

DAY 7 ASSIGNMENTS

1. Deploy mysql RDS & observe failover/fallback to standby database

ak-database-1

ModifyActions

Summary

DB identifier ak-database-1	CPU <div>20.68%</div>	Status Backing-up	Class db.t3.micro
Role Instance	Current activity 0 Connections	Engine MySQL Community	Region & AZ us-east-1f

Connectivity & securityMonitoringLogs & eventsConfigurationMaintenance & backupsTags

Connectivity & security

Endpoint & port Endpoint ak-database-1.cq174vfsoqja.us-east-1.rds.amazonaws.com	Networking Availability Zone us-east-1f VPC	Security VPC security groups arunkumarsgforrdsassignment1 (sg-05fb53a2424d5123c) Active
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Checking mysql connection from an instance

```
Installed:
 mariadb.x86_64 1:5.5.68-1.amzn2

Complete!
[ec2-user@ip-172-31-91-154 ~]$ mysql -h ak-database-1.cq174vfsoqja.us-east-1.rds.amazonaws.com -u arun -P 3306 -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 17
```

```
MySQL [studentdetails]> create table students( sno int, name varchar(255) );
Query OK, 0 rows affected (0.03 sec)

MySQL [studentdetails]> select * from students;
Empty set (0.00 sec)

MySQL [studentdetails]> insert into students (sno,name) values (1,'arun');
Query OK, 1 row affected (0.00 sec)

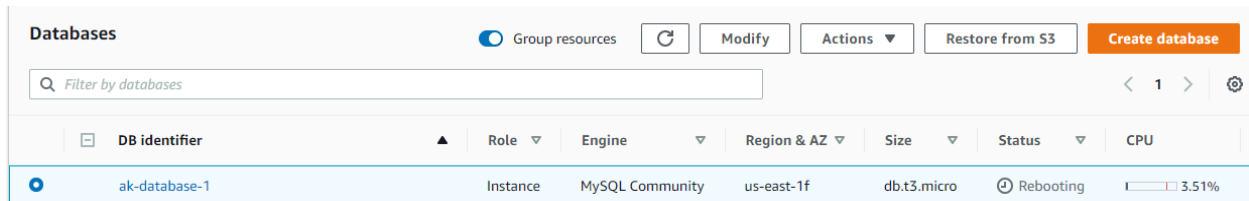
MySQL [studentdetails]> select * from students;
+-----+-----+
| sno | name |
+-----+-----+
| 1 | arun |
+-----+-----+
1 row in set (0.00 sec)

MySQL [studentdetails]>
```

i-01c2ab712f66a72f0

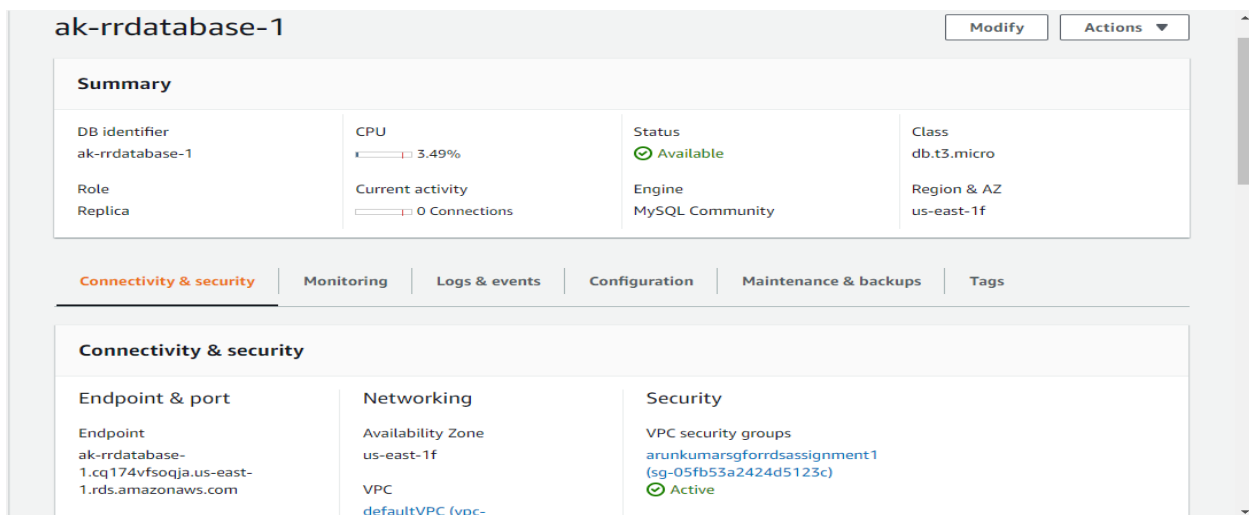
Public IPs: 54.152.82.148 Private IPs: 172.31.91.154

