



## **Lab Experiment-8**

### **Implementing Master/Slave cluster in Jenkins**

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**COURSE** – B. Tech CSE- DevOps Batch 1

**SUBJECT** – Continuous Integration and Deployment

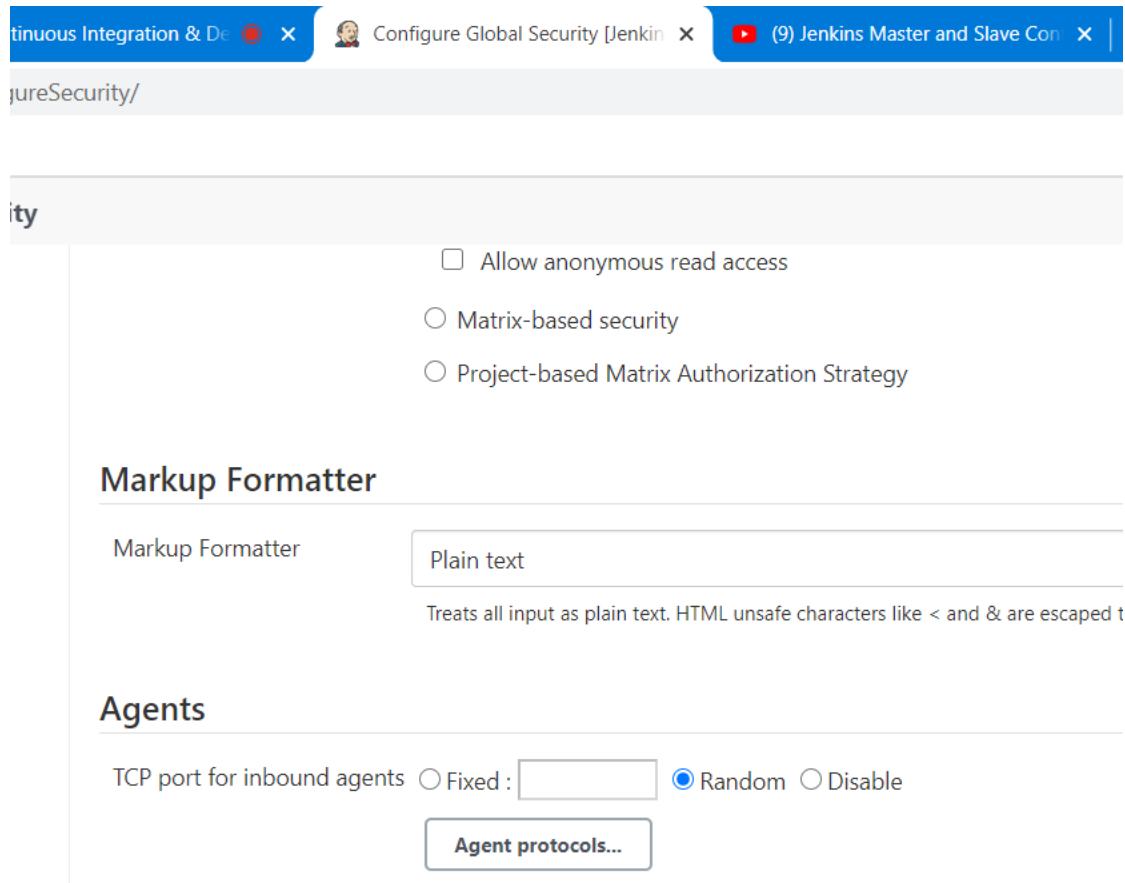
**SEMESTER** – 5<sup>th</sup> semester

**Submitted To:**

Hitesh Kumar Sir

## Experiment for Implementing Master/Slave cluster in Jenkins

- Changing Global Security of TCP port to Random.



