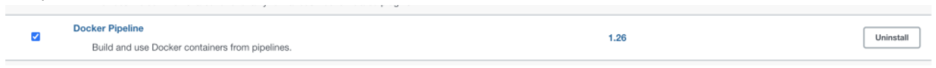
NAGP DevOps ASSIGNMENT

Plugin Info

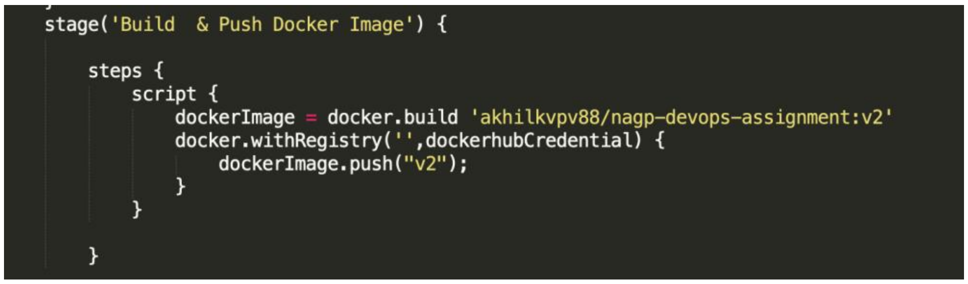
Following Plugins were installed in Jenkins as part of this assignment:

1. **Docker Pipeline:** I am using this plugin to login to my dockerhub account, build the docker image and push the same to dockerhub.



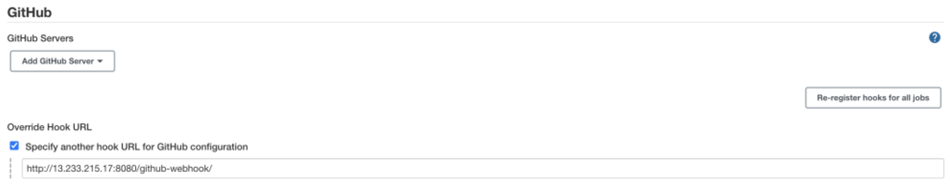
Docker Pipeline
Build and use Docker containers from pipelines.
1.26

With this plugin in place, the following syntax can be used to login, build, and push the docker images.



```
stage('Build  & Push Docker Image') {

    steps {
        script {
            dockerImage = docker.build 'akhilkvpv88/nagp-devops-assignment:v2'
            docker.withRegistry('',dockerhubCredential) {
                dockerImage.push("v2");
            }
        }

    }
```

2. **Github:** Though this plugin came pre-installed when I installed Jenkins, but the same is being used for integrating Github with Jenkins.



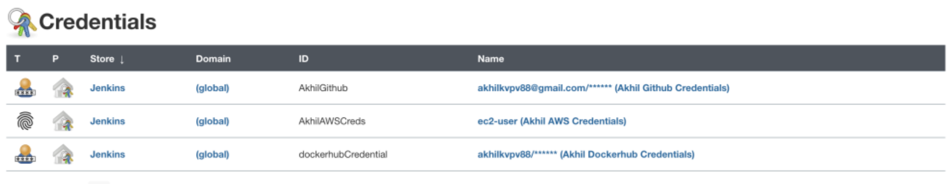
GitHub
GitHub Servers

Override Hook URL
☑ Specify another hook URL for GitHub configuration
http://13.233.215.17:8080/github-webhook/

Credentials

Following credentials were configured in Jenkins as part of this assignment:

1. **GitHub Credentials:** These are configured so that Jenkins build can checkout the project from the GitHub repository and build it.
2. **AWS Credentials:** The AWS credentials are configured because I am using AWS EC2 instance as one of the Jenkins Agent.
3. **Docker Hub Credentials:** Docker Hub credentials are used to push the image to my Docker Hub account.

