Project

Setup a two stages CI/CD pipeline using CodePipeline with build stage to simulate an application.

By

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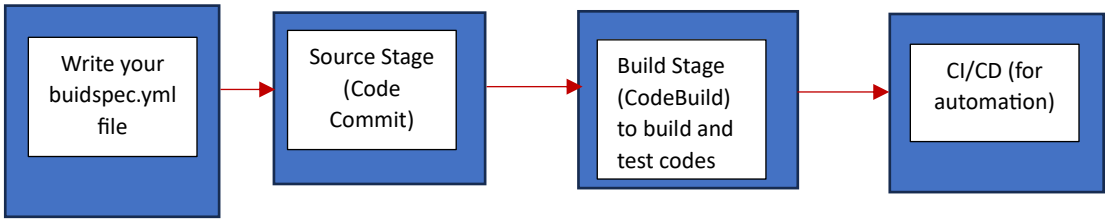
Road Map Schematics of the Project



Firstly, I wrote my buildspec.yml code and saved it as "buildspec.yml". **It is good to note that by default, the buildspec file must be named buildspec.yml and placed in the root of your source directory.**

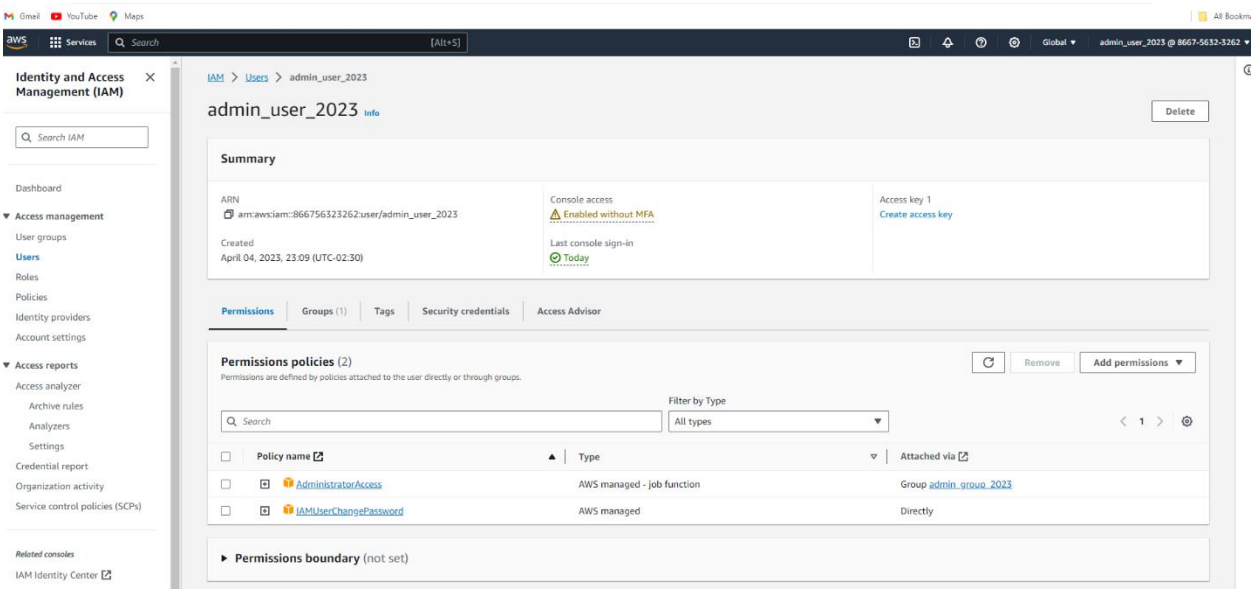
dreAppbuildSpec.yaml > {} phases > {} install > {} pre_build > [ ] commands

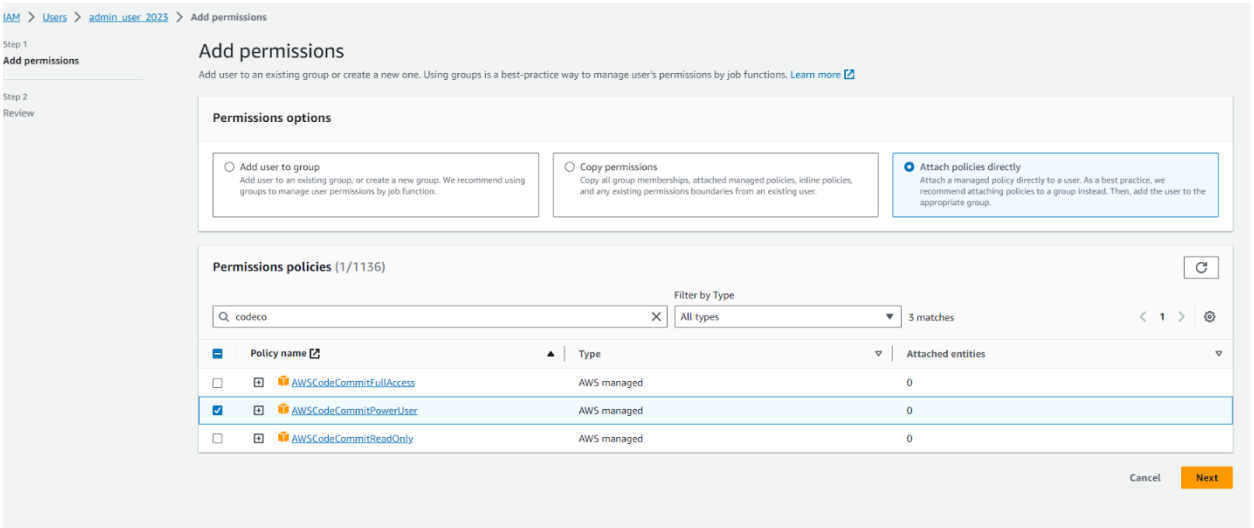
```yaml
version: 0.2

phases:
  install: # describes the app to be installed "Dre-App"
    runtime-versions:
      python: 3.9 # It will install python 3.8
    pre_build: # Checks if all softwares has been installed successfully
      commands:
        - echo "CHECKING IF ALL SOFTWARE HAS BEEN INSTALLLED"
        - python3 --version #checks the version of python installed
    build: # in here, actually runs the command to build your code
      commands:
      - echo "BUILD STARTED AT `date` "
      - pwd
      - echo "Dre-App is being Built"
    post_build: # final stage to check if the code ran successfully
      commands:
      - echo "BUIL Dre-App COMPLETED at `date` "
      - ls -l

artifacts: #these are the files from your source stage you want to produce as outputs
  files:
    - '**/*' # means everything in your source stage
```

