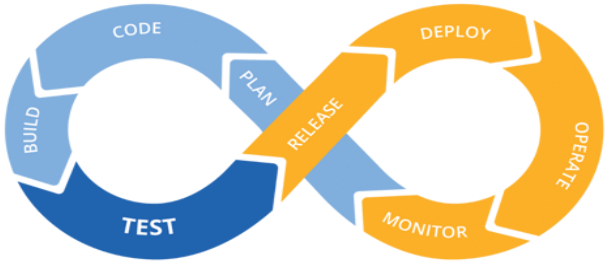
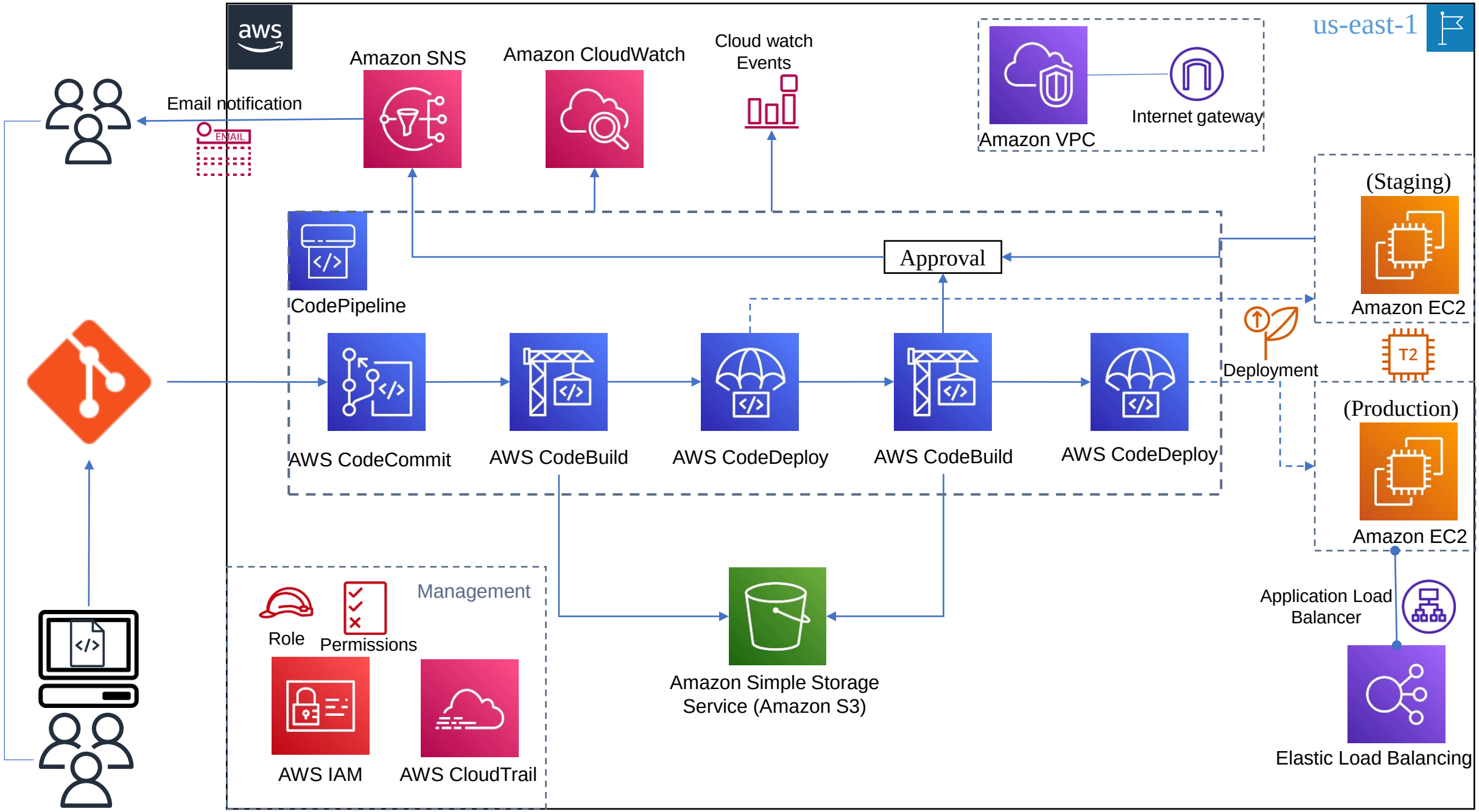
Automated Cloud Development Pipeline using AWS DevOps Cluster



Developed and Designed by
Vinod Kumar Mylapilli


aws
us-east-1
Amazon SNS
Amazon CloudWatch
Cloud watch Events
Email notification
EMAIL
Amazon VPC
Internet gateway
(Staging)
Amazon EC2
CodePipeline
Approval
T2
Deployment
AWS CodeCommit
AWS CodeBuild
AWS CodeDeploy
AWS CodeBuild
AWS CodeDeploy
(Production)
Amazon EC2
Management
Role
Permissions
Application Load Balancer
Amazon Simple Storage Service (Amazon S3)
AWS IAM
AWS CloudTrail
Elastic Load Balancing

AWS Services Used: AWS IAM, Amazon EC2, AWS CodeCommit, AWS CodeBuild, AWS CodeDeploy, AWS CodePipeline, AWS S3, Elastic Load Balancing (Application Load balancer), Amazon SNS, Amazon CloudWatch, Amazon Cloud Trail, Amazon VPC.

Application Tools Used: Python, Django, SQlite3, HTML, CSS, JS, Git hub, Git Bash, Nginx.
Libraries Used: AWS CLI, Whitenoise, gunicorn, Pillow, sqlparse, asgiref, tzdata.

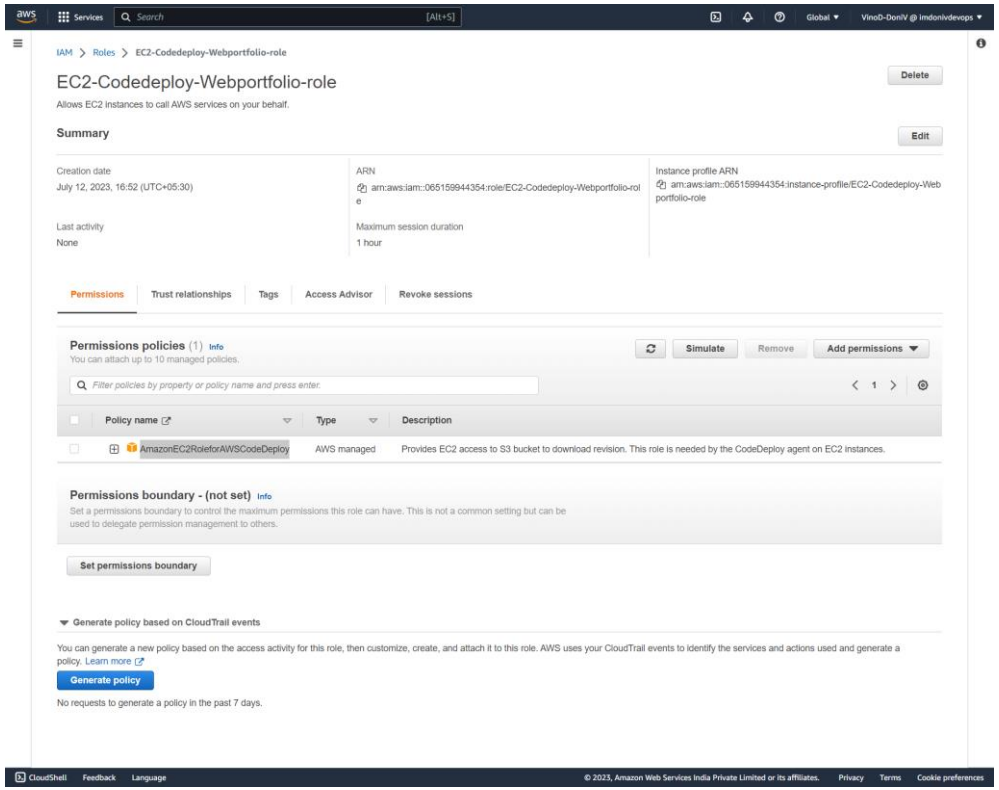
Step-1:

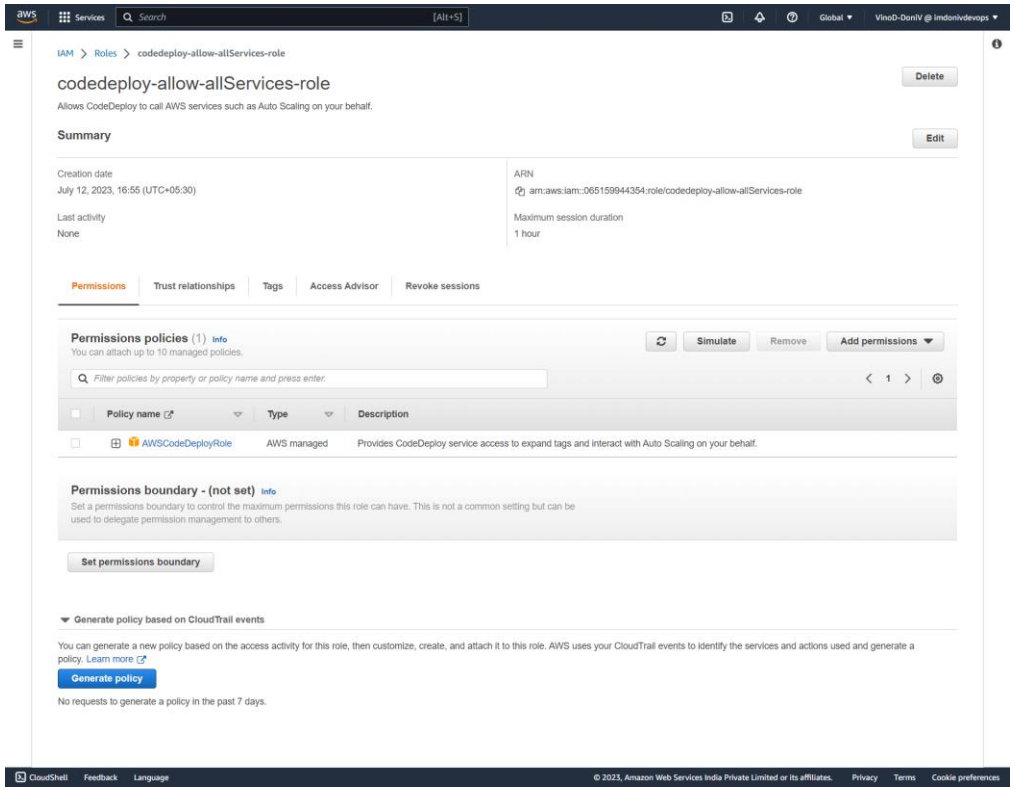
****Create an Amazon EC2 and AWS CodeDeploy IAM Roles****
First Create an Amazon EC2 IAM Role

1. Open the IAM Console at https://console.aws.amazon.com/iam/.
2. In the navigation pane of the IAM console, Choose **Roles**, and then choose **Create role**.
3. Under Trusted entity type, select **AWS service**.
4. From the Use cases, Choose **EC2** and then click Next.
5. On the Add Permissions tab, do the following:
    i. In the Filter policies box, enter "**AmazonEC2RoleforAWSCodeDeploy**"
    ii. Choose Next.
6. On the Name, review and create tab, do the following:
    i. For Role name, enter a unique name for role, such as **EC2-Codedeploy-Webportfolio-role.**
    ii. For Description, enter descriptive text "Provide Ec2 access to S3 bucket to download revision. This role is needed by the CodeDeploy agent on EC2 instance"
    iii. Click Create role.

Second Create an Amazon CodeDeploy IAM Role

1. Open the IAM Console at https://console.aws.amazon.com/iam/.
2. In the navigation pane of the IAM console, Choose Roles, and then choose Create role.
3. Under Trusted entity type, select AWS service.
4. From the Use cases, other AWS services dropdown list, Choose CodeDeploy and then click Next.
5. On the Add Permissions tab, Leave default and then click Next.
6. On the Name, review and create tab, do the following:
   i. For Role name, enter a unique name for role, such as Codedeploy-allow-allServices-role.
   ii. For Description, enter descriptive text “Provide CodeDeploy service access to expand tags and interact with Auto Scaling on your behalf”
   iii. Click Create role.





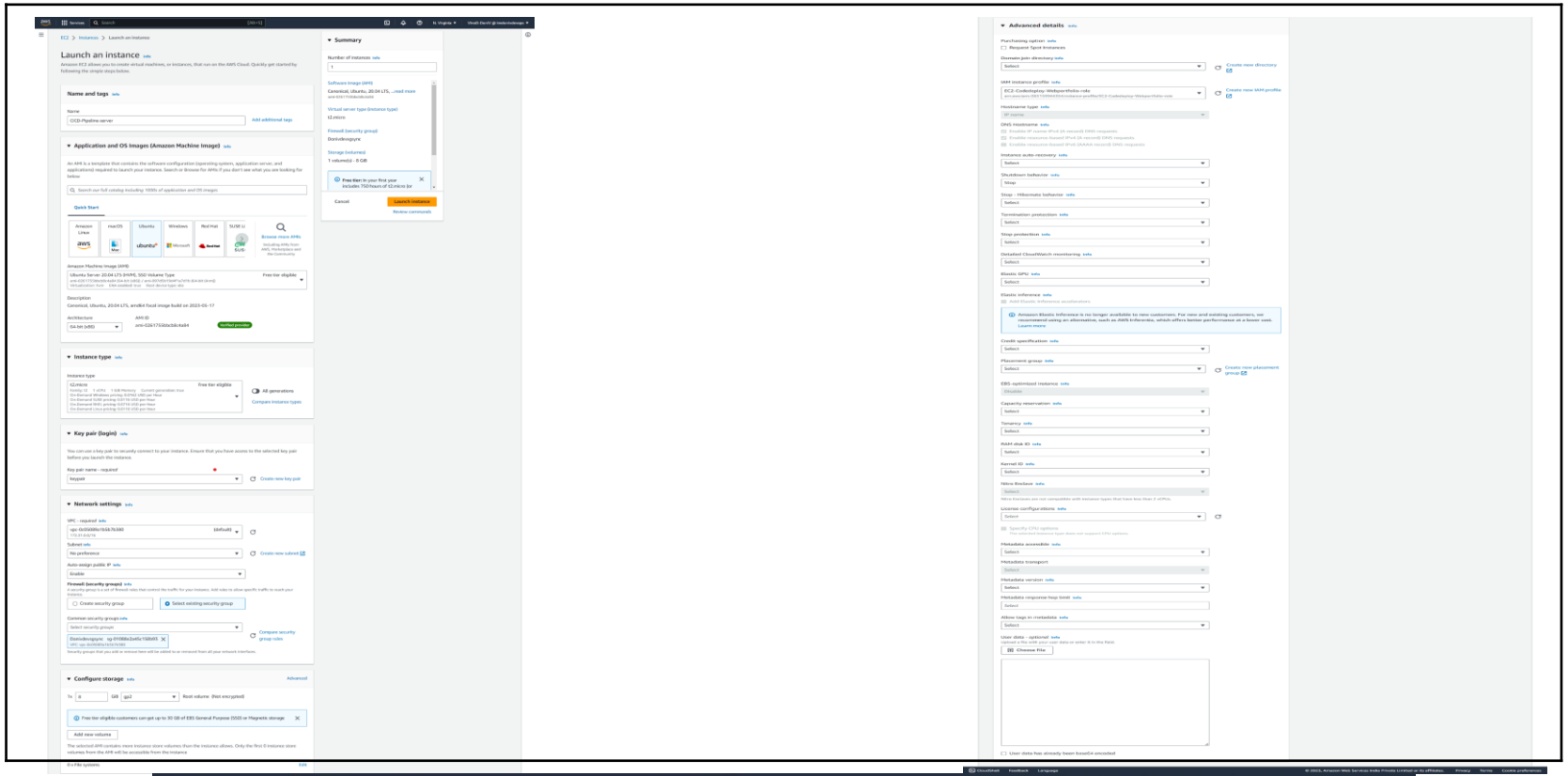
Step-2 :

