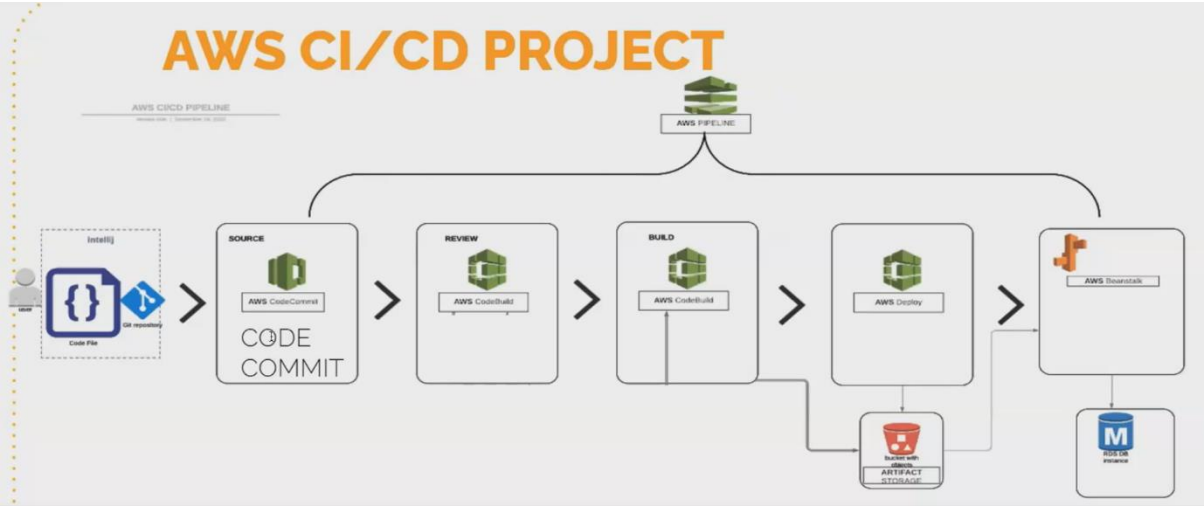
Day 7 - AWS - Code Pipeline



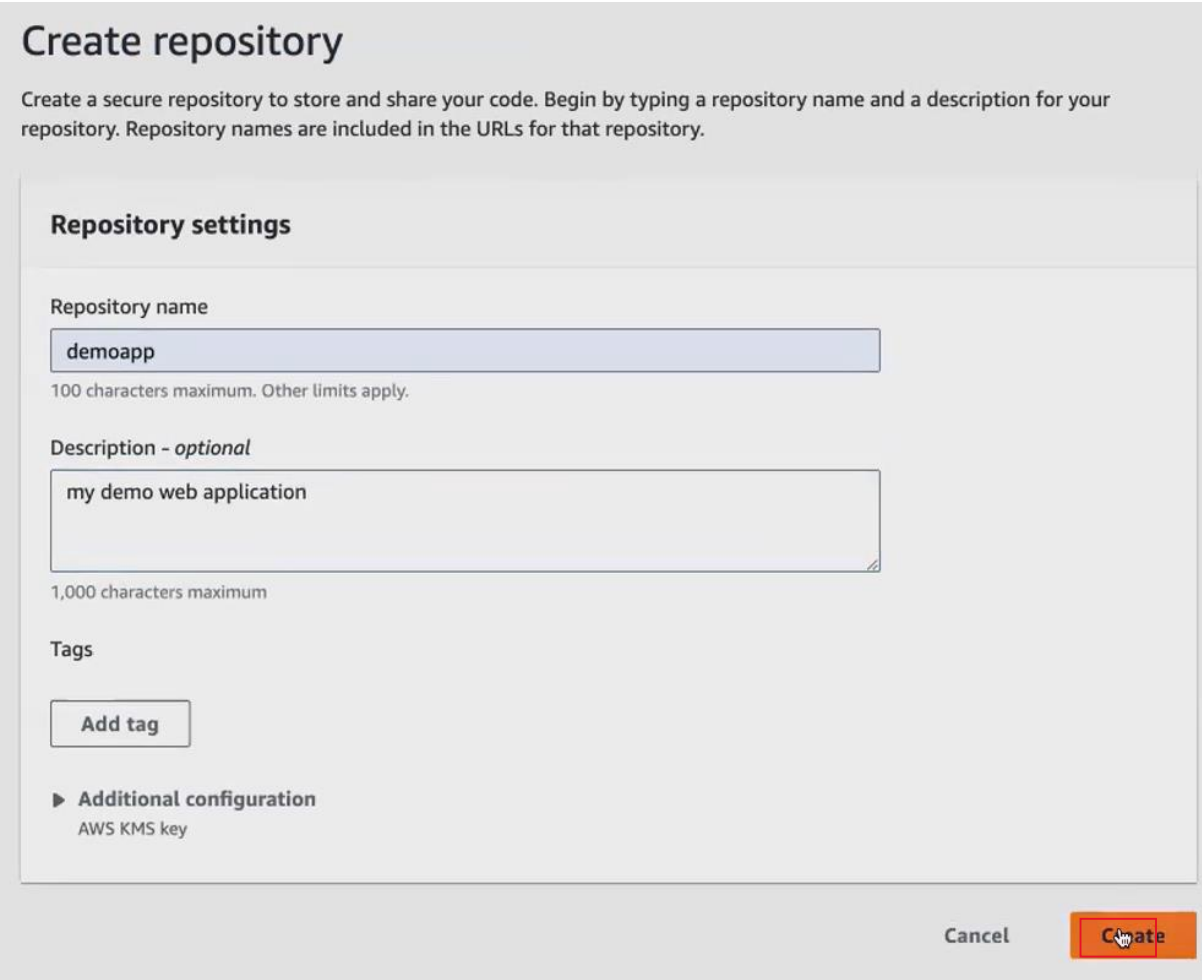
- ✓ we also have a similar tool like Github in the Aws. We call it as code commit. so where you can commit your codes like how you commit your code in the Github Repository. Same way in the code, commit repository.
- ✓ So, this is aws specific. So, you can only use it for the Aws specific projects. Here we put the application. You can deploy the applicant.
- ✓ **share your application, or you can maintain your application in this code [Commit repository].**
- ✓ if I want to build my application.but as a Java application, I build it using maven
- ✓ if I want to use Docker, I build it using my docker. So I will build it using another tool called code. Build here every stage for performing every stage in Jenkins you write a Jenkins file wherein here you'll be using different tools to perform the stages.
- ✓ We use code commit to build the application. We use code, build to deploy the application. You use a tool called Aws, deploy.
- ✓ **this aws deploy can deploy your application to any server.**
- ✓ So you can deploy it wherever you want inside the Aws environment and the entire flow can be automated using aws, pipeline, we call it as code pipeline. So using the code pipeline after building all the stages separately. The build stage deploy stage and the codec stage separately. You will integrate everything, using aws code pipeline.
- ✓ This is similar ro Jenkins file.

Aws console:

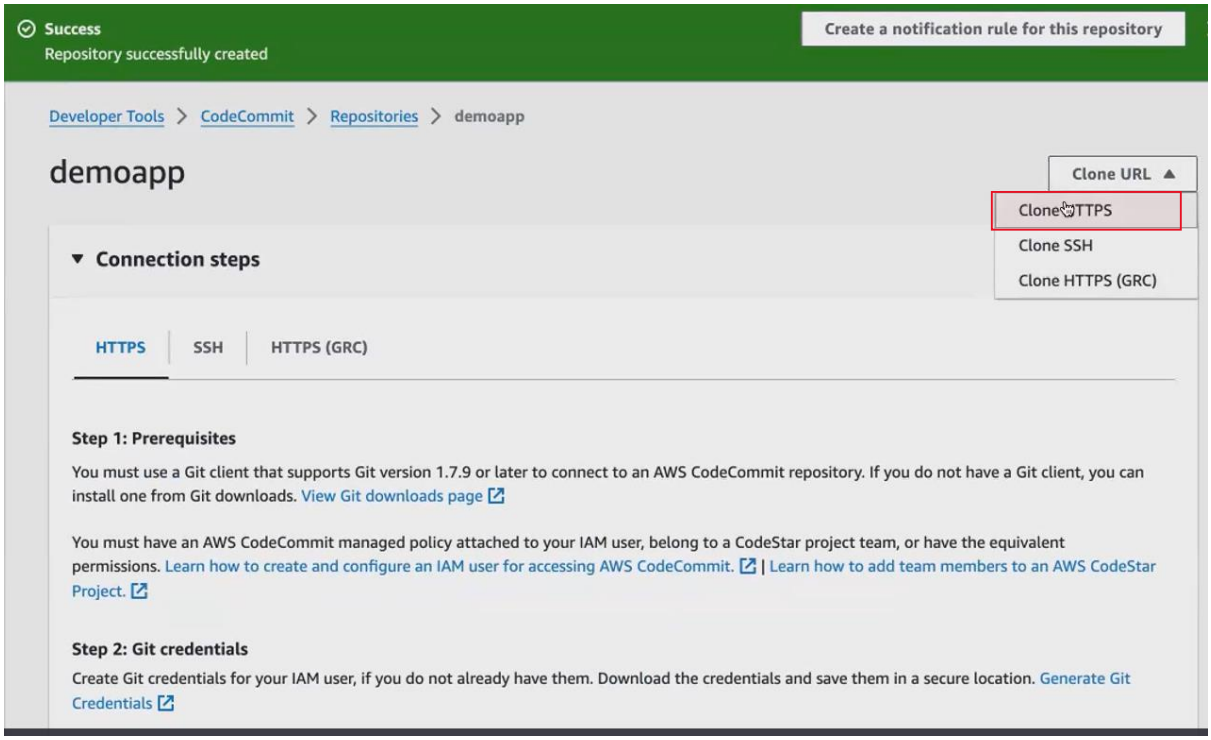
- code commit is similar to your Github Repository, wherein, in your Github Repository, you can create public repository and private repository.
- Wherein code comment, you can only create private repositories which is specific to certain users only for the authenticated user can access this code commit repository like it will ask you for the username and password to access your event, to clone your application from the code.
- Commit repository, you need permission. So this is a private repository wherein you know Github is both private and Github. You can create both private and public repositories.

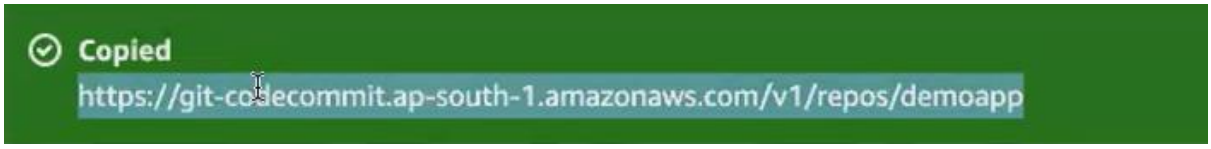
How to create aws pipeline:

Search code commit in aws console

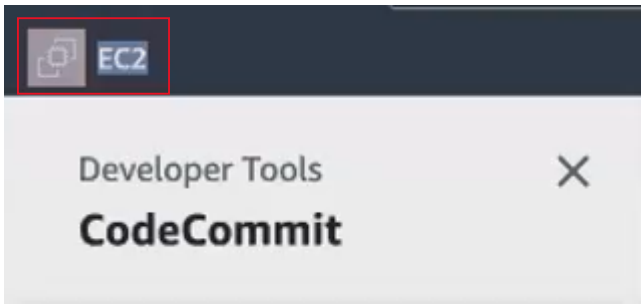


Similar github command used here.click this URL can be coiped

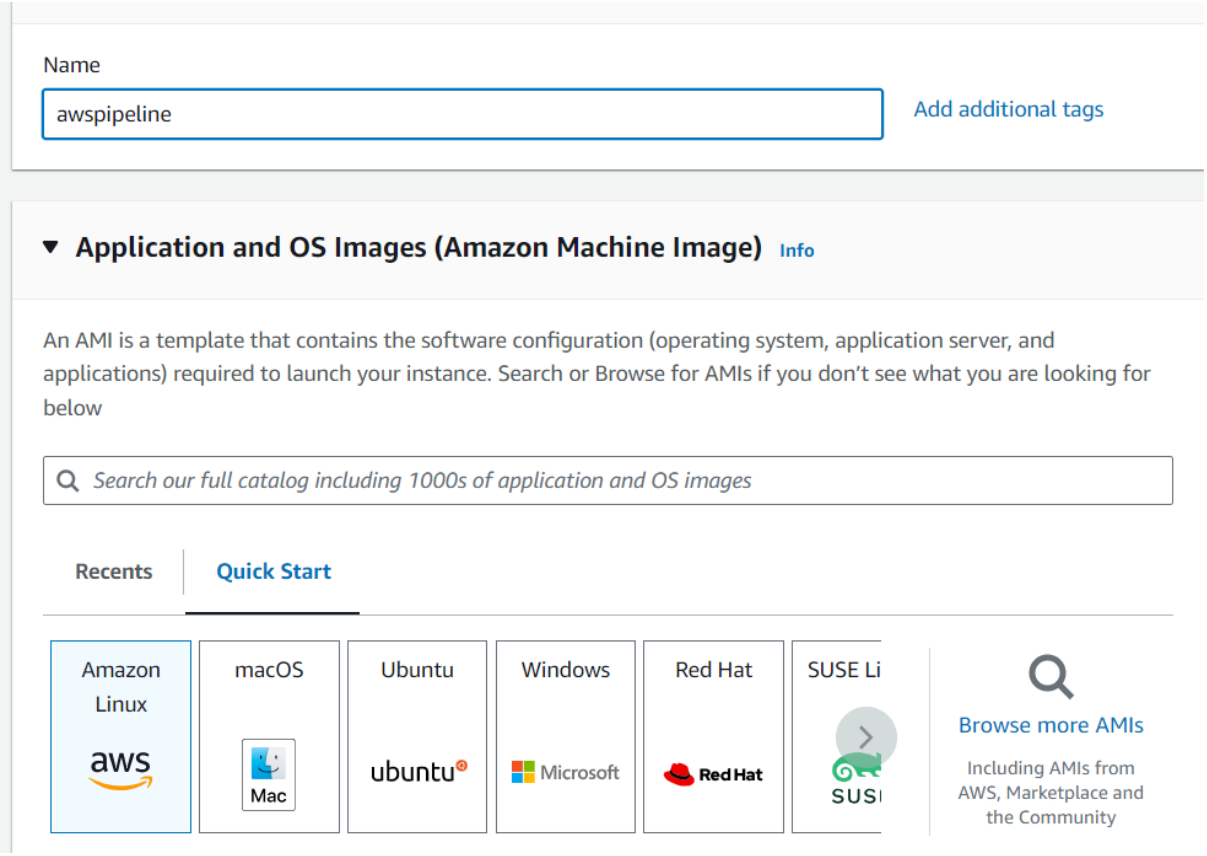


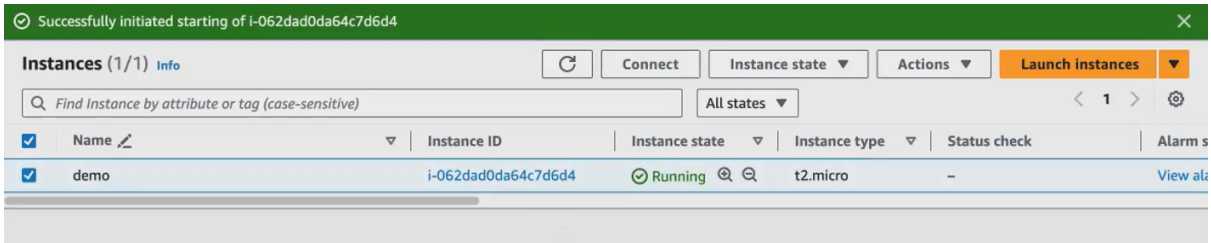


Click ec2 ,open in new tab.



Launch an instance and connect





Connect with that instance and install git

```
[ec2-user@ip-172-31-94-139 ~]$ sudo yum update -y
Last metadata expiration check: 0:02:34 ago on Thu Jul 18 06:04:46 2024.
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-172-31-94-139 ~]$ sudo yum install git -y
Last metadata expiration check: 0:02:50 ago on Thu Jul 18 06:04:46 2024.
Dependencies resolved.
================================================================================
 Package                 Architecture    Version                     Repository
================================================================================
Installing:
 git                     x86_64          2.40.1-1.amzn2023.0.3       amazonlinux
Installing dependencies:
 git-core                x86_64          2.40.1-1.amzn2023.0.3       amazonlinux
 git-core-doc            noarch          2.40.1-1.amzn2023.0.3       amazonlinux
 perl-Error              noarch          1:0.17029-5.amzn2023.0.2    amazonlinux
 perl-File-Find          noarch          1.37-477.amzn2023.0.6       amazonlinux
 perl-Git                noarch          2.40.1-1.amzn2023.0.3       amazonlinux
 perl-TermReadKey        x86_64          2.38-9.amzn2023.0.2         amazonlinux
 perl-lib                x86_64          0.65-477.amzn2023.0.6       amazonlinux

Transaction Summary
```

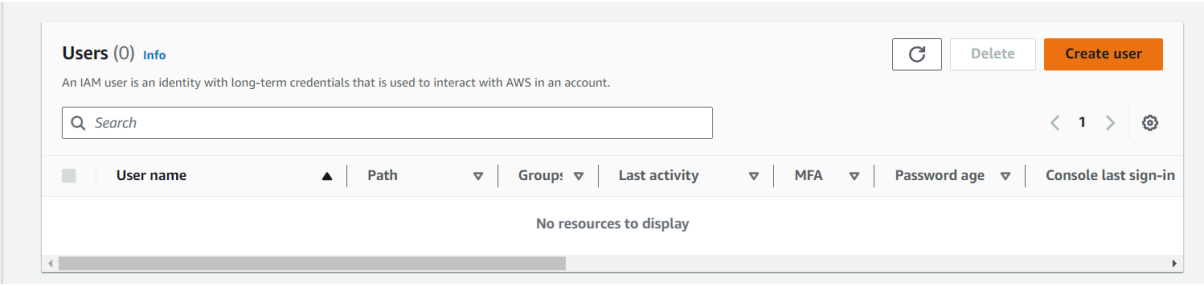
```
[ec2-user@ip-172-31-38-205 ~]$ sudo yum install git -y
Last metadata expiration check: 0:00:47 ago on Mon Jul  8 11:25:18 2024.
```

Clone the created repo in amazon linux.that link taken from codecommit repo we created.

```
[ec2-user@ip-172-31-38-205 ~]$ git clone https://git-codecommit.ap-south-1.amazonaws.com/v1/repos/demoapp
Cloning into 'demoapp'...
Username for 'https://git-codecommit.ap-south-1.amazonaws.com':
```

if you're using a private repository to ask you for the username and password every time. If you want to clone that private repository will ask you for the username and password same way. for that, you have to go to the IAM.

How to create iam user:



Specify user details

User details

User name

app-user

The user name can have up to 64 characters. Valid characters: A-Z, a-z, 0-9, and + = , . @ _ - (hyphen)

☑ Provide user access to the AWS Management Console - *optional*

If you're providing console access to a person, it's a best practice to manage their access in IAM Identity Center.

Are you providing console access to a person?

User type

○ Specify a user in Identity Center - Recommended

We recommend that you use Identity Center to provide console access to a person. With Identity Center, you can centrally manage user access to their AWS accounts and cloud applications.

◉ I want to create an IAM user

We recommend that you create IAM users only if you need to enable programmatic access through access keys, service-specific credentials for AWS CodeCommit or Amazon Keyspaces, or a backup credential for emergency account access.

◉ I want to create an IAM user

We recommend that you create IAM users only if you need to enable programmatic access through access keys, service-specific credentials for AWS CodeCommit or Amazon Keyspaces, or a backup credential for emergency account access.

Console password

◉ Autogenerated password

You can view the password after you create the user.

○ Custom password

Enter a custom password for the user.

- Must be at least 8 characters long
- Must include at least three of the following mix of character types: uppercase letters (A-Z), lowercase letters (a-z), numbers (0-9), and symbols ! @ # $ % ^ & * ( ) _ + - (hyphen) = [ ] { } | '

☐ Show password

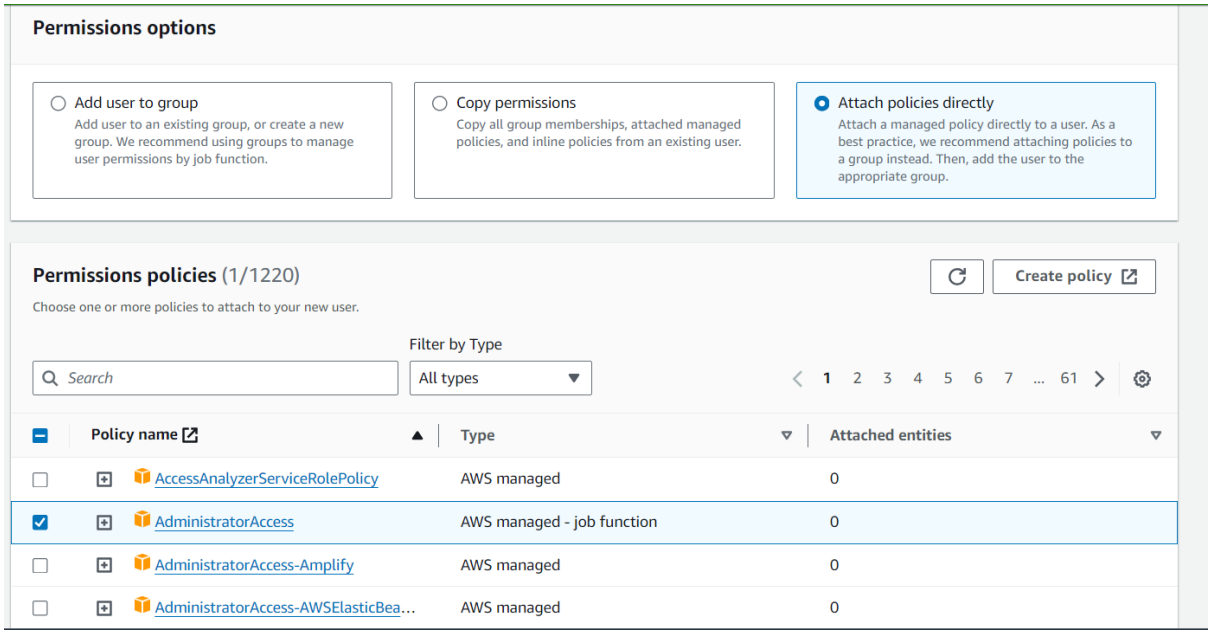
☐ Users must create a new password at next sign-in - Recommended

Users automatically get the IAMUserChangePassword policy to allow them to change their own password.

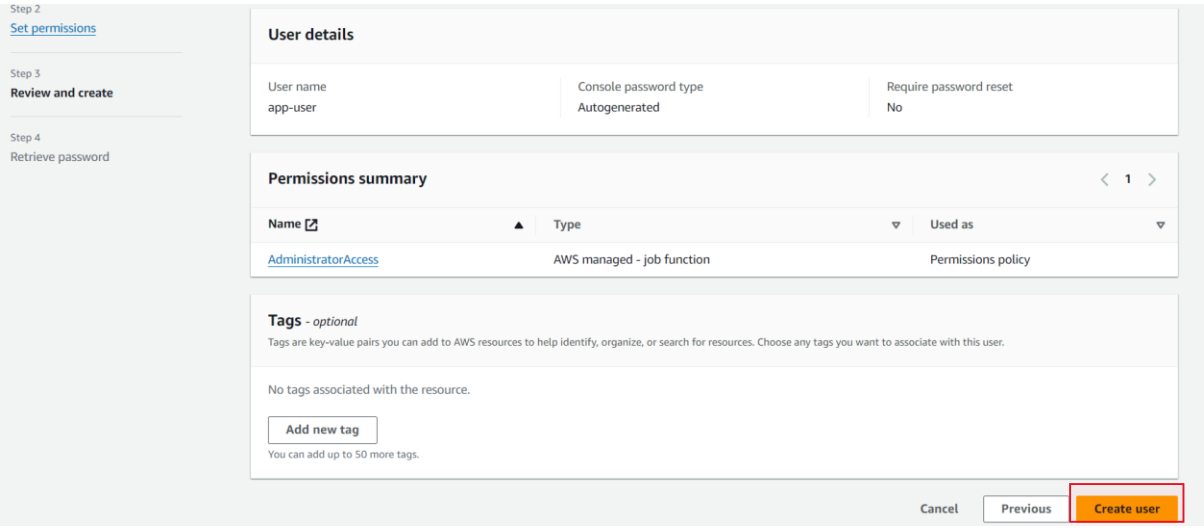
If you are creating programmatic access through access keys or service-specific credentials for AWS CodeCommit or Amazon Keyspaces, you can generate them after you create this IAM user. Learn more

