

AD campaign recommender

CAPSTONE – 01

Model Deployment

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Source code – Flask App

app.py

```
import pickle

mdl_gender = pickle.load(open("final_model_gender.pkl", "rb"))
mdl_age_group = pickle.load(open("final_model_age_group.pkl", "rb"))
test_data_gender = pickle.load(open("test_data_gender.pkl", "rb"))
test_data_age_group = pickle.load(open("test_data_age_group.pkl", "rb"))

test_data_gender.columns = ["DeviceID", "Gender", "AgeGroup", "TravellerType", "HighLevelCategory", "Cluster", "EventCount", "MobilePhoneBrand", "DeviceModel", "TrainTestFlag"]

test_data_age_group.columns = ['DeviceID', 'Gender', 'AgeGroup', 'TravellerType', 'HighLevelCategory',
                               'Cluster', 'EventCount', 'MobilePhoneBrand', 'DeviceModel',
                               'TrainTestFlag']

import numpy as np
from flask import Flask, request, render_template

app = Flask(__name__)

@app.route("/")
def homepage():
    device_ids = test_data_gender["DeviceID"].values
    return render_template("index.html", device_ids=device_ids)
```

```
@app.route("/recommend_campaign", methods=['POST'])
def predict():
    def select_campaign(gender, age_group):
        campaign={
            "Female": [("Campaign 1", "Specific personalized fashion-related campaigns targeting female customers."),
                       ("Campaign 2", "Specific cashback offers on special days [for example, International Women's Day] targeting female customers."),
            "Male": [
                       ("Campaign 3", "Personalized call and data packs targeting male customers."),

            "0-24":
                [
                    ("Campaign 4", "Bundled smartphone offers for the age group 0-24 years."),
                    "25-32" : [ ("Campaign 5", "Special offers for payment wallet offers - those in the age group of 25-32 years."),
                    "33-45": [ ("Campaign 6", "Special cashback offers for Privilege Membership 33-45 years."),
                    "46+": [ ("Campaign 6", "Special cashback offers for Older Customers [46+] years.")
                ]
            }
        final=""
        for cmp in campaign[gender]:
            final = final + cmp[0] + " - " + cmp[1] + "\n"
        for cmp in campaign[age_group]:
            final = final + cmp[0] + " - " + cmp[1] + "\n"
        return final

    device_id=[int(x) for x in request.form.values()][0]

    X_gender=test_data_gender[test_data_gender["DeviceID"]==device_id].drop(["DeviceID", "Gender", "AgeGroup", "TrainTestFlag"],axis=1).iloc[0,:]
    X_age_group=test_data_age_group[test_data_age_group["DeviceID"]==device_id].drop(["DeviceID", "Gender", "AgeGroup", "TrainTestFlag"],axis=1).iloc[0,:]
    gender="Female" if mdl_gender.predict(X_gender.values.reshape(1, -1))[0] == 0 else "Male"

    age_group_predicted=mdl_age_group.predict(X_age_group.values.reshape(1, -1))[0]
    age_group = "0-24" if age_group_predicted == 0 else "25-32" if age_group_predicted == 1 else "33-45" if age_group_predicted == 2 else "46+"

    campaign=select_campaign(gender,age_group)
    result_var = [device_id, gender, age_group, campaign]

    return render_template("index.html", prediction_text = result_var)
```

Source code – Flask App

index.html

```
<!DOCTYPE html>
<html >
<!--From 
```

Flask Application - page

Ad Campaign Recommender webapp

Praveen Selvaraj (University Of Arizona)

Select Device ID

1849333377531060000 ▼

Predict Campaign

Ad Campaign Recommender webapp

Praveen Selvaraj (University Of Arizona)

Select Device ID



Predict Campaign

Prediction for Device ID 6227257023033060000

Gender is - Male

Age Group is - 0-24

Selected Campaigns are below

Campaign 3 - Personalized call and data packs targeting male customers.
Campaign 4 - Bundled smartphone offers for the age group 0-24 years.

