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Dynamically optimizing AWS cloud costs with an AI agent

Cloud platform consultant | Technology, Media & Telecommunications

Business opportunity

A cloud platform consultant provides architecture, environment setup and operations as a service for large enterprise customers on Amazon Web Services (AWS). Through its online application, the company receives a customer's requirements and follows AWS best practices to automatically emulate a customized landing zone for the customer's target environment. When the customer's IT team has verified the emulation, the cloud platform consultant provides everything needed to deploy in the customer's AWS account. The consultant's platform actively provides AI-driven post-deployment feedback for predictive autoscaling, root cause analysis, automated compliance checks, and cost-related recommendations.

As a startup, the consultant must also efficiently govern their own use of AWS resources. Delivering on customer costs requirements directly impacts the value the consultant's service and its reputation.

Technical challenge

As part of their growth plan, the cloud platform consultant needed to carefully govern their own use of the AWS resources so that they operate their scoping and configuration application both with high performance for their customers and efficiency for their own business. Both are essential to growing the company's reputation and potential profit margin.

The company faced a common challenge: cost-related data in AWS is spread across multiple tools, and identifying resource usage anomalies requires manual work. Those two things can make optimizing operations reactive, time-consuming, labor intensive.

The cloud platform consultant needed dynamic forecasting and governance to stay on top of cloud costs as they worked with new customers. But as a startup, the company could not justify hiring dedicated FinOps engineers.

Our solution

Together, the cloud platform consultant and Kyndryl created and trained an AI agent to provide FinOps governance of its AWS environment near-autonomously. The agent is intelligent enough to answer and act on prompts like: “Given the existing operations we are running for customers this week, how can we reduce our cloud spending by 20%?”

The team trained the agent on detailed information about the consultant’s AWS operations. Based on its development and training, the agent can:

- Understand questions in natural language and maintain context across conversations
- Automatically use AWS Cost Explorer, AWS Budgets, and AWS Cloud Watch as need through their APIs
- Operate AWS Lambda functions related to budget status, cost anomaly detection, forecasting, service breakdown, and current spending
- Analyze patterns across services and regions
- Deliver insights and recommendations based on proactively detected cost anomalies and according to optimization guidelines.

The power of partnership

The cloud platform consultant’s FinOps agent uses these AWS services in providing analysis and recommendations:

- Amazon Bedrock Agent Core for natural language orchestration
- AWS Lambda to execute key functions
- AWS Dynamo DB to persist context across sessions
- AWS Web Application Firewall (AWS) to secure API calls and AWS Key Management Service to encrypt data at rest
- Amazon Cost Explorer to establish and enforce cost thresholds
- AWS CloudWatch to provide observability and performance details
- AWS Budget to provides account spending status and manage upgrade approvals

What progress looks like

The cloud platform consultant transformed slow manual work to control cloud costs into semi-autonomous FinOps governance. Using the AI agent, the company receives proactive, cost-efficient recommendations in real time, reducing the need for dedicated FinOps experts and the lag in increasing efficiencies.

In the first weeks of using the AI agent, the company has reduced the cost of its customer-related cloud operations by 15–20%.

Meet the team

Ido Vapner
CTO and Head of Alliances, Kyndryl

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