Cyber Security Internship Report at FutureInterns

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Task 2: SECURITY ALERT MONITORING & INCIDENT RESPONSE

TABLE OF CONTENT

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SECURITY ALERT MONITORING & INCIDENT RESPONSE

1. Introduction

In modern cybersecurity operations, Security Information and Event Management (SIEM) tools play a critical role in proactively monitoring systems for suspicious activities and potential threats. This task focused on simulating a real-world Security Operations Center (SOC) scenario using Splunk, where log data was collected from a Kali Linux machine, uploaded into Splunk for analysis, and visualized on a custom dashboard. The final goal was to identify anomalies, classify incidents, and recommend appropriate responses.

2. Objective

- Monitor simulated system logs using Splunk (SIEM).
- Detect and analyze potential security alerts.
- Classify detected incidents based on severity.
- Draft an incident response plan with recommendations.

3. Tools Used

- OS: Kali Linux
- SIEM Tool: Splunk (Free Trial Version)
- Log Files: /var/log/ system logs (e.g., auth.log, cron, sudo logs)
- Dashboard Studio (Splunk) for visualizations

4.Implementation & Procedure

Step 1: Setup and Environment Preparation

Verified presence of logs using `ls /var/log`. Selected /var/log/auth.log and similar system-generated logs that contain authentication attempts, cron jobs, and sudo usage.

Step 2: Splunk Installation & Configuration

Installed Splunk on Kali using .tgz package. Started the Splunk service:

```
sudo ./splunk start --accept-license
```

Logged into Splunk via http://localhost:8000

Step 3: Uploading and Indexing Logs

Navigated to 'Add Data' in Splunk, uploaded log files, selected source type (`linux_secure`), reviewed and confirmed settings.

Step 4: Log Analysis via Search

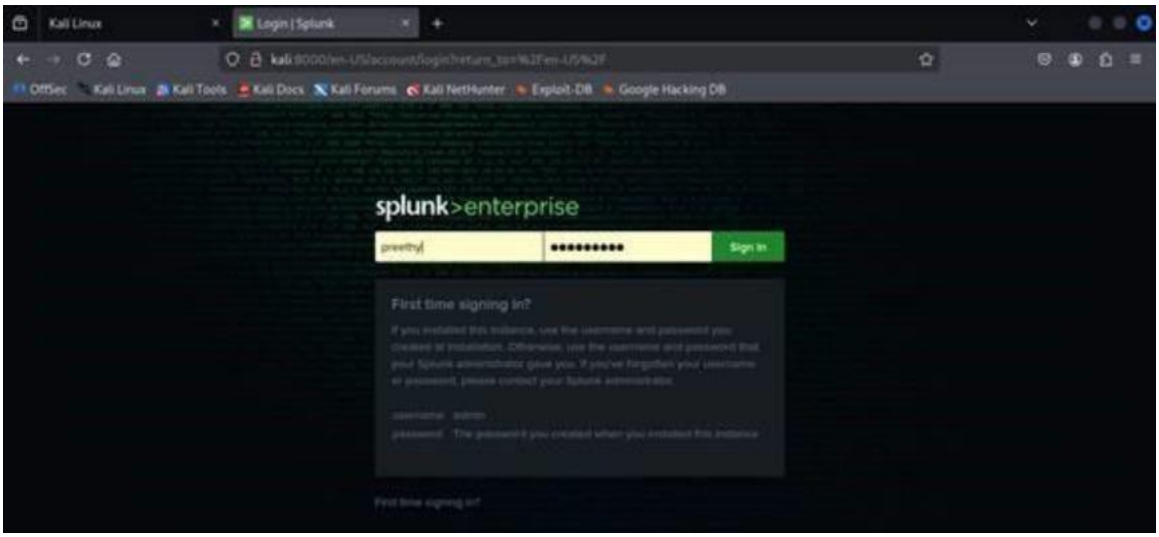
Used Splunk Search & Reporting app, ran queries to detect patterns in sudo, and root login events.

