

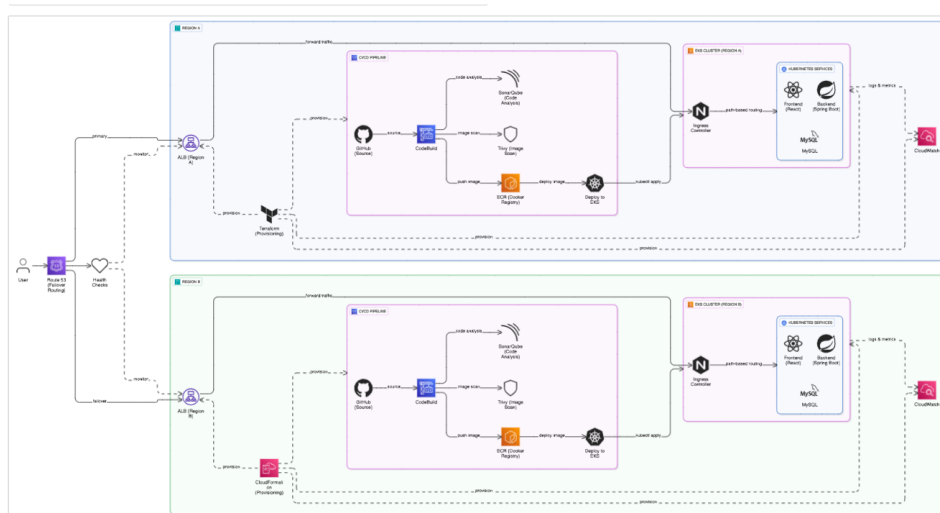
Three Tier Project deployed in EKS Cluster Through Terraform and Cloudformation

Cart-table App:

CloudFormation Stack Description: This stack provisions a full AWS infrastructure to deploy a containerized React + Spring Boot full-stack application using Amazon EKS, Amazon RDS, Amazon Route 53, CodePipeline, CloudWatch, and other supporting services. Main Infrastructure Components

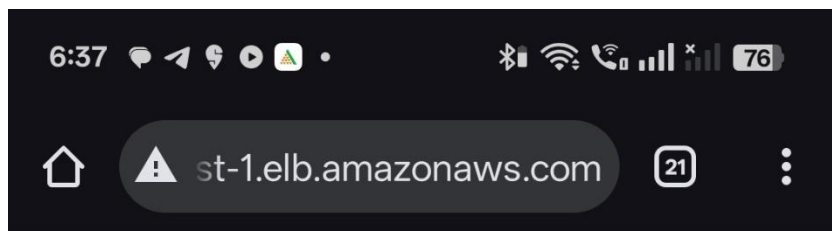
1. Networking – Amazon VPC •
Custom VPC with: 2 Public Subnets and 4 private Subnets
2. EKS node group (frontend & backend pods)
3. RDS MySQL instance
4. Associated Route Tables
5. Internet Gateway, and NAT Gateway
6. Elastic IP for NAT Gateway

Architecture Diagram



34%

?



Product App

[Products](#) / [35](#)

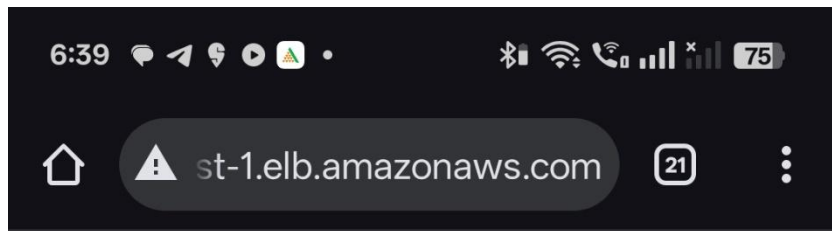
Product Info: 35

Title	Realme
Price	22000
Quantity	1

Edit

Delete





Product App

[Products](#) / [36](#) / [edit](#)

Title

Input the product title here.

