Designing and Simulating AWS Cloud Architectures

LAB *Obligatorio

Lab Overview:

This lab guides participants through the theoretical design of a secure and scalable web application architecture using AWS services. It will explore the integration of core AWS services, IAM configurations, and strategies for optimizing resource management and cost.

Objectives:

By the end of this lab, participants will be able to:

1. Outline an AWS cloud architecture using core services like EC2, S3, and VPC.
2. Design IAM roles and policies that ensure security and compliance with the principle of least privilege.
3. Propose resource management strategies to optimize performance and cost.

Instructions:

Part 1: Designing Cloud Infrastructure

- **Task:**
    - Design a cloud infrastructure for a scalable web application.
    - Include components like compute instances, storage, and network configurations.
    - Use AWS EC2, S3, and VPC to build the basic architecture.

M Configuration

- **Task:**

- Define IAM roles and policies for different components of the architecture, such as developers, admins, and application servers.
- Ensure that each role adheres to the principle of least privilege.

Part 3: Resource Management Strategy

- **Task:**
  - Develop a strategy for managing resources that includes auto-scaling, load balancing, and cost optimization using AWS Auto Scaling, ELB, and AWS Budgets.

Part 4: Theoretical Implementation

Using the AWS services identified, outline the architecture for the web application. Describe how each component interacts with others, focusing on the flow of data and control between services. This description should detail the role of each service in the architecture, ensuring a clear understanding of their interactions and dependencies.

Part 5: Discussion and Evaluation

- **Discussion Points:**
  - Explain the choice of services and how they interact to provide a resilient and secure infrastructure.
  - Discuss how the designed IAM policies contribute to overall security.
  - Review the resource management strategy to ensure it meets the scalability and cost-efficiency needs.

This theoretical lab encourages a comprehensive approach to designing using AWS, leveraging the knowledge gained in the lessons to ensure a holistic understanding and practical approach to secure, scalable cloud architecture designs without the need for direct AWS access.

Designing and Simulating AWS Cloud Architectures

Submit a link to publicly accessible GDoc with your solution

URL

Send lab

ANTERIOR
Building Event-Driven and Asynchronous Applications in AWS

SIGUIENTE
Repaso Módulo 3