**LINUX INTERVIEW QUESTIONS**

**1. What is the difference between Telnet and SSH?**

Although Telnet and SSH are both communication protocols to manage a remote system, the SSH is the secured version of the telnet, and will require key exchange unlike Telnet which sends the data on clear-text.

**2. When you need to edit a file by a system command (like crontab -e) how do you change the default editor that the system opens the file with to nano?**

The system will use the editor defined in your EDITOR environment variable and can be set by export EDITOR=nano

**3. While using X, you encounter issues and cannot quit the X server, how can you force it to restart?**

Linux has a solution for restarting X server with the combination of Alt-Ctrl-Backspace which will force X Restart.

**4. What would be the result of the key combination ALT +9 then pressing m?**

This would print the letter iii times into your STDIN.

**5. Which TCP ports do you need to keep open for FTP, SSH, SMTP, POP3, HITP and H TIPS respectively?**

For the mentioned services you will need to keep the following TCP ports free: 21, 22, 25,110, 80, 443.

**6. What is the difference between the commands ping and ping 6?**

The commands ending with 6 – ping6, traceroute6. Tracepath6 have the same meaning, but are intended to use on ipv6 IP addresses.

**7. What does an open mail relay server means?**

An Open mail relay server, means that this is a server that everyone can send emails through it without the need to identify first or be a part of the domain group.

**8. You want to find all of the “.tem” files in /home/\* and delete them, how can you do it in a command?**

First you need to find the files using find, then delete them using rm -find /home/ — name \*tmp \ xargs rm —rf.

**9. How can you add an ‘auto correction’ that will automatically fix cd /homr” to cd /home”?**

You can add the option cdspell to your shell options by typing “shopt -s cdspell”.

**10. How do you get additional information about a command – for example get information about mail?**

If you want to learn about a command, you can use the commands man mail or info mail to learn more about mail.

**11. You are running a crontab command and doesnt want the command to send an output to the crontab serice, how can you handle it?**

You can send all of the output from the command (STDOUT AND STDERR) to /dev/null – commnandName 2 >&1 >/dev/null

**12. How can you list the arp cache table of the current machine?**

You can use the command arp to control and view the arp table.

**13. How can you eject your cdroni drive from the console?**

In order to eject the cdrom drive, you can use the command eject.

**14. You see a process “./myApplication” with PID 44556, how can you know where was the file executed from?**

You can identify the path where the PID was executed by running pwdx 44556 and you will get the command executing path as an output.

**15. You are doing an installation and want to record your commands and outputs for later review, how can you do that?**

You can use the script application for this functionality – type script -a ;mysession.log and it will start recording your terminal to mvsession.log, when you want to exit, type exit.

**16. How can you get a view of the calendar of January 2004 on a Linux console?**

You can get the view of month/year calendar with the command: cal 01 2004.

**17. You have 100 .txt files in a directory, you want to know in which file you have the string “Error Found”, how can you do it?**

You will need to use the command grep” in order to find data in files – grep Error Found”.\*txt

**18. What command is used to get the IP? Address (es) of the domain name Google.com in Linux?**

In order to find the related IP Address(es) of the domain google.com you can use “nslookup google.com”

**19. What will be the outcome of the following command – touch -in my File?**If the file exists, it will only change the iizodfication time of the file, if the file doesn’t exist, it will create it.

**20. Given the directory myImportantFiles” how can you create a tar file myImportantTar.tar” containing this folder?**

You need to use the tar command to create a tar file – tar -cfmylmportantTar.tar importantFiles.

**21. How caii you know. without checking the logs, which Kernel version is currently loaded to the system?**

The unnamed tool allows you to get various system information – to get only the kernel data. You can use unnamed —rsv

**22. What is the equivalent of Norton commander” or ‘Windows Commander” for Linux console?**

Linux provides the inc (Midnight Commander) tool to allow the user to have an interactive interface for file management in Linux Console.

**23. How call you change a password of a different user (john), when you have root access?**

Using the passwd command with the destination username – passwd john

**24. How do you make sure that your computer date & time are always aligned?**

You need to connect your server to an ntp server using ntpd, or run manually “ntptime ntpserver.com”

**25. You have a tar file (mvFile.tar), how do you convert it to a gzip file on best compression?**

If you need to compress the file on a best compression, you need to run the conunand “gzip -9 myFile.tar” and it will convert it to myFile.tar.gz.

