

Project: Brain-Tasks-App

Phase 1: Application Containerization

Step 1: Clone Repository & Analyze Structure

Files

main

Go to file

dist

assets

index.html

vite.svg

Brain-Tasks-App / dist /

Ubuntu Build Files

b7d121f · 3 months ago History

Name	Last commit message	Last commit date
..		
assets	Build Files	3 months ago
index.html	Build Files	3 months ago
vite.svg	Build Files	3 months ago

```
aws ecr get-login-password --region ap-south-1 \
  | docker login --username AWS --password-stdin 907969929387.dkr.ecr.ap-south-1.amazonaws.com

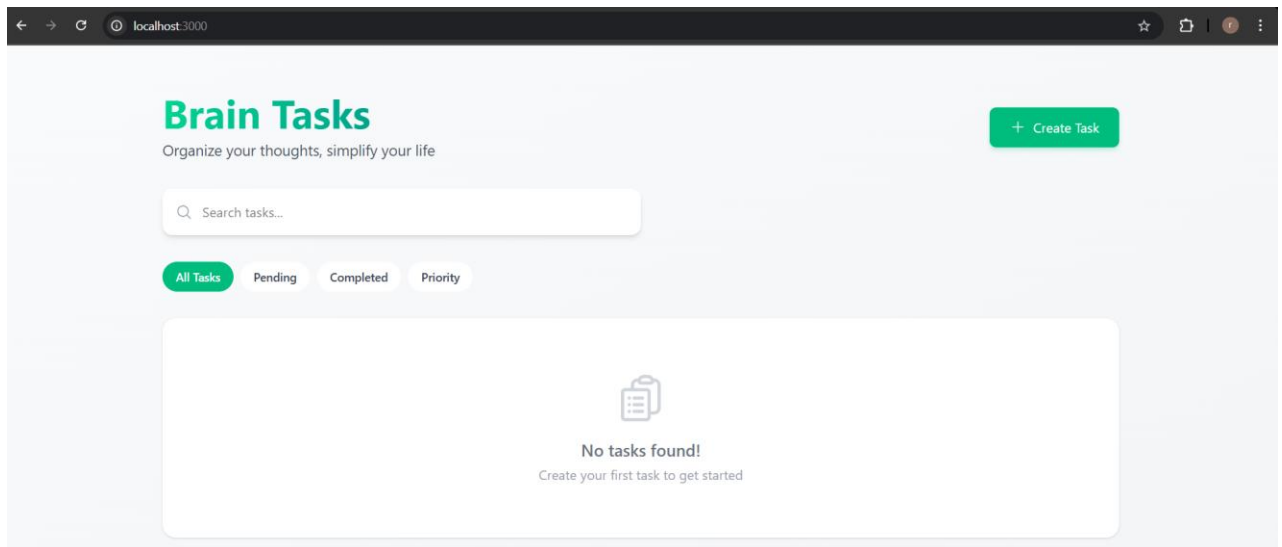
docker tag brain-tasks-app:latest \
  907969929387.dkr.ecr.ap-south-1.amazonaws.com/brain-tasks-app:latest

docker push 907969929387.dkr.ecr.ap-south-1.amazonaws.com/brain-tasks-app:latest
```