Rebooting an instance



After rebooting the availability zone is changed.

2. Create Read Replica for mysql RDS



Checking if the data from the original database is present in the replica

```
[ec2-user@ip-172-31-91-119 ~]$ mysql -h ak-rrdatabase-1.cq174vfsoqja.us-east-1.rds.amazonaws.com -u arun -P 3306 -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 252
Server version: 8.0.23 Source distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MySQL [(none)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| studentdetails |
| sys |
+-----+
5 rows in set (0.02 sec)

MySQL [(none)]>
```

i-0c90fc1a1210f6939

Public IPs: 52.203.239.219 Private IPs: 172.31.91.119

3. Create a event rule in cloudwatch to notify for instance state change

Rule creation for instance state change

arun-ruleforchangeinstance

EditDeleteDisable

Rule details

Rule name

arun-ruleforchangeinstance

Description

Rule ARN

arn:aws:events:us-east-1:590852515231:rule/arun-ruleforchangeinstance

Status

Enabled

Event bus name

default

Event bus ARN

arn:aws:events:us-east-1:590852515231:event-bus/default

Monitoring

[Metrics for the rule](#)

Event pattern

```
{
  "source": ["aws.ec2"],
  "detail-type": ["EC2 Instance State-change Notification"],
  "detail": {
    "instance-id": ["i-0c90fc1a1210f6939"]
  }
}
```

Target(s) (1)

View details

Name	Type	ARN
arunkumarsns1	SNS topic	arn:aws:sns:us-east-1:590852515231:arun

SNS notification for instance state change

Arunkumar-awssns1 <no-reply@sns.amazonaws.com>

7:41 AM (0 minutes ago) ☆ ↶ ⋮

to me ▾

```
{
  "version": "0",
  "id": "cfe1ae27-731c-c501-bbca-a00f7766c55a",
  "detail-type": "EC2 Instance State-change Notification",
  "source": "aws.ec2",
  "account": "590852515231",
  "time": "2021-12-02T02:11:24Z",
  "region": "us-east-1",
  "resources": [
    "arn:aws:ec2:us-east-1:590852515231:instance/i-0c90fc1a1210f6939"
  ],
  "detail": {
    "instance-id": "i-0c90fc1a1210f6939",
    "state": "stopping"
  }
}
```

4. Automate Termination of idle Ec2 instance & get notified for the same

Cloudwatch alarm creation

Created CloudWatch alarm: awsec2-i-0c90fc1a1210f6939-LessThanOrEqualToThreshold-CPUUtilization

Instances (1/95) Info Refresh Connect Instance state Actions Launch instances

Filter instances

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input checked="" type="checkbox"/>	arunkumar-ala...	i-0c90fc1a1210f6939	Running	t2.micro	Initializing	1/1 has	us-east-1c

Instances (95) Info Refresh Connect Instance state Actions Launch instances

Filter instances

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>	arunkumar-ala...	i-0c90fc1a1210f6939	Terminated	t2.micro	-	1/1 in at	us-east-1c

