Dev. training 1.01

File: txt_files/linx_cheat_sheet_en

/Network

Command	Flags / Options	Description
ip	a	Show IP addresses
ip	link	Show network interfaces
ip	route	Show routing table
ip	neigh	Show ARP / neighbor table
ss	-tulpn	Show command history
ping	-c	Test network connectivity
traceroute		Trace network path
tracepath		Trace path without root
mtr	-c	Ping + traceroute combined
dig	@server	DNS lookup
nslookup		DNS lookup (legacy)
curl	-I	HTTP header check
wget		Download files
tcpdump	-i	Packet capture
nmap	-sT, -p	Port scanning
ethtool	-i	NIC driver info
ssh	-i, -p	Secure shell
nc	-zv	Port connectivity test

/Shell

Command	Flags / Options	Description
history		Show command history
history	| grep	Search command history
!!		Run previous command
!n		Run command number n
Ctrl+r		Reverse history search
clear		Clear terminal screen
reset		Reset broken terminal
exit		Exit shell
exec		Replace current process
alias		Create command alias
unalias		Remove alias
type		What is this command?
source		Reload shell config
env		Show environment variables
export		Set environment variable
unset		Remove variable
set		Shell variables & options
shopt		Bash shell options

/Files & Navigation

Command	Flags / Options	Description
pwd		Print current directory
ls		List directory contents
ls	-lah	List all files (long, human)
cd		Change directory
cd	..	Go up one directory
cd	~	Go to home directory
tree		Show directory tree
mkdir		Create directory
mkdir	-p	Create parent directories
rmdir		Remove empty directory
cp		Copy files
cp	-r	Copy directories recursively
mv		Move / rename files
rm		Remove file
rm	-r	Remove directory recursively
stat		Show file metadata
file		Detect file type
du	-sh	Directory size
df	-h	Disk usage
watch		Run command periodically

IO

/Pipes & I/O

Command	Flags / Options	Description
|		Pipe stdout → stdin
>		Redirect output (overwrite)
>>		Redirect output (append)
<		Read input from file
2>		Redirect stderr
&>		Redirect stdout + stderr
tee		Output to stdout and file
tee	-a	Append output to file
xargs		Build arguments from stdin
nohup		Run immune to hangup
disown		Detach cmd job from shell
exec		Replace process with cmd
watch		Run command repeatedly
script		Record terminal session

/Job Control

Command	Flags / Options	Description
&		Run command in background
jobs		List background jobs
fg		Bring job to foreground
bg		Resume job in background
Ctrl+z		Suspend running job
kill		Terminate process
kill	%job	Kill job by job ID
wait		Wait for process to finish

/Permissions & Users

Command	Flags / Options	Description
chmod		Change file permissions
chmod	755 / +x	Nr / executable permissions
chown		Change file owner
chown	-R	Change owner recursively
chgrp		Change group ownership
umask		Default permission mask
id		Show user identity
groups		Show user groups
whoami		Current user
su		Switch user
sudo		Run command as root
sudo	-i	Root login shell

/System

Command	Flags / Options	Description
systemctl	status	Show service status
systemctl	start	Start service
systemctl	stop	Stop service
systemctl	restart	Restart service
systemctl	reload	Reload service config
systemctl	enable	Enable at boot
systemctl	disable	Disable at boot
systemctl	is-enabled	Check boot status
systemctl	daemon-reload	Reload unit files
systemctl	list-units	List active units
systemctl	list-unit-files	List unit files
journalctl	-xe	Recent errors
journalctl	-f	Follow logs
journalctl	--disk-usage	Journal size
hostnamectl		Set / show hostname
timedatectl		Time & timezone

/Disk & Storage

Command	Flags / Options	Description
lsblk		List block devices
lsblk	-f	Show filesystems
blkid		Show UUID / FS type
mount		Mount filesystem
mount	-o	Mount options
umount		Unmount filesystem
df	-h	Disk free space
du	-sh	Directory disk usage
findmnt		Show mounted filesystems
mountpoint		Check mount point
fsck		Filesystem check
tune2fs	-l	ext filesystem info
mkswap		Create swap
swapon		Enable swap
swapoff		Disable swap
dd		Low-level disk copy

/Debug & Processes

Command	Flags / Options	Description
ps	aux	List all running processes
top		Live process overview
htop		Enhanced process viewer
uptime		System load & runtime
free	-h	Memory usage
vmstat		Memory / CPU stats
iostat		Disk I/O statistics
pidstat		Per-process statistics
kill		Terminate process
kill	-9	Force kill process
pgrep		Find process by name
pkill		Kill process by name
lsof		List open files
lsof	-i	Open network sockets
strace		System call tracing
dmesg		Kernel messages

