IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 4, April 2025
Impact Factor: 7.67

AWS Resilient Pattern: Implementing Change Data Capture with Reduced Data Loss

Jhansi Xavier and Praveen Borra
Computer Science, Florida Atlantic University, Boca Raton USA

Abstract: *This paper examines a proposed architecture pattern that has been evaluated to minimize data loss rates in AWS. Change Data Capture (CDC) is a methodology that detects and monitors alterations in a database, facilitating real-time or near-real-time data replication and synchronization among systems. When a CDC process is implemented within a database system, an effective failover mechanism is crucial to ensure the ongoing capture and transmission of changes. It is anticipated that some data loss may occur during the failover process. This article aims to explore the pattern designed to mitigate such data loss.*

Keywords: AWS, Distributed systems, Change Data Capture, Message Queue, Kafka, Failover, Data Loss, Hybrid Environment, Performance Optimization, System Resilience, Fault Tolerance

DOI: 10.48175/IJARSCT-25156