The screenshot shows the Jenkins 'Configure Global Security' page. The browser tabs at the top include 'Continuous Integration & De...', 'Configure Global Security [Jenkin...', and '(9) Jenkins Master and Slave Con...'. The page title is 'Global Security'. Under the 'Security' section, there are three radio button options: 'Allow anonymous read access' (unchecked), 'Matrix-based security' (selected), and 'Project-based Matrix Authorization Strategy' (unchecked). Below this is the 'Markup Formatter' section, which has a dropdown menu set to 'Plain text'. A description below the dropdown states: 'Treats all input as plain text. HTML unsafe characters like < and & are escaped t'. The 'Agents' section contains the 'TCP port for inbound agents' with three radio button options: 'Fixed : [input field]' (unchecked), 'Random' (checked), and 'Disable' (unchecked). At the bottom of the 'Agents' section is a button labeled 'Agent protocols...'.

Global Security

☐ Allow anonymous read access

☒ Matrix-based security

☐ Project-based Matrix Authorization Strategy

### Markup Formatter

Markup Formatter: Plain text

Treats all input as plain text. HTML unsafe characters like < and & are escaped t

### Agents

TCP port for inbound agents: ☐ Fixed :  ☒ Random ☐ Disable

Agent protocols...

- Go to Manage Nodes and Clouds and create a New Node which is shown on the left in the screen.

S	Name ↓	Architecture	Clock Difference	Free Disk Space
	master	Windows 10 (amd64)	In sync	227.93 GB
	MySlave1		N/A	N/A
	<b>Data obtained</b>	<b>12 min</b>	<b>12 min</b>	<b>12 min</b>

- Set the Node as Permanent Agent and then do the below configurations in the configure tab.

Configuration fields for 'MySlave1':

- Name: MySlave1
- Description: Slave 1 for windows
- # of executors: 2
- Remote root directory: F:\Study Material\5th SEM\CI CD lab\Slave1\_dir
- Labels: Jenkins\_slave
- Usage: Only build jobs with label expressions matching this node
- Launch method: Launch agent by connecting it to the master
  - ☐ Disable WorkDir
- Custom WorkDir path: F:\Study Material\5th SEM\CI CD lab\Slave1\_dir
- Internal data directory: remoting
  - ☐ Fail if workspace is missing
  - ☐ Use WebSocket

Buttons: Save, Advanced...

- You will see that the Slave is offline. So to make it online, click on the Slave Name.

S	Name ↓	Architecture	Clock Difference	Free Disk Space
	master	Windows 10 (amd64)	In sync	227.93 GB
	MySlave1		N/A	N/A
	Data obtained	12 min	12 min	12 min

- A screen like this will appear. Download the “agent.jar” file and jnlp file too for executing and save in a directory.

Connect agent to Jenkins one of these ways:

- Launch agent from browser
- Run from agent command line:
 

```
java -jar agent.jar -jnlpUrl http://localhost:8080/computer/MySlave1/slave-agent.jnlp -secret 028f1fc80608cfcf8458c5e1f0b07141e59890756ef72786458dc43656c1a699 -workDir "F:\Study Material\5th SEM\CI CD lab\Slave1_dir"
```

Run from agent command line, with the secret stored in a file:

```
echo 028f1fc80608cfcf8458c5e1f0b07141e59890756ef72786458dc43656c1a699 > secret-file
java -jar agent.jar -jnlpUrl http://localhost:8080/computer/MySlave1/slave-agent.jnlp -secret @secret-file -workDir "F:\Study Material\5th SEM\CI CD lab\Slave1_dir"
```

