End-to-End AWS Portfolio Deployment Using EC2, Docker, Lambda, DynamoDB & CI/CD

Amazon ECR (Elastic Container Registry)

Role: Stores Docker image of your portfolio

Why Used: Required for EC2 deployment

Output:

552174866194.dkr.ecr.us-west-1.amazonaws.com/my-react-portfolio:latest

Amazon EC2 – Application Hosting

Role: Runs the Docker container that serves the React frontend

Why Used:

Full control

Can scale using Auto Scaling Group

24/7 hosting

Elastic Load Balancer (ALB) – Traffic Distribution

Role: Distributes incoming traffic across EC2 instances

Why Used:

Prevents downtime if one instance fails

Supports SSL termination

Works with Auto Scaling

Auto Scaling Group (ASG)

Role: Automatically increases or decreases EC2 instances based on traffic

Why Used:

High availability

Cost optimization

Scaling during traffic spikes

Example configuration:

Minimum: 1 instance

Maximum: 3 instances

Virtual Private Cloud (VPC) – Networking

Role: Secure private network for AWS resources

Why Used:

Custom subnets (Public and Private)

NAT Gateway / Internet Gateway

Security Group control

Typical Setup:

2 Public Subnets: ALB and EC2

2 Private Subnets: Lambda or Database

Internet Gateway

Route Tables

AWS Lambda – Backend Contact API

Role: Handles form submissions without a server

Why Used:

Serverless and cost-efficient

Auto-scalable

Connected via API Gateway

DynamoDB – Store Contact Form Data

Role: NoSQL database for storing form submissions

Why Used:

Fully managed and serverless

Fast reads and writes

No maintenance

Example Table Fields:

Name

Email

Message

Timestamp

Amazon SNS – Email/Notification Service

Role: Sends notification when someone fills contact form

Why Used:

Instant alert

Can send SMS, email, or push notifications

Works with Lambda

Flow:

Frontend → API Gateway → Lambda → DynamoDB + SNS Notification

AWS ACM (Certificate Manager) – SSL Certificate

Role: Provides HTTPS

Why Used:

Free SSL/TLS

Integrated with ALB and CloudFront

Secure encrypted connection

Example:

ALB uses ACM certificate and website runs on HTTPS

Route 53 – Domain and DNS

Role: Connects domain name to Load Balancer

Why Used:

Custom domain

DNS health checks

Easy routing to ALB

Example:

A Record pointing domain to ALB endpoint

AWS CloudWatch – Logs and Monitoring

Logs for Lambda

Container logs from EC2

API Gateway debugging

Set alarms for scaling

GitHub Actions – CI/CD Automation

Code checkout

Docker build

Trivy security scan

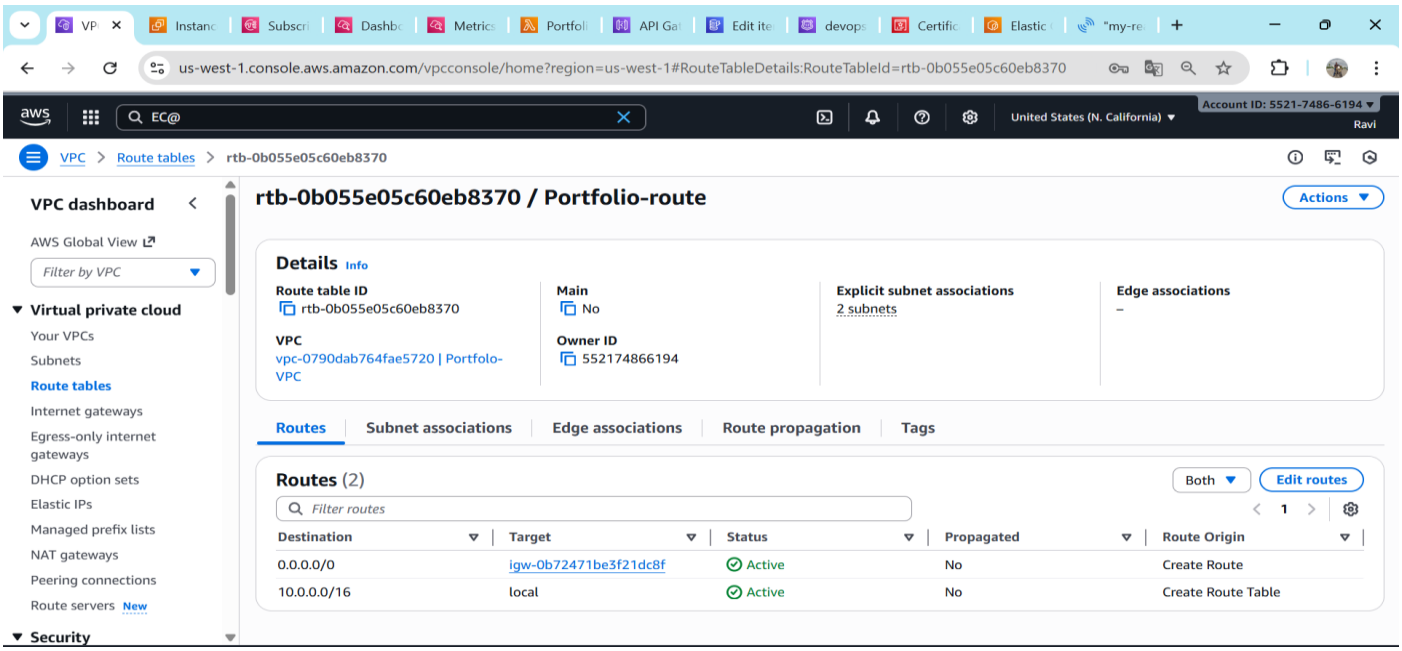
SonarQube code analysis

Push image to ECR

Deploy to EC2

Architecture Summary Table

Component	Service Used	Purpose
Frontend Hosting	EC2 + Docker + ALB	Serve portfolio with load balancing
Auto Scaling ASG	Scale EC2 automatically	
Domain & SSL	Route 53 + ACM	Custom domain with HTTPS
Backend API	Lambda	Handle contact form
Database	DynamoDB	Store messages
Notifications	SNS	Email alert
Container Storage	ECR	Store Docker containers
CI/CD	GitHub Actions + Trivy + SonarQube	Automated deployment and security
Network Security	VPC + Security Groups	Isolate resources and control traffic
Monitoring	CloudWatch	Logs and metrics



us-west-1.console.aws.amazon.com/vpcconsole/home?region=us-west-1#subnets:

Account ID: 5521-7486-6194 | United States (N. California) | Ravi

VPC > Subnets

VPC dashboard

AWS Global View

Filter by VPC

Virtual private cloud

- Your VPCs
- Subnets
- Route tables
- Internet gateways
- Egress-only internet gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists
- NAT gateways
- Peering connections
- Route servers New

Security

Subnets (4) Info

Last updated about 4 hours ago | Actions | Create subnet

Find subnets by attribute or tag

Name	Subnet ID	State	VPC	Block Public...
–	subnet-013cb5639f6dc26be	Available	vpc-0d13f6db325a80556	Off
Public-Portfolio	subnet-08bb0b4a1622795a1	Available	vpc-0790dab764fae5720 | Port...	Off
–	subnet-0d0285d79535ac990	Available	vpc-0d13f6db325a80556	Off
Public2-Portfolio	subnet-03f1c534b0b616d0c	Available	vpc-0790dab764fae5720 | Port...	Off