Step 5: Response & Recommendations

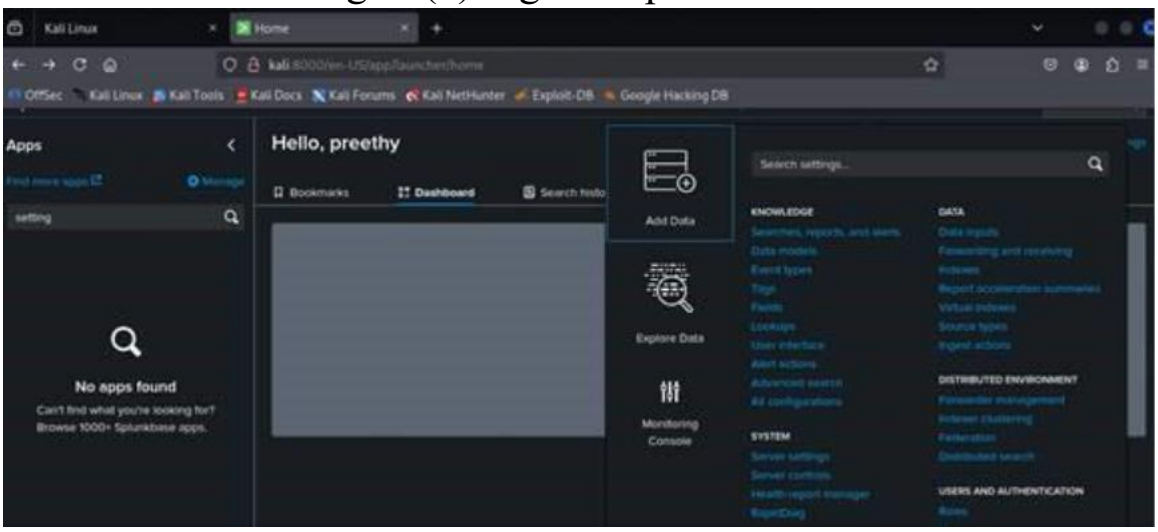
Suggested enabling alerts, limiting sudoers permissions, and regular auditing of CRON/root jobs.

