

## 1. File & Directory Commands

Command	Description	Example Usage
ls	List files	ls -lah
cd	Change directory	cd /etc/nginx
pwd	Print current directory	pwd
mkdir	Create directory	mkdir -p ~/projects/app
rmdir	Remove empty directory	rmdir temp_dir
cp	Copy files/directories	cp -r /src/conf /backup/conf
mv	Move/rename files	mv file.txt archive/
rm	Remove file/directory	rm -rf old_data/
touch	Create empty file	touch deploy.lock

## 2. View & Edit Files

Command	Description	Example Usage
cat	Print file contents	cat /etc/hosts
less	Scroll through file	less /var/log/syslog
head	First N lines	head -n 20 access.log
tail	Last N lines	tail -n 20 error.log
tail -f	Follow logs live	tail -f /var/log/nginx/access.log
nano	Simple text editor	nano file.txt
vim	Advanced editor	vim /etc/fstab

### 3. Text Processing

Command	Description	Example Usage
grep	Search text	grep -i "error" *.log
awk	Column processing	awk -F: '{print \$1,\$3}' /etc/passwd
sed	Find & replace	sed -i 's/old/new/g' file.txt
cut	Extract columns	cut -d: -f1 /etc/passwd
sort	Sort text	sort -nr sales.txt
uniq	Remove duplicates	sort list.txt   uniq -c
wc	Count lines/words	wc -l log.txt

### 4. Search Filesystem

Command	Description	Example Usage
find	Search files	find /var/log -name "*.log"
locate	Fast search	locate nginx.conf

### 5. Processes & Jobs

Command	Description	Example Usage
ps aux	Running processes	ps aux   grep nginx
top	CPU monitor	top
htop	Enhanced top	htop
kill	Stop process	kill 1234
kill -9	Force kill	kill -9 1234
nohup	Run after logout	nohup python app.py &
jobs	Background jobs	jobs
bg	Move to background	bg %1
fg	Bring foreground	fg %1

## 6. System Monitoring & Info

Command	Description	Example Usage
df -h	Disk usage	df -h
du -sh	Folder size	du -sh /var/log
free -h	Memory usage	free -h
vmstat	CPU/IO	vmstat 2 5
iostat	Disk IO	iostat -x 1 3
dmesg	Kernel logs	dmesg   tail
uptime	System load	uptime
hostnamectl	System info	hostnamectl
whoami	Current user	whoami

## 7. systemd / Service Management

Command	Description	Example Usage
systemctl status	Service status	systemctl status nginx
systemctl start	Start service	systemctl start nginx
systemctl stop	Stop service	systemctl stop nginx
systemctl restart	Restart service	systemctl restart nginx
systemctl enable	Enable on boot	systemctl enable nginx
systemctl disable	Disable on boot	systemctl disable nginx
journalctl -u	Service logs	journalctl -u nginx
journalctl -xe	System errors	journalctl -xe

## 8. Disk & Block Devices

Command	Description	Example Usage
lsblk	Block devices	<code>lsblk -f</code>
blkid	UUID info	<code>blkid /dev/xvdf1</code>
mount	Mount fs	<code>mount /dev/sdb1 /mnt/data</code>
umount	Unmount	<code>umount /mnt/data</code>
<code>fdisk -l</code>	Disk partitions	<code>fdisk -l /dev/sda</code>
<code>fuser -m</code>	Using mount	<code>fuser -m /mnt/data</code>

## 9. User & Group Management

Command	Description	Example Usage
useradd -m	Create user	sudo useradd -m vishnu
passwd	Set password	sudo passwd vishnu
userdel -r	Delete user	sudo userdel -r testuser
usermod -aG	Add group	sudo usermod -aG sudo vishnu
id	UID/GID	id vishnu
groups	Groups	groups vishnu
su	Switch user	su - ubuntu

## 10. Permissions & Ownership

Command	Description	Example Usage
chmod	Change permissions	chmod 755 script.sh
chmod +x	Make executable	chmod +x deploy.sh
chown	Change owner	chown user:group file
chgrp	Change group	chgrp devops file.txt

## 11. Networking (Basic)

Command	Description	Example Usage
ip a	IP info	ip a
ping	Connectivity	ping google.com
curl	HTTP request	curl -I https://google.com
wget	Download	wget https://example.com/app.zip
netstat -tulpn	Open ports	netstat -tulpn
ss -tulpn	Modern ports	ss -tulpn
ssh	Remote login	ssh -i key.pem ubuntu@ip
scp	Copy files	scp file ubuntu@ip:/tmp
rsync	Fast sync	rsync -av src/ server:/backup/

## 12. DNS & Network Tools

Command	Description	Example Usage
dig	DNS lookup	dig google.com
nslookup	DNS query	nslookup youtube.com
whois	Domain info	whois google.com
traceroute	Trace route	traceroute google.com
nc -zv	Test port	nc -zv google.com 443

## 13. Compression / Archive

Command	Description	Example Usage
tar -czvf	Create tar	tar -czvf backup.tar.gz /var/www
tar -xzvf	Extract tar	tar -xzvf backup.tar.gz
zip -r	Create zip	zip -r logs.zip /var/log/nginx
unzip	Extract zip	unzip logs.zip

## 14. LVM (Logical Volume Management)

Command	Description	Example Usage
pvs	Physical volumes	pvs
vgs	Volume groups	vgs
lvs	Logical volumes	lvs
pvcreate	Create PV	pvcreate /dev/xvdf
vgcreate	Create VG	vgcreate myvg /dev/xvdf
lvcreate	Create LV	lvcreate -L 10G -n mylv myvg
mkfs.ext4	Format LV	mkfs.ext4 /dev/myvg/mylv
mount	Mount LV	mount /dev/myvg/mylv /mnt/data

## 15. Docker Commands

Command	Description	Example Usage
<code>docker ps</code>	Running containers	<code>docker ps</code>
<code>docker ps -a</code>	All containers	<code>docker ps -a</code>
<code>docker images</code>	List images	<code>docker images</code>
<code>docker run -d</code>	Run container	<code>docker run -d nginx</code>
<code>docker exec -it</code>	Enter container	<code>docker exec -it web bash</code>
<code>docker logs -f</code>	Follow logs	<code>docker logs -f web</code>
<code>docker stop</code>	Stop container	<code>docker stop web</code>
<code>docker start</code>	Start container	<code>docker start web</code>
<code>docker rm</code>	Remove container	<code>docker rm web</code>

## 16. Git Commands (with Bash Basics)

Command	Description	Example Usage
<code>git clone</code>	Clone repo	<code>git clone https://github.com/project.git</code>
<code>git status</code>	Show status	<code>git status</code>
<code>git add .</code>	Stage changes	<code>git add .</code>
<code>git commit -m</code>	Commit	<code>git commit -m "Update fix"</code>
<code>git pull</code>	Pull	<code>git pull</code>
<code>git push</code>	Push	<code>git push</code>
<code>git checkout -b</code>	New branch	<code>git checkout -b feature</code>
<code>#!/bin/bash</code>	Shebang	<code>#!/bin/bash</code>
<code>echo</code>	Print output	<code>echo "Hello"</code>
<code>read</code>	User input	<code>read name</code>
<code>for</code>	Loop	<code>for i in {1..5}; do echo \$i; done</code>
<code>if</code>	Condition	<code>if [ \$x -gt 10 ]; then echo hi; fi</code>
<code>chmod +x</code>	Make executable	<code>chmod +x script.sh</code>