



Linux Cheat Sheet

Navigation

- `pwd`: Print the current working directory.
- `cd [dir]`: Change directory to `[dir]`. Use `cd ..` to go up one level.
- `ls`: List directory contents.
 - `ls -l`: List in long format.
 - `ls -a`: List all files including hidden files (those starting with a dot).
 - `ls -lh`: Long format with human-readable file sizes.

File Operations

- `touch [file]`: Create an empty file or update the timestamp of the file.
- `cp [source] [destination]`: Copy file or directory.
 - `cp -r [source] [destination]`: Copy directories recursively.
- `mv [source] [destination]`: Move or rename file or directory.
- `rm [file]`: Remove file.
 - `rm -r [dir]`: Remove directory and its contents recursively.
 - `rm -i [file]`: Remove with a prompt before every removal.

File Viewing

- `cat [file]`: Concatenate and display file content.
- `less [file]`: View file content one screen at a time.
- `more [file]`: View file content, similar to `less`.
- `head [file]`: Display the first 10 lines of a file.
 - `head -n [num] [file]`: Display the first `[num]` lines of a file.
- `tail [file]`: Display the last 10 lines of a file.
 - `tail -n [num] [file]`: Display the last `[num]` lines of a file.
 - `tail -f [file]`: Follow the file content as it grows.



File Permissions

- `chmod [permissions] [file]`: Change the file permissions.
 - `chmod 755 [file]`: Set permissions to `rw-r-xr-x`.
 - `chmod u+x [file]`: Add execute permission for the owner.
- `chown [owner]:[group] [file]`: Change file owner and group.
- `chgrp [group] [file]`: Change group ownership.

File Permissions Symbols

- `r`: Read permission.
- `w`: Write permission.
- `x`: Execute permission.
- `-`: No permission.

Access Control Lists (ACL)

- `getfacl [file]`: Get ACL of a file.
- `setfacl -m u:[user]:[permissions] [file]`: Set ACL for a user.
- `setfacl -m g:[group]:[permissions] [file]`: Set ACL for a group.
- `setfacl -x u:[user] [file]`: Remove ACL for a user.

Process Management

- `ps`: Display current processes.
 - `ps aux`: Display detailed information about all running processes.
- `top`: Display dynamic real-time view of running processes.
- `htop`: Enhanced version of `top` (needs to be installed).
- `kill [pid]`: Terminate process with process ID `[pid]`.
 - `kill -9 [pid]`: Forcefully terminate process with process ID `[pid]`.
- `killall [process_name]`: Terminate all processes with the specified name.
- `bg`: Resume a suspended job in the background.
- `fg`: Bring a background job to the foreground.
- `jobs`: List all background jobs.



Disk Usage

- `df`: Report file system disk space usage.
 - `df -h`: Human-readable format.
- `du [file/dir]`: Estimate file space usage.
 - `du -sh [file/dir]`: Display summary in human-readable format.

Networking

- `ping [host]`: Check the network connection to a server.
- `ifconfig`: Configure network interfaces (deprecated; use `ip`).
- `ip addr`: Show IP addresses and network interfaces.
- `netstat`: Network statistics.
 - `netstat -tuln`: List all listening ports.
- `wget [url]`: Download files from the web.
- `curl [url]`: Transfer data from or to a server.

Searching

- `grep [pattern] [file]`: Search for a pattern in a file.
 - `grep -r [pattern] [dir]`: Search recursively in a directory.
 - `grep -i [pattern] [file]`: Case-insensitive search.
- `find [dir] -name [pattern]`: Find files by name.
- `locate [name]`: Find files by name (uses a database, needs to be updated with `updatedb`).

Archiving and Compression

- `tar -cvf [archive.tar] [file/dir]`: Create a tar archive.
- `tar -xvf [archive.tar]`: Extract a tar archive.
- `tar -czvf [archive.tar.gz] [file/dir]`: Create a compressed tar archive with gzip.
- `tar -xzvf [archive.tar.gz]`: Extract a compressed tar archive with gzip.
- `zip [archive.zip] [file/dir]`: Create a zip archive.
- `unzip [archive.zip]`: Extract a zip archive.



Package Management

- **Debian/Ubuntu:**
 - `apt update`: Update package lists.
 - `apt upgrade`: Upgrade installed packages.
 - `apt install [package]`: Install a package.
 - `apt remove [package]`: Remove a package.
 - `apt autoremove`: Remove unnecessary packages.
- **Red Hat/CentOS:**
 - `yum update`: Update package lists and upgrade packages.
 - `yum install [package]`: Install a package.
 - `yum remove [package]`: Remove a package.
 - `yum autoremove`: Remove unnecessary packages.

Service Management

- **Systemd:**
 - `systemctl start [service]`: Start a service.
 - `systemctl stop [service]`: Stop a service.
 - `systemctl restart [service]`: Restart a service.
 - `systemctl status [service]`: Check the status of a service.
 - `systemctl enable [service]`: Enable a service to start on boot.
 - `systemctl disable [service]`: Disable a service from starting on boot.

User Management

- `adduser [username]`: Add a new user.
- `passwd [username]`: Change user password.
- `deluser [username]`: Remove a user.
- `usermod -aG [group] [username]`: Add a user to a group.
- `groups [username]`: List the groups a user is in.

Shell Scripting

- Basic Structure:

```
#!/bin/bash  
echo "Hello, World!"
```

- Variables:

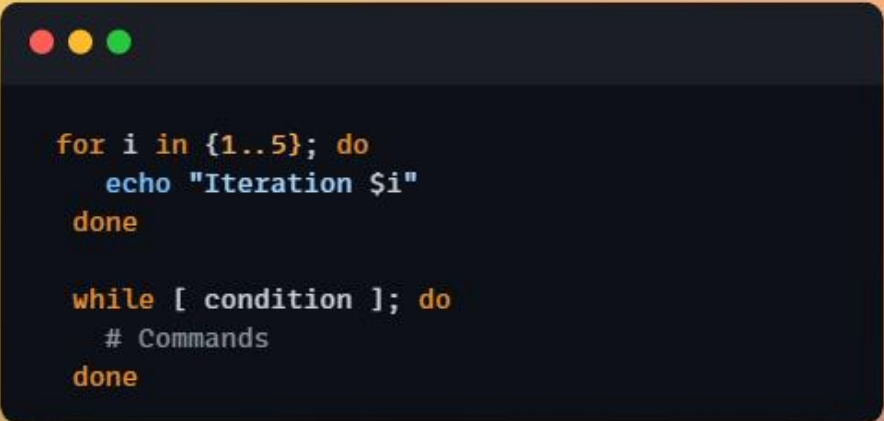
```
NAME="John"  
echo "Hello, $NAME"
```

- Conditional Statements:

```
if [ condition ]; then  
    # Commands  
elif [ condition ]; then  
    # Commands  
else  
    # Commands  
fi
```



- **Loops**



```
for i in {1..5}; do
    echo "Iteration $i"
done

while [ condition ]; do
    # Commands
done
```

Additional Useful Commands

- `echo [text]`: Display text.
- `date`: Display or set the system date and time.
- `uptime`: Show how long the system has been running.
- `who`: Show who is logged on.
- `uname -a`: Show system information.
- `history`: Show command history