5.Screenshort

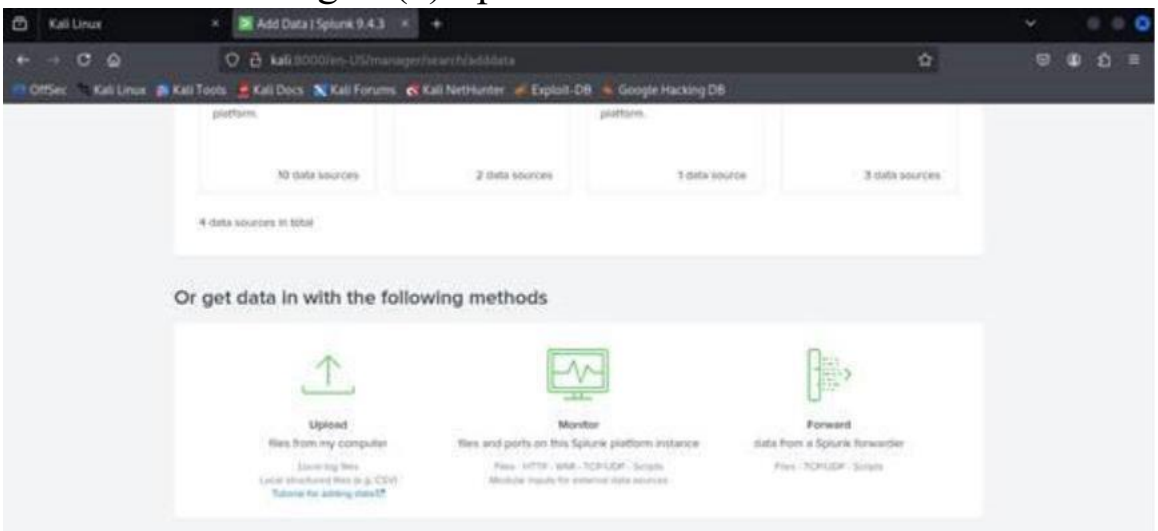
Figure(1) Started Splunk



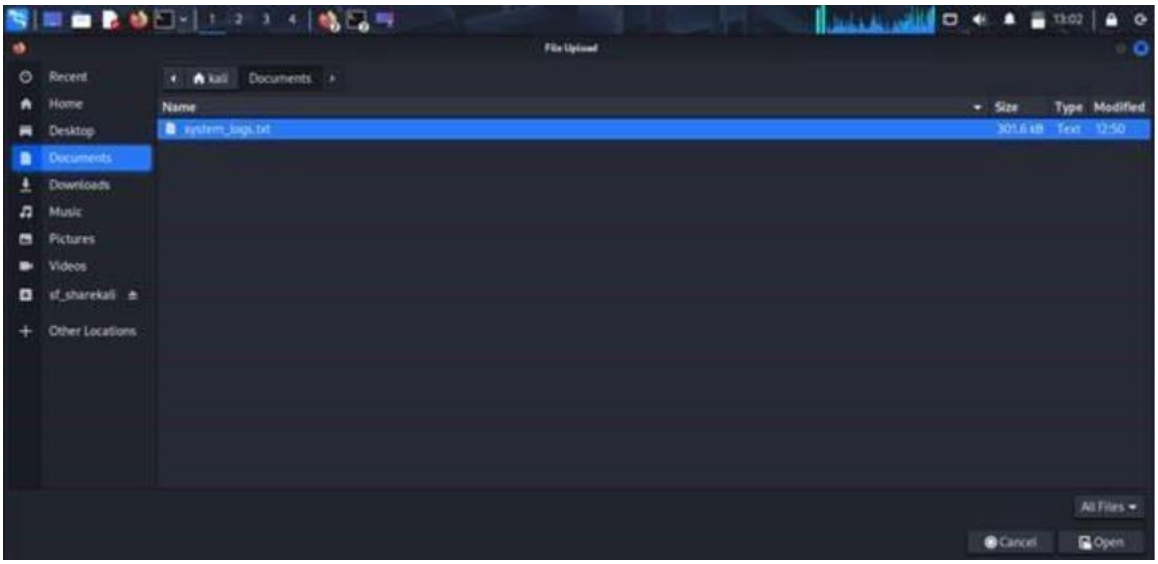
Figure(2)Login to splunk



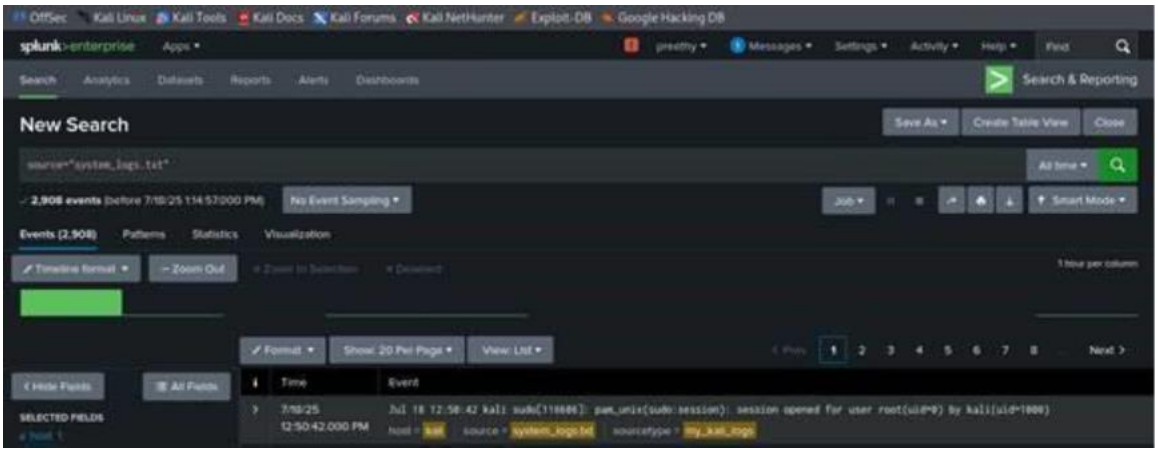
Figure(3) Splunk Dashboard



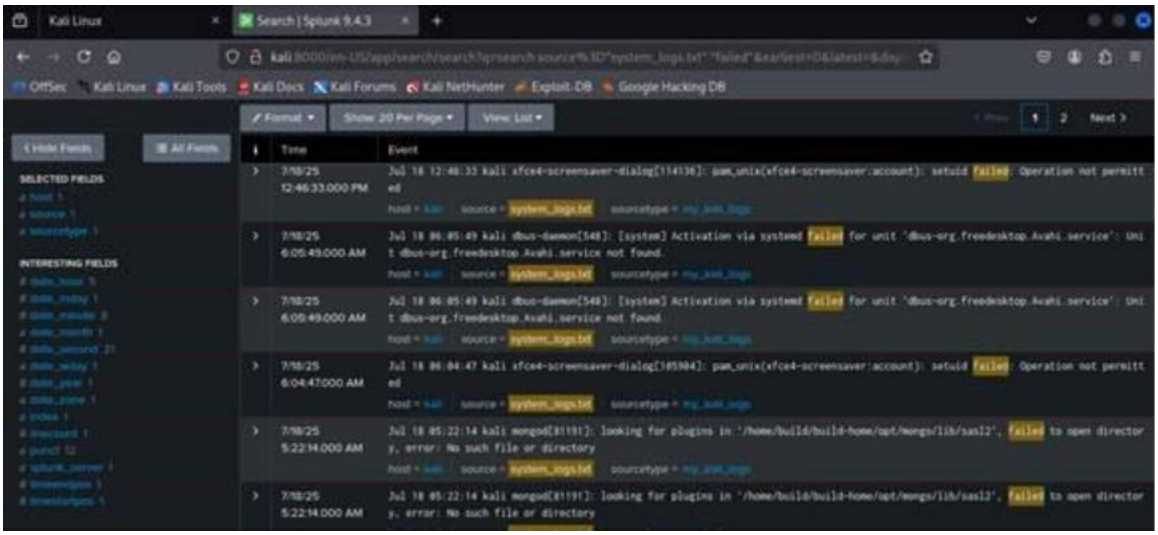
Figure(4)Uploading logs



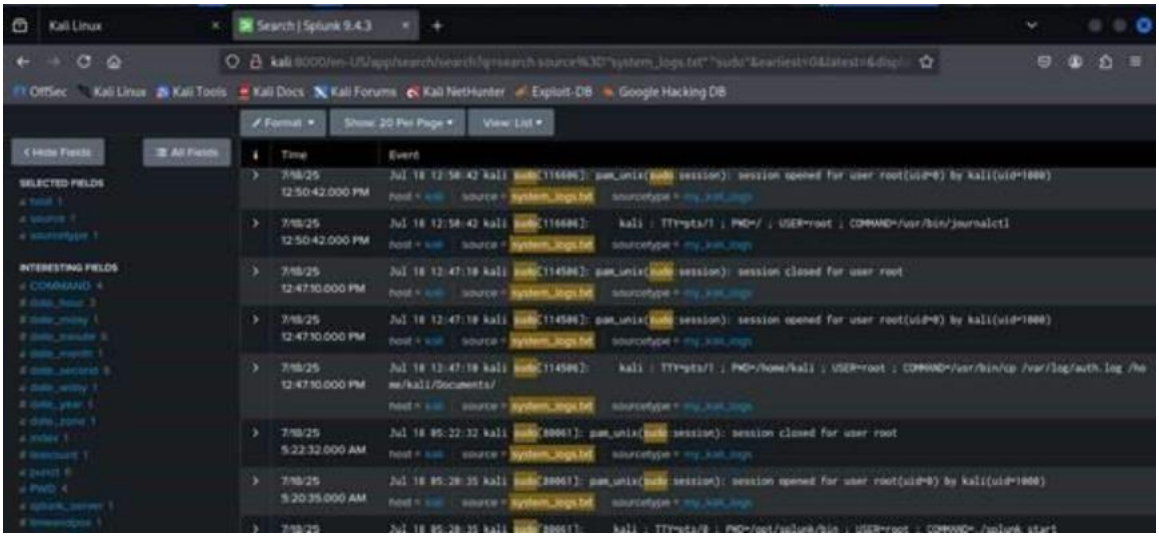
Figure(4.1)Upload the log from system



