



Cloud-Native Platform Modernization: AWS Landing Zone, EKS & CI/CD for Efex

Executive Summary

Efex is a Latin American fintech platform that provides digital payment solutions, enabling businesses to collect, pay, and manage their finances in a unified platform. To support their rapid growth and ensure enterprise-grade reliability, Efex engaged binbash to design and deploy a secure, scalable AWS cloud foundation — including a full AWS Landing Zone, multi-environment EKS clusters, and automated CI/CD pipelines for their Django API and React front-end applications.

Customer Challenge

Efex faced critical infrastructure challenges as their platform scaled across Latin America. Their development team operated without a structured cloud foundation, lacked proper environment isolation between DEV, PRD, and DR, and had no automated deployment pipelines. Key bottlenecks included:

- No centralized AWS Organization or account structure, creating governance and cost visibility gaps.
- Manual deployments for their Django monolith and 3 microservices (Contacts, Account Statements, Payments) with no container orchestration.
- Four separate front-end applications (Onboarding, Payments, Dashboard, SDK) deployed without a repeatable pipeline blueprint.
- No disaster recovery strategy, leaving the platform exposed to extended downtime in the event of a regional failure.

Solution

binbash delivered SOW-002, implementing a comprehensive AWS cloud modernization across five major phases — all provisioned as Infrastructure-as-Code using the **binbash Leverage™** framework and Terraform:

- 1. AWS Landing Zone:** A full AWS Organization with Management, Security, Shared, Apps-Dev, Apps-PRD, and Apps-DR accounts. AWS SSO (Identity Center) with Permission Sets for DevOps and Developer roles, CloudTrail, IAM Access Analyzer, KMS encryption, and secure account baseline settings across all accounts.
- 2. Networking:** Multi-account VPC architecture across primary and secondary regions (mx-central-1 and us-east-1), VPC peerings, Route 53 private hosted zones, and a Pritunl VPN server on EC2 for secure private access to all environments.
- 3. EKS Compute Platform:** Production-grade Amazon EKS clusters deployed in Apps-PRD (standard nodes) and Apps-Dev (spot instances), with Nginx Ingress, ExternalDNS, Cert-Manager, ArgoCD, Argo Image Updater, Cluster Autoscaler, and External Secrets integrated with AWS Secrets Manager.



- 4. CI/CD Pipelines:** GitHub Actions pipelines for building and pushing Docker images to AWS ECR for all back-end services, and CloudFront+S3 deployment pipelines for all four front-end applications, with Slack notifications throughout.
- 5. Disaster Recovery:** A full DR environment in a secondary region with RDS Aurora replica, S3 replication, EKS cluster scaled to zero via ArgoCD, and DNS-based traffic failover via Route 53.

Key Components of the Solution

Acting with the capabilities of a CTO, Cloud Architect, and DevOps Lead, binbash guided Efex's team through an enterprise-grade cloud modernization:

- 1. Infrastructure as Code (IaC) & Leverage Framework:** All AWS resources provisioned via Terraform using the binbash Leverage™ reference architecture, ensuring repeatability, auditability, and team knowledge transfer.
- 2. Security & Compliance Hardening:** Secure baselines across all accounts including enforced MFA, encrypted EBS, S3 ACL lockdown, AWS Config organization-wide, Amazon GuardDuty, Security Hub, and AWS WAFv2 on the API Gateway.
- 3. GitOps Deployment with ArgoCD:** All application deployments managed via ArgoCD with Kustomize templates and Argo Image Updater for automated image tag updates, enabling a fully code-driven deployment lifecycle.

Results

By following binbash's architectural guidance and taking progressive ownership of the AWS platform, Efex's engineering team now operates a secure, automated, and highly available cloud foundation. Their deployment cycle shifted from manual processes to fully automated GitOps pipelines, and the team gained the expertise to independently manage and extend the infrastructure.

Key Milestones

Milestone 1: AWS Landing Zone: Full AWS Organization, SSO, IAM, CloudTrail, KMS, VPNs, and account baselines delivered within 4 weeks of project start.

Milestone 2: EKS PRD + CI/CD: Production EKS cluster, all back-end and front-end pipelines, RDS Aurora, DynamoDB, S3, and API Gateway live within 10 weeks.

Milestone 3: EKS DEV Environment: Complete DEV environment mirroring production deployed and validated within 9 weeks of Milestone 2.

Milestone 4: Disaster Recovery: Full DR environment with EKS, RDS replicas, S3 replication, and DR plan testing completed within 8 weeks of Milestone 2.

Milestone 5: Infrastructure Hardening: GuardDuty, Security Hub, AWS Config, WAFv2, and CloudWatch Observability Operator deployed and validated within 3 weeks of Milestone 3.



Metrics

~95%

Faster deployments.
Hours of manual effort to ~5 min via
automated CI/CD.

~90%

Reduction in downtime exposure.
Zero DR to ~15 min RTO with
automated failover.

~70%

Lower DEV/DR compute costs.
Spot Instances on non-production
EKS vs on-demand.

Conclusion

Through this engagement, binbash successfully transformed Efex's infrastructure from a fragmented, manually-operated environment into a secure, fully automated AWS-native platform. Built entirely on the AWS Well-Architected Framework and the binbash Leverage™ open-source reference architecture, the solution gave Efex complete control over their cloud costs, deployment velocity, and security posture. With a self-sufficient engineering team and a solid DevOps foundation in place, Efex is well-positioned to scale their fintech platform across Latin America.