DeVops Jenkins Assignment

Assignment-02: Jenkins Master Slave pipeline intellipaat.

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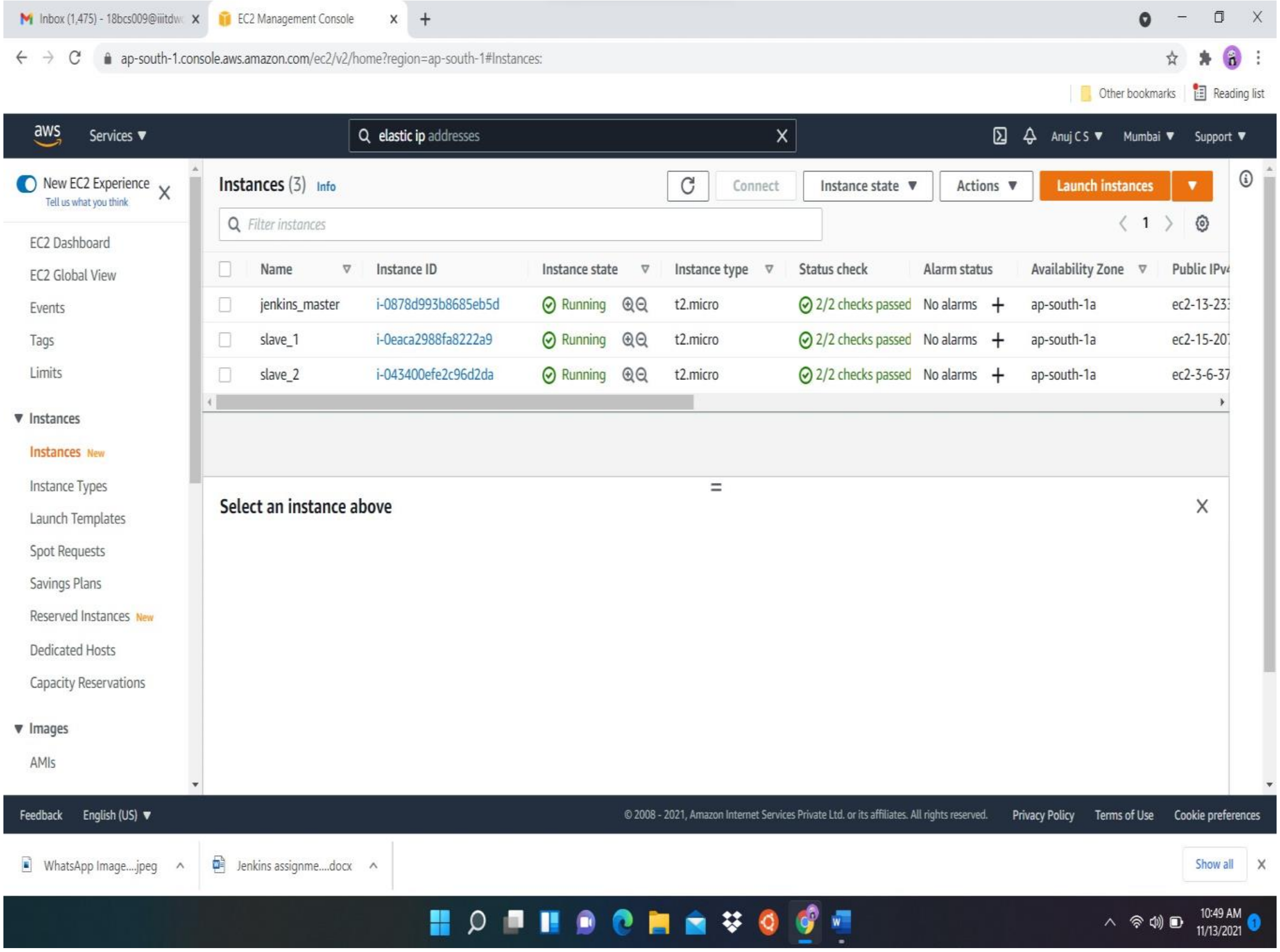
Step-1: First, we are creating three aws ec2 instances and naming them as jenkins_master, slave-1, slave-2.

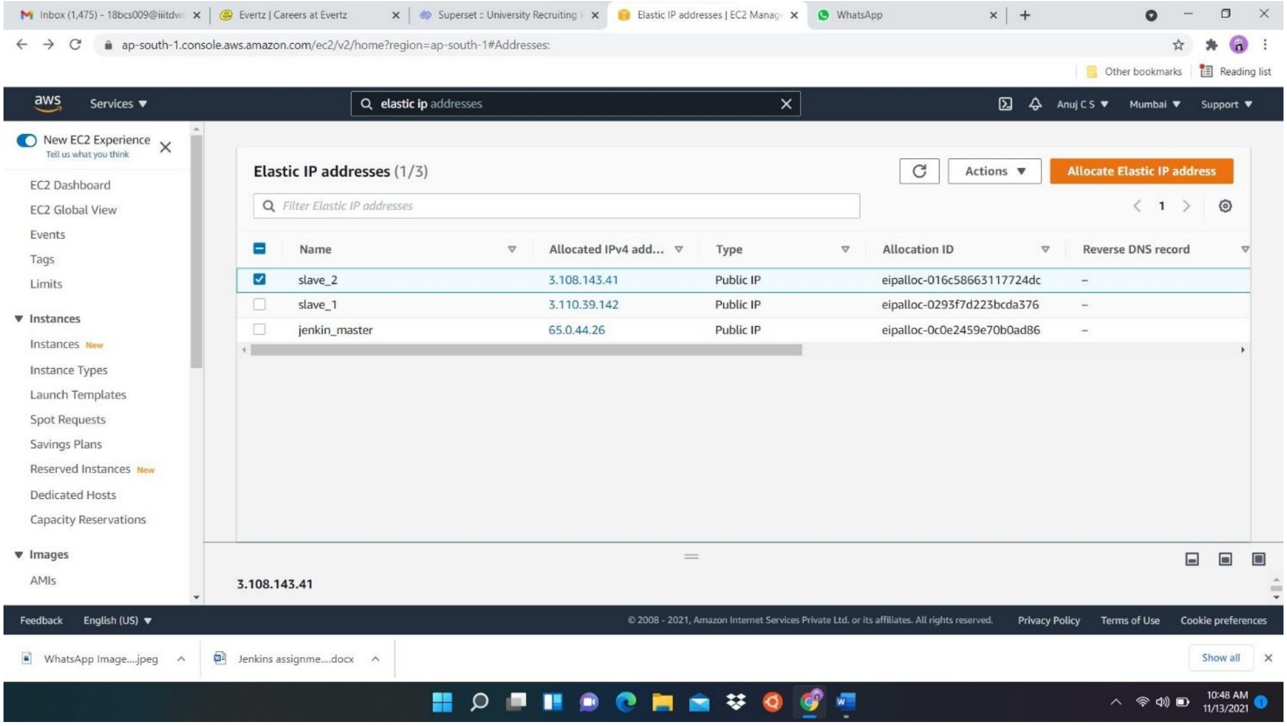


Instances (3) Info

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
□	jenkins_master	i-0878d993b8685eb5d	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1a	ec2-13-23
□	slave_1	i-0eaca2988fa8222a9	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1a	ec2-15-20
□	slave_2	i-043400efe2c96d2da	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1a	ec2-3-6-37

Select an instance above

Step-2: Creating three elastic IP addresses and associating these elastic IP addresses to the ec2 instances.