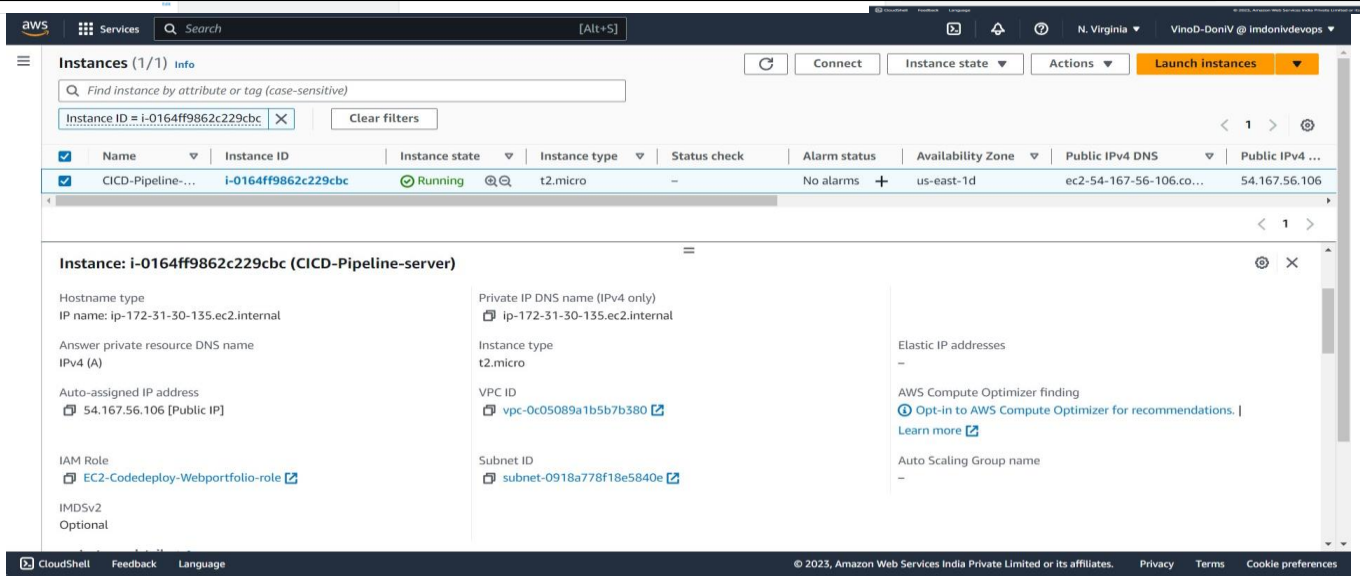
Create EC2 resources and launch EC2 instance.

1. Open the Amazon EC2 console at https://console.aws.amazon.com/ec2/.
2. Choose Launch Instance.
3. For Name and tags, text the name (CICD-Pipeline-server).
4. For application and OS Images(Amazon Machine Image),Choose an Amazon Machine Image (AMI), find the Ubuntu 20.04 LTS AMI at the top of the list and choose Select, rest all default.
5. For Instance type, Choose instance type in the dropdown list t2.micro.
6. For Key pair (login), give the existing key pair or else create a new key pair (by using putty create .ppk file or using ssh client create .pem file), Here I am using keypair.pem file.
7. On the Network settings, do following:
   i. VPC : Default
   ii. Subnet : Default
   iii. Auto-assign public IP : Choose Enable
   iv. For Firewall (security groups), Choose Select existing security group (Donivdevsgsync)
8. Configure storage leave as default.
9. On Advanced details, do the following:
   i. For IAM instance profile, in dropdown list choose existing role (EC2-Codedeploy-Webportfolio-role).
   ii. Rest all leave as it default
   - If didn't give in IAM role in Advance settings, do the following

     In home page click our instance and click on actions on header > security > modify IAM role > chose IAM role which we created and update IAM role

     now we need to reboot select> instance state >reboot instance
10. Click on Launch instance.


Launch an instance
Summary
Name and tags
Application and OS images (Amazon Machine Image)
Instance type
Key pair (login)
Network settings
Configure storage
Launch instance
Advanced details


aws
Services
Search
[Alt+S]
N. Virginia
VinoD-DoniV @ imdonivdevops
Instances (1/1) Info
Connect
Instance state
Actions
Launch instances
Find instance by attribute or tag (case-sensitive)
Instance ID = i-0164ff9862c229cbc
Clear filters
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv4 DNS
Public IPv4 ...
CICD-Pipeline-...
i-0164ff9862c229cbc
Running
t2.micro
–
No alarms
us-east-1d
ec2-54-167-56-106.co...
54.167.56.106
Instance: i-0164ff9862c229cbc (CICD-Pipeline-server)
Hostname type
IP name: ip-172-31-30-135.ec2.internal
Private IP DNS name (IPv4 only)
ip-172-31-30-135.ec2.internal
Answer private resource DNS name
IPv4 (A)
Instance type
t2.micro
Elastic IP addresses
–
Auto-assigned IP address
54.167.56.106 [Public IP]
VPC ID
vpc-0c05089a1b5b7b380
AWS Compute Optimizer finding
Opt-in to AWS Compute Optimizer for recommendations.
Learn more
IAM Role
EC2-Codedeploy-Webportfolio-role
Subnet ID
subnet-0918a778f18e5840e
Auto Scaling Group name
–
IMDSv2
Optional
CloudShell
Feedback
Language
© 2023, Amazon Web Services India Private Limited or its affiliates.
Privacy
Terms
Cookie preferences

Step-3 :

****Code Deploy Agent Installation****

Interact with AWS EC2 instance via SSH Client , Here I used Git bash.

1. Check that Git is installed, Open the terminal and run the below command. If it is not installed, the download git from the official website: https://git-scm.com/downloads.
   $ git –version
2. Open the git bash terminal on where .pem key file stored in that folder. Or else locate that folder by using commands.
3. Set the permission .pem file, Here my pem file is keypair.pem.
   $ **chmod 400 keypair.pem**
4. Open EC2 console, Select your instance and click “Connect”.
5. For Connect to instance, Choose SSH client tab. Here shows everything.
6. Copy the example (ssh -i "keypair.pem" ubuntu@ec2-172-31-30-135.compute-1.amazonaws.com) and paste in your git bash terminal.
7. Once connect to the instance, do following run commands:
   $ **sudo apt update** # Update our machine
   $ **sudo apt install ruby-full** # Install ruby-full in our machine
   $ **sudo apt install wget** # Install wget (web get)
   $ **wget https://aws-codedeploy-us-east-1.s3.us-east-1.amazonaws.com/lastest/install** # Download the files and interact with S3
   $ **chmod +x ./install** #ext up, change the permission on the install file
   $ **sudo ./install auto > /tmp/logfile** # Install the codedeploy-agent
   $ **sudo service codedeploy-agent status** # Agent is running or not

```
ubuntu@ip-172-31-30-135:~$ sudo apt install wget
Reading package lists... Done
Building dependency tree
Reading state information... Done
wget is already the newest version (1.20.3-1ubuntu2).
wget set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 82 not upgraded.
ubuntu@ip-172-31-30-135:~$ wget https://aws-codedeploy-us-east-1.s3.us-east-1.am
azonaws.com/latest/install
--2023-07-12 12:28:04--  https://aws-codedeploy-us-east-1.s3.us-east-1.amazonaws
.com/latest/install
Resolving aws-codedeploy-us-east-1.s3.us-east-1.amazonaws.com (aws-codedeploy-us
-east-1.s3.us-east-1.amazonaws.com)... 54.231.167.114, 52.217.203.202, 52.217.20
3.122, ...
Connecting to aws-codedeploy-us-east-1.s3.us-east-1.amazonaws.com (aws-codedeplo
y-us-east-1.s3.us-east-1.amazonaws.com)|54.231.167.114|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 17892 (17K) []
Saving to: 'install'

install             100%[===================>]  17.47K  --.-KB/s    in 0s

2023-07-12 12:28:04 (112 MB/s) - 'install' saved [17892/17892]

ubuntu@ip-172-31-30-135:~$ chmod +x ./install
ubuntu@ip-172-31-30-135:~$ sudo ./install auto > /tmp/logfile
ubuntu@ip-172-31-30-135:~$ sudo service codedeploy-agent status
● codedeploy-agent.service - LSB: AWS CodeDeploy Host Agent
     Loaded: loaded (/etc/init.d/codedeploy-agent; generated)
     Active: active (running) since Wed 2023-07-12 12:30:55 UTC; 21s ago
       Docs: man:systemd-sysv-generator(8)
      Tasks: 2 (limit: 1141)
     Memory: 56.6M
     CGroup: /system.slice/codedeploy-agent.service
             ├─3136 codedeploy-agent: master 3136
             └─3140 codedeploy-agent: InstanceAgent::Plugins::CodeDeployPlugin:>

Jul 12 12:30:54 ip-172-31-30-135 systemd[1]: Starting LSB: AWS CodeDeploy Host >
Jul 12 12:30:55 ip-172-31-30-135 codedeploy-agent[3128]: Starting codedeploy-ag>
Jul 12 12:30:55 ip-172-31-30-135 systemd[1]: Started LSB: AWS CodeDeploy Host A>
lines 1-13/13 (END)...skipping...
● codedeploy-agent.service - LSB: AWS CodeDeploy Host Agent
     Loaded: loaded (/etc/init.d/codedeploy-agent; generated)
     Active: active (running) since Wed 2023-07-12 12:30:55 UTC; 21s ago
       Docs: man:systemd-sysv-generator(8)
      Tasks: 2 (limit: 1141)
     Memory: 56.6M
     CGroup: /system.slice/codedeploy-agent.service
             ├─3136 codedeploy-agent: master 3136
             └─3140 codedeploy-agent: InstanceAgent::Plugins::CodeDeployPlugin::CommandPoller of master 3136

Jul 12 12:30:54 ip-172-31-30-135 systemd[1]: Starting LSB: AWS CodeDeploy Host Agent...
Jul 12 12:30:55 ip-172-31-30-135 codedeploy-agent[3128]: Starting codedeploy-agent:
Jul 12 12:30:55 ip-172-31-30-135 systemd[1]: Started LSB: AWS CodeDeploy Host Agent.
~
~
~
~
```

Step-4 :

**** Project Structure Configuration****

Create a **gunicorn** folder in the root directory of the Django project (WebPortfolio) with the following:

i. Create a ***gunicorn.service*** file in the **gunicorn folder** with the following contents:

```
[Unit]
Description=gunicorn daemon
Requires=gunicorn.socket
After=network.target
[Service]
User=ubuntu
Group=www-data
WorkingDirectory=/home/ubuntu/WebPortfolio
ExecStart=/home/ubuntu/env/bin/gunicorn --access-logfile - --workers 3 --bind
unix:/home/ubuntu/WebPortfolio/portfolio/portfolio.sock portfolio.wsgi:application
[Install]
WantedBy=multi-user.target
```

ii. Create a ***gunicorn.socket*** file in the gunicorn folder with the following contents:

```
[Unit]
Description=gunicorn socket
[Socket]
ListenStream=/run/gunicorn.sock
[Install]
WantedBy=sockets.target
```

Create a **nginx** folder in the root directory of the Django project (WebPortfolio) with the following:

Create a *nginx.conf* file in the **nginx folder** with the following contents:

```
server {
    listen 80 default_server;
    server_name 54.167.56.106;   # Add Public Ip address from ec2 instance.
    location = /favicon.ico { access_log off; log_not_found off; }
    location /staticfiles/ {
        root /home/ubuntu/WebPortfolio;
    }
    location / {
        include proxy_params;
        proxy_pass http://unix:/run/gunicorn.sock;
    }
}
```

Create a **scripts** folder in the root directory of the Django project (WebPortfolio) with the following:

Create a ***gunicorn.sh, python_dependencies.sh, instance_os_dependencies.sh, nginx.sh, after_install.sh, clean_instance.sh, start_app.sh,**** files in the **scripts folder** with the following contents:

gunicorn.sh

```
#!/usr/bin/bash
sudo cp
/home/ubuntu/WebPortfolio/gunicorn/gunicorn.socket  /etc/s
ystemd/system/gunicorn.socket
sudo cp
/home/ubuntu/WebPortfolio/gunicorn/gunicorn.service  /etc/
systemd/system/gunicorn.service

sudo systemctl start gunicorn.service
sudo systemctl enable gunicorn.service
```

Python_dependencies.sh

```
#!/usr/bin/env bash

virtualenv /home/ubuntu/env
source /home/ubuntu/env/bin/activate
pip install -r /home/ubuntu/WebPortfolio/requirements.txt
```

Instance_os_dependencies.sh

```
#!/usr/bin/env bash

sudo apt install -y python3-pip
sudo apt install -y nginx
sudo apt install -y virtualenv
```

nginx.sh

```
#!/usr/bin/bash

sudo systemctl daemon-reload
sudo rm -f /etc/nginx/sites-enabled/default

sudo cp /home/ubuntu/WebPortfolio/nginx/nginx.conf /etc/nginx/sites-available/portfolio
sudo ln -s /etc/nginx/sites-available/portfolio /etc/nginx/sites-enabled/
#sudo ln -s /etc/nginx/sites-available/blog /etc/nginx/sites-enabled
#sudo nginx -t
sudo gpasswd -a www-data ubuntu
sudo systemctl restart nginx
```

after_install.sh

```
#!/usr/bin/bash

echo "Pull Finished"
sudo systemctl daemon-reload
sudo systemctl restart nginx
```

clean_instance.sh

```
#!/usr/bin/env bash
#
sudo rm -rf /home/ubuntu/WebPortfolio/*
```

start_app.sh

```
#!/usr/bin/bash

sed -i 's/\[]/\["54.144.250.113"]/' /home/ubuntu/WebPortfolio/portfolio/settings.py

python manage.py migrate
python manage.py makemigrations
python manage.py collectstatic
sudo service gunicorn restart
sudo service nginx restart
#sudo tail -f /var/log/nginx/error.log
#sudo systemctl reload nginx
#sudo tail -f /var/log/nginx/error.log
#sudo nginx -t
#sudo systemctl restart gunicorn
#sudo systemctl status gunicorn
#sudo systemctl status nginx
# Check the status
#systemctl status gunicorn
# Restart:
#systemctl restart gunicorn
#sudo systemctl status nginx
```

Create a **appspec.yml** file in the root directory of the Django project (WebPortfolio) with the following contents:

```
version: 0.0
os: linux
files:
  - source: /
    destination: /home/ubuntu/WebPortfolio
permissions:
  - object: /home/ubuntu/WebPortfolio
    owner: ubuntu
    group: ubuntu
hooks:
  BeforeInstall:
      - location: scripts/clean_instance.sh
        timeout: 300
        runas: ubuntu
  AfterInstall:
      - location: scripts/instance_os_dependencies.sh
        timeout: 300
        runas: ubuntu
      - location: scripts/python_dependencies.sh
        timeout: 300
        runas: ubuntu
      - location: scripts/gunicorn.sh
        timeout: 300
        runas: ubuntu
      - location: scripts/nginx.sh
        timeout: 300
        runas: ubuntu
  ApplicationStop:
      - location: scripts/stop_app.sh
        timeout: 300
        runas: ubuntu
  ApplicationStart:
      - location: scripts/start_app.sh
        timeout: 300
        runas: ubuntu
```

Create a **buildspec.yml** file in the root directory of the Django project (WebPortfolio) with the following contents:

