

DVWA Installation

1) Download DVWA

Go to web server directory

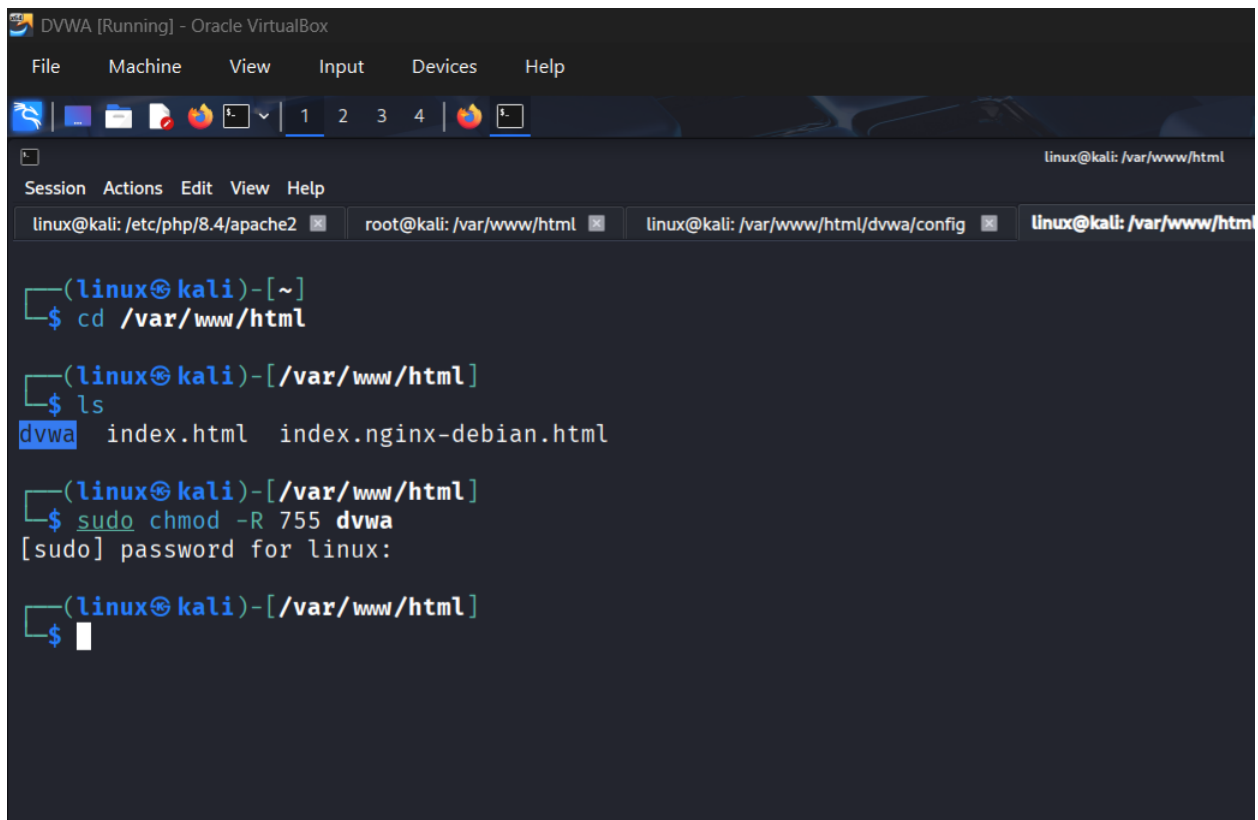
```
cd /var/www/html/
```

Download dvwa

```
sudo git clone https://github.com/digininja/DVWA.git
```

2) Set Permissions

```
sudo chmod -R 755 dvwa
```



The screenshot shows a Kali Linux terminal window titled "DVWA [Running] - Oracle VirtualBox". The terminal displays the following commands and output:

```
(linux@kali)-[~]
$ cd /var/www/html

(linux@kali)-[/var/www/html]
$ ls
dvwa  index.html  index.nginx-debian.html

(linux@kali)-[/var/www/html]
$ sudo chmod -R 755 dvwa
[sudo] password for linux:

(linux@kali)-[/var/www/html]
$
```

