Módulo 1

Automation and Cost Management Project Based on TAGs in AWS

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Agenda

- Introduction
- Problem Definition and Objectives
- Personas
- Lean Inception
- AWS Technologies and Services
- Solution Architecture
- Initial Implementation and Challenges
- Conclusion and Next Steps

Introduction

- **Objective:** Develop a methodology for cost-tagging in AWS.
- **Goal:** Optimize cost control and increase operational efficiency.
- **Methodology:** Use APIs for data collection and create an implementation guide.

- **Thomson Reuters Overview:** Provides information and technology solutions.
- **Focus Areas:** DevOps for collaboration and FinOps for financial management

Problem Definition and Objectives

Core Challenges:

- Development Environment Setup
- Tag Definition for Infrastructure
- Report Development and Data Visualization

Objectives:

- Setup development and testing environment
- Define tagging standards
- Develop data collection API
- Create dashboards for visualization
- Train stakeholders

Personas

DevOps Engineer:

Focus on infrastructure setup and maintenance

Objectives:

•Efficient AWS service implementation and management.

•Optimize deployment, scaling, and system availability.

•Collaborate to align infrastructure with application needs.

Software Developer:

Develop and maintain AWS-based systems

Objectives:

•Develop and maintain portals, web services, and messaging systems on AWS.

•Ensure integration and functionality of system components with AWS.

•Collaborate with DevOps to optimize deployment and performance.

FinOps Specialist:

Monitor and analyze AWS service costs

Objectives:

•Monitor and analyze AWS costs for effective budget management.

•Implement tagging for accurate cost tracking and allocation.

•Identify cost-saving opportunities and resource optimization strategies.

Lean Inception

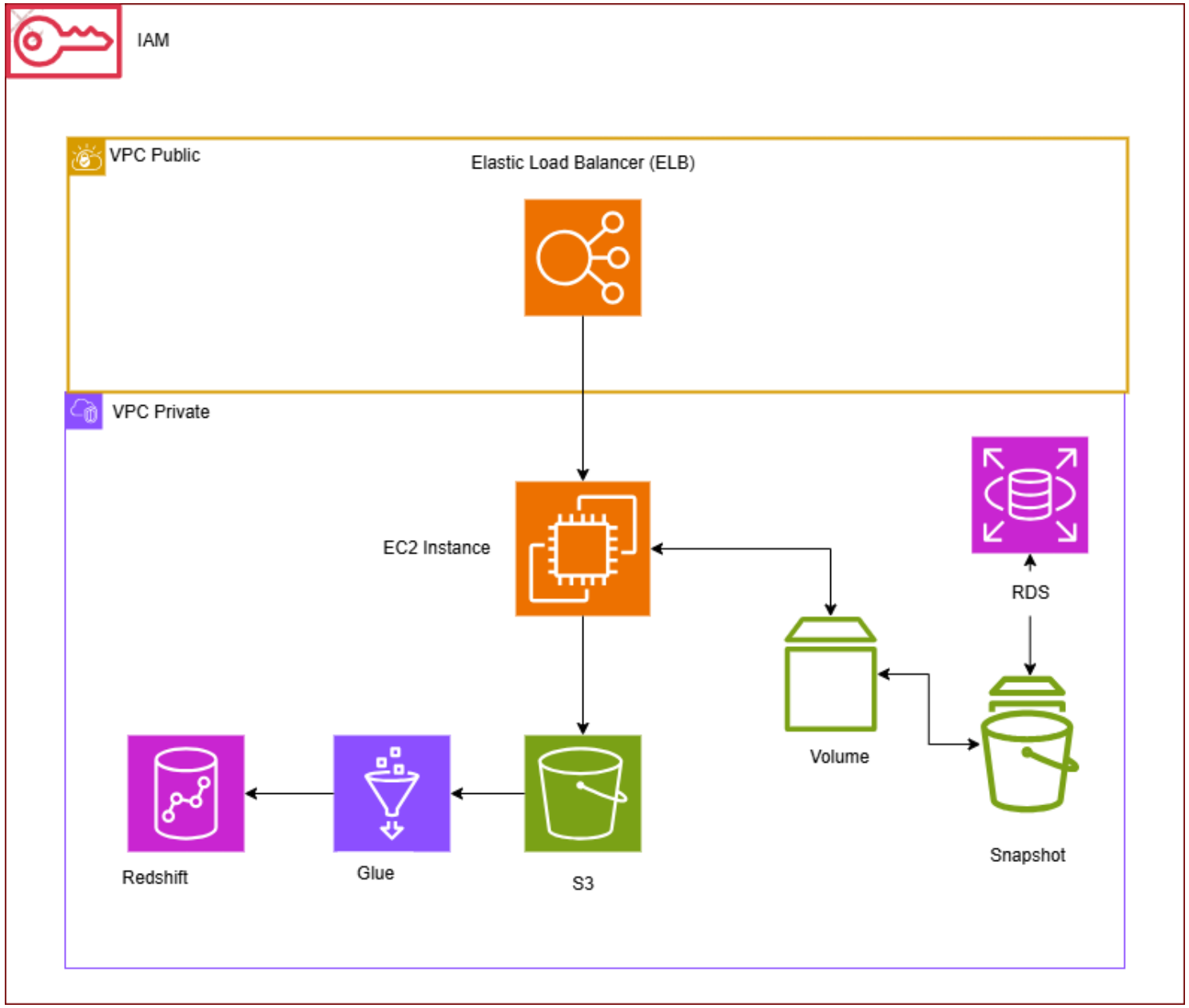
- **Is**: A cost tagging system on AWS designed to implement an effective cost-tagging methodology applicable to all billed services.
- **Is Not**: Not a comprehensive BI solution or an independent security system.
- **Does**: Allows tag configuration and API integration for cost management.
- **Does Not Do**: Does not support machine learning algorithm development or automated data quality verification.