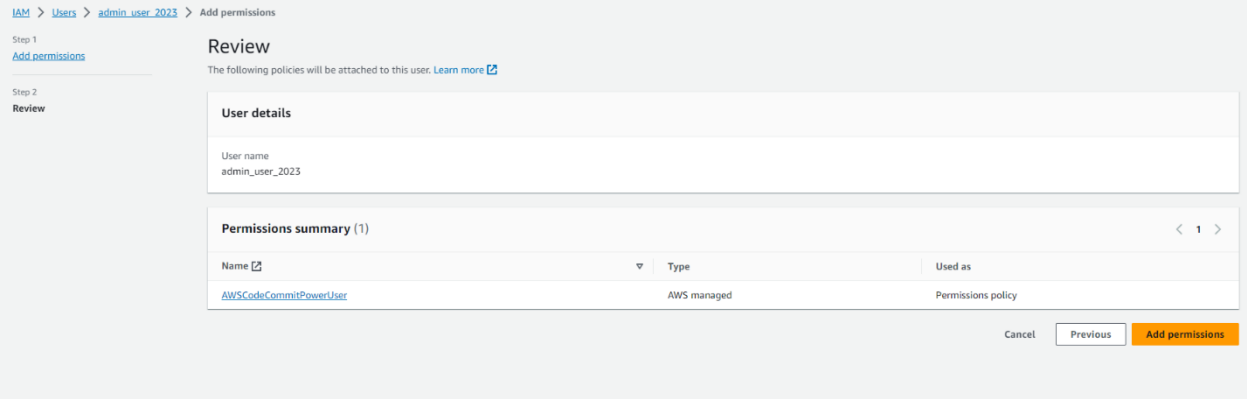
Secondly, for my source code being AWS CodeCommit, I created a repository.

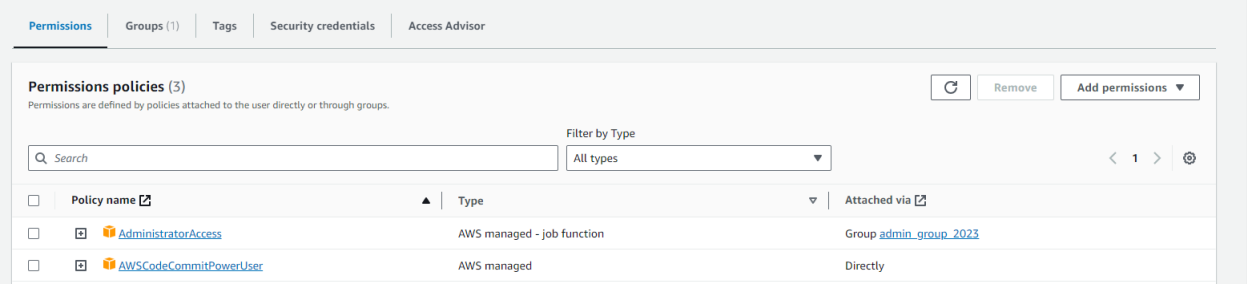
Hint:

- Make sure you have one of the git clients like git installed in your local system.
- Attach an IAM permission “AWSCodeCommitPowerUser” to the user you choose to choose.