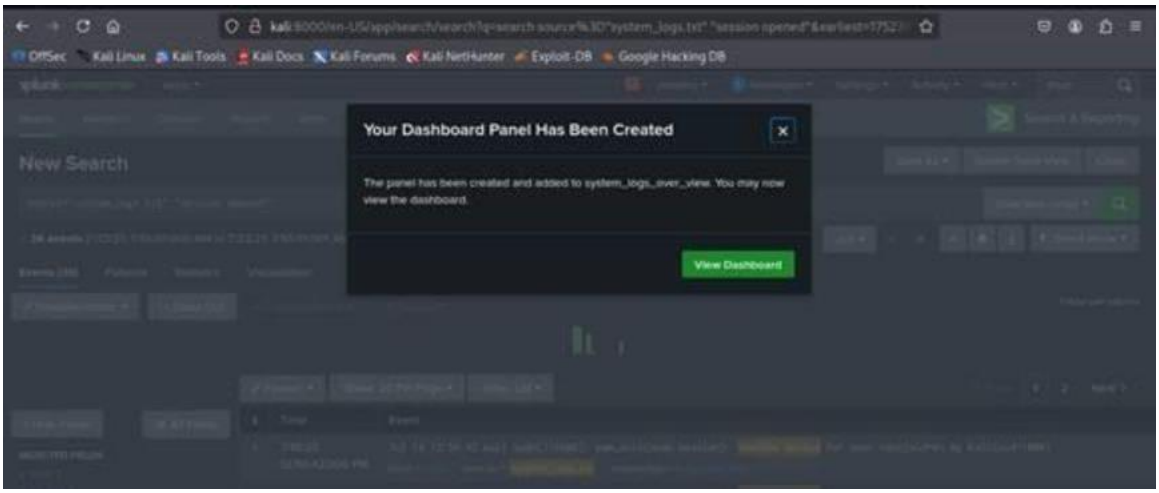
Figure(5)Analyse system_log.text



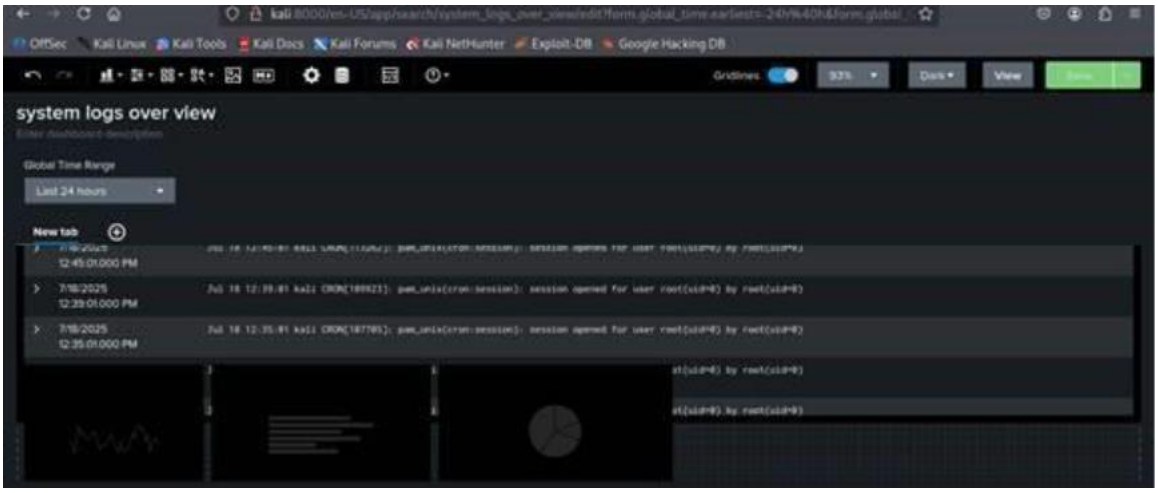
Figure(5.1)logs of failed



Figure(5.2).logs of sudo



Figure(5.3)Creating dashboard



Figure(5.4)graph of logs

6. Conclusion

This exercise provided hands-on experience in using a SIEM tool for incident detection and response. By uploading real log files from a Kali Linux system into Splunk, the process simulated a

SOC environment effectively. The visualizations enabled quick identification of suspicious activities, and the classification helped prioritize response strategies. This task enhanced my understanding of: - Log analysis workflows

- Incident triage
- Using dashboards for real-time SOC visibility