# Linux Cheat Sheet for Beginners

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Introduction to Linux:

* Linux is an open-source operating system kernel used by various distributions (distros) like Ubuntu, Debian, CentOS, etc. It's widely used in servers, embedded systems, and personal computers.
* The terminal is a text-based interface where users can interact with the system by typing commands.

## Useful Commands to interact with Linux system

Here’s the updated **Ubuntu Linux Cheat Sheet for Beginners**, now with examples for each command:

### **File Management**

| **Command** | **Description** | **Example** |
| --- | --- | --- |
| ls | List files and directories in the current directory. | ls -l (detailed view) |
| cd <directory> | Change the current directory. | cd /home/user/Documents |
| pwd | Print the current working directory. | pwd |
| cp <source> <destination> | Copy files or directories. | cp file.txt /tmp/ |
| mv <source> <destination> | Move or rename files and directories. | mv file.txt newfile.txt |
| rm <file> | Remove a file. | rm file.txt |
| rm -r <directory> | Remove a directory and its contents. | rm -r old\_folder |
| cat <file> | Display file contents. | cat notes.txt |
| less <file> | View file contents one page at a time. | less bigfile.log |
| head <file> | View the first 10 lines of a file. | head data.csv |
| tail <file> | View the last 10 lines of a file. | tail data.csv |
| touch <file> | Create an empty file or update timestamp. | touch newfile.txt |
| find <path> -name <filename> | Search for files by name. | find /home -name "\*.txt" |

### **Folder Management**

| **Command** | **Description** | **Example** |
| --- | --- | --- |
| mkdir <directory> | Create a new directory. | mkdir new\_folder |
| rmdir <directory> | Remove an empty directory. | rmdir empty\_folder |
| tree | View directories in a tree structure. | tree /var/log |

### **Disk Management**

| **Command** | **Description** | **Example** |
| --- | --- | --- |
| df -h | Show disk space usage in human-readable format. | df -h |
| du -sh <path> | Show size of a directory or file. | du -sh /home/user |
| mount <device> <mountpoint> | Mount a disk or partition. | sudo mount /dev/sdb1 /mnt |
| umount <mountpoint> | Unmount a disk or partition. | sudo umount /mnt |
| lsblk | List information about block devices. | lsblk |
| fdisk -l | Show partition table of disks. | sudo fdisk -l |

### **Package Management**

| **Command** | **Description** | **Example** |
| --- | --- | --- |
| sudo apt update | Update package list. | sudo apt update |
| sudo apt upgrade | Upgrade installed packages. | sudo apt upgrade |
| sudo apt install <package> | Install a package. | sudo apt install vim |
| sudo apt remove <package> | Remove a package. | sudo apt remove vim |
| dpkg -l | List installed packages. | `dpkg -l |
| dpkg -i <package.deb> | Install a .deb package. | sudo dpkg -i mypackage.deb |

### **User Management**

| **Command** | **Description** | **Example** |
| --- | --- | --- |
| whoami | Display the current user. | whoami |
| sudo adduser <username> | Add a new user. | sudo adduser john |
| sudo passwd <username> | Change a user's password. | sudo passwd john |
| sudo deluser <username> | Delete a user. | sudo deluser john |
| groups <username> | Display groups a user belongs to. | groups john |

### **Process Management**

| **Command** | **Description** | **Example** |
| --- | --- | --- |
| ps aux | Show all running processes. | `ps aux |
| top | Monitor system processes in real time. | top |
| htop | Enhanced process viewer. | htop |
| kill <PID> | Kill a process by PID. | kill 1234 |
| killall <name> | Kill processes by name. | killall firefox |
| bg and fg | Resume jobs in the background or foreground. | bg (background), fg (foreground) |

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### **Networking**

| **Command** | **Description** | **Example** |
| --- | --- | --- |
| ip a | Display network interfaces. | ip a |
| ping <host> | Test network connectivity to a host. | ping google.com |
| curl <url> | Fetch content from a URL. | curl http://example.com |
| wget <url> | Download files from a URL. | wget http://example.com/file.zip |
| netstat -tuln | Show open ports and connections. | netstat -tuln |
| ss -tuln | Display open ports and connections. | ss -tuln |

### **General Troubleshooting**

| **Command** | **Description** | **Example** |
| --- | --- | --- |
| dmesg | Display kernel messages. | `dmesg |
| journalctl -xe | View detailed system logs. | journalctl -xe |
| systemctl status <service> | Check the status of a service. | systemctl status ssh |
| sudo reboot | Reboot the system. | sudo reboot |
| sudo shutdown now | Shut down the system immediately. | sudo shutdown now |
| uptime | Display system uptime. | uptime |
| free -h | Show memory usage. | free -h |

### **Kubernetes Basics (Linux Context)**

| **Command** | **Description** | **Example** |
| --- | --- | --- |
| kubectl get nodes | List all nodes in the cluster. | kubectl get nodes |
| kubectl get pods | List all pods in the cluster. | kubectl get pods -n kube-system |
| kubectl describe pod <pod-name> | Show detailed information about a pod. | kubectl describe pod nginx |
| kubectl logs <pod-name> | Fetch logs for a pod. | kubectl logs nginx |
| kubectl exec -it <pod-name> -- bash | Execute a command inside a pod. | kubectl exec -it nginx -- bash |
| kubectl apply -f <file.yaml> | Apply a Kubernetes manifest file. | kubectl apply -f deployment.yaml |

This comprehensive cheat sheet provides clear examples to help beginners quickly understand and use the commands.