EC2 Instance and Security Group

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name

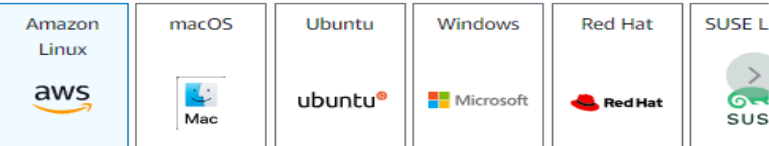
Capstone1

[Add additional tags](#)

▼ Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Quick Start



[Browse more AMIs](#)
Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI

ami-0230bd60aa48260c6 (64-bit (x86)) / ami-04c97e62cb19d53f1 (64-bit (Arm))

Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description

Amazon Linux 2023 AMI 2023.2.20231113.0 x86_64 HVM kernel-6.1

Architecture

64-bit (x86)

AMI ID

ami-0230bd60aa48260c6

Verified provider

[EC2](#) > [Security Groups](#) > sg-092c844d66c597312 - launch-wizard-2

sg-092c844d66c597312 - launch-wizard-2

Actions ▼

Details

Security group name

launch-wizard-2

Security group ID

sg-092c844d66c597312

Description

launch-wizard-2 created 2023-11-19T17:47:53.984Z

VPC ID

vpc-01d3d2234a09276d1

Owner

821024186729

Inbound rules count

2 Permission entries

Outbound rules count

1 Permission entry

[Inbound rules](#)

[Outbound rules](#)

[Tags](#)

Inbound rules (2)

[Refresh](#)

[Manage tags](#)

[Edit inbound rules](#)

< 1 > [Refresh](#)

