

Using the Command Line



How to be a pro hacker.



Hackerman!

Introduction



The command line interface is one of the earliest forms of interacting with a computer.

- Low Graphical Requirements
- Efficiency
- Deeper Control

```
antay@Onchie ~  
Setting up libio-pty-perl (1:1.15-2build2) ...  
Setting up jinja2 (3.1.2-1) ...  
Setting up app (2.2.3.dfspl-1-build2) ...  
Setting up atop (2.7.1-1) ...  
invoke-rc.d: could not determine current runlevel  
invoke-rc.d: could not determine current runlevel  
Created symlink /etc/systemd/system/timers.target.wants/atop-rotate.timer → /lib/systemd/system/atop-rotate.timer.  
Created symlink /etc/systemd/system/multi-user.target.wants/atop.service → /lib/systemd/system/atop.service.  
Created symlink /etc/systemd/system/multi-user.target.wants/atopacct.service → /lib/systemd/system/atopacct.service.  
Setting up python3-urwid (2.1.2-2build1) ...  
Setting up cmatrix (2.0-3) ...  
Setting up python3-psutil (5.9.0-1build1) ...  
Setting up libnl-route-3-298-amd64 (3.5.0-0.1) ...  
Setting up hollywood (1.21-1.1) ...  
Setting up tree (2.0.2-1) ...  
Setting up libipc-run-perl (20200605-0-1) ...  
Setting up libtime-duration-perl (1.21-1) ...  
Setting up libtime-date-perl (2.3300-2) ...  
Setting up libconfuse-common (3.3-2) ...  
Setting up liburing2:amd64 (2.1-2build1) ...  
Setting up libconfuse2:amd64 (3.3-2) ...  
Setting up ccze (0.2.1-6) ...  
Setting up moreutils (0.66-1) ...  
Setting up speedometer (2.0-3) ...  
Setting up bmon (1:4.0-8) ...  
Setting up plocate (1.1.15-1ubuntu2) ...  
update-alternatives: using /usr/bin/plocate to provide /usr/bin/plocate (locate) in auto mode  
Adding group 'plocate' (GID 119) ...  
Done.  
Initializing plocate database; this may take some time...  
Progress: [ 98% ] #####
```

Requirements



For this computer, you will need some form of Linux installed. Debian preferred.

- VirtualBox + Kali - View our [older tutorial](#).
- Windows Subsystem for Linux - Kali, Ubuntu, etc.
- Dual boot, if you dare.



What's an OS?



Warning: Oversimplifications

- Runs on top of your hardware
- Software runs on top of it
- Take ECS 150

[Big Linux family tree.](#)

GNU/Linux?

And now: Powershell



Just kidding.

Prompt



```
ashley@orchid:~$
```

Hello, world!



```
echo hello world  
echo "hello world"
```

What is the difference between these two? Nothing, for now.

Hello, world!



Let's learn more about "echo"

man echo

Navigating the file system.



```
ls
```

Nothing there?

```
touch meow.txt
```

```
ls
```

Introducing Flags



man ls

```
DESCRIPTION
List information about the FILES (the current directory by default).  Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.
Mandatory arguments to long options are mandatory for short options too.

-a, --all
    do not ignore entries starting with .

-A, --almost-all
    do not list implied . and ..

--author
    with -l, print the author of each file

-b, --escape
    print C-style escapes for nongraphic characters

--block-size=SIZE
    with -l, scale sizes by SIZE when printing them; e.g., '--block-size=M'; see SIZE format below

-B, --ignore-backups
    do not list implied entries ending with ~

-c      with -lt: sort by, and show, ctime (time of last modification of file status information); with -l: show ctime and sort by name; otherwise: sort by
        ctime, newest first

-C      list entries by columns

--color[=WHEN]
    colorize the output; WHEN can be 'always' (default if omitted), 'auto', or 'never'; more info below

-d, --directory
    list directories themselves, not their contents

-D, --dired
    generate output designed for Emacs' dired mode

-f      do not sort, enable -aU, disable -ls --color
```

ls -la

Let's navigate!

