Linux Commands Detailed Guide (All Distributions)

A complete command-line reference covering Ubuntu, Debian, CentOS, RedHat, and Arch Linux.

1. Navigation & Filesystem Basics

Command: pwd

Description: Print working directory

Example:

```
pwd
```

Command: ls

Description: List files and directories

Example:

```
ls -la /etc
```

Command: cd

Description: Change directory

Example:

```
cd /var/log
```

Command: tree

Description: Display directory structure

Example:

```
tree /home/user
```

2. File and Directory Management

Command: touch

Description: Create empty file

Example:

```
touch file.txt
```

Command: cp

Description: Copy file or directory

Example:

```
cp source.txt /tmp/
```

Command: mv

Description: Move or rename file

Example:

```
mv old.txt new.txt
```

Command: rm

Description: Remove file or directory

Example:

```
rm -rf /tmp/test
```

Command: find

Description: Search files recursively

Example:

```
find / -name test.conf
```

3. Viewing and Editing Files

Command: cat

Description: View content of file

Example:

```
cat /etc/hosts
```

Command: less

Description: Scroll through file content

Example:

```
less /var/log/syslog
```

Command: head

Description: Show first 10 lines

Example:

```
head -n 10 file.txt
```

Command: tail

Description: Show last 10 lines or follow logs

Example:

```
tail -f file.log
```

Command: nano

Description: Edit file using nano editor

Example:

```
nano script.sh
```

Command: vi/vim

Description: Edit file using vi or vim

Example:

```
vim config.txt
```

4. User and Group Management

Command: whoami

Description: Display current username

Example:

```
whoami
```

Command: id

Description: Show user identity

Example:

```
id username
```

Command: adduser

Description: Create new user (Debian/Ubuntu)

Example:

```
sudo adduser dev
```

Command: useradd

Description: Create new user (RHEL/Arch)

Example:

```
sudo useradd -m dev
```

Command: passwd

Description: Change user password

Example:

```
sudo passwd dev
```

Command: groupadd

Description: Create new group

Example:

```
sudo groupadd admins
```

5. Permissions and Ownership

Command: chmod

Description: Change file permissions

Example:

```
chmod 755 script.sh
```

Command: chown

Description: Change file owner and group

Example:

```
chown user:group file.txt
```

Command: umask

Description: Set default permission mask

Example:

```
umask 022
```

Command: ls -l

Description: List files with permission details

Example:

```
ls -l /home
```

6. Process Management

Command: ps

Description: Show process list

Example:

```
ps aux | grep nginx
```

Command: top

Description: Real-time system monitoring

Example:

```
top
```

Command: htop

Description: Interactive process viewer

Example:

```
htop
```

Command: kill

Description: Terminate process by PID

Example:

```
kill 1234
```

Command: pkill

Description: Kill by process name

Example:

```
pkill firefox
```

Command: nice

Description: Start process with priority

Example:

```
nice -n 10 command
```

7. Networking & Connectivity

Command: ping

Description: Check network reachability

Example:

```
ping google.com
```

Command: ip addr

Description: Display IP address info

Example:

```
ip addr show
```

Command: netstat

Description: List active connections

Example:

```
netstat -tulnp
```

Command: ss

Description: Modern replacement for netstat

Example:

```
ss -tuln
```

Command: curl

Description: Test web endpoints

Example:

```
curl -I https://example.com
```

Command: wget

Description: Download file from internet

Example:

```
wget https://file.com/app.deb
```

Command: scp

Description: Secure copy over SSH

Example:

```
scp file.txt user@server:/path
```

Command: ssh

Description: Remote login to server

Example:

```
ssh user@192.168.1.5
```

8. Package Management (All Distros)

Command: apt

Description: Debian/Ubuntu package manager

Example:

```
sudo apt update && sudo apt upgrade
```

Command: dnf

Description: RHEL/CentOS Fedora package manager

Example:

```
sudo dnf install nginx
```

Command: yum

Description: Older RedHat/CentOS systems

Example:

```
sudo yum update
```

Command: pacman

Description: Arch Linux package manager

Example:

```
sudo pacman -Syu
```

Command: snap

Description: Install snap packages

Example:

```
sudo snap install code
```

9. Disk & Filesystem Management

Command: df -h

Description: Show disk usage in human readable form

Example:

```
df -h
```

Command: du -sh

Description: Show directory size summary

Example:

```
du -sh /var/log
```

Command: lsblk

Description: List block devices

Example:

```
lsblk
```

Command: mount

Description: Mount filesystem

Example:

```
sudo mount /dev/sdb1 /mnt
```

Command: umount

Description: Unmount filesystem

Example:

```
sudo umount /mnt
```

Command: fdisk -l

Description: Show partitions and disks

Example:

```
sudo fdisk -l
```

10. System Information

Command: uname -a

Description: Display kernel and OS info

Example:

```
uname -a
```

Command: lsb_release -a

Description: Show Linux distribution info

Example:

```
lsb_release -a
```

Command: hostnamectl

Description: Display or change hostname

Example:

```
hostnamectl
```

Command: uptime

Description: Show system uptime

Example:

```
uptime
```

Command: dmesg | tail

Description: View kernel logs

Example:

```
dmesg | tail
```

End of Linux Commands Detailed Guide

This document covered key Linux commands across all major distributions (Ubuntu, Debian, CentOS, Fedora, Arch).