

DEVOPS ASSIGNMENT-2

Assignment-02: Jenkins Master Slave pipeline intellipaat

Team members:

Darshan R P(18bcs023)

Neha Mahindrakar(18bec032)

Kavana S Salunkhe(18bcs039)

Sreehari Premkumar(18bec045)

Palshini B Limbani(18bcs062)

Pavan Kumar (18bcs064)

Raghuprasad J N(18bcs073)

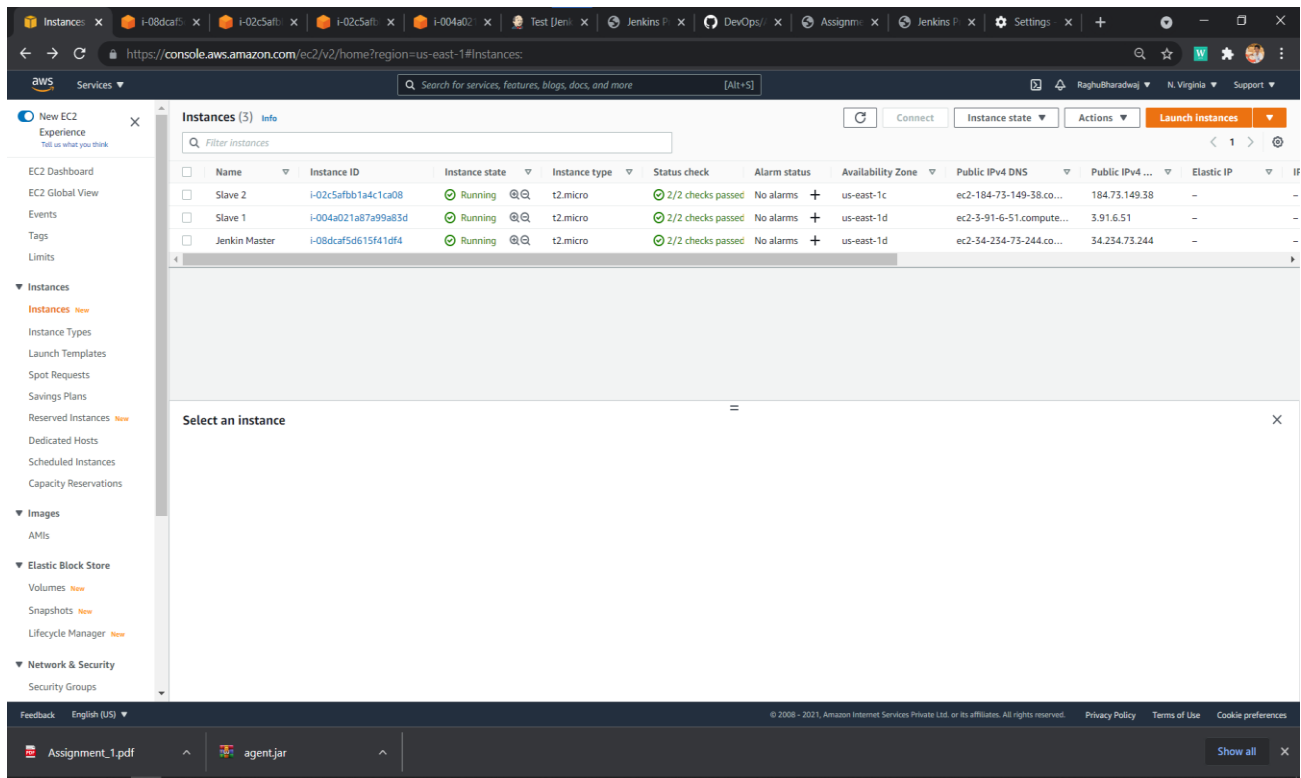
Sripathi Kalyan(18bcs084))

To:

Dr.Uma Sheshadri

Professor,CSE(HOD)

Step 1: Firstly we have to Launch 3 instances i,e Jenkins_Master, Slave 1, Slave 2.



Step 2: Use this commands to install Jenkins on ubuntu ec2 instance.

```
sudo apt-get update -y
```

```
sudo apt-get install openjdk-8-jdk
```

```
wget -q -O - https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo apt-key add -
```

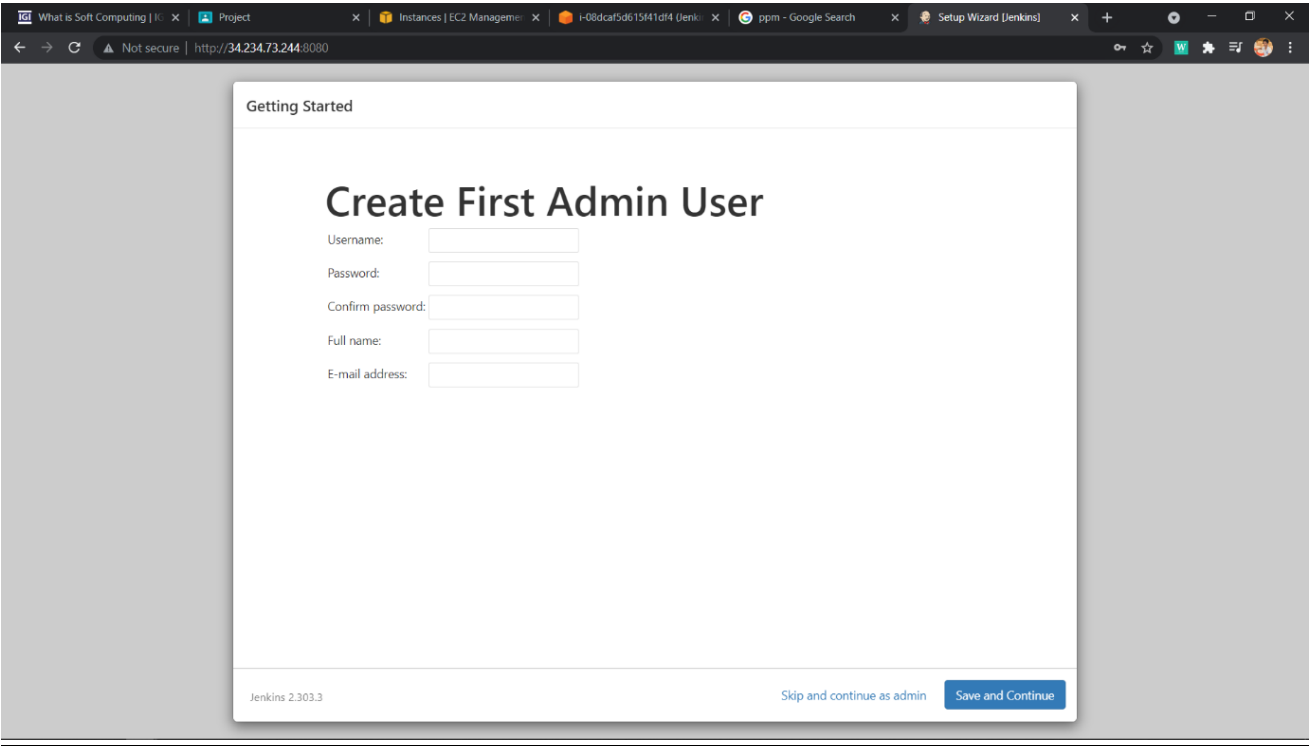
```
sudo sh -c 'echo deb https://pkg.jenkins.io/debian-stable binary/ > \n/etc/apt/sources.list.d/jenkins.list'
```

```
sudo apt-get update
```

