

Module:7- Linux server -deployment of network services

1. What is the Difference between LILO And GRUB?

→ LILO (Linux Loader) and GRUB (Grand Unified Bootloader) are both bootloaders used to start our operating system when we power up our computer. They have a few differences:

1. **Configuration:**

- **LILO:** LILO uses a simple text file (typically `/etc/lilo.conf`) to configure the boot options. After making changes, we need to run a command (`lilo`) to apply the changes.
- **GRUB:** GRUB has a more flexible configuration and can even update the boot menu automatically. It uses configuration files like `/boot/grub/grub.cfg` and allows for more complex boot options.

2. **Support for Multiple OS:**

- **LILO:** LILO is simpler and supports multi-booting, but it's less flexible when dealing with different operating systems.
- **GRUB:** GRUB is more advanced and has better support for multiple operating systems (like Linux, Windows, etc.), as well as handling various file systems.

3. **Boot Menu:**

- **LILO:** LILO doesn't have a graphical boot menu. It's more text-based and doesn't allow easy changes without reconfiguring.
- **GRUB:** GRUB offers a graphical or text-based boot menu that's easy to interact with, making it user-friendly for selecting different operating systems or kernel versions.

4. **Flexibility and Features:**

- **LILO:** LILO is simpler but lacks advanced features like chainloading (booting another bootloader) and boot-time editing.
- **GRUB:** GRUB offers many features, such as boot-time editing, the ability to boot from a network, and support for booting from a wider range of file systems.

5. **Installation and Updates:**

- **LILO:** LILO must be reinstalled or reconfigured after making changes to the bootloader or the operating system.

- **GRUB:** GRUB automatically detects changes and updates the bootloader configuration without needing to reinstall.

2. How to Recover Linux Passwords ?

→ If we forget our Linux password, we can recover it by following these simple steps. Here's how we can reset it:

1. Reboot the System

- First, restart our computer.

2. Access GRUB Menu

- When the system starts, we need to interrupt the boot process. On most systems, press **Shift** or **Esc** (depending on our distribution) to bring up the **GRUB menu**.

3. Edit Boot Options

- In the GRUB menu, use the **arrow keys** to select the entry we want to boot (usually the first option, the one with our Linux distribution).
- Press **e** to edit the boot parameters.

4. Modify the Boot Command

- Look for the line starting with `linux` or `linux16`. This line tells the system how to boot the OS.
- At the end of this line, add **`init=/bin/bash`** (without quotes). This tells the system to boot into a root shell instead of loading the graphical interface.

5. Boot into Single-User Mode

- After adding `init=/bin/bash`, press **Ctrl + X** or **F10** to boot with the modified settings.

6. Reset the Password

- Once our system boots, we'll be in a root shell.

Now, type the following command to reset our password:

```
passwd username
```

- Replace **username** with the name of the account whose password we want to change.
- It will ask us to enter a new password for the user. Type our new password and press Enter.

7. Reboot

After resetting the password, type:

```
exec /sbin/init
```

or simply reboot the system by typing:

```
Reboot
```

- Now, we should be able to log in with our new password.

3. Which command is used for format partition in Linux OS?

- To format a partition in Linux, we can use the `mkfs` (make file system) command. Here's how we can do it in simple steps:

1. Identify the Partition

First, we need to identify the partition we want to format. we can use the `lsblk` or `fdisk -l` command to list all available disks and partitions.

→ `lsblk`

or

→ `sudo fdisk -l`

The output will show something like `/dev/sda1`, `/dev/sdb1`, etc., which are the partitions on our system.

2. Choose the File System Type

we can format the partition with different file system types (like `ext4`, `NTFS`, `FAT32`, etc.). For example, if we want to format the partition as **ext4** (a common Linux file system), we would use the following command.

3. Format the Partition

To format a partition, use the `mkfs` command with the partition name and the desired file system type.

For **ext4**:

→ `sudo mkfs.ext4 /dev/sdXn`

Replace `/dev/sdXn` with your partition name (e.g., `/dev/sda1` or `/dev/sdb1`).

If we want to format it as **FAT32** (useful for drives shared with Windows):

→ `sudo mkfs.vfat /dev/sdXn`

For **NTFS** (if you want it to work with Windows systems):

→ `sudo mkfs.ntfs /dev/sdXn`

4. Confirm and Complete

After entering the command, it will ask us to confirm that we want to erase all data on the partition. Once we confirm, the partition will be formatted.

Example:

If we want to format the partition `/dev/sda1` as **ext4**, the command would be:

→ `sudo mkfs.ext4 /dev/sda1`

Important Notes:

- **Warning:** Formatting a partition will delete all data on it, so make sure we back up any important files before proceeding.
- Ensure the partition is not in use or mounted before formatting. we can unmount it using the `umount` command:
`sudo umount /dev/sdXn`
- That's it! Now your partition is formatted and ready to use.