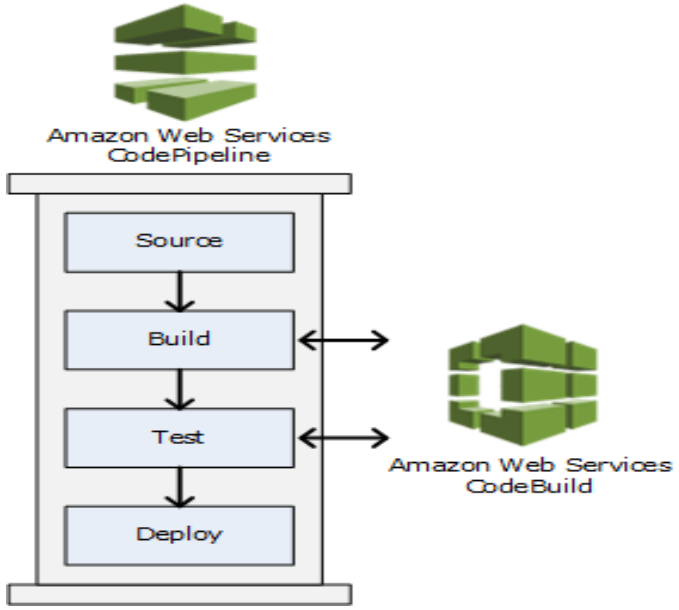
```
version: 0.1

# environment_variables:
  # plaintext:
  #   DJANGO_SETTINGS_MODULE: config.settings.test
  #   SECRET_KEY: nosecret
  #   DATABASE_DEFAULT_URL: sqlite:///db1.sqlite3
  #   DATABASE_STREAMDATA_URL: sqlite:///db2.sqlite3
  #   STREAM_INCOMING_PRIVATE_KEY: changeme
  #   STREAM_INCOMING_PUBLIC_KEY: changeme
  #   GOOGLE_API_KEY: changeme
  #   OPBEAT_ENABLED: False

phases:
  pre_build:
    commands:
      - echo Prebuild ops
      - pip3 install -r requirements.txt
  build:
    commands:
      - echo Building the application
  post_build:
    commands:
      - echo Build completed on `date`
artifacts:
  files:
    - '**/*'
```

Step-5 :

**** CodePipeline Deploy ****

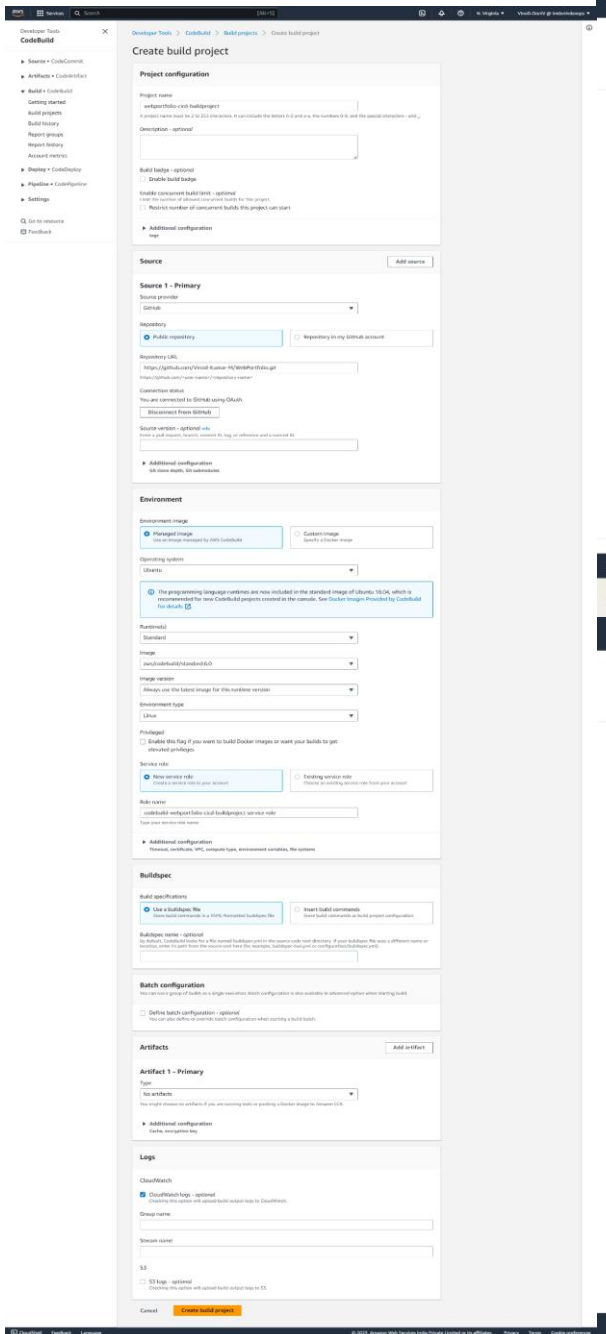


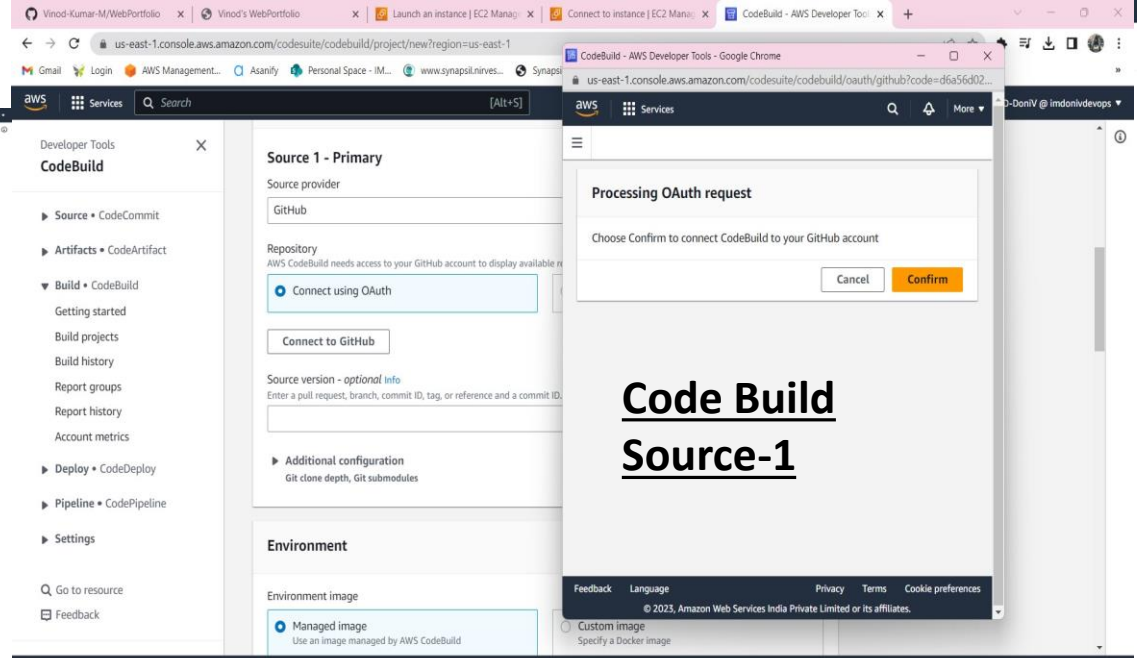
1. Open the AWS **CodePipeline** console at https://console.aws.amazon.com/codesuite/codepipeline/home.
2. In left side pane, Choose **CodeBuild** and then click **Getting started and Create project**.
3. On **Create build project**, do the following:
   - ❖ For **Project configuration**, Enter the Project name (**webportfolio-cicd-buildproject**). Rest all leave it as default.
   - ❖ For **Source**, In source provide dropdown list choose **GitHub**
     - In **Repository**, choose **Connect using Oauth** and then click **Connect to GitHub**
     - After click **Connect to GitHub**, Automatically open one tab in that tab **Processing Oauth request** shows and then click **Confirm**
     - After GitHub Connect, In Repository choose **Public repository**.
     - In **Repository URL**, Enter the Git repository url (https://github.com/Vinod-Kumar-M/WebPortfolio.git)
     - Rest all leave it as default.

- For **Environment**, do the following:
  - In Environment image, Choose **Managed image**.
  - In operating system, Choose **Ubuntu** in the dropdown list.
  - In Runtime(s), Choose **Standard** in the dropdown list.
  - In Image, Choose **aws/codebuild/standard:6.0** in the dropdown list # here always choose latest one
  - In Image version, Choose **Always use the latest image for this runtime version** in the dropdown list
  - In Environment type, Choose **Linux** in the dropdown list.
  - In Privileged, leave it as default.
  - In Service role, Choose **New service role**.
  - In Role name, give the **codebuild-webportfolio-cicd-buildproject-service-role.**
  - In Additional configuration, leave it as default.
- Rest all leave it as default, and then click **Create build project**.

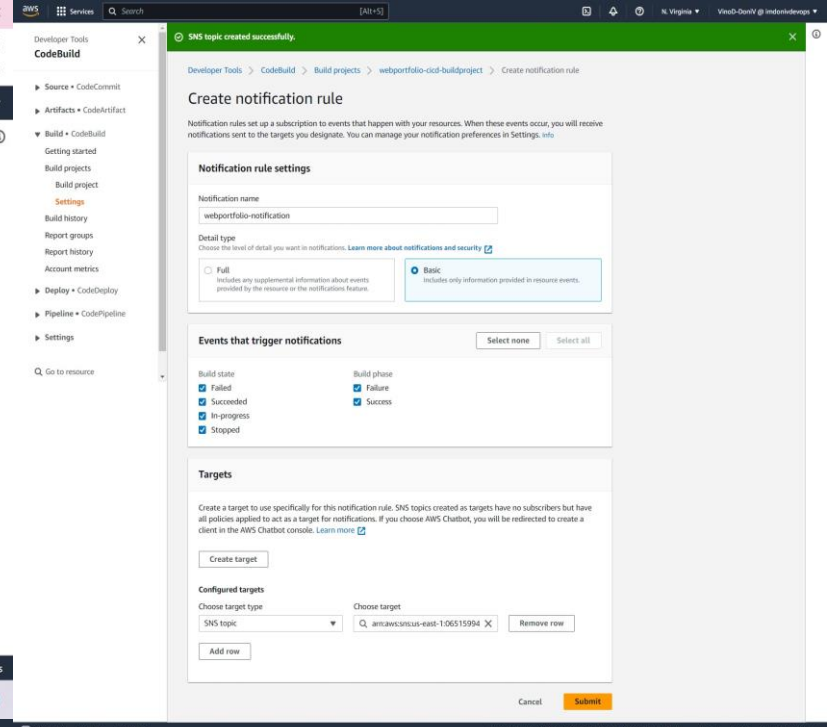
- Choose the Build history in left pane you can see the Build history and Batch history
  - Click the Build history you can see the following details:
    - Build run, Status, Project, Build number, Source version, Submitter, Duration, Completed.

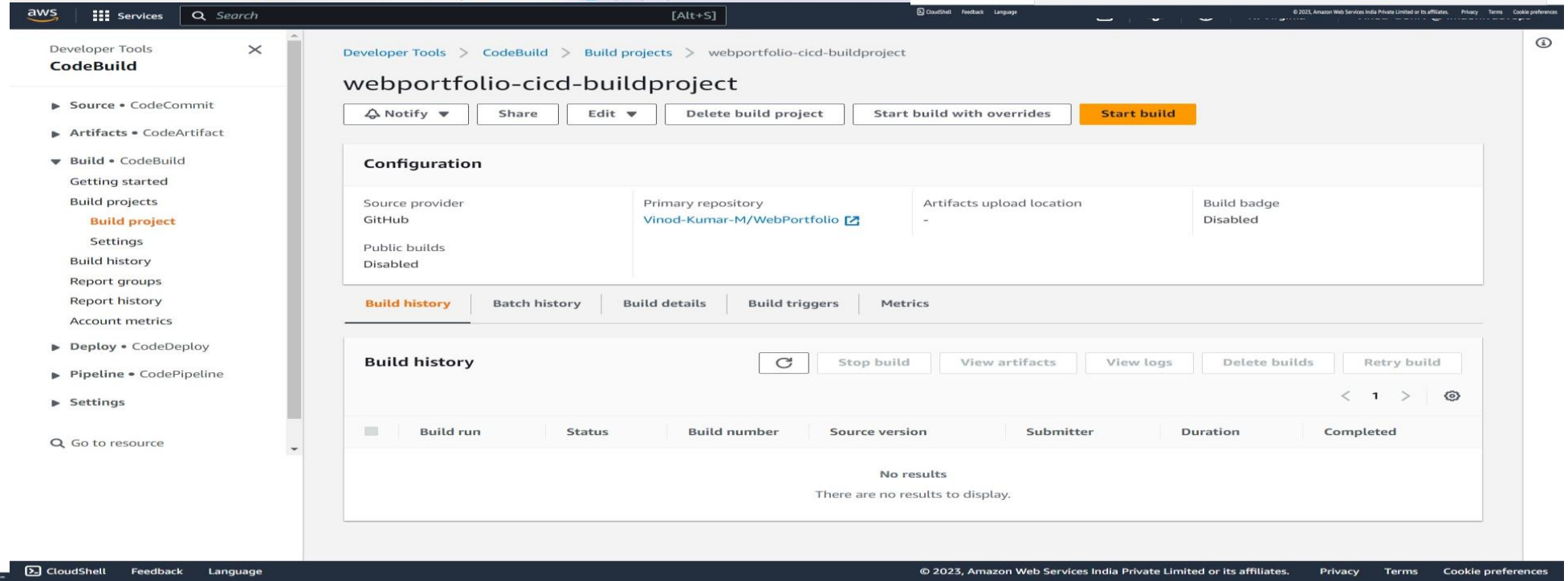
Create Build project





Code Build Source-1



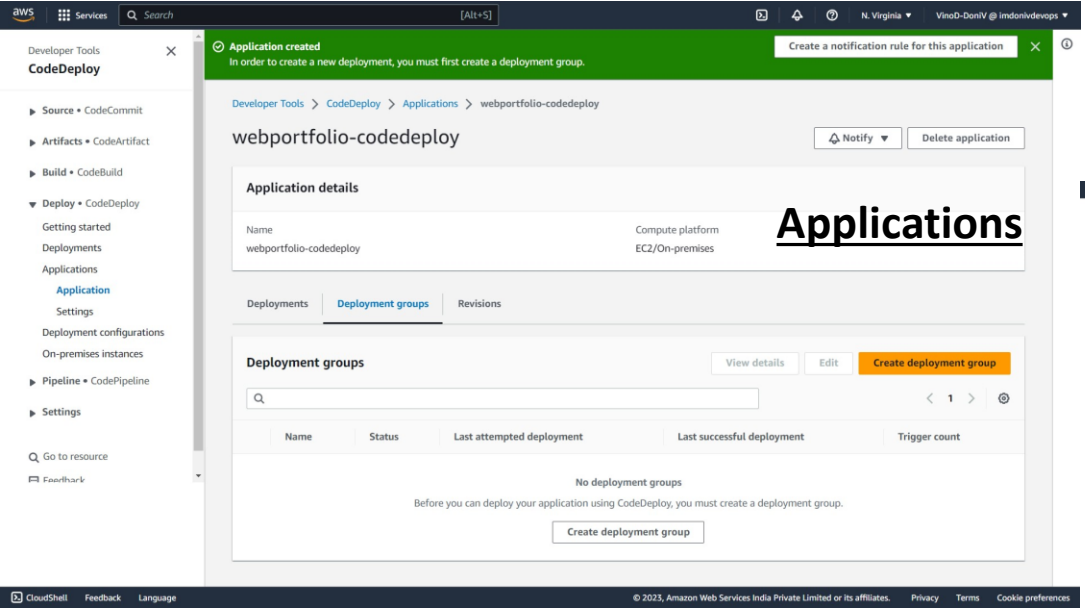


4. In left side pane, Choose **CodeDeploy** and then click **Getting started and Create application**.
   - ❖ For Application configuration, do the following:
     - Application : **webportfolio-codedeploy**
     - Compute platform : Choose **Ec2/On-premises** in the dropdown list.
     - Click **Create application**.
   - ❖ In Applications console, Click our application (webportfolio-codedeploy) > Deployment groups and then click **Create deployment group**.
   - ❖ For Create deployment group, do the following:
     - In Deployment group name, Enter a deployment group name (**webportfolio-codedeploy-group**).
     - In Service role, Enter a service role (**arn:aws:iam::06515944354:role/codedeploy-allow-allServices-role**)
     - In Deployment type, Choose how to deploy your application (**In-place**).
     - In Environment configuration, Check **Amazon Ec2 instances**.
     - In Tags, key: **Name** and Value: **CICD-Pipeline-server**, rest default
     - In Agent configuration with AWS Systems Manager, Install AWS CodeDeploy Agent : Choose **Now and schedule updates** > **Basic Scheduler** > **14 Days**.
     - In Deployment settings, Deployment configuration : Choose **CodeDeploy.AllAtOnce** in the dropdown list.
     - In Load balancer, Check **Enable load balancing** : **Application Load Balancer or Network Load Balancer** and the Choose a target group : **cicd-tg** (Our target group name) in the dropdown list.
     - Rest all leave it as default.
     - Click **Create deployment group**.

