

DVWA Installation

1) Download DVWA

Go to web server directory

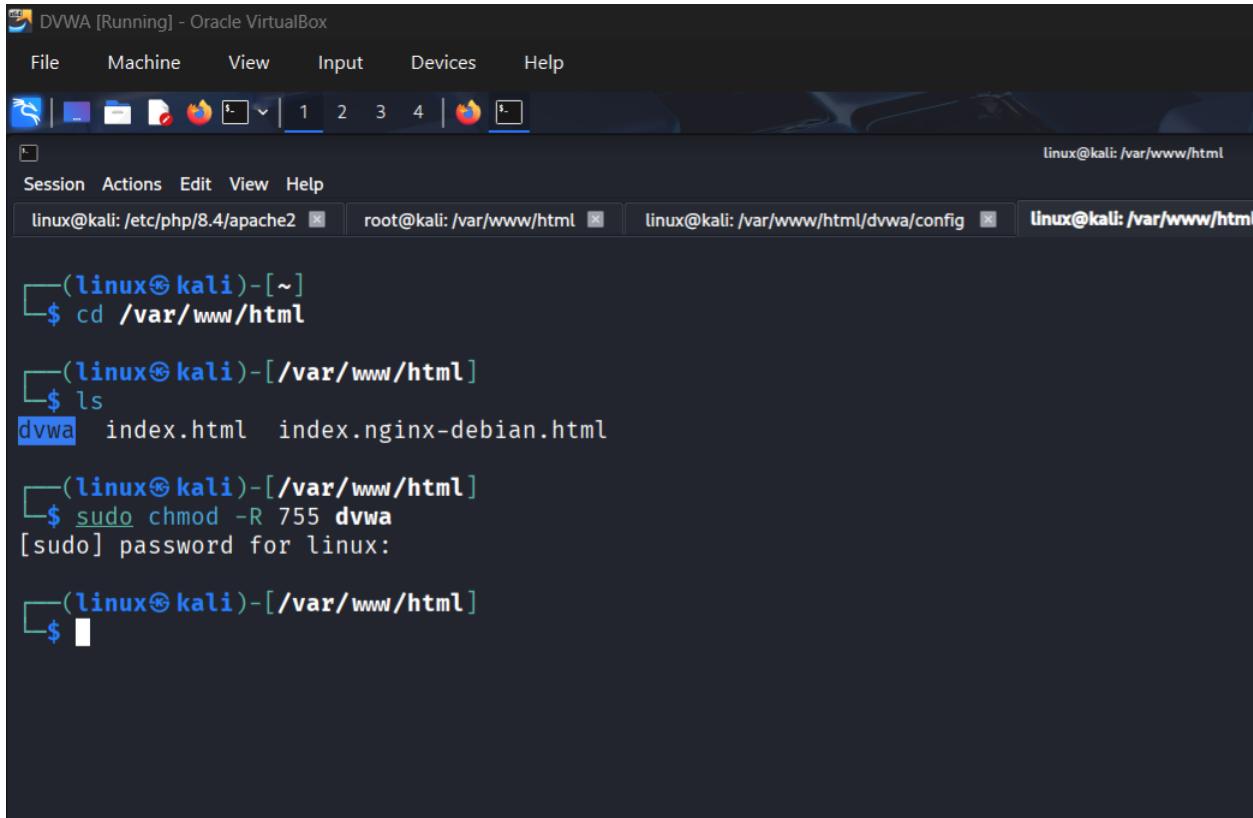
```
cd /var/www/html/
```

Download dvwa

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

2) Set Permissions

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



The screenshot shows a terminal window titled "DVWA [Running] - Oracle VirtualBox". The window has tabs at the top: "File", "Machine", "View", "Input", "Devices", and "Help". Below the tabs is a toolbar with icons for file operations. The terminal itself has several tabs open at the top:

- Session: linux@kali: /etc/php/8.4/apache2
- Actions: root@kali: /var/www/html
- Help: linux@kali: /var/www/html/dvwa/config
- linux@kali: /var/www/html

The main terminal area shows the following command history:

```
└──(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]
$
```

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
```

```
DVWA [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Session Actions Edit View Help
linux@kali: /etc/php/8.4/apache2  root@kali: /var/www/html  linux@kali: /var/www/html/dvwa/config  linux@kali: /var/www/html
$ ls
dvwa index.html index.nginx-debian.html

$ cd 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
config docs hackable logout.php README.es.md README.it.md README.pt.md robots.txt setup.php

