

TOP 120 LINUX INTERVIEW QA

Explanation with example

LINUX KURIOSITY

LINUX KURIOSITY

Top 120 Linux Interview QA

Learn in a Simple and Smart way.

Table of Contents

1. Grep
2. SSH
3. Screen
4. Awk
5. Sed
6. Ansible
7. Scp
8. Tar

9. Nagios

10. File Security

11. Apache

12. Shell Scripting

1. Grep

a. Objective : Below problem help you to use grep in real time issues.

b. Benefits : 1. Grep saved the user time while searching the file.
2. Help you to filter the string.

c. Problem:

1. Suppose you have multiple files in the system with the same first name and last name but the middle name is different (example xxx-4.deb, xxx5.deb). You have to find out the specific file (xxx6.deb). How will you perform this task?

Ans: Grep is a powerful file pattern searcher tool, which helped in searching the specific file.

Grep stand for Global regular expression print.

Command : `dpkg -l | grep -i xxx6.deb`

`dpkg -l` list out all the files and `grep -i` filter the output.

Benefits : Grep saved the user time while searching the file.

2. Suppose you are working as an Apache administrator in XYZaa company. There is some issue occur in the Apache server. Senior Engineer asked you to send the content of configuration file without commented lines. How will you perform this task?

Ans : `grep -v '#' filename`

Above command will print the content without #. -v is an option which is used to display the opposite result.

3. if you want to display the string after the specific string which you have searched. Apart from this, you also have to save the output in the file. How will you do this ?

Ans: `ifconfig | grep -A1 eth0 >> file.txt`

It will display one line of the content of string after the result string. In above example, it will save the content or output in the file (file.txt) after searching the eth0 string.

4. Suppose after saving the document you will come to know that there is a string spelling mistake in the file and you want to count the number of specific string occurrence inside the file. How will you do this?

Ans: `grep -c "count" filename`

-c is an option which is used to count the occurrence of the string appear in the file.

5. Suppose you have saved the server credentials inside the directory but forget where you have saved exactly in the directory. If you want to search server credentials inside the directory and their respective sub directories. How will you find out?

Ans: `grep -r "Server" Directoryname`

-r is an option which is used to find the string in the current directory as well as inside the sub-directory.

6. Suppose if you have to print the line number along with the string pattern. How will you perform this task?

Ans : `grep -n "stringpattern" filename`

-n is an option which is used to display line number along with the string.

7. Is it possible to use grep without any option to find string pattern in the file? If yes please explain.

Ans: \|

grep 'a\|b' filename.

Above command search for a and b string. It will print if it found either a or b.

8. Suppose if you have to check the log of the specific date of the Linux server. How will you perform the task using grep?

Ans: caret symbol (^)

```
grep "^ 7 nov 2016" /var/log/messages
```

grep filter the output and print 7 nov 2016 system rebooted.

9. Suppose if you are facing issue with your hard drive which is failing frequently from last one week. You are eager to know which day it failed. How will you get the log as per your requirement?

Ans : grep "Failed.\$" /var/log/messages

As you can see grep filter the output as per our requirement.

10. Suppose if you have to search a string pattern like abdf in both cases i.e is small and the capital letter in the file. How will you find out?

Ans : grep -i 'abdf' filename

i option is used to ignore the case-sensitive. If find abdf or ABDF, it will print both.

In above diagram grep print both ie is abdf and ABDF.

2. SSH

a. Objective: Below problem help you to use ssh in more secure way.

b. Benefits: 1. Various options to provide more security.
2. Passwordless facility help frequently login.
3. Isolate the group as per requirement.

c. Problem :

1. As you know, ssh is configured on port no 22. Due to security reason, your team lead asked you to change the port number. How will you perform this task?

Ans: First open the configuration file say (/etc/ssh/ssh_config) and then search for Port .Change it to the any other port number 3xxx or available port no. After doing this restart the ssh service using service ssh restart command.

As you can see we are changing the port number from 22 to 3xxx.

Benefits: It provide more security.

2. Suppose you are taking care of Linux server but forget to disable the root login.How will you disable the root login?

Ans: First open the configuration file say (/etc/ssh/ssh_config) and then search for this string “PermitRootlogin” and make it to no. After doing this restart the ssh service.

we are disabling the root login.It is highly recommended not to enable the permitrootlogin in the production environment.