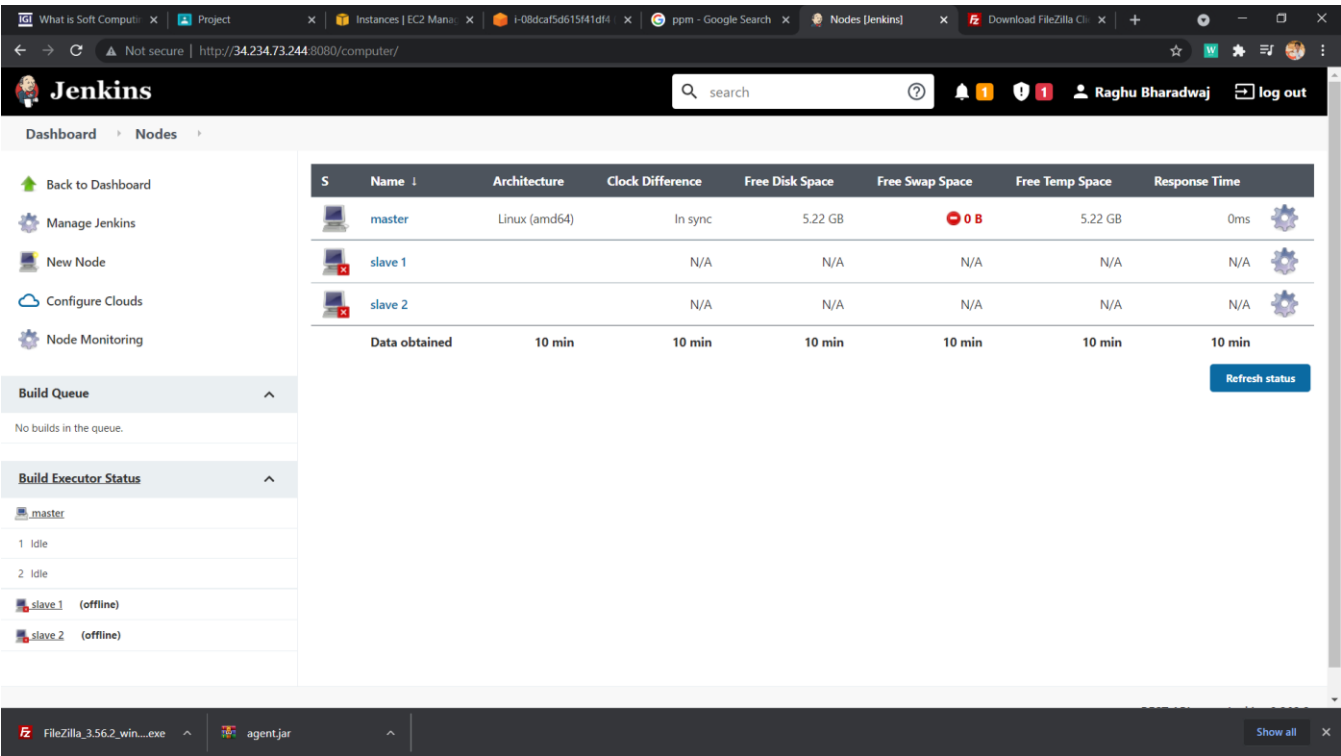
```
apt-get install jenkins
```

```
sudo service jenkins start
```

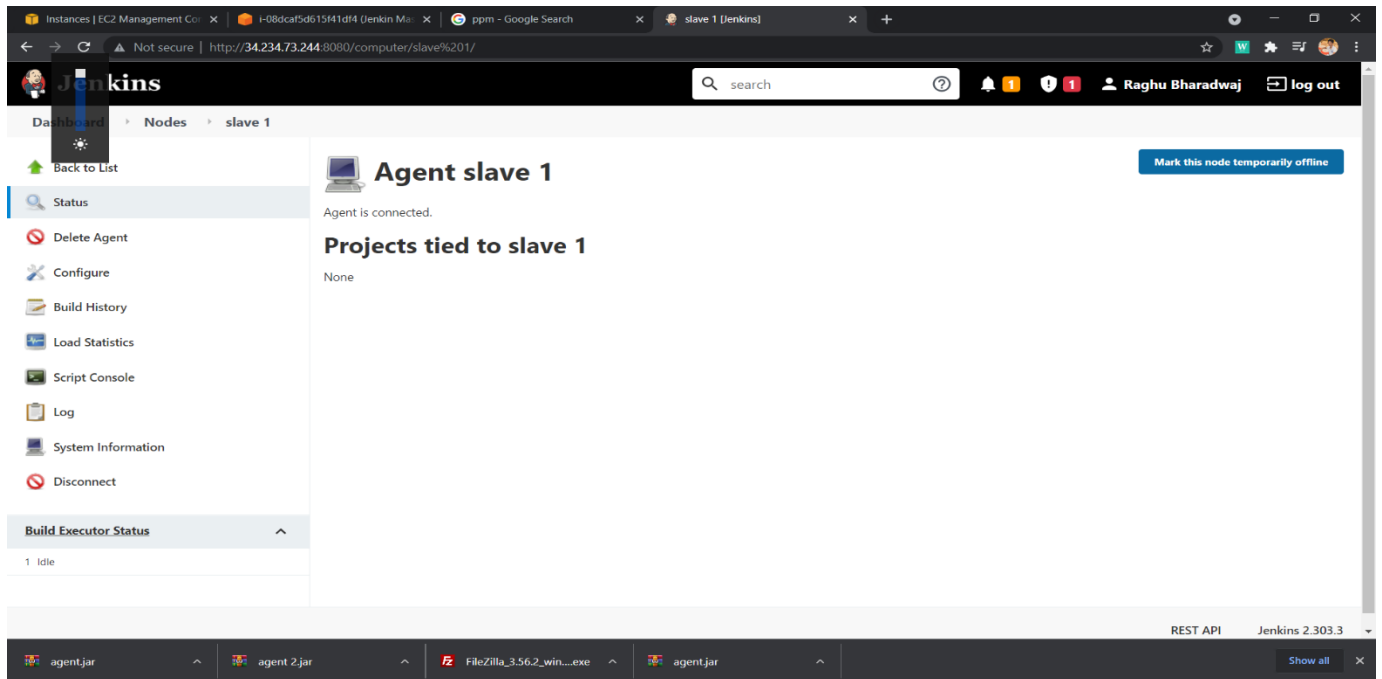
Step 3:



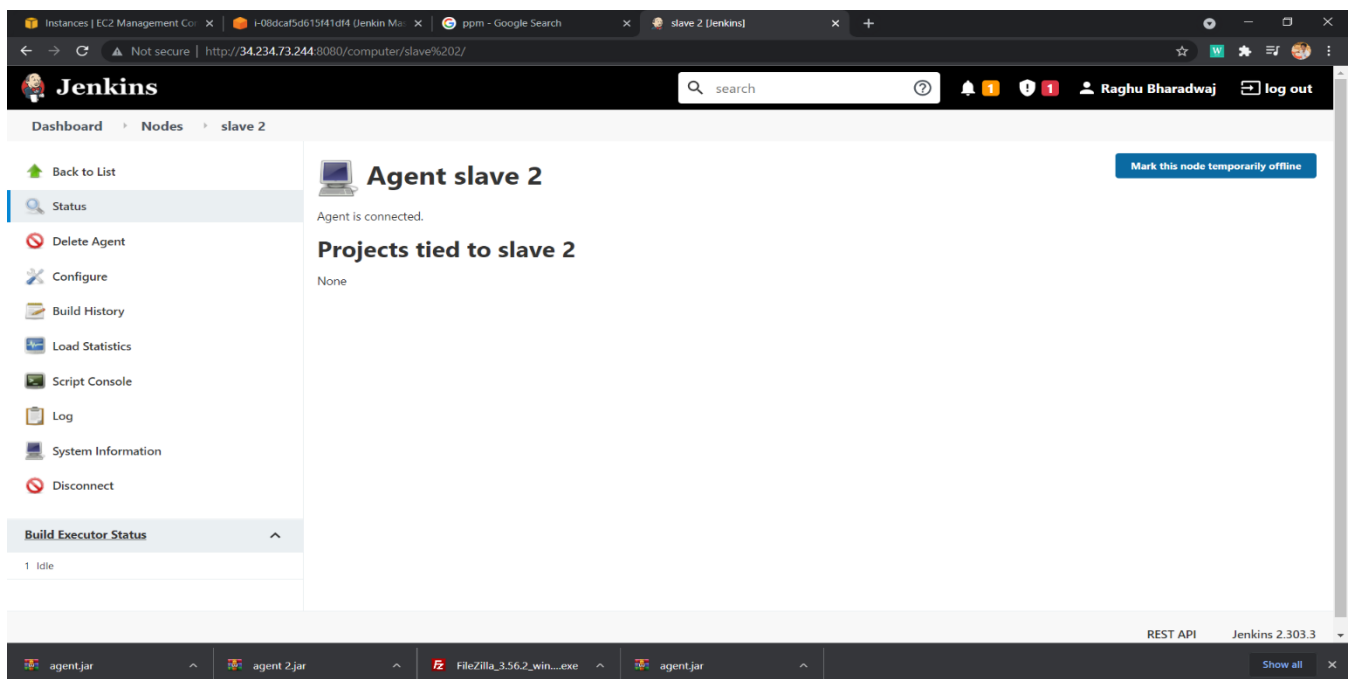
Step 4: Create 2 nodes (one for ec2 slave-1 instance and the other for ec2 slave-2 instance.)



Step 5: Download agent.jar from Slave-1 node and using Filezilla.

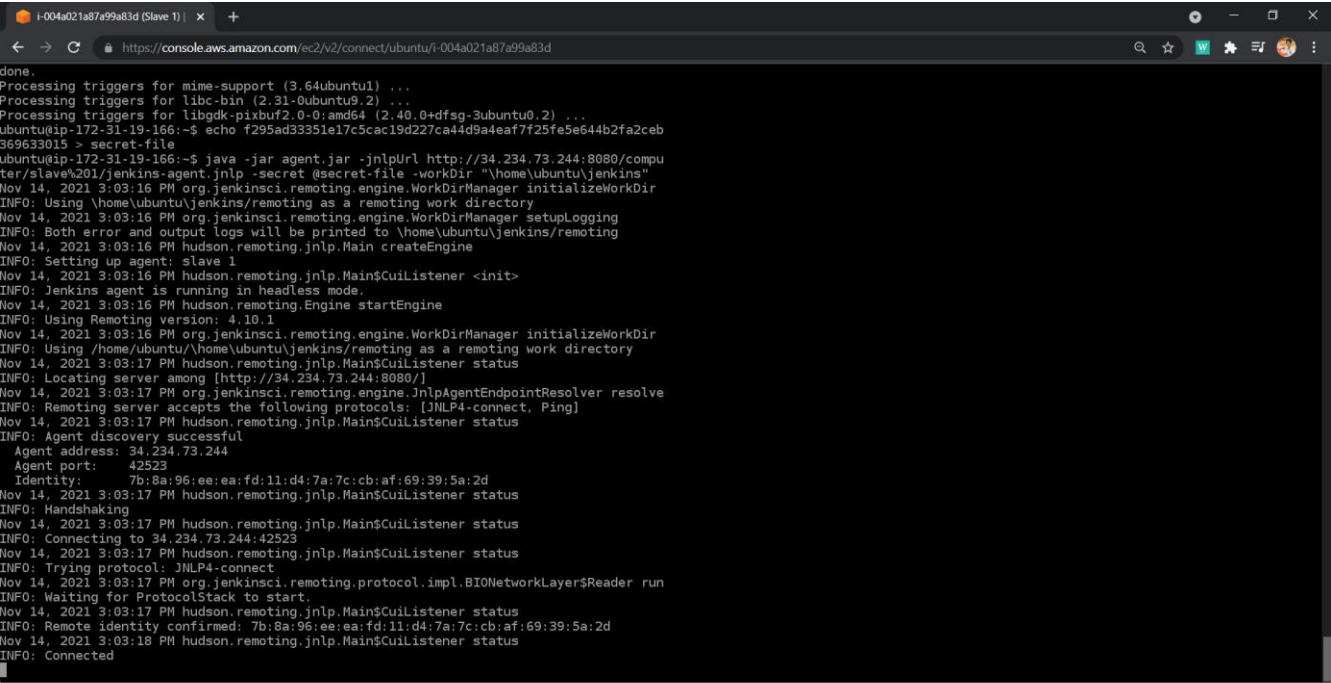


Step 6: Download agent.jar from Slave-2 node and using Filezilla.



Step 7: Run the command on the ec2 instances so that we can connect the nodes to the Jenkins.

(Slave 1)