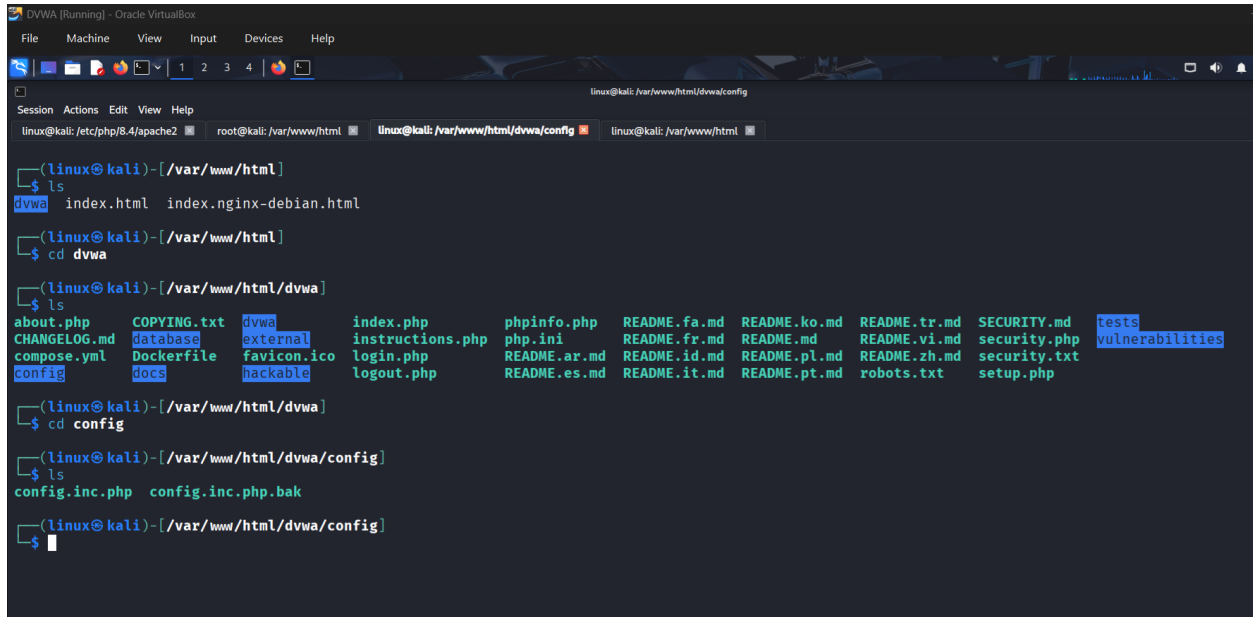
The terminal window has a menu bar with "File", "Machine", "View", "Input", "Devices", and "Help". The status bar at the bottom shows the current session as "linux@kali: /var/www/html".

Note: The command `sudo chmod -R 755 dvwa` gives the file owner full control

Configure DVWA

1) This is the configured version I have in this picture, the file name is not like this at first, we change it:

```
sudo mv config.inc.php.dist config.inc.php
```



```
linux@kali: /var/www/html
└─$ ls
dvwa  index.html  index.nginx-debian.html

linux@kali: /var/www/html
└─$ cd dvwa

linux@kali: /var/www/html/dvwa
└─$ ls
about.php  COPYING.txt  dvwa  index.php  phpinfo.php  README.fa.md  README.ko.md  README.tr.md  SECURITY.md  tests
CHANGELOG.md  database  external  instructions.php  php.ini  README.fr.md  README.md  README.vi.md  security.php  vulnerabilities
compose.yml  Dockerfile  favicon.ico  login.php  README.ar.md  README.id.md  README.pl.md  README.zh.md  security.txt  setup.php
config  docs  hackable  logout.php  README.es.md  README.it.md  README.pt.md  robots.txt

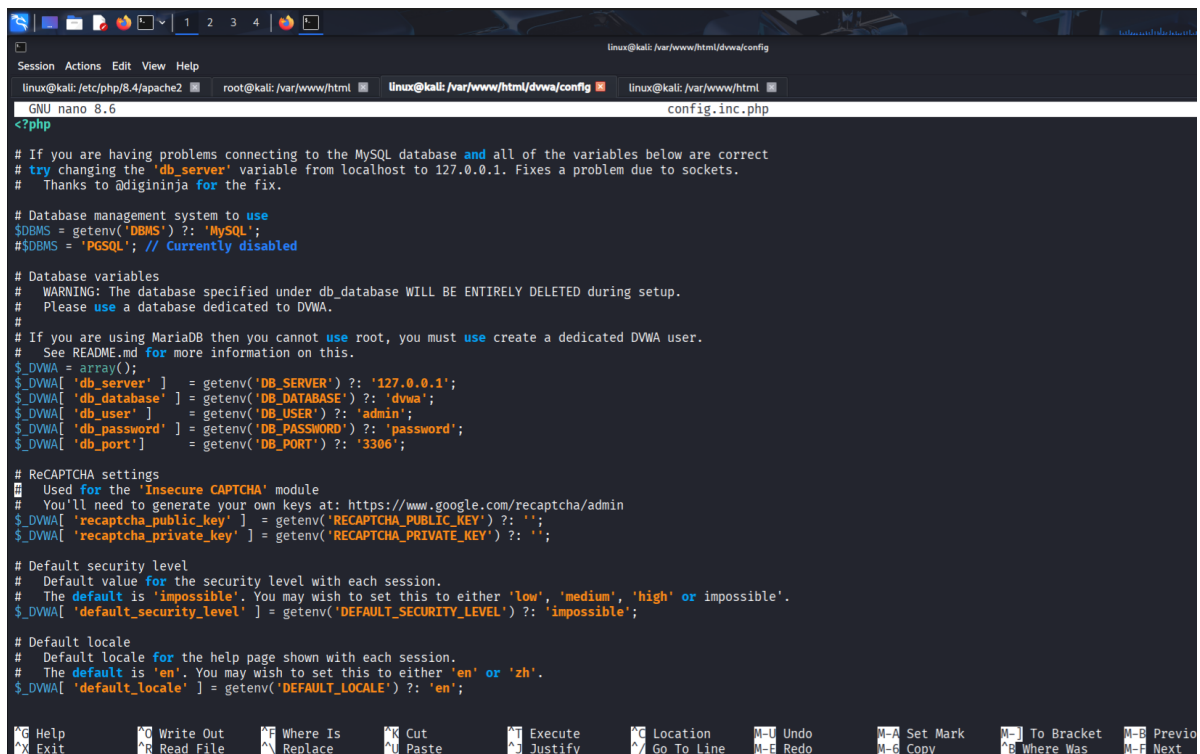
linux@kali: /var/www/html/dvwa
└─$ cd config

linux@kali: /var/www/html/dvwa/config
└─$ ls
config.inc.php  config.inc.php.bak

linux@kali: /var/www/html/dvwa/config
└─$
```