<input type="checkbox"/>	Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
<input type="checkbox"/>	-	sg-0b596788d2adc6d...	IPv4	Custom TCP	TCP	5000	0.0.0.0/0	-
<input type="checkbox"/>	-	sg-027eb185b69202...	IPv4	SSH	TCP	22	0.0.0.0/0	-


```

Package                                Architecture                               Version                                Repository                               Size
Installing:
docker                                x86_64                                  24.0.5-1.amzn2023.0.2                amazonlinux                               42 M
Installing dependencies:
containerd                            x86_64                                  1.7.2-1.amzn2023.0.4                amazonlinux                               34 M
iptables-libs                         x86_64                                  1.8.8-3.amzn2023.0.2                amazonlinux                               401 k
iptables-nft                         x86_64                                  1.8.8-3.amzn2023.0.2                amazonlinux                               183 k
libcgroup                             x86_64                                  3.0-1.amzn2023.0.1                  amazonlinux                               75 k
libnetfilter_conntrack               x86_64                                  1.0.8-2.amzn2023.0.2                amazonlinux                               58 k
libnftnl                             x86_64                                  1.0.1-19.amzn2023.0.2               amazonlinux                               30 k
libnftnl                             x86_64                                  1.2.2-2.amzn2023.0.2                amazonlinux                               84 k
pigz                                 x86_64                                  2.5-1.amzn2023.0.3                  amazonlinux                               83 k
runc                                  x86_64                                  1.1.7-1.amzn2023.0.3                amazonlinux                               3.0 M

Transaction Summary
-----
Install 10 Packages

Total download size: 80 M
Installed size: 306 M
Is this ok [y/N]: y
Downloading Packages:
(1/10): libnetfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64.rpm           889 kB/s | 58 kB    00:00
(2/10): libcgroup-3.0-1.amzn2023.0.1.x86_64.rpm                       1.0 MB/s | 75 kB    00:00
(3/10): iptables-libs-1.8.8-3.amzn2023.0.2.x86_64.rpm                 10 MB/s | 401 kB    00:00
(4/10): libnftnl-1.0.1-19.amzn2023.0.2.x86_64.rpm                     1.6 MB/s | 30 kB    00:00
(5/10): libnftnl-1.2.2-2.amzn2023.0.2.x86_64.rpm                       2.3 MB/s | 84 kB    00:00
(6/10): iptables-nft-1.8.8-3.amzn2023.0.2.x86_64.rpm                  3.7 MB/s | 183 kB    00:00
(7/10): docker-24.0.5-1.amzn2023.0.2.x86_64.rpm                       28 MB/s | 42 MB    00:01
(10/10): containerd-1.7.2-1.amzn2023.0.4.x86_64.rpm                   21 MB/s | 34 MB    00:01
-----
Total                                                                    42 MB/s | 80 MB    00:01
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing :
  Installing : runc-1.1.7-1.amzn2023.0.3.x86_64                        1/10
  Installing : containerd-1.7.2-1.amzn2023.0.4.x86_64                 2/10
  Running scriptlet: containerd-1.7.2-1.amzn2023.0.4.x86_64           2/10
  Installing : pigz-2.5-1.amzn2023.0.3.x86_64                         3/10
  Installing : libnftnl-1.2.2-2.amzn2023.0.2.x86_64                   4/10
  Installing : libnftnl-1.0.1-19.amzn2023.0.2.x86_64                 5/10
  Installing : libnetfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64     6/10
  Installing : iptables-libs-1.8.8-3.amzn2023.0.2.x86_64             7/10
  Installing : iptables-nft-1.8.8-3.amzn2023.0.2.x86_64             8/10
  Running scriptlet: iptables-nft-1.8.8-3.amzn2023.0.2.x86_64        8/10
  Installing : libcgroup-3.0-1.amzn2023.0.1.x86_64                   9/10
  Running scriptlet: docker-24.0.5-1.amzn2023.0.2.x86_64            10/10
  Installing : docker-24.0.5-1.amzn2023.0.2.x86_64                  10/10
  Running scriptlet: docker-24.0.5-1.amzn2023.0.2.x86_64            10/10
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /usr/lib/systemd/system/docker.socket.

  Verifying : runc-1.1.7-1.amzn2023.0.3.x86_64                       1/10
  Verifying : libnetfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64     2/10
  Verifying : libcgroup-3.0-1.amzn2023.0.1.x86_64                   3/10
  Verifying : docker-24.0.5-1.amzn2023.0.2.x86_64                   4/10
  Verifying : iptables-libs-1.8.8-3.amzn2023.0.2.x86_64             5/10
  Verifying : libnftnl-1.0.1-19.amzn2023.0.2.x86_64                 6/10
  Verifying : libnftnl-1.2.2-2.amzn2023.0.2.x86_64                 7/10
  Verifying : iptables-nft-1.8.8-3.amzn2023.0.2.x86_64             8/10
  Verifying : containerd-1.7.2-1.amzn2023.0.4.x86_64                9/10
  Verifying : pigz-2.5-1.amzn2023.0.3.x86_64                       10/10

Installed:
  containerd-1.7.2-1.amzn2023.0.4.x86_64      docker-24.0.5-1.amzn2023.0.2.x86_64      iptables-libs-1.8.8-3.amzn2023.0.2.x86_64      iptables-nft-1.8.8-3.amzn2023.0.2.x86_64      libcgroup-3.0-1.amzn2023.0.1.x86_64
  libnetfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64  libnftnl-1.0.1-19.amzn2023.0.2.x86_64  libnftnl-1.2.2-2.amzn2023.0.2.x86_64      pigz-2.5-1.amzn2023.0.3.x86_64      runc-1.1.7-1.amzn2023.0.3.x86_64

Complete!
[ec2-user@ip-172-31-47-238 ~]$ []

```

Start Docker Service

```
[ec2-user@ip-172-31-36-110 MyFlask]$ sudo systemctl status docker
```

```
○ docker.service - Docker Application Container Engine
```

```
Loaded: loaded (/usr/lib/systemd/system/docker.service; disabled; preset: disabled)
```

```
Active: inactive (dead)
```

```
TriggeredBy: ○ docker.socket
```

```
Docs: https://docs.docker.com
```

```
Nov 19 18:38:51 ip-172-31-36-110.ec2.internal systemd[1]: /usr/lib/systemd/system/docker.service:20: Failed to parse resource value, ignoring: infinity
```

```
[ec2-user@ip-172-31-36-110 MyFlask]$ sudo systemctl start docker
```

```
[ec2-user@ip-172-31-36-110 MyFlask]$ sudo systemctl enable docker
```

```
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /usr/lib/systemd/system/docker.service.
```