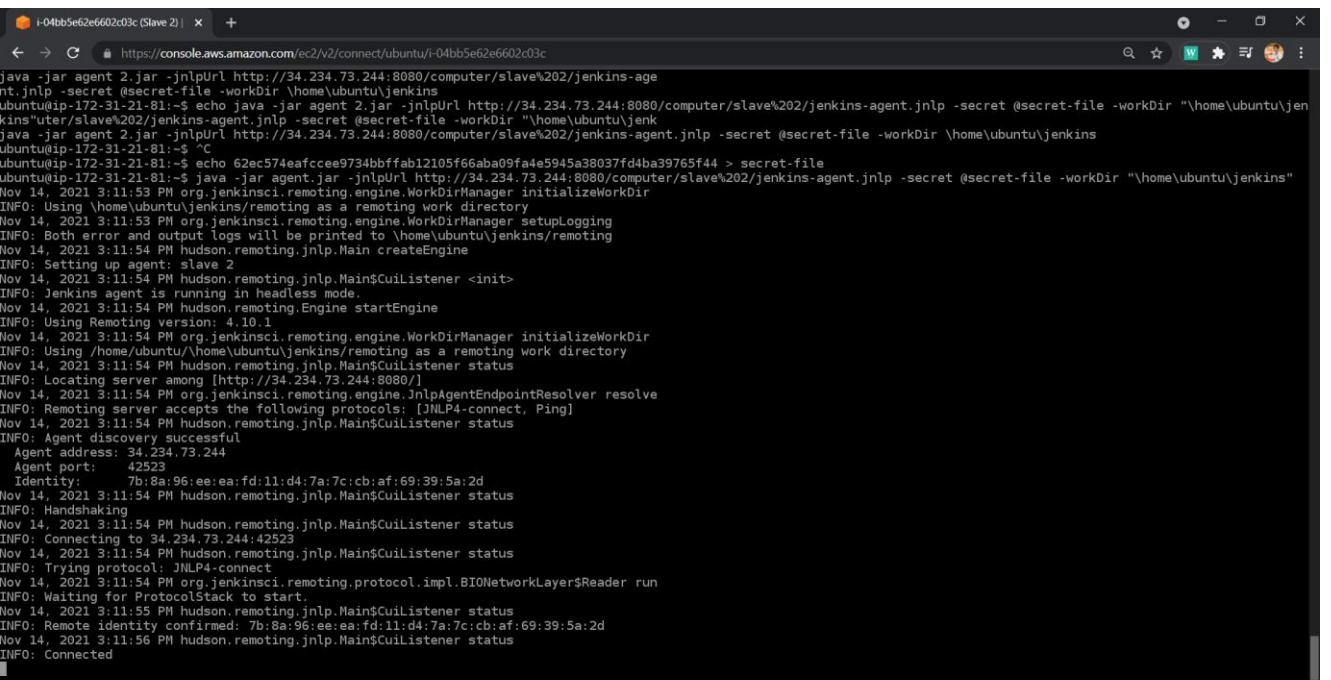


```
done.
Processing triggers for mime-support (3.64ubuntu1) ...
Processing triggers for libc-bin (2.31-0ubuntu9.2) ...
Processing triggers for libgdk-pixbuf2.0-0:amd64 (2.40.0+dfsg-3ubuntu0.2) ...
ubuntu@ip-172-31-19-166:~$ echo f295ad33351e17c5cac19d227ca44d9a4eaf7f25fe5e644b2fa2ceb
f295ad33351e17c5cac19d227ca44d9a4eaf7f25fe5e644b2fa2ceb
ubuntu@ip-172-31-19-166:~$ secret-file
ubuntu@ip-172-31-19-166:~$ java -jar agent.jar -jnlprUrl http://34.234.73.244:8080/computer/slave%202/jenkins-agent.jnlpr -secret @secret-file -workDir "/home/ubuntu/jenkins"
Nov 14, 2021 3:03:16 PM org.jenkinsci.remoting.engine.WorkDirManager initializeWorkDir
INFO: Using /home/ubuntu/jenkins/remoting as a remoting work directory
Nov 14, 2021 3:03:16 PM org.jenkinsci.remoting.engine.WorkDirManager setupLogging
INFO: Both error and output logs will be printed to /home/ubuntu/jenkins/remoting
Nov 14, 2021 3:03:16 PM hudson.remoting.jnlpr.Main createEngine
INFO: Setting up agent: slave 1
Nov 14, 2021 3:03:16 PM hudson.remoting.jnlpr.Main$CuiListener <init>
INFO: Jenkins agent is running in headless mode.
Nov 14, 2021 3:03:16 PM hudson.remoting.Engine startEngine
INFO: Using Remoting version: 4.10.1
Nov 14, 2021 3:03:16 PM org.jenkinsci.remoting.engine.WorkDirManager initializeWorkDir
INFO: Using /home/ubuntu/jenkins/remoting as a remoting work directory
Nov 14, 2021 3:03:17 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Locating server among [http://34.234.73.244:8080/]
Nov 14, 2021 3:03:17 PM org.jenkinsci.remoting.engine.JnlprAgentEndpointResolver resolve
INFO: Remoting server accepts the following protocols: [JNLPR4-connect, Ping]
Nov 14, 2021 3:03:17 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Agent discovery successful
Agent address: 34.234.73.244
Agent port: 42523
Identity: 7b:8a:96:ee:ea:fd:11:d4:7a:7c:cb:af:69:39:5a:2d
Nov 14, 2021 3:03:17 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Handshaking
Nov 14, 2021 3:03:17 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Connecting to 34.234.73.244:42523
Nov 14, 2021 3:03:17 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Trying protocol: JNLPR4-connect
Nov 14, 2021 3:03:17 PM org.jenkinsci.remoting.protocol.impl.BIONetworkLayer$Reader run
INFO: Waiting for ProtocolStack to start.
Nov 14, 2021 3:03:17 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Remote identity confirmed: 7b:8a:96:ee:ea:fd:11:d4:7a:7c:cb:af:69:39:5a:2d
Nov 14, 2021 3:03:18 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Connected
```

i-004a021a87a99a83d (Slave 1)

Public IPs: 3.91.6.51 Private IPs: 172.31.19.166

(Slave 2)



```
java -jar agent 2.jar -jnlprUrl http://34.234.73.244:8080/computer/slave%202/jenkins-agent.jnlpr -secret @secret-file -workDir "/home/ubuntu/jenkins"
ubuntu@ip-172-31-21-81:~$ echo java -jar agent 2.jar -jnlprUrl http://34.234.73.244:8080/computer/slave%202/jenkins-agent.jnlpr -secret @secret-file -workDir "/home/ubuntu/jenkins"
java -jar agent 2.jar -jnlprUrl http://34.234.73.244:8080/computer/slave%202/jenkins-agent.jnlpr -secret @secret-file -workDir "/home/ubuntu/jenkins"
ubuntu@ip-172-31-21-81:~$ PC
ubuntu@ip-172-31-21-81:~$ echo 62ec574eafcc99734bbffab12105f66aba09fa4e5945a38037fd4ba39765f44 > secret-file
ubuntu@ip-172-31-21-81:~$ java -jar agent.jar -jnlprUrl http://34.234.73.244:8080/computer/slave%202/jenkins-agent.jnlpr -secret @secret-file -workDir "/home/ubuntu/jenkins"
Nov 14, 2021 3:11:53 PM org.jenkinsci.remoting.engine.WorkDirManager initializeWorkDir
INFO: Using /home/ubuntu/jenkins/remoting as a remoting work directory
Nov 14, 2021 3:11:53 PM org.jenkinsci.remoting.engine.WorkDirManager setupLogging
INFO: Both error and output logs will be printed to /home/ubuntu/jenkins/remoting
Nov 14, 2021 3:11:54 PM hudson.remoting.jnlpr.Main createEngine
INFO: Setting up agent: slave 2
Nov 14, 2021 3:11:54 PM hudson.remoting.jnlpr.Main$CuiListener <init>
INFO: Jenkins agent is running in headless mode.
Nov 14, 2021 3:11:54 PM hudson.remoting.Engine startEngine
INFO: Using Remoting version: 4.10.1
Nov 14, 2021 3:11:54 PM org.jenkinsci.remoting.engine.WorkDirManager initializeWorkDir
INFO: Using /home/ubuntu/jenkins/remoting as a remoting work directory
Nov 14, 2021 3:11:54 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Locating server among [http://34.234.73.244:8080/]
Nov 14, 2021 3:11:54 PM org.jenkinsci.remoting.engine.JnlprAgentEndpointResolver resolve
INFO: Remoting server accepts the following protocols: [JNLPR4-connect, Ping]
Nov 14, 2021 3:11:54 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Agent discovery successful
Agent address: 34.234.73.244
Agent port: 42523
Identity: 7b:8a:96:ee:ea:fd:11:d4:7a:7c:cb:af:69:39:5a:2d
Nov 14, 2021 3:11:54 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Handshaking
Nov 14, 2021 3:11:54 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Connecting to 34.234.73.244:42523
Nov 14, 2021 3:11:54 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Trying protocol: JNLPR4-connect
Nov 14, 2021 3:11:54 PM org.jenkinsci.remoting.protocol.impl.BIONetworkLayer$Reader run
INFO: Waiting for ProtocolStack to start.
Nov 14, 2021 3:11:55 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Remote identity confirmed: 7b:8a:96:ee:ea:fd:11:d4:7a:7c:cb:af:69:39:5a:2d
Nov 14, 2021 3:11:56 PM hudson.remoting.jnlpr.Main$CuiListener status
INFO: Connected
```

i-04bb5e62e602c03c (Slave 2)

