

Indian Institute of Information Technology, Dharwad



## **DEVOPS JENKINS ASSIGNMENT 2**

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### **Under the Guidance of:**

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# Problem Statement

Creating a Jenkins CICD master slave pipeline

## 1. This is the jenkins master, jenkins slave 1 and jenkins slave 2 aws instances

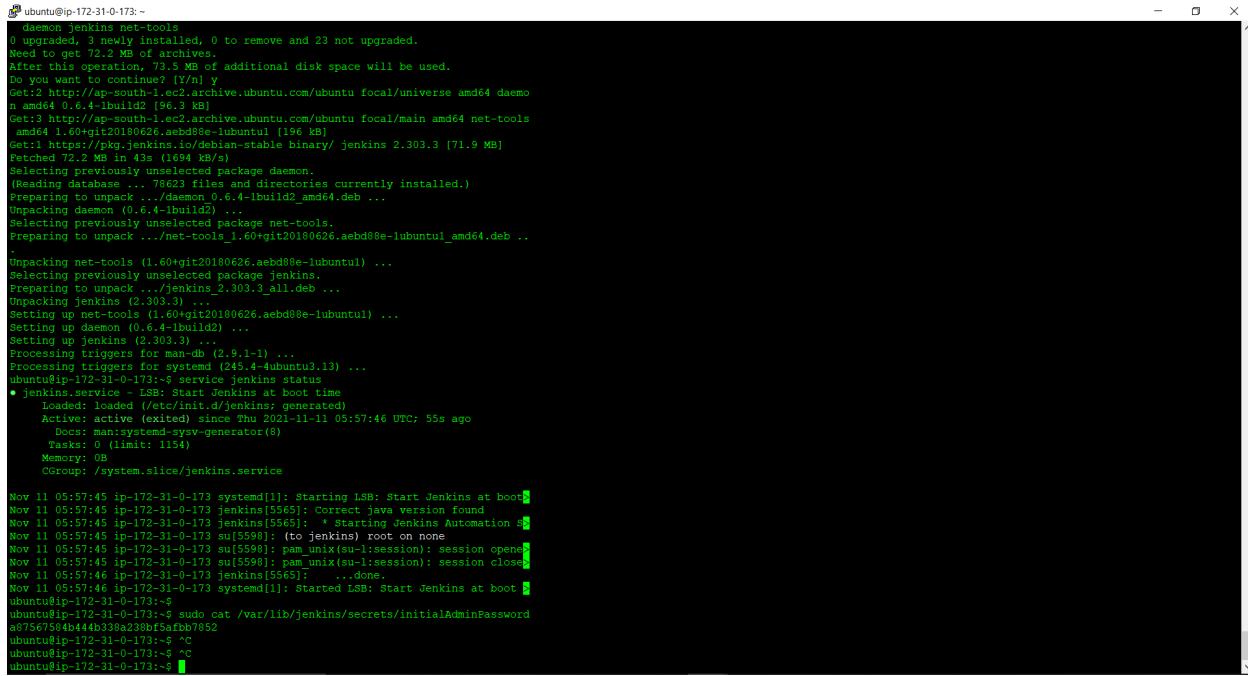
The screenshot shows the AWS EC2 Instances page with the following details:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
Ansible-slave	i-0d8c5b2a984d3a9e8	Terminated	t2.micro	-	No alarms	ap-south-1b	-
jenkins master	i-03fd8db502edecbc2	Terminated	t2.micro	-	No alarms	ap-south-1b	-
jenkins master	i-049b96fd466adddee	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1b	ec2-13-233-35-1
jenkins slave2	i-07d8c7c9bd41ec179	Running	t2.micro	-	No alarms	ap-south-1b	ec2-65-2-122-58
<b>jenkins slave1</b>	<b>i-0d937472dd5801ec0</b>	<b>Running</b>	<b>t2.micro</b>	<b>-</b>	<b>No alarms</b>	<b>ap-south-1b</b>	<b>ec2-15-206-178-35</b>

Details for the selected instance (jenkins slave1):

Instance: i-0d937472dd5801ec0 (jenkins slave1)			
Details			
Instance ID	Public IPv4 address	Private IPv4 addresses	
i-0d937472dd5801ec0 (jenkins slave1)	15.206.178.53   open address	172.31.1.59	
IPv6 address	Instance state	Public IPv4 DNS	
-	Running	ec2-15-206-178-53.ap-south-1.compute.amazonaws.com   open address	

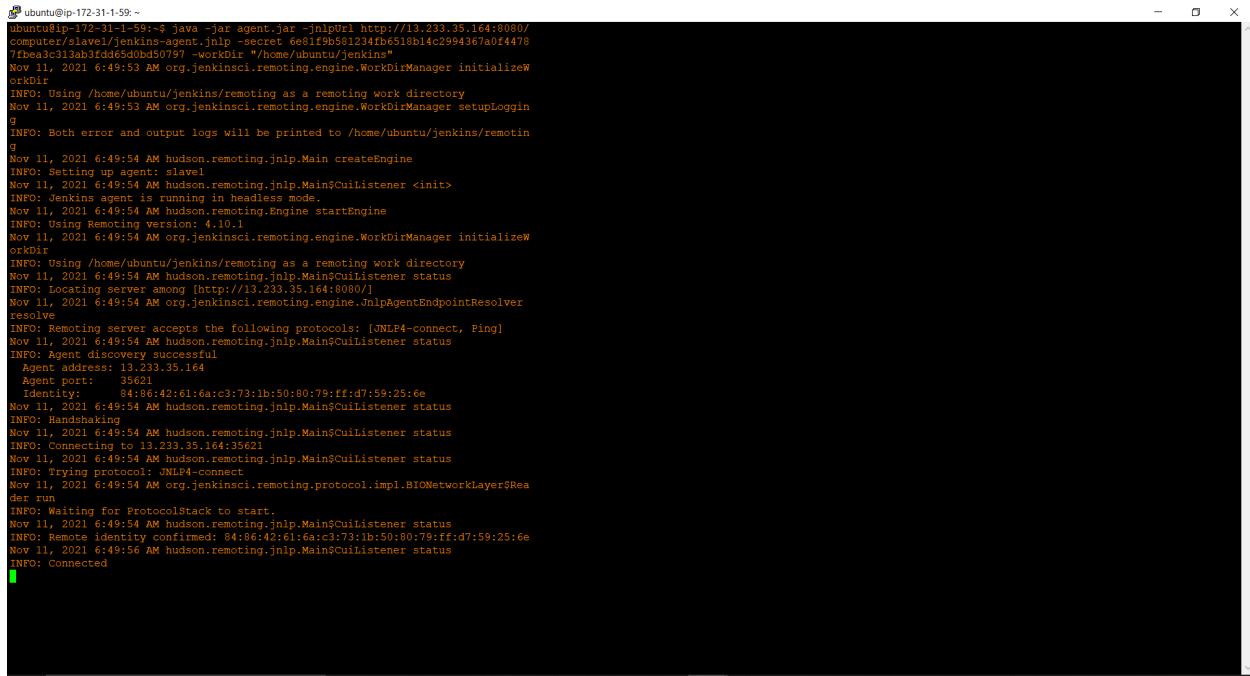
## 2.This is the jenkins master ec2 instance launched through putty, where jenkins is installed and status is active



```
ubuntu@ip-172-31-0-173:~$ sudo apt-get update
[...]
ubuntu@ip-172-31-0-173:~$ sudo apt-get install jenkins
[...]
ubuntu@ip-172-31-0-173:~$ systemctl status jenkins
● jenkins.service - Start Jenkins at boot time
   Loaded: loaded (/etc/init.d/jenkins; generated)
   Active: active (exited) since Thu 2021-11-11 05:57:46 UTC; 55s ago
     Docs: man:systemd-sysv-generator(8)
       Tasks: 0 (limit: 1154)
      Memory: 0B
        Group: /system.slice/jenkins.service
[...]
```

The terminal window shows the process of updating the package list, installing Jenkins, and then checking its status via the system's init system. The Jenkins service is listed as active (exited), having started at boot time.