$ cd config

$ ls
config.php config.inc.php.bak

$
```

- 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.
$_DWA = array();
$_DWA[ 'db_server' ] = getenv('DB_SERVER') ?: '127.0.0.1';
$_DWA[ 'db_database' ] = getenv('DB_DATABASE') ?: 'dvwa';
$_DWA[ 'db_user' ] = getenv('DB_USER') ?: 'admin';
$_DWA[ 'db_password' ] = getenv('DB_PASSWORD') ?: 'password';
$_DWA[ '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
$_DWA[ 'recaptcha_public_key' ] = getenv('RECAPTCHA_PUBLIC_KEY') ?: '';
$_DWA[ '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'.
$_DWA[ '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'.
$_DWA[ 'default_locale' ] = getenv('DEFAULT_LOCALE') ?: 'en';


```

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

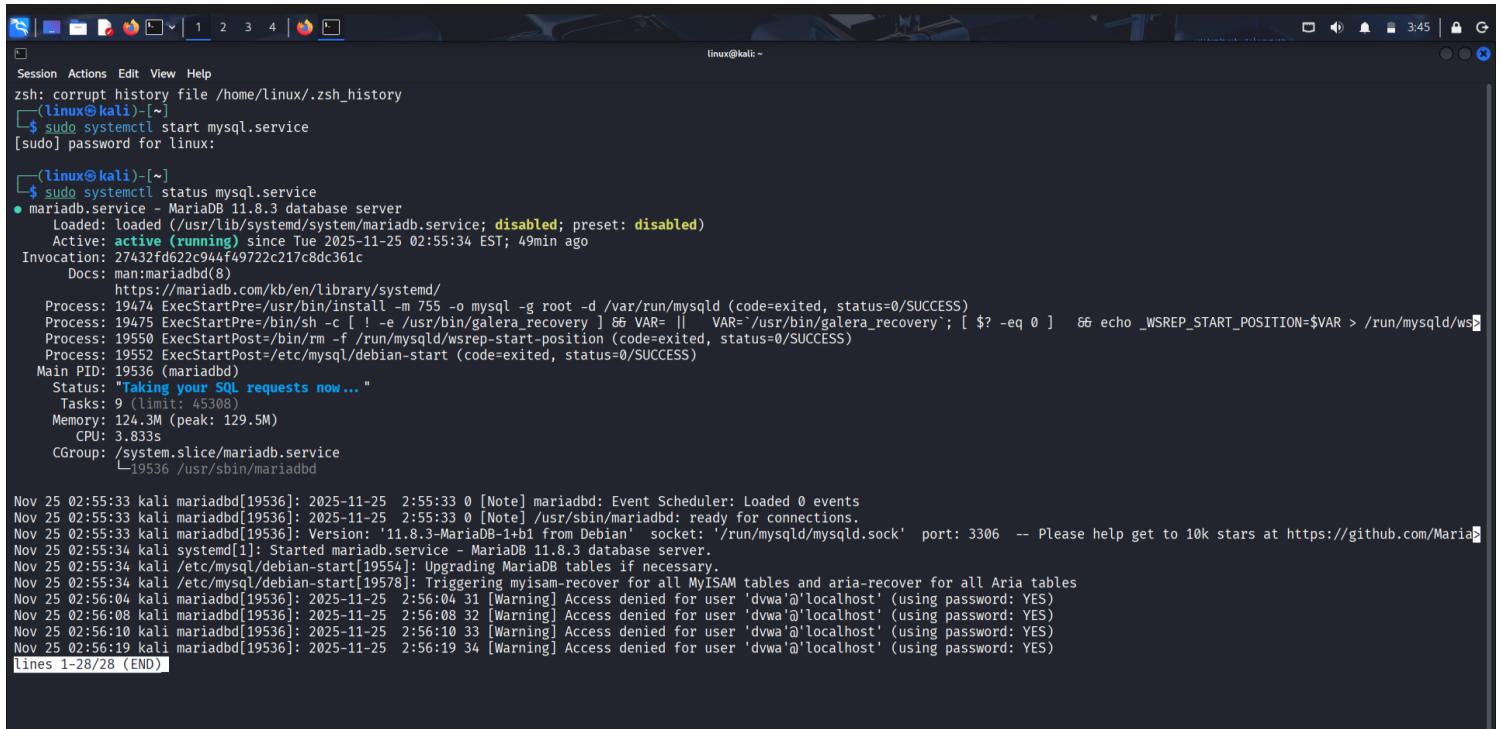
Set Up MySQL Database

1) Start MySQL

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

Check status of mysql

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



```
Session Actions Edit View Help  
zsh: corrupt history file /home/linux/.zsh_history  
[~] $ sudo systemctl start mysql.service  
[sudo] password for linux:  
[~] $ sudo systemctl status mysql.service  
● mariadb.service - MariaDB 11.8.3 database server  
  Loaded: loaded (/usr/lib/systemd/system/mariadb.service; disabled; preset: disabled)  
  Active: active (running) since Tue 2025-11-25 02:55:34 EST; 49min ago  
  Invocation: 27432fd622c944f49722c217c8dc361c  
    Docs: man:mariadb(8)  
          https://mariadb.com/kb/en/library/systemd/  
  Process: 19474 ExecStartPre=/usr/bin/install -m 755 -o mysql -g root -d /var/run/mysqld (code=exited, status=0/SUCCESS)  
  Process: 19475 ExecStartPre=/bin/sh -c [ ! -e /usr/bin/galera_recovery ] && VAR= /usr/bin/galera_recovery; [ $? -eq 0 ] && echo _WSREP_START_POSITION=$VAR > /run/mysqld/wsrep_start_pos.cnf  
