15. How do you mount a windows share on Linux? Is it possible?  
Show/Hide Answer

16. What is the difference between NFS share and a Samba share?  
Show/Hide Answer

17. What is the default permission applied on the user when you mount a NFS permission on any local directory in your system?  
Show/Hide Answer

18. What is the command to view all the kernel parameters?  
Show/Hide Answer

19. What is . and .. in very directory of Linux system?  
Show/Hide Answer

20. What is the command to view all the variables in your system?  
Show/Hide Answer

21. How can you make a custom environment variable permanent so that it works even after reboot?

What Squid service do?  
Squid provides the Proxy service, which caches and filters web traffic.  
Which popular office suite freely available for both Microsoft and Linux ?  
Open office suite is freely available. You can install it on both OS Microsoft and Linux.  
You company recently switched from Microsoft to Linux. All their documents are created on Microsoft office 2007. How will you manage documents created on Microsoft office 2007 ?  
Install open office suite in Linux. It allows you work with Microsoft documents.  
Name any of three spreadsheet programs, those are equivalent to Microsoft Excel and available for Linux?  
Openoffice calc [Free]  
KOffice Kspread [Free]  
StarOffice Base [commercial ]  
Corel Quattro [commercial]  
What is the SMTP ?  
SMTP is the most common protocol for an e-mail server.  
What is NNTP ?  
NNTP is the common protocol which is used for news services. LeafNode and INN are examples of news servers.

What Samba service do ?  
The Samba service provides Microsoft SMB support in Linux so that Linux machines can connect to Microsoft network resources.  
Which service provides searching capabilities on an intranet or domain?  
Dig is the common name of the service that provides searches on an intranet or domain.  
Which service can be used with NFS to provide remote file access for UNIX systems?  
NIS is used with NFS to provide remote file access for UNIX systems.

What is MTA?  
MTA is a service of Sendmail server, which transfer mail from one network or host to another network or host.  
Name a connection-less protocol for file transfer.  
TFTP is a connection-less protocol for file transfer.  
You company wants to run Web Server on their intranet. Which Linux package should you use for this ?  
To run a Web server, you should install the Apache Web server.  
You company have slow internet connection. Which Linux service you can use to manage internet connection ?  
You should use Squid proxy server, which allows to manage the web contents and also cache the web pages to decrease the amount of traffic going to Internet.  
You have tasked with implementing new Linux systems in your lab, those will be used in training of Linux. What type of Linux distribution should you choose?  
For LAB environment you can use free Linux version of Linux distribution. In test system at company or in a Lab environment where usually no real risk in making mistakes you should use free version of Linux. While distribution itself maybe free or nearly free, you will be required to pay for technical support. In Lab environment where time permits you, instead of seeking helping hands, try to solve the issue at your own, that could a great learning experience.  
You have tasked with implementing a new Linux server in your network that will store confidential information of company. Your lab technician have fedora. Should you use it for your new server?  
You could use it, but you should not use it for server. It is not recommended to use an obscure, unsupported distribution for critical server. A well-know, well-supported distribution like RHEL would be a better choice. If a technical problem occurs at some point after the server has been installed, you need to be able to call someone and get an answer immediately rather than searching on internet to find a solution. You should be able to solve the issue and get the server back into production as fast as possible.  
You are installing a Linux system that will run a software that creates very large log files. Which directory should you create separate partition for ?  
Create a separate partition at /var directory.  
You are installing a Linux system that will provide file storage for a number of network users. Which directory should you create separate partition for?  
Create a separate /home directory.  
Which port should you open in your host firewall to run web server?  
By default web server use port 80 and 443 which you need to open in firewall.  
Which IP addressing should you use for Server?  
For server you should always use static IP address.  
Which IP address should you use for client desktop?  
For client you can use both static and dynamic method. For easy management using DHCP to assign IP address would be the best option.  
You are installing RHEL in new system that will be used by software developer to develop advance program. Which option should you choose during the installation, while installation program ask you to choose the set of software?  
Choose Software Development Workstation and use customize now option to select additional packages.  
You are installing RHEL in new system that will used by an administrative assistant to type documents, create presentations, and manage e-mail. Which option should you choose during the installation, while installation program ask you to choose the set of software?  
Choose Desktop and use customize now option to select additional packages.  
Which partition is used for virtual memory by a Linux system?  
swap  
Which ports should you open in host firewall for an email server?  
Open port 110 which is used by the POP3 e-mail protocol.  
Open port 25 which is used by the SMTP e-mail protocol.  
Open port 143 which is used by the IMAP e-mail protocol.  
Your Linux system have two SCSI hard disk drives. The first drive is assigned as SCSI ID 0, and the second drive is assigned SCSI ID 1. How these will be refers in system?  
/dev/sda point to the first SCSI drive.  
/dev/sdb points to the second SCSI drive  
Your Linux system have a single IDE hard disk drive. How partitions will be refers on the IDE drive?  
hd refers for IDE hard disk  
a refers for first hard disk. If system have multiple hard disk use b for second, c for third and so on till last hard disk.  
1 refers for first partition, 2 for second partition and so on till last partition.  
For example  
/dev/hda1 points to the first partition on the first IDE  
/dev/hdd4 points to the fourth partition on the fourth IDE  
/dev/hdc2 points to the second partition on the third IDE

) What is Linux?

Linux is an operating system based on UNIX, and was first introduced by Linus Torvalds. It is based on the Linux Kernel, and can run on different hardware platforms manufactured by Intel, MIPS, HP, IBM, SPARC and Motorola. Another popular element in Linux is its mascot, a penguin figure named Tux.

2) What is the difference between UNIX and LINUX?

Unix originally began as a propriety operating system from Bell Laboratories, which later on spawned into different commercial versions. On the other hand, Linux is free, open source and intended as a non-propriety operating system for the masses.

3) What is BASH?

BASH is short for Bourne Again SHell. It was written by Steve Bourne as a replacement to the original Bourne Shell (represented by /bin/sh). It combines all the features from the original version of Bourne Shell, plus additional functions to make it easier and more convenient to use. It has since been adapted as the default shell for most systems running Linux.

4) What is Linux Kernel?

The Linux Kernel is a low-level systems software whose main role is to manage hardware resources for the user. It is also used to provide an interface for user-level interaction.