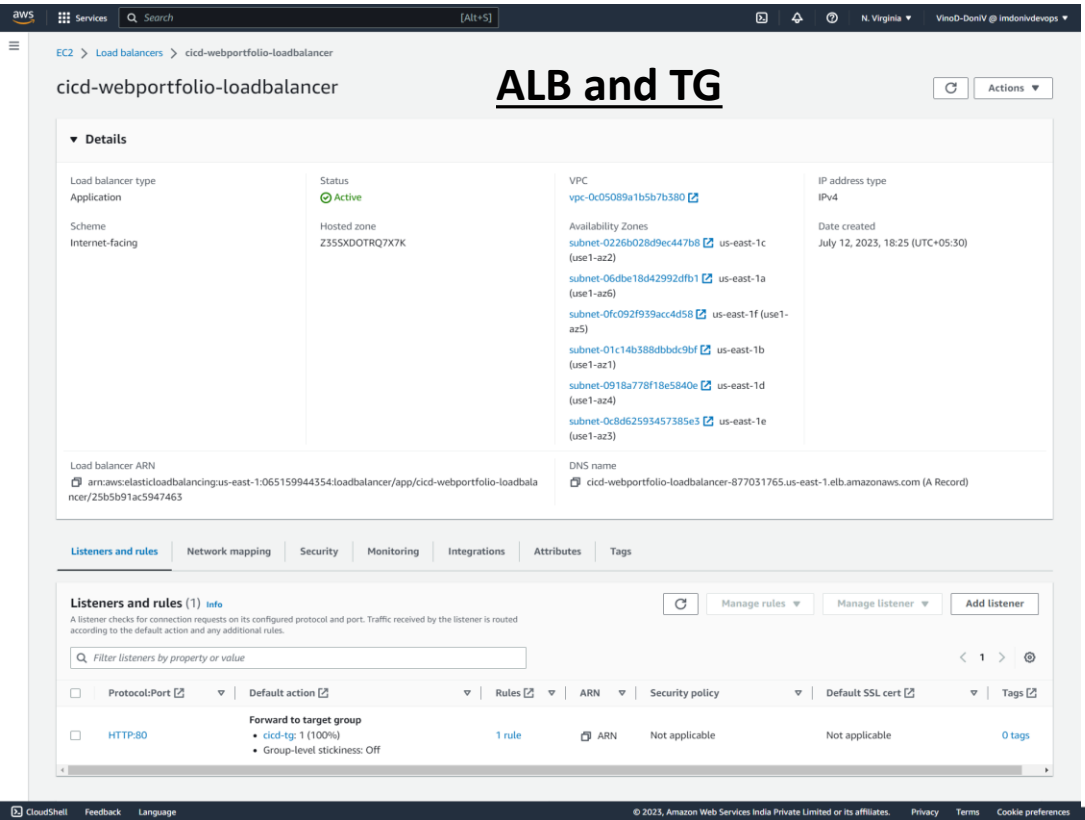
Create Deployment Group

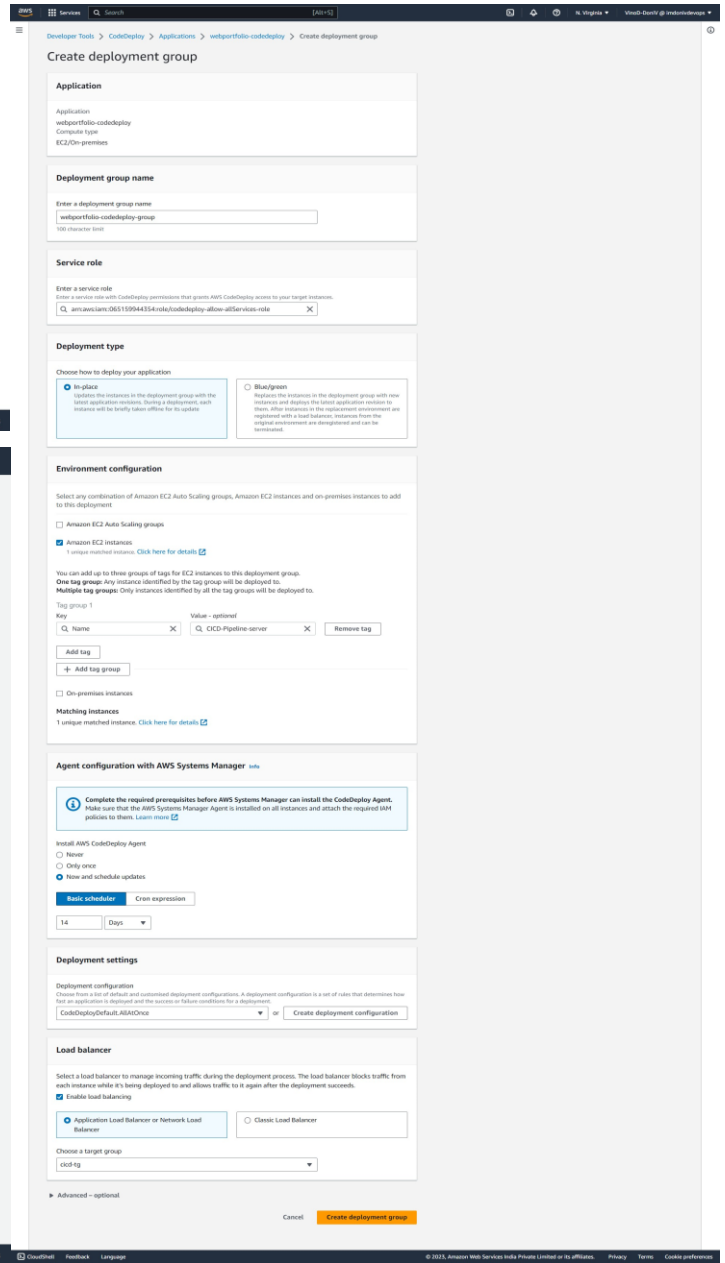
Deployment Group Over view

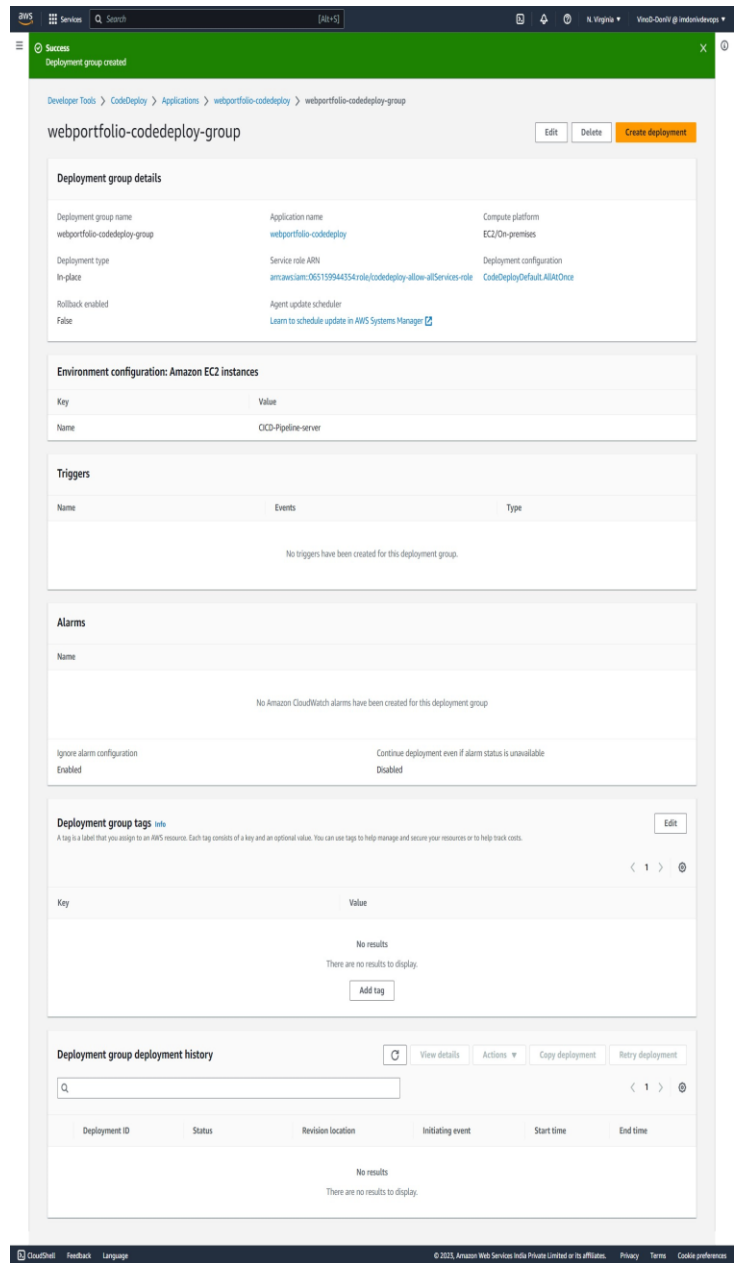
Applications



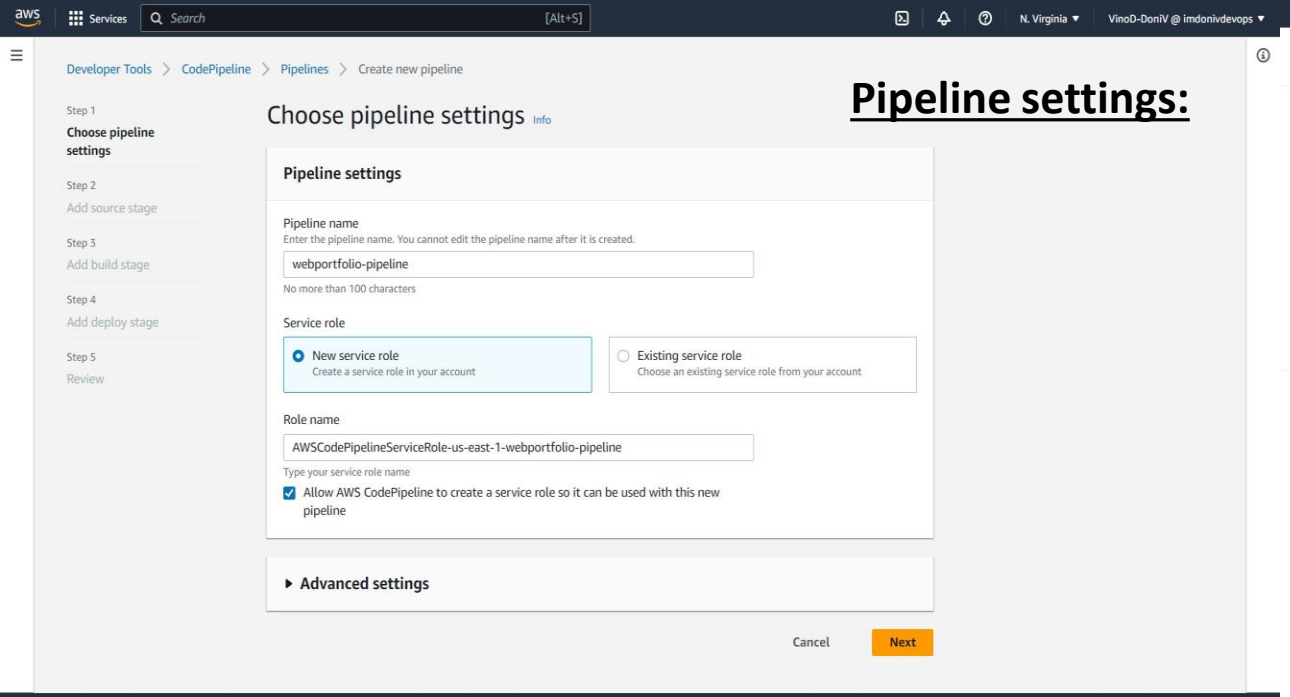
ALB and TG

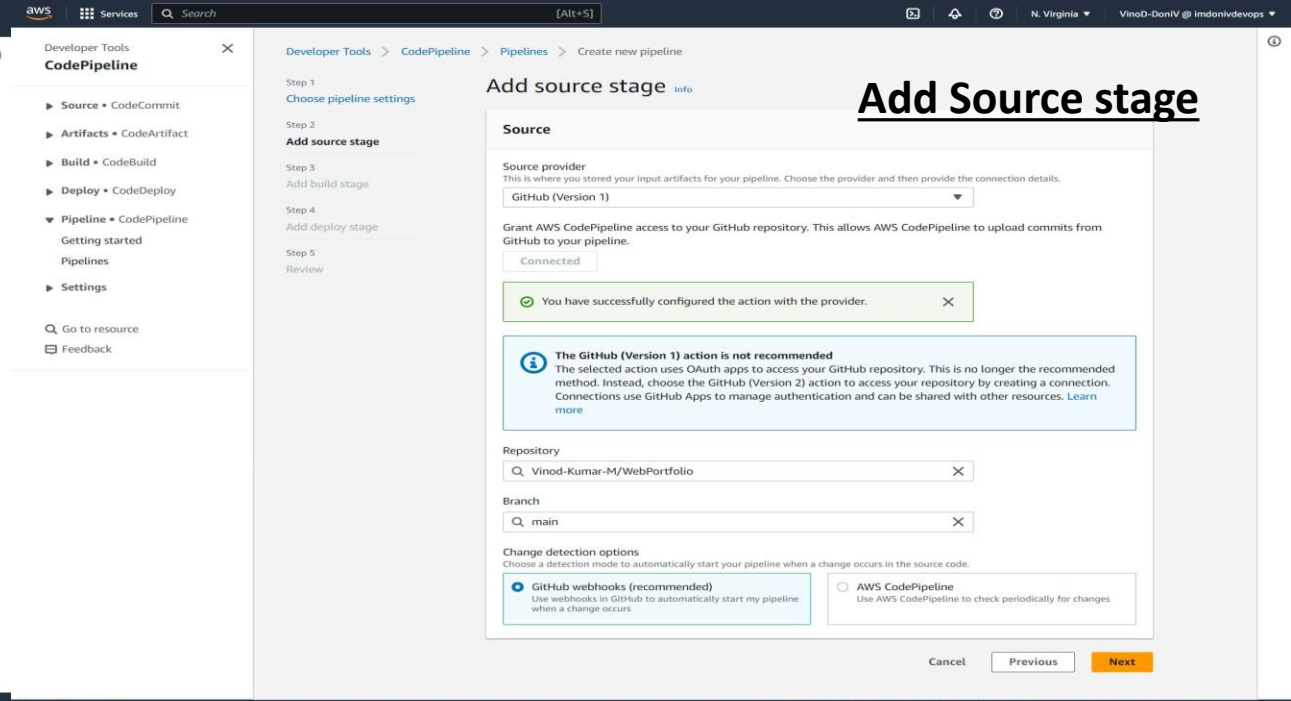


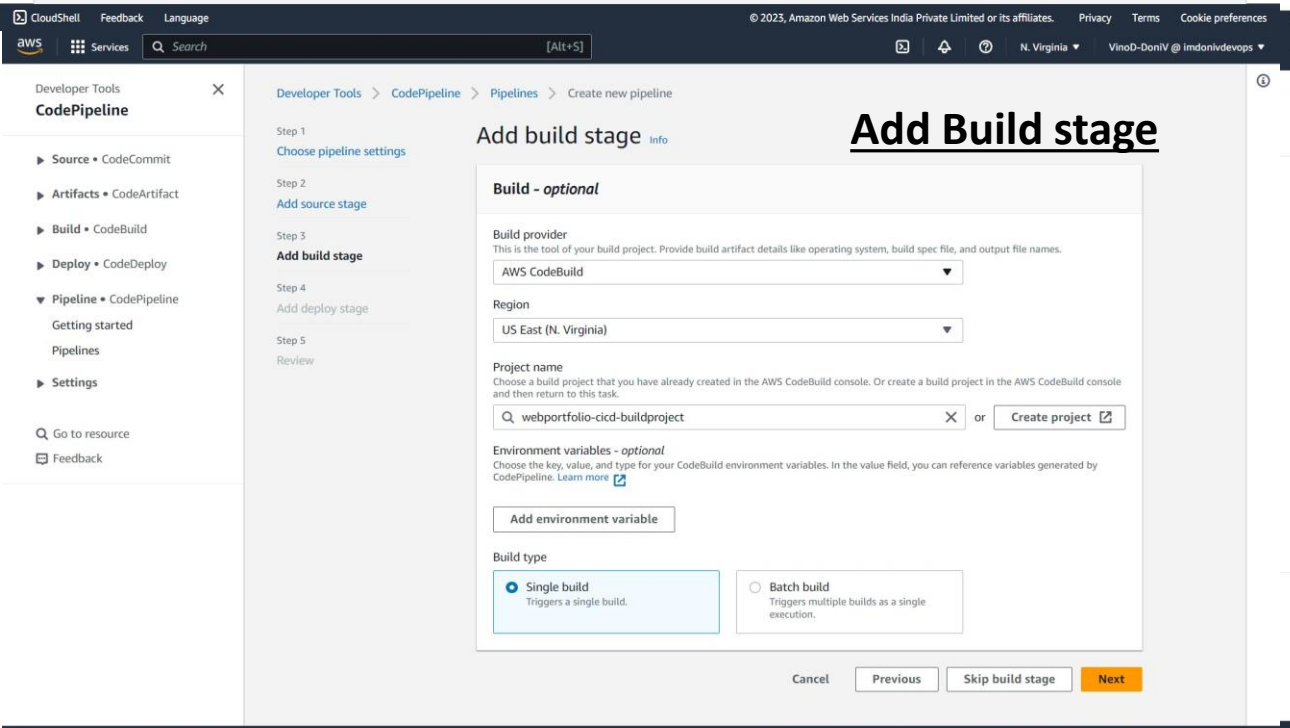


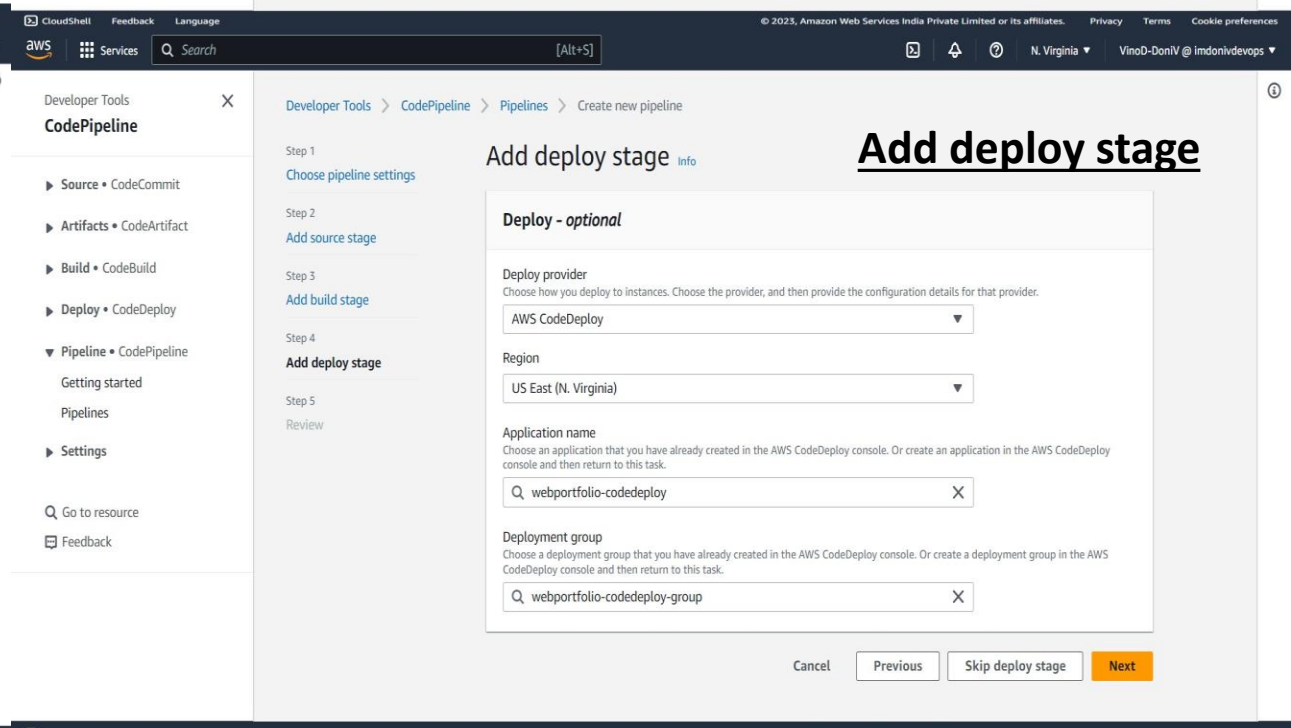


5. In left side pane, Choose **CodePipeline** and then click **Getting started and Create new pipeline.**
   - **Choose pipeline settings,** do the following:
     - In Pipeline settings, Enter the Pipeline name : **webportfolio-pipeline**.
     - In Service role, Choose **New service role**.
     - In Role name, Enter the **AWSCodePipelineServiceRole-us-east-1-webportfolio-pipeline**.
     - Check **Allow AWS CodePipeline** to create a service role so it can be used with this new pipeline.
     - Click **Next**.
   - Add source stage, do the following:
     - In Source provider, Choose **GitHub (version-1)** in the dropdown list and then click **Connected**.
     - In Repository, Give **Vinod-Kumar-M/WebPortfolio**
     - In Branch, Give **main**
     - In Change detection options, Choose **GitHub webhooks**
     - Click **Next**
   - Add build stage, do the following:
     - Build provider : choose **AWS Codebuild**, Region : **US East (N. Virginia)**, Project name : **webportfolio-cicd-buildproject**.
     - In Build type, Choose **Single build**
     - Click **Next**.
   - Add deploy stage, do the following:
     - Deploy provider : **AWS Codedeploy**, Region : **US East (N. Virginia),** Application name : **webportfolio-codedeploy**, Deployment group : **webportfolio-codedeploy-group .**
     - Click Next.
   - Review the steps and click **create pipeline**.

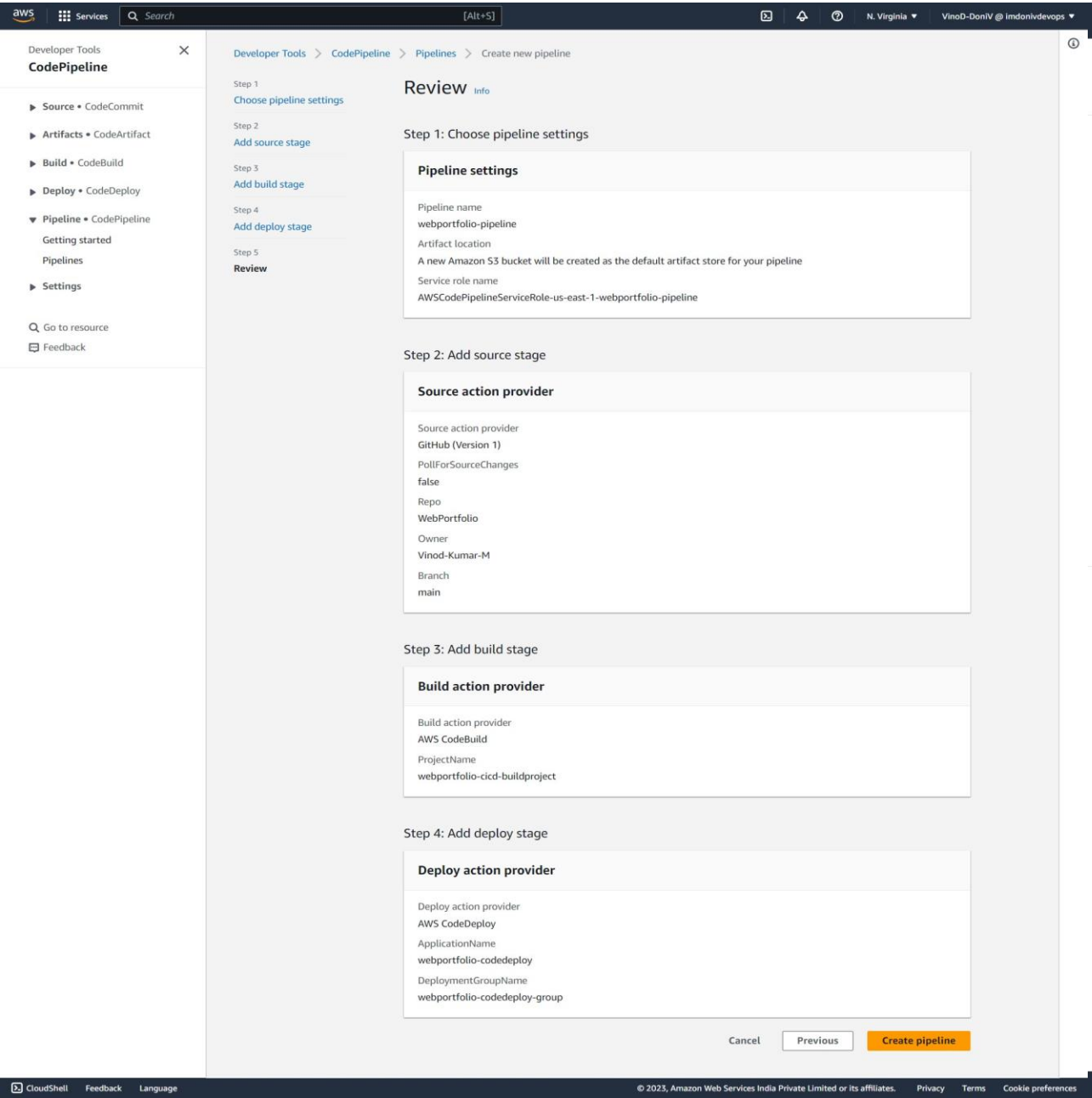

Pipeline settings:
Developer Tools > CodePipeline > Pipelines > Create new pipeline
Step 1
Choose pipeline settings
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Choose pipeline settings Info
Pipeline settings
Pipeline name
Enter the pipeline name. You cannot edit the pipeline name after it is created.
webportfolio-pipeline
No more than 100 characters
Service role
New service role
Create a service role in your account
Existing service role
Choose an existing service role from your account
Role name
AWSCodePipelineServiceRole-us-east-1-webportfolio-pipeline
Type your service role name
Allow AWS CodePipeline to create a service role so it can be used with this new pipeline
Advanced settings
Cancel
Next


Add Source stage
Developer Tools
CodePipeline
Source • CodeCommit