Select a subnet

us-west-1.console.aws.amazon.com/vpcconsole/home?region=us-west-1#RouteTableDetails:RouteTableId=rtb-0b055e05c60eb8370

Account ID: 5521-7486-6194 | United States (N. California) | Ravi

VPC > Route tables > rtb-0b055e05c60eb8370

VPC dashboard

AWS Global View

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- DHCP option sets
- Elastic IPs
- Managed prefix lists
- NAT gateways
- Peering connections
- Route servers New

rtb-0b055e05c60eb8370 / Portfolio-route

Actions

Details Info

Route table ID	Main	Explicit subnet associations	Edge associations
rtb-0b055e05c60eb8370	No	2 subnets	–
VPC	**Owner ID**		
vpc-0790dab764fae5720 | Portfolio-VPC	552174866194		

Routes | Subnet associations | Edge associations | Route propagation | Tags

Routes (2)

Both | Edit routes

Filter routes

Destination	Target	Status	Propagated	Route Origin
0.0.0.0/0	igw-0b72471be3f21dc8f	Active	No	Create Route
10.0.0.0/16	local	Active	No	Create Route Table

us-west-1.console.aws.amazon.com/vpcconsole/home?region=us-west-1#InternetGateway:internetGatewayId=igw-0b72471be3f21dc8f

Account ID: 5521-7486-6194 | United States (N. California) | Ravi

VPC > Internet gateways > igw-0b72471be3f21dc8f

VPC dashboard

AWS Global View

Filter by VPC

Virtual private cloud

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- Route tables
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- Egress-only internet gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists
- NAT gateways
- Peering connections

igw-0b72471be3f21dc8f / Portfolio-IGW

Actions

Details Info

Internet gateway ID	State	VPC ID	Owner
igw-0b72471be3f21dc8f	Attached	vpc-0790dab764fae5720 | Portfolio-VPC	552174866194

Tags (1)

Manage tags

Search tags

Key	Value
Name	Portfolio-IGW

us-west-1.console.aws.amazon.com/ec2/home?region=us-west-1#Instances:

aws | Search [Alt+S] | United States (N. California) | Account ID: 5521-7486-6194 | Ravi

EC2 > Instances

EC2

- Dashboard
- AWS Global View
- Events
- **Instances**
  - Instances
  - Instance Types
  - Launch Templates
  - Spot Requests
  - Savings Plans
  - Reserved Instances
  - Dedicated Hosts
  - Capacity Reservations
  - Capacity Manager New
- **Images**
  - AMIs
  - AMI Catalog

Instances (1/5) Info

Connect | Instance state | Actions | Launch instances

Find Instance by attribute or tag (case-sensitive) | All states | 1

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Avai
Public2-Portfolio	i-08b001d883c292581	Running	m7i-flex.large	3/3 checks passed	View alarms +	us-w
ASG1	i-08e2e2bf3bb28f550	Running	m7i-flex.large	3/3 checks passed	View alarms +	us-w
Portfolio-Server	i-0c79416c725c25d7b	Running	m7i-flex.large	3/3 checks passed	View alarms +	us-w
Portfolio-server-1	i-0e56930d5c80b55f9	Running	m7i-flex.large	3/3 checks passed	View alarms +	us-w

i-0e56930d5c80b55f9 (Portfolio-server-1)

Details | Status and alarms | Monitoring | Security | Networking | Storage | Tags

Instance summary Info

Instance ID i-0e56930d5c80b55f9	**Public IPv4 address** 13.57.52.91 | open address	**Private IPv4 addresses** 10.0.1.7
IPv6 address –	**Instance state** Running	**Public DNS** –
Hostname type	**Private IP DNS name (IPv4 only)**	

us-west-1.console.aws.amazon.com/ec2/home?region=us-west-1#Images:visibility=owned-by-me

aws | Search [Alt+S] | United States (N. California) | Account ID: 5521-7486-6194 | Ravi

EC2 > AMIs

- **Images**
  - AMIs
  - AMI Catalog
- **Elastic Block Store**
  - Volumes
  - Snapshots
  - Lifecycle Manager
- **Network & Security**
  - Security Groups
  - Elastic IPs
  - Placement Groups
  - Key Pairs
  - Network Interfaces
- **Load Balancing**
  - Load Balancers
  - Target Groups
  - Trust Stores
- **Auto Scaling**

Amazon Machine Images (AMIs) (1) Info

Recycle Bin | EC2 Image Builder | Actions | Launch instance from AMI

Owned by me | Find AMI by attribute or tag | 1

Name	AMI name	AMI ID	Source	Owner
	Portfolio-image	ami-0766e678a9527bd82	552174866194/Portfolio-image	552174866194

Select an AMI

us-west-1.console.aws.amazon.com/ec2/home?region=us-west-1#TargetGroup:targetGroupArn=arn:aws:elasticloadbalancing:us-west-1:55...

aws | Search [Alt+S] | United States (N. California) | Account ID: 5521-7486-6194 | Ravi

EC2 > Target groups > Portfolio-TG

Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups
Trust Stores
Auto Scaling
Auto Scaling Groups
Settings

Portfolio-TG

Actions

Details

arn:aws:elasticloadbalancing:us-west-1:552174866194:targetgroup/Portfolio-TG/b83aaad2ef73b519

Target type	Protocol : Port	Protocol version	VPC
Instance	HTTP: 80	HTTP1	vpc-0790dab764fae5720
IP address type	**Load balancer**		
IPv4	Portfolio-LB		

5	1	4	0	0	0
Total targets	Healthy	Unhealthy	Unused	Initial	Draining
	0 Anomalous				

Distribution of targets by Availability Zone (AZ)
Select values in this table to see corresponding filters applied to the Registered targets table below.

Targets | Monitoring | Health checks | Attributes | Tags

us-west-1.console.aws.amazon.com/ec2/home?region=us-west-1#LoadBalancer:loadBalancerArn=arn:aws:elasticloadbalancing:us-west-1:5...

aws | Search [Alt+S] | United States (N. California) | Account ID: 5521-7486-6194 | Ravi

EC2 > Load balancers > Portfolio-LB

Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups
Trust Stores
Auto Scaling
Auto Scaling Groups
Settings

Introducing URL rewrite for Application Load Balancer
Modify host headers and URL paths of incoming requests before they reach your targets. To get started, add a rule to your listener and configure a transform.
Learn more

Portfolio-LB

Actions

Details

Load balancer type	Status	VPC	Load balancer IP address type
Application	Active	vpc-0790dab764fae5720	IPv4
Scheme	**Hosted zone**	**Availability Zones**	**Date created**
Internet-facing	Z368ELLRRE2KJ0	subnet-08bb0b4a1622795a1 us-west-1a (usw1-az1) subnet-03f1c534b0b616d0c us-west-1c (usw1-az3)	November 8, 2025, 12:38 (UTC+05:30)