CP files from S3 bucket to EC2 Instance

```
[ec2-user@ip-172-31-36-110 MyFlask]$ aws s3 cp s3://uoamsdsc5bucket1/MyFlask/ ./ --recursive
download: s3://uoamsdsc5bucket1/MyFlask/test_data_age_group.pkl to ./test_data_age_group.pkl
download: s3://uoamsdsc5bucket1/MyFlask/requirements.txt to ./requirements.txt
download: s3://uoamsdsc5bucket1/MyFlask/final_model_gender.pkl to ./final_model_gender.pkl
download: s3://uoamsdsc5bucket1/MyFlask/index.html to ./index.html
download: s3://uoamsdsc5bucket1/MyFlask/style.css to ./style.css
download: s3://uoamsdsc5bucket1/MyFlask/app.py to ./app.py
download: s3://uoamsdsc5bucket1/MyFlask/final_model_age_group.pkl to ./final_model_age_group.pkl
download: s3://uoamsdsc5bucket1/MyFlask/Dockerfile to ./Dockerfile
download: s3://uoamsdsc5bucket1/MyFlask/test_data_gender.pkl to ./test_data_gender.pkl
[ec2-user@ip-172-31-36-110 MyFlask]$ ls
Dockerfile  app.py  final_model_age_group.pkl  final_model_gender.pkl  index.html  requirements.txt  style.css  test_data_age_group.pkl  test_data_gender.pkl
```

Create Docker Image

```
[ec2-user@ip-172-31-36-110 MyFlask]$ sudo docker build -t praveencapstone:latest .
```

```
[+] Building 7.4s (7/15)
[+] Building 22.8s (7/15)
[+] Building 26.2s (7/15)
[+] Building 26.5s (7/15)
[+] Building 27.6s (7/15)
[+] Building 28.5s (7/15)
[+] Building 28.6s (7/15)
[+] Building 28.9s (7/15)
[+] Building 29.7s (7/15)
[+] Building 30.9s (7/15)
[+] Building 31.3s (7/15)
[+] Building 31.5s (7/15)
[+] Building 80.8s (16/16) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 532B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/python:3.7-slim
=> [ 1/11] FROM docker.io/library/python:3.7-slim@sha256:b53f496ca43e5af6994f8e316cf03af31050bf7944e0e4a308ad86c001cf028b
=> => resolve docker.io/library/python:3.7-slim@sha256:b53f496ca43e5af6994f8e316cf03af31050bf7944e0e4a308ad86c001cf028b
=> => sha256:a255ffcb469f2ec40f2958a76beb0c2b2bbef92ce9af67a9b48d84b4cb695ac8 7.54kB / 7.54kB
=> => sha256:a803e7c4b030119420574a882a52b6431e160fceb7620f61b525d49bc2d58886 29.12MB / 29.12MB
=> => sha256:bf3336e84c8e00632cdea35b18fec9a5691711bdc8ac885e3ef54a3d5ff500ba 3.50MB / 3.50MB
=> => sha256:8973eb85275f19b8d72c6047560629116ad902397e5c1885b2508788197de28b 11.38MB / 11.38MB
=> => sha256:b53f496ca43e5af6994f8e316cf03af31050bf7944e0e4a308ad86c001cf028b 1.86kB / 1.86kB
=> => sha256:fffd28e36ef37b3a4a24f6a771a48d7c5499ea42d6309ac911a3f699e122060be 1.37kB / 1.37kB
=> => extracting sha256:a803e7c4b030119420574a882a52b6431e160fceb7620f61b525d49bc2d58886
=> => sha256:f9afc3cc0135aad884dad502f28a5b3d8cd32565116131da818ebf2ea6d46095 244B / 244B
=> => sha256:39312d8b4ab77de264678427265a2668073675bb8666caf723da18c9e4b7e3fc 3.13MB / 3.13MB
=> => extracting sha256:bf3336e84c8e00632cdea35b18fec9a5691711bdc8ac885e3ef54a3d5ff500ba
=> => extracting sha256:8973eb85275f19b8d72c6047560629116ad902397e5c1885b2508788197de28b
=> => extracting sha256:f9afc3cc0135aad884dad502f28a5b3d8cd32565116131da818ebf2ea6d46095
=> => extracting sha256:39312d8b4ab77de264678427265a2668073675bb8666caf723da18c9e4b7e3fc
=> [internal] load build context
=> => transferring context: 2.90kB
=> [ 2/11] WORKDIR /app/
=> [ 3/11] COPY requirements.txt /app/
=> [ 4/11] RUN pip install -r ./requirements.txt
=> [ 5/11] COPY app.py /app/
=> [ 6/11] COPY final_model_gender.pkl /app/
=> [ 7/11] COPY final_model_age_group.pkl /app/
=> [ 8/11] COPY test_data_gender.pkl /app/
=> [ 9/11] COPY test_data_age_group.pkl /app/
=> [10/11] COPY templates/index.html /app/templates/index.html
=> [11/11] COPY static/css/style.css /app/static/css/style.css
=> exporting to image
=> => exporting layers
=> => writing image sha256:67f1b1f89f73557bb2cbda094116a0465d734abe7d46966a73849b7b46321e82
=> => naming to docker.io/library/praveencapstone:latest
```

```
docker:default
docker:default
docker:default
docker:default
docker:default
docker:default
docker:default
docker:default
docker:default
docker:default
docker:default
docker:default
docker:default
0.0s
0.0s
0.0s
0.0s
0.2s
4.1s
0.0s
0.0s
0.5s
0.4s
0.5s
1.86kB
0.0s
1.9s
0.6s
0.9s
0.2s
0.7s
0.0s
0.3s
0.0s
0.4s
0.0s
51.0s
0.2s
0.0s
0.0s
0.1s
0.0s
0.0s
20.2s
20.2s
0.0s
0.0s
```

