



GenAI-Powered KYB Solution on AWS

Executive Summary

Akua is a Latin American FinTech company providing digital onboarding and compliance solutions for financial institutions and businesses. As Akua continues scaling its operations and attracting new investment rounds, the company sought to enhance its platform through Artificial Intelligence (AI), specifically Generative AI (GenAI), to automate and optimize its Know Your Business (KYB) workflows. To achieve this, Akua partnered with binbash, an AWS Advanced Consulting Partner specializing in cloud-native architectures and AI/ML solutions. Leveraging AWS Bedrock and binbash's Leverage™ framework, binbash designed and deployed a secure AWS KYB automation platform that improves compliance, reduces manual effort, and strengthens Akua's leadership position in the FinTech space.

Customer Challenge

KYB verification is a critical yet resource-intensive process for FinTech companies operating under strict regulatory compliance frameworks. Akua faced several challenges:

- High operational costs and manual workload associated with document validation and data verification.
- Fragmented data ingestion and inconsistent document formats complicating automation.
- The need to ensure compliance with PII protection, data segregation, and risk mitigation across global markets.
- A strategic goal to differentiate Akua's platform through intelligent automation, enabling faster onboarding, enhanced due diligence, and AI-driven accuracy.

Akua engaged binbash to architect and implement a proprietary KYB GenAI pipeline built on AWS, combining scalable infrastructure, AI orchestration, and strong data governance.



Akua is a cloud-native "acquiring-as-a-service" platform for Latin America that enables banks, fintechs and merchants to process payments through a single API. With multi-rail support, AI-driven fraud detection and automated reconciliation, it helps modernise payment systems, scale efficiently and ensure reliability with 99.99% uptime and 10M+ daily transaction capacity.



The team successfully adapted to the dynamic changes we requested as our project progressed, showcasing remarkable flexibility and commitment to delivering a tailored solution.

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Solution

binbash designed and implemented a **KYB solution** on **AWS**, structured into two key layers—the **KYB Blueprints Environment** for model refinement and the **KYB Production Environment for real-time operations**.

The implementation leveraged:

- Amazon S3 for secure data ingestion, partitioning, and storage of both sample and production KYB documents.
- Amazon Bedrock for orchestrating Foundation Models, Agents and Guardrails—powering document understanding, data extraction, and compliance validation.
- AWS Lambda and Amazon EventBridge for automation and event-driven processing.
- AWS IAM privileges following a strategy with PII isolation.
- AWS SNS/SQS: Used to send notifications when the process finishes, so the client doesn't need to poll or check the system manually.
- AWS API GATEWAY: Used to interact with the system through REST endpoints — one to start a KYB process (POST New Request) and another to check its progress and result (GET Case Status).

The project followed the AWS Well-Architected Framework and used binbash Leverage™, the company's reference IaC framework, to standardize architecture components and accelerate environment provisioning.

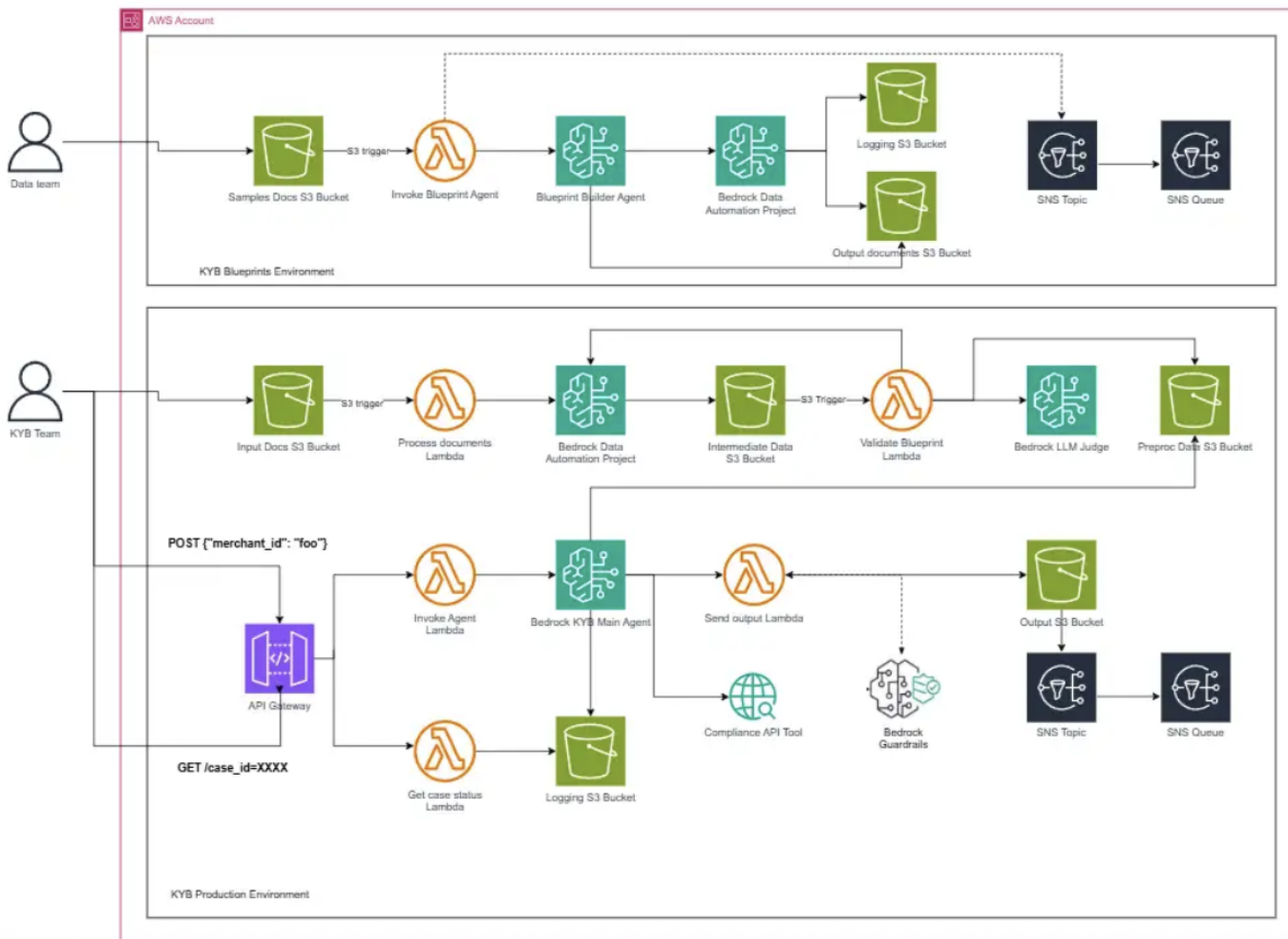
Architecture Overview:

