

# Study of Basic Commands in Linux Operating System

## File and Directory Management

### ls

- **Description:** Lists files and directories in the current directory.
- **Usage:** `ls [options] [directory]`
- **Examples:**
  - `ls` - List files and directories.
  - `ls -l` - List with detailed information.
  - `ls -a` - List all files, including hidden ones.

### cd

- **Description:** Changes the current directory.
- **Usage:** `cd [directory]`
- **Examples:**
  - `cd /home/user` - Change to /home/user directory.
  - `cd ..` - Move up one directory.
  - `cd ~` - Move to the home directory.

### pwd

- **Description:** Prints the current working directory.
- **Usage:** `pwd`
- **Examples:**
  - `pwd` - Display the full path of the current directory.

### mkdir

- **Description:** Creates a new directory.
- **Usage:** `mkdir [options] directory_name`
- **Examples:**
  - `mkdir new_folder` - Create a directory named new\_folder.
  - `mkdir -p parent_folder/child_folder` - Create parent and child directories.

### rmdir

- **Description:** Removes an empty directory.
- **Usage:** `rmdir directory_name`
- **Examples:**
  - `rmdir old_folder` - Remove the empty directory old\_folder.

### rm

- **Description:** Removes files or directories.
- **Usage:** `rm [options] file_name`

- **Examples:**
  - `rm file.txt` - Remove `file.txt`.
  - `rm -r folder_name` - Remove `folder_name` and its contents recursively.

## **cp**

- **Description:** Copies files or directories.
- **Usage:** `cp [options] source destination`
- **Examples:**
  - `cp file1.txt file2.txt` - Copy `file1.txt` to `file2.txt`.
  - `cp -r dir1 dir2` - Copy `dir1` to `dir2` recursively.

## **mv**

- **Description:** Moves or renames files or directories.
- **Usage:** `mv [options] source destination`
- **Examples:**
  - `mv file1.txt /home/user/` - Move `file1.txt` to `/home/user/`.
  - `mv old_name.txt new_name.txt` - Rename `old_name.txt` to `new_name.txt`.

# **File Viewing and Editing**

## **cat**

- **Description:** Concatenates and displays file content.
- **Usage:** `cat [options] file_name`
- **Examples:**
  - `cat file.txt` - Display the content of `file.txt`.
  - `cat file1.txt file2.txt` - Concatenate and display both files.

## **less**

- **Description:** Views file content with backward and forward navigation.
- **Usage:** `less file_name`
- **Examples:**
  - `less file.txt` - View and navigate through `file.txt`.

## **free**

- **Description:** Displays memory usage.
- **Usage:** `free [options]`
- **Examples:**
  - `free` - Show memory usage.
  - `free -h` - Show memory usage in human-readable format.

# **Process Management**

## **ps**

- **Description:** Displays information about active processes.
- **Usage:** `ps [options]`
- **Examples:**

- `ps` - Display processes for the current user.
- `ps aux` - Display detailed information about all processes.

## Networking

### ping

- **Description:** Tests network connectivity to a host.
- **Usage:** `ping [options] destination`
- **Examples:**
  - `ping google.com` - Send ICMP packets to `google.com`.

### ifconfig

- **Description:** Displays or configures network interfaces.
- **Usage:** `ifconfig [interface] [options]`
- **Examples:**
  - `ifconfig` - Display network interfaces and their details.

### netstat

- **Description:** Displays network connections and routing tables.
- **Usage:** `netstat [options]`
- **Examples:**
  - `netstat -tuln` - Display listening ports and network connections.

## User Management

### whoami

- **Description:** Displays the currently logged-in user.
- **Usage:** `whoami`
- **Examples:**
  - `whoami` - Show the username of the current user.

### adduser

- **Description:** Adds a new user to the system.
- **Usage:** `adduser username`
- **Examples:**
  - `adduser newuser` - Add a new user named `newuser`.

## File Permissions

### chmod

- **Description:** Changes file permissions.
- **Usage:** `chmod [options] mode file_name`
- **Examples:**
  - `chmod 755 file.txt` - Set permissions of `file.txt` to `rwxr-xr-x`.