Start Docker Container

```
[ec2-user@ip-172-31-36-110 MyFlask]$ sudo docker image ls
REPOSITORY      TAG         IMAGE ID      CREATED       SIZE
praveencapstone latest      67f1b1f89f73 3 minutes ago 1.26GB
[ec2-user@ip-172-31-36-110 MyFlask]$ sudo docker run -p 5000:5000 praveencapstone
* Serving Flask app 'app'
* Debug mode: on
/usr/local/lib/python3.7/site-packages/sklearn/base.py:338: UserWarning: Trying to unpickle estimator LogisticRegression from version 1.2.2 when using version 1.0.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/modules/model_persistence.html#security-maintainability-limitations
UserWarning,
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.0.2:5000
Press CTRL+C to quit
* Restarting with stat
/usr/local/lib/python3.7/site-packages/sklearn/base.py:338: UserWarning: Trying to unpickle estimator LogisticRegression from version 1.2.2 when using version 1.0.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/modules/model_persistence.html#security-maintainability-limitations
UserWarning,
* Debugger is active!
* Debugger PIN: 114-584-019
```

Access the Web Application from the browser

← → ↻ ⓘ 127.0.0.1:5000

★ Bookmarks Google Gmail Arizona_AWS_login YouTube Amazon Web Servic... Colaboratory Kaggle Online Courses https://cf-courses-d... data MicrosoftDocs/ml-... Microsoft Certified:... Home - Microsoft A... mslearn-dp100 » All Bookmarks

Relaunch to update

Ad Campaign Recommender webapp

Praveen Selvaraj (University Of Arizona)

Select Device ID

1849333377531060000

1849333377531060000

6227257023033060000

-7600851242672910000

5942868393073170000

-4215964873844710000

4913874360661090000

-1170950896505480000

1144318590514500000

-4887297848790620000

-1086950066179570000

3139277304566220000

-3735054311352540000

3176802138249000000

-6177218115346880000

2366957454686090000

-4772359937329880000

-7254397047536140000

-3545326871544920000

-2997574359444930000

7409327892797430

01:39 20-11-2023

Access the Web Application from the browser

Ad Campaign Recommender webapp

Praveen Selvaraj (University Of Arizona)

Select Device ID

Predict Campaign

Prediction for Device ID 1955554385486920000

Gender is - Male

Age Group is - 25-32

Selected Campaigns are below

Campaign 3 - Personalized call and data packs targeting male customers.

