

# CSPM Lite(Cloud Security Posture Manager)

## Introduction

Cloud environments like **AWS**, **Azure**, and **GCP** are widely used for hosting applications and data. However, misconfigurations (such as open storage buckets, weak IAM roles, or exposed secrets) often lead to security breaches.

This project, **CSPM Lite**, is a simplified **Cloud Security Posture Manager** designed to scan cloud configurations, detect misconfigurations, and provide remediation recommendations. It also supports report generation for compliance purposes.

## Objectives

- Detecting common cloud misconfigurations.
- Provide **hardening recommendations** based on security best practices (CIS Benchmarks).
- Store scan results in a local database for tracking.
- Allow exporting scan results as **JSON**, **CSV**, and **PDF**.
- Provide a **simple web UI** for ease of use.

## Features

1. **Misconfiguration Detection**
  - Example checks:
    - Open storage buckets.
    - Weak IAM policies.
    - Exposed secrets.
2. **Recommendations**

- Suggestions to harden security configurations.
- 3. **Report Generation**
  - Export results in **JSON**, **CSV**, or **PDF** format.
- 4. **Database Storage**
  - Uses SQLite to save and retrieve scan history.
- 5. **Web Interface**
  - User-friendly interface built with FastAPI + Jinja2 templates.
  - Styled using a custom **CSS file**.