3. Suppose you are working with multiple numbers of Linux server and while login, every time you need to give a password. What is the solution for this?

Ans: First create the public key as well as private key using **ssh-keygen** command and copy the public key using **ssh-copy-id** to the remote server.

First we creating public as well as private key and copy the public key to the remote server.

Note: After doing this verify whether you are able to login without a password or not.

4. Suppose In your organization there are multiple groups as well as users. Is it possible to give them SSH server access? If yes how will you perform this task?

Ans: First open the configuration file(/etc/ssh/ssh_config) and add users as well as group. Below is the Syntax:

AllowUsers Username

AllowGroups Groupname

Save the file and restart the ssh service.

we are adding the users as well group in the configuration file. After that restart the ssh service.

5. As you know ssh having two protocol ie is protocol 1 and protocol 2. Out of these two which one is more secure and where you have to edit these changes?

Ans: Protocol 2 is more secure than Protocol 1. Open the configuration file

and add the “Protocol 2” . After that restart the ssh service.

we are adding the protocol 2 in the ssh configuration file and then we need to restart the ssh service.

Note: In protocol 2 there are multiple authentication forms as compared to protocol 1.

6. Suppose, you want to know the list of IP who try to do login attempt into your Linux server without proper authentication. Where are the logs will be stored?

Ans: It will be stored under /var/log/secure.It contains the information related to authentication and authorization privileges.From the point of security, it is a very useful directory.

All failed login attempt information is stored in the /var/log/secure.

7. Suppose you want to access the ssh server without giving the password manually.But it should take a password from the file. Is this possible? if yes, How will you do this?

Ans: ssh username@remoteserver << filename.txt

By applying above command you don't need to enter the password manually. It will fetch the password from the file.In this way, we provide more security to our Linux server.

As you can see in the above diagram we are login to the remote server with the help of file which contains the password information.

8. Suppose you are transferring the data using ssh connection but it is very slow. So what type of cipher will you use to increase the speed?

Ans: Blowfish is a cipher which is used to increase the speed of data transfer by encrypting the data. A Command is: `scp -c blowfish filename.txt username@remote`.

As you can see in the above diagram we are using blowfish cipher to transfer the data from local to the remote machine.

9. Suppose you are facing issue while logging to ssh server. In this case, what will you do to troubleshoot?

Ans: We will use -v option to debug the issue. Below is the command:

```
ssh -v username@Remotemachine
```

Above command give you all the logs.

we are using -v option to find the login issue to the remote machine.

10. After copying a large file over the network to the ssh server. You started facing network issue. What will you do to get rid out of this problem?

Ans: We will limit the bandwidth using -l option while transferring the file over the network. Below is the command:

```
Scp -l 50kb/s filename username@remote-machine
```

l option is used to limit the bandwidth.

while tranferring the large file we need to limit the bandwidth to improve the network.

3. Screen

a.Objectives: Below problems help you to understand how to use screen in real time scenario.

b.Benefits: 1. Help you to work with multiple process simultaneously.

c.Problems:

1. Suppose you are working as a System Engineer at Xyz company and take caring of all the Linux server. Due to security reason you have access to have only one terminal. You need to work on multiple Linux servers. How will you perform this task?

Ans: Screen helps us to work with multiple server using Screen command.

Command : Screen (It will create the session)

Command : Ctrl+a+d (Detach from the session)

Command : ssh [username@remoteip](#) (Login to the remote server).

Command : Repeat above two steps

screen controlling the two sessions with two different servers.

2. Suppose you are done the task of one Linux process and wanted to switch to another Linux process. How will you perform this task using the screen?

Ans : Command: screen (create the session)

Command: ctrl+a+d (Detach from the process)

Command: screen -r session id (Reconnect to another session)

With the help of session id user can switch from one session to another session.

3. Suppose you are following IST time and your colleague is following PST time. You have to share knowledge of an issue with your colleague like how to check the logs. How will you perform this task?

Ans: Command: screen (Create the screen ID)

Command: Ctrl +A +d (detach from the session)

Command: screen -ls (To list out the Session ID)

Share the session-ID with your colleague.