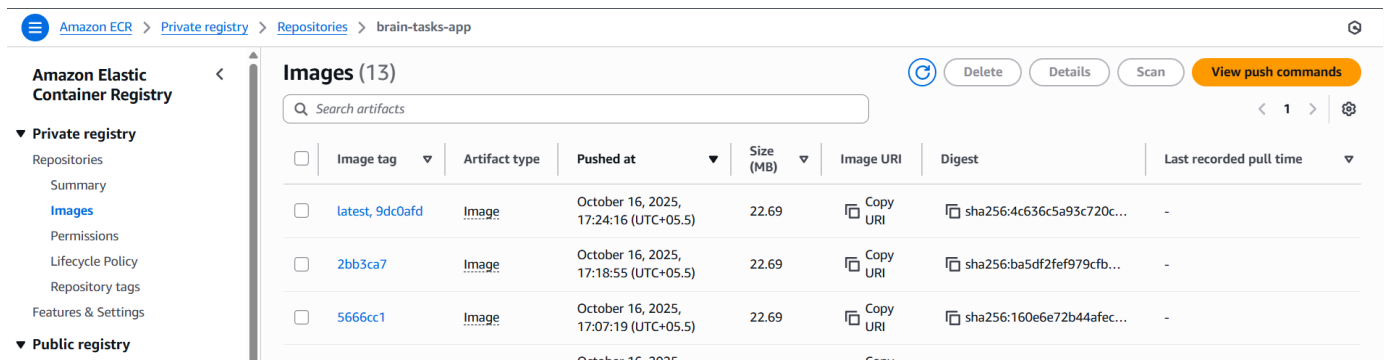
Step 2: Dockerize React Application

```
PS C:\Users\91866\miniproject1\Brain-Tasks-App> docker build -t brain-tasks-app .
[+] Building 11.0s (11/11) FINISHED                                docker:des
ktop-linux
=> [internal] load build definition from Dockerfile
    0.0s
=> => transferring dockerfile: 478B
    0.0s
=> [internal] load metadata for docker.io/library/nginx:alpine
    5.9s
=> [auth] library/nginx:pull token for registry-1.docker.io
```

Ln 66, C

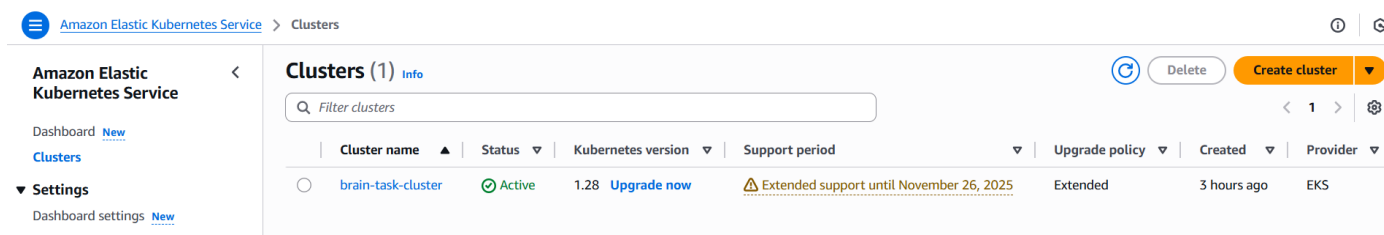


Step 3: Create ECR Repository



Phase 2: Kubernetes Infrastructure

Step 4: Create EKS Cluster



Step 5: Kubernetes Deployment Setup

Brain-Tasks-App > k8s > ! deployment.yaml

```
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    name: brain-tasks-app
5    namespace: default
6  spec:
7    replicas: 2
8    selector:
9      matchLabels:
10     app: brain-tasks-app
11    template:
12      metadata:
13        labels:
14          app: brain-tasks-app
15      spec:
16        containers:
17        - name: brain-tasks-app
18          image: 907969929387.dkr.ecr.ap-south-1.amazonaws.com/brain-tasks-app:latest
19          ports:
20            - containerPort: 80
21          resources:
22            requests:
23              memory: "64Mi"
```

Brain-Tasks-App > k8s > ! service.yaml

```
1  apiVersion: v1
2  kind: Service
3  metadata:
4    name: brain-tasks-service
5    namespace: default
6  spec:
7    selector:
8      app: brain-tasks-app
9    ports:
10     - protocol: TCP
11       port: 80
12       targetPort: 80
13    type: LoadBalancer
```