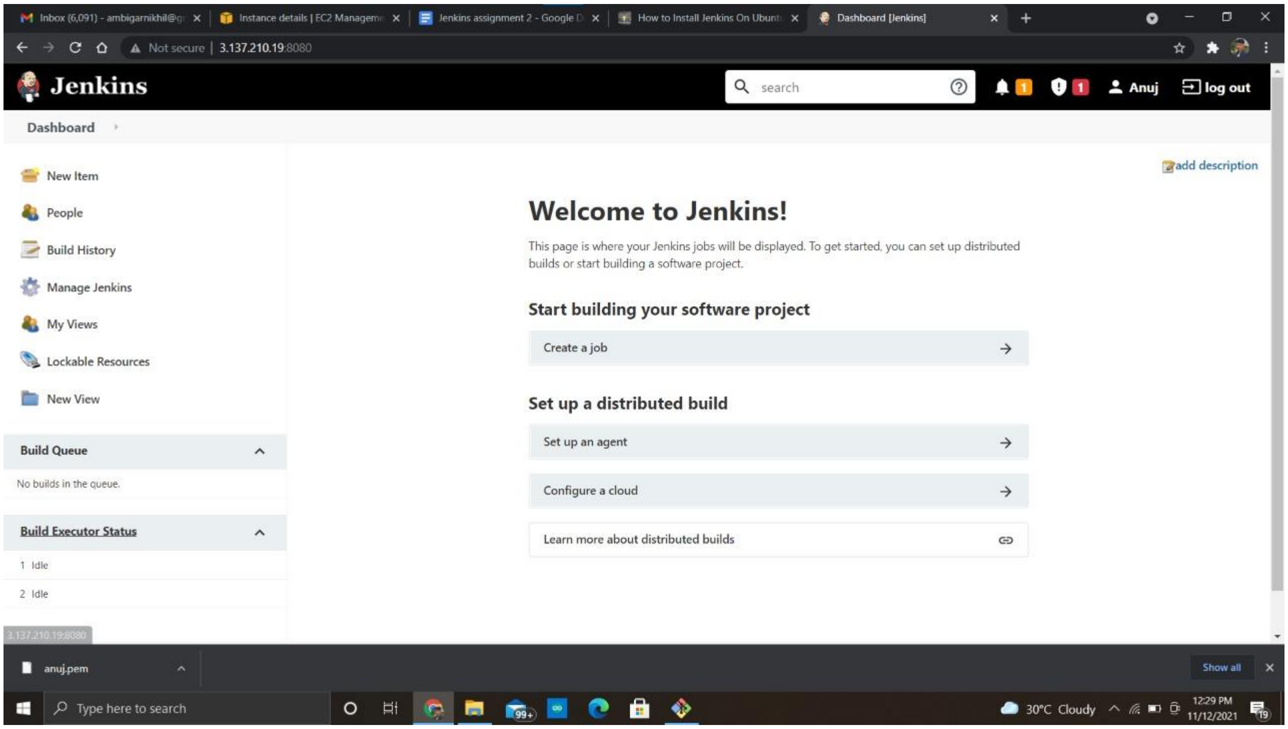
Elastic IP addresses (1/3)

	Name	Allocated IPv4 add...	Type	Allocation ID	Reverse DNS record
☑	slave_2	3.108.143.41	Public IP	eipalloc-016c58663117724dc	–
□	slave_1	3.110.39.142	Public IP	eipalloc-0293f7d223bcda376	–
□	jenkin_master	65.0.44.26	Public IP	eipalloc-0c0e2459e70b0ad86	–

3.108.143.41

Step-3: Install Jenkins on jenkins_master ec2 instance.
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/ > \
    /etc/apt/sources.list.d/jenkins.list'
sudo apt-get update
apt-get install jenkins
sudo service jenkins start
```



No builds in the queue.

1 Idle

2 Idle

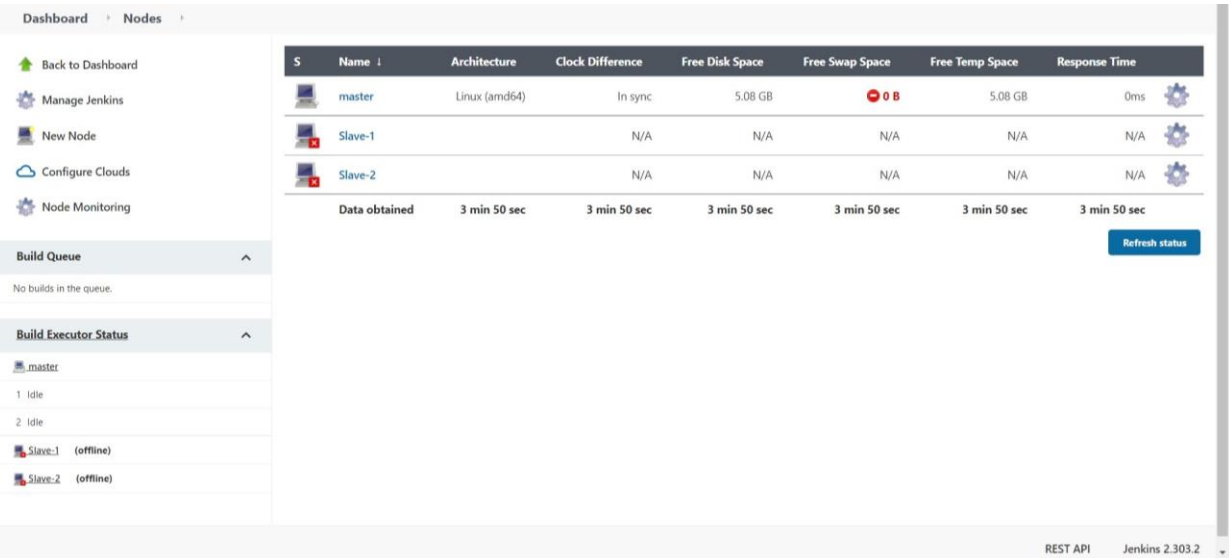
Welcome to Jenkins!

This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.

Start building your software project

Set up a distributed build

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



S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
	master	Linux (amd64)	In sync	5.08 GB	0 B	5.08 GB	0ms
	Slave-1		N/A	N/A	N/A	N/A	N/A
	Slave-2		N/A	N/A	N/A	N/A	N/A
	Data obtained	3 min 50 sec	3 min 50 sec	3 min 50 sec	3 min 50 sec	3 min 50 sec	3 min 50 sec

No builds in the queue.

master

1 Idle

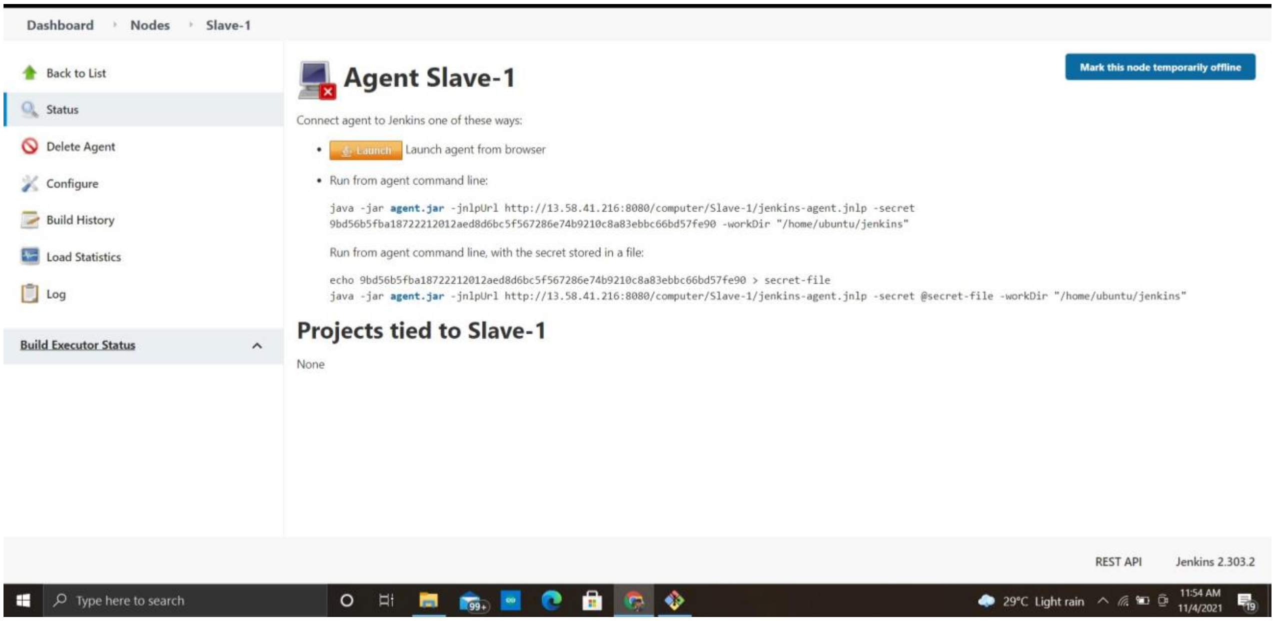
2 Idle

Slave-1 (offline)

Slave-2 (offline)

Step-5:

Download agent.jar from Slave-1 node and using Filezilla, transfer that file to slave-1 ec2 instance.



Agent Slave-1

Connect agent to Jenkins one of these ways:

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