5) What is LILO?

LILO is a boot loader for Linux. It is used mainly to load the Linux operating system into main memory so that it can begin its operations.

6) What is a swap space?

A swap space is a certain amount of space used by Linux to temporarily hold some programs that are running concurrently. This happens when RAM does not have enough memory to hold all programs that are executing.

7) What is the advantage of open source?

Open source allows you to distribute your software, including source codes freely to anyone who is interested. People would then be able to add features and even debug and correct errors that are in the source code. They can even make it run better, and then redistribute these enhanced source code freely again. This eventually benefits everyone in the community.

8 ) What are the basic components of Linux?

Just like any other typical operating system, Linux has all of these components: kernel, shells and GUIs, system utilities, and application program. What makes Linux advantageous over other operating system is that every aspect comes with additional features and all codes for these are downloadable for free.

9) Does it help for a Linux system to have multiple desktop environments installed?

In general, one desktop environment, like KDE or Gnome, is good enough to operate without issues. It’s all a matter of preference for the user, although the system allows switching from one environment to another. Some programs will work on one environment and not work on the other, so it could also be considered a factor in selecting which environment to use.

10) What is the basic difference between BASH and DOS?

The key differences between the BASH and DOS console lies in 3 areas:  
– BASH commands are case sensitive while DOS commands are not;  
– under BASH, / character is a directory separator and acts as an escape character. Under DOS, / serves as a command argument delimiter and is the directory separator  
– DOS follows a convention in naming files, which is 8 character file name followed by a dot and 3 character for the extension. BASH follows no such convention.

11) What is the importance of the GNU project?

This so-called Free software movement allows several advantages, such as the freedom to run programs for any purpose and freedom to study and modify a program to your needs. It also allows you to redistribute copies of a software to other people, as well as freedom to improve software and have it released to the public.

12) Describe the root account.

The root account is like a systems administrator account, and allows you full control of the system. Here you can create and maintain user accounts, assigning different permissions for each account. It is the default account every time you install Linux.

13) What is CLI?

CLI is short for Command Line Interface. This interface allows user to type declarative commands to instruct the computer to perform operations. CLI offers an advantage in that there is greater flexibility. However, other users who are already accustom with using GUI find it difficult to remember commands including attributes that come with it.

14) What is GUI?

GUI, or Graphical User Interface, makes use of images and icons that users click and manipulate as a way of communicating with the computer. Instead of having to remember and type commands, the use of graphical elements makes it easier to interact with the system, as well as adding more attraction through images, icons and colors.

15) How do you open a command prompt when issuing a command?

To open the default shell (which is where the command prompt can be found), press Ctrl-Alt-F1. This will provide a command line interface (CLI) from which you can run commands as needed.

16) How can you find out how much memory Linux is using?

From a command shell, use the “concatenate” command: cat /proc/meminfo for memory usage information. You should see a line starting something like: Mem: 64655360, etc. This is the total memory Linux thinks it has available to use.

17) What is typical size for a swap partition under a Linux system?

The preferred size for a swap partition is twice the amount of physical memory available on the system. If this is not possible, then the minimum size should be the same as the amount of memory installed.

18) What are symbolic links?

Symbolic links act similarly to shortcuts in Windows. Such links point to programs, files or directories. It also allows you instant access to it without having to go directly to the entire pathname.

19) Does the Ctrl+Alt+Del key combination work on Linux?

Yes, it does. Just like Windows, you can use this key combination to perform a system restart. One difference is that you won’t be getting any confirmation message and therefore, reboot is immediate.

20) How do you refer to the parallel port where devices such as printers are connected?

Whereas under Windows you refer to the parallel port as the LPT port, under Linux you refer to it as /dev/lp . LPT1, LPT2 and LPT3 would therefore be referred to as /dev/lp0, /dev/lp1, or /dev/lp2 under Linux.

21) Are drives such as harddrive and floppy drives represented with drive letters?

No. In Linux, each drive and device has different designations. For example, floppy drives are referred to as /dev/fd0 and /dev/fd1. IDE/EIDE hard drives are referred to as /dev/hda, /dev/hdb, /dev/hdc, and so forth.

22) How do you change permissions under Linux?

Assuming you are the system administrator or the owner of a file or directory, you can grant permission using the chmod command. Use + symbol to add permission or – symbol to deny permission, along with any of the following letters: u (user), g (group), o (others), a (all), r (read), w (write) and x (execute). For example the command chmod go+rw FILE1.TXT grants read and write access to the file FILE1.TXT, which is assigned to groups and others.

23) In Linux, what names are assigned to the different serial ports?

Serial ports are identified as /dev/ttyS0 to /dev/ttyS7. These are the equivalent names of COM1 to COM8 in Windows.

24) How do you access partitions under Linux?

Linux assigns numbers at the end of the drive identifier. For example, if the first IDE hard drive had three primary partitions, they would be named/numbered, /dev/hda1, /dev/hda2 and /dev/hda3.

25) What are hard links?

Hard links point directly to the physical file on disk, and not on the path name. This means that if you rename or move the original file, the link will not break, since the link is for the file itself, not the path where the file is located.

Which account is created on Linux installation?

- With the installation of Linux, a super user account is created called as ‘root’.

2. Which daemon tracks events on your system?

- The syslogd daemon tracks the system information and saves it to specified log files.

3. Which command would you use if you want to remove the password assigned to a group?

- gpasswd – r removes the password from the group.   
- Here, the gpasswd changes the password of the group and when it is accompanied by –r, the password gets removed.

4. You wish to print a file ‘draft’ with 60 lines to a page. What command would you use?

- The command that I would use is: pr -l60 draft  
- The default page length when using pr is 66 lines.   
- The -l option specifies a different length.

5. Which file would you examine to determine the levels of messages written to system log files?

- kernel.h

6. You are logged on as a regular user. Without logging off and logging on as root, you are required to create a new user account immediately. How would you do it?

- This can be achieved by issuing the su command.   
- This will prompt you for the password of the root account.  
- Providing the password, logs you in as root. Now, you can perform any administrative duties. .

7. You are required to restore the file memo.ben. It was backed up in the tar file MyBackup.tar. Which command would you use to do it?

- The command that we would use is: tar xf MyBackup.tar memo.ben  
- It uses the x switch to extract a file.

