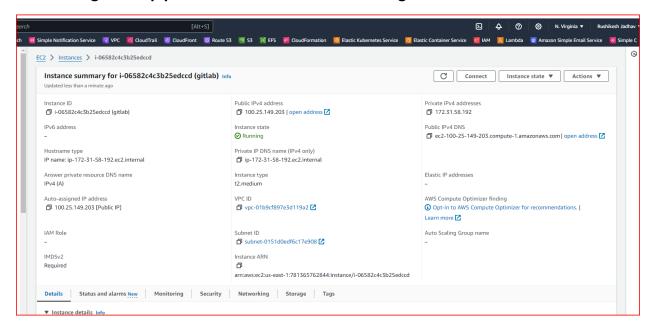
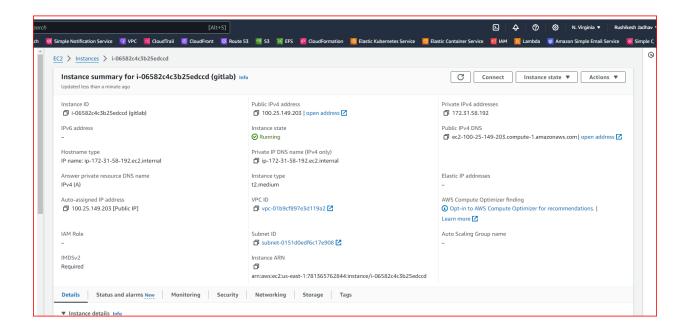
GITLAB POC

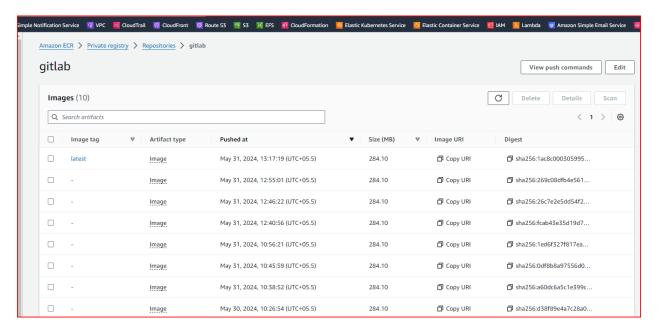
For running Gitlab pipeline we need to do some configurations on AWS



