

**Date:26/03/2024**

**Prepared By: Shrikanth C R**

**BUILD DOCKER IMAGE & PUSH TO DOCKER HUB USING JENKINS PIPELINE:**

**Prerequisites for Jenkins Master:**

```
#!/bin/bash
```

```
sudo su -
```

```
yum update -y
```

```
yum install git -y
```

```
yum install maven -y
```

```
yum install java-17 -y
```

```
yum install docker -y
```

```
systemctl start docker
```

```
systemctl enable docker
```

```
docker run -d -p 8080:8080 -p 50000:50000 jenkins/jenkins:its
```

**Prerequisites for Jenkins Slave:**

Roundcube

Meet - yos

Installed

Instances

Docker Hub

shrikanthcr


New Tab

ChatGPT

docker-sprin

54.81.164.117:8080/manage/pluginManager/installed

You are sharing your entire screen. Stop Sharing

 **Jenkins**

Search (CTRL+K)

admin log out

Dashboard > Manage Jenkins > Plugins

Updates

Available plugins

Installed plugins

Advanced settings

Download progress

Q maven integr

Name	Enabled
<a href="#">Maven Integration plugin</a> 3.23 This plugin provides a deep integration between Jenkins and Maven. It adds support for automatic triggers between projects depending on SNAPSHOTS as well as the automated configuration of various Jenkins publishers such as Junit. <a href="#">Report an issue with this plugin</a>	<input checked="" type="checkbox"/>
<a href="#">Pipeline Maven Integration Plugin</a> 1396.veb_f07b_2fc1d8 This plugin provides integration with Pipeline, configures maven environment to use within a pipeline job by calling sh mvn or bat mvn. The selected maven installation will be configured and prepended to the path. <a href="#">Report an issue with this plugin</a>	<input checked="" type="checkbox"/>

Roundcube

Meet - yos

Installed

Instances

Docker Hub

shrikanthcr


New Tab

ChatGPT

docker-sprin

54.81.164.117:8080/manage/pluginManager/installed

You are sharing your entire screen. Stop Sharing

 **Jenkins**

Search (CTRL+K)

admin log out

Dashboard > Manage Jenkins > Plugins

Updates

Available plugins

Installed plugins

Advanced settings

Download progress

Q openjdk

Name	Enabled
<a href="#">Eclipse Temurin installer Plugin</a> 1.5 Provides an installer for the JDK tool that downloads the JDK from https://adoptium.net <a href="#">Report an issue with this plugin</a>	<input checked="" type="checkbox"/>
<a href="#">openJDK-native-plugin</a> 1.8 <a href="#">Report an issue with this plugin</a>	<input checked="" type="checkbox"/>

Dashboard > Manage Jenkins > Plugins

## Plugins

- Updates
- Available plugins
- Installed plugins
- Advanced settings
- Download progress

docker

Name	Enabled
<b>CloudBees Docker Build and Publish plugin</b> 1.4.0 This plugin enables building Dockerfile based projects, as well as publishing of the built images/repos to the docker registry. <a href="#">Report an issue with this plugin</a>	<input checked="" type="checkbox"/>
<b>Docker API Plugin</b> 3.3.4-86.v39b_a_5ede342c This plugin provides <a href="#">docker-java</a> API for other plugins. <a href="#">Report an issue with this plugin</a>	<input checked="" type="checkbox"/>
<b>Docker Commons Plugin</b> 439.va_3cb_0a_6a_fb_29 Provides the common shared functionality for various Docker-related plugins. <a href="#">Report an issue with this plugin</a>	<input checked="" type="checkbox"/>

Dashboard > Manage Jenkins

- Project Relationship
- Check File Fingerprint
- Manage Jenkins
- My Views

### Build Queue

No builds in the queue.

### Build Executor Status

Built-In Node

1 Idle

2 Idle

slave-1

1 Idle

Warnings have been published for the following currently installed components:

[Go to plugin manager](#)

[Configure which of these warnings are shown](#)

**docker-build-step 2.11:**

CSRF vulnerability and missing permission check (no fix available)

No fixes for these issues are available. It is recommended that you review the security advisory and apply mitigations if possible, or uninstall this plugin.

## System Configuration



### System

Configure global settings and paths.



### Plugins

Add, remove, disable or enable plugins that can extend the functionality of Jenkins.



### Tools

Configure tools, their locations and automatic installers.



### Nodes

Add, remove, control and monitor the various nodes that Jenkins runs jobs on.

Roundcube | Meet - yos | PLAYING | Tools [Jen X] | Instances | Docker Hub | shrikanthcr/ | New Tab | ChatGPT | docker-sprin | + | - | X

54.81.164.117:8080/manage/configureTools/ | You are sharing your entire screen. Stop Sharing | ☆ | 🔒 | 👤 | 📄 | ☰

Dashboard > Manage Jenkins > Tools

## JDK installations

JDK installations ^ | Edited

Add JDK

≡ JDK

Name

OpenJDK17

☒ Install automatically ?

