Name - Parmeshwar*

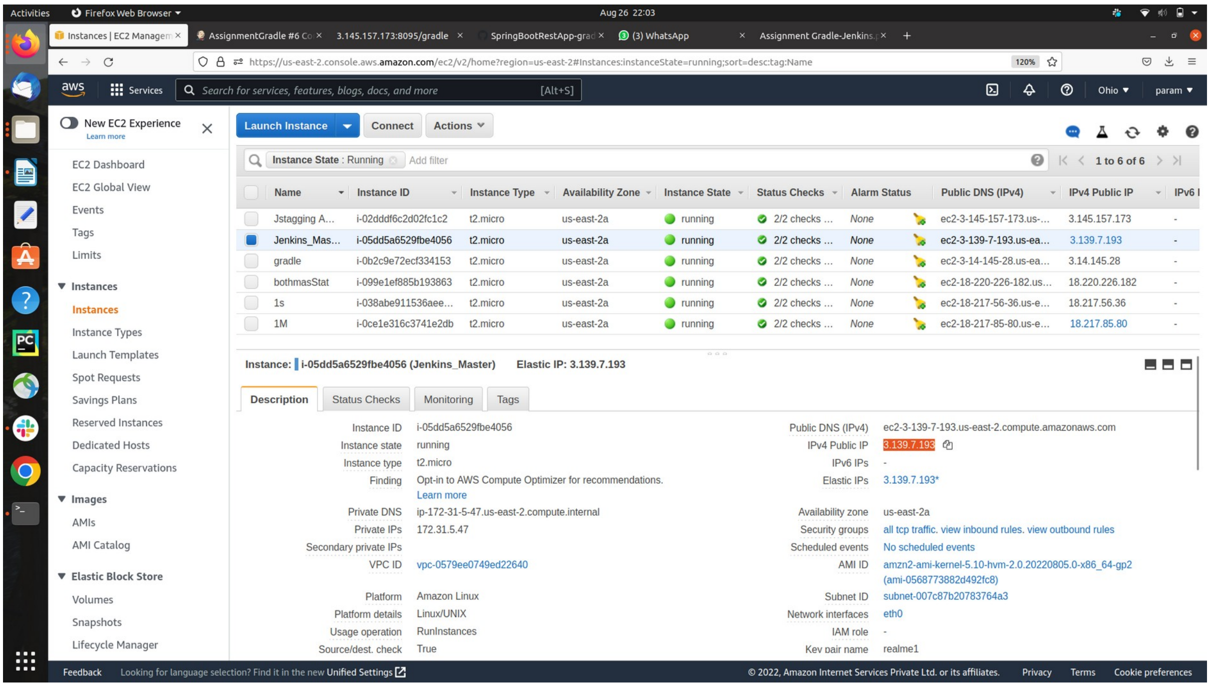
Assignment (Gradle & JenKINS)

Problem Statement: Automated Deployment of 2-Tier Web application

Q2) Design and develop tasks required to build CICD pipeline using learned technologies to deploy 2-Tier application on cloud platform as a set of microservices on containerized platform such as docker. Deploy a web application on Docker container using GRADLE as build tool to install, test, package application which is fetched from GitHub Repository & deploy through Web Application . Provision Infrastructure on AWS.

Step 1) Created Two Instances Of Linux

i) One is Master Node



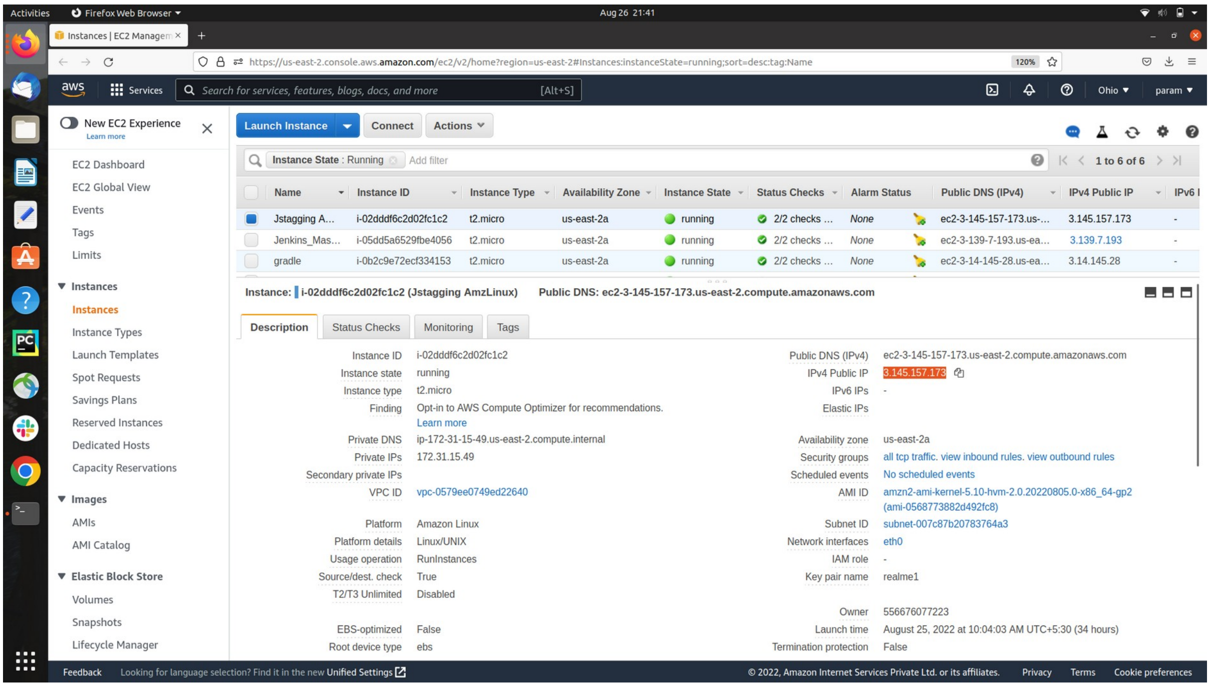
	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 I
□	Jstagging A...	i-02dddf6c2d02fc1c2	t2.micro	us-east-2a	● running	✓ 2/2 checks ...	None	ec2-3-145-157-173.us-...	3.145.157.173	-
☑	Jenkins_Mas...	i-05dd5a6529fbe4056	t2.micro	us-east-2a	● running	✓ 2/2 checks ...	None	ec2-3-139-7-193.us-ea...	3.139.7.193	-
□	gradle	i-0b2c9e72ecf334153	t2.micro	us-east-2a	● running	✓ 2/2 checks ...	None	ec2-3-14-145-28.us-ea...	3.14.145.28	-
□	bothmasStat	i-099e1ef885b193863	t2.micro	us-east-2a	● running	✓ 2/2 checks ...	None	ec2-18-220-226-182.us...	18.220.226.182	-
□	1s	i-038abe911536aee...	t2.micro	us-east-2a	● running	✓ 2/2 checks ...	None	ec2-18-217-56-36.us-e...	18.217.56.36	-
□	1M	i-0ce1e316c3741e2db	t2.micro	us-east-2a	● running	✓ 2/2 checks ...	None	ec2-18-217-85-80.us-e...	18.217.85.80	-