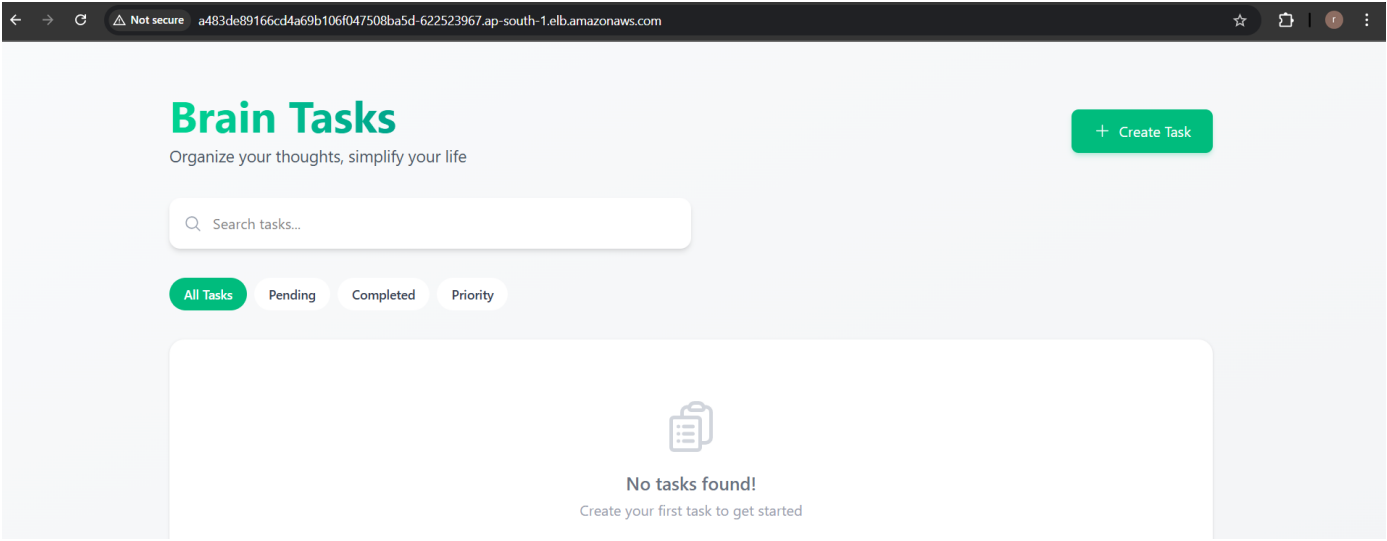
```
PS C:\Users\91866\miniproject1\Brain-Tasks-App> kubectl get all
NAME                                READY   STATUS    RESTARTS   AGE
pod/brain-tasks-app-66857dc578-d5wxv 1/1     Running   0           23s
pod/brain-tasks-app-66857dc578-gzblk 1/1     Running   0           23s

NAME                                TYPE                CLUSTER-IP      EXTERNAL-IP
service/brain-tasks-service         LoadBalancer        10.100.165.236  a483de89166cd4a69b106f047508ba5d-622523967.ap
-south-1.elb.amazonaws.com          80:30293/TCP        10s
service/kubernetes                  ClusterIP            10.100.0.1      <none>
443/TCP                            9m34s

NAME                                READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/brain-tasks-app      2/2     2             2           23s

NAME                                DESIRED   CURRENT   READY   AGE
replicaset.apps/brain-tasks-app-66857dc578 2         2         2       23s
PS C:\Users\91866\miniproject1\Brain-Tasks-App> kubectl get service brain-tasks-service -o wide
NAME                                TYPE                CLUSTER-IP      EXTERNAL-IP
PORT(S)                            AGE   SELECTOR
brain-tasks-service                 LoadBalancer        10.100.165.236  a483de89166cd4a69b106f047508ba5d-622523967.ap-south-1
.elb.amazonaws.com                  80:30293/TCP        18s   app=brain-tasks-app
PS C:\Users\91866\miniproject1\Brain-Tasks-App> docker build -t 907969929387.dkr.ecr.ap-south-1.amazonaws.com/brain-tasks-app:latest .
```

Step 6: Application Deployment Verification



Phase 3: CI/CD Pipeline Implementation

Step 7: CodeBuild Project Setup

Developer Tools

CodeBuild

► Source • CodeCommit

► Artifacts • CodeArtifact

▼ Build • CodeBuild

Getting started

Build projects

Build project

Settings

Build history

Report groups

Report history

Developer Tools > CodeBuild > Build projects > brain-tasks-app-build

brain-tasks-app-build

Actions Create trigger Edit Clone Debug build Start build with overrides Start build