Roundcube | Meet - yos | PLAYING | Tools [Jen X] | Instances | Docker Hub | shrikanthcr/ | New Tab | ChatGPT | docker-sprin | + | - | X

54.81.164.117:8080/manage/configureTools/ | You are sharing your entire screen. Stop Sharing | ☆ | 🔒 | 👤 | 📄 | ☰

Dashboard > Manage Jenkins > Tools

Add JDK

≡ JDK

Name

OpenJDK17

☒ Install automatically ?

≡ Install from adoptium.net ?

Version ?

jdk-17.0.10+7 ▾

Add Installer ▾

Dashboard > Manage Jenkins > Tools

Name

maven

☒ Install automatically ?

**Install from Apache**

Version

3.8.6

Add Installer

Add Maven

Dashboard > Manage Jenkins > Tools

**Docker installations**

Docker installations ^ Edited

Add Docker

**Docker**

Name

Docker

☒ Install automatically ?

**Download from docker.com**

Docker version ?

latest

English (United States)

Dashboard > Manage Jenkins > Tools

☒ Install automatically ?

**Download from docker.com**

Docker version ?

latest

Add Installer

Add Docker

Roundcube

Meet - yos

Dashboard

Instances

Docker Hub

shrikanthcr/

New Tab

ChatGPT

docker-sprin

54.81.164.117:8080

You are sharing your entire screen. 

Stop Sharing

Jenkins

Search (CTRL+K)

admin

log out

Dashboard

New Item

People

Build History

Project Relationship

Check File Fingerprint

Manage Jenkins

My Views

Add description

All

S	W	Name	Last Success	Last Failure	Last Duration
		Docker-Build-Push	1 hr 49 min #3 shrikanthcr/testrepo:3 shrikanthcr/testrepo:latest	N/A	7.2 sec
		maven project1	20 hr #7	20 hr #6	23 sec
		Pipeline-Docker-Build-Push	7 min 2 sec #8	12 min #7	8.3 sec

Build Queue

Pipeline-Docker-Build-Push

Changes

Build Now

Configure

Delete Pipeline

Full Stage View

Rename

Pipeline Syntax

Add description

Disable Project

Stage View

Average stage times:  
(Average full run time: ~8s)

Git

Maven Build

Docker Build & Push

277ms

5s

2s

Build History

Filter...

#8

Mar 26, 2024, 6:25 AM

#7

Mar 26, 2024, 6:20 AM

#6

Mar 26, 2024, 6:15 AM

Permalinks

Last build (#8), 7 min 23 sec ago

Last stable build (#8), 7 min 23 sec ago

Last successful build (#8), 7 min 23 sec ago

Dashboard > Pipeline-Docker-Build-Push > Configuration

## Configure

- General
- Advanced Project Options
- Pipeline**

### Pipeline

Definition

Pipeline script

```
1 pipeline {
2   agent {
3     label 'slave-1'
4   }
5
6   stages {
7     stage('git') {
8       steps {
9         git branch: 'main', changelog: false, poll: false, url: 'https://github.com/shrikanthcr/Simtekx
10      }
11    }
12    stage('Maven Build') {
13      steps {
14        sh "mvn clean install"
15      }
16    }
17  }
```

Dashboard > docker bild-push-jenkins-pipeline > Pipeline Syntax

are optional and can be omitted in your script, leaving them at default values.)

### Steps

Sample Step

withDockerRegistry: Sets up Docker registry endpoint

withDockerRegistry ?

Docker registry URL ?

URL to the Docker registry you are using. May be left blank to use the public DockerHub registry (currently <https://index.docker.io/v1/>).  
(from [Docker Commons Plugin](#))

Registry credentials

- none -

Dashboard > docker bild-push-jenkins-pipeline > Pipeline Syntax

examples reference

IntelliJ IDEA GDSE

withDockerRegistry ?

Docker registry URL ?

URL to the Docker registry you are using. May be left blank to use the public DockerHub registry (currently <https://index.docker.io/v1/>).  
(from [Docker Commons Plugin](#))

Registry credentials

- none -

Jenkins Credentials Provider

Jenkins

(Default)

## Jenkins Credentials Provider: Jenkins

### Add Credentials

Domain

Global credentials (unrestricted)

Kind

Username with password

Scope ?

Global (Jenkins, nodes, items, all child items, etc)

Username ?

ec2-user

☐ Treat username as secret ?



## Jenkins Credentials Provider: Jenkins

☐ Treat username as secret ?

Password ?

.....

ID ?

Docker-Login-ID-Password

Description ?

