Automated DR for Wealth Management Platform

Implementing automated failover for a modernized fee calculation application of an Wealth Management Platform

aws partner network

Executive Summary

Designed and implemented an automated disaster recovery solution to meet near-zero RTO and RPO requirements for a user-facing wealth management application

Key Challenge/Problem Statement

Broadridge developed a modern wealth management platform built on AWS. The platform provides its Wealth Management Institutional customers with an intelligent wealth management solution that is personalized based on how each user works and consumes information. This personalization enables Advisors and their teams to efficiently manage each client's needs and encourage holistic wealth management practices to drive strategic business objectives.

The platform is run on AWS and is comprised of 27 applications consisting of Core Platform, Trading, Information Management, FA & CSA Workstation, and Client Service & Reporting components. Even a brief outage to the core platform has significant implications to the wealth management customers that use the platform.

Proposed Solution and Architecture

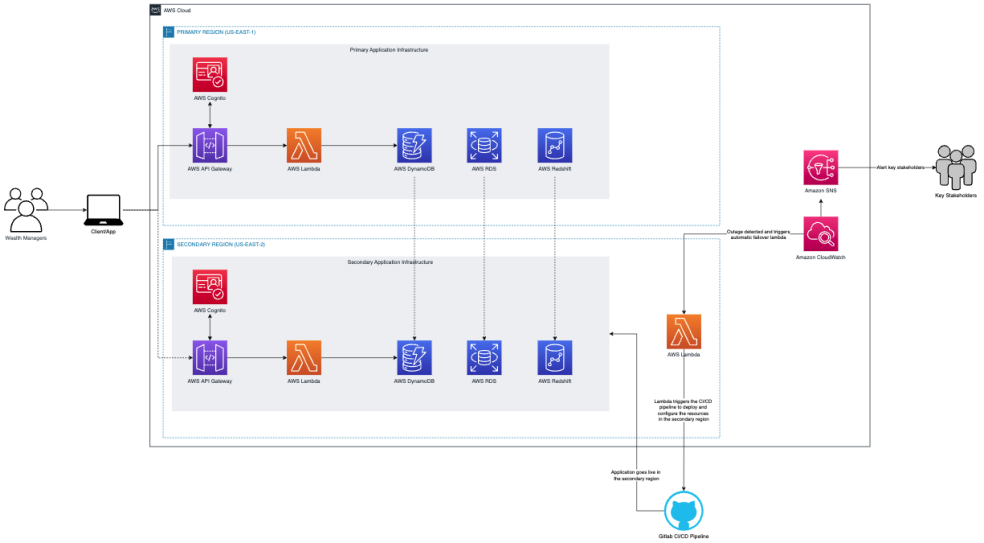
Based on resiliency testing and analysis, the main concern was regional failure which was classified as a critical risk since a failure would not only cause significant data loss, but also far exceed the acceptable RTO and RPO objectives. Due to the criticality and complexity of the regional point of failure, we decided that addressing this issue must be the primary objective of our solution.

Since almost every component of the application would be affected by a regional failure, it was clear that the RTO and RPO would not be met if there were any manual steps in the disaster recovery solution that we provided. As such, it was determined that we would have to implement an entirely automated, warm-standby disaster recovery solution.

1. Designed the solution to kick off the disaster recovery process using CloudWatch for monitoring, we identified the logs that would be created in the case of a regional failure. When these logs are generated, a lambda is triggered to kick off our automated failover process.
2. Since time doesn't allow for databases to be entirely replicated at the time of failover, we had to ensure that the most recent application data would be able to be accessed in the standby region in case of a regional outage. We accomplished this by configuring each data store to be properly, synchronously replicated in the standby region.
3. With the necessary data stores being replicated in a warm-standby state, we created a lambda to kick off a CI/CD pipeline that deployed the Terraform code to build the infrastructure in the secondary region and configure the infrastructure to communicate with the standby data stores. Since we had a lambda trigger configured with the CloudWatch logs, the solution automatically kicks off and performs the failover activities to avoid impact to the end user experience.

About the Client

Broadridge Financial Solutions is a global provider of investor communications and technology-driven solutions to banks, broker-dealers, mutual funds, and corporate issuers. The Company delivers a range of solutions that helps its clients serve their retail and institutional customers across the entire investment lifecycle, including pre-trade, trade, and post-trade processing functionality.



AWS Services Used

- AWS Compute Services – Lambda, Batch
- AWS Storage Services – S3
- AWS Application Integration – Step Functions
- AWS Databases – DynamoDB, Redshift, RDS, Glue, Athena
- AWS Networking Services – VPC, API Gateway, CloudFront
- AWS Management and Governance Services – CloudWatch, Config
- AWS Security, Identity, Compliance Services - IAM, Key Management Service, Cognito

Results

- Resiliency and chaos testing analysis provides details of each point of failure
- Automated disaster recovery solution reduces the failover time from greater than 6 hours to less than 5 minutes
- Automated disaster recovery solution prevents loss of data in case of regional failure

Summary

By engaging with Vertical Relevance, the customer will now be able to immediately trigger a failover of their application if their main AWS region goes down. With this solution implemented, we conducted the same resilience and the time to failover was reduced from greater than 6 hours to less than 5 minutes. The customer can meet the RTO and RPO objectives in their SLA and are no longer at risk of incurring financial and reputational ramifications if there is a regional failure.

About Vertical Relevance

Vertical Relevance is a Financial Services focused (Wealth Management, Asset Management, Banking, Insurance) consulting firm helping with the design & delivery of effective transformation programs across people, process, & systems. With 10+ years of AWS & 20+ years of Financial Services experience, we understand the business needs & build solutions to meet sales, marketing, & compliance goals.

VERTICAL RELEVANCE