Configuration

Source provider

GitHub

Primary repository

Wanted162/project-brain-task

Artifacts upload location

-

Service role

arn:aws:iam::907969929387:role/CodeBuildBrainTasksServiceRole

Public builds

Disabled

Environment

Edit

Image

aws/codebuild/amazonlinux2-x86_64-standard:3.0

Environment type

Linux Container

Compute type

EC2

Compute

4 vCPUs, 8 GiB memory

Fleet ARN

-

Service role

arn:aws:iam::907969929387:role/CodeBuildBrainTasksServiceRole

Privileged

False

Timeout

1 hour 0 minutes

Queued timeout

8 hours 0 minutes

Certificate

-

Registry credential

-

► VPC

► Environment variables

► File systems

Developer Tools

CodeBuild

► Source • CodeCommit

► Artifacts • CodeArtifact

▼ Build • CodeBuild

Getting started

Build projects

Build project

Settings

Build history

Report groups

Report history

Compute fleets New

Account metrics

▼ Related integrations

Jenkins

GitHub Actions New

GitLab runners New

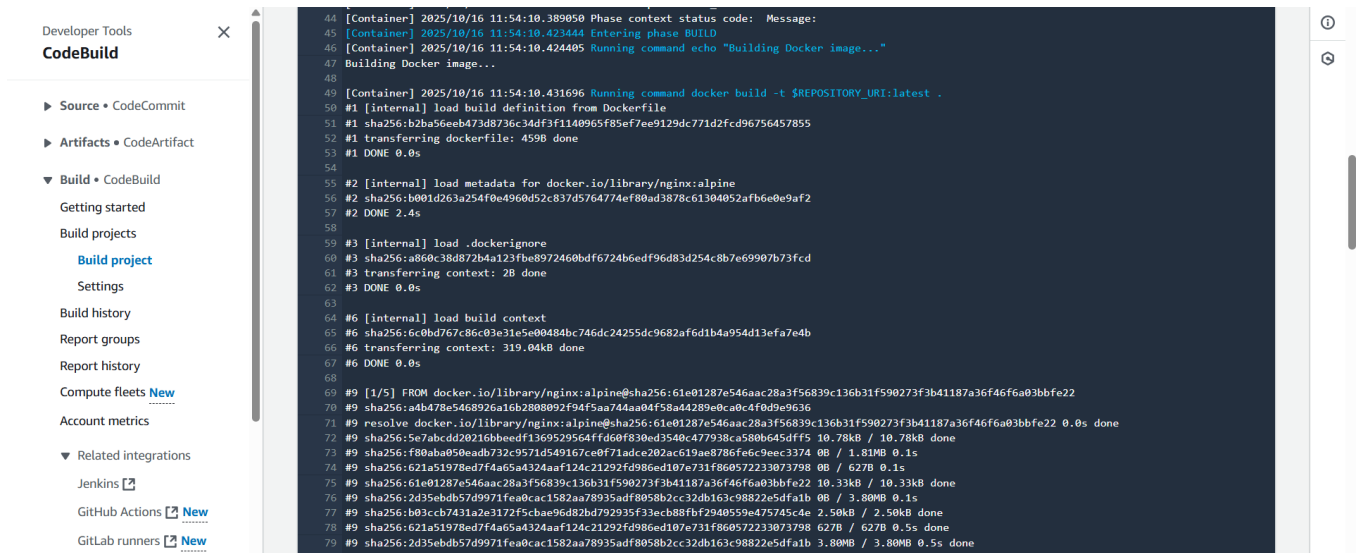
Build history Batch history Project details Build triggers Metrics Debug sessions