With the help of session-id multiple users can work simultaneously on same session.

4. Suppose different groups working on the same Linux server. You want

to secure your session with the password. How will you perform this task?

Ans: Command: `mkpasswd password123` (Create hash password)

Command: copy it to `$HOME/.screenrc` file.

Next time when you log in to session it will prompt for the password.

4. AWK

a. Objective : Below problems help you to understand how to use awk in real time scenario.

b. Benefits: 1. Able to filter the columns of the file as per your need.

c. Problem :

1. Suppose you have the list of Server of the different vendor like IBM or HP and you want to know the list of IBM server only. How will you filter it?

Ans: command: `awk '{print$ specify the IBM column number;}' filename.txt`

2. Suppose in your asset list there are multiple columns but you want only selected columns to display as per your requirement. How will you do this?

Ans: Command: `awk '{print$ specify the column number;}' filename.txt`

3. Suppose you have asset list and wanted to know the name of the server whose RAM is

more than 32 GB. How will you do this?

Ans: Command: `awk '{$1>16 ;}' filename.txt`

5. Sed

a. Objective : Below problems help you to understand how to use sed in real time scenario

b. Benefits : 1. Able to filter the content of the file
2. Able to substitute the string as per your need.

b. Problem :

1. Suppose you have a file (log.txt) and you want to check the content of the file from the

specific line 50 to 100 and doesn't want to include the line from 20 to

30. How will you do

this using sed?

Ans: Command: `sed -n '50,100p' log.txt`

Above command print the line from 50 to 100 in the log.txt.

2. Suppose you have made a spelling mistake in the log file say (configuration.txt) then how

will you replace the wrong with correct one using sed?

Ans: command: sed 's/wrong/correct/g' filename.txt

Above command substitute the wrong with correct.

3. Suppose In your file there is a word called Tar & tar. You want to replace these two words

ie is (Tar & tar) with gunzip. How will you do this?

Ans: command: sed 's/tar/gunzip/gi' filename.txt

Above command substitute the tar or Tar with gunzip. A -i option is used to ignore the case sensitive.

6. Ansible

Objective : Below problems help you to understand how to use the ansible in real time scenario.

Benefits : 1.Install software on multiple hosts.
2. Gather hardware and software information without login individual host.

Problems :

Basic Scenario based Question on Ansible

1. Suppose if you have to install software on multiple hosts in minimum time.How will you do this ?

Ans: Using Ansible we can install the software on multiple hosts.

2. After preparing the controlling machine how will you access the remote machine without prompting for password?

Ans: First create the public key using ssh-keygen command and share the public key using the ssh-copy-id command with all the remote host.

3. You have multiple hosts and you need to store their IP for the future task. Where will you store the IP?

Ans: File name is /etc/ansible/hosts where you can keep all the IP address of remote host.

4. Suppose your manager asked you to send the report of up and down servers. How will you do this ?

Ans: Using ping module in ansible we can make the report of up and down servers.

5. If you have to check the disk report of each and every file system manually then it is too much time- consuming process. How will you overcome this problem?

Ans: command : ansible -m command -a "df -h" list of servers

using command module we can check the disk size of all the servers at a time.

6. Suppose you have to check the memory usages of each and every server immediately. How will you do?

Ans: command: ansible -m command -a "free -mt" list of servers

Above command will show the memory usage of all the servers.

7. Suppose if you want to check the hostname as well as architectures of each and every server. After that, you want to store it in the text file. How will you do?

Ans: Command: ansible -m command -a "arch" list of servers > /filename.txt

Command: ansible -m shell -a "hostname" list of servers > /filename.txt

8. Suppose client reported the issue of the outage and ask you to check the uptime of their respective server. How will you do?

Ans: ansible -m command -a "uptime" list of servers. Uptime show from

how many hours it
is up.

9. Suppose if you have to check the latest version of the Apache on the different host. To do this task What are the basic parameters you need to define in the ansible-playbook configuration file?

Ans: Basically five parameters needed. Details are as follows:

1. hosts: list of all hosts
2. remote_user: host account name
3. vars: used to modify the behaviour of the remote system.
4. handlers: used to restart the service

10. Is it possible to use the same playbook for the same set of task?

Ans: Yes, you need to use same playbooks.