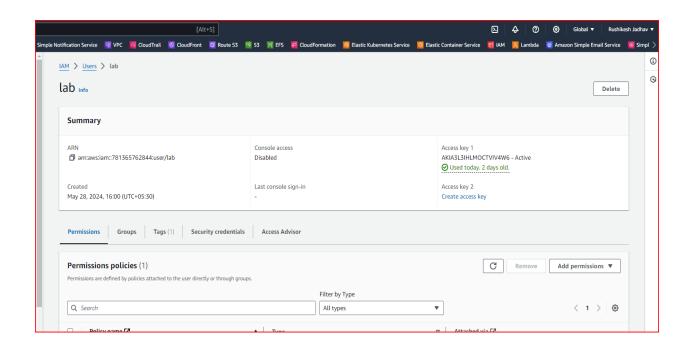
Security group



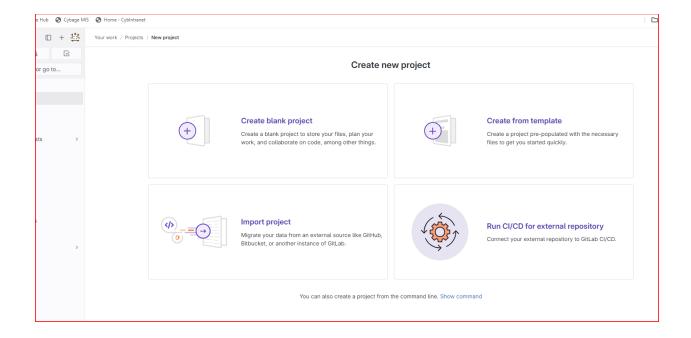
ECR



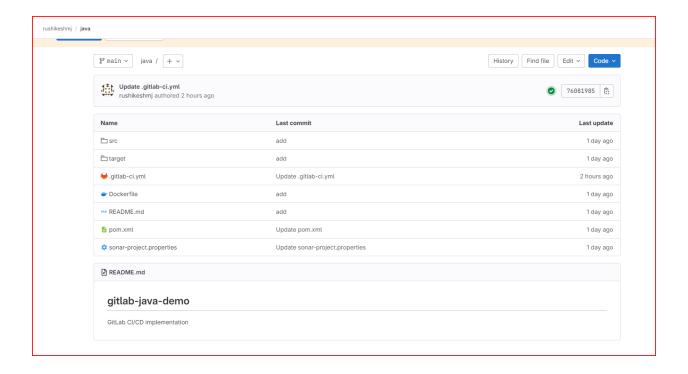
IAM



Import project from GITHUB



After that go to project tab on left side and select your project Create .gitlab-ci.yml file inside the project and start writing yml file.

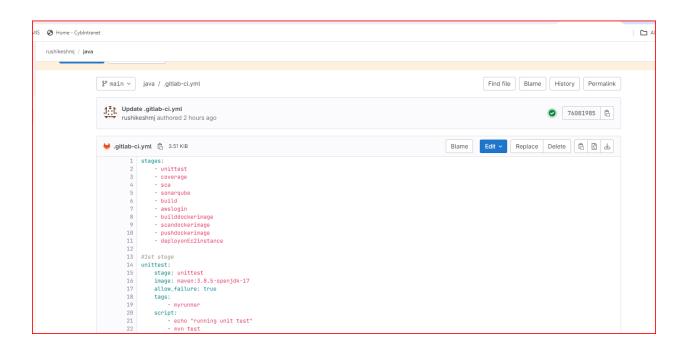


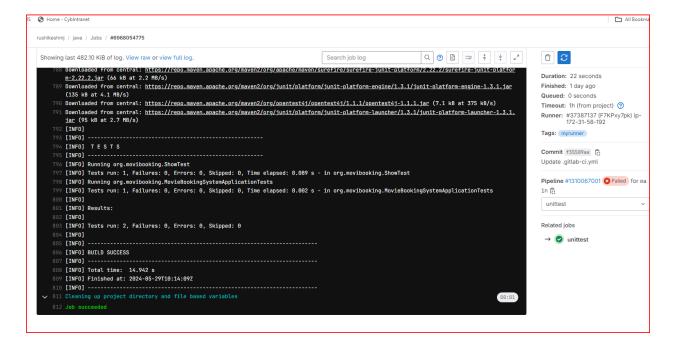
After doing this install some application on EC2 Console

```
sudo apt-get update
sudo apt-get install docker.io
sudo su
sudo curl -L --output /usr/local/bin/gitlab-runner https://gitlab-runner-
downloads.s3.amazonaws.com/latest/binaries/gitlab-runner-linux-amd64
sudo chmod +x /usr/local/bin/gitlab-runner
sudo chmod +x /usr/local/bin/gitlab-runner
sudo useradd --comment 'GitLab Runner' --create-home gitlab-runner --shell /bin/bash
sudo gitlab-runner install --user=gitlab-runner --working-directory=/home/gitlab-runner
sudo gitlab-runner start
sudo gitlab-runner register
sudo vi /etc/gitlab-runner/config.toml
sudo gitlab-runner restart
docker run -d --name sonarcontainer -p 9000:9000 sonarqube
docker ps
docker run -d --name jenkinscontainer -p 8080:8080 jenkins/jenkins
docker ps
sudo apt-get install -y curl unzip
curl "https://awscli.amazonaws.com/awscli-exe-linux-x86 64.zip" -o "awscliv2.zip"
unzip awscliv2.zip
sudo ./aws/install
aws --version
aws configure
aws login
```