Load balancer ARN
arn:aws:elasticloadbalancing:us-west-1:552174866194:loadbalancer/app/Portfolio-LB/335d2708b106a52b

DNS name Info
Portfolio-LB-779416430.us-west-1.elb.amazonaws.com (A Record)

us-west-1.console.aws.amazon.com/ec2/home?region=us-west-1#AutoScalingGroupDetails:id=Portfolio-ASG;view=details

aws | Search [Alt+S] | United States (N. California) | Account ID: 5521-7486-6194 | Ravi

EC2 > Auto Scaling groups > Portfolio-ASG

Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups
Trust Stores
Auto Scaling
Auto Scaling Groups
Settings

Portfolio-ASG

Portfolio-ASG Capacity overview

Edit

arn:aws:autoscaling:us-west-1:552174866194:autoScalingGroup:bb3a8451-1e7c-4ab4-baa9-43ea53285b74:autoScalingGroupName/Portfolio-ASG

Desired capacity	Scaling limits (Min - Max)	Desired capacity type	Status
2	2 - 3	Units (number of instances)	-

Date created
Sat Nov 08 2025 13:46:56 GMT+0530 (India Standard Time)

Details | Integrations | Automatic scaling | Instance management | Instance refresh | Activity | Monitoring

Launch template

Edit

Launch template	AMI ID	Instance type	Owner
lt-0c80511846279c344 Portfolio-Template	ami-0766e678a9527bd82	m7i-flex.large	arn:aws:iam::552174866194:user/Ravi

us-west-1.console.aws.amazon.com/sns/v3/home?region=us-west-1#/subscription/arn:aws:sns:us-west-1:552174866194:Portfolio:cd2be775...

aws | DynamoDB | United States (N. California) | Account ID: 5521-7486-6194 | Ravi

Amazon SNS > Topics > Portfolio > Subscription: cd2be775-1282-4512-9692-42a176505ed4

Amazon SNS

- Dashboard
- Topics
- Subscriptions
- Mobile
  - Push notifications
  - Text messaging (SMS)

Subscription: cd2be775-1282-4512-9692-42a176505ed4

Edit | Delete

Details

ARN
arn:aws:sns:us-west-1:552174866194:Portfolio:cd2be775-1282-4512-9692-42a176505ed4

Endpoint
deevelaraviteja@gmail.com

Topic
Portfolio

Subscription Principal
arn:aws:iam::552174866194:user/Ravi

Status
Confirmed

Protocol
EMAIL

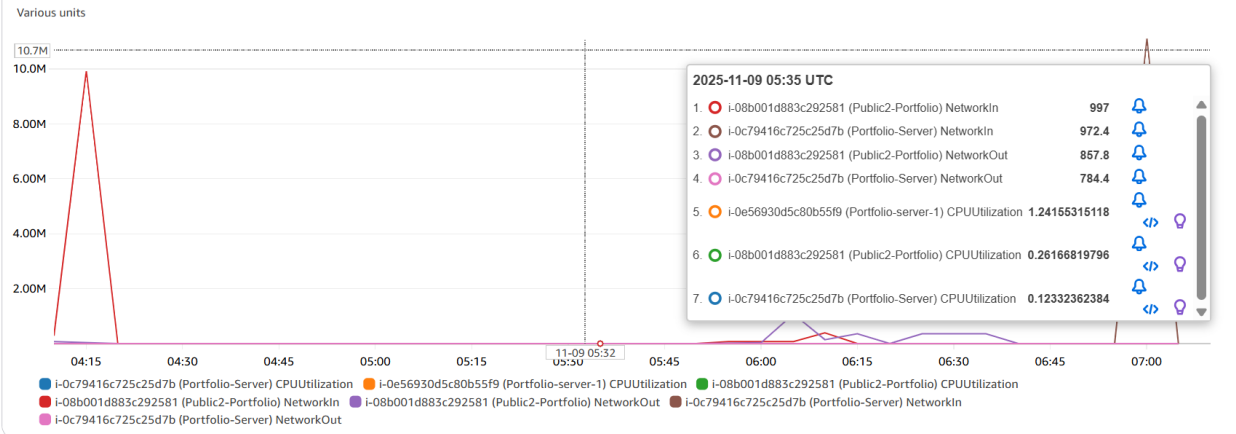
Subscription filter policy | Redrive policy (dead-letter queue)

Subscription filter policy Info

This policy filters the messages that a subscriber receives.

us-west-1.console.aws.amazon.com/cloudwatch/home?region=us-west-1#dashboards/dashboard/Portfolio

CPUUtilization, NetworkIn, NetworkOut | 5 minutes | Average | 1h | 3h | 12h | 1d | 3d | 1w | Custom | UTC timezone



View in metrics | Close

us-west-1.console.aws.amazon.com/lambda/home?region=us-west-1#/functions/Portfolio-Function?tab=code

aws | Search [Alt+S] | United States (N. California) | Account ID: 5521-7486-6194 | Ravi

Lambda > Functions > Portfolio-Function

API Gateway (2)

+ Add trigger

+ Add destination

94:function:Portfolio-Function

Function URL Info
-

Code | Test | Monitor | Configuration | Aliases | Versions

Code source Info

Open in Visual Studio Code | Upload from

Portfolio-Function

EXPLORER
PORTFOLIO-FUNCTION
lambda_function.py
DEPLOY

lambda_function.py

```
sns = boto3.client('sns', region_name='

TABLE_NAME = "Portfolio-Table"
SNS_TOPIC_ARN = "arn:aws:sns:us-west-1:

def lambda_handler(event, context):
    try:
        # Parse request body
```

Welcome

Meet Amazon Q

Your generative AI-powered assistant across the software development lifecycle.

Get inline code suggestions

Info | **Tutorials**

Learn how to implement common use cases in AWS Lambda.

Create a simple web app

In this tutorial you will learn how to:

- Build a simple web app, consisting of a Lambda function with a function URL that outputs a webpage
- Invoke your function through its function URL

Learn more

Start tutorial

us-west-1.console.aws.amazon.com/apigateway/main/apis/ct1zxva4jk/resources?api=ct1zxva4jk&region=us-west-1

aws | Route 53 | United States (N. California) | Account ID: 5521-7486-6194 | Ravi

API Gateway > APIs > Resources - Portfolio-API (ct1zxva4jk)

API Gateway

- APIs
- Custom domain names
- Domain name access associations
- VPC links

API: Portfolio-API

- Resources
- Stages
- Authorizers
- Gateway responses
- Models
- Resource policy
- Documentation
- Dashboard
- API settings

Resources

API actions | Deploy API

Create resource

- /
  - /contact
    - GET
    - OPTIONS
    - POST

Resource details

Delete | Update documentation | Enable CORS

Path: /contact

Resource ID: gvxqfn

Methods (3)

Delete | Create method

Method type	Integration type	Authorization	API key
GET	Lambda	None	Not required
OPTIONS	Mock	None	Not required
POST	Lambda	None	Not required

us-west-1.console.aws.amazon.com/dynamodbv2/home?region=us-west-1#item-explorer?table=Portfolio-Table

aws | ECR | United States (N. California) | Account ID: 5521-7486-6194 | Ravi

DynamoDB > Explore items > Portfolio-Table

DynamoDB

- Dashboard
- Tables
- Explore items
- PartiQL editor
- Backups
- Exports to S3
- Imports from S3
- Integrations
- Reserved capacity
- Settings