Build history

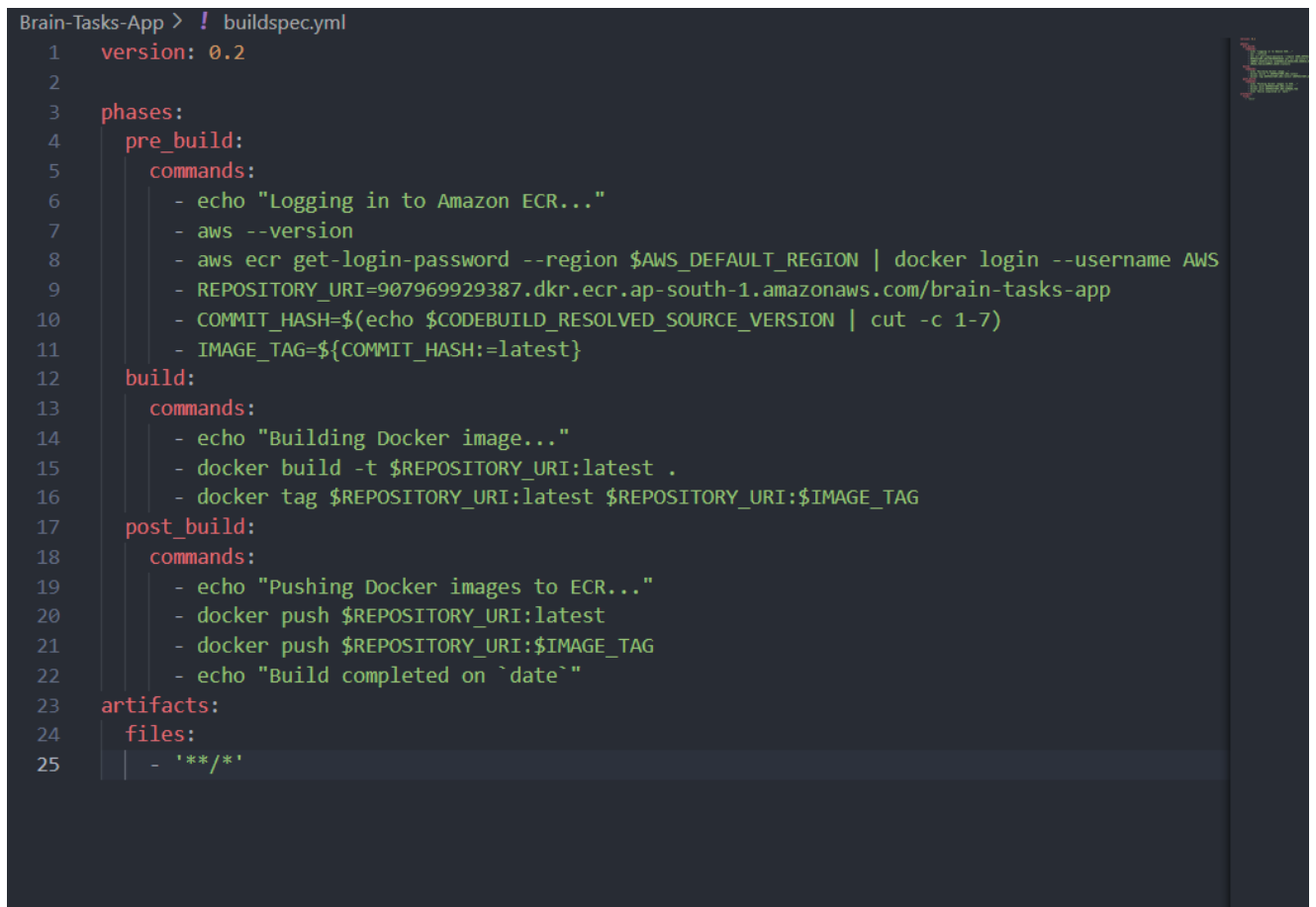
Stop build View artifacts View logs Delete builds Retry build Debug build

< 1 >

	Build run	Status	Build number	Source version	Submitter	Duration	Completed
<input type="checkbox"/>	brain-tasks-app-build:01f65508-4100-478d-a6da-10a8f5333117	Succeeded	13	arn:aws:s3::codepipeline-ap-south-1-fd28eadcad00-43f9-bc6b-dfc05a87d626/b-rain-tasks-pipeline/SourceArti/XpE3POG.zip	codepipeline/brain-tasks-pipeline-new	31 seconds	10 minutes ago
<input type="checkbox"/>	brain-tasks-app-build:eac4e332-269b-4b03-a201-e0b6c8038b46	Succeeded	12	arn:aws:s3::codepipeline-ap-south-1-fd28eadcad00-43f9-bc6b-dfc05a87d626/b-rain-tasks-pipeline/SourceA	codepipeline/brain-tasks-pipeline-new	33 seconds	16 minutes ago



