**Prerequisites**:

* Jenkins(on any VM)
* Openjdk-11(for Jenkins)
* Docker(installed on same VM)
* Azure account

**STEPS**:

* Create a VM in azure account for creating env for running Jenkins Application
* Update the repo and install java using “sudo apt install openjdk-11-jdk” cmd
* Check java version and install docker engine in VM
* After installing Docker, install Jenkins by following these steps:

Add these commands and check for Jenkins version

sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \ - Add repo key

https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key

echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \ - Add repo

https://pkg.jenkins.io/debian-stable binary/ | sudo tee \

/etc/apt/sources.list.d/jenkins.list > /dev/null

sudo apt-get update - update repo

sudo apt-get install Jenkins - install Jenkins

* Now, Access Jenkins application through Public ip of VM.
* Copy the password from “sudo cat /var/lib/jenkins/secrets/initialAdminPassword” for Jenkins
* Go To credentials and add In Global Credentials add Credentials of Docker Hub for pushing image
* Create Pipeline for Docker go to build section and add Script Below

pipeline {

agent any

environment {

//once you sign up for Docker hub, use that user\_id here

registry = "your\_docker\_user\_id/mypythonapp"

//- update your credentials ID after creating credentials for connecting to Docker Hub

registryCredential = 'registry credential

dockerImage = ''

}

For initiating Connection to docker hub

* Go to pipeline Recommendation and add out github repo containing docker file and our Node.js/python/java app and add it to pipeline syntax
* Now build docker image using

stage('Building image') {

steps{

script {

dockerImage = docker.build registry

}

}

}

stage('Upload Image') {

steps{

script {

docker.withRegistry( '', registryCredential ) {

dockerImage.push()

}

}

}

}

For uploading image to Docker Hub

stage('Docker Run') {

steps{

script {

dockerImage.run("-p 8096:5000 --rm --name mypythonappContainer")

}

}

}

}

}

For running the application we uploaded every time we upload the above script we should use Build application.

The Above Script contains stages for Build and Running the application.

We can Also Use Azure Devops and GitHub Actions for Creating pipeline and Pushing Image from Docker to Docker Hub.