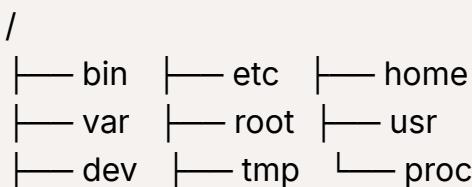


linux cba

Explain the Linux File System structure with neat diagrams. Describe the purpose of the directories /bin, /etc, /home, /var and /root.

Diagram



Directory Purpose

- **/bin** – Basic user commands (ls, cp, mv, rm).
 - **/etc** – System configuration files.
 - **/home** – User home folders.
 - **/var** – Variable data (logs, cache).
 - **/root** – Home directory of root user.
-

What are Linux file naming conventions? Write the rules and give at least five valid and five invalid file name examples.

Rules

- Case-sensitive.
- Can use letters, numbers, _ and .

- Avoid special chars (`? | /`).
- Max length 255 chars.
- Should not start with `.`

Valid

`notes.txt` , `data1` , `my_file` , `info.log` , `script.py`

Invalid

`my*file` , `a/b.txt` , `-hello` , `name?` , `test|code`

Explain the seven types of files in Linux with suitable examples and commands to identify each file type.

- **Regular file** – text, images → `file a.txt`
 - **Directory** – folder → `file mydir/`
 - **Character device** – keyboard → `/dev/tty`
 - **Block device** – HDD → `/dev/sda`
 - **FIFO (pipe)** → `mkfifo p1`
 - **Socket** → `/var/run/docker.sock`
 - **Symbolic link** → `In -s a b`
-

Differentiate between root user, normal user and system user in Linux. How can you switch users? Give commands and examples.

- **Root user** – full control (UID 0).
- **Normal user** – limited permissions.
- **System user** – used by services (no login).

Switch users:

- `su username`
 - `su -` (to root)
 - `sudo -i`
-

Explain any five Linux directory commands (`pwd`, `ls`, `cd`, `mkdir`, `rmdir`) with syntax, example and output.

- `pwd` – show current directory → `pwd` → `/home/user`
 - `ls` – list files → `ls` → `Documents Downloads`
 - `cd` – change directory → `cd folder`
 - `mkdir` – create folder → `mkdir test`
 - `rmdir` – remove empty folder → `rmdir test`
-

Write the use, syntax and example for the following file commands: `file`, `touch`, `cp`, `mv` and `rm`.

- `file` – show file type → `file a.txt`
 - `touch` – create empty file → `touch new.txt`
 - `cp` – copy → `cp a b`
 - `mv` – move/rename → `mv a b`
 - `rm` – delete → `rm a.txt`
-

What is the purpose of the Linux man command? Explain its usage, navigation

keys, and give examples of checking help pages for two commands.

Purpose

Shows the manual/help for commands.

Usage

`man command`

Navigation

`Space` (next), `b` (back), `/` (search), `q` (quit)

Examples

`man ls` , `man mkdir`

Explain the working of the following Linux file content commands with examples and outputs: cat, tac, head, tail.

- **cat** – show file → `cat a.txt`
 - **tac** – reverse file → `tac a.txt`
 - **head** – first 10 lines → `head a.txt`
 - **tail** – last 10 lines → `tail a.txt`
-

What is the Linux Filesystem Hierarchy Standard (FHS)? Explain the purpose of the directories /usr, /dev, /tmp, /proc, /mnt and /media.

FHS

Defines how Linux folders are organized.

- **/usr** – user apps, libraries
 - **/dev** – device files
 - **/tmp** – temporary files
 - **/proc** – system info (virtual FS)
 - **/mnt** – temporary mount point
 - **/media** – USB, CD auto-mount
-

Differentiate between the following (any four):

a) cat vs tac

cat → normal order

tac → reverse order

b) cp vs mv

cp → copy

mv → move/ rename

c) rm vs rmdir

rm → removes files

rmdir → removes empty folders

d) /home vs /root

/home → normal user homes

/root → root user home

e) /bin vs /sbin

/bin → basic commands

/sbin → system/admin commands