```
java -jar agent.jar -jnlpUrl http://13.58.41.216:8080/computer/Slave-1/jenkins-agent.jnlp -secret
9bd56b5fba18722212012aed8d6bc5f567286e74b9210c8a83ebbc66bd57fe90 -workDir "/home/ubuntu/jenkins"
```

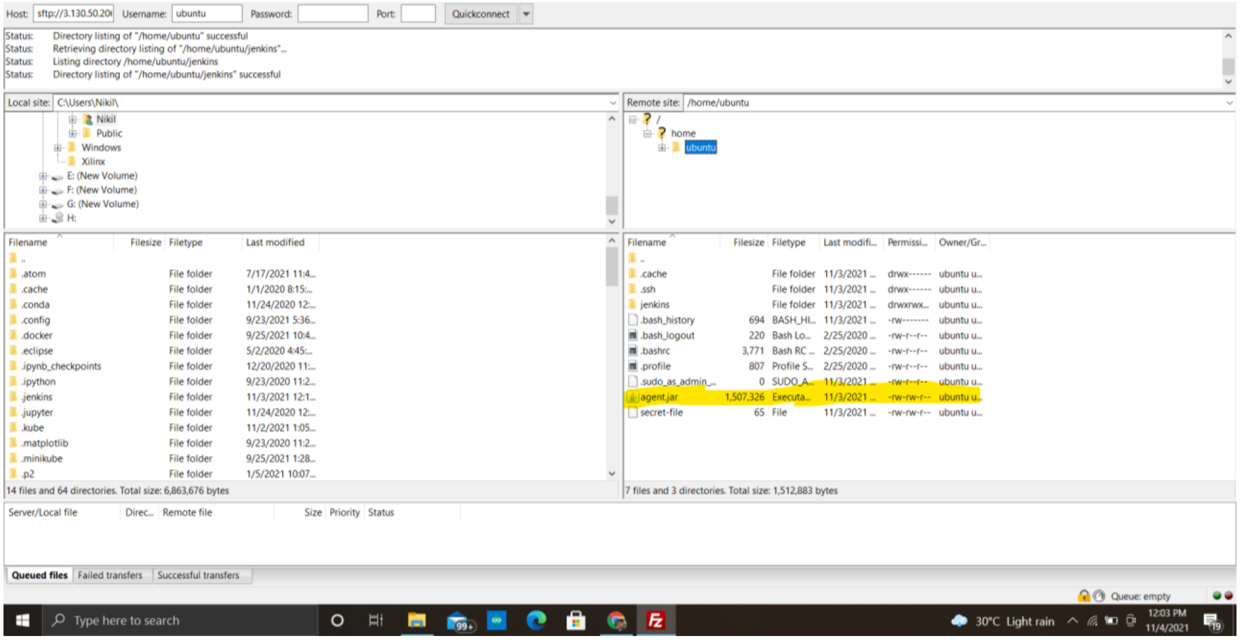
Run from agent command line, with the secret stored in a file:

```
echo 9bd56b5fba18722212012aed8d6bc5f567286e74b9210c8a83ebbc66bd57fe90 > secret-file
java -jar agent.jar -jnlpUrl http://13.58.41.216:8080/computer/Slave-1/jenkins-agent.jnlp -secret @secret-file -workDir "/home/ubuntu/jenkins"
```

Projects tied to Slave-1

None

SLAVE-1



Host: sftp://3.130.50.20(Username: ubuntu Password: Port:

```
Status:    Directory listing of "/home/ubuntu" successful
Status:    Retrieving directory listing of "/home/ubuntu/jenkins"...
Status:    Listing directory /home/ubuntu/jenkins
Status:    Directory listing of "/home/ubuntu/jenkins" successful
```

Local site: C:\Users\Nikil\

```
    Nikil
    Public
  Windows
  Xilinx
E: (New Volume)
F: (New Volume)
G: (New Volume)
H:
```

Filename	Filesize	Filetype	Last modified
..			
.atom		File folder	7/17/2021 11:4...
.cache		File folder	1/1/2020 8:15:...
.conda		File folder	11/24/2020 12:...
.config		File folder	9/23/2021 5:36...
.docker		File folder	9/25/2021 10:4...
.eclipse		File folder	5/2/2020 4:45:...
.ipynb_checkpoints		File folder	12/20/2020 11:...
.ipython		File folder	9/23/2020 11:2...
.jenkins		File folder	11/3/2021 12:1...
.jupyter		File folder	11/24/2020 12:...
.kube		File folder	11/2/2021 1:05...
.matplotlib		File folder	9/23/2020 11:2...
.minikube		File folder	9/25/2021 1:28...
.p2		File folder	1/5/2021 10:07...

14 files and 64 directories. Total size: 6,863,676 bytes

Remote site: /home/ubuntu

