Complete Basic Linux + SOC Networking Commands

File and Directory Commands

ls   - List directory contents

cd <dir>   - Change directory

pwd   - Print working directory

mkdir <dir>   - Make new directory

rmdir <dir>   - Remove empty directory

rm <file>   - Remove file

rm -r <dir>   - Remove directory recursively

touch <file>   - Create empty file

cp <src> <dst>   - Copy file

mv <src> <dst>   - Move/rename file

find <dir> -name <pattern>   - Find files by name

locate <file>   - Find file quickly using database

File Content Commands

cat <file>   - Display file content

less <file>   - Scroll through file

head <file>   - First 10 lines

tail <file>   - Last 10 lines

tail -f <file>   - Live monitor file

wc -l <file>   - Count lines

sort <file>   - Sort file content

uniq <file>   - Remove duplicates

cut -d':' -f1 <file>   - Cut specific fields

grep <pattern> <file>   - Search for pattern

User Management Commands

whoami   - Show current user

id   - Show UID, GID

users   - Show logged-in users

who   - Show logged-in sessions

adduser <user>   - Create new user

```
passwd <user>              - Change password

su <user>                  - Switch user

sudo <command>             - Run command as root

groups <user>              - Show group membership
```

Permissions and Ownership

```
chmod <mode> <file>            - Change file permissions

chown <user>:<group> <file>    - Change file owner

ls -l                          - Shows permissions
```

Software & Package Management (Debian/Ubuntu)

```
sudo apt update            - Update package list

sudo apt upgrade           - Upgrade packages

sudo apt install <pkg>     - Install package

sudo apt remove <pkg>      - Remove package
```

Process Management

```
ps aux                     - List all processes

top                        - Real-time CPU/memory usage

htop                       - Interactive version of top

kill <PID>                 - Terminate a process

kill -9 <PID>              - Force kill process

pkill <name>               - Kill by name

nice                       - Set process priority

renice                     - Change process priority
```

Disk, System & Hardware Info

```
df -h                      - Disk usage

du -sh *                   - Folder sizes

free -h                    - RAM usage

uptime                     - System load info

uname -a                   - Kernel/system info

hostname                   - Show or set system name
```

Archiving & Compression

```
tar -xvf file.tar          - Extract .tar
```

```
tar -xzvf file.tar.gz          - Extract .tar.gz

zip file.zip file              - Compress to .zip

unzip file.zip                 - Extract .zip

gzip file / gunzip file.gz     - Compress/decompress .gz
```

System & Service Control

```
systemctl status <service>        - Check service status

systemctl start/stop <service>    - Control service

systemctl enable/disable <service>  - Enable/disable at boot

reboot / shutdown now             - Restart or shutdown system
```

Log Monitoring

```
journalctl                     - System logs (systemd)

tail -f /var/log/syslog        - Real-time logs

cat /var/log/auth.log          - Authentication logs
```

Basic Linux Networking Commands (SOC)

```
ip a / ifconfig                - Show IP address and interface details

ip r / route -n                - Show routing table (gateway info)

ping <IP/hostname>             - Test network connectivity

traceroute <IP/hostname>       - Show path taken to reach destination

nslookup <domain>              - DNS lookup of a domain

nslookup -type=txt <domain> | grep "spf" - SPF DNS lookup

dig <domain>                   - Detailed DNS query tool

dig +short txt <domain> | grep "spf" - Fetch SPF record

host <domain>                  - Simple DNS lookup

netstat -antp                  - Show active TCP connections with process info

ss -tuln                       - Show listening ports

lsof -i                        - Show open ports and corresponding processes

tcpdump -i <interface>         - Capture and analyze live packets

nmap <IP>                      - Scan remote system for open ports/services

curl <URL>                     - Fetch a web page or check HTTP response

wget <URL>                     - Download a file from the internet

hostname -I                    - Show system IP address

arp -a                         - Show ARP table (IP - MAC mapping)
```

iwconfig   - Show Wi-Fi interface settings

nmcli   - Manage network connections

Real-Time Network Monitoring

iftop   - Show real-time bandwidth usage per connection

nload   - Real-time incoming/outgoing traffic graph

vnstat   - Network usage statistics over time