8. What is partial backup?

- When you select only a portion of your file hierarchy or a single partition to back up, it is called partial back up.

9. What is the fastest way to enter a series of commands from the command-line?

- Write the commands, each separated by a semi-colon. Press enter after the last command.   
- The semi-colon would inform the shell that multiple commands are being entered at the command line, to be executed serially.

10. What are the qualities of soft links?

a.) Soft link files have different inode numbers than source file  
b.) The soft link file will be of no use if original file is deleted.   
c.) Soft links are not updated  
d.) They can create links between directories  
e.) They can cross file system boundaries

11. Differentiate between Cron and Anacron.

a.) Minimum granularity with Cron is minute while it is in days with Anacron.   
b.) Cron job can be scheduled by any normal user while Anacron can be scheduled only by the super user.   
c.) Cron expects the system to be up and running while the Anacron doesn’t expect the system to be up and running all the time. In case of anacron if a job is scheduled and the system is down that time, it will execute the job as soon as the system is up and running.   
d.) Cron is ideal for servers while Anacron is ideal for desktops and laptops.   
e. ) Cron should be used when you want a job to be executed at a particular hour and minute while Anacron should be used in when the job can be executed irrespective of the hour and minute.

12.) What is an INODE?

- It is a structure which has the description of all the files and pointers to the data blocks of file stored in it.   
- The information contained is file-size, access and modification time, permission and so on.

13. Which command is used to check the number of files and disk space used and the each user’s defined quota?

repquota command is used to check the status of the user’s quota along with the disk space and number of files used. This command gives a summary of the user’s quota that how much space and files are left for the user. Every user has a defined quota in Linux. This is done mainly for the security, as some users have only limited access to files. This provides a security to the files from unwanted access. The quota can be given to a single user or to a group of users.

14. What is the name and path of the main system log?

By default the main system log is /var/log/messages. This file contains all the messages and the script written by the user. By default all scripts are saved in this file. This is the standard system log file, which contains messages from all system software, non-kernel boot issues, and messages that go to 'dmesg'. dmesg is a system file that is written upon system boot.

16. How secured is Linux? Explain.

Security is the most important aspect of an operating system. Due to its unique authentication module, Linux is considered as more secured than other operating systems. Linux consists of PAM. PAM is Pluggable Authentication Modules. It provides a layer between applications and actual authentication mechanism. It is a library of loadable modules which are called by the application for authentication. It also allows the administrator to control when a user can log in. All PAM applications are configured in the directory "/etc/pam.d" or in a file "/etc/pam.conf". PAM is controlled using the configuration file or the configuration directory.

17. Can Linux computer be made a router so that several machines may share a single Internet connection? How?

Yes a Linux machine can be made a router. This is called "IP Masquerade." IP Masquerade is a networking function in Linux similar to the one-to-many (1: Many) NAT (Network Address Translation) servers found in many commercial firewalls and network routers. The IP Masquerade feature allows other "internal" computers connected to this Linux box (via PPP, Ethernet, etc.) to also reach the Internet as well. Linux IP Masquerading allows this functionality even if the internal computers do not have IP addresses.  
The IP masquerading can be done by the following steps:

1. The Linux PC must have an internet connection and a connection to LAN. Typically, the Linux PC has two network interfaces-an Ethernet card for the LAN and a dial-up PPP connection to the Internet (through an ISP).

2. All other systems on your LAN use the Linux PC as the default gateway for TCP/IP networking. Use the same ISP-provided DNS addresses on all systems.

3. Enable IP forwarding in the kernel. By default the IP forwarding is not enabled. To ensure that IP forwarding is enabled when you reboot your system, place this command in the /etc/rc.d/rc.local file.

4. Run /sbin/iptables-the IP packet filter administration program-to set up the rules that enable the Linux PC to masquerade for your LAN.

18. What is the minimum number of partitions you need to install Linux?

Minimum 2 partitions are needed for installing Linux. The one is / or root which contains all the files and the other is swap. Linux file system is function specific which means that files and folders are organized according to their functionality. For example, all executables are in one folder, all devices in another, all libraries in another and so on. / or ‘root’ is the base of this file system. All the other folders are under this one. / can be consider as C: .Swap is a partition that will be used as virtual memory. If there is no more available RAM a Linux computer will use an area of the hard disk, called swap, to temporarily store data. In other words it is a way of expanding your computers RAM.

19. Which command is used to review boot messages?

dmesg command is used to review boot messages. This command will display system messages contained in the kernel ring buffer. We can use this command immediately after booting to see boot messages. A ring buffer is a buffer of fixed size for which any new data added to it overwrites the oldest data in it. Its basic syntax is

dmesg [options]

Invoking dmesg without any of its options causes it to write all the kernel messages to standard output. This usually produces far too many lines to fit into the display screen all at once, and thus only the final messages are visible. However, the output can be redirected to the less command through the use of a pipe, thereby allowing the startup messages to be viewed on one screen at a time  
dmesg | less

20. Which utility is used to make automate rotation of a log?

logrotate command is used to make automate rotation of log.  
Syntax of the command is:  
logrotate [-dv] [-f|] [-s|] config\_file+  
It allows automatic rotation, compression, removal, and mailing of log files. This command is mainly used for rotating and compressing log files. This job is done every day when a log file becomes too large. This command can also be run by giving on command line. We can done force rotation by giving –f option with this command in command line. This command is also used for mailing. We can give –m option for mailing with this command. This option takes two arguments one is subject and other is recipient name.

21. What are the partitions created on the mail server hard drive?

The main partitions are done firstly which are root, swap and boot partition. But for the mail server three different partitions are also done which are as follows:  
1. /var/spool- This is done so that if something goes wrong with the mail server or spool than the output cannot overrun the file system.  
2. /tmp- putting this on its own partition prevents any user item or software from overrunning the system files.  
3. /home- putting this on its own is useful for system upgrades or reinstalls. It allow not to wipe off the /home hierarchy along with other areas.

