Runbook for dr-project.com Failover Procedure

Objective: This document outlines the procedure to fail over the application from the primary region (ap-south-1) to the secondary region (us-east-1) in the event of a disaster.

Prerequisites:

- AWS CLI is installed and configured.

- The DR-Project-KeyPair.pem and DR-Project-KeyPair-Secondary.pem files are accessible.

Summary of the Primary Region (ap-south-1)

- **Frontend:** A static website in an S3 bucket named dr-project-web-app-primary.

- **Backend:** An Application Load Balancer (dr-project-alb-primary) with an Auto Scaling Group and EC2 instances.

- **Database:** A PostgreSQL database instance (dr-project-db-primary).

Summary of the DR Region (us-east-1)

- **Frontend:** A secondary S3 website in dr-project-web-app-secondary.

- **Backend:** A separate Application Load Balancer (dr-project-alb-secondary) with an Auto Scaling Group and EC2 instances using a replicated AMI.

- **Database:** A restored database instance from a primary region snapshot (dr-project-db-secondary).

Failover Procedure

Step 1: Simulate a Primary Region Failure We simulated a failure by deleting the listener on the primary load balancer.

Command:

- aws elbv2 delete-listener --listener-arn arn:aws:elasticloadbalancing:ap-south-1:925352741061:listener/app/dr-project-alb-primary/86ee73f412007b77/04f423dace7d121c --region ap-south-1

- **Expected Result:** This command has no output if successful. The primary load balancer will immediately stop routing traffic.

Step 2: Verify the Health Check Failure Route 53's health check for the primary region will detect the failure.

Command:

- aws route53 get-health-check-status --health-check-id b57019aa-91f8-49c6-b42c-3748bf3f1ec7
- **Expected Result:** After a few minutes, the output will show the status as "Failure", confirming the failure has been detected.

Step 3: Verify Traffic Has Failed Over Wait for Route 53 to redirect traffic to the secondary region. This can take a few minutes.

Command:

- nslookup app.dr-project.com
- **Expected Result:** The nslookup command will return the IP address of your secondary load balancer.
- **Final Check:** Open a web browser and visit app.dr-project.com. The page should show the secondary region's content: **DR Application Tier: This is the secondary region backend.**