Step 8: Buildspec Configuration



Step 9: ECR repository creation and image store using cloud native service

aws Search [Alt+S] Account ID: 9079-6992-9387 Asia Pacific (Mumbai) Pranit

Amazon ECR > Private registry > Repositories > brain-tasks-app

Amazon Elastic Container Registry

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

ECR public gallery [ECR public gallery](#)
Amazon ECS [Amazon ECS](#)
Amazon EKS [Amazon EKS](#)
Getting started [Getting started](#)

Images (13)

Search artifacts

<input type="checkbox"/>	Image tag	Artifact type	Pushed at	Size (MB)	Image URI	Digest	Last recorded pull time
<input type="checkbox"/>	latest, 9dc0afd	Image	October 16, 2025, 17:24:16 (UTC+05.5)	22.69	Copy URI	sha256:4c636c5a93c720c...	-
<input type="checkbox"/>	2bb3ca7	Image	October 16, 2025, 17:18:55 (UTC+05.5)	22.69	Copy URI	sha256:ba5df2fef979cfb...	-
<input type="checkbox"/>	5666cc1	Image	October 16, 2025, 17:07:19 (UTC+05.5)	22.69	Copy URI	sha256:160e6e72b44afec...	-
<input type="checkbox"/>	-	Image	October 16, 2025, 17:04:47 (UTC+05.5)	22.69	Copy URI	sha256:ff80d343810c534...	-
<input type="checkbox"/>	-	Image	October 16, 2025, 17:03:43 (UTC+05.5)	22.69	Copy URI	sha256:cc188811461e53...	-
<input type="checkbox"/>	-	Image	October 16, 2025, 17:02:39 (UTC+05.5)	22.69	Copy URI	sha256:36106bd857dfd0...	-
<input type="checkbox"/>	-	Image	October 16, 2025, 17:01:36 (UTC+05.5)	22.69	Copy URI	sha256:c5a1c684d9509d...	-
<input type="checkbox"/>	-	Image Index	October 16, 2025, 16:59:57 (UTC+05.5)	22.69	Copy URI	sha256:4cee5dcff7cdc630...	-

Step 10: AWS CodeDeploy Setup with EKS cluster

Developer Tools CodeDeploy

- Source • CodeCommit
- Artifacts • CodeArtifact
- Build • CodeBuild
- ▼ Deploy • CodeDeploy
 - Getting started
 - Deployments
 - Applications
 - Application**