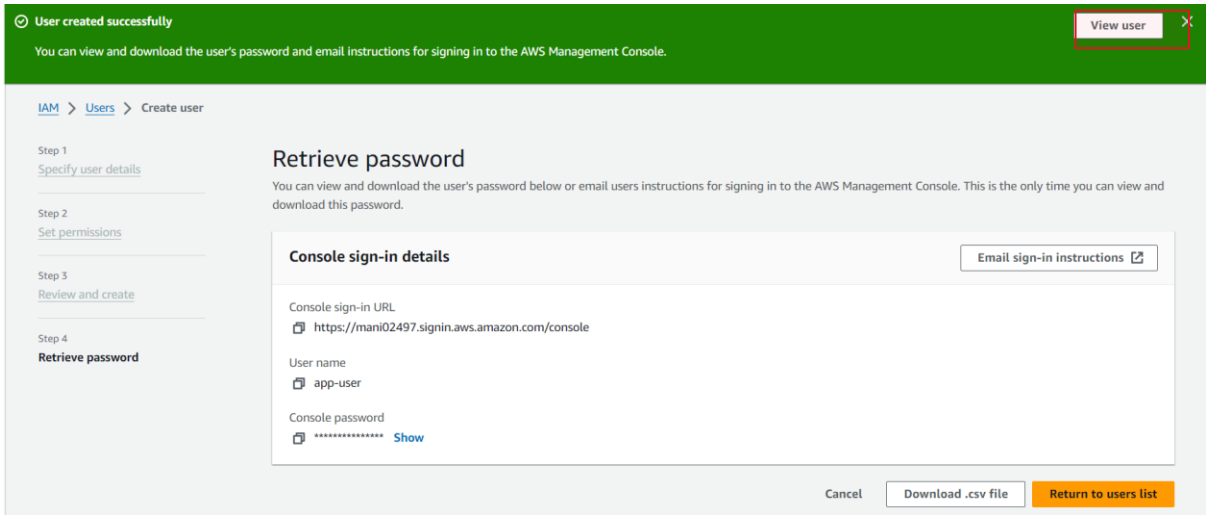
Cancel Next

we have to attach policies.we only use so give administration full access

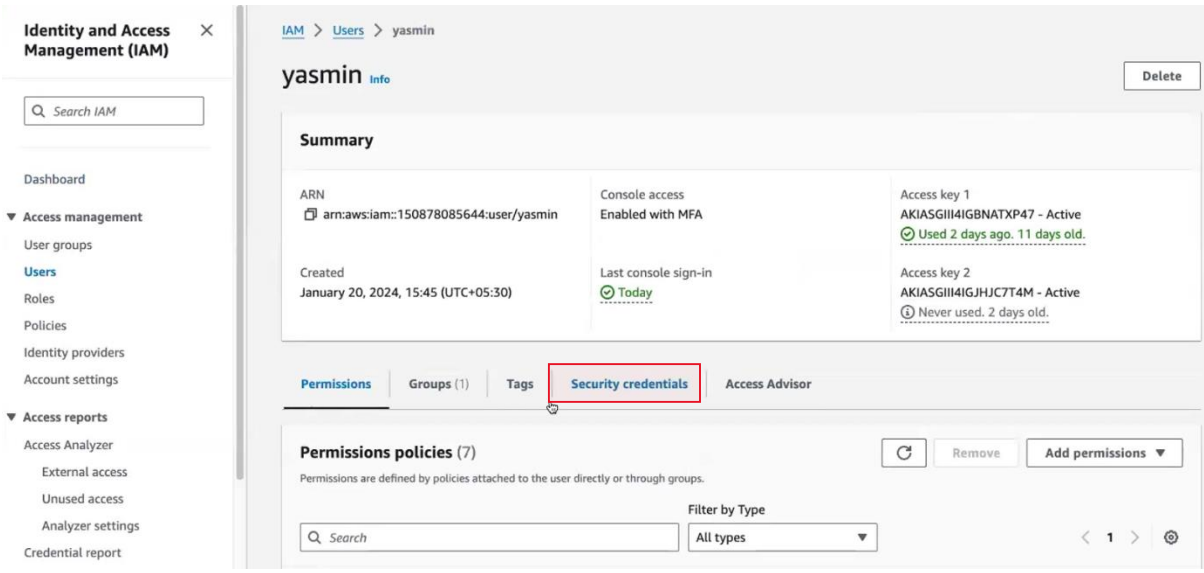


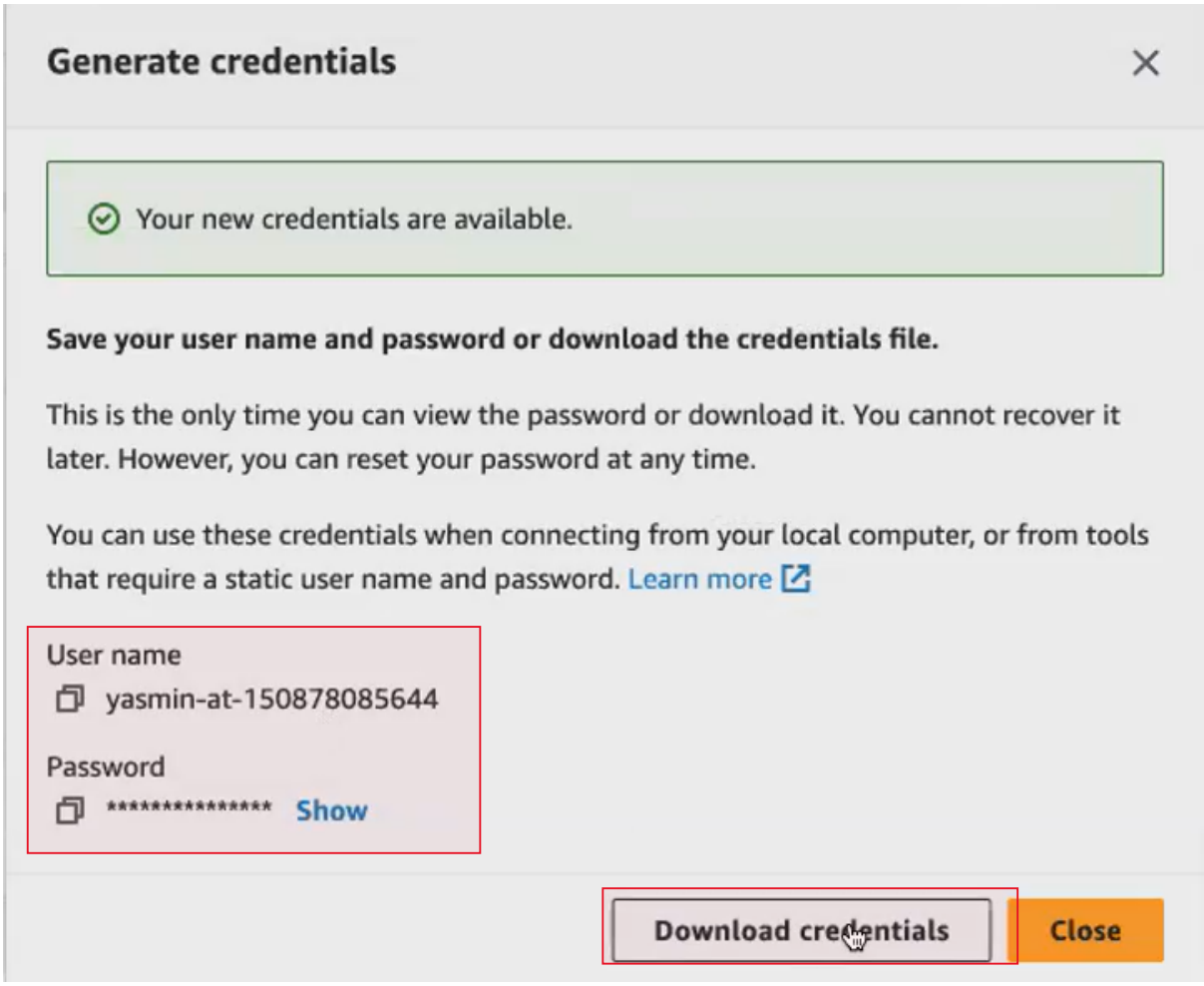
Click next

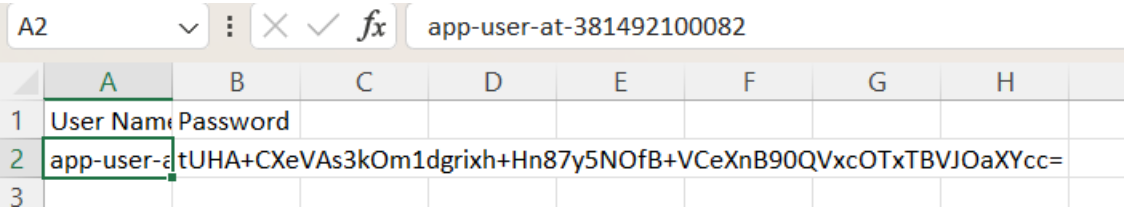




Goto IAM user







Open download credentials in excel.

Copy username and password in **amazon linux**

now you can see you have appeared to have cloned the empty repository. So now the repo is cloned. You can see Demo app is the name of my repo, which is an empty repository. Okay, I have cloned it now. So let me give cd to get into it. Now, this is an empty repository. I don't have any files or application. A so now, what I will do, I will be putting some application to this repository. Okay, so now we will create us

Inside demoapp repo we added few files

1. Index.html
2. Buildspec.yaml
3. Appspec.yml

   install_nginx.sh

   Start_nginx.sh:

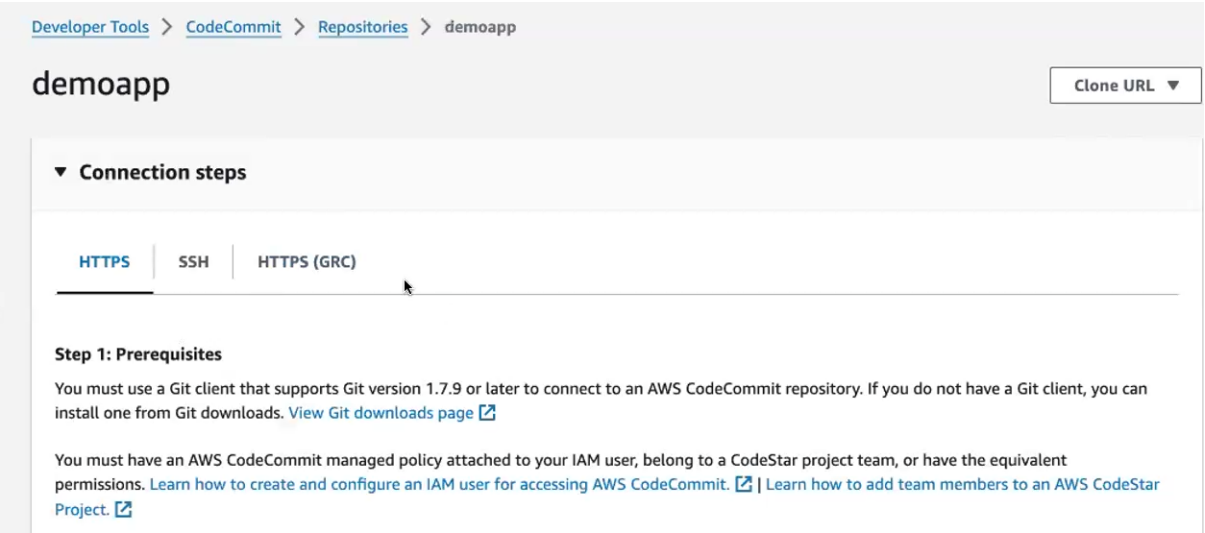
1. **<u>Index.html:</u>**

```
[ec2-user@ip-172-31-38-205 ~]$ git clone https://git-codecommit.ap-south-1.amazonaws.com/v1/repos/demoapp
Cloning into 'demoapp'...
Username for 'https://git-codecommit.ap-south-1.amazonaws.com': yasmin-at-150878085644
Password for 'https://yasmin-at-150878085644@git-codecommit.ap-south-1.amazonaws.com':
warning: You appear to have cloned an empty repository.
[ec2-user@ip-172-31-38-205 ~]$ ls
app.sh  custommetrics.sh  demoapp  website.sh
[ec2-user@ip-172-31-38-205 ~]$
```

I will launch a simple index.HTML page. okay. So here in this index.HTML,you can give any content to it. So this is index dot HTML page, which will display Hello devops on my browser when I execute it. Now I have this index.HTML page, and to run this in the browser. You need a web server, so I will be using nginix for that.

```html
<!DOCTYPE html>
<html>
  <head>
    <style>
      body {
        font-family: Arial, sans-serif;
        background-color: #f2f2f2;
        color: #333;
        text-align: center;
      }

      h1 {
        font-size: 36px;
        margin-top: 50px;
        color: #6130e8;
      }

      p {
        font-size: 18px;
        margin: 20px 0;
      }
    </style>
  </head>
  <body>
    <h1>Hello Devops</h1>
    <p></p>
  </body>
</html>
```

Your code commit repository is created, but it's empty. Nothing is there? So what I will do? I will push this index.HTML




```
warning: You appear to have cloned an empty repository.
ec2-user@ip-172-31-38-205 ~]$ ls
app.sh  custommetrics.sh  demoapp  website.sh
ec2-user@ip-172-31-38-205 ~]$ cd demoapp/
ec2-user@ip-172-31-38-205 demoapp]$ ls
ec2-user@ip-172-31-38-205 demoapp]$ vi index.html
ec2-user@ip-172-31-38-205 demoapp]$ git add .
ec2-user@ip-172-31-38-205 demoapp]$ git commit -m "index file added"
master (root-commit) 1b2bff7] index file added
```

```
[ec2-user@ip-172-31-38-205 demoapp]$ git push
Username for 'https://git-codecommit.ap-south-1.amazonaws.com':
```

now you're doing a push to the code, commit repository. Again, it will ask you for the username and password. So I think I've downloaded the username and password. I've downloaded the code commit credential. Just copy the credential and put it here so like how you, whenever you're making a push to the Github Repository, it will ask you for the username and password. Same thing you have to do it here.

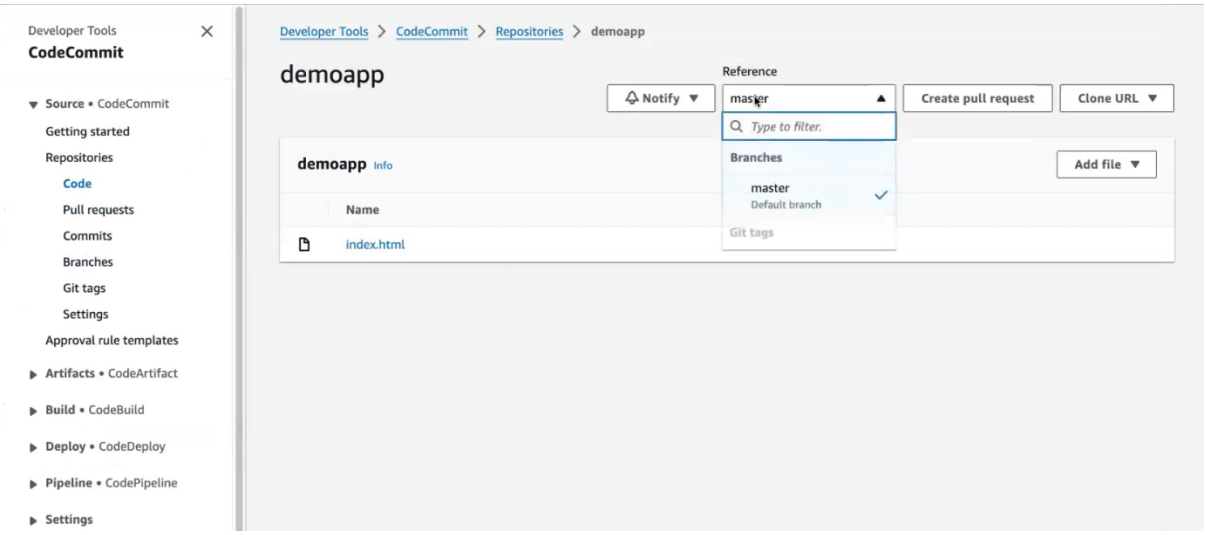
```
[ec2-user@ip-172-31-38-205 demoapp]$ git push
Username for 'https://git-codecommit.ap-south-1.amazonaws.com': yasmin-at-150878085644
Password for 'https://yasmin-at-150878085644@git-codecommit.ap-south-1.amazonaws.com':
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 475 bytes | 475.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
remote: Validating objects: 100%
To https://git-codecommit.ap-south-1.amazonaws.com/v1/repos/demoapp
 * [new branch]      master -> master
[ec2-user@ip-172-31-38-205 demoapp]$
```

now the index HTML. Is moved to the code, commit repository, go to the code, commit repository. We give a refresh

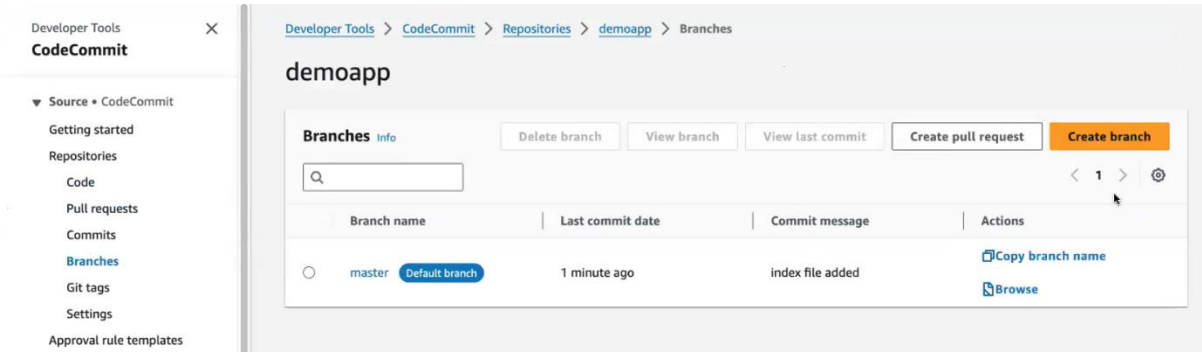
Already we create a demoapp repo, then clone that demo app repo. Inside the repo we have index.html application file. We use that application.

your Github Repository can be a public report, but here it is only a private report. So to access this, you need to have an Iam user with a code commit credential. So to access your code commit repository. You have to be an Iam user. And you should have this code commit credentials[ssh ,https].

Now in the master branch.



Smiliar to github we create a branch[if we need]



before creating project doing the build. Okay, I have to mention how to build the application. I have to tell my code build how to build the application. you have to write a file called **buildsepc.Yaml**

```
[ec2-user@ip-172-31-38-205 demoapp]$ vi buildspec.yaml
```

So in Jenkins you'll be creating only one file. That is your Jenkins file in the Jenkins file itself. You will be writing all the you'll be creating or configuring all the stages, build stage test stage and the deployment stage in one file.

you'll be creating 2 separate files

1. **for building [**buildsepc.Yaml]
2. **for deploying [aspect]**

We we have the HTML file, and if I want to access my HTML file in the browser. I need a web server, so I use ngenix for accessing this index.HTML, file. If you're using a full fledged application like python or react application.

1. always, your build respect file starts with **version**
2. what all I have to do to perform my build. Okay? So that I will put it inside **phases.**
3. before doing the build. if it is a Java application before building the Java application, what you have to do, you have to install the build tools. So I have to 1st **install my builder tools**.
4. since it's a simple HTML application for this.If you want to build the application , u need only **nginx[build tool for HTML].** If you're using a Java application, then we will be installing Maven.
5. here I will just simply give a simple **echo command** I'm installing in the next server.So these are list of commands in Yaml, if you give if you start aligned with the hyphen [-], which means you're mentioning a list.
6. Next give sudo .after updating, you have to install the nginx application.
7. after installing the necessary tools, you have to **build your application** for building your application.
8. just mentioned today's date.So here I've used my index.HTML, so I have an index dot. HTML. What I'll do. I'll simply **copy my index.HTML page** to my web rute directory of my Internet server. So the Web Brute Directory for your Internet server is /var/www/html.so inside this folder I have to copy my index.HTML. So when I execute my Internet's web server.

9. In post build commands ,this echo statement is just for the clarity. when this build is executing. You can check the event, page or logs page, to see what are the actions it is performing, so when you give echo it will be helpful for you to understand in which phase it is exactly running the build.
10. after building the application, usually what you'll get you will get the artifacts. So if you're building a Java application. You will get the jar file. Okay, inside the target folder. You get the jar file so what you can do. You can move all your jar files into your S 3 bucket.
11. **in this application you don't have a jar file. You're only copying the index or HTML to the Web Root Directory of this Engine nginx web server.**

```
version: 0.2
phases:
  install:
    commands:
      - echo "Installing Nginx Server"
      - sudo apt-get update
      - sudo apt-get install nginx -y
  build:
    commands:
      - echo "Build started on 8 july"
      - cp index.html /var/www/html/
  post_build:
    commands:
      - echo "Configuring Nginx"
      - sudo systemctl start nginx
      - sudo systemctl enable nginx

artifacts:
  files:
   - '**/*'
```

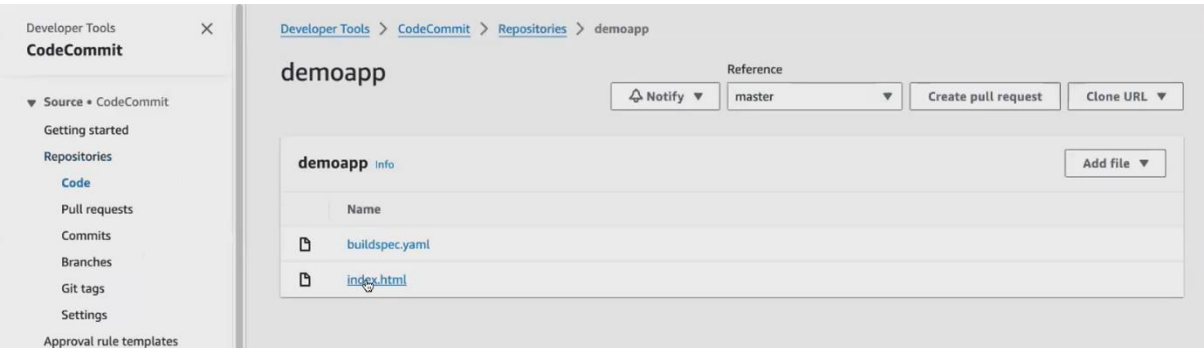
Now let me save this file and where I have to maintain this file, I have to push this file to my code Comment repository. Okay? So for performing your code build, you have to write your **buildsepc.Yaml** based on the applications requirement. We will be writing it.

```
[ec2-user@ip-172-31-38-205 demoapp]$ vi buildspec.yaml
[ec2-user@ip-172-31-38-205 demoapp]$ git add .
[ec2-user@ip-172-31-38-205 demoapp]$ git commit -m "build file"
[master 82486c1] build file
```

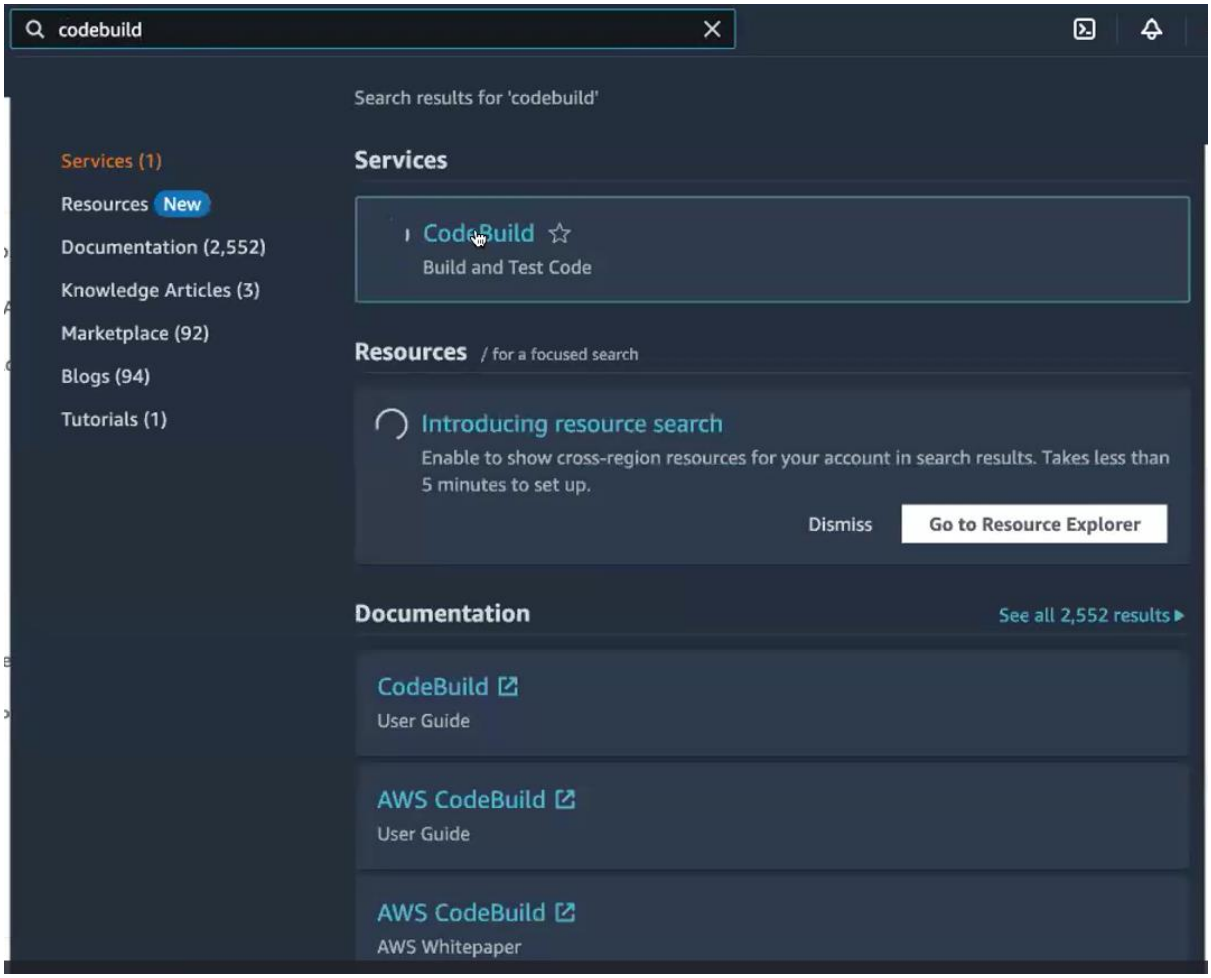
```
[ec2-user@ip-172-31-38-205 demoapp]$ git push
Username for 'https://git-codecommit.ap-south-1.amazonaws.com': yasmin-at-150878085644
Password for 'https://yasmin-at-150878085644@git-codecommit.ap-south-1.amazonaws.com':
```

now the <u>buildsepc.Yaml</u> is moved to your repository.

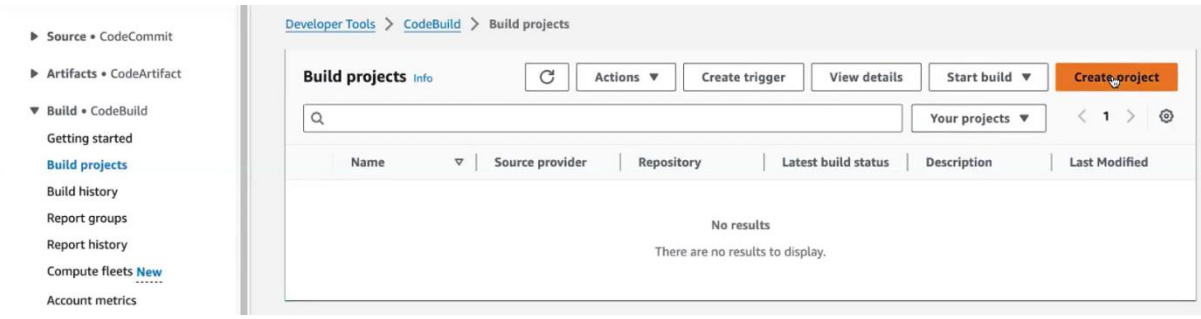
Inside repo we have 2 files.