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Pipeline • CodePipeline
Getting started
Pipelines
Settings
Go to resource
Feedback
Developer Tools > CodePipeline > Pipelines > Create new pipeline
Step 1
Choose pipeline settings
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Add source stage Info
Source
Source provider
This is where you stored your input artifacts for your pipeline. Choose the provider and then provide the connection details.
GitHub (Version 1)
Grant AWS CodePipeline access to your GitHub repository. This allows AWS CodePipeline to upload commits from GitHub to your pipeline.
Connected
You have successfully configured the action with the provider.
The GitHub (Version 1) action is not recommended
The selected action uses OAuth apps to access your GitHub repository. This is no longer the recommended method. Instead, choose the GitHub (Version 2) action to access your repository by creating a connection. Connections use GitHub Apps to manage authentication and can be shared with other resources. Learn more
Repository
Vinod-Kumar-M/WebPortfolio
Branch
main
Change detection options
Choose a detection mode to automatically start your pipeline when a change occurs in the source code.
GitHub webhooks (recommended)
Use webhooks in GitHub to automatically start my pipeline when a change occurs
AWS CodePipeline
Use AWS CodePipeline to check periodically for changes
Cancel
Previous
Next

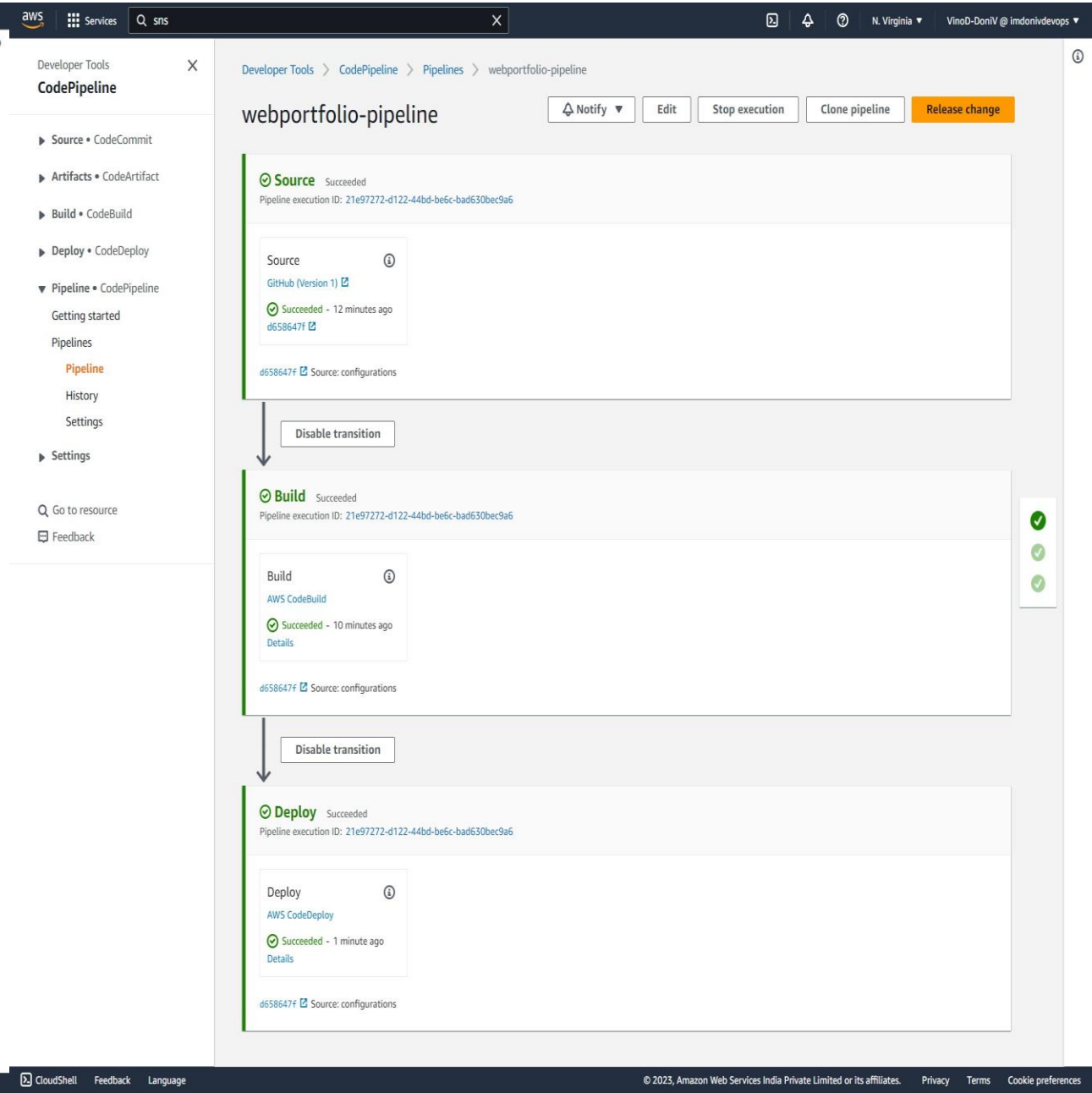

Add Build stage
Developer Tools
CodePipeline
Source • CodeCommit
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Pipeline • CodePipeline
Getting started
Pipelines
Settings
Go to resource
Feedback
Developer Tools > CodePipeline > Pipelines > Create new pipeline
Step 1
Choose pipeline settings
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Add build stage Info
Build - optional
Build provider
This is the tool of your build project. Provide build artifact details like operating system, build spec file, and output file names.
AWS CodeBuild
Region
US East (N. Virginia)
Project name
Choose a build project that you have already created in the AWS CodeBuild console. Or create a build project in the AWS CodeBuild console and then return to this task.
webportfolio-cicd-buildproject
or
Create project
Environment variables - optional
Choose the key, value, and type for your CodeBuild environment variables. In the value field, you can reference variables generated by CodePipeline. Learn more
Add environment variable
Build type
Single build
Triggers a single build.
Batch build
Triggers multiple builds as a single execution.
Cancel
Previous
Skip build stage
Next