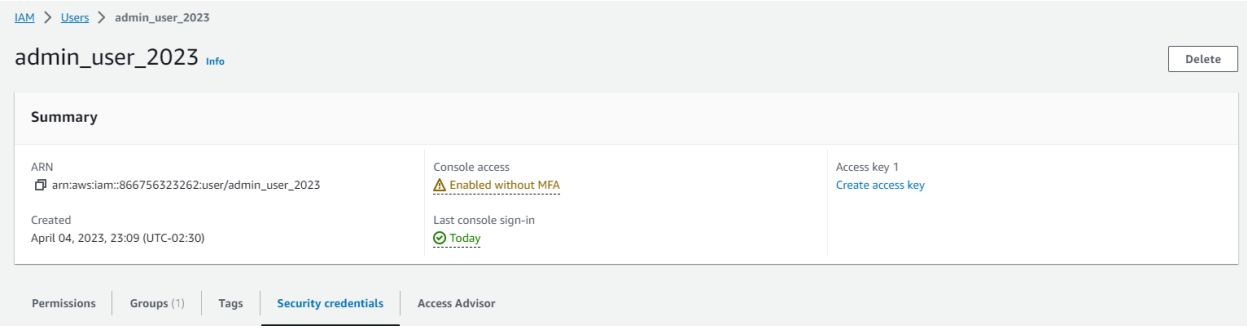


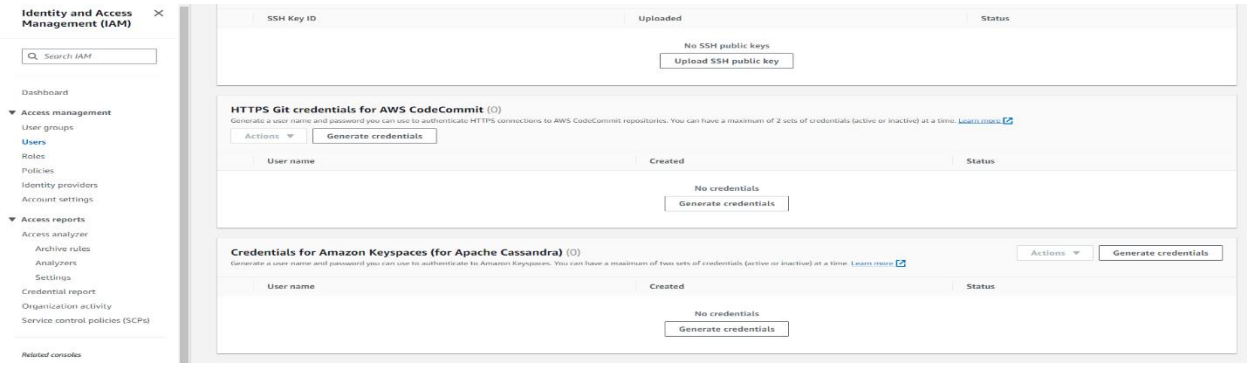


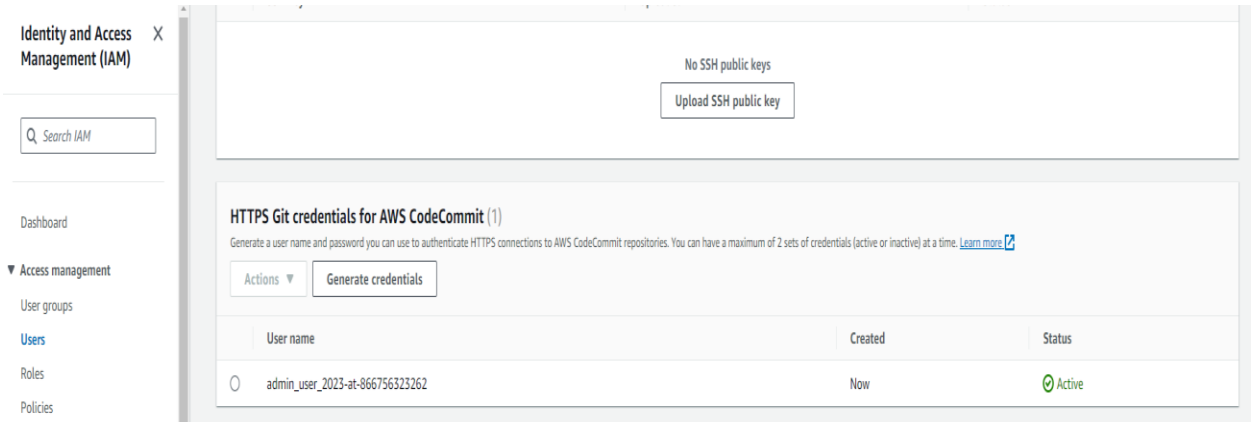




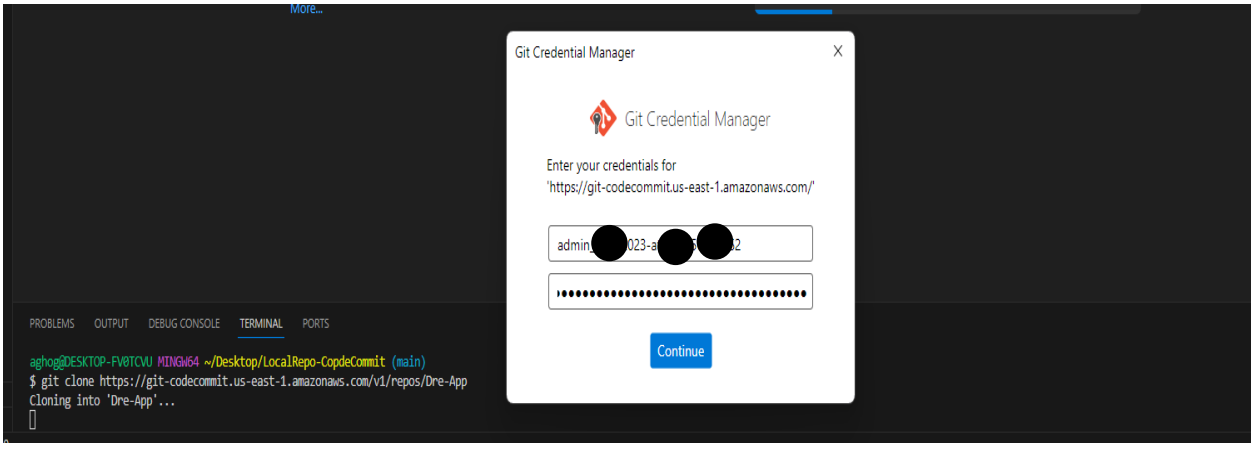
- Get a HTTPS “Git Credentials for ASW CodeCommit” from the security tab of the IAM user.