### 3. This is the jenkins slave1 node connected to Jenkins server



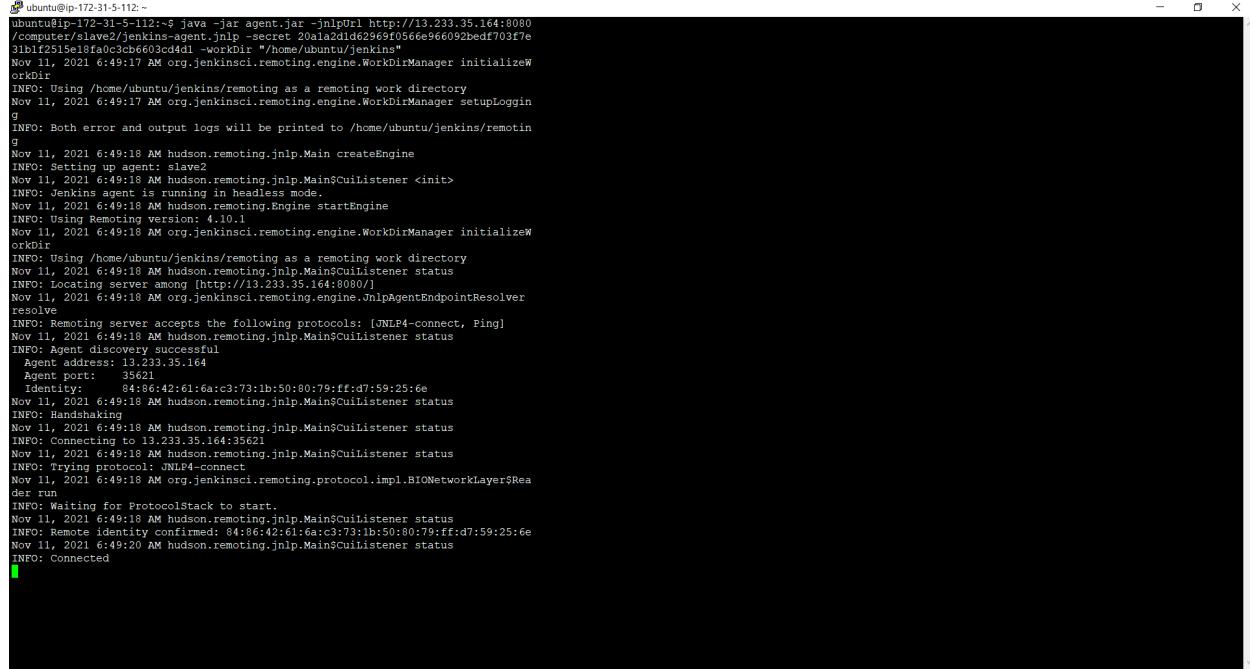
A terminal window titled 'ubuntu@ip-172-31-1-59:' showing the output of a Java command. The command is:

```
java -jar agent.jar -jnlpUrl http://13.233.35.164:8080/computer/slave1/jenkins-agent.jnlp -secret ee81f9b581234fb651b1c2c994367a0f44787fbea3c313ab1fd6d50bd50797 -workDir "/home/ubuntu/jenkins"
```

The log output shows the Jenkins slave1 node connecting to the Jenkins master at 13.233.35.164:8080. It includes details about the agent's configuration, the creation of the Hudson Remoting Engine, and the discovery of the agent. The log ends with the message 'INFO: Connected'.

```
ubuntu@ip-172-31-1-59:~$ java -jar agent.jar -jnlpUrl http://13.233.35.164:8080/computer/slave1/jenkins-agent.jnlp -secret ee81f9b581234fb651b1c2c994367a0f44787fbea3c313ab1fd6d50bd50797 -workDir "/home/ubuntu/jenkins"
Nov 11, 2021 6:49:53 AM org.jenkinsci.remoting.engine.WorkDirManager initializeWORkDir
INFO: Using /home/ubuntu/jenkins/remoting as a remoting work directory
Nov 11, 2021 6:49:53 AM org.jenkinsci.remoting.engine.WorkDirManager setupLoggin
g
INFO: Both error and output logs will be printed to /home/ubuntu/jenkins/remotin
g
Nov 11, 2021 6:49:54 AM hudson.remoting.Jnlp.Main createEngine
INFO: Setting up agent: slave1
Nov 11, 2021 6:49:54 AM hudson.remoting.Jnlp.Main$CuiListener <init>
INFO: Jenkins agent is running in headless mode.
Nov 11, 2021 6:49:54 AM hudson.remoting.Engine startEngine
INFO: Using Remoting version 4.10.1
Nov 11, 2021 6:49:54 AM org.jenkinsci.remoting.engine.WorkDirManager initializeW
ORkDir
INFO: Using /home/ubuntu/jenkins/remoting as a remoting work directory
Nov 11, 2021 6:49:54 AM hudson.remoting.Jnlp.Main$CuiListener status
INFO: Locating server among [http://13.233.35.164:8080/]
Nov 11, 2021 6:49:54 AM org.jenkinsci.remoting.engine.JnlpAgentEndpointResolver
resolve
INFO: Remoting server accepts the following protocols: [JNLP4-connect, Ping]
Nov 11, 2021 6:49:54 AM hudson.remoting.Jnlp.Main$CuiListener status
INFO: Agent discovery successful
  Agent address: 13.233.35.164
  Agent port: 35621
  Identity: 84:86:42:61:6a:c3:73:1b:50:80:79:ff:d7:59:25:6e
Nov 11, 2021 6:49:54 AM hudson.remoting.Jnlp.Main$CuiListener status
INFO: Handshaking...
Nov 11, 2021 6:49:54 AM hudson.remoting.Jnlp.Main$CuiListener status
INFO: Connecting to 13.233.35.164:35621
Nov 11, 2021 6:49:54 AM hudson.remoting.Jnlp.Main$CuiListener status
INFO: Trying protocol: JNLP4-connect
Nov 11, 2021 6:49:54 AM org.jenkinsci.remoting.protocol.impl.BIONetworkLayer$Rea
der run
INFO: Waiting for ProtocolStack to start.
Nov 11, 2021 6:49:54 AM hudson.remoting.Jnlp.Main$CuiListener status
INFO: Remote identity confirmed: 84:86:42:61:6a:c3:73:1b:50:80:79:ff:d7:59:25:6e
Nov 11, 2021 6:49:56 AM hudson.remoting.Jnlp.Main$CuiListener status
INFO: Connected
```

## 4.This is the jenkins slave2 node connected to Jenkins server



```
ubuntu@ip-172-31-5-112:~$ java -jar agent.jar http://13.233.35.164:8080/computer/slave2/jenkins-agent.jnlp -secret 20ala2dd1d6296f0566e966092bed703f7e31b1f2515e18fa0c3cb6603cd4d1 -workdir "/home/ubuntu/jenkins"  
Nov 11, 2021 6:49:17 AM org.jenkinsci.remoting.engine.WorkDirManager initializeW  
orkDir  
INFO: Using /home/ubuntu/jenkins/remoting as a remoting work directory  
Nov 11, 2021 6:49:17 AM org.jenkinsci.remoting.engine.WorkDirManager setupLogin  
g  
INFO: Both error and output logs will be printed to /home/ubuntu/jenkins/remotin  
g  
Nov 11, 2021 6:49:18 AM hudson.remoting.jnlp.Main createEngine  
INFO: Setting up agent: slave2  
Nov 11, 2021 6:49:18 AM hudson.remoting.jnlp.Main$CuiListener <init>  
INFO: Jenkins agent is running in headless mode.  
Nov 11, 2021 6:49:18 AM hudson.remoting.Engine startEngine  
INFO: Using Remoting version: 4.10.1  
Nov 11, 2021 6:49:18 AM org.jenkinsci.remoting.engine.WorkDirManager initializeW  
orkDir  
INFO: Using /home/ubuntu/jenkins/remoting as a remoting work directory  
Nov 11, 2021 6:49:18 AM hudson.remoting.jnlp.Main$CuiListener status  
INFO: Locating server among [http://13.233.35.164:8080]  
Nov 11, 2021 6:49:18 AM org.jenkinsci.remoting.engine.JnlpAgentEndpointResolver  
getServer  
INFO: Remoting server accepts the following protocols: [JNLP4-connect, Ping]  
Nov 11, 2021 6:49:18 AM hudson.remoting.jnlp.Main$CuiListener status  
INFO: Agent discovery successful  
Agent address: 13.233.35.164  
Agent port: 35621  
Identity: 84:86:42:61:6a:c3:73:1b:50:80:79:ff:d7:59:25:6e  
Nov 11, 2021 6:49:18 AM hudson.remoting.jnlp.Main$CuiListener status  
INFO: Handshaking  
Nov 11, 2021 6:49:18 AM hudson.remoting.jnlp.Main$CuiListener status  
INFO: Connecting to 13.233.35.164:35621  
Nov 11, 2021 6:49:18 AM hudson.remoting.jnlp.Main$CuiListener status  
INFO: Trying protocol: JNLP4-connect  
Nov 11, 2021 6:49:18 AM org.jenkinsci.remoting.protocol.impl.BIONetworkLayer$Rea  
der run  
INFO: Waiting for ProtocolStack to start.  
Nov 11, 2021 6:49:18 AM hudson.remoting.jnlp.Main$CuiListener status  
INFO: Remote identity confirmed: 84:86:42:61:6a:c3:73:1b:50:80:79:ff:d7:59:25:6e  
Nov 11, 2021 6:49:20 AM hudson.remoting.jnlp.Main$CuiListener status  
INFO: Connected
```

