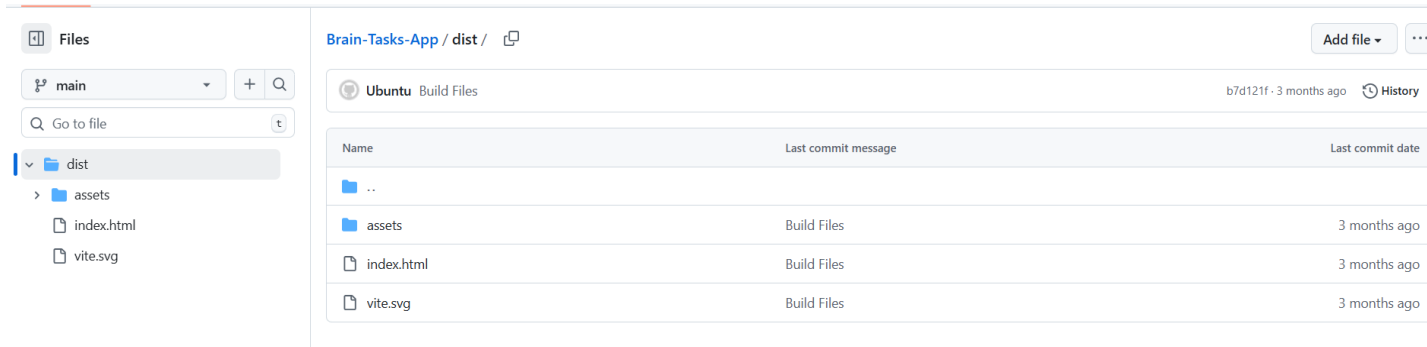


Project: Brain-Tasks-App

Phase 1: Application Containerization

Step 1: Clone Repository & Analyze Structure



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

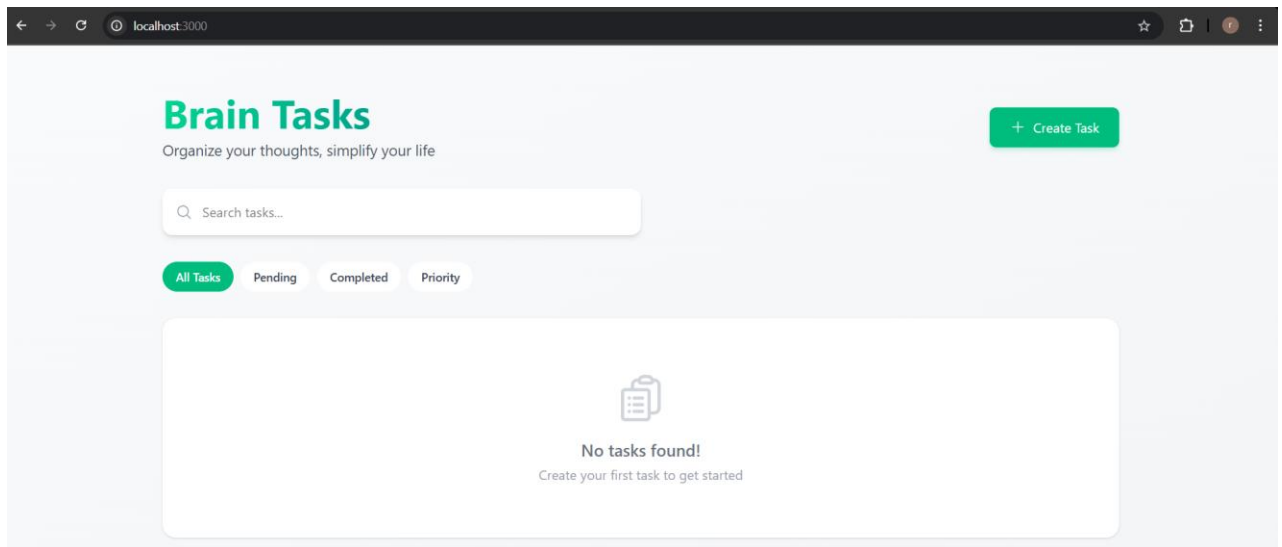
docker tag brain-tasks-app:latest \
907969929387.dkr.ecr.ap-south-1.amazonaws.com/brain-tasks-app:latest