22. What are the fields in the/etc/passwd file?

It contains all the information of the users who log into the system. It contains a list of the system's accounts, giving for each account some useful information like user ID, group ID, home directory, shell, etc. It should have general read permission as many utilities, like ls use it to map user IDs to user names, but write access only for the superuser (root). The main fields of /etc/passwd file are:  
1. Username: It is used when user logs in. It should be between 1 and 32 characters in length.  
2. Password: An x character indicates that encrypted password is stored in /etc/shadow file.  
3. User ID (UID): Each user must be assigned a user ID (UID). UID 0 (zero) is reserved for root and UIDs 1-99 are reserved for other predefined accounts. Further UID 100-999 are reserved by system for administrative and system accounts/groups.  
4. Group ID (GID): The primary group ID (stored in /etc/group file)  
5. User ID Info: The comment field. It allow you to add extra information about the users such as user's full name, phone number etc. This field use by finger command.  
6. Home directory: The absolute path to the directory the user will be in when they log in. If this directory does not exists then users directory becomes /  
7. Command/shell: The absolute path of a command or shell (/bin/bash). Typically, this is a shell.

23. Which commands are used to set a processor-intensive job to use less CPU time?

nice command is used for changing priority of the jobs.  
Syntax: nice [OPTION] [COMMAND [ARG]...]  
Range of priority goes from -20 (highest priority) to 19 (lowest).Priority is given to a job so that the most important job is executed first by the kernel and then the other least important jobs. This takes less CPU times as the jobs are scheduled and are given priorities so the CPU executes fast. The priority is given by numbers like -20 describe the highest priority and 19 describe the least priority.

24. How to change window manager by editing your home directory?

/.xinitrc file allows changing the window manager we want to use when logging into X from that account. The dot in the file name shows you that the file is a hidden file and doesn't show when you do a normal directory listing. For setting a window manager we have to save a command in this file. The syntax of command is: exec windowmanager.After this, save the file. Next time when you run a startx a new window manager will open and become default. The commands for starting some popular window managers and desktop environments are:  
-KDE = startkde  
-Gnome = gnome-session  
-Blackbox = blackbox  
-FVWM = fvwm  
-Window Maker = wmaker  
-IceWM = icewm

25. How documentation of an application is stored?

When a new application is installed its documentation is also installed. This documentation is stored under the directory named for application. For example if my application name is App1 then the path of the documentation will be /user/doc/App1. It contains all the information about the application. It contains date of creating application, name of application and other important module of the application. We can get the basic information of application from the documentation.

26. How shadow passwords are given?

pwconv command is used for giving shadow passwords. Shadow passwords are given for better system security. The pwconv command creates the file /etc/shadow and changes all passwords to ‘x’ in the /etc/passwd file. First, entries in the shadowed file which don't exist in the main file are removed. Then, shadowed entries which don't have `x' as the password in the main file are updated. Any missing shadowed entries are added. Finally, passwords in the main file are replaced with `x'. These programs can be used for initial conversion as well to update the shadowed file if the main file is edited by hand.

27. How do you create a new user account?

useradd command is used for creating a new user account. When invoked without the  
-D option, the useradd command creates a new user account using the values specified on the command line and the default values from the system. The new user account will be entered into the system files as needed, and initial files copied, depending on the command line options. This command uses the system default as home directory. If –m option is given then the home directory is made.

28. Which password package is installed for the security of central password?

Shadow password packages are used for security of central passwords. Security is the most important aspect of every operating system. When this package is not installed the user information including passwords is stored in the /etc/passwd file. The password is stored in an encoded format. These encoded forms can be easily identified by the System crackers by randomly encoding the passwords from dictionaries. The Shadow Package solves the problem by relocating the passwords to another file (usually /etc/shadow). The /etc/shadow file is set so that it cannot be read by just anyone. Only root will be able to read and write to the /etc/shadow file.

29. Which shell do you assign to a POP3 mail-only account?

POP3 mail only account is assigned to the /bin/false shell. However, assigning bash shell to a POP3 mail only gives user login access, which is avoided. /bin/nologin can also be used. This shell is provided to the user when we don’t want to give shell access to the user. The user cannot access the shell and it reject shell login on the server like on telnet. It is mainly for the security of the shells. POP3 is basically used for downloading mail to mail program. So for illegal downloading of emails on the shell this account is assigned to the /bin/false shell or /bin/nologin. These both shells are same they both do the same work of rejecting the user login to the shell. The main difference between these two shells is that false shell shows the incorrect code and any unusual coding when user login with it. But the nologin shell simply tells that no such account is available. So nologin shell is used mostly in Linux.

30. Which daemon is responsible for tracking events on Linux system?

syslogd is responsible for tracking system information and save it to the desired log files. It provides two system utilities which provide system logging and kernel message trapping. Internet and UNIX domain sockets support enable this utility package to support both local and remote logging. Every logged message contains at least a time and a hostname field, normally a program name field, too. So to track these information this daemon is used. syslogd mainly reacts to the set of signals given by the user. These are the signals given to syslogd: SIGHUP: This lets syslogd perform a re-initialization. All open files are closed, the configuration file (default is /etc/syslog.conf) will be reread and the syslog facility is started again. SIGTERM: The syslogd will die. SIGINT, SIGQUIT: If debugging is enabled these are ignored, otherwise syslogd will die. SIGUSR1: Switch debugging on/off. This option can only be used if syslogd is started with the - d debug option. SIGCHLD: Wait for Childs if some were born, because of waiting messages.

31. Which daemon is used for scheduling of the commands?

The crontab command is used for scheduling of the commands to run at a later time. SYNTAX  
crontab [ -u user ] file  
crontab [ -u user ] { -l | -r | -e }

Options  
-l List - display the current crontab entries.

-r Remove the current crontab.

-e Edit the current crontab using the editor specified by the VISUAL or EDITOR environment variables.  
When user exits from the editor, the modified crontab will be installed automatically. Each user can have their own crontab, and though these are files in /var, they are not intended to be edited directly. If the –u option is given than the crontab gives the name of the user whose crontab is to be tweaked. If it is given without this then it will display the crontab of the user who is executing the command.