```
/
  home
    ubuntu
```

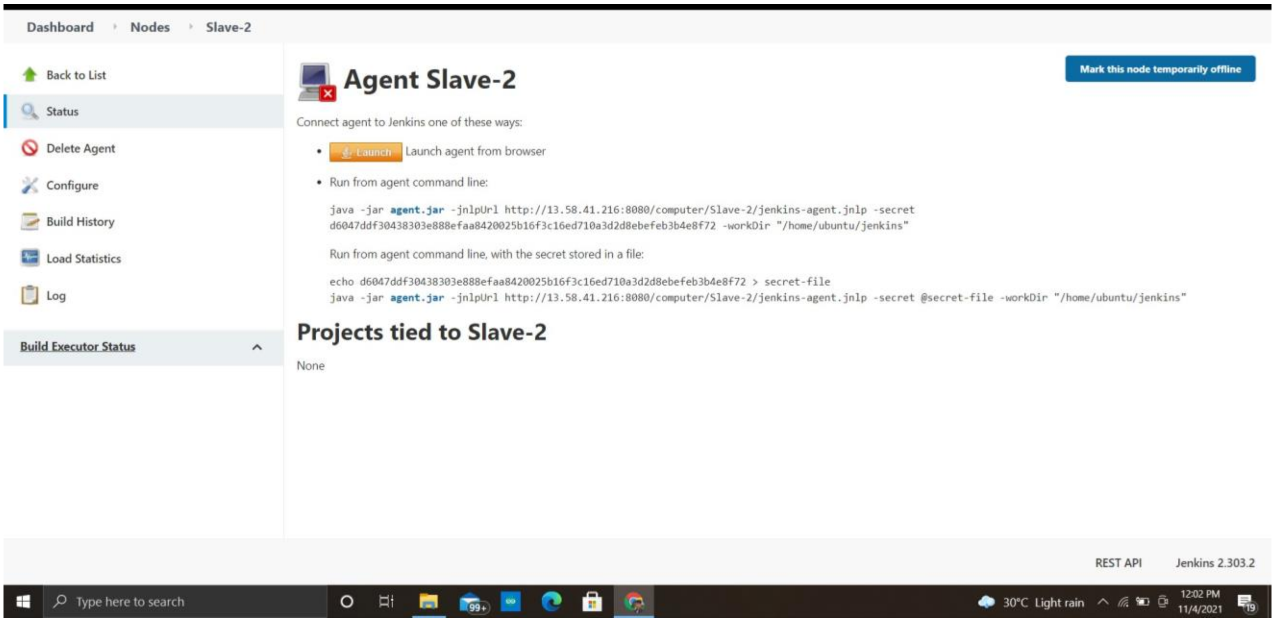
Filename	Filesize	Filetype	Last modifi...	Permissi...	Owner/Gr...
..					
.cache		File folder	11/3/2021 ...	drwx------	ubuntu u...
.ssh		File folder	11/3/2021 ...	drwx------	ubuntu u...
jenkins		File folder	11/3/2021 ...	drwxrwx...	ubuntu u...
.bash_history	694	BASH_HI...	11/3/2021 ...	-rw-------	ubuntu u...
.bash_logout	220	Bash Lo...	2/25/2020 ...	-rw-r--r--	ubuntu u...
.bashrc	3,771	Bash RC ...	2/25/2020 ...	-rw-r--r--	ubuntu u...
.profile	807	Profile S...	2/25/2020 ...	-rw-r--r--	ubuntu u...
.sudo_as_admin_...	0	SUDO_A...	11/3/2021 ...	-rw-r--r--	ubuntu u...
agent.jar	1,507,326	Executa...	11/3/2021 ...	-rw-rw-r--	ubuntu u...
secret-file	65	File	11/3/2021 ...	-rw-rw-r--	ubuntu u...

7 files and 3 directories. Total size: 1,512,883 bytes

Server/Local file	Direc...	Remote file	Size	Priority	Status

Step-5:

Download agent.jar from Slave-2 node and using Filezilla, transfer that file to slave-2 ec2 instance.



Agent Slave-2

Connect agent to Jenkins one of these ways:

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

```
java -jar agent.jar -jnlpUrl http://13.58.41.216:8080/computer/Slave-2/jenkins-agent.jnlp -secret
d6047ddf30438303e888efaa8420025b16f3c16ed710a3d2d8ebefeb3b4e8f72 -workDir "/home/ubuntu/jenkins"
```

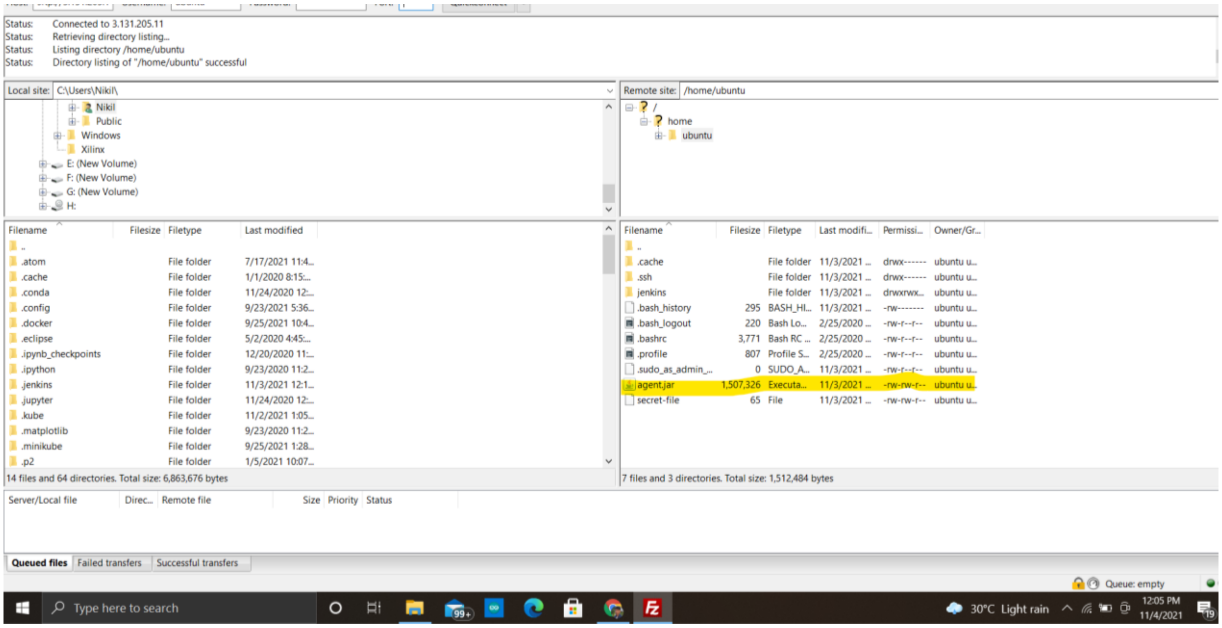
Run from agent command line, with the secret stored in a file:

```
echo d6047ddf30438303e888efaa8420025b16f3c16ed710a3d2d8ebefeb3b4e8f72 > secret-file
java -jar agent.jar -jnlpUrl http://13.58.41.216:8080/computer/Slave-2/jenkins-agent.jnlp -secret @secret-file -workDir "/home/ubuntu/jenkins"
```

Projects tied to Slave-2

None

SLAVE-2