2) Configure file:

```
sudo nano config.inc.php
```



```
GNU nano 8.6 config.inc.php
<?php

# If you are having problems connecting to the MySQL database and all of the variables below are correct
# try changing the 'db_server' variable from localhost to 127.0.0.1. Fixes a problem due to sockets.
# Thanks to @digininja for the fix.

# Database management system to use
$DBMS = getenv('DBMS') ?: 'MySQL';
#$DBMS = 'PGSQL'; // Currently disabled

# Database variables
# WARNING: The database specified under db_database WILL BE ENTIRELY DELETED during setup.
# Please use a database dedicated to DVWA.
#
# If you are using MariaDB then you cannot use root, you must use create a dedicated DVWA user.
# See README.md for more information on this.
$_DVWA = array();
$_DVWA['db_server'] = getenv('DB_SERVER') ?: '127.0.0.1';
$_DVWA['db_database'] = getenv('DB_DATABASE') ?: 'dvwa';
$_DVWA['db_user'] = getenv('DB_USER') ?: 'admin';
$_DVWA['db_password'] = getenv('DB_PASSWORD') ?: 'password';
$_DVWA['db_port'] = getenv('DB_PORT') ?: '3306';

# ReCAPTCHA settings
# Used for the 'Insecure CAPTCHA' module
# You'll need to generate your own keys at: https://www.google.com/recaptcha/admin
$_DVWA['recaptcha_public_key'] = getenv('RECAPTCHA_PUBLIC_KEY') ?: '';
$_DVWA['recaptcha_private_key'] = getenv('RECAPTCHA_PRIVATE_KEY') ?: '';

# Default security level
# Default value for the security level with each session.
# The default is 'impossible'. You may wish to set this to either 'low', 'medium', 'high' or impossible'.
$_DVWA['default_security_level'] = getenv('DEFAULT_SECURITY_LEVEL') ?: 'impossible';

# Default locale
# Default locale for the help page shown with each session.
# The default is 'en'. You may wish to set this to either 'en' or 'zh'.
$_DVWA['default_locale'] = getenv('DEFAULT_LOCALE') ?: 'en';
```

```
$_DVWA[ 'db_user' ] = getenv('DB_USER') ?: 'admin';

$_DVWA[ 'db_password' ] = getenv('DB_PASSWORD') ?: 'password';
```