Instance: i-05dd5a6529fbe4056 (Jenkins_Master) Elastic IP: 3.139.7.193

Description | Status Checks | Monitoring | Tags

Instance ID	i-05dd5a6529fbe4056	Public DNS (IPv4)	ec2-3-139-7-193.us-east-2.compute.amazonaws.com
Instance state	running	IPv4 Public IP	3.139.7.193
Instance type	t2.micro	IPv6 IPs	-
Finding	Opt-in to AWS Compute Optimizer for recommendations. Learn more	Elastic IPs	3.139.7.193*
Private DNS	ip-172-31-5-47.us-east-2.compute.internal	Availability zone	us-east-2a
Private IPs	172.31.5.47	Security groups	all tcp traffic. view inbound rules. view outbound rules
Secondary private IPs		Scheduled events	No scheduled events
VPC ID	vpc-0579ee0749ed22640	AMI ID	amzn2-ami-kernel-5.10-hvm-2.0.20220805.0-x86_64-gp2 (ami-0568773882d492fc8)
Platform	Amazon Linux	Subnet ID	subnet-007c87b20783764a3
Platform details	Linux/UNIX	Network interfaces	eth0
Usage operation	RunInstances	IAM role	-
Source/dest. check	True	Key pair name	realme1

i) One is stagging (s1) Node



Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 I
Jstagging A...	i-02dddf6c2d02fc1c2	t2.micro	us-east-2a	running	2/2 checks ...	None	ec2-3-145-157-173.us-...	3.145.157.173	-
Jenkins_Mas...	i-05dd5a6529fbe4056	t2.micro	us-east-2a	running	2/2 checks ...	None	ec2-3-139-7-193.us-ea...	3.139.7.193	-
gradle	i-0b2c9e72ecf334153	t2.micro	us-east-2a	running	2/2 checks ...	None	ec2-3-14-145-28.us-ea...	3.14.145.28	-

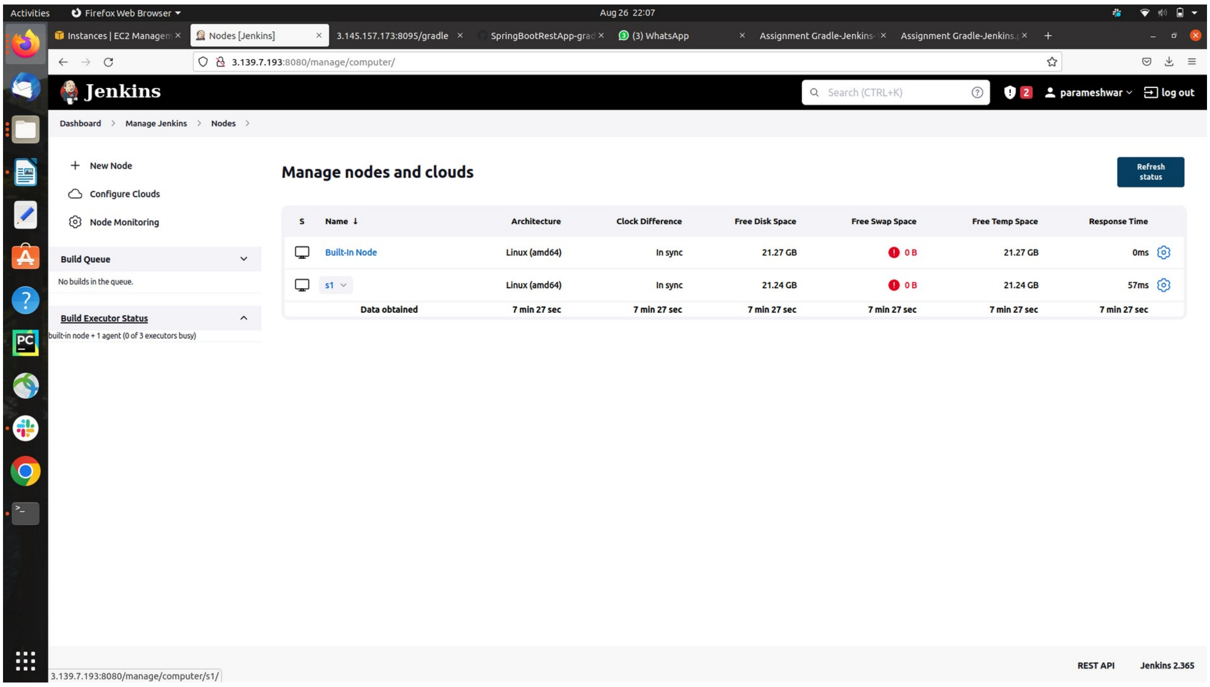
Instance: i-02dddf6c2d02fc1c2 (Jstagging AmzLinux) Public DNS: ec2-3-145-157-173.us-east-2.compute.amazonaws.com

Description | Status Checks | Monitoring | Tags

Instance ID	i-02dddf6c2d02fc1c2	Public DNS (IPv4)	ec2-3-145-157-173.us-east-2.compute.amazonaws.com
Instance state	running	IPv4 Public IP	3.145.157.173
Instance type	t2.micro	IPv6 IPs	-
Finding	Opt-in to AWS Compute Optimizer for recommendations. Learn more	Elastic IPs	
Private DNS	ip-172-31-15-49.us-east-2.compute.internal	Availability zone	us-east-2a
Private IPs	172.31.15.49	Security groups	all tcp traffic. view inbound rules. view outbound rules
Secondary private IPs		Scheduled events	No scheduled events
VPC ID	vpc-0579ee0749ed22640	AMI ID	amzn2-ami-kernel-5.10-hvm-2.0.20220805.0-x86_64-gp2 (ami-0568773882d492fc8)
Platform	Amazon Linux	Subnet ID	subnet-007c87b20783764a3
Platform details	Linux/UNIX	Network interfaces	eth0
Usage operation	RunInstances	IAM role	-
Source/dest. check	True	Key pair name	realme1
T2/T3 Unlimited	Disabled		
		Owner	556676077223
EBS-optimized	False	Launch time	August 25, 2022 at 10:04:03 AM UTC+5:30 (34 hours)
Root device type	ebs	Termination protection	False

Feedback
Looking for language selection? Find it in the new Unified Settings
© 2022, Amazon Internet Services Private Ltd. or its affiliates.
Privacy
Terms
Cookie preferences