1. CI steps for GitLab workflow which includes (Use Self Hosted Runner)

- I. Checkout code to repo
- II. Unit testing



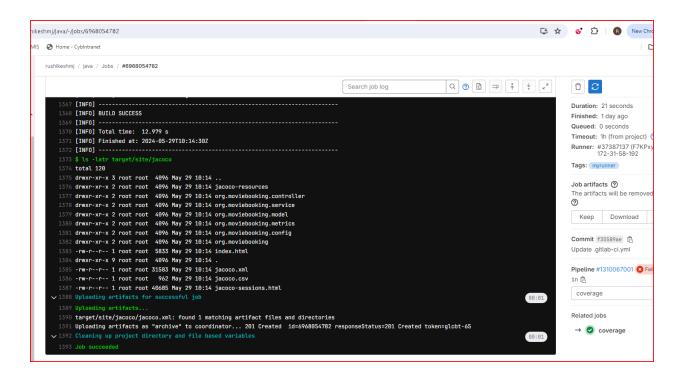


III. code coverage using jacoco

```
nikeshmj/java/-/blob/main/.gitlab-ci.yml?ref_type=heads
                                                                                                                                                                                                     ☆ ☆
                                                                                                                                                                                                                 🚱 🗋 🕟 New Chrome av
    rushikeshmi / java
                           ■ .gittab-ci.yiii t<sub>□</sub> 3.31 kib
                                                                                                                                                 Branne Reprace Detete (0 8 🗷
                                     1 stages:
                                               - unittest
- coverage
                                               - sca
                                              - sonarqube
                                              - build
                                              - scandockerimage
                                   9 - scand
10 - pushd
11 - deplo
12
13 #1st stage
14 unittest:
15 stage:
16 image:
17 allow_f
                                               - nushdockeriman
                                               stage: unittest
image: maven:3.8.5-openjdk-17
allow_failure: true
                                    18
19
20
21
                                               tags:
                                                 - echo "running unit test"
- mvn test
                                         coverage:
stage: coverage
                                               image: maven:3.8.5-openidk-17

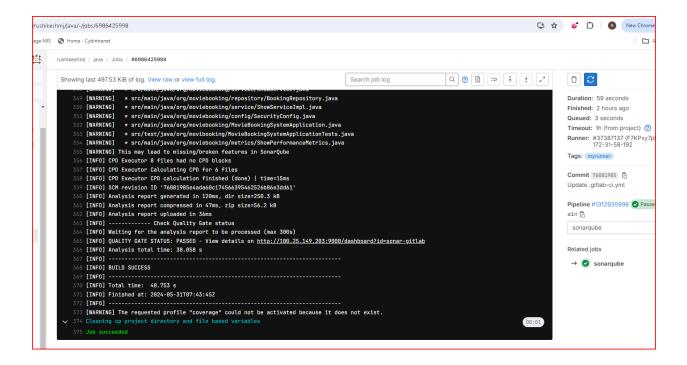
    mvn clean jacoco:prepare-agent test jacoco:report -B
    ls -latr target/site/jacoco

                                                   paths:
                                                           target/site/jacoco/jacoco.xml
```



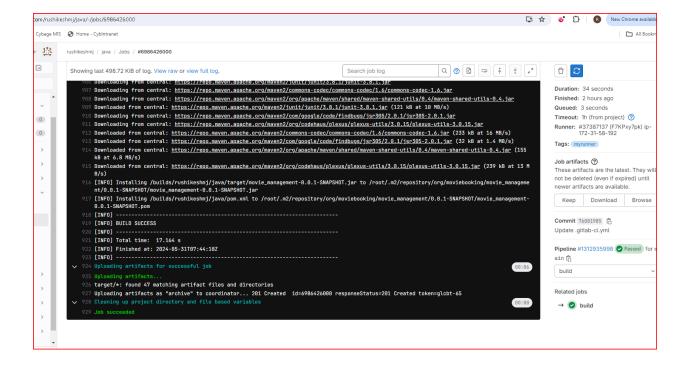
IV. SCA using SonarQubes along with quality gates

```
hikeshmj/java/-/blob/main/.gitlab-ci.yml?ref_type=heads
                                                                                                                                                  rushikeshmj / java
                                   - deployonEc2instance
                                   stage: unittest
                                  image: maven:3.8.5-openjdk-17
allow_failure: true
tags:
- myrunner
                                  script:
                           21 - ec
22 - mv
23 #2nd stage
                                     - echo "running unit test"
- mvn test
                           24 coverage:
                                   stage: coverage
image: maven:3.8.5-openjdk-17
                                   tags:
                                        myrunner
                                   artifacts:
                                     36 #3rd stage
                                   stage: sonarqube
image: maven:3.8.5-openjdk-17
                                   tags:
- myrunner
dependencies:
                                        coverage
                                   script:
                                        mwn sonar:sonar -Pcoverage -Dsonar.projectKey=sonar-gitlab -Dsonar.organization=sonar-gitlab -Dsonar.host.url=$SONAR_HOST_URL -Dsonar.lo
```



