

DeVops Jenkins

Assignment 2

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Assignment-02: Jenkins Master Slave pipeline intellipaat.

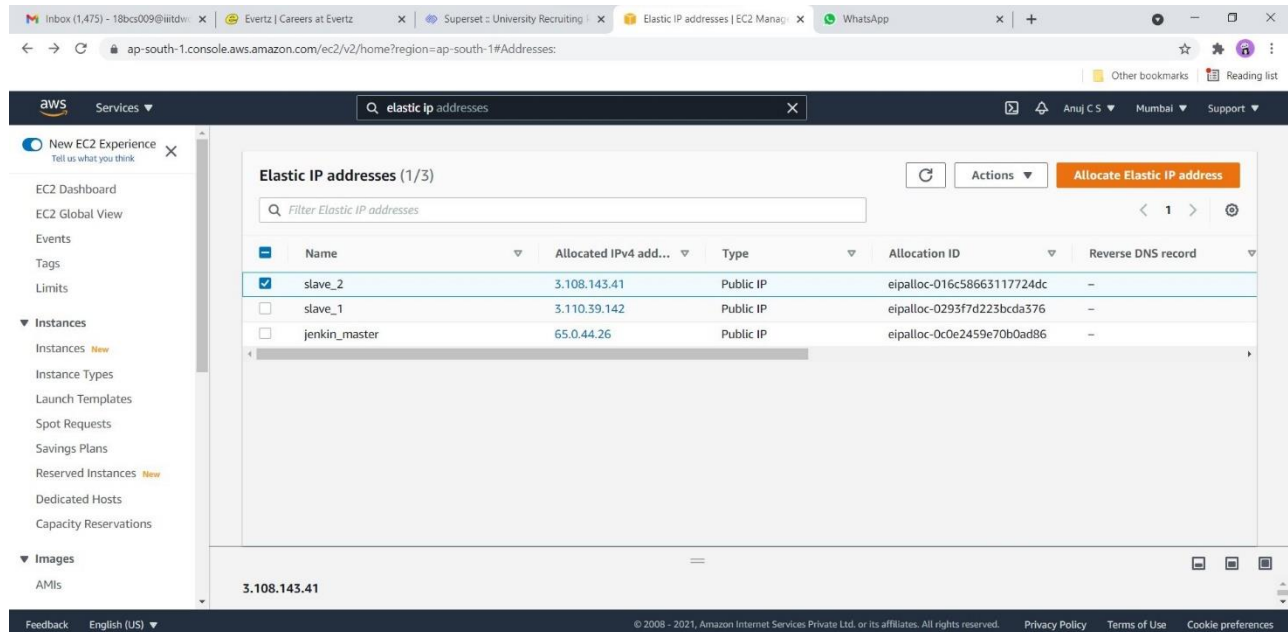
Step-1: Firstly, we are creating three aws ec2 instances and naming them as jenkins_master, slave-1, slave-2.

The screenshot displays the AWS Management Console interface for the 'ap-south-1' region. The 'Instances' page shows three EC2 instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
jenkins_master	i-0878d993b8685eb5d	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1a	ec2-13-235...
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...