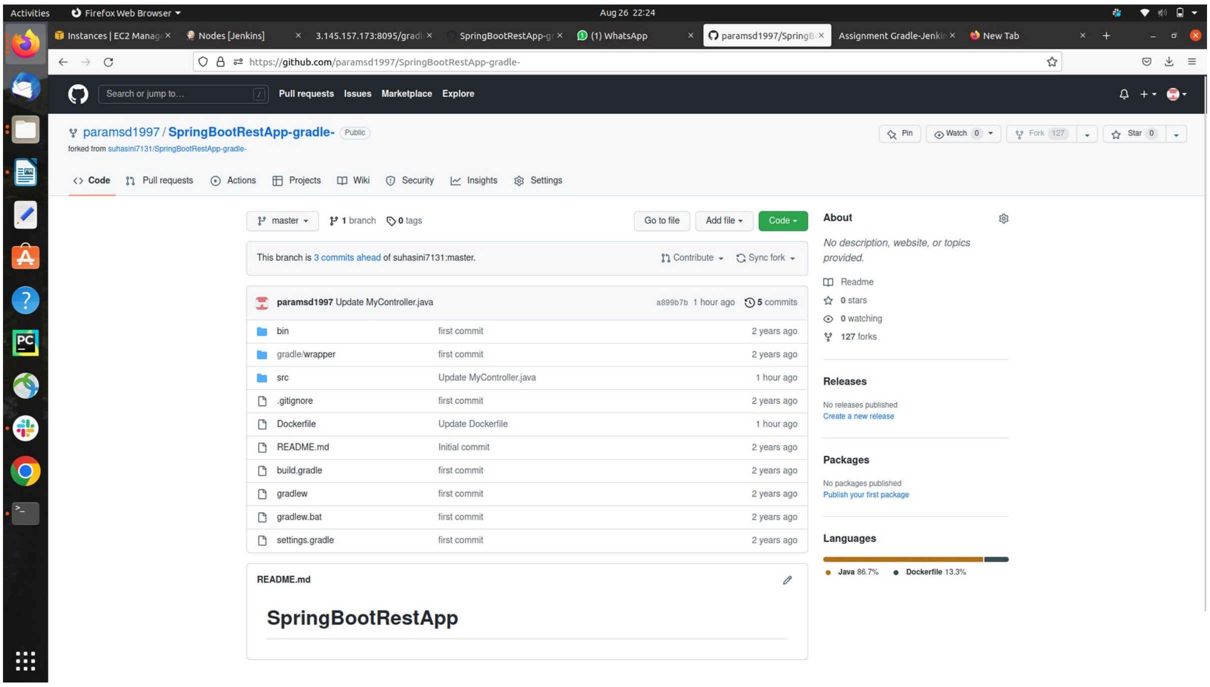
step 2) Stagging Connected with Master Nodes



Manage nodes and clouds

S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
	Built-In Node	Linux (amd64)	In sync	21.27 GB	0 B	21.27 GB	0ms
	s1	Linux (amd64)	In sync	21.24 GB	0 B	21.24 GB	57ms
	Data obtained	7 min 27 sec	7 min 27 sec	7 min 27 sec	7 min 27 sec	7 min 27 sec	7 min 27 sec

step 4) Pushed the code to the Github repository



This branch is 3 commits ahead of suhasini7131:master.

paramsd1997 Update MyController.java a899b7b 1 hour ago 5 commits

bin	first commit	2 years ago
gradle/wrapper	first commit	2 years ago
src	Update MyController.java	1 hour ago
.gitignore	first commit	2 years ago
Dockerfile	Update Dockerfile	1 hour ago
README.md	Initial commit	2 years ago
build.gradle	first commit	2 years ago
gradlew	first commit	2 years ago
gradlew.bat	first commit	2 years ago
settings.gradle	first commit	2 years ago

README.md

SpringBootRestApp

About

No description, website, or topics provided.

Readme
0 stars
0 watching
127 forks

Releases

No releases published
Create a new release

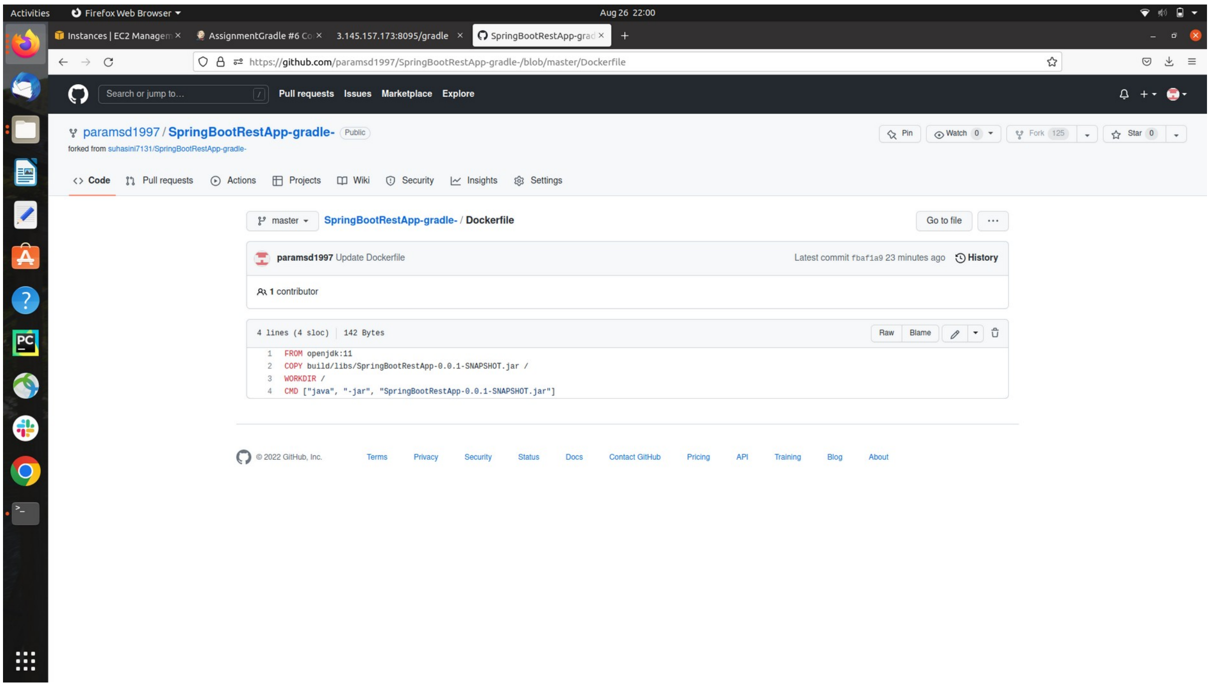
Packages

No packages published
Publish your first package

Languages

Java 86.7% Dockerfile 13.3%

step 4) Created the Docker file to copy the .jar file and the create Image



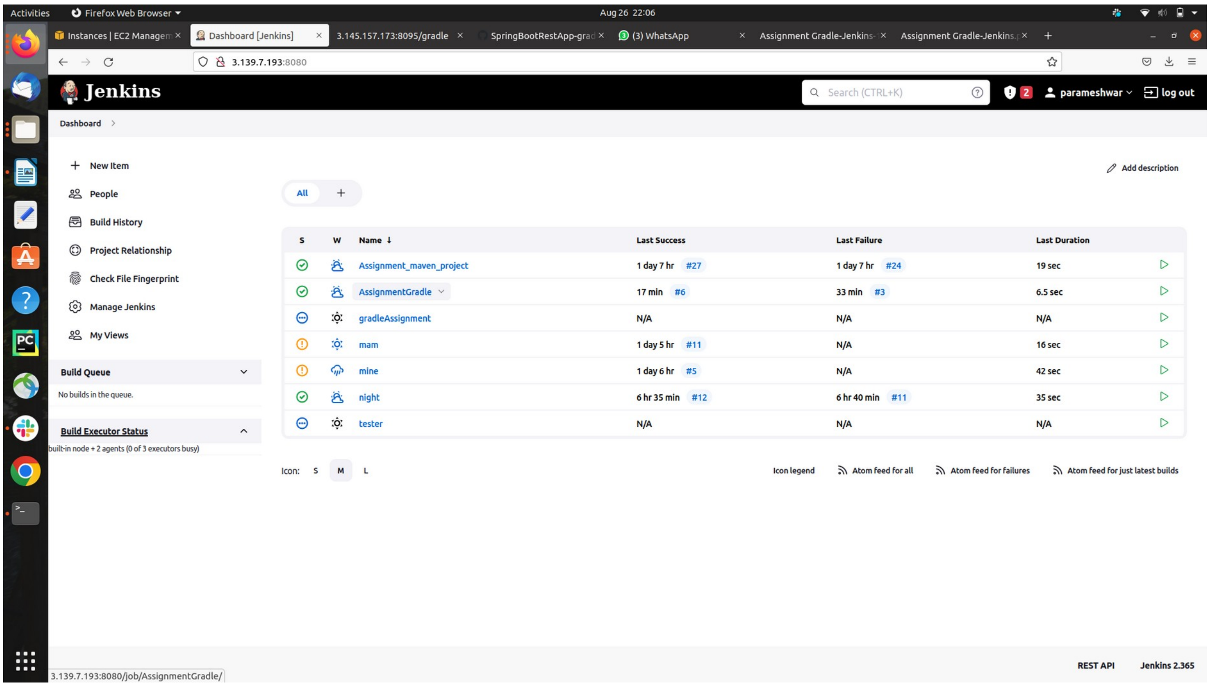
paramsd1997 Update Dockerfile Latest commit fbaf1a9 23 minutes ago