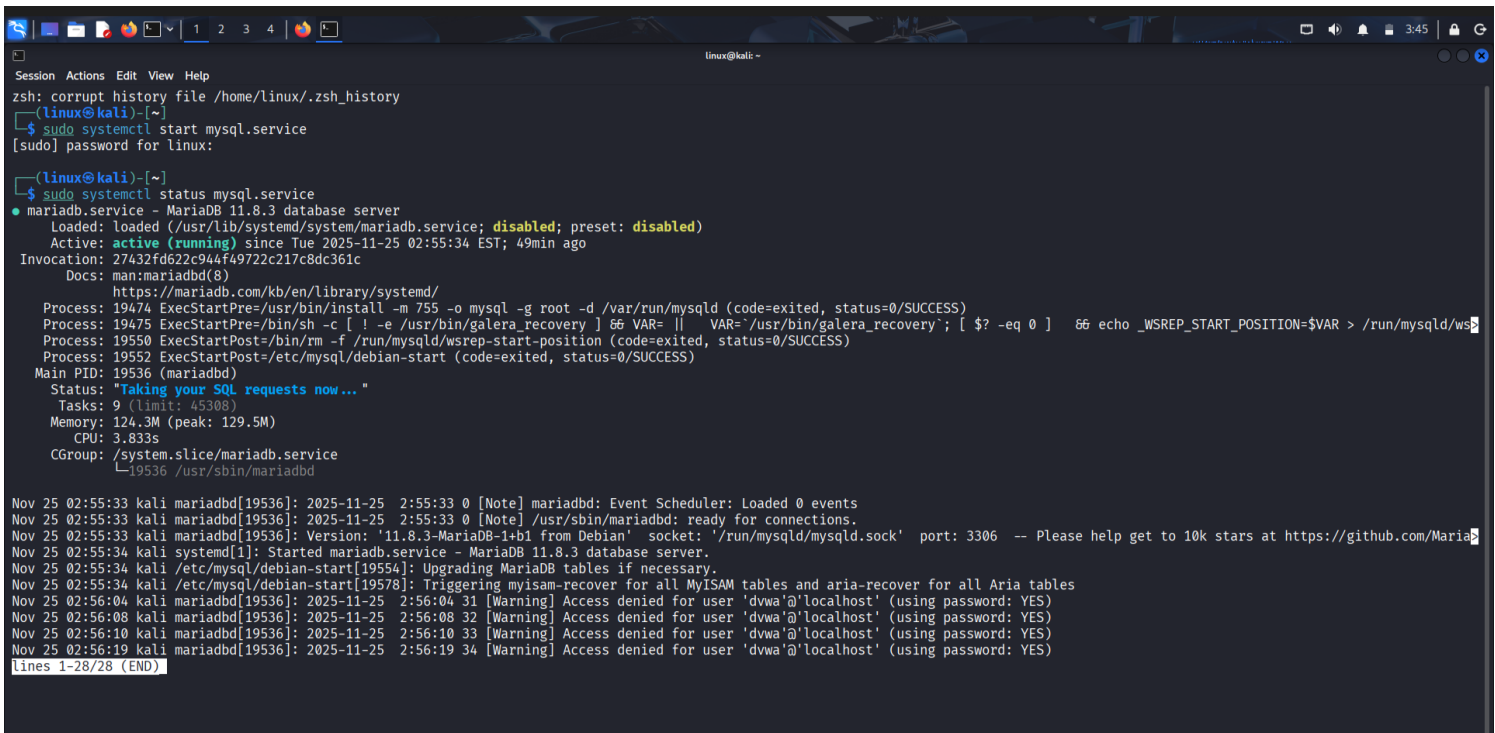
Set Up MySQL Database

1) Start MySQL

```
sudo systemctl start mysql.service
```

Check status of mysql

```
sudo systemctl status mysql.service
```

A terminal window on a Kali Linux system showing the process of starting and checking the status of the MySQL service. The user runs 'sudo systemctl start mysql.service' and then 'sudo systemctl status mysql.service'. The status output shows that the MariaDB 11.8.3 database server is loaded and active (running). It also displays system metrics like memory and CPU usage. At the bottom, the journal logs for the service are shown, including startup messages and several 'Access denied' warnings for the 'dvwa' user from 'localhost'.

2) Log in to MySQL

```
sudo mysql -u root -p
```

Create Database:

```
CREATE DATABASE dvwa;
```

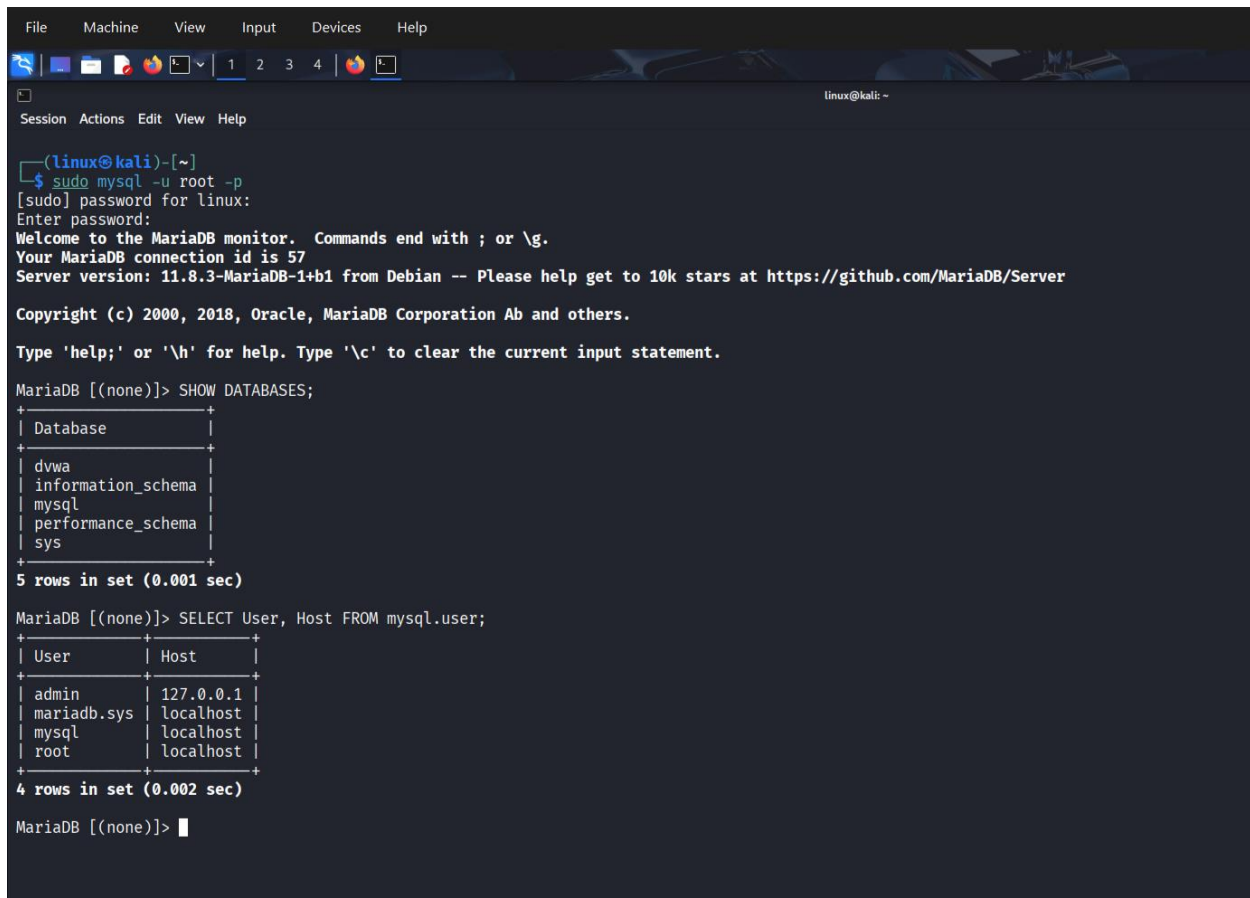
I created user:

```
CREATE USER 'admin'@'127.0.0.1' IDENTIFIED BY 'password';
```

