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Top 50 Shell Scripting Interview Questions

1: What is a shell?

Shell is a interface between user and the kernel. Even though there can be only one kernel ; a system can have many shell running simultaneously . Whenever a user enters a command through keyboard the shell communicates with the kernel to execute it and then display the output to the user.

2: What are the different types of commonly used shells on a typical linux system?

csh,ksh,bash,Bourne . The most commonly used and advanced shell used today is "Bash" .

3:What is the equivalent of a file shortcut that we have on window on a Linux system?

Shortcuts are created using "links" on Linux. There are two types of links that can be used namely "soft link" and "hard link"

4:What is the difference between soft and hard links?

Soft links are link to the file name and can reside on different filesystem as well; however hard links are link to the inode of the file and has to be on the same filesystem as that of the file. Deleting the original file makes the soft link inactive (broken link) but does not affect the hard link (Hard link will still access a copy of the file)

5: How will you pass and access arguments to a script in Linux?

Arguments can be passed as:

scriptName "Arg1" "Arg2"...."Argn" and can be accessed inside the script as \$1 , \$2 .. \$n

6: What is the significance of \$#?

\$# shows the count of the arguments passed to the script.

7: What is the difference between \$* and \$@?

`$@` treats each quoted arguments as separate arguments but `$*` will consider the entire set of positional parameters as a single string.

8: Use sed command to replace the content of the file (emulate tac command)

Eg:

```
[crayon-5460a3833a1b1515294660/]
```

Then O/p should be

```
EFGH
```

```
ABCD
```

```
[crayon-5460a3833a1b7915254113/]
```

Here G command appends to the pattern space,

h command copies pattern buffer to hold buffer

and d command deletes the current pattern space.

9: Given a file, replace all occurrence of word “ABC” with “DEF” from 5th line till end in only those lines that contains word “MNO”

```
[crayon-5460a3833a1ba099749621/]
```

10: Given a file , write a command sequence to find the count of each word.

```
[crayon-5460a3833a1bd339202604/]
```

`"(backslash)011"` is octal equivalent of “tab character” and

`"(backslash)012"` is octal equivalent of newline character.

11: How will you find the 99th line of a file using only tail and head command?

```
tail +99 file1|head -1
```

12: Print the 10th line without using tail and head command.

```
[crayon-5460a3833a1c0023343552/]
```

13: In my bash shell I want my prompt to be of format ‘\$’ Present working directory’: “hostname”> and load a file containing a list of user defined functions as soon as I login , how will you automate this?

In bash shell we can create “.profile” file which automatically gets invoked as soon as I login

and write the following syntax into it.
[crayon-5460a3833a1c2347747595/]

Here File1 is the file containing the user defined functions and “.” invokes this file in current shell.

14: Explain about “s” permission bit in a file?

“s” bit is called “set user id” (SUID) bit.

“s” bit on a file causes the process to have the privileges of the owner of the file during the instance of the program.

Eg: Executing “passwd” command to change current password causes the user to writes its new password to shadow file even though it has “root” as its owner.

15: I want to create a directory such that anyone in the group can create a file and access any person’s file in it but none should be able to delete a file other than the one created by himself.

We can create the directory giving read and execute access to everyone in the group and setting its sticky bit “t” on as follows:
[crayon-5460a3833a1c5060316426/]

16: How can you find out how long the system has been running?

Command “uptime”

17: How can any user find out all information about a specific user like his default shell, real life name, default directory,when and how long he has been using the sytem?

finger “loginName” ...where loginName is the login name of the
user whose information is expected.

18: What is the difference between \$\$ and \$!?

\$\$ gives the process id of the currently executing process whereas \$! shows the process id of the process that recently went into background.

19: What are zombie processes?

These are the processes which have died but whose exit status is still not picked by the parent process. These processes even if not functional still have its process id entry in the process

table.

20: How will you copy file from one machine to other?

We can use utilities like “ftp” ,”scp” or “rsync” to copy file from one machine to other.

Eg: Using ftp:

ftp hostname

>put file1

>bye

Above copies file file1 from local system to destination system whose hostname is specified.