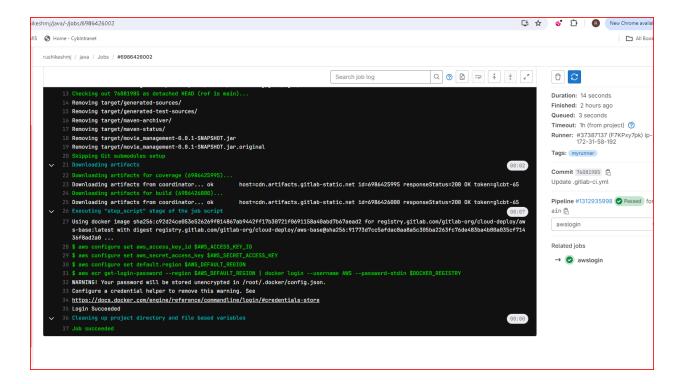
V. Build and package JAR

```
rushikeshmj/java/-/blob/main/.gitlab-ci.yml?ref_type=heads
                                                                                                                                                               ☐ ☆ S D B New Ch
age MIS S Home - Cybintranet
      rushikeshmj / java
                                            - ls -latr target/site/jacoco
                                        artifacts:
                                           36 #3rd stage
37 sonarqube:
                                        stage: sonarqube
                                        image: maven:3.8.5-openjdk-17
0
                                       dependencies:
                                       - coverage
script:
- mvn sonar:sonar -Pcoverage -Dsonar.projectKey=sonar-gitlab -Dsonar.organization=sonar-gitlab -Dsonar.host.url=$SONAR_HOST_URL -Dsonar.lo
0
                               49 build:
                                        stage: build
                                        image: maven:3.8.5-openjdk-17
tags:
                                             - myrunner
                                        script:
- mvn clean install -DskipTests
                                          when: always
name: "SpringBoot Report"
                                           paths:
                                           - target/*
expire_in: 30 days
```



VI. Configuration of AWS

```
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ushikeshmj/java/-/blob/main/.gitlab-ci.yml?ref_type=heads
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                                                                                                                                                                                                                                                       rushikeshmj / java
                                                   dependencies:
- coverage
                                       42
43
44
45
                                                   script:
                                                         - mvn sonar:sonar -Pcoverage -Dsonar.projectKey=sonar-gitlab -Dsonar.organization=sonar-gitlab -Dsonar.host.url=$SONAR_HOST_URL -Dsonar.lo
                                       48
49 build:
50 sta
51 ima
52 tag
53
54 scr
                                                   stage: build
image: maven:3.8.5-openjdk-17
                                                   tags:
                                                          myrunner
                                                  script:
- mvn clean install -DskipTests
                                                 artifacts:
when: always
name: "SpringBoot Report"
paths:
- target/*
expire_in: 30 days
                                        68 awslogin:
                                                    image: registry.gitlab.com/gitlab-org/cloud-deploy/aws-base:latest
                                                   tags:
                                                        - aws configure set aws_access_key_id $AWS_ACCESS_KEY_ID - aws configure set aws_secret_access_key $AWS_SECRET_ACCESS_KEY - aws configure set default.region $AWS_DEFAULT_REGION
                                                          - aws ecr get-login-password --region $AWS_DEFAULT_REGION | docker login --username AWS --password-stdin $DOCKER_REGISTRY
```