7. SCP

Objective: Below problems help you to understand how to use scp in different scenarios.

Benefits: 1. Transfer the file in limited bandwidth to avoid network outage.
2. Transfer the file in encryption form.

Problems:

1. Suppose you are transferring the data from source to destination but unable to view how it is transferring? How will you enable the view in the command line?

Ans: Enable verbose mode for detail information.

As you can see we have enabled the verbose option to track the data transfer information from source to destination.

2. Suppose if you want to know how much time it will take to transfer 1 GB of a file? How will you determine this?

Ans: p option will help you to determine how much time it took to copy from source to destination.

p option is very useful in determining the transfer time of data from source to destination.

3. Suppose if you have a very important release and file size is around 2 GB. You have to transfer the file in minimum time. How will you do this?

Ans: C option will increase the data speed.

C option actually compressed the data because of this reason transfer rate get increased.

4. Is it possible to change the cipher while transferring the file from source to destination?

Ans: Yes, it is possible to change the cipher while transferring the file from source to destination using c option.

we can change the cipher using c options.

5. As we know SCP by default work on port no 22 and due to security reason we need to change it to the different port number. How will you transfer the file using the different port number?

Ans: Using -P option

We can specify any port number like 2xx or 4x or any available port number.

6. It is very difficult to transfer each and every file inside the directory. How will you overcome this problem?

Ans: Using option r

In case of multiple files transfer from source to destination, this option is very useful.

7. Is it possible to disable the warning messages while transferring the data using scp?

Ans: Using q option

q option disabled the warning messages while transferring the data using scp.

8. Is it possible to transfer the file from one remote server to another remote server? If yes, how will you do this?

Ans: Yes, It is possible to transfer the file from one remote server to another remote server.

Syntax: `scp -r username@IP:/filepath destination@IP`

In the above diagram, we need to specify the source IP as well as destination IP.

9. Before transfer a file to a remote host, it should retain their ownership, modification time and access time. How will you do this?

Ans: Using option p

p option is used to preserve the ownership of files while transferring the files from source to destination.

10. Is it possible to limit the bandwidth while transferring the data from local to remote or vice versa?

Ans: Using option l

We can set up the bandwidth as per our requirement like 50kbps or 100kbps while transferring the data from source to destination.

8. Tar

Objective: Below problems help you to understand how to use tar in real time scenario

Benefits: 1. Able to do Archive of the files.
2. compress file to achieve minimum space.

Problem:

1. Suppose if you have to compress the home directory and extension should be tar. How will you do?

Ans: Command: tar -cvf file.tar directoryname

c option is used for compression, v option is used for verbose and f for the filename.

2. Which one takes more time to compress gunzip and bz2?

Ans: bz2 takes more time to compress than gunzip.

A File size of gunzip is more than bz2.

**3. Suppose if you have to untar the file and extract files should go in the different directory?
How will you do?**

Ans: tar -xvf compressedfile -C filepath_where_ you_want to place the files.

x option is used for extract, v option is used for verbose and f is used for filename. C option is used to specify the directory where you want the

extracted files.

4. Is it possible to extract the compressed file ie is .bz2 and .gz using x option?

Ans : Yes it is possible to extract the compressed file ie is .bz2 and .gz using x option.

Using x option we can extract both type of file ie is .bz2 & .gz file.

5. Is it possible to list the content of the files without extracting it?

Ans: Yes, it is possible to list the content of the files without extracting it using t option.

Using t option we can list the content of the compressed files.

6. Suppose if we need only one file from the compressed folder. How will you extract it?

Ans: Command : tar -xvf compressedfile specify the file which you want to extract

Using option -xvf we can extract the single file from the compressed file.

7. In case if we need more than one file or group of files. How will you extract it without uncompressing the whole folder?

Ans: In case of

- a. tar we use -xvf option
- b. tar.bz2 we use -jxvf option
- c. tar.gz we use -zxvf option

Command : tar -xvf compressed file.tar specify the filename in the single quote

tar -jxvf compressedfile.tar.bz2 specify the filename in the single quote

tar -zxvf compressedfile.tar.gz specify the filename in the single quote.

8. Is it possible to compress a single file in the compressed folder?

Ans: Yes it is possible to compress a single file in the compressed folder.

