

## Case Study: Automating FinOps and Governance with Before You Solutions

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### Customer Overview

A mid-sized SaaS company in the marketing analytics domain was operating entirely on AWS infrastructure with multiple development, staging, and production environments. The organization relied heavily on Amazon EC2 for compute workloads, Amazon RDS for databases, and S3 for data storage.

As the engineering team grew, cloud costs increased rapidly. Despite using cost explorer dashboards, the company had no automated system to detect idle resources or enforce tagging standards.

Their monthly AWS bill consistently exceeded **\$15,000**, and manual review of usage reports was inefficient and inconsistent.

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### Business Challenge

The customer faced several key operational challenges that directly impacted cost and governance:

#### 1. Idle and Underutilized Resources:

Dozens of EC2 and RDS instances ran at <10% CPU utilization but were never stopped.

Several unattached EBS volumes and outdated snapshots were consuming storage costs.

#### 2. Tagging and Ownership Visibility:

Over 40% of resources lacked mandatory tags such as *Owner* and *Environment*, making cost allocation impossible across teams.

#### 3. Manual Cost Audits:

The DevOps team manually pulled cost reports every week, which took 2–3 hours daily and frequently missed anomalies.

#### 4. Lack of Alerts and Governance Policies:

There was no automation to alert on anomalies, enforce tag compliance, or generate audit-ready cost reports for internal reviews.

The company needed a lightweight, secure, and fully serverless automation framework to monitor, govern, and optimize AWS resources on a daily basis — **without introducing new infrastructure or SaaS dependencies**.

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### Solution

Before You Solutions deployed its **AWS Cloud Cost Optimization & Auto-Governance System**, a **serverless FinOps automation solution** designed to continuously monitor, analyze, and report AWS resource utilization.

The deployment used **Terraform for IaC**, enabling complete infrastructure setup in less than 15 minutes.

The system runs entirely on **AWS-native services**, eliminating the need for external APIs or third-party SaaS tools.

## Architecture Overview

1. **Amazon EventBridge** triggers the system daily at a predefined schedule.
  2. **AWS Lambda** (Python + Boto3) scans for idle EC2 instances, underutilized RDS clusters, unattached EBS volumes, and old snapshots.
  3. **A Tag Enforcement Engine** checks resources against required tag policies (Owner, Project, Environment).
  4. Results are compiled into structured JSON and uploaded to **Amazon S3** for audit purposes.
  5. A **Slack Integration** posts real-time alerts with cost-saving recommendations and estimated monthly savings.
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## AWS Services Used

AWS Lambda • Amazon EventBridge • Amazon CloudWatch • Amazon S3 • AWS Identity and Access Management (IAM) • AWS Budgets • AWS Cost Explorer API • AWS SNS

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## Implementation Details

- **IaC Deployment:** Used Terraform modules (lambda.tf, iam.tf, eventbridge.tf) for rapid and repeatable deployments.
- **Security:** IAM roles were configured with least-privilege permissions.
- **Tag Policy Enforcement:** JSON policies defined required tags, automatically identifying non-compliant resources.
- **Notifications:** Slack webhook delivered real-time savings summaries and compliance status.
- **Reports:** All daily scans stored in S3 with timestamped reports for historical cost tracking.

The system operated at a **monthly AWS cost of under \$1**, including Lambda, CloudWatch, and S3 storage costs.

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## Results and Impact

Within three weeks of implementation:

- **Cost Savings:**  
Idle EC2 and RDS instances were stopped automatically or flagged for manual termination.  
The company achieved a **38% reduction in monthly AWS spend** (~\$5,700 savings).
  - **Tag Compliance:**  
Resource tagging accuracy improved from **62% to 98%**, enabling accurate chargebacks and budgeting across departments.
  - **Operational Efficiency:**  
Manual review time dropped from 3 hours per day to less than 15 minutes per week.  
The DevOps team could now focus on deployment and reliability tasks instead of manual audits.
  - **Governance and Audit Readiness:**  
S3 reports provided a complete audit trail of cost-saving actions, helping the finance and compliance teams validate spend reduction metrics easily.
  - **Rapid ROI:**  
The system paid for itself within the first month of operation, delivering measurable financial and operational outcomes.
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## Business Impact Summary

Metric	Before Implementation	After Implementation
Idle Resource Detection	Manual review (weekly)	Automated daily scan
Tag Compliance	62%	98%
Monthly AWS Cost	\$15,000	\$9,300
Manual Review Time	3 hrs/day	15 mins/week
Deployment Time	—	15 minutes (Terraform)

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## Security & Compliance

- IAM roles configured with **least-privilege access**.
  - .gitignore and pre-commit checks prevent secret leakage.
  - Environment variables used for credentials, avoiding hardcoded keys.
  - Compliant with **AWS Well-Architected Framework** (Cost Optimization & Operational Excellence pillars).
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## Conclusion

The AWS Cloud Cost Optimization & Auto-Governance System delivered immediate and measurable ROI while providing a sustainable FinOps governance layer for the customer.

With minimal setup and cost, the customer achieved real-time cost visibility, automated governance, and consistent compliance across their AWS environment.

This success demonstrates how small and mid-size organizations can adopt FinOps principles without expensive SaaS subscriptions — using open, AWS-native automation built and managed by Before You Solutions.

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## About Before You Solutions

**Before You Solutions (BYS)** is an AWS Partner specializing in DevOps, Cloud Automation, and FinOps solutions for startups and SMBs.

The company builds open, scalable frameworks that empower businesses to optimize cost, strengthen security, and accelerate innovation on AWS.

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