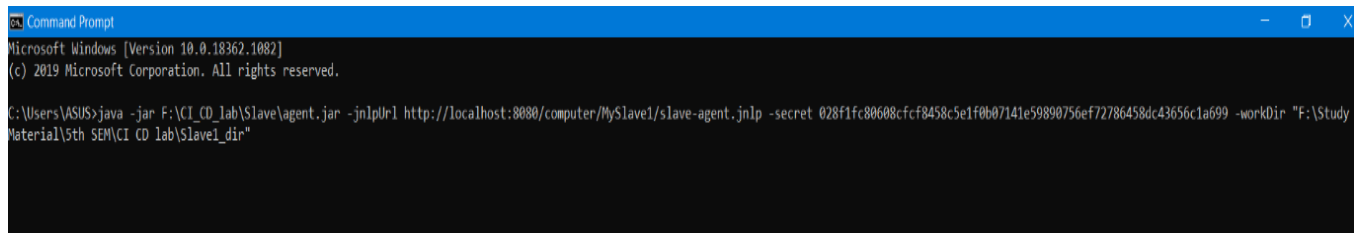
## Labels

Jenkins\_slave

## Projects tied to MySlave1

None

- Run the below command to get the slave in online mode. Also, give the path of the agent.jar file before it so that command prompt will fetch that file from the directory in which it is stored.



```
Command Prompt
Microsoft Windows [Version 10.0.18362.1082]
(c) 2019 Microsoft Corporation. All rights reserved.

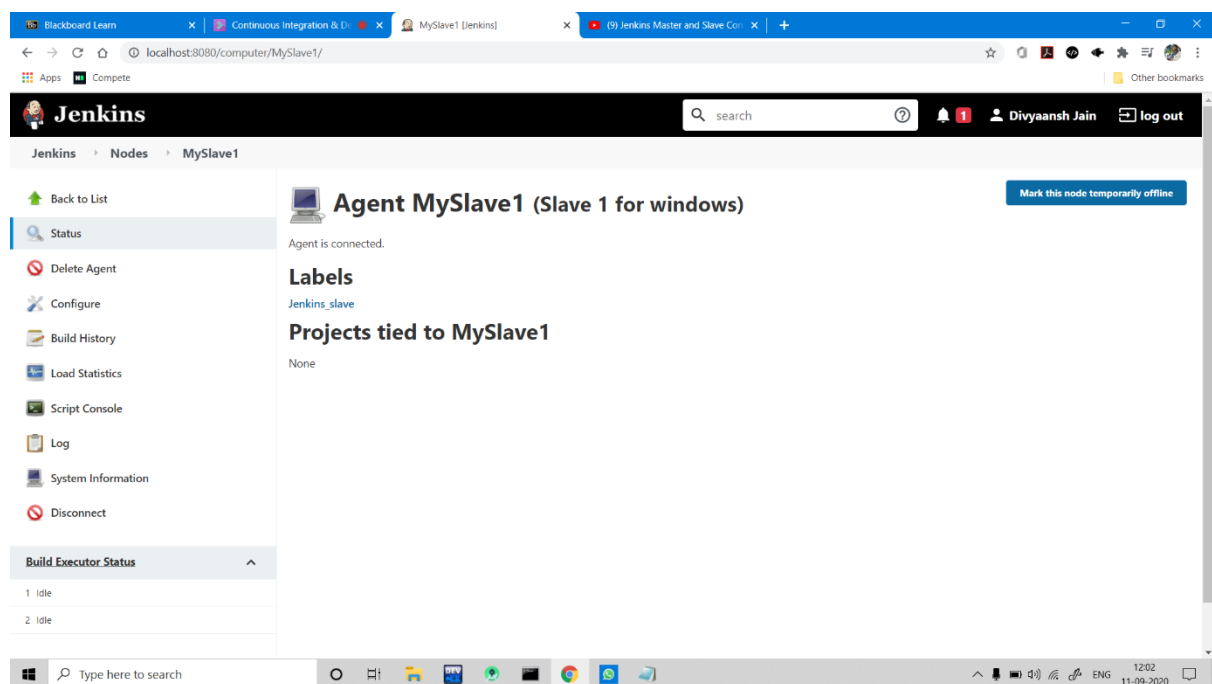
C:\Users\ASUS>java -jar F:\CI_CD_lab\Slave\agent.jar -jnlpUrl http://localhost:8080/computer/MySlave1/slave-agent.jnlp -secret 028f1fc80608cfcf8458c5e1f0b07141e59890756ef72786458dc43656c1a699 -workDir "F:\StudyMaterial\5th SEM\CI_CD lab\Slave1_dir"
```

- On successful launch of the node, command prompt will show this message.