32. How environment variable is set so that the file permission can be automatically set to the newly created files?

umask command is used to set file permission on newly created files automatically.   
Syntax  
umask [-p] [-S] [mode]  
It is represented in octal numbers. We can simply use this command without arguments to see the current file permissions. To change the permissions, mode is given in the arguments. The default umask used for normal user is 0002. The default umask for the root user is 0022. For calculating the original values, the values shown by the umask must be subtracted by the default values. It is mainly used for masking of the file and directory permission. The /etc/profile script is where the umask command is usually set for all users. The –S option can be used to see the current default permissions displayed in the alpha symbolic format.   
For example, umask 022 ensures that new files will have at most 755 permissions (777 NAND 022).  
The permissions can be calculated by taking the NAND of original value with the default values of files and directories.

....

Q) Explain each system calls used for process management in linux.

Answer - System calls used for Process management......

Q) Which command is used to check the number of files and disk space used and the each user’s defined quota?

repquota command is used to check the status of the user’s quota along with the disk space and number of files used. This command gives a summary of the user’s quota that how much space and files are left for the user. Every user has a defined quota in Linux. This is done mainly for the security, as some users have only limited access to files. This provides a security to the files from unwanted access. The quota can be given to a single user or to a group of users.

Q) What is the name and path of the main system log?

By default the main system log is /var/log/messages. This file contains all the messages and the script written by the user. By default all scripts are saved in this file. This is the standard system log file, which contains messages from all system software, non-kernel boot issues, and messages that go to 'dmesg'. dmesg is a system file that is written upon system boot.

Q) How secured is Linux? Q) Explain.

Security is the most important aspect of an operating system. Due to its unique authentication module, Linux is considered as more secured than other operating systems. Linux consists of PAM. PAM is Pluggable Authentication Modules. It provides a layer between applications and actual authentication mechanism. It is a library of loadable modules which are called by the application for authentication. It also allows the administrator to control when a user can log in. All PAM applications are configured in the directory "/etc/pam.d" or in a file "/etc/pam.conf". PAM is controlled using the configuration file or the configuration directory.

Q) Can Linux computer be made a router so that several machines may share a single Internet connection? How?

Yes a Linux machine can be made a router. This is called "IP Masquerade." IP Masquerade is a networking function in Linux similar to the one-to-many (1: Many) NAT (Network Address Translation) servers found in many commercial firewalls and network routers. The IP Masquerade feature allows other "internal" computers connected to this Linux box (via PPP, Ethernet, etc.) to also reach the Internet as well. Linux IP Masquerading allows this functionality even if the internal computers do not have IP addresses.  
The IP masquerading can be done by the following steps:

1. The Linux PC must have an internet connection and a connection to LAN. Typically, the Linux PC has two network interfaces-an Ethernet card for the LAN and a dial-up PPP connection to the Internet (through an ISP).

2. All other systems on your LAN use the Linux PC as the default gateway for TCP/IP networking. Use the same ISP-provided DNS addresses on all systems.

3. Enable IP forwarding in the kernel. By default the IP forwarding is not enabled. To ensure that IP forwarding is enabled when you reboot your system, place this command in the /etc/rc.d/rc.local file.

4. Run /sbin/iptables-the IP packet filter administration program-to set up the rules that enable the Linux PC to masquerade for your LAN.

Q) What is the minimum number of partitions you need to install Linux?

Minimum 2 partitions are needed for installing Linux. The one is / or root which contains all the files and the other is swap. Linux file system is function specific which means that files and folders are organized according to their functionality. For example, all executables are in one folder, all devices in another, all libraries in another and so on. / or ‘root’ is the base of this file system. All the other folders are under this one. / can be consider as C: .Swap is a partition that will be used as virtual memory. If there is no more available RAM a Linux computer will use an area of the hard disk, called swap, to temporarily store data. In other words it is a way of expanding your computers RAM.

Which command is used to review boot messages?

dmesg command is used to review boot messages. This command will display system messages contained in the kernel ring buffer. We can use this command immediately after booting to see boot messages. A ring buffer is a buffer of fixed size for which any new data added to it overwrites the oldest data in it. Its basic syntax is

dmesg [options]

Invoking dmesg without any of its options causes it to write all the kernel messages to standard output. This usually produces far too many lines to fit into the display screen all at once, and thus only the final messages are visible. However, the output can be redirected to the less command through the use of a pipe, thereby allowing the startup messages to be viewed on one screen at a time  
dmesg | less

Which utility is used to make automate rotation of a log?

logrotate command is used to make automate rotation of log.  
Syntax of the command is:  
logrotate [-dv] [-f|] [-s|] config\_file+  
It allows automatic rotation, compression, removal, and mailing of log files. This command is mainly used for rotating and compressing log files. This job is done every day when a log file becomes too large. This command can also be run by giving on command line. We can done force rotation by giving –f option with this command in command line. This command is also used for mailing. We can give –m option for mailing with this command. This option takes two arguments one is subject and other is recipient name.

Q) What are the partitions created on the mail server hard drive?

The main partitions are done firstly which are root, swap and boot partition. But for the mail server three different partitions are also done which are as follows:  
1. /var/spool- This is done so that if something goes wrong with the mail server or spool than the output cannot overrun the file system.  
2. /tmp- putting this on its own partition prevents any user item or software from overrunning the system files.  
3. /home- putting this on its own is useful for system upgrades or reinstalls. It allow not to wipe off the /home hierarchy along with other areas.

Q) What are the fields in the/etc/passwd file?

It contains all the information of the users who log into the system. It contains a list of the system's accounts, giving for each account some useful information like user ID, group ID, home directory, shell, etc. It should have general read permission as many utilities, like ls use it to map user IDs to user names, but write access only for the superuser (root). The main fields of /etc/passwd file are:  
1. Username: It is used when user logs in. It should be between 1 and 32 characters in length.  
2. Password: An x character indicates that encrypted password is stored in /etc/shadow file.  
3. User ID (UID): Each user must be assigned a user ID (UID). UID 0 (zero) is reserved for root and UIDs 1-99 are reserved for other predefined accounts. Further UID 100-999 are reserved by system for administrative and system accounts/groups.  
4. Group ID (GID): The primary group ID (stored in /etc/group file)  
5. User ID Info: The comment field. It allow you to add extra information about the users such as user's full name, phone number etc. This field use by finger command.  
6. Home directory: The absolute path to the directory the user will be in when they log in. If this directory does not exists then users directory becomes /  
7. Command/shell: The absolute path of a command or shell (/bin/bash). Typically, this is a shell.

