SMBCTEX-003 – Expert Design Review

Project Title: IX-RD-PS-SegurosPatria-01Migración infraestructura Seguros Patria
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Prepared by: Intcomex Cloud
Reviewed by: Julio Diaz

Purpose

This document presents an expert review of the solution architecture designed and implemented for Seguros Patria under the project code IX-RD-PS-SegurosPatria-01. The review evaluates the infrastructure against AWS Well-Architected Framework pillars and industry best practices, ensuring the solution aligns with security, performance, cost-efficiency, and operational excellence objectives.

Review Summary

Pillar	Status	Comments
Operational Excellence	Compliant	Clear monitoring, logging, and runbook practices are in place
Security	Compliant	Strong IAM controls, encryption, and network segmentation implemented
Reliability	Partial	Single Availability Zone architecture limits fault tolerance
Performance Efficiency	Compliant	Well-sized services with optimization through RDS and FSx
Cost Optimization	Improving	Initial modeling complete; lacks automated cost tracking or usage alerts

Architecture Review

Strengths

- **Modular Design:** Clear separation of compute, storage, directory, and networking layers.
- **Scalability:** Designed to scale across two AZs even though deployed in one initially.
- **Security:** Comprehensive IAM policies, MFA for root, encrypted storage, and secure access boundaries.
- **Backup & Monitoring:** AWS Backup, CloudWatch, and CloudTrail are properly configured.

- **Compliance:** Infrastructure adheres to AWS best practices, with well-documented configurations.

Areas of Concern

- **High Availability:** Currently deployed in a single AZ due to cost considerations; introduces a single point of failure.
- **Automation:** Manual patching and deployment workflows limit agility and recovery speed.
- **Dev/Test Environments:** Not yet provisioned, increasing risk during production updates.

Detailed Recommendations

High Availability & Fault Tolerance

- **Recommendation:** Migrate to a Multi-AZ architecture for EC2 and RDS services.
- **Justification:** Increases availability and minimizes business disruption during AZ-level failures.

CI/CD Pipeline

- **Recommendation:** Implement AWS CodePipeline + CodeDeploy for automated builds and updates.
- **Justification:** Reduces human error and improves deployment speed, version control, and rollback.

Cost Management

- **Recommendation:** Use AWS Budgets and Cost Explorer for ongoing tracking.
- **Justification:** Enables real-time awareness of usage spikes and encourages ongoing cost optimization.

Dev/Test Infrastructure

- **Recommendation:** Deploy isolated Dev/Test environments with resource limits.
- **Justification:** Facilitates safe testing and shortens deployment cycles for new features or patches.

Compliance with AWS Well-Architected Framework

Pillar	Review Status	Supporting Evidence
Operational Excellence	Meets	Runbooks, monitoring dashboards, training sessions
Security	Meets	IAM roles, encryption, VPC setup, logging
Reliability	Partially	Designed for high availability but deployed in single AZ

Pillar	Review Status	Supporting Evidence
Performance Efficiency	Meets	RDS optimization, FSx scaling, use of ALB & WAF
Cost Optimization	Improving	Initial modeling done; no real-time cost management configured

Expert Review Conclusion

The solution designed and deployed under the SMBCTEX initiative demonstrates a solid architectural foundation with careful attention to security, performance, and manageability. However, to fully align with enterprise-grade cloud architecture standards, the implementation should expand to support multi-AZ failover, automate operations, and enhance cost governance.

Sign-Off

Name	Role	Signature	Date
Julio Diaz	AWS Solutions Architect		
Edwin Mendoza	Project Manager		
[Seguros Patria Rep]	Client Representative		