Warm Standby Disaster Recovery with AWS for Osyte

Executive Summary

Introduction

The client is an investment technology solution provider for asset allocators. They need an integrated system across the entire investment process, from investment data aggregation to asset allocation monitoring, from portfolio rebalancing to performance measurement. The client wants to re-architect their AWS environment, which is aimed to reduce downtime, cost optimization, and automated, highly secure, and highly resilient Disaster Recovery solution. CloudThat's team worked closely with the client's team to leverage AWS services like Amazon API Gateway, Amazon Lambda, and Amazon Route 53, among others.

Customer Challenges

The client aimed to re-architect their AWS environment by leveraging Amazon API Gateway as a primary tool. The client's primary challenge lies in establishing a comprehensive Disaster Recovery (DR) plan for their existing cloud Infrastructure hosted in the AWS Oregon region. The key requirements encompass implementing solutions for Business Continuity, ensuring failover mechanisms for maximum uptime, incorporating Automated DNS Failover routing, ensuring high data availability, optimizing network configuration to mitigate latency issues, reducing data transfer charges, enhancing security measures, and adhering to AWS best practices.

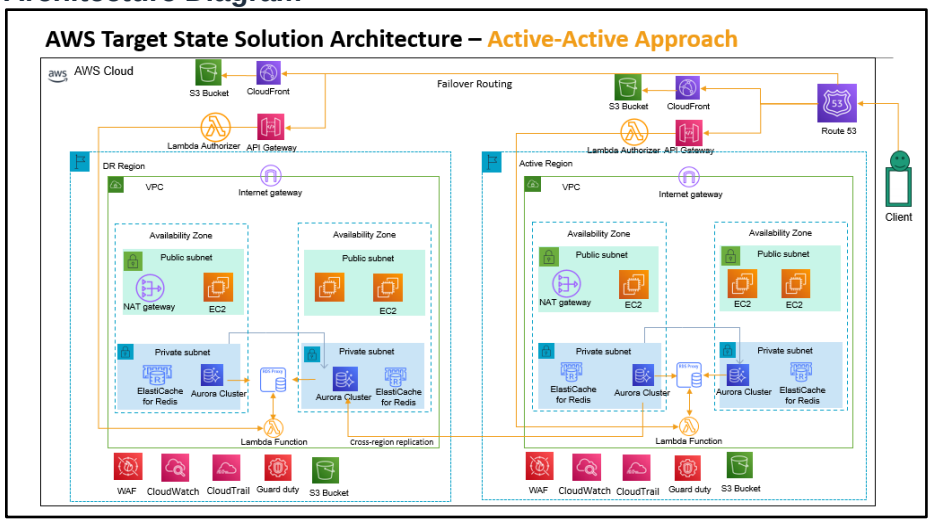
Solution

- Reduce downtime, optimize costs, and establish a highly secure and resilient Disaster Recovery solution.
- Collaborate closely with the client's team to follow AWS security best practices and deploy the new DR architecture.
- Creating a custom Amazon VPC in the Ohio region for Disaster Recovery.
- Setting up a Twin-Gate connection for accessing private AWS resources.
- Implementing Amazon RDS proxy for high database availability.
- Deploying Amazon ElastiCache to enhance web application performance.
- Enhancing security with Amazon GuardDuty, Amazon Inspector, AWS Config, and AWS WAF for threat detection, workload vulnerability, and traffic blocking.
- Utilizing AWS Secrets Manager to store credentials securely.
- Employing AWS Key Management Service for storage encryption.
- Implementing Amazon Route 53 for DNS failover.
- Utilizing cross-region read replicas for Amazon Aurora serverless v2 database replication.
- Monitoring the web application using AWS CloudWatch logs and alarms.
- Setting up notifications via Amazon SNS, Amazon SQS, and Amazon SES to receive messages, emails, and alerts for AWS account activity.

About Osyte

Osyte is an investment technology solution for asset allocators who need an integrated system across the entire investment process, from investment data aggregation to asset allocation monitoring, from portfolio rebalancing to performance measurement. Our financial technology product supports the people, strategies, and insights needed to automate operational tasks, streamline portfolio management functions, provide real-time performance management, and improve investment outcomes through daily portfolio oversight.

Architecture Diagram



The proposed architecture solution for Osyte involves setting up an Active-Active DR infrastructure in the Ohio region using Amazon API Gateway for traffic routing and AWS Lambda Authorizer for request authorization. In case of failover, Amazon Route 53 switches to a secondary Amazon API Gateway based on Amazon Aurora CloudWatch health checks. Each region's Amazon API Gateway has its custom domain for accessing the application and handling static and dynamic content. The architecture also includes a Serverless Amazon Aurora cluster spanning multiple AZs, an Amazon RDS proxy for improved database availability and scalability, and SFTP and TwinGate for secure remote access to private applications and data.

Outcome

- Successful AWS infrastructure implementation in the Ohio region.
- Automated failover with minimal downtime for uninterrupted service.
- Active-Passive region mirroring for disaster recovery readiness.
- Amazon RDS database replication for redundancy and performance.
- High availability via Amazon RDS Proxy for uninterrupted database access.
- Performance boost with Amazon ElastiCache for web apps.
- Amazon S3 Cross-Region Read Replica for data resilience.
- AWS Lambda function replication for disaster recovery.
- Secure AWS Secrets Management and scheduled backups for data protection.
- Low-latency content delivery with AWS CloudFront.
- Multi-Availability Zone deployment for high availability.
- Authorized user access control using AWS Lambda authorizer for security.

About CloudThat

CloudThat is the official AWS (Amazon Web Services) Advanced Consulting Partner with competencies on Migration, DevOps & Data and Analytics and Service Delivery Partner for AWS Lambda, Amazon API Gateway, Amazon DynamoDB, Amazon EKS & Amazon QuickSight. We help businesses aim for higher goals using best-in-industry cloud computing practices and expertise. We are on a mission to build a robust cloud computing ecosystem by disseminating knowledge on technological intricacies within the cloud space. Our blogs, webinars, case studies, and white papers enable all the stakeholders in the cloud computing sphere.