VII. builddockerimage

```
🖒 🗴 💰 🗋 🔞 New Chrome avail
rushikeshmj/java/-/blob/main/.gitlab-ci.yml?ref_type=heads
age MIS 🔇 Home - CybIntranet
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         rushikeshmj / java
                                                52
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                                                              tags:
                                                                      - myrunner
                                                              script:
- mvn clean install -DskipTests
                                                              artifacts:
                                                               artifacts:
when: always
name: "SpringBoot Report"
paths:
- target/*
expire_in: 30 days
                                                64
65
66
67
68
8 wwwlogin:
69
11 tags:
72 -m
73 before.
74 -a
75 -a
76 -a
77 script:
78 -a
79
81
82 wilddocker
83 stage:
84 tags:
85 -m
                                                              before_script:
- aws configure set aws_access_key_id $AWS_ACCESS_KEY_ID
- aws configure set aws_secret_access_key $AWS_SECRET_ACCESS_KEY
- aws configure set default_region $AWS_DEFAULT_REGION
script:
- aws ecr get-login-password --region $AWS_DEFAULT_REGION | docker login --username AWS --password-stdin $DOCKER_REGISTRY
                                                       builddockerimage:
stage: builddockerimage
tags:
- myrunner
```

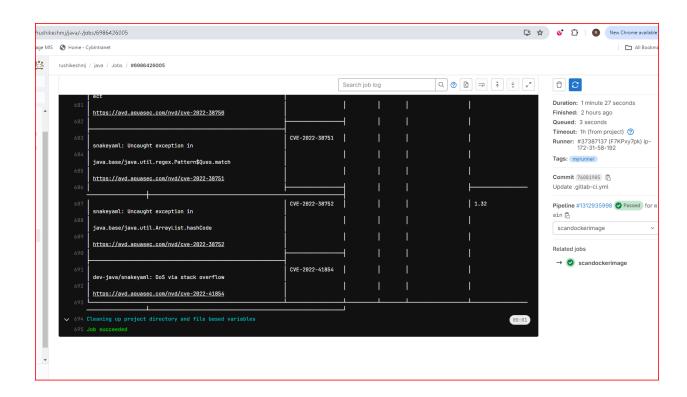
```
/rushikeshmj/java/-/blob/main/.gitlab-ci.yml?ref_type=heads
                                                                                                                                                                                                                  age MIS 🚯 Home - Cybintranet
                                                                                                                                                                                                                                                             All Bo
        rushikeshmj / java
                                         - myrunner
script:
- mvn clean install -DskipTests
                                                    artifacts:
  when: always
  name: "SpringBoot Report"
  paths:
    - target/*
  expire_in: 30 days
                                                     stage: awslogin
image: registry.gitlab.com/gitlab-org/cloud-deploy/aws-base:latest
tags:
- myrunner
                                                    before_script:
                                                    - aws configure set aws_access_key_id $AWS_ACCESS_KEY_ID
- aws configure set aws_secret_access_key $AWS_SECRET_ACCESS_KEY
- aws configure set default.region $AWS_DEFAULT_REGION
script:
                                                            - aws ecr get-login-password --region $AWS_DEFAULT_REGION | docker login --username AWS --password-stdin $DOCKER_REGISTRY
                                                builddockerimage:
                                                     stage: builddockerimage
tags:
                                                     image: docker:latest
services:
    - docker:dind
                                                     script:
                                                            - docker build -t $DOCKER REGISTRY/$APP NAME:latest
```

VIII. scandockerimage

```
□ ☆ S | R | New Chrome available
 /rushikeshmj/java/-/blob/main/.gitlab-ci.yml?ref_type=heads
    ge MIS 🔞 Home - CybIntranet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               All Book
111
                           rushikeshmj / java
                                                                                                                                 8 awslogin:
69 stage: awslogin
78 image: registry.gitlab.ci
71 tags:
72 - myrunner
73 before.script:
74 - aws configure set i
75 - aws configure set i
76 - aws configure set i
77 script:
78 - aws ecr get-login-i
80 #6th stage
10 builddockerimage:
81 stage: builddockerimage
82 tags:
83 stage: builddockerimage
84 tags:
85 - myrunner
86 image: docker:latest
                                                                                                                                                                         togun:
stage: awslogin
image: registry.gitlab.com/gitlab-org/cloud-deploy/aws-base:latest
tags:
- myrunner

    aws configure set aws_access_key_id $AWS_ACCESS_KEY_ID
    aws configure set aws_secret_access_key $AWS_SECRET_ACCESS_KEY
    aws configure set default.region $AWS_DEFAULT_REGION

 0
                                                                                                                                                                                           - aws ecr get-login-password --region $AWS_DEFAULT_REGION | docker login --username AWS --password-stdin $DOCKER_REGISTRY
 0
                                                                                                                                    85 - m
86 image: 0
87 service:
88 - d
89 script:
90 - d
91
92 #7th stage
                                                                                                                                                                          image: docker:latest
                                                                                                                                                                         services:
                                                                                                                                                                                                docker:dind
                                                                                                                                                                      script:
- docker build -t $DOCKER_REGISTRY/$APP_NAME:latest .
                                                                                                                                    93
94 scandockerimage:
95 stage: scando
96 image: regist
97 tags:
98 - myrunne
99 script:
                                                                                                                                                                         NOUNCEPTUREY:
stage: scandockerimage
image: registry.gitlab.com/gitlab-org/cloud-deploy/aws-base:latest
tags:
- myrunner
                                                                                                                                                                                 cript:
- apt install -y curl
- curl -sft https://row.githubusercontent.com/aquasecurity/trivy/main/contrib/install.sh | sh -s -- -b /usr/local/bin v0.51.1
- trivy image $00CKER_REGISTRY/$APP_NAME:$00CKER_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_IMAGE_
```