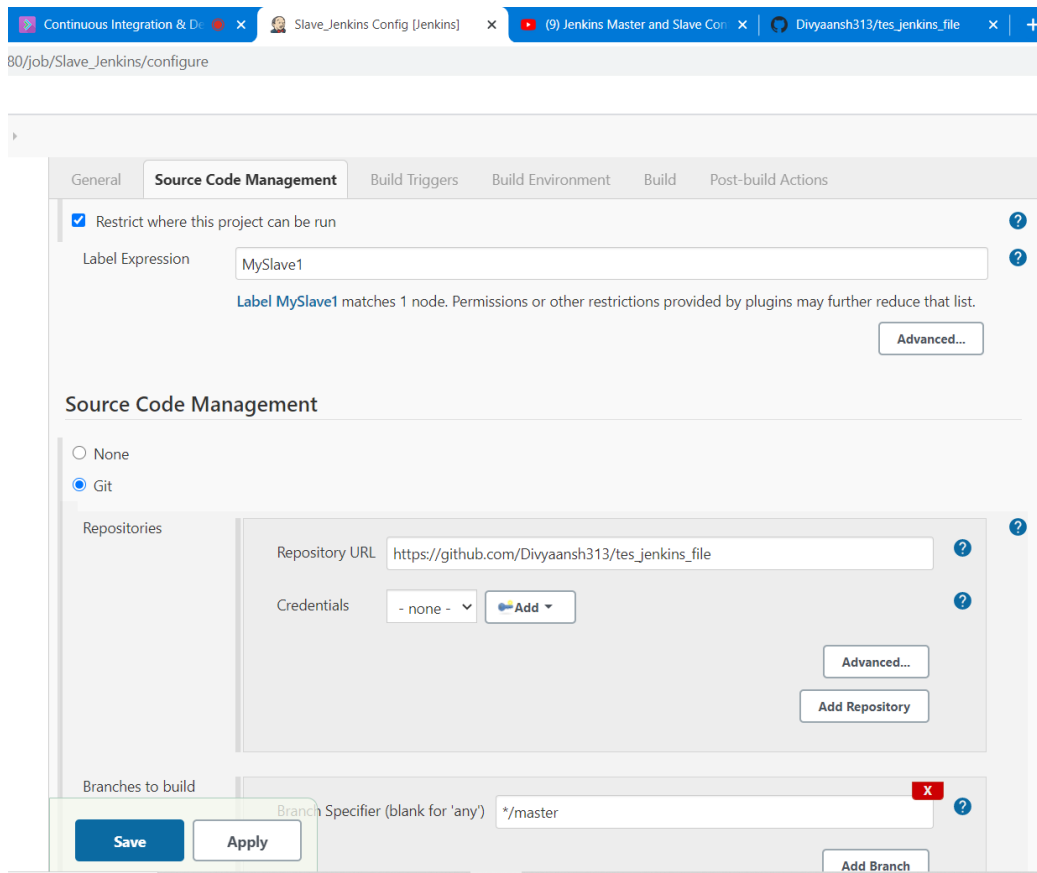
```
C:\Users\ASUS>java -jar F:\CI_CD_lab\Slave\agent.jar -jnlpUrl http://localhost:8080/computer/MySlave1/slave-agent.jnlp -secret 028f1fc80608cfcf8458c5e1f0b07141e5

C:\Users\ASUS>java -jar F:\CI_CD_lab\Slave\agent.jar -jnlpUrl http://localhost:8080/computer/MySlave1/slave-agent.jnlp -secret 028f1fc80608cfcf8458c5e1f0b07141e5
Material\5th SEM\CI_CD lab\Slave1_dir"
Sep 11, 2020 12:02:02 PM org.jenkinsci.remoting.engine.WorkDirManager initializeWorkDir
INFO: Using F:\Study Material\5th SEM\CI_CD lab\Slave1_dir\remoting as a remoting work directory
Sep 11, 2020 12:02:02 PM org.jenkinsci.remoting.engine.WorkDirManager setupLogging
INFO: Both error and output logs will be printed to F:\Study Material\5th SEM\CI_CD lab\Slave1_dir\remoting
Sep 11, 2020 12:02:04 PM hudson.remoting.jnlp.Main createEngine
INFO: Setting up agent: MySlave1
Sep 11, 2020 12:02:04 PM hudson.remoting.jnlp.Main$CuiListener <init>
INFO: Jenkins agent is running in headless mode.
Sep 11, 2020 12:02:04 PM hudson.remoting.Engine startEngine
INFO: Using Remoting version: 4.5
Sep 11, 2020 12:02:04 PM org.jenkinsci.remoting.engine.WorkDirManager initializeWorkDir
INFO: Using F:\Study Material\5th SEM\CI_CD lab\Slave1_dir\remoting as a remoting work directory
Sep 11, 2020 12:02:04 PM hudson.remoting.jnlp.Main$CuiListener status
INFO: Locating server among [http://localhost:8080/]
Sep 11, 2020 12:02:04 PM org.jenkinsci.remoting.engine.JnlpAgentEndpointResolver resolve
INFO: Remoting server accepts the following protocols: [JNLP4-connect, Ping]
Sep 11, 2020 12:02:04 PM hudson.remoting.jnlp.Main$CuiListener status
INFO: Agent discovery successful
Agent address: localhost
Agent port: 50858
Identity: 31:13:fc:e8:8f:e8:33:e0:2d:cd:83:51:07:82:93:dc
Sep 11, 2020 12:02:04 PM hudson.remoting.jnlp.Main$CuiListener status
INFO: Handshaking
Sep 11, 2020 12:02:04 PM hudson.remoting.jnlp.Main$CuiListener status
INFO: Connecting to localhost:50858
Sep 11, 2020 12:02:04 PM hudson.remoting.jnlp.Main$CuiListener status
INFO: Trying protocol: JNLP4-connect
Sep 11, 2020 12:02:05 PM hudson.remoting.jnlp.Main$CuiListener status
INFO: Remote identity confirmed: 31:13:fc:e8:8f:e8:33:e0:2d:cd:83:51:07:82:93:dc
Sep 11, 2020 12:02:07 PM hudson.remoting.jnlp.Main$CuiListener status
INFO: Connected
```