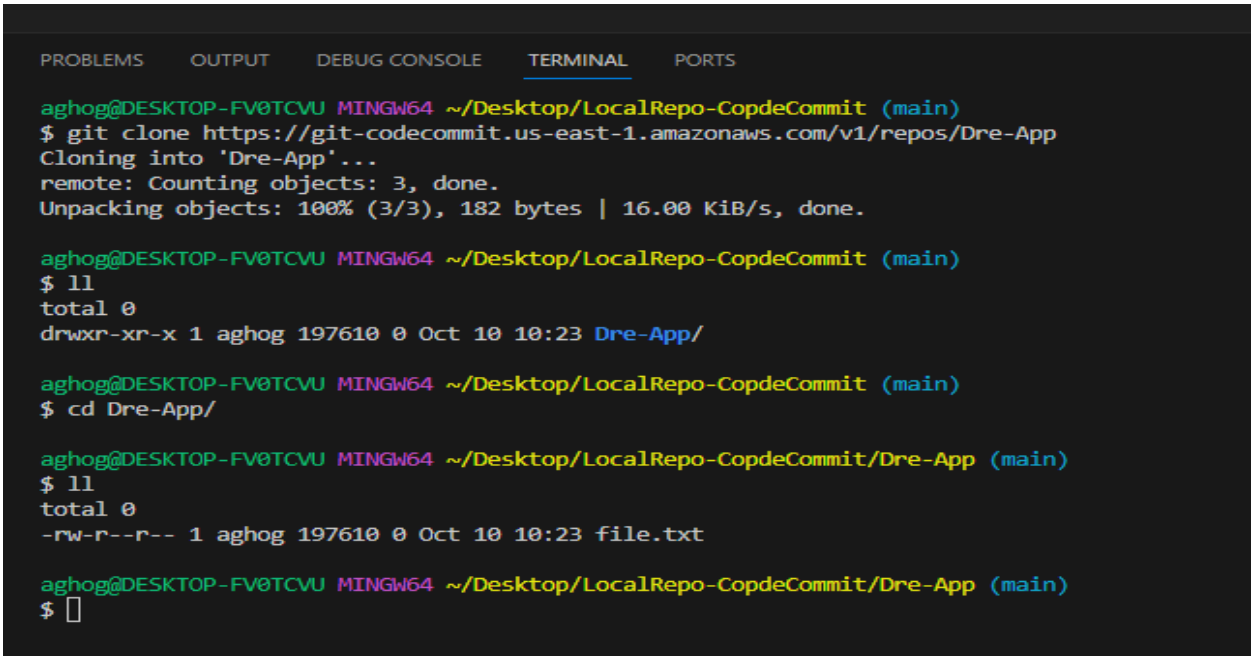




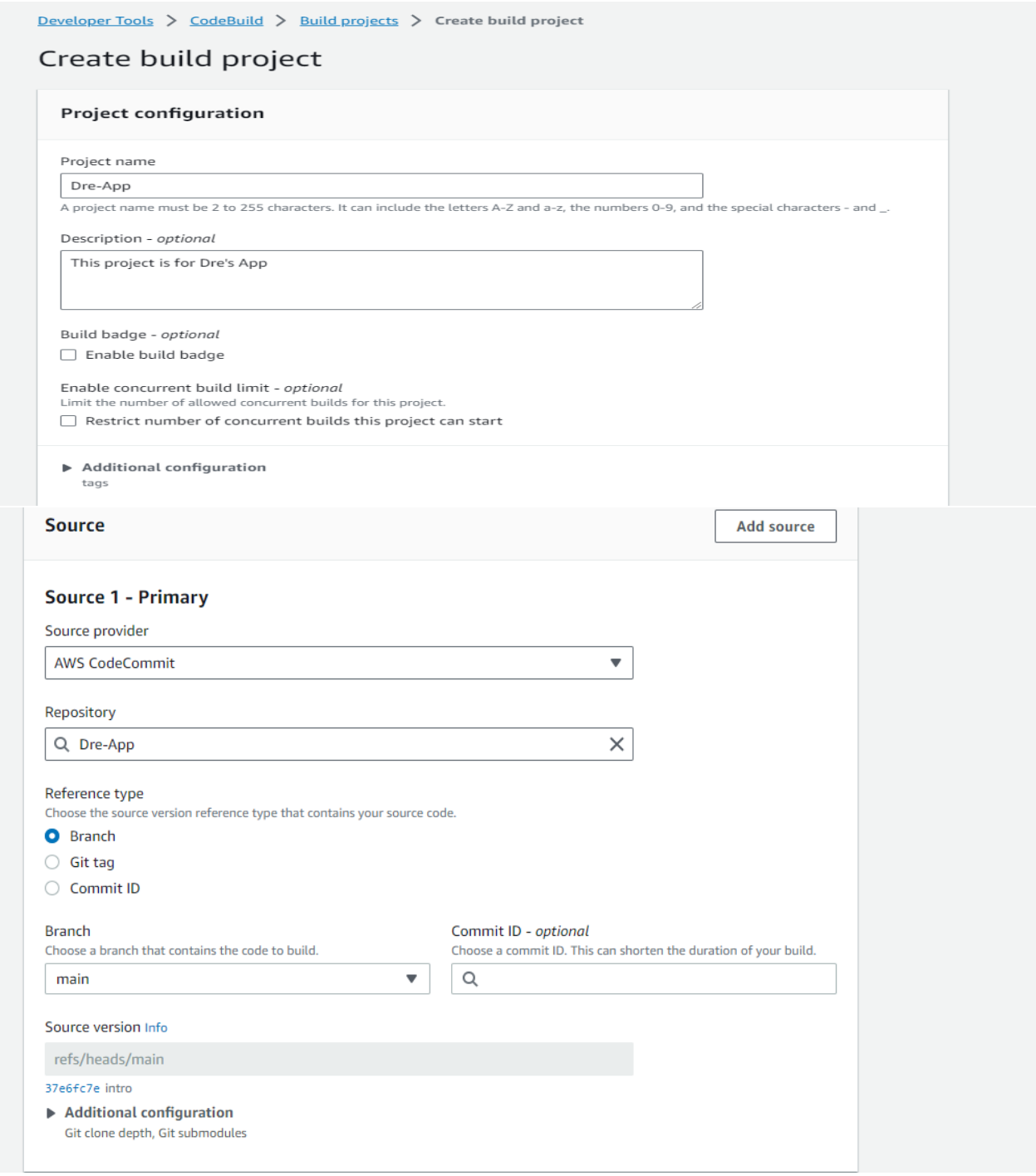


Next, you go ahead and create a codecommit repository and clone the http URL of the repository to a folder in your local computer, using your terminal.





Thirdly, you build your project using **CodeBuild.**



Environment

Environment image

- (•) Managed image
  Use an image managed by AWS CodeBuild
- ( ) Custom image
  Specify a Docker image

Operating system

Amazon Linux

Runtime(s)

Standard

Image

aws/codebuild/amazonlinux2-x86_64-standard:5.0

Image version

Always use the latest image for this runtime version

Environment type

Linux EC2

Privileged

- [ ] Enable this flag if you want to build Docker images or want your builds to get elevated privileges

Service role

- (•) New service role
  Create a service role in your account
- ( ) Existing service role
  Choose an existing service role from your account

Artifacts

Add artifact

Artifact 1 - Primary

Type

No artifacts

You might choose no artifacts if you are running tests or pushing a Docker image to Amazon ECR.

▶ **Additional configuration**
Cache, encryption key

Logs

CloudWatch

- [x] CloudWatch logs - *optional*
  Checking this option will upload build output logs to CloudWatch.

Group name

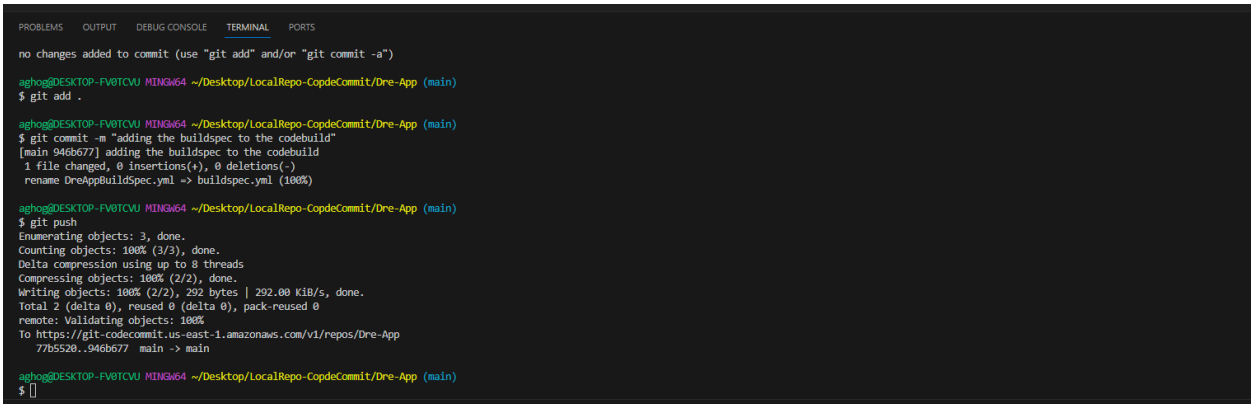
Stream name

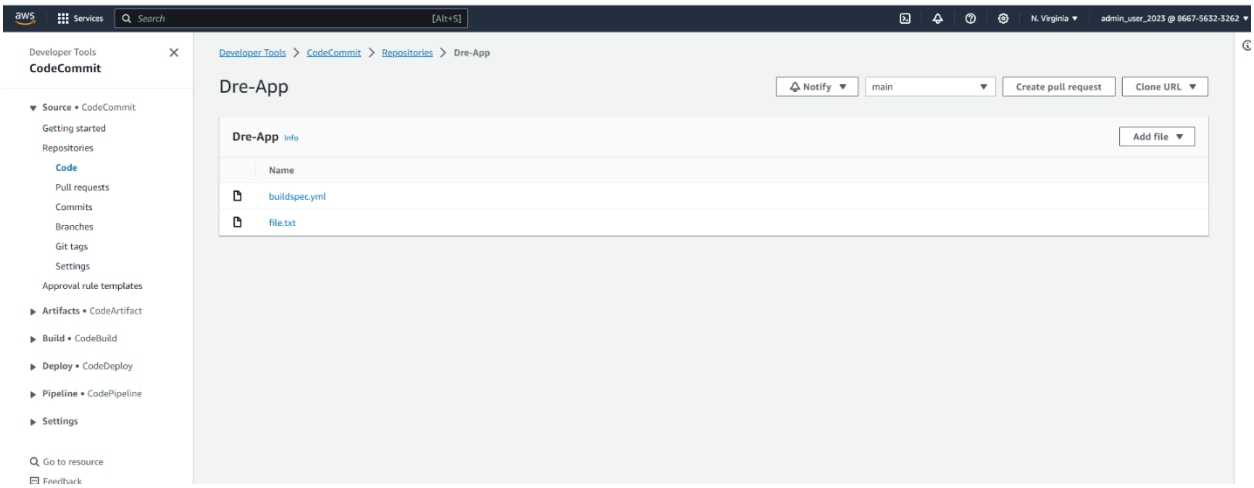
S3

- [ ] S3 logs - *optional*
  Checking this option will upload build output logs to S3.