21: I want to monitor a continuously updating log file, what command can be used to most efficiently achieve this?

We can use tail -f filename . This will cause only the default last 10 lines to be displayed on std o/p which continuously shows the updating part of the file.

22: I want to connect to a remote server and execute some commands, how can I achieve this?

We can use telnet to do this:

telnet hostname -l user

>Enter password

>Write the command to execute

>quit

23: I have 2 files and I want to print the records which are common to both.

We can use “comm” command as follows:

comm -12 file1 file2 ... 12 will suppress the content which are

unique to 1st and 2nd file respectively.

24: Write a script to print the first 10 elements of Fibonacci series.

[crayon-5460a3833a1c9858773456/]

25: How will you connect to a database server from linux?

We can use isql utility that comes with open client driver as follows:

```
isql -S serverName -U username -P password
```

26: What are the 3 standard streams in Linux?

- 0 - Standard Input
- 1 - Standard Output
- 2 - Standard Error

27: I want to read all input to the command from file1 direct all output to file2 and error to file 3, how can I achieve this?

```
command file2 2>file3
```

28: What will happen to my current process when I execute a command using exec?

"exec" overlays the newly forked process on the current process ; so when I execute the command using exec, the command gets executed on the current shell without creating any new processes.

Eg: Executing “**exec ls**” on command prompt will execute ls and once ls exits, the process will shut down

29: How will you emulate wc -l using awk?

```
awk 'END {print NR}' fileName'
```

30: Given a file find the count of lines containing word “ABC”.

```
grep -c "ABC" file1
```

31: What is the difference between grep and egrep?

egrep is Extended grep that supports added grep features like “+” (1 or more occurrence of previous character), “?” (0 or 1 occurrence of previous character) and “|” (alternate matching)

32: How will you print the login names of all users on a system?

/etc/shadow file has all the users listed.

```
awk -F ':' '{print $1}' /etc/shadow|uniq -u
```

33: How to set an array in Linux?

Syntax in ksh:

Set -A arrayname= (element1 element2 element)

In bash

A=(element1 element2 element3 elementn)

34: Write down the syntax of “for “ loop

Syntax:

for iterator in (elements)

do

execute commands

done

35:How will you find the total disk space used by a specific user?

du -s /home/user1where user1 is the user for whom the total disk space needs to be found.

36: Write the syntax for “if” conditionals in linux?

Syntax

If condition is successful

then

execute commands

else

execute commands

fi

37:What is the significance of \$? ?

\$? gives the exit status of the last command that was executed.

38: How do we delete all blank lines in a file?

[crayon-5460a3833a1cc630913844/]

where (backslash)011 is octal equivalent of space and

(backslash)040 is octal equivalent of tab

39: How will I insert a line “ABCDEF” at every 100th line of a file?

sed '100i\ABCDEF' file1

40: Write a command sequence to find all the files modified in less than 2 days and print the record count of each.

find . -mtime -2 -exec wc -l {} \;

41: How can I set the default rwx permission to all users on every file which is created in the current shell?

We can use:

[crayon-5460a3833a1cf238947458/]

This will set default rwx permission for every file which is created to every user.

42: How can we find the process name from its process id?

We can use “ps -p ProcessId”

43: What are the four fundamental components of every file system on linux?

bootblock, super block, inode block and datablock

44: What is a boot block?

This block contains a small program called “Master Boot record”(MBR) which loads the kernel during system boot up.

45: What is a super block?

Super block contains all the information about the file system like size of file system, block size used by it, number of free data blocks and list of free inodes and data blocks.

46: What is an inode block?

This block contains the inode for every file of the file system along with all the file attributes except its name.

47: How can I send a mail with a compressed file as an attachment?

```
zip file1.zip file1|mailx -s "subject" Recepients email id
```

Email content

EOF

48: How do we create command aliases in shell?

alias Aliasname="Command whose alias is to be created"

49: What are "c" and "b" permission fields of a file?

"c" and "b" permission fields are generally associated with a device file. It specifies whether a file is a character special file or a block special file.

50: What is the use of a shebang line?

Shebang line at top of each script determines the location of the engine which is to be used in order to execute the script.

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