1 contributor

4 lines (4 sloc) | 142 Bytes

```
FROM openjdk:11
COPY build/libs/SpringBootRestApp-0.0.1-SNAPSHOT.jar /
WORKDIR /
CMD ["java", "-jar", "SpringBootRestApp-0.0.1-SNAPSHOT.jar"]
```

step 5)Build a new job (AssignmentGradle)in the jenkins



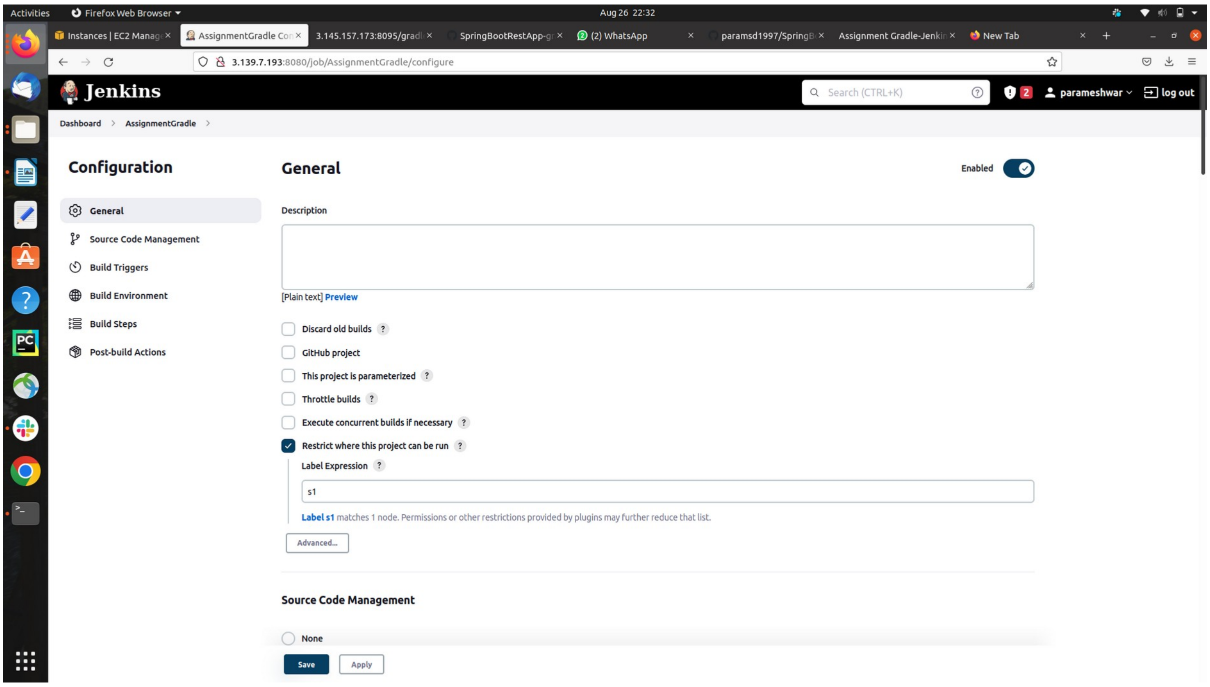
No builds in the queue.

built-in node + 2 agents (0 of 3 executors busy)

S	W	Name ↓	Last Success	Last Failure	Last Duration
✓		Assignment_maven_project	1 day 7 hr #27	1 day 7 hr #24	19 sec
✓		AssignmentGradle	17 min #6	33 min #3	6.5 sec
		gradleAssignment	N/A	N/A	N/A
!		mam	1 day 5 hr #11	N/A	16 sec
!		mine	1 day 6 hr #5	N/A	42 sec
✓		night	6 hr 35 min #12	6 hr 40 min #11	35 sec
		tester	N/A	N/A	N/A

3.139.7.193:8080/job/AssignmentGradle/

step 6) Configurig the Project New Job



General

Enabled ●

Description

[Plain text] Preview

☐ Discard old builds

☐ GitHub project

☐ This project is parameterized

☐ Throttle builds

☐ Execute concurrent builds if necessary

☑ Restrict where this project can be run

Label Expression

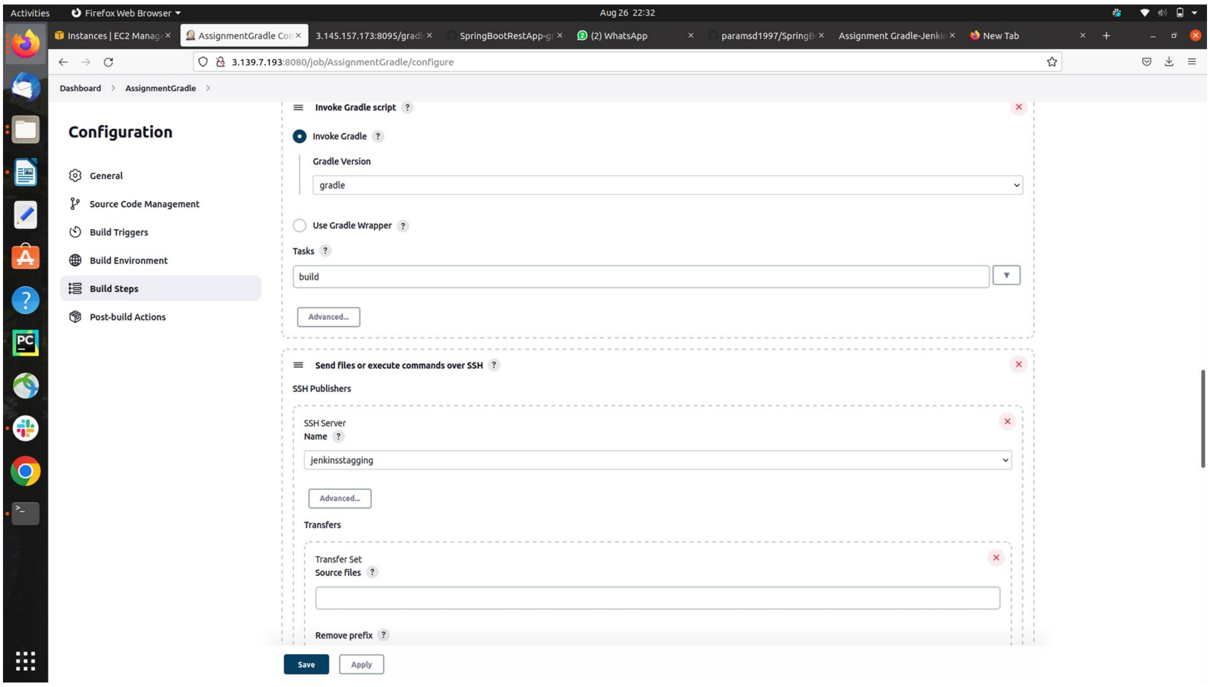
s1

Label s1 matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list.

