

Project -1 Application Deployment

Git Clone Repo URL : <https://github.com/Vennilavan12/Brain-Tasks-App.git>

```
root@ip-172-31-45-41:~# git clone https://github.com/Vennilavan12/Brain-Tasks-App.git
Cloning into 'Brain-Tasks-App'...
remote: Enumerating objects: 8, done.
remote: Total 8 (delta 0), reused 0 (delta 0), pack-reused 8 (from 1)
Receiving objects: 100% (8/8), 100.04 KiB | 14.29 MiB/s, done.
root@ip-172-31-45-41:~# ls
Brain-Tasks-App  snap
root@ip-172-31-45-41:~# cd Brain-Tasks-App/
root@ip-172-31-45-41:~/Brain-Tasks-App# ls
dist
root@ip-172-31-45-41:~/Brain-Tasks-App# vi script.sh
root@ip-172-31-45-41:~/Brain-Tasks-App# ./script.sh
-bash: ./script.sh: Permission denied
root@ip-172-31-45-41:~/Brain-Tasks-App# chmod 755 script.sh
root@ip-172-31-45-41:~/Brain-Tasks-App# ./script.sh
Updating system...
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease
```

Created Docker build

```
root@ip-172-31-45-41:~/Brain-Tasks-App# docker build -t brainstack:latest .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
            Install the buildx component to build images with BuildKit:
            https://docs.docker.com/go/buildx/

Sending build context to Docker daemon 489.5kB
Step 1/6 : FROM nginx:alpine
alpine: Pulling from library/nginx
589002ba0eae: Pulling fs layer
bca5d04786e1: Pulling fs layer
3e2c181db1b0: Pulling fs layer
6b7b6c7061b7: Pulling fs layer
399d0898a94e: Pulling fs layer
955a8478f9ac: Pulling fs layer
6d397a54a185: Pulling fs layer
5e7756927bef: Pulling fs layer
6b7b6c7061b7: Waiting
399d0898a94e: Waiting
955a8478f9ac: Waiting
```

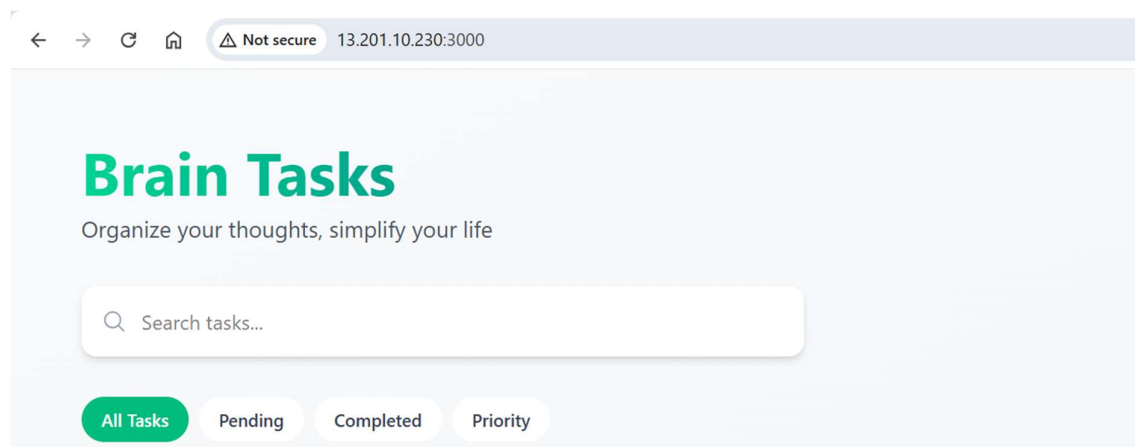
Build Docker images

```
Successfully tagged brainstack:latest
root@ip-172-31-45-41:~/Brain-Tasks-App# docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
brainstack    latest    d78c0c5fb716   3 minutes ago  62.4MB
nginx         alpine    b76de378d572   10 days ago   62.1MB
root@ip-172-31-45-41:~/Brain-Tasks-App#
```