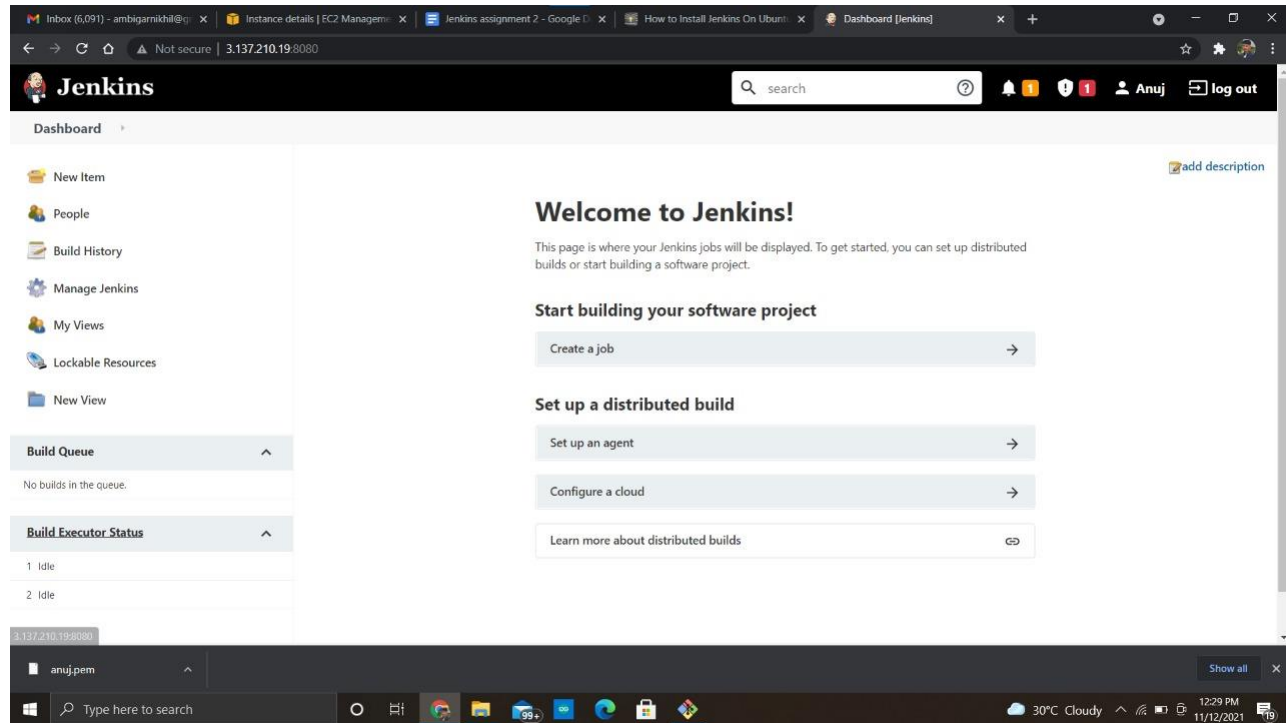
The left sidebar shows navigation options like 'EC2 Dashboard', 'Events', 'Tags', 'Limits', 'Instances', 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Capacity Reservations', 'Images', and 'AMIs'. The bottom of the console shows the footer with 'Feedback', 'English (US)', and copyright information for 2008-2021.

