Success Story

15% cloud cost reduction for a Germany based online marketplace using Terraform & AWS Lambda

Client:
Germany based online marketplace

Industry:
Software & Technology

Country:
Germany

Our Role:
Product Engineering

About the Client

The client is a leading outsourcing firm in Germany that offers call center matching and management services through its AI-based digital platform. With a diverse portfolio of services, the outsourcing company helps businesses identify and connect with more than 400 call centers for their need of inbound, outbound, back office, and social media support.

Key Facts

15% reduction in cloud bills	**25%** faster release frequency	**35%** reduction in CPU utilization

The Situation

The outsourcing firm had an in-house team for developing and maintaining their call center matching & management platform. The team continuously improves the web application for better performance and connects businesses with a relevant call center provider. However, as the system became complex and scalable, there was a requirement to make the architecture manageable and optimize resources on the cloud. Their team was confronting two major challenges:

Firstly, for testing the platform, the development and QA team simulated the testing environment on the AWS cloud using dedicated EC2 instances. For the varying test scenarios, the team would create and launch multiple EC2 instances but won't switch them off once the purpose is fulfilled. These idle instances were adding unnecessary cloud costs, creating the need to automate cloud optimization.

Secondly, the call center matching platform was built on monolithic architecture. For the scalable system, the application was required to be migrated to container based microservices architecture. To overcome these challenges, the outsourcing firm chose Daffodil Software as its technology partner for later's proven expertise in managing cloud services and modernizing applications at scale. Team Daffodil, was chosen to facilitate the following requirements:

- Automate availability of EC2 test environments, i.e. an instance should only be available for the time required to test the solution.

- Create a container-based, regeneratable test environment that is capable of handling concurrent requests by multiple testers at once.

The Solution

Automating Infrastructure Provisioning

For the requirement to automate infrastructure on the cloud, a Terraform file was generated. This file enables creating of the required resources such as EC2, IAM policy, IAM role, Cloudwatch alarms, and lambda functions. When any tester requires an EC2 instance, they would build a Jenkins job which then creates terraform resources and launches all docker containers onto the EC2 instances.

Based on the inactivity which contains factors such as Nginx logs exported to the Cloudwatch log group filtered for status codes, CPU utilization, memory utilization the lambda would delete the whole instance along with its related resources. This automation ensures that cloud resources are not running idle, and are created or deleted as and when their purpose is fulfilled.

Migrating Monolithic Architecture to Docker

Team Daffodil containerized the existing monolithic application using Docker. It runs in an orchestrated environment through Kubernetes and is managed by Terraform. For containerizing the application, some of the specialized AWS services were utilized, such as:

- AWS Fargate to run EC2 instances in containers

- AWS Elastic Container Repository for flexible hosting

- AWS Elastic Kubernetes Service to run K8 on AWS

The new, microservices architecture of the call center matching platform makes optimization easy for the development team. Architecture modernization made it convenient for the team to manage, update, and roll out new services, without impacting the entire application.

The Impact

The self-destructing docker testing environment is available for testers to launch at the demand and not worry about forgetting to shut down the resources. This keeps the cost of the docker environment controlled and brought a significant drop of 15% in the overall cloud bills.

Technology Stack

Amazon CloudWatch

Lambda

Route53

EC2

AWS SNS
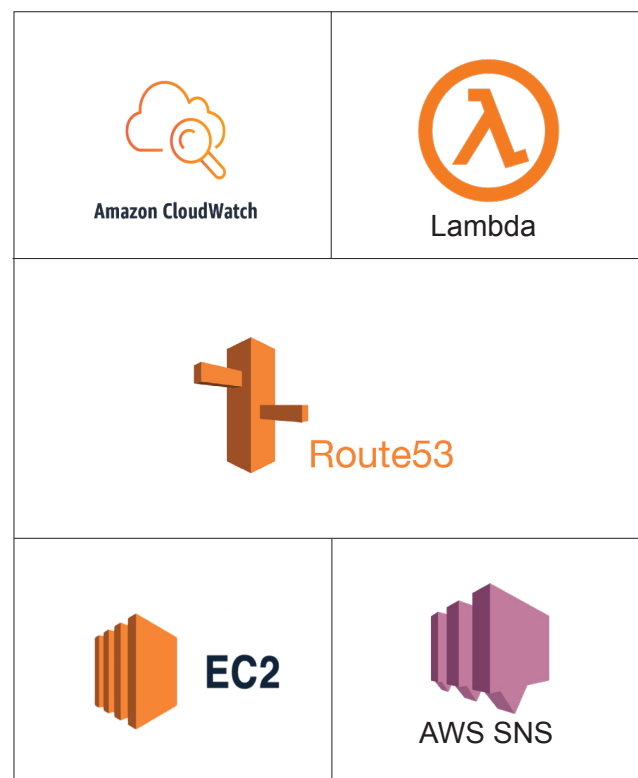
Services Used

Software Engineering

Cloud Services

About Daffodil

For more than 20 years, Daffodil Software has been a trusted software technology partner to organizations across the globe. We take pride in our ability to look beyond technologies & deliver innovative solutions.

Daffodil is a CMMI level 3 accredited organization with innovation, tech agility & process orientation rooted deep within the core. Our team of 1000+ technologists strive to shape the tech industry and help businesses elevate their value proposition through technology.

Technology Partnerships & Certifications

Microsoft Partner Silver Application Development partner **Microsoft Partner** Silver Collaboration and Content	**Google Cloud** Premier Partner	**aws** partner network
salesforce registered consulting partner	**UiPath** Partner Robotic Process Automation	**PubNub®**
CERTIFIED ISO 9001:2015 COMPANY	ISO 27001:2013	International Organization for Standardization ISO 20000

Awards & Accolades

Deloitte. Technology Fast500 APAC Winner	**IT EUROPA** EUROPEAN IT & SOFTWARE EXCELLENCE AWARDS	**zinnov ZONES**	**Great Place To Work®** Certified INDIA
W mobilewebaward 2020	INDIA'S MOST ADMIRED BRAND 2020 INDIA'S CHOICE	**CMMI** level 3	THE ECONOMIC TIMES B T b BEST TECH BRANDS 2021

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