**26. How can you disable cliii during runtime?**

In order to disable a network card, for the current runtime , you can run the command  
“ifdown eth1” or fconfig eth1 down”

**27. How can you get the current username that you are logged in with?**

You can find the user that you are logged in with, using the commands “who am I” or “whoami’

**28. Using the apt-get application, how can you install gcc compiler?**

The apt-get allows you to download and install new applications like gcc – apt-get install gcc

**29. How do you run the interiial bbre1ote\_desJ(jop VNC application on Linux?**

In order to run the vncserver daemon and connect to the server using a vncviewer on port 15000 + vnc instance number (15001,15002).

**30. How can you find all lines starting with the word Error” in the log file mylog.log”, with a single command?**

The Linux command look allows you to find only lines beginning with the provided string – look Error iiiylog.log

**31. You have a file that you want to randomize its lines and create permutations of it for distinctive file list, how can you create a permutation of the file myfile” into “mynewfile’?**

The Linux tool shuf allows you to create permutations of file and shuffle the lines, which will allow you to create new distinctive files – shuf myfile > mynewfile.

**32. You have moved a file from one server to another, but you are not sure that the file has been perfectly moved, how can you verify that the file has not been corrupted?**

You can use the md5sum tool on both sides (both servers) on the file and match the result, if it is the same, the file has not been corrupted.

**33. How would you copy the file ‘file.txt” owned by root using secure ftp from 10.1.1.1 On /root/ to your local folder in one command?**

You need to use the scp tool (secure copy over sftp) which allows copying in one line scp root@ 10.1.1.1:/root/file. txt ./

**34. How will you change all the ownership of/home/useri to user2 (recursively)?**

You need to use the chown command on the directory – chown user2:user2 /home/user1 —R.

**35. How can you check how long is the system running since the last restart amid the load average on it?**

The uptime command can show you the current time, how long the system has been running since the last restart, how many users are currently logged on to the system, and the system load averages in the resolution of the last 1,5, and 15 minutes.

**36. How can you check what processes a specified user (torn) is currently running?**

ps command will output the current processes of all or specific users – ps -U torn.

**37. How can you see all the rimning processes at the systern and their resources use on a live auto-refreshing view?**

Top lets you see all the processes in the system and sort them by resources usage.

**38. What is the tool provided with gzip for decompression?**

The gzip tool provides another tool gunzip for gzip files decompression.

**39. What command displays hardware related kernel messages?**

command displays hardware related kernel messages is dmesg

**40. What command shows PCI card information?**

PCI card information is Ispci

**41. What does the command ‘Ismod’ do?**

Ismod is List currently loaded modules

**42. What does the command insmod do?**

Insmod do Load an available module

**43. What is the device name for the first SATA drive on a server?**

First SATA drive is /dev/sda

**44. What is the device name for the first IDE drive on a server?**

first IDE drive server name is /dev/had

**45. Which two video card vendors require proprietary drivers for full hardware support?**

two video card vendors are Nvidia/ATI

**46. Which device corresponds to the physical memory?**

Corresponds physical memory is /dev/kmem

**47. Which damon checks the health status of hard drives?**

Health status of hard drives is SMARTD

**48. What command will install the required drivers for a Realtek 8139 based network card?**

insmod rt18139 or modprobe rtl8139

**49. What two values are needed in order to properly setup a monitor under X11?**

hsync, vsync

**50. What is the maximum amount of addressable RAM that a 32-bit kernel will address?**

Up to 64 GB, with PAE

**51. What is the most popular architecture, in use today?**

i386

**1) 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.

**26) What is the maximum length for a filename under Linux?**

Any filename can have a maximum of 255 characters. This limit does not include the path name, so therefore the entire pathname and filename could well exceed 255 characters.

**27)What are filenames that are preceded by a dot?**

In general, 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.

**28) Explain virtual desktop.**

This serves as an alternative to minimizing and maximizing different windows on the current desktop. Using virtual desktops, each desktop 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 with programs intact in each one.