DAX

- Clusters
- Subnet groups
- Parameter groups
- Events

Table: Portfolio-Table - Items returned (15)

Scan started on November 09, 2025, 12:43:41

Actions | Create item

id (String)	Message	Mobile-Num...	Name
5a28328c-0f66-4706-adda-88d0faef962e	sdfgh	6302886336	pavan
1c9c7de5-ed41-4bfc-8349-a936c66db5c5	No Message	0	No Nan
3e274810-93b2-4e40-bd72-8ce9097313d8	great	6303275377	ravi
f9b217fc-1410-4f46-a7c5-21454c8cfaae	Hello from ...	0	Ravi
902fc675-42ce-49f4-9734-a0898cd3682d	Hello from ...	0	Ravi
a4beb844-d95c-4006-8333-8b5da4821b60	No Message	0	No Nan
3780877d-6ebd-4b6b-859f-6b67c8cb368b	hello	9922773882	poojith
7ec72a5a-7fcb-43c0-a246-a28f87055c48	Hello All thi...	12345678990	Devops
415	Welcome	6303275377	Ravi

us-east-1.console.aws.amazon.com/route53/v2/hostedzones?region=us-west-1#ListRecordSets/Z0132320ZDAGJZ5AIZ4

aws | Search [Alt+S] | Global | Account ID: 5521-7486-6194 | Ravi

Route 53 > Hosted zones > devopswithravi.xyz

Route 53

- Dashboard
- Hosted zones
- Health checks
- Profiles New

IP-based routing

- CIDR collections

Traffic flow

- Traffic policies
- Policy records

Domains

- Registered domains
- Requests

Resolver

Records (4/4) Info

Delete records | Import zone file | Create record

The following table lists the existing records in devopswithravi.xyz. You can't delete the SOA record or the NS record named devopswithravi.xyz.

Filter records by property or value | Type | Routing p... | Alias

Record ...	Type	Routin...	Differ...	Alias	Valu
devopswit...	A	Simple	-	Yes	dua
devopswit...	NS	Simple	-	No	ns-2 ns-1 ns-1 ns-6

4 records selected

us-west-1.console.aws.amazon.com/acm/home?region=us-west-1#/certificates/91a8d828-39a6-491b-b2d1-e36f8ab56bab

aws | Search [Alt+S] | United States (N. California) | Account ID: 5521-7486-6194 | Ravi

AWS Certificate Manager > Certificates > 91a8d828-39a6-491b-b2d1-e36f8ab56bab

AWS Certificate Manager (ACM)

- List certificates
- Request certificate
- Import certificate
- AWS Private CA

91a8d828-39a6-491b-b2d1-e36f8ab56bab

Delete

Certificate status

Identifier
91a8d828-39a6-491b-b2d1-e36f8ab56bab

Status
Issued

ARN
arn:aws:acm:us-west-1:552174866194:certificate/91a8d828-39a6-491b-b2d1-e36f8ab56bab

Type
Amazon Issued

Domains (1)

Create records in Route 53 | Export to CSV

Domain	Status	Renewal status	Type	CNAME name
devopswithravi.xyz	Success	-	CNAME	_806754a5bfde6b2af3d1902e

us-west-1.console.aws.amazon.com/ecr/repositories/private/552174866194/my-react-portfolio?region=us-west-1

aws | Search [Alt+S] | United States (N. California) | Account ID: 5521-7486-6194 | Ravi

Amazon ECR > Private registry > Repositories > my-react-portfolio

Amazon Elastic Container Registry

- Private registry
  - Repositories
    - Summary
    - Images
    - Permissions
    - Lifecycle Policy
    - Repository tags
  - Features & Settings
- Public registry
  - Repositories
  - Settings

ECR public gallery
Amazon ECS
Amazon EKS

Images (10)