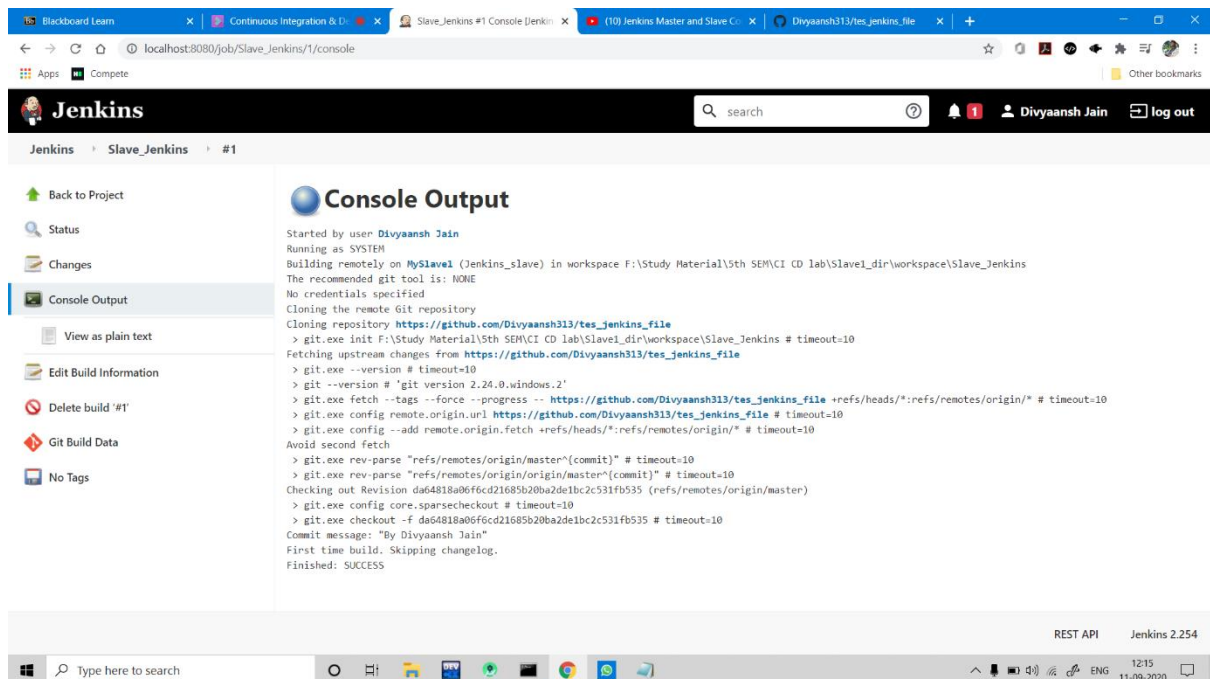
- On the Jenkins portal, you will see the below screen.

