

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
```

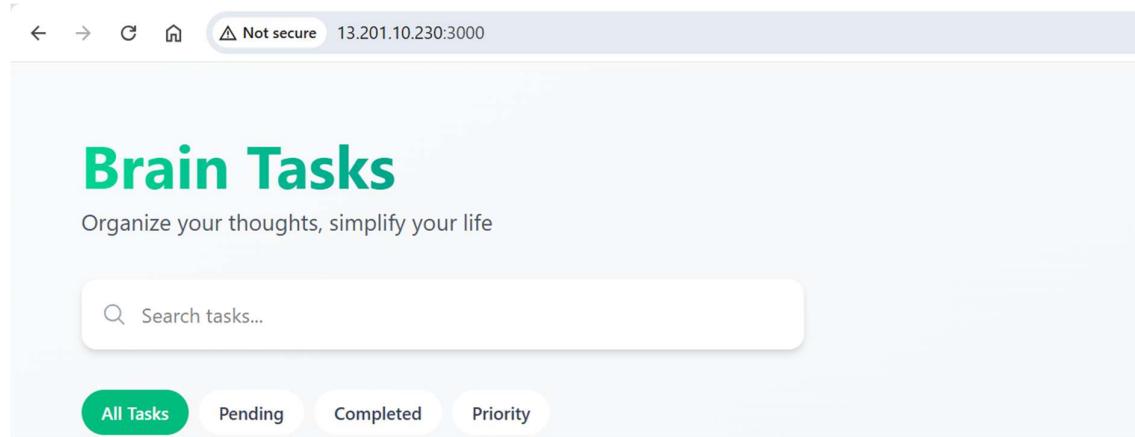
Build Docker images

```
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
brainstack      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 brainstack: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
brainstack      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

```
alpine      b76de378d572  10 days ago   62.1MB
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:e896872dae6d5533ca47320fbe4ad70ea51fbcd38032ba15af083306710e5ff 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				
View push commands				
<input type="text"/> 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 'auto' in your 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)

Public IPs: 13.201.10.230 Private IPs: 172.31.45.41

The screenshot shows the AWS EKS Cluster Overview page for the 'react-eks-cluster'. At the top, there's a navigation bar with 'Clusters' and a search bar labeled 'Filter clusters'. Below it is a table with columns: Cluster name, Status, Kubernetes version, and Support period. The cluster 'react-eks-cluster' is listed as Active, running Kubernetes version 1.34, with standard support until December 2, 2026. There are buttons for 'Delete' and 'Create cluster'.

On the left, there's a breadcrumb trail: Clusters > react-eks-cluster. The main content area has a title 'react-eks-cluster' with buttons for 'Delete cluster', 'Upgrade version', and 'Monitor cluster'. A message box says 'End of standard support for Kubernetes version 1.34 is December 2, 2026.' with a 'Upgrade' button.

The 'Cluster info' section is expanded, showing details like Status (Active), Kubernetes version (1.34), Support period (Standard support until December 2, 2026), Provider (EKS), Cluster health (0 issues), Upgrade insights (0 issues), Node health issues (0 issues), and Capability issues (0 issues).

At the bottom, there are tabs for Overview, Resources, Compute, Networking, Add-ons (1), Capabilities, Access, and Object storage.

Instances (8) [Info](#)

[Connect](#) [Instance state ▾](#) [Actions ▾](#) [Launch](#)

Find Instance by attribute or tag (case-sensitive)

[All states ▾](#)

[Instance state = running](#) [X](#) [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-0fe77ddbbaa8593a89	Running		t3.micro	

Deployment.yml file