Which commands are used to set a processor-intensive job to use less CPU time?

nice command is used for changing priority of the jobs.  
Syntax: nice [OPTION] [COMMAND [ARG]...]  
Range of priority goes from -20 (highest priority) to 19 (lowest).Priority is given to a job so that the most important job is executed first by the kernel and then the other least important jobs. This takes less CPU times as the jobs are scheduled and are given priorities so the CPU executes fast. The priority is given by numbers like -20 describe the highest priority and 19 describe the least priority.

How to change window manager by editing your home directory?

/.xinitrc file allows changing the window manager we want to use when logging into X from that account. The dot in the file name shows you that the file is a hidden file and doesn't show when you do a normal directory listing. For setting a window manager we have to save a command in this file. The syntax of command is: exec windowmanager.After this, save the file. Next time when you run a startx a new window manager will open and become default. The commands for starting some popular window managers and desktop environments are:  
-KDE = startkde  
-Gnome = gnome-session  
-Blackbox = blackbox  
-FVWM = fvwm  
-Window Maker = wmaker  
-IceWM = icewm

Q) How documentation of an application is stored?

When a new application is installed its documentation is also installed. This documentation is stored under the directory named for application. For example if my application name is App1 then the path of the documentation will be /user/doc/App1. It contains all the information about the application. It contains date of creating application, name of application and other important module of the application. We can get the basic information of application from the documentation.

Q) How shadow passwords are given?

pwconv command is used for giving shadow passwords. Shadow passwords are given for better system security. The pwconv command creates the file /etc/shadow and changes all passwords to ‘x’ in the /etc/passwd file. First, entries in the shadowed file which don't exist in the main file are removed. Then, shadowed entries which don't have `x' as the password in the main file are updated. Any missing shadowed entries are added. Finally, passwords in the main file are replaced with `x'. These programs can be used for initial conversion as well to update the shadowed file if the main file is edited by hand.

Q) How do you create a new user account?

useradd command is used for creating a new user account. When invoked without the  
-D option, the useradd command creates a new user account using the values specified on the command line and the default values from the system. The new user account will be entered into the system files as needed, and initial files copied, depending on the command line options. This command uses the system default as home directory. If –m option is given then the home directory is made.

Q) Which password package is installed for the security of central password?

Shadow password packages are used for security of central passwords. Security is the most important aspect of every operating system. When this package is not installed the user information including passwords is stored in the /etc/passwd file. The password is stored in an encoded format. These encoded forms can be easily identified by the System crackers by randomly encoding the passwords from dictionaries. The Shadow Package solves the problem by relocating the passwords to another file (usually /etc/shadow). The /etc/shadow file is set so that it cannot be read by just anyone. Only root will be able to read and write to the /etc/shadow file.

Q) Which shell do you assign to a POP3 mail-only account?

POP3 mail only account is assigned to the /bin/false shell. However, assigning bash shell to a POP3 mail only gives user login access, which is avoided. /bin/nologin can also be used. This shell is provided to the user when we don’t want to give shell access to the user. The user cannot access the shell and it reject shell login on the server like on telnet. It is mainly for the security of the shells. POP3 is basically used for downloading mail to mail program. So for illegal downloading of emails on the shell this account is assigned to the /bin/false shell or /bin/nologin. These both shells are same they both do the same work of rejecting the user login to the shell. The main difference between these two shells is that false shell shows the incorrect code and any unusual coding when user login with it. But the nologin shell simply tells that no such account is available. So nologin shell is used mostly in Linux.

Q) Which daemon is responsible for tracking events on Linux system?

syslogd is responsible for tracking system information and save it to the desired log files. It provides two system utilities which provide system logging and kernel message trapping. Internet and UNIX domain sockets support enable this utility package to support both local and remote logging. Every logged message contains at least a time and a hostname field, normally a program name field, too. So to track these information this daemon is used. syslogd mainly reacts to the set of signals given by the user. These are the signals given to syslogd: SIGHUP: This lets syslogd perform a re-initialization. All open files are closed, the configuration file (default is /etc/syslog.conf) will be reread and the syslog facility is started again. SIGTERM: The syslogd will die. SIGINT, SIGQUIT: If debugging is enabled these are ignored, otherwise syslogd will die. SIGUSR1: Switch debugging on/off. This option can only be used if syslogd is started with the - d debug option. SIGCHLD: Wait for Childs if some were born, because of waiting messages.

Q) Which daemon is used for scheduling of the commands?

The crontab command is used for scheduling of the commands to run at a later time. SYNTAX  
crontab [ -u user ] file  
crontab [ -u user ] { -l | -r | -e }

Options  
-l List - display the current crontab entries.

-r Remove the current crontab.

-e Edit the current crontab using the editor specified by the VISUAL or EDITOR environment variables.  
When user exits from the editor, the modified crontab will be installed automatically. Each user can have their own crontab, and though these are files in /var, they are not intended to be edited directly. If the –u option is given than the crontab gives the name of the user whose crontab is to be tweaked. If it is given without this then it will display the crontab of the user who is executing the command.

Q) How environment variable is set so that the file permission can be automatically set to the newly created files?

umask command is used to set file permission on newly created files automatically.  
Syntax  
umask [-p] [-S] [mode]  
It is represented in octal numbers. We can simply use this command without arguments to see the current file permissions. To change the permissions, mode is given in the arguments. The default umask used for normal user is 0002. The default umask for the root user is 0022. For calculating the original values, the values shown by the umask must be subtracted by the default values. It is mainly used for masking of the file and directory permission. The /etc/profile script is where the umask command is usually set for all users. The –S option can be used to see the current default permissions displayed in the alpha symbolic format.  
For example, umask 022 ensures that new files will have at most 755 permissions (777 NAND 022).  
The permissions can be calculated by taking the NAND of original value with the default values of files and directories.

Update V1.1.

