**SMBCTEX-003 – Expert Design Review**

**Project Title:** IX-RD-PS-SegurosPatria-01Migración 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 |
| 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** |
| --- | --- | --- | --- |
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