Docker image ran and check in Browser

```
root@ip-172-31-45-41:~/Brain-Tasks-App# docker run -p 3000:3000 brainstack:latest
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: /etc/nginx/conf.d/default.conf differs from the packaged version
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2026/02/15 06:16:50 [notice] 1#1: using the "epoll" event method
2026/02/15 06:16:50 [notice] 1#1: nginx/1.29.5
2026/02/15 06:16:50 [notice] 1#1: built by gcc 15.2.0 (Alpine 15.2.0)
2026/02/15 06:16:50 [notice] 1#1: OS: Linux 6.14.0-1018-aws
2026/02/15 06:16:50 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2026/02/15 06:16:50 [notice] 1#1: start worker processes
2026/02/15 06:16:50 [notice] 1#1: start worker process 29
```

Launched in browser



AWS ECR Repository created

```
root@ip-172-31-45-41:~/Brain-Tasks-App# aws ecr create-repository \
--repository-name react-app \
--region ap-south-1
{
  "repository": {
    "repositoryArn": "arn:aws:ecr:ap-south-1:460783431859:repository/react-app",
    "registryId": "460783431859",
    "repositoryName": "react-app",
    "repositoryUri": "460783431859.dkr.ecr.ap-south-1.amazonaws.com/react-app",
    "createdAt": "2026-02-15T06:23:49.417000+00:00",
    "imageTagMutability": "MUTABLE",
    "imageScanningConfiguration": {
      "scanOnPush": false
    },
    "encryptionConfiguration": {
      "encryptionType": "AES256"
    }
  }
}
```

Docker image tagged to ECR

```
Login Succeeded
root@ip-172-31-45-41:~/Brain-Tasks-App# docker tag braintask:latest 460783431859.dkr.ecr.ap-south-1.amazonaws.com/react-app:latest
Error response from daemon: No such image: braintask:latest
root@ip-172-31-45-41:~/Brain-Tasks-App# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
braintask            latest             d78c0c5fb716       18 minutes ago    62.4MB
nginx                alpine             b76de378d572       10 days ago       62.1MB
root@ip-172-31-45-41:~/Brain-Tasks-App# docker tag braintask:latest 460783431859.dkr.ecr.ap-south-1.amazonaws.com/react-app:latest
root@ip-172-31-45-41:~/Brain-Tasks-App# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
460783431859.dkr.ecr.ap-south-1.amazonaws.com/react-app    latest             d78c0c5fb716       19 minutes ago    62.4MB
braintask            latest             d78c0c5fb716       19 minutes ago    62.4MB
nginx                alpine             b76de378d572       10 days ago       62.1MB
root@ip-172-31-45-41:~/Brain-Tasks-App#
```

i-038ff3c0dfda169ec (Project)

PublicIPs: 13.201.10.230 PrivateIPs: 172.31.45.41

Docker push to ECR

```
root@ip-172-31-45-41:~/Brain-Tasks-App# docker push 460783431859.dkr.ecr.ap-south-1.amazonaws.com/react-app
Using default tag: latest
The push refers to repository [460783431859.dkr.ecr.ap-south-1.amazonaws.com/react-app]
a2f2f97e9511: Pushed
f61dbb93401c: Pushed
20829c4ece7d: Pushed
da3ac26fdf0f: Pushed
7b2903554e63: Pushed
6c0e59fd138a: Pushed
aa0fc249df10: Pushed
f35bcec50d8c: Pushed
660f9a93104f: Pushed
53998a5033c3: Pushed
989e799e6349: Pushed
latest: digest: sha256:e896872dae6d5533ca47320fble4ad70ea51fbbd38032ba15af083306710e5ff size: 2613
root@ip-172-31-45-41:~/Brain-Tasks-App#
```

i-038ff3c0dfda169ec (Project)

PublicIPs: 13.201.10.230 PrivateIPs: 172.31.45.41

react-app

Summary

Images

Lifecycle policy

Permissions

Repository tags

Images (1) Info

🔄

Delete

📄 Copy URI

Details

Scan

View push commands

🔍 Filter active images

<input type="checkbox"/>	Image tags	Type	Created at	Image size	Image digest	Last pulled at
<input type="checkbox"/>	latest	Image	15 February 2026, 12:04:48 (UTC+05.5)	26.08	📄 sha256:e8...	-