```
Status:	Connected to 3.131.205.11
Status:	Retrieving directory listing...
Status:	Listing directory /home/ubuntu
Status:	Directory listing of "/home/ubuntu" successful
```

Filename	Filesize	Filetype	Last modified
..			
.atom		File folder	7/17/2021 11:4...
.cache		File folder	1/1/2020 8:15:...
.conda		File folder	11/24/2020 12:...
.config		File folder	9/23/2021 5:36...
.docker		File folder	9/25/2021 10:4...
.eclipse		File folder	5/2/2020 4:45:...
.ipynb_checkpoints		File folder	12/20/2020 11:...
.ipython		File folder	9/23/2020 11:2...
.jenkins		File folder	11/3/2021 12:1...
.jupyter		File folder	11/24/2020 12:...
.kube		File folder	11/2/2021 1:05...
.matplotlib		File folder	9/23/2020 11:2...
.minikube		File folder	9/25/2021 1:28...
.p2		File folder	1/5/2021 10:07...

14 files and 64 directories. Total size: 6,863,676 bytes

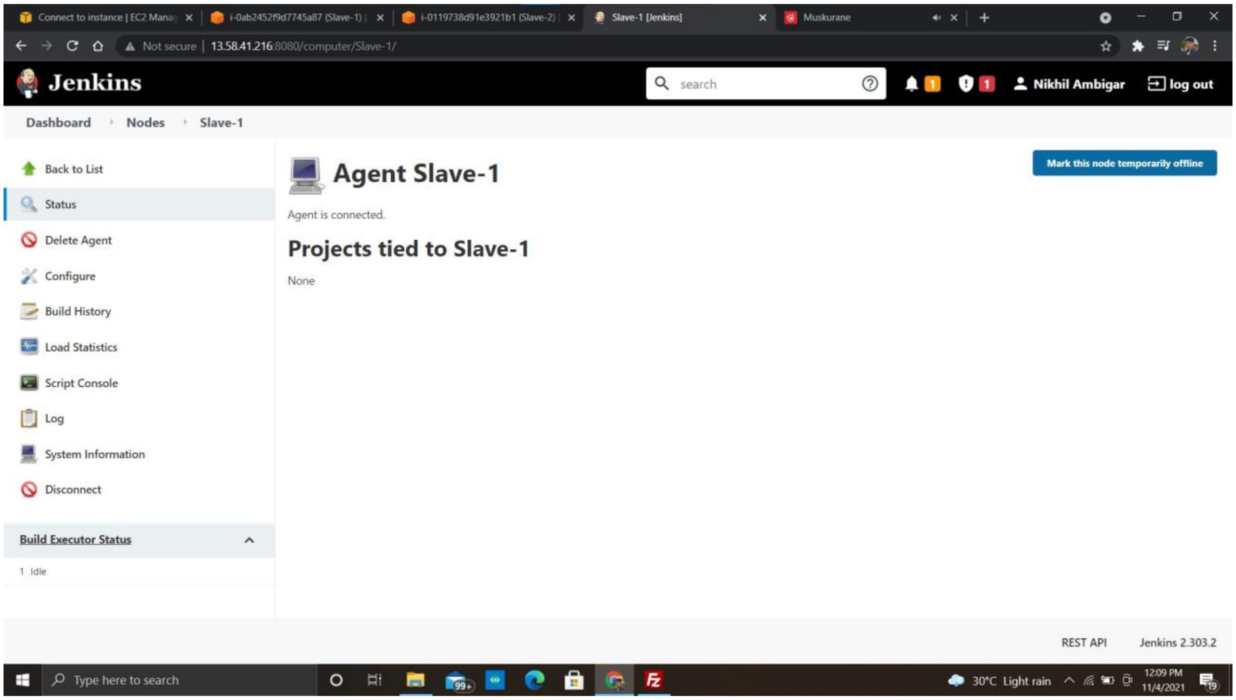
Filename	Filesize	Filetype	Last modifi...	Permissi...	Owner/Gr...
..					
.cache		File folder	11/3/2021 ...	drwx------	ubuntu u...
.ssh		File folder	11/3/2021 ...	drwx------	ubuntu u...
jenkins		File folder	11/3/2021 ...	drwxrwx...	ubuntu u...
.bash_history	295	BASH_HI...	11/3/2021 ...	-rw-------	ubuntu u...
