

Answers

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Dear Readers, Welcome to **Linux Interview questions** with answers and explanation. These 40 solved **Linux questions** will help you prepare for technical interviews and online selection tests conducted during campus placement for freshers and job interviews for professionals.

After reading these **tricky Linux questions**, you can easily attempt the objective type and multiple choice type questions on Linux.

Which account is created on Linux installation?

- With the installation of Linux, a super user account is created called as 'root'.

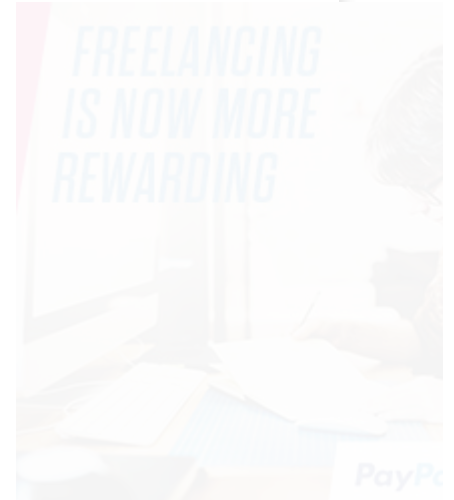
Which daemon tracks events on your system?

- The syslogd daemon tracks the system information and saves it to specified log files.

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.

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The default page length when using `pr` is 66 lines.

- The `-l` option specifies a different length.

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

- `kernel.h`

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.

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.

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 backup.

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



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

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.

What is an INODE?

- It is a structure which has the description of all the files and pointers to the data blocks of files stored in it.

the 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.

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.

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

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.

What is the minimum number of partitions that 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

folders are under this one. / can be consider as /.

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+
```

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.

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.

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.

(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.

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

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.

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

shadowed file if the main file is edited by hand.

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.

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.

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

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.

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

Which command 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 then 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.

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.

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.

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