

Building a Scalable, High Performance Data Platform with AWS Serverless technology



Executive Summary

FLYHUB is a recently established Fintech subsidiary of Stanbic Uganda Holdings Limited, with the aim of being a technology solutions hub for financial service providers and businesses within Uganda and beyond.

An equally significant aspect of reaching the ambitious goal of being a leader in delivering high quality digital financial products was choosing a suitable technology partner, and for that FLYHUB turned to Altron Systems Integration as an enablement partner. This partnership with Altron's has enabled FLYHUB to leverage Altron's expertise in delivering world-class technology by adopting leading practices to architect, implement, and support sustainable business solutions that are fit for purpose, cost-effective, and optimised for performance.

The Challenge

The advent of the Fintech industry has seen businesses use technology to transform their traditional financial methods to improve and streamline their financial services; Given the exponential growth of data within these organisations, cloud computing platforms such as AWS are crucial to enable fintech companies to securely, and reliably store and manage data, as well as provide scalable and inexpensive means of running their workloads.

As a result of FLYHUB recent establishment they currently do not have the internal expertise required to meet their objective of being a technology solutions hub for financial service providers and businesses. The risk of the cloud's skills gap within FLYHUB will make it hard for the organisation to clearly outline KPIs that would both serve as a guide and allow them to track the effectiveness of their cloud adoption and would most likely lead to undesirable outcomes.

FLYHUB Uganda Limited is a subsidiary of Stanbic Uganda Holdings Limited.

The main objective of the Fintech subsidiary is to provide financial technology innovation services as part of the Stanbic Uganda Holdings Limited Digital Transformation journey to greatness. FLYHUB's services and product offerings will empower Ugandan businesses through Technology and Innovation.'''

Why AWS

- AWS provides on-demand cloud compute services, that are scalable, secure, and reliable, on a metered pay-as-you-go model.
- AWS Cloud Adoption Framework (CAF) leverages AWS experience and best practices to help improve businesses's cloud readiness by focusing on six perspectives: Business, People, Governance, Platform, Security, and Operations.
- Amazon ECS Fargate allows for easy adoption of micro services using Docker and the abstraction layer it provides for the development team is crucial to delivering efficient and high- quality software.
- AWS Proton allows for implementation of DevOps best practises by coordinating all the different tools your development teams need for infrastructure provisioning, code deployments, monitoring, and updates.

Why FLYHUB chose Altron Systems Integration as a Partner

Altron Systems Integration (ASI) is a specialist provider, leveraging world-class technology and leading practices to architect, implement and support sustainable ICT-based business solutions which are strategically aligned, fit for purpose, cost effective and optimised for performance.

As an AWS Advanced Consulting Partner, ASI has made significant investments in their AWS practice, and have extensive experience in deploying customer solutions on AWS and have a strong bench of trained and certified technical consultants.

The Solution

Altron Systems Integration (ASI) was able to gain insight into FLYHUB's cloud adoption journey, understand their current cloud-readiness strengths and weaknesses using AWS Cloud Adoption Framework (AWS CAF) and Migration Readiness Assessment. These tools enabled ASI to design a solution that deliver business value based on the customer's requirements. AWS Control Tower was used to setup a secure and well governed multi-account environment following AWS prescriptive best practises. Using AWS Well-Architected Framework we were able to design and run workloads that are secure, resilient, performance efficient, and cost optimised. The workload components used such as ECS allowed the FLUHUB development team to implement their container services without the restriction that would be imposed on them to manage clusters of EC2 servers as they are new to AWS. Altron as the platform delivery team opted to use AWS Proton, this new AWS service allowed us to decouple the management and automation of the infrastructure from application code delivery, through the use of AWS Proton's self-services infrastructure templates and the landing zone multi account strategy we created a tooling AWS account to house the AWS Proton components and used this account to deliver CI/CD process for delivering secure and consistent deployments across development, test and production environments.

Results and Benefits

- FLYHUB found the use of ECS Fargate to run containers simpler than their previous method that required server management and it allowed them to focus on application code.
- AWS ECS Fargate is a managed service that takes away the need to provision, configure, or scale clusters of virtual machines. This is vital for a development team that wants to move fast in a new ecosystem whilst delivering a quality product.
- AWS Proton is a managed service that the platform team used manage deployments, Altron was tasked with enablement and creation of a platform that would help FLYHUB's development team and the main concern was how we could deliver an automated, secure and self-servicing platform that would standardise infrastructure deployments as well as deploy application code using CI/CD best practises with limited resources and AWS Proton ticked all the boxes and the ease of use was a major bonus for us.

Project Outcome and Success Metrics

- Migrated code base from GitLab to CodeCommit and also enabled SSO access to CodeCommit for the application team.
- Automated the deployment workflow and separated roles of responsibility by using AWS Proton.
- Successfully deprecated the application code reliance on Netflix's Eureka Service Discovery through usage of AWS ECS and its native service discovery tool that uses AWS Cloud Map API actions to manage HTTP and DNS namespaces for your Amazon ECS services.
- Allowed the FlyHub team to implement a Centralised, Multi-Account, and Well-Architected environment setup through the use of AWS Control Tower and Landing Zones.

Lessons Learned

- FlyHub can now spin-up a new environment in a matter of minutes using a fully automated process.
- With AWS Proton FlyHub is able to enforce workload governance with minimal resource thus focusing on delivering customer value.
- Culture and business buy-in are crucial to driving organisational success.