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

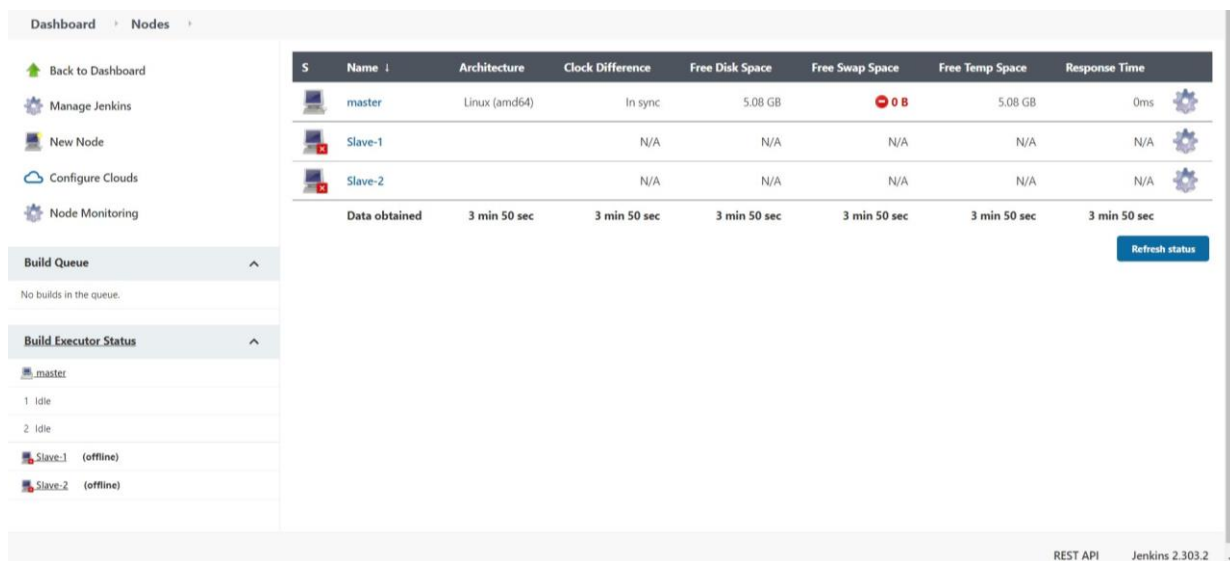


Step-3: Install Jenkins on jenkins_master ec2 instance.
Commands to install Jenkins on ubuntu ec2 instance.

```
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
```

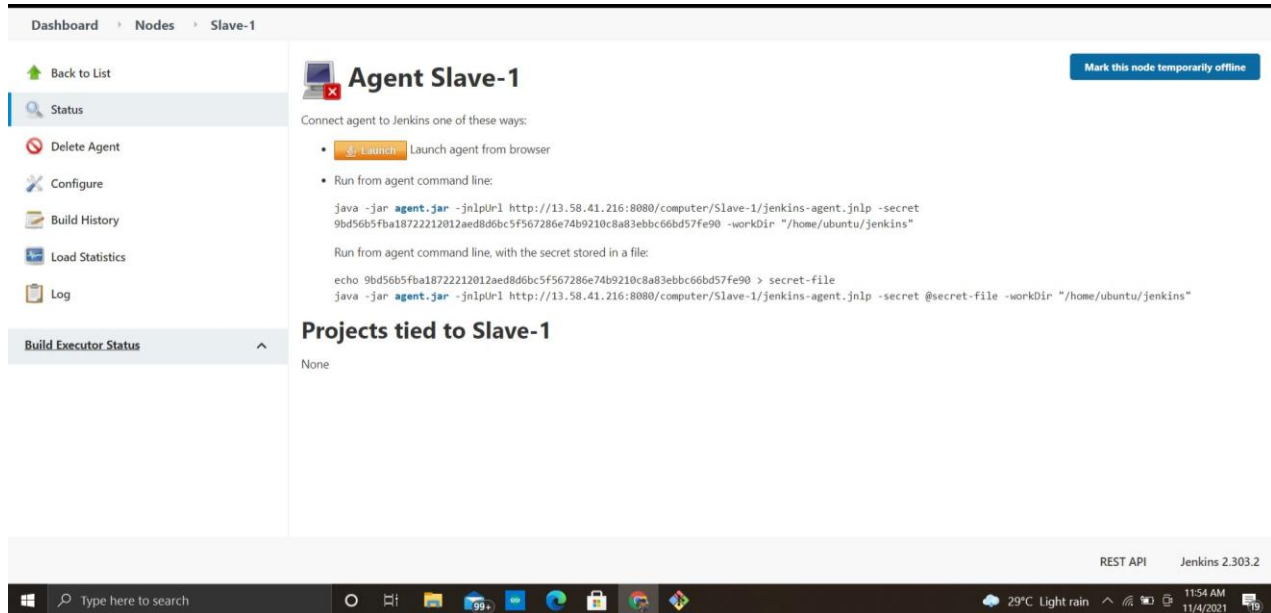


Step-4: Creating two nodes. (one for ec2 slave-1 instance and the other for ec2 slave-2 instance.)