## 5.This is the fully connected master and slaves setup

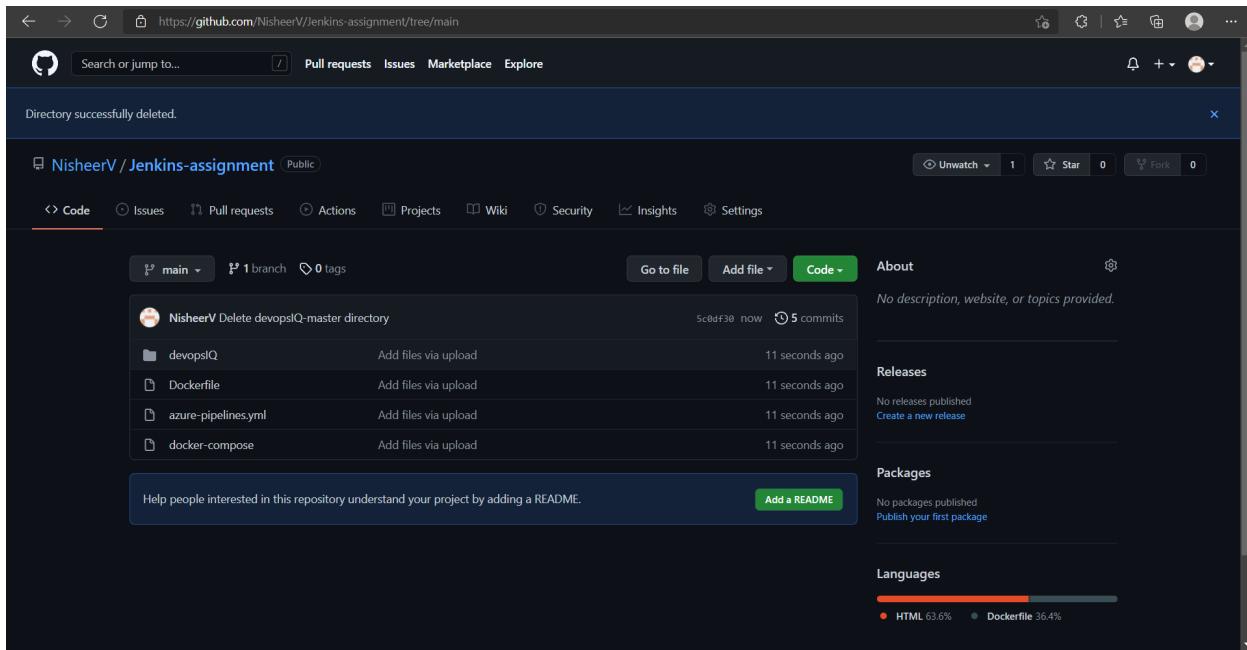
The screenshot shows the Jenkins interface for managing nodes. The top navigation bar indicates the URL is 13.233.35.164:8080/computer/. The main content area is titled "Nodes". On the left sidebar, there are links for Back to Dashboard, Manage Jenkins, New Node, Configure Clouds, and Node Monitoring. Below these are sections for Build Queue (No builds in the queue) and Build Executor Status.

The central part of the screen displays a table of nodes:

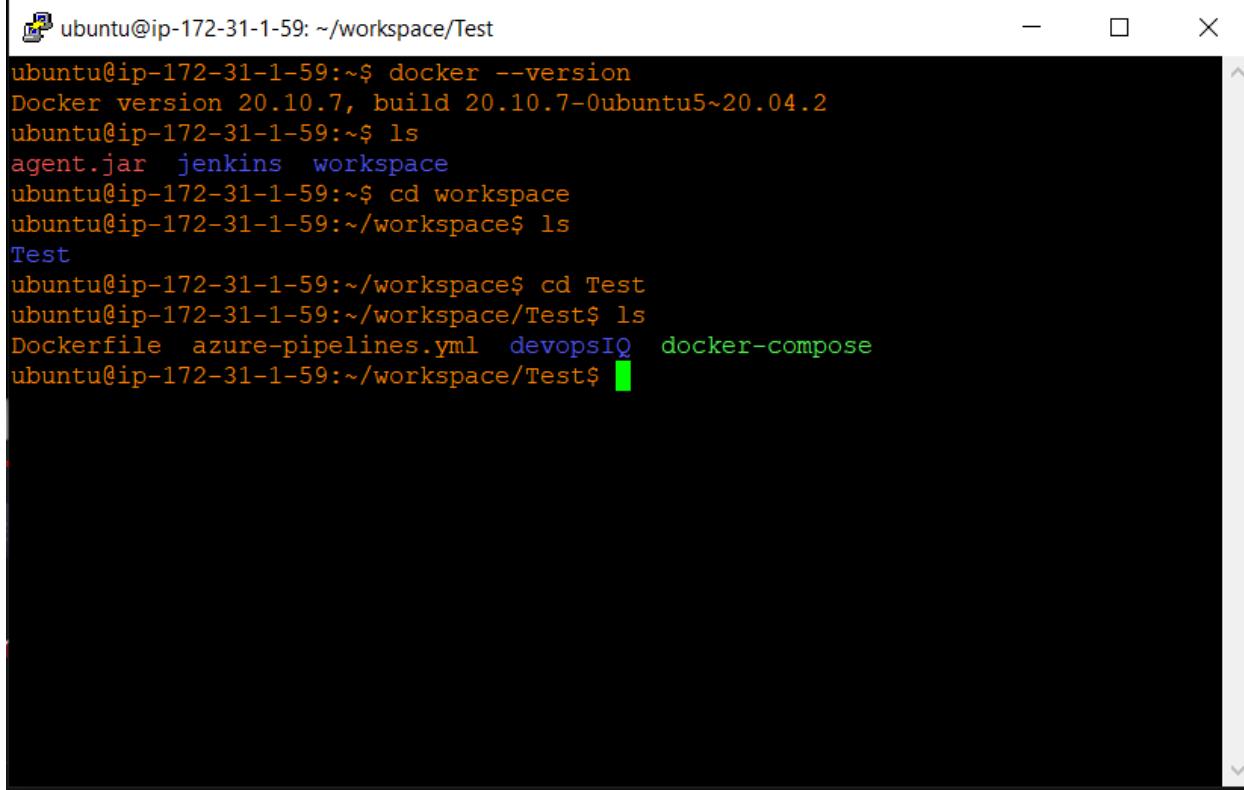
S	Name	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
	master	Linux (amd64)	In sync	5.14 GB	0 B	5.14 GB	0ms
	slave1	Linux (amd64)	In sync	5.74 GB	0 B	5.74 GB	117ms
	slave2	Linux (amd64)	In sync	5.74 GB	0 B	5.74 GB	71ms

Below the table, there is a row of metrics: Data obtained, 39 sec; 39 sec; 39 sec; 39 sec; 39 sec; 39 sec; 39 sec. A blue "Refresh status" button is located at the bottom right of the table area.

## **6.This is the github repository which contains the project files**



## **7.Checking contents of slave1 test server after executing build step.**



A terminal window showing the command-line interface of a slave1 test server. The session starts with the user checking the Docker version, then listing files in their workspace, navigating into the 'Test' directory, and finally listing files within that directory. The terminal has standard window controls (minimize, maximize, close) at the top right.

```
ubuntu@ip-172-31-1-59:~/workspace/Test
ubuntu@ip-172-31-1-59:~$ docker --version
Docker version 20.10.7, build 20.10.7-0ubuntu5~20.04.2
ubuntu@ip-172-31-1-59:~$ ls
agent.jar jenkins workspace
ubuntu@ip-172-31-1-59:~$ cd workspace
ubuntu@ip-172-31-1-59:~/workspace$ ls
Test
ubuntu@ip-172-31-1-59:~/workspace$ cd Test
ubuntu@ip-172-31-1-59:~/workspace/Test$ ls
Dockerfile azure-pipelines.yml devopsIQ docker-compose
ubuntu@ip-172-31-1-59:~/workspace/Test$
```

## 8.Configuring the test server by first adding Github project link

The screenshot shows the Jenkins job configuration interface for a job named 'Test'. The 'General' tab is selected. In the 'Source Code Management' section, the 'GitHub project' option is checked, and the 'Project url' is set to <https://github.com/NisheerV/Jenkins-assignment.git>. Other build configurations like 'Discard old builds' and 'Restrict where this project can be run' are also visible. At the bottom, there are 'Save' and 'Apply' buttons.

