

Lab1

01) What is Jenkins used for?

Jenkins is used to build and test your product continuously, so developers can continuously integrate changes into the build

02) What is Jenkins agent? What is Jenkins executor (Build Executor)?

- An agent is typically a machine, or container, which connects to a Jenkins controller and executes tasks when directed by the controller

- A Jenkins executor is one of the basic building blocks which allow a build to run on a node/agent (e.g. build server). Think of an executor as a

03) Explain Jenkins master-slave architecture?

Jenkins Master

Your main Jenkins server is the Master. The Master's job is to handle:

- Scheduling build jobs.
- Dispatching builds to the slaves for the actual execution.
- Monitor the slaves (possibly taking them online and offline as required).
- Recording and presenting the build results.
- A Master instance of Jenkins can also execute build jobs directly.

Jenkins Slave

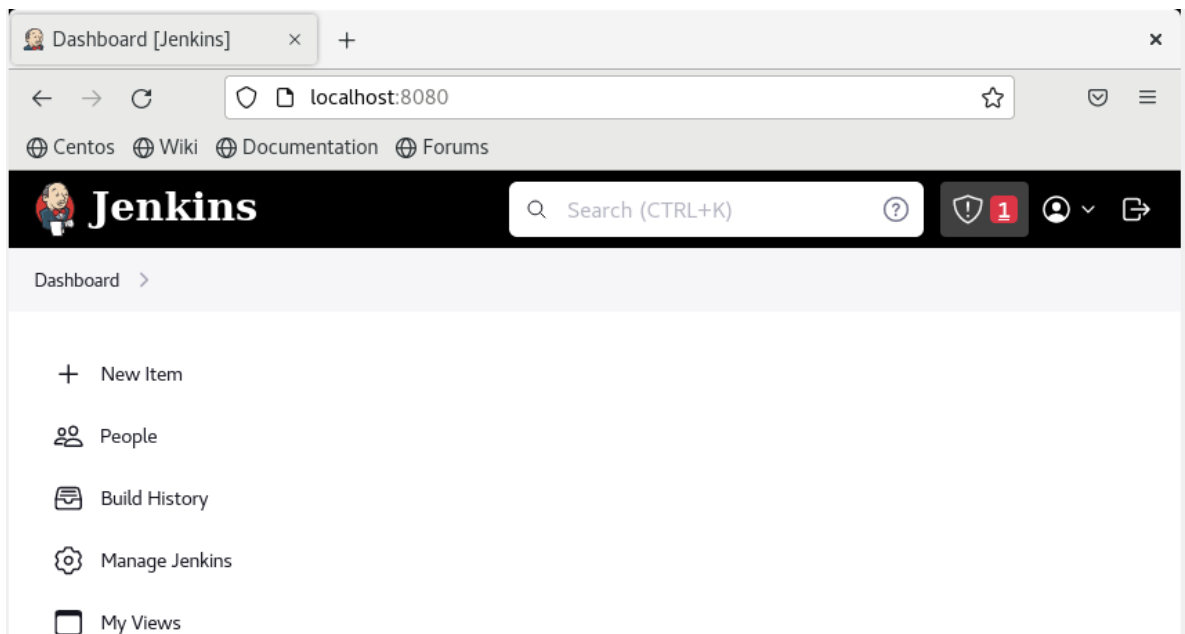
A Slave is a Java executable that runs on a remote machine. Following are the characteristics of Jenkins

Slaves:

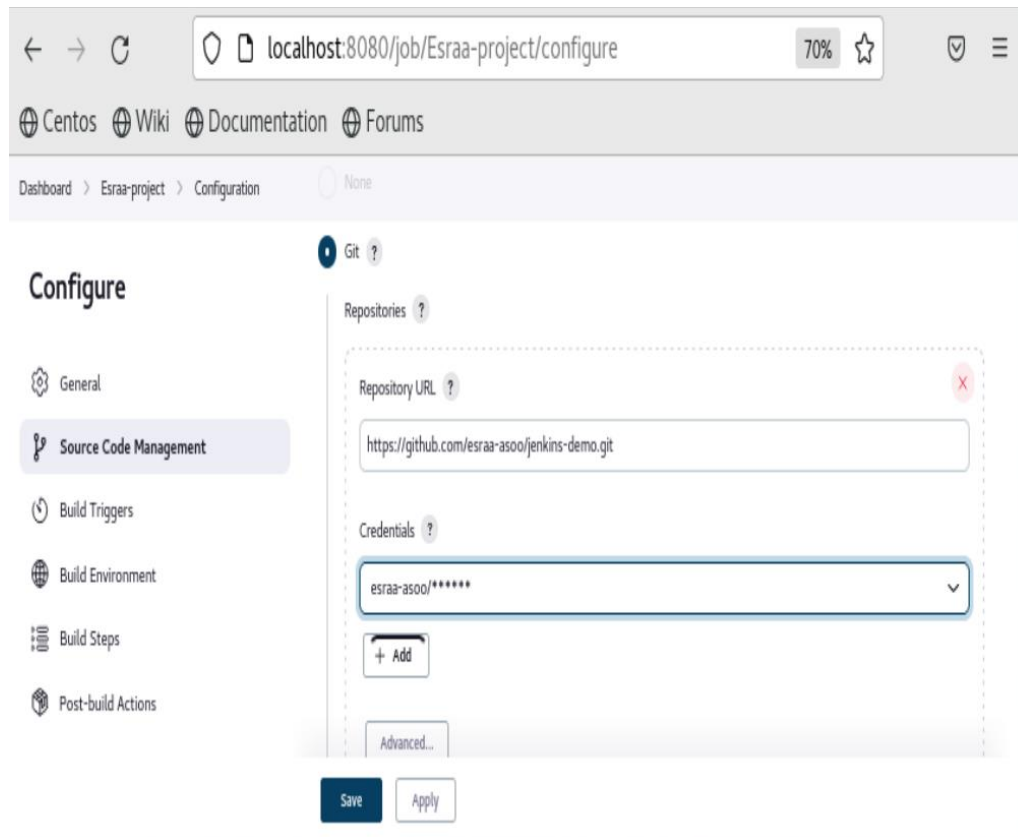
- It hears requests from the Jenkins Master instance.
- Slaves can run on a variety of operating systems.
- The job of a Slave is to do as they are told to, which involves executing build jobs dispatched by the Master.
- You can configure a project to always run on a particular Slave machine or a particular type of Slave machine, or simply let Jenkins pick the next available Slave

04) Install jenkins with docker image.

```
[esraa@10 ~]$ sudo docker run -p 8080:8080 -p 50000:50000 -d -v jenkins_home:/var/jenkins_home jenkins/jenkins:lts
[sudo] password for esraa:
Unable to find image 'jenkins/jenkins:lts' locally
lts: Pulling from jenkins/jenkins
bbef03cda1f: Pull complete
398a127e9b8f: Pull complete
740ae8bf5abb: Pull complete
5b55a2898e5d: Pull complete
11d78b95ea0e: Pull complete
725cf6a496a4: Pull complete
acc71bc946ba: Pull complete
aeb3c582524d: Pull complete
6ba52cfaad0b: Pull complete
4d90a31f0368: Pull complete
38d0248b6a15: Pull complete
e148037a0095: Pull complete
3a72a5e34c1b: Pull complete
Digest: sha256:6bb55cab3759b203fe5e1cac5fd2eff912d0cd572d8aaf1be116d70b2e7fd244
Status: Downloaded newer image for jenkins/jenkins:lts
0f24e55deb21882058356233b1986de6f1540ccb392068d0f940186aefe65f33
```



05) Create free style project and link it to private git repo containing any dockerfile then build an image from this dockerfile and push it to private docker repo



The screenshot shows the Jenkins configuration page for a job named 'Esraa-project'. The 'Source Code Management' tab is selected. The 'Repository URL' is set to 'https://github.com/esraa-asoo/jenkins-demo.git'. The 'Credentials' dropdown is set to 'esraa-asoo/*****'. The 'Advanced...' button is visible. The 'Save' and 'Apply' buttons are at the bottom.

