**- Linux server -deployment of network services**

**1] Difference between LILO and GRUB**

| **Feature** | **LILO (Linux Loader)** |  | **GRUB (GRand Unified Bootloader)** |
| --- | --- | --- | --- |
| OS Support | Only Linux |  | Supports multiple OS (Linux, Windows) |
| Configuration | Static |  | Dynamic |
| Graphical Menu | No |  | Yes |
| Filesystem Support | Limited |  | Supports many filesystems |
| Default Today | Outdated |  | Commonly used |

**2] How to Recover Linux Password?**

1. Reboot system and go to **GRUB menu**.
2. Press e to edit the boot entry.
3. Find line starting with linux and add:

init=/bin/bash

1. Press Ctrl+X or F10 to boot.
2. Run:

mount -o remount,rw /

passwd root

1. Enter new password, then:

exec /sbin/init

**3] Command to Format Partition in Linux**

mkfs.ext4 /dev/sdX#

* Replace sdX# with your partition (e.g., /dev/sdb1).

**4] How to Enable “Quota” in Linux**

1. Edit /etc/fstab, add usrquota and/or grpquota.
2. Remount:

mount -o remount /

1. Run:

quotacheck -cum /

quotaon /

1. Set quota:

edquota username

**5] How to Mount Partition in Linux**

mount /dev/sdX# /mnt/point

Example:

mount /dev/sdb1 /mnt/data

**6] Use of “mdadm” Command**

mdadm is used to **create, manage, and monitor RAID arrays** in Linux.

Example to create RAID 1:

mdadm --create --verbose /dev/md0 --level=1 --raid-devices=2 /dev/sd[b-c]1

**7] Configure Secure Apache Web Server in Linux**

1. Install Apache:

sudo apt install apache2

1. Enable SSL:

sudo a2enmod ssl

1. Create or get SSL certificate:

sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout mysite.key -out mysite.crt

1. Configure virtual host in /etc/apache2/sites-available/default-ssl.conf.
2. Enable site:

sudo a2ensite default-ssl

sudo systemctl reload apache2

**8] Run Windows Software on Linux**

Use **Wine** or **PlayOnLinux**:

sudo apt install wine

wine your\_windows\_app.exe

Or use **virtual machines** (like VirtualBox or VMware).

**9] Difference Between Windows and Linux**

| **Feature** | **Windows** | **Linux** |
| --- | --- | --- |
| Source | Closed | Open Source |
| Cost | Paid | Free |
| Customization | Limited | Highly customizable |
| Security | More vulnerable | More secure |
| Software | .exe files | .deb, .rpm, source |

**10] Advantages of Open Source**

* Free to use and distribute
* Highly customizable
* Community support
* Transparent and secure
* Encourages innovation

**11] Install and Configure Apache Web Server**

sudo apt update

sudo apt install apache2

sudo systemctl enable apache2

sudo systemctl start apache2

**12] Host Simple Website & Configure Virtual Hosts**

1. Create website folder:

sudo mkdir /var/www/mydomain

1. Add index.html.
2. Create config file:

sudo nano /etc/apache2/sites-available/mydomain.conf

apache

CopyEdit

<VirtualHost \*:80>

ServerName mydomain.com

DocumentRoot /var/www/mydomain

</VirtualHost>

1. Enable site:

sudo a2ensite mydomain

sudo systemctl reload apache2

**13] Install and Manage MySQL/MariaDB**

**Install:**

sudo apt install mysql-server

sudo systemctl enable mysql

sudo systemctl start mysql

**Secure it:**

sudo mysql\_secure\_installation

**Login:**

sudo mysql -u root -p

**Create database:**

CREATE DATABASE testdb;