

Linux Cheat Sheet



BY DEVOPS SHACK

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The Ultimate Guide for DevOps & System Administration

1. System Information

Command	Description
uname -a	Show kernel name, version, and system info
hostname	Display system hostname
uptime	Show how long the system has been running
whoami	Show current logged-in user
id	Show user ID and group ID
date	Show current system date and time
cal	Display current month calendar
`dmesg`	less`

Best Practice: Use dmesg and uname for debugging hardware and OS-level issues.

2. User Management

Command	Description
who	Show who is logged in
w	Show logged-in users and activity
adduser <user>	Add a new user
userdel <user>	Remove a user
passwd <user>	Change user password
su - <user>	Switch to another user

Command	Description
groups <user>	Show group membership
usermod -aG sudo <user>	Add user to sudo group

Best Practice: Create non-root users for daily operations; restrict root access.

3. File & Directory Operations

Command	Description
ls -l	List files with details
ls -a	List hidden files
pwd	Print working directory
cd <dir>	Change directory
mkdir <dir>	Create new directory
mkdir -p /path/to/dir	Create nested directories
rmdir <dir>	Remove empty directory
rm -r <dir>	Remove directory recursively
touch <file>	Create an empty file
cp <src> <dest>	Copy file/directory
mv <src> <dest>	Move/rename file
stat <file>	Show file metadata
tree	Display directory structure (install with apt/yum)

Best Practice: Always use -i with rm to avoid accidental deletions.

4. File Viewing & Editing

Command	Description
cat <file>	Display file content

Command	Description
less <file>	View file with scrolling
head -n 20 <file>	Show first 20 lines
tail -n 20 <file>	Show last 20 lines
tail -f <file>	Monitor file in real time
nano <file>	Open file in Nano editor
vim <file>	Open file in Vim editor
wc -l <file>	Count lines in a file
wc -w <file>	Count words in a file

Best Practice: Use tail -f on logs to debug live applications.

5. File Permissions & Ownership

Command	Description
ls -l	View permissions
chmod 755 <file>	rwx for owner, r-x for group/others
chmod u+x <file>	Add execute permission to user
chmod g-w <file>	Remove write permission for group
chown user <file>	Change owner
chown user:group <file>	Change owner and group
umask	Show default permissions

Best Practice: Restrict permissions to least privilege; avoid 777 unless testing.

6. Process Management

Command	Description
ps aux	Show all processes

Command	Description
top	Show real-time process usage
htop	Interactive process manager (install separately)
jobs	Show background jobs
fg %1	Bring job 1 to foreground
bg %1	Resume job 1 in background
kill <pid>	Kill process by PID
kill -9 <pid>	Force kill process
systemctl status <svc>	Show service status
systemctl start <svc>	Start a service
systemctl stop <svc>	Stop a service
systemctl restart <svc>	Restart a service

Best Practice: Use systemctl for services instead of manually killing PIDs.

7. Networking

Command	Description
ifconfig / ip a	Show IP addresses
ping <host>	Check connectivity
curl <url>	Fetch from URL
wget <url>	Download file
netstat -tulnp	Show active ports
ss -tulnp	Alternative to netstat
dig <domain>	DNS lookup
nslookup <domain>	Another DNS lookup

Command	Description
traceroute <host>	Trace path to host
scp file user@host:/path	Copy file to remote host
ssh user@host	SSH into remote server

Best Practice: Use ss instead of netstat (modern replacement).

8. Disk Management

Command	Description
df -h	Show disk usage
du -sh <dir>	Show size of directory
lsblk	List block devices
mount	Show mounted file systems
umount /mnt	Unmount filesystem
fdisk -l	Show disk partitions
ls -lh /dev/disk/by-uuid/	Show disk UUIDs
blkid	Show block device IDs

Best Practice: Use du -sh * to check which directories are consuming space.

9. Package Management

Ubuntu/Debian (APT)

Command	Description
apt update	Update package list
apt upgrade	Upgrade all packages
apt install <pkg>	Install package
apt remove <pkg>	Remove package

Command	Description
apt search <pkg>	Search package

CentOS/RHEL (YUM/DNF)

Command	Description
yum install <pkg>	Install package
yum remove <pkg>	Remove package
yum update	Update all packages
dnf search <pkg>	Search package

10. Archiving & Compression

Command	Description
tar -cvf file.tar dir	Create tar archive
tar -xvf file.tar	Extract tar archive
tar -czvf file.tar.gz dir	Create compressed tarball
tar -xzvf file.tar.gz	Extract compressed tarball
gzip <file>	Compress file
gunzip <file.gz>	Decompress file
zip file.zip file1 file2	Zip multiple files
unzip file.zip	Extract zip file

11. Search & Find

Command	Description
find / -name <file>	Find file by name
find / -type f -size +100M	Find files larger than 100MB
grep "text" <file>	Search inside a file

Command	Description
<code>grep -r "text" <dir></code>	Recursive search in directory
<code>which <command></code>	Show command path
<code>whereis <command></code>	Show all command locations
<code>locate <file></code>	Find file using index

Best Practice: Use `grep -i` for case-insensitive searches.

12. System Monitoring

Command	Description
<code>free -h</code>	Show memory usage
<code>uptime</code>	Show load average
<code>dmesg</code>	Show kernel messages
<code>iostat</code>	CPU and I/O statistics
<code>vmstat</code>	Virtual memory statistics
<code>sar -u 1 3</code>	Show CPU usage at 1 sec intervals (install sysstat)

Best Practice: Use `htop` and `glances` for interactive system monitoring.