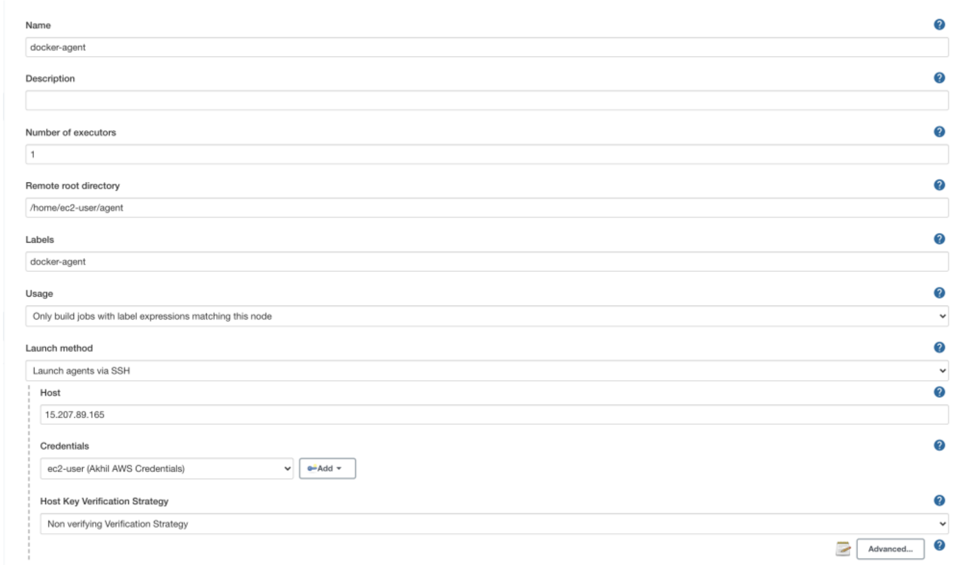


Credentials

T	P	Store ↓	Domain	ID	Name
		Jenkins	(global)	AkhilGithub	akhilkvpv88@gmail.com/****** (Akhil Github Credentials)
		Jenkins	(global)	AkhilAWSCreds	ec2-user (Akhil AWS Credentials)
		Jenkins	(global)	dockerhubCredential	akhilkvpv88/****** (Akhil Dockerhub Credentials)

Docker Agent

I have used an EC2 instance as one of the docker agents. Below is the screenshot of how I have configured the same:



Name
docker-agent

Description

Number of executors
1

Remote root directory
/home/ec2-user/agent

Labels
docker-agent

Usage
Only build jobs with label expressions matching this node

Launch method
Launch agents via SSH

Host
15.207.89.165

Credentials
ec2-user (Akhil AWS Credentials)

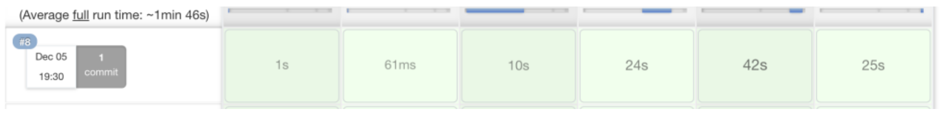
Host Key Verification Strategy
Non verifying Verification Strategy

Jenkins Pipeline

The Jenkins Pipeline that I have created contains following steps:

- Build
- Test
- Package
- Build & Push Docker Image

Below is the snapshot of one of the successful builds.



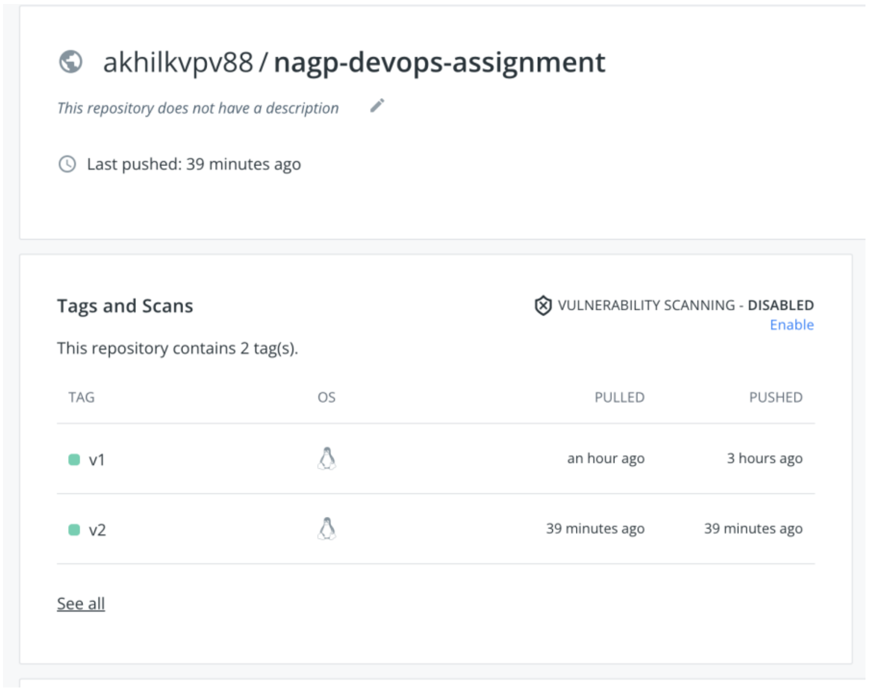
(Average full run time: ~1min 46s)