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

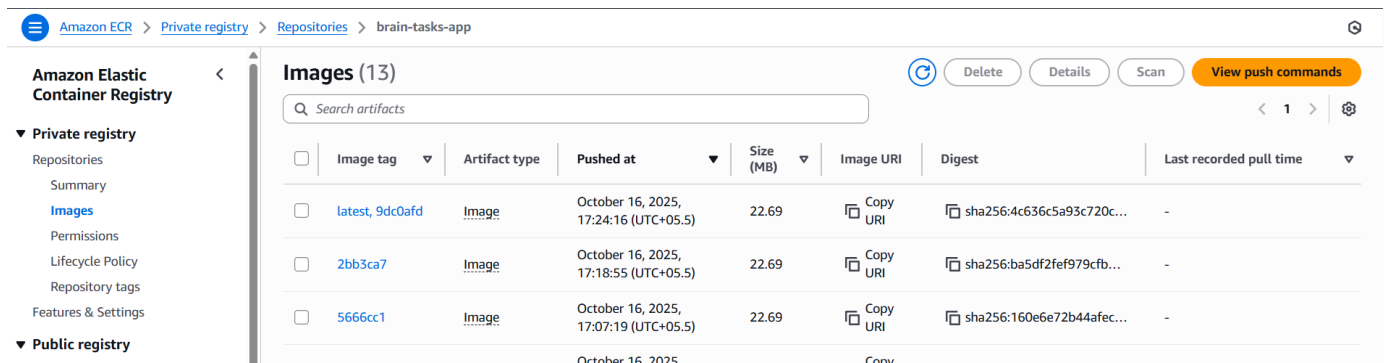
Step 2: Dockerize React Application

```
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

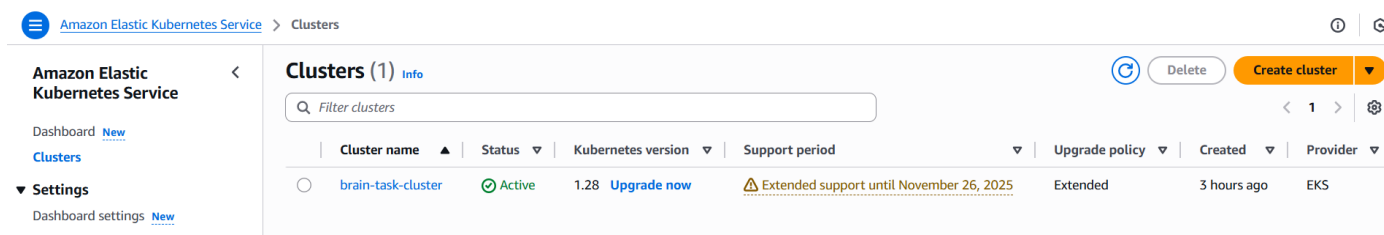


Step 3: Create ECR Repository



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
```