Step-5:

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



The screenshot shows the Jenkins 'Agent Slave-1' configuration page. The left sidebar contains links for 'Back to List', 'Status', 'Delete Agent', 'Configure', 'Build History', 'Load Statistics', and 'Log'. The main content area shows the 'Agent Slave-1' title with a red status icon and a 'Mark this node temporarily offline' button. Below the title, it says 'Connect agent to Jenkins one of these ways:' and provides two options: 'Launch agent from browser' (with a 'Launch' button) and 'Run from agent command line:'. The command line instructions are as follows:

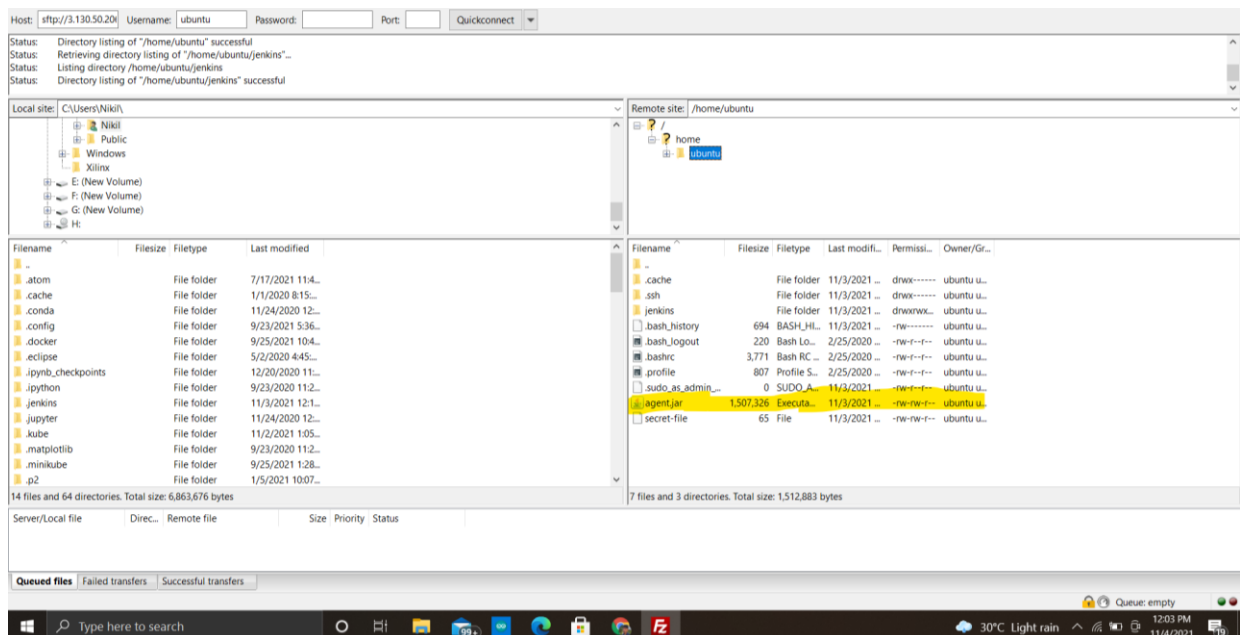
```
java -jar agent.jar -jnlpUrl http://13.58.41.216:8080/computer/Slave-1/jenkins-agent.jnlp -secret 9bd56b5fba18722212012aed8d8bc5f567286e74b9210c8a83ebbc66bd57fe90 -workDir "/home/ubuntu/jenkins"
```

It also shows the command to run from the agent command line with the secret stored in a file:

```
echo 9bd56b5fba18722212012aed8d8bc5f567286e74b9210c8a83ebbc66bd57fe90 > 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"
```

Below this, it says 'Projects tied to Slave-1' and 'None'. The bottom of the page shows the 'REST API' and 'Jenkins 2.303.2' version.

SLAVE-1



The screenshot shows the FileZilla interface with the local site set to 'C:\Users\Nikhil\' and the remote site set to '/home/ubuntu'. The local site pane shows a directory listing of 'C:\Users\Nikhil\' with files like .atom, .cache, .conda, .config, .docker, .eclipse, .ipynb_checkpoints, .jpython, .jenkins, .jupyter, .kube, .matplotlib, .minikube, and .p2. The remote site pane shows a directory listing of '/home/ubuntu' with files like .cache, .ssh, .jenkins, .bash_history, .bash_logout, .bashrc, .profile, .sudo_as_administrator, agent.jar, and secret-file. The 'agent.jar' file is highlighted in yellow. The bottom status bar shows '14 files and 64 directories. Total size: 6,863,676 bytes' for the local site and '7 files and 3 directories. Total size: 1,512,883 bytes' for the remote site.