Source Code Management

○ None

Adding the Gradle set up



3.139.7.193:8080/job/AssignmentGradle/configure

Configuration

Invoke Gradle script

● Invoke Gradle

Gradle Version: gradle

○ Use Gradle Wrapper

Tasks: build

Send files or execute commands over SSH

SSH Publishers

SSH Server

Name: jenkinsstagging

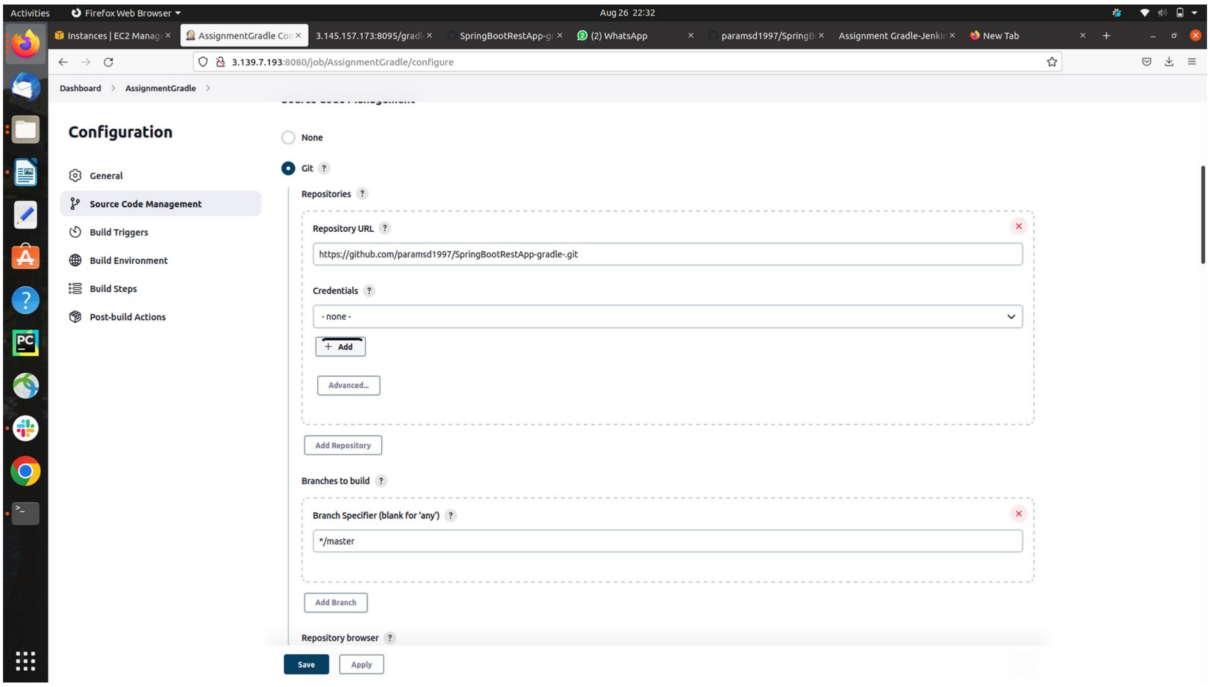
Transfers

Transfer Set

Source files:

Remove prefix

Adding the the Git repo for Source Code Management



3.139.7.193:8080/job/AssignmentGradle/configure

Configuration

○ None

● Git

Repositories

Repository URL: https://github.com/paramsd1997/SpringBootRestApp-gradle-.git

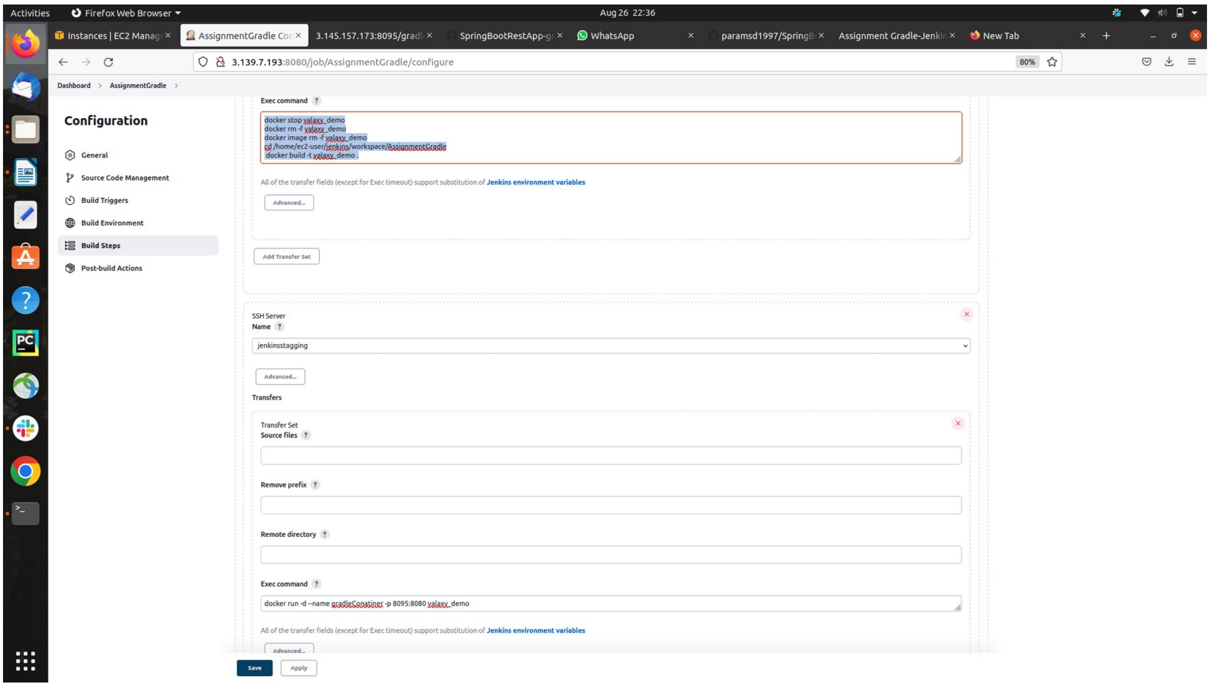
Credentials: - none -

Branches to build

Branch Specifier (blank for 'any'): */master

Repository browser

executing the Command Using SSH Server



Configuration

Exec command

```
docker stop valaxy_demo
docker rm -f valaxy_demo
docker image rm -f valaxy_demo
cd /home/ec2-user/jenkins/workspace/AssignmentGradle
 docker build -t valaxy_demo .
```

All of the transfer fields (except for Exec timeout) support substitution of Jenkins environment variables