```
root@ip-172-31-45-41:~/Brain-Tasks-App# cat deployment.yaml
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.yaml file

```
root@ip-172-31-45-41:~/Brain-Tasks-App# vi service.yaml
root@ip-172-31-45-41:~/Brain-Tasks-App# cat service.yaml
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.yaml
deployment.apps/brain-tasks-deployment created
root@ip-172-31-45-41:~/Brain-Tasks-App# kubectl apply -f service.yaml
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

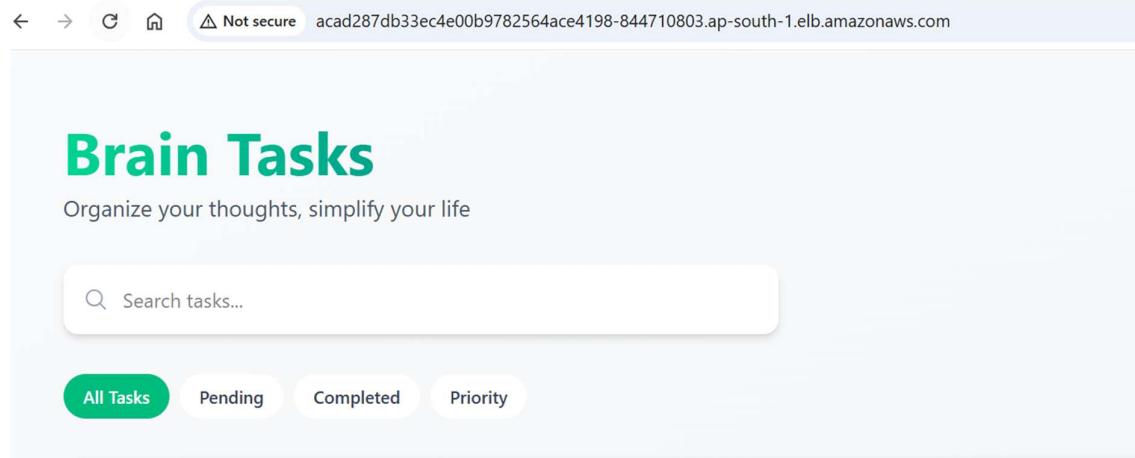
```
root@ip-172-31-45-41:~/Brain-Tasks-App# kubectl get nodes
NAME           STATUS  ROLES   AGE    VERSION
ip-192-168-17-0.ap-south-1.compute.internal  Ready   <none>  8m21s  v1.34.3-eks-70ce843
ip-192-168-4-66.ap-south-1.compute.internal  Ready   <none>  8m22s  v1.34.3-eks-70ce843
ip-192-168-42-202.ap-south-1.compute.internal  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-jirpsg  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   AGE
kubernetes  ClusterIP  10.100.0.1   <none>       13m
root@ip-172-31-45-41:~/Brain-Tasks-App# 
```

Verified app using Load balance ARN

```
root@ip-172-31-45-41:~/Brain-Tasks-App# kubectl get svc
NAME        TYPE        CLUSTER-IP     EXTERNAL-IP   AGE
kubernetes  ClusterIP  10.100.0.1   <none>       13m
react-app-service  LoadBalancer  10.100.161.114  acad287db33ec4e00b9782564ace4198-844710803.ap-south-1.elb.amazonaws.com  80:30514/TCP
81s
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