brain-tasks-app-ec2

Notify Delete application

Application details

Name	Compute platform
brain-tasks-app-ec2	EC2/On-premises

Deployments Deployment groups Revisions

brain-tasks-dg

Edit Delete Create deployment

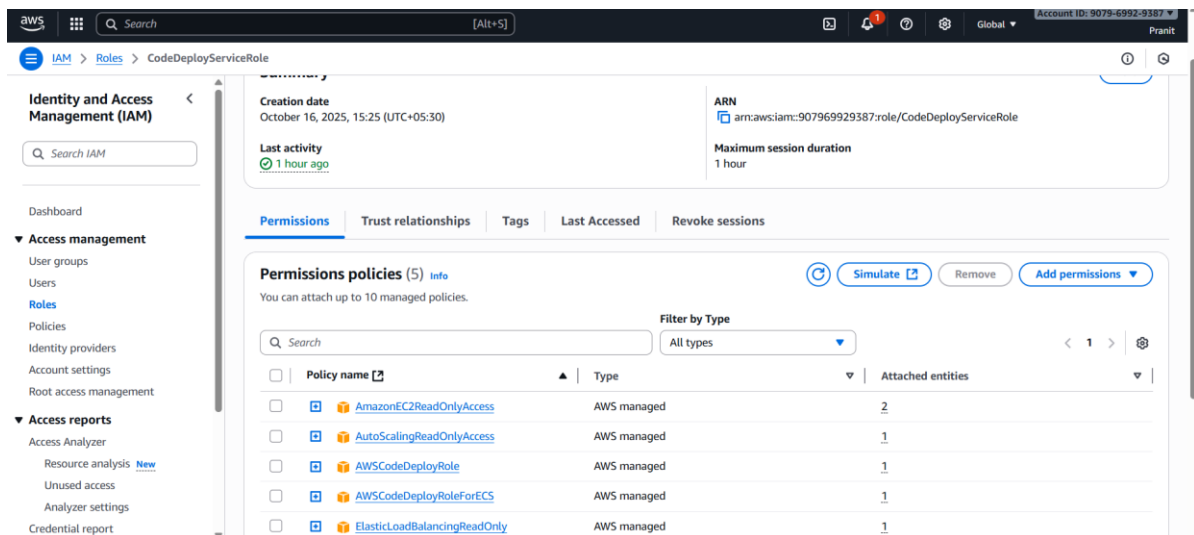
Deployment group details

Deployment group name	Application name	Compute platform
brain-tasks-dg	brain-tasks-app-ec2	EC2/On-premises
Deployment type	Service role ARN	Deployment configuration
In-place	arn:aws:iam::907969929387:role/CodeDeployServiceRole	CodeDeployDefault_AllAtOnce
Rollback enabled	Agent update scheduler	
False	Learn to schedule update in AWS Systems Manager	

Environment configuration: Amazon EC2 instances

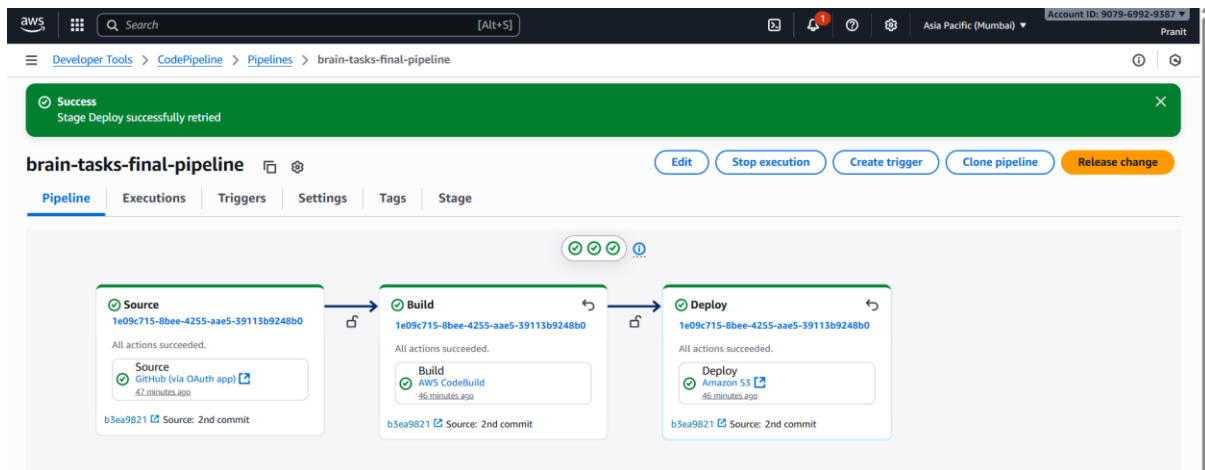
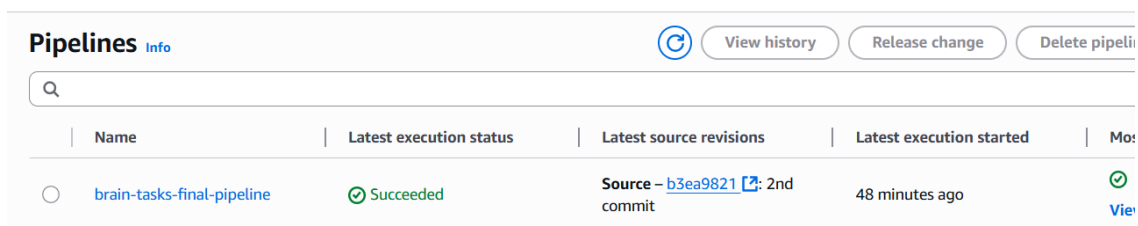
Key	Value
kubernetes.io/cluster/brain-task-cluster	owned

