

Linux Preparation

System Access & File System (18 Questions)

1. What is PuTTY and how do you use it to access a Linux VM

Just use the command `ip -a` or `ifconfig` and know the ip address for Linux VM and then open your putty terminal and enter the Ip address in the hostname and click enter
Then login with your id and password to access the terminal

2. What are the key details required to connect a remote system using PuTTY?

Ip address , putty terminal , user name and its password

3. How do you securely access a Linux system from Windows?

By downloading VM ware from oracle and installing the linux iso in it and launch the Linux terminal

4. Explain the Linux file system hierarchy (/bin, /etc, /usr, /home, /var, etc.).

/bin - Contains the files regarding the user binary commands like `ls` , `cp` and `mkdir`

/etc - Store all the configuration files of the system such as the network setting , user accounts , software setting etc

/usr - Contains the user data such as the libraries and other documentation which are only of read only access

/home - this is the home directory where all the personal files and documentations are held upon

/var - hold the variable for the data files, log files, database and cache files

5. What does the /etc directory contain?

They contain the files regarding the system setting such as the network setting , user password and software setting that are used

6. How do you navigate to the parent directory using a single command?

`cd ..`

7. What does the command `cd ~` do?

This command takes us to the home directory

8. How do absolute and relative paths differ?

Absolute path they start with the / and with the total file path at once .
for example : `cd /var/www/html`

Relative path is that they don't start with the / . for example :
`Cd avenger`
`Mkdir captain`
`Touch America`

9. What's the command to list all files, including hidden ones?

List all the files - `ls -ltr`

List all the hidden files - `ls -la`

10. How do you create multiple directories at once?

`mkdir <name1> <name2> <name3>`

`mkdir name{1..3}-xyz`

11. How do you create an empty file from the command line?

`touch filename`

12. What is the difference between touch and vi for file creation?

`touch filename` and then we have to vi

vi just create the file and its stored

13. How do you search for a file in the system using find?

cd to the directory and then find <filename>

finding an word in the files - grep "name" filename

14. How is locate different from find?

- Locate is used this return all the files and paths related to the word avenger
- Find helps to find the word avenger in the particular directory

15. How do you change your password on a Linux system?

Passwd username

16. What are wildcards in Linux? Give examples using * and?.

Wildcards are used to find files or directory used an format of alphabet and numbers

rm -rf *name - removed directories ending with name

rm -rf name* - removed directories starting with name

ls -l ?bcd* - gives all the files starting with any name but with bcd

17. How do you combine the contents of two files into one?

touch checkfile

echo "hello there" > checkfile

echo " nice to meet you" >> checkfile

cat filename > catlogs 2>&1

18. What's the difference between a hard link and a symbolic (soft) link?

hard links are those which are linked to the inode and the file so when the files are destroyed or deleted the link remains and is present

soft link are only linked to the file so when the file is deleted the total link is being destroyed

soft link - `ln -s filename`

hard link - `ln filename`

Linux Fundamentals (20 Questions)

19. What is the correct syntax for most Linux commands?

`command [options] [arguments]`

20. What does the `chmod 755 file.txt` command mean?

`Chmod 755` means:

Owner or user - with all permissions

Group - with read and execute permission

Others - with read and execute permission

21. What are the symbolic and numeric modes in `chmod`?

Symbolic methods are by using u, g, o. users, groups and others

For example: `chmod u+x filename` [giving the user executable permission]

Numeric methods are where the numbers from [0 to 7] are used

For example: `chmod 755 filename`

22. How do you change the owner of a file using `chown`?

`chown u:root filename` - changing the user of the file to root

23. What's the difference between `chown` and `chgrp`?

`chown` is used to change the user for the file

`chgrp` is used to change the group for the file

these both can be done in an same command

- `chown user:group filename`

24. How do you access the manual for a command?

`man command_name`

25. What does the `whatis` command do?

`whatis` command is same as `man` command gives out the whole manual for an command

26. How do TAB completion and up-arrow key assist in the terminal?

`tab` is used for auto completion of an path of an command

up arrow key is used to display the prev used commands in linux

27. How do you append text to a file from the command line?

For example:

`echo "hello" > filetype [this is an overwrite command]`

`echo "how are you" >> filetype [this is an append command]`

28. What is a pipe (`|`) in Linux and how is it used?

Pipe is used to give out multiple commands in an same line but the next command depends on the output of the first command

Like: `ls -ltr | more`

29. How do you count the number of lines in a file using `wc`?

`wc -l filename`

30. What does the `cut` command do? How is it different from `awk`?

`cut` command is used to cut the file into desired fields and words

`awk` commands are used for data extraction from an file

for example in `cut`:

`cut -c1 filename` - it is used to cut the first character in the file

`cut -c1-4` - its an range of characters

`cut -d ":" -f2 filename` - cutting based on fields

for example in awk:

`awk '{print $1}' filename` - prints the first field in the file

`awk '/hulk/{count ++} END {print count}' filename` - counting the number of words occurred in the file with the keyword

31. How do you filter only unique lines from a file?

Using sort and uniq commands

`sort filename | uniq` - this removes the duplicate lines and gives out uniq lines