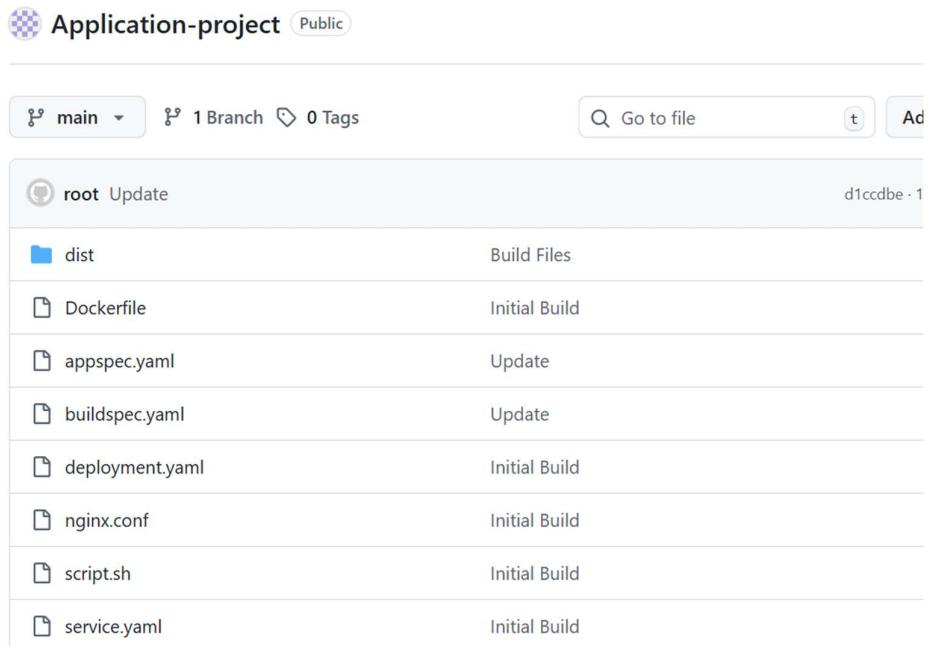
acad287db33ec4e00b9782564ace4198-844710803.ap-south-1.elb.amazonaws.com



The screenshot shows a web browser window with the URL `acad287db33ec4e00b9782564ace4198-844710803.ap-south-1.elb.amazonaws.com`. The page title is "Brain Tasks" and the subtitle is "Organize your thoughts, simplify your life". There is a search bar with the placeholder "Search tasks...". Below the search bar are four buttons: "All Tasks" (highlighted in green), "Pending", "Completed", and "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#
```



The screenshot shows a GitHub repository named "Application-project". It has 1 branch and 0 tags. The "main" branch is selected. The repository contains the following files:

- 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)

The commit hash is `d1ccdbe · 1`.

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. The navigation bar at the top includes links for Developer Tools, CodeBuild, Build projects, and Braintask. On the left sidebar, under the CodeBuild section, there are links for Source + CodeCommit, Artifacts + CodeArtifact, Build + CodeBuild (with sub-links for Getting started and Build projects), and a Build project link which is currently selected. Other items like Settings, Build history, Report groups, Report history, Compute fleets New, Account metrics, and Related integrations (Jenkins, GitHub Actions, GitHub runners) are also listed.

The main content area is titled "Braintask". It features a "Configuration" section with tabs for Source provider (GitHub), Primary repository (vignesh-dev-aws/Application-project), Artifacts upload location (-), and Service role (arn:aws:iam::460783431859:role/Codebuild-React). Below this is a "Public builds" section set to Disabled.

Below the configuration is a navigation bar with tabs: Build history (selected), Batch history, Project details, Build triggers, Metrics, and Debug sessions. Under "Build history", there is a table with columns: Build run, Status, Build number, Source version, Submitter, Duration, and Completed. One build entry is shown: Braintask:c5ed7608-3299-4284-b8ec-6ead5377d5c, Status: Succeeded, Build number: 6, Submitter: Applogs/lam_bda_task, Duration: 44 seconds, Completed: 8 minutes ago.

Verified the logs in CloudWatch

The screenshot shows the AWS CloudWatch Log Management interface. The left sidebar includes navigation links like CloudWatch, Log management, /aws/codebuild/Brantask, and a search bar for favorites and recent logs. The main area displays log events for the task 'c3ed7608-3299-4284-b8ec-6fead9377d5c'. It features a filter bar with a search input ('Filter events - press enter to search'), time range ('1m 1h UTC timezone'), and a 'Display' dropdown. The log table has columns for Timestamp and Message, showing entries from February 15, 2026, at 10:31:57.316Z. The messages describe the build process, including container phase completion, context status, entering the BUILD phase, running commands like 'echo Building Docker image...', and finally executing a docker build command.

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