Home Task

DevOps Engineer

Notes:

If something is not clear, you are allowed to make assumptions of your own – please write your assumption in the answer.

1. **Design a Simple CI/CD Pipeline**

   - Provide an overview of a basic CI/CD pipeline that aligns with the following principles:
     i. Code Stability
     ii. Process Performance
     iii. Security

   - Include a diagram to illustrate the pipeline's flow and components.

2. **Infrastructure as Code (IaC)**

   - The product team has introduced a business requirement for a new application with the following characteristics:

     o It must be highly scalable to handle varying workloads. Sometimes it will need to support thousands of concurrent users, while at other times, only a few dozen.

     o The application is already containerized and ready for deployment in the cloud.

     o Deployment also requires a separate, non-containerized database.

   - Describe how you would design the infrastructure for this requirement using IaC principles.

3. **AWS Design Task**

   - Create a VPC design to meet the following requirements:
     i. Internet access for public-facing resources.
     ii. A private address space for internal components.
     iii. PrivateLink access to AWS services such as S3, RDS, and SQS.

   - Provide a diagram of the VPC architecture.

4. **Scenario:**

You need to deploy a static website on AWS. The website will be hosted in an S3 bucket and distributed globally via CloudFront.

Task:

Use Terraform to:

1. Create an S3 bucket to store the website files.

2. Enable static website hosting on the S3 bucket.

3. Set up a CloudFront distribution to serve the website.

4. Ensure the bucket policy allows CloudFront to access the content securely.

Deliverables:

1. A single Terraform configuration file that:

    o Create the S3 bucket with proper configurations.

    o Configures CloudFront with the S3 bucket as its origin.

    o Output the CloudFront distribution domain name.

2. A short README file with instructions on:

    o How to deploy the infrastructure.

    o How to upload files to the S3 bucket.