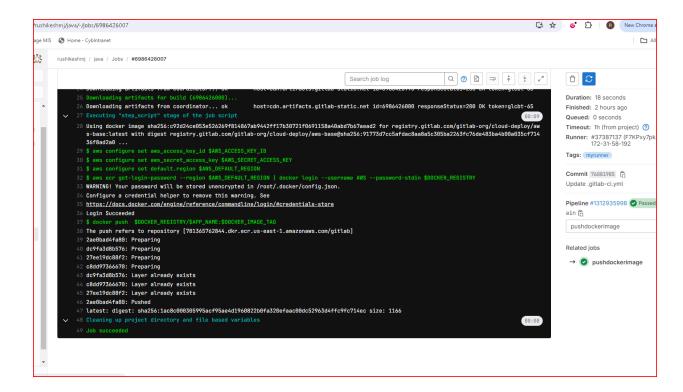


IX. pushdockerimage

```
m/rushikeshmj/java/-/blob/main/.gitlab-ci.yml?ref_type=heads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ☐ New Chrome avail
  bage MIS 🐧 Home - Cybintranet
  111
                         rushikeshmj / java
                                                                                                                          79
80 #6th stage
81
82 builddockerimage:
                                                                                                                     ### builddockerimage:
### stage: buildd
### tags:
### tags:
### tags:
### docker
### stage
### stage:
### stage
### tags:
### docker
                                                                                                                                                 stage: builddockerimage
  0
                                                                                                                                                                            - docker build -t $DOCKER_REGISTRY/$APP_NAME:latest .
  0
                                                                                                                                                       stage: scandockerimage
image: registry.gitlab.com/gitlab-org/cloud-deploy/aws-base:latest
                                                                                                                                                   stage: pushdockerimage
image: registry.gitlab.com/gitlab-org/cloud-deploy/aws-base:latest
                                                                                                                       108
109
                                                                                                                                                       before_scripture set aws_access_key_id $AWS_ACCESS_KEY_ID

- aws configure set aws_access_key $AWS_SECRET_ACCESS_KEY

- aws configure set default.region $AWS_DEFAULT_REGION
                                                                                                                       115
116
117
118
                                                                                                                                                        script:
                                                                                                                                                                       - ams ecr get-login-password --region $AWS_DEFAULT_REGION | docker login --username AWS --password-stdin $DOCKER_REGISTRY - docker push $DOCKER_REGISTRY/$APP_NAME:$DOCKER_INAGE_TAG
```