localhost:8080/job/Esraa-project/configure

Centos Wiki Documentation Forums

Dashboard > Esraa-project > Configuration

Configure

Git

Repositories

Repository URL

https://github.com/esraa-asoo/jenkins-demo.git

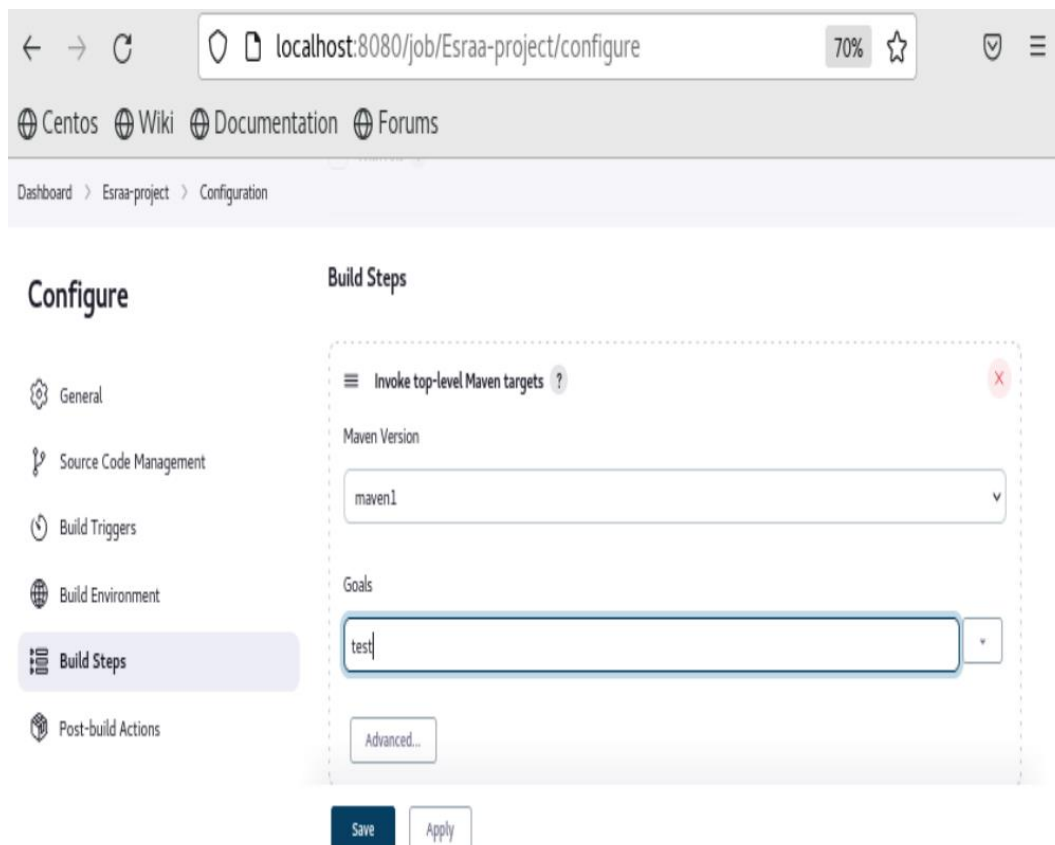
Credentials

esraa-asoo/*****

+ Add

Advanced...

Save Apply



The screenshot shows the Jenkins configuration page for a job named 'Esraa-project'. The 'Build Steps' tab is selected. The 'Invoke top-level Maven targets' checkbox is checked. The 'Maven Version' is set to 'maven1'. The 'Goals' field contains 'test'. The 'Advanced...' button is visible. The 'Save' and 'Apply' buttons are at the bottom.

localhost:8080/job/Esraa-project/configure

Centos Wiki Documentation Forums

Dashboard > Esraa-project > Configuration

Configure

Build Steps

Invoke top-level Maven targets

Maven Version

maven1

Goals

test




Advanced...

Save Apply


Global credentials (unrestricted)

[+ Add Credentials](#)

Credentials that should be available irrespective of domain specification to requirements matching.


ID	Name	Kind	Description
 github-token	esraa-asoo/*****	Username with password	
 doker-hub-regist	esraa0123/*****	Username with password	

Icon: ☒ S ☐ M ☐ L

 **dockerhub**

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 esraa0123


[esraa0123](#) [Repositories](#) [jenkins-images](#) [General](#)


Using 1 of 1 private repositories. [Get more](#)

[General](#) [Tags](#) [Builds](#) [Collaborators](#) [Webhooks](#) [Settings](#)

 **esraa0123/jenkins-images**

Description

This repository does not have a description 


 Last pushed: 2 hours ago

Docker commands

To push a new tag to this repository,

```
docker push esraa0123/jenkins-images:tagname
```

Tags

 VULNERABILITY SCANNING - DISABLED [Enable](#)

This repository is empty. When it's not empty, you'll see a list of the most recent tags here.

Automated Builds

Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your

localhost:8080/job/Esraa-project/configure

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Dashboard > Esraa-project > Configuration

Configure

General

Source Code Management

Build Triggers

Build Environment

Build Steps

Post-build Actions

Username and password (separated) ?

Username Variable ?

USER

Password Variable ?

PASSWORD

Credentials ?

Specific credentials

Parameter expression

esraa0123/*****

+ Add

Save

Apply

Esraa-project Config [Jen]

WhatsApp

esraa0123/jenkins-images

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localhost:8080/job/Esraa-project/configure

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Dashboard > Esraa-project > Configuration

Configure

General

Source Code Management

Build Triggers

Build Environment

Build Steps

Post-build Actions

Execute shell ?

Command

See the list of available environment variables

docker build -t esraa0123/jenkins-images:1 .

docker login -u \$USER -p \$PASSWORD

docker push esraa0123/jenkins-images:1

Save

Apply

Finished: SUCCESS

Tags

VULNERABILITY SCANNING - DISABLED
[Enable](#)

This repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
1		Image	---	a few seconds ago

[See all](#)

[Go to Advanced Image Management](#)

