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FMCG DATA ANALYTICS SOLUTIONS ADOPTS SCALABLE ARCHITECTURE

Introduction

SnapBizz CloudTech (popularly known as SnapBizz) focuses on developing cloud-based solutions for the FMCG ecosystem (brands, retailers, consumers, and distributors) in large/medium "Kirana" stores. The company offers retailers and brands a disruptive cloud solution enabling customers to find and order products and services online.

The solution provides retailers with innovative store management and contextual visibility to improve profitability. It also connects stores with their consumers, facilitating the last-mile connection.

The solution comprises a tablet, barcode scanner, thermal printer, and an intelligent external 22" consumer-facing LED display for visual consumer engagement.

Business Need

According to Nielsen, India has over 6.65 million Kirana stores, contributing to nearly 90% of its total trade. The global pandemic has reinforced the importance of local Kirana stores and changed how these Kirana stores function.

With the surge in demand, various demand and supply-related challenges have emerged. Social distancing and hygiene norms have made e-payment the new normal. Research suggests that the customers these stores won during the pandemic can only be retained if they offer home delivery, credit, hyper-local apps, and hyper-local merchandising services.

SnapBizz has been working to organize and digitize these Kirana stores to improve their profitability. However, the need to digitize everything from stocks to payments has led to an unexpected surge in traffic, affecting the solution's performance.

The client wanted a solution that would address the following needs:

- Focus on business innovation,
- Automate scaling of the application to handle traffic,
- Lower their infrastructure cost,
- Improve application performance.

Solution Approach

The Cloud Consultants at Rapyder designed a scalable architecture on AWS to address the over-provisioning of resources. The solution had the following features:

- Considered AWS Mumbai to host applications since the user base in India.
- Hosted all servers behind the load balancer in private subnets across different availability zones (AZ) to reduce latency.
- Terminated all incoming traffic on the application load balancer and routed them to appropriate servers in the backend to ensure a single-entry point and avoid internet exposure.
- Deployed app servers in autoscaling groups for scalability and high availability.
- Applied AWS Certificate Manager on load balancers to securely manage SSL certificates.
- Used load balancers to offload SSL certificates and send traffic to the appropriate instance.
- Used RDS MySQL in multi-AZ to ensure high availability of the global database.
- Used MS SQL standard on EC2 for reporting purposes.
- Migrated from Azure CosmosDB to Amazon DynamoDB.
- Used AWS Data Pipeline to replicate data from DynamoDB to SQL Server.
- Used AWS ElastiCache for Redis caching.

Reaping Rewards

- 20% cost reduction
- Improved application performance
  Reduced latency
- High availability on AWS with auto-scaling

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