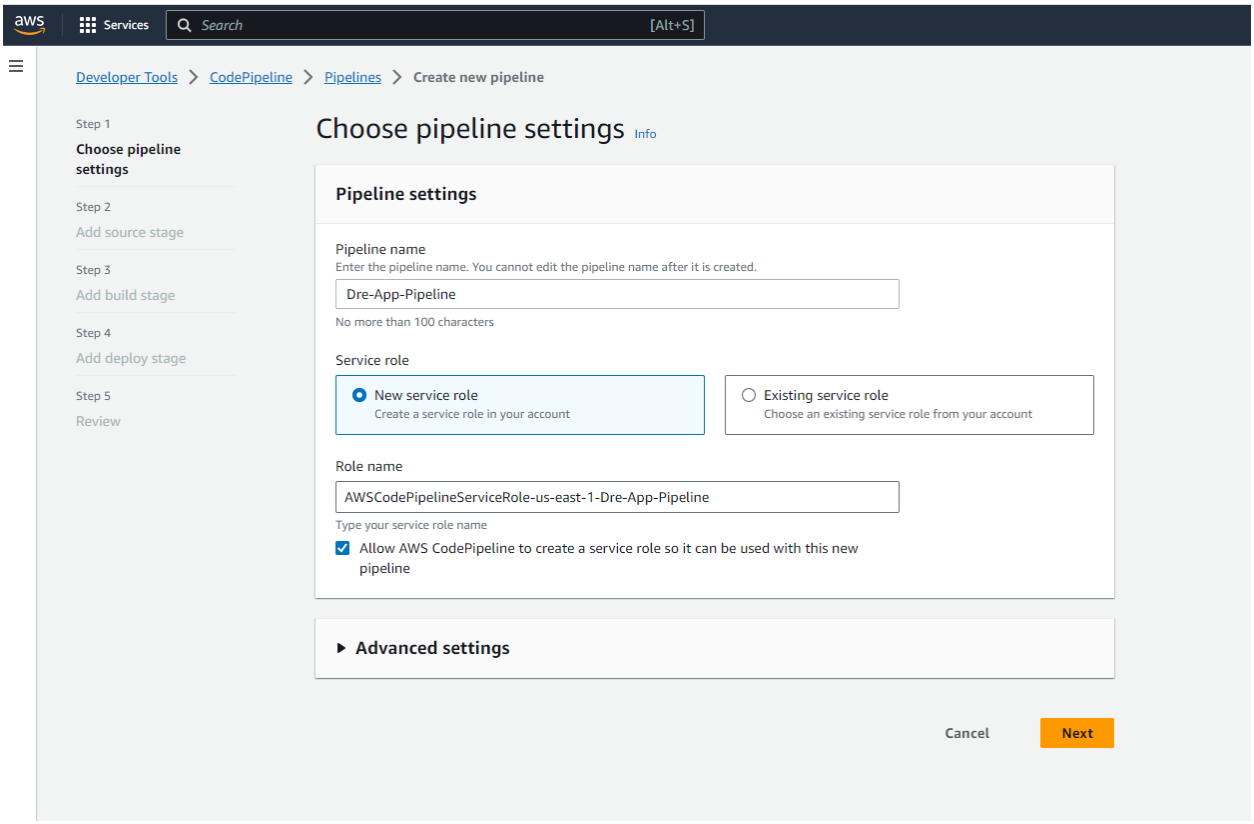
Cancel | **Create build project**

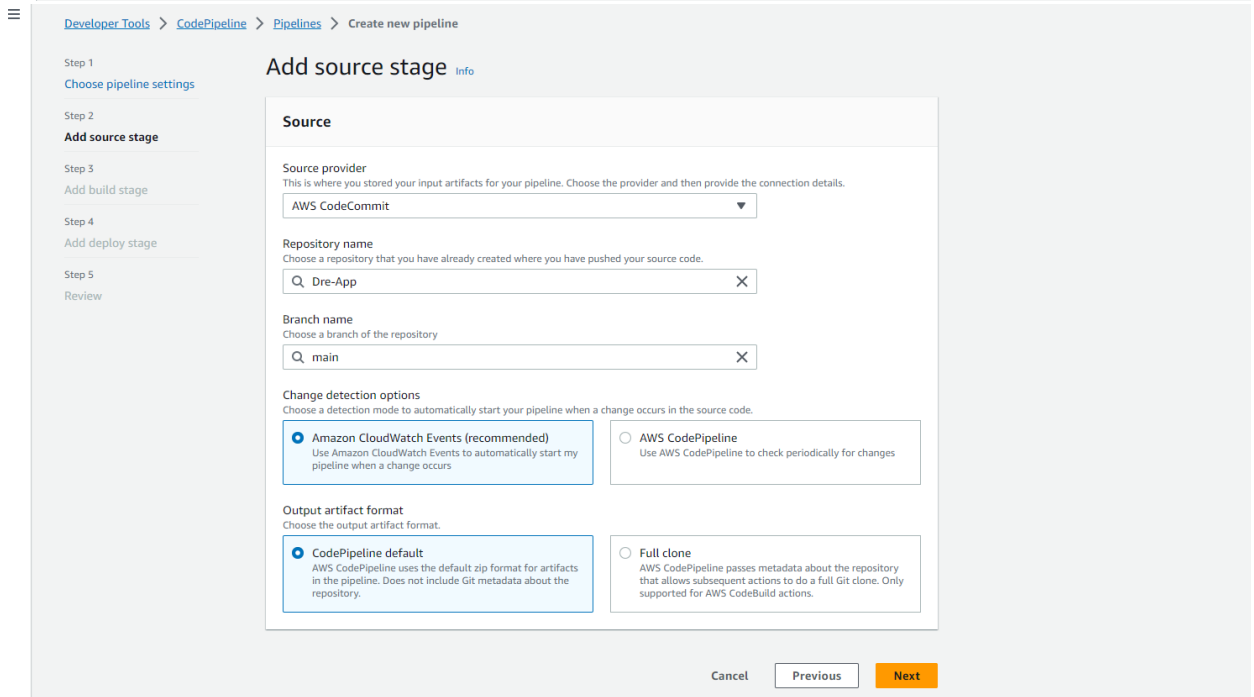
Creating a build project makes your codecommit as a source and creates a docker testing environment (a temporary ec2). After creating your build project, you can push your buildspec.yml file from your git to the codecommit repository.

