Report S6/L5

Esercizio del Giorno

Si ricordi che la configurazione dei servizi costituisce essa stessa una parte integrante dell'esercizio.

L'esercizio di oggi ha un duplice scopo:

- Fare pratica con Hydra per craccare l'autenticazione dei servizi di rete.
- Consolidare le conoscenze dei servizi stessi tramite la loro configurazione.

L'esercizio si svilupperà in due fasi:

- Una prima fase dove insieme vedremo l'abilitazione di un servizio SSH e la relativa sessione di cracking dell'autenticazione con Hydra.
- Una seconda fase dove sarete liberi di configurare e craccare un qualsiasi servizio di rete tra quelli disponibili, ad esempio ftp, rdp, telnet, autenticazione HTTP.

Esercizio fase 2 – suggerimento:

Per la seconda parte dell'esercizio, scegliete un servizio da configurare e poi provate a craccare l'autenticazione con Hydra.

- Se optate per il servizio ftp, potete semplicemente installarlo con il seguente comando: sudo apt-get install vsftpd
- E poi avviare il servizio con: service vsftpd start

Svolgimento

Per iniziare ho creato il nuovo utente su kali con il comando < **sudo adduser** > e l'ho chiamato **test_user** ho confermato inserendo la psw del mio kali e ho impostato **testpass** come password per in nuovo account, ho lasciato le altre informazioni come di default.

```
-(kali⊛kali)-[~]
 -$ <u>sudo</u> adduser test_u<u>ser</u>
[sudo] password for kali:
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] Y
info: Adding new user litest_user' to supplemental / extra groups `users' ...
info: Adding user `test_user' to group `users'
```

Ho attivato il servizio ssh con il comando < sudo service ssh start >.

Poi ho ispezionato il file sshd config nella directory /etc/ssh/sshd config.

```
GNU nano 8.2
                                                                                        sshd_config
                                                                                                                                                   GNU nano 8.2
                                                                                                                                                                                                                                    sshd config
                                                                                                                                                    Change to yes if you don
HostbasedAuthentication
   This is the sshd server system-wide configuration file.sshd_config(5) for more information.
                                                                                                                                                                                 you don't trust ~/.ssh/known_hosts for
   This sshd was compiled with PATH=/usr/local/bin:/usr/bin:/usr/games
                                                                                                                                                   IgnoreRhosts yes
   The strategy used for options in the default sshd_config shipped with OpenSSH is to specify options with their default value where possible, but leave them commented. Uncommented options override the default value.
                                                                                                                                                   PermitEmptyPasswords no
                                                                                                                                                    Change to yes to enable challenge-response passwords (beware issues with some PAM modules and threads) \,
Include /etc/ssh/sshd_config.d/*.conf
                                                                                                                                                    odInteractiveAuthentication no
#Port 22
#AddressFamily any
#ListenAddress 0.0.0.0
                                                                                                                                                    Kerberos options
#HostKey /etc/ssh/ssh_host_rsa_key
#HostKey /etc/ssh/ssh_host_ecdsa_key
#HostKey /etc/ssh/ssh_host_ed25519_key
                                                                                                                                                   KerberosGetAFSToken no
                                                                                                                                                   GSSAPIAuthentication no
GSSAPICleanupCredentials yes
# Ciphers and keying
#RekeyLimit default none
# Logging
#SyslogFacility AUTH
#LogLevel INFO
                                                                                                                                                   Set this to 'yes' to enable PAM authentication, account processing, and session processing. If this is enabled, PAM authentication will be allowed through the KbdInteractiveAuthentication and PasswordAuthentication. Depending on your PAM configuration, PAM authentication via KbdInteractiveAuthentication may bypass the setting of "PermitRootLogin prohibit-password".

If you just want the PAM account and session checks to run without PAM authentication, then enable this but set PasswordAuthentication and KbdInteractiveAuthentication to 'no'.
# Authentication:
#LoginGraceTime 2m
#PermitRootLogin prohibit-password
#StrictModes yes
#MaxSessions 10
                                                                                                                                                    sePAM yes
#PubkeyAuthentication yes
                                                                                                                                                   AllowAgentForwarding yes
# Expect .ssh/authorized_keys2 to be disregarded by default in future.
#AuthorizedKeysFile .ssh/authorized_keys .ssh/authorized_keys2
                                                                                                                                                  #AllowTcpForwarding yes
#GatewayPorts no
                                                                                                                                                  X11Forwarding yes
#X11DisplayOffset 10
#X11UseLocalhost yes
#AuthorizedPrincipalsFile none
                                                                                                                                                  #PermitTTY yes
PrintMotd no
#AuthorizedKeysCommand none
#AuthorizedKeysCommandUser nobody
                                                                                                                                                  #TCPKeepAlive yes
PermitUserEnvironment no
# For this to work you will also need host keys in /etc/ssh/ssh_known_hosts
#HostbasedAuthentication no
```

```
#PermitUserEnvironment no
#Compression delayed
#ClientAliveInterval 0
#ClientAliveCountMax 3
#UseDNS no
#PidFile /run/sshd.pid
#MaxStartups 10:30:100
#PermitTunnel no
#ChrootDirectory none
#VersionAddendum none
# no default banner path
#Banner none

# Allow client to pass locale environment variables
AcceptEnv LANG LC_*
# override default of no subsystems
Subsystem sftp /usr/lib/openssh/sftp-server
# Example of overriding settings on a per-user basis
#Match User anoncvs
# X11Forwarding no
# AllowTcpForwarding no
# PermitTTY no
# ForceCommand cvs server
```