Created a EKS cluster with 7 nodes

```
root@ip-172-31-45-41:~/Brain-Tasks-App# eksctl create cluster \
--name react-eks-cluster \
--region ap-south-1 \
--nodegroup-name reactapp-nodes \
--node-type t3.micro \
--nodes 7
2026-02-15 06:40:14 [i] eksctl version 0.223.0
2026-02-15 06:40:14 [i] using region ap-south-1
2026-02-15 06:40:14 [i] setting availability zones to [ap-south-1a ap-south-1b ap-south-1c]
2026-02-15 06:40:14 [i] subnets for ap-south-1a - public:192.168.0.0/19 private:192.168.96.0/19
2026-02-15 06:40:14 [i] subnets for ap-south-1b - public:192.168.32.0/19 private:192.168.128.0/19
2026-02-15 06:40:14 [i] subnets for ap-south-1c - public:192.168.64.0/19 private:192.168.160.0/19
2026-02-15 06:40:14 [i] nodegroup "reactapp-nodes" will use "" [AmazonLinux2023/1.34]
2026-02-15 06:40:14 [!] Auto Mode will be enabled by default in an upcoming release of eksctl. This means
networking add-ons will no longer be created by default. To maintain current behavior, explicitly set 'au
cluster configuration. Learn more: https://eksctl.io/usage/auto-mode/
2026-02-15 06:40:14 [i] using Kubernetes version 1.34
```

i-038ff3c0dfda169ec (Project)

PublicIPs: 13.201.10.230 PrivateIPs: 172.31.45.41

> Clusters ⓘ

Clusters (1) Info

🔄

Delete

Create cluster ▾

🔍 Filter clusters

< 1 > ⚙️

Cluster name ▲	Status ▼	Kubernetes version ▼	Support period ▼	Upgrade policy ▼
react-eks-cluster	🟢 Active	1.34 Upgrade now	Standard support until December 2, 2026	Extended support

> [Clusters](#) > react-eks-cluster ⓘ

🔄

Delete cluster

Upgrade version

Monitor cluster

ⓘ ▶ End of standard support for Kubernetes version 1.34 is December 2, 2026.

Upgrade

▼ Cluster info Info

Status

🟢 Active

Kubernetes version

1.34 Info

Support period

[Standard support until December 2, 2026](#)

Provider

EKS

Cluster health

🟢 0

Upgrade insights

🟢 0

Node health issues

🟢 0

Capability issues

🟢 0

< Overview Resources Compute Networking Add-ons 1 Capabilities Access Ob >

Instances (8) [Info](#) 🔄 Connect Instance state ▾ Actions ▾ Launch

🔍 Find Instance by attribute or tag (case-sensitive) All states ▾

Instance state = running ✕ Clear filters

<input type="checkbox"/>	Name 🔗	▲	Instance ID	Instance state ▾	Instance type ▾
<input type="checkbox"/>	react-eks-cluster-reactapp-nodes-Node		i-0917b0ae314bffa4e	🟢 Running 🔍 🔍	t3.micro
<input type="checkbox"/>	react-eks-cluster-reactapp-nodes-Node		i-04e6ba18a309e9951	🟢 Running 🔍 🔍	t3.micro
<input type="checkbox"/>	react-eks-cluster-reactapp-nodes-Node		i-0e3f7b4ac8ef58d02	🟢 Running 🔍 🔍	t3.micro
<input type="checkbox"/>	react-eks-cluster-reactapp-nodes-Node		i-0124403cb10d42daf	🟢 Running 🔍 🔍	t3.micro
<input type="checkbox"/>	react-eks-cluster-reactapp-nodes-Node		i-0d3dc0f83c3e9bdee	🟢 Running 🔍 🔍	t3.micro
<input type="checkbox"/>	react-eks-cluster-reactapp-nodes-Node		i-07e444a7b015f6161	🟢 Running 🔍 🔍	t3.micro
<input type="checkbox"/>	react-eks-cluster-reactapp-nodes-Node		i-0fe77ddbaa8593a89	🟢 Running 🔍 🔍	t3.micro