## **9.Restricting project to slave 1 and Adding Source code management as Git when configuring for the test server.**

The screenshot shows the Jenkins configuration interface for a job named "Test". The "General" tab is selected. Under "Restrict where this project can be run", the "Label Expression" field contains "slave1". A note below states: "Label slave1 matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list." The "Source Code Management" section is expanded, showing "Git" selected and a repository URL of "https://github.com/NisheerV/Jenkins-assignment.git". The "Credentials" dropdown is set to "- none -". At the bottom, there are "Save" and "Apply" buttons.

## 10.Adding build steps to the test server

The screenshot shows a Jenkins configuration page for a job named "Test". The top navigation bar includes links for Dashboard, Test, General, Source Code Management, Build Triggers, Build Environment, Build, and Post-build Actions. The "Build Environment" tab is selected.

The "Build" section contains an "Execute shell" step. The "Command" field contains the following Jenkins Groovy script:

```
sudo docker rm -f $(sudo docker ps -a -q)
sudo docker build /home/ubuntu/workspace/Test -t test
sudo docker run -it -p 82:80 -d test
```

Below the command, there is a link to "See the list of available environment variables" and an "Advanced..." button.

The "Post-build Actions" section has a "Add post-build action" button.

At the bottom, there are "Save" and "Apply" buttons.

## 11.First successful build on slave 1 test server

The screenshot shows the Jenkins interface for a successful build. The main title is "Build #5 (Nov 11, 2021 7:36:58 AM)". The status is green with a checkmark icon. The build was started by user "Nisheer V". The repository information is: Revision: cc26380b745bfcf31831fc414f6e438fd6e2ab2, Repository: <https://github.com/hshar/devops1Q.git>, and ref: refs/remotes/origin/master. The sidebar on the left includes links for Back to Project, Status, Changes, Console Output, Edit Build Information, Delete build '#5', Git Build Data, and Previous Build.

Build #5 (Nov 11, 2021 7:36:58 AM)

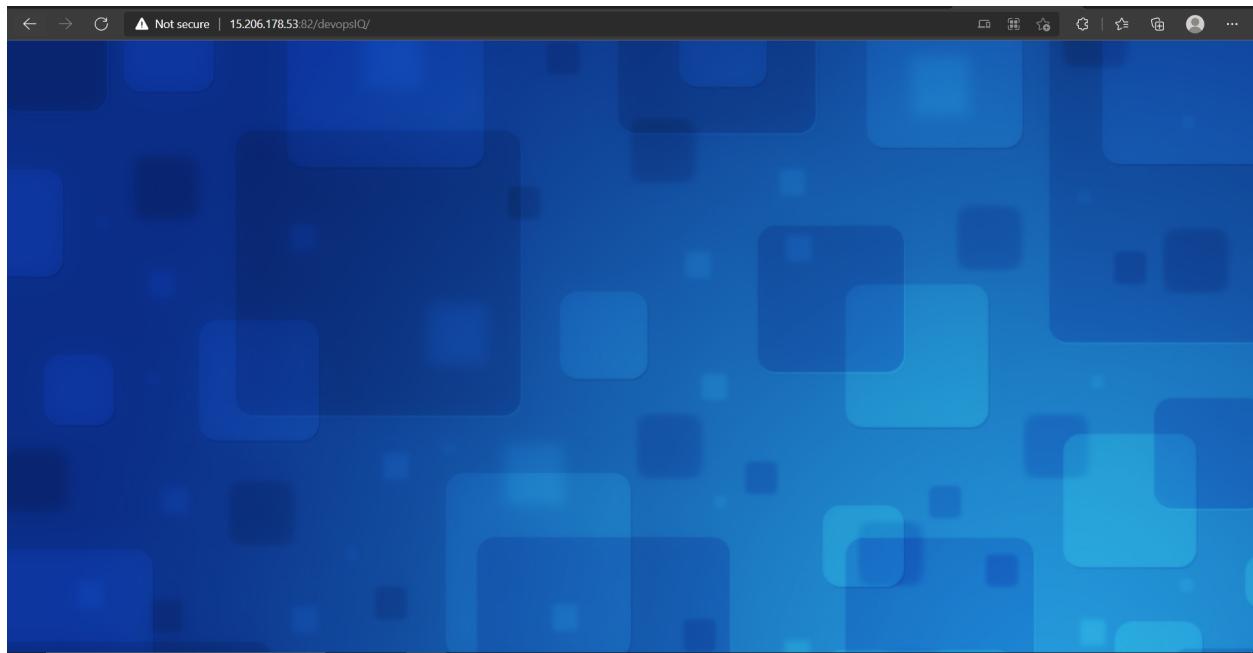
No changes.

Started by user [Nisheer V](#)

Revision: cc26380b745bfcf31831fc414f6e438fd6e2ab2  
Repository: <https://github.com/hshar/devops1Q.git>  
refs/remotes/origin/master

REST API Jenkins 2.303.3

## **12.Working website on test server**



## 13.Now testing the test server by removing the current container

```
ubuntu@ip-172-31-1-59:~/workspace/Test
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker run -it -p 82:80 -d test
c6ba5c965afa7e1670e213e02a61cb80b15855c118f4e8c6696c62c9ba101a41
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS
PORTS NAMES
c6ba5c965afa test "/bin/sh -c 'apachedc'" 9 minutes ago Up 9 minutes
0.0.0.0:82->80/tcp, :::82->80/tcp serene_northcutt
ubuntu@ip-172-31-1-59:~/workspace/Test$ ^C
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker rm -f c6ba5c965afa
c6ba5c965afa
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker run -it -d ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
Digest: sha256:626ffef5ffef7566e00254b638eb7e0f2b1d4da9675088f4781a50ae288f3322
Status: Downloaded newer image for ubuntu:latest
e4395da7a5502a77174e136fc666d2a639fc00e43a310103554686fcfc1a0523
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS
PORTS NAMES
fd9000ac9f7a test "/bin/sh -c 'apachedc'" About a minute ago Up About
a minute 0.0.0.0:82->80/tcp, :::82->80/tcp dreamy_yallow
ubuntu@ip-172-31-1-59:~/workspace/Test$ ^C
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker rm -f fd9000ac9f7a
fd9000ac9f7a
ubuntu@ip-172-31-1-59:~/workspace/Test$
```

## 14. Project test build status

The screenshot shows the Jenkins interface for the 'Project Test' job. The top navigation bar indicates the URL is 13.233.35.164:8080/job/Test/. The right side of the header shows a search bar, user information for 'Nisheer V', and a 'log out' button. The main content area has a title 'Project Test'. On the left, there's a sidebar with links: 'Back to Dashboard', 'Status' (which is selected), 'Changes', 'Workspace', 'Build Now', 'Configure', 'Delete Project', 'GitHub', and 'Rename'. The main content area displays 'Recent Changes' and a 'Permalinks' section with a bulleted list of build history. Below that is a 'Build History' table with three rows: #5 (Nov 11, 2021 7:36 AM), #4 (Nov 11, 2021 7:13 AM), and #3 (Nov 11, 2021 7:10 AM). At the bottom of the table are links for 'Atom feed for all' and 'Atom feed for failures'.

