Experiment 4: Linux System Administration (Part 2)

1. Aim:

a. Perform package management activities in Linux OS.
b. Perform disk partition activities in Linux OS.

2. Requirements: LINUX OS

3. Related Theory:

Linux administration includes user account management, managing disk partitions and sizes, installing and removing packages and updating and upgrading the Linux system. Linux allows to lock or disable access to a particular user account without changing anything from the account thereby aiding in managing the users and restricting their activities. Disk Partitioning is the process of dividing a disk into one or more logical areas, often known as partitions, on which the user can work separately.

Package management is a method of installing, updating, removing, and keeping track of software updates from specific repositories (repos) in the Linux system. Linux distros often use different package management tools. A Linux administrator thereby can use either a high level or low level package manager to install or remove packages. Apart from this, the update and upgrade commands can be used to update the package list with the latest available versions and upgrade and install the latest versions of packages that are already installed respectively.

4. Laboratory Exercise:

Perform following system admin activities on Linux machine.

a. Lock or Disable user account
b. Partition the disk using the following commands and infer their output
    i. fdisk
    ii. df
    iii. lsblk
c. Install, list, update, upgrade and remove packages using various commands of Linux package managers (yum and rpm)

5. Post-Experiment Exercise:

A. Conclusion:

#Summarize your experience about the skills acquired from this experiment.

B. Tasks:

For each question, Students need to submit the question and screenshot of the response (answer and output).

1. What is the significance of locking a user account? Demonstrate locking and unlocking of a user account from the terminal.
2. Allot full root privileges to user and then modify to provide only selected root privileges. (use ***visudo***)
3. Execute ***fdisk*** command with different options and interpret the outputs.
4. Execute ***df*** command with different options and interpret the outputs.
5. Execute ***lsblk*** command with different options and interpret the outputs.
6. Install and Uninstall a package using:
    a. Debian Low level package manager
    b. Redhat Low level package manager
7. List all dependencies of a package and highlight the limitations of dpkg & rpm package managers in handling the dependencies.
8. Install and Uninstall a package using:
    a. Debian basedfront-end package manager
    b. Redhat basedfront-end package manager

    How the installation/uninstallation process differs while using front-end managers as compared to using base package managers in task 6.
9. Perform the following operations using **yum** package manager and interpret the output of command used:
    a. List all installed packages (attach only part of output as it may be big)
    b. Describe the info of a package
    c. Find out which package installed a particular file
10. Update and upgrade your system. Demonstrate how these two processes are interrelated. What will be the effect on system if only one of these processes is performed and not both?