Delete | Details | Scan | View push commands

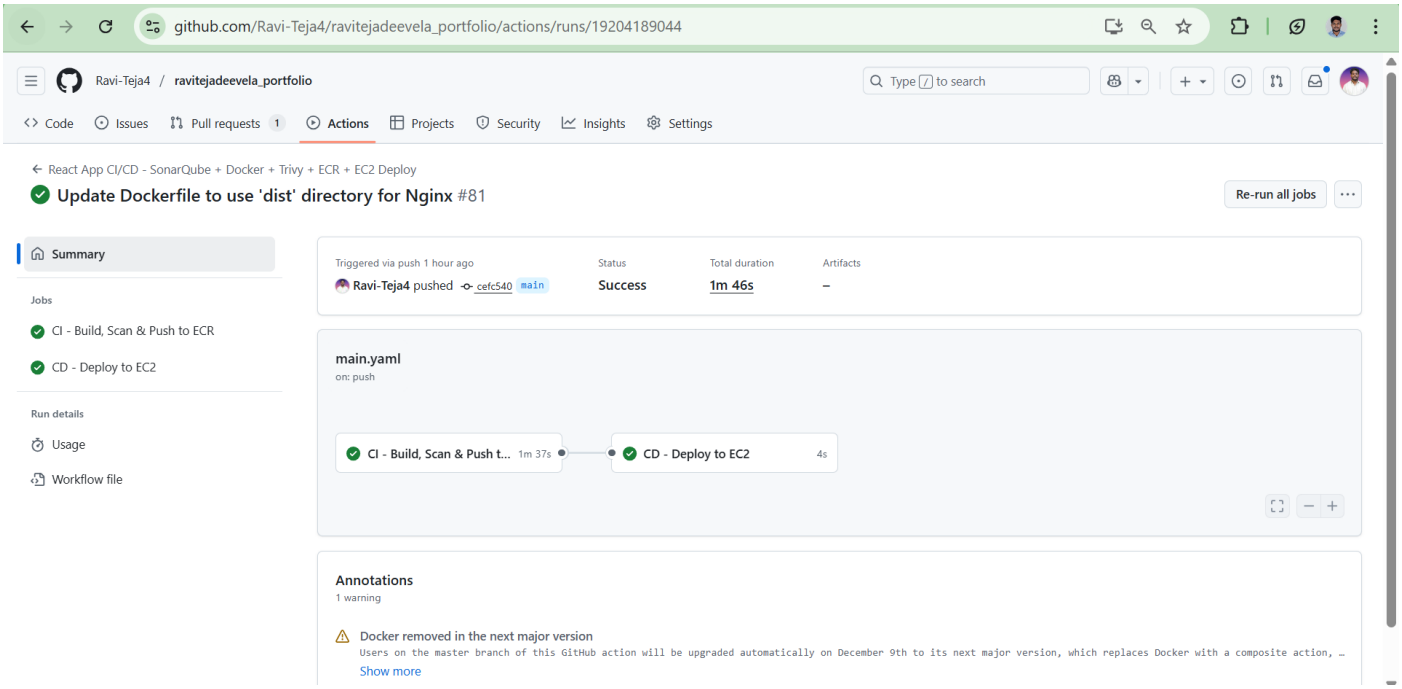
Search artifacts

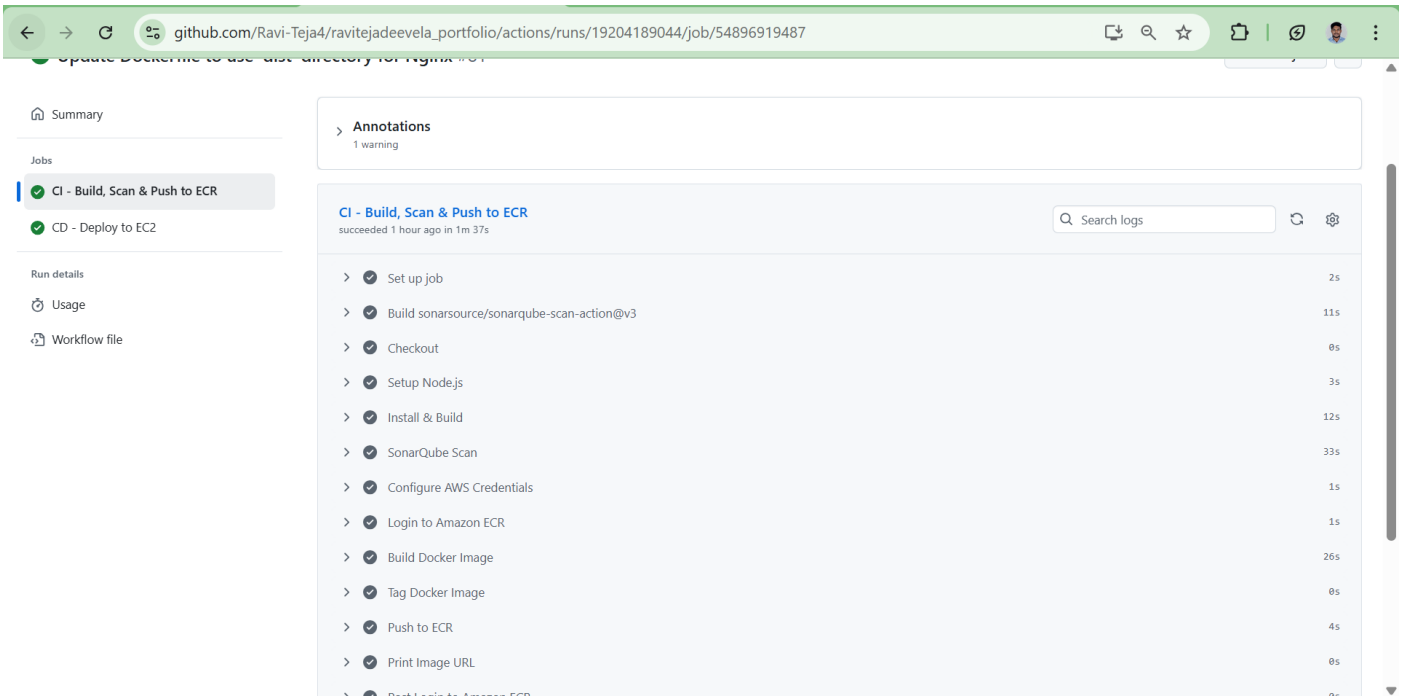
Image tag	Artifact type	Pushed at	Size (MB)	Image URI	Digest	Last recorded pull time
latest	Image	November 09, 2025, 11:22:55 (UTC+05.5)	22.62	Copy URI	sha256:5c7b130814b627...	November 09, 2025, 11:40:20 (UTC+05.5)
-	Image	November 09, 2025, 10:46:03 (UTC+05.5)	22.62	Copy URI	sha256:da7ddebc83b66e...	-
-	Image	November 09, 2025, 08:58:49 (UTC+05.5)	22.62	Copy URI	sha256:18dc29901b61ae...	-
-	Image	November 09, 2025, 08:35:08	22.62	Copy URI	sha256:f00293b95247fe...	-