  Process: 19550 ExecStartPost=/bin/rm -f /run/mysqld/wsrep_start-position (code=exited, status=0/SUCCESS)  
  Process: 19552 ExecStartPost=/etc/mysql/debian-start (code=exited, status=0/SUCCESS)  
 Main PID: 19536 (mariadb)  
   Status: "Taking your SQL requests now..."  
   Tasks: 9 (limit: 45308)  
     Memory: 124.3M (peak: 129.5M)  
       CPU: 3.833s  
      CGroup: /system.slice/mariadb.service  
              └─19536 /usr/sbin/mariadb  
  
Nov 25 02:55:33 kali mariadb[19536]: 2025-11-25 2:55:33 0 [Note] mariadb: Event Scheduler: Loaded 0 events  
Nov 25 02:55:33 kali mariadb[19536]: 2025-11-25 2:55:33 0 [Note] /usr/sbin/mariadb: ready for connections.  
Nov 25 02:55:33 kali mariadb[19536]: Version: '11.8.3-MariaDB-1+b1 from Debian' socket: '/run/mysqld/mysqld.sock' port: 3306 -- Please help get to 10k stars at https://github.com/MariaDB/mariadb  
Nov 25 02:55:34 kali systemd[1]: Started mariadb.service - MariaDB 11.8.3 database server.  
Nov 25 02:55:34 kali /etc/mysql/debian-start[19554]: Upgrading MariaDB tables if necessary.  
Nov 25 02:55:34 kali /etc/mysql/debian-start[19578]: Triggering myisam-recover for all MyISAM tables and aria-recover for all Aria tables  
Nov 25 02:56:04 kali mariadb[19536]: 2025-11-25 2:56:04 31 [Warning] Access denied for user 'dvwa'@'localhost' (using password: YES)  
Nov 25 02:56:08 kali mariadb[19536]: 2025-11-25 2:56:08 32 [Warning] Access denied for user 'dvwa'@'localhost' (using password: YES)  
Nov 25 02:56:10 kali mariadb[19536]: 2025-11-25 2:56:10 33 [Warning] Access denied for user 'dvwa'@'localhost' (using password: YES)  
Nov 25 02:56:19 kali mariadb[19536]: 2025-11-25 2:56:19 34 [Warning] Access denied for user 'dvwa'@'localhost' (using password: YES)  
lines 1-28/28 (END)
```