Public IPs: 50.19.30.7 Private IPs: 172.31.21.81

Step 8:

Connect to in...xI-02c5afbb1a...xI-004a021a87...xNodes [Jenkin...xIndex of /dev...xDevOps/Assig...xAssignment_1...xJenkins Prod...xSettings - Pas...x+

Not secure | http://34.234.73.244:8080/computer/

W*👤⋮

Jenkins

search

🔔1🛡️2👤Raghu Bharadwaj🚪log out

DashboardNodes

🏠 Back to Dashboard

⚙️ Manage Jenkins

🖥️ New Node

☁️ Configure Clouds

🔍 Node Monitoring

Build Queue

No builds in the queue.

Build Executor Status

🖥️ _master

1 Idle

2 Idle

🖥️ Slave 2

1 Prod #7

🖥️ _slave_1

1 Idle

S	Name	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
🖥️	master	Linux (amd64)	In sync	4.75 GB	0 B	4.75 GB	0ms
🖥️	slave 1	Linux (amd64)	In sync	4.38 GB	0 B	4.38 GB	70ms
🖥️	Slave 2	Linux (amd64)	In sync	4.59 GB	0 B	4.59 GB	71ms
Data obtained		11 sec	11 sec	11 sec	11 sec	11 sec	11 sec

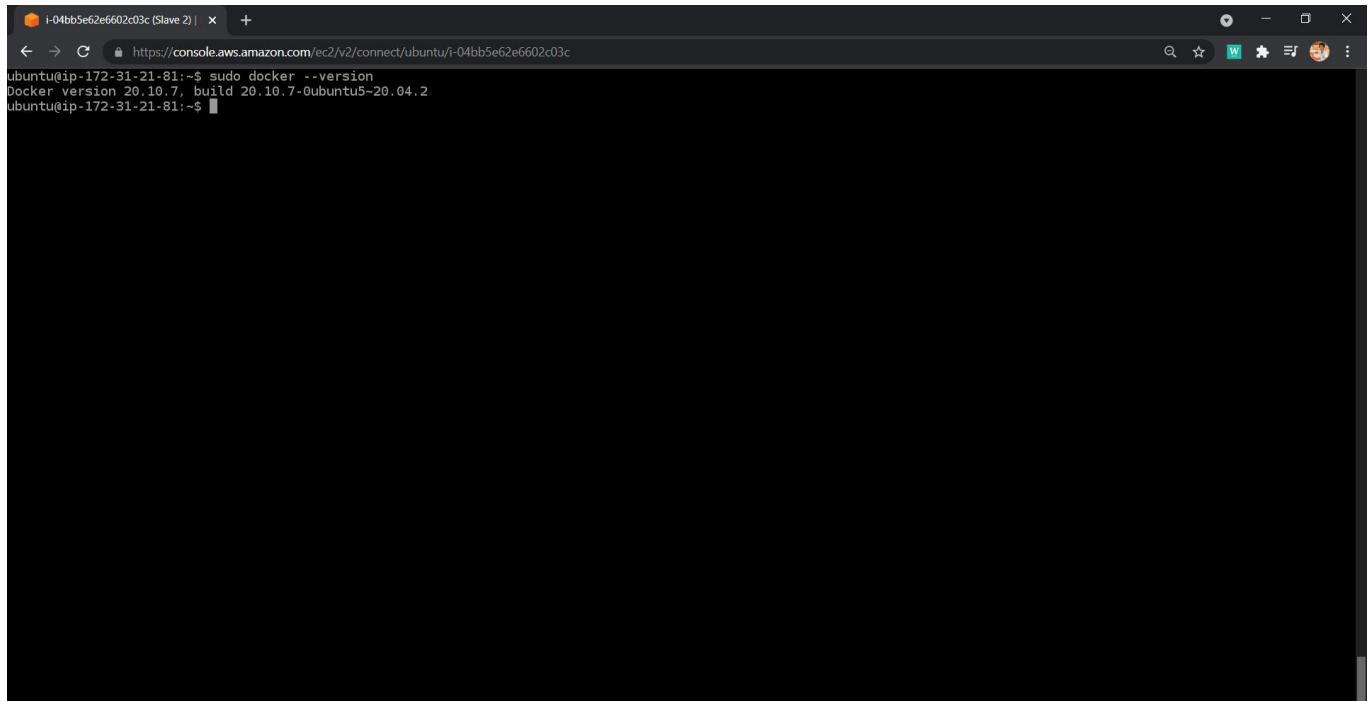
Refresh status

Assignment_1.pdf

agent.jar

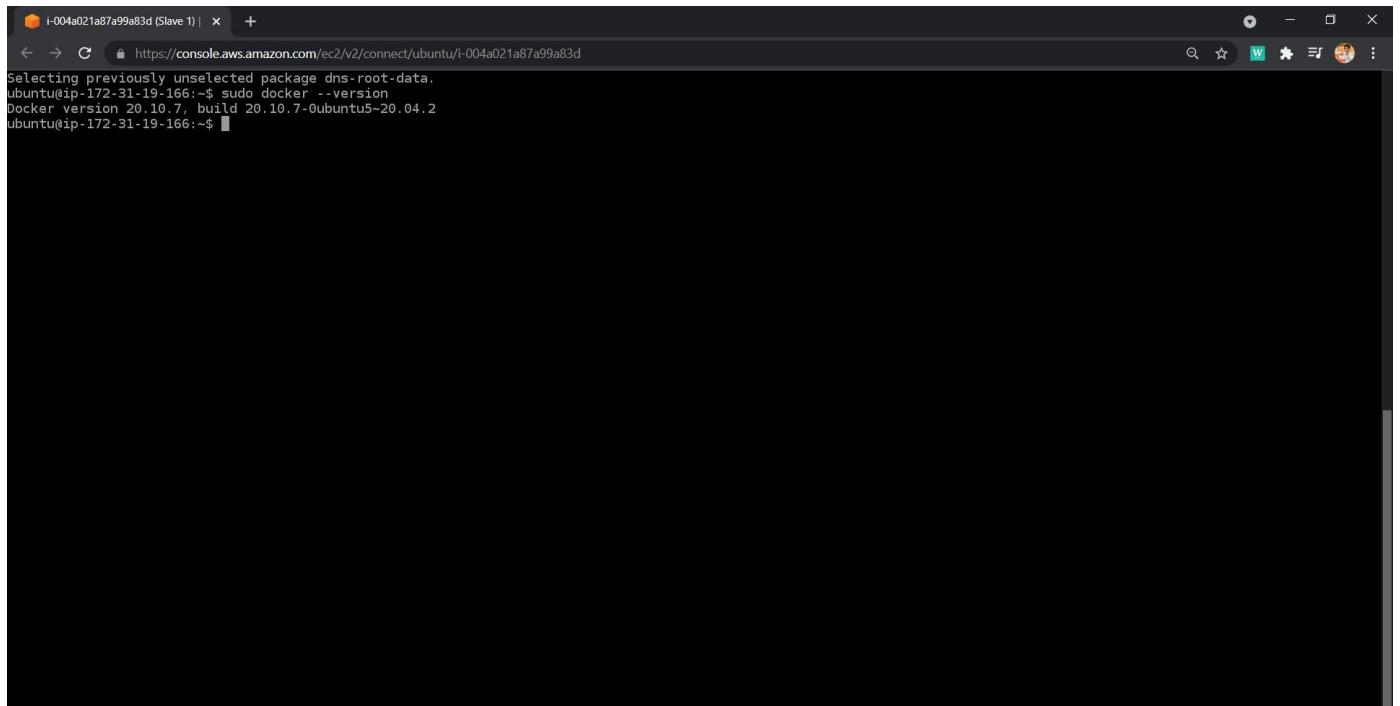
Show all

Step 9: Install docker on Slave-1 and Slave-2 ec2 instances.

A screenshot of the AWS Management Console terminal for an EC2 instance named 'i-04bb5e62e6602c03c (Slave 2)'. The terminal shows the command 'sudo docker --version' being executed, resulting in the output 'Docker version 20.10.7, build 20.10.7-0ubuntu5~20.04.2'. The browser window title is 'i-04bb5e62e6602c03c (Slave 2)' and the URL is 'https://console.aws.amazon.com/ec2/v2/connect/ubuntu/i-04bb5e62e6602c03c'.

```
i-04bb5e62e6602c03c (Slave 2) | x +
https://console.aws.amazon.com/ec2/v2/connect/ubuntu/i-04bb5e62e6602c03c
ubuntu@ip-172-31-21-81:~$ sudo docker --version
Docker version 20.10.7, build 20.10.7-0ubuntu5~20.04.2
ubuntu@ip-172-31-21-81:~$
```

i-04bb5e62e6602c03c (Slave 2)
Public IPs: 50.19.30.7 Private IPs: 172.31.21.81

A screenshot of the AWS Management Console terminal for an EC2 instance named 'i-004a021a87a99a83d (Slave 1)'. The terminal shows the command 'sudo docker --version' being executed, resulting in the output 'Docker version 20.10.7, build 20.10.7-0ubuntu5~20.04.2'. The browser window title is 'i-004a021a87a99a83d (Slave 1)' and the URL is 'https://console.aws.amazon.com/ec2/v2/connect/ubuntu/i-004a021a87a99a83d'.

```
i-004a021a87a99a83d (Slave 1) | x +
https://console.aws.amazon.com/ec2/v2/connect/ubuntu/i-004a021a87a99a83d
Selecting previously unselected package dns-root-data.
ubuntu@ip-172-31-19-166:~$ sudo docker --version
Docker version 20.10.7, build 20.10.7-0ubuntu5~20.04.2
ubuntu@ip-172-31-19-166:~$
```

i-004a021a87a99a83d (Slave 1)
Public IPs: 3.91.6.51 Private IPs: 172.31.19.166

Step 10: Create two jobs (test for Slave-1 and prod for Slave-2)

In configure, we are setting source code management as git and passing our Github repo link, in build we are selecting execute shell and writing some commands to run.