Deployment.yml file

```
root@ip-172-31-45-41:~/Brain-Tasks-App# cat deployment.yml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: brain-tasks-deployment
spec:
  replicas: 5
  selector:
    matchLabels:
      app: react-app
  template:
    metadata:
      labels:
        app: react-app
    spec:
      containers:
        - name: react-app
          image: 460783431859.dkr.ecr.ap-south-1.amazonaws.com/react-app
          ports:
            - containerPort: 3000
root@ip-172-31-45-41:~/Brain-Tasks-App#
```

Service.yml file

```
root@ip-172-31-45-41:~/Brain-Tasks-App# vi service.yml
root@ip-172-31-45-41:~/Brain-Tasks-App# cat service.yml
apiVersion: v1
kind: Service
metadata:
  name: react-app-service
spec:
  type: LoadBalancer
  selector:
    app: react-app
  ports:
    - protocol: TCP
      port: 80
      targetPort: 3000
root@ip-172-31-45-41:~/Brain-Tasks-App#
```

i-038ff3c0dfda169ec (Project)

PublicIPs: 13.201.10.230 PrivateIPs: 172.31.45.41

Applied Kubectl deployment & service

```
targetPort: 3000
root@ip-172-31-45-41:~/Brain-Tasks-App# kubectl apply -f deployment.yml
deployment.apps/brain-tasks-deployment created
root@ip-172-31-45-41:~/Brain-Tasks-App# kubectl apply -f service.yml
service/react-app-service created
root@ip-172-31-45-41:~/Brain-Tasks-App#
```

i-038ff3c0dfda169ec (Project)

PublicIPs: 13.201.10.230 PrivateIPs: 172.31.45.41

Verified nodes & pods services

```
root@ip-172-31-45-41:~/Brain-Tasks-App# kubectl get nodes
NAME                                STATUS    ROLES    AGE    VERSION
ip-192-168-17-0.ap-south-1.compute.internal Ready    <none>   8m21s  v1.34.3-eks-70ce843
ip-192-168-4-66.ap-south-1.compute.internal Ready    <none>   8m22s  v1.34.3-eks-70ce843
ip-192-168-42-202.ap-south-1.compute.internal Ready    <none>   8m22s  v1.34.3-eks-70ce843
ip-192-168-42-39.ap-south-1.compute.internal Ready    <none>   8m22s  v1.34.3-eks-70ce843
ip-192-168-50-189.ap-south-1.compute.internal Ready    <none>   8m21s  v1.34.3-eks-70ce843
ip-192-168-77-5.ap-south-1.compute.internal Ready    <none>   8m21s  v1.34.3-eks-70ce843
ip-192-168-84-124.ap-south-1.compute.internal Ready    <none>   7m50s  v1.34.3-eks-70ce843
root@ip-172-31-45-41:~/Brain-Tasks-App# kubectl get pods
NAME                                READY    STATUS    RESTARTS  AGE
brain-tasks-deployment-58b58b9c5b-6fr4k 1/1      Running   0          76s
brain-tasks-deployment-58b58b9c5b-dtxtm 1/1      Running   0          76s
brain-tasks-deployment-58b58b9c5b-f5gdz 1/1      Running   0          76s
brain-tasks-deployment-58b58b9c5b-jfpgs 1/1      Running   0          76s
brain-tasks-deployment-58b58b9c5b-wc48h 1/1      Running   0          76s
root@ip-172-31-45-41:~/Brain-Tasks-App# kubectl get svc
NAME                                TYPE                CLUSTER-IP    EXTERNAL-IP    PORT(S)
kubernetes                         ClusterIP           10.100.0.1    <none>         443/TCP
```

Verified app using Load balance ARN

```
root@ip-172-31-45-41:~/Brain-Tasks-App# kubectl get svc
NAME                                TYPE                CLUSTER-IP    EXTERNAL-IP    PORT(S)
kubernetes                         ClusterIP           10.100.0.1    <none>         443/TCP
react-app-service                  LoadBalancer       10.100.161.114 acad287db33ec4e00b9782564ace4198-844710803.ap-south-1.elb.amazonaws.com 80:30514/TCP
root@ip-172-31-45-41:~/Brain-Tasks-App# ^C
root@ip-172-31-45-41:~/Brain-Tasks-App#
```


Access the load balance ARN in browser

acad287db33ec4e00b9782564ace4198-844710803.ap-south-1.elb.amazonaws.com

← → ↻ 🏠

⚠ Not secure acad287db33ec4e00b9782564ace4198-844710803.ap-south-1.elb.amazonaws.com

Brain Tasks

Organize your thoughts, simplify your life

🔍 Search tasks...