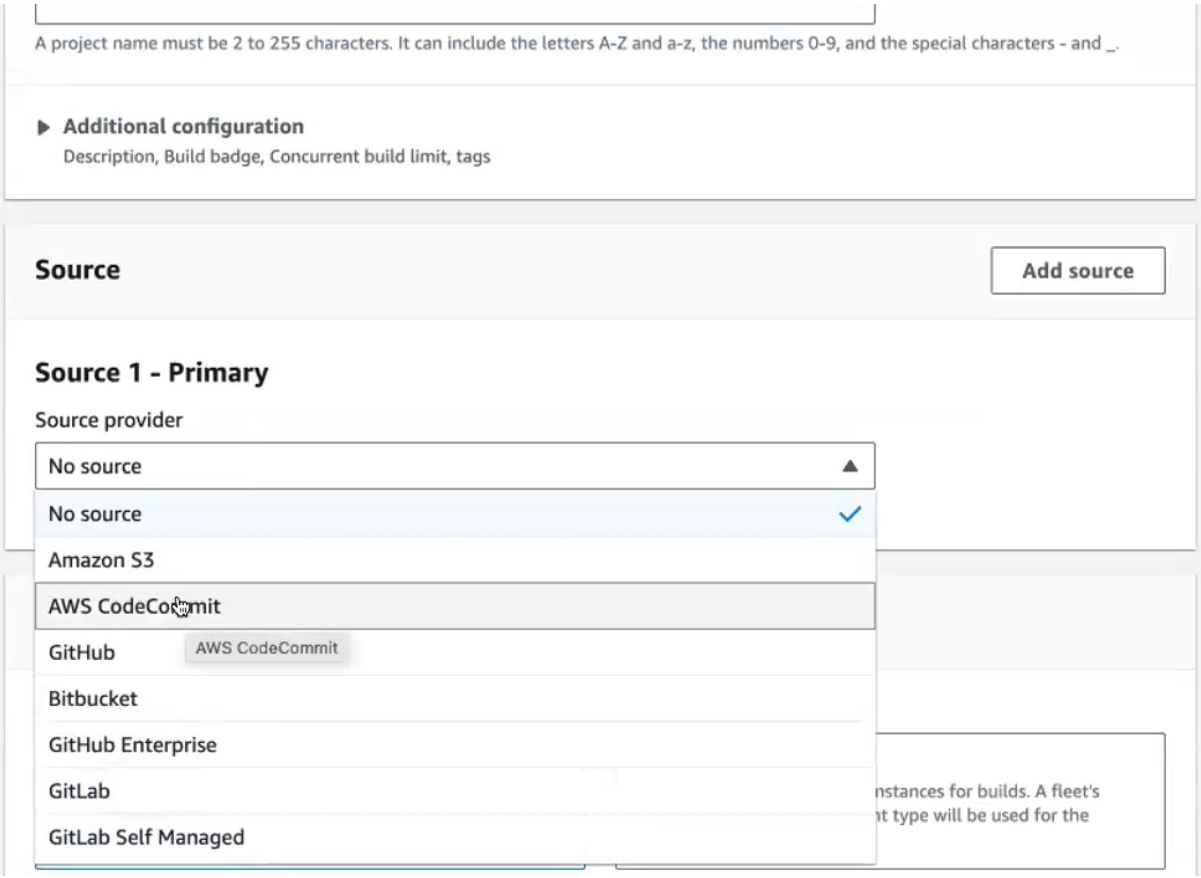
Then built that code using code built. **this code build is used to build and test your application.**

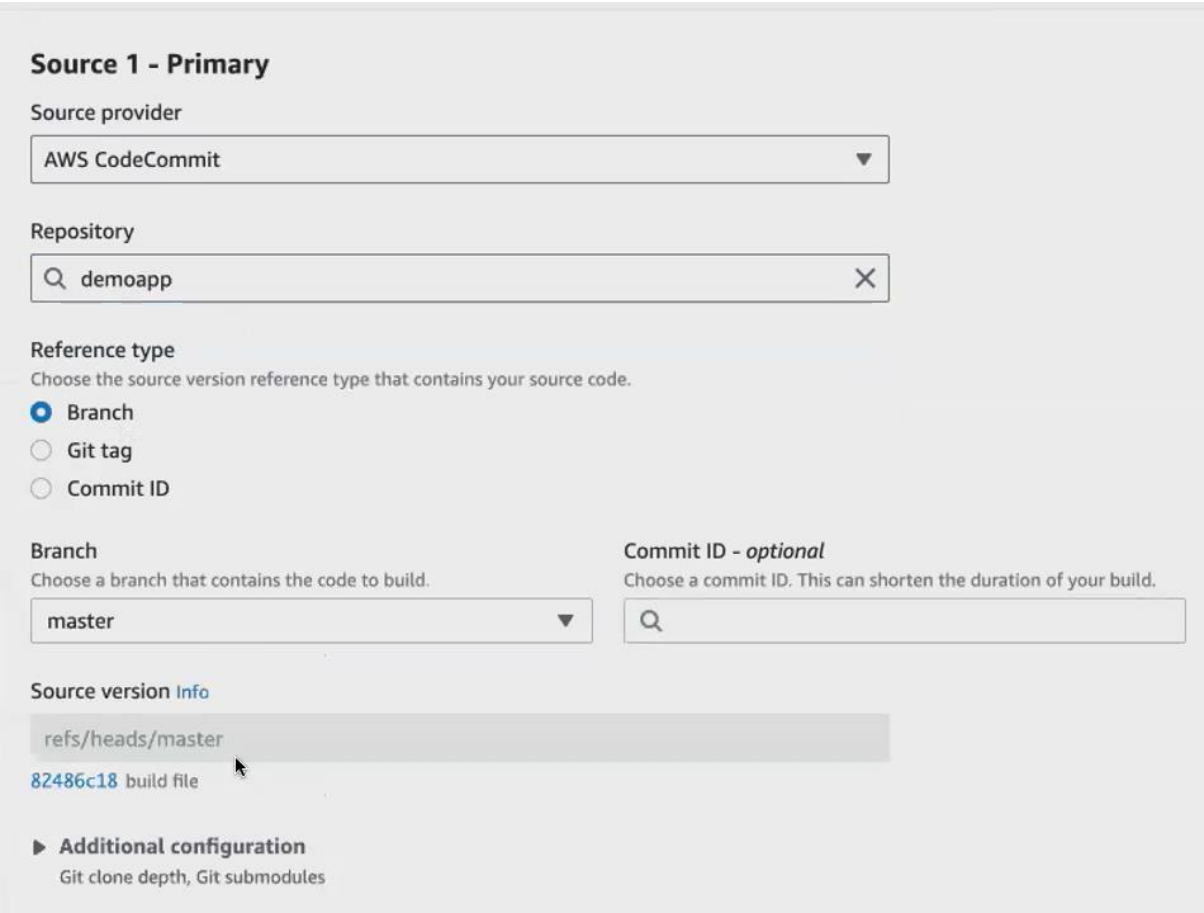


click on, create project under your code, build to build your project. You have to click on, create project



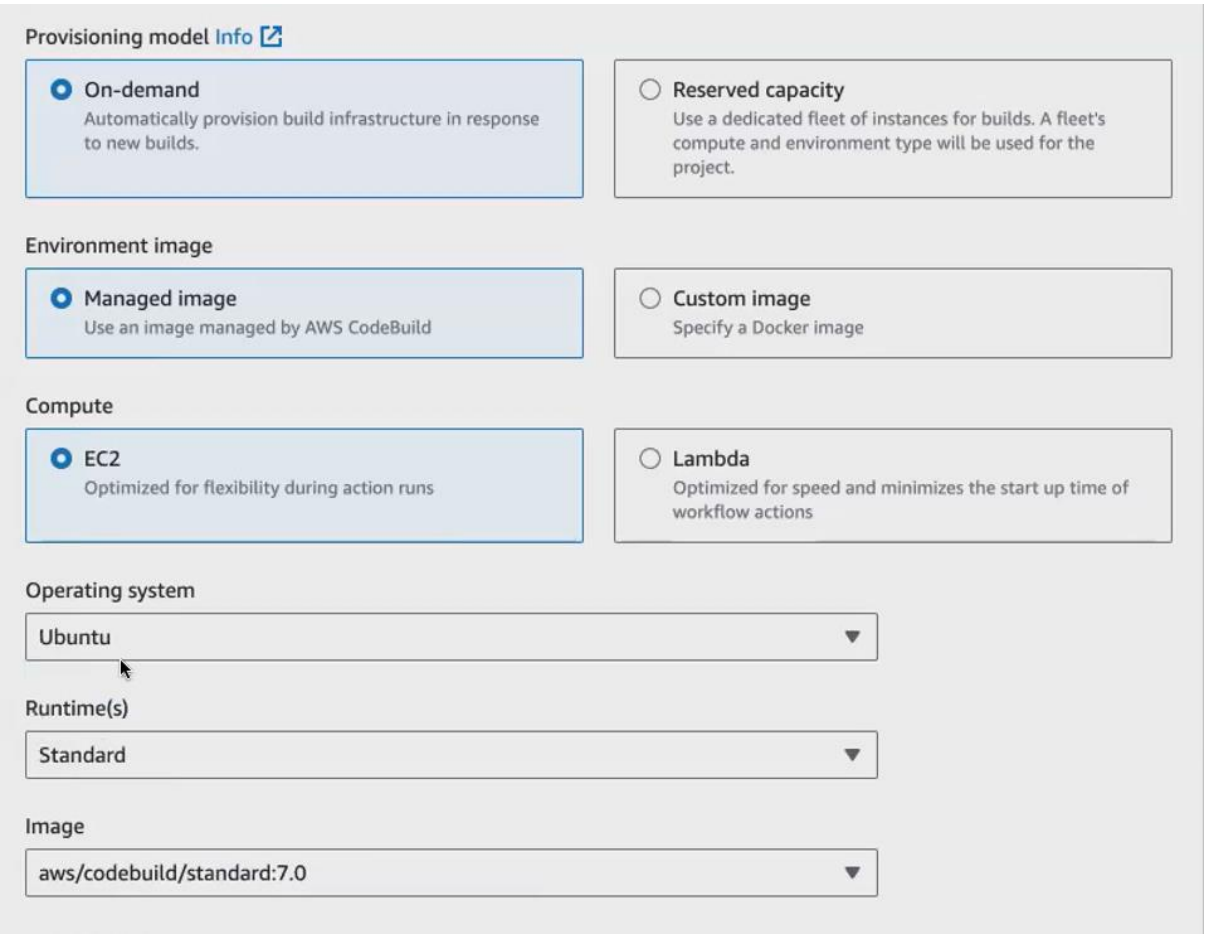
here your application is located. Now my application that I have to build is located in the code Commit repository. You can also, if you have the application in the Github Repository, you can also click on Github. Okay, now, I have my application in the code Commit repository. So I can select the source as code Commit .





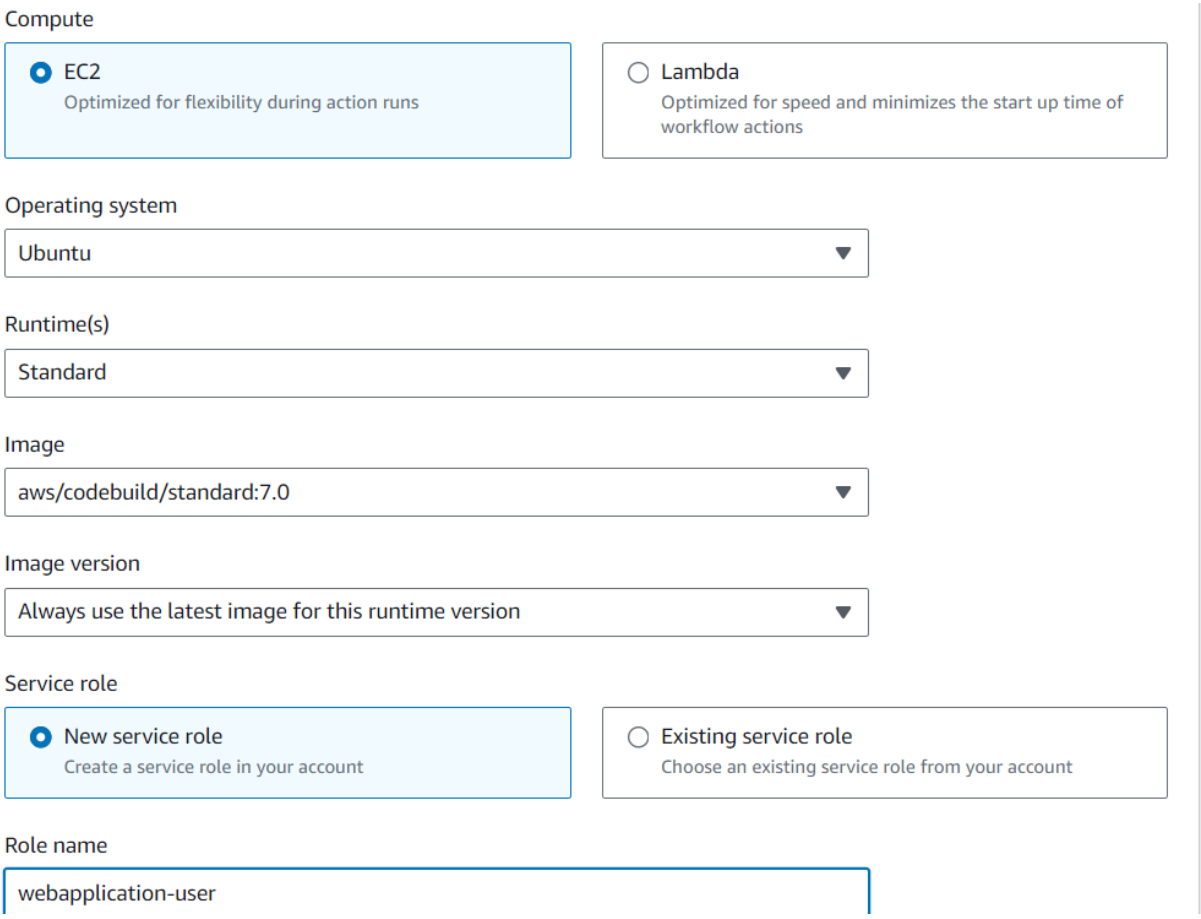
behind the what you need, you need an Ec2. You need a compute server to perform all these actions. So code build, it will create. Okay, you cannot see that machine getting created in the Ec. 2, dashboard. But behind your code build will maintain a Ec 2, it will launch a Ec 2.

Give ubuntu server ,because in amazon linux sudo apt not work its shows error. Remaining as given.

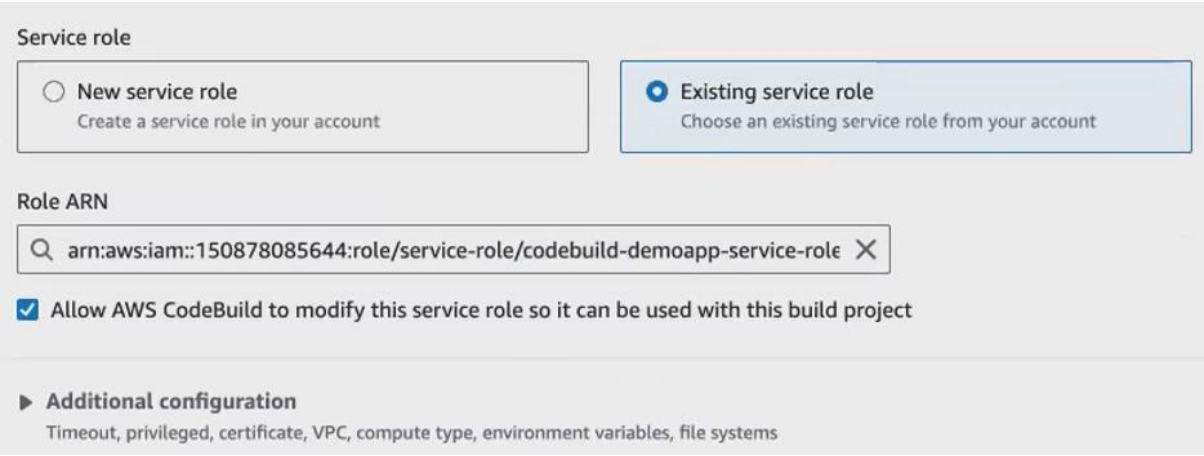


if you're doing it for the 1st time you have to create, go with a new service role. <u>Service role means what this build is doing</u>. Code build is doing. It is talking to the Ec2 , so it has to connect with a different service. service role is mainly for connecting 2 different services. In IAM give this service role.

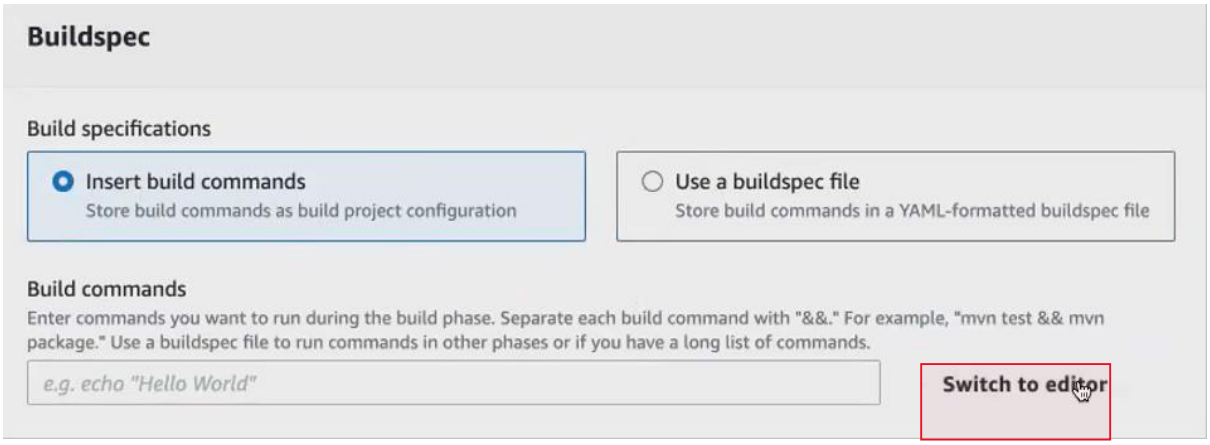
My screen:



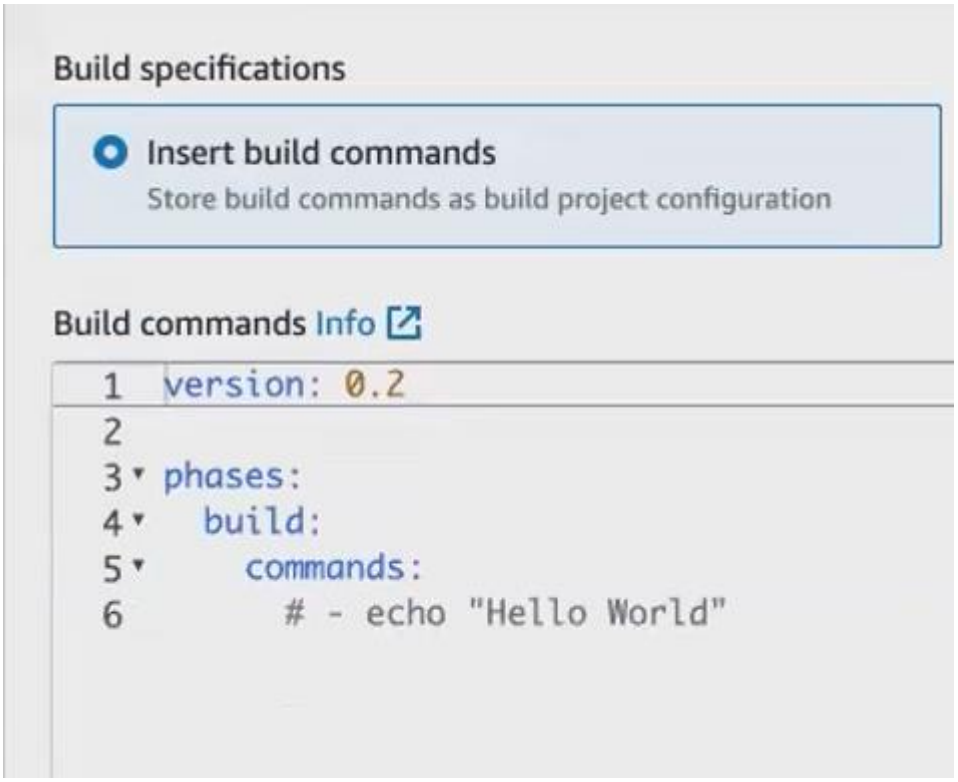
Yasmine screen:



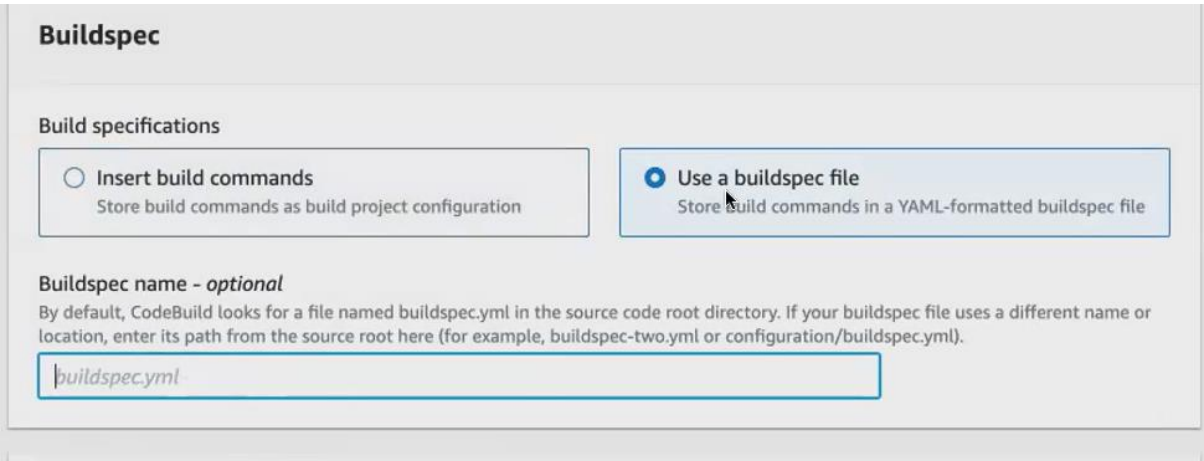
Write our buildspec file in this also by using insert built cmds



Write the code in this also.

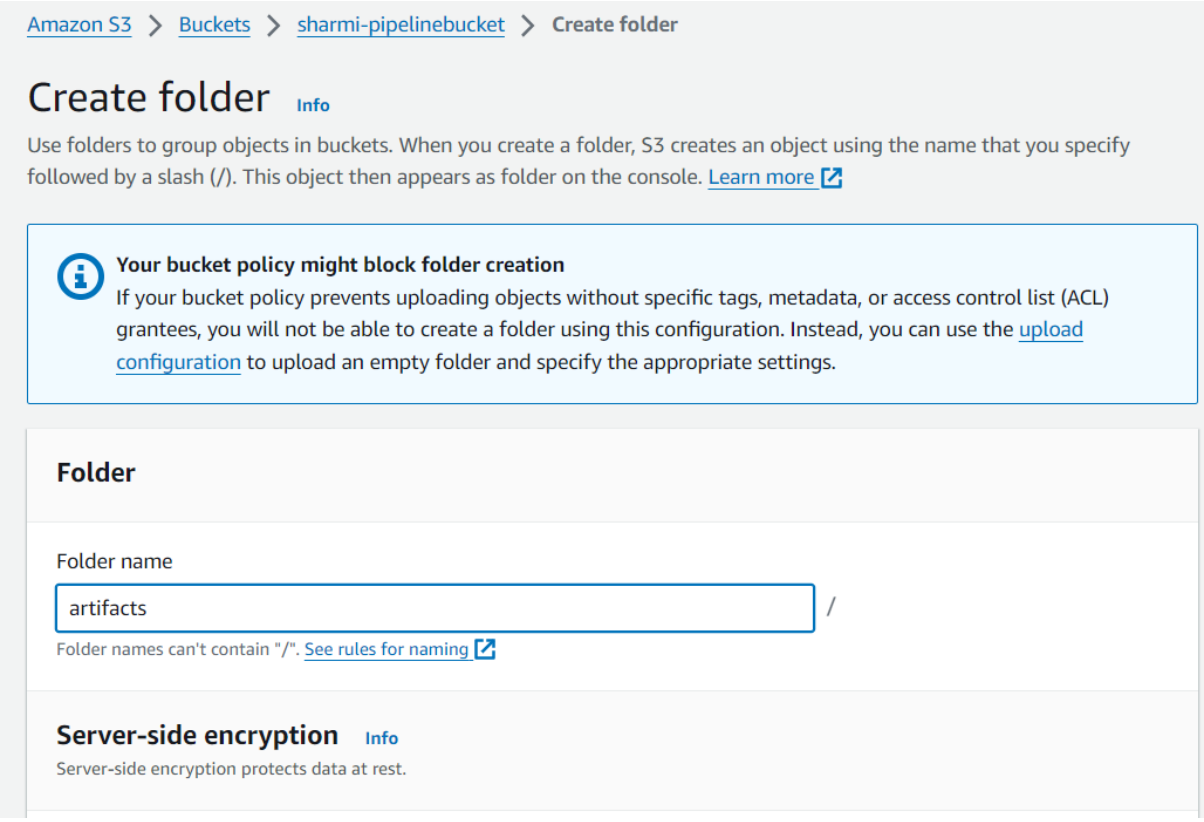


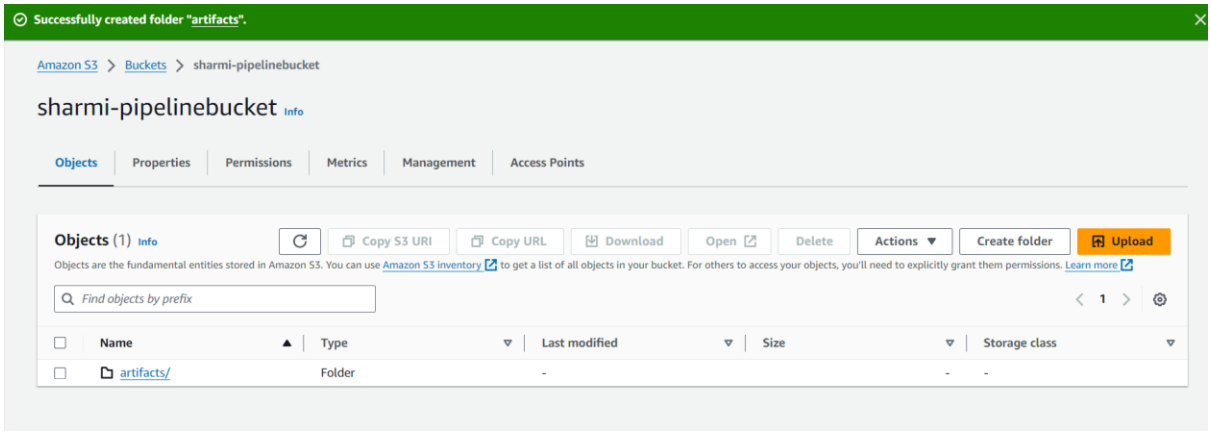
We have already write buildspec file.so use this from code commit takes that file automatically. **automatically fetch my build spec file based on the build spec file, the project will be built, the application will be built.**

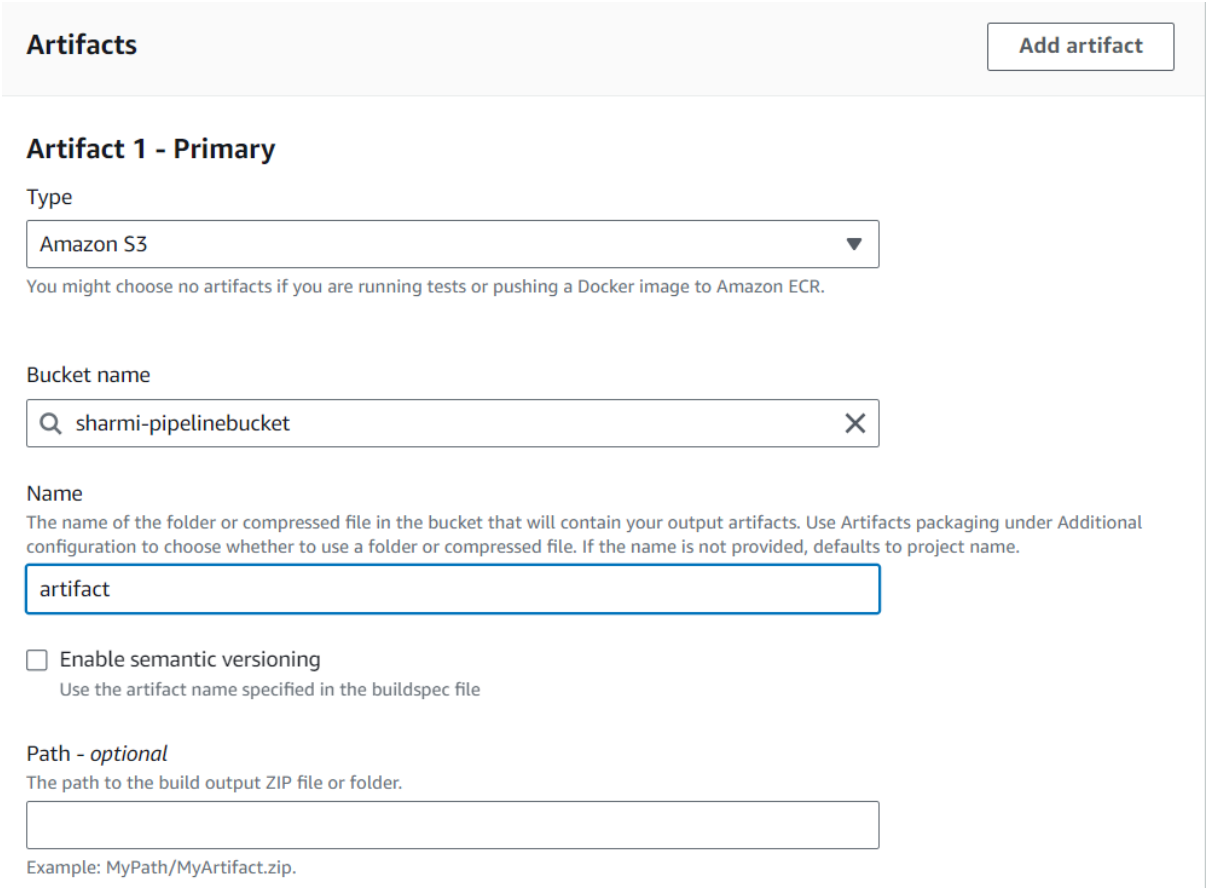


Artifact asks in which s3 bucket stores this.so we create s3 bucket..yasmin used already created s3 bucket.inside that bucket create folder called artifacts..inside that folder my artifacts file stored.