The screenshot shows the Jenkins Dashboard interface. The top navigation bar includes the Jenkins logo, a search bar, and user information (Raghu Bharadwaj). The left sidebar contains links to various dashboard sections: New Item, People, Build History, Manage Jenkins, My Views, Lockable Resources, and New View. The main content area displays a table of jobs, filtered by 'All' and 'CICD'. The table has columns for Status (S), Webhook (W), Name, Last Success, Last Failure, and Last Duration. Two jobs are listed: 'Prod' and 'Test'. The 'Prod' job has a last success of 18 min - #6 and a last failure of 1 hr 35 min - #3. The 'Test' job has a last success of 18 min - #10 and a last failure of 21 hr - #5. Below the table, there are links for 'Icon: S M L', 'Legend', and 'Atom feed for all', 'Atom feed for failures', and 'Atom feed for just latest builds'. The bottom status bar shows the current build queue (1) and the build executor status (1 Idle, 2 Idle, 1 Slave 2 offline).

S	W	Name ↓	Last Success	Last Failure	Last Duration
✓	☁	Prod	18 min - #6	1 hr 35 min - #3	5.2 sec
✓	⚙	Test	18 min - #10	21 hr - #5	6.8 sec

Step 11: Build Test

The screenshot shows the Jenkins web interface for a project named 'Test'. The top navigation bar includes a search bar, a user profile for 'Raghu Bharadwaj', and a 'log out' button. The left sidebar contains a 'Status' menu with options like 'Back to Dashboard', 'Changes', 'Workspace', 'Build Now', 'Configure', 'Delete Project', 'GitHub', and 'Rename'. Below this is a 'Build History' section with a 'trend' dropdown and a search box containing the word 'find'. The main content area is titled 'Project Test' and features a 'Workspace' icon, a 'Recent Changes' icon, and a 'Permalinks' section. On the right side of the main area, there are buttons for 'add description' and 'Disable Project'. The bottom status bar shows the Jenkins version '2.303.3' and a 'REST API' link.

The screenshot shows the Jenkins web interface for the 'Test #2 Console' page. The top navigation bar is similar to the previous screenshot, but the user profile is 'Raghu Bharadwaj'. The left sidebar has a 'Console Output' menu with options like 'Back to Project', 'Status', 'Changes', 'View as plain text', 'Edit Build Information', 'Delete build '#2'', 'Git Build Data', and 'Previous Build'. The main content area is titled 'Console Output' and displays the build log. The log starts with 'Started by user Raghu Bharadwaj' and 'Running as SYSTEM'. It shows the build process for a project named 'Test' on a slave node. The log includes the following commands and output:

```
Building remotely on slave 1 in workspace /home/ubuntu/workspace/Test
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /home/ubuntu/workspace/Test/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/RaghuPrasadJN/devopsIQ.git # timeout=10
Fetching upstream changes from https://github.com/RaghuPrasadJN/devopsIQ.git
> git --version # timeout=10
> git --version # 'git version 2.25.1'
> git fetch --tags --force --progress -- https://github.com/RaghuPrasadJN/devopsIQ.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision cc26380b7f45bfcf31831fc4f4f6e438fd6e2ab2 (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f cc26380b7f45bfcf31831fc4f4f6e438fd6e2ab2 # timeout=10
Commit message: "Set up CI with Azure Pipelines"
> git rev-list --no-walk cc26380b7f45bfcf31831fc4f4f6e438fd6e2ab2 # timeout=10
Finished: SUCCESS
```

The bottom status bar shows the Jenkins version '2.303.3' and a 'REST API' link.