Set privilege of user:

```
GRANT ALL PRIVILEGES ON dvwa.* TO 'admin'@'127.0.0.1';
```

Conclusion:



The screenshot shows a terminal window on a Kali Linux machine. The user has executed the command `sudo mysql -u root -p` and entered the password. The terminal displays the MySQL monitor interface. The user has entered `SHOW DATABASES;` and the output shows five databases: `dvwa`, `information_schema`, `mysql`, `performance_schema`, and `sys`. Then, the user has entered `SELECT User, Host FROM mysql.user;` and the output shows four users: `admin` (hosted at `127.0.0.1`), `mariadb.sys` (hosted at `localhost`), `mysql` (hosted at `localhost`), and `root` (hosted at `localhost`).

```
File Machine View Input Devices Help
1 2 3 4
linux@kali: ~
Session Actions Edit View Help

(linux@kali)-[~]
$ sudo mysql -u root -p
[sudo] password for linux:
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 57
Server version: 11.8.3-MariaDB-1+b1 from Debian -- Please help get to 10k stars at https://github.com/MariaDB/Server

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

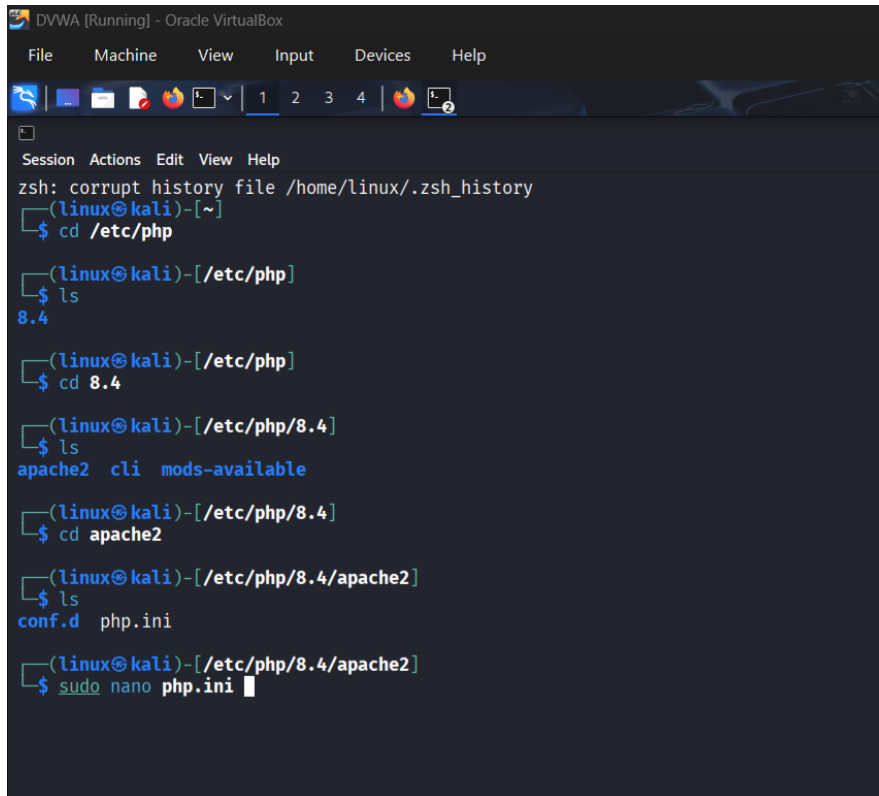
MariaDB [(none)]> SHOW DATABASES;
+-----+
| Database |
+-----+
| dvwa      |
| information_schema |
| mysql     |
| performance_schema |
| sys       |
+-----+
5 rows in set (0.001 sec)

MariaDB [(none)]> SELECT User, Host FROM mysql.user;
+-----+-----+
| User      | Host      |
+-----+-----+
| admin     | 127.0.0.1 |
| mariadb.sys | localhost |
| mysql     | localhost |
| root      | localhost |
+-----+-----+
4 rows in set (0.002 sec)

MariaDB [(none)]>
```