#8 Dec 05 19:30 1 commit

1s	61ms	10s	24s	42s	25s

Docker

Below is a snapshot of docker image pushed by Jenkins pipeline.



akhilkvpv88 / **nagp-devops-assignment**

This repository does not have a description

Last pushed: 39 minutes ago

Tags and Scans

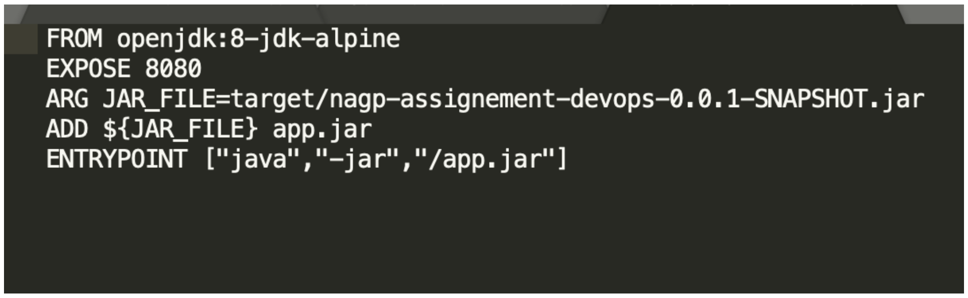
VULNERABILITY SCANNING - **DISABLED**
Enable

This repository contains 2 tag(s).

TAG	OS	PULLED	PUSHED
v1		an hour ago	3 hours ago
v2		39 minutes ago	39 minutes ago

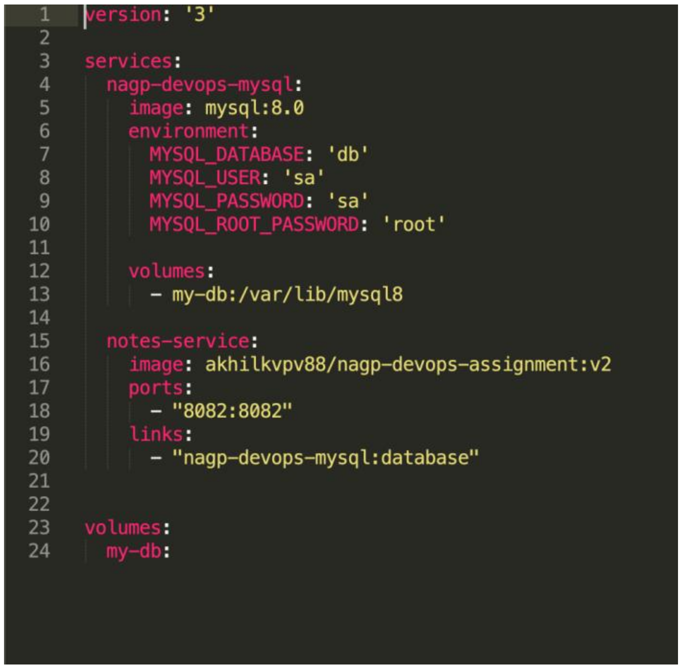
See all

Also, here is the snapshot of the **Dockerfile**



```
FROM openjdk:8-jdk-alpine
EXPOSE 8080
ARG JAR_FILE=target/nagp-assignement-devops-0.0.1-SNAPSHOT.jar
ADD ${JAR_FILE} app.jar
ENTRYPOINT ["java","-jar","/app.jar"]
```