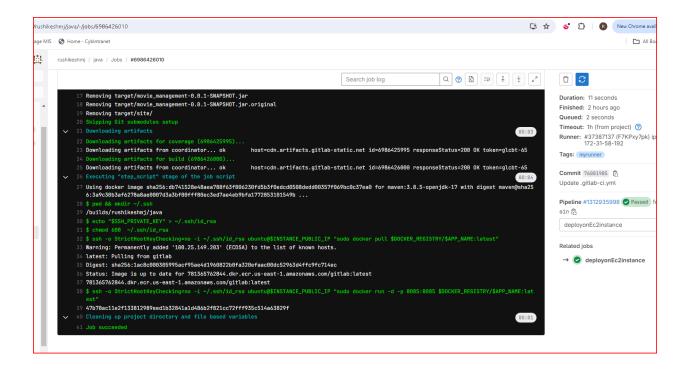
2. CD steps includes

1. Deploy application on EC2 using SSH Private Key

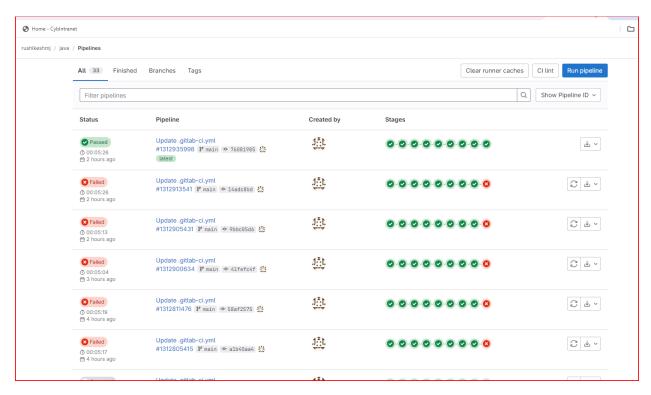
```
ushikeshmj/java/-/blob/main/.gitlab-ci.yml?ref_type=heads
                                                                                                                                                                                                          ge MIS 🚱 Home - Cybintranet
                                                                                                                                                                                                                                                   rushikeshmj / java
                                             scandocкerimage:
stage: scandockerimage
                                                  image: registry.gitlab.com/gitlab-org/cloud-deploy/aws-base:latest
                                                  tags:
                                                       curl -sft https://raw.githubusercontent.com/aquasecurity/trivy/main/contrib/install.sh | sh -s -- -b /usr/local/bin v0.51.1 - trivy image $00CKER_REGISTRY/$APP_NAME:$00CKER_IMAGE_TAG
                                      101
                                      103
104 #8th stage
                                      106 pushdockerimage:
107 stage: pushdo
108 image: regist
109 tags:
                                                  stage: pushdockerimage image: registry.gitlab.com/gitlab-org/cloud-deploy/aws-base:latest
                                                         - myrunner
                                                 before_script:
- aws configure set aws_access_key_id $AWS_ACCESS_KEY_ID
- aws configure set aws_secret_access_key $AWS_SECRET_ACCESS_KEY
                                                         aws configure set default.region $AWS_DEFAULT_REGION
                                      115
116
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121
122
                                                     - aws ecr get-login-password --region $AWS_DEFAULT_REGION | docker login --username AWS --password-stdin $DOCKER_REGISTRY - docker push $DOCKER_REGISTRY\$APP_NAME:\$DOCKER_IMAGE_TAG
                                             deployonEc2instance:
                                                 stage: deployonEc2instance
tags:
- myrunner
                                      123
124
125
126
                                                  before_script:
                                                     - pwd && mkdir ~/.ssh

- echo "$SSH_PRIVATE_KEY" > ~/.ssh/id_rsa

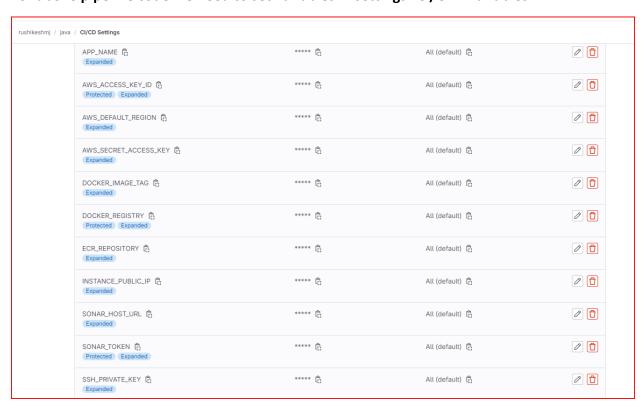
- chmod 600 ~/.ssh/id_rsa
                                                  script:
                                                        .
- ssh -o StrictHostKevChecking=no -i ~/.ssh/id_rsa ubuntu@$INSTANCE_PUBLIC_IP "sudo docker pull $DOCKER_REGISTRY/$APP_NAME:latest"
                                                       - ssh -o StrictHostKeyChecking=no -i ~/.ssh/id_rsa ubuntu@$INSTANCE_PUBLIC_IP "sudo docker run -d -p 8085:8085 $DOCKER_REGISTRY/$APP_NAME:
```



