Linux Basic Commands

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1. `ls` – List Files and Directories

Purpose: Shows the files and folders in the current directory.

Common Options

- `ls` → list visible files
- `ls -a` → list **all files including hidden (.files)**
- `ls -l` → detailed list (permissions, owner, size, time)
- `ls -la` → detailed + hidden files

Example

```
ls
ls -a
ls -la
```

Use in Cybersecurity:
Check what files exist, find hidden files, inspect directories on a compromised system.

1. **File type and permissions** (`-rw-r--r--`, `drwxr-xr-x`, `lrwxrwxrwx`)
    - First character = file type:
        - `-` regular file
        - `d` directory
        - `l` symbolic link
        - `c` character device, `b` block device, `p` FIFO, `s` socket
    - Next 9 chars = permissions in 3 groups (owner / group / others): `r` read, `w` write, `x` execute.
    - Special letters:
        - `s` or `S` = SUID/SGID bit set (explain below).
        - `t` or `T` = sticky bit (common on `/tmp`).
2. **Hard link count** (`1`, `5`, etc.) — how many directory entries point to this inode.
3. **Owner (user)** (`name`) — file owner.
4. **Group** (`staff`) — owning group.
5. **Size** (`3.2K`, `160`) — bytes (use `-h` for human readable).

6. **Timestamp** (`Jun 1 10:05`) — by default shows modification time (mtime). Use options to show ctime/atime.
7. **Filename** (`notes.txt`) — if `l` (link), `-> target` shows the link target.

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2. `pwd` – Print Working Directory

Purpose: Shows **your current location** in Linux.

Example

```
pwd
```

Output Example:

```
/home/isha/Documents
```

Use in Cybersecurity:
Helps track location during enumeration, privilege escalation, or file-system navigation.

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3. `cd` – Change Directory

Purpose: Move from one folder to another.

Common Uses

```
cd foldername        → go inside a folder
cd ..                → go back one level
cd /path/to/folder   → go to a specific path
cd ~                 → go to home directory
cd /                 → go to root directory
```

Use in Cybersecurity:
Navigate directories in a target machine, find configs/logs/password files, etc.

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4. `clear` – Clear the Terminal

Purpose: Removes all previous terminal output from screen (for clean view).

Example

```
clear
```

Shortcut: **Ctrl + L**

Use in Cybersecurity:
Keeps your terminal organized while running multiple commands.

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5. `history` – Show Previously Used Commands

Purpose: Displays your past commands with numbers.

Example

```
history
```

You can rerun a command using:

```
!37  → runs the command number 37
```

Clear history

```
history -c
```

Use in Cybersecurity:

- View what commands were executed
- Helps track mistakes
- Attackers often delete history to hide traces
  → `history -c` or `rm ~/.bash_history`