Databases and AWS

Create a MySQL Amazon RDS Instance

1. Log in to the AWS Management Console, and navigate to the Amazon RDS Console.

2. Launch a new Amazon RDS DB Instance, and select MySQL Community Edition instance as the database engine.

3. Configure the DB Instance to use Multi-AZ and General Purpose (SSD) storage.

   Warning: This is not eligible for AWS Free Tier; you will incur a small charge by provisioning this instance.

4. Set the DB Instance identifier and database name to `MySQL123`, and configure the master username and password.

5. Validate the configuration settings, and launch the DB Instance.

6. Return to the list of the Amazon RDS instances. You will see the status of your Amazon RDS database as `Creating`. It may take up to 20 minutes to create your new Amazon RDS instance.

You have provisioned your first Amazon RDS instance using Multi-AZ.

Simulate a Failover from One AZ to Another

In this exercise, you will use Multi-AZ failover to simulate a failover from one Availability Zone to another.

1. In the Amazon RDS Console, view the list of DB Instances.

2. Find your DB Instance called MySQL123, and check its status. When its status is `Available`, proceed to the next step.

3. Select the instance, and issue a Reboot command from the actions menu.

4. Confirm the reboot.

You have now simulated a failover from one Availability Zone to another using Multi-AZ failover. The failover should take approximately two or three minutes.

Create a Read Replica

In this exercise, you will create a read replica of your existing MySQL123 DB server.

1. In the Amazon RDS Console, view the list of DB Instances.

2. Find your DB Instance called `MySQL123`, and check its status. When its status is `Available`, proceed to the next step.

3. Select the instance, and issue a Create Read Replica command from the list of actions.

4. Configure the name of the read replica and any other settings. Create the replica.

5. Wait for the replica to be created, which can typically take several minutes. When it is complete, delete both the MySQL123 and MySQLReadReplica databases by clicking the checkboxes next to them, clicking the Instance Actions drop-down box, and then clicking Delete.

In the preceding exercises, you created a new Amazon RDS MySQL instance with Multi- AZ enabled. You then simulated a failover from one Availability Zone to another by rebooting the primary instance. After that, you scaled your Amazon RDS instance out by creating a read replica of the primary database. Delete the DB Instance.

EXERCISE - 6.4

Read and Write from a DynamoDB Table

In this exercise, you will create an Amazon DynamoDB table and then read and write to it using the AWS Management Console.

1. Log in to the AWS Management Console, and view the Amazon DynamoDB console.

2. Create a new table named `UserProfile` with a partition key of userID of type String.

3. After the table has been created, view the list of items in the table.

4. Using the Amazon DynamoDB console, create and save a new item in the table. Set the userID to U01, and append another String attribute called **name** with a value of `Joe`.

5. Perform a scan on the table to retrieve the new item.

You have now created a simple Amazon DynamoDB table, put a new item, and retrieved it using Scan. Delete the DynamoDB table.

EXERCISE - 6.5

Launch a Redshift Cluster

In this exercise, you will create a data warehouse using Amazon Redshift and then read and write to it using the AWS Management Console.

1. Log in to the AWS Management Console, and view the Amazon Redshift Console.

2. Create a new cluster, configuring the database name, username, and password.

3. Configure the cluster to be single node using one SSD-backed storage node.

4. Launch the cluster into an Amazon VPC using the appropriate security group.

5. Install and configure SQL Workbench on your local computer, and connect to the new cluster.

6. Create a new table and load data using the `COPY` command.

You have now created an Amazon Redshift cluster and connected to it using a standard SQL client. Delete the cluster when you have completed the exercise.