Step 11: Permission Configuration



Phase 4: Complete CI/CD pipeline

Step 12: AWS CodePipeline Creation



Phase 5: Monitoring & Problem Solving

Step 13: CloudWatch Monitoring

CloudWatch

Favorites and recents

Dashboards

▶ AI Operations [New](#)▶ Alarms [0](#) [0](#) [0](#) [0](#)

Log groups (3)

By default, we only load up to 10000 log groups.

☒ Exact match

<input type="checkbox"/>	Log group	Log class	Anomaly d...	Data pr...	Sensitiv...	Retention	Metric fi...
<input type="checkbox"/>	/aws/codebuild/brain-tasks-app-build	Standard	Configure	-	-	Never expire	-

CloudWatch

Favorites and recents

Dashboards

▶ AI Operations [New](#)▶ Alarms [0](#) [0](#) [0](#) [0](#)

▼ Logs

[Log groups](#)[Log Anomalies](#)[Live Tail](#)[Logs Insights](#)[Contributor Insights](#)

▼ Metrics

[All metrics](#) [New](#)[Explorer](#)[Streams](#)▶ Application Signals (APM) [New](#)

Log streams (13)

☐ Exact match ☐ Show expired [Info](#)

<input type="checkbox"/>	Log stream	Last event time
<input type="checkbox"/>	01f65508-4100-478d-a6da-10a8f5333117	2025-10-16 11:53:56 (UTC)
<input type="checkbox"/>	eac4e332-269b-4b03-a201-e0b6c8038b46	2025-10-16 11:48:55 (UTC)
<input type="checkbox"/>	94281bd8-50b3-4f6d-b43b-16c6b52fe804	2025-10-16 11:37:20 (UTC)
<input type="checkbox"/>	1b1aab79-8335-4831-a331-1c17ae618406	2025-10-16 11:34:48 (UTC)
<input type="checkbox"/>	f1afc45-6968-42d3-a74e-77df4c46a64a	2025-10-16 11:33:44 (UTC)
<input type="checkbox"/>	dacfa0a2-2d24-4f50-af10-19e3076248f2	2025-10-16 11:32:40 (UTC)
<input type="checkbox"/>	32c86801-52bb-46db-86d5-7bca601a8a03	2025-10-16 11:31:36 (UTC)
<input type="checkbox"/>	b071614f-2e38-49ec-b95c-4efd120fc84f	2025-10-16 11:22:49 (UTC)
<input type="checkbox"/>	8aaa44a0-1c4d-45a0-8395-ea050a44213a	2025-10-16 11:22:15 (UTC)
<input type="checkbox"/>	a322c0c8-e86d-4f5f-a248-abd340811aab	2025-10-16 11:21:19 (UTC)
<input type="checkbox"/>	fae17d95-9da5-4a91-908d-45040a13d12f	2025-10-16 11:19:37 (UTC)
<input type="checkbox"/>	141684e2-c883-4bb8-afff-cf7c9f6bb8e1	2025-10-16 11:19:01 (UTC)

CodeBuild

☆ Cross account unavailable

1h

3h

12h

1d

1w

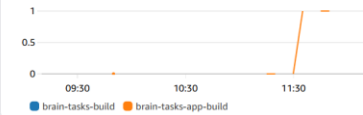
Custom

UTC timezone

☐ In alarm (0) ☐ Insufficient data (0) ☒ OK (0)

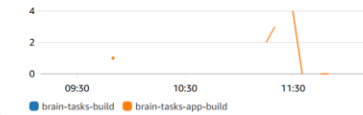
SucceededBuilds: Sum

Various units



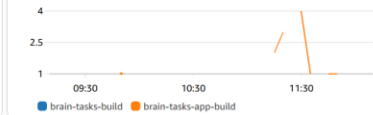
FailedBuilds: Sum

Various units



Builds: Sum

Various units



Duration: Average

Various units