Notification for termination of idle ec2 instance

ALARM: "awsec2-i-0c90fc1a1210f6939-LessThanOrEqualToThreshold-CPUUtiliz..." in US East (N. Virginia) Inbox x

Arunkumar-awssns1 <no-reply@sns.amazonaws.com> 7:49 AM (18 minutes ago) ☆ ↶ ⋮
to me

You are receiving this email because your Amazon CloudWatch Alarm "awsec2-i-0c90fc1a1210f6939-LessThanOrEqualToThreshold-CPUUtilization" in the US East (N. Virginia) region has entered the ALARM state, because "Threshold Crossed: 1 datapoint [0.09999999999999999 (02/12/21 02:04:00)] was less than or equal to the threshold (20.0)." at "Thursday 02 December, 2021 02:19:09 UTC".

View this alarm in the AWS Management Console:
<https://us-east-1.console.aws.amazon.com/cloudwatch/deeplink.js?region=us-east-1#alarmsV2:alarm/awsec2-i-0c90fc1a1210f6939-LessThanOrEqualToThreshold-CPUUtilization>

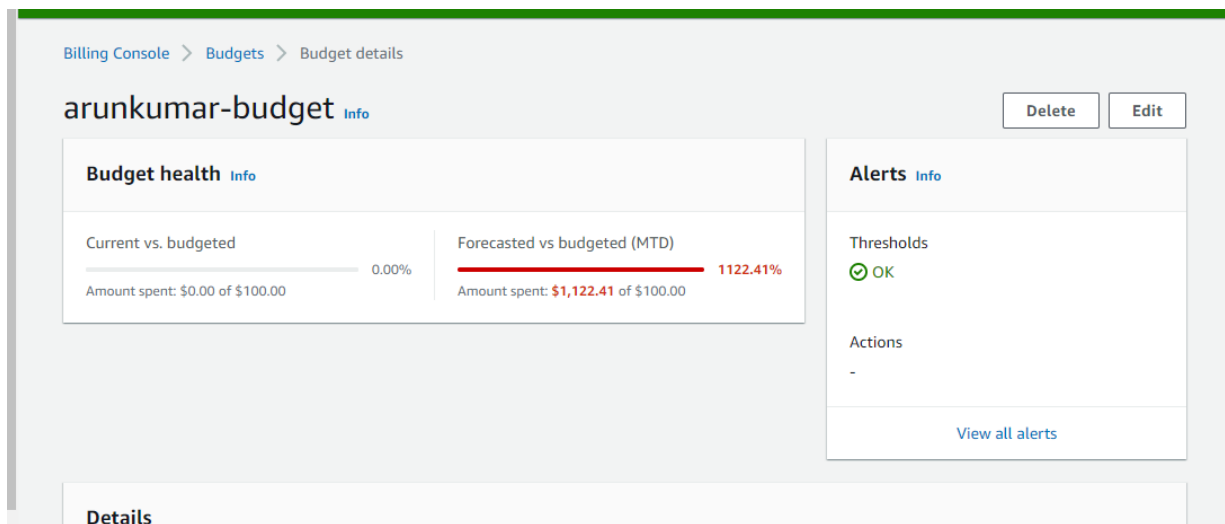
Alarm Details:

- Name: awsec2-i-0c90fc1a1210f6939-LessThanOrEqualToThreshold-CPUUtilization
- Description: Created from EC2 Console
- State Change: INSUFFICIENT_DATA -> ALARM
- Reason for State Change: Threshold Crossed: 1 datapoint [0.09999999999999999 (02/12/21 02:04:00)] was less than or equal to the threshold (20.0).
- Timestamp: Thursday 02 December, 2021 02:19:09 UTC
- AWS Account: 590852515231
- Alarm Arn: arn:aws:cloudwatch:us-east-1:590852515231:alarm:awsec2-i-0c90fc1a1210f6939-LessThanOrEqualToThreshold-CPUUtilization