Project Test

Status

Changes

Workspace

Build Now

Configure

Delete Project

GitHub

Rename

Build History trend ^

find
#5 Nov 11, 2021 7:36 AM
#4 Nov 11, 2021 7:13 AM
#3 Nov 11, 2021 7:10 AM

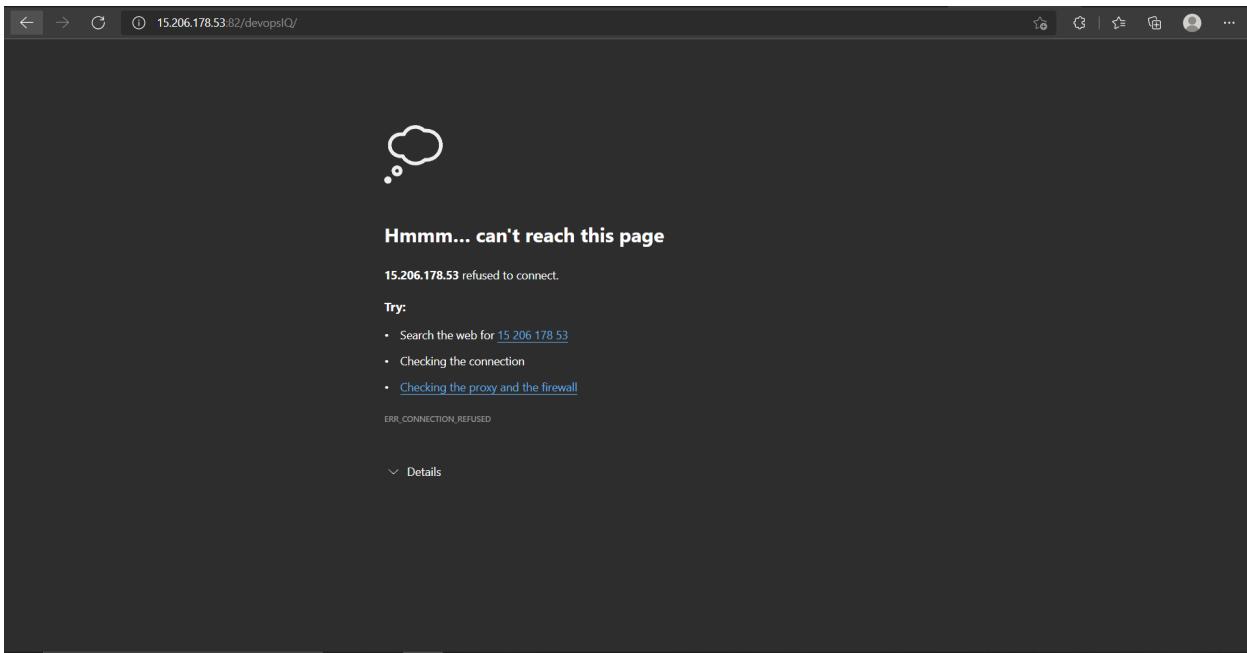
Atom feed for all Atom feed for failures

Recent Changes

Permalinks

- Last build (#5), 1 min 0 sec ago
- Last stable build (#5), 1 min 0 sec ago
- Last successful build (#5), 1 min 0 sec ago
- Last failed build (#3), 27 min ago
- Last unsuccessful build (#3), 27 min ago
- Last completed build (#5), 1 min 0 sec ago

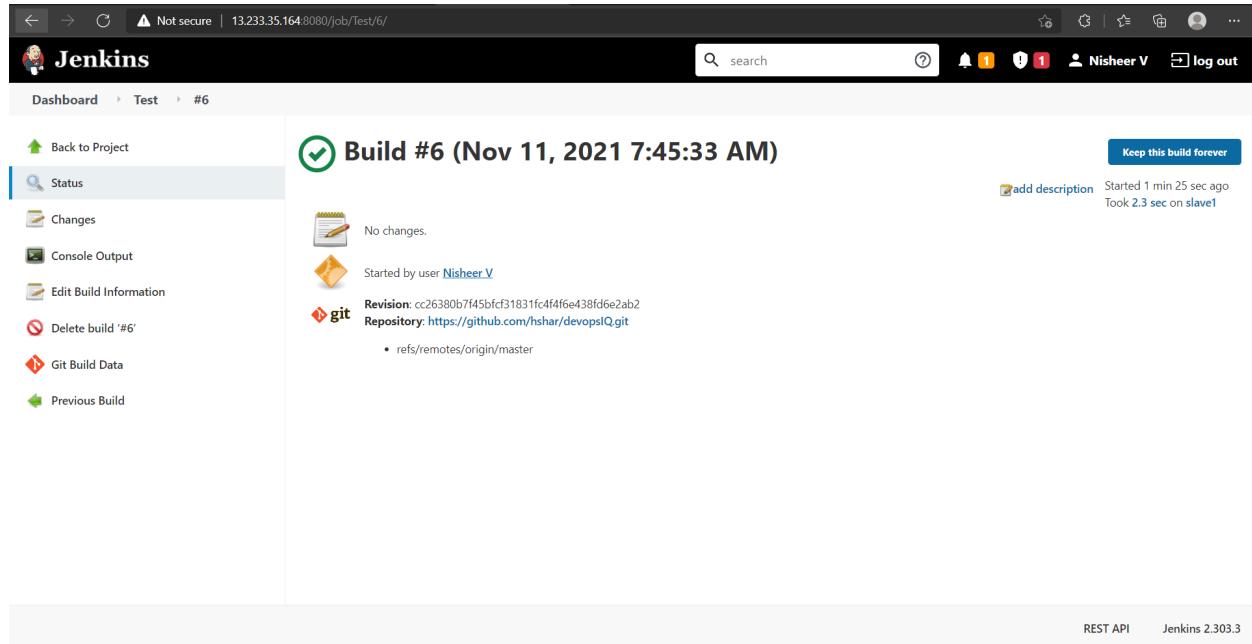
## 15.Checking the website if the container has been removed



## 16.Adding command to build an arbitrary container

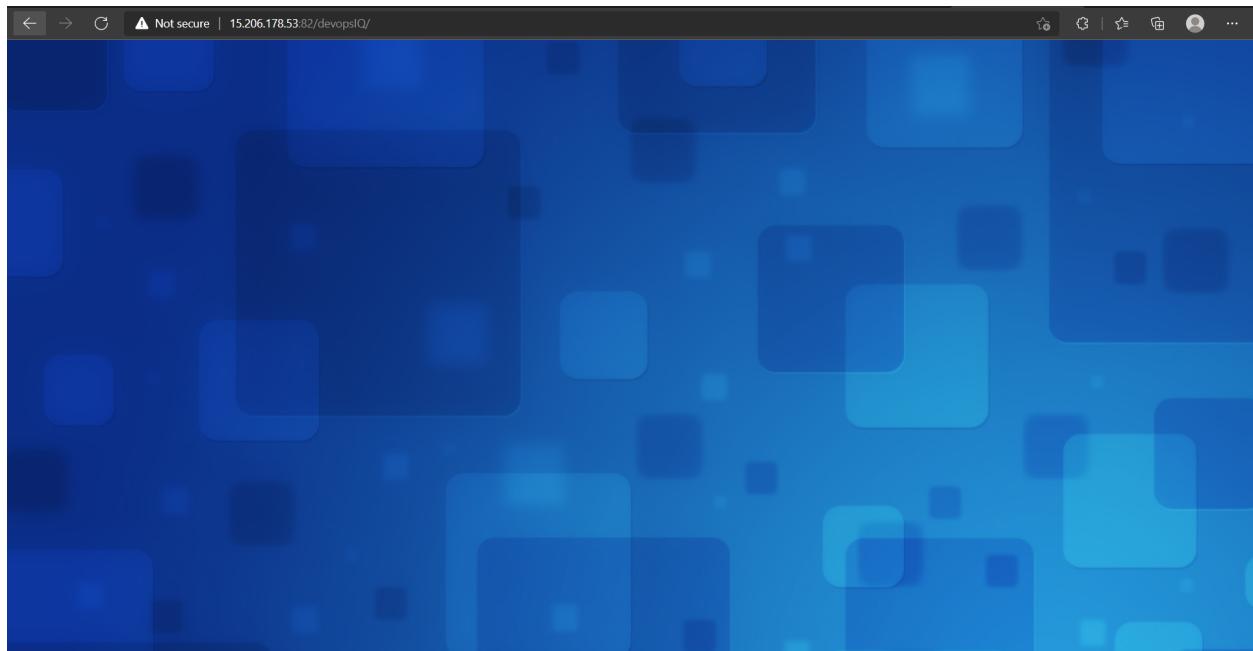
```
ubuntu@ip-172-31-1-59: ~/workspace/Test
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker run -it -p 82:80 -d test
c6ba5c965afa: Pulling from workspace/test5
Digest: sha256:626ffef5ff6e7566e00254b638eb7e0f2b1d4da9675088f4781a50ae288f3322
Status: Downloaded newer image for ubuntu:latest
e1395da7a5502a77174e136fc66d2a639fc00e43a1010103554686fcfc1a0523
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS
PORTS NAMES
c6ba5c965afa test "/bin/sh -c 'apachectl'" 9 minutes ago Up 9 minutes
0.0.0.0:82->80/tcp, :::82->80/tcp serene_northcutt
ubuntu@ip-172-31-1-59:~/workspace/Test$ ^C
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker rm -f c6ba5c965afa
c6ba5c965afa
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker run -it -d ubuntu
Error: Pulling image failed: Error response from daemon: Get https://index.docker.io/v1/repositories/ubuntu/images: dial tcp 172.25.0.1:4441: connect: connection refused
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker pull ubuntu
Digest: sha256:626ffef5ff6e7566e00254b638eb7e0f2b1d4da9675088f4781a50ae288f3322
Status: Downloaded newer image for ubuntu:latest
e1395da7a5502a77174e136fc66d2a639fc00e43a1010103554686fcfc1a0523
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS
PORTS NAMES
fd9000ac9f7a test "/bin/sh -c 'apachectl'" About a minute ago Up About a minute
0.0.0.0:82->80/tcp, :::82->80/tcp dreamy_yallow
ubuntu@ip-172-31-1-59:~/workspace/Test$ ^C
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker rm -f fd9000ac9f7a
fd9000ac9f7a
ubuntu@ip-172-31-1-59:~/workspace/Test$ sudo docker run -it -d ubuntu
f948d787ffff4a9442fe0097901fe802d5339b6d46216698f83276fe10454e41a
ubuntu@ip-172-31-1-59:~/workspace/Test$
```