Step 12: Build Prod

The screenshot shows the Jenkins web interface with the 'Prod #4 Console [Jenkins]' tab selected. The left sidebar contains links to Dashboard, Prod, #4, Back to Project, Status, Changes, Console Output (selected), View as plain text, Edit Build Information, Delete build '#4', Git Build Data, and Previous Build. The main area displays the 'Console Output' for the build, which includes the following text:

```
Started by user Raghu Bharadwaj
Running as SYSTEM
Building remotely on Slave 2 in workspace /home/ubuntu/workspace/Prod
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /home/ubuntu/workspace/Prod/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/RaghuPrasadJN/devopsIQ.git # timeout=10
Fetching upstream changes from https://github.com/RaghuPrasadJN/devopsIQ.git
> git --version # timeout=10
> git fetch --tags --force --progress -- https://github.com/RaghuPrasadJN/devopsIQ.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/master^(commit) # timeout=10
Checking out Revision cc26380b7f45bfcf31831fc4f4f6e438fd6e2ab2 (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f cc26380b7f45bfcf31831fc4f4f6e438fd6e2ab2 # timeout=10
Commit message: "Set up CI with Azure Pipelines"
> git rev-list --no-walk cc26380b7f45bfcf31831fc4f4f6e438fd6e2ab2 # timeout=10
[Prod] $ /bin/sh -xe /tmp/jenkins8831715064037005153.sh
+ sudo docker ps -a -q
+ sudo docker rm -f e4156972d2eb
e4156972d2eb
+ sudo docker build /home/ubuntu/workspace/Prod -t production
Sending build context to Docker daemon 24.35MB

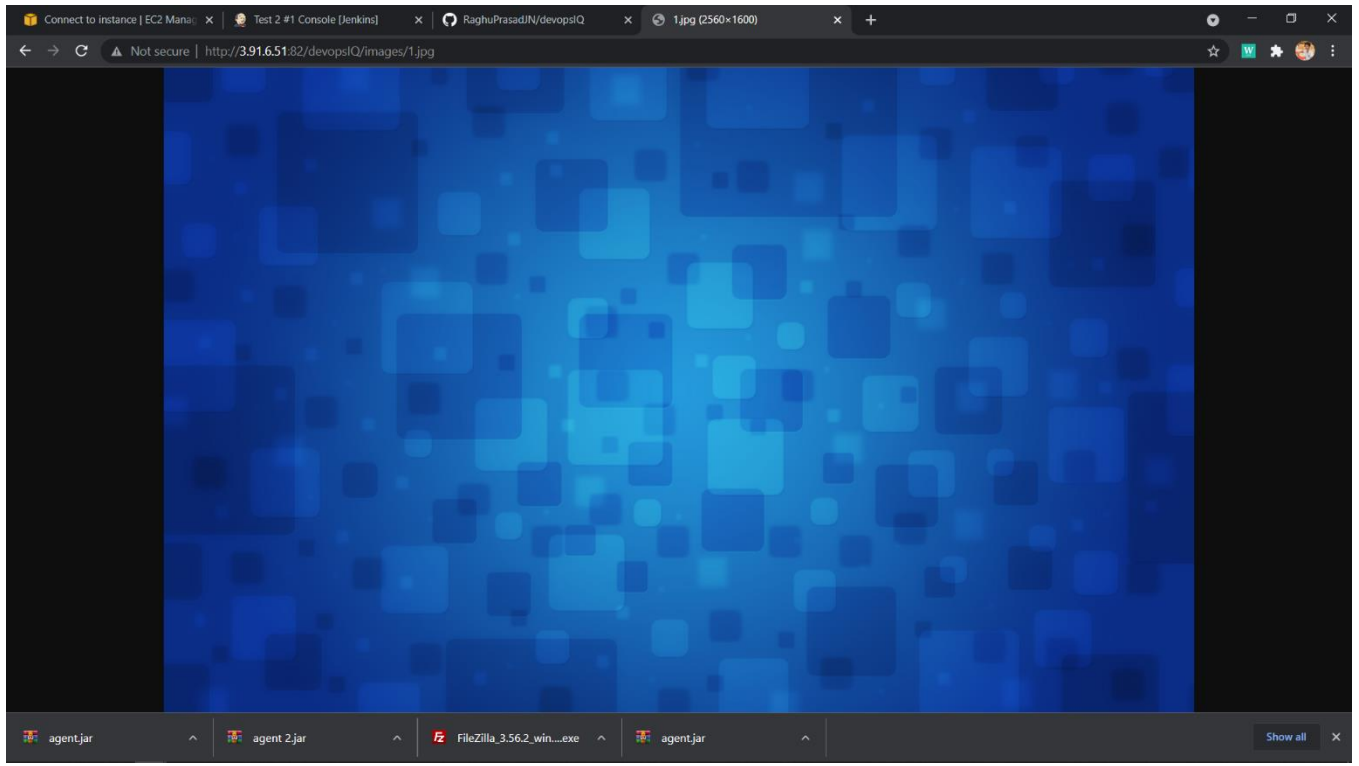
Step 1/2 : FROM hshar/webapp
--> 0cbc1f535ed8
Step 2/2 : ADD ./devopsIQ /var/www/html/devopsIQ
--> Using cache
--> 1997c58a2eb1
Successfully built 1997c58a2eb1
Successfully tagged production:latest
+ sudo docker run -it -p 80:80 -d production
```

At the bottom of the console output, there is a status bar showing 'agent.jar' and a 'Show all' button.

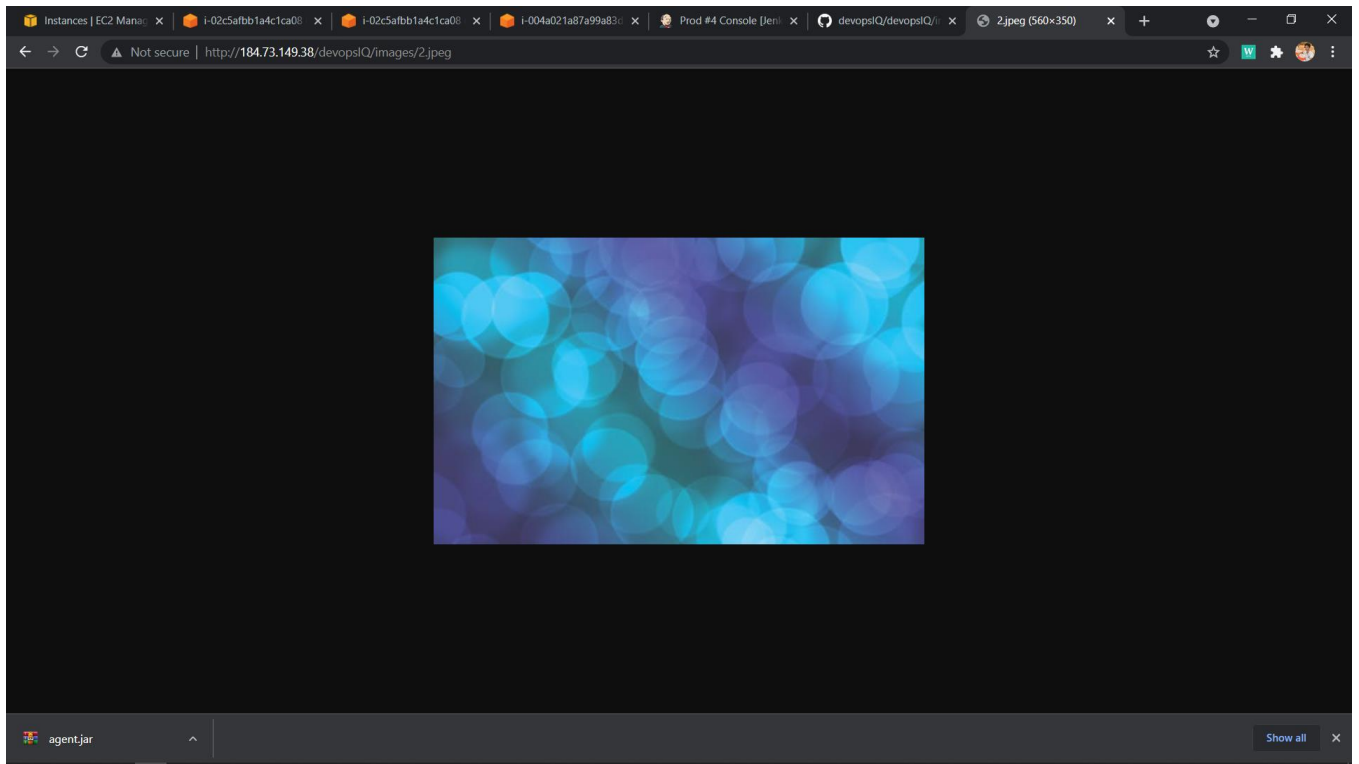
Step 13: Creating the pipeline.