Add deploy stage
Developer Tools
CodePipeline
Source • CodeCommit
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Pipeline • CodePipeline
Getting started
Pipelines
Settings
Go to resource
Feedback
Developer Tools > CodePipeline > Pipelines > Create new pipeline
Step 1
Choose pipeline settings
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Add deploy stage Info
Deploy - optional
Deploy provider
Choose how you deploy to instances. Choose the provider, and then provide the configuration details for that provider.
AWS CodeDeploy
Region
US East (N. Virginia)
Application name
Choose an application that you have already created in the AWS CodeDeploy console. Or create an application in the AWS CodeDeploy console and then return to this task.
webportfolio-codedeploy
Deployment group
Choose a deployment group that you have already created in the AWS CodeDeploy console. Or create a deployment group in the AWS CodeDeploy console and then return to this task.
webportfolio-codedeploy-group
Cancel
Previous
Skip deploy stage
Next

Review of the CodePipeline:



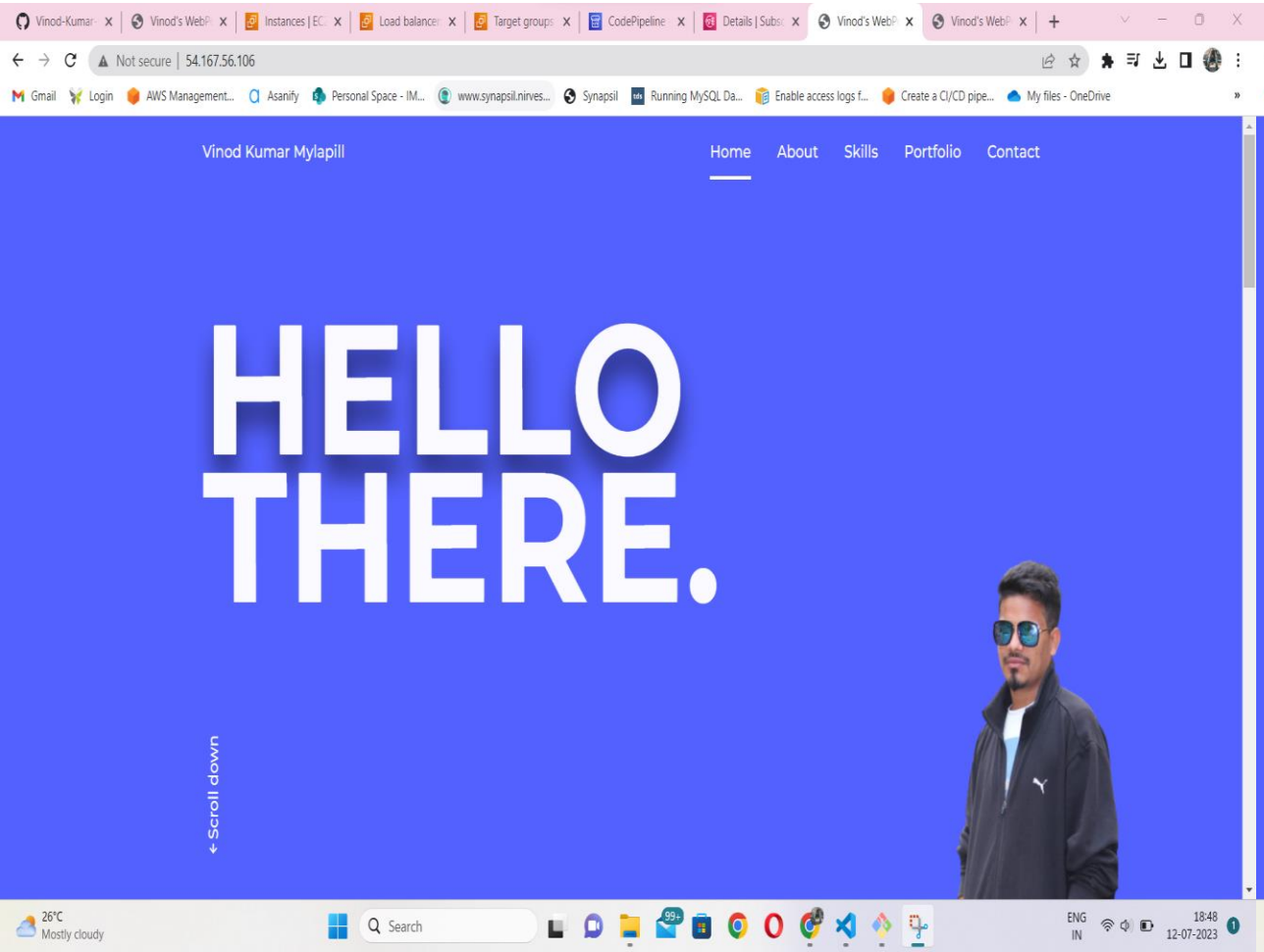
Pipeline Process :



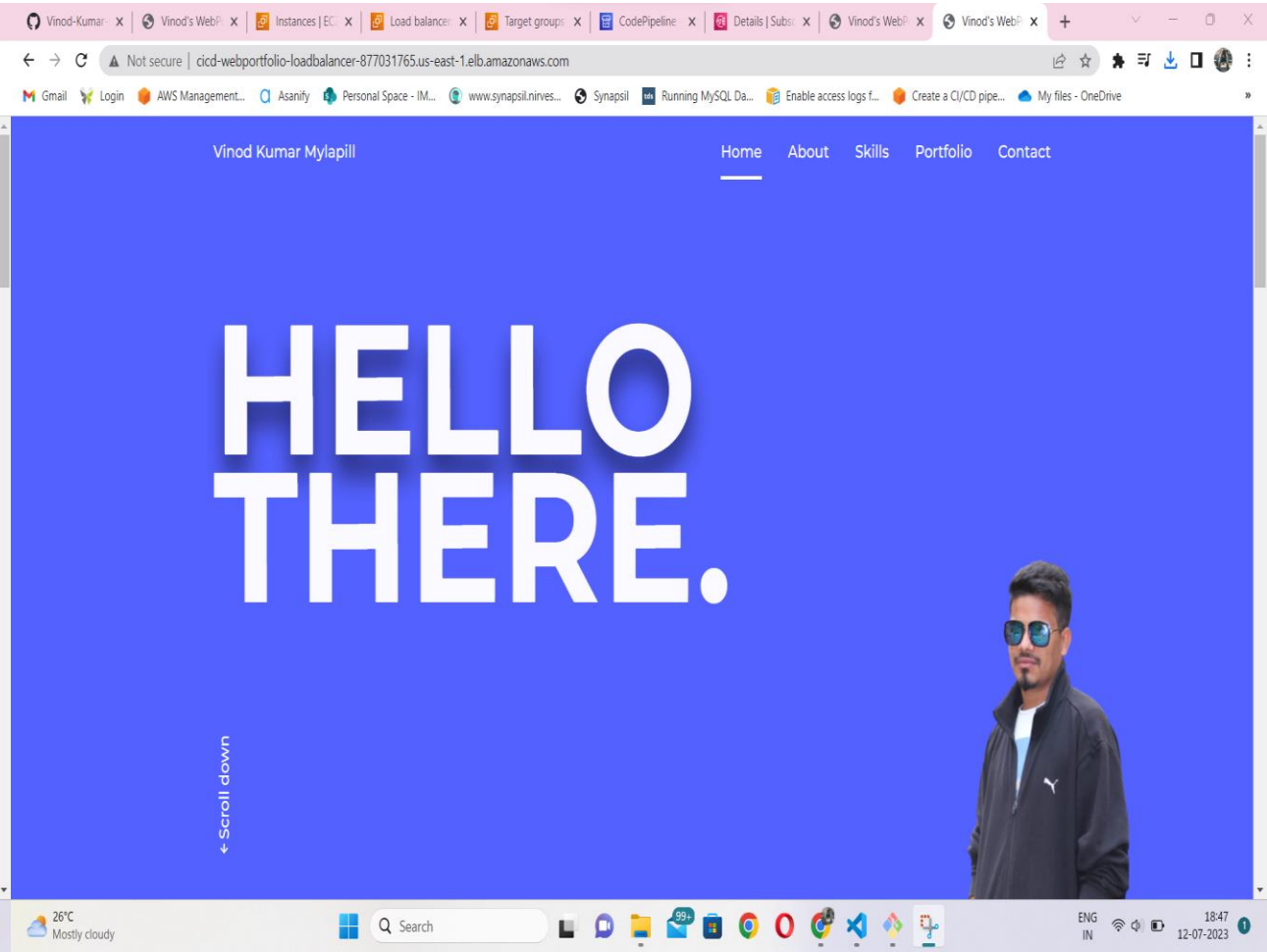
Pipeline Process shows **Succeeded** in all **Source, Build and Deploy** stages then after copy the **Public Ip** in EC2 instance and **DNS** in Load Balancer.
Paste in the browser you can see the result like below.

This result shows staging version.

By using EC2 public IP (54.167.56.106)



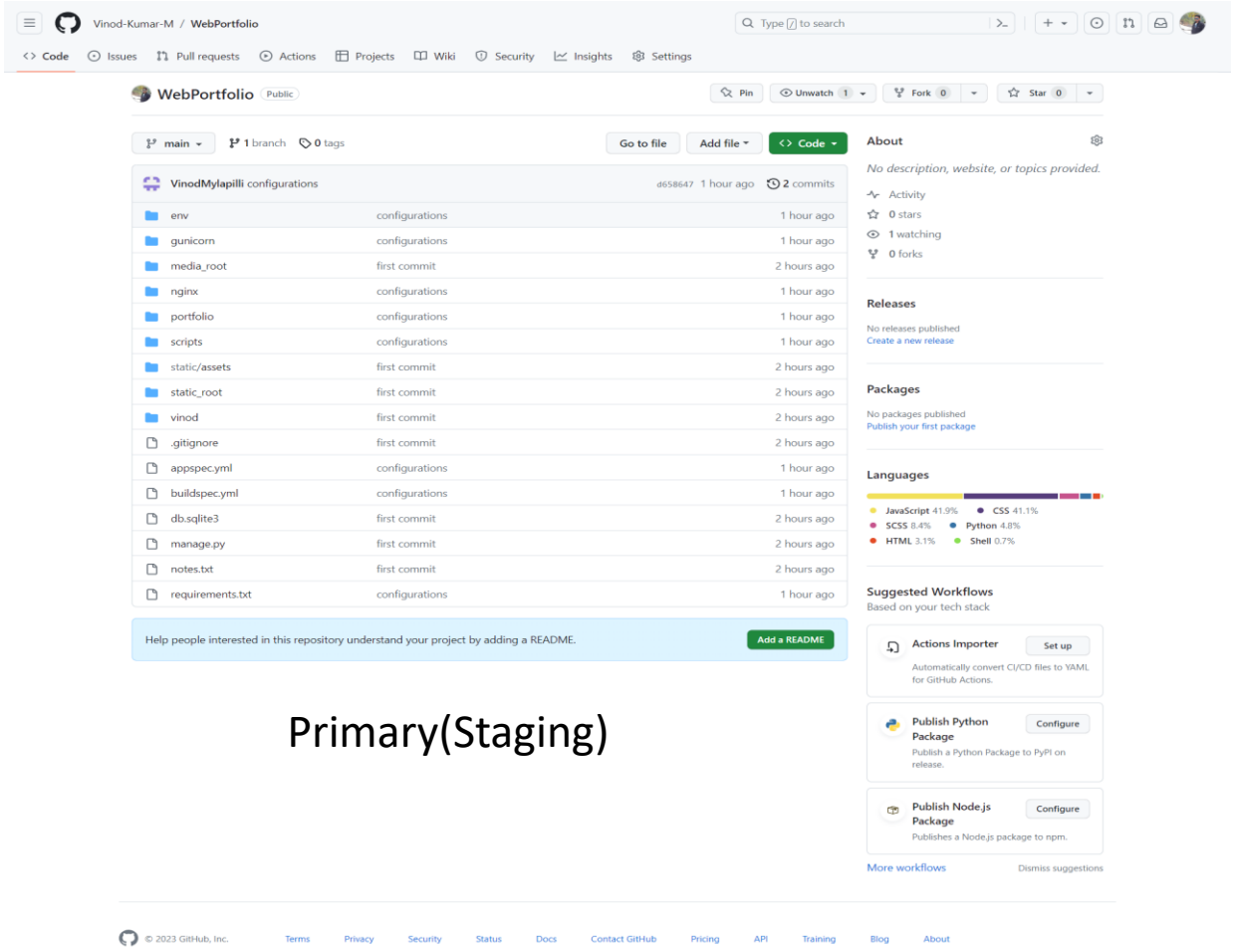
By Using DNS Load Balancer



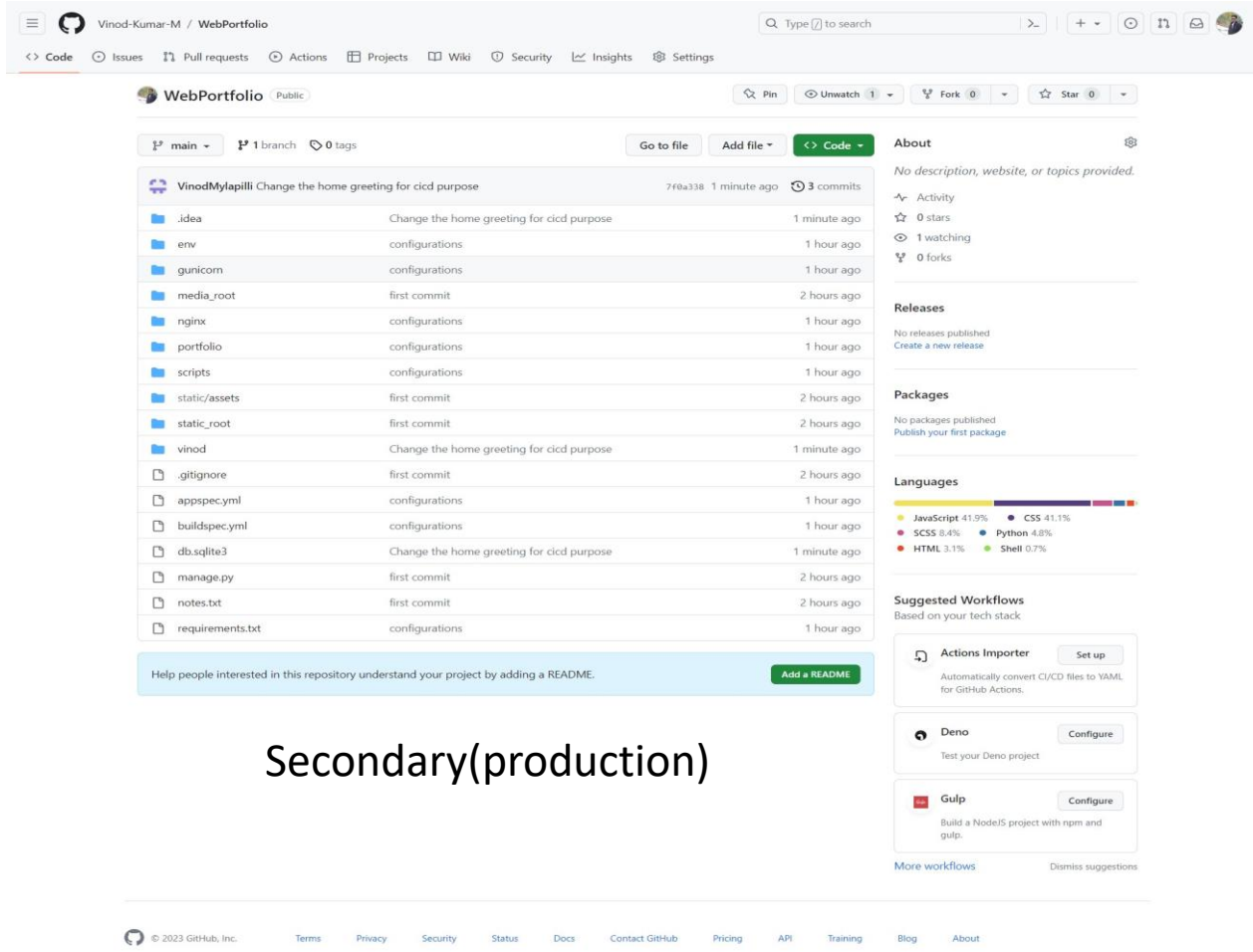
Now, Check the Automation Pipeline process working or not:

- First change the code in our project, what implementation want to shows.
- Then after push the code in GitHub, do the followings commands:

  $ git remote add origin https://github.com/Vinod-Kumar-M/WebPortfolio.git
  $ git branch –M main
  $ git commit –m “Change the Home Greeting”
  $ git push –u origin main

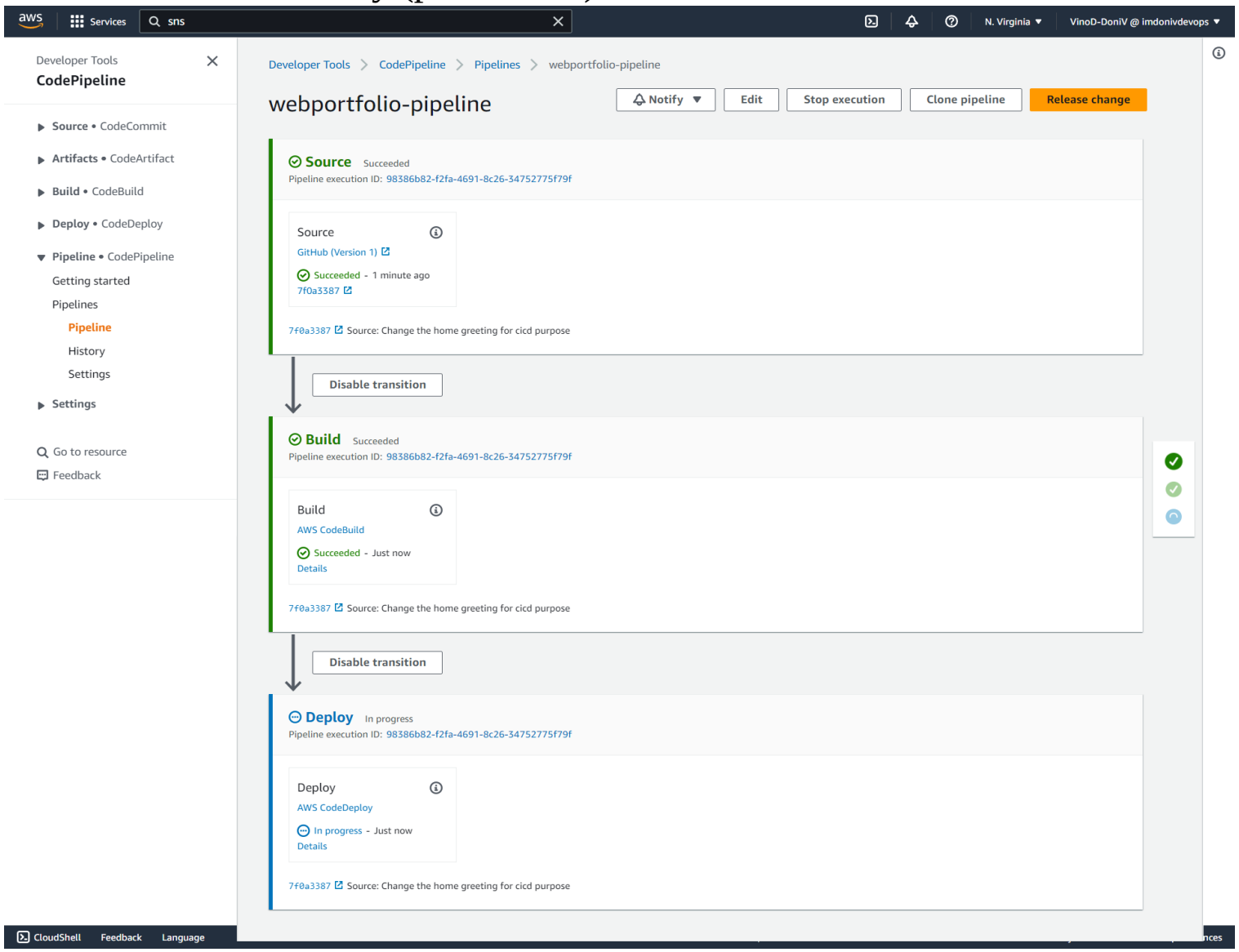


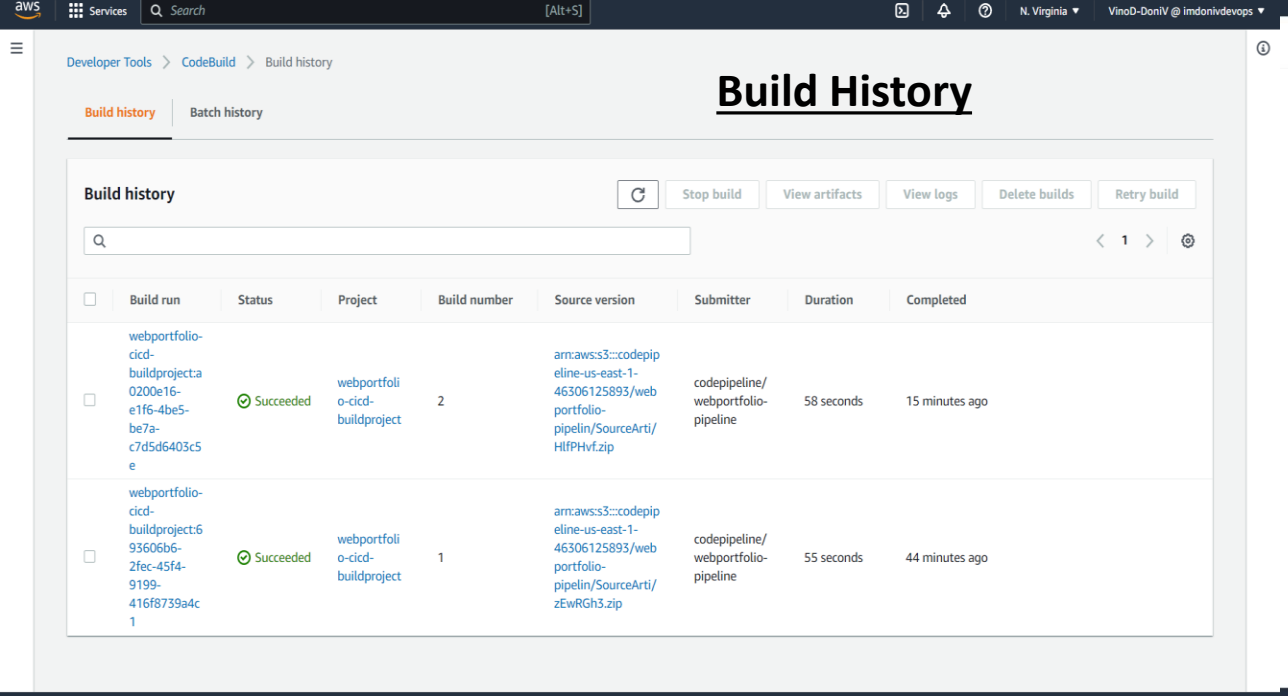
Primary(Staging)



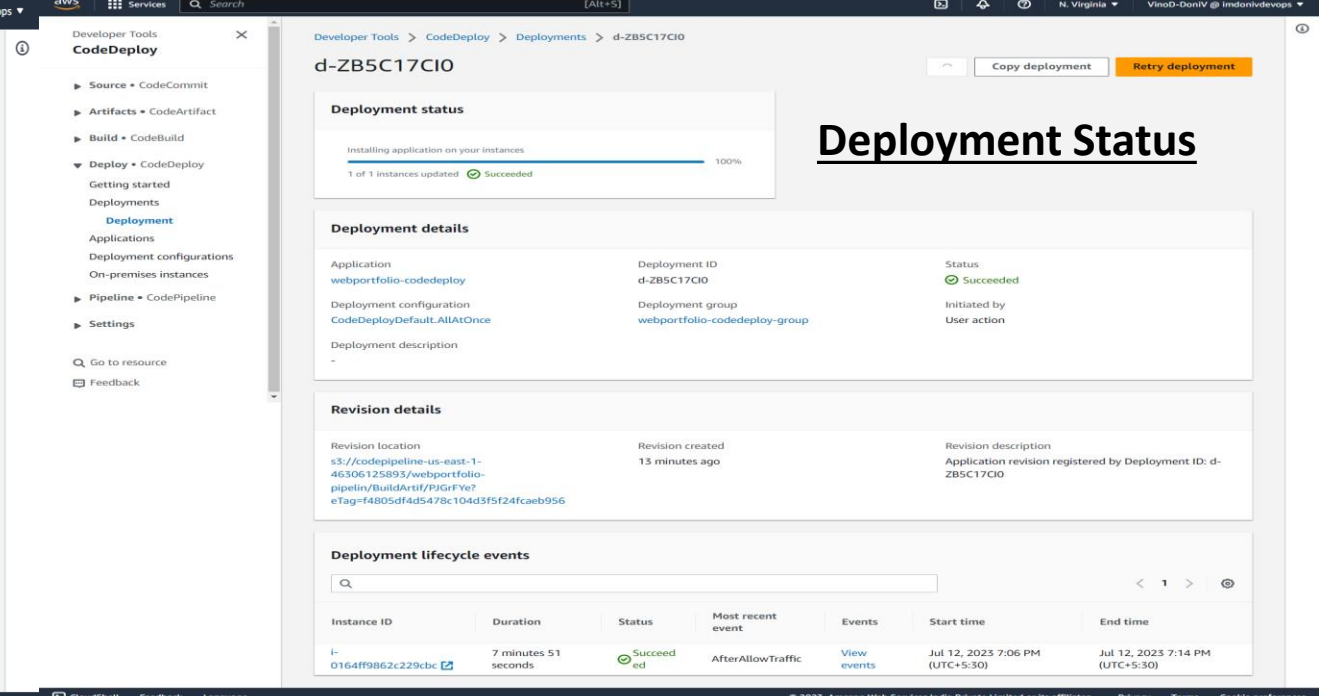
Secondary(production)

- After Push the Code in GitHub, Automatically Pipeline process Starts. Shows below.
- See the Source: configurations ID changed here.
  - Primary (Staging) ID : d658647f
  - Secondary (production) ID : 7f0a3387