## 17. Running new build to check if the test server is executing all commands



The screenshot shows the Jenkins interface for a build named "Test" (Build #6). The top navigation bar indicates the URL is 13.233.35.164:8080/job/Test/6/. The main title is "Build #6 (Nov 11, 2021 7:45:33 AM)". A green checkmark icon is present next to the title. On the right, there is a "Keep this build forever" button. The left sidebar contains links for Back to Project, Status (which is selected), Changes, Console Output, Edit Build Information, Delete build #6, Git Build Data, and Previous Build. The "Status" section shows "No changes." and "Started by user Nisheer V". It also displays Git information: Revision: cc26380b7f45bfcf31831fc4f4f6e438fd6e2ab2, Repository: https://github.com/hshar/devops1Q.git, and ref: refs/remotes/origin/master. The bottom right corner shows "REST API" and "Jenkins 2.303.3".

## **18.New build is successful**



## **19.This is the test server build status**

The screenshot shows the Jenkins interface for a project named "Project Test". The left sidebar contains links for Back to Dashboard, Status, Changes, Workspace, Build Now (which is selected), Configure, Delete Project, GitHub, and Rename. The main content area displays the "Project Test" title, workspace, and recent changes. Below this is a "Permalinks" section with a list of build logs. The "Build History" table lists the last five builds, with the most recent being successful (#5) and the previous one failing (#3). A search bar at the top right allows users to search for specific builds.

#	Build	Date
⑥	#5	Nov 11, 2021 7:45 AM
⑤	#5	Nov 11, 2021 7:36 AM
④	#4	Nov 11, 2021 7:13 AM
③	#3	Nov 11, 2021 7:10 AM

## 20.This is the running test server project dashboard

The screenshot shows the Jenkins dashboard at the URL <http://13.233.35.164:8080>. The top navigation bar indicates "Not secure". The dashboard features a sidebar on the left with links like "New Item", "People", "Build History", "Manage Jenkins", "My Views", "Lockable Resources", and "New View". The main content area displays a table for the "Test" job, which has a status of "Success" (green checkmark), a build number of "#6", and a duration of "6 min 2 sec". It also shows the last failure was 40 minutes ago. Below the table, there are sections for "Build Queue" (empty) and "Build Executor Status" (one master and one slave node both idle). A legend at the bottom right provides links for Atom feeds.

All	W	Name	Last Success	Last Failure	Last Duration
		Test	6 min 2 sec - #6	40 min - #3	2.3 sec

Icon: S M L

Legend: Atom feed for all | Atom feed for failures | Atom feed for just latest builds

## 21.Configuring the production server by first adding Github project link

The screenshot shows the Jenkins configuration interface for a job named 'Prod'. The 'General' tab is selected. In the 'Source Code Management' section, the 'GitHub project' option is checked, and the 'Project url' field contains the value 'https://github.com/NisheerV/Jenkins-assignment.git'. Other build configurations like 'Discard old builds' and 'Restrict where this project can be run' are also visible. At the bottom, there are 'Save' and 'Apply' buttons.

## **22.Restricting project to slave 2 and Adding Source code management as Git when configuring for the production server.**

The screenshot shows the Jenkins configuration page for a job named 'Prod'. The 'General' tab is selected. Under 'Restrict where this project can be run', the 'Label Expression' is set to 'slave2'. In the 'Source Code Management' section, 'Git' is selected as the provider, and the 'Repository URL' is set to 'https://github.com/NisheerV/Jenkins-assignment.git'. There are 'Save' and 'Apply' buttons at the bottom.

## 23.Adding build steps to the production server

The screenshot shows the Jenkins configuration interface for a job named 'Prod'. The 'Build Environment' tab is active. In the 'Build' section, there is one step defined:

- Execute shell**

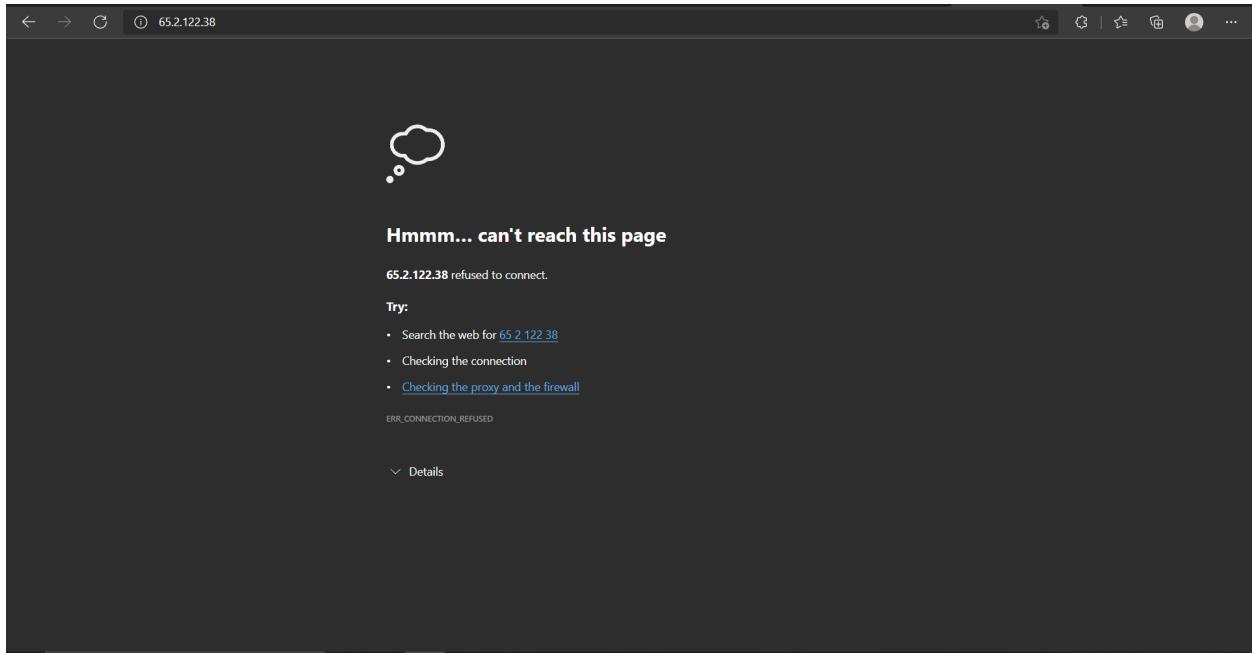
The command entered is:

```
sudo docker rm -f $(sudo docker ps -a -q)
sudo docker build /home/ubuntu/jenkins/workspace/Prod -t production
sudo docker run -it -p 80:80 -d production
```

Below the command, there is a link to "See the list of available environment variables". There are also "Advanced..." and "Add build step" buttons.

In the 'Post-build Actions' section, there is a "Save" button.