Configure Apache

1) Find php configuration file



```
DVWA [Running] - Oracle VirtualBox
File Machine View Input Devices Help
1 2 3 4
Session Actions Edit View Help
zsh: corrupt history file /home/linux/.zsh_history
(linux@kali)~$ cd /etc/php
(linux@kali)~/etc/php$ ls
8.4
(linux@kali)~/etc/php$ cd 8.4
(linux@kali)~/etc/php/8.4$ ls
apache2 cli mods-available
(linux@kali)~/etc/php/8.4$ cd apache2
(linux@kali)~/etc/php/8.4/apache2$ ls
conf.d php.ini
(linux@kali)~/etc/php/8.4/apache2$ sudo nano php.ini
```

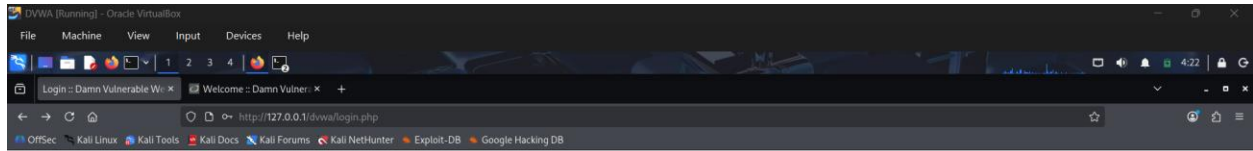
2) Configure file

```
;;;;;;;;;;
; Fopen wrappers ;
;;;;;;;;;;

; Whether to allow the treatment of URLs (like http:// or ftp://) as files.
; https://php.net/allow-url-fopen
allow_url_fopen = On

; Whether to allow include/require to open URLs (like https:// or ftp://) as files.
; https://php.net/allow-url-include
allow_url_include = On
```

RESULT

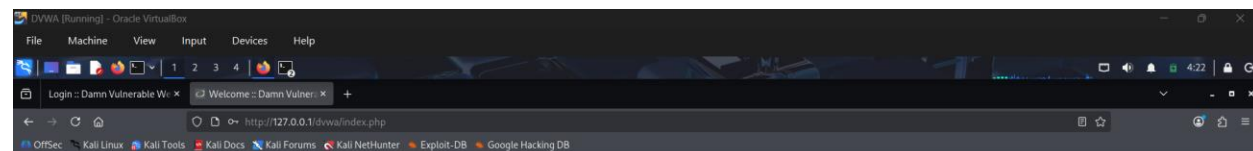


Username

Password

Login

[Damn Vulnerable Web Application \(DVWA\)](#)



Welcome to Damn Vulnerable Web Application!

Damn Vulnerable Web Application (DVWA) is a PHP/MySQL web application that is damn vulnerable. Its main goal is to be an aid for security professionals to test their skills and tools in a legal environment, help web developers better understand the processes of securing web applications and to aid both students & teachers to learn about web application security in a controlled class room environment.

The aim of DVWA is to practice some of the most common web vulnerabilities, with various levels of difficulty, with a simple straightforward interface.

General Instructions

It is up to the user how they approach DVWA. Either by working through every module at a fixed level, or selecting any module and working up to reach the highest level they can before moving onto the next one. There is not a fixed object to complete a module; however users should feel that they have successfully exploited the system as best as they possible could by using that particular vulnerability.

Please note, there are both documented and undocumented vulnerabilities with this software. This is intentional. You are encouraged to try and discover as many issues as possible.

There is a help button at the bottom of each page, which allows you to view hints & tips for that vulnerability. There are also additional links for further background reading, which relates to that security issue.

WARNING!

Damn Vulnerable Web Application is damn vulnerable! Do not upload it to your hosting provider's public html folder or any internet facing servers, as they will be compromised. It is recommend using a virtual machine (such as [VirtualBox](#) or [VMware](#)), which is set to NAT networking mode. Inside a guest machine, you can download and install [XAMPP](#) for the web server and database.

Disclaimer

We do not take responsibility for the way in which any one uses this application (DVWA). We have made the purposes of the application clear and it should not be used maliciously. We have given warnings and taken measures to prevent users from installing DVWA on to live web servers. If your web server is compromised via an installation of DVWA, it is not our responsibility it is the responsibility of the person's who uploaded and installed it.

More Training Resources

DVWA aims to cover the most commonly seen vulnerabilities found in today's web applications. However there are plenty of other issues with web applications. Should you wish to explore any additional attack vectors, or want more difficult challenges, you may wish to look into the following other projects:

- [MultiWiki](#)
- [OWASP Vulnerable Web Applications Directory](#)



Filebeat Download and Configuration

Filebeat Installation

1) Downloading the Elastic GPG Key (Security Signature)

This command downloads and introduces Elastic's official digital signature to the system.

```
wget -qO - https://artifacts.elastic.co/GPG-KEY-elasticsearch | sudo gpg --dearmor -o /usr/share/keyrings/elasticsearch-keyring.gpg
```

2) Adding the Elastic Repository to the System

```
echo "deb [signed-by=/usr/share/keyrings/elasticsearch-keyring.gpg] https://artifacts.elastic.co/packages/8.x/apt stable main" | sudo tee /etc/apt/sources.list.d/elasticsearch-8.x.list
```