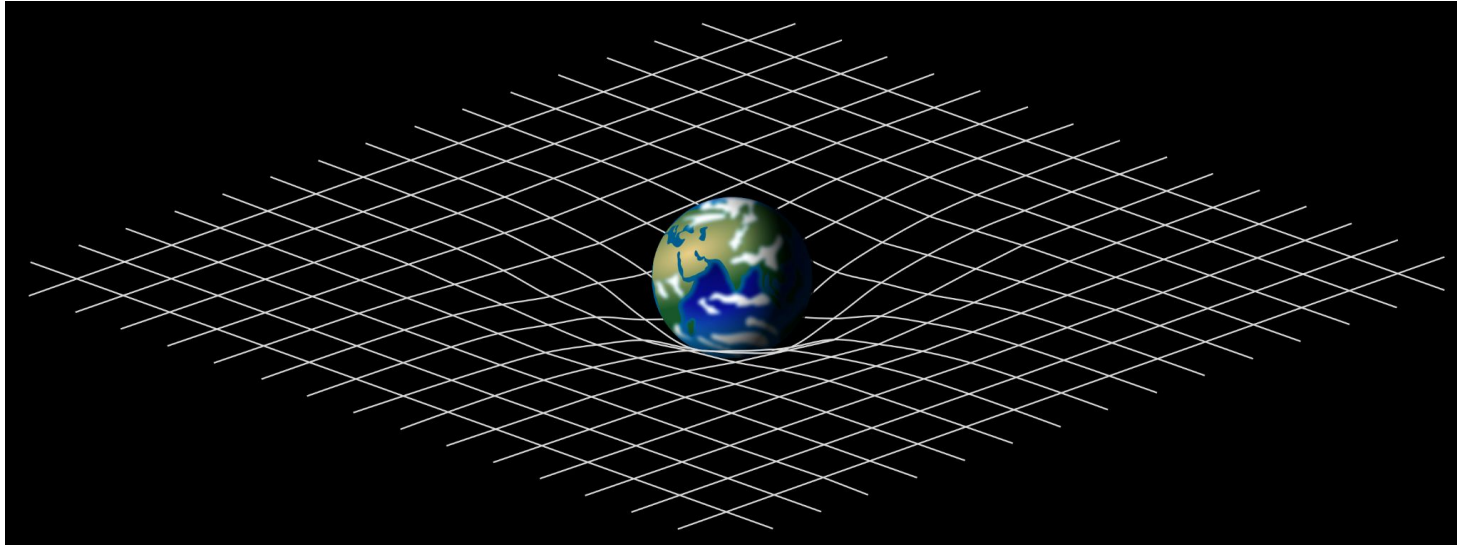


```
mkdir myFolder
```

```
cd myFolder
```

Look, the prompt changed! (Probably.)

Theory of Relativity



Just kidding...

Relativity



ls

ls .

ls ..