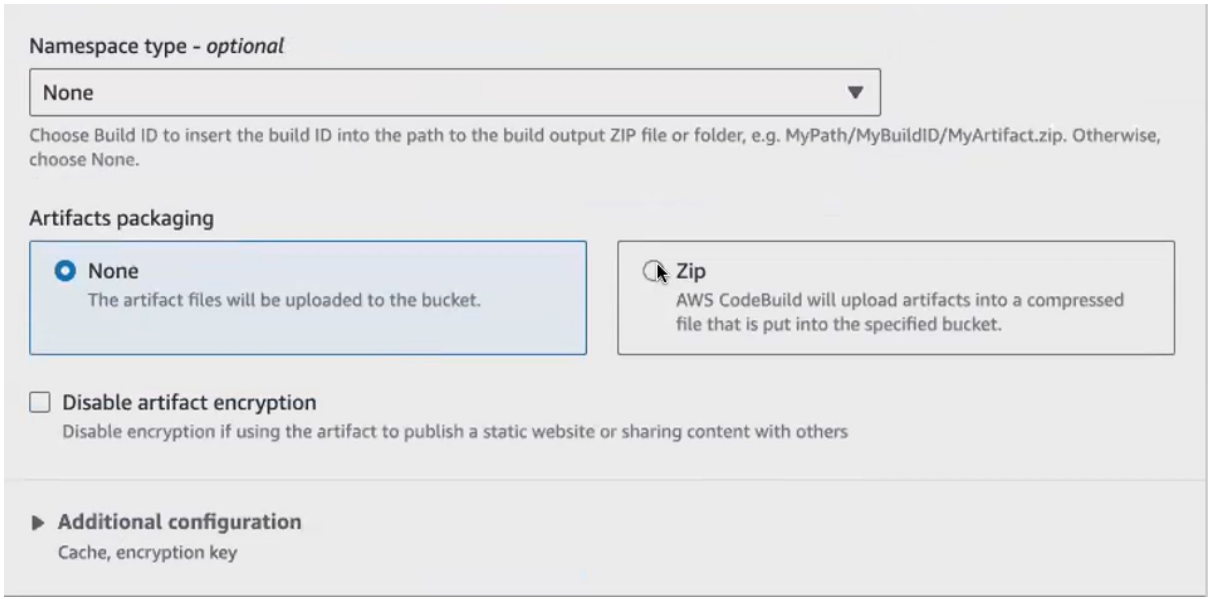
I created s3 bucket [sharmi-pipelinebucket].inside that artifacts folder created



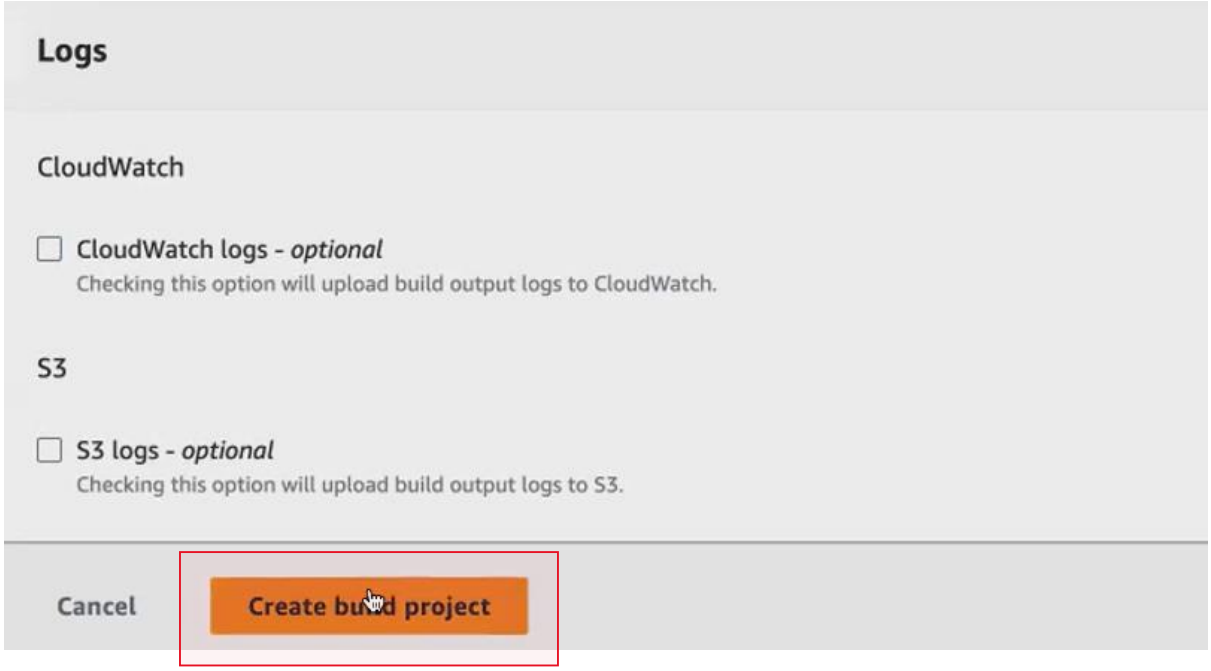




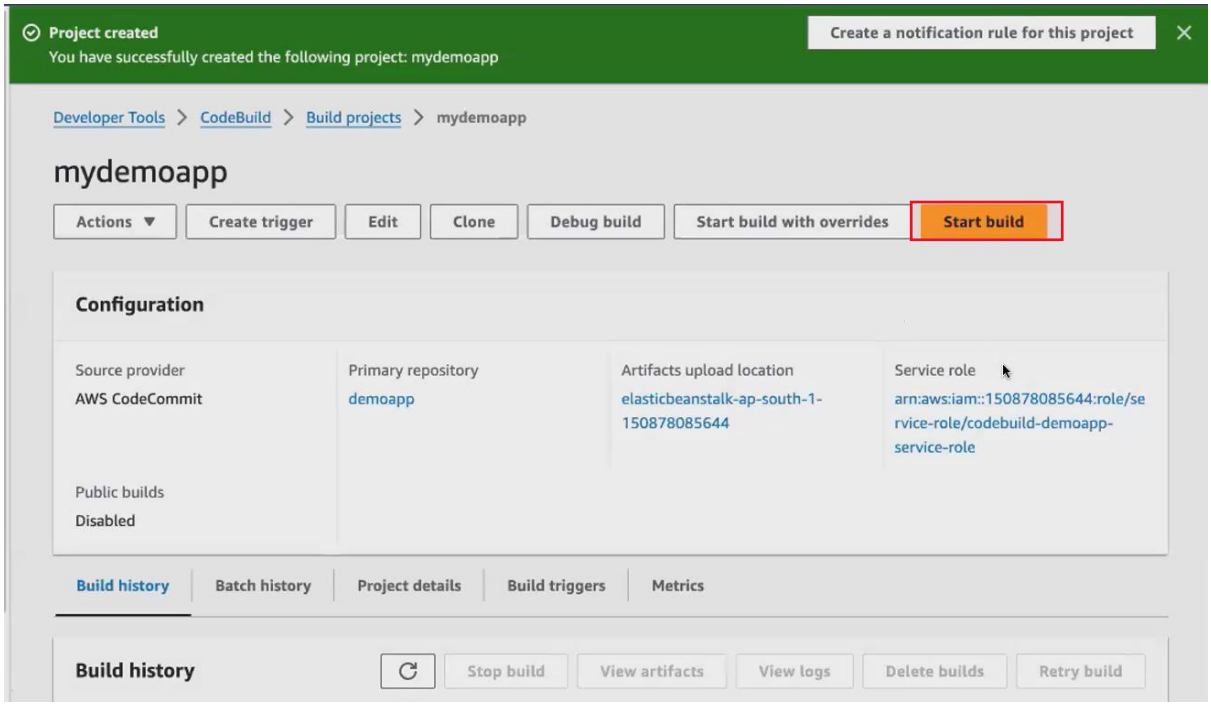
Want our appli in zip format give zip.



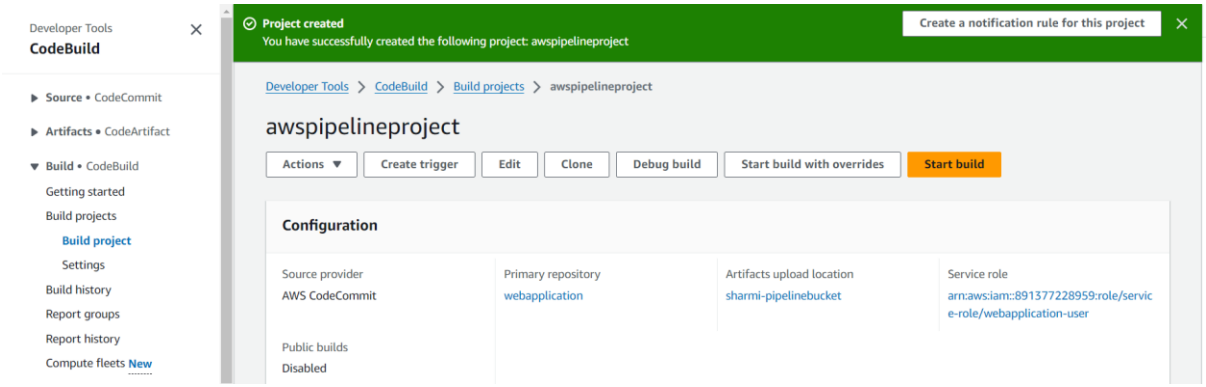
our cloud watch will keep on monitoring your application logs. Okay, you don't want it now, because it will charge you for that.

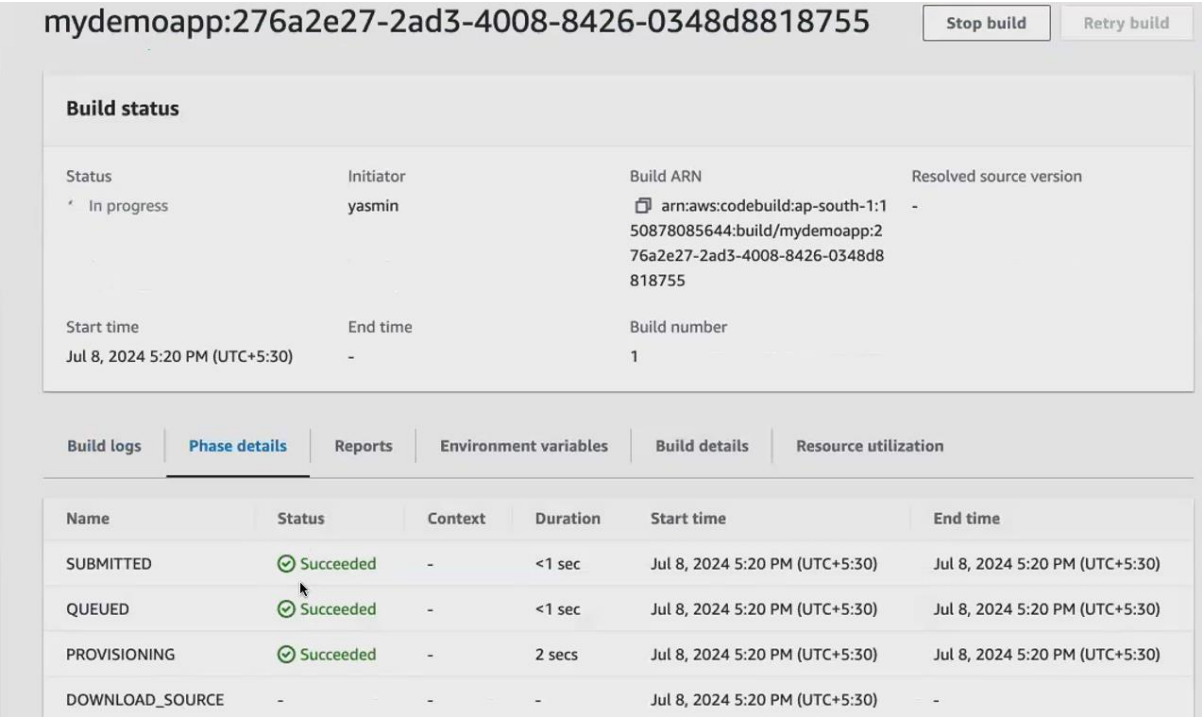


Click start build application can build.


Project created
You have successfully created the following project: mydemoapp
Create a notification rule for this project
Developer Tools > CodeBuild > Build projects > mydemoapp
mydemoapp
Actions
Create trigger
Edit
Clone
Debug build
Start build with overrides
Start build
Configuration
Source provider
AWS CodeCommit
Primary repository
demoapp
Artifacts upload location
elasticbeanstalk-ap-south-1-150878085644
Service role
arn:aws:iam::150878085644:role/service-role/codebuild-demoapp-service-role
Public builds
Disabled
Build history
Batch history
Project details
Build triggers
Metrics
Build history
Stop build
View artifacts
View logs
Delete builds
Retry build

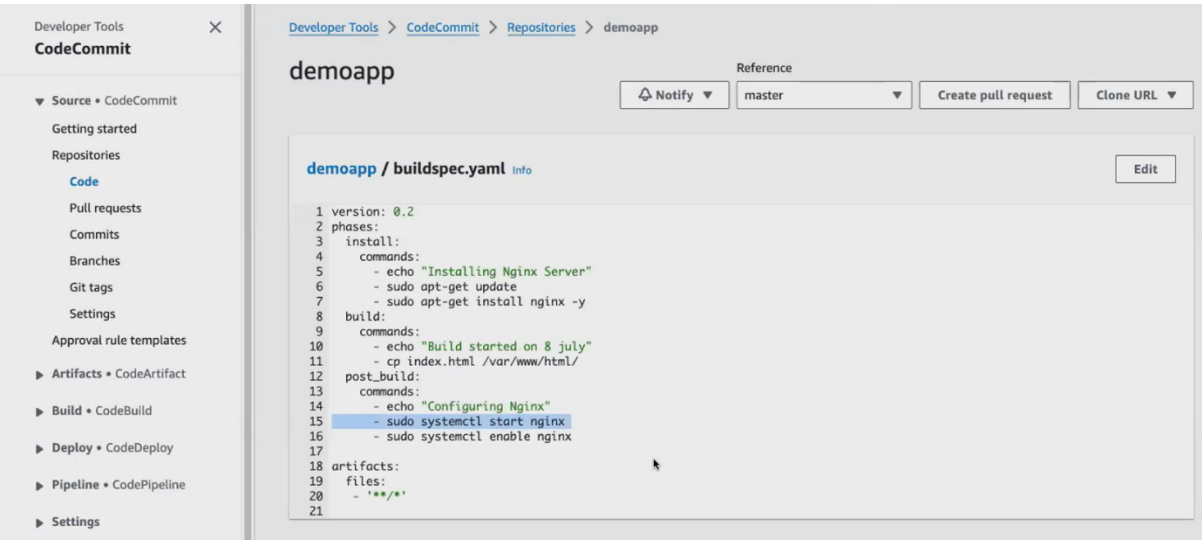
My screen:

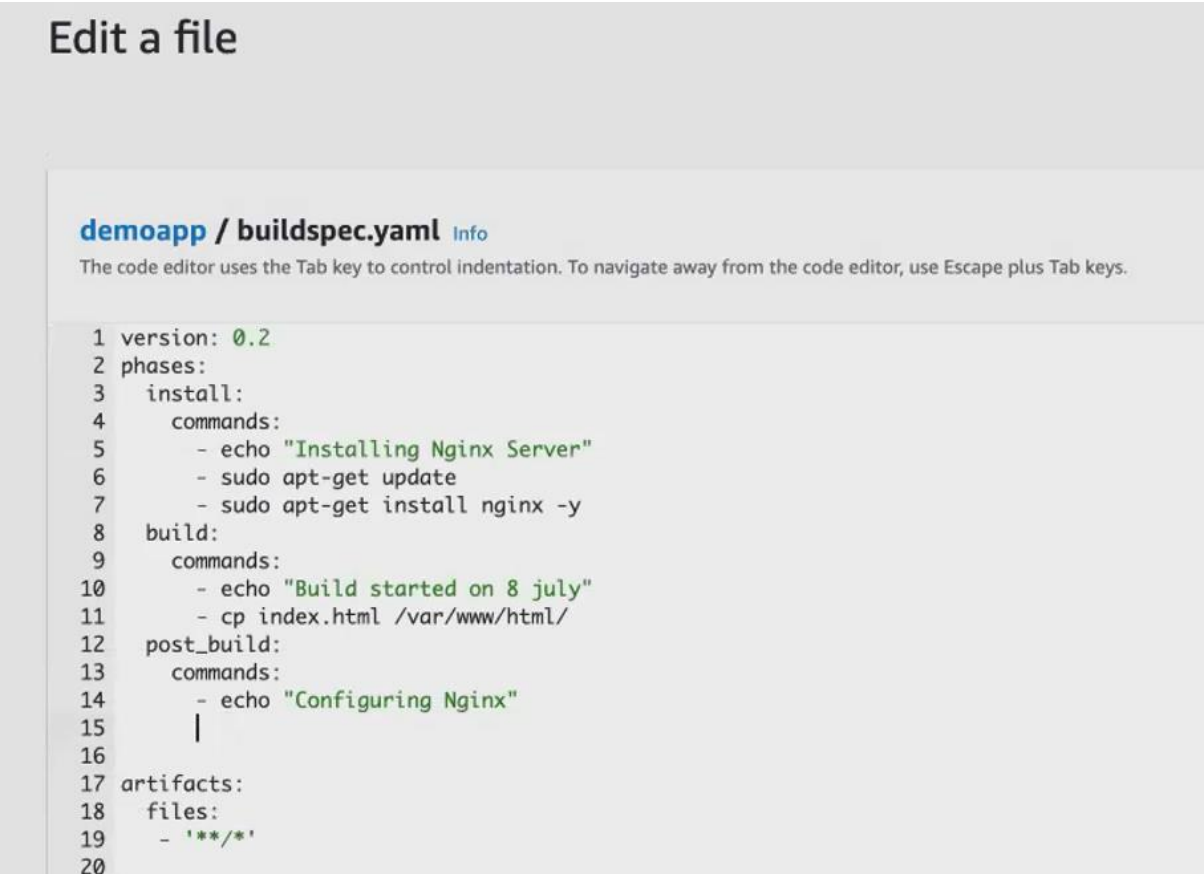

Developer Tools
CodeBuild
Source • CodeCommit
Artifacts • CodeArtifact
Build • CodeBuild
Getting started
Build projects
Build project
Settings
Build history
Report groups
Report history
Compute fleets New
Project created
You have successfully created the following project: awspipelineproject
Create a notification rule for this project
Developer Tools > CodeBuild > Build projects > awspipelineproject
awspipelineproject
Actions
Create trigger
Edit
Clone
Debug build
Start build with overrides
Start build
Configuration
Source provider
AWS CodeCommit
Primary repository
webapplication
Artifacts upload location
sharmi-pipelinebucket
Service role
arn:aws:iam::891377228959:role/service-role/webapplication-user
Public builds
Disabled



One by one all stages can built .suppose shows an error goto repo → code→edit

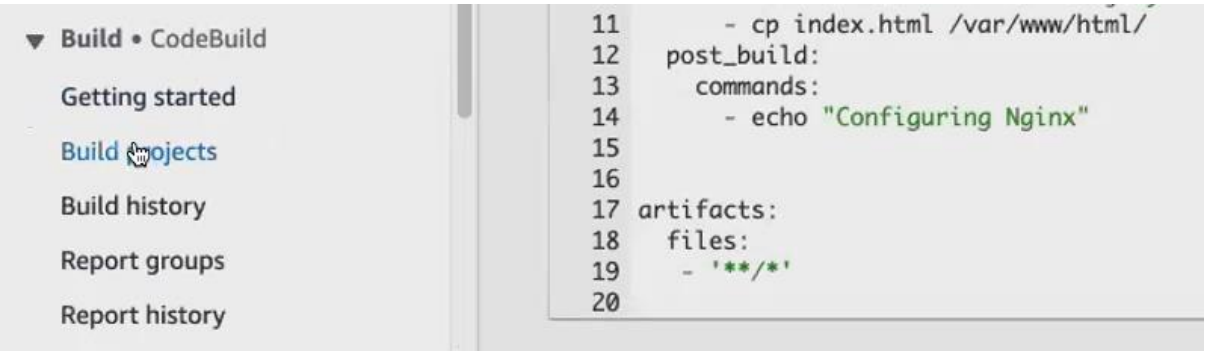
Line 15,16 shows error ..so remove that lines.

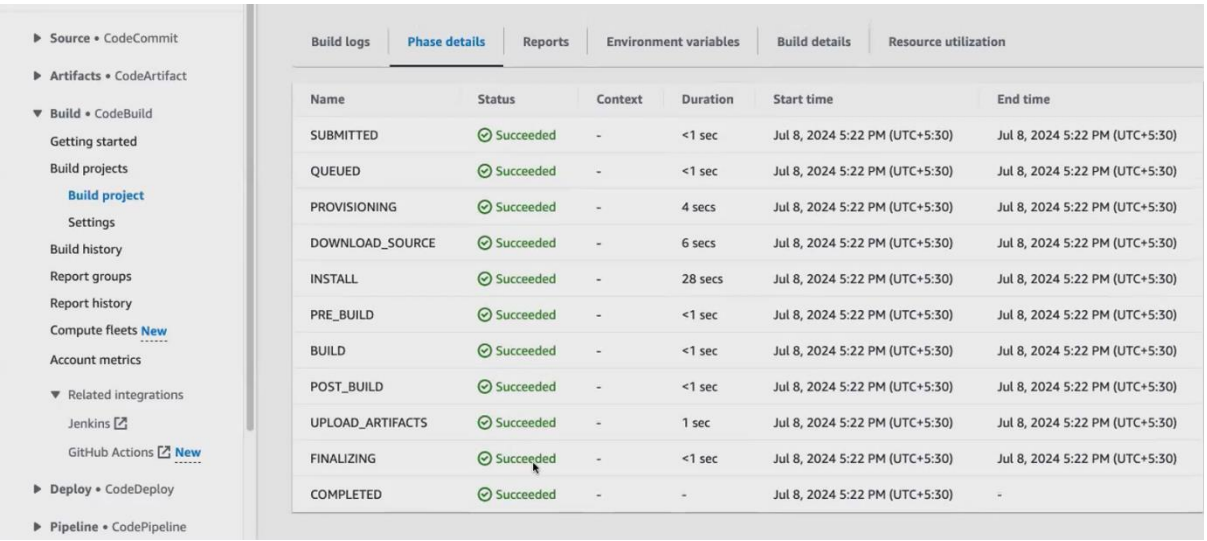




Click commit changes.

again goto build projects→click start build

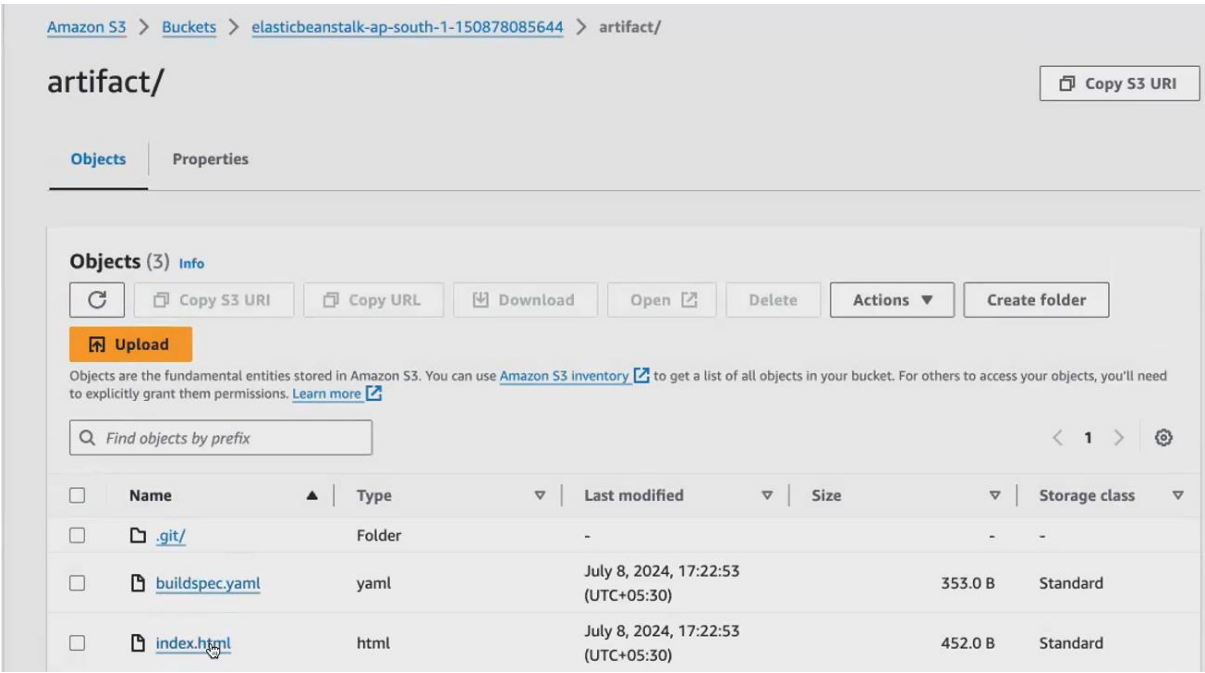




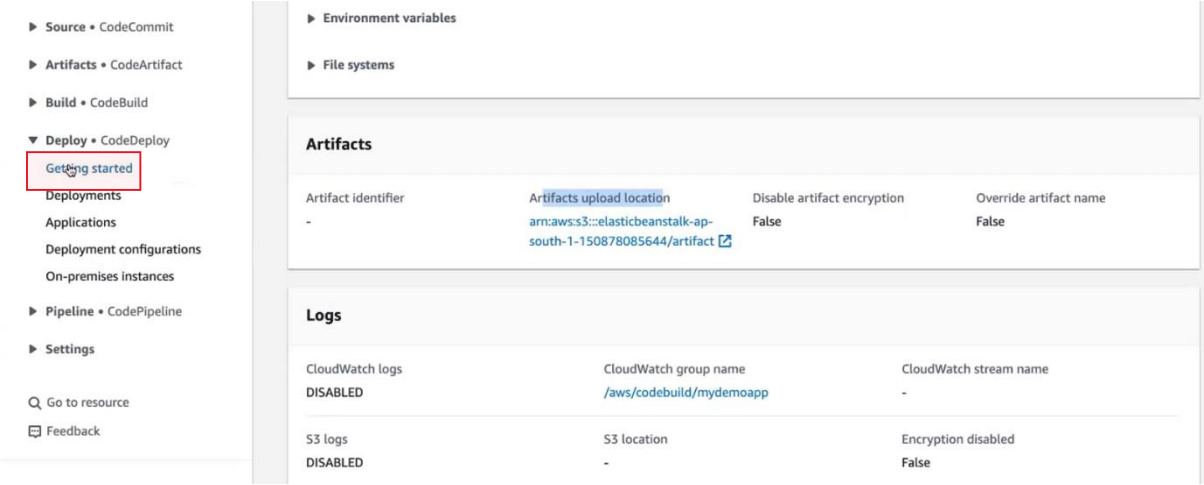
Name	Status	Context	Duration	Start time	End time
SUBMITTED	Succeeded	-	<1 sec	Jul 8, 2024 5:22 PM (UTC+5:30)	Jul 8, 2024 5:22 PM (UTC+5:30)
QUEUED	Succeeded	-	<1 sec	Jul 8, 2024 5:22 PM (UTC+5:30)	Jul 8, 2024 5:22 PM (UTC+5:30)
PROVISIONING	Succeeded	-	4 secs	Jul 8, 2024 5:22 PM (UTC+5:30)	Jul 8, 2024 5:22 PM (UTC+5:30)
DOWNLOAD_SOURCE	Succeeded	-	6 secs	Jul 8, 2024 5:22 PM (UTC+5:30)	Jul 8, 2024 5:22 PM (UTC+5:30)
INSTALL	Succeeded	-	28 secs	Jul 8, 2024 5:22 PM (UTC+5:30)	Jul 8, 2024 5:22 PM (UTC+5:30)
PRE_BUILD	Succeeded	-	<1 sec	Jul 8, 2024 5:22 PM (UTC+5:30)	Jul 8, 2024 5:22 PM (UTC+5:30)
BUILD	Succeeded	-	<1 sec	Jul 8, 2024 5:22 PM (UTC+5:30)	Jul 8, 2024 5:22 PM (UTC+5:30)
POST_BUILD	Succeeded	-	<1 sec	Jul 8, 2024 5:22 PM (UTC+5:30)	Jul 8, 2024 5:22 PM (UTC+5:30)
UPLOAD_ARTIFACTS	Succeeded	-	1 sec	Jul 8, 2024 5:22 PM (UTC+5:30)	Jul 8, 2024 5:22 PM (UTC+5:30)
FINALIZING	Succeeded	-	<1 sec	Jul 8, 2024 5:22 PM (UTC+5:30)	Jul 8, 2024 5:22 PM (UTC+5:30)
COMPLETED	Succeeded	-	-	Jul 8, 2024 5:22 PM (UTC+5:30)	-

