Week3 – day2

Memory and System Usage Commands

1. free -h
    - Displays memory usage in a human-readable format (-h flag).
    - Shows total, used, and available RAM and swap space.

```
thinkitive@thinkitive-HP-Laptop-14-ck2xxx:~$ free -h
               total        used        free      shared  buff/cache   available
Mem:           7.5Gi       2.6Gi       1.2Gi       358Mi       3.7Gi       4.2Gi
Swap:          2.0Gi          0B       2.0Gi
```

2. ps aux --sort -%mem | head
    - Lists all running processes, sorted by memory usage in descending order (--sort -%mem).
    - head limits output to the top 10 memory-consuming processes.
3. top
    - Displays real-time system resource usage, including CPU and memory consumption.

Network and Connectivity Commands

4. ping chatgpt.com
    - Sends ICMP echo requests to chatgpt.com to check connectivity and response time.
5. nslookup google.com
    - Queries DNS servers to find the IP address of google.com.
6. ifconfig
    - Displays network interfaces and IP configurations (deprecated; ip a is the modern alternative).

```
thinkitive@thinkitive-HP-Laptop-14-ck2xxx:~$ ifconfig
docker0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 172.17.0.1  netmask 255.255.0.0  broadcast 172.17.255.255
        ether 1a:15:99:ba:a1:66  txqueuelen 0  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

7. curl http://google.com
    - Fetches and displays the HTTP response from google.com (useful for checking connectivity).

File and Disk Operations

8. ls -lrt
    - Lists files in the current directory, sorted by modification time (-t), in reverse order (-r), with detailed info (-l).
9. less a.txt
    - Opens a.txt for viewing, allowing navigation.

10.stat a.txt

- Displays detailed metadata about a.txt, including size, permissions, and modification time.

11.df -h

- Shows disk space usage in a human-readable format (-h).

Software Installation and Management

12.sudo apt search firefox

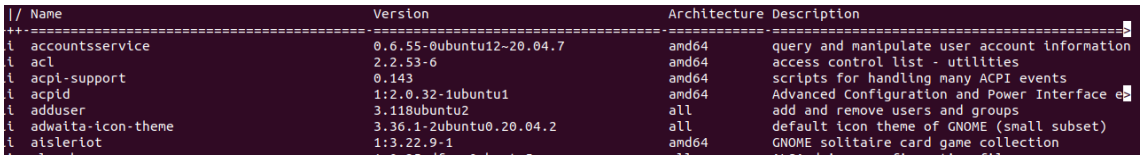
- Searches for firefox in the package repository.

13.sudo apt search python

- Searches for python in the package repository.

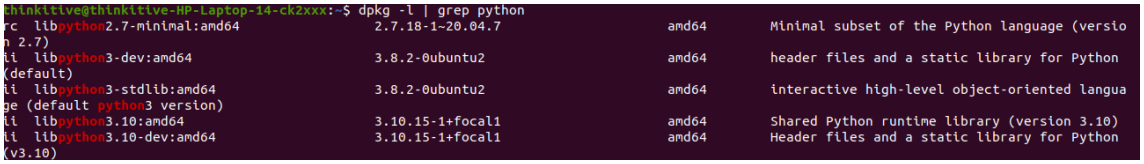
14.dpkg -l

- Lists all installed packages.



15.dpkg -l | grep python

- Filters installed packages to show only those related to python.



16.dpkg -l | grep mysql

- Filters installed packages to show only those related to mysql.

User Management

- Delete user: sudo userdel -r meenakshi
- Create user: sudo useradd -m meenakshitry
- Set password: sudo passwd meenakshitry
- Add user interactively: sudo adduser meenakshi
- View user info: finger meenakshitry
- Manage groups: sudo groupadd c406cohort, sudo usermod -a -G c406cohort meenakshitrying

Permissions & Directory Management

- Create directory: sudo mkdir -p /home/grouptry/meenakshi/a
- Set read-only: sudo chmod 400 /home/grouptry/meenakshi/a
- Change group ownership: sudo chgrp c406cohort /home/grouptry
- Set group inheritance: sudo chmod 2775 grouptry/, sudo chmod g+s grouptry/meenakshi/a

SSH Key Generation

- Generate key: ssh-keygen -t rsa -b 4096 -C "ranawatjinesh@gmail.com"
- Start SSH agent: eval "$(ssh-agent -s)"
- Install OpenSSH: sudo apt install openssh-client
- View keys: less ~/.ssh/id_rsa.pub, less ~/.ssh/id_rsa

System Monitoring

- Print queue: lpq
- System logs: dmesg | tail -50, dmesg | grep "USB"
- Switch user: su - jineshtry
- Command history: history

Network Testing

- Run iperf server: iperf -s -f M
- Install iperf: sudo apt install iperf
- Start packet capture: sudo tcpdump -i any
- Check connectivity: telnet google.com, dig google.com

Jenkins Setup

- Install Java: sudo apt install openjdk-11-jdk -y
- Add Jenkins repo:

  wget -q -O - https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo apt-key add -
  echo "deb https://pkg.jenkins.io/debian-stable binary/" | sudo tee /etc/apt/sources.list.d/jenkins.list

- Install & start Jenkins:

  sudo apt update
  sudo apt install jenkins -y
  sudo systemctl start jenkins
  sudo systemctl enable jenkins

- Get initial admin password: sudo cat /var/lib/jenkins/secrets/initialAdminPassword