L'esercizio prevede di lasciare le configurazioni di default.

Per connettermi in SSH all'utente appena creato uso il comando **<ssh test_user@192.168.30.3>** dove:

- -ssh → servizio
- -test_user → utente creato in precedenza
- -192.168.30.3 → IP kali

```
(kali⊕ kali)-[~]
$ ssh test_user@192.168.30.3
The authenticity of host '192.168.30.3 (192.168.30.3)' can't be established.
ED25519 key fingerprint is SHA256:o516ZakcJ5xEXJc5+cNr+F5Yh/7qf8AnZxXmH5LKtcg.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.30.3' (ED25519) to the list of known hosts.
test_user@192.168.30.3's password:
Connection closed by 192.168.30.3 port 22
```

```
| $\sudo \text{service ssh start} \\
| $\sudo \text{service ssh start} \\
| $\sudo \text{service ssh start} \\
| $\sudo \text{password for kali:} \\
| $\sudo \text{kali} \text{kali} - [~] \\
$\text{ssh test_user} \text{0192.168.30.3} \text{ser} \text{password:} \\
| $\sum \text{linux kali} \text{6.11.2-amd} \text{4 #1 SMP PREEMPT_DYNAMIC Kali} \text{6.11.2-1kali1} \text{(2024-10-15) x86_64} \\
| $\text{The programs included with the Kali GNU/Linux system are free software;} \\
| $\text{the exact distribution terms for each program are described in the individual files in /usr/share/doc/*/copyright.} \\
| $\text{Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law.} \| $\text{(test_user} \text{kali} \text{old} \text{linux} \text{comes kali} \text{old} - [~] \\
| $\text{1}$
```

Mentre per tornare all'utente originario cambio semplicemente il nome dell'utente ovvero:

-ssh kali@192.168.30.3

```
(test_user® kali)-[~]
$ ssh kali@192.168.30.3
The authenticity of host '192.168.30.3 (192.168.30.3)' can't be established.
ED25519 key fingerprint is SHA256:o516ZakcJ5xEXJc5+cNr+F5Yh/7qf8AnZxXmH5LKtcg.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? Y
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added '192.168.30.3' (ED25519) to the list of known hosts.
kali@192.168.30.3'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.

__(kali@kali)-[~]
```

Per craccare username e password usiamo il software Hydra con il seguente comando:

hydra -L username_list -P password_list IP_KALI -t 4 ssh

dove:

- -L → per selezionare un file contenente la lista di possibili username
- -P → per selezionare un file contenente la lista di possibili password

Le directory dei file le abbiamo trovate grazie al tool wordlist

```
kali@kali: /usr/share/wordlists/seclists/Passwords
 File Actions Edit View Help
 __(kali⊗kali)-[~]

$ cd /usr/share/wordlists/seclists
       -(kali®kali)-[/usr/share/wordlists/seclists]
Discovery IOCs
                   / IOCs Passwords Payloads Usernames
Miscellaneous Pattern-Matching README.md Web-Shells
       (kali⊛kali)-[/usr/share/wordlists/seclists]
 probable-v2-top1575.txt
probable-v2-top207.txt
Pwdb-Public
README.md
cirt-default-passwords.txt
citrix.txt
clarkson-university-82.txt
Common_Credentials
Cracked-Hashes

Cracked-Hashes

Cracked-Hashes

Cracked-Hashes

Cracked-Hashes

Cracked-Hashes

Cracked-Hashes

Cracked-Hashes

Cracked-Hashes

README.HIM

richelieu-french-top20000.txt

richelieu-french-top5000.txt

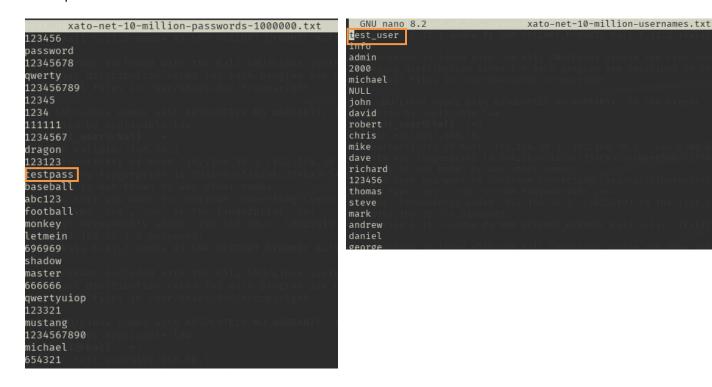
SCRABBLE-hackerhouse.tgz
                                                                   SCRABBLE-mackerhouse.tgz
scraped-JWT-secrets.txt
seasons.txt
Software
stupid-ones-in-production.txt
twitter-banned.txt
unkown-azul.txt
UserPassCombo-Jay.txt
wiFi-wPA
darkc0de.txt
darkweb2017-top10000.txt
darkweb2017-top1000.txt
darkweb2017-top100.txt
darkweb2017-top10.txt
days.txt
Default-Credentials
der-postillon.txt
dutch_common_wordlist.txt
dutch_passwordlist.txt
                                                                    Wikipedia
                                                            wikinedia
xato-net-10-million-passwords-1000000.txt
xato-net-10-million-passwords-1000000.txt
xato-net-10-million-passwords-100000.txt
xato-net-10-million-passwords-1000.txt
xato-net-10-million-passwords-100.txt
xato-net-10-million-passwords-10.txt
xato-net-10-million-passwords-dup.txt
xato-net-10-million-passwords-dup.txt
xato-net-10-million-passwords.txt
german_misc.txt
Honeypot-Captures
Keyboard-Walks
Leaked-Databases
Malware
       (kali⊛kali)-[/usr/share/wordlists/seclists/Passwords]
```

I file che utilizzerò sono i seguenti:

xato-net-10-million-passwords-1000000.txt

xato-net-10-million-usernames.txt

Al fine di ridurre le tempistiche ho inserito nelle prime posizioni delle liste il mio username e la mia password.



Il comando quindi diventa:

hydra -L /usr/share/wordlists/seclists/Usernames/xato-net-10-million-usernames.txt -P /usr/share/wordlists/seclists/Passwords/xato-net-10-million-passwords-1000000.txt 192.168.30.3 -t 4 ssh

Possiamo aggiungere lo switch -V per controllare il progresso del cracking, ecco il risultato:

Hydra ha trovato le credenziali nelle sue liste e me le ha evidenziate nella ricerca.

```
[ATTEMPT] target 192.168.30.3 - login "test_user" - pass "123123" - 11 of 8295464295456 [child 2] (0/0)

[ATTEMPT] target 192.168.30.3 - login "test_user" - pass "testpass" - 12 of 8295464295456 [child 3] (0/0)

[22][ssh] host: 192.168.30.3 | login "test_user" password: testpass

[ATTEMPT] target 192.168.30.3 - login "info" - pass "123456" - 1000002 of 8295464295456 [child 3] (0/0)

[ATTEMPT] target 192.168.30.3 - login "info" - pass "password" - 1000003 of 8295464295456 [child 0] (0/0)
```

Nel risultato notiamo:

22 → porta

Ssh → protocollo

Host → il nostro IP

Login → username

Password → la nostra password selezionata per il test

Terminata la configurazione e il cracking delle credenziali, inizio la seconda parte dell'esercizio.

Esercizio 2

Installiamo il servizio FTP con il comando: sudo apt-get install vsftpd

Avviamo il servizio con il comando: service vsftpd start

```
(kali⊕kali)-[~
 $ sudo apt-get install vsftpd [sudo] password for kali:
  Reading package lists... Done
 Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
      he following packages were automatically installed and are no longer required:
fonts-liberation2 hydra-gtk ibverbs-providers imagemagick-6.q16 libarmadillo12 libassuan0 libavfilter9
libavformat60 libbfio1 libbcost-iostreams1.83.0 libbcost-thread1.83.0 libcephfs2 libdaxctl1 libegl-dev libfmt9
libgail-common libgail18t64 libgdal34t64 libgeos3.12.1t64 libgfapi0 libgfrpc0 libgfxdr0 libgl-mesa-dev
libgles-dev libgles1 libglusterfs0 libglvnd-core-dev libglvnd-dev libgspell-1-2 libgtx2.0-ot64 libgtx2.0-bin
libgtk2.0-common libibverbs1 libimobiledevice6 libiniparser1 libjim0.82t64 libjsoncpp25 liblua5.2-0
libmagickcore-6.q16-7-extra libmagickcore-6.q16-7t64 libmagickwand-6.q16-7t64 libmetat
libmimalloc2.0 libhdct16 libnghttp3-3 libpaper1 libper15.38t64 libplacebo338 libplist3 libpmem1 libpoppler134
libpostproc57 libpython3.11-dev libpython3.11-minimal libpython3.11-stdlib libpython3.11t64 libqt5x-11extras5
libqt6dbus6t64 libqt6gui6t64 libqt6metwork6t64 libqt6opengl6t64 libqt6openglwidgets6t64 libqt6printsupport6t64
libpt6sql6t64 libqt6test6t64 libqt6widgets6t64 libqt6openglwidgets6t64 libre2-10 libroc0.3
libssh-gcrypt-4 libsuperlu6 libswscale7 libu2f-udev libusbmuxd6 libwireshark17t64 libwiretap14t64 libroc10 libroc0.3
libssh-gcrypt-4 libsuperlu6 libswscale7 libu2f-udev libusbmuxd6 libwireshark17t64 libwiretap14t64 libroc2-10 libroc0.3
python3-diskcache python3-hatch-vcs python3-hatchling python3-jose python3-libzto3 python3-mistume0
python3-diskcache python3-hatch-vcs python3-pluggy python3-pose python3-rsa python3-mestuptools-scm
python3-time-machine python3-trove-classifiers python3.11 python3.11-dev python3.11-minimal rwho rwhod
samba-vfs-modules xcape
  yerons transmission materials by the samba-vfs-modules xcape
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
        vsftpd
 0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 142 kB of archives.
After this operation, 352 kB of additional disk space will be used.
After this operation, 352 kB of additional disk space will be used.

Get:1 http://kali.download/kali kali-rolling/main amd64 vsftpd amd64 3.0.3-13.1 [142 kB]

Fetched 142 kB in 1s (237 kB/s)

Preconfiguring packages ...

Selecting previously unselected package vsftpd.

(Reading database ... 426521 files and directories currently installed.)

Preparing to unpack .../vsftpd_3.0.3-13.1_amd64.deb ...

Unpacking vsftpd (3.0.3-13.1) ...

Setting up vsftpd (3.0.3-13.1)
  Setting up vsftpd (3.0.3-13.1)
/usr/lib/tmpfiles.d/vsftpd.conf:1: Line references path below legacy directory /var/run/, updating /var/run/vsftpd/empty + /run/vsftpd/empty; please update the tmpfiles.d/ drop-in file accordingly.

update-rc.d: We have no instructions for the vsftpd init script.

update-rc.d: It looks like a network service, we disable it.
Processing triggers for man-db (2.13.0-1) ...
Processing triggers for kali-menu (2024.4.0) ...
  __(kali⊛kali)-[~]
$service_vsftpd_start
                  AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ===
 Authentication is required to start 'vsftpd.service' Authenticating as: ,,, (kali)
    — AUTHENTICATION COMPLETE —
```

Mandiamo il comando:

hydra -L /usr/share/wordlists/seclists/Usernames/xato-net-10-million-usernames.txt -P
 /usr/share/wordlists/seclists/Passwords/xato-net-10-million-passwords-1000000.txt 192.168.30.3 –V –t
 4 ftp

Anche in questo caso notiamo che **hydra** è stata in grado di rilevare le credenziali sfruttando il **protocollo ftp** sulla **porta 21**.

```
[ATTEMPT] target 192.168.30.3 - login "test_user" - pass "1234567" - 9 of 8295464295456 [child 3] (0/0) [ATTEMPT] target 192.168.30.3 - login "test_user" - pass "dragon" - 10 of 8295464295456 [child 1] (0/0) [ATTEMPT] target 192.168.30.3 - login "test_user" - pass "123123" - 11 of 8295464295456 [child 2] (0/0) [ATTEMPT] target 192.168.30.3 - login "test_user" - pass "testpass" - 12 of 8295464295456 [child 0] (0/0) [21][ftp] host: 192.168.30.3 - login "info" - pass "12345678" - 1000002 of 8295464295456 [child 0] (0/0) [ATTEMPT] target 192.168.30.3 - login "info" - pass "password" - 1000003 of 8295464295456 [child 3] (0/0) [ATTEMPT] target 192.168.30.3 - login "info" - pass "password" - 1000003 of 8295464295456 [child 3] (0/0) [ATTEMPT] target 192.168.30.3 - login "info" - pass "12345678" - 1000004 of 8295464295456 [child 1] (0/0) [ATTEMPT] target 192.168.30.3 - login "info" - pass "qwerty" - 1000005 of 8295464295456 [child 2] (0/0)
```