32. How do you find lines containing the word "error" in a file?

`grep -c "error" filename`

33. What's the difference between grep and awk?

grep is used to find the word that is present in the total file present in the directory like line by line search

awk is used for data extraction that is usefull to know how many of the fields or keywords are present this is majorly used for text processing

34. How do you compare two files line by line?

Using the compare command

`cmp <filename1> <filename2>` - comparing both the files by the level of bytes but instead if this we can use diff command

`diff <filename1> <filename2>` - this shows an perfect output

35. How do you compress and extract .tar.gz files?

For the process of compress and extract in linux we use tar and gzip/gunzip /gzip -e command

Tar - used too compress the directories and creating an backup

Gzip - compress and decompress files present

Commands are :

tar cvf pandafull.tar /home/panda - compressing

tar xvf pandafull.tar - decompressing

tar xvf pandafull.tar -C /path/to/directory/ - decompressing to an particular directory

gzip pandafull.tar.gz - this is used to compress the file

gunzip pandafull.gz.gz - this is used to decompress the file

36. How is gzip different from tar?

tar is used to compress large directories and decompress those directories

gzip is used to compress files to reduce the file size and also they are used to compress the tar files

37. How do you combine multiple files into a single archive?

cat <file1> <file2> <file3> > filetotal - combine process

38. What are the key differences between Linux and Windows commands?

In linux all the process are taken place using the commands which are used to go through the process of the linux

But in windows we don't need any commands where everything are handled using the gui interface

System Administration (27 Questions)

39. How do you open and save a file in the vi editor?

vi filename - enter the data present - press esc and :wq! To write and quit

40. How do you replace all instances of "apple" with "orange" in a file using sed?

sed -i `s/apple/orange/g` filename

41. How do you add a new user in Linux?

useradd username

42. What's the command to delete a user and their home directory?

sudo userdel -r username

here the -r is used to delete the home directory of the user

43. What is sudo and how does it work?

Sudo is used in the place of the user account where some commands are only runnable by the root so using sudo makes the commands to be runned in the root

44. What is the difference between su and sudo?

su - is used to change the used to the root used with the allocated password

sudo is used in front of any root based command that can be runned in the main user itself

45. How can you monitor who is currently logged in?

Using commands like user and who we can know what users have been logged in and at what time

46. How do you send a message to all users logged into a system?

Using the command wall, we can send a message to all the users that have been logged in into the machine

Wall

Enter the message

Ctrl +d - to send the message

47. What is the difference between Active Directory and LDAP?

48. What is OpenLDAP used for in Linux?

49. How do you find the current date and time in Linux?

Use the command date

50. What does the uptime command tell you?

Uptime command shows the time from when the machine is running , number of users present and the machine load

51. How do you check your system's hostname?

We can use commands like pwd, whoami, hostname

52. What's the difference between ps and top?

Ps command is used to show the running process that are running in the machine

Top command shows an detail view of the processes running along with their cpu and memory percentage , users , priority , nice value , virtual memory , memory taken by ram , shared memory and cpu time

53. How do you kill a process using its PID?

We can use the kill command

kill PID

the other kill commands are :

kill -1 - restart

kill -2 - intercept

kill -9 - force kill the process

kill -15 - kill the process gracefully

54. What's the difference between crontab and at?

Crontab is an command which is used to schedule work tasks and at command is used schedule commands that used to schedule work for once

Crontab commands are:

crontab -e - to start the crontab editor

45 9 7 7 * echo " this is an cron tab command " > crontab-entry

45 - here is the minutes

9 - is the hour

7- is the date

7 - is the month

55. How do you view all scheduled cron jobs for a user?

crontab -l - is used to view all the crontab schedules that have been produced

56. What command is used to reboot a Linux machine immediately?

sudo report or sudo shutdown -r now

57. What does systemctl do?

Systemctl is a command used to start stop restart enable an service that has been present in the linux machine

`systemctl enable service_name`

`systemctl start service_name`

`systemctl stop service_name`

`systemctl restart service_name`

58. How do you monitor disk usage with df and du?

Df or disk free is used to display the disk information on the machine and its file system

Command is: `df` and `df -h`

Du is known as the disk usage that shows the amount of space taken in all the files and directories present in the file system

Command is: `du` and `du [directory]`

59. How do you check RAM usage with free?

60. What's the output of `uname -a`?

this command is used to display all the information about the machine

name of the os used , hostname, number of bits, time when it was created

61. What command gives detailed system hardware info?

`sudo dmidecode -` to be runned in root

or for more detailed view we can use `lshw`

62. How do you find out the OS version you are running?

`lsb_release -a` this is used to show the os version

63. What's the command to change the system hostname?

`sudo hostnamectl set-hostname [new-hostname]`

64. How do you exit a terminal session?

Command we can use is `exit`

65. What does `script` command do in Linux?

This is used to create an script file that stores all the outputs and commands in an file

For example:

`Script <filename>` - this command starts the script file and thus after this all the commands are being stored in the script file

66. What is single-user mode? How is it used to reset the root password?

67. What is an *SOS* report and when would you generate one?

Sos report is like an analysis report that is used to give out an detailed report that is used to diagnose the analysis and support the data

Command is: `sosreport`