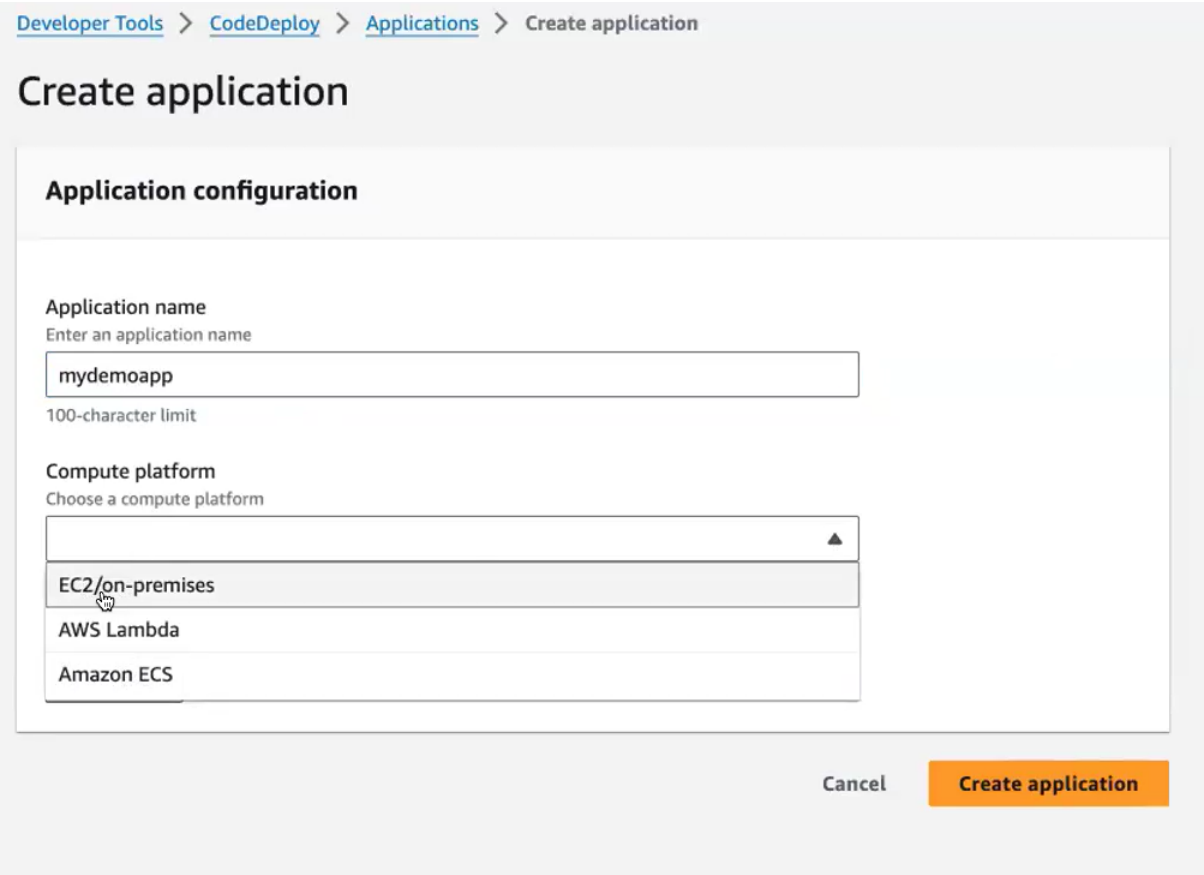
Now application is build.

We build the application we got artifacts.



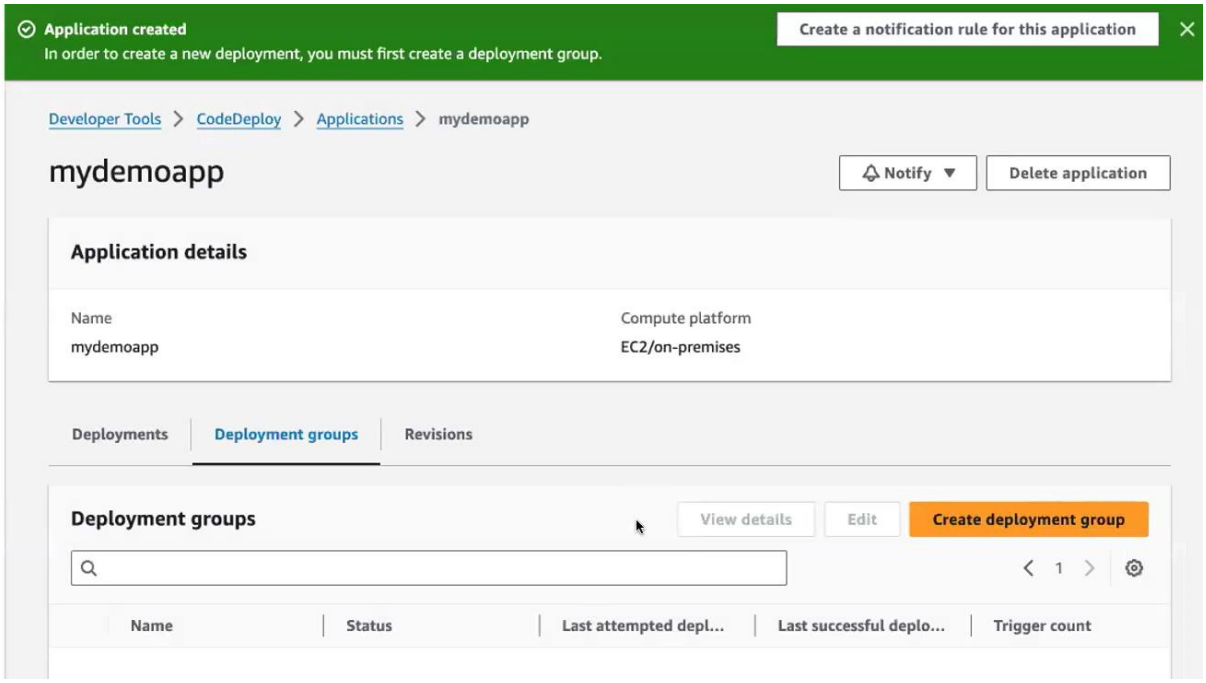
After build deploy the application.



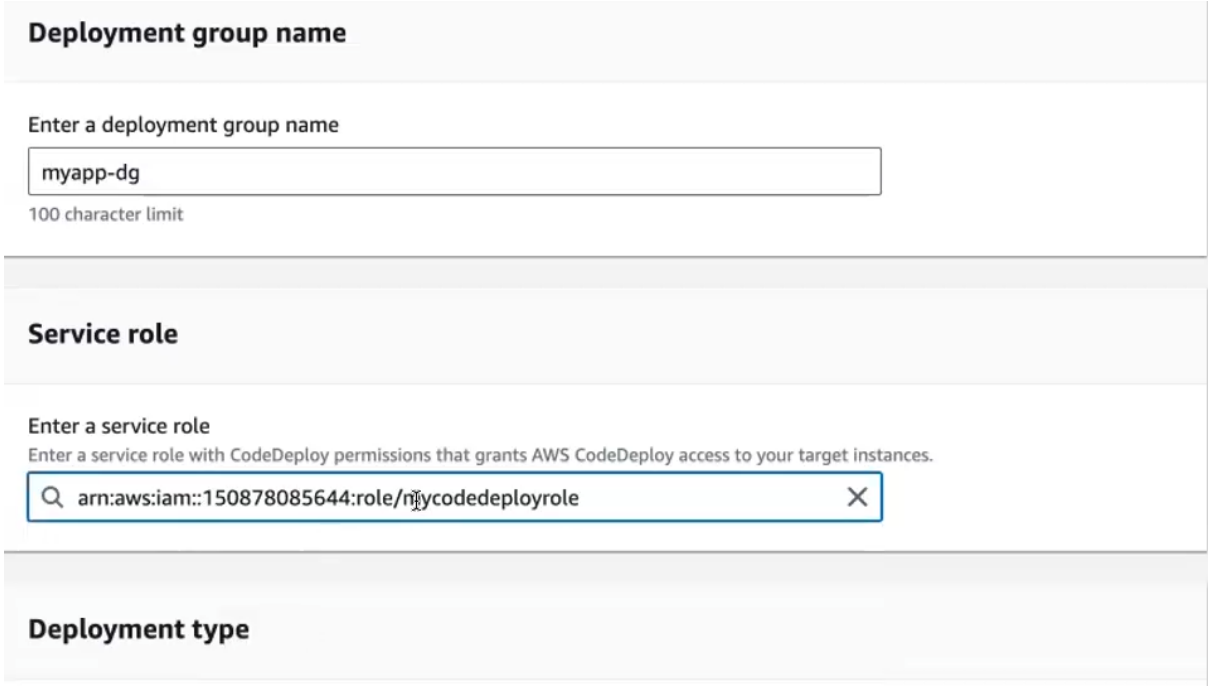


you can see you can see your server running this deploying, this application to the Ec2 .If you want to maintain a serverless architecture, you go with Aws Lambda.

now I have created it. We have to go and **create the deployment group**. So after creating your application, we have to go and create the deployment group. So your code deployed can deploy your application in one ec2, or if you want to deploy it in the real time, we don't deploy a application in one ec2. We will be deploying it in multiple machines. Okay, so that is why we call it as deployment group.

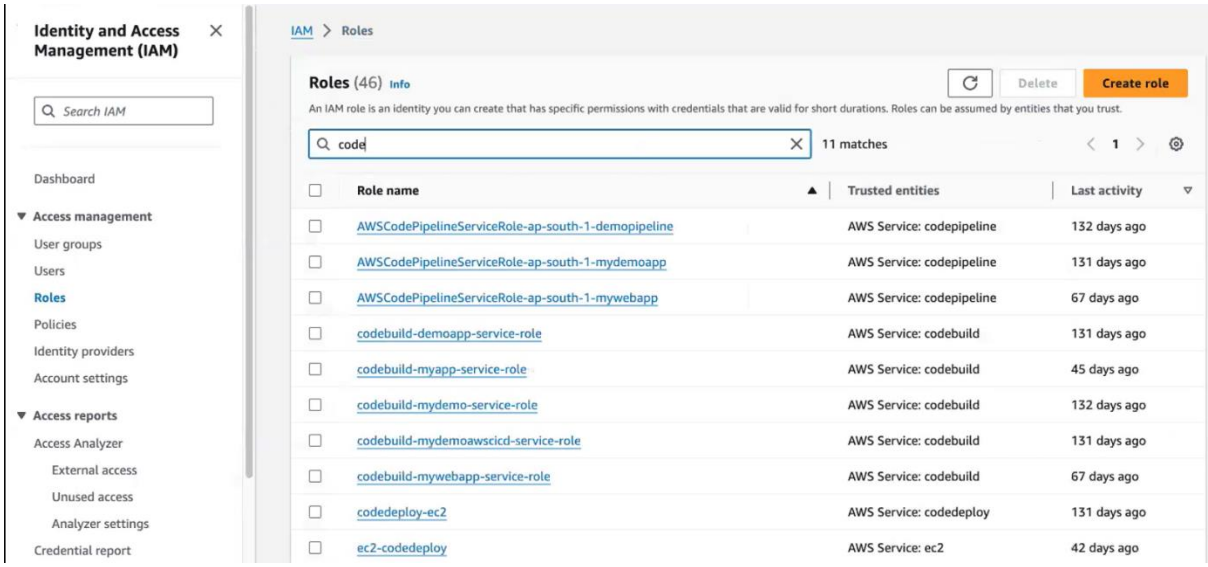


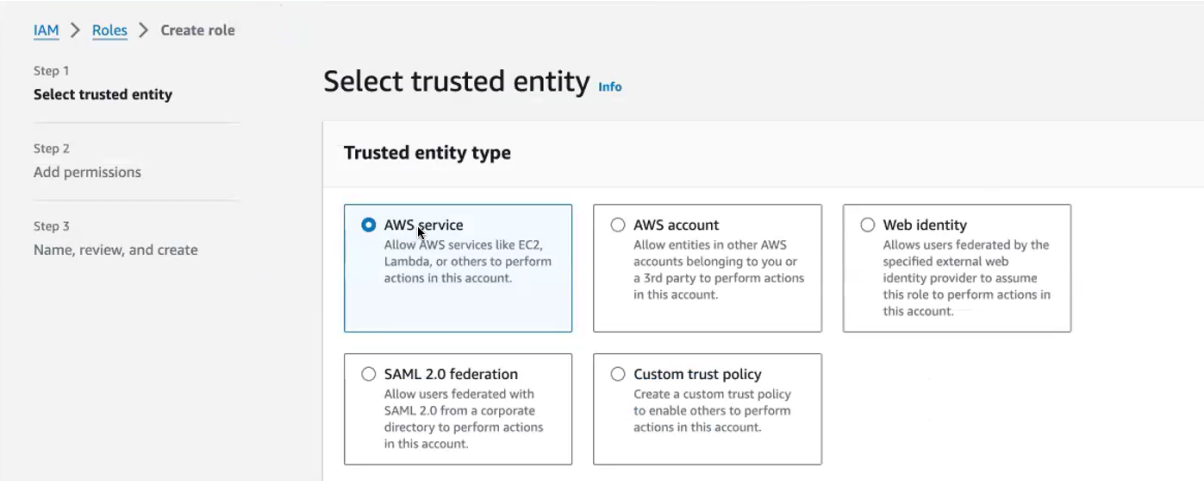
Service role we have to create:

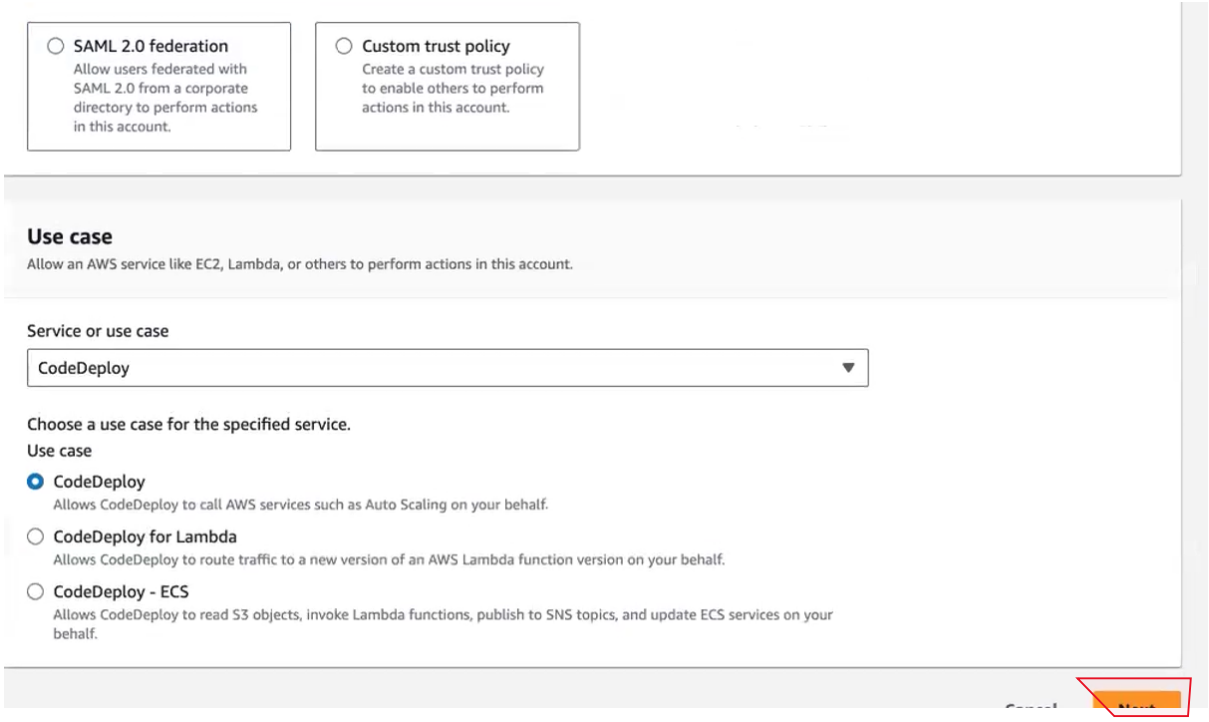


How to create Service role:

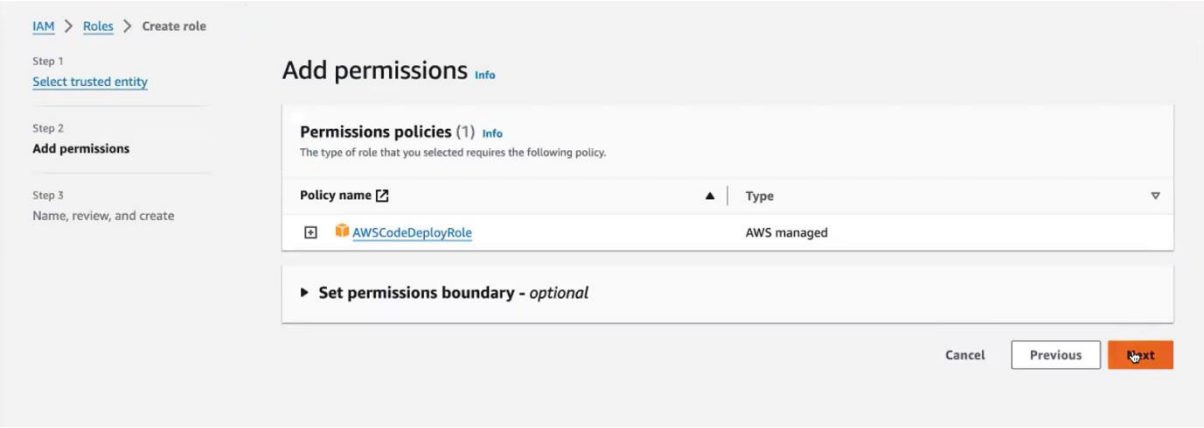
Goto IAM → click create role→

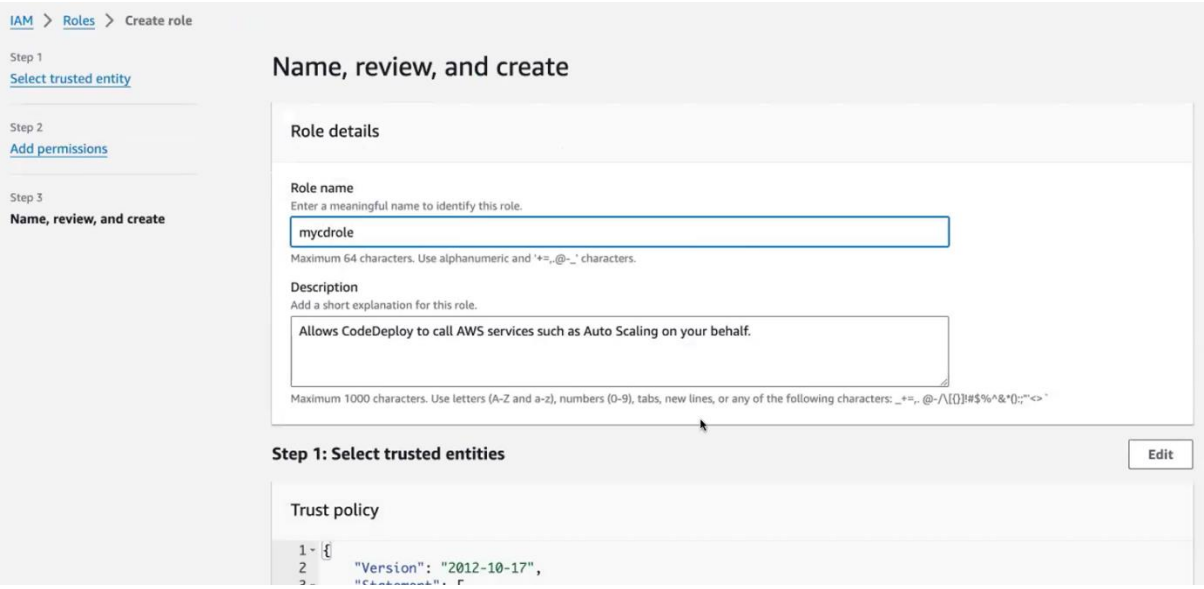


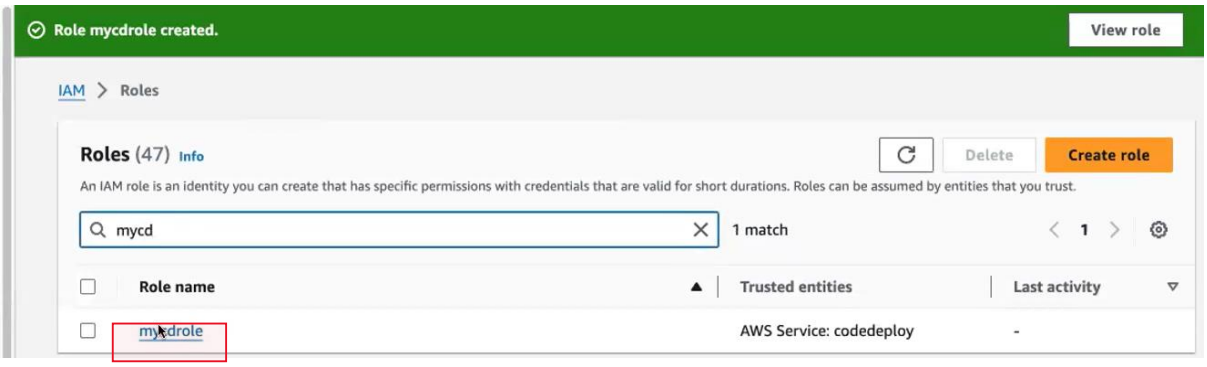


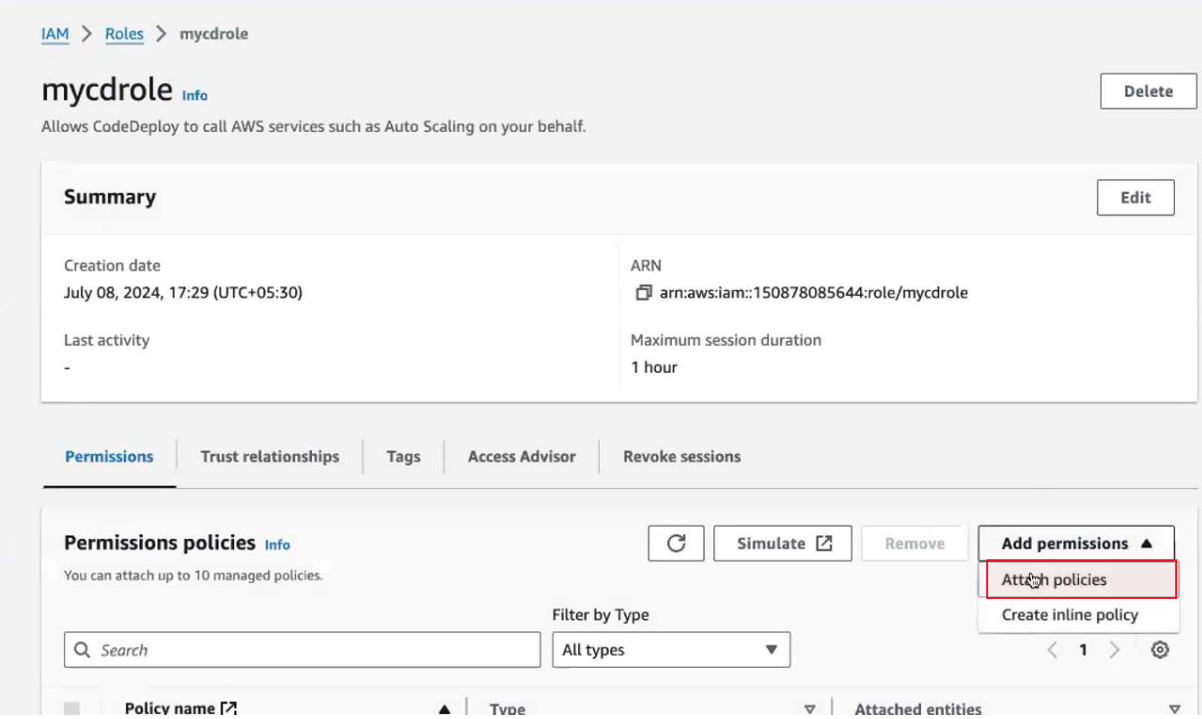


Later on give permission

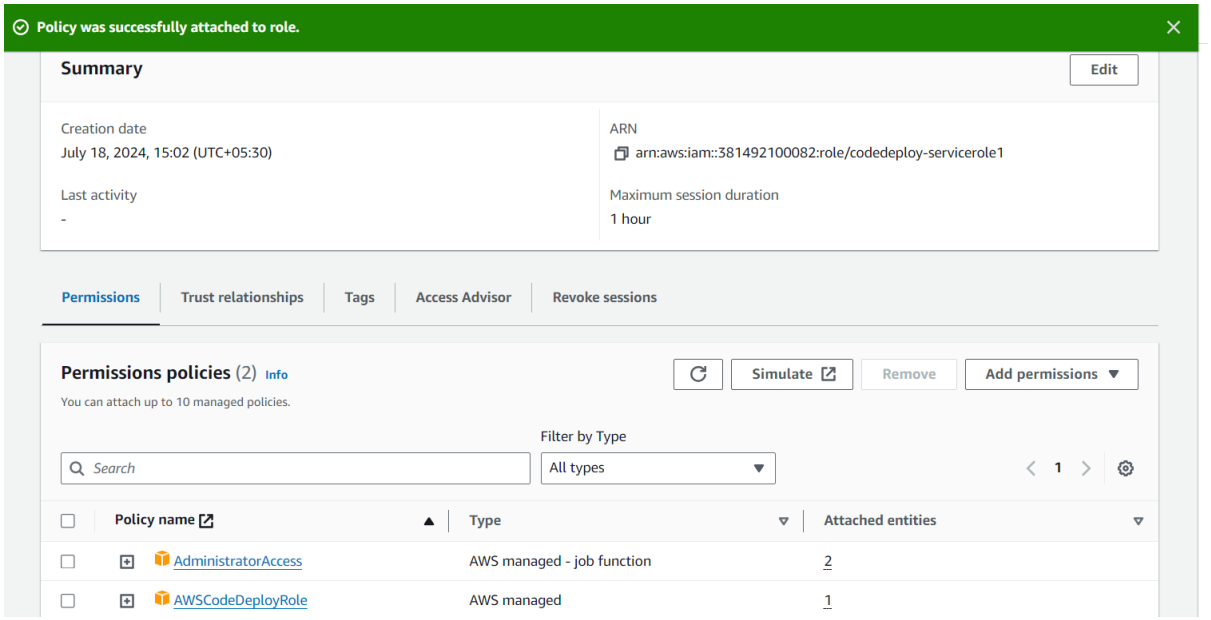



IAM > Roles > Create role
Step 1
Select trusted entity
Step 2
Add permissions
Step 3
Name, review, and create
Name, review, and create
Role details
Role name
Enter a meaningful name to identify this role.
mycdrole
Maximum 64 characters. Use alphanumeric and '+=,.@-_' characters.
Description
Add a short explanation for this role.
Allows CodeDeploy to call AWS services such as Auto Scaling on your behalf.
Maximum 1000 characters. Use letters (A-Z and a-z), numbers (0-9), tabs, new lines, or any of the following characters: _+=,. @-/\[{}]!#$%^&*();"<>`
Step 1: Select trusted entities
Edit
Trust policy
{
"Version": "2012-10-17",


Role mycdrole created.
View role
IAM > Roles
Roles (47) Info
Delete
Create role
An IAM role is an identity you can create that has specific permissions with credentials that are valid for short durations. Roles can be assumed by entities that you trust.
mycd
1 match
1
Role name
Trusted entities
Last activity
mycdrole
AWS Service: codedeploy
-

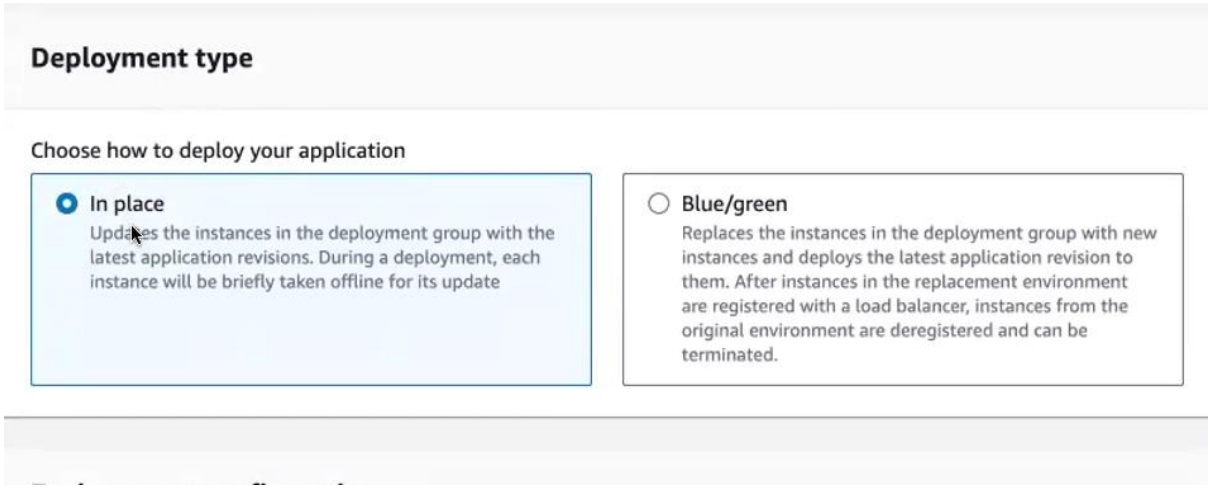

IAM > Roles > mycdrole
mycdrole Info
Delete
Allows CodeDeploy to call AWS services such as Auto Scaling on your behalf.
Summary
Edit
Creation date
July 08, 2024, 17:29 (UTC+05:30)
ARN
arn:aws:iam::150878085644:role/mycdrole
Last activity
-
Maximum session duration
1 hour
Permissions
Trust relationships
Tags
Access Advisor
Revoke sessions
Permissions policies Info
You can attach up to 10 managed policies.
Simulate
Remove
Add permissions
Attach policies
Create inline policy
Filter by Type
Search
All types
1
Policy name
Type
Attached entities

Give all the permissions .open this IAM in new tab.



