Ultimate Linux Advanced Commands Cheat Sheet with Explanations

tmux (Terminal Multiplexer)

- **Used for managing multiple terminal sessions in a single window.**

- Example:

tmux new -s mysession

- Creates a new session named mysession.

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2. screen (Session Management)

- **Used to create persistent terminal sessions.**

- Example:

screen -S mysession

- Starts a new screen session.

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3. nohup (Run Process in Background Even After Logout)

- **Runs a command that continues executing even after logout.**

- Example:

nohup myscript.sh &

- Runs myscript.sh in the background, and prevents termination on logout.

4. strace (System Call Tracer)

- **Used for debugging and tracing system calls made by a process.**

- Example:

strace -p 1234

- Attaches to process ID 1234 and traces system calls.

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5. lsof (List Open Files)

- **Displays a list of files opened by processes.**

- Example:

lsof -i :80

- Lists processes using port 80.

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6. tcpdump (Network Packet Analyzer)

- **Captures network packets for analysis.**

- Example:

sudo tcpdump -i eth0 port 443

- Captures packets on the eth0 interface for port 443.

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7. netstat / ss (Network Statistics)

- **Displays network connections, routing tables, and more.**
- Example:

netstat -tulnp

- Shows listening ports and their associated processes.

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8. htop (Interactive Process Manager)

- **A more advanced alternative to top.**
- Example:

htop

- Displays running processes in an interactive UI.

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9. iostat (CPU and Disk Utilization)

- **Shows system input/output statistics.**
- Example:

iostat -c 2 5

- Displays CPU usage every 2 seconds, 5 times.

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10. vmstat (Performance Monitoring)

- **Monitors system performance (CPU, memory, processes).**
- Example:

vmstat 2 5

- Displays stats every 2 seconds, 5 times.

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11. sar (System Activity Reporter)

- **Collects, reports, and saves system activity information.**
- Example:

sar -u 5 10

- Monitors CPU usage every 5 seconds for 10 times.

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12. nc (Netcat - Network Utility)

- **Used for testing network connections.**
- Example:

nc -zv google.com 80

- Checks if port 80 on google.com is open.

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13. rsync (Remote File Syncing)

- **Synchronizes files between two locations efficiently.**
- Example:

rsync -avz /source/dir user@remote:/dest/dir

- Syncs /source/dir to /dest/dir on remote server.

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14. scp (Secure Copy)

- **Transfers files between servers securely.**
- Example:

scp file.txt user@remote:/home/user/

- Copies file.txt to a remote server.

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15. find (Search for Files)

- **Searches files based on various criteria.**
- Example:

find /home -type f -name "*.log"

- Finds all .log files under /home.

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16. xargs (Execute Command on Multiple Inputs)

- **Runs commands on multiple inputs efficiently.**
- Example:

find . -name "*.log" | xargs rm -f

- Deletes all .log files in the current directory.

17. sed (Stream Editor)

- **Modifies files in a stream.**
- Example:

```
sed -i 's/oldtext/newtext/g' file.txt
```

- Replaces oldtext with newtext in file.txt.

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18. awk (Text Processing Tool)

- **Processes text files efficiently.**
- Example:

```
awk '{print $1, $3}' data.txt
```

- Prints the first and third column from data.txt.

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19. curl (HTTP Requests)

- **Fetches data from a URL.**
- Example:

```
curl -I https://www.google.com
```

- Fetches the HTTP headers of google.com.

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20. wget (Download Files from Internet)

- **Downloads a file from a given URL.**
- Example:

wget https://example.com/file.zip

- Downloads file.zip from example.com.

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21. traceroute (Trace Network Path)

- **Shows the path packets take to a destination.**
- Example:

traceroute google.com

- Displays the route packets take to google.com.

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22. iptables (Firewall Configuration)

- **Configures the Linux firewall.**
- Example:

sudo iptables -A INPUT -p tcp --dport 22 -j DROP

- Blocks incoming SSH connections.

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23. ufw (Uncomplicated Firewall)

- **A user-friendly firewall management tool.**
- Example:

sudo ufw allow 80/tcp

- Allows HTTP traffic on port 80.

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24. mount (Mount Filesystems)

- **Mounts storage devices.**
- Example:

sudo mount /dev/sdb1 /mnt

- Mounts /dev/sdb1 to /mnt.

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25. umount (Unmount Filesystems)

- **Unmounts storage devices.**
- Example:

sudo umount /mnt

- Unmounts the /mnt directory.

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26. fdisk (Disk Partitioning)

- **Manages disk partitions.**
- Example:

sudo fdisk /dev/sdb

- Opens partition manager for /dev/sdb.

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27. mkfs (Create Filesystem)

- **Formats a partition with a filesystem.**
- Example:

sudo mkfs.ext4 /dev/sdb1

- Formats /dev/sdb1 as an ext4 filesystem.

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28. du (Disk Usage)

- **Shows file and directory sizes.**
- Example:

du -sh /home/user

- Displays total disk usage of /home/user.

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29. df (Disk Free Space)

- **Shows available disk space.**
- Example:

df -h

- Displays disk usage in human-readable format.

30. watch (Monitor Command Output)

- **Executes a command periodically.**

- Example:

watch -n 2 free -m

- Shows memory usage every 2 seconds.