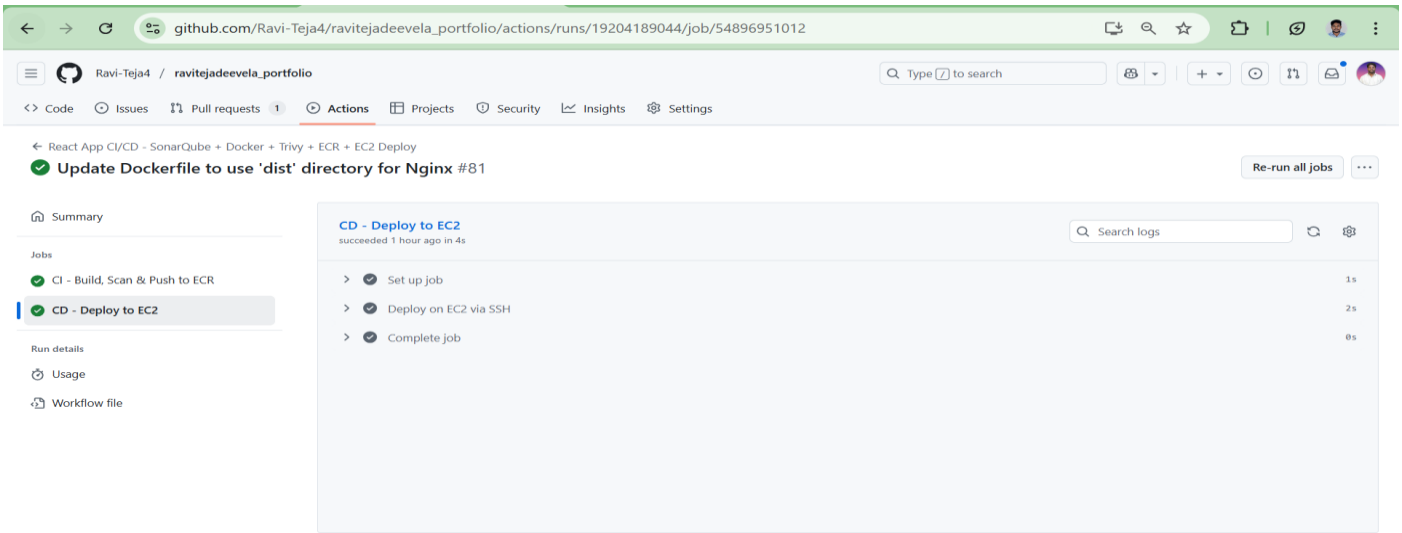
root@ip-10-0-3-225: ~

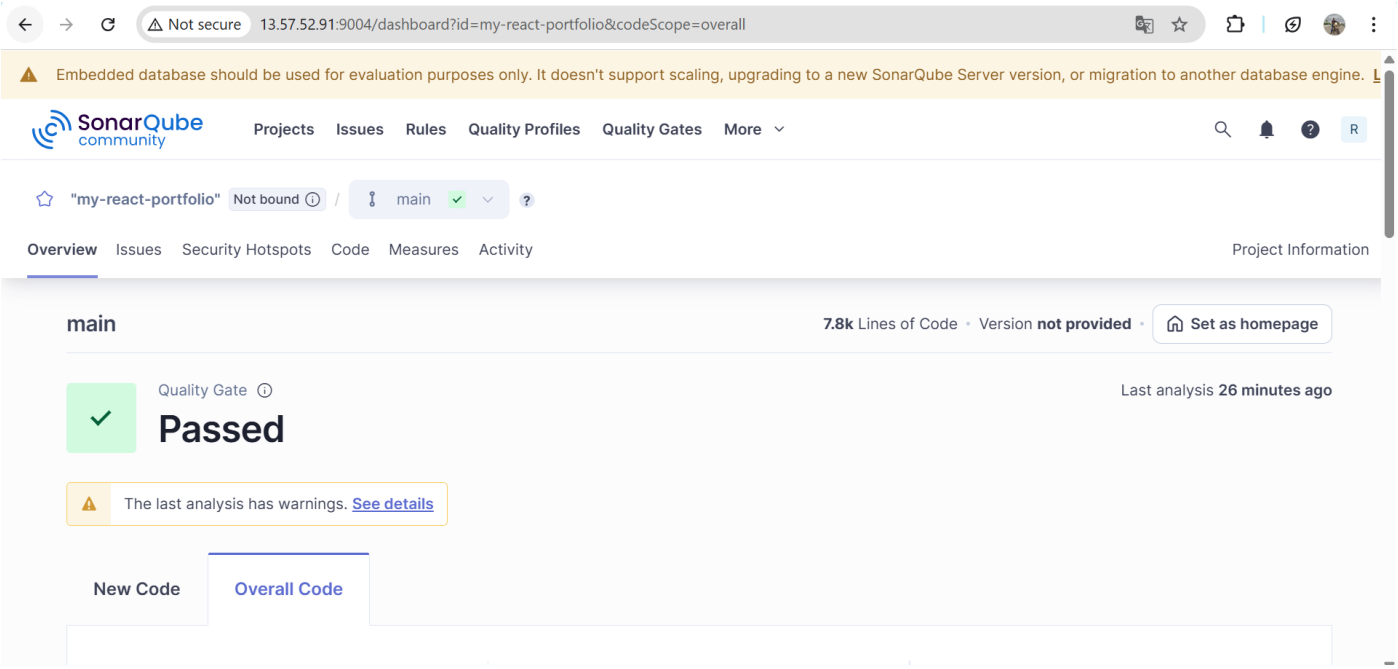
```
root@ip-10-0-3-225:~# ls
aws  awscliv2.zip  snap
root@ip-10-0-3-225:~# docker ps
CONTAINER ID   IMAGE
          COMMAND                  CREATED             STATUS              PORT
S                                   NAMES
74f31bac0d47   552174866194.dkr.ecr.us-west-1.amazonaws.com/my-react-portfolio
:latest   "/docker-entrypoint.…"   About an hour ago   Up About an hour   0.0.
0.0:80->80/tcp, [::]:80->80/tcp   react-portfolio
root@ip-10-0-3-225:~# docker images
REPOSITORY                                                          TAG       IM
AGE ID       CREATED             SIZE
552174866194.dkr.ecr.us-west-1.amazonaws.com/my-react-portfolio   latest    51
bdd7ffc060   About an hour ago   50.4MB
<none>                                                              <none>    a4
cf3545521e   14 hours ago        50.4MB
root@ip-10-0-3-225:~#
```

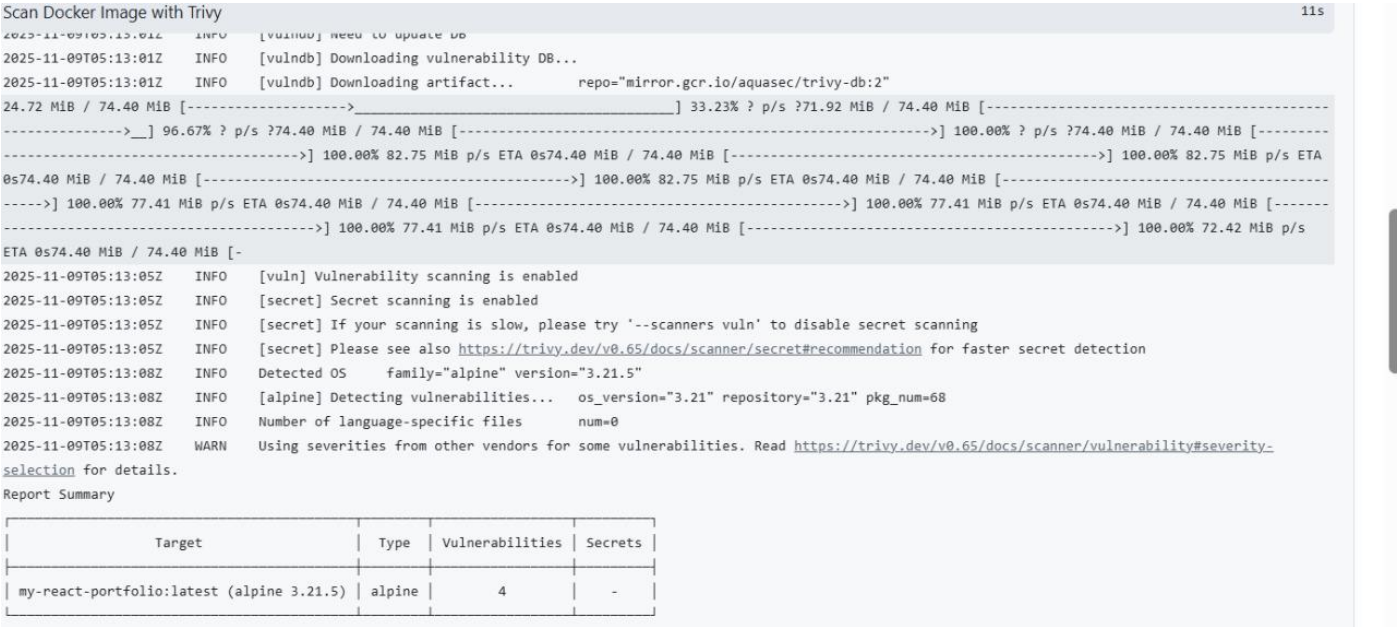
Finally I Deployed My Application Through Docker (CI/CD) (Git-Hub Actions)











```
Scan Docker Image with Trivy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
2025-11-09T05:13:01Z    INFO    [vulndb] Need to update DB
2025-11-09T05:13:01Z    INFO    [vulndb] Downloading vulnerability DB...
2025-11-09T05:13:01Z    INFO    [vulndb] Downloading artifact...        repo="mirror.gcr.io/aquasec/trivy-db:2"
24.72 MiB / 74.40 MiB [-------------------->__________________________________________] 33.23% ? p/s ?71.92 MiB / 74.40 MiB [-----------------------------------------
---------------->__] 96.67% ? p/s ?74.40 MiB / 74.40 MiB [-------------------------------------------------------->] 100.00% ? p/s ?74.40 MiB / 74.40 MiB [---------
-------------------------------------->] 100.00% 82.75 MiB p/s ETA 0s74.40 MiB / 74.40 MiB [------------------------------------------->] 100.00% 82.75 MiB p/s ETA
0s74.40 MiB / 74.40 MiB [------------------------------------------->] 100.00% 82.75 MiB p/s ETA 0s74.40 MiB / 74.40 MiB [-----------------------------------------
----->] 100.00% 77.41 MiB p/s ETA 0s74.40 MiB / 74.40 MiB [------------------------------------------->] 100.00% 77.41 MiB p/s ETA 0s74.40 MiB / 74.40 MiB [-------
-------------------------------------->] 100.00% 77.41 MiB p/s ETA 0s74.40 MiB / 74.40 MiB [------------------------------------------->] 100.00% 72.42 MiB p/s
ETA 0s74.40 MiB / 74.40 MiB [-
2025-11-09T05:13:05Z    INFO    [vuln] Vulnerability scanning is enabled
2025-11-09T05:13:05Z    INFO    [secret] Secret scanning is enabled
2025-11-09T05:13:05Z    INFO    [secret] If your scanning is slow, please try '--scanners vuln' to disable secret scanning
2025-11-09T05:13:05Z    INFO    [secret] Please see also https://trivy.dev/v0.65/docs/scanner/secret#recommendation for faster secret detection
2025-11-09T05:13:08Z    INFO    Detected OS     family="alpine" version="3.21.5"
2025-11-09T05:13:08Z    INFO    [alpine] Detecting vulnerabilities...   os_version="3.21" repository="3.21" pkg_num=68
2025-11-09T05:13:08Z    INFO    Number of language-specific files       num=0
2025-11-09T05:13:08Z    WARN    Using severities from other vendors for some vulnerabilities. Read https://trivy.dev/v0.65/docs/scanner/vulnerability#severity-
selection for details.
Report Summary

┌──────────────────────────────────────────┬────────┬─────────────────┬─────────┐
│                  Target                  │  Type  │ Vulnerabilities │ Secrets │
├──────────────────────────────────────────┼────────┼─────────────────┼─────────┤
│ my-react-portfolio:latest (alpine 3.21.5) │ alpine │        4        │    -    │
└──────────────────────────────────────────┴────────┴─────────────────┴─────────┘
```

