



## SMBCTEX-003 – Expert Design Review

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**Project Title:** IX-RD-PS-SegurosPatria-01 Migración infraestructura Seguros Patria

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### 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   |           |      |