Price

Quantity

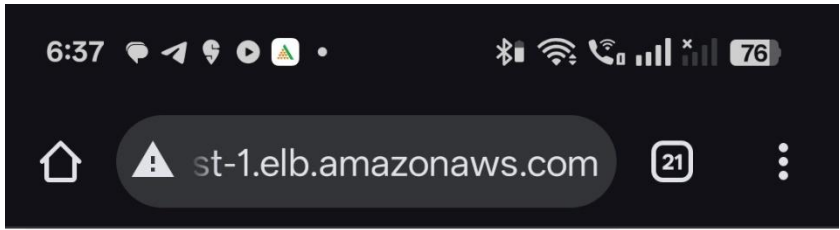
Update



```
mysql> select * from product;
```

id	price	quantity	title
33	1100	55	Blackberry
35	22000	1	Realme

```
2 rows in set (0.01 sec)
```



Product App

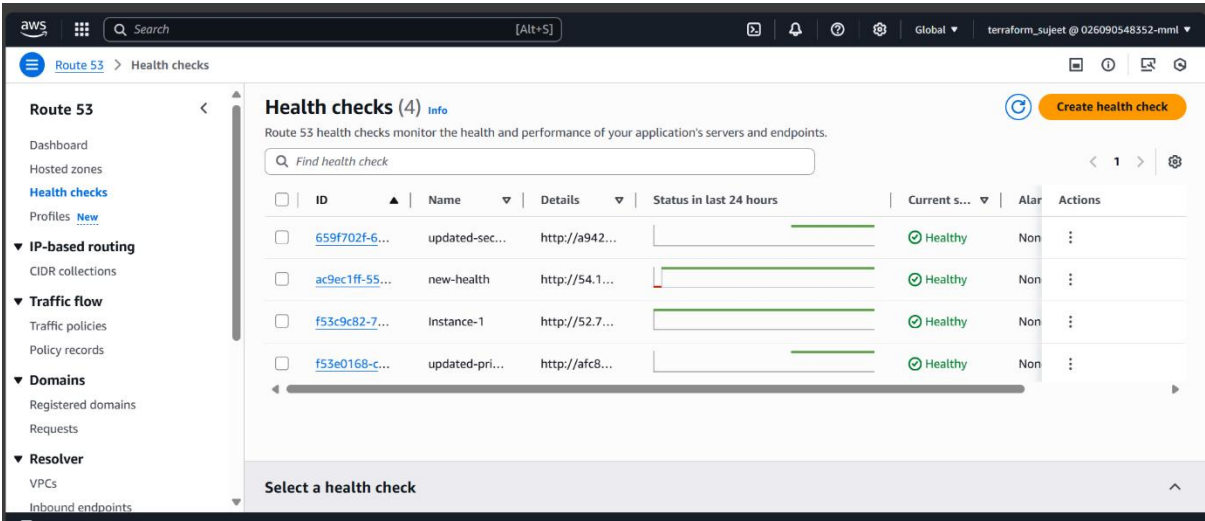
[Products](#)

#	Title	Price	Quantity	Actions		
33	Blackberry	1100	55	View	Edit	Delete
35	Realme	22000	1	View	Edit	Delete

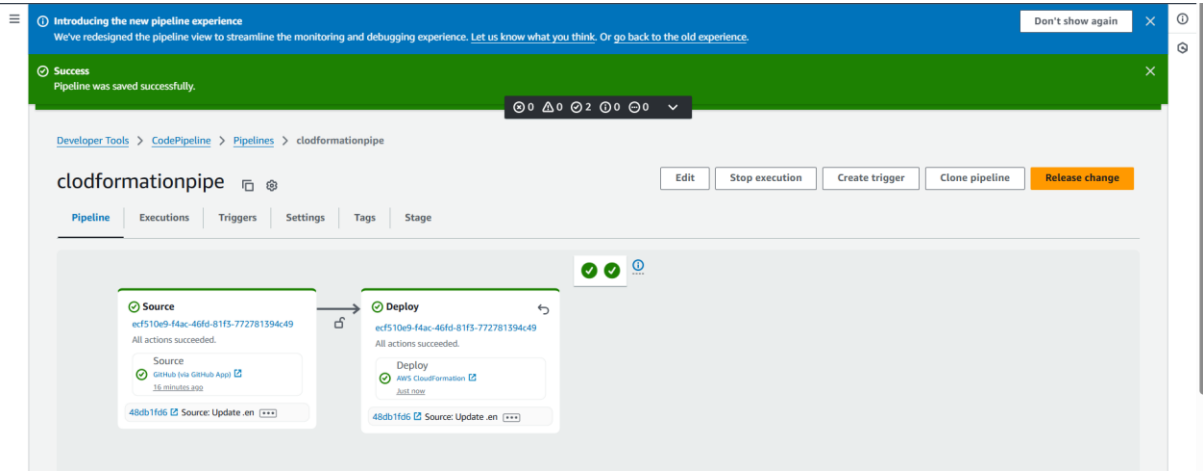
[Add](#)