.bash_logout	220	Bash Lo...	2/25/2020 ...	-rw-r--r--	ubuntu u...
.bashrc	3,771	Bash RC ...	2/25/2020 ...	-rw-r--r--	ubuntu u...
.profile	807	Profile S...	2/25/2020 ...	-rw-r--r--	ubuntu u...
.sudo_as_admin_...	0	SUDO_A...	11/3/2021 ...	-rw-r--r--	ubuntu u...
agent.jar	1,507,326	Executa...	11/3/2021 ...	-rw-rw-r--	ubuntu u...
secret-file	65	File	11/3/2021 ...	-rw-rw-r--	ubuntu u...

7 files and 3 directories. Total size: 1,512,484 bytes

Step-6:

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

SLAVE-1 CONNECTED



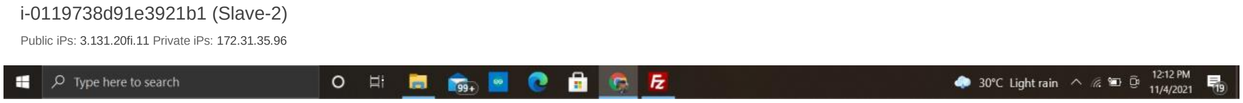
Agent Slave-1

Agent is connected.

Projects tied to Slave-1

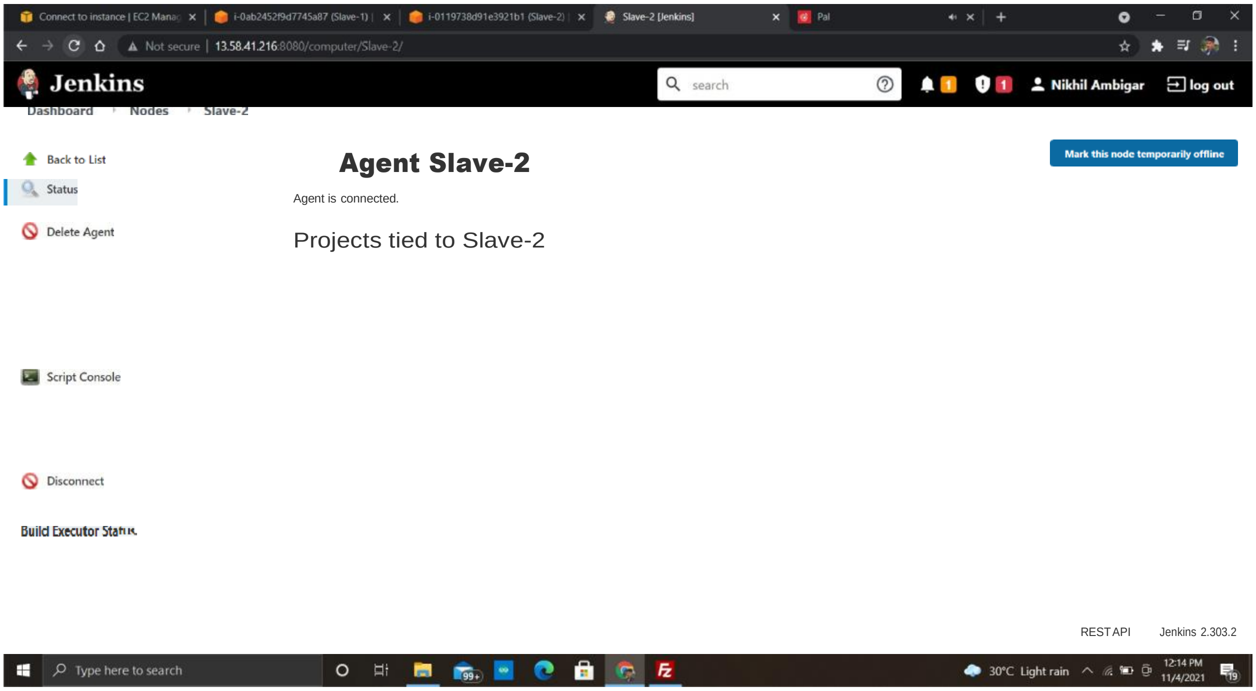
None

SLAVE-2 CONNECTED.



i-0119738d91e3921b1 (Slave-2)

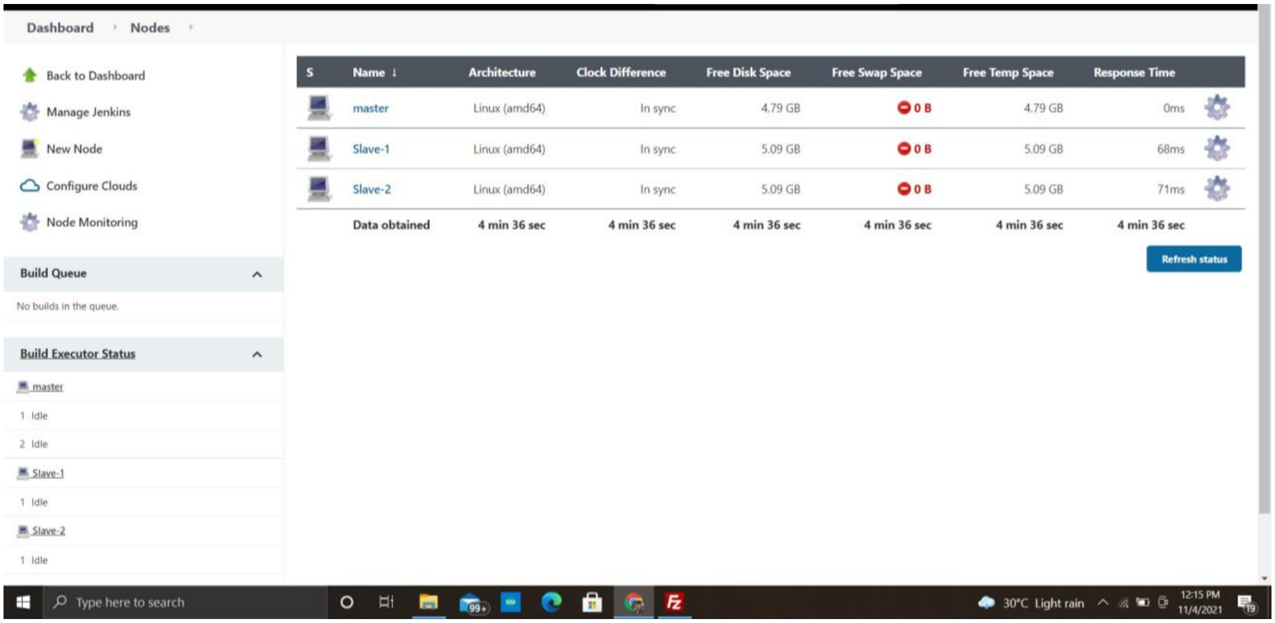
Public iPs: 3.131.20fi.11 Private iPs: 172.31.35.96



Agent Slave-2

Agent is connected.

Projects tied to Slave-2



S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
	master	Linux (amd64)	In sync	4.79 GB	⊖ 0 B	4.79 GB	0ms
	Slave-1	Linux (amd64)	In sync	5.09 GB	⊖ 0 B	5.09 GB	68ms
	Slave-2	Linux (amd64)	In sync	5.09 GB	⊖ 0 B	5.09 GB	71ms