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:

```
(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.

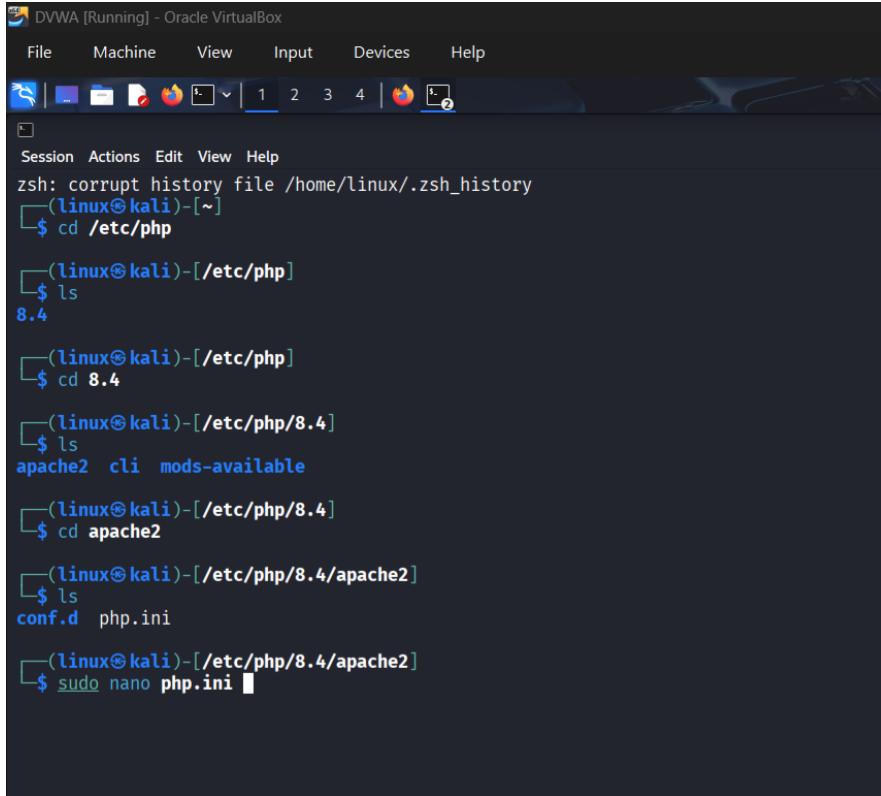
MariaDB [(none)]> SHOW DATABASES;
+-----+
| Database |
+-----+
| dvwa    |
| information_schema |
| mysql   |
| performance_schema |
| sys     |
+-----+
5 rows in set (0.001 sec)

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



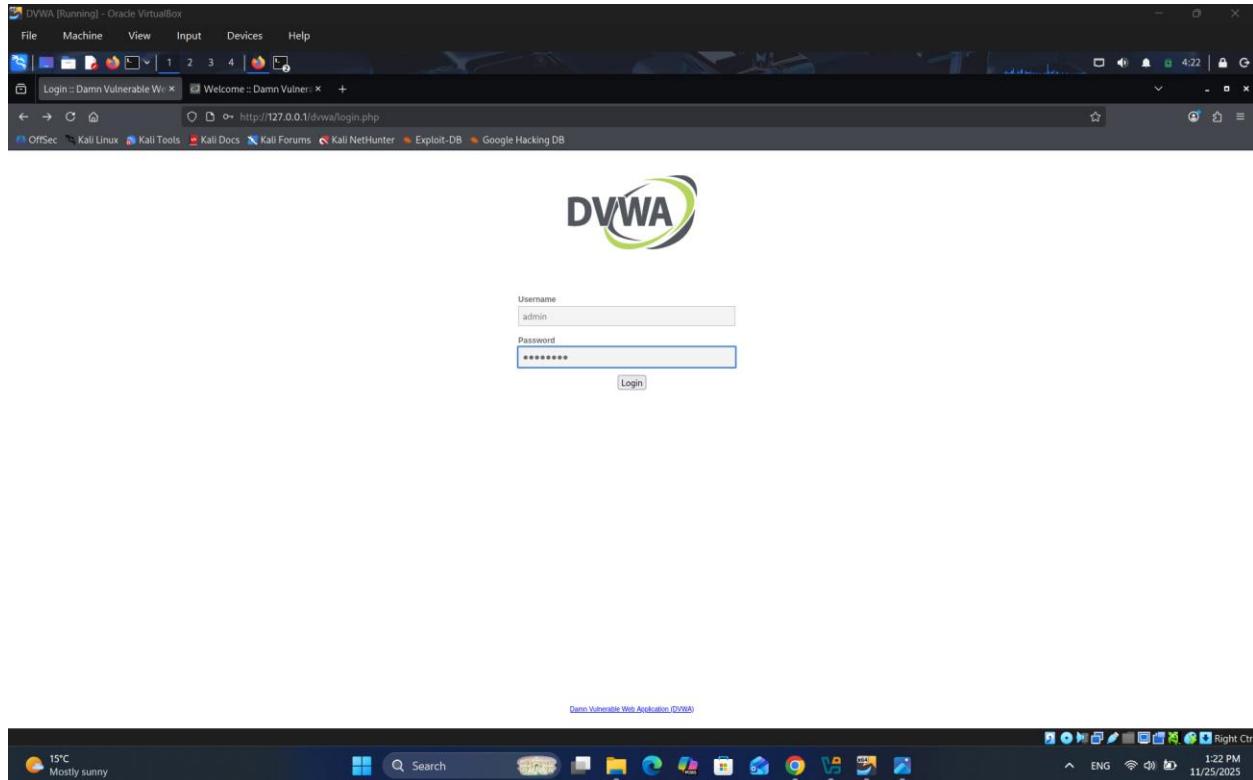
```
DVWA [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Session Actions Edit View Help
zsh: corrupt history file /home/linux/.zsh_history
└─(linux㉿kali)-[~]
└─$ cd /etc/php
└─(linux㉿kali)-[/etc/php]
└─$ ls
8.4
└─(linux㉿kali)-[/etc/php]
└─$ cd 8.4
└─(linux㉿kali)-[/etc/php/8.4]
└─$ 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