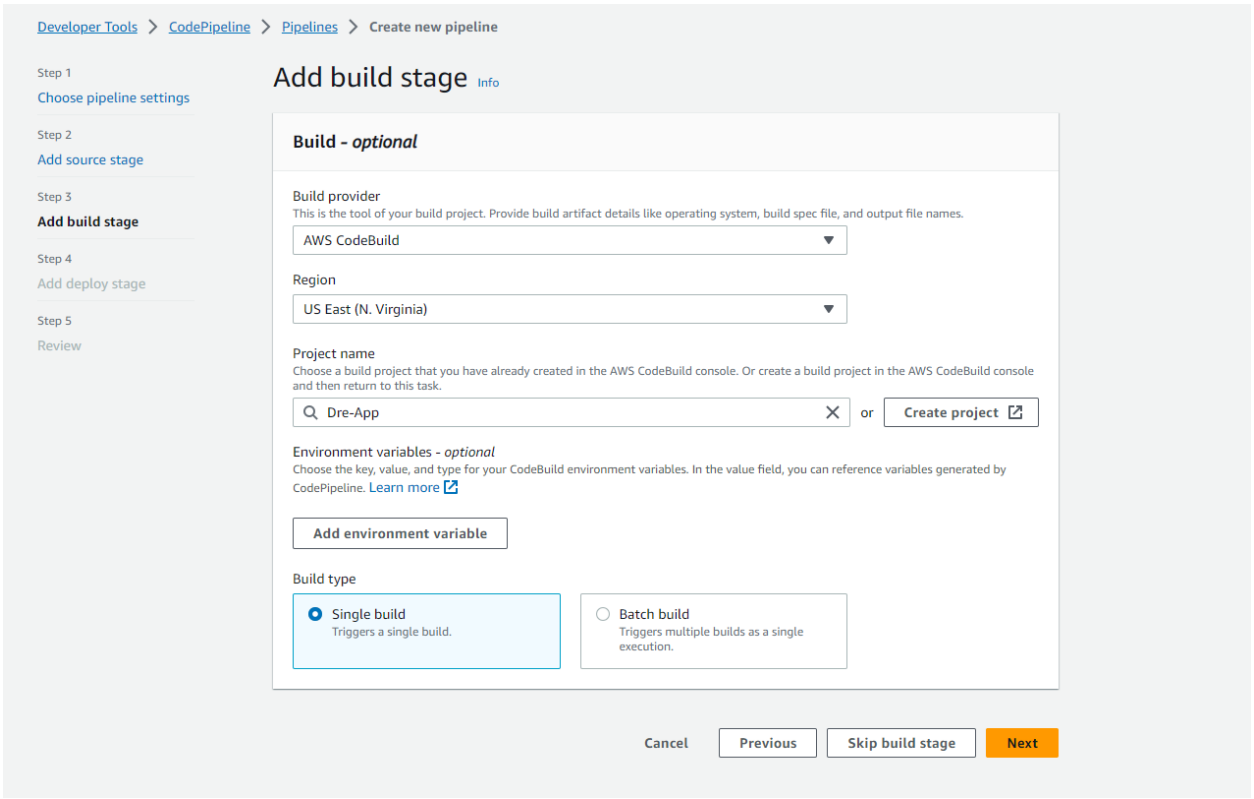


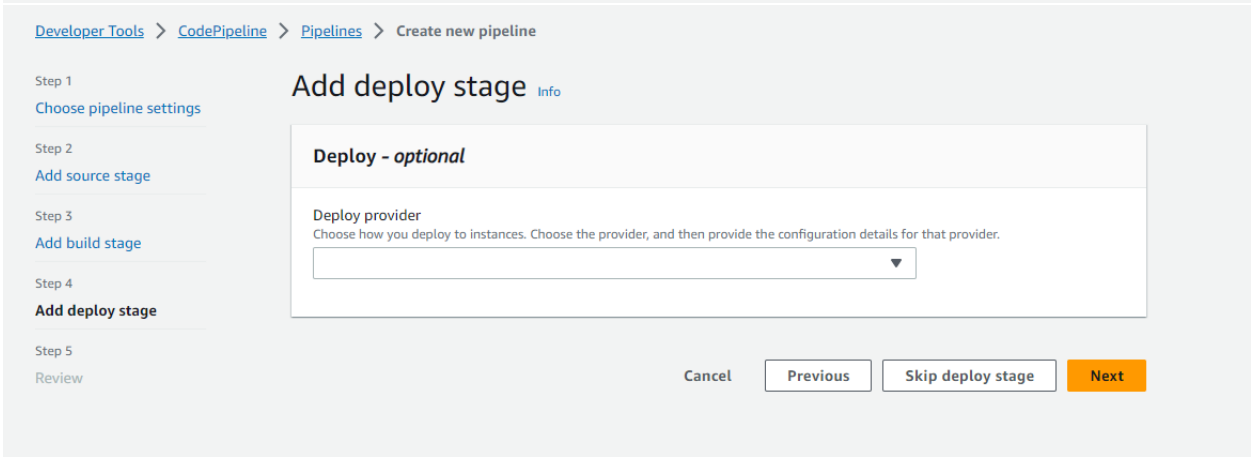


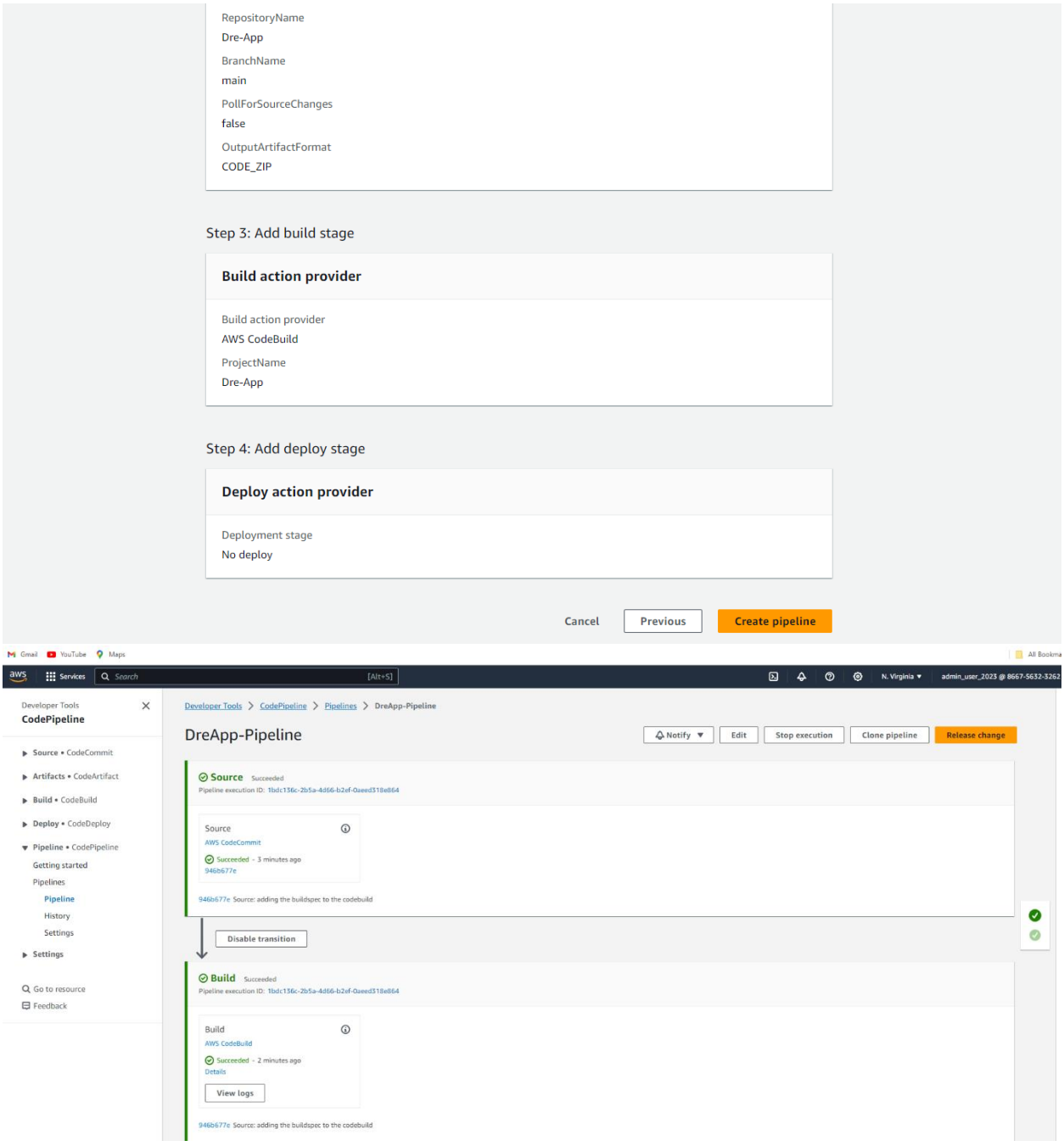
Fourth Step, you build a CI/CD pipeline as an orchestrator for automation of any changes made to your code “buildspec.yml”





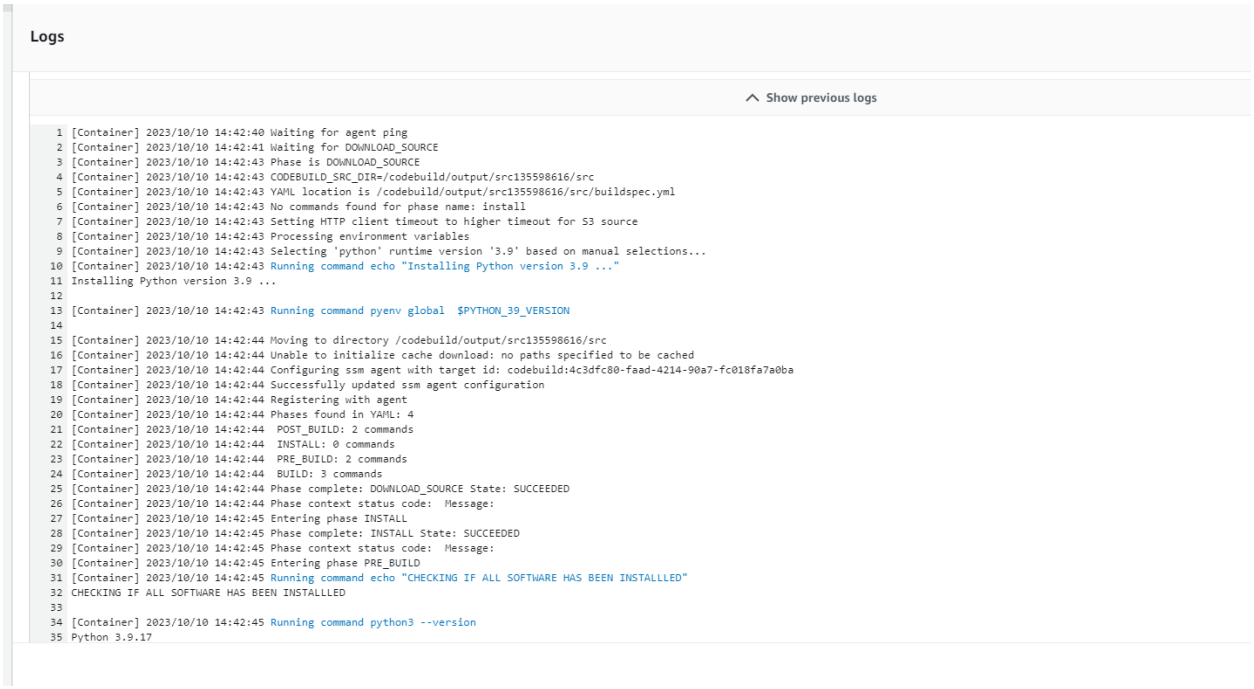

Developer Tools > CodePipeline > Pipelines > Create new pipeline
Step 1
Choose pipeline settings
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Add build stage Info
Build - optional
Build provider
This is the tool of your build project. Provide build artifact details 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.
Dre-App
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


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.
Cancel
Previous
Skip deploy stage
Next



Finally, a two stage CI/CD pipeline is created.