Command: tar -rvf compressedfile specify the file which you want to compress.

9. Is it possible to verify .tar , .tar.gz and .tar.bz2 file ?

Ans: Yes it possible to verify only .tar file using W option. But we cannot verify the .tar.gz and .tar.bz2.

10. How to check the size of the compressed file? And also what is the difference between .tar, .tar.gz and .tar.bz2?

Ans: We can check the size of the compressed file using du -sh command.

-s: option is used to summarize the content

-h: print the summary in human-readable format.

Command: du -sh compressed file name

9. Nagios

Objective: Belows problems help you to understand the working principle of nagios.

Benefits: 1. learn about important configuration files and their uses.
2. Will come to know how the plugins works in Linux , window and hosts.

Problem :

1. If you have to choose the methods between monitoring using ssh keys and nrpe addon, which method will you choose and why?

Ans: Nrpe addon method is better than ssh keys because in case of ssh keys you face issue when you have more number of the server.

2. Management asked you to configure the alert for printers in such a way that if there is an issue like low toner, paper jam etc. It should send the alert to IT team.How will you do this?

Ans : By default, snmp is enabled which allow check_hpjd plugin to monitor the private service of the printer.

3. What is the configuration filename where you define the service and host definition?

Ans: Object definition file is the filename where we define the service and host definition.

4. Suppose you have to monitor the port status and bandwidth in the switch, which plugin will you use?

Ans: SNMP in the switch which help the check_mrtgtraf plugin to monitor the port status and bandwidth of the switch.

5. In the main configuration file of Nagios, where we store the sensitive information like a password?

Ans: Resource file where we store the sensitive information like a password.

6. In the main configuration file of Nagios where we store the information about host, services, host-groups and contact?

Ans: Inside the cfg_file or cfg_dir where you can define one or more object definition files.

7. Is it true the CGI configuration file also contains the address of the main configuration file?

Ans: Yes, It is true the CGI configuration file contain the address of the main configuration file.

8. Using Nagios what are the private services you can monitor in the Linux Host?

Ans: Disk-space, services & connectivity are the private services which we can monitor in the
linux host.

9. If you want to monitor the window machine which plugin will you use?

Ans: nsclient++ is the plugin which help us to monitor the window machine.

10.Which monitoring tool is mostly used in the Organization ?

Ans: Nagios is used by most of the companies or Organization.

10. File security

Objective : Below problems help you to know how to secure the file using command

Benefits :

1. Learn about different option of chmod , acl and chattr.
2. Protect file between two user using sticky bit
3. Learn about how to set default permission using umask.

Problems :

1. As per Security policy, you need to assign the read, write and execute permission to the owner of the folder, read and write permission to the group of the folder and only read permission to the others of the folder. How will you do?

Ans : command : chmod 764 folder_name

Chmod is a command which is used to set the permission on the folder.

2. Whenever you create a new folder there is some default permission assigned to the folder. How will you change it?

Ans: umask is a command which is used to modify the default permission of the folder.

3. Suppose if we enable the sticky bit for the folders. After enabling it Is it possible for the non-owned user to delete the files of the other user?

Ans: No it is not possible for the non-owned user to delete the files of the other user.

Sticky bit is used to protect the files inside the directory.

4. While adding the user suppose if we don't want to assign the password to the user. What is the option should we use?

Ans: Command: `passwd -d username`

Above option allow us to add the user without password.

5. Suppose in a group there are three members 1. Sunita 2. Radha and 3. Divya. As per the project requirement, you haven't to give only read permission to the Sunita and Radha. For Divya read, write and execute permission we need to assign. How will you do this?

Ans: Acl is a Linux command which is used to set the permission on the specific user of the group as per our requirement.

6. For every Linux server, there is some configuration file you don't want root user to delete it by accidentally. How will you do this?

Ans: Chattr command is a command which is used to protect the files or folder. After applying the chattr command owner of the file cannot delete the file.

7. Using which option in the chattr command secure all the files inside the directory?

Ans: -R is the option in the chattr command secured all the files inside the directory.

8. Using which option in chattr command which gives read access the directory?

Ans: -a option in chattr command which gives read access to the directory.