A screenshot of a web browser window titled "DVWA [Running] - Oracle VirtualBox". The address bar shows "http://127.0.0.1/dvwa/index.php". The page displays the DVWA logo at the top. On the left is a sidebar menu with various attack modules listed: Home, Instructions, Setup / Reset DB, Brute Force, Command Injection, CSRF, File Inclusion, File Upload, Insecure CAPTCHA, SQL Injection, SQL Injection (Blind), Weak Session IDs, XSS (DOM), XSS (Reflected), XSS (Stored), CSP Bypass, JavaScript Attacks, Authorisation Bypass, Open HTTP Redirect, Cryptography, API, DVWA Security, PHP Info, About, and Logout. The main content area is titled "Welcome to Damn Vulnerable Web Application!". It contains sections for "General Instructions", "WARNING!", "Disclaimer", and "More Training Resources". The "General Instructions" section includes a note about the application being documented and undocumented, and a warning about file uploads. The "WARNING!" section cautions against uploading files to hosting providers' public folders or Internet-facing servers. The "Disclaimer" section states that DVWA is not responsible for misuse. The "More Training Resources" section links to "Multiline" and "OWASP Vulnerable Web Applications Directory". The status bar at the bottom shows system information like weather (15°C, Mostly sunny), date (11/25/2025), and time (1:22 PM).

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

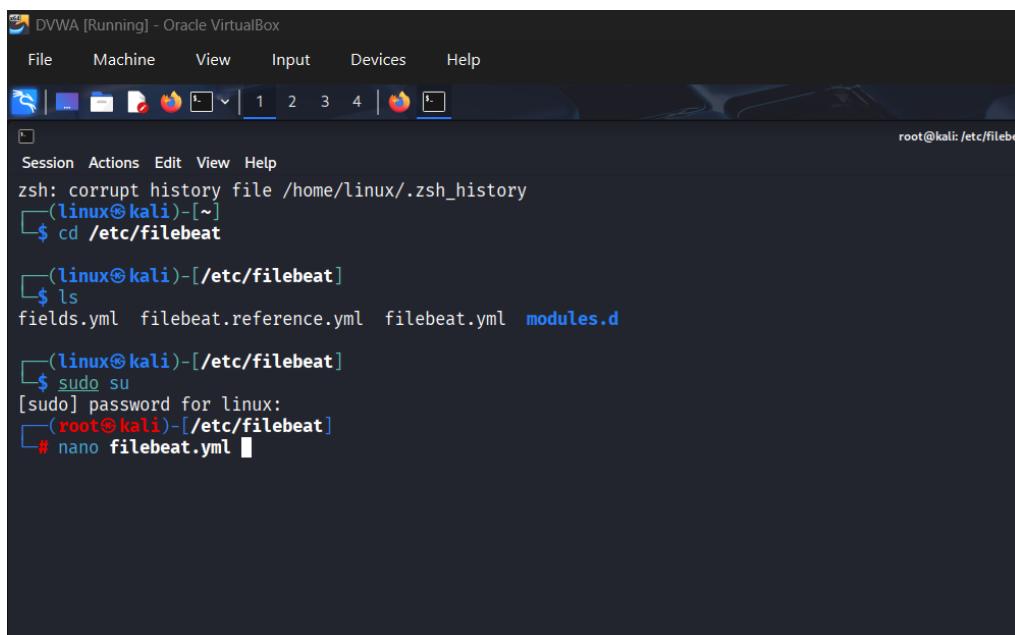
```
sudo apt-get update
```

4) Installing Filebeat Agent

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

Filebeat Configuration

1) Configure Filebeat file:



The screenshot shows a terminal window titled 'DVWA [Running] - Oracle VirtualBox'. The window has a dark theme with a blue header bar. The terminal itself has a dark background with light-colored text. At the top of the terminal, there is a navigation bar with icons for file, machine, view, input, devices, and help. Below the navigation bar, there is a toolbar with icons for session, actions, edit, view, and help. The status bar at the bottom right shows the root user on a Kali Linux system with the path '/etc/filebeat'. The terminal content shows the following session:

```
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.certificateAuthorities: ["/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"
```

4) Start and enable filebeat. Check filebeat status

```
File Machine View Input Devices Help
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: 3c3cd4117da45af8279dd523419ab0
      Docs: https://www.elastic.co/beats/filebeat
   Main PID: 80371 (filebeat)
     Tasks: 10 (limit: 6864)
    Memory: 168M (peak: 168.7M)
       CPU: 692ms
      Group: /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/...
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/libbeat/processors/add_cloud_metadata", "file": "cloud.go", "line": 100}, "log.type": "log", "source": "filebeat", "version": 8.19.7}
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/processors/add_cloud_metadata", "file": "cloud.go", "line": 100}, "log.type": "log", "source": "filebeat", "version": 8.19.7}
Nov 25 04:57:20 kali filebeat[80371]: {"log.level": "info", "@timestamp": "2025-11-25T04:57:20.052-0500", "log.logger": "input.filestream.metric_registry", "log.origin": {"function": "github.com/elastic/beats/v7/libbeat/processors/add_cloud_metadata", "file": "cloud.go", "line": 100}, "log.type": "log", "source": "filebeat", "version": 8.19.7}
Nov 25 04:57:20 kali filebeat[80371]: {"log.level": "info", "@timestamp": "2025-11-25T04:57:20.053-0500", "log.logger": "crawler", "log.origin": {"function": "github.com/elastic/beats/v7/libbeat/processors/add_cloud_metadata", "file": "cloud.go", "line": 100}, "log.type": "log", "source": "filebeat", "version": 8.19.7}
Nov 25 04:57:20 kali filebeat[80371]: {"log.level": "info", "@timestamp": "2025-11-25T04:57:20.054-0500", "log.logger": "crawler", "log.origin": {"function": "github.com/elastic/beats/v7/libbeat/processors/add_cloud_metadata", "file": "cloud.go", "line": 100}, "log.type": "log", "source": "filebeat", "version": 8.19.7}
Nov 25 04:57:20 kali filebeat[80371]: {"log.level": "info", "@timestamp": "2025-11-25T04:57:20.055-0500", "log.logger": "processors.add_cloud_metadata", "log.origin": {"function": "github.com/elastic/beats/v7/libbeat/processors/add_cloud_metadata", "file": "cloud.go", "line": 100}, "log.type": "log", "source": "filebeat", "version": 8.19.7}
Nov 25 04:57:20 kali filebeat[80371]: {"log.level": "info", "@timestamp": "2025-11-25T04:57:20.056-0500", "log.logger": "publisher_pipeline_output", "log.origin": {"function": "github.com/elastic/beats/v7/libbeat/processors/publisher_pipeline_output", "file": "publisher_pipeline.go", "line": 100}, "log.type": "log", "source": "filebeat", "version": 8.19.7}
Nov 25 04:57:20 kali filebeat[80371]: {"log.level": "info", "@timestamp": "2025-11-25T04:57:20.057-0500", "log.logger": "monitoring", "log.origin": {"function": "github.com/elastic/beats/v7/libbeat/processors/monitoring", "file": "monitoring.go", "line": 100}, "log.type": "log", "source": "filebeat", "version": 8.19.7}
Nov 25 04:57:20 kali filebeat[80371]: {"log.level": "info", "@timestamp": "2025-11-25T04:57:20.058-0500", "log.logger": "monitoring", "log.origin": {"function": "github.com/elastic/beats/v7/libbeat/processors/monitoring", "file": "monitoring.go", "line": 100}, "log.type": "log", "source": "filebeat", "version": 8.19.7}
(lines 1-22/22 (END))
```

RESULT

The screenshot shows the Elasticsearch Discover interface. The search bar contains 'host.name:kali'. The results table displays 84 documents from November 25, 2025, between 13:45:52.517 and 14:00:52.517. The results are filtered by host.ip and show various log entries. The interface includes a sidebar with popular fields like host.ip and host.name, and a bottom navigation bar with links to context-aware Discover, Try ES|QL, Inspect, Alerts, and Save.