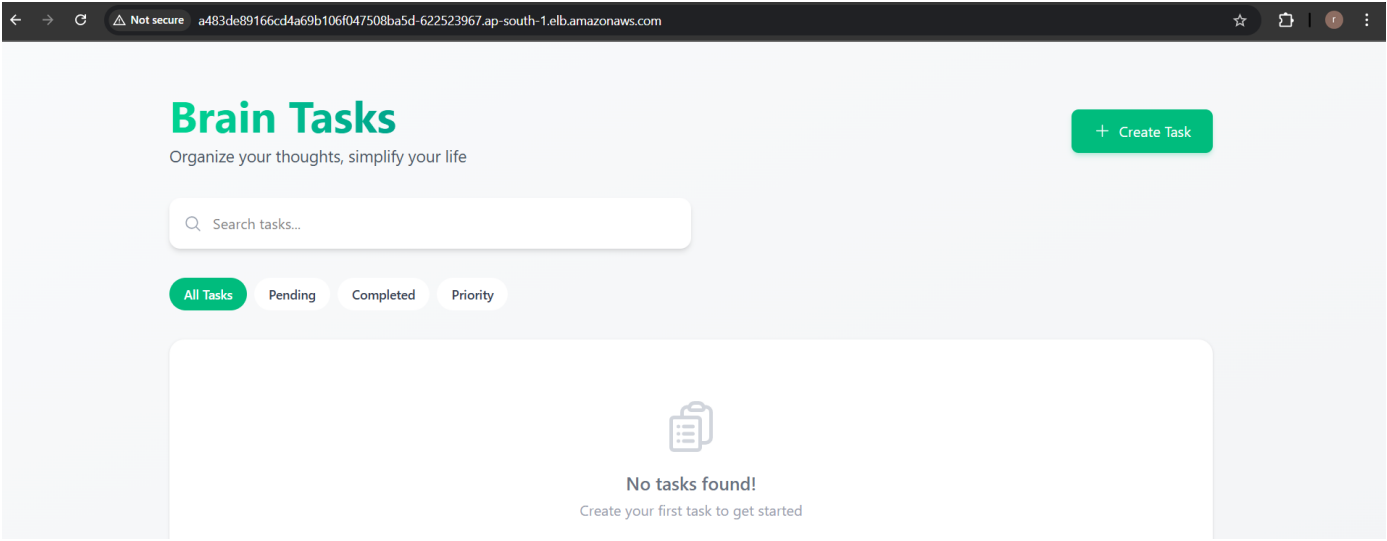
```
PS C:\Users\91866\miniproject1\Brain-Tasks-App> kubectl get all
NAME                                READY   STATUS    RESTARTS   AGE
pod/brain-tasks-app-66857dc578-d5wxv 1/1     Running   0           23s
pod/brain-tasks-app-66857dc578-gzblk 1/1     Running   0           23s

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 > Build projects

Build projects Info 🔄 Actions ▾ Create trigger View details Debug build Start build ▾ Create project

🔍 Your projects ▾ < 1 > ⚙️

	Name ▾	Source provider	Repository	Latest build status	Description	Last Modified
<input type="radio"/>	brain-tasks-app-build	GitHub	Wanted162/project-brain-task 🔗	✔️ Succeeded	-	2 hours ago

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 > ⚙️

<input type="checkbox"/>	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/SourceArtifacts/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/SourceArtifacts/XpE3POG.zip	codepipeline/brain-tasks-pipeline-new	33 seconds	16 minutes ago

Developer Tools CodeBuild

► Source • CodeCommit

► Artifacts • CodeArtifact

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▼ Related integrations

Jenkins 🔗

GitHub Actions 🔗 New

GitLab runners 🔗 New