## System Design

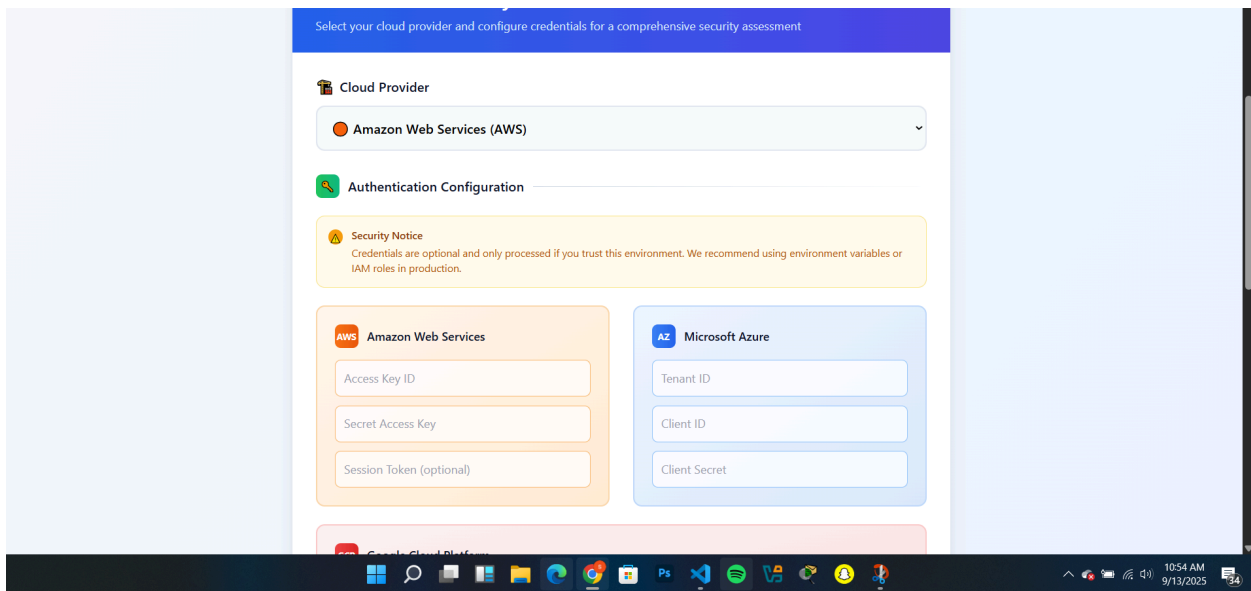
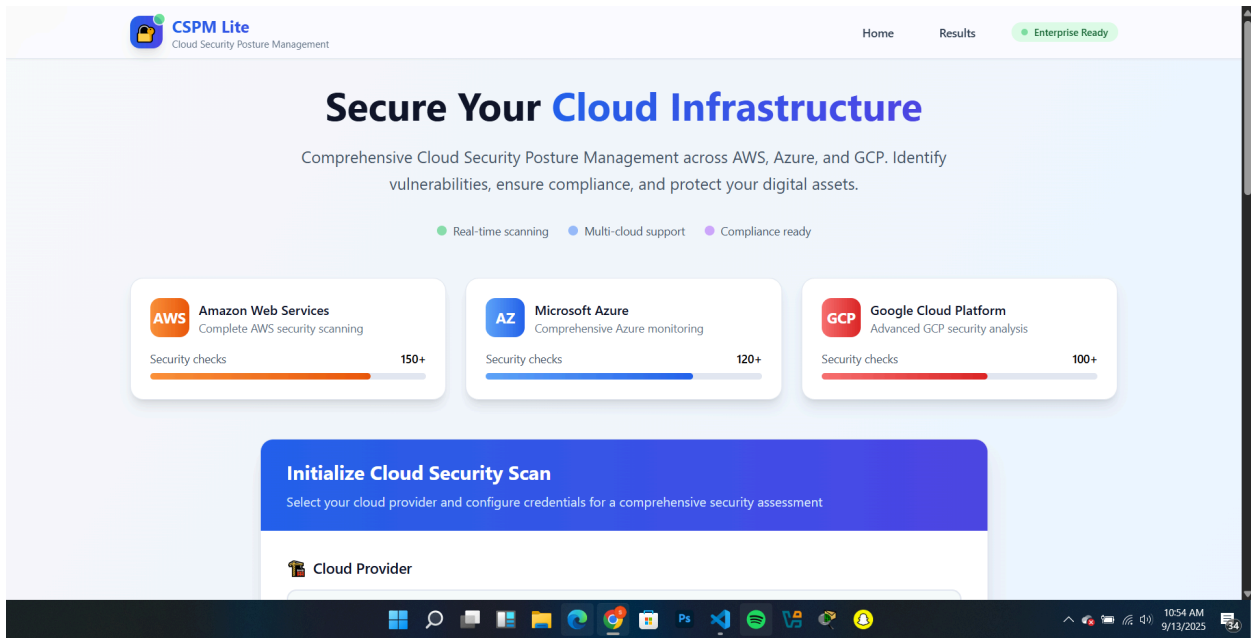
- **Backend:** Python (FastAPI)
- **Database:** SQLite (via SQLAlchemy)
- **Cloud SDKs:** boto3 (AWS), placeholders for Azure/GCP.
- **Frontend:** HTML + CSS (Jinja2 templates, static styling).
- **Reports:** JSON, CSV, PDF (using [reportlab](#)).