## **24.Checking the ip address before production build**

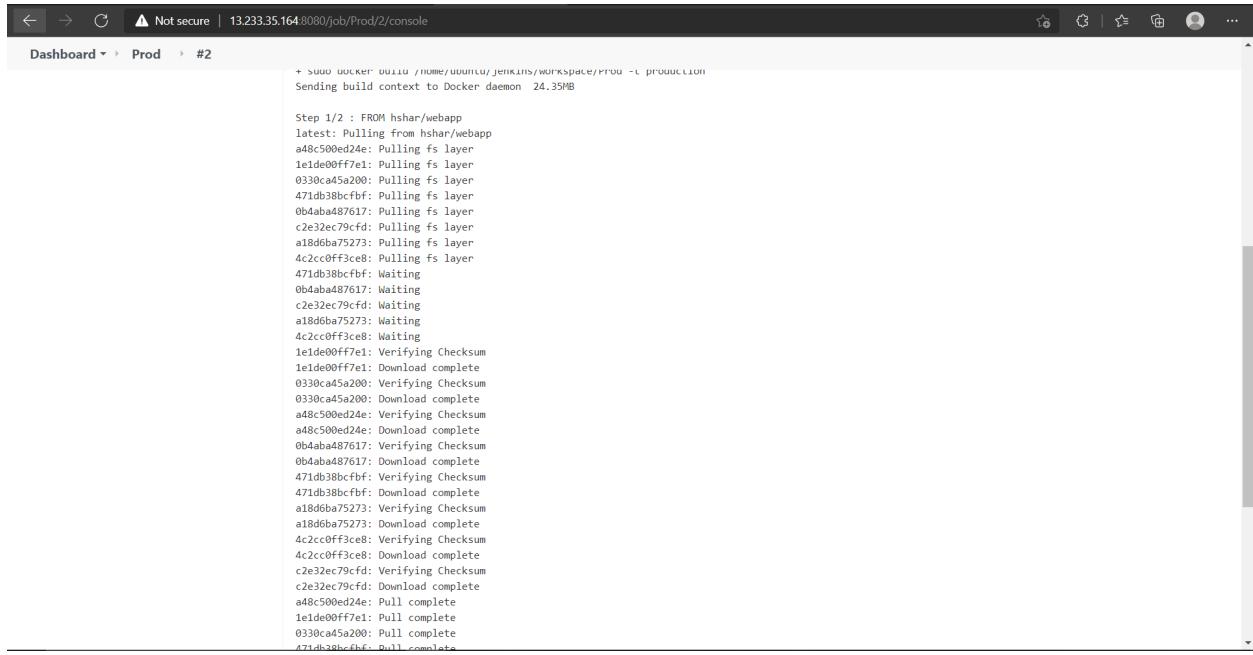


## 25.Production build success output 1

The screenshot shows the Jenkins interface for a build named 'Prod' (Build #2). The left sidebar has links for Back to Project, Status, Changes, and Console Output (which is selected). The main content area is titled 'Console Output' with a green checkmark icon. It displays the build log, starting with the user 'Nisheer V' and the workspace details. The log shows the git configuration, fetching of changes from GitHub, and the Docker build process. The Docker build command is:

```
Step 1/2 : FROM hshar/webapp
latest: Pulling from hshar/webapp
a48c500ed24e: Pulling fs layer
1e1de0ff7e1: Pulling fs layer
0330ca45a200: Pulling fs layer
```

## 26.Production build success output 2



The screenshot shows a Jenkins job console for a build labeled '#2'. The URL is 13.233.35.164:8080/job/Prod/2/console. The page title is 'Dashboard > Prod > #2'. The log output shows a successful Docker build process:

```
+ sudo docker build /home/ubuntu/jenkins/workspace/prod -t production
Sending build context to Docker daemon 24.35MB
Step 1/2 : FROM hshar/webapp
latest: Pulling from hshar/webapp
a48c500ed24e: Pulling fs layer
1e1de0ff7e1: Pulling fs layer
0330ca45a200: Pulling fs layer
471db38bcfbf: Pulling fs layer
0b4aba487617: Pulling fs layer
c2e32ec79cfcd: Pulling fs layer
a18d6ba75273: Pulling fs layer
4c2cc0fffc3e8: Pulling fs layer
471db38bcfbf: Waiting
0b4aba487617: Waiting
c2e32ec79cfcd: Waiting
a18d6ba75273: Waiting
4c2cc0fffc3e8: Waiting
1e1de0ff7e1: Verifying Checksum
1e1de0ff7e1: Download complete
0330ca45a200: Verifying Checksum
0330ca45a200: Download complete
a48c500ed24e: Verifying Checksum
a48c500ed24e: Download complete
0b4aba487617: Verifying Checksum
0b4aba487617: Download complete
471db38bcfbf: Verifying Checksum
471db38bcfbf: Download complete
a18d6ba75273: Verifying Checksum
a18d6ba75273: Download complete
4c2cc0fffc3e8: Verifying Checksum
4c2cc0fffc3e8: Download complete
c2e32ec79cfcd: Verifying Checksum
c2e32ec79cfcd: Download complete
a48c500ed24e: Pull complete
1e1de0ff7e1: Pull complete
0330ca45a200: Pull complete
471db38bcfbf: Pull complete
```

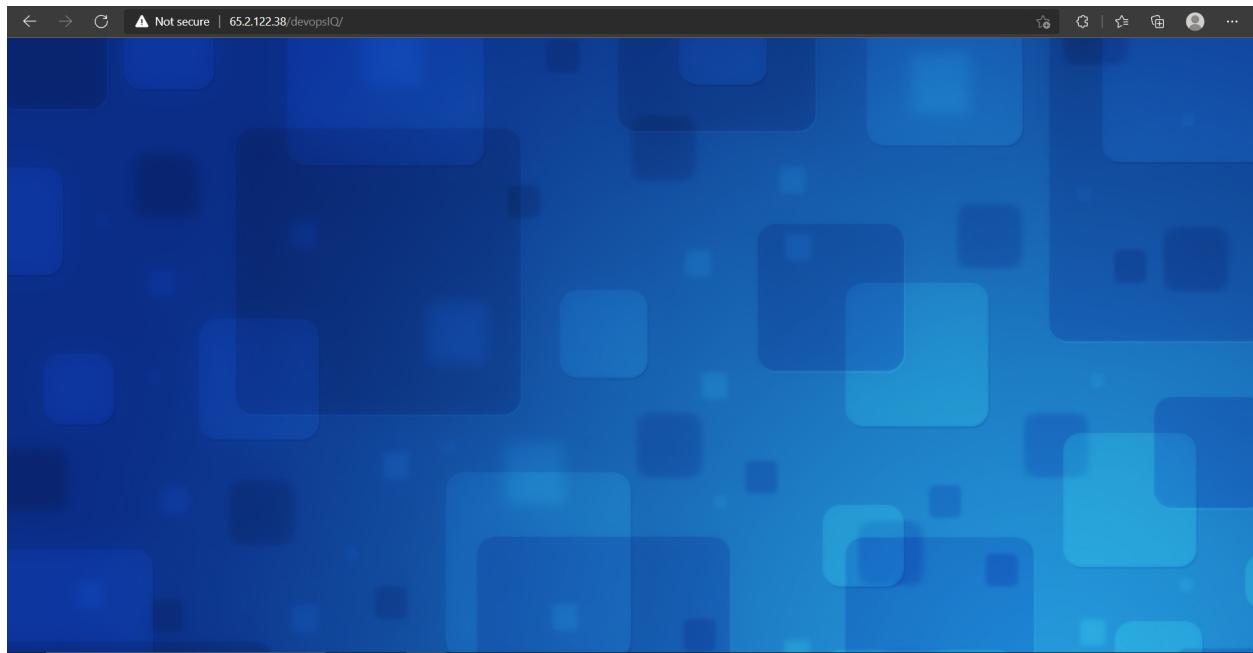
## 27. Production build success output 3

The screenshot shows a Jenkins job console output for a build named 'Prod' (Build #2). The output text is as follows:

```
0330ca45a200: Verifying Checksum
0330ca45a200: Download complete
a48c500ed24e: Verifying Checksum
a48c500ed24e: Download complete
0b4aba487617: Verifying Checksum
0b4aba487617: Download complete
471db38bcfbf: Verifying Checksum
471db38bcfbf: Download complete
a18d6ba75273: Verifying Checksum
a18d6ba75273: Download complete
4c2cc0ff3ce8: Verifying Checksum
4c2cc0ff3ce8: Download complete
c2e32ec79cf9: Verifying Checksum
c2e32ec79cf9: Download complete
a48c500ed24e: Pull complete
1e1de00ff7e1: Pull complete
0330ca45a200: Pull complete
471db38bcfbf: Pull complete
0b4aba487617: Pull complete
c2e32ec79cf9: Pull complete
a18d6ba75273: Pull complete
4c2cc0ff3ce8: Pull complete
Digest: sha256:3c7cbcab1a26c01410dcc9cbc57252b50d9ed2f31a2dc24e3f066c61b88e839b
Status: Downloaded newer image for hsharp/webapp:latest
--> 0cb1f1535ed8
Step 2/2 : ADD ./devopsIQ /var/www/html/devopsIQ
--> 3cf2d830bcc0
Successfully built 3cf2d830bcc0
Successfully tagged production:latest
+ sudo docker run -it -p 80:80 -d production
50bd851b2eeaa292dc09751140979bf53828873f0cb66069ae21b41f61e544bb
Finished: SUCCESS
```

At the bottom right of the console window, there are links for "REST API" and "Jenkins 2.303.3".