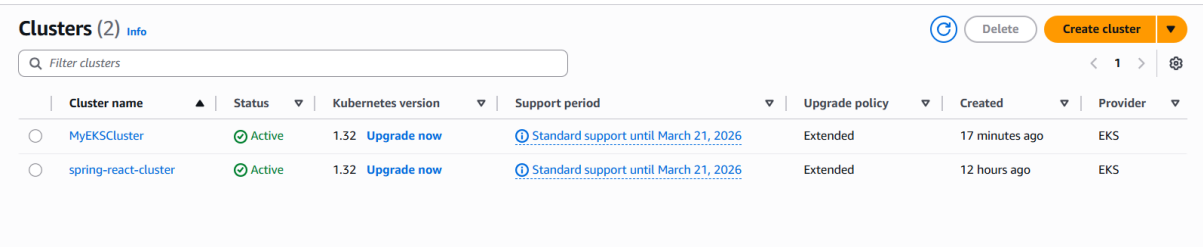
Creating rout53 for failover routing and health check.



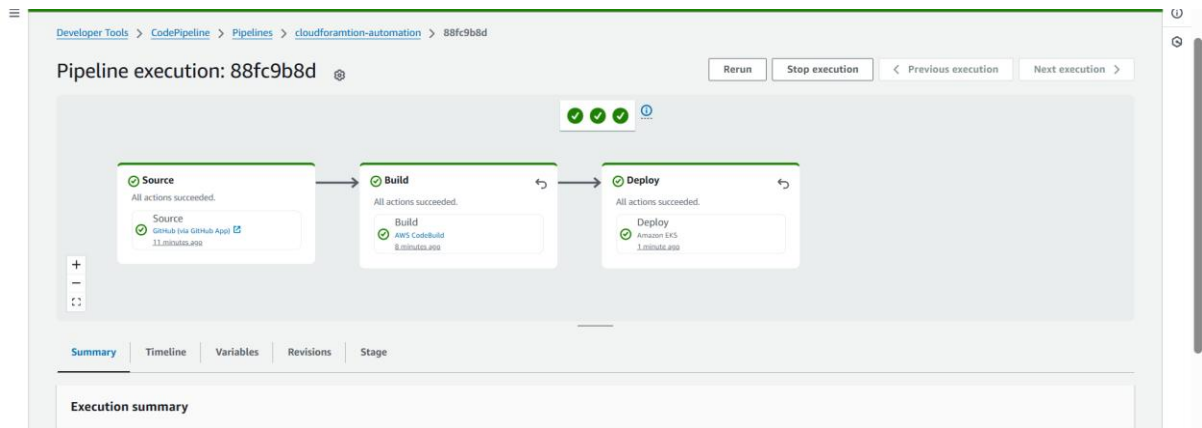
Creating Infrastructure through Cloudformation



Craeted an Eks Cluster named MyEKSCluster



Creating Infrastructure and deploying application inside that infra. Now it's deployed so it's automated now.



Adding SonarQube for codequality analysis.

The screenshot shows the SonarQube web interface. At the top, there is a yellow banner with a message: 'You're running a version of SonarQube that has reached end of life. Please upgrade to a supported version at your earliest convenience.' Below the banner, the navigation bar includes 'sonarqube', 'Projects', 'Issues', 'Rules', 'Quality Profiles', 'Quality Gates', and 'Administration'. A search bar is present with the text 'Search for projects...'. The main content area shows a list of projects, with 'springboot-backend' selected. The project status is 'Passed'. The last analysis was performed 1 hour ago. The project details include: Bugs (A), Vulnerabilities (A), Hotspots Reviewed (E), Code Smells (A), Coverage (0.0%), Duplications (0.0%), and Lines (199). The footer of the page states: 'SonarQube™ technology is powered by SonarSource SA. Community Edition - Version 9.9 (build 65466) - LGPL v3 - Community - Documentation - Plugins - Web API'.

Lab12-Backend

main

Last analysis of this Branch had 1 warning

June 25, 2025 at 1:52 PM

Version 0.0.1-SNAPSHOT

Overview

Issues

Security Hotspots

Measures

Code

Activity

Project Settings

Project Information

QUALITY GATE STATUS

Passed

All conditions passed.

