What are the Hardwares Requirements for Linux

System Characteristic	Recommended
Processor	64-bit Opteron, EM64T
RAM	1 GB or greater
Swap space	1 GB or greater
Disk space	500 MB free space

How can you create and install an open Linux?

1. Select and download your preferred Linux distribution
2. Create your bootable installation media (CD/DVD, USB drive, etc.)
3. Set your PC to boot from the CD/DVD or USB drive
4. Run the installer and choose how to configure Linux

Describe about Linux file systems and its advantages

Advantages of Linux

1. **Open-Source :** This means that the source code of the operating system is freely available for anyone to use, modify, and distribute. This makes it a great choice for developers and IT professionals who want to customize the operating system to suit their needs.
2. **Stability and Reliability**: The operating system is designed to run for long periods of time without crashing or requiring a reboot. This makes it a great choice for servers and other systems that need to be up and running 24/7.
3. **Security:** The operating system is designed with security in mind, and it is less susceptible to viruses and malware than other operating systems.
4. **Customizability:** As mentioned earlier, Linux is an open-source operating system, which means that it can be customized to suit the needs of the user. This makes it a great choice for users who want to create a unique experience.
5. **Cost-Effective:** Linux is a cost-effective operating system, as it is freely available and can be used without any licensing fees. This makes it a great choice for users who are on a tight budget

Disadvantages of Linux

1. **Limited Software Availability:** Many software developers do not create software for Linux, which means that users may not be able to find the software they need.
2. **Limited Hardware Support**: Many hardware manufacturers do not create drivers for Linux, which means that users may not be able to use certain hardware with the operating system
3. **Steep Learning Curve**: Linux can be difficult to learn, especially for users who are not familiar with the command line interface. This can make it difficult for users to navigate and use the operating system.
4. Lack of Commercial Support: Linux does not have the same level of commercial support as other operating systems.
5. Compatibility Issues: Linux may not be compatible with certain software and hardware, which can create compatibility issues for users.

Explain the procedure for Login and Logout in a Linux Operating System

Logging In

1. Type your user name at the login prompt and press Return.
2. Type your password at the Password: prompt and press Return.
3. To start OpenWindows manually after you login, type openwin and press Return.

Logging Out

1. You must exit OpenWindows to log out. Press the MENU button and select Exit.
2. SELECT Exit.
3. Type exit (or logout) and press Return.

Describe the two methods of assigning permissions.

All the three owners (user owner, group, others) in the Linux system have three types of permissions defined. Nine characters denotes the three types of permissions.

1. **Read (r) :** The read permission allows you to open and read the content of a file. But you can't do any editing or modification in the file.
2. **Write (w) :** The write permission allows you to edit, remove or rename a file. For instance, if a file is present in a directory, and write permission is set on the file but not on the directory, then you can edit the content of the file but can't remove, or rename it.

3. **Execute (x):** In Unix type system, you can't run or execute a program unless execute permission is set.But in Windows, there is no such permission available.

Permissions are listed below:

permission	on a file	on a directory
r (read)	read file content (cat)	read directory content (ls)
w (write)	change file content (vi)	create file in directory (touch)
x (execute)	execute the file	enter the directory (cd)

What is Kernel?

The Linux® kernel is the main component of a Linux operating system (OS) and is the core interface between a computer's hardware and its processes. It communicates between the 2, managing resources as efficiently as possible

The kernel has 4 jobs:

1. **Memory management:** Keep track of how much memory is used to store what, and where
2. **Process management:** Determine which processes can use the central processing unit (CPU), when, and for how long
3. **Device drivers:** Act as mediator/interpreter between the hardware and processes
4. **System calls and security:** Receive requests for service from the processes

What is 'command.com'?

COMMAND.COM is the command shell on MS-DOS and PC-DOS, as well as versions of Windows that depend on DOS (Windows 1.0 to Windows 95, 98 and ME). COMMAND.COM gives users a command line interface to DOS as well as a way to run scripts called "batch files" with the .BAT file extension. COMMAND.COM reads the AUTOEXEC.BAT file to automatically run commands on startup. Most of these consist of setting environment variables and loading device drivers for the various hardware components installed in the computer.

What is BSD

Berkeley Software Distribution (BSD) is a group of related open source Unix-like operating systems (OS) with origins in early versions of Research Unix at Bell Labs. FreeBSD is the most popular member.

BSD is configured for internet hosting, web hosting, and hosting many servers on one system. It is the first OS to have added an internet protocol. BSD OSes have a very strongly enforced time-sharing system, which makes them most useful where resources are shared between processes.

Describe in details the chmod commands?

chmod is a command that lets you change the permissions of a file or directory to all types of users.

Here's the syntax of the chmod command:

chmod <Operations> <File/Directory Name>

User Level permissions

These operations control permissions on the user level. Here's the commands you can use:

1. u – Grant permission to a user
2. g – Grant permission to a group (A Group of users
3. o– Grant permission to others (who do not come under either of the above).

File Level permissions

These control permissions on the file level.

1. r – Grants read permission
2. w – Grant write permission
3. x – Grant execute permission

What is Vi Editor? Explain major commands of VI Editor

The vi editor is elaborated as **vi**sual editor. It is installed in every Unix system. In other words, it is available in all Linux distros. It is user-friendly and works same on different distros and platforms. It is a very powerful application. An improved version of vi editor is **vim**.

Command	Action

i	Start typing before the current character
I	Start typing at the start of current line
a	Start typing after the current character
A	Start typing at the end of current line
o	Start typing on a new line after the current line
O	Start typing on a new line before the current line

To move around a file:

Commands	Action
j	To move down
k	To move up
h	To move left
l	To move right

To jump lines:

Commands	Action
G	Will direct you at the last line of the file
``	Will direct you to your last position in the file

To delete:

Commands	Action
x	Delete the current character
X	Delete the character before the cursor
r	Replace the current character

xp	Switch two characters
dd	Delete the current line
D	Delete the current line from current character to the end of the line
dG	delete from the current line to the end of the file

To repeat and undo:

Commands	Action
u	Undo the last command
.	Repeat the last command

Command to cut, copy and paste:

Commands	Action
dd	Delete a line
yy	(yank yank) copy a line
p	Paste after the current line
P	Paste before the current line