The solution integrates Bedrock-powered AI agents for blueprint creation, document parsing, compliance checks, and metadata generation, deployed in a production-ready account ensuring secure and compliant PII handling.



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Key Components of the Solution

- **KYB Blueprints Environment**

- Sample document storage on S3.
- Blueprint Builder Agent powered by Bedrock LLMs to automate the build and refine steps of blueprint generation for Bedrock Data Automation.
- Automated document data extraction via Bedrock Data Automation.
- LLM as a judge to validate Bedrock Data Automation extracted data.

- **KYB Production Environment**

- Data ingestion and preprocessing using EventBridge and Lambda.
- Entity extraction and validation through Bedrock Agents and compliance APIs.
- Guardrails to enforce compliance.



- **Security and Compliance**

- <Strict segregation of PII and non-PII data using S3 partitioning.
- Configurations aligned with PCI DSS and ISO 27001 practices.
- IAM policies enforcing least-privilege access.

- **Automation & Observability**

- End-to-end process orchestration via Lambda and EventBridge.
- Continuous improvement cycle through Blueprint Builder Agent iterations.
- Documentation and bi-weekly delivery demos ensured full transparency and collaboration.

Results

The GenAI-powered KYB solution allowed Akua to:

- Automate document processing, reducing manual effort by an estimated 70–80%.
- Accelerate onboarding times by enabling parallel AI-driven validation workflows.
- Enhance compliance through automated guardrails and PII isolation strategies.
- Position itself as an AI-first FinTech, improving investor appeal and market competitiveness.

Key Milestones

- **Data Foundation & Ingestion**

- Ingested KYB datasets from Akua's systems into AWS S3.
- Built a partitioned Data Lake structure for efficient data retrieval and querying.
- Conducted data visualization, preprocessing, and edge case analysis to ensure input quality.

- **Model Evaluation & Selection**

- Assessed Amazon Bedrock Foundation Models to identify the best fit for KYB automation.
- Shortlisted the top two Foundation Models for accuracy and efficiency.

- **Blueprint Automation Development**

- Developed the Blueprint Builder Agent to automate the build and refine steps of blueprint generation for Bedrock Data Automation.
- Implemented Bedrock Data Automation for continuous blueprint refinement.

- **Compliance, Guardrails & Knowledge Integration**

- Integrated external compliance APIs for entity verification.
- Enabled Bedrock Guardrails to ensure regulatory adherence and prevent hallucinations.
- Built Bedrock Knowledge Bases to enhance contextual understanding of KYB data.

- **Testing & Validation**

- Performed extensive validation with synthetic and real datasets.
- Conducted vulnerability assessments (prompt injection, data leakage, etc.).
- Automated the full pipeline using EventBridge and Lambda orchestration.



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- **Documentation & Delivery**

- Delivered comprehensive documentation and technical specs.
- Held bi-weekly demo sessions for sprint reviews and knowledge transfer.

Metrics

- Automation coverage: 80% of KYB document types processed automatically.
- Security posture: 100% data isolation achieved.
- Operational improvement: 70% reduction in manual compliance effort.
- Scalability: Architecture supports 10× increase in document volume with no manual reconfiguration.

Conclusion

Through its collaboration with binbash, Akua successfully transformed its KYB verification pipeline into a fully automated, AI-driven compliance solution powered by AWS Bedrock. The implementation not only reduced operational overhead and accelerated customer onboarding but also elevated Akua's positioning as a next-generation FinTech innovator.

binbash's approach—rooted in the AWS Well-Architected Framework and accelerated by its Leverage™ infrastructure-as-code modules—ensured a secure, scalable, and compliant deployment. The result is a forward-looking architecture enabling continuous AI improvement, operational efficiency, and sustainable growth for Akua's FinTech platform.