Workflow File:

```yaml
name: React App CI/CD - SonarQube + Docker + Trivy + ECR + EC2 Deploy

on:
  push:
    branches: [ "main" ]
  workflow_dispatch:

jobs:
  build:
    name: CI - Build, Scan & Push to ECR
    runs-on: ubuntu-latest

    env:
      AWS_REGION: us-west-1
      ECR_REPOSITORY: my-react-portfolio
      IMAGE_TAG: latest

    steps:
      - name: Checkout
```

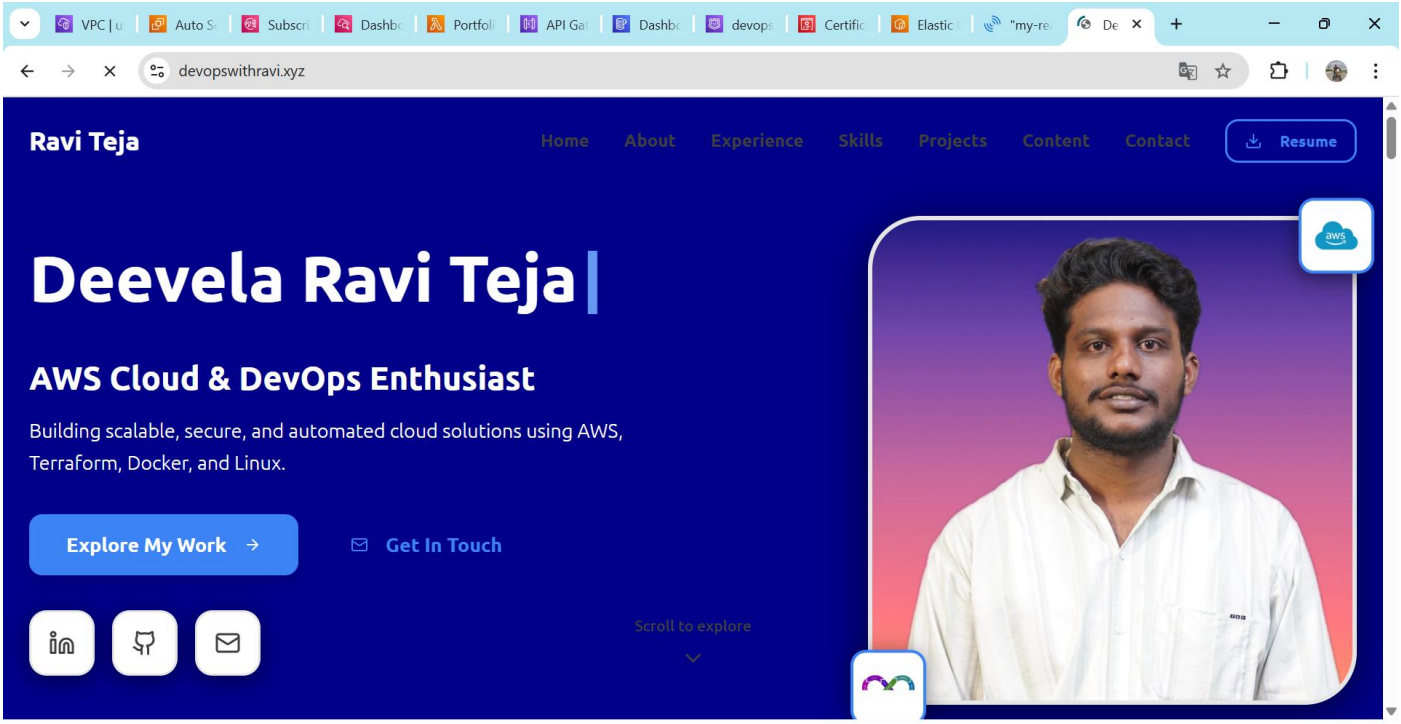
```
      uses: actions/checkout@v4

    - name: Setup Node.js
      uses: actions/setup-node@v4
      with:
        node-version: 18

    - name: Install & Build
      run: |
        npm ci
        npm run build
    - name: SonarQube Scan
      uses: sonarsource/sonarqube-scan-action@v3
      with:
        projectBaseDir: .
        args: >
          -Dsonar.projectKey=my-react-portfolio
          -Dsonar.projectName="my-react-portfolio"
      env:
        SONAR_TOKEN: ${{ secrets.SONAR_TOKEN }}
        SONAR_HOST_URL: ${{ secrets.SONAR_HOST_URL }}

    - name: Configure AWS Credentials
      uses: aws-actions/configure-aws-credentials@v4
      with:
        aws-access-key-id: ${{ secrets.AWS_ACCESS_KEY_ID }}
        aws-secret-access-key: ${{ secrets.AWS_SECRET_ACCESS_KEY }}
        aws-region: ${{ env.AWS_REGION }}

    - name: Login to Amazon ECR
      id: login-ecr
      uses: aws-actions/amazon-ecr-login@v2

    - name: Build Docker Image
      run: docker build -t $ECR_REPOSITORY:$IMAGE_TAG .

    - name: Tag Docker Image
      run: |
        docker tag $ECR_REPOSITORY:$IMAGE_TAG \
        ${{ steps.login-ecr.outputs.registry }}/${{ env.ECR_REPOSITORY }}:$IMAGE_TAG


    - name: Push to ECR
      run: |
        docker push ${{ steps.login-ecr.outputs.registry }}/${{ env.ECR_REPOSITORY
}}:$IMAGE_TAG
    - name: Print Image URL
      run: |
        echo "✅ Image pushed:"
        echo "${{ steps.login-ecr.outputs.registry }}/${{ env.ECR_REPOSITORY }}:$IMAGE_TAG"
  deploy:
    name: CD - Deploy to EC2
    needs: build
    runs-on: ubuntu-latest

    steps:
      - name: Deploy on EC2 via SSH
        uses: appleboy/ssh-action@v1.2.0
        with:
```

```
        host: ${{ secrets.SERVER_IP }}
        username: ${{ secrets.SERVER_USER }}
        key: ${{ secrets.SERVER_SSH_KEY }}
        script: |
          echo "🔐 Login to ECR"
          aws ecr get-login-password --region us-west-1 | docker login --username AWS --
password-stdin ${{ secrets.AWS_ACCOUNT_ID }}.dkr.ecr.us-west-1.amazonaws.com
          echo "🧹 Removing old container..."
          docker stop react-portfolio || true
          docker rm react-portfolio || true
          echo "📦 Pulling new image..."
          docker pull ${{ secrets.AWS_ACCOUNT_ID }}.dkr.ecr.us-west-1.amazonaws.com/my-
react-portfolio:latest
          echo "🚀 Running container..."
          docker run -d -p 80:80 --name react-portfolio \
            ${{ secrets.AWS_ACCOUNT_ID }}.dkr.ecr.us-west-1.amazonaws.com/my-react-
portfolio:latest
          echo "✅ Deployment Done!"
```