3) Updating the Package Database

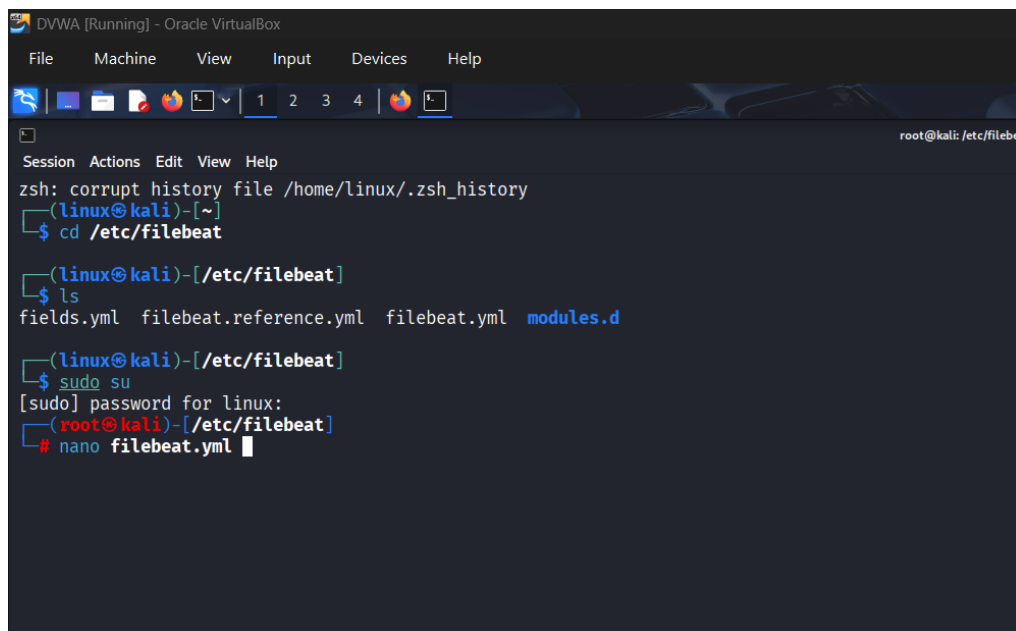
```
sudo apt-get update
```

4) Installing Filebeat Agent

```
sudo apt-get install filebeat
```

Filebeat Configuration

1) Configure Filebeat file:



```
DVWA [Running] - Oracle VirtualBox
File Machine View Input Devices Help
1 2 3 4
root@kali: /etc/filebeat
Session Actions Edit View Help
zsh: corrupt history file /home/linux/.zsh_history
(linux@kali)~$ cd /etc/filebeat
(linux@kali)~/etc/filebeat$ ls
fields.yml  filebeat.reference.yml  filebeat.yml  modules.d
(linux@kali)~/etc/filebeat$ sudo su
[sudo] password for linux:
(root@kali)~/etc/filebeat$ nano filebeat.yml
```


2) Set filebeat inputs for access logs

```
# ===== Filebeat inputs =====  
  
filebeat.inputs:  
  
# Each - is an input. Most options can be set at the input level, so  
# you can use different inputs for various configurations.  
# Below are the input-specific configurations.  
  
# filestream is an input for collecting log messages from files.  
- type: filestream  
  
# Unique ID among all inputs, an ID is required.  
id: my-filestream-id  
  
# Change to true to enable this input configuration.  
enabled: true  
  
# Paths that should be crawled and fetched. Glob based paths.  
paths:  
  - /var/log/apache2/access.log  
  #- c:\programdata\elasticsearch\logs\  
  
# Exclude lines. A list of regular expressions to match. It drops the lines that are  
# matching any regular expression from the list.  
# Line filtering happens after the parsers pipeline. If you would like to filter lines  
# before parsers, use include_message parser.  
#exclude_lines: ['^DBG']
```

3) Set Elasticsearch Output and Logstash Output

```
# ===== Elasticsearch Output =====  
  
#output.elasticsearch:  
# Array of hosts to connect to.  
#hosts: ["localhost:9200"]  
  
# Performance preset - one of "balanced", "throughput", "scale",  
# "latency", or "custom".  
preset: balanced  
  
# Protocol - either `http` (default) or `https`.  
#protocol: "https"  
  
# Authentication credentials - either API key or username/password.  
#api_key: "id:api_key"  
#username: "elastic"  
#password: "changeme"  
  
# ===== Logstash Output =====  
  
output.logstash:  
# The Logstash hosts  
hosts: ["10.0.2.3:5044"]  
  
# Optional SSL. By default is off.  
# List of root certificates for HTTPS server verifications  
#ssl.certificate_authorities: ["/etc/pki/root/ca.pem"]  
  
# Certificate for SSL client authentication  
#ssl.certificate: "/etc/pki/client/cert.pem"  
  
# Client Certificate Key  
#ssl.key: "/etc/pki/client/cert.key"
```



```
File Machine View Input Devices Help
[Icons] 1 2 3 4 [Icons] 4:58 [G]
linux@kali -
Session Actions Edit View Help

(linux@kali)~$ sudo systemctl enable filebeat.service
Created symlink /etc/systemd/system/multi-user.target.wants/filebeat.service → /usr/lib/systemd/system/filebeat.service.

(linux@kali)~$ sudo systemctl start filebeat.service

(linux@kali)~$ sudo systemctl status filebeat.service
● filebeat.service - Filebeat sends log files to Logstash or directly to Elasticsearch.
   Loaded: loaded (/usr/lib/systemd/system/filebeat.service; enabled; preset: disabled)
   Active: active (running) since Tue 2025-11-25 04:57:19 EST; 1min 28s ago
 Invocation: 2c3dad1170d45af8279dd08523a194b0
    Docs: https://www.elastic.co/beats/filebeat
 Main PID: 80371 (filebeat)
   Tasks: 10 (limit: 6864)
  Memory: 168M (peak: 168.7M)
     CPU: 692ms
  CGroup: /system.slice/filebeat.service
          └─80371 /usr/share/filebeat/bin/filebeat --environment systemd -c /etc/filebeat/filebeat.yml --path.home /usr/share/filebeat --path.config /etc/filebeat --path.data /var/lib/f
```

```
Nov 25 04:57:20 kali filebeat[80371]: {"log.level":"info","@timestamp":"2025-11-25T04:57:20.050-0500","log.logger":"input.filestream","log.origin":{"function": "github.com/elastic/beats/v7/l",
Nov 25 04:57:20 kali filebeat[80371]: {"log.level":"info","@timestamp":"2025-11-25T04:57:20.051-0500","log.logger":"crawler","log.origin":{"function": "github.com/elastic/beats/v7/libbeat/c",
Nov 25 04:57:20 kali filebeat[80371]: {"log.level":"info","@timestamp":"2025-11-25T04:57:20.050-0500","log.logger":"input.filestream.metric_registry","log.origin":{"function": "github.com/e",
Nov 25 04:57:20 kali filebeat[80371]: {"log.level":"info","@timestamp":"2025-11-25T04:57:20.050-0500","log.logger":"crawler","log.origin":{"function": "github.com/elastic/beats/v7/libbeat/c",
Nov 25 04:57:20 kali filebeat[80371]: {"log.level":"info","@timestamp":"2025-11-25T04:57:20.052-0500","log.logger":"crawler","log.origin":{"function": "github.com/elastic/beats/v7/libbeat/c",
Nov 25 04:57:23 kali filebeat[80371]: {"log.level":"info","@timestamp":"2025-11-25T04:57:23.017-0500","log.logger":"processors.add_cloud_metadata","log.origin":{"function": "github.com/elas",
Nov 25 04:57:33 kali filebeat[80371]: {"log.level":"info","@timestamp":"2025-11-25T04:57:33.025-0500","log.logger":"publisher.pipeline_output","log.origin":{"function": "github.com/elastic",
Nov 25 04:57:33 kali filebeat[80371]: {"log.level":"info","@timestamp":"2025-11-25T04:57:33.043-0500","log.logger":"publisher.pipeline_output","log.origin":{"function": "github.com/elastic",
Nov 25 04:57:50 kali filebeat[80371]: {"log.level":"info","@timestamp":"2025-11-25T04:57:50.055-0500","log.logger":"monitoring","log.origin":{"function": "github.com/elastic/beats/v7/libbe",
Nov 25 04:58:20 kali filebeat[80371]: {"log.level":"info","@timestamp":"2025-11-25T04:58:20.046-0500","log.logger":"monitoring","log.origin":{"function": "github.com/elastic/beats/v7/libbe",
lines 1-2/22 (END)
```

The screenshot displays the Elastic Discover interface. At the top, the search bar contains the query `host.name:kali`. The time range is set to `Nov 25, 2025 @ 13:45:52.517 - Nov 25, 2025 @ 14:00:52.517` with an interval of `Auto - 30 seconds`. The visualization area shows a bar chart with a single green bar at 13:57. Below the chart, the 'Documents (84)' section is visible, showing a list of search results. The first document is a GET request to `http://127.0.0.1/dvwa/login.php` from a Mozilla browser on a Linux x86_64 system. The second document is a GET request to `http://127.0.0.1/dvwa/ HTTP/1.1` from a Gecko browser on a Linux x86_64 system. The third document is a GET request to `http://127.0.0.1/dvwa/login.php HTTP/1.1` from a Mozilla browser on a Linux x86_64 system. The fourth document is a GET request to `http://127.0.0.1/dvwa/ HTTP/1.1` from a Gecko browser on a Linux x86_64 system. The fifth document is a GET request to `http://127.0.0.1/dvwa/login.php HTTP/1.1` from a Mozilla browser on a Linux x86_64 system. The sixth document is a GET request to `http://127.0.0.1/dvwa/ HTTP/1.1` from a Gecko browser on a Linux x86_64 system. The seventh document is a GET request to `http://127.0.0.1/dvwa/login.php HTTP/1.1` from a Mozilla browser on a Linux x86_64 system. The eighth document is a GET request to `http://127.0.0.1/dvwa/ HTTP/1.1` from a Gecko browser on a Linux x86_64 system. The ninth document is a GET request to `http://127.0.0.1/dvwa/login.php HTTP/1.1` from a Mozilla browser on a Linux x86_64 system. The tenth document is a GET request to `http://127.0.0.1/dvwa/ HTTP/1.1` from a Gecko browser on a Linux x86_64 system.