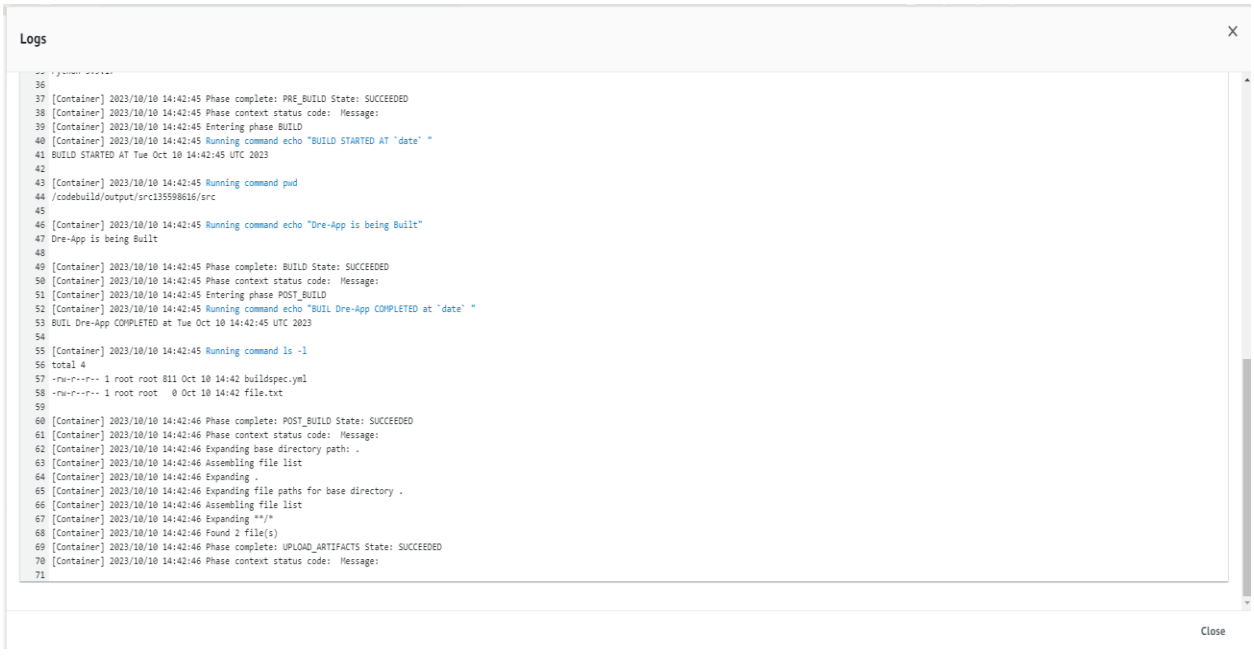
Screenshot of the Build Log.



Logs

Show previous logs

```
[Container] 2023/10/10 14:42:40 Waiting for agent ping
[Container] 2023/10/10 14:42:41 Waiting for DOWNLOAD_SOURCE
[Container] 2023/10/10 14:42:43 Phase is DOWNLOAD_SOURCE
[Container] 2023/10/10 14:42:43 CODEBUILD_SRC_DIR=/codebuild/output/src135598616/src
[Container] 2023/10/10 14:42:43 YAML location is /codebuild/output/src135598616/src/buildspec.yml
[Container] 2023/10/10 14:42:43 No commands found for phase name: install
[Container] 2023/10/10 14:42:43 Setting HTTP client timeout to higher timeout for S3 source
[Container] 2023/10/10 14:42:43 Processing environment variables
[Container] 2023/10/10 14:42:43 Selecting 'python' runtime version '3.9' based on manual selections...
[Container] 2023/10/10 14:42:43 Running command echo "Installing Python version 3.9 ..."
Installing Python version 3.9 ...

[Container] 2023/10/10 14:42:43 Running command pyenv global  $PYTHON_39_VERSION

[Container] 2023/10/10 14:42:44 Moving to directory /codebuild/output/src135598616/src
[Container] 2023/10/10 14:42:44 Unable to initialize cache download: no paths specified to be cached
[Container] 2023/10/10 14:42:44 Configuring ssm agent with target id: codebuild:4c3dfc80-faad-4214-90a7-fc018fa7a0ba
[Container] 2023/10/10 14:42:44 Successfully updated ssm agent configuration
[Container] 2023/10/10 14:42:44 Registering with agent
[Container] 2023/10/10 14:42:44 Phases found in YAML: 4
[Container] 2023/10/10 14:42:44  POST_BUILD: 2 commands
[Container] 2023/10/10 14:42:44  INSTALL: 0 commands
[Container] 2023/10/10 14:42:44  PRE_BUILD: 2 commands
[Container] 2023/10/10 14:42:44  BUILD: 3 commands
[Container] 2023/10/10 14:42:44 Phase complete: DOWNLOAD_SOURCE State: SUCCEEDED
[Container] 2023/10/10 14:42:44 Phase context status code:  Message:
[Container] 2023/10/10 14:42:45 Entering phase INSTALL
[Container] 2023/10/10 14:42:45 Phase complete: INSTALL State: SUCCEEDED
[Container] 2023/10/10 14:42:45 Phase context status code:  Message:
[Container] 2023/10/10 14:42:45 Entering phase PRE_BUILD
[Container] 2023/10/10 14:42:45 Running command echo "CHECKING IF ALL SOFTWARE HAS BEEN INSTALLLED"
CHECKING IF ALL SOFTWARE HAS BEEN INSTALLLED

[Container] 2023/10/10 14:42:45 Running command python3 --version
Python 3.9.17
```



Logs

```
[Container] 2023/10/10 14:42:45 Phase complete: PRE_BUILD State: SUCCEEDED
[Container] 2023/10/10 14:42:45 Phase context status code:  Message:
[Container] 2023/10/10 14:42:45 Entering phase BUILD
[Container] 2023/10/10 14:42:45 Running command echo "BUILD STARTED AT `date` "
BUILD STARTED AT Tue Oct 10 14:42:45 UTC 2023

[Container] 2023/10/10 14:42:45 Running command pwd
/codebuild/output/src135598616/src

[Container] 2023/10/10 14:42:45 Running command echo "Dre-App is being Built"
Dre-App is being Built

[Container] 2023/10/10 14:42:45 Phase complete: BUILD State: SUCCEEDED
[Container] 2023/10/10 14:42:45 Phase context status code:  Message:
[Container] 2023/10/10 14:42:45 Entering phase POST_BUILD
[Container] 2023/10/10 14:42:45 Running command echo "BUIL Dre-App COMPLETED at `date` "
BUIL Dre-App COMPLETED at Tue Oct 10 14:42:45 UTC 2023

[Container] 2023/10/10 14:42:45 Running command ls -l
total 4
-rw-r--r-- 1 root root 811 Oct 10 14:42 buildspec.yml
-rw-r--r-- 1 root root   0 Oct 10 14:42 file.txt

[Container] 2023/10/10 14:42:46 Phase complete: POST_BUILD State: SUCCEEDED
[Container] 2023/10/10 14:42:46 Phase context status code:  Message:
[Container] 2023/10/10 14:42:46 Expanding base directory path: .
[Container] 2023/10/10 14:42:46 Assembling file list
[Container] 2023/10/10 14:42:46 Expanding .
[Container] 2023/10/10 14:42:46 Expanding file paths for base directory .
[Container] 2023/10/10 14:42:46 Assembling file list
[Container] 2023/10/10 14:42:46 Expanding **/*
[Container] 2023/10/10 14:42:46 Found 2 file(s)
[Container] 2023/10/10 14:42:46 Phase complete: UPLOAD_ARTIFACTS State: SUCCEEDED
[Container] 2023/10/10 14:42:46 Phase context status code:  Message:
```

Close