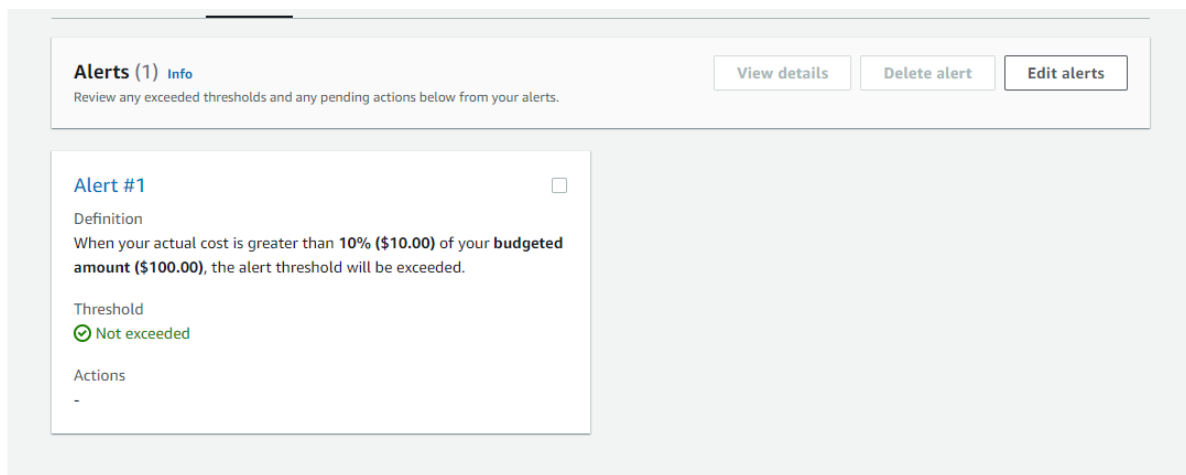
Day 8 Assignments

1. Create a cost budget for your AWS account ,set threshold & get notified once threshold is crossed.

Budget details



Alert



2. Enforce users to define tag for all the resources

Created rule to enforce usage of tags

AWS Config > Rules > arunkumar-required-tags

arunkumar-required-tags

Actions ▾

▼ Rule details Edit

Description Checks whether your resources have the tags that you specify. Config rule ARN arn:aws:config:us-east-1:590852515231:config-rule/config-rule-stzf6i	Trigger type <ul style="list-style-type: none">Oversized configuration changesConfiguration changes Scope of changes Resources Resource types <ul style="list-style-type: none">ACM CertificateAutoScaling AutoScalingGroupCloudFormation StackCodeBuild ProjectDynamoDB TableEC2 CustomerGatewayEC2 InstanceEC2 InternetGateway	Last successful evaluation ⌚ Not available
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Non-compliant resources

▼ Resources in scope View details Remediate ↺

Noncompliant < 1 > ⚙

	Type	Status	Annotation	Compliance
-04b0-46a4-8fc7-2fc6861ca7...	CloudFormation Stack	-	-	⚠ Noncompliant
	EC2 NetworkInterface	-	-	⚠ Noncompliant
	EC2 SecurityGroup	-	-	⚠ Noncompliant
	EC2 SecurityGroup	-	-	⚠ Noncompliant
	EC2 SecurityGroup	-	-	⚠ Noncompliant
	RDS DBInstance	-	-	⚠ Noncompliant

Compliant resources

▼ Resources in scope View details Remediate ↺

Compliant < 1 2 ... > ⚙

	Type	Status	Annotation	Compliance
	AutoScaling AutoScali...	-	-	✅ Compliant
	AutoScaling AutoScali...	-	-	✅ Compliant
	AutoScaling AutoScali...	-	-	✅ Compliant
	AutoScaling AutoScali...	-	-	✅ Compliant
	AutoScaling AutoScali...	-	-	✅ Compliant
	AutoScaling AutoScali...	-	-	✅ Compliant
	CloudFormation Stack	-	-	✅ Compliant
	EC2 Instance	-	-	✅ Compliant
	EC2 Instance	-	-	✅ Compliant
	EC2 Instance	-	-	✅ Compliant