/Meta / Help

Command	Flags / Options	Description
man		Manual pages
man	-k	Search manuals by keyword
apropos		Search commands by description
tldr		Simplified help pages
help		Bash built-in help
info		GNU info documentation
which		Show command path
whereis		Locate binary / man / source

/Flags

Flag	Alt	Description
-h	--help	Show help
-v	--verbose	Verbose output
-q	--quiet	Suppress output
-f		Force action
-r	-R	Recursive
-a		All / include hidden
-l		Long listing
-n		Numeric / no resolve
-i		Interactive / ignore case
-t		Type / TCP
-p		Port / PID
-u	-R	User / update
--dry-run		Simulate only

Filesystem Structure

/	Root of the filesystem
/bin	Essential user binaries
/sbin	System binaries (root)
/etc	System configuration
/home	User home directories
/root	Root user home
/usr	Userland programs & libraries
/usr/bin	/usr/bin
/usr/sbin	System commands
/var	Variable system data
/var/log	System logs
/tmp	Temporary files
/run	Runtime state data
/dev	Device files
/proc	Kernel info (virtual)
/sys	Kernel & hardware (virtual)
/mnt	Manual mounts
/media	Removable media

```
├── bin
│   └── Essential user commands (ls, cp, mv)
│
├── sbin
│   └── System commands (root) – network, disk, boot
│
├── boot
│   ├── vmlinuz              → Linux kernel
│   ├── initrd.img           → Initramfs
│   └── grub/                → Bootloader configuration
│
├── dev
│   ├── sda, sdb             → Disks
│   ├── tty*, pts/           → Terminals
│   └── null, zero           → Special devices
│
├── etc
│   ├── hostname             → System hostname
│   ├── hosts                → Local DNS mappings
│   ├── resolv.conf          → DNS servers
│   ├── fstab                → Mounts at boot
│   ├── passwd               → User accounts
│   ├── shadow               → Password hashes
│   ├── group                → Groups
│   ├── sudoers              → Sudo rules
│   ├── ssh/
│   │   ├── sshd_config      → SSH server config
│   │   └── ssh_config       → SSH client config
│   ├── systemd/
│   │   ├── system/          → System units
│   │   └── user/            → User units
│   ├── netplan/             → Ubuntu networking
│   ├── network/             → Debian legacy networking
│   ├── cron.d/              → System cron jobs
│   └── default/             → Default application settings
│
├── home
│   ├── user/
│   │   ├── Documents/
│   │   ├── Downloads/
│   │   ├── .bashrc          → Shell configuration
│   │   ├── .profile         → Login environment
│   │   ├── .ssh/
│   │   │   ├── id_rsa       → Private key
│   │   │   └── authorized_keys
│   │   └── .config/         → Application configs
│   └── otheruser/
```

File structure:

```
├── root
│   └── Root user home directory
│
├── lib
│   └── Shared libraries (critical)
│
├── lib64
│   └── 64-bit libraries
│
├── usr
│   ├── bin
│   │   └── Most user programs
│   ├── sbin
│   │   └── System programs
│   ├── lib
│   │   └── Libraries
│   ├── local
│   │   ├── bin          → Locally installed binaries
│   │   ├── sbin
│   │   └── lib
│   └── share
│       ├── man          → Manual pages
│       └── zoneinfo     → Timezone data
│
├── var
│   ├── log
│   │   ├── syslog       → System log
│   │   ├── auth.log     → Authentication logs
│   │   ├── kern.log     → Kernel logs
│   │   └── journal/     → systemd journal
│   ├── lib
│   │   ├── docker/      → Docker data
│   │   ├── postgresql/  → Databases
│   │   └── systemd/     → Runtime state
│   ├── cache
│   │   └── apt/         → Package cache
│   ├── spool
│   │   ├── cron/        → Cron jobs
│   │   └── mail/        → Mail queue
│   └── tmp
│       └── Temporary files (longer-lived)
│
├── tmp
│   └── Temporary files (cleared on reboot)
│
├── run
│   ├── pid              → Process IDs
│   ├── lock             → Lock files
│   └── systemd/         → Runtime data
│
├── proc
│   ├── cpuinfo          → CPU information
│   ├── meminfo          → Memory information
│   └── sys/             → Kernel interface
│
├── sys
│   └── Kernel & hardware (virtual filesystem)
│
├── media
│   └── Removable media (automount)
│
├── mnt
│   └── Manual mounts (NFS, SMB, disks)
│
└── opt
    └── Optional / third-party software
```