Complete pipeline



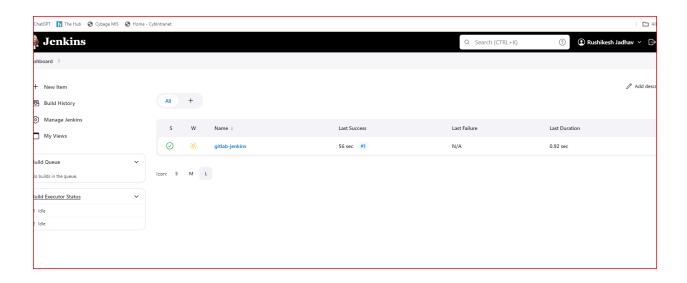
For above pipeline code we need to set variables in settings--CI/CD-- variables



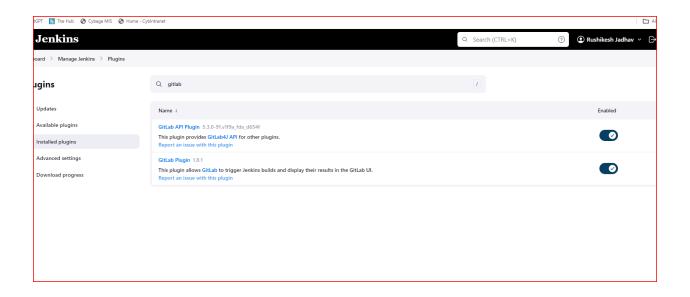
3. Integration of tools

Jenkins GitLab Integration using same GitLab Repo

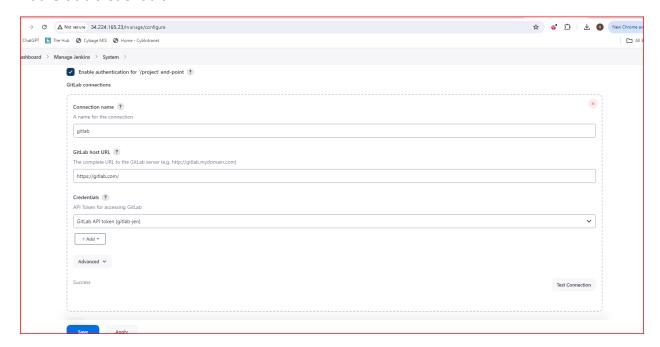
Create Job



Download plugins of gitlab



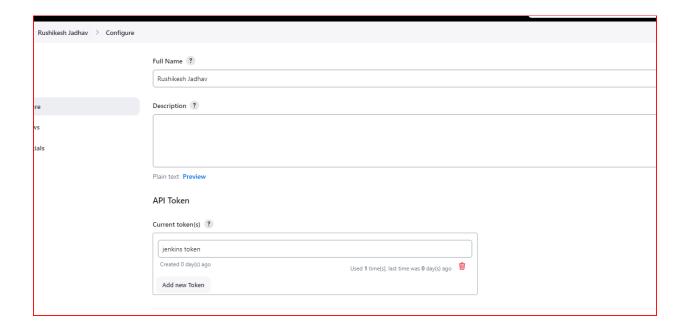
Add Gitlab credentials



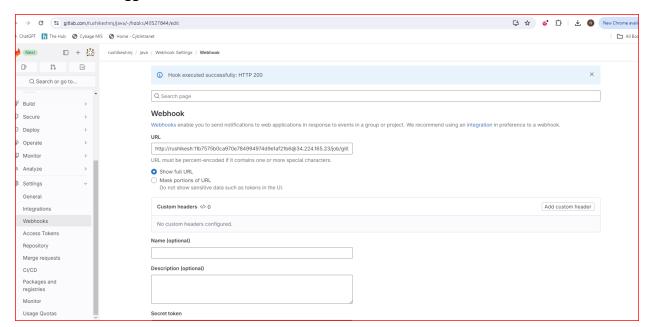
We can see added credentials here



API Token from Jenkins to access webhook



GitLab events trigger webhooks



Console output