SSH Server

Name: jenkinsstagging

Transfers

Transfer Set

Source files

Remove prefix

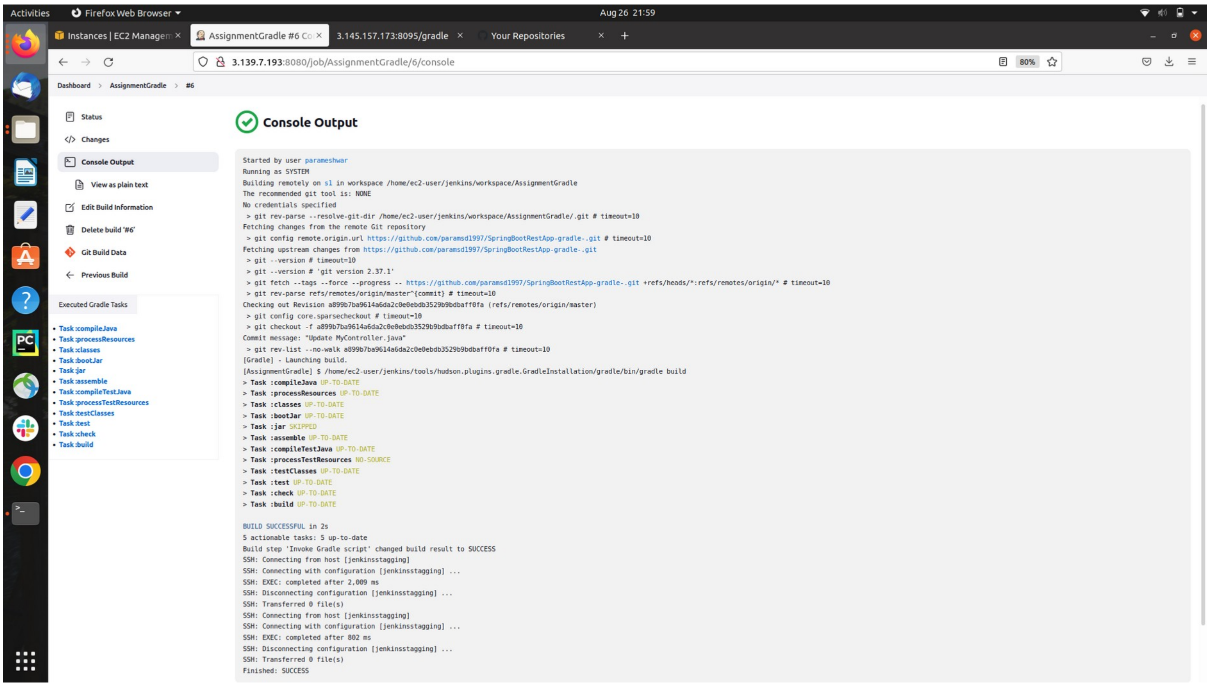
Remote directory

Exec command

```
docker run -d --name gradleConatiner -p 8095:8080 valaxy_demo
```

All of the transfer fields (except for Exec timeout) support substitution of Jenkins environment variables

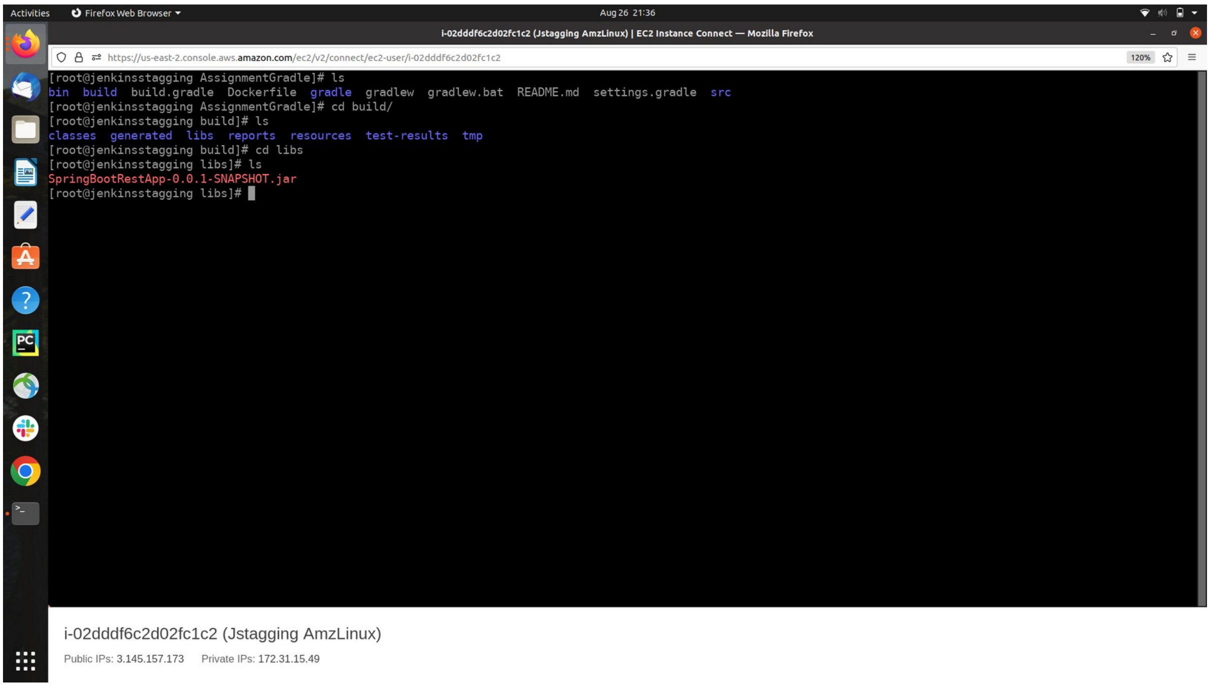
step 7) after Builded the project Ouput got successful



Console Output

```
Started by user parameshwar
Running as SYSTEM
Building remotely on s1 in workspace /home/ec2-user/jenkins/workspace/AssignmentGradle
The recommended git tool is: NONE
No credentials specified
 > git rev-parse --resolve-git-dir /home/ec2-user/jenkins/workspace/AssignmentGradle/.git # timeout=10
Fetching changes from the remote Git repository
 > git config remote.origin.url https://github.com/paramsd1997/SpringBootRestApp-gradle-.git # timeout=10
Fetching upstream changes from https://github.com/paramsd1997/SpringBootRestApp-gradle-.git
 > git --version # timeout=10
 > git --version # 'git version 2.37.1'
 > git fetch --tags --force --progress -- https://github.com/paramsd1997/SpringBootRestApp-gradle-.git +refs/heads/*:refs/remotes/origin/* # timeout=10
 > git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision a899b7ba9614a6da2c0e0ebdb3529b9bdbaff0fa (refs/remotes/origin/master)
 > git config core.sparsecheckout # timeout=10
 > git checkout -f a899b7ba9614a6da2c0e0ebdb3529b9bdbaff0fa # timeout=10
Commit message: "Update MyController.java"
 > git rev-list --no-walk a899b7ba9614a6da2c0e0ebdb3529b9bdbaff0fa # timeout=10
[Gradle] - Launching build.
[AssignmentGradle] $ /home/ec2-user/jenkins/tools/hudson.plugins.gradle.GradleInstallation/gradle/bin/gradle build
> Task :compileJava UP-TO-DATE
> Task :processResources UP-TO-DATE
> Task :classes UP-TO-DATE
> Task :bootJar UP-TO-DATE
> Task :jar SKIPPED
> Task :assemble UP-TO-DATE
> Task :compileTestJava UP-TO-DATE
> Task :processTestResources NO-SOURCE
> Task :testClasses UP-TO-DATE
> Task :test UP-TO-DATE
> Task :check UP-TO-DATE
> Task :build UP-TO-DATE

BUILD SUCCESSFUL in 2s
5 actionable tasks: 5 up-to-date
Build step 'Invoke Gradle script' changed build result to SUCCESS
SSH: Connecting from host [jenkinsstagging]
SSH: Connecting with configuration [jenkinsstagging] ...
SSH: EXEC: completed after 2,009 ms
SSH: Disconnecting configuration [jenkinsstagging] ...
SSH: Transferred 0 file(s)
SSH: Connecting from host [jenkinsstagging]
SSH: Connecting with configuration [jenkinsstagging] ...
SSH: EXEC: completed after 802 ms
SSH: Disconnecting configuration [jenkinsstagging] ...
SSH: Transferred 0 file(s)
Finished: SUCCESS
```