MEASURES

New Code

Since June 24, 2025

Started 1 day ago

Overall Code

0 New Bugs

Reliability A

0 New Vulnerabilities

Security A

0 New Security Hotspots

Security Review A

Adding Cloudwatch for logging and monitoring purpose

CloudWatch

Container Insights

Container Insights

Service: EKS

Add to dashboard

View in maps

View performance dashboards

Clusters state summary (1)

As of June 26, 2025, 06:46 PM (UTC+05:30)

Cluster

spring-react-cluster

Explore related

Utilization

59% CPU

64% Memory

Alarm states per resource type

Cluster

No alarms detected

Node

No alarms detected

Namespace

No alarms detected

Service

No alarms detected

Performance and status summary

Last 1 min

Clusters CPU (avg)

Utilization 24%

Reserved 43%

Clusters Memory (avg)

Utilization 44%

Reserved 22%

Pods (sum)

Desired 0

Ready 0

Nodes (sum)

Unavailable 0

Available 0

Control plane summary

Last 3 hours

Max API server requests

Average API server requests latency

Top 10

Nodes

per metric

CPU Utilization

Percent

High Utilization >= (80)

1 - ip-192-168-7-16.ec2.internal

2 - ip-192-168-49-115.ec2.internal

Top 10

Nodes

per metric

Memory Utilization

Percent

High Utilization >= (80)

1 - ip-192-168-7-16.ec2.internal

2 - ip-192-168-49-115.ec2.internal

Clusters overview (1)

Find cluster

View in EKS

Name

Alarm state

Last state update

Max CPU %

Max Memory %

spring-react-cluster

No alarms d...

-

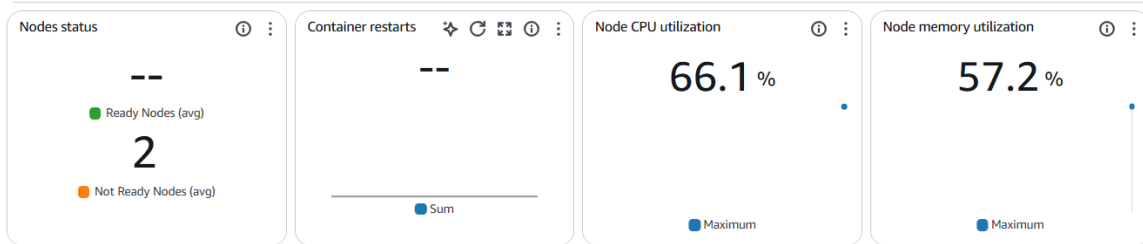
59%

64%

Clusters Performance monitoring - proj-cluster

[Explore related](#)

Cluster summary



Pods performance and status

Now we can access the application through loadbalancer.

react-springboot-alb-53400275.us-east-1.elb.amazonaws.com

git repo: <https://github.com/Supriya9876/Terraform-Capstone>

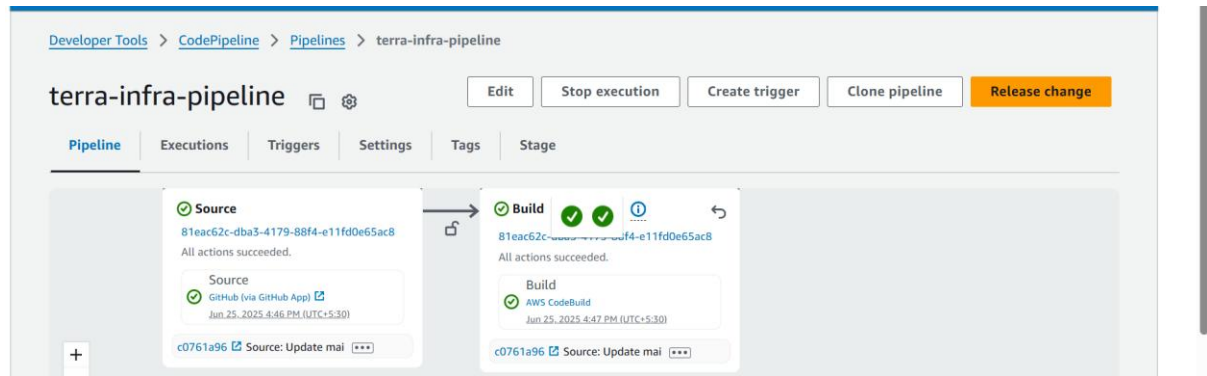
Now Automating the Infra through terraform

Build

The screenshot shows the AWS CodeBuild console for a build named `application-sutomate-build:dbcfa633-8f99-47b2-b93a-13165d323bb3`. The build status is **Succeeded**. The console displays the following details:

Build status		
Status	Initiator	Build ARN
✓ Succeeded	terra_user	arn:aws:codebuild:us-west-1:535002878565:build/application-sutomate-build:dbcfa633-8f99-47b2-b93a-13165d323bb3
Resolved source version	Start time	End time
f37a46c62614b9839dac3bd92f16beab3e5d24ac	Jun 25, 2025 11:59 AM (UTC+5:30)	Jun 25, 2025 12:03 PM (UTC+5:30)

Pipeline



Application automation through eks deploying through terraform