	Data obtained	**4 min 36 sec**	**4 min 36 sec**	**4 min 36 sec**	**4 min 36 sec**	**4 min 36 sec**	**4 min 36 sec**

Build Queue

No builds in the queue.

Build Executor Status

master
1 Idle
2 Idle
Slave-1
1 Idle
Slave-2
1 Idle

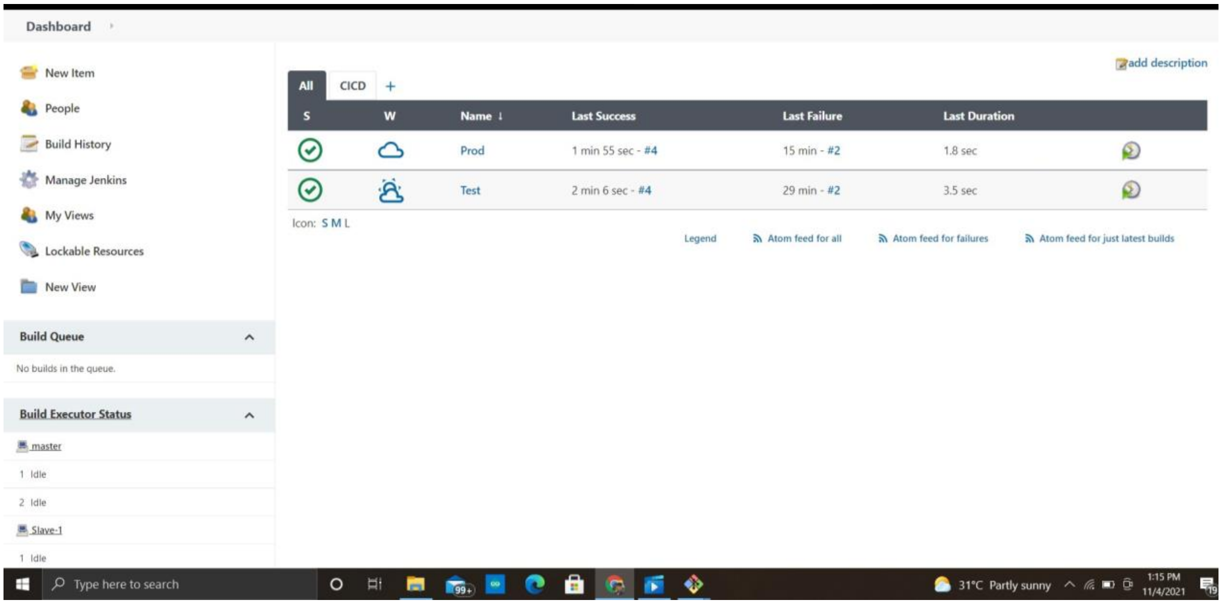
Step-7:

Install docker on Slave-1 and Slave-2 ec2 instances.

Step 8:

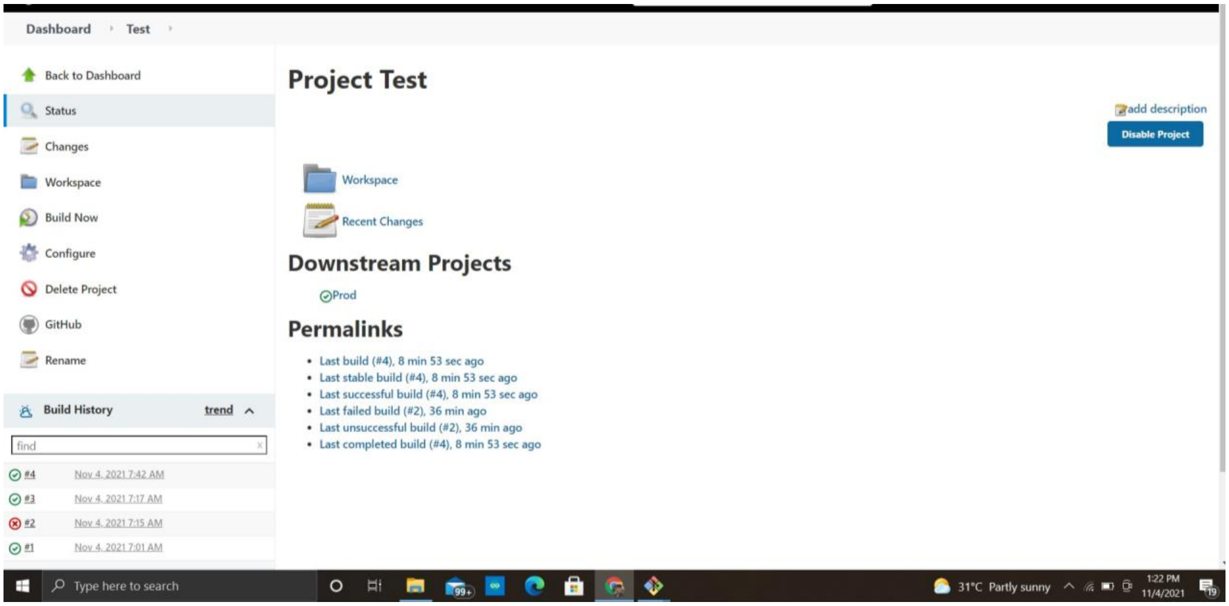
Create two jobs (test for Slave-1 and prod for Slave-2)

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.



S	W	Name ↓	Last Success	Last Failure	Last Duration
✓	☁	Prod	1 min 55 sec - #4	15 min - #2	1.8 sec
✓	⛅	Test	2 min 6 sec - #4	29 min - #2	3.5 sec

Step 9: Build Test job.



Project Test

Downstream Projects

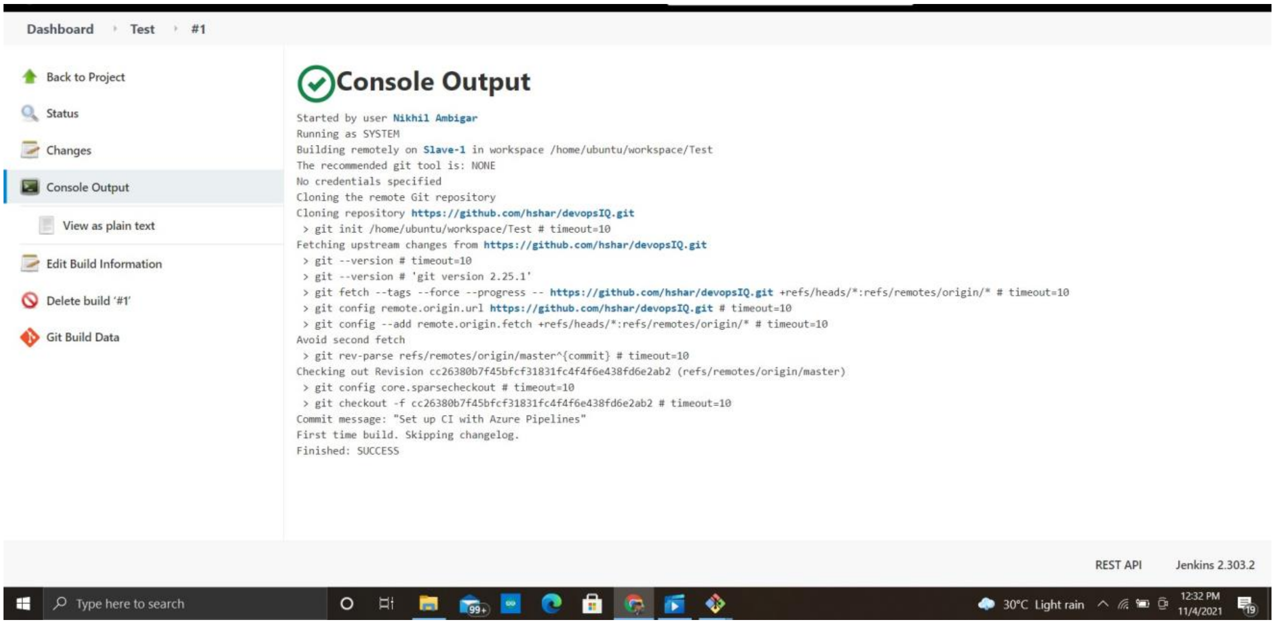
✓Prod

Permalinks

- Last build (#4), 8 min 53 sec ago
- Last stable build (#4), 8 min 53 sec ago
- Last successful build (#4), 8 min 53 sec ago
- Last failed build (#2), 36 min ago
- Last unsuccessful build (#2), 36 min ago
- Last completed build (#4), 8 min 53 sec ago

Build History

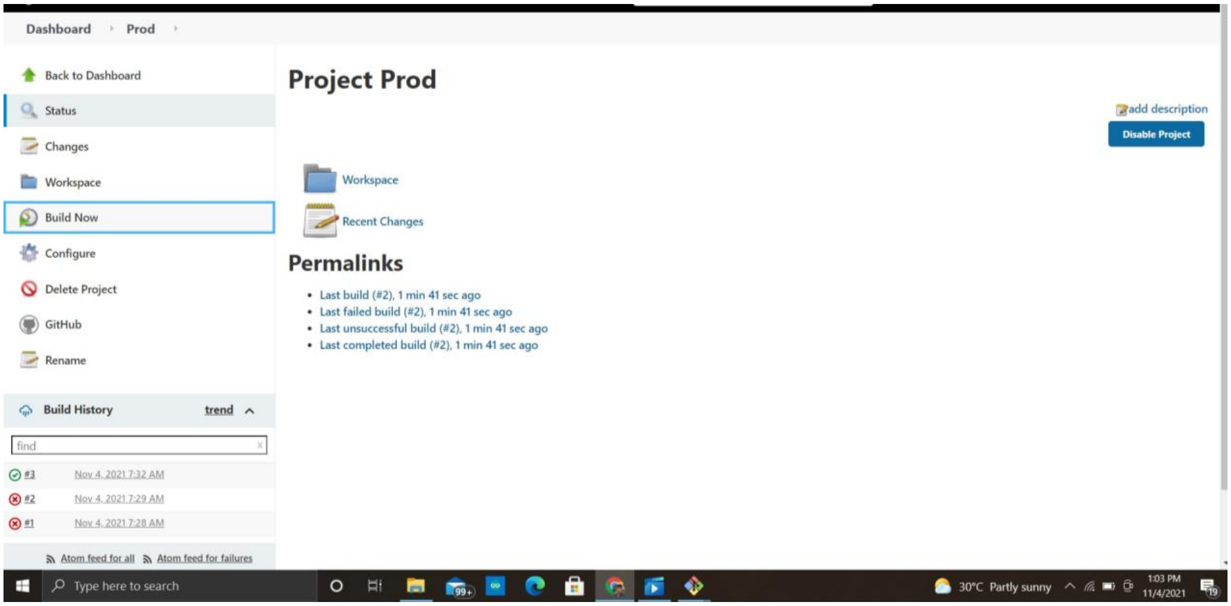
✓ #4	Nov 4, 2021 7:42 AM
✓ #3	Nov 4, 2021 7:17 AM
✗ #2	Nov 4, 2021 7:15 AM
✓ #1	Nov 4, 2021 7:01 AM



Console Output