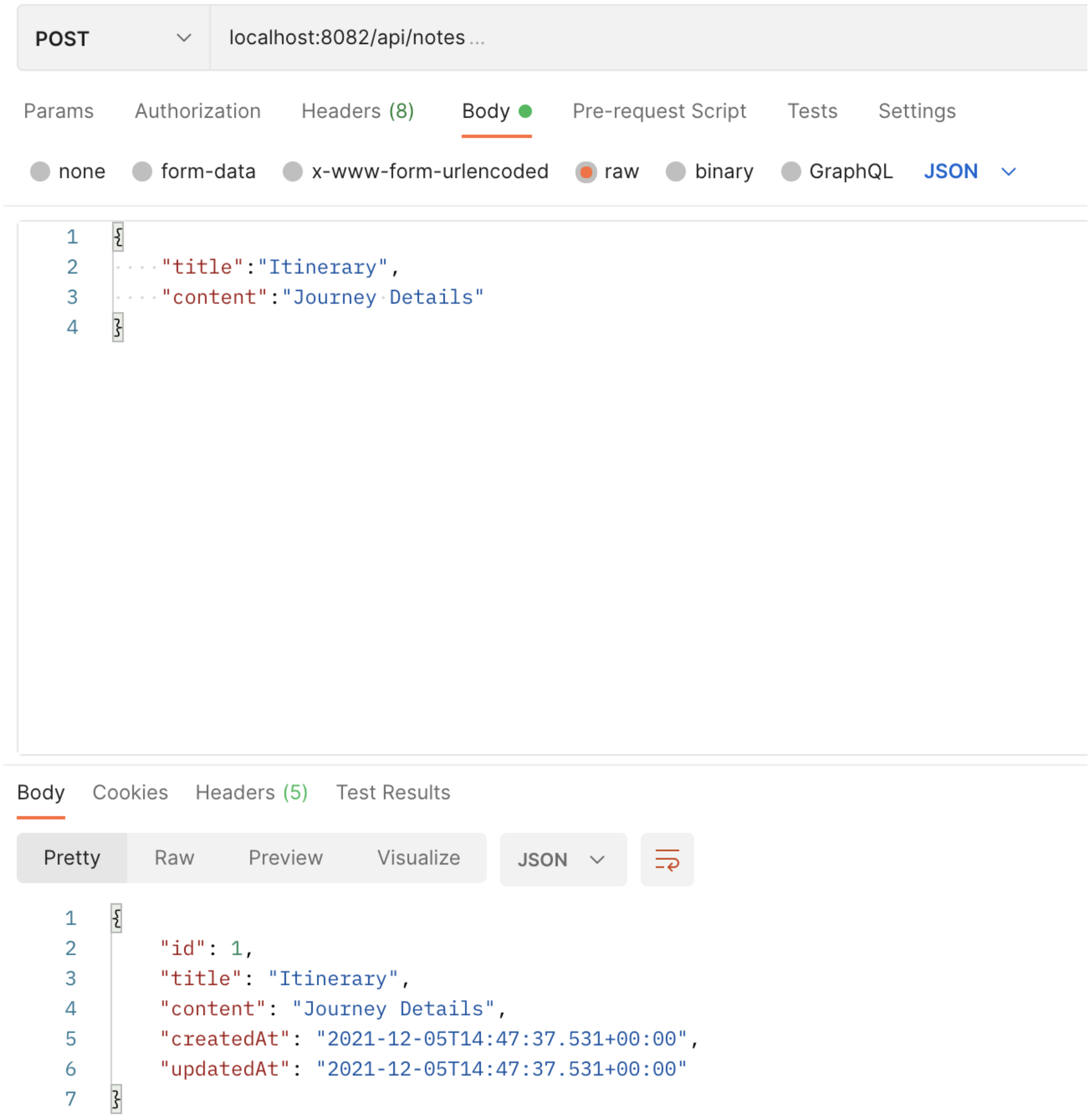
Once the image is pushed to Docker Hub by the Jenkins Build, we can use the **docker-compose.yml** to start the containers. Here are the contents of this file:



```
version: '3'

services:
  nagp-devops-mysql:
    image: mysql:8.0
    environment:
      MYSQL_DATABASE: 'db'
      MYSQL_USER: 'sa'
      MYSQL_PASSWORD: 'sa'
      MYSQL_ROOT_PASSWORD: 'root'

    volumes:
      - my-db:/var/lib/mysql8

  notes-service:
    image: akhilkvpv88/nagp-devops-assignment:v2
    ports:
      - "8082:8082"
    links:
      - "nagp-devops-mysql:database"


volumes:
  my-db:
```

Assuming we are using builds from Docker Hub, we can run the command **docker-compose** up which starts the **mysql** container followed by the **notes-service** container and our application comes up. Now, we can use postman to test our microservices.