step 8) After Building we .jar file got created into build/libs



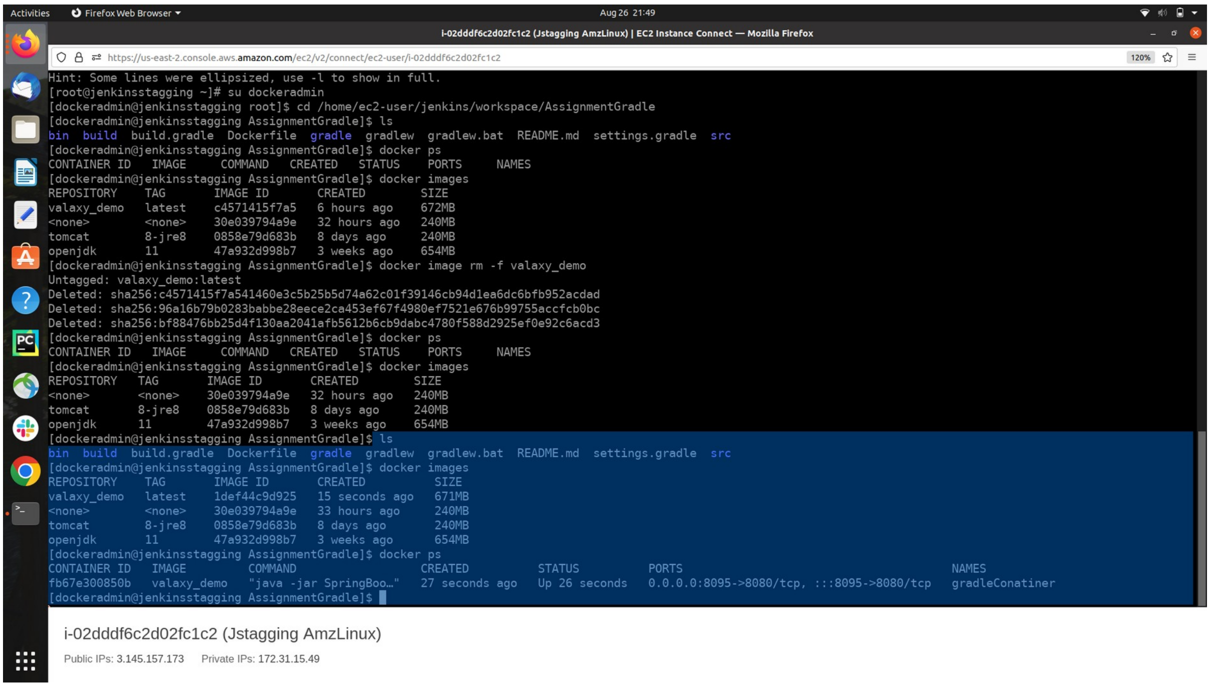
Activities
Firefox Web Browser
Aug 26 21:36
i-02dddf6c2d02fc1c2 (Jstagging AmzLinux) | EC2 Instance Connect — Mozilla Firefox
https://us-east-2.console.aws.amazon.com/ec2/v2/connect/ec2-user/i-02dddf6c2d02fc1c2
120%

```
[root@jenkinsstagging AssignmentGradle]# ls
bin  build  build.gradle  Dockerfile  gradle  gradlew  gradlew.bat  README.md  settings.gradle  src
[root@jenkinsstagging AssignmentGradle]# cd build/
[root@jenkinsstagging build]# ls
classes  generated  libs  reports  resources  test-results  tmp
[root@jenkinsstagging build]# cd libs
[root@jenkinsstagging libs]# ls
SpringBootRestApp-0.0.1-SNAPSHOT.jar
[root@jenkinsstagging libs]# 
```

i-02dddf6c2d02fc1c2 (Jstagging AmzLinux)

Public IPs: 3.145.157.173   Private IPs: 172.31.15.49

step 9) After getting .jar file Launching the Conatiner and creating the image using Dockerfile