The screenshot shows the Jenkins web interface with the 'CICD [Jenkins]' tab selected. The left sidebar contains links to Dashboard, CICD, and Pipeline. The main area displays the 'Build Pipeline: CICD' configuration page. The pipeline is named '#9' and consists of two steps: '#9 Test' and '#5 Prod'. The '#9 Test' step is a green box with a status of 'Success' and a duration of '2.2 sec'. The '#5 Prod' step is a green box with a status of 'Success' and a duration of '2.2 sec'. The pipeline is shown as a sequence of steps connected by arrows. The top of the page shows the Jenkins logo, a search bar, and the user 'Raghu Bharadwaj' with a 'log out' button. The bottom of the page shows the status bar with 'REST API' and 'Jenkins 2.303.3'.

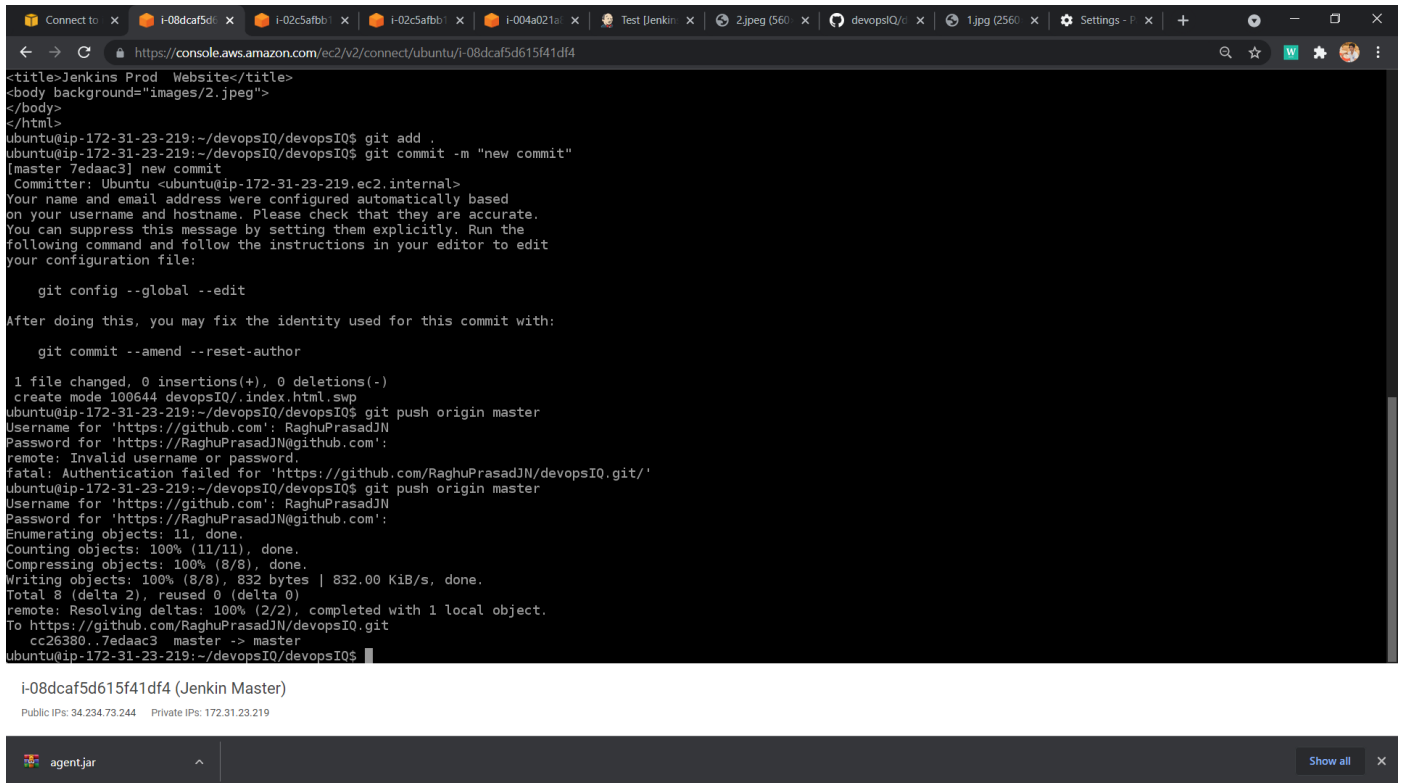
Step 14: we can see our website using slave-1 IP at port 82.



Slave 2 at port 80.



Step 15: Push to Origin master.



```
<title>Jenkins Prod Website</title>
<body background="images/2.jpeg">
</body>
</html>
ubuntu@ip-172-31-23-219:~/devopsIQ/devopsIQ$ git add .
ubuntu@ip-172-31-23-219:~/devopsIQ/devopsIQ$ git commit -m "new commit"
[master 7edaac3] new commit
Committer: Ubuntu <ubuntu@ip-172-31-23-219.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

1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 devopsIQ/.index.html.swp
ubuntu@ip-172-31-23-219:~/devopsIQ/devopsIQ$ git push origin master
Username for 'https://github.com': RaghuPrasadJN
Password for 'https://github.com':
remote: Invalid username or password.
fatal: Authentication failed for 'https://github.com/RaghuPrasadJN/devopsIQ.git/'
ubuntu@ip-172-31-23-219:~/devopsIQ/devopsIQ$ git push origin master
Username for 'https://github.com': RaghuPrasadJN
Password for 'https://github.com':
Enumerating objects: 11, done.
Counting objects: 100% (11/11), done.
Compressing objects: 100% (8/8), done.
Writing objects: 100% (8/8), 832 bytes | 832.00 KiB/s, done.
Total 8 (delta 2), reused 0 (delta 0)
remote: Resolving deltas: 100% (2/2), completed with 1 local object.
To https://github.com/RaghuPrasadJN/devopsIQ.git
cc26380..7edaac3 master -> master
ubuntu@ip-172-31-23-219:~/devopsIQ/devopsIQ$
```

i-08dcaf5d615f41df4 (Jenkin Master)

Public IPs: 34.234.73.244 Private IPs: 172.31.23.219

agent.jar ^ Show all x

Step 16: Final output After pushing it into the master.