Campaign 5 - Special offers for payment wallet offers - those in the age group of 25-32 years.

AWS EC2 Instance Stats

EC2 > Instances > i-0800d33e125552ba0		
Instance summary for i-0800d33e125552ba0 (msds_capstone1) Info		
Updated less than a minute ago		
<div><div><div>Instance ID</div><div> i-0800d33e125552ba0 (msds_capstone1)</div></div><div><div>IPv6 address</div><div>—</div></div><div><div>Hostname type</div><div>IP name: ip-172-31-36-110.ec2.internal</div></div><div><div>Answer private resource DNS name</div><div>IPv4 (A)</div></div><div><div>Auto-assigned IP address</div><div> 54.82.175.158 [Public IP]</div></div><div><div>IAM Role</div><div> EMR_EC2_DefaultRole ↗</div></div><div><div>IMDSv2</div><div>Required</div></div></div> <div><div><div>Public IPv4 address</div><div> 54.82.175.158 open address ↗</div></div><div><div>Instance state</div><div> Running</div></div><div><div>Private IP DNS name (IPv4 only)</div><div> ip-172-31-36-110.ec2.internal</div></div><div><div>Instance type</div><div>t2.micro</div></div><div><div>VPC ID</div><div> vpc-01d3d2234a09276d1 ↗</div></div><div><div>Subnet ID</div><div> subnet-0fae0176dca3b6f15 ↗</div></div></div> <div><div><div>Private IPv4 addresses</div><div> 172.31.36.110</div></div><div><div>Public IPv4 DNS</div><div> ec2-54-82-175-158.compute-1.amazonaws.com open address ↗</div></div><div><div>Elastic IP addresses</div><div>—</div></div><div><div>AWS Compute Optimizer finding</div><div>Opt-in to AWS Compute Optimizer for recommendations. Learn more ↗</div></div><div><div>Auto Scaling Group name</div><div>—</div></div></div>		
<div>Details Security Networking Storage Status checks Monitoring Tags</div>		
▼ Instance details Info		
<div><div><div>Platform</div><div> Amazon Linux (Inferred)</div></div><div><div>Platform details</div><div> Linux/UNIX</div></div><div><div>Stop protection</div><div>Disabled</div></div><div><div>Instance auto-recovery</div><div>Default</div></div><div><div>AMI Launch Index</div><div>0</div></div><div><div>Credit specification</div><div>standard</div></div><div><div>Usage operation</div><div> RunInstances</div></div><div><div>Enclaves Support</div><div>—</div></div><div><div>Allow tags in instance metadata</div><div>Disabled</div></div></div> <div><div><div>AMI ID</div><div> ami-0230bd60aa48260c6</div></div><div><div>AMI name</div><div> al2023-ami-2023.2.20231113.0-kernel-6.1-x86_64</div></div><div><div>Launch time</div><div> Mon Nov 20 2023 00:07:04 GMT+0530 (India Standard Time) (about 1 hour)</div></div><div><div>Lifecycle</div><div>normal</div></div><div><div>Key pair assigned at launch</div><div> mykey</div></div><div><div>Kernel ID</div><div>—</div></div><div><div>RAM disk ID</div><div>—</div></div><div><div>Boot mode</div><div> uefi-preferred</div></div><div><div>Use RBN as guest OS hostname</div><div> Disabled</div></div></div> <div><div><div>Monitoring</div><div>disabled</div></div><div><div>Termination protection</div><div>Disabled</div></div><div><div>AMI location</div><div> amazon/al2023-ami-2023.2.20231113.0-kernel-6.1-x86_64</div></div><div><div>Stop-hibernate behavior</div><div>Disabled</div></div><div><div>State transition reason</div><div>—</div></div><div><div>State transition message</div><div>—</div></div><div><div>Owner</div><div> 821024186729</div></div><div><div>Current instance boot mode</div><div> legacy-bios</div></div><div><div>Answer RBN DNS hostname IPv4</div><div> Enabled</div></div></div>		
▼ Host and placement group Info		
<div><div><div>Host ID</div><div>—</div></div><div><div>Host resource group name</div><div>—</div></div><div><div>Virtualization type</div><div> hvm</div></div><div><div>Number of vCPUs</div><div>1</div></div></div> <div><div><div>Affinity</div><div>—</div></div><div><div>Tenancy</div><div> default</div></div><div><div>Reservation</div><div> r-06298e8cc0e001daa</div></div><div><div>Capacity Reservation setting</div><div>open</div></div></div> <div><div><div>Placement group</div><div>—</div></div><div><div>Placement group ID</div><div>—</div></div><div><div>Partition number</div><div>—</div></div></div>		
▼ Capacity reservation Info		
<div><div><div>Capacity Reservation ID</div><div>—</div></div></div>		
▼ Accelerators Info		
<div><div><div>Elastic Graphics ID</div><div>—</div></div></div>		