```

44 [Container] 2025/10/16 11:54:10.389050 Phase context status code: Message:
45 [Container] 2025/10/16 11:54:10.423444 Entering phase BUILD
46 [Container] 2025/10/16 11:54:10.424405 Running command echo "Building Docker image..."
47 Building Docker image...
48
49 [Container] 2025/10/16 11:54:10.431696 Running command docker build -t $REPOSITORY_URI:latest .
50 #1 [internal] load build definition from Dockerfile
51 #1 sha256:b2ba56eeb473d8736c34df3f1140965f85ef7ee9129dc771d2fcd96756457855
52 #1 transferring dockerfile: 459B done
53 #1 DONE 0.0s
54
55 #2 [internal] load metadata for docker.io/library/nginx:alpine
56 #2 sha256:b001d263a254f0e4960d52c837d576474ef80ad3878c61304052afb6e09af2
57 #2 DONE 2.4s
58
59 #3 [internal] load .dockerignore
60 #3 sha256:a860c38d872b4a123f8e97246bdf6724b6edf96d83d254c8b7e69907b73fcd
61 #3 transferring context: 2B done
62 #3 DONE 0.0s
63
64 #6 [internal] load build context
65 #6 sha256:6c0bd767c8603e31e5e00484bc746dc24255dc9682af6d1b4a954d13efa7e4b
66 #6 transferring context: 319.04kB done
67 #6 DONE 0.0s
68
69 #9 [1/5] FROM docker.io/library/nginx:alpine@sha256:61e01287e546aac28a3f56839c136b31f590273f3b41187a36f46f6a03bbfe22
70 #9 sha256:a4b478e5468926a16b2808092f94f5aa74aa04f58aa44289e0ca0c4f0d9e9636
71 #9 resolve docker.io/library/nginx:alpine@sha256:61e01287e546aac28a3f56839c136b31f590273f3b41187a36f46f6a03bbfe22 0.0s done
72 #9 sha256:5e7abdd20216bbedf1369529564ff60f830ed3540c477938ca580b645dff5 10.78kB / 10.78kB done
73 #9 sha256:f80aba05eadb732c9571d549167ce0f71adce202ac619ae8786fe6c9ec3374 0B / 1.81MB 0.1s
74 #9 sha256:621a51978ed7f4a65a4324aaf124c21292fd986ed107e731f860572233073798 0B / 627B 0.1s
75 #9 sha256:61e01287e546aac28a3f56839c136b31f590273f3b41187a36f46f6a03bbfe22 10.33kB / 10.33kB done
76 #9 sha256:2d35ebd57d9971fea0cac1582aa78935adf8058b2cc32db163c98822e5dfa1b 0B / 3.80MB 0.1s
77 #9 sha256:b03c3b7431a2c3172f5cbac96d82b792935f3ecb88fbf29a0559e475745cde 2.50kB / 2.50kB done
78 #9 sha256:621a51978ed7f4a65a4324aaf124c21292fd986ed107e731f860572233073798 627B / 627B 0.5s done
79 #9 sha256:2d35ebd57d9971fea0cac1582aa78935adf8058b2cc32db163c98822e5dfa1b 3.80MB / 3.80MB 0.5s done
80 #9 sha256:03e0333340663146c5124b81c6464d31e0c4550c241023166c443c7c410b / 409B 0.5s

```

Step 8: Buildspec Configuration

Brain-Tasks-App > ! buildspec.yml

```
1  version: 0.2
2
3  phases:
4    pre_build:
5      commands:
6        - echo "Logging in to Amazon ECR..."
7        - aws --version
8        - aws ecr get-login-password --region $AWS_DEFAULT_REGION | docker login --username AWS
9          REPOSITORY_URI=907969929387.dkr.ecr.ap-south-1.amazonaws.com/brain-tasks-app
10       - COMMIT_HASH=$(echo $CODEBUILD_RESOLVED_SOURCE_VERSION | cut -c 1-7)
11       - IMAGE_TAG=${COMMIT_HASH:=latest}
12    build:
13      commands:
14        - echo "Building Docker image..."
15        - docker build -t $REPOSITORY_URI:latest .
16        - docker tag $REPOSITORY_URI:latest $REPOSITORY_URI:$IMAGE_TAG
17    post_build:
18      commands:
19        - echo "Pushing Docker images to ECR..."
20        - docker push $REPOSITORY_URI:latest
21        - docker push $REPOSITORY_URI:$IMAGE_TAG
22        - echo "Build completed on `date`"
23  artifacts:
24    files:
25      - '**/*.*'
```

Step 9: ECR Integration

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

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...	-

Phase 4: Monitoring & Problem Solving

Step 10: CloudWatch Monitoring

CloudWatch > Log groups

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 > Log groups > /aws/codebuild/brain-tasks-app-build

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"/>	f1afcf45-6968-42d3-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-2e58-49ec-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)