1.When do you need a virtual hosting ?  
The term Virtual Host refers to the practice of maintaining more than one server on one machine, as differentiated by their apparent hostname. For example, it is often desirable for companies sharing a web server to have their own domains, with web servers accessible as[www.company1.com](http://www.company1.com/) and [www.company2.com](http://www.company2.com/), without requiring the user to know any extra path information.  
2.In which port telnet is listening?  
23  
3.How to get the listening ports which is greater than 6000 using netstat ?  
4.How to block and openrelay ?  
Open relays are e-mail servers that are configured to accept and transfer e-mail on behalf of any user anywhere, including unrelated third parties.  
The qmail-smtpd daemon will consult the rcpthosts control file to determine valid destination addresses, and reject anything else.  
5.Q) What is sandwitch configuration in qmail ?  
Qmail + Clam + Spamassassin- This is normally called Sandwitch configuration in qmail.  
6.Advantages of Qmail ?  
More secure, better designed, modular, faster, more reliable, easier to configure, don't have to upgrade it every few months or worry about being vulnerable to something due to some obscure feature being enabled  
qmail supports host and user masquerading, full host hiding, virtual domains, null clients, list-owner rewriting, relay control, double-bounce recording, arbitrary RFC 822 address lists, cross-host mailing list loop detection, per-recipient checkpointing, downed host backoffs, independent message retry schedules, etc. qmail also includes a drop-in ``sendmail'' wrapper so that it will be used transparently by your current UAs.  
7.Q) What is the difference between POP3 and IMAP ?  
The Difference  
POP3 works by reviewing the inbox on the mail server, and downloading the new messages to your computer. IMAP downloads the headers of the new messages on the server, then retrieves the message you want to read when you click on it.  
When using POP3, your mail is stored on your PC. When using IMAP, the mail is stored on the mail server. Unless you copy a message to a "Local Folder" the messages are never copied to your PC.  
Scenarios of Use  
POP3  
· You only check e-mail from one computer.  
· You want to remove your e-mail from the mail server.  
IMAP  
· You check e-mail from multiple locations.  
· You use Webmail.  
8.How to drop packets using iptables ?  
Iptables -A INPUT -s xx.xx.xx.xx -d xx.xx.xx.xx -j DROP  
9.Daily routines of Linux Administrators ?  
\*.Check the health of servers  
\*.Check for updates  
\*.Check the Backup  
\*.Check with the trouble ticketing system for any unread ticket.  
\*.Troubleshoot if there any problem  
\*.Installation of new servers, if needed.  
\*.Report to the Boss  
10.How to take the Dump of a MySQL Database ?  
Mysqldump databasename > dumpname  
11.How to know the CPU usage of each process ?  
Top, uptime  
12.How to bind another IP in a NIC ?  
Copy the contents eth0 to eth1, and change the ipaddress. Restart the network. .  
13.Transparently proxy all web-surfing through Squid box  
iptables -t nat -A PREROUTING -i eth1 -tcp --dport 80 -j DNAT --to  
iptables -t nat -A PREROUTING -i eth1 -tcp --dport 80 -j DNAT --to  
14.Transparently redirect web connections from outside to the DMZ web server.  
iptables -t nat -A PREROUTING -i eth0 -d 192.168.1.1 -dport 80 -j DNAT –to  
15 Howto Activate the forwarding  
echo 1 >/proc/sys/net/ipv4/ip\_forward  
16.Kill spoofed packets  
for f in /proc/sys/net/ipv4/conf/\*/rp\_filter; do  
echo 1 > $f  
done.  
$iptables -A LDROP --proto tcp -j LOG --log-level info \ --log-prefix “TCP Drop”