AWS Technologies and Services

- **Research and Selection Criteria:**
  - Prioritize AWS services already used by the company to ensure integration into the current ecosystem.
  - Use common AWS cloud services to generate costs to be monitored. Since the logic can be applied to other types of services, it makes the product of this project scalable.
  - Focus on services that align with scalability, security, and data confidentiality requirements.
- **Selected Tools and Services:**
  - **Compute:** EC2 instances for virtual machines, Elastic Load Balancer for traffic distribution.
  - **Storage:** EBS volumes for persistent storage, S3 for scalable object storage.
  - **Database:** RDS for relational databases, Redshift for data warehousing.
  - **Data Processing:** Glue for ETL tasks, integrating data from various sources.
  - **Support Services:** IAM for access control, CloudFormation for infrastructure automation.

Solution Architecture

- **Architecture Overview:**
  - Network Layer: VPC
  - Compute Layer: EC2, ELB
  - Storage Layer: EBS, S3
  - Database Layer: RDS, Redshift
  - Data Processing: Glue



Initial Implementation and Challenges

Development Environment Setup:

- Establish a dedicated AWS Lab environment for experimentation and learning.
- Use AWS CloudFormation to automate resource creation and configuration.

Challenges:

- $50 budget cap necessitates careful cost management.
- Tight control; participants can't create security groups.
- Restricted use of AWS Lambda functions and Amazon EventBridge rules.

Conclusion and Next Steps

Achievements:

- Established a foundation for AWS cost management through effective tagging practices.
- Utilizes stacks for managing AWS resources as single units, simplifying resource management.
- CloudFormation template automates deployment of resources like EC2, S3, and Redshift.

Next Steps:

- Refine tagging practices to enhance cost control and operational efficiency.
- Implement practical guide for stakeholders to ensure successful adoption of new practices.
- Explore automation strategies for service management to optimize resource usage.

Thank you