Attach the permissions[administration access] to this roles

U have attached it. Okay. So now we will go and attach this role. So we have created the role. So you have to attach the role here. The service role after creating the service role with all the permissions you have to attach it to your deployment of group configuration.



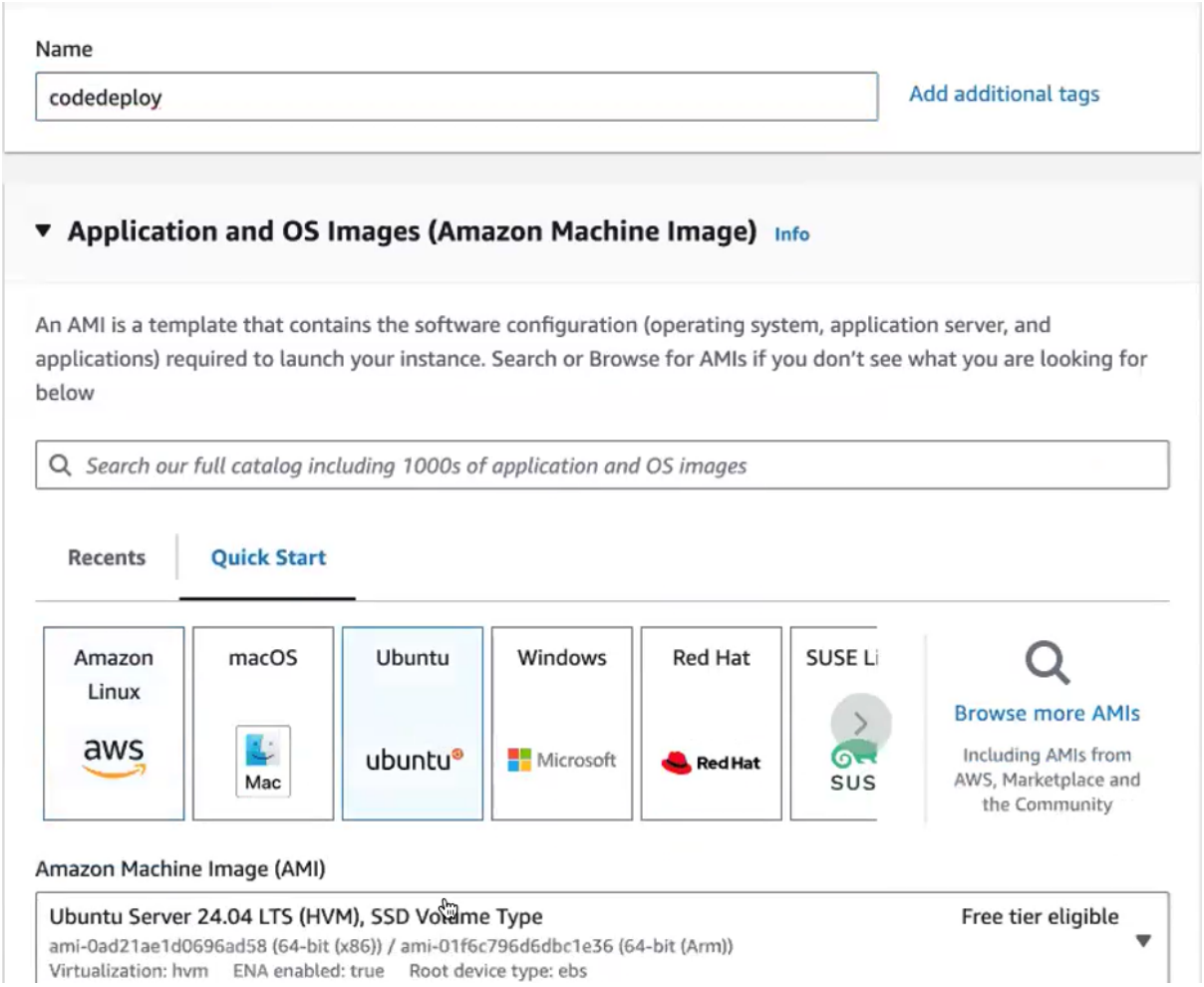
1. **<u>in place:</u>**

Different types of deployment strategies. If you're going for in place deployment needs, So it will what it will do it will. so it will deploy your application altogether.

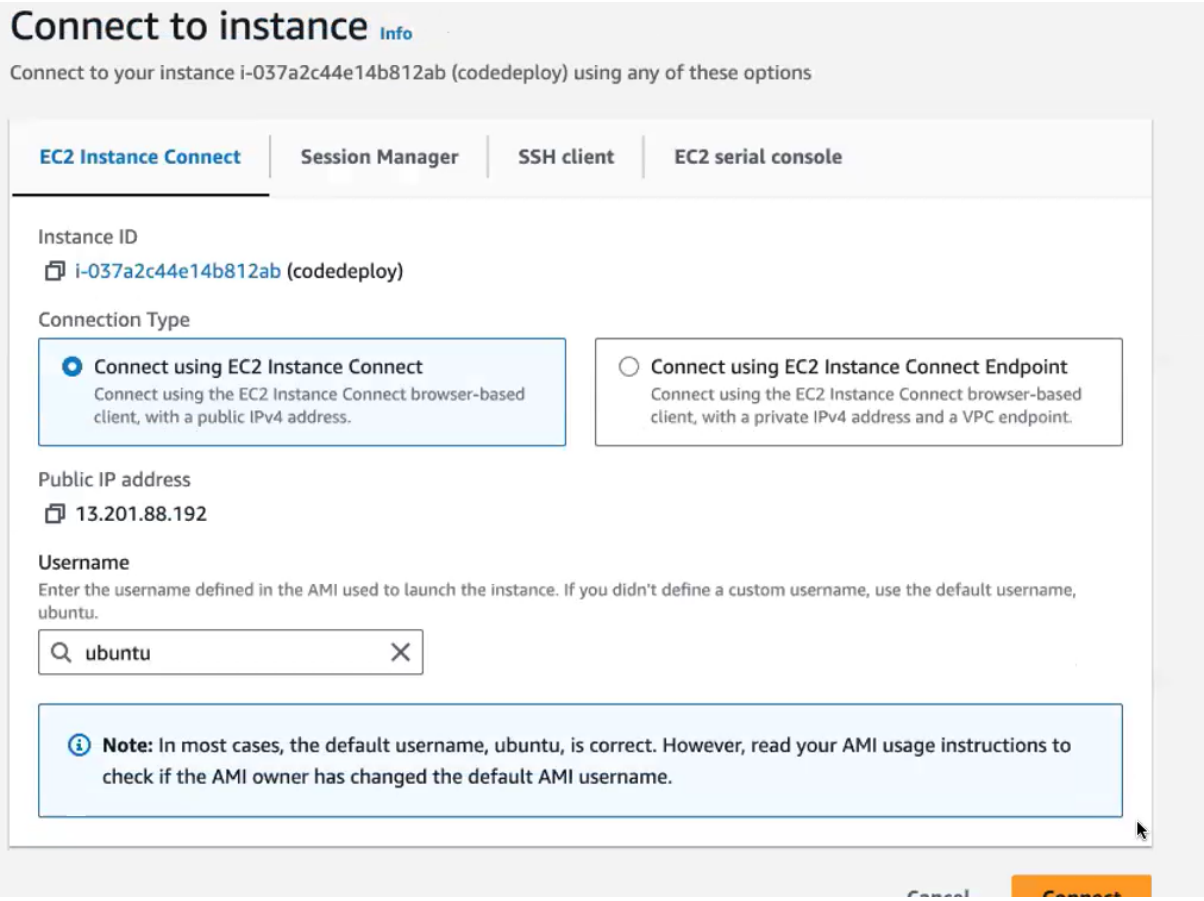
2. **<u>blue, green deployment:</u>**

- ✓ Wherein, if you're going for blue green deployment. So now I have. I'm like maintaining one. Applic I'm running an application in my Ec2, and tomorrow I create a different version. I see I have a different. I have developed a different version of my application. And I want to replace my existing application.
- ✓ Okay? Because the real time, if you see every now and then, if you go and look for the website, amazon.com or Flipkart, or Myntra. Whatever you see every day there is a new feature added to the application. So the new feature is a new version only.
- ✓ So what we do in the Blue Green deployment model, we will be creating 2 types of environment. One is for the blue environment and another one is a green environment.
- ✓ So blue environment maintains your original. The existing application will be running in the blue environment.
- ✓ And I created another environment called as green environment my new version. I will put it inside my green environment.
- ✓ So what I will do I will test my green environment. I will perform all the real time tests in my green environment. Once that is done, if my new version is properly functioning.
- ✓ Then I will gradually move my green gradually move my application, the newer version, which is running the green environment to my blue environment. Okay? So they are asking what type of deployment strategies you wanted you can go with in place itself. So now they're asking, yeah, environmental configuration.

Create a new ec2:



Connect that instance



now your code deploy has to deploy the application. What it will do. It will get the application from the Ec2. Sorry it will get the application from the previous stage. That is the artifact. So where your artifact is located, it is located in the S3 bucket. So your code deploy will get the artifact from the S3 bucket, and it will deploy to my Ec2 .

So for doing that, I need a mediator to do that. So my code, I have to install code deploy agent inside this Ec 2 where you're deploying to that Ec 2. You have to install **code deploy agent**. Okay, so this code deploy agent will help you to deploy this application to your Ec 2. So I will also give you the code of this whole deployment. so you will get the quote from the Amazon itself. I will tell you. After finishing this.

I will create a shell script:

so that with a single shell script you can install it. done this for the client agent install. So if you're using Amazon Linux. The installation is very straightforward. You just have to run a single command. Since you are using ubuntu. Okay, ubuntu is a 3rd party operating system. So you have to. There are several steps that you have to follow to install this code.

```
ubuntu@ip-172-31-40-190:~$ vi install.sh
```

only thing you have to edit as the region code. If you see in my 4th line and the wget command I have given the region code as Us- East1 [this can be changed our region code can give]

```
EC2
#!/bin/bash
# This installs the CodeDeploy agent and its prerequisites on Ubuntu 22.04.
sudo apt-get update
sudo apt-get install ruby-full ruby-webrick wget -y
cd /tmp
wget https://aws-codedeploy-us-east-1.s3.us-east-1.amazonaws.com/releases/codedeploy-agent_1.3.2-1902_all.deb
mkdir codedeploy-agent_1.3.2-1902_ubuntu22
dpkg-deb -R codedeploy-agent_1.3.2-1902_all.deb codedeploy-agent_1.3.2-1902_ubuntu22
sed 's/Depends:.*/Depends:ruby3.0/' -i ./codedeploy-agent_1.3.2-1902_ubuntu22/DEBIAN/control
dpkg-deb -b codedeploy-agent_1.3.2-1902_ubuntu22/
sudo dpkg -i codedeploy-agent_1.3.2-1902_ubuntu22.deb
systemctl list-units --type=service | grep codedeploy
sudo service codedeploy-agent status
~
```

https://docs.google.com/document/d/1PWghD1uklVI37KiR92n9ln8WEUyO6bbbkXUU_ZtC13E/edit#heading=h.x44geimrpqar

create a cicd pipeline in aws {document link}

want to install Code deploy agent in the window server. You have to run this command one by one.

To install the CodeDeploy agent on Ubuntu Server

1. Sign in to the instance.
2. Enter the following commands, one after the other:

```
sudo apt update
```

```
sudo apt install ruby-full
```

```
sudo apt install wget
```

3. Enter the following command:

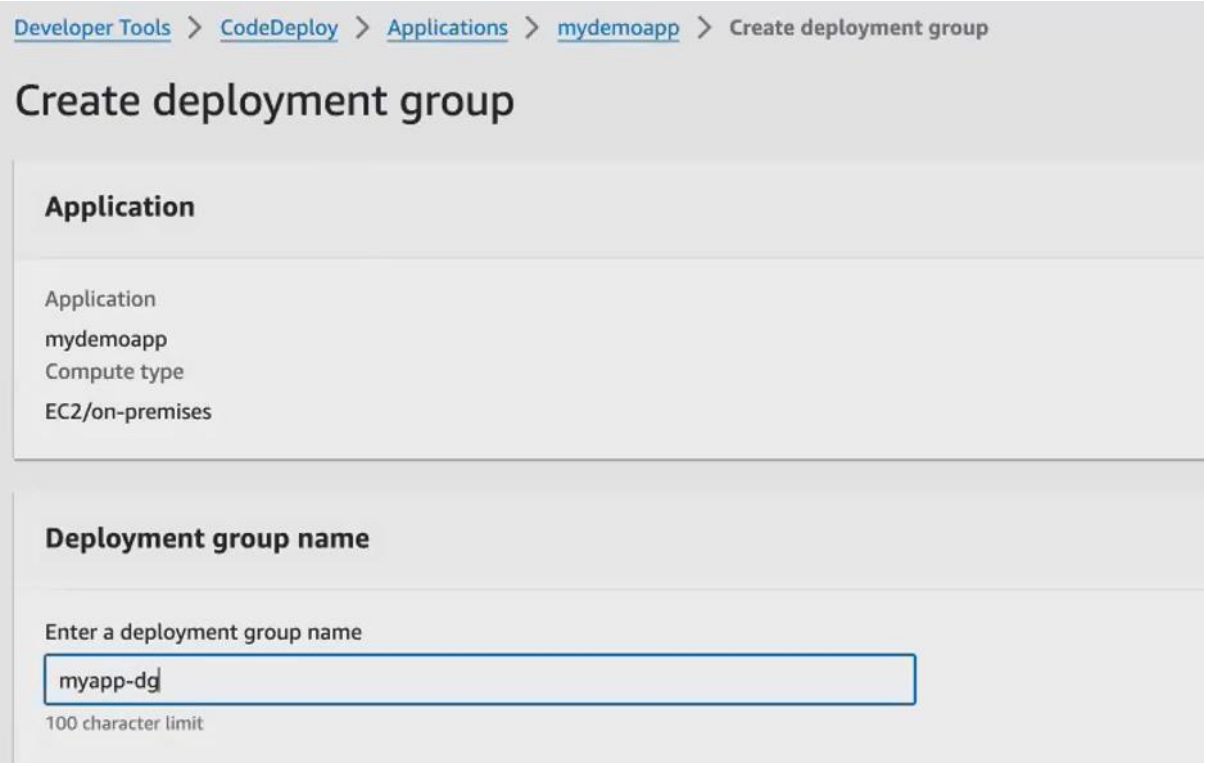
```
cd /home/ubuntu
```

/home/ubuntu represents the default user name for an Ubuntu Server instance. If your

```
ubuntu@ip-172-31-40-190:~$ chmod +x install.sh
ubuntu@ip-172-31-40-190:~$ ./install.sh
```

```
Executing: /lib/systemd/systemd-sysv-install enable codedeploy-agent
  codedeploy-agent.service                      loaded active running LSB: AWS CodeDeploy Host Agent
● codedeploy-agent.service - LSB: AWS CodeDeploy Host Agent
     Loaded: loaded (/etc/init.d/codedeploy-agent; generated)
     Active: active (running) since Mon 2024-07-08 12:12:41 UTC; 76ms ago
       Docs: man:systemd-sysv-generator(8)
    Process: 2465 ExecStart=/etc/init.d/codedeploy-agent start (code=exited, status=0/SUCCESS)
      Tasks: 2 (limit: 1120)
     Memory: 31.3M
        CPU: 520ms
     CGroup: /system.slice/codedeploy-agent.service
             ├─2471 "codedeploy-agent: master 2471" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "
             └─2473 "codedeploy-agent: booting child" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "" "

Jul 08 12:12:40 ip-172-31-40-190 systemd[1]: Starting LSB: AWS CodeDeploy Host Agent...
Jul 08 12:12:41 ip-172-31-40-190 codedeploy-agent[2465]: Starting codedeploy-agent:
Jul 08 12:12:41 ip-172-31-40-190 systemd[1]: Started LSB: AWS CodeDeploy Host Agent.
ubuntu@ip-172-31-40-190:~$
```

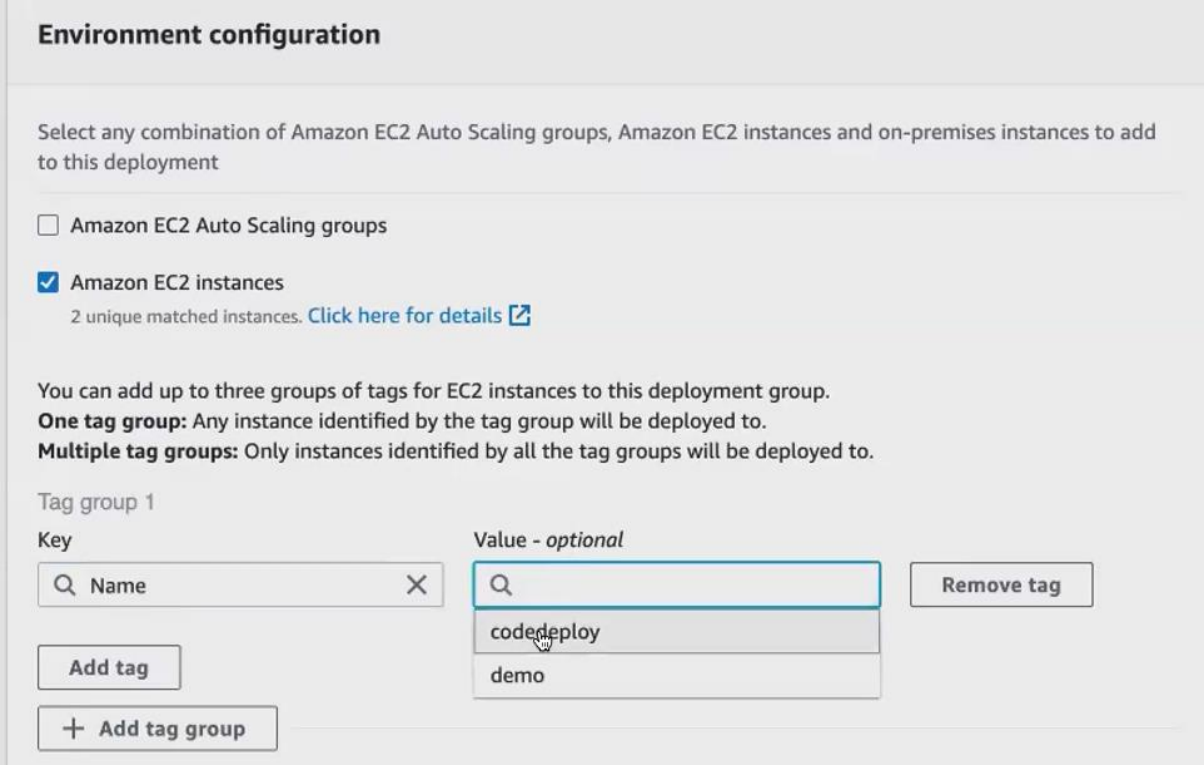
After installed.goto code deploy configuration

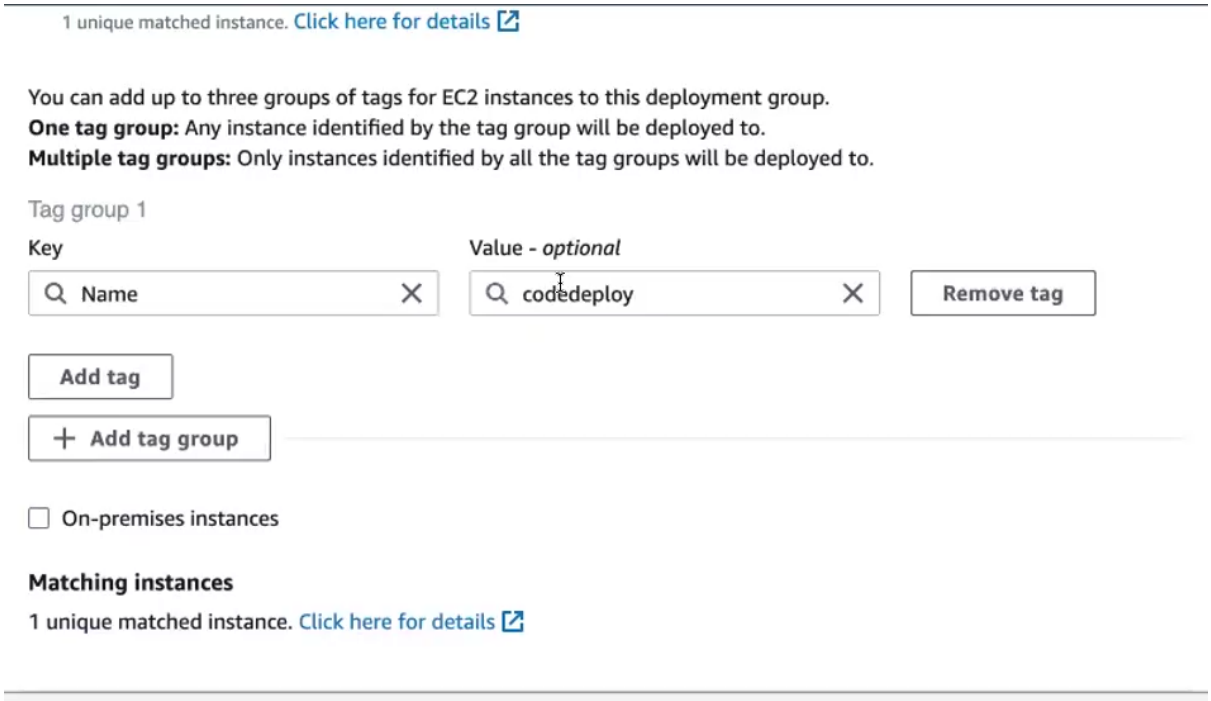


Here I have to select the ec2 where I have installed my code deploy agent. Let me refresh it. Yes, name, and the value is the name of your Ec. 2, where you have installed the Code Deploy Agent, and you can see it is matching.

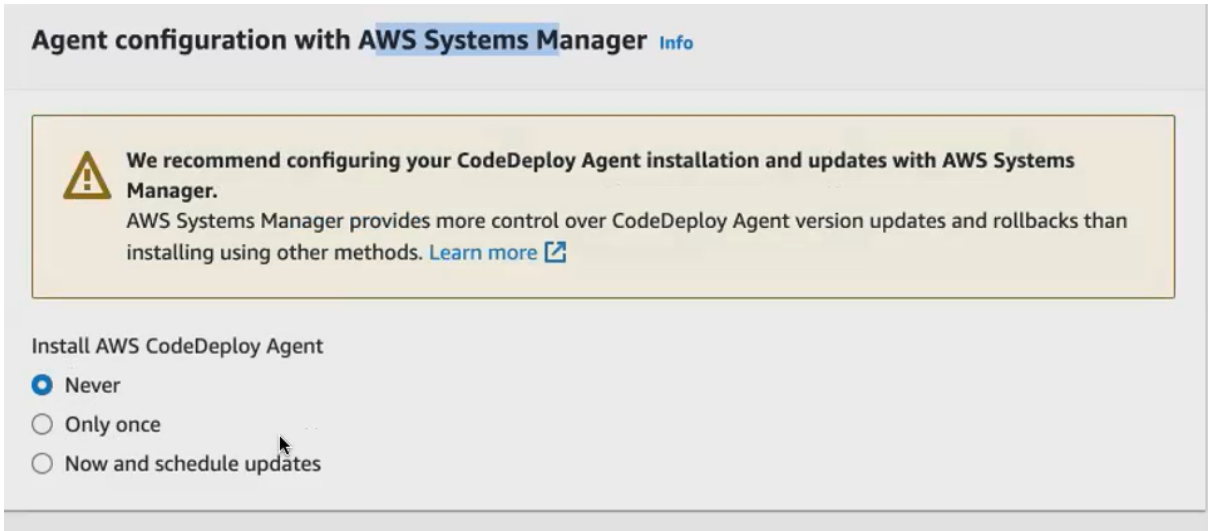
It are showing the result as one unique match instance, which means this Code deploy agent can identify your Ec. 2 and it is asking agent configuration with Aws Systems manager. You can either go with now schedule and you can go. You can go with the automatic code deploy agent install if you click on only once, your code deploy agent

will be automatically installed to this ec2. This is an automated way, but you can also go and manually install it Refresh that page.code deploy agent is visible.