```
Started by user Nikhil Ambigar
Running as SYSTEM
Building remotely on Slave-1 in workspace /home/ubuntu/workspace/Test
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/hshar/devopsIQ.git
 > git init /home/ubuntu/workspace/Test # timeout=10
Fetching upstream changes from https://github.com/hshar/devopsIQ.git
 > git --version # timeout=10
 > git --version # 'git version 2.25.1'
 > git fetch --tags --force --progress -- https://github.com/hshar/devopsIQ.git +refs/heads/*:refs/remotes/origin/* # timeout=10
 > git config remote.origin.url https://github.com/hshar/devopsIQ.git # timeout=10
 > git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
 > 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"
First time build. Skipping changelog.
Finished: SUCCESS
```

Step 10: Build prod job.

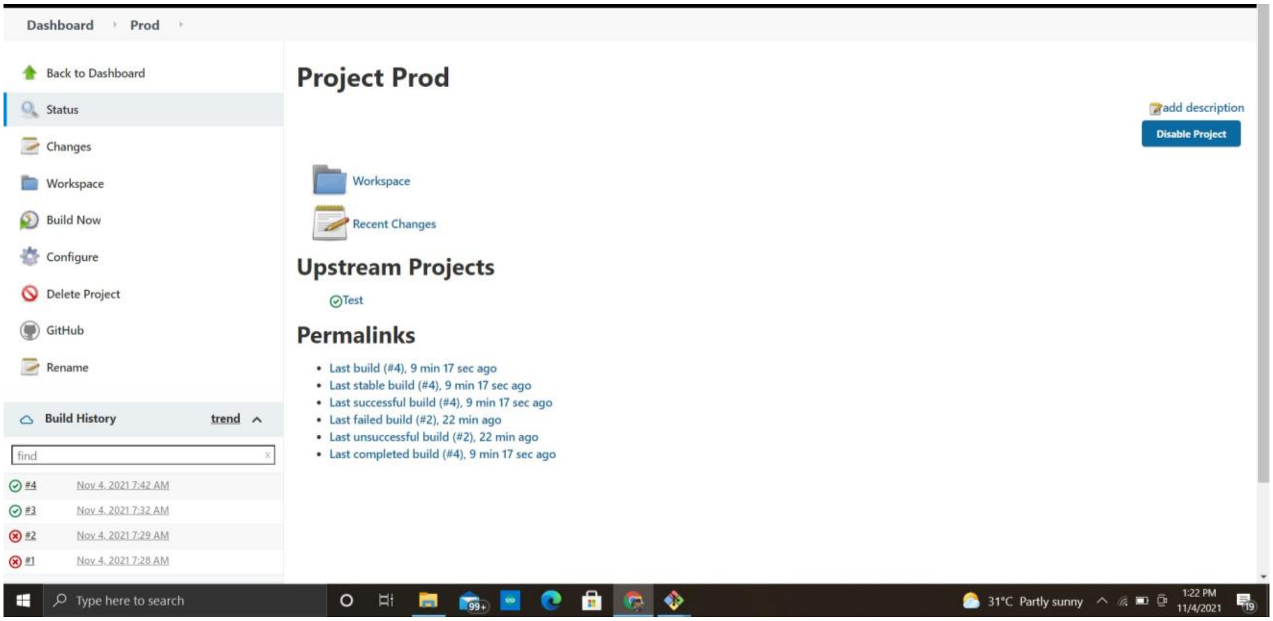


Project Prod

Permalinks

- Last build (#2), 1 min 41 sec ago
- Last failed build (#2), 1 min 41 sec ago
- Last unsuccessful build (#2), 1 min 41 sec ago
- Last completed build (#2), 1 min 41 sec ago

✓ #3	Nov 4, 2021 7:32 AM
✗ #2	Nov 4, 2021 7:29 AM
✗ #1	Nov 4, 2021 7:28 AM



Dashboard › Prod ›

Build History trend

find

✓ #4	Nov 4, 2021 7:42 AM
✓ #3	Nov 4, 2021 7:32 AM
⊗ #2	Nov 4, 2021 7:29 AM
⊗ #1	Nov 4, 2021 7:28 AM

Project Prod

add description

Disable Project

Workspace

Recent Changes

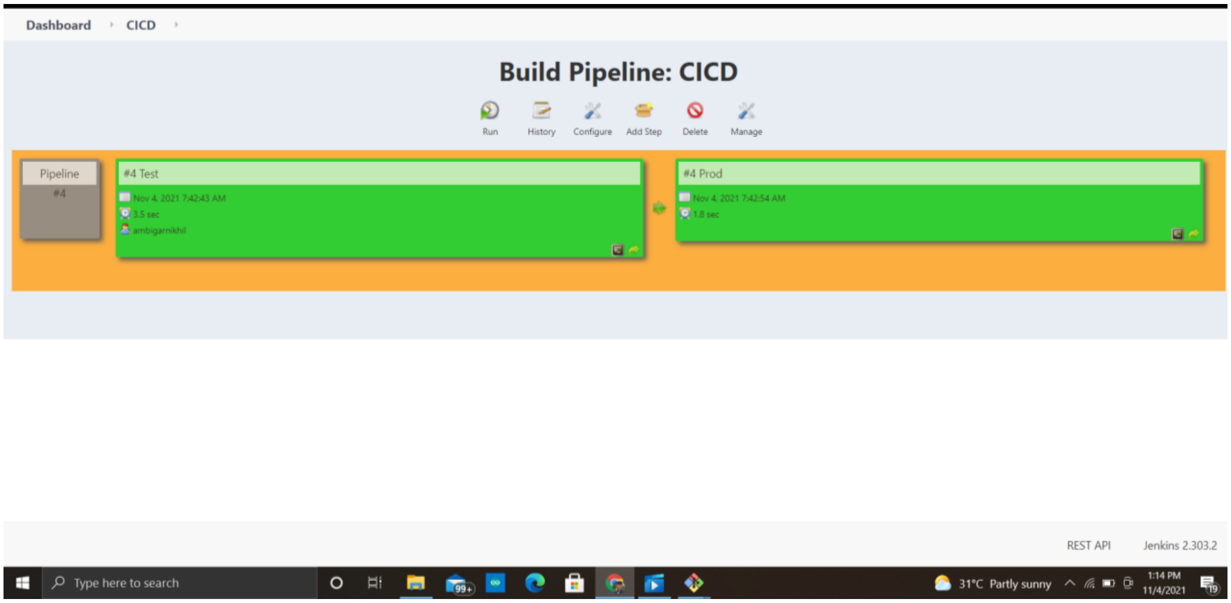
Upstream Projects

✓Test

Permalinks

- Last build (#4), 9 min 17 sec ago
- Last stable build (#4), 9 min 17 sec ago
- Last successful build (#4), 9 min 17 sec ago
- Last failed build (#2), 22 min ago
- Last unsuccessful build (#2), 22 min ago
- Last completed build (#4), 9 min 17 sec ago

Step-11: Creating the pipeline



Dashboard › CICD ›

Build Pipeline: CICD

Pipeline
#4

#4 Test
Nov 4, 2021 7:42:43 AM
3.5 sec
ambigarnikhil

#4 Prod
Nov 4, 2021 7:42:54 AM
1.8 sec

Step-12: After successfully building our project we can see our website using slave-1 IP at port 82.

We can see our website using slave-2 IP at port 82.

THANK YOU