Step-5:

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

The screenshot shows the Jenkins 'Agent Slave-2' configuration page. The left sidebar contains links: 'Back to List', 'Status', 'Delete Agent', 'Configure', 'Build History', 'Load Statistics', and 'Log'. The 'Status' section is active, showing instructions to connect the agent to Jenkins. It includes a 'Launch' button and a command line for running the agent. Below this, the 'Projects tied to Slave-2' section shows 'None'. The bottom of the page displays the REST API endpoint and the Jenkins version (2.303.2).

Dashboard > Nodes > Slave-2

Agent Slave-2

Mark this node temporarily offline

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

REST API Jenkins 2.303.2

SLAVE-2

The screenshot shows the FileZilla interface with a connection to the SLAVE-2 node. The status bar at the top indicates the connection is successful. The left pane shows the local site (C:\Users\Nikhil\), and the right pane shows the remote site (/home/ubuntu). The file list in the right pane includes various system files and folders, with 'agent.jar' highlighted. The bottom status bar shows the queue of files and the current transfer status.

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

Local site: C:\Users\Nikhil\ Remote site: /home/ubuntu

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

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

Filename	Filesize	Filetype	Last modified	Permissions	Owner/Group
.cache		File folder	11/3/2021 ...	drwxr-xr-x	ubuntu u...
.ssh		File folder	11/3/2021 ...	drwxr-xr-x	ubuntu u...
.jenkins		File folder	11/3/2021 ...	drwxr-xr-x	ubuntu u...
.bash_history	295	BASH_HL...	11/3/2021 ...	-rw-r--r--	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-r--r--	ubuntu u...
secret-file	65	File	11/3/2021 ...	-rw-r--r--	ubuntu u...

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

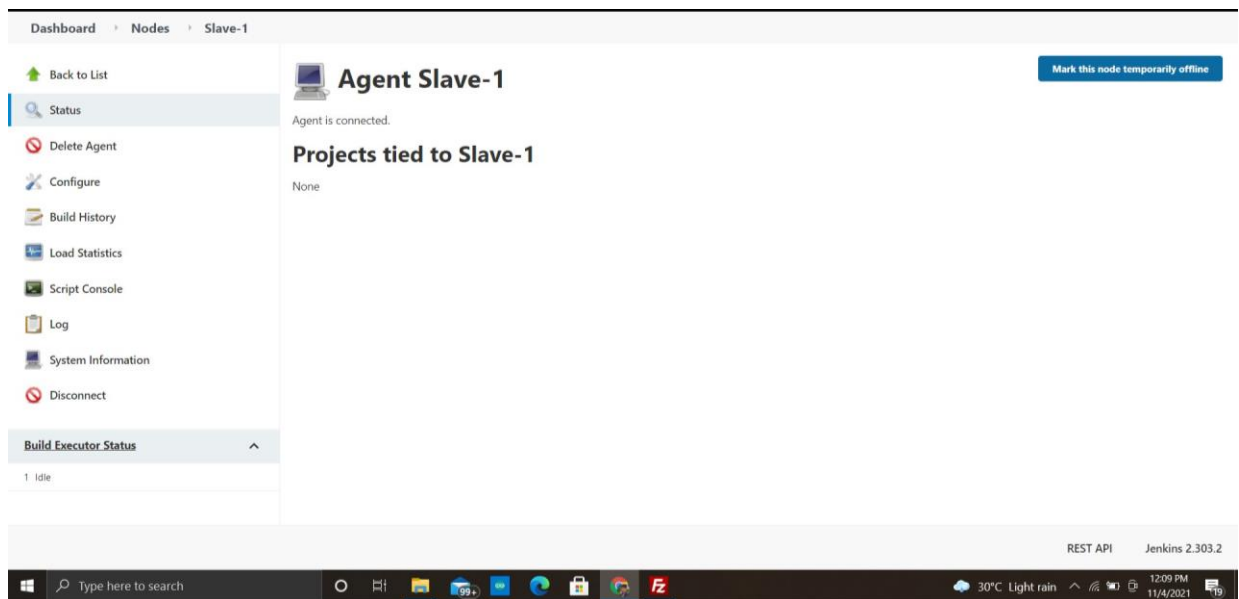
Queued files Failed transfers Successful transfers