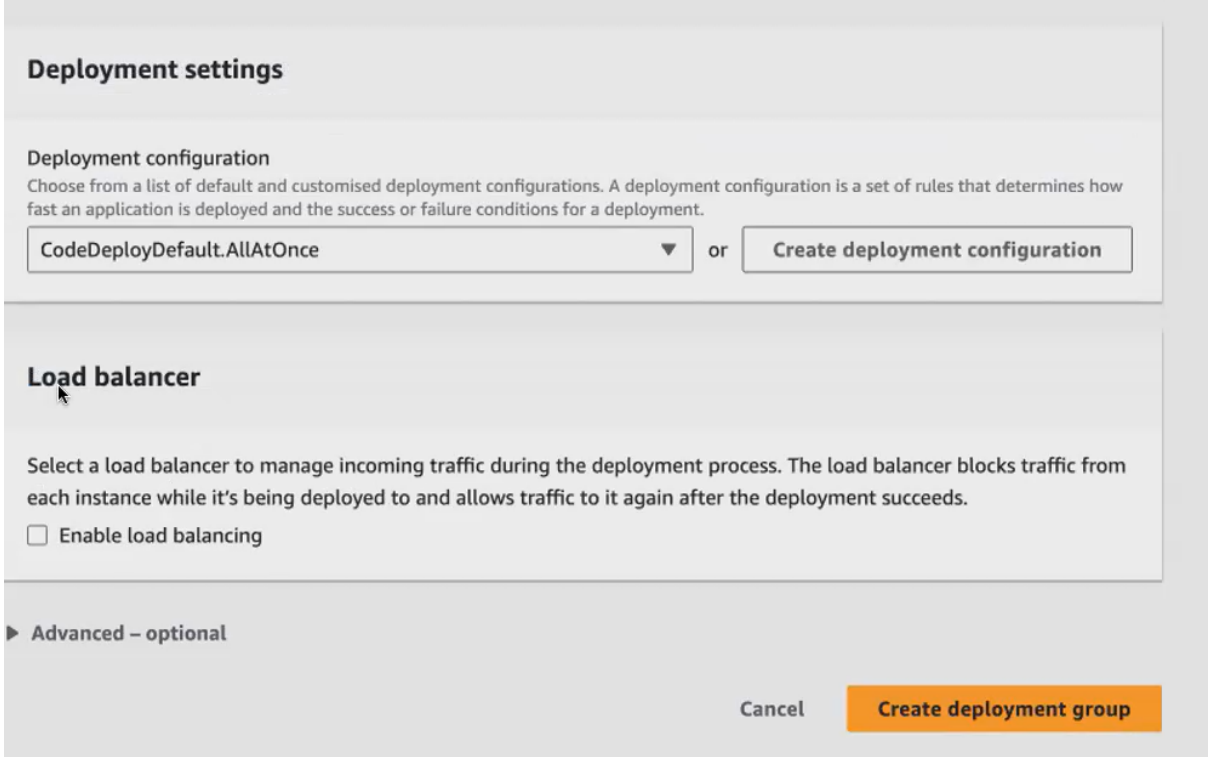




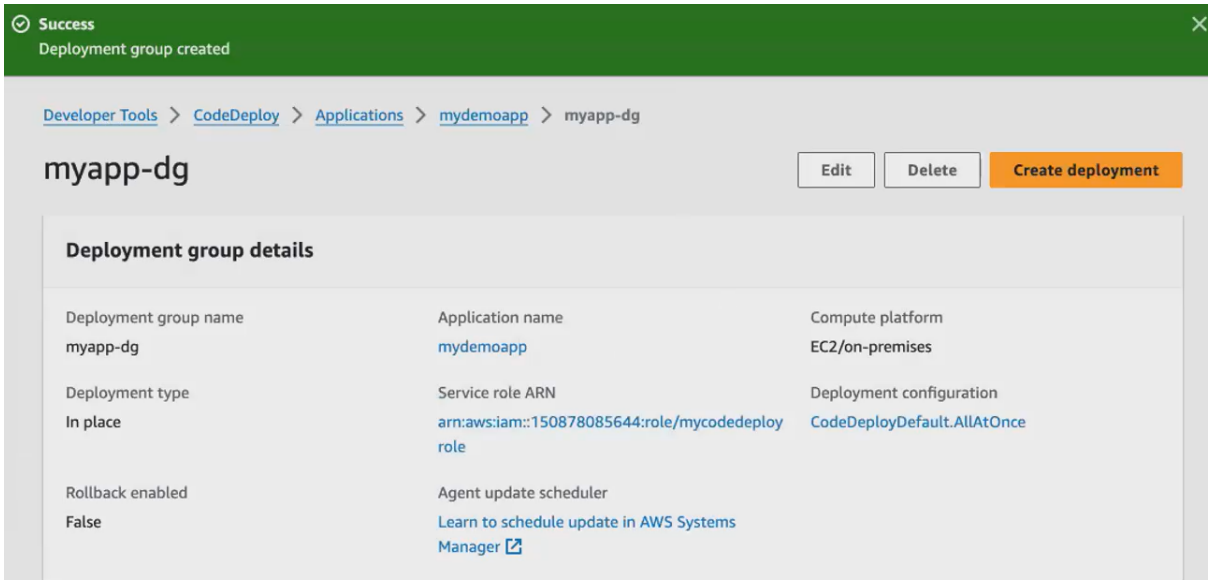
the script and deployed the Code Install the Code Deploy agent. You can either way you can go. You can ask your code deploy to de install the code deploy agent in your Ec. 2 .We click on only once. It will be installed only once, or if you're going for now and schedule updates means whenever there is a new release, it will install the code deploy agent every now and then. So now let me go with never, because I have already installed it. So I don't need the Code Deploy Agent again to be installed.



So enable load Balancer. If you have multiple Ec 2.If your application is running in multiple Ec 2, you can go and enable load Balancer. Now, I have only one easy to machine configure, so I don't want to enable load balancer.

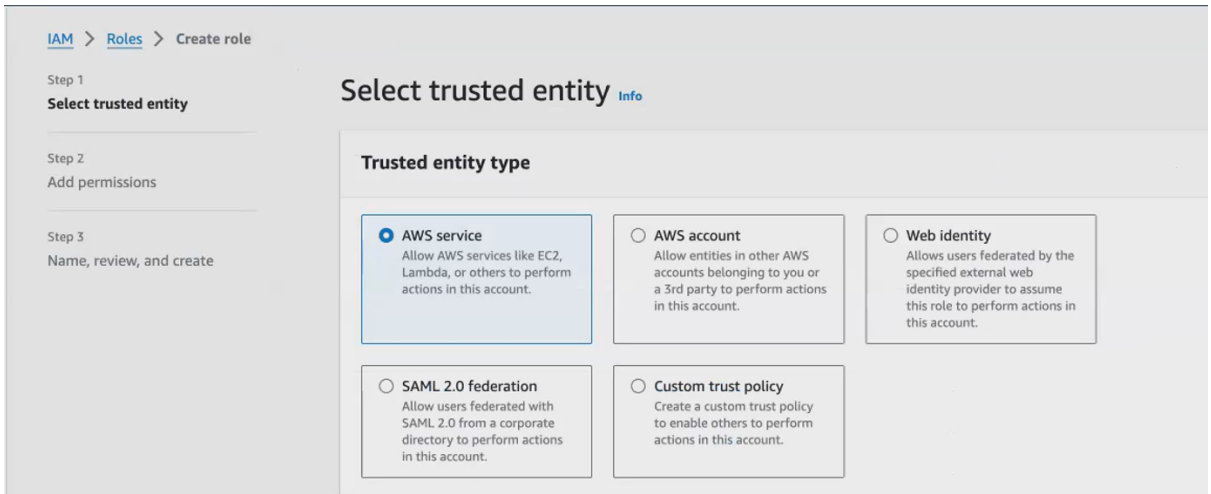


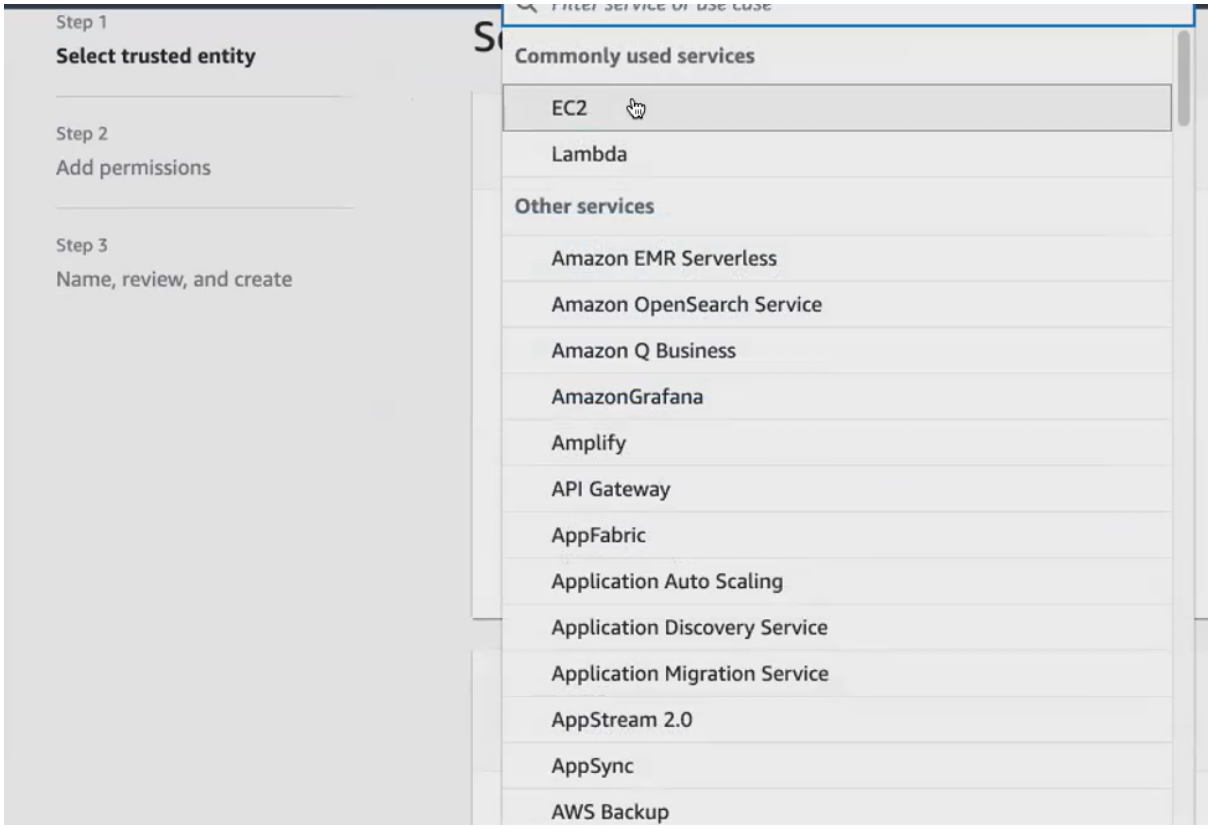
Remaining not needed ,given as per.



so now, we have created the deployment group. So here I've also installed the Code Deploy agent. So now I want to let my. Now I've given permission for my code deploy to talk with the Ec. 2 .So my Ec. 2 should also have permission to connect with my code deploy agent. Okay, so what I have to do, I have to attach the permission for my Ec 2.

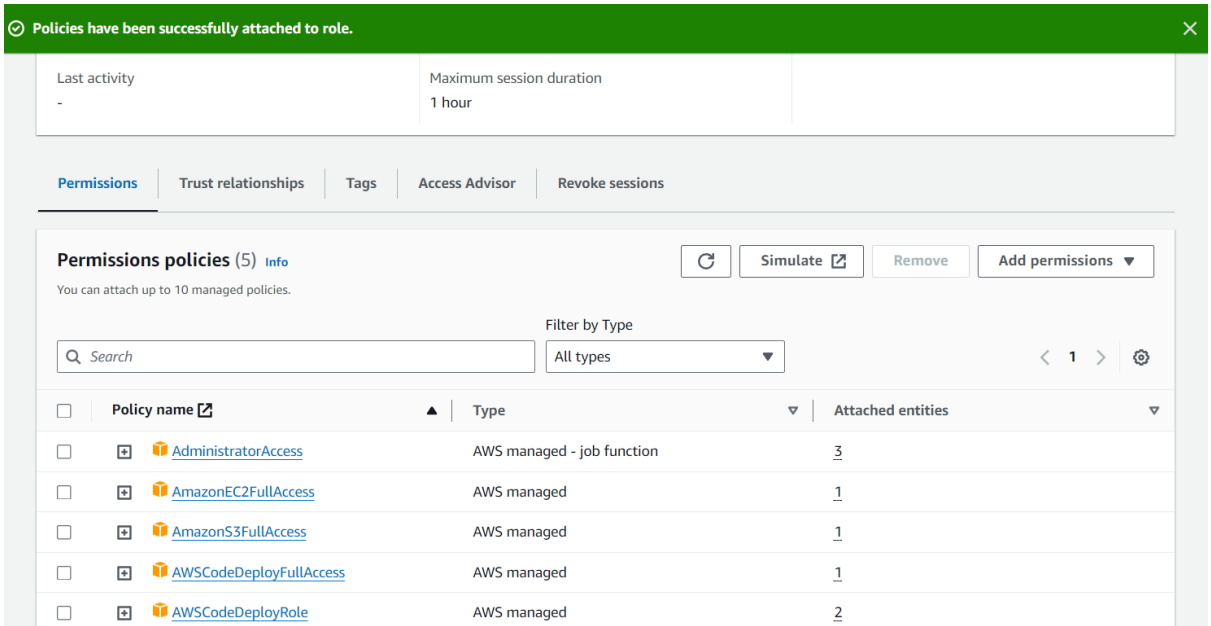
You'll be creating 2 roles is don't get confused. So for code deploy.we will be creating 2 roles. One is for the code deploy itself. Another one is for your Ec 2, where you're deploying the application.



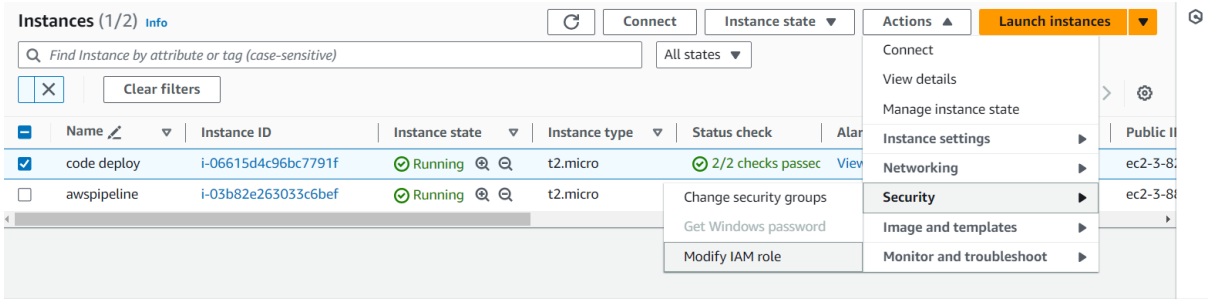


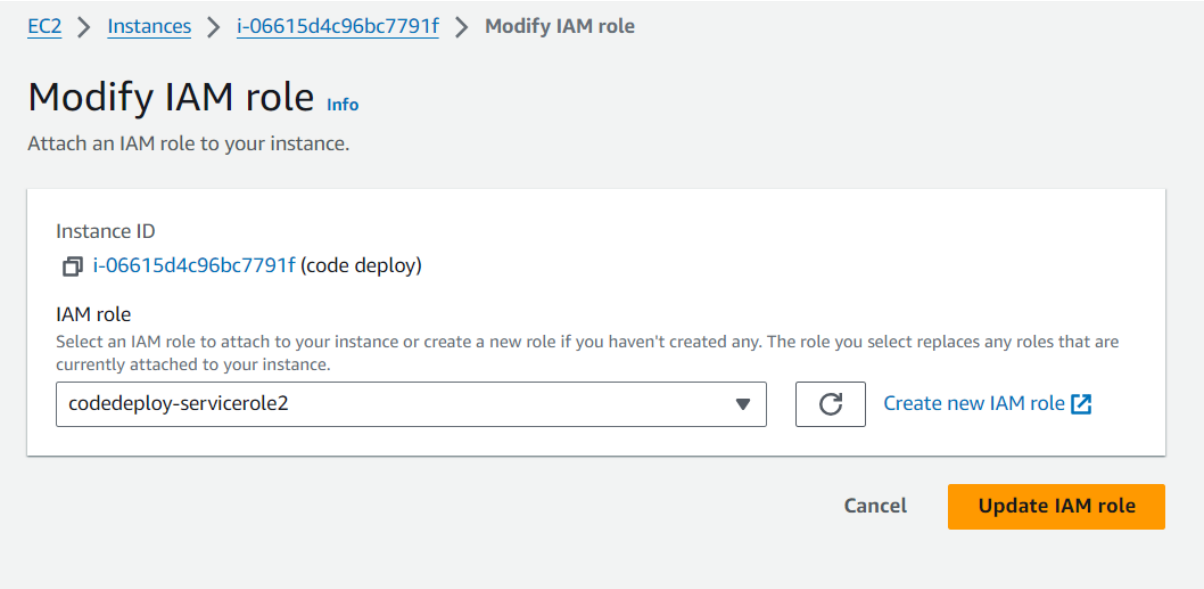
Attach permissions for this role [give full access to ec2, s3, deploy full access, code deploy role]

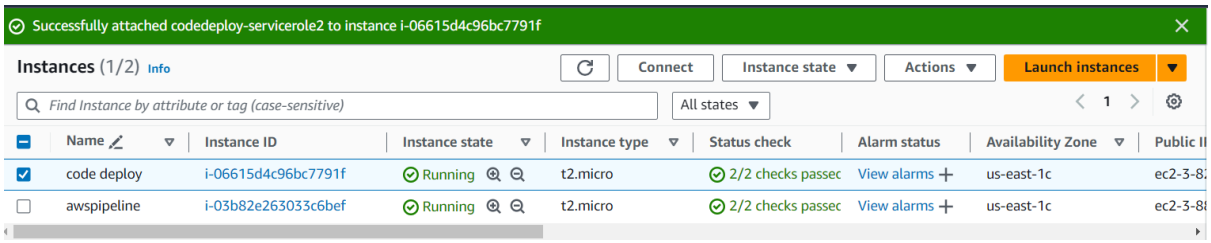
Get into that role click attach policies.

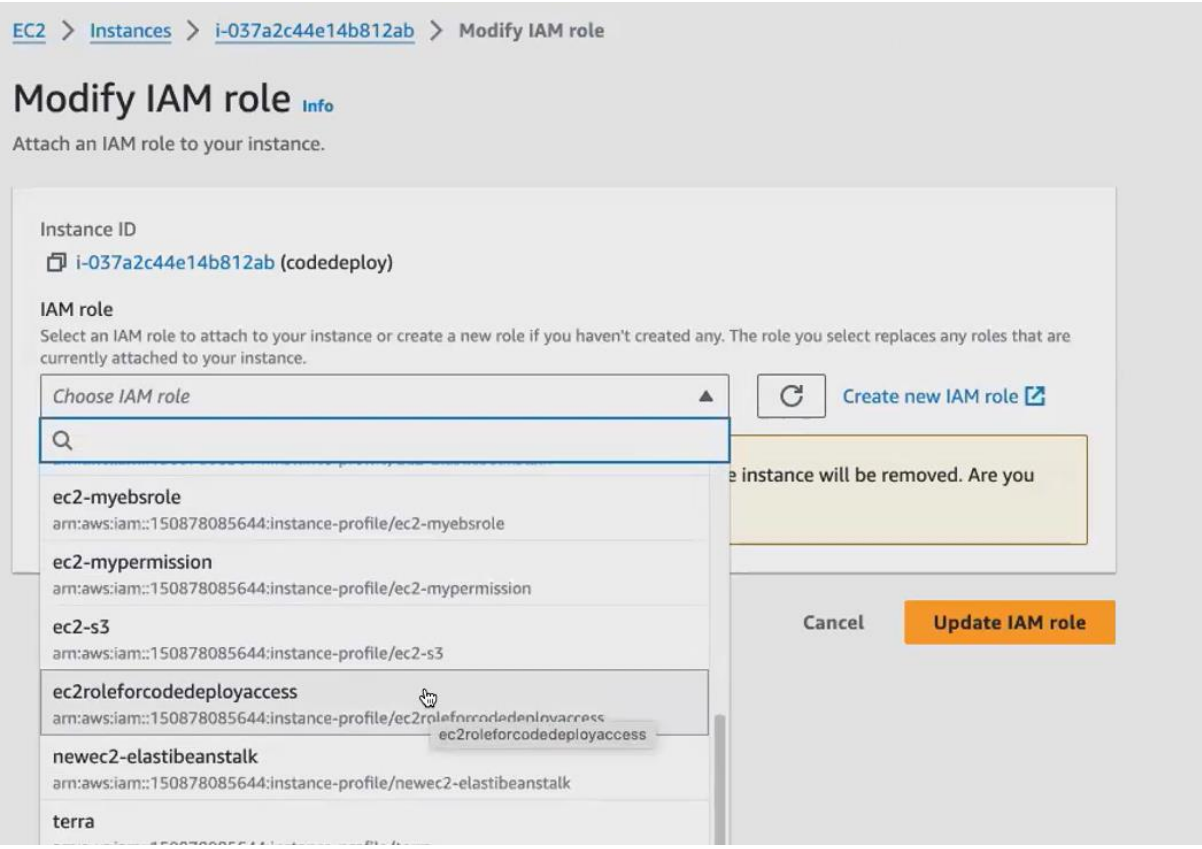


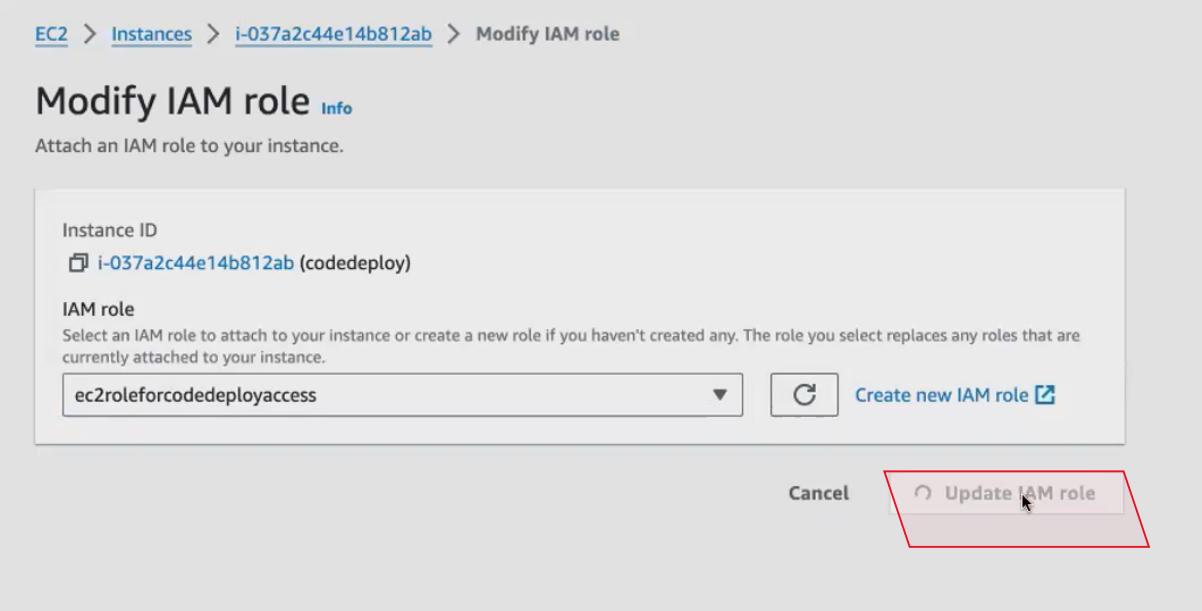
Goto instance give modify iam role. now I have to attach this role to my Ec 2.click ec2


Instances (1/2) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Clear filters
Name
Instance ID
Instance state
Instance type
Status check
Alar
Public I
code deploy
i-06615d4c96bc7791f
Running
t2.micro
2/2 checks passec
View
ec2-3-8
awspipeline
i-03b82e263033c6bef
Running
t2.micro
ec2-3-8
Connect
View details
Manage instance state
Instance settings
Networking
Security
Image and templates
Monitor and troubleshoot
Change security groups
Get Windows password
Modify IAM role


EC2 > Instances > i-06615d4c96bc7791f > Modify IAM role
Modify IAM role Info
Attach an IAM role to your instance.
Instance ID
i-06615d4c96bc7791f (code deploy)
IAM role
Select an IAM role to attach to your instance or create a new role if you haven't created any. The role you select replaces any roles that are currently attached to your instance.
codedeploy-servicerole2
Create new IAM role
Cancel
Update IAM role


Successfully attached codedeploy-servicerole2 to instance i-06615d4c96bc7791f
Instances (1/2) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
1
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public I
code deploy
i-06615d4c96bc7791f
Running
t2.micro
2/2 checks passec
View alarms
us-east-1c
ec2-3-8
awspipeline
i-03b82e263033c6bef
Running
t2.micro
2/2 checks passec
View alarms
us-east-1c
ec2-3-8





after updating it again, go to your Ec 2, connect with your Ec 2.give this command

```
Last login: Mon Jul  8 12:07:51 2024 from 13.233.177.3
ubuntu@ip-172-31-40-190:~$ sudo service codedeploy-agent restart
```

```
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status


Last login: Mon Jul  8 12:07:51 2024 from 13.233.177.3
ubuntu@ip-172-31-40-190:~$ sudo service codedeploy-agent restart
ubuntu@ip-172-31-40-190:~$ 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 Mon 2024-07-08 12:20:36 UTC; 27s ago
       Docs: man:systemd-sysv-generator(8)
    Process: 2932 ExecStart=/etc/init.d/codedeploy-agent start (code=exited, status=0/SUCCESS)
      Tasks: 2 (limit: 1120)
     Memory: 61.9M
        CPU: 1.164s
     CGroup: /system.slice/codedeploy-agent.service
             ├─2938 "codedeploy-agent: master 2938" "" "" "
```

```
#!/bin/bash
sudo service nginx start
```

