**1) System**

|  |  |
| --- | --- |
| uname | Displays Operating system name |
| uname -r | Displays kernel release information |
| uptime | Displays how long the system has been running including load average |
| hostname | Shows the system hostname |
| hostname -i | Displays the IP address of the system |
| last reboot | Shows system reboot history |
| date | Displays current system date and time |
| timedatectl | Query and change the System clock |
| cal | Displays the current calendar month and day |
| w | Displays currently logged in users in the system |
| whoami | Displays who you are logged in as |
| tree | Displays tree system of files |

**2) Hardware**

|  |  |
| --- | --- |
| dmesg | Displays bootup messages |
| cat /proc/cpuinfo | Displays more information about CPU e.g model, model name, cores, vendor id |
| cat /proc/meminfo | Displays more information about hardware memory e.g. Total and Free memory |
| lscpu | Displays information about cpu and processing unit. |
| lsblk | Displays block devices related information |
| free -m | Displays free and used memory in the system (-m flag indicates memory in MB) |
| df -h | Displays mounted spaces |
| lspci -tv | Displays PCI devices in a tree-like diagram |
| dmidecode | Displays hardware information from the BIOS |
| Fdisk -l | To list partition tables. |
| ps | To see all the running process |
| Kill -9 pid | To kill that process |

**3) File Commands**

|  |  |
| --- | --- |
| touch filename | To Create a file |
| mkdir directory-name | To create a directory |
| ls -al | Lists files - both regular & hidden files |
| rm filename | Removes a file |
| rm -f filename | Forcefully removes a file |
| rm -r directory-name | Removes a directory recursively |
| rm -rf directory-name | Removes a directory forcefully and recursively |
| cp file1 file2 | Copies the contents of file1 to file2 |
| cp -r dir1 dir2 | Recursively Copies dir1 to dir2. dir2 is created if it does not exist |
| mv file1 file2 | Renames file1 to file2 |
| ln -s /path/to/filename   link-name | Creates a symbolic link to filename |
| touch filename | Creates a new file |
| cat > filename | Places standard input into a file |
| more filename | Outputs the contents of a file |
| head filename | Displays the first 10 lines of a file |
| tail filename | Displays the last 10 lines of a file |
| gpg -c filename | Encrypts a file |
| gpg -c filename.gpg | Decrypts a file |
| wc | Prints the number of bytes, words and lines in a file |
| xargs | Executes commands from standard input |

**4) Users**

|  |  |
| --- | --- |
| id | Displays the details of the active user e.g. uid, gid, and groups |
| last | Shows the last logins in the system |
| who | Shows who is logged in to the system |
| groupadd "admin" | Adds the group 'admin' |
| adduser "Sam" | Adds user Sam |
| userdel "Sam" | Deletes user Sam |
| usermod | Used for changing / modifying user information |

**6) File Permission**

|  |  |
| --- | --- |
| chmod octal filename | Change file permissions of the file to octal |
|  |  |
| **Example** |  |
| chmod 777 /data/test.c | Set rwx permissions to owner, group and everyone (everyone else who has access to the server) |
| chmod 755 /data/test.c | Set rwx to the owner and r\_x to group and everyone |
| chmod 766 /data/test.c | Sets rwx for owner, rw for group and everyone |
| chown owner user-file | Change ownership of the file |
| chown owner-user:owner-group filename | Change owner and group owner of the file |
| chown owner-user:owner-group directory | Change owner and group owner of the directory |

**7) Network**

|  |  |
| --- | --- |
| ip addr show | Displays IP addresses and all the network interfaces |
| ip address add 192.168.0.1/24 dev eth0 | Assigns IP address 192.168.0.1 to interface eth0 |
| ifconfig | Displays IP addresses of all network interfaces |
| ping host | ping command sends an ICMP echo request to establish a connection to server / PC |
| whois domain | Retrieves more information about a domain name |
| dig domain | Retrieves DNS information about the domain |
| dig -x host | Performs reverse lookup on a domain |
| host google.com | Performs an IP lookup for the domain name |
| hostname -i | Displays local IP address |
| wget filename | Downloads a file from an online source |
| netstat -r | Displays Kernel IP routing table |

**8) Compression/Archives**

|  |  |
| --- | --- |
| tar -cf home.tar home<:code> | Creates archive file called 'home.tar' from file 'home' |
| tar -xf files.tar | Extract archive file 'files.tar' |
| tar -zcvf home.tar.gz source-folder | Creates gzipped tar archive file from the source folder |
| gzip file | Compression a file with .gz extension |

**9) Install Packages**

|  |  |
| --- | --- |
| rpm -i pkg\_name.rpm | Install an rpm package |
| rpm -e pkg\_name | Removes an rpm package |
| dnf install pkg\_name | Install package using dnf utility |

**11) Search**

|  |  |
| --- | --- |
| grep 'pattern' files | Search for a given pattern in files |
| grep -r pattern dir | Search recursively for a pattern in a given directory |
| locate file | Find all instances of the file |
| find /home/ -name "index" | Find file names that begin with 'index' in /home folder |
| find /home -size +10000k | Find files greater than 10000k in the home folder |

**12) Disk Usage**

|  |  |
| --- | --- |
| df -h | Displays free space on mounted systems |
| df -i | Displays free inodes on filesystems |
| fdisk -l | Shows disk partitions, sizes, and types |
| du -sh | Displays disk usage in the current directory in a human-readable format |
| findmnt | Displays target mount point for all filesystems |
| mount device-path mount-point | Mount a device |

**13) Directory Traverse**

|  |  |
| --- | --- |
| cd .. | Move up one level in the directory tree structure |
| cd ~ | Change directory to $HOME directory |
| cd /test | Change directory to /test directory |