## **28.After production build working website on Production server**



## 29.This is the production server build status

The screenshot shows the Jenkins interface for a project named 'Prod'. The top navigation bar includes links for 'Dashboard', 'Prod', 'Status', 'Changes', 'Workspace', 'Build Now', 'Configure', 'Delete Project', 'GitHub', and 'Rename'. A search bar and user information ('Nisheer V') are also present. The main content area is titled 'Project Prod' and displays 'Recent Changes' and 'Workspace' sections. Below these are 'Permalinks' and a 'Build History' section. The 'Build History' table lists two builds: '#2 Nov 11, 2021 8:17 AM' (green checkmark) and '#1 Nov 11, 2021 8:12 AM' (red X). At the bottom, there are links for 'Atom feed for all' and 'Atom feed for failures'.

Build	Timestamp
#2	Nov 11, 2021 8:17 AM
#1	Nov 11, 2021 8:12 AM

## **30.Configuring the test server to trigger the production build only if the test build is stable**

The screenshot shows the Jenkins job configuration interface for a job named 'Test'. The 'Build' tab is selected. Under the 'Post-build Actions' section, there is a configuration for 'Build other projects'. A dropdown menu is open, showing 'Prod.' as the selected project to build. Below this, three radio button options are available: 'Trigger only if build is stable' (selected), 'Trigger even if the build is unstable', and 'Trigger even if the build fails'. At the bottom of the configuration area are 'Save' and 'Apply' buttons.

### 31.This is the running test server and production server project dashboard

The screenshot shows the Jenkins dashboard at the URL <http://13.233.35.164:8080>. The top navigation bar includes links for 'New Item', 'People', 'Build History', 'Manage Jenkins', 'My Views', 'Lockable Resources', and 'New View'. The main content area displays a table of projects with columns: Status (S), Working (W), Name, Last Success, Last Failure, and Last Duration. There are two entries: 'Prod' (Status: green checkmark, Working: cloud icon) with last success at '5 min 32 sec - #2' and last failure at '10 min - #1'; and 'Test' (Status: green checkmark, Working: cloud icon) with last success at '37 min - #6' and last failure at '1 hr 11 min - #3'. Below the table, there are icons for 'S M L' and links for 'Atom feed for all', 'Atom feed for failures', and 'Atom feed for just latest builds'. On the left, collapsed sections show 'Build Queue' (No builds in the queue) and 'Build Executor Status' (master: 1 idle, slave1: 1 idle).

All	+ <a href="#">New Item</a>	S	W	Name	Last Success	Last Failure	Last Duration	<a href="#">add description</a>
		Prod			5 min 32 sec - #2	10 min - #1	17 sec	
		Test			37 min - #6	1 hr 11 min - #3	2.3 sec	

Icon: S M L      Legend      [Atom feed for all](#)      [Atom feed for failures](#)      [Atom feed for just latest builds](#)

**Build Queue** ^  
No builds in the queue.

**Build Executor Status** ^  
master  
1 idle  
2 idle  
slave1  
1 idle

## 32.Adding CICD pipeline to connect the test and production server

The screenshot shows the Jenkins dashboard at the URL [13.233.35.164:8080/newView](http://13.233.35.164:8080/newView). The user is logged in as 'Nisheer V'. A modal dialog is open to create a new view, with the name 'CICD' entered in the 'View name' field. The dialog offers three options: 'Build Pipeline View', 'List View', and 'My View'. The 'Build Pipeline View' option is selected. Below the options, there is a note about displaying jobs in a build pipeline view. At the bottom of the dialog is an 'OK' button.

View name  
CICD

**Build Pipeline View**  
Shows the jobs in a build pipeline view. The complete pipeline of jobs that a version propagates through are shown as a row in the view.

**List View**  
Shows items in a simple list format. You can choose which jobs are to be displayed in which view.

**My View**  
This view automatically displays all the jobs that the current user has an access to.

OK

Dashboard >

- New Item
- People
- Build History
- Manage Jenkins
- My Views
- Lockable Resources
- New View**

**Build Queue**  
No builds in the queue.

**Build Executor Status**

Node	Status	Idle
master	Idle	1
slave1	Idle	2

### 33.Running initial build on the CICD pipeline

The screenshot shows the Jenkins interface for a 'Build Pipeline: CICD' project. At the top, there's a navigation bar with links for 'Dashboard', 'CICD', and other Jenkins features like 'Run', 'History', 'Configure', 'Add Step', 'Delete', and 'Manage'. Below the navigation is a main title 'Build Pipeline: CICD'. The pipeline itself is visualized as a horizontal flow with two distinct stages: 'Test' (green) and 'Prod' (blue). The 'Test' stage is labeled '#6 Test' and includes details such as 'Nov 11, 2021 7:45:33 AM', '2.3 sec', and 'admin'. The 'Prod' stage is labeled 'Prod' and shows 'N/A' for both duration and user information. The entire pipeline is set against a yellow background.

## 34.Successful build after running the CICD pipeline

The screenshot shows the Jenkins interface for a 'Build Pipeline: CICD' view. At the top, there's a navigation bar with links for 'Run', 'History', 'Configure', 'Add Step', 'Delete', and 'Manage'. Below the navigation bar, the main area displays two green cards representing successful builds:

- #7 Test**: Started on Nov 11, 2021 8:37:09 AM, completed in 2.4 sec by admin.
- #3 Prod**: Started on Nov 11, 2021 8:37:19 AM, completed in 2.5 sec.

On the left side, there's a sidebar labeled 'Pipeline' with '#7' indicating the current build number. At the bottom right of the page, there are links for 'REST API' and 'Jenkins 2.303.3'.

## **35.Configuring github webhook on the test server by adding github hook build trigger**

The screenshot shows the Jenkins job configuration interface for a job named 'Test'. The 'Build Triggers' tab is selected. In the 'Repository browser' section, '(Auto)' is chosen. Under 'Additional Behaviours', there is a button labeled 'Add ▾'. The 'Build Triggers' section contains several checkboxes:

- Trigger builds remotely (e.g., from scripts)
- Build after other projects are built
- Build periodically
- GitHub hook trigger for GITScm polling
- Poll SCM

The 'Build Environment' section includes the following checkboxes:

- Delete workspace before build starts
- Use secret text(s) or file(s)
- Abort the build if it's stuck
- Add timestamp to the Console Output
- Inspect build log for published Gradle build scans
- With Ant

At the bottom of the configuration panel, there are 'Save' and 'Apply' buttons, along with a close button (X) and a help button (?).

## 36.Adding github webhook link on github settings

The screenshot shows a browser window with the URL <https://github.com/NisheerV/Jenkins-assignment/settings/hooks/new>. The GitHub interface is in dark mode. On the left, a sidebar menu lists various settings categories: Options, Manage access, Security & analysis, Branches, **Webhooks**, Notifications, Integrations, Deploy keys, Actions, Environments, Secrets, and Pages. The 'Webhooks' option is currently selected. The main content area is titled 'Webhooks / Add webhook'. It contains instructions about sending POST requests to the specified URL with event details. A 'Payload URL \*' input field is populated with 'http://13.233.35.164:8080/github-webhook'. Below it, a 'Content type' dropdown is set to 'application/x-www-form-urlencoded'. A 'Secret' input field is present but empty. Under the heading 'Which events would you like to trigger this webhook?', there are three radio button options: 'Just the push event.' (selected), 'Send me everything.', and 'Let me select individual events.'

## 37.Github webhook successfully added

The screenshot shows a GitHub repository settings page for 'NisheerV/Jenkins-assignment'. The 'Webhooks' section is active, displaying a single entry: 'http://13.233.35.164:8080/github... (push)'. This indicates that a webhook has been successfully added to the repository.

Okay, that hook was successfully created. We sent a ping payload to test it out! Read more about it at <https://docs.github.com/webhooks/#ping-event>.

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Code Issues Pull requests Actions Projects Wiki Security Insights Settings

Options Manage access Security & analysis Branches Webhooks Notifications Integrations Deploy keys Actions Environments Secrets

Webhooks Add webhook

Webhooks allow external services to be notified when certain events happen. When the specified events happen, we'll send a POST request to each of the URLs you provide. Learn more in our [Webhooks Guide](#).

● http://13.233.35.164:8080/github... (push)

Edit Delete