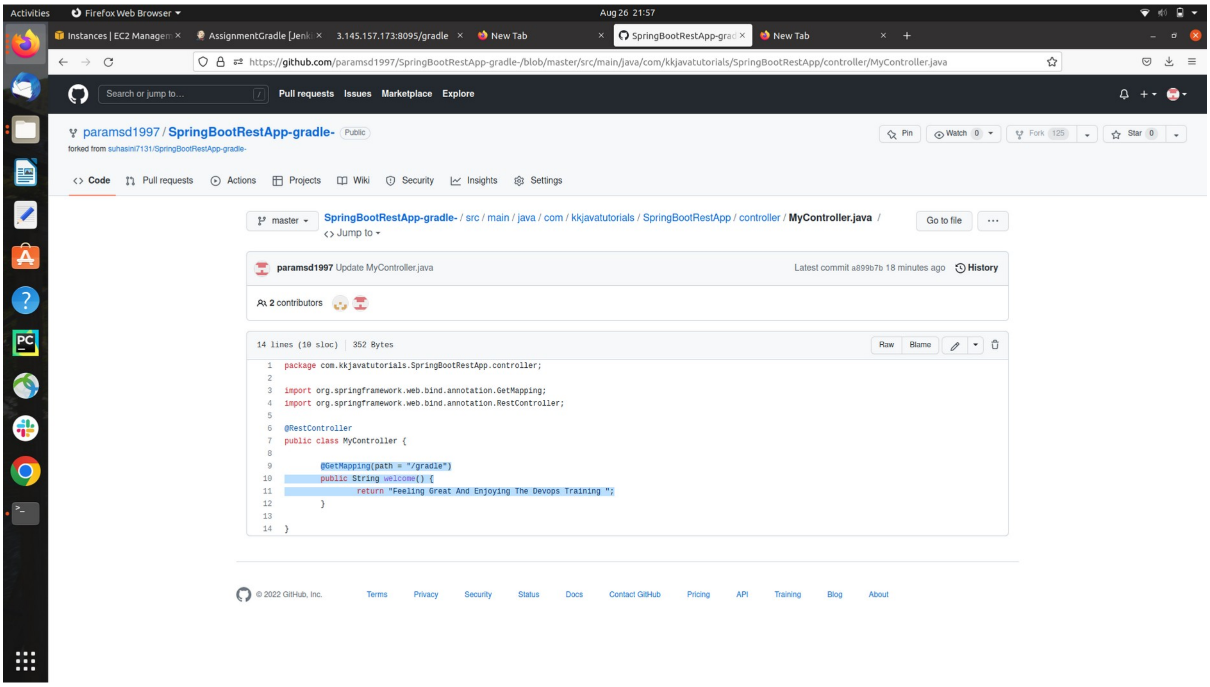
Activities
Firefox Web Browser
Aug 26 21:49
i-02dddf6c2d02fc1c2 (Jstagging AmzLinux) | EC2 Instance Connect — Mozilla Firefox
https://us-east-2.console.aws.amazon.com/ec2/v2/connect/ec2-user/i-02dddf6c2d02fc1c2
120%

```
Hint: Some lines were ellipsized, use -l to show in full.
[root@jenkinsstagging ~]# su dockeradmin
[dockeradmin@jenkinsstagging root]$ cd /home/ec2-user/jenkins/workspace/AssignmentGradle
[dockeradmin@jenkinsstagging AssignmentGradle]$ ls
bin  build  build.gradle  Dockerfile  gradle  gradlew  gradlew.bat  README.md  settings.gradle  src
[dockeradmin@jenkinsstagging AssignmentGradle]$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
[dockeradmin@jenkinsstagging AssignmentGradle]$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
valaxy_demo   latest    c4571415f7a5   6 hours ago    672MB
<none>        <none>    30e039794a9e   32 hours ago   240MB
tomcat        8-jre8    0858e79d683b   8 days ago     240MB
openjdk       11        47a932d998b7   3 weeks ago    654MB
[dockeradmin@jenkinsstagging AssignmentGradle]$ docker image rm -f valaxy_demo
Untagged: valaxy_demo:latest
Deleted: sha256:c4571415f7a541460e3c5b25b5d74a62c01f39146cb94d1ea6dc6bfb952acdad
Deleted: sha256:96a16b79b0283babbe28eece2ca453ef67f4980ef7521e676b99755accfcb0bc
Deleted: sha256:bf88476bb25d4f130aa2041afb5612b6cb9dabc4780f588d2925ef0e92c6acd3
[dockeradmin@jenkinsstagging AssignmentGradle]$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
[dockeradmin@jenkinsstagging AssignmentGradle]$ docker images
REPOSITORY   TAG       IMAGE ID       CREATED        SIZE
<none>       <none>    30e039794a9e   32 hours ago   240MB
tomcat       8-jre8    0858e79d683b   8 days ago     240MB
openjdk      11        47a932d998b7   3 weeks ago    654MB
[dockeradmin@jenkinsstagging AssignmentGradle]$ ls
bin  build  build.gradle  Dockerfile  gradle  gradlew  gradlew.bat  README.md  settings.gradle  src
[dockeradmin@jenkinsstagging AssignmentGradle]$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED          SIZE
valaxy_demo   latest    1def44c9d925   15 seconds ago   671MB
<none>        <none>    30e039794a9e   33 hours ago     240MB
tomcat        8-jre8    0858e79d683b   8 days ago       240MB
openjdk       11        47a932d998b7   3 weeks ago      654MB
[dockeradmin@jenkinsstagging AssignmentGradle]$ docker ps
CONTAINER ID   IMAGE         COMMAND                  CREATED          STATUS          PORTS                                       NAMES
fb67e300850b   valaxy_demo   "java -jar SpringBoo…"   27 seconds ago   Up 26 seconds   0.0.0.0:8095->8080/tcp, :::8095->8080/tcp   gradleConatiner
[dockeradmin@jenkinsstagging AssignmentGradle]$ 
```

i-02dddf6c2d02fc1c2 (Jstagging AmzLinux)

Public IPs: 3.145.157.173   Private IPs: 172.31.15.49

Source Code



https://github.com/paramsd1997/SpringBootRestApp-gradle-/blob/master/src/main/java/com/kkjavatutorials/SpringBootRestApp/controller/MyController.java

paramsd1997 / SpringBootRestApp-gradle- Public

forked from suhasini7131/SpringBootRestApp-gradle-

SpringBootRestApp-gradle- / src / main / java / com / kkjavatutorials / SpringBootRestApp / controller / MyController.java

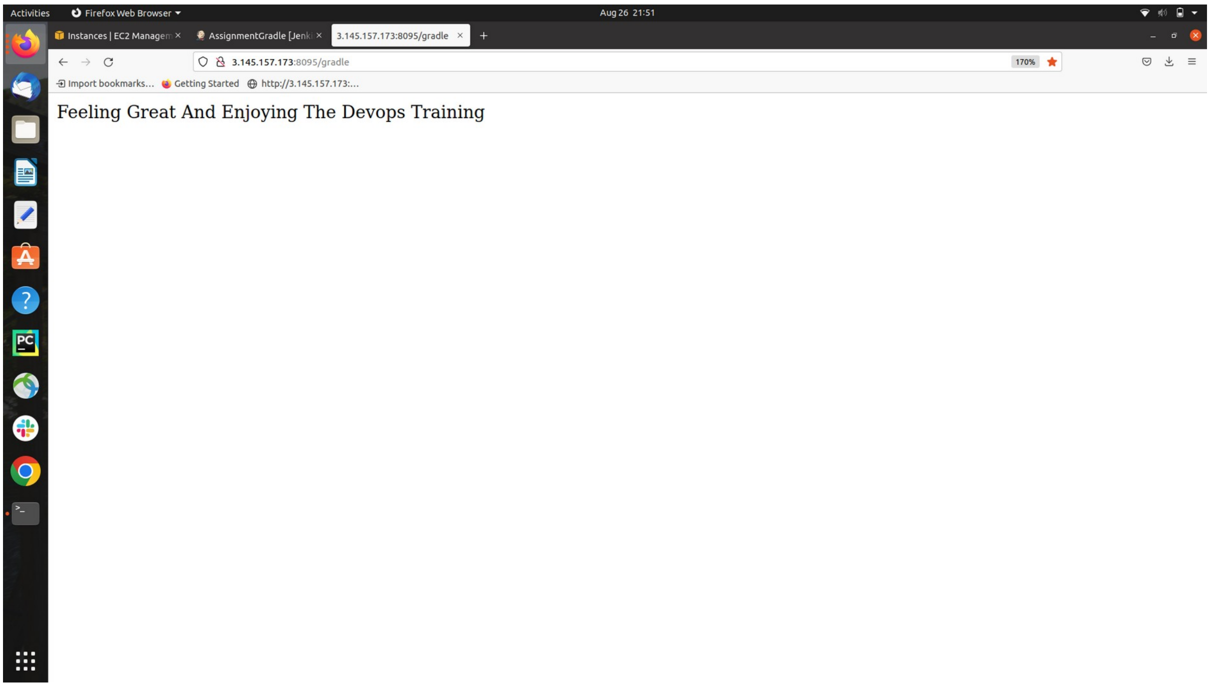
paramsd1997 Update MyController.java — Latest commit a899b7b 18 minutes ago

2 contributors

14 lines (10 sloc) | 352 Bytes

```java
package com.kkjavatutorials.SpringBootRestApp.controller;

import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.RestController;

@RestController
public class MyController {

        @GetMapping(path = "/gradle")
        public String welcome() {
                return "Feeling Great And Enjoying The Devops Training ";
        }

}
```

step 10) Accessing the Server using docker container



3.145.157.173:8095/gradle

```
Feeling Great And Enjoying The Devops Training
```

THANK YOU !!