Docker-Login-ID-Password

Cancel

Add

Roundcube Meet - yo PLAYING docker bild Pipeline X Instances Repository You are sharing your entire screen. Stop Sharing

54.81.164.117:8080/job/docker-bild-push-jenkins-pipeline/pipeline-syntax/

Dashboard > docker bild-push-jenkins-pipeline > Pipeline Syntax (from Docker Commons Plugin)

Registry credentials

ec2-user/\*\*\*\*\* (Docker-Login-ID-Password)

+ Add

Docker installation

(Default)

Generate Pipeline Script

```
// This step should not normally be used in your script. Consult the inline help for details.
withDockerRegistry(credentialsId: 'Docker-Login-ID-Password') {
    // some block
}
```

Dashboard > Pipeline-Docker-Build-Push > Configuration

## Configure

- General
- Advanced Project Options
- Pipeline**

Definition: Pipeline script

Script ?

```
11 }
12 stage('Maven Build') {
13     steps {
14         sh "mvn clean install"
15     }
16 }
17 stage('Docker Build & Push') {
18     steps {
19         script{
20             withDockerRegistry(credentialsId: '4e420bfb-0fad-4d1a-9a8d-55f317d8505e') {
21                 sh "docker build -t shrikanthcr/httprepo:tag-httpd ."
22                 sh "docker push shrikanthcr/httprepo:tag-httpd"
23             }
24         }
25     }
26 }
27 }
```

☒ Use Groovy Sandbox ?

[Pipeline Syntax](#)

Dashboard > Pipeline-Docker-Build-Push > Configuration

## Configure

- General
- Advanced Project Options
- Pipeline**

Definition: Pipeline script

Script ?

```
15 }
16 }
17 stage('Docker Build & Push') {
18     steps {
19         script{
20             withDockerRegistry(credentialsId: '4e420bfb-0fad-4d1a-9a8d-55f317d8505e') {
21                 sh "docker build -t shrikanthcr/httprepo:tag-httpd ."
22                 sh "docker push shrikanthcr/httprepo:tag-httpd"
23             }
24         }
25     }
26 }
27 }
28 }
29 }
30 }
```

☒ Use Groovy Sandbox ?

[Pipeline Syntax](#)

[Save](#) [Apply](#)

REST API Jenkins 2.440.2

Roundcube

Meet - YOUTUBE

Pipeline-D

Pipeline-D

Instances

shrikanth X

shrikanth

New Tab

ChatGPT

docker-sp

https://hub.docker.com/repository/docker/shrikanthcr/httpdrepo

You are sharing your entire screen. Stop Sharing

docker hub

Explore

Repositories

Organizations

Search Docker Hub

ctrl+K

?

⋮

S

shrikanthcr / Repositories / httpdrepo / General

Using 0 of 1 private repositories. Get more

General

Tags

Builds

Collaborators

Webhooks

Settings

shrikanthcr/httpdrepo

Updated 9 minutes ago

httpdrepo

Docker commands

Public View

To push a new tag to this repository:

docker push shrikanthcr/httpdrepo:tagname

Tags

This repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
tag-httpd		Image	---	9 minutes ago

See all

Automated Builds

Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.

Available with Pro, Team and Business subscriptions. Read more about automated builds

Upgrade

Dashboard > Pipeline-Docker-Build-Push > #8

Successfully tagged shrikanthcr/httpdrepo:tag-httpd

[Pipeline] sh

+ docker push shrikanthcr/httpdrepo:tag-httpd

The push refers to repository [docker.io/shrikanthcr/httpdrepo]

33a45436c626: Preparing

09e838cb4021: Preparing

09e838cb4021: Mounted from shrikanthcr/testrepo

33a45436c626: Mounted from shrikanthcr/testrepo

tag-httpd: digest: sha256:1684996077d7eb4f87416d0a930bf3ae114c44b4ddbc6268b42613cd99d00871b size: 741

[Pipeline] }

[Pipeline] // withDockerRegistry

[Pipeline] }

[Pipeline] // script

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // node

[Pipeline] End of Pipeline

Finished: SUCCESS

```
pipeline {
```

```
agent {
  label 'slave-1'
}

stages {
  stage('Git') {
    steps {
      git branch: 'main', changelog: false, poll: false, url: 'https://github.com/shrikanthcr/Simtekway-Projects.git'
    }
  }
  stage('Maven Build') {
    steps {
      sh "mvn clean install"
    }
  }
  stage('Docker Build & Push') {
    steps {
      script{
        withDockerRegistry(credentialsId: '4e420bf0-fad-4d1a-9a8d-55f317d8505e') {
          sh "docker build -t shrikanthcr/httpdrepo:tag-httpd ."
          sh "docker push shrikanthcr/httpdrepo:tag-httpd"
        }
      }
    }
  }
}
```