1. What is tar?
2. Which is the standard command used to uncompress gzip files?
3. What is the RPM switch for only installing packages?
4. What is the command used to install an RPM package named demofilename2.2-2.i386.rpm?
5. Which command is used to see which RPM version of gzip was installed on the system?
6. Where is the location of automatically mounted file systems?
7. While installing the new RPM what common steps should take?
8. PPP is most often used to create?
9. Which service is most likely not functioning properly?
10. Samba is used to provide support for which protocol?
11. What command is used to load a module into the kernel?
12. With respect to a Linux system’s RAM, how large should the swap file be?
13. How would you create a backup of the fstab file to the /backup folder?
14. What command is used to exit the edit mode of VI editor?
15. What key combination will exit from VI editor and not save the changes made?
16. What command would you use to create a file system on a new hard drive?
17. What is the fstab file contains?
18. What is the inittab file contains?
19. What command can you use to verify the current active shell?
20. Where is the file . bashrc located?
21. What is the function of .bash\_profile file?
22. What is the function of .bash\_logout file?
23. What is the function of .bashrc file?
24. You need to define a macro, a key binding for the existing command. How would you do it?
25. A user is new to Linux and he wants to know full list of available commands, what would you suggest him?
26. Your assistant needs to print directory stack, what would you suggest?
27. You have lots of running jobs, how would you remove all the running processes, without restarting the machine?
28. What does the command 'hash' is used for in bash Shell?
29. You have a large text file, and you need to see one page at a time. What will you do?
30. Who own the data dictionary?
31. How to know a command summary and usability in Linux?
32. What command should you use to check the number of files and disk space used by each user's defined quotas?
33. What is swap space?
34. How to set up swap partition?
35. How to create a swap file?
36. Why fsck used?
37. When the system runs the fsck and which script invokes it?
38. What is e2fsck command?
39. Types of journals and their function?
40. Differentiate ext2 and ext3 file systems?
41. What is the function of tune2fs command?
42. What is the function of dump2fs command?
43. What is the function of debugfs command?
44. What is the function of resize2fs command?
45. Difference between .bashrc and .bash\_profile?
46. How to mount Windows share on Linux?
47. What is the file system used in Rhel 5 and Rhel 6?
48. What is the difference between ext3 and ext4 file systems?
49. What is the command used to check any hardware changes made on the system in Linux?
50. Is it possible to increase swap partition? If yes then how?
51. What is a swap partition? What is the recommended swap partition for 8 GB RAM?
52. What is the procedure you follow to extend a LVM partition?
53. What is the command to view all the available partitions on the system?
54. What is the command to view all the mounted partitions on the system?
55. What is the use of mtab directory?
56. How do you make permanent changes to any file inside /proc directory?
57. What is the default mode when you enter single user mode?
58. Explain the procedure to fix a case when a system is unable to boot due to improper entry in fstab?
59. What are the last two sections define in fstab file?
60. What is the command to display all the logical volume available in the system?
61. How do you mount a windows share on Linux? Is it possible?
62. What is the difference between NFS share and a Samba share?
63. What is the default permission applied on the user when you mount a NFS permission on any local directory in your system?
64. What is the command to view all the kernel parameters?
65. What is the command to view all the variables in your system?
66. How can you make a custom environment variable permanent so that it works even after reboot?
67. What Squid service does?
68. What is the SMTP?
69. What is NNTP?
70. What Samba service does?
71. Which service can be used with NFS to provide remote file access for UNIX systems?
72. What is MTA?
73. What is the connection-less protocol for file transfer?
74. You company wants to run Web Server on their intranet. Which Linux package should you use for this?
75. You company have slow internet connection. Which Linux service you can use to manage internet connection?
76. You have tasked with implementing a new Linux server in your network that will store confidential information of company. Your lab technician has fedora. Should you use it for your new server?
77. You are installing a Linux system that will run software that creates very large log files. Which directory should you create separate partition for?
78. You are installing a Linux system that will provide file storage for a number of network users. Which directory should you create separate partition for?
79. Which port should you open in your host firewall to run web server?
80. Which IP addressing should you use for Server?
81. Which IP address should you use for client desktop?
82. You are installing RHEL in new system that will be used by software developer to develop advance program. Which option should you choose during the installation, while installation program ask you to choose the set of software?
83. You are installing RHEL in new system that will used by an administrative assistant to type documents, create presentations, and manage e-mail. Which option should you choose during the installation, while installation program ask you to choose the set of software?
84. Which partition is used for virtual memory by a Linux system?
85. Which ports should you open in host firewall for an email server?
86. Your Linux system has two SCSI hard disk drives. The first drive is assigned as SCSI ID 0, and the second drive is assigned SCSI ID 1. How these will be refers in system?
87. Your Linux system has a single IDE hard disk drive. How partitions will be refers on the IDE drive?
88. What is Linux?
89. What is the difference between UNIX and LINUX?
90. What is BASH?
91. What is Linux Kernel?
92. What is LILO?
93. What is a swap space?
94. What is the advantage of open source?
95. What are the basic components of Linux?
96. Does it help for a Linux system to have multiple desktop environments installed?
97. What is the basic difference between BASH and DOS?
98. What is the importance of the GNU project?
99. Describe the root account.
100. What is CLI?
101. What is GUI?
102. How do you open a command prompt when issuing a command?
103. How can you find out how much memory Linux is using?
104. What is typical size for a swap partition under a Linux system?
105. What are symbolic links?
106. Does the Ctrl+Alt+Del key combination work on Linux?
107. How do you refer to the parallel port where devices such as printers are connected?
108. In Linux the drives such as harddrive and floppy drives represented with drive letters?
109. How do you change permissions under Linux?
110. In Linux, what names are assigned to the different serial ports?
111. How do you access partitions under Linux?
112. What are hard links?
113. Which account is created on Linux installation?
114. Which daemon tracks events on your system?
115. Which command would you use if you want to remove the password assigned to a group?
116. You wish to print a file ‘draft’ with 60 lines to a page. What command would you use?
117. Which file would you examine to determine the levels of messages written to system log files?
118. You are logged on as a regular user. Without logging off and logging on as root, you are required to create a new user account immediately. How would you do it?
119. You are required to restore the file memo.ben. It was backed up in the tar file MyBackup.tar. Which command would you use to do it?
120. What is partial backup?
121. What is the fastest way to enter a series of commands from the command-line?
122. What are the qualities of soft links?
123. What is the name and path of the main system log?
124. Which command is used to review boot messages?
125. Which utility is used to make automate rotation of a log?
126. What are the partitions created on the mail server hard drive?
127. Which commands are used to set a processor-intensive job to use less CPU time?
128. How to change window manager by editing your home directory?
129. How documentation of an application is stored?
130. How shadow passwords are given?
131. Which password package is installed for the security of central password?
132. Which shell do you assign to a POP3 mail-only account?
133. Which daemon is responsible for tracking events on Linux system?
134. Which daemon is used for scheduling of the commands?
135. How environment variable is set so that the file permission can be automatically set to the newly created files?
136. When do you need a virtual hosting?
137. In which port telnet is listening?
138. How to get the listening ports which is greater than 6000 using netstat?
139. How to block and open relay?
140. What is sandwitch configuration in qmail?
141. Advantages of Qmail?
142. What is the difference between POP3 and IMAP?
143. How to drop packets using iptables?
144. Daily routines of Linux Administrators?
145. How to take the Dump of a MySQL Database?
146. How to know the CPU usage of each process?
147. How to bind another IP in a NIC?
148. How to activate the forwarding?
149. How to kill spoofed packets?

**Example to create ext4 file system?**

**Which are the Different types of RAID?**

**Which is the command for creating software RAID’s in Red hat Linux?**

**How to Create LVM?**

**Difference between Linux Partitions and Linux LVM partitions?**

**Why is LVM used?**

**How to remove older duplicated RPMs automatically?**

**How to remove duplicate entry in yum install?**

**How to force yum update command to exclude certain Packages?**

**How to create a patch bundle in Linux?**

**How to create a repository with patch bundles?**

**What is firmware?**

**How to boot from a specific kernel?**

**How to update kernel?**

**How to create a local yum repo?**

**How to configure Jumbo Frames to Boost**[**Network Performance**](javascript:void(0);)**/ Throughput?**

**What is MTU?**

**How Install Patch Repository without connection to Internet?**

**What to do if /var file system in Linux is completely full?**

**How to change Duplex and/or Auto-Negotiation NIC settings in Linux?**

**How to**[**check**](javascript:void(0);)**LAN card is full duplex or half speed?**

**How to Setup eth0 negotiated speed?**

**Explain /etc/hosts?**

**How can I recover my Red Hat if it BOOTs to a “Kernel Panic” error?**

**What is the proper method to remove old kernels from a Red Hat Enterprise Linux system?**

**How to Add a Module (driver)?**

**How to List All Loaded Modules?**

**How to remove a module?**

**What is the command to see number of modules installed on server?**

**How to blacklist kernel modules?**

**How to prevent a Linux kernel module from auto loading**

**How do I set sysctl variables under Linux?**

**How do I re-register my system with Red Hat Network (RHN) Classic or Red Hat Network Satellite?**

**Why is kernel upgrade needed in Linux?**

**How to set default boot kernel in Linux?**