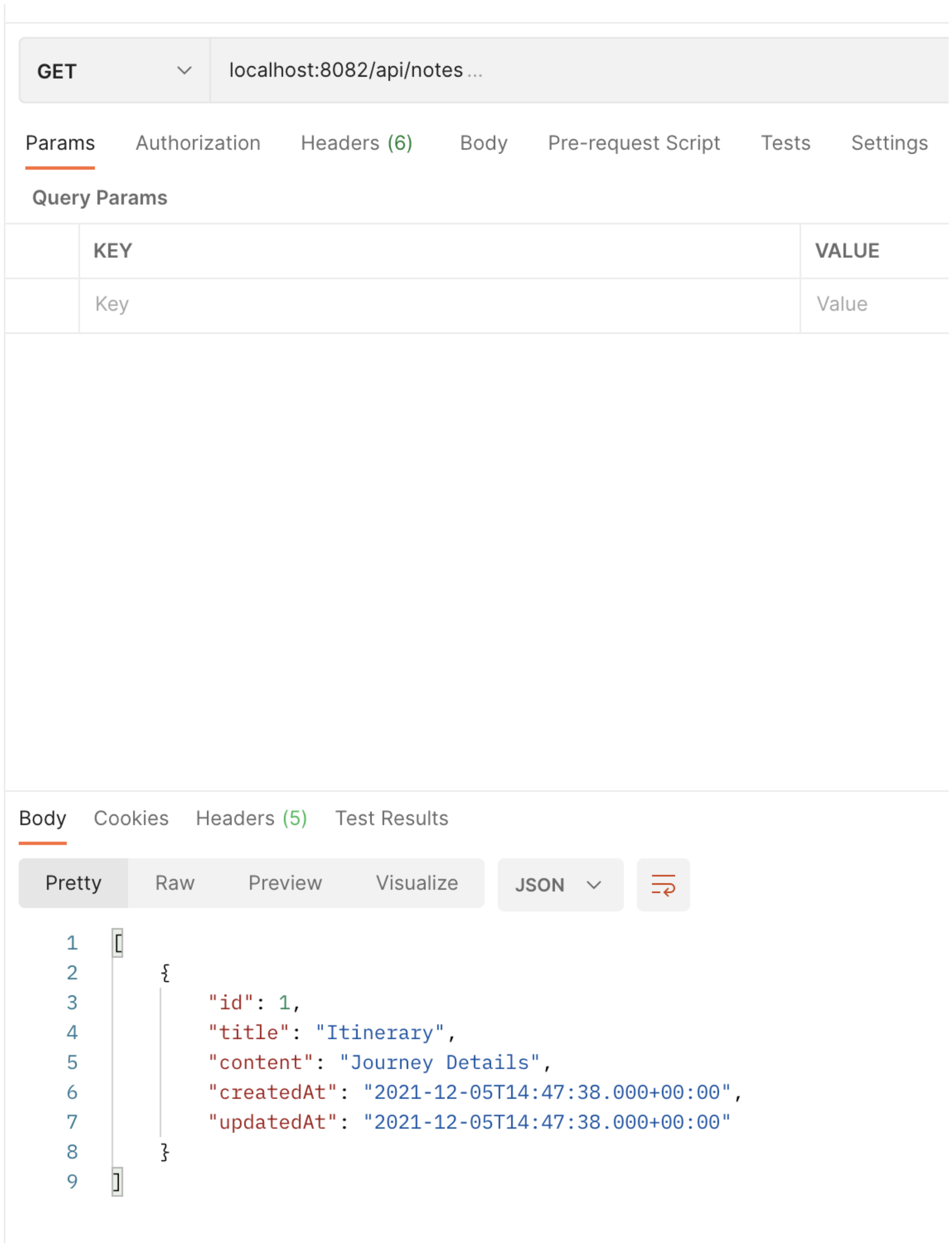
Service to Create a Note



```
{
    "title":"Itinerary",
    "content":"Journey Details"
}
```

```
{
    "id": 1,
    "title": "Itinerary",
    "content": "Journey Details",
    "createdAt": "2021-12-05T14:47:37.531+00:00",
    "updatedAt": "2021-12-05T14:47:37.531+00:00"
}
```

Service to Fetch Notes



localhost:8082/api/notes ...

KEY	VALUE
Key	Value

```
[
    {
        "id": 1,
        "title": "Itinerary",
        "content": "Journey Details",
        "createdAt": "2021-12-05T14:47:38.000+00:00",
        "updatedAt": "2021-12-05T14:47:38.000+00:00"
    }
]
```