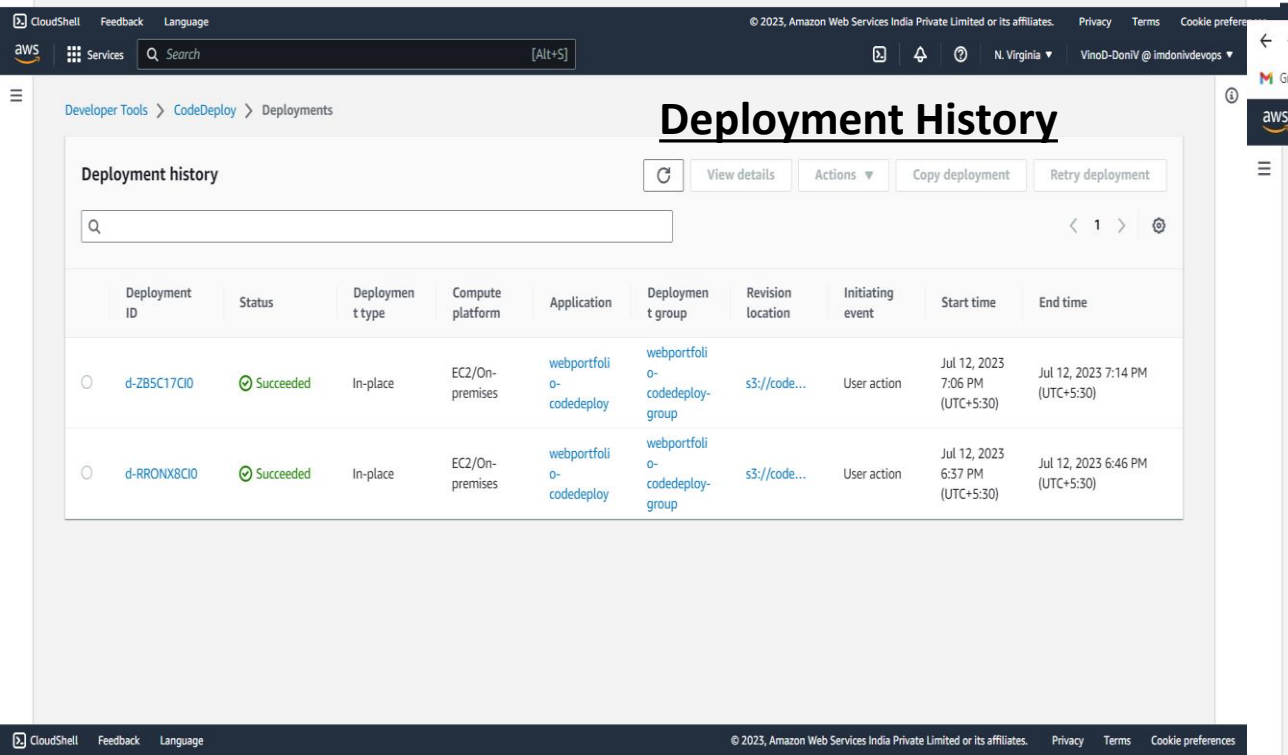




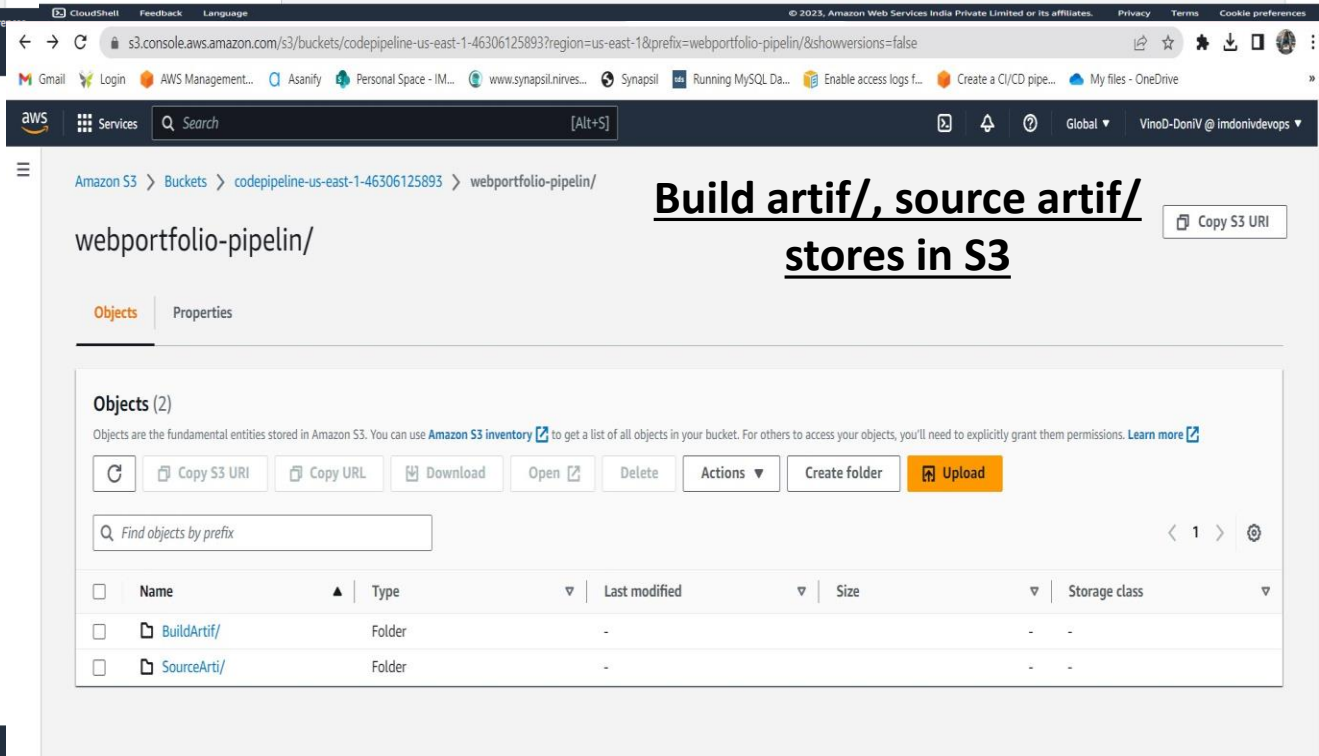
Build History



Deployment Status



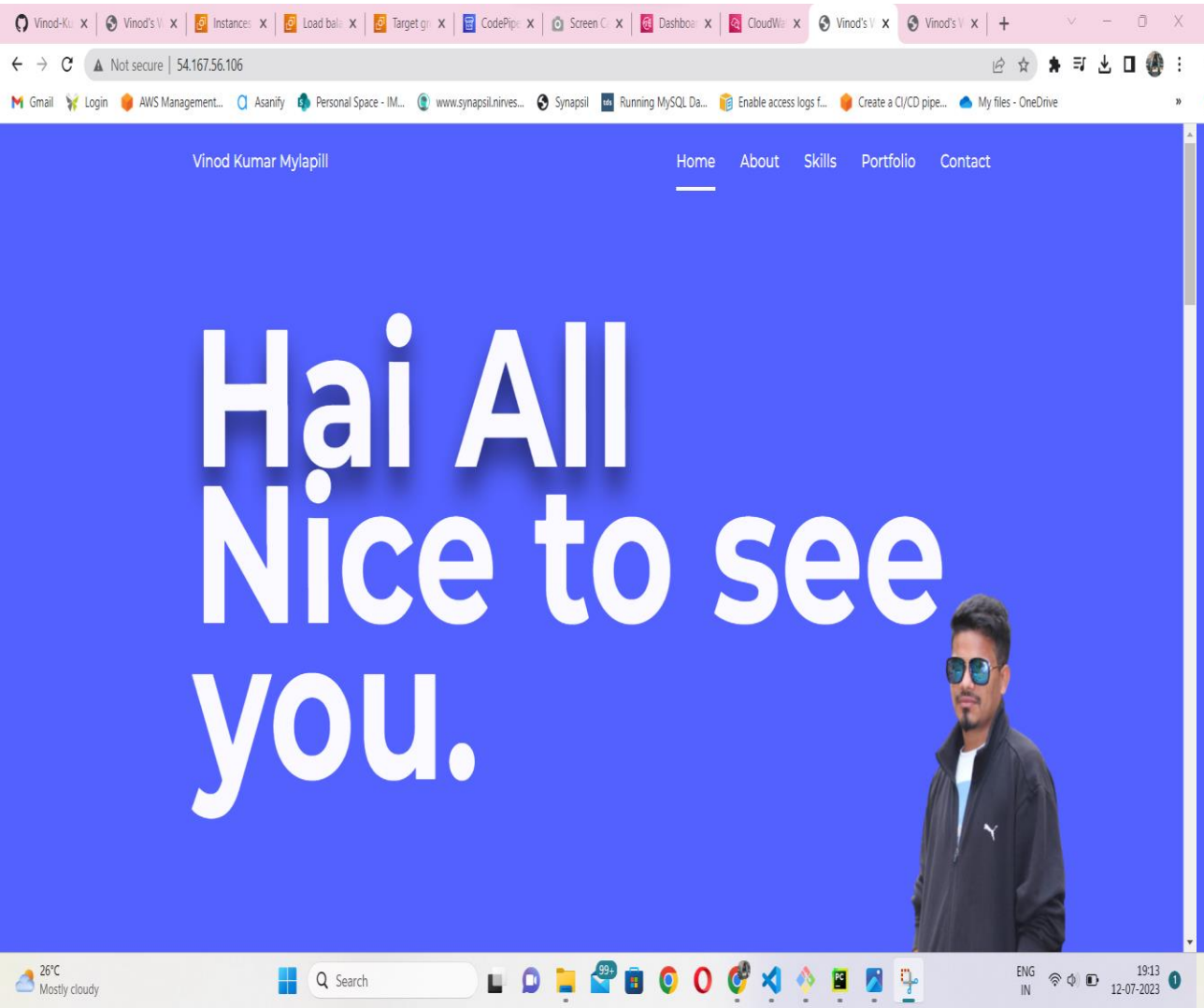
Deployment History



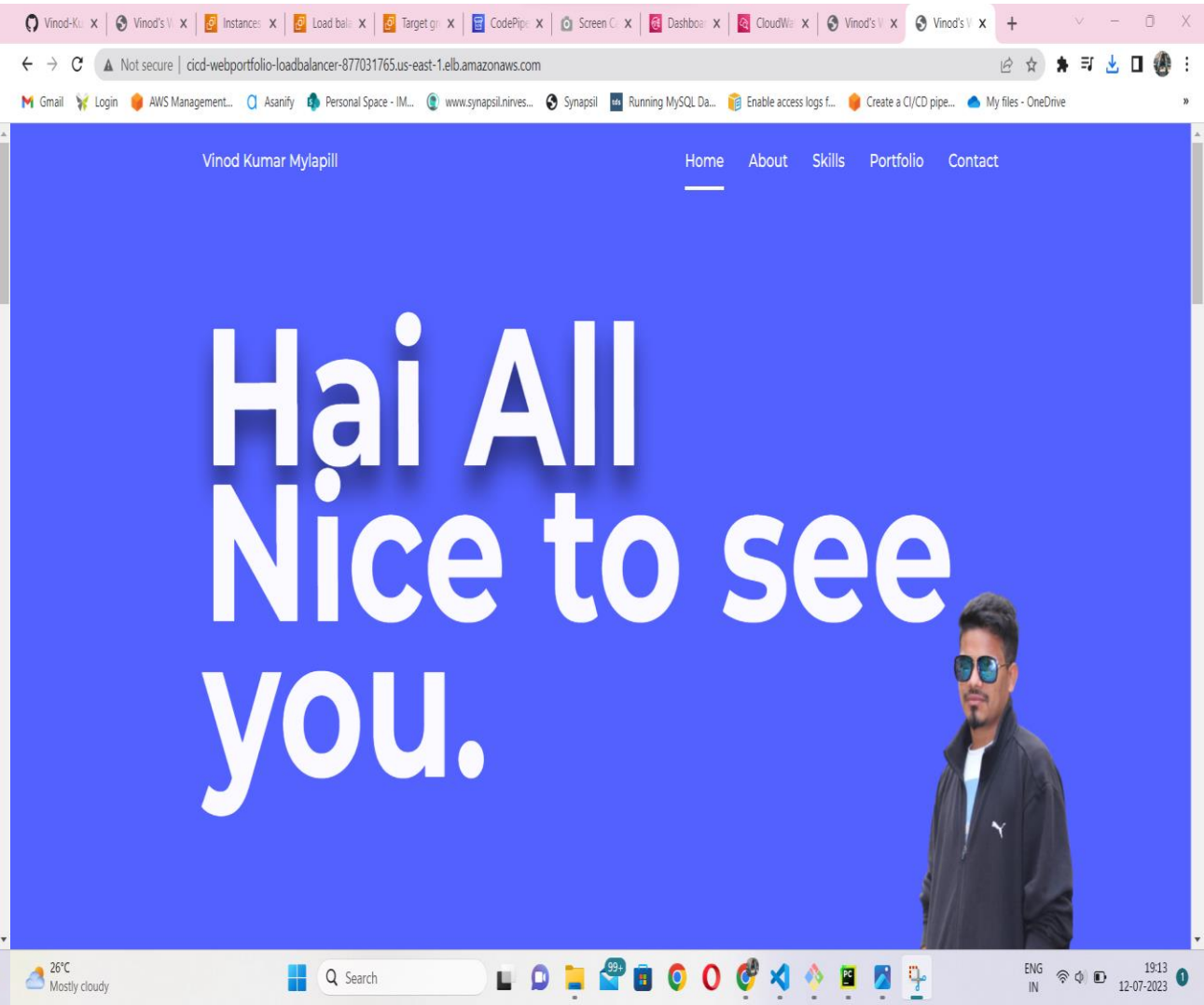
Build artif/, source artif/ stores in S3

The Result shows Here:

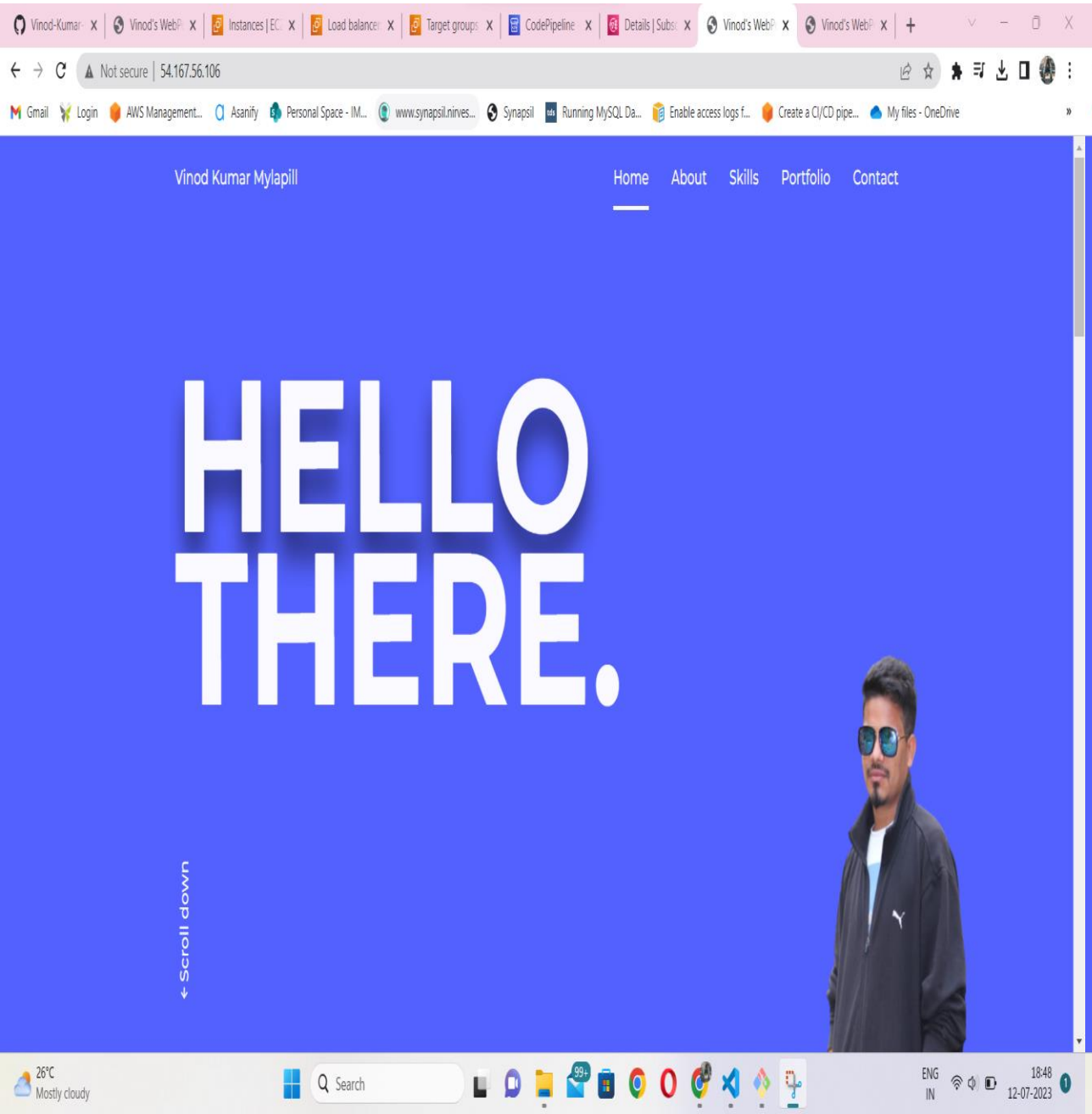
By using EC2 public IP (54.167.56.106)



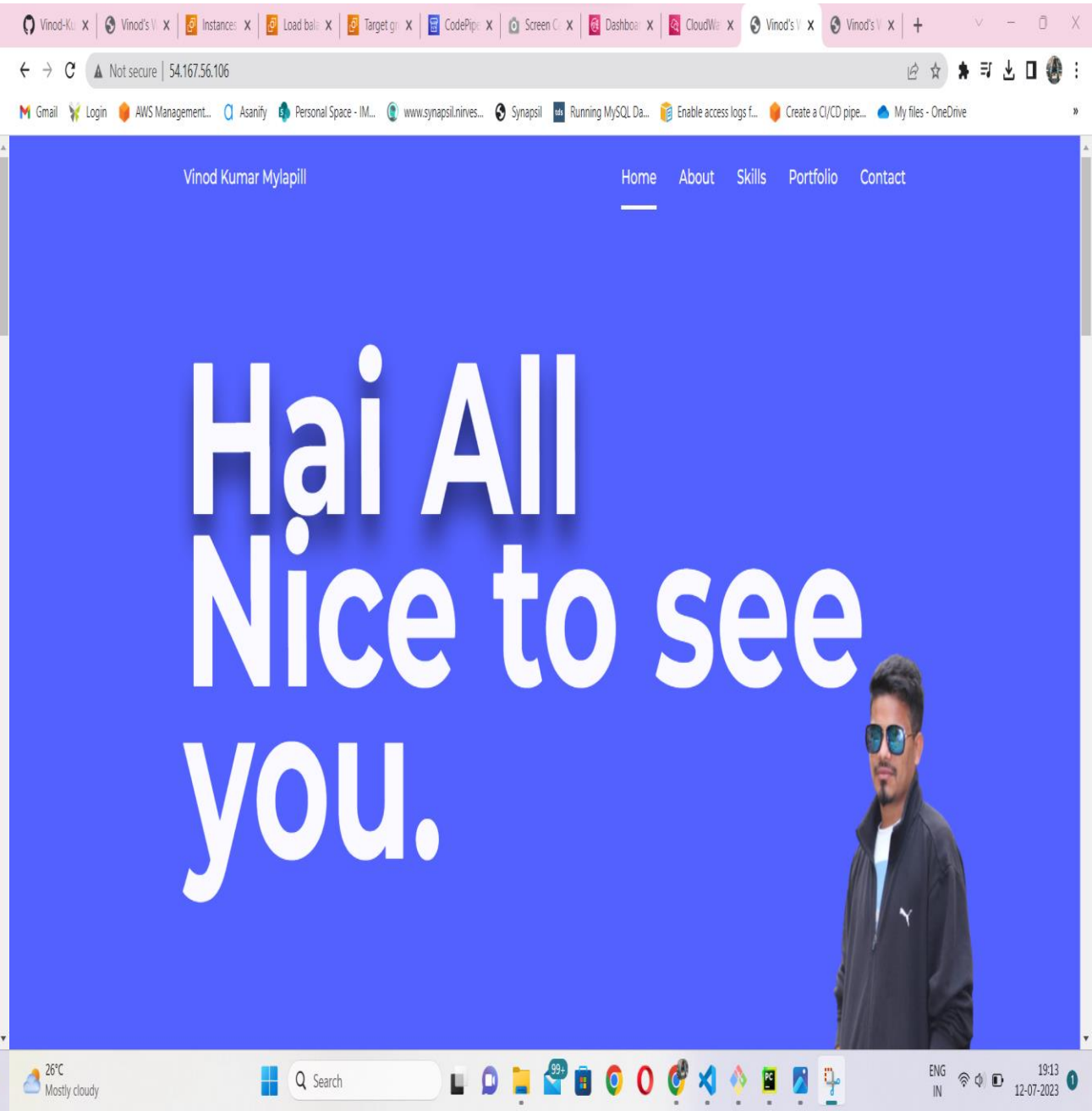
By Using DNS Load Balancer



Primary (Staging)



Secondary (Production)



Thank You !

See you soon.....