**29) How do you share a program across different virtual desktops under Linux?**

To share a program across different virtual desktops, 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, in the same position onscreen.

**30) What does a nameless (empty) directory represent?**

This empty directory name serves as the nameless base of the Linux file system. This serves as an attachment for all other directories, files, drives and devices.

**31) What is the pwd command?**

The pwd command is short for print working directory command. It’s counterpart in DOS is the cd command, and is used to display the current location in the directory tree.

**32) What are daemons?**

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.

**33) How do you switch from one desktop environment to another, such as switching from KDE to Gnome?**

Assuming you have these two environments installed, just log out from the graphical interface. Then at the Log in screen, type your login ID and password and choose which session type you wish to load. This choice will remain your default until you change it to something else.

**34) What are the kinds of permissions under Linux?**

There are 3 kinds of permissions under Linux:  
– Read: users may read the files or list the directory

– Write: users may write to the file of new files to the directory  
– Execute: users may run the file or lookup a specific file within a directory

**35) How does case sensitivity affect the way you use commands?**

When we talk about case sensitivity, commands are considered identical only if every character is encoded as is, including lowercase and uppercase letters. This means that CD, cd and Cd are three different commands. Entering a command using uppercase letters, where it should be in lowercase, will produce different outputs.

**36) What are environmental variables?**

Environmental variables are global settings that control the shell’s function as well as that of other Linux programs. Another common term for environmental variables is global shell variables.

**37) What are the different modes when using vi editor?**

There are 3 modes under vi:  
– Command mode – this is the mode where you start in  
– Edit mode – this is the mode that allows you to do text editing  
– Ex mode – this is the mode wherein you interact with vi with instructions to process a file

**38) Is it possible to use shortcut for a long pathname?**

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/iceman/assignments directory, you would type as follows: /ho

/ice

/assi

. This, however, assumes that the path is unique, and that the shell you’re using supports this feature.

**39) What is redirection?**

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.

**40) What is grep command?**

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.

**41) What could possibly be the problem when a command that was issued gave a different result from the last time it was used?**

One highly possible reason for getting different results from what seems to be the same command has something to do with case sensitivity issues. Since Linux is case sensitive, a command that was previously used might have been entered in a different format from the present one. For example, to lists all files in the directory, you should type the command ls, and not LS. Typing LS would either result in an error message if there is no program by that exact name exist, or may produce a different output if there is a program named LS that performs another function.

**42) What are the contents in /usr/local?**

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.

**43) How do you terminate an ongoing process?**

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.

**44) How do you insert comments in the command line prompt?**

Comments are created by typing the # symbol before the actual comment text. This tells the shell to completely ignore what follows. For example: “# This is just a comment that the shell will ignore.”

**45) What is command grouping and how does it work?**

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 OUTPUT to a second file named MYDATES, you can apply command grouping as follows: (date cat OUTPUT) > MYDATES

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

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:

|  |  |
| --- | --- |
| 1 | ls –l cd .. ls –a MYWORK which is equivalent to 3 commands: ls -l cd.. ls -a MYWORK |

\*\*Note that this will be executed one after the other, in the order specified.

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

Answer:

|  |  |
| --- | --- |
| 1 | Find ./ -name “\*.c” | xargs grep –i “apple” |

**48) Write a command that will display all .txt files, including its individual permission.**

Answer:

|  |  |
| --- | --- |
| 1 | ls -a -l \*.txt |

**49) Write a command that will do the following:  
-look for all files in the current and subsequent directories with an extension c,v  
-strip the,v from the result (you can use sed command)  
-use the result and use a grep command to search for all occurrences of the word ORANGE in the files.**

|  |  |
| --- | --- |
| 1 | Find ./ -name “\*.c,v” | sed ‘s/,v//g’ | xargs grep “ORANGE” |

**50) What, if anything, is wrong with each of the following commands?  
a) ls -l-s**

**b) cat file1, file2**

**c) ls – s Factdir**

Answers:  
a) there should be space between the 2 options: ls -l –s

b) do not use commas to separate arguments: cat file1 file2

c) there should be no space between hyphen and option label: ls –s Factdir