9. In terms of work, what is the difference between Chmod and Acl?

Ans: Chmod: Suppose For a folder, if you have to set same permission for all the user then

chmod will come into play.

ACL: Suppose for a folder, if you have to set different permission for all the user then

ACL will come into play.

10. What is the value of the read, write and execute in Chmod command?

Ans: Value of the read, write and execute in chmod command are as follows:

1. Read: 4
2. Write: 2
3. Execute: 1

11. Apache

Objective : Belows problems help you to know about different security option of apache

Benefits: 1. Default firewall module is present which protect from foriegn attack.

Problem :

1. Suppose if you are working in production environment. But your apache server is showing version and operating system information. This may create a security risk. How will you overcome with this problem?

Ans: First open the Apache configuration file using vim or any other editor.

Command : `vim /etc/apache2/apache2.conf`

Secondly, we need to switch off the server signature and add ServerTokens Prod.

Format :

ServerSignature Off
ServerTokens Prod

Finally, restart the apache server.

Command: `service apache2 restart`

2. Suppose in your apache server there is unnecessary directory showing in the web page and your team lead asked you to disable the listing of the unwanted directory. How will you do this?

Ans: First open the Apache configuration file and add option-indexes in the directory where you want to disable the listing.

3. Suppose your apache version is very old and in the new version there are some extra features is added. How will you update your apache version?

Ans: Command : apt-get upgrade apache2

Above command will upgrade the apache2 to the latest version.

4. Suppose if you are facing apache performance issue and Team lead asks you to disable unnecessary modules. How will you do this?

Ans: Open the apache configuration file and comment out all the unnecessary modules.

5. Is it good to run the apache server using default user and group?

Ans: No, It is not good to run the apache server using default user and group.

6. Suppose if you have to disable the root directory access for all the user. How will you do this ?

Ans: First open the Apache configuration file and add the options_none as well as Deny from all in the configuration file.

7. From past one week, In your apache log, you are seeing some unwanted logs. How to enable the firewall in apache server?

Ans: mod_security and mod_evasive are the two modules which enable the firewall in Apache server.

8. How to disable the symlinks, CGI execution and Server-side includes?

Ans: Add Options -FollowSymLinks, Options -Includes and Options -ExecCGI in the apache Configuration file.

9. Why is it always good to limit the request size in the apache server?

Ans: To avoid the denial of service attack. It is always recommended to put a limit. By default, there is no request limit.

10. Why is SSL certificate necessary to secure the apache server?

Ans: Yes, SSL certificate is necessary to secure the apache server or business website. Without

SSL certificate the data transfer happened in plain text which creates the security risk.

12. Shell Scripting

Objectives: Belows problems help you to understand how to use shell scripting in real time.

Benefits: 1.Able to identify whether script executed successfully or not
2. Able to differentiate between user and system variable.
3. Able to execute the script.

Problems:

1. Suppose if you want to write or edit the script then using which tool it is possible?

Ans: vi or vim or nano.you can use anyone as per your choice.

For writing or editing the script we will use vi or vim or nano editor.

2. After writing the script you are unable to execute the script what is the reason for this ?

Ans: Require Execute permission.

Command: `chmod +x Filename`

As you can see we are using x option to give execute permission to file.

3. Suppose if you want to display the today date in your script then using which command will you do this?

Ans: Command: date. It will display the current date.

The date is a command which is used to display the date.

4. How will you verify whether your script is executed successfully or not?

Ans: Command: echo \$?

It will show the Value zero or non Zero Value. Zero value means executed successfully and Non-Zero value means failed.

5. Is it recommended to modify the system variables?

Ans: No, It is not recommended to modify the system variables.

6. What is the use of variables in the shell scripting?

Ans: To store the value.

Value can be integer or string type.

7. What is the difference between User-defined variables and System variables?

Ans: User-defined variables: Created by a user. Often we can edit the variable as per our requirement.

System variables: By default, it is there.

8. Which one is correct ? 1. n=10 or 10=n?

Ans: n=10 variable should always be at left side and value should be at the right side.

9. Is Null variable contain the value at the time of definition?

Ans: No, The Null variable doesn't contain the value at the time of definition.

10. Using which command you can able to print the value of variable on the screen ?

Ans: Command: echo \$variable-name