## Workflow

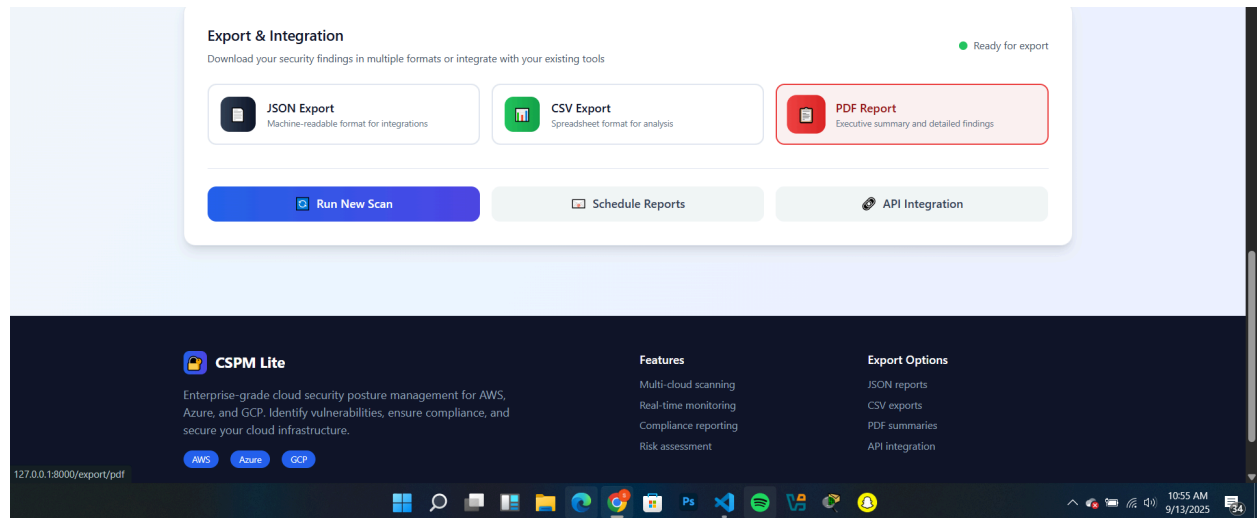
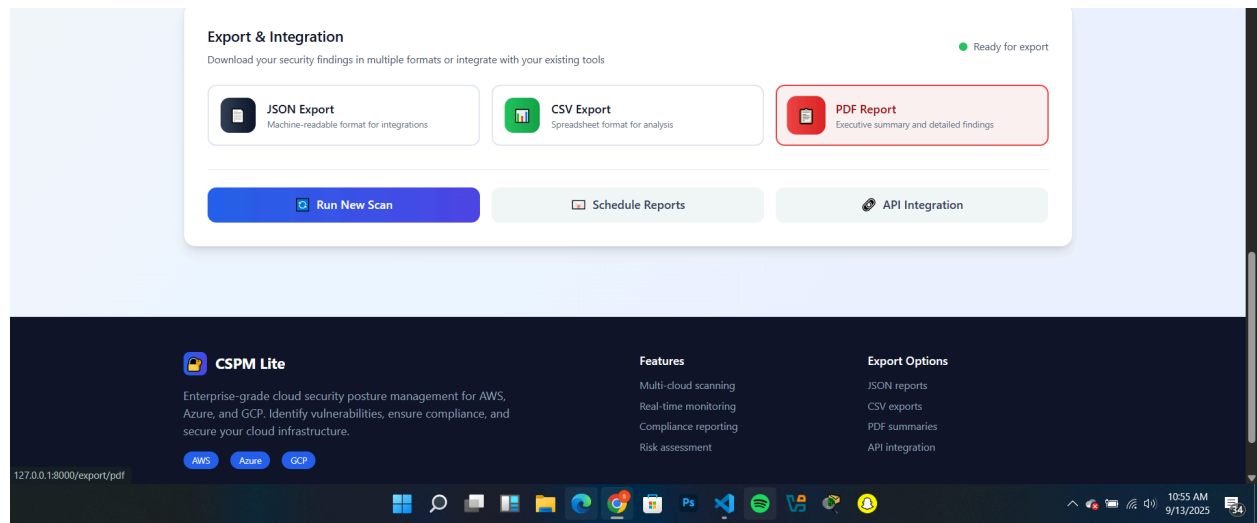
1. **User selects provider (AWS, Azure, GCP).**
2. **CSPM Lite runs scan** and identifies issues.
3. **Findings are saved** into SQLite database.
4. **Results are displayed** in a web UI.
5. **User can export reports** for compliance.

# Sample Output (UI Screenshot Placeholder)

## Home Page



## Result Page



## Conclusion

This project demonstrates the core functionality of a Cloud Security Posture Manager (CSPM). While simplified, it highlights how security misconfigurations can be detected, stored, and reported. It provides both a technical backend and a user-friendly UI, making it a practical foundation for cloud security monitoring.