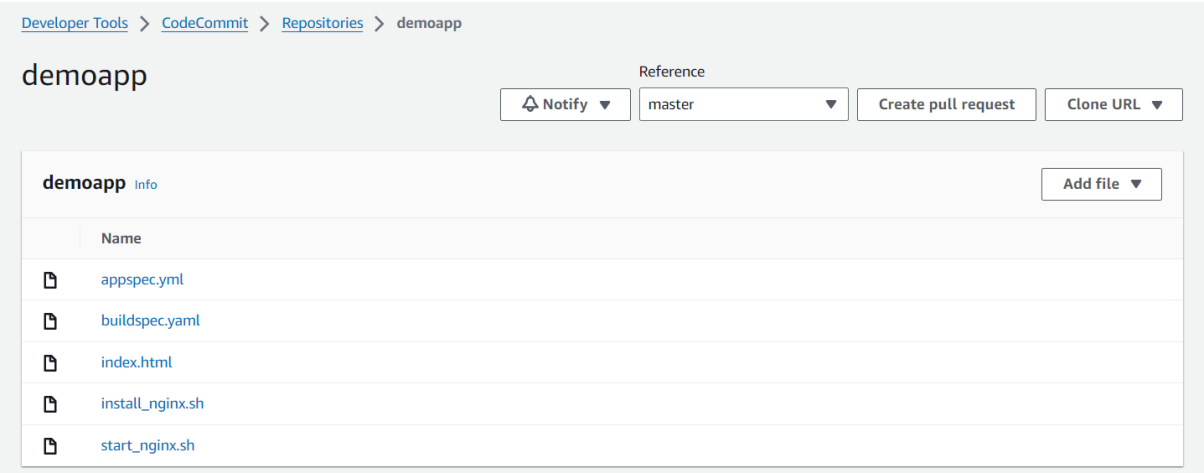
```
[ec2-user@ip-172-31-94-139 ~]$ vi install_nginx.sh
[ec2-user@ip-172-31-94-139 ~]$ vi start_nginx.sh
```

```
[ec2-user@ip-172-31-94-139 ~]$ git add appspec.yml
[ec2-user@ip-172-31-94-139 ~]$ git add install_nginx.sh
[ec2-user@ip-172-31-94-139 ~]$ git add start_nginx.sh
```

```
[ec2-user@ip-172-31-94-139 ~]$ git commit -m "add all files"
[master 12bf0b8] add all files
 Committer: EC2 Default User <ec2-user@ip-172-31-94-139.ec2.internal>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 3 files changed, 21 insertions(+)
 create mode 100644 appspec.yml
 create mode 100644 install_nginx.sh
 create mode 100644 start_nginx.sh
[ec2-user@ip-172-31-94-139 ~]$ git push
Username for 'https://git-codecommit.us-east-1.amazonaws.com': app-user-at-381492100082
Password for 'https://app-user-at-381492100082@git-codecommit.us-east-1.amazonaws.com':
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Compressing objects: 100% (4/4), done.
```

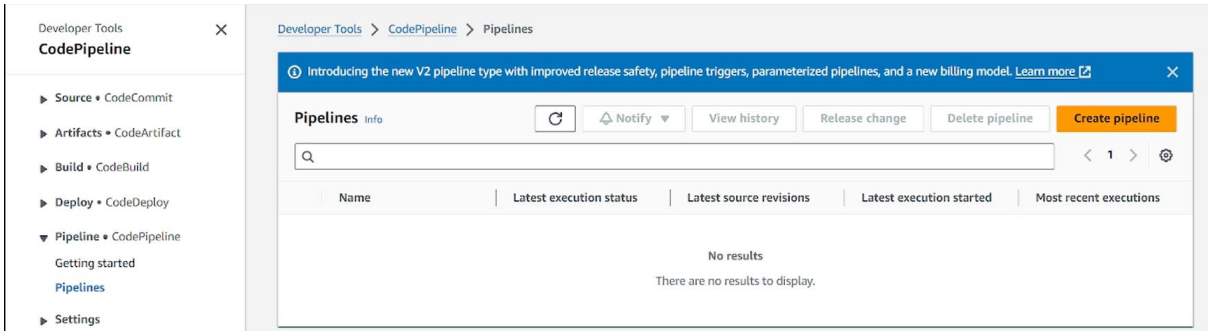
```
[ec2-user@ip-172-31-94-139 ~]$ git push
Username for 'https://git-codecommit.us-east-1.amazonaws.com': app-user-at-381492100082
Password for 'https://app-user-at-381492100082@git-codecommit.us-east-1.amazonaws.com':
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Compressing objects: 100% (4/4), done.
Writing objects: 100% (5/5), 641 bytes | 641.00 KiB/s, done.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0
remote: Validating objects: 100%
To https://git-codecommit.us-east-1.amazonaws.com/v1/repos/demoapp
   5765ef5..12bf0b8  master -> master
[ec2-user@ip-172-31-94-139 ~]$
```

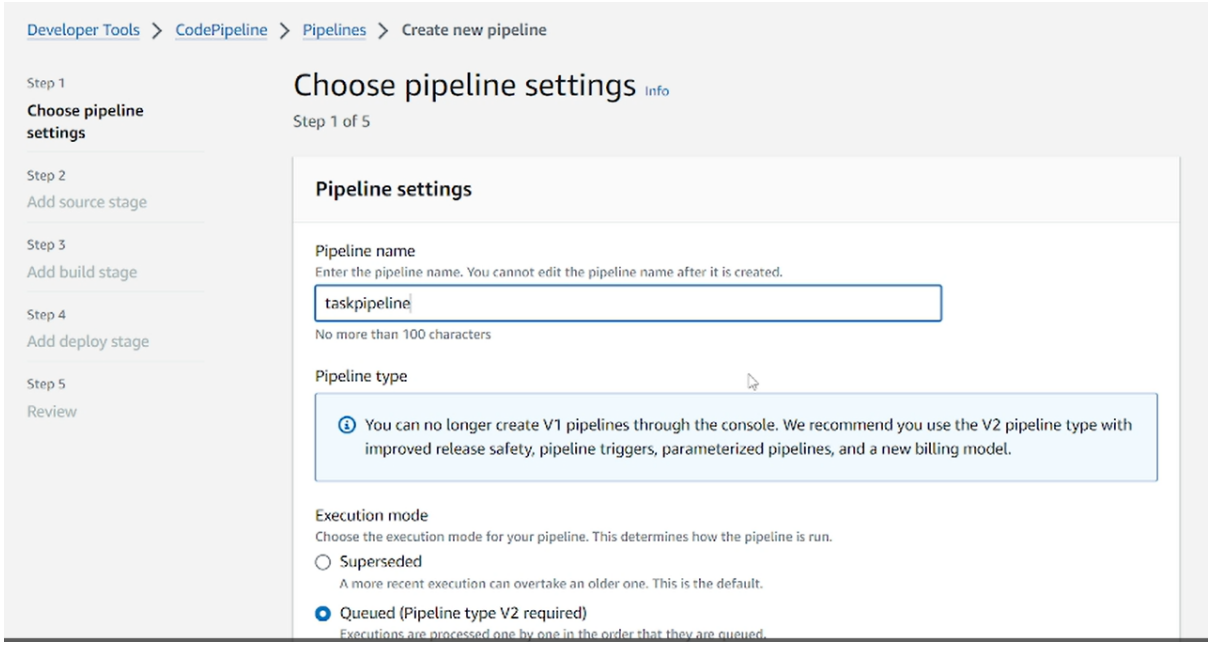
All files written in amazon linux instance



Open the port no: 80 for code deploy ec2 instance

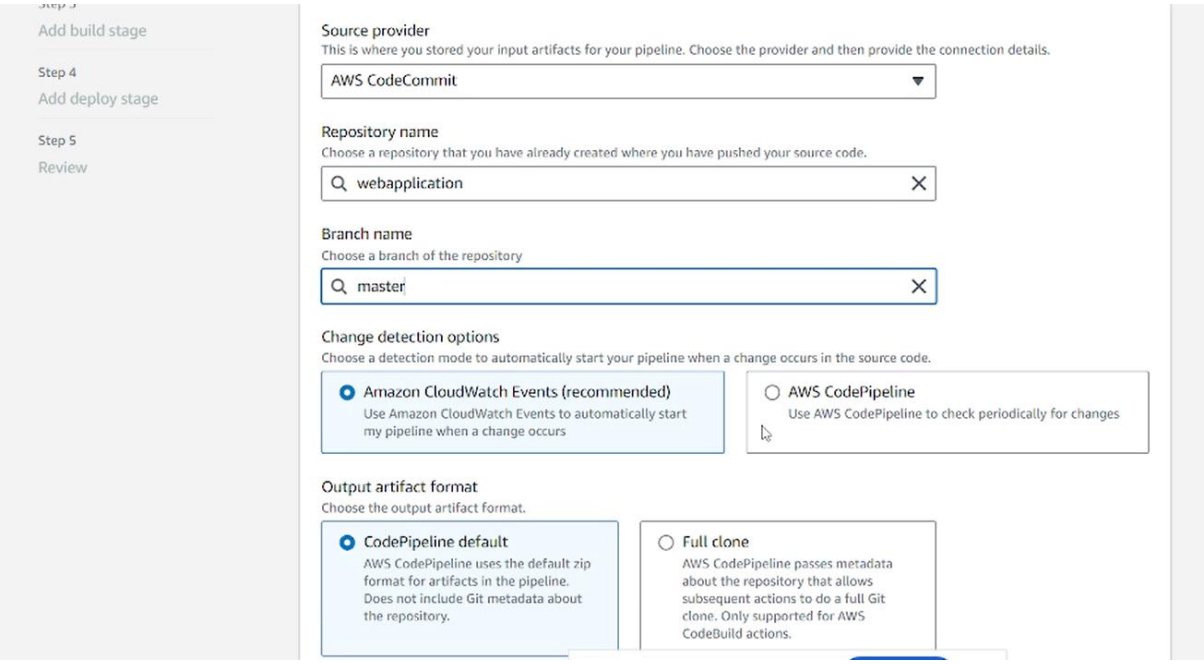
Create pipeline:



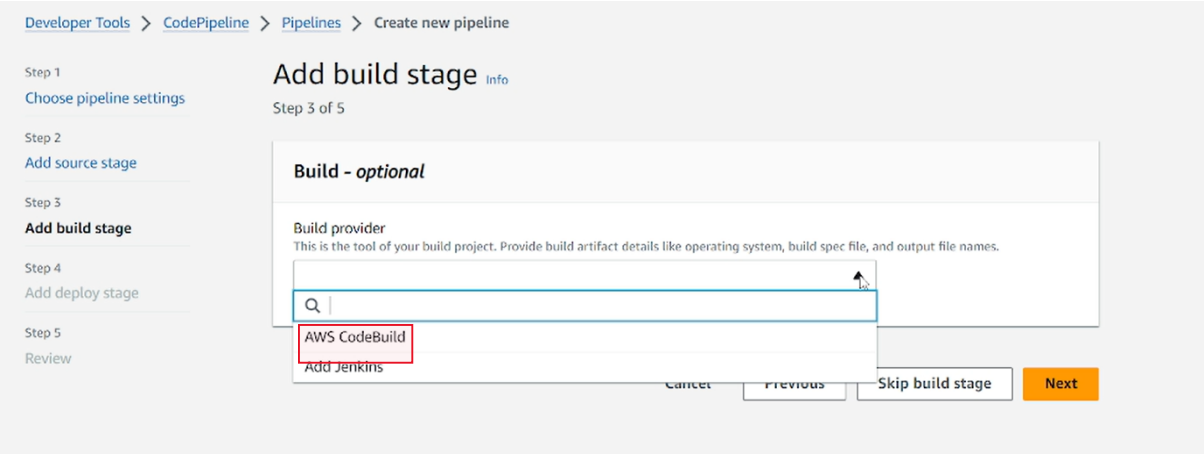


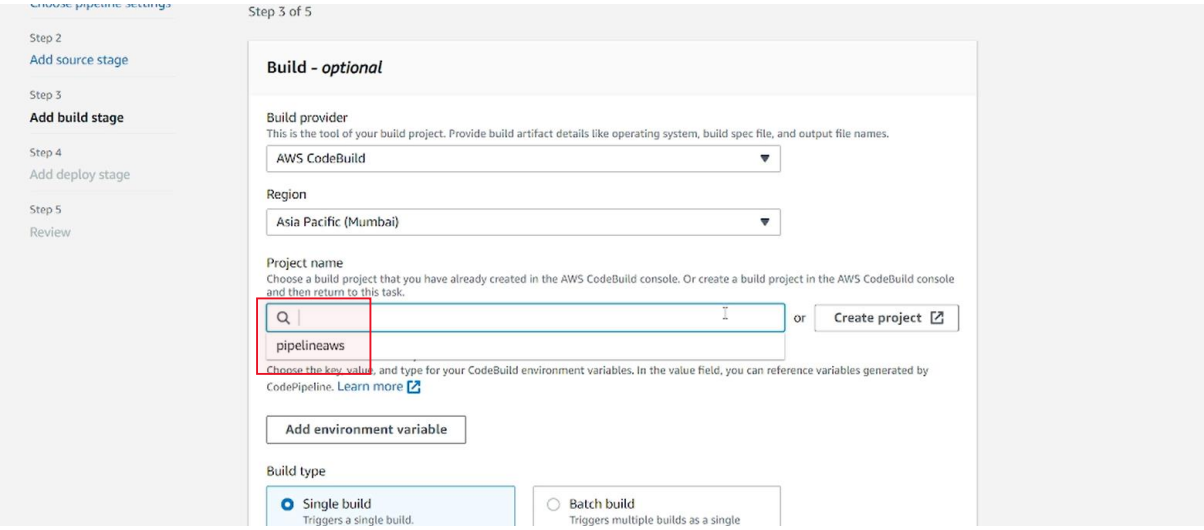
Remaining are same .click next. pipeline role also assigned automatically

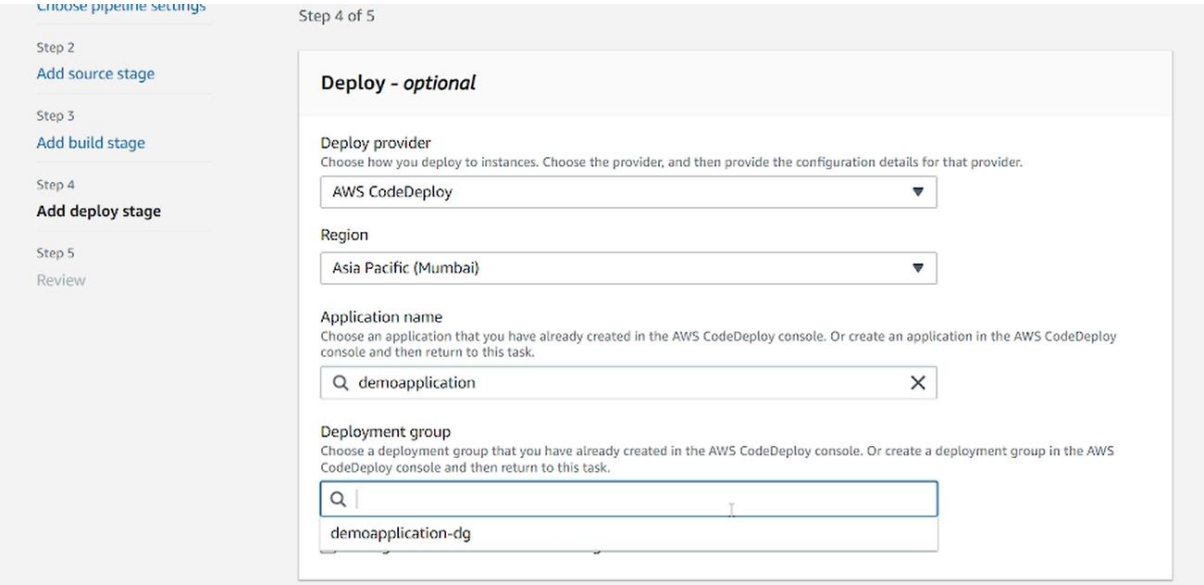
Select aws code commit.All names comes under [already we created]



This build stage is optional:







Build action provider

AWS CodeBuild

ProjectName

pipelineaws

Step 4: Add deploy stage

Deploy action provider

Deploy action provider

AWS CodeDeploy

ApplicationName

demoapplication

DeploymentGroupName

demoapplication-dg

Configure automatic rollback on stage failure

Disabled

Cancel | Previous | Create pipeline

Success

Congratulations! The pipeline taskpipeline has been created.

Create a notification rule for this pipeline

Developer Tools > CodePipeline > Pipelines > taskpipeline

taskpipeline

Notify | Edit | Stop execution | Clone pipeline | Release change

Pipeline type: V2 Execution mode: QUEUED

Source In progress

Source

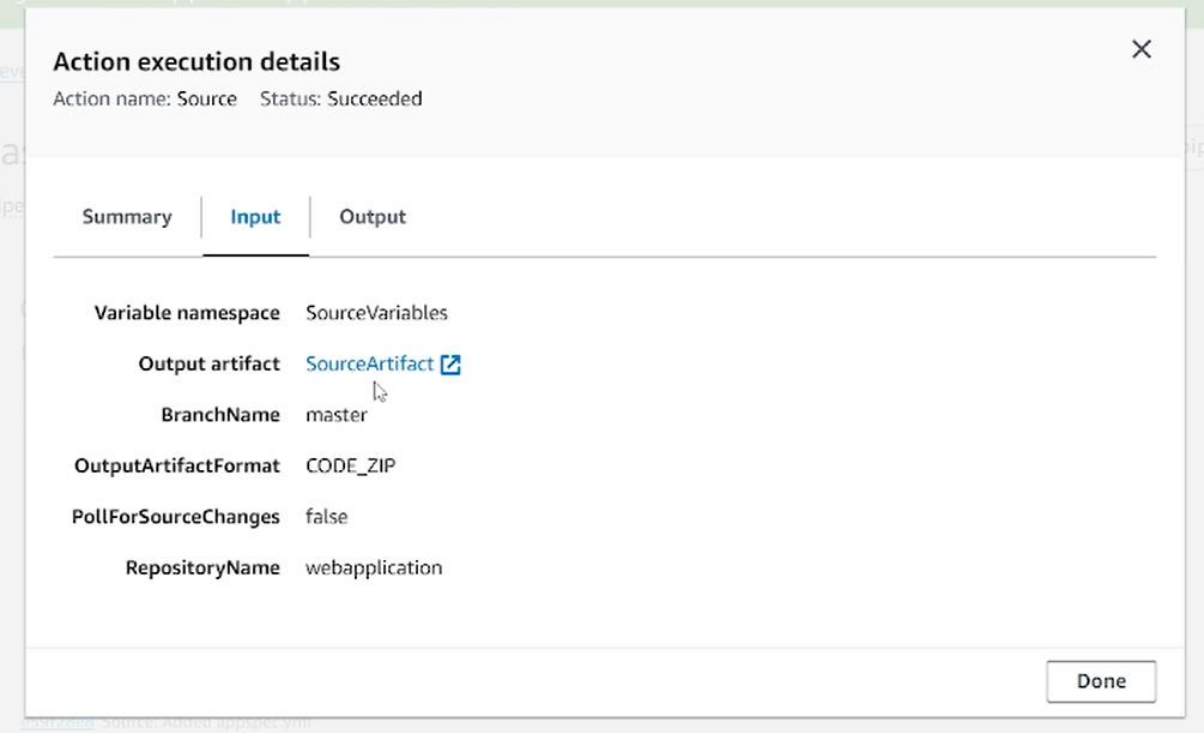
AWS CodeCommit

In progress - Just now

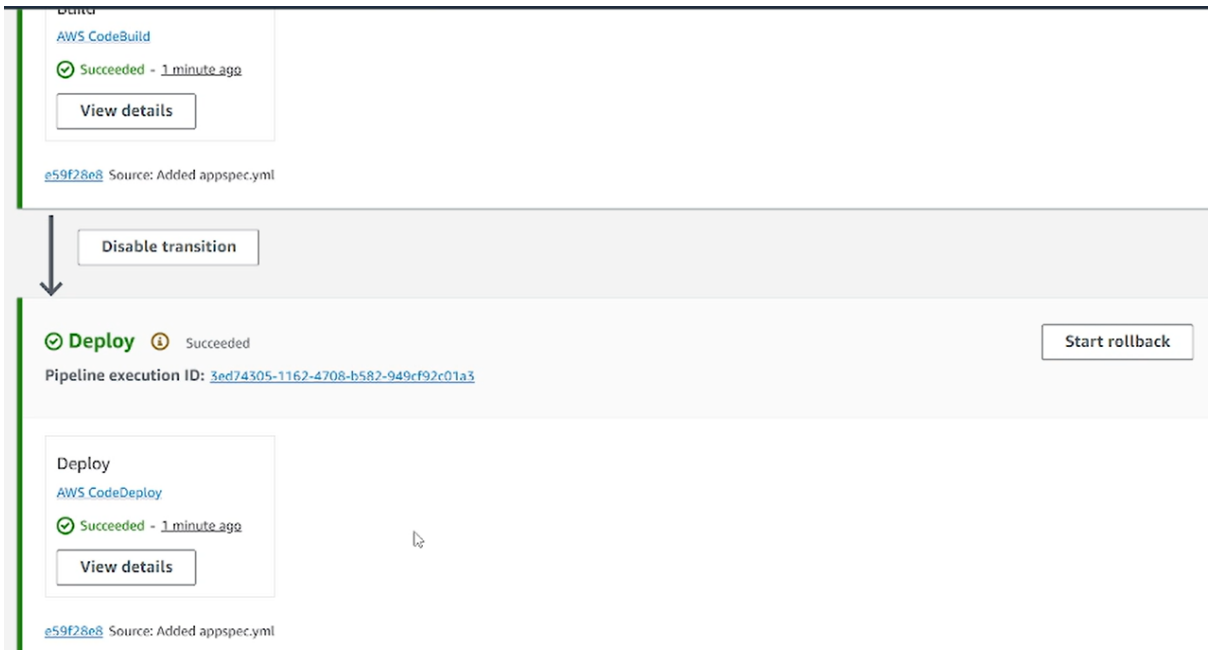
View details

Disable transition

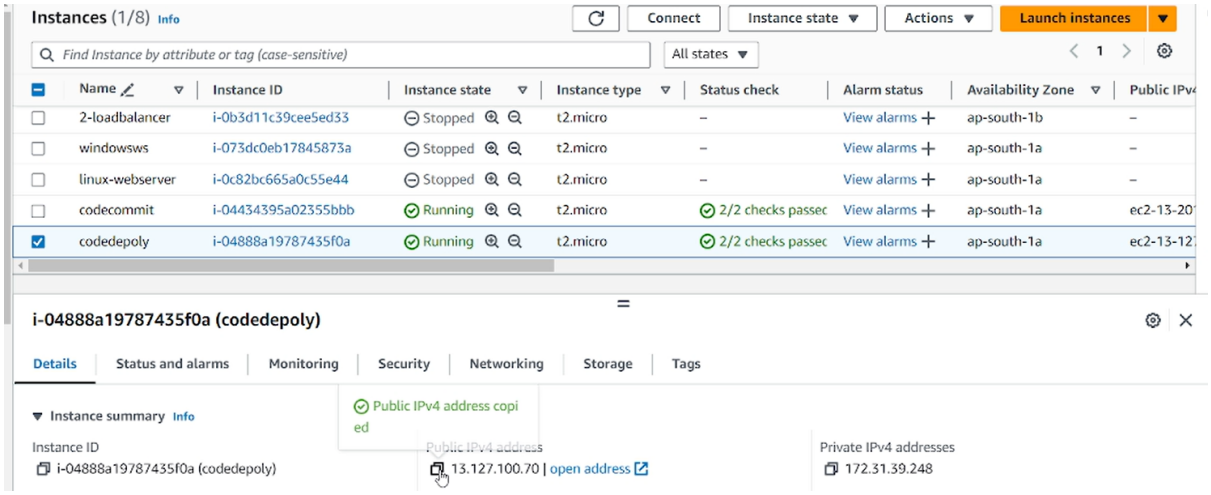
After came to succeeded stage click view details. Where the code come like that all details shown.

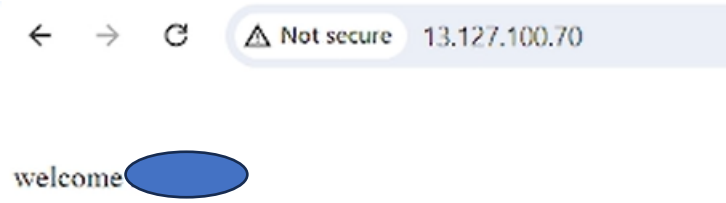


All stages ran

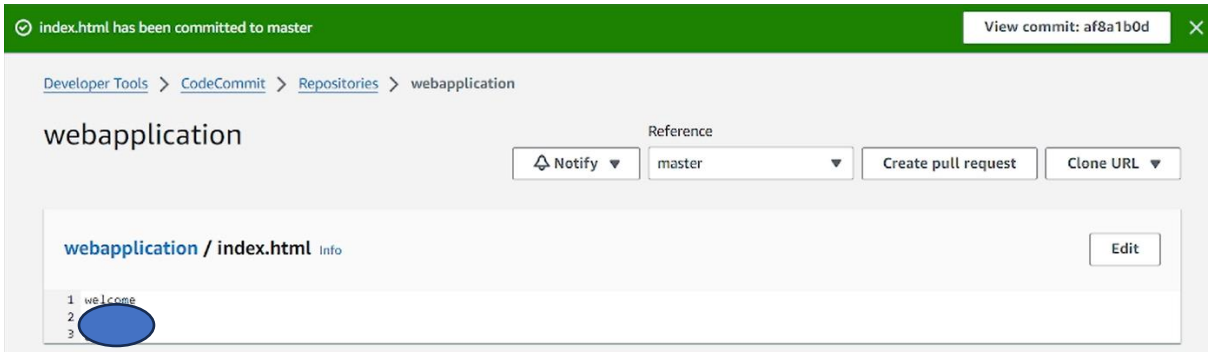
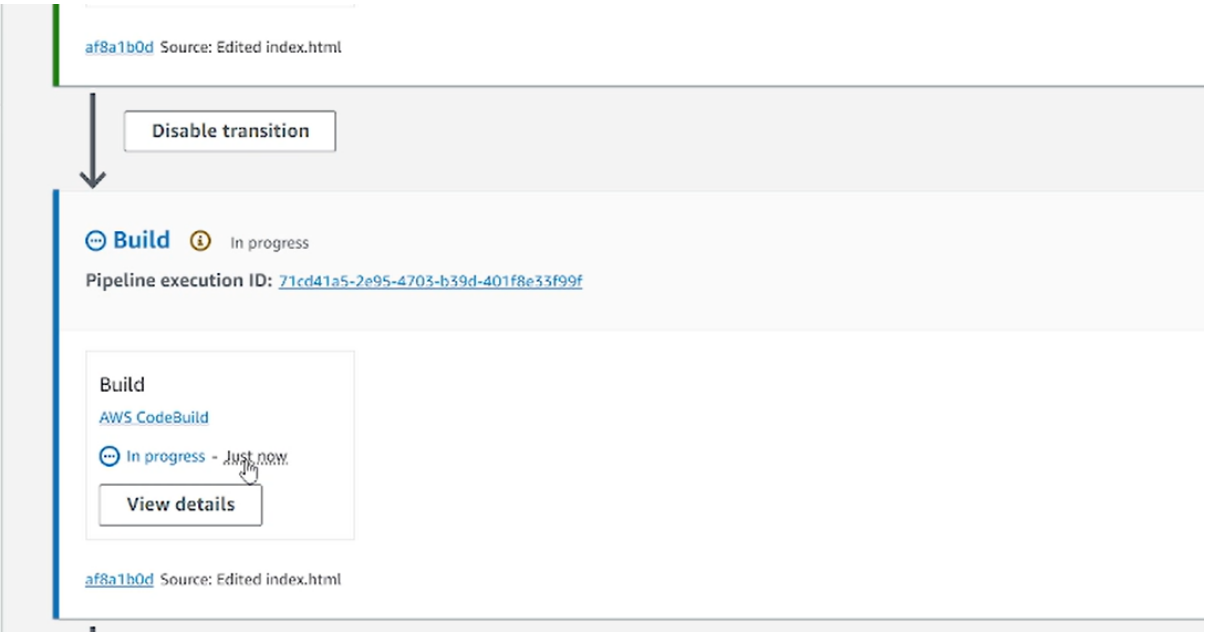
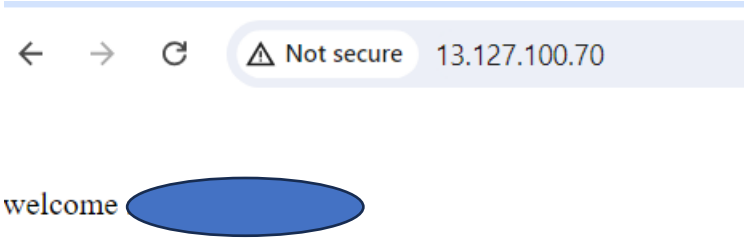


Goto code deploy ec2.open the port no:80..copy the address run in browser.





Goto index.html that content changed. That change automatically updated in browser. Because we automate the process.



Goto that pipeline. That blue line indicates the file is built