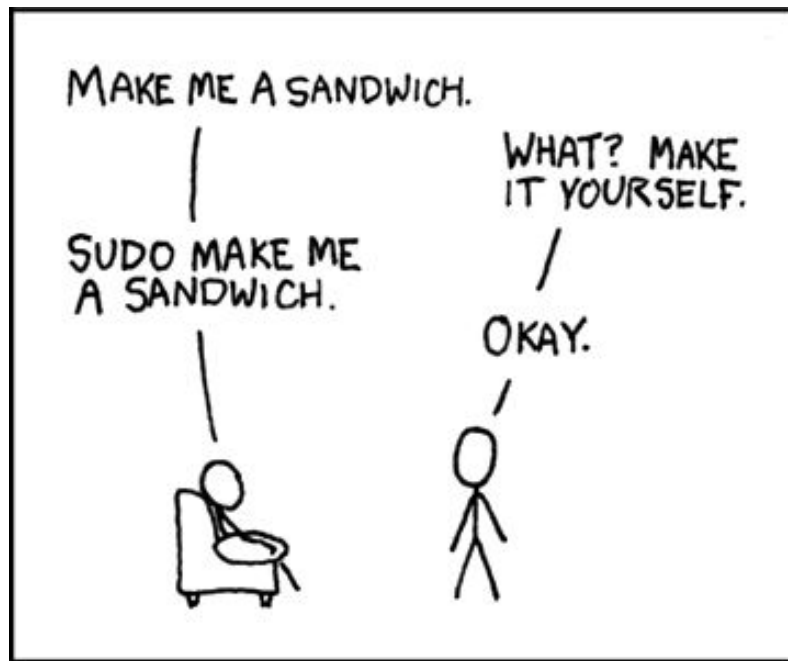
Absolute

ls /

Where are we?

pwd

Relevant XKCD



Sudo



Some commands need root permission.

whoami

sudo whoami

Bash Stuff



Write to file

```
echo "I am a cat" > ../meow.txt
```

Redirect Output

```
cat ../meow.txt | wc
```

Getting more programs



Update & Upgrade

```
sudo apt update && sudo apt upgrade -y
```

```
sudo apt install hollywood
```

Now, you're a hacker*



```
ashley@Orchid (172.20.211.58) X + v
Your public key has been saved in /tmp/hollywood/4F8PLa.pub
The key fingerprint is:
SHA256:6kPAksveZS4dkzao8ahyOjQvstueVHDm81/4748GyYQ ashley@Orchid
The key's randomart image is:
+-----[SHA256]-----
|.o.
|E..+o..
|o=+o..
|oo=+o
|..o=BS+
|.oo ++o.+
|.+.+.+o
|o ..o.
|.ooop
|-----[SHA256]-----
Birth: -

Generating public/private dsa key pair.
Your identification has been saved in /tmp/hollywood/6Yw0u7
Your public key has been saved in /tmp/hollywood/6Yw0u7.pub
The key fingerprint is:
SHA256:ax/vdopeeGDBHnj2iGjwo15A0OgmKv2wXL2jP1aat ashley@Orchid
The key's randomart image is:
+-----[DSA 1024]-----
|+.o.
|*+ = +
|+. + + o . .
| = 0 o = o
|o X O o S
|.o B . + =
| + . + =
|E . . o +
| +oo.+
|-----[SHA256]-----
Birth: -

power_efficient
uevent
xz_dec
uevent
version

249 directories, 514 files /dev/block
0 directories, 0 files

VuavEtkiRa (Vu-av-Et-ki-Ra) Victor-uniform-alfa-victor-Echo-tango-kilo-india-Romeo-alfa
Quamer (Quan-er) Quebec-uniform-alfa-mike-echo-romeo
ibCigEwAf~ (ib-Cig-Ew-Af-TILDE) india-bravo-Charlie-india-golf-Echo-whiskey-Alfa-foxtrot-TILDE
bucNa (buc-Na) bravo-uniform-charlie-November-alfa
Okjadvee (Ok-jad-vee) Oscar-kilo-juliett-alfa-delta-yankee-echo-echo
giHiCjH (gi-Hic-Ji) golf-india-Hotel-india-charlie-Juliett-india
ammaAdea (im-Ac-daa) india-mike-mike-Alfa-charlie-delta-echo-alfa
Varb (Varb) Victor-alfa-romeo-bravo

Interfaces RX bps pps % TX bps pps %
eth0 0 0 0 0 0 0
eth0 192B 0 0 0 0 0
class :1 (mq) 0 0 0 0 0

C++ Language Options
-fabi-version=n -fno-access-control -faligned-new=n
-fargs-in-order=n -fchar8_t -fcheck-new -fconstexpr-depth=n
-fconstexpr-cache-depth=n -fconstexpr-loop-limit=n

ECANCELED 125 Operation canceled
EBADR 53 Invalid request descriptor
ELOOP 40 Too many levels of symbolic links
EDQUOT 122 Disk quota exceeded

u. 22.04 0: bash# 1:hollywood# 7.70 16x 2023-10-03 13:21:34
```