Mahmoud Mohamed Said Ahmed

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Education

Bachelor in Information Technology
Cairo University - Faculty of Computers and Artificial Intelligence ⧉

Professional Experience

Cisco CyberOps Associate Trainee
National Telecommunication Institute ⧉

Incident Response
cybertalents
Reverse Engineering, Digital Forensics

Skills

Linux Administration

Penetration Testing

Version Control
Git / Git LFS / GitHub / GitLab

Programming & Scripting
C/C++/ java / python / Bash Scripting / PowerShell

containers
Docker / podman / Kubernetes

CI/CD & Pipelines
Jenkins / GitHub Actions / GitLab CI

Tools
AWS/Helm/Ansible/vagrant/vim/neovim/grafana

Data Serialization & DSL
JSON / YAML / Terraform

Projects

Exodia OS ⧉
Exodia OS is an Arch-based distribution designed for all cybersecurity fields. It also offers other special editions, such as the Home edition for daily use and the Acer Predator edition tailored for Acer Predator laptops, enabling control over CPU/GPU fans and keyboard RGB settings.

Ransomware ⧉
This is a basic implementation of ransomware using Python, consisting of two programs: a server and a client.
The server is used to control the client (ransomware) and is hosted on the attacker's machine.
The client, which functions as the ransomware, connects to the server and awaits commands to encrypt/decrypt files. The client is deployed on the victim's machine.

VProfile app deployment on local host ⧉
VProfile is a website written in Java and consists of multiple services, forming a Multi-Tier Web Application.
The services include: MySQL - Memcached - RabbitMQ - Tomcat - Nginx
Steps:
1. In this process, we will deploy the application on our local host using Vagrant, a tool that facilitates the creation of VMs using a Ruby script.
2. Create scripts to install all services. Each service should have its own script (e.g., a script to install and enable the MySQL service, another script for Nginx, another for Memcached, etc.).
3. Create a Vagrantfile and configure all VMs (five VMs for the five different services).

AWS Lift & Shift For VProfile ⧉
Here, we will deploy the VProfile app on AWS instead of locally, utilizing the following tech stack for services:

- EC2 Instances for MySQL, Tomcat, Memcache, RabbitMQ
- ELB in place of Nginx LB - AutoScaling for EC2 scaling
- S3/EFS Storage for Shared Storage - Route 53 for private DNS service

Steps:
1. Configure Security Group & Keypairs. 2. Create EC2 Instances for all services.
3. Build & Deploy the VProfile App.   4. Set up ELB & 53.
5. Add AutoScaling Group.

AWS PAAS & SAAS VProfile
Tech Stack (Services):

- Elastic Beanstalk for Tomcat (App Server), Nginx Load Balancer, EC2 AutoScaling
- S3/EFS Storage for Shared Storage - RDS Instance for Databases
- Amazon ElastiCache instead of Memcached - ActiveMQ instead of RabbitMQ
- Route 53 for private DNS service - CloudFront for content delivery network
Steps:
1. Configure Security Group & Keypairs. 2. Create RDS Instances.
3. Set up Amazon ElastiCache. 4. Set up Amazon Route 53.
5. Configure the Database. 6. Set up Elastic Beanstalk.
7. Build & Deploy the VProfile App. 8. Set up CloudFront.

VProfile - Jenkins(using CI/CD) ☑
Deploy VProfile on AWS using Jenkins CI/CD

Steps:
1. Fetch the code from GitHub.   2. Build the code using Maven.
3. Test the code using Maven Unit Test. 4. Analyze the code using Maven Checkstyle.
5. Analyze the code using SonarQube and upload it to the SonarQube Server, then wait for the Quality Gate.
6. Build Docker images.   7. Deploy images to the AWS ECR Registry.

VProfile - Kubernetes ☑
Deploying VProfile on K8s Cluster

Steps:
1. Install Kops to launch a Kubernetes cluster.
2. Containerize the VProfile app.
3. Create an EBS volume for the DB Pod to handle the database.
4. Label nodes with zone names.

VProfile-GitOps ☑
There are two Git repositories: Terraform Workflow and Application Workflow.
- It consists of two branches: Stage Branch and main Branch.
- If any changes are added to the Stage Branch, workflows will detect these changes.
- Then, Terraform will test these changes in AWS Cloud and validate them.
- If the code is validated successfully, the changes will be merged into the main Branch via a Pull Request.
- The Pull Request will then be validated and approved (approved by the owner of the main Branch).
- Finally, this code will be applied to the infrastructure level (applied to AWS Cloud).
- It fetches the code, builds it using Maven.
- Tests and analyzes the code using SonarCloud.
- Builds Docker images if validated successfully and uploads them to Amazon ECR (AWS Docker registry).
- Then, using Helm to fetch the Docker images to the EKS Cluster and run the application.

Collaborators at acer-predator-turbo-and-rgb-keyboard-linux-module ☑
It's a kernel module for Acer Predator laptops designed to control GPU/CPU fan speed, keyboard RGB, and TURBO mode.
We reverse-engineered the official Predator Series App and subsequently wrote a C-based kernel module for Linux.

Courses

- DevOps with Projects ☑
- HashiCorp - Terraform ☑
- GitHub Actions ☑
- Web App Security/Testing ☑

- 20RealTime DevOps Projects ☑
- Docker & Kubernetes ☑
- Helm Masterclass ☑

- PNPT ☑
- GitLab CI ☑
- Mobile App PenTesting ☑

Certificates

- Incident Response ☑
- DevOps ☑

- NTI CyberOps Associa ☑
- PNPT ☑

- CCNA ☑

- C Programming With linux ☑