AWS EC2 Instance Stats

DetailsSecurityNetworkingStorageStatus checksMonitoringTags

▼ Security details

IAM Role

EMR_EC2_DefaultRole

Owner ID

821024186729

Launch time

Mon Nov 20 2023 00:07:04 GMT+05:30 (India Standard Time)

Security groups

sg-092b44a66c597312 (launch-wizard-2)

▼ Inbound rules

Filter rules

< 1 >

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
-	sg-r0h596788d2ad6dc3	5000	TCP	0.0.0.0/0	launch-wizard-2	-
-	sg-r0276b185b69202f5	22	TCP	0.0.0.0/0	launch-wizard-2	-

▼ Outbound rules

Filter rules

< 1 >

Name	Security group rule ID	Port range	Protocol	Destination	Security groups	Description
-	sg-r0327d00b9b7e4a72d	All	All	0.0.0.0/0	launch-wizard-2	-

DetailsSecurityNetworkingStorageStatus checksMonitoringTags

▼ Networking details info

Public IPv4 address

54.82.175.158

open address

Public IPv4 DNS

ec2-54-82-175-158.compute-1.amazonaws.com

open address

Subnet ID

subnet-0fae0176da336f15

Availability zone

us-east-1a

Use RBN as guest OS hostname

Disabled

Private IPv4 addresses

172.31.36.110

Private IP DNS name (IPv4 only)

ip-172-31-36-110.ec2.internal

IPv6 addresses

-

Carrier IP addresses (ephemeral)

-

Answer RBN DNS hostname IPv4

Enabled

VPC ID

vpc-01d5d2234a09276e1

Secondary private IPv4 addresses

-

Outpost ID

-

▼ Network interfaces (1) info

Filter network interfaces

Interface ID	Description	IPv4 Prefixes	IPv6 Prefixes	Public IPv4 address	Private IPv4 address	Private IPv4 DNS	IPv6 addresses	Primary IPv6 address	Attachment time	Interface owner	Attachment state
eni-Oud76d6c74837842a8	-	-	-	54.82.175.158	172.31.36.110	ip-172-31-36-110.ec2.i...	-	-	Mon Nov 20 2023 00:...	821024186729	attached

▼ Elastic IP addresses (0) info

Filter Elastic IP addresses

Name	Allocated IPv4 address	Type	Address pool	Allocation ID
No Elastic IP addresses are associated with this instance				

DetailsSecurityNetworkingStorageStatus checksMonitoringTags

Alarm recommendations

Manage detailed monitoring

1h3h12h1d3d1wCustomUTC timezoneAdd to dashboard

CPU utilization (%)

Status check failed (any) (count)

Status check failed (instance) (count)

Status check failed (system) (count)

Network in (bytes)

Network out (bytes)

Network packets in (count)

Network packets out (count)

Disk reads (bytes)

Disk read operations (operations)

Disk writes (bytes)

Disk write operations (operations)

CPU credit usage (count)

CPU credit balance (count)

Thank You 😊!