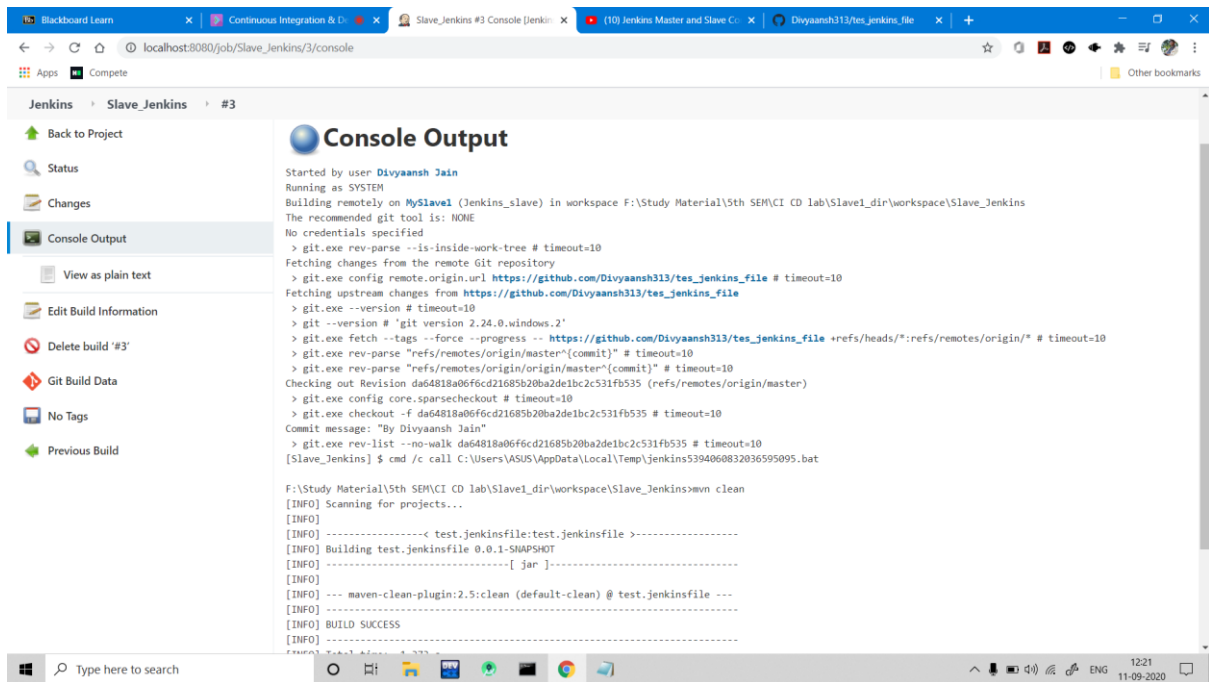


- Create a Maven or Freestyle project in the Jenkins and restrict that the project should be run on the slave created. Also, give the GitHub URL.



- Run any maven goal such as “mvn clean” or any echo command.





- A workspace will also be created in the given directory of Slave.

aterial\5th SEM\CI CD lab\Slave1\_dir

View

his PC > Documents and files (F:) > Study Material > 5th SEM > CI CD lab > Slave1\_dir >

Name	Date modified	Type	Size
remoting	11-09-2020 12:02	File folder	
workspace	11-09-2020 12:14	File folder	