12:05 PM 11/4/2021

Step-6:

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

SLAVE-1 CONNECTED



SLAVE-2 CONNECTED.

Dashboard > Nodes > Slave-2

[Back to List](#)

 Status Delete Agent

Agent Slave-2

Agent is connected.

Projects tied to Slave-2

Mark this node temporarily offline

 Script Console Disconnect

Build Executor Status

RESTAPI Jenkins 2.303.1



Dashboard > Nodes >

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-1

1 Idle

Slave-2

1 Idle

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

Refresh status

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.

The screenshot shows the Jenkins Dashboard. On the left, there is a sidebar with navigation links: New Item, People, Build History, Manage Jenkins, My Views, Lockable Resources, and New View. Below these are sections for 'Build Queue' (No builds in the queue) and 'Build Executor Status' (1 idle master, 2 idle slaves, 1 idle Slave-1). The main area displays a table of jobs under the 'All' tab, with a filter for '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'. Both jobs have a green checkmark in the Status column, indicating they are successful. The 'Prod' job has a last success of 1 min 55 sec - #4 and a last failure of 15 min - #2. The 'Test' job has a last success of 2 min 6 sec - #4 and a last failure of 29 min - #2. Below the table, there is a legend for the status icons and links for Atom feeds.

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

Icon: S M L

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

Step 9: Build Test job.

The screenshot shows a web application interface for a project named "Test". The left sidebar contains navigation links: "Back to Dashboard", "Status", "Changes", "Workspace", "Build Now", "Configure", "Delete Project", "GitHub", and "Rename". The "Build History" section is expanded, showing a table of build records.

	Build History	trend
find		
#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	

The main content area is titled "Project Test" and includes a "Workspace" section with "Recent Changes". Below this is a "Downstream Projects" section with a "Prod" status. The "Permalinks" section lists several build events with their timestamps.

- 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

The bottom of the screen shows a Windows taskbar with a search bar, system icons, and the date/time (1:22 PM, 11/4/2021).

Dashboard > Test > #1

[Back to Project](#)

[Status](#)

[Changes](#)

Console Output

[View as plain text](#)

[Edit Build Information](#)

[Delete build '#1'](#)

[Git Build Data](#)

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

REST API Jenkins 2.303.2

Type here to search

30°C Light rain 12:32 PM 11/4/2021

Step 10: Build prod job.

Dashboard > Prod

[Back to Dashboard](#)

[Status](#)

[Changes](#)

[Workspace](#)

Build Now

[Configure](#)

[Delete Project](#)

[GitHub](#)

[Rename](#)

Build History trend ^

find

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

[Atom feed for all](#) [Atom feed for failures](#)

Project Prod

[add description](#)

[Disable Project](#)

[Workspace](#)

[Recent Changes](#)

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

Type here to search

30°C Partly sunny 1:03 PM 11/4/2021

Dashboard > Prod

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

[Back to Dashboard](#)

[Status](#)
[Changes](#)
[Workspace](#)
[Build Now](#)
[Configure](#)
[Delete Project](#)
[GitHub](#)
[Rename](#)

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

Type here to search

31°C Partly sunny 1:22 PM 11/4/2021

Step-11: Creating the pipeline

Dashboard > CICD

Build Pipeline: CICD

[Run](#) [History](#) [Configure](#) [Add Step](#) [Delete](#) [Manage](#)

Pipeline #4

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

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

REST API Jenkins 2.303.2

Type here to search

31°C Partly sunny 1:14 PM 11/4/2021

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