All Tasks


Pending

Completed

Priority

Pushed code to Github repo

```
root@ip-172-31-45-41:~/Brain-Tasks-App# git remote set-url origin https://github.com/vignesh-dev-aws/Application-project.git
root@ip-172-31-45-41:~/Brain-Tasks-App# git push -u origin main
Username for 'https://github.com': vignesh-dev-aws
Password for 'https://vignesh-dev-aws@github.com':
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 2 threads
Compressing objects: 100% (7/7), done.
Writing objects: 100% (8/8), 100.04 KiB | 100.04 MiB/s, done.
Total 8 (delta 0), reused 8 (delta 0), pack-reused 0
To https://github.com/vignesh-dev-aws/Application-project.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.
root@ip-172-31-45-41:~/Brain-Tasks-App#
```

 Application-project Public

🔗 main ▾


🔗 1 Branch

🏷 0 Tags

🔍 Go to file


t

Ad


 root

Update


d1ccdbe · 1

 dist


Build Files

 Dockerfile


Initial Build

 appspec.yaml


Update

 buildspec.yaml


Update

 deployment.yaml


Initial Build

 nginx.conf

Initial Build

 script.sh

Initial Build

 service.yaml

Initial Build

Updated the cluster configmap with the codebuild role ARN for EKS access

```
root@ip-172-31-45-41:~/Brain-Tasks-App# kubectl apply -f aws-auth.yaml
configmap/aws-auth configured
root@ip-172-31-45-41:~/Brain-Tasks-App# cat aws-auth.yaml
apiVersion: v1
kind: ConfigMap
metadata:
  name: aws-auth
  namespace: kube-system
data:
  mapRoles: |
    - rolearn: arn:aws:iam::460783431859:role/Codebulid-React
      username: codebuild
      groups:
        - system:bootstrappers
        - system:masters
root@ip-172-31-45-41:~/Brain-Tasks-App#
```

Build project executed in codebuild using Lambda

The screenshot shows the AWS CodeBuild console for the 'Braintask' project. The left sidebar contains navigation links for Developer Tools, CodeBuild, and Build projects. The main area displays the project configuration and build history.

Configuration:

- Source provider: GitHub
- Primary repository: vignesh-dev-aws/Application-project
- Artifacts upload location: -
- Service role: arn:aws:iam::460783431859:role/Codebuild-React
- Public builds: Disabled

Build history:

Build run	Status	Build number	Source version	Submitter	Duration	Completed
Braintaskc3ed7608-5299-4284-b8ec-6fead9377d5c	Succeeded	6	-	Applgsls/lam bda_task	44 seconds	8 minutes ago

Verified the logs in CloudWatch

The screenshot shows the AWS CloudWatch console for the 'Log events' of the 'Braintask' build project. The left sidebar contains navigation links for CloudWatch, Log management, and Alarms. The main area displays the log events.

Log events:

Timestamp	Message
2026-02-15T10:31:57.316Z	[Container] 2026/02/15 10:31:56.533024 Phase complete: PRE_BUILD State: SUCCEEDED
2026-02-15T10:31:57.316Z	[Container] 2026/02/15 10:31:56.533045 Phase context status code: Message:
2026-02-15T10:31:57.316Z	[Container] 2026/02/15 10:31:56.567500 Entering phase BUILD
2026-02-15T10:31:57.316Z	[Container] 2026/02/15 10:31:56.568645 Running command echo Building Docker image...
2026-02-15T10:31:57.316Z	Building Docker image...
2026-02-15T10:31:57.316Z	[Container] 2026/02/15 10:31:56.574690 Running command docker build -t \$ECR_REPO...

Verified the pods logs in EC2

[illegible]

i-038ff3c0dfda169ec (Project)
PublicIPs: 13.201.10.230 PrivateIPs: 172.31.45.41