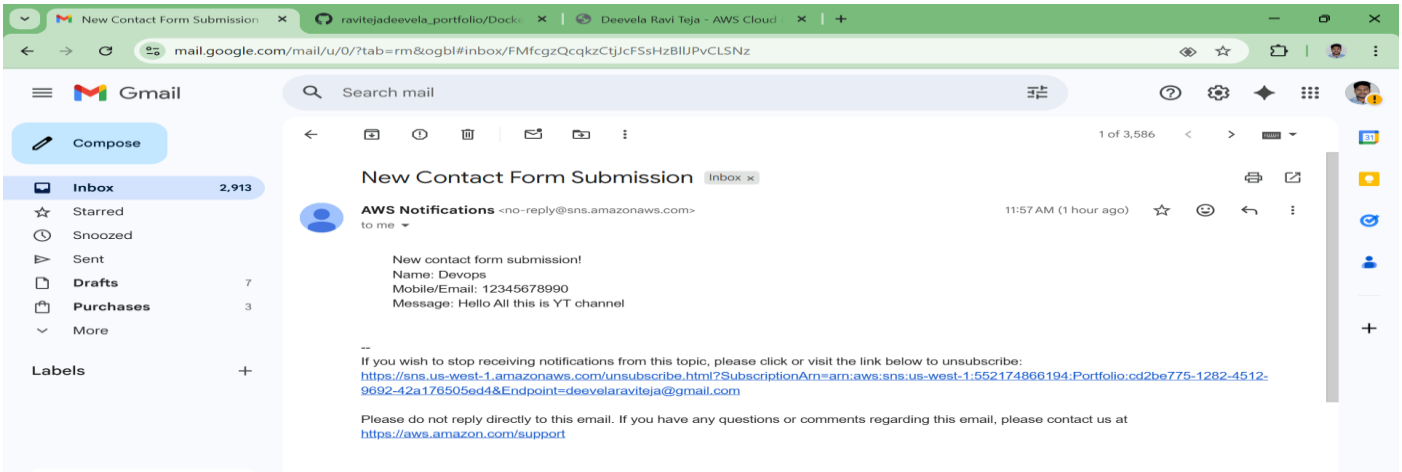
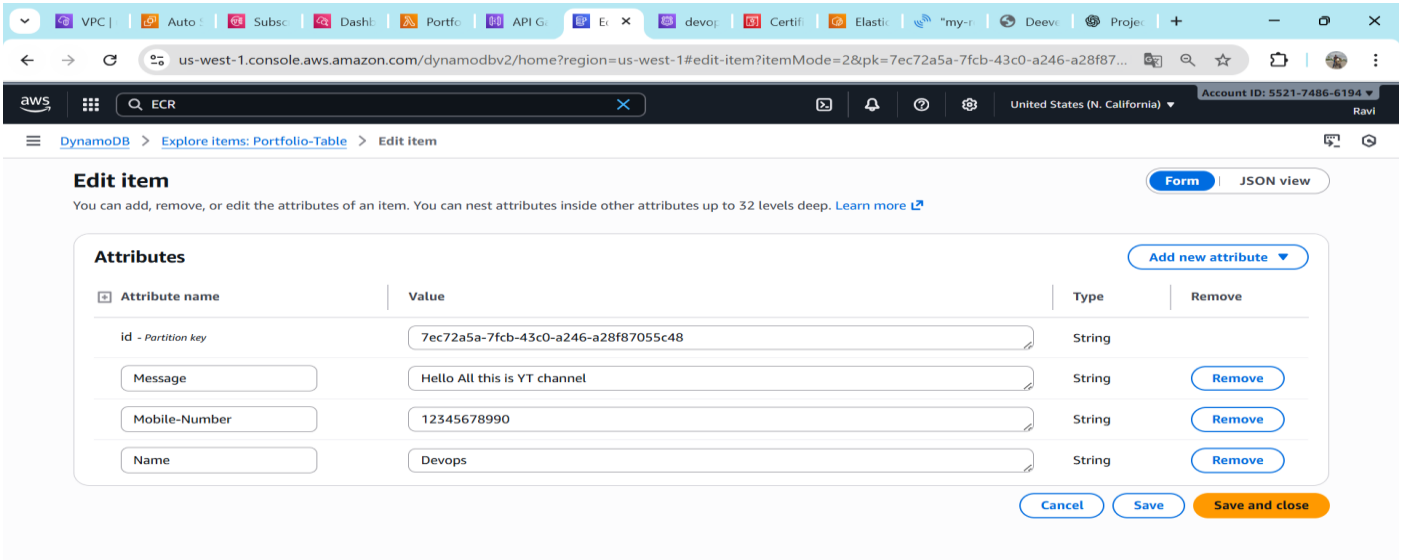
Docker File:

```
# Stage 1: Build the React app
FROM node:18-alpine AS build

# Set working directory
WORKDIR /app

# Copy package files and install dependencies
COPY package*.json ./
RUN npm ci

# Copy all source files
COPY . .

# Build the app
RUN npm run build

# Stage 2: Serve with Nginx
FROM nginx:stable-alpine

# Copy built files from Stage 1
COPY --from=build /app/dist /usr/share/nginx/html

# Copy custom Nginx config
COPY nginx.conf /etc/nginx/conf.d/default.conf

# Expose port 80
EXPOSE 80

# Start Nginx
CMD ["nginx", "-g", "daemon off;"]
```

Finally :



Who Submitted the ContactFrom in the Portfolio I got a Message:



The Contact Information data will be stored into Backend DynamoDB: